

Worldwide Sumitomo Network

U.S.A.

Sumitomo Machinery Corporation of America (SMA)
4200 Holland Blvd. Chesapeake, VA 23323, U.S.A.
Tel: (1)757-485-8218
Fax: (1)757-485-7490

Argentina

SM-Cydo de Argentina S.A. (SMAR)
Montes de Oca #6719, (B1606BMG)Munro,
Buenos Aires, Argentina
Tel: (54)11-4765-5332
Fax: (54)11-4765-5517

Brazil

SM-Cydo Redutores do Brasil, Ltda. (SMBR)
Av. Fagundes Filho, 191 Metro Sao Judas
Edificio Houston-Sala H123 Sao Paulo-SP
Brasil 04304-010
Tel: (55)11-5585-3600
Fax: (55)11-5585-9990

Chile

SM-Cydo de Chile, Ltda. (SMCH)
San Pablo Ave, 3507 Quinta Nomal, Santiago, Chile
Tel: (56)2-892-7000
Fax: (56)2-892-7001

Mexico

SM-Cydo de Mexico, S.A. de C.V. (SMME)
Calle "C" No. 506A Parque Industrial
Almacentro Apodaca, N. L., Mexico 66600
Tel: (52)81-8144-5130
Fax: (52)81-8369-3699

Canada

SM-Cydo of Canada, Ltd. (SMC)
1045 South Service Road West, Oakville, Ontario,
Canada L6L 6K3
Tel: (1)905-469-1050
Fax: (1)905-469-1055

Germany

Sumitomo(SHI) Cydo Drive Germany GmbH (SCG)
Cydostraße 92, 85229 Markt Indersdorf, Germany
Tel: (49)8136-66-0
Fax: (49)8136-5771

Austria

SCG Branch Austria Office
Gruentalerstraße 30A, 4020 Linz, Austria
Tel: (43)732-330958
Fax: (43)732-331978

Benelux

SCG Branch Benelux Office
Office Heikneuterlaan 23, 3010 Kesse-Lo/Leuven,
Belgium
Tel: (32)16 60 83 11
Fax: (32)16 57 16 39

France

SM-Cydo France E.U.R.L. (SMFR)
65-75 Avenue Jean Mermoz, Espace Primagaz, 93126
La Courmeuve, France
Tel: (33)149-929494
Fax: (33)149-929490

Italy

SM-Cydo Italy Srl (SMIT)
Via dell' Artigianato 23, 20010 Cornaredo(MI), Italy
Tel: (39)02-9356-2121
Fax: (39)02-9356-9893

Spain

SM-Cydo Iberia, S.L. (SMIB)
Edificio Gobelas, C/Landabarrí, nº 4 Escalera 1, 2º Izqda,
Leioa 48940 Vizcaya, Spain
Tel: (34)944-805389
Fax: (34)944-801550

Sweden

SM-Cydo Scandinavia AB (SMSC)
Ridbanegatan 4, S-21377 Malmö, Sweden
Tel: (46)40220030
Fax: (46)40220035

UK

SM-Cydo UK Ltd. (SMUK)
Unit 29, Bergen Way, Sutton Fields Industrial Estate,
Kingston upon Hull, HU7 0YQ, East Yorkshire,
United Kingdom
Tel: (44)1482-790340
Fax: (44)1482-790321

China

Sumitomo(SHI) Cydo Drive China, Ltd. (SCT)
13 Floor, No. 1698 Yishan Rd, Shanghai, China 201103
Tel: (86)21-3462-7877
Fax: (86)21-3462-7922

Hong Kong

SM-Cydo of Hong Kong Co., Ltd. (SMHK)
Unit 1802, 18/F, Park Building, 476 Castle Peak Road,
Kowloon, Hong Kong
Tel: (852)2460-1881
Fax: (852)2460-1882

Korea

Sumitomo(SHI) Cydo Drive Korea, Ltd. (SCK)
Royal Bldg. 9F Rm. 913, 5 Danju-Dong, Chongro-ku,
Seoul, Korea 110-721
Tel: (82)2-730-0151
Fax: (82)2-730-0156

Taiwan

Tatung SM-Cydo Co., Ltd. (TSC)
22 Chungshan N. Road 3rd., Sec. Taipei, Taiwan 104,
R. O. C.
Tel: (886)2-2595-7275
Fax: (886)2-2595-5594

Singapore

Sumitomo(SHI)Cydo Drive Asia Pacific Pte. Ltd.(SCA)
15 Kwong Min Road, Singapore 628718
Tel: (65)6591-7800
Fax: (65)6863-4238

Philippines

SCA Branch Office in Philippines
B2b Granville Industrial Complex, Governor's Drive, Bo,
Bancal, Carmona 4116 Cavite, Philippines
Tel: (63)2-6800-6500
Fax: (63)2-6800-6555

Vietnam

SCA Representative Office in Ho Chi Minh
Floor 4, 99 Nguyen Thi Minh Khai Street World Ben Thanh,
District 1, HCM, Vietnam
Tel: (84)8-3925-6504
Fax: (84)8-3925-6505

Malaysia

SM-Cydo(Malaysia) Sdn. Bhd. (SMMA)
No. 2, Jalan BP 4/1, Bandar Bukit Puchong, 47100
Puchong, Selangor Darul Ehsan, Malaysia
Tel: (60)3-8061-2909
Fax: (60)3-8061-3909

Thailand

SM-Cydo(Thailand) Co., Ltd. (SMTH)
195, Empire Tower 21st Fl., Unit 2103-4, South
Sathorn Road, Yannawa Sathorn Bangkok 10120,
Thailand
Tel: (66)2-670-0998
Fax: (66)2-670-0999

Australia

SM-Cydo(Australia) Pty., Ltd. (SMAU)
9 Holbeche Rd, Arndell Park, NSW, 2148, Australia
Tel: (61)2-8811-6555
Fax: (61)2-8811-6500

India

Sumi-Cydo Drive India Private Limited
Survey No. 130, Hissa No. 02, Jeevan Nagar Next to
TVS Logistics, Off Mumbai-Bangalore bypass,
Tathawade, Pune-411 033, India
Tel: (91)20-6674-2900
Fax: (91)20-6674-2901

Japan

Sumitomo Heavy Industries, Ltd.
Address: ThinkPark Tower, 1-1, Osaki 2-Chome,
Shinagawa-ku, Tokyo 141-6025, Japan
Tel: (81) 3-6737-2511
Fax: (81) 3-6866-5160

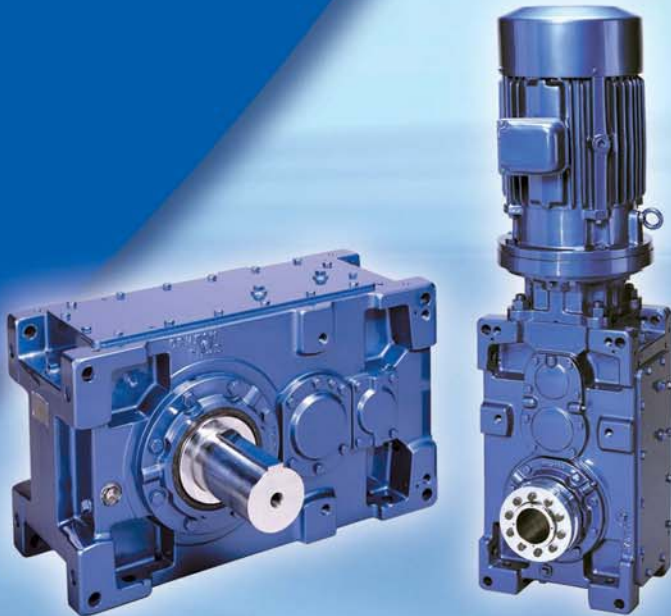
Sumitomo Drive Technologies

PARAMAX[®] 9000 Series

Reducer & Drive Units

Sumitomo Drive Technologies
Always on the Move

PARAMAX[®]
9000 Series
Reducer & Drive Units



A**Features**

Available Combination
 Drive Units and Reducers
 Basic Motor
 Introduction of Application

B**Drive Unit**

Standard Specifications ... B- 2
 Construction Drawing ... B- 3
 Nomenclature ... B- 4
 Selection ... B- 6
 Service Factor SF ... B- 8
 Selection Tables and Dimension Tables
 Right Angle Shaft ... B- 11
 Parallel Shaft ... B- 73

C**Reducer**

Standard Specifications ... C- 2
 Construction Drawing ... C- 3
 Nomenclature ... C- 4
 Selection ... C- 6
 Service Factor SF ... C- 8
 Selection Tables and Dimension Tables
 Right Angle Shaft ... C- 11
 Parallel Shaft ... C-101

D**Technical Data**

Lubricant and Installation ... D- 2
 Painting Specifications and Rust Proof Standard ... D- 3
 Moment of Inertia ... D- 4
 Supplementary Dimension Drawing ... D- 12
 Supplementary Matters to Hollow Shaft ... D- 17
 Hollow Shaft Related Dimensions ... D- 18
 Cooling Fan Dimension ... D- 20
 Option Dimension ... D- 24
 Motor Terminal Box ... D- 32
 Motor Flange Dimension ... D- 34



Features

JUST FIT SIZE

26 sizes variation for most accurate economical selection.

Prepared full range 26 sizes variation.
Fitness size selection available for every requested torque.
Customer's wide design availability with most accurate economical selection.

Size	Output Torque	Size	Output Torque	Size	Output Torque
9015	2.6	9065	31.4	9110	174
9025	4.2	9070	38.2	9115	207
9030	6.4	9075	47.8	9118	260
9035	8.5	9080	58.5	9121	301
9040	10.1	9085	73.1	9126	351
9045	13.2	9090	85.9	9128	420
9050	15.3	9095	101	9131	473
9055	19.9	9100	122	9136	552
9060	24.4	9105	144		

【kNm】

NEW DESIGN CONCEPT

Direct motor mount for right angle type also standardized.

Direct motor mount design of right angle type is standardized.

It has a number of outstanding features.

1. No input coupling
2. No coupling alignment required
3. Compact drive assembly

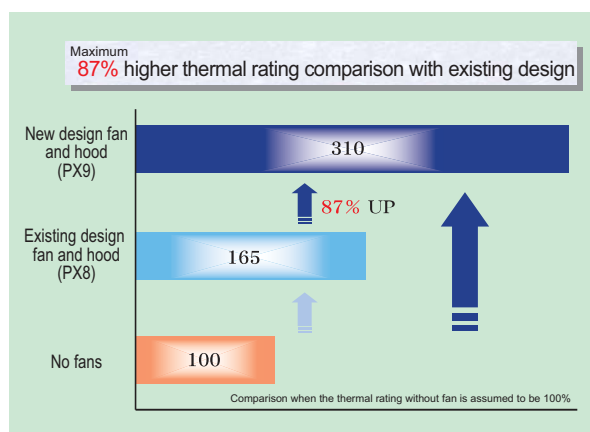


LARGER THERMAL CAPACITY

Advanced thermal capacity by new designed fan cooling system. (Option)

New designed fan and conducted air cooling gain larger thermal capacity.

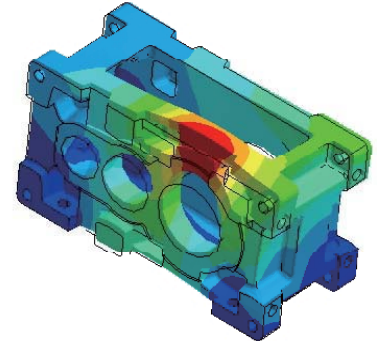
This system benefits for severe situation like continuous operation, even if compact size.



LOW NOISE

Low noise resulting from optimized gear tooth profile modification and rigid housing design.

FEM analysis used to maximize housing strength and rigidity, so maintaining correct gear alignment and bearing loading.

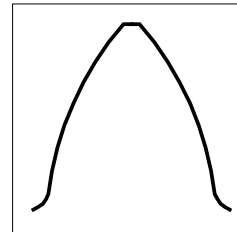


FEM Analysis

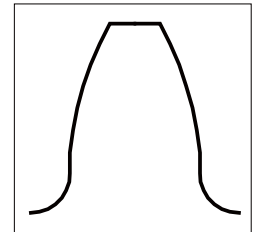
HIGH TOOTH STRENGTH

25 deg Pressure angle

In comparison with ordinary pressure angle (20 deg), 25 deg pressure angle permits a tooth form with thicker dedendum. This translates into higher tooth strength rating, an essential feature for shock load applications.



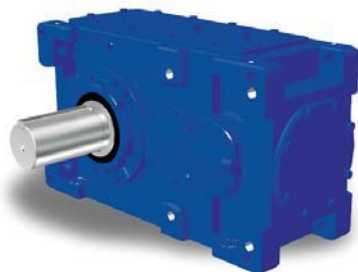
25 deg Pressure Angle



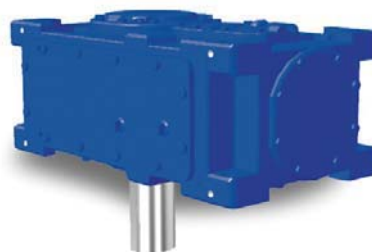
20 deg Pressure Angle

UNIVERSAL HOUSING

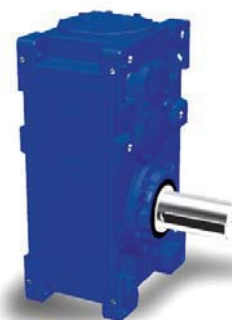
Horizontal, vertical or upright mounting - All use the same housing.



Horizontal mounting



Vertical mounting



Upright mounting

AVAILABLE COMBINATION

Drive Unit: Right Angle

		Ratio																					
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71
O/P speed	60Hz	286	254	225	200	180	161	144	129	113	100	90	80	72	64	57	51	45	40	36	32	29	25
r/min	50Hz	238	211	188	167	150	134	120	107	94	83	75	67	60	54	48	42	38	33	30	27	24	21
Motor (kW×P)	5.5x4															●	●	●	●	●	●	●	●
	7.5x4															●	●	●	●	●	●	●	●
	11x4									●	●	●	●	●	●	●	●	●	●	●	●	●	●
	15x4							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	18.5x4					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	22x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	30x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	37x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	45x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	55x4	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●

Drive Unit: Parallel

		Ratio																					
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71
O/P speed	60Hz	286	254	225	200	180	161	144	129	113	100	90	80	72	64	57	51	45	40	36	32	29	25
r/min	50Hz	238	211	188	167	150	134	120	107	94	83	75	67	60	54	48	42	38	33	30	27	24	21
Motor (kW×P)	5.5x4									●	●	●	●	●	●	●	●	●	●	●	●	●	●
	7.5x4						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11x4		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	15x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	18.5x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	22x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	30x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	37x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	45x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	55x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	75 x4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	90 x4			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	110 x4						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Reducer

		Ratio																					
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71
Size	9015	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	9025	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	9030	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9035			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9040	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9045			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9050	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9055			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9060	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9065			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9070	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9075			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9080	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9085			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9090	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9095		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9105		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9110	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9115		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	9118													●		●	●	●	●	●	●	●	●
	9121														●	●	●	●	●	●	●	●	●
	9126														●	●	●	●	●	●	●	●	●
	9128														●	●	●	●	●	●	●	●	●
	9131												●	●	●	●	●	●	●	●	●	●	●
	9136												●	●	●	●	●	●	●	●	●	●	●

AVAILABLE COMBINATION

Ratio																	
80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	60Hz	O/P speed
23	20	18	16	14	13	11	10	9.0	8.0	7.2	6.4	5.7	5.1	4.5	4.0	50Hz	r/min
19	17	15	13	12	11	9.4	8.3	7.5	6.7	6.0	5.4	4.8	4.2	3.8	3.3	5.5x4	Motor (kW×P)
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	7.5x4	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	11x4	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15x4	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	18.5x4	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	22x4	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	30x4	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	37x4	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	45x4	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	55x4	

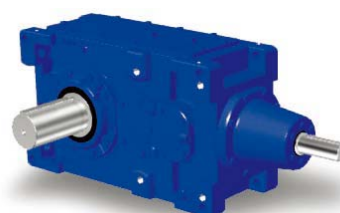
Ratio	
80	90
23	20
19	17
●	●
●	●
●	●
●	●
●	●
●	●
●	●
●	●
●	●
●	●
●	●



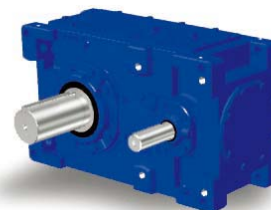
Drive Unit: Right Angle



Drive Unit: Parallel



Reducer: Right Angle



Reducer: Parallel

Ratio																	
80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500	
																	9015
																	9025
●	●	●	●	●	●	●	●	●	●								9030
●	●	●	●	●	●	●	●	●	●	●	●						9035
●	●	●	●	●	●	●	●	●	●								9040
●	●	●	●	●	●	●	●	●	●	●	●						9045
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			9050
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9055
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9060
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9065
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9070
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9075
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9080
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9085
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9090
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9095
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9100
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9105
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9110
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9115
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9118
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9121
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9126
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9128
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9131
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9136

Size

AVAILABLE COMBINATION

Basic Motor

Table 1. 3-Phase Induction Motors (4 Pole).

◎ : Standard Insulation

● : Manufactured Models

Capacity kW	Specifications							
	Indoor Type	Outdoor Type	Corrosion- proof Class 2	Insulation Class			Inverter Motors (Constant Torque)	
				B	F	H	Indoor Type	Outdoor Type
5.5	●	●	●	◎	●	●	●	●
7.5	●	●	●	◎	●	●	●	●
11	●	●	●	◎	●	●	●	●
15	●	●	●	◎	●	●	●	●
18.5	●	●	●	◎	●	●	●	●
22	●	●	●	◎	●	●	●	●
30	●	●	●		◎	●	●	●
37	●	●	●		◎	●	●	●
45	●	●	●		◎	●	●	●
55	●	●	●		◎	●	●	●
Remarks	Continuous Rating, 55kW and under, Applicable Voltage : 200V 50/60Hz(400V 50/60Hz,440V 60Hz,440V 60Hz) Provided that the base frequency for driving an inverter is 60 Hz.							

Table 2. 3-Phase Induction Motors with Built-in Brakes (4 Pole).

◎ : Standard Insulation

● : Manufactured Models

Capacity kW	Specifications							
	Indoor Type	Outdoor Type	Corrosion- proof Class 2	Insulation Class			Inverter Motors (Constant Torque)	
				B	F	H	Indoor Type	Outdoor Type
5.5	●	●	●	◎	●	●	●	●
7.5	●	●	●	◎	●	●	●	●
11	●	●	●	◎	●	●	●	●
15	●	●	●	◎	●	●	●	●
18.5	●	●	●	◎	●	●	●	●
22	●	●	●	◎	●	●	●	●
30	●	●	●		◎	●	●	●
37	●	●	●		◎	●		
Remarks	Continuous Rating, Applicable Voltage : 200V 50/60Hz , 220V 50/60Hz (400V 50/60Hz , 440V 60Hz) Provided that the base frequency for driving an inverter is 60 Hz. Brake Insulation : B type							

- Notes: 1. Motors with output kW specifications other than as listed in Tables 1-4 are also manufactured. Consult factory.
Examples: Special voltage, dust-proof, humidity-proof, tropical treatment, high temperature, ship use, dual shaft (round & square shaft), CSA standard, NEMA standard, etc.
2. When using an inverter drive, advice us of ambient temperature, input r/min, mounting method, load characteristics and other conditions of use.

AVAILABLE COMBINATION

Table 3. Safety Increased Explosion-proof (eG3) 3-Phase Induction Motor (4 Pole).

◎ : Standard Insulation

● : Manufactured Models

Capacity kW	Specifications				
	Indoor Type	Outdoor Type	Corrosion- proof Class 2	Insulation Class	
				B	F
5.5	●	●	●	◎	●
7.5	●	●	●	◎	●
11	●	●	●	◎	●
15	●	●	●	◎	
18.5	●	●	●	◎	
22	●	●	●	◎	
30	●	●	●	◎	●
37	●	●	●		◎
45	●	●	●		◎
55	●	●	●		◎
Remarks	Continuous Rating Applicable Voltage: 200V, 220V, 350V, 380V, 400V, 440V, 50/60Hz				

Table 4. Pressure-tight Explosion-proof (d2G4) 3-Phase Motor (4 Pole).

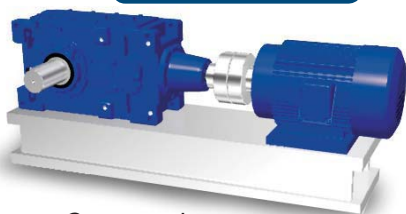
◎ : Standard Insulation

● : Manufactured Models

Capacity kW	Specifications				
	Indoor Type	Outdoor Type	Corrosion- proof Class 2	Insulation Class	Inverter Motors (Constant Torque)
				B	Indoor Type
5.5	●	●	●	◎	●
7.5	●	●	●	◎	●
11	●	●	●	◎	●
15	●	●	●	◎	●
18.5	●	●	●	◎	●
22	●	●	●	◎	●
30	●	●	●	◎	●
37	●	●	●		●
Remarks	Continuous Rating Applicable Voltage : 200V , 220V , 350V , 380V , 400V , 440V 50/60Hz (Inverter Motors) : 200V 60Hz , 220V 60Hz , 400V 60Hz , 440V 60Hz Applicable Inverter :Applicable only to Sumitomo Inverters.(Refer to Inverter catalogue.)				

INTRODUCTION OF APPLICATION

With Motor



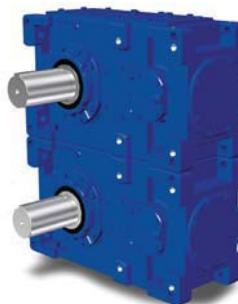
Common base



Drive unit right angle

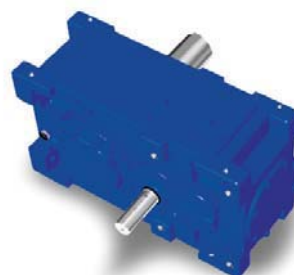


Drive unit parallel



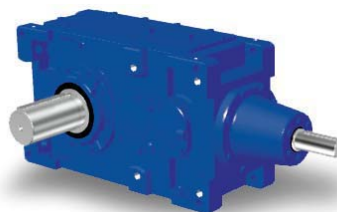
Double Stack

Single stage



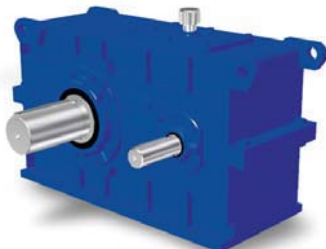
Top mount

Reducer



Right angle

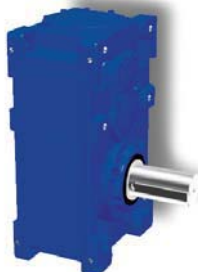
Steel housing



Mounting

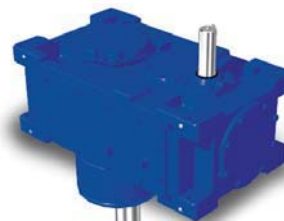


Upright mount



Upright wall mount

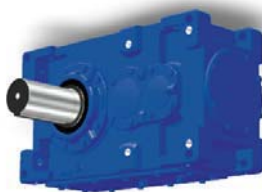
Special slow speed shaft



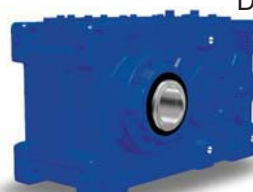
Drop bearing housing



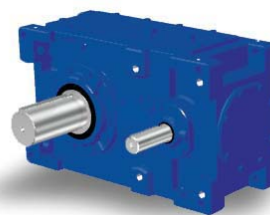
Vertical mount



Ceiling mount



Hollow shaft

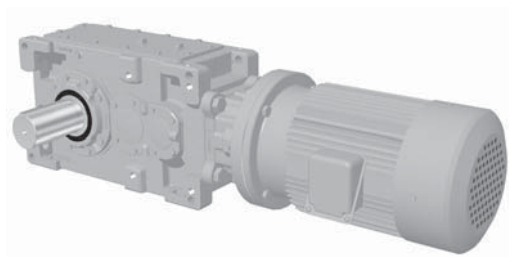


Parallel

B



<Drive Unit Parallel Shaft>



<Drive Unit Right Angle Shaft>

Drive Unit

Standard Specifications	...	B- 2
Construction Drawing	...	B- 3
Nomenclature	...	B- 4
Selection	...	B- 6
Service Factor SF	...	B- 8
Right Angle Shaft	...	B- 11
Parallel Shaft	...	B- 73
Exact Reduction Ratio	...	B- 110

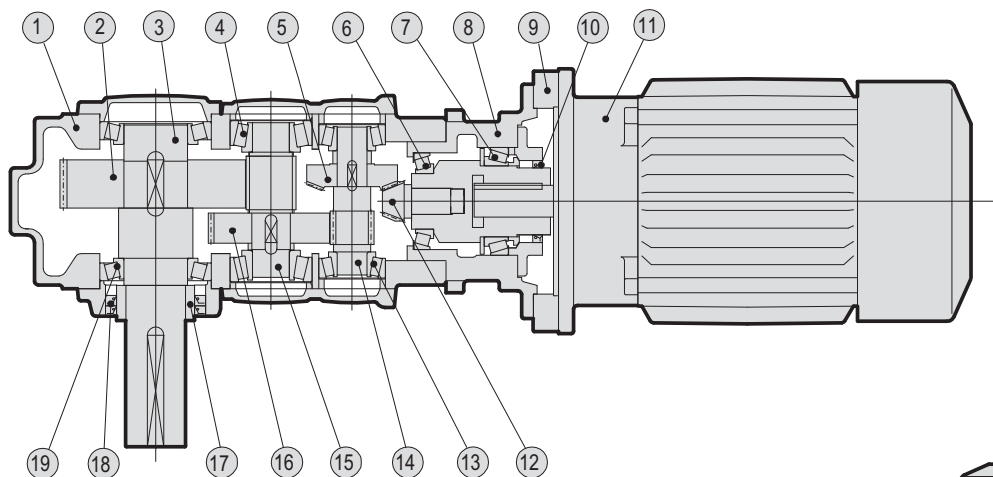
Drive Unit Standard Specifications

Item		Standard Specification		Standard Specification with Built-in Brake	
Motor	Capacity Range	5.5kW x 4P ~ 55kW x 4P		5.5kW x 4P ~ 37kW x 4P	
	Enclosure	Totally enclosed fan cooled type		Totally enclosed fan cooled type	
	Power Source	200V 50/60Hz, 220V 60Hz 380~415V 50Hz, 440~460V 60Hz For other voltages contact Sumitomo.			
	Insulation	Class F		Class F	
	Time Rating	Continuous rating		Continuous rating	
	Lead Wiring (Lug Type)	P4P Lead wiring	4P	P4P Lead wiring	4P
		3	5.5 ~ 7.5kW (Direct starting)	5	5.5 ~ 7.5kW (Direct starting)
		6	11 ~ 55kW (λ-Δstarting available)	8	11kW (λ-Δstarting available)
				10	15 ~ 37kW (λ-Δstarting available)
Standards	Conforms to JIS, CE or UL. Consult Sumitomo for details.				

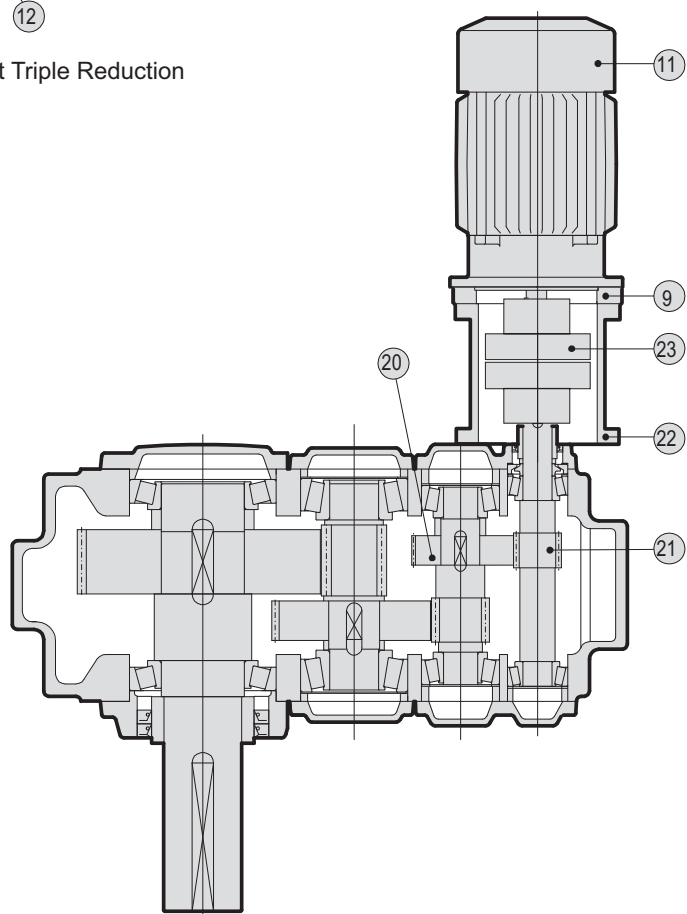
Item		Standard Specification		
		Mounting	High Speed Shaft Speed	
Reducer	Lubrication Method	Horizontal Shaft	750 ~ 1800r/min	Oil bath lubrication In case of high speed shaft speed is less than 750r/min, electric pump lubrication may be used. Consult Sumitomo for details.
		Vertical Shaft	400 ~ 1800r/min	Pump lubrication (Two different pump lubrication systems are available; shaft connected pump lubrication and electric pump lubrication. For details, refer to the outline dimension drawing.)
		Upright Shaft	750 ~ 1800r/min	Oil bath lubrication Grease lubrication for right angle input shaft.
	Lubricant	Refer to the page D-2		
	Gear Type	Involute external gear		
Ambient Conditions	Installation Location	Indoor (Minimal dust and humidity)		
	Ambient Temperature	-10°C~40°C A cooling fan may be required depending on the usage (Note)		
	Ambient Humidity	Under 85%		
	Elevation	Less than 1,000 meters above sea level		
	Atmosphere	Well ventilated location, free of corrosive and explosive gases, vapor, and dust.		
Installation		Horizontal installation Refer to the page D-2		
Method of Coupling with Driven Machine		Coupling, gears, chain sprocket or belt.		
Painting		Surface preparation: Shot blast after wash before machining Inside paint: UNI GROUND PTC primer is sprayed once Outside paint: For primer coating, UNI GROUND PTC primer is sprayed once. For final coating, NEORON #2000 is sprayed once. Paint color: Donau Blue (equivalent Munsell color: 6.5PB 3.6/8.2), Refer to page D-3.		

Note : In general, a heating or cooling system is necessary when ambient temperature is lower than -10°C or higher than 50°C.
e.g. High temperature gas or liquid passes through the hollow shaft.
Consult us when substances lower than -10°C or higher than 50°C will be in contact with PARAMAX DRIVES.

Drive Unit Construction Drawing



Drive Unit Right Angle Shaft Triple Reduction



Drive Unit Parallel Shaft Triple Reduction

Ref.No.	Part Name	Ref.No.	Part Name	Ref.No.	Part Name	Ref.No.	Part Name
1	Housing	7	Taper roller bearing	13	Taper roller bearing	19	Taper roller bearing
2	Helical gear	8	Bearing housing	14	Helical pinion shaft	20	Helical gear
3	Slow speed shaft	9	Flange for motor	15	Helical pinion shaft	21	Helical pinion shaft
4	Taper roller bearing	10	Oil seal	16	Helical gear	22	Motor adapter
5	Bevel gear	11	Motor	17	Collar	23	Coupling
6	Taper roller bearing	12	Bevel pinion shaft	18	Oil seal		

P

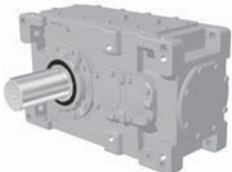
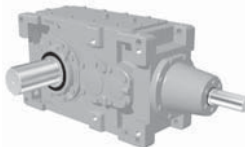
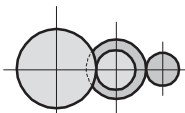
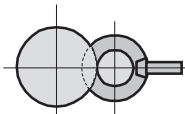
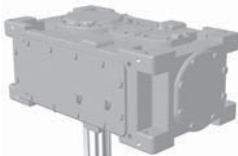
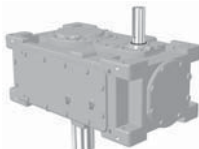
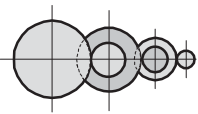
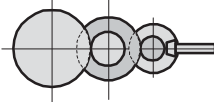
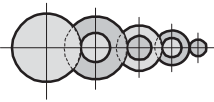
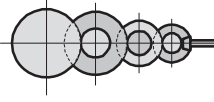
H

A

9055

R

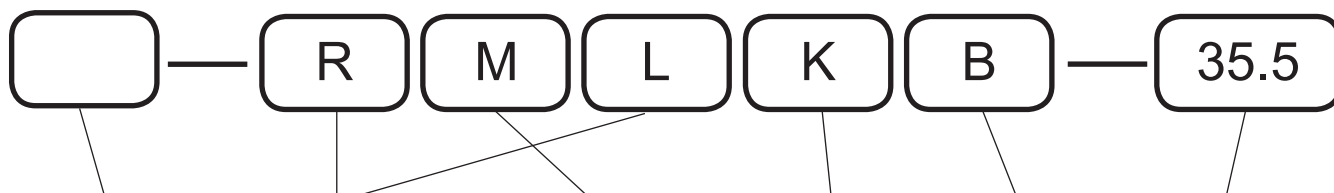
3

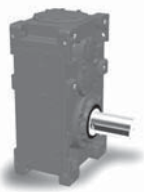
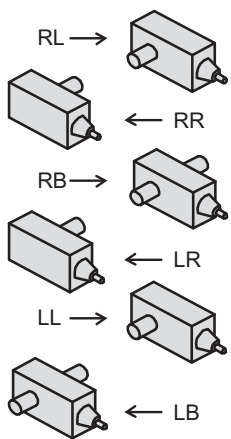
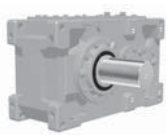
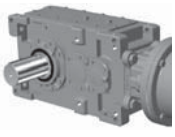
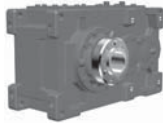
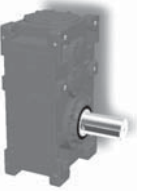
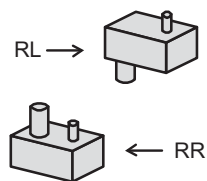
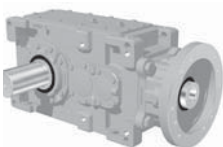
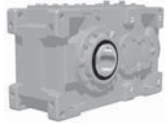
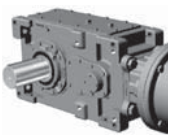
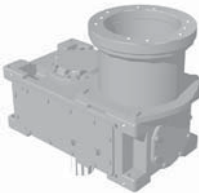
Series	Mounting	Housing	Size	Torque kNm	Shaft Position	Number of Gear Stage
P Paramax	H  Horizontal	A Monoblock	9015	2.6	R  Right Angle	2 
			9025	4.2		Double Reduction 
			9030	6.4		
			9035	8.5		
			9040	10.1		
	V  Vertical		9045	13.2	P  Parallel	3 
			9050	15.3		Triple Reduction 
			9055	19.9		
			9060	24.4		
			9065	31.4		
	W  Upright	D Split	9070	38.2		4 
			9075	47.8		Quadruple Reduction 
			9080	58.5		
			9085	73.1		

1. For shaft arrangement, refer to the dimension sheets.

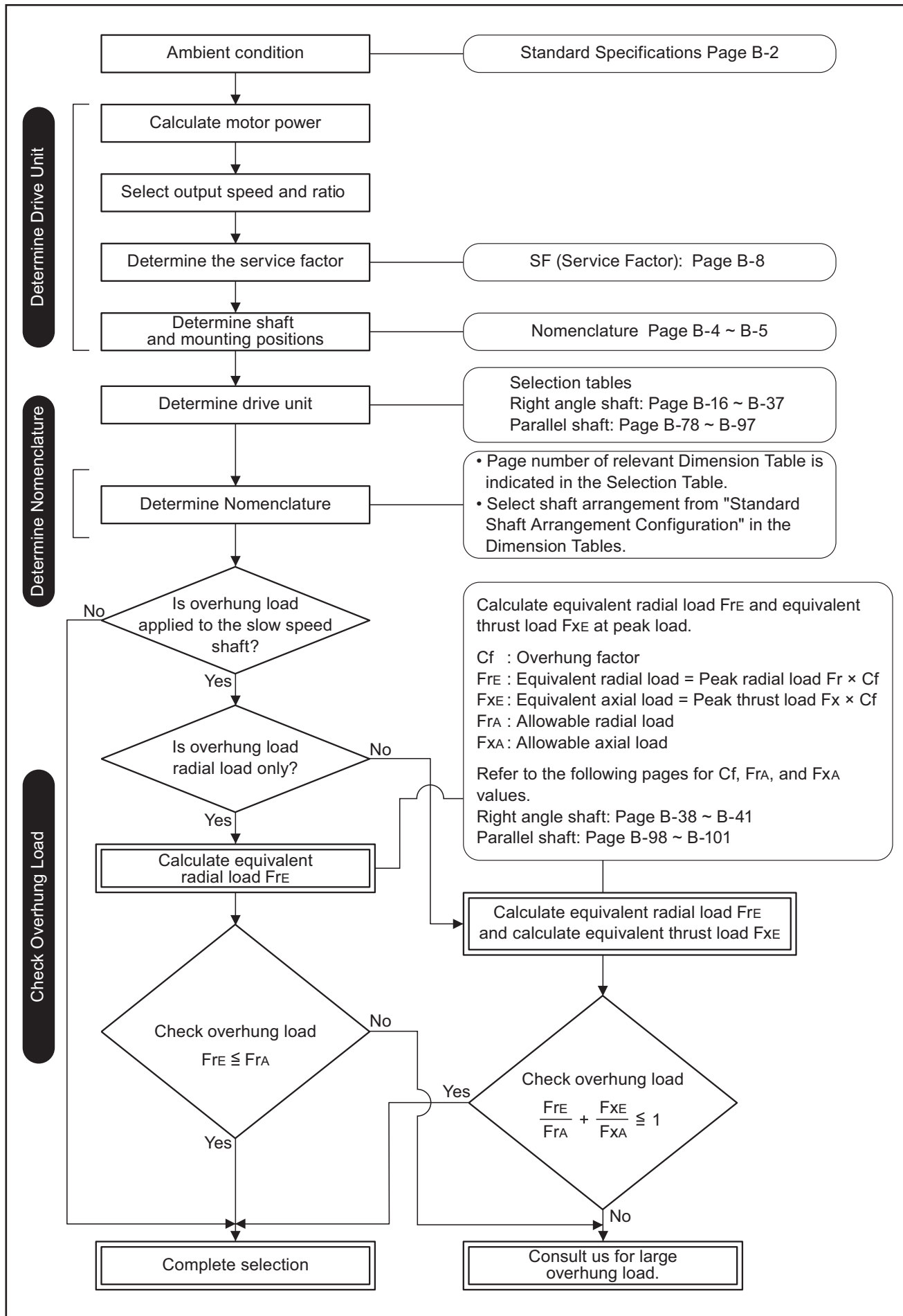
2. Consult us for reduction ratios smaller than 6.3.

Drive Unit Nomenclature

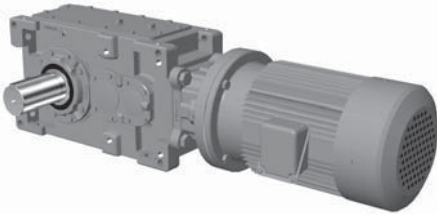


Mounting for Upright	Shaft Arrangement	High Speed Shaft	Slow Speed Shaft	Option	Nominal Ratio	
(Blank) 		M  Right Angle Shaft	(Blank)  Solid Shaft	(Blank)  Without Option	Right Angle Shaft	
		 Parallel Shaft	T  Hollow Shaft (Shrink Disk Type)		6.3 56 7.1 63 8 71 9 80 10 90 11.2 100 12.5 112 14 125 16 140 18 160 20 180 22.4 200 25 224 28 250 31.5 280 35.5 315 40 355 45 400 50 450	
W  Wall Mount (Upright Mounting)		Y  Flange for Motor (Right Angle Shaft)	K  Hollow Shaft (Key Type)	B  With Backstop	Parallel Shaft	
		J  Motor Adapter (Parallel Shaft)			6.3 56 7.1 63 8 71 9 80 10 90 11.2 100 12.5 112 14 125 16 140 18 160 20 180 22.4 200 25 224 28 250 31.5 280 35.5 315 40 355 45 400 50 450 500	

Drive Unit Selection



Drive Unit Selection Example

○ : Conditions ■ : Selected item		Reference page No.
○ Ambient condition : Indoor, Ambient temperature 20°C ■ Check ambient condition → OK ○ Load Power P : P = 17kW ■ Motor power → 18.5 kW ○ Electric source : 200V 50Hz ○ Output speed : 33 r/min Load condition ○ Type of load, Operating hours : Uniform load • 14 hours/day ■ Determine service factor → SF=1.25 ○ Shaft and mounting positions : Right Angle Shaft • Horizontal Mounting ■ Determine size, shaft position, number of stages → 9030 R3 45 Size 9030 Right Angle Shaft Triple Reduction Nominal Reduction Ratio 45 ■ Check dimension ■ Check shaft arrangement → RML ■ Check nomenclature → PHA9030R3-RML-45 Check overhung load ○ Overhung member : Sprocket (Single row) ■ Overhung factor Cf → Cf = 1.0 ○ Radial load position and direction : Center of solid shaft, Downward ○ Peak radial load Fr : 10.6 kN ○ Peak thrust load Fx : 0 kN ■ Equivalent radial load FrE → FrE = 10.6 × 1.0 = 10.6 ■ Allowable radial load → 26.5 kN $10.6 \leq 26.5$ → OK ○ Motor specification : 200V 50Hz without brake • indoor ■ Check motor specification → OK ■ Complete Selection Selected model → PHA9035R3-RML-45 200V 50Hz without brake • indoor		B-2 Standard Specifications B-8 Service Factor B-4 ~B-5 Nomenclature B-24 Selection Tables B-44 *1 Dimension Tables B-38 Allowable external load B-38 Allowable Radial Load A-6 Available Combination of Basic Motor
		*1 Page number of the relevant Dimension Table is indicated in the Selection Table.

Drive Unit Service Factor SF

Service Factor SF

Driven Machine		Operating Hours (hours/day)				
		3 hrs	10 hrs	24 hrs		
CRANES						
Classification of Crane	Hoisting	Traverse Motion	Travel Motion	Slewing Motion	Boom Hoisting	The crane classification is based on JIS B8821-1976 "Calculation standard for the structure of crane."
Group I	1.00	1.50		1.25	1.00	
Group II	1.25		1.50		1.00	
Group III	1.50		1.75		1.25	
Group IV	1.75		2.00		1.50	
CONVEYORS (General purpose)						
Uniformly load or fed				1.00	1.00	1.25
Heavy load						
Not uniformly fed				1.00	1.25	1.50
Reciprocating or shaker				1.50	1.75	2.00
ELEVATORS						
Elevators				1.50	1.50	1.50
Escalators				1.25	1.25	1.25
METAL MILLS						
Draw bench carriage and main drive				1.50	1.50	1.50
Runout table						
Non reversing						
Group drives				1.50	1.50	1.50
Individual drivers				2.00	2.00	2.00
Reversing				2.00	2.00	2.00
Slab pushers				1.50	1.50	1.50
Shears				2.00	2.00	2.00
Wire drawing				1.25	1.25	1.25
Wire winding machine				1.25	1.50	1.50
METAL STRIP PROCESSING MACHINERY						
Bridles				1.50	1.50	1.50
Coilers & uncoilers				1.00	1.25	1.50
Edge trimmers				1.00	1.25	1.50
Flatteners				1.25	1.25	1.50
Loopers (Accumulators)				1.50	1.50	2.00
Pinch rolls				1.25	1.25	1.50
Scrap choppers				2.00	2.00	2.00
Shears				2.00	2.00	2.00
Slitters				1.00	1.25	1.50
MILL, ROTARY TYPE						
Ball and rod				2.00	2.00	2.00
Cement Kilns				2.00	2.00	2.00
Kilns (Except cement kilns)				1.50	1.50	1.50
Dryers and coolers				1.50	1.50	1.50
SEWAGE DISPOSAL EQUIPMENT						
Aerators				2.00	2.00	2.00
Bar screens				1.25	1.25	1.25
Chemical feeders				1.25	1.25	1.25
Dewatering screens				1.50	1.50	1.50
Scum breakers				1.50	1.50	1.50
Slow or rapid mixers				1.50	1.50	1.50
Sludge collectors				1.25	1.25	1.25
Thickeners				1.50	1.50	1.50
Vacuum filters				1.50	1.50	1.50
EXTRUDERS						
Plastics				1.25	1.25	1.25
Rubber				1.50	1.50	1.50
FEEDERS						
Apron				1.00	1.25	1.50
Belt				1.00	1.25	1.50
Disk				1.00	1.00	1.25
Reciprocating				1.50	1.75	2.00
Screw				1.00	1.25	1.50

Driven Machine		Operating Hours (hours/day)		
		3 hrs	10 hrs	24 hrs
RUBBER INDUSTRY				
Mixers		1.75	1.75	2.00
Mixing mill -2 smooth rolls		1.50	1.50	1.75
Batch drop mill -2 smooth rolls		1.50	1.50	1.50
Cracker warmer				
-2 roll: 1 corrugated roll		1.75	1.75	1.75
Cracker -2 corrugated rolls		2.00	2.00	2.00
Holding, feed and blend mill				
-2 rolls		1.25	1.25	1.25
Refiner -2 rolls		1.50	1.50	1.50
Calenders		1.50	1.50	1.50
PAPER MILL				
All types incl. Paper making machine		2.00	2.00	2.00
AGITATORS AND MIXERS				
Pure liquids		1.00	1.00	1.25
Liquids and solids		1.00	1.25	1.50
Liquids variable density		1.00	1.25	1.50
MIXERS				
Concrete		1.25	1.25	1.50
CRUSHER				
Stone or ore		2.50	2.50	2.50
BLOWERS				
Centrifugal		1.00	1.00	1.25
Lobe		1.00	1.25	1.50
Vane		1.00	1.25	1.50
COMPRESSORS				
Centrifugal		1.00	1.00	1.25
Lobe		1.00	1.25	1.50
Reciprocating: multi cylinder		1.50	1.50	1.75
Reciprocating: single cylinder		1.75	1.75	2.00
FANS				
Centrifugal		1.00	1.00	1.25
Cooling towers		※	※	※
Forced draft		1.25	1.25	1.25
Suction draft		1.50	1.50	1.50
Industrial and mine		1.50	1.50	1.50
PUMPS				
Centrifugal		1.00	1.00	1.25
Screw pump		1.25	1.25	1.50
Gear pump		1.25	1.25	1.50
DREDGES				
Cable reels		1.25	1.25	1.50
Conveyors		1.25	1.25	1.50
Cutter head drive		2.00	2.00	2.00
Pumps		2.00	2.00	2.00
Screen drives		1.75	1.75	2.00
Stackers		1.25	1.25	1.50
Winches		1.25	1.25	1.50
GENERATORS AND EXCITERS		1.00	1.00	1.25
HAMMER MILLS		1.75	1.75	2.00
SUGAR INDUSTRY				
Beet slicer		2.00	2.00	2.00
Cane knives		1.50	1.50	1.50
Crushers		1.50	1.50	1.50
Mills (Slow speed end)		1.75	1.75	1.75

Notes:

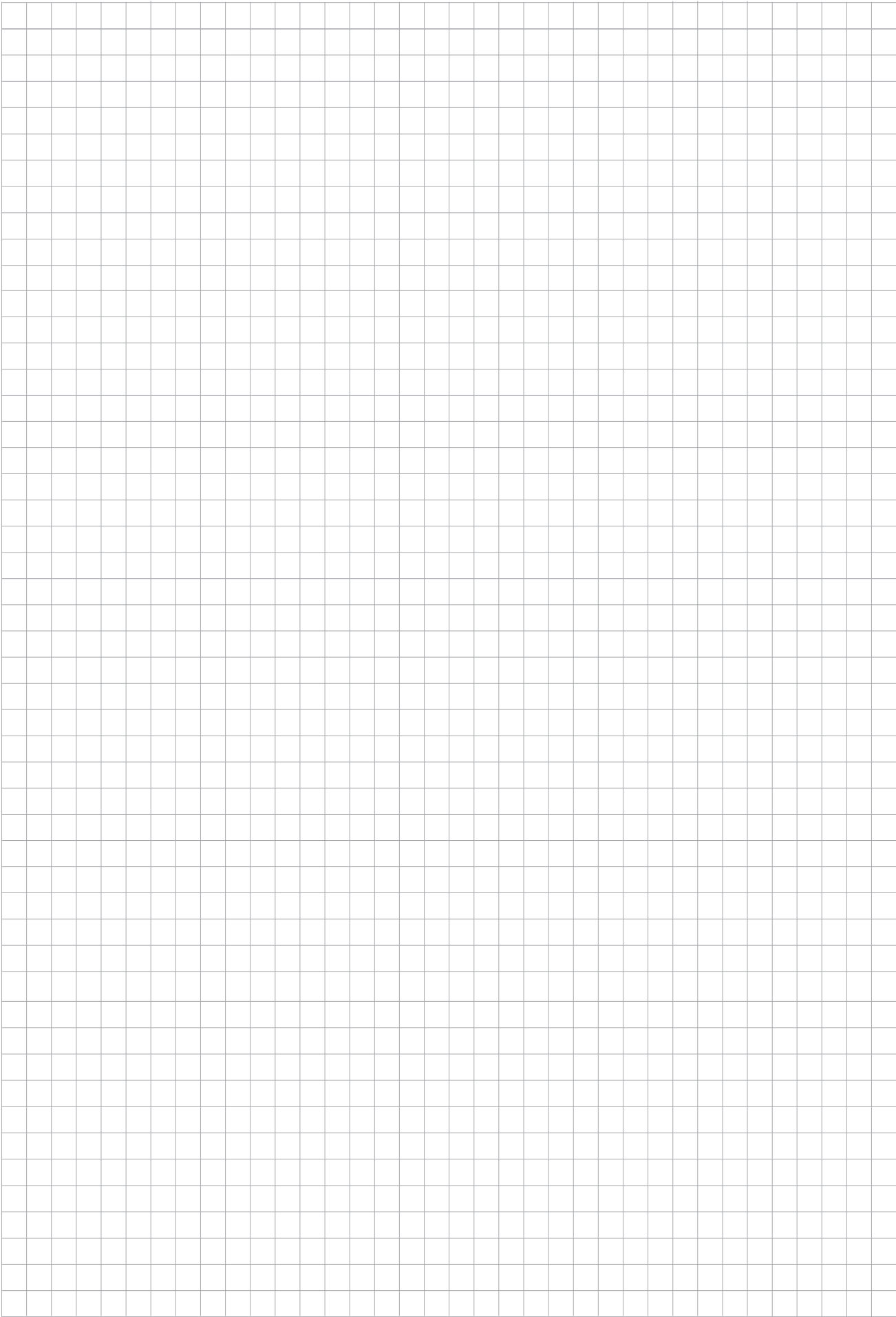
- (1) Values in the above table are based on AGMA standards and SUMITOMO's experience.
- (2) Values in the above table apply for electric motors as prime movers - if prime mover is a multi cylinder combustion engine, 0.25 has to be added to the SF.
- (3) Consult us for special duty or when special safety specifications are needed.
- (4) ※ : For SF, consult us.

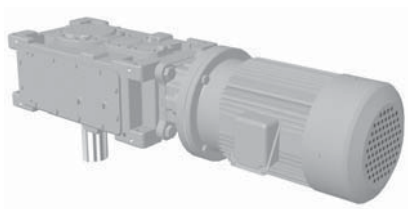
Drive Unit Service Factor SF

Refer to the following for driven machines not shown on the left page.

Prime Mover	Operating Hours	Type of Load		
		Uniform Load	Moderate Shock Load	Heavy Shock Load
		U	M	H
Electric Motor	3 hours/day	1.00	1.00	1.50
	10 hours/day	1.00	1.25	1.75
	24 hours/day	1.25	1.50	2.00
Internal Combustion Engine (multi cylinder)	3 hours/day	1.00	1.25	1.75
	10 hours/day	1.25	1.50	2.00
	24 hours/day	1.50	1.75	2.25

Note: Consult us when the operating hours are less than 3 hours/day or when an internal combustion engine (single cylinder) is used.

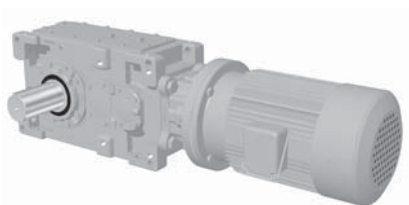




<Drive Unit Right Angle Shaft Horizontal Mounting>



<Drive Unit Right Angle Shaft Upright Mounting>



<Drive Unit Right Angle Shaft Vertical Mounting>

B

Drive Unit Right Angle Shaft

Selection	... B- 12
Allowable Radial and Thrust Loads	... B- 38
Dimension Sheets	... B- 42
Exact Actual Ratio	... B- 110

SELECTION Drive Unit Right Angle Shaft Combinations with 4P motor

Shaft Position	High Speed Shaft Speed	Ambient Temperature
Right Angle Shaft	1500r/min	40 Degree

kW	SF	Low Speed Shaft Speed (r/min)																				
		238	211	188	167	150	134	120	107	94	83	75	67	60	54	48	42	38	33	30		
		Nominal Reduction Ratio																				
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50		
5.5kW 4P	1															9030	9030	9030	9030	9030		
	1.25															9030	9030	9030	9030	9030		
	1.5															9030	9030	9030	9030	9030		
	2															9030	9030	9030	9030	9030		
7.5kW 4P	1															9030	9030	9030	9030	9030	9030	
	1.25															9030	9030	9030	9030	9030	9030	
	1.5															9030	9030	9030	9030	9030	9030	
	2															9030	9030	9030	9030	9030	9030	
11kW 4P	1										9030	9030	9030	9030	9030	9030	9030	9030	9030	9030		
	1.25										9030	9030	9030	9030	9030	9030	9030	9030	9030	9030		
	1.5										9030	9030	9030	9030	9030	9030	9030	9030	9030	9035		
	2										9030	9030	9030	9030	9030	9030	9030	9030	9030	9035		
15kW 4P	1								9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030		
	1.25								9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035		
	1.5								9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035		
	2								9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9045	
18.5kW 4P	1						9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035		
	1.25						9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035		
	1.5						9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9040	9040	9045		
	2						9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9040	9045	9045		
22kW 4P	1				9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035		
	1.25				9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9040	9040	9045		
	1.5				9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9040	9040	9045		
	2				9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9040	9045	9045	9045	9050		
30kW 4P	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045		
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045		
	1.5	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050		
	2	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9055	9055	
37kW 4P	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045		
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9035	9040	9040	9045	9045	9050	9050		
	1.5	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9050	9055	9055		
	2	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	9060	9060	
45kW 4P	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9050	9050		
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9050	9055	9055		
	1.5	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9040	9040	9045	9045	9045	9055	9055	9055	9060		
	2	9040	9040	9040	9040	9040	9040	9045	9045			9050	9050	9050	9055	9055	9060	9060	9065	9065		
55kW 4P	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9055	9055	9055	9055	9055	9055	9055		
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9055	9055	9055	9055	9055	9060	9060		
	1.5	9040	9040	9040	9040	9040	9040	9045	9045			9050	9050	9055	9055	9055	9055	9060	9065	9065		
	2	9040	9040	9040	9040	9040	9040	9045	9045			9070	9070	9070	9070	9070	9070	9070	9070	9075		

Drive Unit

Selection Tables

Dimension Tables

SELECTION Drive Unit Right Angle Shaft Combinations with 4P motor

Low Speed Shaft Speed (r/min)																			SF	kW	
27	24	21	19	17	15	13	12	11	9.4	8.3	7.5	6.7	6.0	5.4	4.8	4.2	3.8	3.3			
Nominal Reduction Ratio																					
56	63	71	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450			
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1	5.5kW 4P	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1.25		
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9055	9055	9055	9065	9065	1.5		
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9055	9055	9060	9060	9065	9065	9075	2		
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9055	9055	9065	1	7.5kW 4P	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9055	9055	9060	9065	9065	1.25		
9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9045	9050	9055	9055	9060	9060	9065	9065	9075	1.5		
9030	9030	9035	9035	9035	9040	9045	9045	9050	9055	9055	9060	9060	9060	9065	9065	9070	9075	9075	2		
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9055	9055	9060	9060	9065	9065	9075	1	11kW 4P	
9030	9030	9030	9035	9035	9040	9040	9045	9045	9045	9055	9055	9055	9060	9065	9065	9070	9075	9075	1.25		
9035	9040	9040	9040	9040	9040	9045	9045	9055	9055	9055	9060	9065	9065	9065	9065	9070	9075	9075	1.5		
9035	9040	9045	9045	9045	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9075	9085	9085	2		
9030	9030	9035	9035	9035	9040	9045	9045	9050	9055	9055	9060	9060	9060	9065	9065	9070	9075	9075	1	15kW 4P	
9035	9040	9040	9045	9045	9045	9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9075	9085	1.25		
9035	9040	9045	9045	9045	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9075	9085	9085	1.5		
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085	9085		2		
9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9060	9065	9065	9070	9070	9075	9075	9075	1	18.5kW 4P	
9035	9040	9045	9045	9050	9050	9055	9055	9065	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	1.25		
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085		1.5		
9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				2		
9035	9040	9045	9045	9045	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9075	9085	9085	1	22kW 4P	
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085		1.25		
9045	9050	9055	9055	9055	9060	9065	9065	9065	9065	9070	9070	9075	9075	9085	9085	9085			1.5		
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9075	9080	9085	9085	9085					2		
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085	9085		1	30kW 4P	
9050	9050	9055	9055	9065	9070	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				1.25		
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085	9085					1.5		
9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085									2		
9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085					1	37kW 4P
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085						1.25		
9060	9060	9065	9065	9070	9070	9075	9075	9075	9080	9085	9085								1.5		
9065	9065	9070	9075	9075	9080	9080	9080	9085	9085										2		
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085	9085						1	45kW 4P
9060	9060	9065	9065	9070	9070	9075	9075	9075	9080	9085	9085								1.25		
9065	9065	9070	9075	9075	9080	9080	9080	9085	9085	9085									1.5		
9070	9075	9075	9080	9080	9080	9085	9085												2		
9060	9060	9065	9065	9070	9070	9075	9075	9075	9080	9085	9085								1	55kW 4P	
9065	9065	9070	9075	9075	9080	9080	9080	9085	9085										1.25		
9065	9070	9070	9075	9075	9080	9080	9085	9085											1.5		
9075																			2		

SELECTION Drive Unit Right Angle Shaft Combinations with 4P motor

Shaft Position	High Speed Shaft Speed	Ambient Temperature
Right Angle Shaft	1800r/min	40 Degree

kW	SF	Low Speed Shaft Speed (r/min)																			
		286	254	225	200	180	161	144	129	113	100	90	80	72	64	57	51	45	40	36	
		Nominal Reduction Ratio																			
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40	45	50	
5.5kW 4P	1																			9030	
	1.25																			9030	
	1.5																			9030	
	2																			9030	
7.5kW 4P	1															9030	9030	9030	9030	9030	9030
	1.25															9030	9030	9030	9030	9030	9030
	1.5															9030	9030	9030	9030	9030	9030
	2															9030	9030	9030	9030	9030	9030
11kW 4P	1									9030	9030	9035	9030	9030	9030	9030	9030	9030	9030	9030	
	1.25									9030	9030	9035	9030	9030	9030	9030	9030	9030	9030	9030	
	1.5									9030	9030	9035	9030	9030	9030	9030	9030	9030	9030	9030	
	2									9030	9030	9035	9035	9030	9030	9030	9030	9030	9030	9035	
15kW 4P	1							9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	
	1.25							9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	
	1.5							9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	
	2							9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	
18.5kW 4P	1					9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	
	1.25					9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	
	1.5					9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	
	2					9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9040	9040	9045
22kW 4P	1				9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	
	1.25				9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	
	1.5				9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9040	9040	9045	
	2				9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9035	9040	9045	9045
30kW 4P	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	
	1.5	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	
	2	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9055
37kW 4P	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	
	1.5	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	
	2	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9055	9055	9055
45kW 4P	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9045	
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9050	9050	
	1.5	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9050	9055	
	2	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9055	9055	9060	9065	
55kW 4P	1	9040	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9055	9055	9055	9055	9055	9055	9055	
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9040	6045	6045	6045	9055	9055	9055	9055	9055	9055	9055	
	1.5	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9055	9055	9055	9055	9055	9060	9060	
	2	9040	9040	9040	9040	9040	9040	9045	9045			9060	9060	9060	9060	9065	9065	9070	9070	9070	

Size of Reducer



SELECTION Drive Unit Right Angle Shaft Combinations with 4P motor

Low Speed Shaft Speed (r/min)																			SF	kW
32	29	25	23	20	18	16	14	13	11	10	9.0	8.0	7.2	6.4	5.7	5.1	4.5	4.0		
Nominal Reduction Ratio																				
56	63	71	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450		
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1.25	5.5kW
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1.5	4P
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9055	9050	9055	9055	9060	9065	9065	2	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9050	9050	9055	9055	1	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9050	9055	9055	9055	9065	1.25	7.5kW
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9055	9055	9060	9065	9065	1.5	4P
9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9065	9065	9075	9075	2	
9030	9030	9030	9035	9035	9040	9040	9040	9040	9045	9045	9050	9050	9050	9055	9055	9060	9065	9065	1	
9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9045	9050	9055	9055	9060	9060	9065	9065	9075	1.25	11kW
9030	9030	9030	9035	9035	9040	9040	9045	9045	9045	9055	9055	9055	9060	9065	9065	9070	9075	9075	1.5	4P
9035	9040	9040	9040	9045	9045	9045	9050	9055	9055	9060	9060	9065	9065	9070	9070	9075	9075	9075	2	
9030	9030	9030	9035	9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9065	9065	9075	9075	1	
9030	9030	9035	9035	9035	9040	9045	9045	9050	9055	9055	9060	9060	9060	9065	9065	9070	9075	9075	1.25	15kW
9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9060	9065	9065	9070	9070	9075	9075	9085	1.5	4P
9040	9040	9045	9045	9050	9055	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	2	
9035	9035	9035	9035	9035	9040	9045	9045	9050	9055	9055	9060	9060	9060	9065	9065	9070	9075	9075	1	
9035	9040	9040	9040	9045	9045	9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9075	9085	1.25	18.5kW
9035	9040	9045	9045	9050	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	1.5	4P
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085			2	
9035	9040	9040	9040	9045	9045	9045	9050	9055	9055	9060	9060	9065	9065	9070	9070	9075	9075	9075	1	
9035	9040	9045	9045	9045	9050	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	1.25	22kW
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085		1.5	4P
9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				2	
9040	9040	9045	9045	9050	9055	9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	1	
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085			1.25	30kW
9050	9050	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				1.5	4P
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085	9085						2	
9045	9050	9050	9055	9055	9060	9060	9060	9065	9065	9070	9070	9075	9075	9080	9085	9085			1	
9050	9050	9055	9055	9065	9070	9070	9070	9070	9075	9075	9080	9080	9085	9085	9085				1.25	37kW
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085						1.5	4P
9060	9065	9065	9070	9070	9070	9075	9075	9080	9085	9085									2	
9050	9055	9055	9055	9060	9060	9065	9065	9070	9075	9075	9080	9080	9080	9085	9085				1	
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085						1.25	45kW
9060	9060	9065	9065	9070	9070	9075	9075	9075	9080	9085	9085								1.5	4P
9065	9070	9070	9075	9075	9080	9080	9080	9085	9085										2	
9055	9055	9060	9065	9065	9070	9070	9070	9075	9075	9080	9080	9085	9085						1	
9060	9065	9065	9070	9070	9070	9075	9075	9075	9085	9085									1.25	55kW
9065	9065	9070	9075	9075	9080	9080	9080	9085	9085										1.5	4P
9070	9075	9075	9080	9080	9080	9085	9085												2	

SELECTION Drive Unit Right Angle Shaft 5.5kW

5.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz			Output Speed r/min	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m	SF		Output Torque (Tout) Nm	kgf m	SF						
47.6	1100	113	4.89	57.1	919	94	5.81	9030	R3	31.5	B-44	B-54	B-64
42.3	1240	127	4.89	50.7	1040	106	5.81	9030	R3	35.5	B-44	B-54	B-64
37.5	1400	143	4.69	45.0	1170	119	5.45	9030	R3	40	B-44	B-54	B-64
			4.89				5.81	9035	R3	40	B-44	B-54	B-64
33.3	1580	161	4.21	40.0	1310	134	5.05	9030	R3	45	B-44	B-54	B-64
			4.89				5.81	9035	R3	45	B-44	B-54	B-64
30.0	1750	179	2.92	36.0	1460	149	3.50	9030	R3	50	B-44	B-54	B-64
			4.89				5.81	9035	R3	50	B-44	B-54	B-64
			4.74				5.69	9040	R3	50	B-44	B-54	B-64
26.8	1960	200	2.92	32.1	1630	167	3.50	9030	R3	56	B-44	B-54	B-64
			4.47				5.34	9035	R3	56	B-44	B-54	B-64
			4.74				5.69	9040	R3	56	B-44	B-54	B-64
23.8	2210	225	2.92	28.6	1840	188	3.50	9030	R3	63	B-44	B-54	B-64
			4.74				5.69	9040	R3	63	B-44	B-54	B-64
21.1	2490	254	2.69	25.4	2070	212	3.21	9030	R3	71	B-44	B-54	B-64
			2.92				3.50	9035	R3	71	B-44	B-54	B-64
			3.98				4.76	9040	R3	71	B-44	B-54	B-64
			4.74				5.69	9045	R3	71	B-44	B-54	B-64
18.8	2800	286	2.92	22.5	2330	238	3.50	9035	R3	80	B-44	B-54	B-64
			3.89				4.65	9040	R4	80	B-48	B-58	B-68
			4.74				5.69	9045	R3	80	B-48	B-58	B-68
16.7	3150	322	2.85	20.0	2630	268	3.41	9035	R3	90	B-44	B-54	B-64
			3.18				3.81	9040	R4	90	B-48	B-58	B-68
			4.18				5.00	9045	R3	90	B-48	B-58	B-68
			4.60				5.45	9050	R4	90	B-48	B-58	B-68
15.0	3500	358	3.05	18.0	2920	298	3.65	9040	R4	100	B-48	B-58	B-68
			3.94				4.72	9045	R4	100	B-48	B-58	B-68
			4.52				5.41	9050	R4	100	B-48	B-58	B-68
13.4	3920	400	2.50	16.1	3270	334	3.00	9040	R4	112	B-48	B-58	B-68
			3.34				4.00	9045	R4	112	B-48	B-58	B-68
			3.70				4.45	9050	R4	112	B-48	B-58	B-68
			4.60				5.45	9055	R4	112	B-48	B-58	B-68
12.0	4380	447	2.47	14.4	3650	372	2.96	9040	R4	125	B-48	B-58	B-68
			3.09				3.70	9045	R4	125	B-48	B-58	B-68
			3.61				4.34	9050	R4	125	B-48	B-58	B-68
			4.60				5.45	9055	R4	125	B-48	B-58	B-68
10.7	4900	501	2.03	12.9	4090	417	2.43	9040	R4	140	B-48	B-58	B-68
			2.63				3.14	9045	R4	140	B-48	B-58	B-68
			2.98				3.56	9050	R4	140	B-48	B-58	B-68
			3.89				4.65	9955	R4	140	B-48	B-58	B-68
			4.65				5.45	9060	R4	140	B-50	B-60	B-70
9.4	5600	572	2.50	11.3	4670	477	3.00	9045	R4	160	B-48	B-58	B-68
			2.60				3.10	9050	R4	160	B-48	B-58	B-68
			3.87				4.63	9055	R4	160	B-48	B-58	B-68
8.3	6300	644	2.12	10.0	5250	536	2.54	9045	R4	180	B-48	B-58	B-68
			2.43				2.92	9050	R4	180	B-48	B-58	B-68
			3.10				3.72	9055	R4	180	B-48	B-58	B-68
			3.80				4.56	9060	R4	180	B-50	B-60	B-70
			4.85				5.81	9065	R4	180	B-50	B-60	B-70
7.5	7000	715	2.27	9.0	5840	596	2.72	9050	R4	200	B-48	B-58	B-68
			2.60				3.10	9055	R4	200	B-48	B-58	B-68
			3.69				4.41	9060	R4	200	B-50	B-60	B-70
			3.89				4.67	9065	R4	200	B-50	B-60	B-70
6.7	7840	801	1.87	8.0	6540	667	2.23	9050	R4	224	B-48	B-58	B-68
			2.54				3.05	9055	R4	224	B-48	B-58	B-68
			2.90				3.49	9060	R4	224	B-50	B-60	B-70
			3.89				4.67	9065	R4	224	B-50	B-60	B-70
6.0	8750	894	1.81	7.2	7300	745	2.18	9050	R4	250	B-48	B-58	B-68
			2.43				2.90	9055	R4	250	B-48	B-58	B-68
			2.96				3.56	9060	R4	250	B-50	B-60	B-70
			3.85				4.63	9065	R4	250	B-50	B-60	B-70
			4.69				5.45	9070	R4	250	B-50	B-60	B-70
5.4	9800	1000	1.94	6.4	8170	834	2.34	9055	R4	280	B-48	B-58	B-68
			2.34				2.80	9060	R4	280	B-50	B-60	B-70
			3.03				3.63	9065	R4	280	B-50	B-60	B-70
			3.90				4.67	9070	R4	280	B-50	B-60	B-70
4.8	11030	1130	1.40	5.7	9190	938	1.67	9050	R4	315	B-48	B-58	B-68
			1.94				2.32	9055	R4	315	B-48	B-58	B-68
			2.09				2.50	9060	R4	315	B-50	B-60	B-70
			3.09				3.70	9065	R4	315	B-50	B-60	B-70
			3.40				4.09	9070	R4	315	B-50	B-60	B-70
4.2	12430	1270	4.94	5.1	10360	1060	5.81	9075	R4	315	B-50	B-60	B-70
			1.20				1.45	9050	R4	355	B-48	B-58	B-68
			1.56				1.87	9055	R4	355	B-48	B-58	B-68
			1.89				2.27	9060	R4	355	B-50	B-60	B-70
			2.43				2.92	9065	R4	355	B-50	B-60	B-70
			3.20				3.83	9070	R4	355	B-50	B-60	B-70
			4.14				4.96	9075	R4	355	B-50	B-60	B-70
			4.70				5.63	9080	R4	355	B-50	B-60	B-70

Drive Unit

Selection
TablesDimension
Tables

SELECTION Drive Unit Right Angle Shaft 5.5kW, 7.5kW

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz				Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF						
3.8	14010	1430	1.47	4.5	11670	1190	1.76	9055	R4	400	B-48	B-58	B-68
			2.18				2.61	9065	R4	400	B-50	B-60	B-70
			3.61				4.32	9075	R4	400	B-50	B-60	B-70
3.3	15760	1610	1.25	4.0	13130	1340	1.50	9055	R4	450	B-48	B-58	B-68
			1.96				2.36	9065	R4	450	B-50	B-60	B-70
			3.38				4.07	9075	R4	450	B-50	B-60	B-70
			4.92				5.81	9085	R4	450	B-50	B-60	B-70

7.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz				Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF						
53.6	1340	137	4.93	64.3	1110	114	5.86	9030	R3	28	B-44	B-54	B-64
47.6	1500	154	3.58	57.1	1250	128	4.26	9030	R3	31.5	B-44	B-54	B-64
42.3	1700	173	3.58	50.7	1410	144	4.26	9030	R3	35.5	B-44	B-54	B-64
37.5	1910	195	3.44	45	1590	163	4.00	9030	R3	40	B-44	B-54	B-64
			3.58				4.26	9035	R3	40	B-44	B054	B-64
33.3	2150	219	3.09	40	1790	183	3.70	9030	R3	45	B-44	B-54	B-64
			3.58				4.26	9035	R3	45	B-44	B-54	B-64
			4.57				5.48	9040	R3	45	B-44	B-54	B-64
30.0	2390	244	2.14	36	1990	203	2.57	9030	R3	50	B-44	B-54	B-64
			3.58				4.26	9035	R3	50	B-44	B-54	B-64
			3.48				4.17	9040	R3	50	B-44	B-54	B-64
26.8	2670	273	2.14	32.1	2230	228	2.57	9030	R3	56	B-44	B-54	B-64
			3.28				3.92	9035	R3	56	B-44	B-54	B-64
			3.48				4.17	9040	R3	56	B-44	B-54	B-64
			4.80				5.74	9045	R3	56	B-44	B-54	B-64
23.8	3010	307	2.14	28.6	2510	256	2.57	9030	R3	63	B-44	B-54	B-64
			3.48				4.17	9040	R3	63	B-44	B-54	B-64
21.1	3390	346	1.97	25.4	2830	288	2.36	9030	R3	71	B-44	B-54	B-64
			2.14				2.57	9035	R3	71	B-44	B-54	B-64
			2.92				3.49	9040	R3	71	B-44	B-54	B-64
			3.48				4.17	9045	R3	71	B-44	B-54	B-64
			4.26				5.20	9050	R3	71	B-44	B-54	B-64
18.8	3820	390	2.14	22.5	3180	325	2.57	9035	R3	80	B-44	B-54	B-64
			2.85				3.41	9040	R4	80	B-48	B-58	B-68
			3.48				4.17	9045	R3	80	B-44	B-54	B-64
			4.93				6.00	9060	R4	80	B-50	B-60	B-70
16.7	4300	439	2.09	20.0	3580	366	2.50	9035	R3	90	B-44	B-54	B-64
			2.33				2.80	9040	R4	90	B-48	B-58	B-68
			3.06				3.66	9045	R3	90	B-44	B-54	B-64
			3.37				4.00	9050	R4	90	B-48	B-58	B-68
			4.53				5.46	9055	R3	90	B-44	B-54	B-64
			4.93				6.00	9060	R4	90	B-50	B-60	B-70
15.0	4780	488	2.24	18.0	3980	406	2.68	9040	R4	100	B-48	B-58	B-68
			2.89				3.46	9045	R4	100	B-48	B-58	B-68
			3.32				3.97	9050	R4	100	B-48	B-58	B-68
			4.93				6.00	9060	R4	100	B-50	B-60	B-70
13.4	5350	546	1.84	16.1	4460	455	2.20	9040	R4	112	B-48	B-58	B-68
			2.45				2.93	9045	R4	112	B-48	B-58	B-68
			2.72				3.26	9050	R4	112	B-48	B-58	B-68
			3.37				4.00	9055	R4	112	B-48	B-58	B-68
			4.13				5.06	9060	R4	112	B-50	B-60	B-70
12.0	5970	609	1.81	14.4	4970	508	2.17	9040	R4	125	B-48	B-58	B-68
			2.26				2.72	9045	R4	125	B-48	B-58	B-68
			2.65				3.18	9050	R4	125	B-48	B-58	B-68
			3.37				4.00	9055	R4	125	B-48	B-58	B-68
			4.26				5.06	9060	R4	125	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 7.5kW

Frequency							Model			Page of Dimension Sheet			
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright	
Output Speed r/min	Output Torque (Tout) Nm	kgf·m		Output Speed r/min	Output Torque (Tout) Nm	kgf·m							SF
10.7	6690	683	1.49	12.9	5570	569	1.78	9040	R4	140	B-48	B-58	B-68
			1.93				2.30	9045	R4	140	B-48	B-58	B-68
			2.18				2.61	9050	R4	140	B-48	B-58	B-68
			2.85				3.41	9055	R4	140	B-48	B-58	B-68
			3.41				4.00	9060	R4	140	B-50	B-60	B-70
			4.42				5.29	9065	R4	140	B-50	B-60	B-70
9.4	7640	780	1.84	11.3	6370	650	2.20	9045	R4	160	B-48	B-58	B-68
			1.90				2.28	9050	R4	160	B-48	B-58	B-68
			2.84				3.40	9055	R4	160	B-48	B-58	B-68
			4.54				5.45	9065	R4	160	B-50	B-60	B-70
8.3	8600	878	1.56	10.0	7160	731	1.86	9045	R4	180	B-48	B-58	B-68
			1.78				2.14	9050	R4	180	B-48	B-58	B-68
			2.28				2.73	9055	R4	180	B-48	B-58	B-68
			2.78				3.34	9060	R4	180	B-50	B-60	B-70
			3.56				4.26	9065	R4	180	B-50	B-60	B-70
			4.40				5.20	9070	R4	180	B-50	B-60	B-70
7.5	9550	975	1.66	9.0	7960	813	2.00	9050	R4	200	B-48	B-58	B-68
			1.90				2.28	9055	R4	200	B-48	B-58	B-68
			2.70				3.24	9060	R4	200	B-50	B-60	B-70
			2.85				3.42	9065	R4	200	B-50	B-60	B-70
			4.40				5.20	9070	R4	200	B-50	B-60	B-70
6.7	10700	1090	1.37	8.0	8910	910	1.64	9050	R4	224	B-48	B-58	B-68
			1.86				2.24	9055	R4	224	B-48	B-58	B-68
			2.13				2.56	9060	R4	224	B-50	B-60	B-70
			2.85				3.42	9065	R4	224	B-50	B-60	B-70
			3.74				4.40	9070	R4	224	B-50	B-60	B-70
			4.40				5.20	9075	R4	224	B-50	B-60	B-70
6.0	11940	1220	1.33	7.2	9950	1020	1.60	9050	R4	250	B-48	B-58	B-68
			1.78				2.13	9055	R4	250	B-48	B-58	B-68
			2.17				2.61	9060	R4	250	B-50	B-60	B-70
			2.82				3.40	9065	R4	250	B-50	B-60	B-70
			3.44				4.00	9070	R4	250	B-50	B-60	B-70
			4.40				5.20	9075	R4	250	B-50	B-60	B-70
5.4	13370	1370	1.09	6.4	11140	1140	1.32	9050	R4	280	B-48	B-58	B-68
			1.42				1.72	9055	R4	280	B-48	B-58	B-68
			1.72				2.05	9060	R4	280	B-50	B-60	B-70
			2.22				2.66	9065	R4	280	B-50	B-60	B-70
			2.86				3.42	9070	R4	280	B-50	B-60	B-70
			3.97				4.66	9075	R4	280	B-50	B-60	B-70
			4.26				5.20	9080	R4	280	B-50	B-60	B-70
4.8	15040	1540	1.02	5.7	12530	1280	1.22	9050	R4	315	B-48	B-58	B-68
			1.42				1.70	9055	R4	315	B-48	B-58	B-68
			1.53				1.84	9060	R4	315	B-50	B-60	B-70
			2.26				2.72	9065	R4	315	B-50	B-60	B-70
			2.49				3.00	9070	R4	315	B-50	B-60	B-70
			3.62				4.26	9075	R4	315	B-50	B-60	B-70
			3.85				4.53	9080	R4	315	B-50	B-60	B-70
4.2	16950	1730	0.88	5.1	14130	1440	1.06	9050	R4	355	B-48	B-58	B-68
			1.14				1.37	9055	R4	355	B-48	B-58	B-68
			1.38				1.66	9060	R4	355	B-50	B-60	B-70
			1.78				2.14	9065	R4	355	B-50	B-60	B-70
			2.34				2.81	9070	R4	355	B-50	B-60	B-70
			3.04				3.64	9075	R4	355	B-50	B-60	B-70
			3.45				4.13	9080	R4	355	B-50	B-60	B-70
			4.53				5.46	9085	R4	355	B-50	B-60	B-70
3.8	19100	1950	1.07	4.5	15920	1630	1.29	9055	R4	400	B-48	B-58	B-68
			1.60				1.92	9065	R4	400	B-50	B-60	B-70
			2.65				3.17	9075	R4	400	B-50	B-60	B-70
			4.00				4.80	9085	R4	400	B-50	B-60	B-70
3.3	21490	2190	0.92	4.0	17910	1830	1.10	9055	R4	450	B-48	B-58	B-68
			1.44				1.73	9065	R4	450	B-50	B-60	B-70
			2.48				2.98	9075	R4	450	B-50	B-60	B-70
			3.61				4.26	9085	R4	450	B-50	B-60	B-70

Drive Unit

Selection
TablesDimension
Tables

SELECTION Drive Unit Right Angle Shaft 11kW

11kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz			Output Speed r/min	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m	SF		Output Torque (Tout) Nm	kgf m	SF						
93.8	1120	114	3.90	113	934	95	4.63	9030	R2	16	B-42	B-52	B-62
83.3	1260	129	3.90	100	1050	107	4.63	9030	R2	18	B-42	B-52	B-62
75.0	1400	143	4.63	90.0	1170	119	5.54	9030	R3	20	B-44	B-54	B-64
67.0	1570	160	4.18	80.4	1310	133	5.00	9030	R3	22.4	B-44	B-54	B-64
60.0	1750	179	3.72	72.0	1460	149	4.45	9030	R3	25	B-44	B-54	B-64
			4.90				5.81	9035	R3	25	B-44	B-54	B-64
53.6	1960	200	3.36	64.3	1630	167	4.00	9030	R3	28	B-44	B-54	B-64
			4.45				5.27	9035	R3	28	B-44	B-54	B-64
			5.00				5.90	9040	R3	28	B-44	B-54	B-64
47.6	2210	225	2.44	57.1	1840	188	2.90	9030	R3	31.5	B-44	B-54	B-64
			3.90				4.63	9035	R3	31.5	B-44	B-54	B-64
			4.37				5.18	9040	R3	31.5	B-44	B-54	B-64
42.3	2490	254	2.44	50.7	2070	212	2.90	9030	R3	35.5	B-44	B-54	B-64
			3.54				4.27	9035	R3	35.5	B-44	B-54	B-64
			3.81				4.63	9040	R3	35.5	B-44	B-54	B-64
37.5	2800	286	2.34	45.0	2330	238	2.72	9030	R3	40	B-44	B-54	B-64
			2.44				2.90	9035	R3	40	B-44	B-54	B-64
			3.72				4.55	9040	R3	40	B-44	B-54	B-64
			4.37				5.25	9045	R3	40	B-44	B-54	B-64
33.3	3150	322	2.10	40.0	2630	268	2.52	9030	R3	45	B-44	B-54	B-64
			2.44				2.90	9035	R3	45	B-44	B-54	B-64
			3.11				3.73	9040	R3	45	B-44	B-54	B-64
			4.07				4.87	9045	R3	45	B-44	B-54	B-64
			4.54				5.45	9050	R3	45	B-44	B-54	B-64
30.0	3500	358	1.46	36.0	2920	298	1.75	9030	R3	50	B-44	B-54	B-64
			2.44				2.90	9035	R3	50	B-44	B-54	B-64
			3.89				4.67	9045	R3	50	B-44	B-54	B-64
			4.45				5.36	9050	R3	50	B-44	B-54	B-64
26.8	3920	400	1.46	32.1	3270	334	1.75	9030	R3	56	B-44	B-54	B-64
			2.23				2.67	9035	R3	56	B-44	B-54	B-64
			2.37				2.84	9040	R3	56	B-44	B-54	B-64
			3.27				3.91	9045	R3	56	B-44	B-54	B-64
			3.63				4.36	9050	R3	56	B-44	B-54	B-64
			4.72				5.63	9055	R3	56	B-44	B-54	B-64
23.8	4410	450	1.46	28.6	3680	375	1.75	9030	R3	63	B-44	B-54	B-64
			2.37				2.84	9040	R3	63	B-44	B-54	B-64
			3.54				4.27	9050	R3	63	B-44	B-54	B-64
			4.72				5.72	9055	R3	63	B-44	B-54	B-64
21.1	4970	508	1.34	25.4	4140	423	1.60	9030	R3	71	B-44	B-54	B-64
			1.46				1.75	9035	R3	71	B-44	B-54	B-64
			1.99				2.38	9040	R3	71	B-44	B-54	B-64
			2.37				2.84	9045	R3	71	B-44	B-54	B-64
			2.90				3.54	9050	R3	71	B-44	B-54	B-64
			3.81				4.54	9055	R3	71	B-44	B-54	B-64
			4.54				5.45	9060	R3	71	B-46	B-56	B-66
18.8	5600	572	1.46	22.5	4670	477	1.75	9035	R3	80	B-44	B-54	B-64
			1.94				2.32	9040	R4	80	B-48	B-58	B-68
			2.37				2.84	9045	R3	80	B-44	B-54	B-64
			3.81				4.63	9055	R3	80	B-44	B-54	B-64
16.7	6300	644	1.42	20.0	5250	536	1.70	9035	R3	90	B-44	B-54	B-64
			1.59				1.90	9040	R4	90	B-48	B-58	B-68
			2.09				2.50	9045	R3	80	B-44	B-54	B-64
			2.30				2.72	9050	R4	90	B-48	B-58	B-68
			3.09				3.72	9055	R3	90	B-44	B-54	B-64
			3.36				4.09	9060	R4	90	B-50	B-60	B-70
			4.81				5.76	9065	R3	90	B-46	B-56	B-66
15.0	7000	715	1.52	18.0	5840	596	1.82	9040	R4	100	B-48	B-58	B-68
			1.97				2.36	9045	R4	100	B-48	B-58	B-68
			2.26				2.70	9050	R4	100	B-48	B-58	B-68
			3.36				4.09	9060	R4	100	B-50	B-60	B-70
13.4	7840	801	1.25	16.1	6540	667	1.50	9040	R4	112	B-48	B-58	B-68
			1.67				2.00	9045	R4	112	B-48	B-58	B-68
			1.85				2.22	9050	R4	112	B-48	B-58	B-68
			2.30				2.72	9055	R4	112	B-48	B-58	B-68
			2.81				3.45	9060	R4	112	B-50	B-60	B-70
			3.40				4.09	9065	R4	112	B-50	B-60	B-70
			4.90				5.90	9070	R4	112	B-50	B-60	B-70
12.0	8750	894	1.23	14.4	7300	745	1.48	9040	R4	125	B-48	B-58	B-68
			1.54				1.85	9045	R4	125	B-48	B-58	B-68
			1.80				2.17	9050	R4	125	B-48	B-58	B-68
			2.30				2.72	9055	R4	125	B-48	B-58	B-68
			2.90				3.45	9060	R4	125	B-50	B-60	B-70
			3.40				4.09	9065	R4	125	B-50	B-60	B-70
			4.54				5.45	9070	R4	125	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 11kW

Drive Unit
Selection
Tables
Dimension
Tables

Frequency							Model			Page of Dimension Sheet			
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright	
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m								SF
10.7	9800	1000	1.01	12.9	8170	834	1.21	9040	R4	140	B-48	B-58	B-68
			1.31				1.57	9045	R4	140	B-48	B-58	B-68
			1.49				1.78	9050	R4	140	B-48	B-58	B-68
			1.94				2.32	9055	R4	140	B-48	B-58	B-68
			2.32				2.72	9060	R4	140	B-50	B-60	B-70
			3.01				3.60	9065	R4	140	B-50	B-60	B-70
			3.72				4.54	9070	R4	140	B-50	B-60	B-70
9.4	11210	1140	1.25	11.3	9340	953	1.50	9045	R4	160	B-48	B-58	B-68
			1.30				1.55	9050	R4	160	B-48	B-58	B-68
			1.93				2.31	9055	R4	160	B-48	B-58	B-68
			3.10				3.71	9065	R4	160	B-50	B-60	B-70
			4.81				5.72	9075	R4	160	B-50	B-60	B-70
8.3	12610	1290	1.06	10.0	10510	1070	1.27	9045	R4	180	B-48	B-58	B-68
			1.21				1.46	9050	R4	180	B-48	B-58	B-68
			1.55				1.86	9055	R4	180	B-48	B-58	B-68
			1.90				2.28	9060	R4	180	B-50	B-60	B-70
			2.42				2.90	9065	R4	180	B-50	B-60	B-70
			3.00				3.54	9070	R4	180	B-50	B-60	B-70
			4.00				4.81	9075	R4	180	B-50	B-60	B-70
			4.72				5.63	9080	R4	180	B-50	B-60	B-70
7.5	14010	1430	1.13	9.0	11670	1190	1.36	9050	R4	200	B-48	B-58	B-68
			1.30				1.55	9055	R4	200	B-48	B-58	B-68
			1.84				2.20	9060	R4	200	B-50	B-60	B-70
			1.94				2.33	9065	R4	200	B-50	B-60	B-70
			3.00				3.54	9070	R4	200	B-50	B-60	B-70
			4.45				5.36	9080	R4	200	B-50	B-60	B-70
6.7	15690	1600	0.93	8.0	13070	1330	1.11	9050	R4	224	B-48	B-58	B-68
			1.27				1.52	9055	R4	224	B-48	B-58	B-68
			1.45				1.74	9060	R4	224	B-50	B-60	B-70
			1.94				2.33	9065	R4	224	B-50	B-60	B-70
			2.55				3.00	9070	R4	224	B-50	B-60	B-70
			3.00				3.54	9075	R4	224	B-50	B-60	B-70
			3.90				4.63	9080	R4	224	B-50	B-60	B-70
			4.90				5.90	9085	R4	224	B-50	B-60	B-70
6.0	17510	1790	0.90	7.2	14590	1490	1.09	9050	R4	250	B-48	B-58	B-68
			1.21				1.45	9055	R4	250	B-48	B-58	B-68
			1.48				1.78	9060	R4	250	B-50	B-60	B-70
			1.92				2.31	9065	R4	250	B-50	B-60	B-70
			2.34				2.72	9070	R4	250	B-50	B-60	B-70
			3.00				3.54	9075	R4	250	B-50	B-60	B-70
			3.45				4.09	9080	R4	250	B-50	B-60	B-70
			4.72				5.63	9085	R4	250	B-50	B-60	B-70
5.4	19610	2000	0.97	6.4	16340	1670	1.17	9055	R4	280	B-48	B-58	B-68
			1.17				1.40	9060	R4	280	B-50	B-60	B-70
			1.51				1.81	9065	R4	280	B-50	B-60	B-70
			1.95				2.33	9070	R4	280	B-50	B-60	B-70
			2.70				3.18	9075	R4	280	B-50	B-60	B-70
			2.90				3.54	9080	R4	280	B-50	B-60	B-70
			4.09				4.90	9085	R4	280	B-50	B-60	B-70
4.8	22060	2250	0.97	5.7	18380	1880	1.16	9055	R4	315	B-48	B-58	B-68
			1.04				1.25	9060	R4	315	B-50	B-60	B-70
			1.54				1.85	9065	R4	315	B-50	B-60	B-70
			1.70				2.04	9070	R4	315	B-50	B-60	B-70
			2.47				2.90	9075	R4	315	B-50	B-60	B-70
			2.62				3.09	9080	R4	315	B-50	B-60	B-70
			3.63				4.36	9085	R4	315	B-50	B-60	B-70
4.2	24860	2540	0.94	5.1	20720	2120	1.13	9060	R4	355	B-50	B-60	B-70
			1.21				1.46	9065	R4	355	B-50	B-60	B-70
			1.60				1.91	9070	R4	355	B-50	B-60	B-70
			2.07				2.48	9075	R4	355	B-50	B-60	B-70
			2.35				2.81	9080	R4	355	B-50	B-60	B-70
			3.09				3.72	9085	R4	355	B-50	B-60	B-70
3.8	28010	2860	1.09	4.5	23340	2380	1.30	9065	R4	400	B-50	B-60	B-70
			1.80				2.16	9075	R4	400	B-50	B-60	B-70
			2.72				3.27	9085	R4	400	B-50	B-60	B-70
3.3	31520	3220	0.98	4.0	26260	2680	1.18	9065	R4	450	B-50	B-60	B-70
			1.69				2.03	9075	R4	450	B-50	B-60	B-70
			2.46				2.90	9085	R4	450	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 15kW

15kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
120	1190	122	4.06	144	995	102	4.86	9030	R2	12.5	B-42	B-52	B-62
107	1340	137	4.06	129	1110	114	4.86	9030	R2	14	B-42	B-52	B-62
93.8	1530	156	2.86	113	1270	130	3.40	9030	R2	16	B-42	B-52	B-62
			4.06				9035	R2	16	B-42	B-52	B-62	
			4.20				9040	R2	16	B-42	B-52	B-62	
83.3	1720	176	2.86	100	1430	146	3.40	9030	R2	18	B-42	B-52	B-62
			4.06				9035	R2	18	B-42	B-52	B-62	
			4.20				9040	R2	18	B-42	B-52	B-62	
75.0	1910	195	3.40	90.0	1590	163	4.06	9030	R3	20	B-44	B-54	B-64
			4.46				5.20	9040	R3	20	B-44	B-54	B-64
67.0	2140	218	3.06	80.4	1780	182	3.66	9030	R3	22.4	B-44	B-54	B-64
			4.46				5.20	9040	R3	22.4	B-44	B-54	B-64
60.0	2390	244	2.73	72.0	1990	203	3.26	9030	R3	25	B-44	B-54	B-64
			3.60				9035	R3	25	B-44	B-54	B-64	
			4.47				5.20	9040	R3	25	B-44	B-54	B-64
53.6	2670	273	2.46	64.3	2230	228	2.93	9030	R3	28	B-44	B-54	B-64
			3.26				9035	R3	28	B-44	B-54	B-64	
			3.66				9040	R3	28	B-44	B-54	B-64	
			4.50				9045	R3	28	B-44	B-54	B-64	
47.6	3010	307	1.79	57.1	2510	256	2.13	9030	R3	31.5	B-44	B-54	B-64
			2.86				9035	R3	31.5	B-44	B-54	B-64	
			3.20				9040	R3	31.5	B-44	B-54	B-64	
			4.50				9045	R3	31.5	B-44	B-54	B-64	
42.3	3390	346	1.79	50.7	2830	288	2.13	9030	R3	35.5	B-44	B-54	B-64
			2.60				9035	R3	35.5	B-44	B-54	B-64	
			2.80				9040	R3	35.5	B-44	B-54	B-64	
			3.85				9045	R3	35.5	B-44	B-54	B-64	
			4.33				9050	R3	35.5	B-44	B-54	B-64	
37.5	3820	390	1.72	45.0	3180	325	2.00	9030	R3	40	B-44	B-54	B-64
			1.79				2.13	9035	R3	40	B-44	B-54	B-64
			2.73				3.34	9040	R3	40	B-44	B-54	B-64
			3.20				3.85	9045	R3	40	B-44	B-54	B-64
			4.06				4.86	9050	R3	40	B-44	B-54	B-64
33.3	4300	439	1.54	40.0	3580	366	1.85	9030	R3	45	B-44	B-54	B-64
			1.79				2.13	9035	R3	45	B-44	B-54	B-64
			2.28				2.74	9040	R3	45	B-44	B-54	B-64
			2.98				3.57	9045	R3	45	B-44	B-54	B-64
			3.33				4.00	9050	R3	45	B-44	B-54	B-64
			4.53				5.46	9055	R3	45	B-44	B-54	B-64
30.0	4780	488	1.07	36.0	3980	406	1.28	9030	R3	50	B-44	B-54	B-64
			1.79				2.13	9035	R3	50	B-44	B-54	B-64
			2.85				3.42	9045	R3	50	B-44	B-54	B-64
			3.26				3.93	9050	R3	50	B-44	B-54	B-64
			4.33				5.20	9055	R3	50	B-44	B-54	B-64
			4.93				5.60	9060	R3	50	B-46	B-56	B-66
26.8	5350	546	1.07	32.1	4460	455	1.28	9030	R3	56	B-44	B-54	B-64
			1.64				1.96	9035	R3	56	B-44	B-54	B-64
			1.74				2.08	9040	R3	56	B-44	B-54	B-64
			2.40				2.87	9045	R3	56	B-44	B-54	B-64
			2.66				3.20	9050	R3	56	B-44	B-54	B-64
			3.46				4.13	9055	R3	56	B-44	B-54	B-64
4.26	5.13	9060	R3	56	B-46	B-56	B-66						
23.8	6020	614	1.07	28.6	5010	512	1.28	9030	R3	63	B-44	B-54	B-64
			1.74				2.08	9040	R3	63	B-44	B-54	B-64
			2.60				3.13	9050	R3	63	B-44	B-54	B-64
			3.46				4.20	9055	R3	63	B-44	B-54	B-64
			4.00				4.53	9060	R3	63	B-46	B-56	B-66
			4.93				5.60	9065	R3	63	B-46	B-56	B-66
21.1	6780	692	0.98	25.4	5650	577	1.18	9030	R3	71	B-44	B-54	B-64
			1.07				1.28	9035	R3	71	B-44	B-54	B-64
			1.46				1.74	9040	R3	71	B-44	B-54	B-64
			1.74				2.08	9045	R3	71	B-44	B-54	B-64
			2.13				2.60	9050	R3	71	B-44	B-54	B-64
			2.80				3.33	9055	R3	71	B-44	B-54	B-64
			3.33				4.00	9060	R3	71	B-46	B-56	B-66
			4.48				5.36	9065	R3	71	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 15kW

Frequency										Page of Dimension Sheet			
50Hz			60Hz				Model						
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
18.8	7640	780	1.07	22.5	6370	650	1.28	9035	R3	80	B-44	B-54	B-64
			1.42				1.70	9040	R4	80	B-48	B-58	B-68
			1.74				2.08	9045	R3	80	B-44	B-54	B-64
			2.80				3.40	9055	R3	80	B-44	B-54	B-64
			4.00				4.53	9065	R3	80	B-46	B-56	B-64
			4.40				5.33	9070	R4	80	B-50	B-60	B-70
16.7	8600	878	1.04	20.0	7160	731	1.25	9035	R3	90	B-44	B-54	B-64
			1.16				1.40	9040	R4	90	B-48	B-58	B-68
			1.53				1.83	9045	R3	90	B-44	B-54	B-64
			1.68				2.00	9050	R4	90	B-48	B-58	B-68
			2.26				2.73	9055	R3	90	B-44	B-54	B-64
			2.46				3.00	9060	R4	90	B-50	B-60	B-70
15.0	9550	975	3.53	18.0	7960	813	4.22	9065	R3	90	B-46	B-56	B-66
			4.40				5.33	9070	R4	90	B-50	B-60	B-70
			1.12				1.34	9040	R4	100	B-48	B-58	B-68
			1.44				1.73	9045	R4	100	B-48	B-58	B-68
			1.66				1.98	9050	R4	100	B-48	B-58	B-68
			2.46				3.00	9060	R4	100	B-50	B-60	B-70
13.4	10700	1090	4.33	16.1	8910	910	5.20	9070	R4	100	B-50	B-60	B-70
			0.92				1.10	9040	R4	112	B-48	B-58	B-68
			1.22				1.46	9045	R4	112	B-48	B-58	B-68
			1.36				1.63	9050	R4	112	B-48	B-58	B-68
			1.68				2.00	9055	R4	112	B-48	B-58	B-68
			2.06				2.53	9060	R4	112	B-50	B-60	B-70
12.0	11940	1220	2.50	14.4	9950	1020	3.00	9065	R4	112	B-50	B-60	B-70
			3.60				4.33	9070	R4	112	B-50	B-60	B-70
			4.40				5.33	9075	R4	112	B-50	B-60	B-70
			0.90				1.08	9040	R4	125	B-48	B-58	B-68
			1.13				1.36	9045	R4	125	B-48	B-58	B-68
			1.32				1.59	9050	R4	125	B-48	B-58	B-68
10.7	13370	1370	1.68	12.9	11140	1140	2.00	9055	R4	125	B-48	B-58	B-68
			2.13				2.53	9060	R4	125	B-50	B-60	B-70
			2.50				3.00	9065	R4	125	B-50	B-60	B-70
			3.33				4.00	8970	R4	125	B-50	B-60	B-70
			4.40				5.33	9075	R4	125	B-50	B-60	B-70
			5.00				6.00	9080	R4	125	B-50	B-60	B-70
9.4	15280	1560	0.96	11.3	12730	1300	1.15	9045	R4	140	B-48	B-58	B-68
			1.09				1.30	9050	R4	140	B-48	B-58	B-68
			1.42				1.70	9055	R4	140	B-48	B-58	B-68
			1.70				2.00	9060	R4	140	B-50	B-60	B-70
			2.21				2.64	9065	R4	140	B-50	B-60	B-70
			2.73				3.33	9070	R4	140	B-50	B-60	B-70
8.3	17190	1760	3.86	10.0	14330	1460	4.59	9075	R4	140	B-50	B-60	B-70
			4.33				5.20	9080	R4	140	B-50	B-60	B-70
			0.89				1.07	9050	R4	180	B-48	B-58	B-68
			1.14				1.36	9055	R4	180	B-48	B-58	B-68
			1.39				1.67	9060	R4	180	B-50	B-60	B-70
			1.78				2.13	9065	R4	180	B-50	B-60	B-70
7.5	19100	1950	2.93	9.0	15920	1630	3.53	9075	R4	180	B-50	B-60	B-70
			3.46				4.13	9080	R4	180	B-50	B-60	B-70
			4.53				5.46	9085	R4	180	B-50	B-60	B-70
			0.83				1.00	9050	R4	200	B-48	B-58	B-68
			0.95				1.14	9055	R4	200	B-48	B-58	B-68
			1.35				1.62	9060	R4	200	B-50	B-60	B-70
7.5	19100	1950	1.42	9.0	15920	1630	1.71	9065	R4	200	B-50	B-60	B-70
			2.20				2.0	9070	R4	200	B-50	B-60	B-70
			3.26				3.93	9080	R4	200	B-50	B-60	B-70
			3.80				4.53	9085	R4	200	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 15kW, 18.5kW

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
6.7	21390	2180	0.93	8.0	17830	1820	1.12	9055	R4	224	B-48	B-58	B-68
			1.06				1.28	9060	R4	224	B-50	B-60	B-70
			1.42				1.71	9065	R4	224	B-50	B-60	B-70
			1.87				2.20	9070	R4	224	B-50	B-60	B-70
			2.20				2.60	9075	R4	224	B-50	B-60	B-70
			2.86				3.40	9080	R4	224	B-50	B-60	B-70
			3.60				4.33	9085	R4	224	B-50	B-60	B-70
6.0	23880	2440	0.89	7.2	19900	2030	1.06	9055	R4	250	B-48	B-58	B-68
			1.08				1.30	9060	R4	250	B-50	B-60	B-70
			1.41				1.70	9065	R4	250	B-50	B-60	B-70
			1.72				2.00	9070	R4	250	B-50	B-60	B-70
			2.20				2.60	9075	R4	250	B-50	B-60	B-70
			2.53				3.00	9080	R4	250	B-50	B-60	B-70
			3.46				4.13	9085	R4	250	B-50	B-60	B-70
5.4	26740	2730	0.86	6.4	22280	2280	1.02	9060	R4	280	B-50	B-60	B-70
			1.11				1.33	9065	R4	280	B-50	B-60	B-70
			1.43				1.71	9070	R4	280	B-50	B-60	B-70
			1.98				2.33	9075	R4	280	B-50	B-60	B-70
			2.13				2.60	9080	R4	280	B-50	B-60	B-70
			3.00				3.60	9085	R4	280	B-50	B-60	B-70
4.8	30080	3070	1.13	5.7	25070	2560	1.36	9065	R4	315	B-50	B-60	B-70
			1.24				1.50	9070	R4	315	B-50	B-60	B-70
			1.81				2.13	9075	R4	315	B-50	B-60	B-70
			1.92				2.26	9080	R4	315	B-50	B-60	B-70
			2.66				3.20	9085	R4	315	B-50	B-60	B-70
4.2	33900	3460	0.89	5.1	28250	2880	1.07	9065	R4	355	B-50	B-60	B-70
			1.17				1.40	9070	R4	355	B-50	B-60	B-70
			1.52				1.82	9075	R4	355	B-50	B-60	B-70
			1.72				2.06	9080	R4	355	B-50	B-60	B-70
			2.26				2.73	9085	R4	355	B-50	B-60	B-70
3.8	38200	3900	1.32	4.5	31830	3250	1.58	9075	R4	400	B-50	B-60	B-70
			2.00				2.40	9085	R4	400	B-50	B-60	B-70
3.3	42980	4390	1.24	4.0	35810	3660	1.49	9075	R4	450	B-50	B-60	B-70
			1.80				2.13	9085	R4	450	B-50	B-60	B-70

18.5kW	Frequency	Hz	50Hz	60Hz
	Pole	P	4	4
	Speed	n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
150	1180	120	5.29	180	982	100	6.10	9035	R2	10	B-42	B-52	B-62
134	1320	135	5.29	161	1100	112	6.10	9035	R2	11.2	B-42	B-52	B-62
120	1470	150	4.75	144	1230	125	5.40	9035	R2	12.5	B-42	B-52	B-62
107	1650	168	4.75	129	1370	140	5.40	9035	R2	14	B-42	B-52	B-62
93.8	1880	192	3.29	113	1570	160	3.94	9035	R2	16	B-42	B-52	B-62
			3.40				4.05	9040	R2	16	B-42	B-52	B-62
			4.37				5.24	9045	R2	16	B-42	B-52	B-62
83.3	2120	216	3.29	100	1770	180	3.94	9035	R2	18	B-42	B-52	B-62
			3.40				4.05	9040	R2	18	B-42	B-52	B-62
			4.37				5.24	9045	R2	18	B-42	B-52	B-62
75.0	2360	241	2.32	90.0	1960	200	2.75	9035	R2	20	B-42	B-52	B-62
			3.62				4.21	9040	R3	20	B-44	B-54	B-64
67.0	2640	269	2.32	80.4	2200	224	2.75	9035	R2	22.4	B-42	B-52	B-62
			3.62				4.21	9040	R3	22.4	B-44	B-54	B-64
60.0	2940	301	2.91	72.0	2450	251	3.25	9035	R3	25	B-44	B-54	B-64
			3.62				4.21	9040	R3	25	B-44	B-54	B-64

SELECTION Drive Unit Right Angle Shaft 18.5kW

Frequency							Model			Page of Dimension Sheet			
50Hz			SF	60Hz			SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
Output Speed r/min	Output Torque (Tout) Nm	kgf m		Output Speed r/min	Output Torque (Tout) Nm	kgf m							
53.6	3300	337	2.64	64.3	2750	281	3.13	9035	R3	28	B-44	B-54	B-64
			2.97				3.51	9040	R3	28	B-44	B-54	B-64
			3.65				4.21	9045	R3	28	B-44	B-54	B-64
			4.32				5.18	9050	R3	28	B-44	B-54	B-64
47.6	3710	379	2.32	57.1	3090	316	2.75	9035	R3	31.5	B-44	B-54	B-64
			2.60				3.08	9040	R3	31.5	B-44	B-54	B-64
			3.65				4.21	9045	R3	31.5	B-44	B-54	B-64
			4.27				4.91	9050	R3	31.5	B-44	B-54	B-64
42.3	4180	427	2.10	50.7	3480	356	2.54	9035	R3	35.5	B-44	B-54	B-64
			2.27				2.75	9040	R3	35.5	B-44	B-54	B-64
			3.12				3.74	9045	R3	35.5	B-44	B-54	B-64
			3.51				4.21	9050	R3	35.5	B-44	B-54	B-64
			4.45				5.40	9055	R3	35.5	B-44	B-54	B-64
37.5	4710	481	1.45	45.0	3930	401	1.72	9035	R3	40	B-44	B-54	B-64
			2.21				2.70	9040	R3	40	B-44	B-54	B-64
			2.60				3.12	9045	R3	40	B-44	B-54	B-64
			3.29				3.94	9050	R3	40	B-44	B-54	B-64
			4.27				4.91	9055	R3	40	B-44	B-54	B-64
33.3	5300	541	1.45	40.0	4420	451	1.72	9035	R3	45	B-44	B-54	B-64
			1.85				2.22	9040	R3	45	B-44	B-54	B-64
			2.42				2.89	9045	R3	45	B-44	B-54	B-64
			2.70				3.24	9050	R3	45	B-44	B-54	B-64
			3.67				4.43	9055	R3	45	B-44	B-54	B-64
4.37	5.24	9060	R3	45	B-46	B-56	B-66						
30.0	5890	601	1.45	36.0	4910	501	1.72	9035	R3	50	B-44	B-54	B-64
			2.31				2.77	9045	R3	50	B-44	B-54	B-64
			2.64				3.18	9050	R3	50	B-44	B-54	B-64
			3.51				4.21	9055	R3	50	B-44	B-54	B-64
			4.00				4.54	9060	R3	50	B-46	B-56	B-66
26.8	6600	673	1.32	32.1	5500	561	1.58	9035	R3	56	B-44	B-54	B-64
			1.41				1.69	9040	R3	56	B-44	B-54	B-64
			1.94				2.33	9045	R3	56	B-44	B-54	B-64
			2.16				2.59	9050	R3	56	B-44	B-54	B-64
			2.81				3.35	9055	R3	56	B-44	B-54	B-64
3.45	4.16	9060	R3	56	B-46	B-56	B-66						
4.61	5.51	9065	R3	56	B-46	B-56	B-66						
23.8	7420	758	1.41	28.6	6180	631	1.69	9040	R3	63	B-44	B-54	B-64
			2.10				2.54	9050	R3	63	B-44	B-54	B-64
			2.81				3.40	9055	R3	63	B-44	B-54	B-64
			3.24				3.67	9060	R3	63	B-46	B-56	B-66
			4.00				4.54	9065	R3	63	B-46	B-56	B-66
4.75	5.40	9070	R3	63	B-46	B-56	B-66						
21.1	8360	854	0.87	25.4	6970	711	1.04	9035	R3	71	B-44	B-54	B-64
			1.18				1.41	9040	R3	71	B-44	B-54	B-64
			1.41				1.69	9045	R3	71	B-44	B-54	B-64
			1.72				2.10	9050	R3	71	B-44	B-54	B-64
			2.27				2.70	9055	R3	71	B-44	B-54	B-64
2.70	3.24	9060	R3	71	B-46	B-56	B-66						
3.63	4.35	9065	R3	71	B-46	B-56	B-66						
4.54	5.40	9070	R3	71	B-46	B-56	B-66						
18.8	9420	962	0.87	22.5	7850	802	1.04	9035	R3	80	B-44	B-54	B-64
			1.15				1.38	9040	R4	80	B-48	B-58	B-68
			1.41				1.69	9045	R3	80	B-44	B-54	B-64
			2.27				2.75	9055	R3	80	B-44	B-54	B-64
			3.24				3.67	9065	R3	80	B-46	B-56	B-66
3.56	4.32	9070	R4	80	B-50	B-60	B-70						
4.75	5.40	9075	R3	80	B-46	B-56	B-66						

Drive Unit

Selection
TablesDimension
Tables

SELECTION Drive Unit Right Angle Shaft 18.5kW

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (T _{out}) Nm	kgf m			Output Torque (T _{out}) Nm	kgf m							
16.7	10600	1080	0.84	20.0	8830	902	1.01	9035	R3	90	B-44	B-54	B-64
			0.94				1.13	9040	R4	90	B-48	B-58	B-68
			1.24				1.48	9045	R3	90	B-44	B-54	B-64
			1.36				1.62	9050	R4	90	B-48	B-58	B-68
			1.83				2.21	9055	R3	90	B-44	B-54	B-64
			2.00				2.43	9060	R4	90	B-50	B-60	B-70
			2.86				3.42	9065	R3	90	B-46	B-56	B-66
			3.56				4.32	9070	R4	90	B-50	B-60	B-70
			4.75				5.40	9075	R3	90	B-46	B-56	B-66
15.0	11780	1200	0.90	18.0	9820	1000	1.08	9040	R4	100	B-48	B-58	B-68
			1.17				1.40	9045	R4	100	B-48	B-58	B-68
			1.34				1.61	9050	R4	100	B-48	B-58	B-68
			2.00				2.43	9060	R4	100	B-50	B-60	B-70
			3.51				4.21	9070	R4	100	B-50	B-60	B-70
13.4	13190	1350	0.99	16.1	10990	1120	1.18	9045	R4	112	B-48	B-58	B-68
			1.10				1.32	9050	R4	112	B-48	B-58	B-68
			1.36				1.62	9055	R4	112	B-48	B-58	B-68
			1.67				2.05	9060	R4	112	B-50	B-60	B-70
			2.02				2.43	9065	R4	112	B-50	B-60	B-70
			2.91				3.51	9070	R4	112	B-50	B-60	B-70
			3.56				4.32	9075	R4	112	B-50	B-60	B-70
			4.59				5.51	9080	R4	112	B-50	B-60	B-70
12.0	14720	1500	0.91	14.4	12270	1250	1.10	9045	R4	125	B-48	B-58	B-68
			1.07				1.29	9050	R4	125	B-48	B-58	B-68
			1.36				1.62	9055	R4	125	B-48	B-58	B-68
			1.72				2.05	9060	R4	125	B-50	B-60	B-70
			2.02				2.43	9065	R4	125	B-50	B-60	B-70
			2.70				3.24	9070	R4	125	B-50	B-60	B-70
			3.56				4.32	9075	R4	125	B-50	B-60	B-70
			4.05				4.86	9080	R4	125	B-50	B-60	B-70
10.7	16490	1680	0.88	12.9	13740	1400	1.05	9050	R4	140	B-48	B-58	B-68
			1.15				1.38	9055	R4	140	B-48	B-58	B-68
			1.38				1.62	9060	R4	140	B-50	B-60	B-70
			1.79				2.14	9065	R4	140	B-50	B-60	B-70
			2.21				2.70	9070	R4	140	B-50	B-60	B-70
			3.13				3.72	9075	R4	140	B-50	B-60	B-70
			3.51				4.21	9080	R4	140	B-50	B-60	B-70
			4.81				5.78	9085	R4	140	B-50	B-60	B-70
9.4	18850	1920	1.15	11.3	15700	1600	1.37	9055	R4	160	B-48	B-58	B-68
			1.84				2.21	9065	R4	160	B-50	B-60	B-70
			1.78				2.10	9070	R4	160	B-50	B-60	B-70
			2.86				3.40	9075	R4	160	B-50	B-60	B-70
			3.08				3.67	9080	R4	160	B-50	B-60	B-70
			4.27				5.13	9085	R4	160	B-50	B-60	B-70
8.3	21200	2160	0.92	10.0	17670	1800	1.10	9055	R4	180	B-48	B-58	B-68
			1.12				1.35	9060	R4	180	B-50	B-60	B-70
			1.44				1.73	9065	R4	180	B-50	B-60	B-70
			1.78				2.10	9070	R4	180	B-50	B-60	B-70
			2.37				2.86	9075	R4	180	B-50	B-60	B-70
			2.81				3.35	9080	R4	180	B-50	B-60	B-70
			3.67				4.43	9085	R4	180	B-50	B-60	B-70
7.5	23560	2410	1.09	9.0	19630	2000	1.31	9060	R4	200	B-50	B-60	B-70
			1.15				1.38	9065	R4	200	B-50	B-60	B-70
			1.78				2.10	9070	R4	200	B-50	B-60	B-70
			2.64				3.18	9080	R4	200	B-50	B-60	B-70
			3.08				3.67	9085	R4	200	B-50	B-60	B-70
6.7	26380	2690	0.86	8.0	21990	2240	1.03	9060	R4	224	B-50	B-60	B-70
			1.15				1.38	9065	R4	224	B-50	B-60	B-70
			1.51				1.78	9070	R4	224	B-50	B-60	B-70
			1.78				2.10	9075	R4	224	B-50	B-60	B-70
			2.32				2.75	9080	R4	224	B-50	B-60	B-70
			2.91				3.51	9085	R4	224	B-50	B-60	B-70
6.0	29450	3010	0.88	7.2	24540	2510	1.05	9060	R4	250	B-50	B-60	B-70
			1.14				1.37	9065	R4	250	B-50	B-60	B-70
			1.39				1.62	9070	R4	250	B-50	B-60	B-70
			1.78				2.10	9075	R4	250	B-50	B-60	B-70
			2.05				2.43	9080	R4	250	B-50	B-60	B-70
			2.81				3.35	9085	R4	250	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 18.5kW, 22kW

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
5.4	32980	3370	0.90	6.4	27480	2810	1.08	9065	R4	280	B-50	B-60	B-70
			1.16				1.38	9070	R4	280	B-50	B-60	B-70
			1.61				1.89	9075	R4	280	B-50	B-60	B-70
			1.72				2.10	9080	R4	280	B-50	B-60	B-70
			2.43				2.91	9085	R4	280	B-50	B-60	B-70
4.8	37100	3790	0.91	5.7	30920	3160	1.10	9065	R4	315	B-50	B-60	B-70
			1.01				1.21	9070	R4	315	B-50	B-60	B-70
			1.47				1.72	9075	R4	315	B-50	B-60	B-70
			1.56				1.83	9080	R4	315	B-50	B-60	B-70
			2.16				2.59	9085	R4	315	B-50	B-60	B-70
4.2	41810	4270	0.95	5.1	34840	3560	1.14	9070	R4	355	B-50	B-60	B-70
			1.23				1.47	9075	R4	355	B-50	B-60	B-70
			1.40				1.67	9080	R4	355	B-50	B-60	B-70
			1.83				2.21	9085	R4	355	B-50	B-60	B-70
			1.07				1.28	9075	R4	400	B-50	B-60	B-70
3.8	47110	4810	1.62	4.5	39260	4010	1.94	9085	R4	400	B-50	B-60	B-70
			1.00				1.21	9075	R4	450	B-50	B-60	B-70
3.3	53000	5410	1.46	4.0	44170	4510	1.72	9085	R4	450	B-50	B-60	B-70

22kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
188	1120	114	4.68	225	934	95	5.45	9035	R2	8	B-42	B-52	B-62
167	1260	129	4.68	200	1050	107	5.45	9035	R2	9	B-42	B-52	B-62
150	1400	143	4.45	180	1170	119	5.13	9035	R2	10	B-42	B-52	B-62
134	1570	160	4.45	161	1310	133	5.13	9035	R2	11.2	B-42	B-52	B-62
120	1750	179	4.00	144	1460	149	4.54	9035	R2	12.5	B-42	B-52	B-62
107	1960	200	4.00	129	1630	167	4.54	9035	R2	14	B-42	B-52	B-62
93.8	2240	229	2.77	113	1870	191	3.31	9035	R2	16	B-42	B-52	B-62
			2.86				3.40	9040	R2	16	B-42	B-52	B-62
			3.68				4.40	9045	R2	16	B-42	B-52	B-62
83.3	2520	257	2.77	100	2100	215	3.31	9035	R2	18	B-42	B-52	B-62
			2.86				3.40	9040	R2	18	B-42	B-52	B-62
			3.68				4.40	9045	R2	18	B-42	B-52	B-62
75.0	2800	286	3.04	90.0	2330	238	3.54	9040	R3	20	B-44	B-54	B-64
			4.31				4.90	9050	R3	20	B-44	B-54	B-64
			4.95				5.59	9060	R3	20	B-46	B-56	B-66
67.0	3140	320	3.04	80.4	2610	267	3.54	9040	R3	22.4	B-44	B-54	B-64
			4.31				4.90	9050	R3	22.4	B-44	B-54	B-64
			4.95				5.59	9060	R3	22.4	B-46	B-56	B-66
60.0	3500	358	2.45	72.0	2920	298	2.90	9035	R3	25	B-44	B-54	B-64
			3.05				3.54	9040	R3	25	B-44	B-54	B-64
			4.31				4.90	9050	R3	25	B-44	B-54	B-64
			4.95				5.59	9060	R3	25	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 22kW

Frequency							Model			Page of Dimension Sheet			
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright	
Output Speed r/min	Output Torque (Tout) Nm kgf m			Output Speed r/min	Output Torque (Tout) Nm kgf m								SF
53.6	3920	400	2.22	64.3	3270	334	2.63	9035	R3	28	B-44	B-54	B-64
			2.50				2.95	9040	R3	28	B-44	B-54	B-64
			3.07				3.54	9045	R3	28	B-44	B-54	B-64
			3.63				4.36	9050	R3	28	B-44	B-54	B-64
			4.31				4.90	9055	R3	28	B-44	B-54	B-64
			4.95				5.59	9060	R3	28	B-46	B-56	B-66
47.6	4410	450	1.95	57.1	3680	375	2.31	9035	R3	31.5	B-44	B-54	B-64
			2.18				2.59	9040	R3	31.5	B-44	B-54	B-64
			3.07				3.54	9045	R3	31.5	B-44	B-54	B-64
			3.59				4.13	9050	R3	31.5	B-44	B-54	B-64
			4.31				4.90	9055	R3	31.5	B-44	B-54	B-64
			4.95				5.59	9065	R3	31.5	B-46	B-56	B-66
42.3	4970	508	1.77	50.7	4140	423	2.13	9035	R3	35.5	B-44	B-54	B-64
			1.90				2.31	9040	R3	35.5	B-44	B-54	B-64
			2.62				3.14	9045	R3	35.5	B-44	B-54	B-64
			2.95				3.54	9050	R3	35.5	B-44	B-54	B-64
			3.81				4.54	9055	R3	35.5	B-44	B-54	B-64
			4.22				4.77	9060	R3	35.5	B-46	B-56	B-66
			4.95				5.59	9065	R3	35.5	B-46	B-56	B-66
37.5	5600	572	1.22	45.0	4670	477	1.45	9035	R3	40	B-44	B-54	B-64
			1.86				2.27	9040	R3	40	B-44	B-54	B-64
			2.18				2.62	9045	R3	40	B-44	B-54	B-64
			2.77				3.31	9050	R3	40	B-44	B-54	B-64
			3.59				4.13	9055	R3	40	B-44	B-54	B-64
			4.22				4.77	9060	R3	40	B-46	B-56	B-66
33.3	6300	644	1.22	40.0	5250	536	1.45	9035	R3	45	B-44	B-54	B-64
			1.55				1.86	9040	R3	45	B-44	B-54	B-64
			2.03				2.43	9045	R3	45	B-44	B-54	B-64
			2.27				2.72	9050	R3	45	B-44	B-54	B-64
			3.09				3.72	9055	R3	45	B-44	B-54	B-64
			3.68				4.40	9060	R3	45	B-46	B-56	B-66
			4.22				4.77	9065	R3	45	B-46	B-56	B-66
30.0	7000	715	1.22	36.0	5840	596	1.45	9035	R3	50	B-44	B-54	B-64
			1.94				2.33	9045	R3	50	B-44	B-54	B-64
			2.22				2.68	9050	R3	50	B-44	B-54	B-64
			2.95				3.54	9055	R3	50	B-44	B-54	B-64
			3.36				3.81	9060	R3	50	B-46	B-56	B-66
			4.22				4.77	9065	R3	50	B-46	B-56	B-66
			4.90				5.59	9070	R3	50	B-46	B-56	B-66
26.8	7840	801	1.11	32.1	6540	667	1.33	9035	R3	56	B-44	B-54	B-64
			1.18				1.42	9040	R3	56	B-44	B-54	B-64
			1.63				1.95	9045	R3	56	B-44	B-54	B-64
			1.81				2.18	9050	R3	56	B-44	B-54	B-64
			2.36				2.81	9055	R3	56	B-44	B-54	B-64
			2.90				3.50	9060	R3	56	B-46	B-56	B-66
			3.87				4.63	9065	R3	56	B-46	B-56	B-66
4.86	5.59	9070	R3	56	B-46	B-56	B-66						
23.8	8820	901	1.18	28.6	7350	751	1.42	9040	R3	63	B-44	B-54	B-64
			1.77				2.13	9050	R3	63	B-44	B-54	B-64
			2.36				2.86	9055	R3	63	B-44	B-54	B-64
			2.72				3.09	9060	R3	63	B-46	B-56	B-66
			3.36				3.81	9065	R3	63	B-46	B-56	B-66
			4.00				4.54	9070	R3	63	B-46	B-56	B-66
			4.90				5.59	9075	R3	63	B-46	B-56	B-66
21.1	9940	1020	0.99	25.4	8290	846	1.19	9040	R3	71	B-44	B-54	B-64
			1.18				1.42	9045	R3	71	B-44	B-54	B-64
			1.45				1.77	9050	R3	71	B-44	B-54	B-64
			1.90				2.27	9055	R3	71	B-44	B-54	B-64
			2.27				2.72	9060	R3	71	B-46	B-56	B-66
			3.05				3.65	9065	R3	71	B-46	B-56	B-66
			3.81				4.54	9070	R3	71	B-46	B-56	B-66
4.90	5.59	9075	R3	71	B-46	B-56	B-66						

SELECTION Drive Unit Right Angle Shaft 22kW

Frequency								Model			Page of Dimension Sheet		
50Hz			60Hz										
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
18.8	11210	1140	0.97	22.5	9340	953	1.16	9040	R4	80	B-48	B-58	B-68
			1.18				9045	R3	80	B-44	B-54	B-64	
			1.90				9055	R3	80	B-44	B-54	B-64	
			2.72				9065	R3	80	B-46	B-56	B-66	
			3.00				9070	R4	80	B-50	B-60	B-70	
			4.00				9075	R3	80	B-46	B-56	B-66	
			4.54				9080	R4	80	B-50	B-60	B-70	
16.7	12610	1290	1.04	20.0	10510	1070	1.25	9045	R3	90	B-44	B-54	B-64
			1.15				9050	R4	90	B-48	B-58	B-68	
			1.54				9055	R3	90	B-44	B-54	B-64	
			1.68				9060	R4	90	B-50	B-60	B-70	
			2.40				9065	R3	90	B-46	B-56	B-66	
			3.00				9070	R4	90	B-50	B-60	B-70	
			4.00				9075	R3	90	B-46	B-56	B-66	
15.0	14010	1430	4.54	18.0	11670	1190	5.13	9080	R4	90	B-50	B-60	B-70
			0.98				9045	R4	100	B-48	B-58	B-68	
			1.13				9050	R4	100	B-48	B-58	B-68	
			1.68				9060	R4	100	B-50	B-60	B-70	
			2.95				9070	R4	100	B-50	B-60	B-70	
			4.50				9080	R4	100	B-50	B-60	B-70	
			13.4				15690	1600	0.83	16.1	13070	1330	1.00
0.92	9050	R4		112	B-48	B-58			B-68				
1.15	9055	R4		112	B-48	B-58			B-68				
1.40	9060	R4		112	B-50	B-60			B-70				
1.70	9065	R4		112	B-50	B-60			B-70				
2.45	9070	R4		112	B-50	B-60			B-70				
3.00	9075	R4		112	B-50	B-60			B-70				
3.86	9080	R4		112	B-50	B-60			B-70				
12.0	17510	1790	4.54	14.4	14590	1490	5.13	9085	R4	112	B-50	B-60	B-70
			0.90				9050	R4	125	B-48	B-58	B-68	
			1.15				9055	R4	125	B-48	B-58	B-68	
			1.45				9060	R4	125	B-50	B-60	B-70	
			1.70				9065	R4	125	B-50	B-60	B-70	
			2.27				9070	R4	125	B-50	B-60	B-70	
			3.00				9075	R4	125	B-50	B-60	B-70	
			3.40				9080	R4	125	B-50	B-60	B-70	
10.7	19610	2000	4.54	12.9	16340	1670	5.13	9085	R4	125	B-50	B-60	B-70
			0.97				9055	R4	140	B-48	B-58	B-68	
			1.16				9060	R4	140	B-50	B-60	B-70	
			1.50				9065	R4	140	B-50	B-60	B-70	
			1.86				9070	R4	140	B-50	B-60	B-70	
			2.63				9075	R4	140	B-50	B-60	B-70	
			2.95				9080	R4	140	B-50	B-60	B-70	
9.4	22410	2290	4.04	11.3	18680	1910	4.86	9085	R4	140	B-50	B-60	B-70
			0.96				9055	R4	160	B-48	B-58	B-68	
			1.55				9065	R4	160	B-50	B-60	B-70	
			2.40				9075	R4	160	B-50	B-60	B-70	
			2.59				9080	R4	160	B-50	B-60	B-70	
8.3	25210	2570	3.59	10.0	21010	2150	4.31	9085	R4	160	B-50	B-60	B-70
			0.95				9060	R4	180	B-50	B-60	B-70	
			1.21				9065	R4	180	B-50	B-60	B-70	
			1.50				9070	R4	180	B-50	B-60	B-70	
			2.00				9075	R4	180	B-50	B-60	B-70	
			2.36				9080	R4	180	B-50	B-60	B-70	
7.5	28010	2860	3.09	9.0	23340	2380	3.72	9085	R4	180	B-50	B-60	B-70
			0.92				9060	R4	200	B-50	B-60	B-70	
			0.97				9065	R4	200	B-50	B-60	B-70	
			1.50				9070	R4	200	B-50	B-60	B-70	
			2.22				9080	R4	200	B-50	B-60	B-70	
6.7	31370	3200	2.59	8.0	26150	2670	3.09	9085	R4	200	B-50	B-60	B-70
			0.97				9065	R4	224	B-50	B-60	B-70	
			1.27				9070	R4	224	B-50	B-60	B-70	
			1.50				9075	R4	224	B-50	B-60	B-70	
			1.95				9080	R4	224	B-50	B-60	B-70	
6.0	35020	3580	2.45	7.2	29180	2980	2.95	9085	R4	224	B-50	B-60	B-70
			0.96				9065	R4	250	B-50	B-60	B-70	
			1.17				9070	R4	250	B-50	B-60	B-70	
			1.50				9075	R4	250	B-50	B-60	B-70	
			1.72				9080	R4	250	B-50	B-60	B-70	
			2.36				2.81	9085	R4	250	B-50	B-60	B-70

Drive Unit

Selection
TablesDimension
Tables

SELECTION Drive Unit Right Angle Shaft 22kW, 30kW

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
5.4	39220	4000	0.97	6.4	32680	3340	1.16	9070	R4	280	B-50	B-60	B-70
			1.35				1.59	9075	R4	280	B-50	B-60	B-70
			1.45				1.77	9080	R4	280	B-50	B-60	B-70
			2.04				2.45	9085	R4	280	B-50	B-60	B-70
4.8	44120	4500	0.85	5.7	36770	3750	1.02	9070	R4	315	B-50	B-60	B-70
			1.23				1.45	9075	R4	315	B-50	B-60	B-70
			1.31				1.54	9080	R4	315	B-50	B-60	B-70
			1.81				2.18	9085	R4	315	B-50	B-60	B-70
4.2	49720	5080	1.03	5.1	41440	4230	1.24	9075	R4	355	B-50	B-60	B-70
			1.17				1.40	9080	R4	355	B-50	B-60	B-70
			1.54				1.86	9085	R4	355	B-50	B-60	B-70
3.8	56030	5720	0.90	4.5	46690	4770	1.08	9075	R4	400	B-50	B-60	B-70
			1.36				1.63	9085	R4	400	B-50	B-60	B-70
3.3	63030	6440	0.84	4.0	52530	5360	1.01	9075	R4	450	B-50	B-60	B-70
			1.23				1.45	9085	R4	450	B-50	B-60	B-70

30kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

* marked model upright type need additional cooling system for continuous operation.

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
238	1200	123	4.59	286	1000	102	4.59	9040	R2	6.3	B-42	B-52	B-62
211	1360	138	4.59	254	1130	115	4.59	9040	R2	7.1	B-42	B-52	B-62
188	1530	156	4.13	225	1270	130	4.59	9040	R2	8	B-42	B-52	B-62
167	1720	176	4.13	200	1430	146	4.59	9040	R2	9	B-42	B-52	B-62
150	1910	195	3.76	180	1590	163	4.26	9040	R2	10	B-42	B-52	B-62
			4.80				5.76	9045	R2	10	B-42	B-52	B-62
134	2140	218	3.76	161	1780	182	4.26	9040	R2	11.2	B-42	B-52	B-62
			4.80				5.76	9045	R2	11.2	B-42	B-52	B-62
120	2390	244	3.90	144	1990	203	4.66	9045	R2	12.5	B-42	B-52	B-62
107	2670	273	3.90	129	2230	228	4.66	9045	R2	14	B-42	B-52	B-62
93.8	3060	312	2.10	113	2550	260	2.50	9040	R2	16	B-42	B-52	B-62
			2.70				3.23	9045	R2	16	B-42	B-52	B-62
83.3	3440	351	2.10	100	2870	293	2.50	9040	R2	18	B-42	B-52	B-62
			2.70				3.23	9045	R2	18	B-42	B-52	B-62
75.0	3820	390	2.23	90.0	3180	325	2.60	9040	R3	20	B-44	B-54	B-64
			3.16				3.60	9050	R3	20	B-44	B-54	B-64
			3.63				4.09	9060	R3	20	B-46	B-56	B-66
67.0	4280	437	2.23	80.4	3570	364	2.60	9040	R3	22.4	B-44	B-54	B-64
			3.16				3.60	9050	R3	22.4	B-44	B-54	B-64
			3.63				4.09	9060	R3	22.4	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 30kW

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz									
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
60.0	4780	488	2.23	72.0	3980	406	2.60	9040	R3	25	B-44	B-54	B-64
			3.16				3.60	9050	R3	25	B-44	B-54	B-64
			3.63				4.09	9060	R3	25	B-46	B-56	B-66
53.6	5350	546	1.83	64.3	4460	455	2.16	9040	R3	28	B-44	B-54	B-64
			2.25				2.60	9045	R3	28	B-44	B-54	B-64
			2.66				3.20	9050	R3	28	B-44	B-54	B-64
			3.16				3.60	9055	R3	28	B-44	B-54	B-64
			3.63				4.09	9060	R3	28	B-46	B-56	B-66
47.6	6020	614	1.60	57.1	5010	512	1.90	9040	R3	31.5	B-44	B-54	B-64
			2.25				2.60	9045	R3	31.5	B-44	B-54	B-64
			2.63				3.03	9050	R3	31.5	B-44	B-54	B-64
			3.10				3.50	9060	R3	31.5	B-46	B-56	B-66
			3.63				4.10	9065	R3	31.5	B-46	B-56	B-66
			4.53				5.16	9070	R3	31.5	B-46	B-56	B-66
42.3	6780	692	1.40	50.7	5650	577	1.70	9040	R3	35.5	B-44	B-54	B-64
			1.92				2.30	9045	R3	35.5	B-44	B-54	B-64
			2.16				2.60	9050	R3	35.5	B-44	B-54	B-64
			2.80				3.33	9055	R3	35.5	B-44	B-54	B-64
			3.10				3.50	9060	R3	35.5	B-46	B-56	B-66
			3.63				4.10	9065	R3	35.5	B-46	B-56	B-66
			4.53				5.16	9070	R3	35.5	B-46	B-56	B-66
37.5	7640	780	1.36	45.0	6370	650	1.67	9040	R3	40	B-44	B-54	B-64
			1.60				1.92	9045	R3	40	B-44	B-54	B-64
			2.03				2.43	9050	R3	40	B-44	B-54	B-64
			2.63				3.03	9055	R3	40	B-44	B-54	B-64
			3.10				3.50	9060	R3	40	B-46	B-56	B-66
			4.53				5.16	9070	R3	40	B-46	B-56	B-66
33.3	8600	878	1.14	40.0	7160	731	1.37	9040	R3	45	B-44	B-54	B-64
			1.49				1.78	9045	R3	45	B-44	B-54	B-64
			1.66				2.00	9050	R3	45	B-44	B-54	B-64
			2.26				2.73	9055	R3	45	B-44	B-54	B-64
			2.70				3.23	9060	R3	45	B-46	B-56	B-66
			3.10				3.50	9065	R3	45	B-46	B-56	B-66
			4.50				5.16	9070	R3	45	B-46	B-56	B-66
30.0	9550	975	1.42	36.0	7960	813	1.71	9045	R3	50	B-44	B-54	B-64
			1.63				1.96	9050	R3	50	B-44	B-54	B-64
			2.16				2.60	9055	R3	50	B-44	B-54	B-64
			2.46				2.80	9060	R3	50	B-46	B-56	B-66
			3.10				3.50	9065	R3	50	B-46	B-56	B-66
			3.60				4.09	9070	R3	50	B-46	B-56	B-66
4.53	5.16	9075	R3	50	B-46	B-56	B-66						
26.8	10700	1090	0.87	32.1	8910	910	1.04	9040	R3	56	B-44	B-54	B-64
			1.20				1.43	9045	R3	56	B-44	B-54	B-64
			1.33				1.60	9050	R3	56	B-44	B-54	B-64
			1.73				2.06	9055	R3	56	B-44	B-54	B-64
			2.13				2.56	9060	R3	56	B-46	B-56	B-66
			2.84				3.40	9065	R3	56	B-46	B-56	B-66
			3.56				4.09	9070	R3	56	B-46	B-56	B-66
			4.53				5.16	9075	R3	56	B-46	B-56	B-66
23.8	12030	1230	0.87	28.6	10030	1020	1.04	9040	R3	63	B-44	B-54	B-64
			1.30				1.56	9050	R3	63	B-44	B-54	B-64
			1.73				2.10	9055	R3	63	B-44	B-54	B-64
			2.00				2.26	9060	R3	63	B-46	B-56	B-66
			2.46				2.80	9065	R3	63	B-46	B-56	B-66
			2.93				3.33	9070	R3	63	B-46	B-56	B-66
			3.60				4.09	9075	R3	63	B-46	B-56	B-66
21.1	13560	1380	0.87	25.4	11300	1150	1.04	9045	R3	71	B-44	B-54	B-64
			1.06				1.30	9050	R3	71	B-44	B-54	B-64
			1.40				1.66	9055	R3	71	B-44	B-54	B-64
			1.66				2.00	9060	R3	71	B-46	B-56	B-66
			2.24				2.68	9065	R3	71	B-46	B-56	B-66
			2.80				3.33	9070	R3	71	B-46	B-56	B-66
			3.60				4.09	9075	R3	71	B-46	B-56	B-66

Drive Unit

Selection
TablesDimension
Tables

SELECTION Drive Unit Right Angle Shaft 30kW

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
18.8	15280	1560	0.87	22.5	12730	1300	1.04	9045	R3	80	B-44	B-54	B-64
			1.40				1.70	9055	R3	80	B-44	B-54	B-64
			2.00				2.26	9065	R3	80	B-46	B-56	B-66
			2.20				2.66	9070	R4	80	B-50	B-60	B-70
			2.93				3.33	9075	R3	80	B-46	B-56	B-66
			3.33				3.76	9080	R4	80	B-50	B-60	B-70
16.7	17190	1760	0.84	20.0	14330	1460	1.00	9050	R4	90	B-48	B-58	B-68
			1.13				1.36	9055	R3	90	B-44	B-54	B-64
			1.23				1.50	9060	R4	90	B-50	B-60	B-70
			1.76				2.11	9065	R3	90	B-46	B-56	B-66
			2.20				2.66	9070	R4	90	B-50	B-60	B-70
			2.93				3.33	9075	R3	90	B-46	B-56	B-66
15.0	19100	1950	18.0	15920	1630	1.00	9055	R4	100	B-48	B-58	B-68	
						1.50	9060	R4	100	B-50	B-60	B-70	
						2.60	9070	R4	100	B-50	B-60	B-70	
						3.76	9080	R4	100	B-50	B-60	B-70	
13.4	21390	2180	16.1	17830	1820	1.00	9055	R4	112	B-48	B-58	B-68	
						1.26	9060	R4	112	B-50	B-60	B-70	
						1.50	9065	R4	112	B-50	B-60	B-70	
						2.16	9070	R4	112	B-50	B-60	B-70	
						2.66	9075	R4	112	B-50	B-60	B-70	
						3.40	9080	R4	112	B-50	B-60	B-70	
						3.76	9085	R4	112	B-50	B-60	B-70	
12.0	23880	2440	14.4	19900	2030	1.00	9055	R4	125	B-48	B-58	B-68	
						1.26	9060	R4	125	B-50	B-60	B-70	
						1.50	9065	R4	125	B-50	B-60	B-70	
						2.00	9070	R4	125	B-50	B-60	B-70	
						2.66	9075	R4	125	B-50	B-60	B-70	
						3.00	9080	R4	125	B-50	B-60	B-70	
						3.76	9085	R4	125	B-50	B-60	B-70	
10.7	26740	2730	12.9	22280	2280	1.00	9060	R4	140	B-50	B-60	B-70	
						1.32	9065	R4	140	B-50	B-60	B-70	
						1.66	9070	R4	140	B-50	B-60	B-70	
						2.29	9075	R4	140	B-50	B-60	B-70	
						2.60	9080	R4	140	B-50	B-60	B-70	
						3.56	9085	R4	140	B-50	B-60	B-70	
9.4	30560	3120	11.3	25470	2600	1.36	9065	R4	160	B-50	B-60	B-70	
						2.10	9075	R4	160	B-50	B-60	B-70	
						2.26	9080	R4	160	B-50	B-60	B-70	
						3.16	9085	R4	160	B-50	B-60	B-70	
8.3	34380	3510	10.0	28650	2930	1.06	9065	R4	180	B-50	B-60	B-70	
						1.30	9070	R4	180	B-50	B-60	B-70	
						1.76	9075	R4	180	B-50	B-60	B-70	
						2.06	9080	R4	180	B-50	B-60	B-70	
						2.73	9085	R4	180	B-50	B-60	B-70	
7.5	38200	3900	9.0	31830	3250	1.30	9070	R4	200	B-50	B-60	B-70	
						1.96	9080	R4	200	B-50	B-60	B-70	
						2.26	9085	R4	200	B-50	B-60	B-70	
6.7	42780	4370	8.0	35650	3640	1.10	9070	R4	224	B-50	B-60	B-70	
						1.30	9075	R4	224	B-50	B-60	B-70	
						1.70	9080	R4	224	B-50	B-60	B-70	
						2.16	9085	R4	224	B-50	B-60	B-70	
6.0	47750	4880	7.2	39790	4060	1.00	9070	R4	250	B-50	B-60	B-70	
						1.30	9075	R4	250	B-50	B-60	B-70	
						1.50	9080	R4	250	B-50	B-60	B-70	
						2.06	9085	R4	250	B-50	B-60	B-70	
5.4	53480	5460	6.4	44570	4550	1.16	9075	R4	280	B-50	B-60	B-70	
						1.30	9080	R4	280	B-50	B-60	B-70	
						1.80	9085	R4	280	B-50	B-60	B-70	
4.8	60170	6140	5.7	50140	5120	1.06	9075	R4	315	B-50	B-60	B-70	
						1.13	9080	R4	315	B-50	B-60	B-70	
						1.60	9085	R4	315	B-50	B-60	B-70	
4.2	67810	6920	5.1	56500	5770	1.03	9080	R4	355	B-50	B-60	B-70	
						1.36	9085	R4	355	B-50	B-60	B-70	
3.8	76400	7800	4.5	63670	6500	1.20	9085	R4	400	B-50	B-60	B-70	
3.3	85950	8780	4.0	71630	7310	1.06	9085	R4	450	B-50	B-60	B-70	

SELECTION Drive Unit Right Angle Shaft 37kW

37kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

* marked model upright type need additional cooling system for continuous operation.

Frequency								Model			Page of Dimension Sheet		
50Hz				60Hz				Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF						
238	1480	152	3.72	286	1240	126	3.72	9040	R2	6.3	B-42	B-52	B-62
211	1670	171	3.72	254	1390	142	3.72	9040	R2	7.1	B-42	B-52	B-62
188	1880	192	3.35	225	1570	160	3.72	9040	R2	8	B-42	B-52	B-62
			4.37				5.24	9045	R2	8	B-42	B-52	B-62
167	2120	216	3.35	200	1770	180	3.72	9040	R2	9	B-42	B-52	B-62
			4.37				5.24	9045	R2	9	B-42	B-52	B-62
150	2360	241	3.05	180	1960	200	3.45	9040	R2	10	B-42	B-52	B-62
			3.89				4.67	9045	R2	10	B-42	B-52	B-62
134	2640	269	3.05	161	2200	224	3.45	9040	R2	11.2	B-42	B-52	B-62
			3.89				4.67	9045	R2	11.2	B-42	B-52	B-62
120	2940	301	3.16	144	2450	251	3.78	9045	R2	12.5	B-42	B-52	B-62
107	3300	337	3.16	129	2750	281	3.78	9045	R2	14	B-42	B-52	B-62
93.8	3770	385	1.70	113	3140	321	2.02	9040	R2	16	B-42	B-52	B-62
			2.18				2.62	9045	R2	16	B-42	B-52	B-62
83.3	4240	433	1.70	100	3530	361	2.02	9040	R2	18	B-42	B-52	B-62
			2.18				2.62	9045	R2	18	B-42	B-52	B-62
75.0	4710	481	1.81	90.0	3930	401	2.10	9040	R3	20	B-44	B-54	B-64
			2.56				2.91	9050	R3	20	B-44	B-54	B-64
			2.94				3.32	9060	R3	20	B-46	B-56	B-66
			4.51				5.13	9070	R3	20	B-46	B-56	B-66
67.0	5280	539	1.81	80.4	4400	449	2.10	9040	R3	22.4	B-44	B-54	B-64
			2.56				2.91	9050	R3	22.4	B-44	B-54	B-64
			2.94				3.32	9060	R3	22.4	B-46	B-56	B-66
			4.51				5.13	9070	R3	22.4	B-46	B-56	B-66
60.0	5890	601	1.81	72.0	4910	501	2.10	9040	R3	25	B-44	B-54	B-64
			2.56				2.91	9050	R3	25	B-44	B-54	B-64
			2.94				3.32	9060	R3	25	B-46	B-56	B-66
			4.51				5.13	9070	R3	25	B-46	B-56	B-66
53.6	6600	673	1.48	64.3	5500	561	1.75	9040	R3	28	B-44	B-54	B-64
			1.82				2.10	9045	R3	28	B-44	B-54	B-64
			2.16				2.59	9050	R3	28	B-44	B-54	B-64
			2.56				2.91	9055	R3	28	B-44	B-54	B-64
			2.94				3.32	9060	R3	28	B-46	B-56	B-66
			4.51				5.13	9070	R3	28	B-46	B-56	B-66
47.6	7420	758	1.30	57.1	6180	631	1.54	9040	R3	31.5	B-44	B-54	B-64
			1.82				2.10	9045	R3	31.5	B-44	B-54	B-64
			2.13				2.45	9050	R3	31.5	B-44	B-54	B-64
			2.56				2.91	9055	R3	31.5	B-44	B-54	B-64
			2.94				3.32	9065	R3	31.5	B-46	B-56	B-66
			3.67				4.18	9070	R3	31.5	B-46	B-56	B-66
			4.51				5.13	9075	R3	31.5	B-46	B-56	B-66
42.3	8360	854	1.13	50.7	6970	711	1.37	9040	R3	35.5	B-44	B-54	B-64
			1.56				1.87	9045	R3	35.5	B-44	B-54	B-64
			1.75				2.10	9050	R3	35.5	B-44	B-54	B-64
			2.27				2.70	9055	R3	35.5	B-44	B-54	B-64
			2.51				2.83	9060	R3	35.5	B-46	B-56	B-66
			2.94				3.32	9065	R3	35.5	B-46	B-56	B-66
			3.67				4.18	9070	R3	35.5	B-46	B-56	B-66
			4.51				5.13	9075	R3	35.5	B-46	B-56	B-66

Drive Unit

Selection
TablesDimension
Tables

SELECTION Drive Unit Right Angle Shaft 37kW

Frequency							Model			Page of Dimension Sheet			
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
37.5	9420	962	1.10	45.0	7850	802	1.35	9040	R3	40	B-44	B-54	B-64
			1.30				1.56	9045	R3	40	B-44	B-54	B-64
			1.64				1.97	9050	R3	40	B-44	B-54	B-64
			2.13				2.45	9055	R3	40	B-44	B-54	B-64
			2.51				2.83	9060	R3	40	B-46	B-56	B-66
			3.67				4.18	9070	R3	40	B-46	B-56	B-66
33.3	10600	1080	0.92	40.0	8830	902	1.11	9040	R3	45	B-44	B-54	B-64
			1.21				1.44	9045	R3	45	B-44	B-54	B-64
			1.35				1.62	9050	R3	45	B-44	B-54	B-64
			1.83				2.21	9055	R3	45	B-44	B-54	B-64
			2.18				2.62	9060	R3	45	B-46	B-56	B-66
			2.51				2.83	9065	R3	45	B-46	B-56	B-66
3.64	4.18	9070	R3	45	B-46	B-56	B-66						
30.0	11780	1200	1.15	36.0	9820	1000	1.38	9045	R3	50	B-44	B-54	B-64
			1.32				1.59	9050	R3	50	B-44	B-54	B-64
			1.75				2.10	9055	R3	50	B-44	B-54	B-64
			2.00				2.27	9060	R3	50	B-46	B-56	B-66
			2.51				2.83	9065	R3	50	B-46	B-56	B-66
			2.91				3.32	9070	R3	50	B-46	B-56	B-66
3.67	4.18	9075	R3	50	B-46	B-56	B-66						
26.8	13190	1350	0.97	32.1	10990	1120	1.16	9045	R3	56	B-44	B-54	B-64
			1.08				1.29	9050	R3	56	B-44	B-54	B-64
			1.40				1.67	9055	R3	56	B-44	B-54	B-64
			1.72				2.08	9060	R3	56	B-46	B-56	B-66
			2.30				2.75	9065	R3	56	B-46	B-56	B-66
			2.89				3.32	9070	R3	56	B-46	B-56	B-66
3.67	4.18	9075	R3	56	B-46	B-56	B-66						
23.8	14840	1520	1.05	28.6	12370	1260	1.27	9050	R3	63	B-44	B-54	B-64
			1.40				1.70	9055	R3	63	B-44	B-54	B-64
			1.62				1.83	9060	R3	63	B-46	B-56	B-66
			2.00				2.27	9065	R3	63	B-46	B-56	B-66
			2.37				2.70	9070	R3	63	B-46	B-56	B-66
			2.91				3.32	9075	R3	63	B-46	B-56	B-66
21.1	16730	1710	0.86	25.4	13940	1420	1.05	9050	R3	71	B-44	B-54	B-64
			1.13				1.35	9055	R3	71	B-44	B-54	B-64
			1.35				1.62	9060	R3	71	B-46	B-56	B-66
			1.81				2.17	9065	R3	71	B-46	B-56	B-66
			2.27				2.70	9070	R3	71	B-46	B-56	B-66
			2.91				3.32	9075	R3	71	B-46	B-56	B-66
18.8	18850	1920	1.13	22.5	15700	1600	1.37	9055	R3	80	B-44	B-54	B-64
			1.62				1.83	9065	R3	80	B-46	B-56	B-66
			1.78				2.16	9070	R4	80	B-50	B-60	B-70
			2.37				2.70	9075	R3	80	B-46	B-56	B-66
			2.70				3.05	9080	R4	80	B-50	B-60	B-70
16.7	21200	2160	0.91	20.0	17670	1800	1.10	9055	R3	90	B-44	B-54	B-64
			1.00				1.21	9060	R4	90	B-50	B-60	B-70
			1.43				1.71	9065	R3	90	B-46	B-56	B-66
			1.78				2.16	9070	R4	90	B-50	B-60	B-70
			2.37				2.70	9075	R3	90	B-46	B-56	B-66
			2.70				3.05	9080	R4	90	B-50	B-60	B-70
15.0	23560	2410	1.00	18.0	19630	2000	1.21	9060	R4	100	B-50	B-60	B-70
			1.75				2.10	9070	R4	100	B-50	B-60	B-70
			2.67				3.05	9080	R4	100	B-50	B-60	B-70
13.4	26380	2690	0.83	16.1	21990	2240	1.02	9060	R4	112	B-50	B-60	B-70
			1.01				1.21	9065	R4	112	B-50	B-60	B-70
			1.45				1.75	9070	R4	112	B-50	B-60	B-70
			1.78				2.16	9075	R4	112	B-50	B-60	B-70
			2.29				2.75	9080	R4	112	B-50	B-60	B-70
			2.70				3.05	9085	R4	112	B-50	B-60	B-70
12.0	29450	3010	0.86	14.4	24540	2510	1.02	9060	R4	125	B-50	B-60	B-70
			1.01				1.21	9065	R4	125	B-50	B-60	B-70
			1.35				1.62	9070	R4	125	B-50	B-60	B-70
			1.78				2.16	9075	R4	125	B-50	B-60	B-70
			2.02				2.43	9080	R4	125	B-50	B-60	B-70
			2.70				3.05	9085	R4	125	B-50	B-60	B-70
10.7	32980	3370	0.89	12.9	27480	2810	1.07	9065	R4	140	B-50	B-60	B-70
			1.10				1.35	9070	R4	140	B-50	B-60	B-70
			1.56				1.86	9075	R4	140	B-50	B-60	B-70
			1.75				2.10	9080	R4	140	B-50	B-60	B-70
			2.40				2.89	9085	R4	140	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 37kW, 45kW

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
9.4	37690	3850	0.92	11.3	31410	3210	1.11	9065	R4	160	B-50	B-60	B-70
			1.43				1.70	9075	R4	160	B-50	B-60	B-70
			1.54				1.83	9080	R4	160	B-50	B-60	B-70
			2.13				2.56	9085	R4	160	B-50	B-60	B-70
8.3	42400	4330	0.89	10.0	35340	3610	1.05	9070	R4	180	B-50	B-60	B-70
			1.18				1.43	9075	R4	180	B-50	B-60	B-70
			1.40				1.67	9080	R4	180	B-50	B-60	B-70
			1.83				2.21	9085	R4	180	B-50	B-60	B-70
7.5	47110	4810	0.89	9.0	39260	4010	1.05	9070	R4	200	B-50	B-60	B-70
			1.32				1.59	9080	R4	200	B-50	B-60	B-70
			1.54				1.83	9085	R4	200	B-50	B-60	B-70
			0.89				1.05	9075	R4	224	B-50	B-60	B-70
6.7	52770	5390	1.16	8.0	43970	4490	1.37	9080	R4	224	B-50	B-60	B-70
			1.45				1.75	9085	R4	224	B-50	B-60	B-70
			0.89				1.05	9075	R4	250	B-50	B-60	B-70
			1.02				1.21	9080	R4	250	B-50	B-60	B-70
6.0	58890	6010	1.40	7.2	49080	5010	1.67	9085	R4	250	B-50	B-60	B-70
			0.86				1.05	9080	R4	280	B-50	B-60	B-70
5.4	65960	6730	1.21	6.4	54970	5610	1.45	9085	R4	280	B-50	B-60	B-70
			1.08				1.29	9085	R4	315	B-50	B-60	B-70
4.8	74200	7580	1.08	5.7	61840	6310	1.29	9085	R4	315	B-50	B-60	B-70
4.2	83630	8540	0.91	5.1	69690	7110	1.10	9085	R4	355	B-50	B-60	B-70

45kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

* marked model upright type need additional cooling system for continuous operation.

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
238	1800	184	3.06	286	1500	154	3.06	9040	R2	6.3	B-42	B-52	B-62
211	2030	208	3.06	254	1700	173	3.06	9040	R2	7.1	B-42	B-52	B-62
188	2290	234	2.75	225	1910	195	3.06	9040	R2	8	B-42	B-52	B-62
			3.60				4.31	9045	R2	8	B-42	B-52	B-62
167	2580	263	2.75	200	2150	219	3.06	9040	R2	9	B-42	B-52	B-62
			3.60				4.31	9045	R2	9	B-42	B-52	B-62
150	2870	293	2.51	180	2390	244	2.84	9040	R2	10	B-42	B-52	B-62
			3.20				3.84	9045	R2	10	B-42	B-52	B-62
134	3210	328	2.51	161	2670	273	2.84	9040	R2	11.2	B-42	B-52	B-62
			3.20				3.84	9045	R2	11.2	B-42	B-52	B-62
120	3580	366	2.60	144	2980	305	3.11	9045	R2	12.5	B-42	B-52	B-62
107	4010	410	2.60	129	3340	341	3.11	9045	R2	14	B-42	B-52	B-62
93.8	4580	468	1.40	113	3820	390	1.66	*9040	R2	16	B-42	B-52	B-62
			1.80				2.15	9045	R2	16	B-42	B-52	B-62
83.3	5160	527	1.40	100	4300	439	1.66	*9040	R2	18	B-42	B-52	B-62
			1.80				2.15	9045	R2	18	B-42	B-52	B-62
75.0	5730	585	1.48	90.0	4780	488	1.73	9040	R3	20	B-44	B-54	B-64
			2.11				2.40	9050	R3	20	B-44	B-54	B-64
			2.42				2.73	9060	R3	20	B-46	B-56	B-66
			3.71				4.22	9070	R3	20	B-46	B-56	B-66
67.0	6420	655	1.48	80.4	5350	546	1.73	9040	R3	22.4	B-44	B-54	B-64
			2.11				2.40	9050	R3	22.4	B-44	B-54	B-64
			2.42				2.73	9060	R3	22.4	B-46	B-56	B-66
			3.71				4.22	9070	R3	22.4	B-46	B-56	B-66
60.0	7160	731	1.49	72.0	5970	609	1.73	9040	R3	25	B-44	B-54	B-64
			2.11				2.40	9050	R3	25	B-44	B-54	B-64
			2.42				2.73	9060	R3	25	B-46	B-56	B-66
			3.71				4.22	9070	R3	25	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 45kW

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
53.6	8020	819	1.22	64.3	6690	683	1.44	9040	R3	28	B-44	B-54	B-64
			1.50				1.73	9045	R3	28	B-44	B-54	B-64
			1.77				2.13	9050	R3	28	B-44	B-54	B-64
			2.11				2.40	9055	R3	28	B-44	B-54	B-64
			2.42				2.73	9060	R3	28	B-46	B-56	B-66
			3.71				4.22	9070	R3	28	B-46	B-56	B-66
47.6	9020	921	1.50	57.1	7520	768	1.73	9045	R3	31.5	B-44	B-54	B-64
			1.75				2.02	9050	R3	31.5	B-44	B-54	B-64
			2.11				2.40	9055	R3	31.5	B-44	B-54	B-64
			2.42				2.73	9065	R3	31.5	B-46	B-56	B-66
			3.02				3.44	9070	R3	31.5	B-46	B-56	B-66
			3.71				4.22	9075	R3	31.5	B-46	B-56	B-66
42.3	10170	1040	1.28	50.7	8480	865	1.53	9045	R3	35.5	B-44	B-54	B-64
			1.44				1.73	9050	R3	35.5	B-44	B-54	B-64
			1.86				2.22	9055	R3	35.5	B-44	B-54	B-64
			2.06				2.33	9060	R3	35.5	B-46	B-56	B-66
			2.42				2.73	9065	R3	35.5	B-46	B-56	B-66
			3.02				3.44	9070	R3	35.5	B-46	B-56	B-66
			3.71				4.22	9075	R3	35.5	B-46	B-56	B-66
37.5	11460	1170	1.06	45.0	9550	975	1.28	9045	R3	40	B-44	B-54	B-64
			1.35				1.62	9050	R3	40	B-44	B-54	B-64
			1.75				2.02	9055	R3	40	B-44	B-54	B-64
			2.06				2.33	9060	R3	40	B-46	B-56	B-66
			3.02				3.44	9070	R3	40	B-46	B-56	B-66
33.3	12890	1320	0.99	40.0	10740	1100	1.19	9045	R3	45	B-44	B-54	B-64
			1.11				1.33	9050	R3	45	B-44	B-54	B-64
			1.51				1.82	9055	R3	45	B-44	B-54	B-64
			1.80				2.15	9060	R3	45	B-46	B-56	B-66
			2.06				2.33	9065	R3	45	B-46	B-56	B-66
			3.00				3.44	9070	R3	45	B-46	B-56	B-66
30.0	14330	1460	0.95	36.0	11940	1220	1.14	9045	R3	50	B-44	B-54	B-64
			1.08				1.31	9050	R3	50	B-44	B-54	B-64
			1.44				1.73	9055	R3	50	B-44	B-54	B-64
			1.64				1.86	9060	R3	50	B-46	B-56	B-66
			2.06				2.33	9065	R3	50	B-46	B-56	B-66
			2.40				2.73	9070	R3	50	B-46	B-56	B-66
			3.02				3.44	9075	R3	50	B-46	B-56	B-66
26.8	16040	1640	0.88	32.1	13370	1370	1.06	9050	R3	56	B-44	B-54	B-64
			1.15				1.37	9055	R3	56	B-44	B-54	B-64
			1.42				1.71	9060	R3	56	B-46	B-56	B-66
			1.89				2.26	9065	R3	56	B-46	B-56	B-66
			2.37				2.73	9070	R3	56	B-46	B-56	B-66
			3.02				3.44	9075	R3	56	B-46	B-56	B-66
23.8	18050	1840	1.15	28.6	15040	1540	1.40	9055	R3	63	B-44	B-54	B-64
			1.33				1.51	9060	R3	63	B-46	B-56	B-66
			1.64				1.86	9065	R3	63	B-46	B-56	B-66
			1.95				2.22	9070	R3	63	B-46	B-56	B-66
			2.40				2.73	9075	R3	63	B-46	B-56	B-66
21.1	20340	2080	0.93	25.4	16950	1730	1.11	9055	R3	71	B-44	B-54	B-64
			1.11				1.33	9060	R3	71	B-46	B-56	B-66
			1.49				1.78	9065	R3	71	B-46	B-56	B-66
			1.86				2.22	9070	R3	71	B-46	B-56	B-66
			2.40				2.73	9075	R3	71	B-46	B-56	B-66
18.8	22920	2340	0.93	22.5	19100	1950	1.13	9055	R3	80	B-44	B-54	B-64
			1.33				1.51	9065	R3	80	B-46	B-56	B-66
			1.46				1.77	9070	R4	80	B-50	B-60	B-70
			1.95				2.22	9075	R3	80	B-46	B-56	B-66
			2.22				2.51	9080	R4	80	B-50	B-60	B-70
16.7	25790	2630	0.82	20.0	21490	2190	1.00	9060	R4	90	B-50	B-60	B-70
			1.17				1.40	9065	R3	90	B-46	B-56	B-66
			1.46				1.77	9070	R4	90	B-50	B-60	B-70
			1.95				2.22	9075	R3	90	B-46	B-56	B-66
			2.22				2.51	9080	R4	90	B-50	B-60	B-70
15.0	28650	2930	0.82	18.0	23880	2440	1.00	9060	R4	100	B-50	B-60	B-70
			1.44				1.73	9070	R4	100	B-50	B-60	B-70
			2.20				2.51	9080	R4	100	B-50	B-60	B-70
13.4	32090	3280	0.83	16.1	26740	2730	1.00	9065	R4	112	B-50	B-60	B-70
			1.20				1.44	9070	R4	112	B-50	B-60	B-70
			1.46				1.77	9075	R4	112	B-50	B-60	B-70
			1.88				2.26	9080	R4	112	B-50	B-60	B-70
			2.22				2.51	9085	R4	112	B-50	B-60	B-70

SELECTION Drive Unit Right Angle Shaft 45kW, 55kW

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
12.0	35810	3660	0.83	14.4	29840	3050	1.00	9065	R4	125	B-50	B-60	B-70
			1.11				1.33	9070	R4	125	B-50	B-60	B-70
			1.46				1.77	9075	R4	125	B-50	B-60	B-70
			1.66				2.00	9080	R4	125	B-50	B-60	B-70
			2.22				2.51	9085	R4	125	B-50	B-60	B-70
10.7	40110	4100	0.91	12.9	33430	3410	1.11	9070	R4	140	B-50	B-60	B-70
			1.28				1.53	9075	R4	140	B-50	B-60	B-70
			1.44				1.73	9080	R4	140	B-50	B-60	B-70
			1.97				2.37	9085	R4	140	B-50	B-60	B-70
9.4	45840	4680	1.17	11.3	38200	3900	1.40	9075	R4	160	B-50	B-60	B-70
			1.26				1.51	9080	R4	160	B-50	B-60	B-70
			1.75				2.11	9085	R4	160	B-50	B-60	B-70
8.3	51570	5270	0.97	10.0	42980	4390	1.17	9075	R4	180	B-50	B-60	B-70
			1.15				1.37	9080	R4	180	B-50	B-60	B-70
			1.51				1.82	9085	R4	180	B-50	B-60	B-70
7.5	57300	5850	1.08	9.0	47750	4880	1.31	9080	R4	200	B-50	B-60	B-70
			1.26				1.51	9085	R4	200	B-50	B-60	B-70
6.7	64180	6550	0.95	8.0	53480	5460	1.13	9080	R4	224	B-50	B-60	B-70
			1.20				1.44	9085	R4	224	B-50	B-60	B-70
6.0	71630	7310	0.84	7.2	59690	6090	1.00	9080	R4	250	B-50	B-60	B-70
			1.15				1.37	9085	R4	250	B-50	B-60	B-70
5.4	80220	8190	1.00	6.4	66850	6830	1.20	9085	R4	280	B-50	B-60	B-70
4.8	90250	9210	0.88	5.7	75210	7680	1.06	9085	R4	315	B-50	B-60	B-70

55kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

* marked model upright type need additional cooling system for continuous operation.

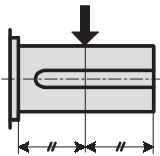
Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
238	2210	225	2.50	286	1840	188	2.50	9040	R2	6.3	B-42	B-52	B-62
211	2490	254	2.50	254	2070	212	2.50	*9040	R2	7.1	B-42	B-52	B-62
188	2800	286	2.25	225	2330	238	2.50	*9040	R2	8	B-42	B-52	B-62
			2.94				3.52	9045	R2	8	B-42	B-52	B-62
167	3150	322	2.25	200	2630	268	2.50	*9040	R2	9	B-42	B-52	B-62
			2.94				3.52	9045	R2	9	B-42	B-52	B-62
150	3500	358	2.05	180	2920	298	2.32	*9040	R2	10	B-42	B-52	B-62
			2.61				3.14	9045	R2	10	B-42	B-52	B-62
134	3920	400	2.05	161	3270	334	2.32	*9040	R2	11.2	B-42	B-52	B-62
			2.61				3.14	9045	R2	11.2	B-42	B-52	B-62
120	4380	447	1.47	144	3650	372	1.76	*9040	R2	12.5	B-42	B-52	B-62
			2.12				2.54	9045	R2	12.5	B-42	B-52	B-62
107	4900	501	1.47	129	4090	417	1.76	*9040	R2	14	B-42	B-52	B-62
			2.12				2.54	9045	R2	14	B-42	B-52	B-62
93.8	5600	572	1.14	113	4670	477	1.36	*9040	R2	16	B-42	B-52	B-62
			1.47				1.76	9045	R2	16	B-42	B-52	B-62
83.8	6300	644	1.47	100.0	5250	536	1.76	*9045	R2	18	B-42	B-52	B-62
75.0	7000	715	1.14	90.0	5840	596	1.36	*9045	R2	20	B-42	B-52	B-62
			1.72				1.96	9050	R3	20	B-44	B-54	B-64
			1.98				2.23	9060	R3	20	B-46	B-56	B-66
			3.03				3.45	9070	R3	20	B-46	B-56	B-66
67.0	7840	801	1.14	80.4	6540	667	1.36	*9045	R2	22.4	B-42	B-52	B-62
			1.72				1.96	9050	R3	22.4	B-44	B-54	B-64
			1.98				2.23	9060	R3	22.4	B-46	B-56	B-66
			3.03				3.45	9070	R3	22.4	B-46	B-56	B-66
60.0	8750	894	1.72	72.0	7300	745	1.96	9055	R3	25	B-44	B-54	B-64
			1.98				2.23	9060	R3	25	B-46	B-56	B-66
			3.03				3.45	9070	R3	25	B-46	B-56	B-66
53.6	9800	1000	1.72	64.3	8170	834	1.96	9055	R3	28	B-44	B-54	B-64
			1.98				2.23	9060	R3	28	B-46	B-56	B-66
			3.03				3.45	9070	R3	28	B-46	B-56	B-66

SELECTION Drive Unit Right Angle Shaft 55kW

Frequency								Model			Page of Dimension Sheet		
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Horizontal	Vertical	Upright
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m							
47.6	11030	1130	1.72	57.1	9190	938	1.96	9055	R3	31.5	B-44	B-54	B-64
			1.98				2.23	9065	R3	31.5	B-46	B-56	B-66
			2.47				2.81	9070	R3	31.5	B-46	B-56	B-66
			3.03				3.45	9075	R3	31.5	B-46	B-56	B-66
42.3	12430	1270	1.52	50.7	10360	1060	1.81	9055	R3	35.5	B-44	B-54	B-64
			1.69				1.90	9060	R3	35.5	B-46	B-56	B-66
			1.98				2.23	9065	R3	35.5	B-46	B-56	B-66
			2.47				2.81	9070	R3	35.5	B-46	B-56	B-66
			3.03				3.45	9075	R3	35.5	B-46	B-56	B-66
37.5	14010	1430	1.43	45.0	11670	1190	1.65	9055	R3	40	B-44	B-54	B-64
			1.69				1.90	9060	R3	40	B-46	B-56	B-66
			2.47				2.81	9070	R3	40	B-46	B-56	B-66
33.3	15760	1610	1.23	40.0	13130	1340	1.49	9055	R3	45	B-44	B-54	B-64
			1.47				1.76	9060	R3	45	B-46	B-56	B-66
			1.69				1.90	9065	R3	45	B-46	B-56	B-66
			2.45				2.81	9070	R3	45	B-46	B-56	B-66
30.0	17510	1790	1.18	36.0	14590	1490	1.41	9055	R3	50	B-44	B-54	B-64
			1.34				1.52	9060	R3	50	B-46	B-56	B-66
			1.69				1.90	9065	R3	50	B-46	B-56	B-66
			1.96				2.23	9070	R3	50	B-46	B-56	B-66
			2.47				2.81	9075	R3	50	B-46	B-56	B-66
26.8	19610	2000	0.94	32.1	16340	1670	1.12	9055	R3	56	B-44	B-54	B-64
			1.16				1.40	9060	R3	56	B-46	B-56	B-66
			1.55				1.85	9065	R3	56	B-46	B-56	B-66
			1.94				2.23	9070	R3	56	B-46	B-56	B-66
			2.47				2.81	9075	R3	56	B-46	B-56	B-66
23.8	22060	2250	0.94	28.6	18380	1880	1.14	9055	R3	63	B-44	B-54	B-64
			1.09				1.23	9060	R3	63	B-46	B-56	B-66
			1.34				1.52	9065	R3	63	B-46	B-56	B-66
			1.60				1.81	9070	R3	63	B-46	B-56	B-66
			1.96				2.23	9075	R3	63	B-46	B-56	B-66
21.1	24860	2540	0.90	25.4	20720	2120	1.09	9060	R3	71	B-46	B-56	B-66
			1.22				1.46	9065	R3	71	B-46	B-56	B-66
			1.52				1.81	9070	R3	71	B-46	B-56	B-66
			1.96				2.23	9075	R3	71	B-46	B-56	B-66
18.8	28010	2860	1.09	22.5	23340	2380	1.23	9065	R3	80	B-46	B-56	B-66
			1.20				1.45	9070	R4	80	B-50	B-60	B-70
			1.60				1.81	9075	R3	80	B-46	B-56	B-66
			1.81				2.05	9080	R4	80	B-50	B-60	B-70
16.7	31520	3220	0.96	20.0	26260	2680	1.15	9065	R3	90	B-46	B-56	B-66
			1.20				1.45	9070	R4	90	B-50	B-60	B-70
			1.60				1.81	9075	R3	90	B-46	B-56	B-66
			1.81				2.05	9080	R4	90	B-50	B-60	B-70
15.0	35020	3580	1.18	18.0	29180	2980	1.41	9070	R4	100	B-50	B-60	B-70
			1.80				2.05	9080	R4	100	B-50	B-60	B-70
13.4	39220	4000	0.98	16.1	32680	3340	1.18	9070	R4	112	B-50	B-60	B-70
			1.20				1.45	9075	R4	112	B-50	B-60	B-70
			1.54				1.85	9080	R4	112	B-50	B-60	B-70
			1.81				2.05	9085	R4	112	B-50	B-60	B-70
12.0	43770	4470	0.90	14.4	36480	3720	1.09	9070	R4	125	B-50	B-60	B-70
			1.20				1.45	9075	R4	125	B-50	B-60	B-70
			1.36				1.63	9080	R4	125	B-50	B-60	B-70
			1.81				2.05	9085	R4	125	B-50	B-60	B-70
10.7	49020	5010	1.05	12.9	40850	4170	1.25	9075	R4	140	B-50	B-60	B-70
			1.18				1.41	9080	R4	140	B-50	B-60	B-70
			1.61				1.94	9085	R4	140	B-50	B-60	B-70
9.4	56030	5720	0.96	11.3	46690	4770	1.14	9075	R4	160	B-50	B-60	B-70
			1.03				1.23	9080	R4	160	B-50	B-60	B-70
			1.43				1.72	9085	R4	160	B-50	B-60	B-70
8.3	63030	6440	0.94	10.0	52530	5360	1.12	9080	R4	180	B-50	B-60	B-70
			1.23				1.49	9085	R4	180	B-50	B-60	B-70
7.5	70030	7150	0.89	9.0	58360	5960	1.07	9080	R4	200	B-50	B-60	B-70
			1.03				1.23	9085	R4	200	B-50	B-60	B-70
6.7	78440	8010	0.98	8.0	65360	6670	1.18	9085	R4	224	B-50	B-60	B-70
6.0	87540	8940	0.94	7.2	72950	7450	1.12	9085	R4	250	B-50	B-60	B-70

SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Allowable Radial Load (kN)



Sheet 1

Applicable to configurations: Double Reduction RMR, LML
Triple Reduction RML, LMR/Quadruple Reduction RMR, LML

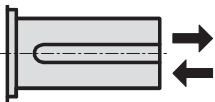
L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	17.7	29.4	29.9	32.4	37.8	46.6	39.7	49.1	44.1	77.0	100.1
	160	20.1	31.4	32.4	33.8	39.7	48.1	41.7	50.5	46.1	89.0	108.9
	100	25.0	35.3	38.7	39.2	47.1	53.5	47.6	54.4	54.4	99.0	122.1
	63	26.5	35.3	42.2	47.1	54.9	62.3	58.9	64.3	65.2	131.5	125.6
	40	26.5	35.3	42.2	49.1	54.9	67.7	71.1	78.0	79.0	141.0	125.1
	≤ 25	26.5	35.3	42.2	49.1	54.9	67.7	81.4	95.2	99.1	139.5	122.6
Heavy duty bearing model	250						71.1	93.7	70.1	122.5	122.5	141.8
	160						78.0	94.7	77.5	137.5	137.5	132.4
	100						81.4	98.1	92.2	149.5	149.5	127.0
	63						81.4	98.1	114.8	149.0	149.0	125.6
	40						81.4	98.1	117.7	148.5	148.5	125.1
	≤ 25						81.4	98.1	117.7	147.0	147.0	122.6

Sheet 2

Applicable to configurations: Double Reduction RML, LMR
Triple Reduction RMR, LML/Quadruple Reduction RML, LMR

L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	9.8	21.6	19.1	21.6	22.6	31.4	16.7	28.4	17.2	44.0	58.4
	160	12.3	23.1	20.6	23.1	24.0	31.4	18.1	27.0	17.7	55.5	64.3
	100	16.7	29.4	26.0	27.5	28.4	35.3	22.1	30.4	25.5	63.5	74.6
	63	21.6	35.3	32.9	35.3	37.3	42.7	33.4	38.3	33.8	95.0	104.5
	40	26.5	35.3	41.7	43.7	48.6	55.4	45.1	51.5	47.6	129.0	146.7
	≤ 25	26.5	35.3	42.2	49.1	54.9	67.7	60.8	68.7	67.7	167.0	171.2
Heavy duty bearing model	250						46.1	74.6	40.2	90.0	90.0	114.8
	160						52.0	72.1	45.6	103.5	103.5	125.1
	100						60.3	79.0	59.4	116.0	116.0	140.8
	63						81.4	96.6	80.0	152.5	152.5	174.1
	40						81.4	98.1	108.9	192.0	192.0	191.8
	≤ 25						81.4	98.1	117.7	180.5	180.5	171.2

Allowable Axial Load (kN)



L.Speed Shaft Speed r/min	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	14.7	23.1	26.5	31.4	32.9	31.9	27.0	43.2	28.0	23.5	23.5
	160	18.1	23.1	28.4	31.4	33.4	31.9	28.9	43.2	28.4	27.5	27.5
	100	24.5	23.1	32.9	31.4	37.3	31.9	34.3	43.2	39.7	32.9	32.9
	63	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	52.5	45.6	45.6
	40	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	63.3	60.3
	≤ 25	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	67.7	60.3
Heavy duty bearing model	250						23.1	34.8	18.6	18.6	56.9	56.9
	160						25.0	33.4	21.1	21.1	56.9	56.9
	100						29.4	36.8	27.5	27.5	56.9	56.9
	63						39.2	43.2	36.3	36.3	56.9	56.9
	40						39.2	43.2	49.1	49.1	56.9	56.9
	≤ 25						39.2	43.2	56.9	56.9	56.9	56.9

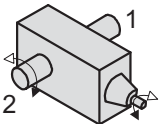
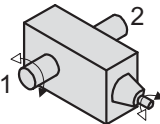
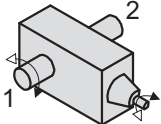
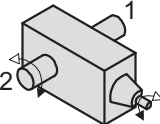
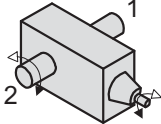
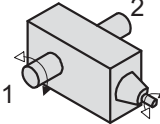
SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25

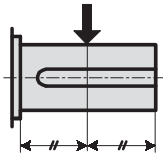
Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft).
Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RMB,LMB)
 - See sheet1 when the radial load is applied only to the shaft1.
 - See sheet2 when the radial load is applied only to the shaft2.
 - Consult us when the radial load is applied to both shafts.
- Refer to B-6 to check overhang load, and calculate equivalent load at peak load value.
Be careful under following condition because large peak load may be generated.
Application: When the inertia is large, such as for crane driving, slewing, etc.
Motor: inline motor
Connecting method: Sprocket or gear
Consult us when the peak load is larger than allowable value.

	RMB	LMB
Double Reduction Ratio		
Triple Reduction Ratio		
Quadruple Reduction Ratio		

SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Allowable Radial Load (kgf)



Sheet 1

Applicable to configurations: Double Reduction RMR, LML
Triple Reduction RML, LMR/Quadruple Reduction RMR, LML

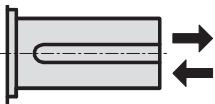
	L.Speed Shaft Speed r/min	Size of Reducer											
		9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	1800	3000	3050	3300	3850	4750	4050	5000	4500	7850	7850	10200
	160	2050	3200	3300	3450	4050	4900	4250	5150	4700	9050	9050	11100
	100	2550	3600	3950	4000	4800	5450	4850	5550	5550	10100	10100	12450
	63	2700	3600	4300	4800	5600	6350	6000	6550	6650	13400	13400	12800
	40	2700	3600	4300	5000	5600	6900	7250	7950	8050	14350	14350	12750
	≤ 25	2700	3600	4300	5000	5600	6900	8300	9700	10100	14200	14200	12500
Heavy duty bearing model	250							7250	9550	7150	12500	12500	14450
	160							7950	9650	7900	14000	14000	13500
	100							8300	10000	9400	15250	15250	12950
	63							8300	10000	11700	15200	15200	12800
	40							8300	10000	12000	15150	15150	12750
	≤ 25							8300	10000	12000	15000	15000	12500

Sheet 2

Applicable to configurations: Double Reduction RML, LMR
Triple Reduction RMR, LML/Quadruple Reduction RML, LMR

	L.Speed Shaft Speed r/min	Size of Reducer											
		9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	1000	2200	1950	2200	2300	3200	1700	2900	1750	4500	4500	5950
	160	1250	2350	2100	2350	2450	3200	1850	2750	1800	5650	5650	6550
	100	1700	3000	2650	2800	2900	3600	2250	3100	2600	6450	6450	7600
	63	2200	3600	3350	3600	3800	4350	3400	3900	3450	9700	9700	10650
	40	2700	3600	4250	4450	4950	5650	4600	5250	4850	13150	13150	14950
	≤ 25	2700	3600	4300	5000	5600	6900	6200	7000	6900	17000	17000	17450
Heavy duty bearing model	250							4700	7600	4100	9150	9150	11700
	160							5300	7350	4650	10550	10550	12750
	100							6150	8050	6050	11800	11800	14350
	63							8300	9850	8150	15550	15550	17750
	40							8300	10000	11100	19550	19550	19550
	≤ 25							8300	10000	12000	18400	18400	17450

Allowable Axial Load (kgf)



	L.Speed Shaft Speed r/min	Size of Reducer											
		9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	1500	2350	2700	3200	3350	3250	2750	4400	2850	2850	2400	2400
	160	1850	2350	2900	3200	3400	3250	2950	4400	2900	2900	2800	2800
	100	2500	2350	3350	3200	3800	3250	3500	4400	4050	4050	3350	3350
	63	2700	2350	3350	3200	3800	3250	5000	4400	5350	5350	4650	4650
	40	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6450	6150
	≤ 25	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6900	6150
Heavy duty bearing model	250							2350	3550	1900	1900	5800	5800
	160							2550	3400	2150	2150	5800	5800
	100							3000	3750	2800	2800	5800	5800
	63							4000	4400	3700	3700	5800	5800
	40							4000	4400	5000	5000	5800	5800
	≤ 25							4000	4400	5800	5800	5800	5800

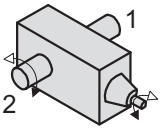
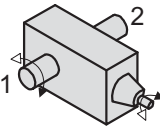
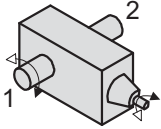
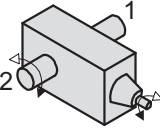
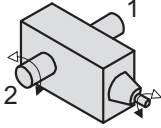
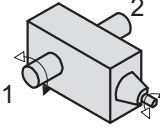
SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

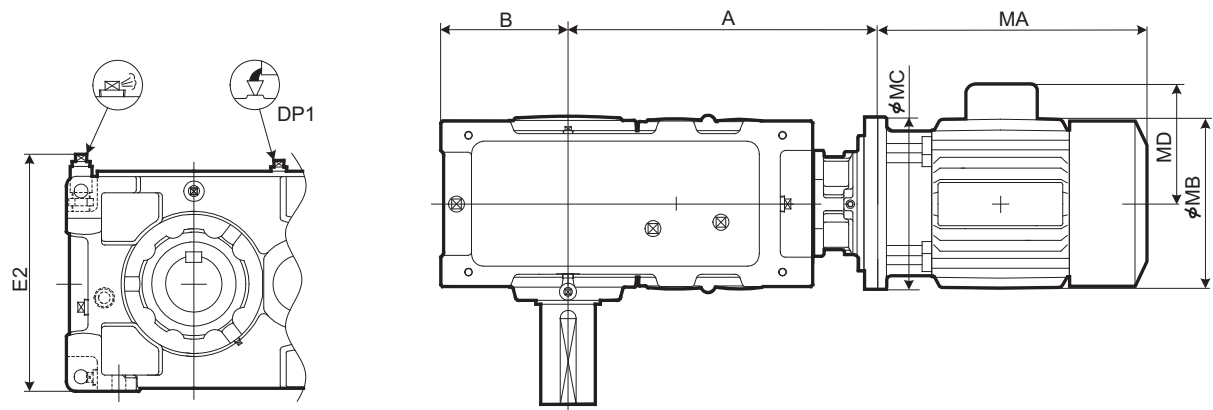
Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25

Notes

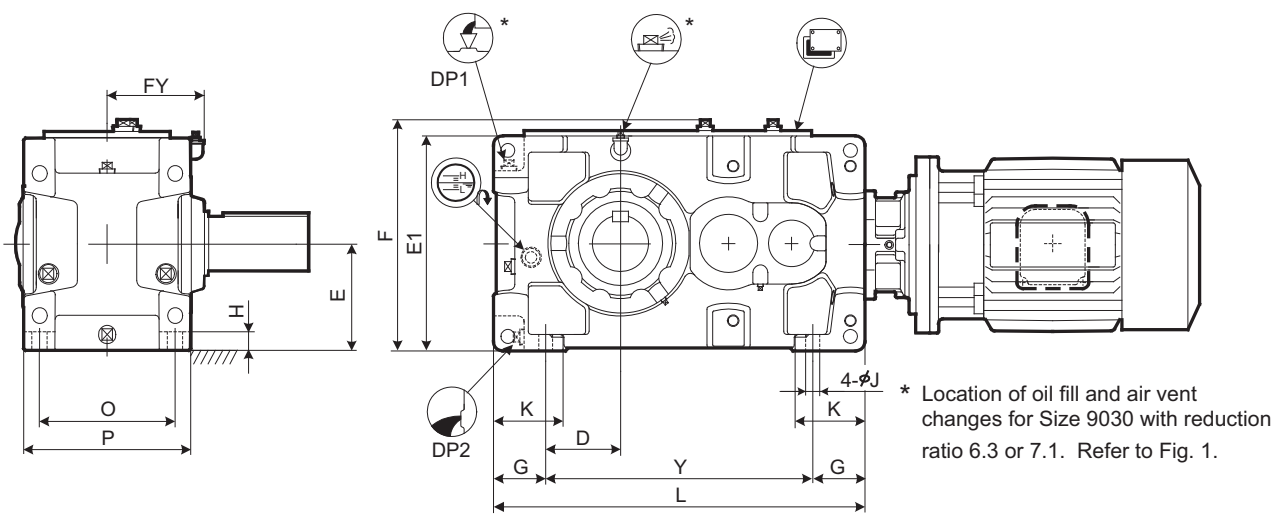
- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft). Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RMB,LMB)
 - See sheet1 when the radial load is applied only to the shaft1.
 - See sheet2 when the radial load is applied only to the shaft2.
 - Consult us when the radial load is applied to both shafts.
- Refer to B-6 to check overhang load, and calculate equivalent load at peak load value. Be careful under following condition because large peak load may be generated.
 Application: When the inertia is large, such as for crane driving, slewing, etc.
 Motor: inline motor
 Connecting method: Sprocket or gear
 Consult us when the peak load is larger than allowable value.

	RMB	LMB
Double Reduction Ratio		
Triple Reduction Ratio		
Quadruple Reduction Ratio		



[Fig. 1] Location of oil fill and air vent for Size 9030 with reduction ratio 6.3 or 7.1

Drive Unit
Selection
Tables
Dimension
Tables



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Technical drawing of a solid shaft with dimensions TU1, U1, T1, L1, Y1, X1, Z1, W1, and V1.	Technical drawing of a hollow shaft (Shrink Disk Type) with dimensions TU2, U2, T2, V2, and V3. Refer to the Page D-18 for details.	Technical drawing of a hollow shaft (Key Type) with dimensions TU4, U4, T4, V4, and V5. Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB
Diagram of RML shaft arrangement configuration.	Diagram of RMR shaft arrangement configuration.	Diagram of RMB shaft arrangement configuration.	Diagram of LMR shaft arrangement configuration.	Diagram of LML shaft arrangement configuration.	Diagram of LMB shaft arrangement configuration.

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Double Reduction Horizontal Mounting 9030 ▶ 9045

Size	A	B	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9030		200	110	160	320	353	349	154	90	28	24	120	590	215	265	410
9035	See	219	129	185	370		399	154	90	28	24	120	640	215	265	460
9040	below	235	120	200	400		431	172	115	30	28	150	685	255	315	455
9045		256	141	220	440		471	172	115	30	28	150	745	255	315	515

Size	DP1	DP2	Oil Qty. (L)	Wt.[kg]*	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	10	240	255
9035	3/4"	3/4"	12	260	275
9040	1"	1"	16	340	350
9045	1"	1"	18	400	410

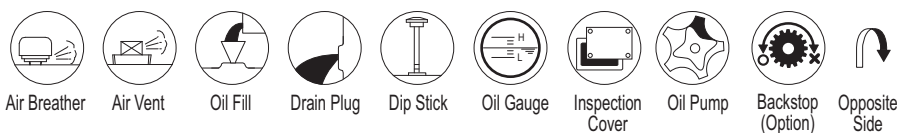
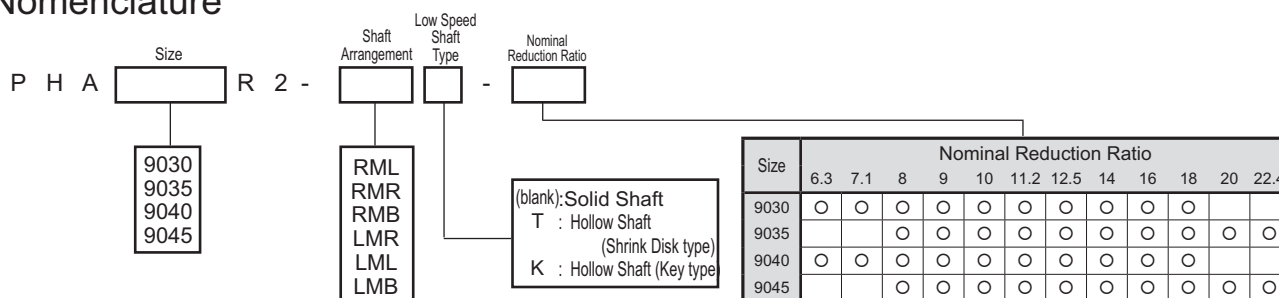
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

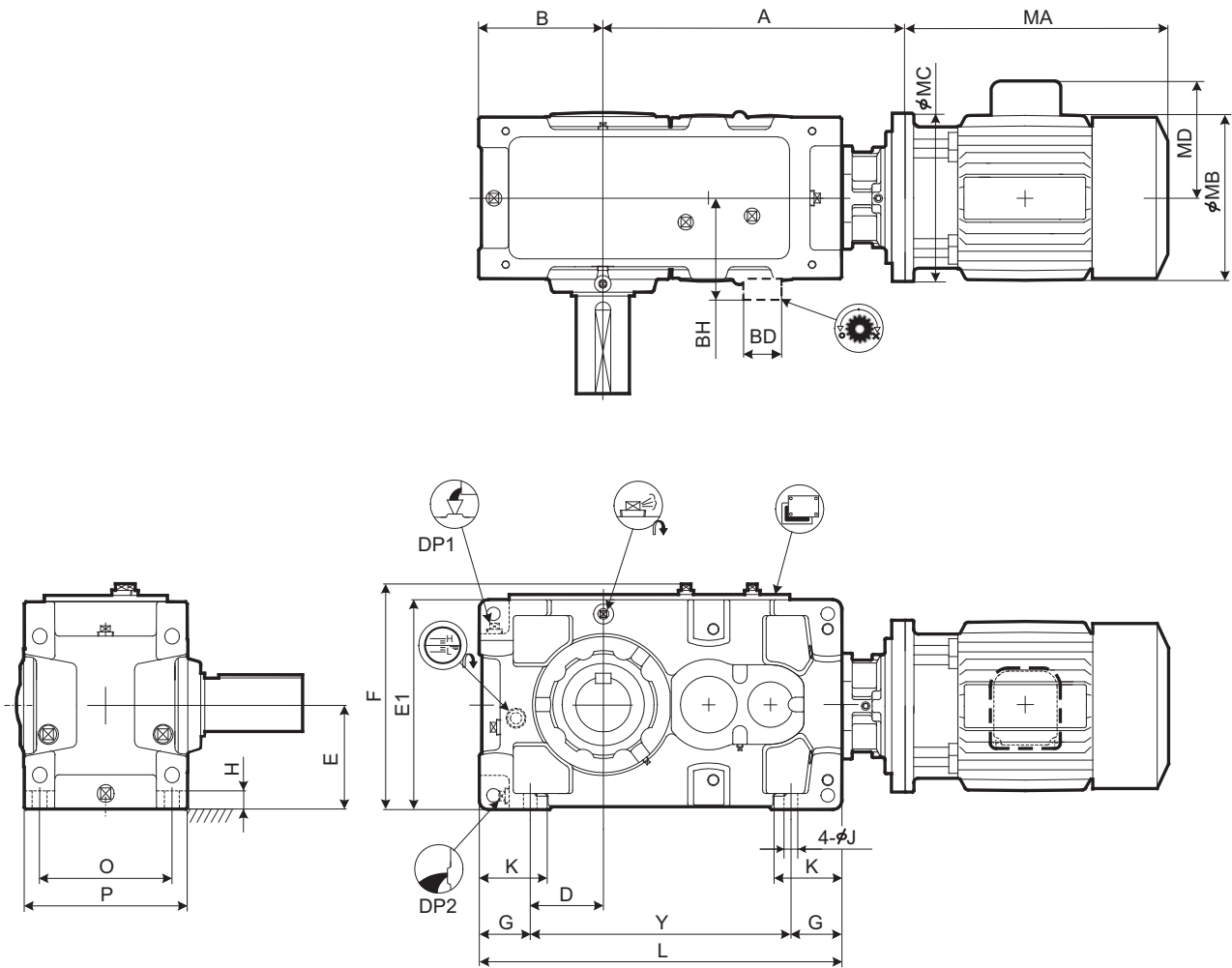
kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9030	9035	9040	9045		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	540	571			11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	11	131	175
18.5	625	394	400	835	394	400	297		601	625	664	33	213	258
22	625	394	400	835	394	400	297		601	625	664	33	213	258
30	625	394	400	835	394	400	297			625	664	33	224	280
37	715.5	394	450	930.5	394	450	297			625	664	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	15	259	320
55	769.5	484	550				412			625	664	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1												
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105

Unit: mm

Nomenclature

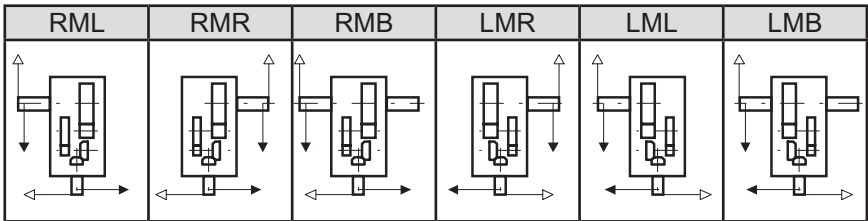




Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Horizontal Mounting 9030 ▶ 9055

Size	A	B	D	E	E1	F	G	H	J	K	L	O	P	Y
9030		200	110	160	320	349	90	28	24	120	590	215	265	410
9035		219	129	185	370	399	90	28	24	120	640	215	265	460
9040	See below	235	120	200	400	431	115	30	28	150	685	255	315	455
9045		256	141	220	440	471	115	30	28	150	745	255	315	515
9050		255	138.5	210	420	451	116.5	32	28	150	775	285	345	542
9055		286	171	245	490	521	115	32	28	150	845	285	345	615

Size	BD	BH	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
						5.5-30kW	37-55kW
9030			3/4"	3/4"	10	240	250
9035			3/4"	3/4"	12	260	270
9040			1"	1"	16	325	345
9045			1"	1"	18	385	405
9050	150	263	1"	1"	21	475	485
9055	150	263	1"	1"	28	535	545

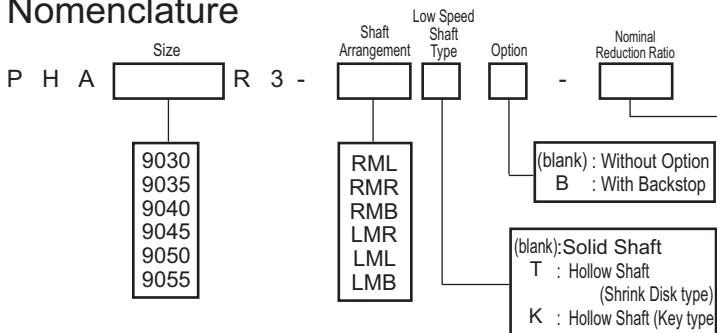
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	540	571	595	634			8	43	54
7.5	415	251	315	510	251	315	185	540	571	595	634	675	714	8	57	77
11	480	251	350	575	251	350	188	540	571	595	634	675	714	11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	675	714	11	131	175
18.5	625	394	400	835	394	400	297		601	625	664	705	744	33	213	258
22	625	394	400	835	394	400	297		601	625	664	705	744	33	213	258
30	625	394	400	835	394	400	297			625	664	705	744	33	224	280
37	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
55	769.5	484	550				412					705	744	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9030	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○		○	○	○		
9040	○	○	○	○	○	○	○	○		○	○	○	○			
9045				○	○	○	○	○	○	○		○	○	○		
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



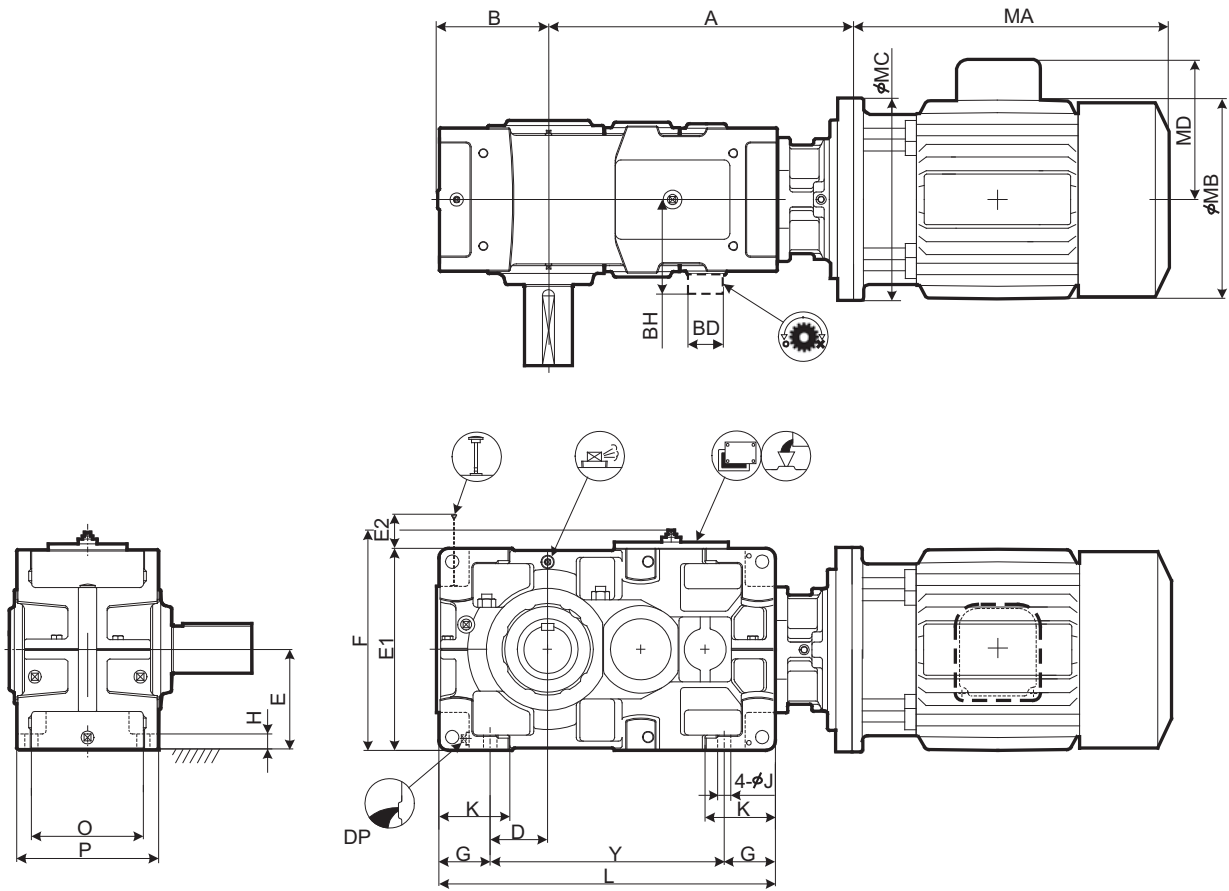
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Technical drawing of a solid shaft with dimensions TU1, U1, T1, L1, φV1, Y1, X1, Z1, and W1.	Technical drawing of a hollow shaft (Shrink Disk Type) with dimensions TU2, U2, T2, φV2, and φV3. Refer to the Page D-18 for details.	Technical drawing of a hollow shaft (Key Type) with dimensions TU4, U4, T4, φV4, and φV5. Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB
Diagram of RML shaft arrangement configuration.	Diagram of RMR shaft arrangement configuration.	Diagram of RMB shaft arrangement configuration.	Diagram of LMR shaft arrangement configuration.	Diagram of LML shaft arrangement configuration.	Diagram of LMB shaft arrangement configuration.

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Horizontal Mounting 9060 ▶ 9075

Size	A	B	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060	See below	299	151	265	530	158	578	135	35	35	180	885	310	380	615
9065		338	190	300	600	123	648	135	35	35	180	970	310	380	700
9070		336	163	300	600	183	648	160	40	42	215	1020	350	430	700
9075		383	210	335	670	148	718	160	52	42	220	1120	350	430	800

Size	BD	BH	DP	Oil Qty. (L)	Wt. [kg]*	
					5.5-30kW	37-55kW
9060	175	308	1"	29	680	690
9065	175	308	1"	33	805	815
9070	190	330	1"	45	950	960
9075	190	330	1"	52	1200	1210

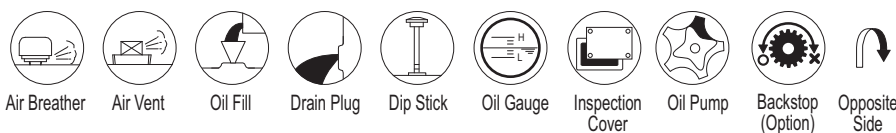
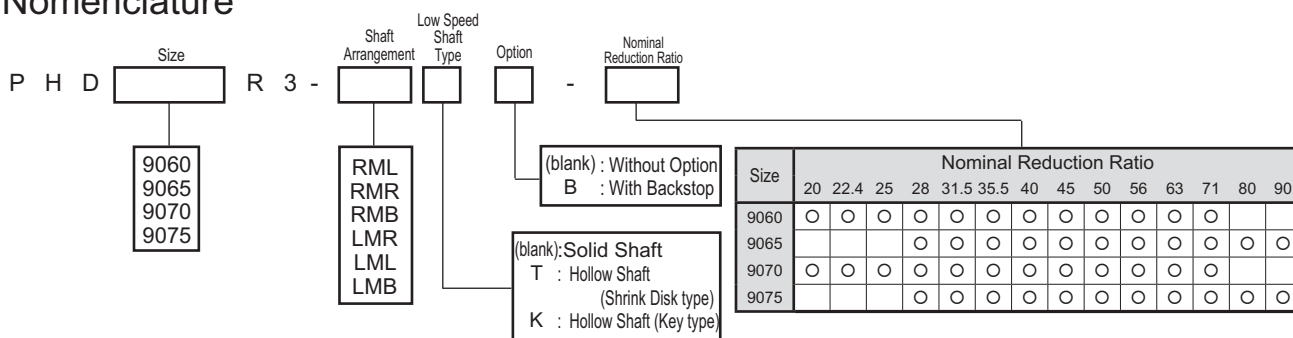
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9060	9065	9070	9075		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	744	790			11	76	96
15	545	324	350	700	324	350	232	744	790			11	131	175
18.5	625	394	400	835	394	400	297	774	820	882	935	33	213	258
22	625	394	400	835	394	400	297	774	820	882	935	33	213	258
30	625	394	400	835	394	400	297	774	820	882	935	33	224	280
37	715.5	394	450	930.5	394	450	297	774	820	882	935	15	259	320
45	715.5	394	450	930.5	394	450	297	774	820	882	935	15	259	320
55	769.5	484	550				412	774	820	882	935	29	276	

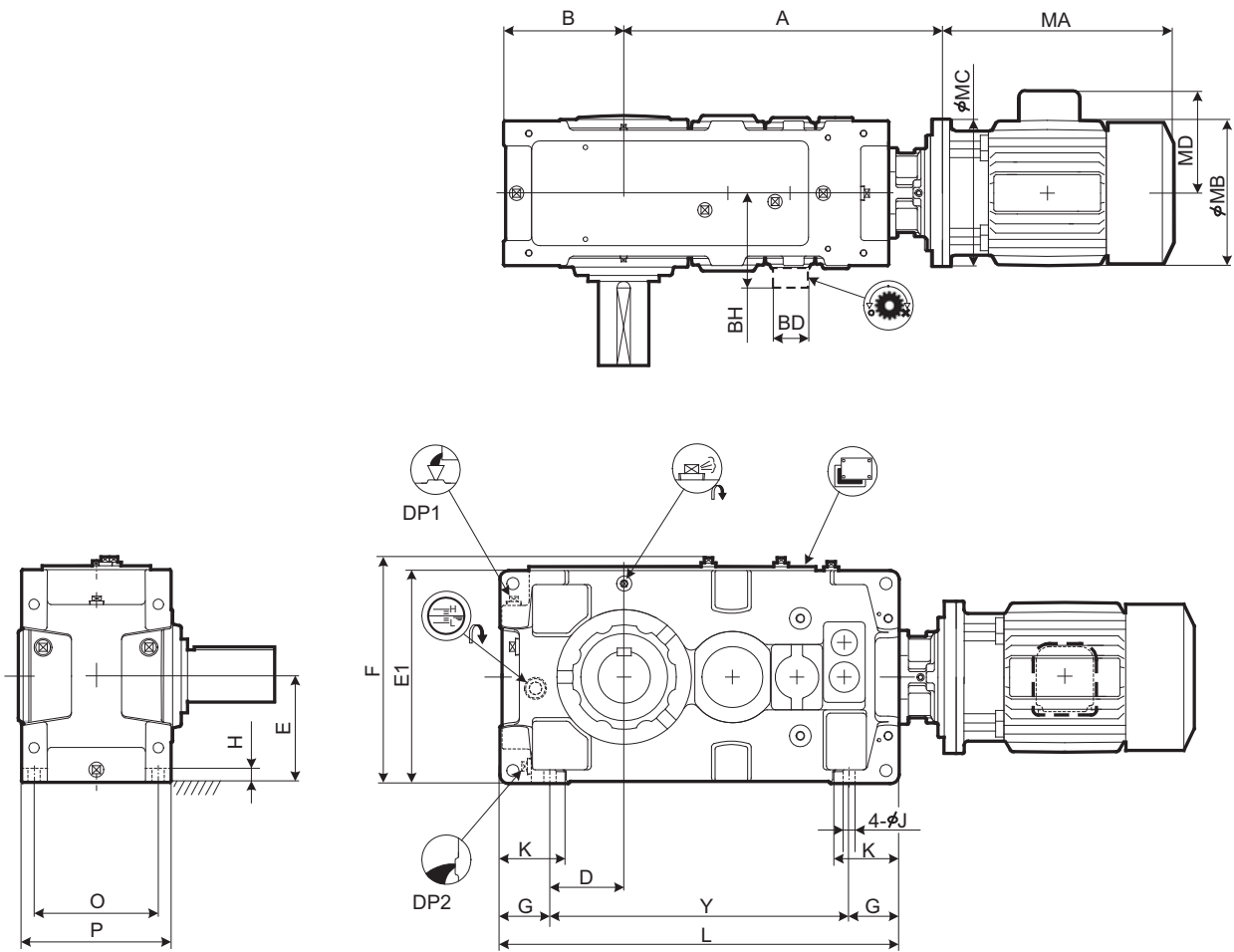
Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148

Unit: mm

Nomenclature



Drive Unit
Selection
Tables
Dimension
Tables



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Horizontal Mounting 9040 ▶ 9055

Size	A	B	D	E	E1	F	G	H	J	K	L	O	P	Y
9040	See below	235	120	200	400	431	115	30	28	150	759	255	315	529
9045		256	141	220	440	471	115	30	28	150	819	255	315	589
9050		255	138.5	210	420	451	116.5	32	28	150	848	285	345	615
9055		286	171	245	490	521	115	32	28	150	918	285	345	688

Size	BD	BH	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
						5.5-30kW	37-55kW
9040			1"	1"	19	355	365
9045			1"	1"	21	425	435
9050	150	263	1"	1"	24	490	500
9055	150	263	1"	1"	29	550	560

*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD						Without Brake	With Brake
	MA	MB	MC	MA	MB	MC		9040	9045	9050	9055			
5.5	382	212	315	454	212	315	144	674	713	743	782	8	43	54
7.5	415	251	315	510	251	315	185	674	713	743	782	8	57	77
11	480	251	350	575	251	350	188	674	713	743	782	11	76	96
15	545	324	350	700	324	350	232	674	713	743	782	11	131	175
18.5	625	394	400	835	394	400	297	704	743	773	812	33	213	258
22	625	394	400	835	394	400	297	704	743	773	812	33	213	258
30	625	394	400	835	394	400	297			773	812	33	224	280

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1												
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature

P H A Size R 4 - Shaft Arrangement Low Speed Shaft Type Option - Nominal Reduction Ratio

9040
9045
9050
9055

RML
RMR
RMB
LMR
LML
LMB

(blank) : Without Option
 B : With Backstop

(blank): Solid Shaft
 T : Hollow Shaft (Shrink Disk type)
 K : Hollow Shaft (Key type)

Size	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9040	○	○	○	○	○	○										
9045				○	○	○	○	○								
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9055				○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



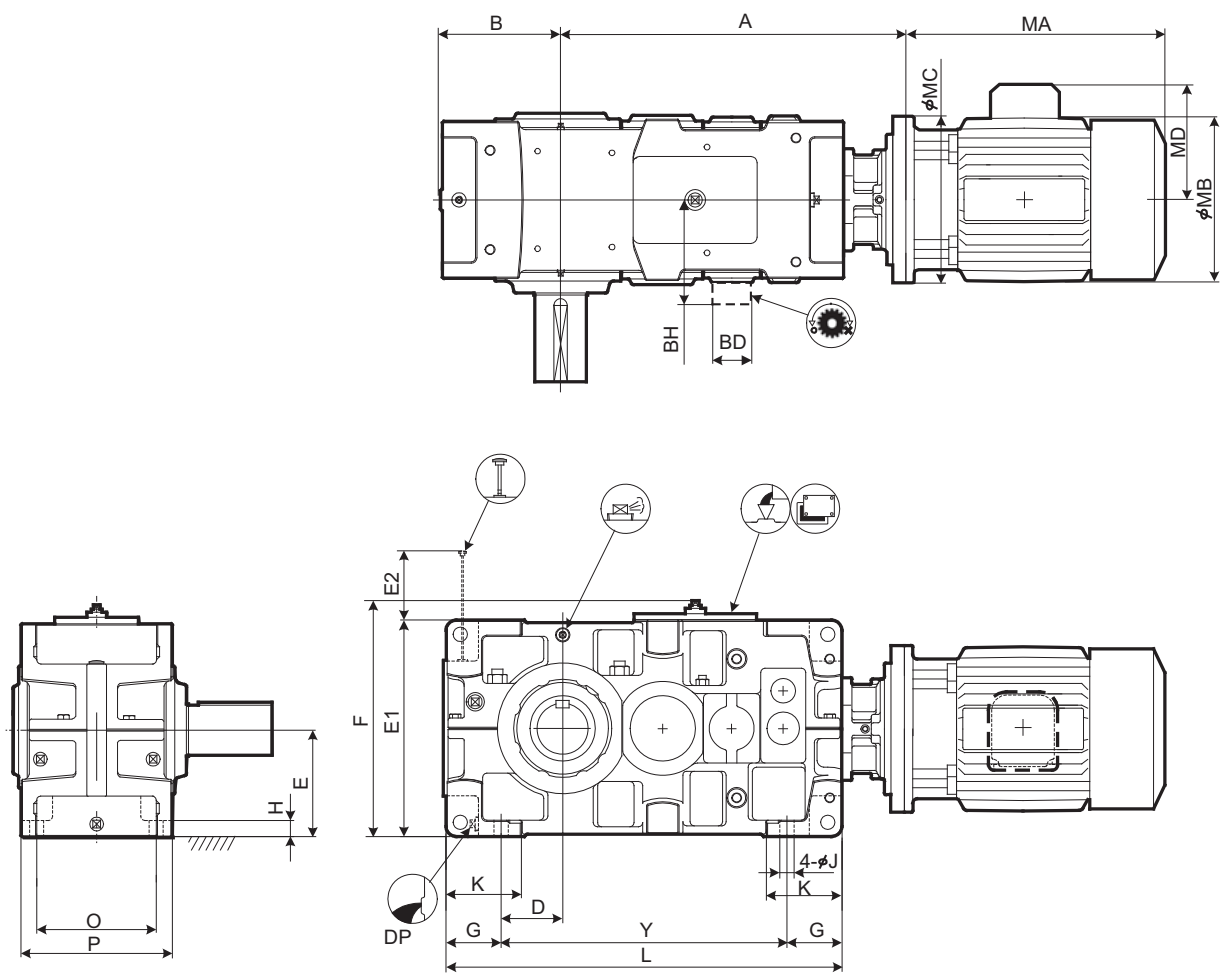
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Horizontal Mounting 9060 ▶ 9085

Size	A	B	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060		299	151	265	530	121	578	135	35	35	180	970	310	380	700
9065		338	190	300	600	86	648	135	35	35	180	1055	310	380	785
9070	See below	336	163	300	600	140	648	160	40	42	215	1115	350	430	795
9075		383	210	335	670	105	718	160	52	42	220	1215	350	430	895
9080		378	205	335	670	162	718	160	52	42	220	1275	380	460	955
9085		422	249	375	750	122	798	160	52	42	220	1375	380	460	1055

Size	BD	BH	DP	Oil Qty. (L)	Wt. [kg]*	
					5.5-30kW	37-55kW
9060	175	308	1"	38	700	710
9065	175	308	1"	43	855	865
9070	190	330	1"	57	990	1000
9075	190	330	1"	67	1210	1220
9080	210	365	1"	73	1410	1420
9085	210	365	1"	90	1670	1680

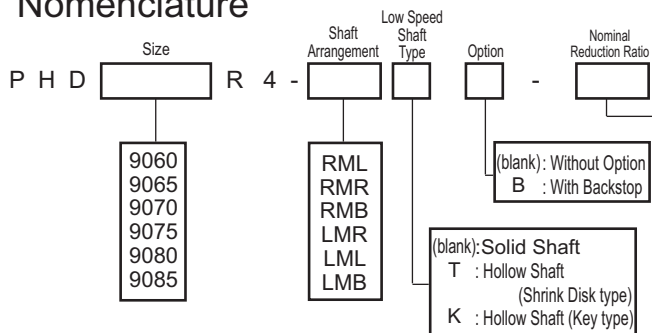
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange [kg]		Mass of Motor [kg]	
	Without Brake			With Brake			MD									Without Brake	With Brake
	MA	MB	MC	MA	MB	MC		9060	9065	9070	9075	9080	9085				
5.5	382	212	315	454	212	315	144	829	875	947	1000	1055	1111	8		43	54
7.5	415	251	315	510	251	315	185	829	875	947	1000	1055	1111	8		57	77
11	480	251	350	575	251	350	188	829	875	947	1000	1055	1111	11		76	96
15	545	324	350	700	324	350	232	829	875	947	1000	1055	1111	11		131	175
18.5	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33		213	258
22	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33		213	258
30	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33		224	280
37	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15		259	320
45	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15		259	320
55	769.5	484	550				412			977	1030	1085	1141	29		276	

Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio																		
	80	90	100	112	125	140	160	180	200	224	250	260	280	315	355	400	450		
9060		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9065				○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



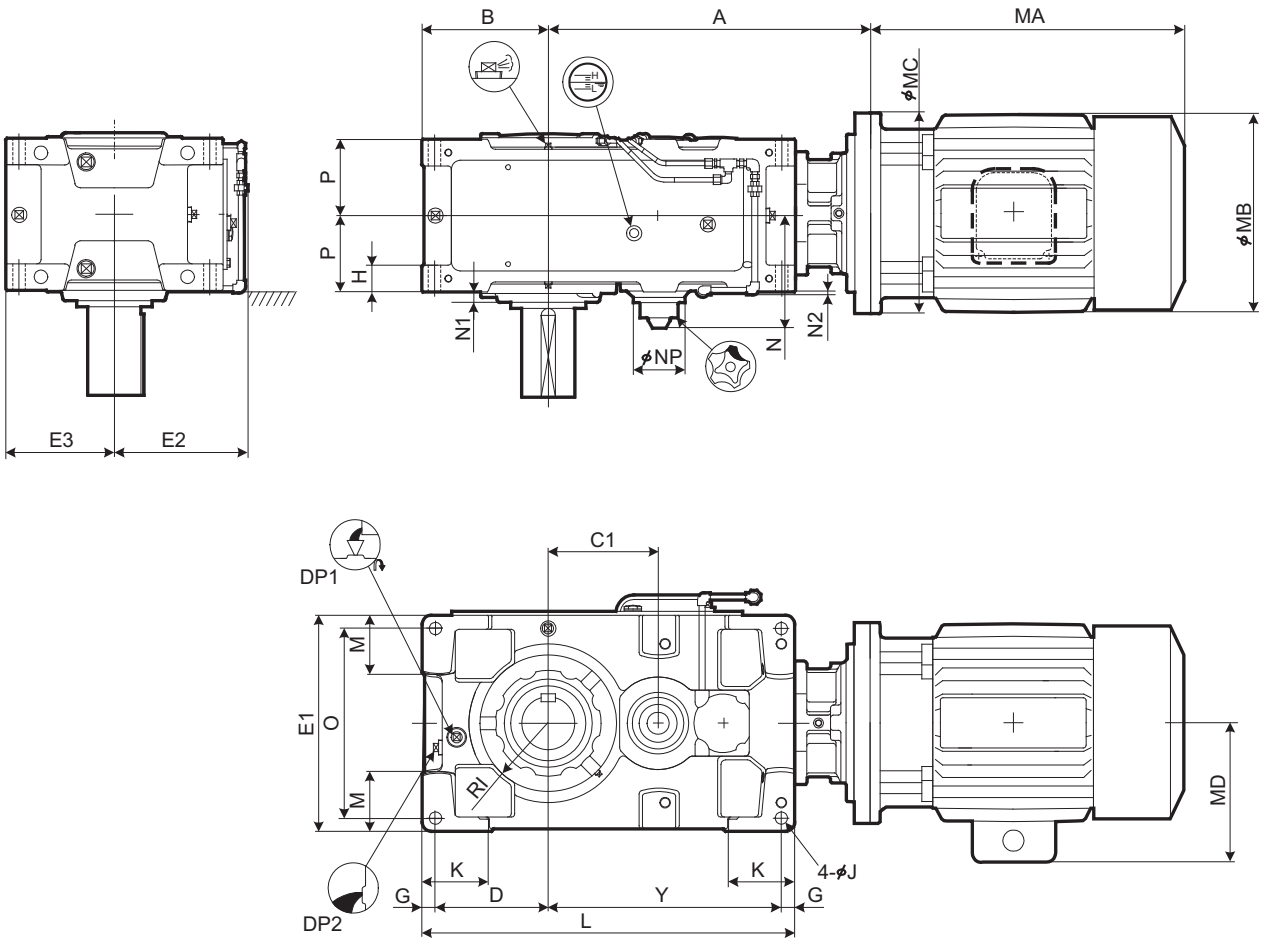
Oil Pump



Backstop (Option)



Opposite Side



Drive Unit

Selection
Tables

Dimension
Tables

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Double Reduction Vertical Mounting 9030 ▶ 9045

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9030	See below	200	155	175	320	220	160	25	50	105	24	120	590	85	224	22	9	117	270	132.5	365
9035		219	186	194	370	245	185	25	50	120	24	120	640	100	224	22	9	117	320	132.5	396
9040		235	180	205	400	260	200	30	60	120	28	150	685	100	241.5	15	2	117	340	157.5	420
9045		256	219	266	440	266	220	30	60	140	28	150	745	120	241.5	17.5	2	117	380	157.5	459

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	7	240	255
9035	3/4"	3/4"	9	260	275
9040	1"	1"	19	340	350
9045	1"	1"	23	400	410

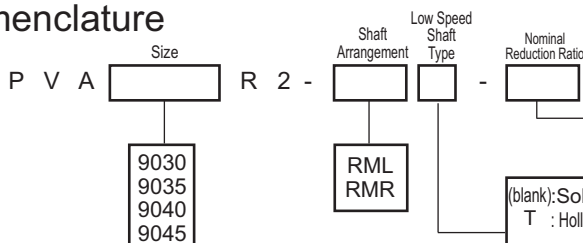
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9030	9035	9040	9045		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	540	571			11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	11	131	175
18.5	625	394	400	835	394	400	297		601	625	664	33	213	258
22	625	394	400	835	394	400	297		601	625	664	33	213	258
30	625	394	400	835	394	400	297			625	664	33	224	280
37	715.5	394	450	930.5	394	450	297			625	664	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	15	259	320
55	769.5	484	550				412			625	664	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1												
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9030	○	○	○	○	○	○	○	○	○	○	○	○
9035		○	○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○	○	○
9045			○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



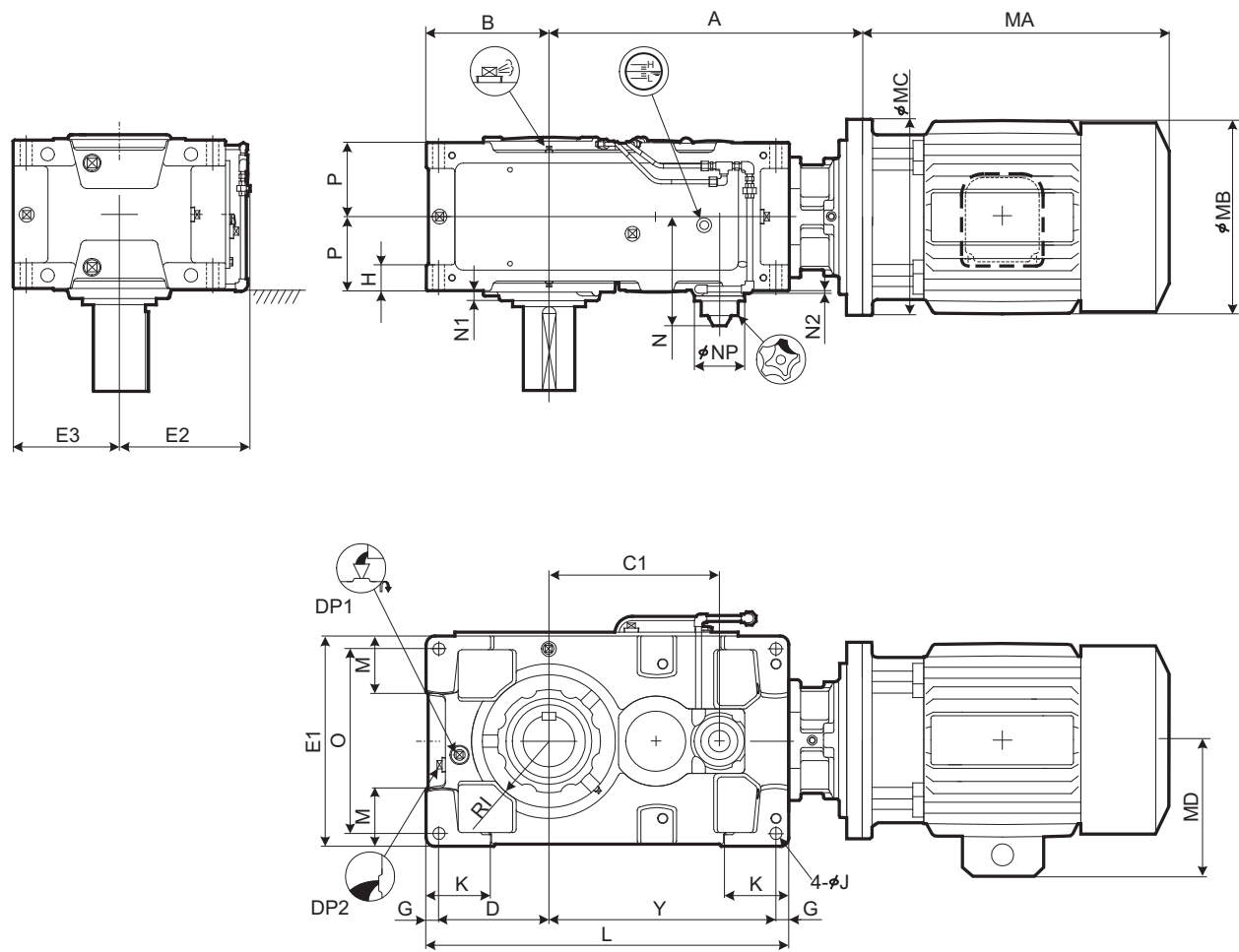
Oil Pump



Backstop (Option)



Opposite Side



Drive Unit

Selection Tables

Dimension Tables

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Vertical Mounting 9030 ▶ 9055

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9030		200	264	175	320	220	160	25	50	105	24	120	590	85	211	22	9	100	270	132.5	365
9035		219	295	194	370	245	185	25	50	120	24	120	640	100	211	22	9	100	320	132.5	396
9040	See below	235	306	205	400	260	200	30	60	120	28	150	685	100	237.5	15	2	117	340	157.5	420
9045		256	345	226	440	266	220	30	60	140	28	150	745	120	237.5	17.5	2	117	380	157.5	459
9050		255	358	225	420	270	210	30	60	140	28	150	775	110	257.5	23	7	117	360	172.5	490
9055		286	397	256	490	305	245	30	60	155	28	150	845	135	257.5	23	7	117	430	172.5	529

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	9	240	250
9035	3/4"	3/4"	12	260	270
9040	1"	1"	18	325	345
9045	1"	1"	22	385	405
9050	1"	1"	21	475	485
9055	1"	1"	30	535	545

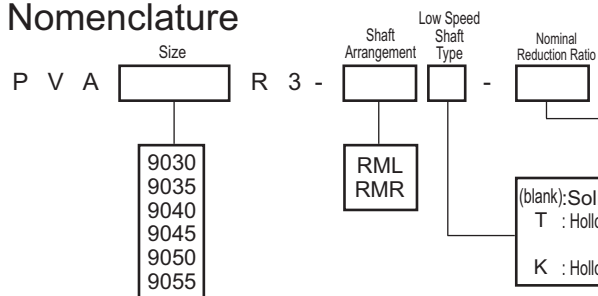
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	540	571	595	634			8	43	54
7.5	415	251	315	510	251	315	185	540	571	595	634	675	714	8	57	77
11	480	251	350	575	251	350	188	540	571	595	634	675	714	11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	675	714	11	131	175
18.5	625	394	400	835	394	400	297		601	625	664	705	744	33	213	258
22	625	394	400	835	394	400	297		601	625	664	705	744	33	213	258
30	625	394	400	835	394	400	297			625	664	705	744	33	224	280
37	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
55	769.5	484	550				412					705	744	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio															
9030	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9035																
9040																
9045																
9050																
9055																



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



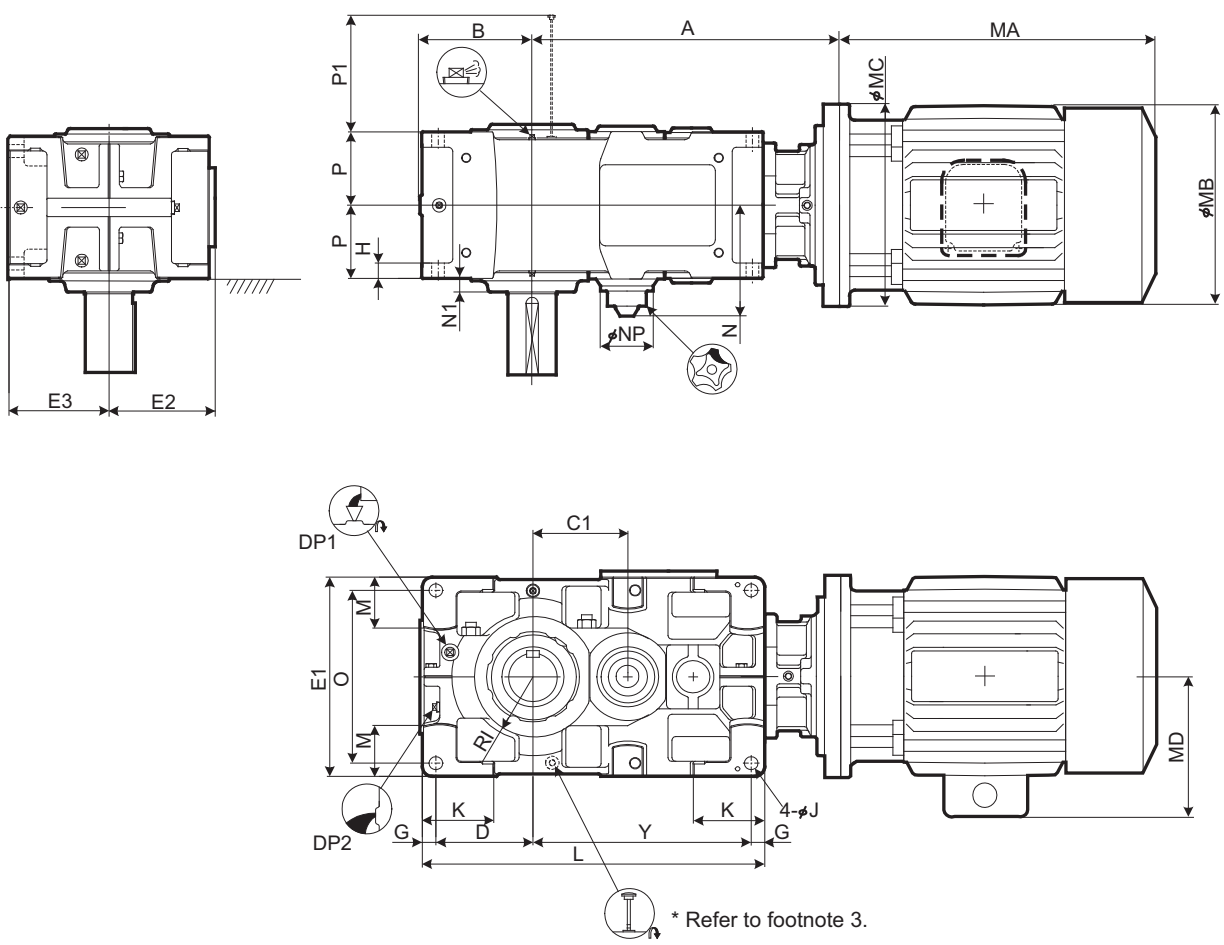
Oil Pump



Backstop (Option)



Opposite Side



Drive Unit

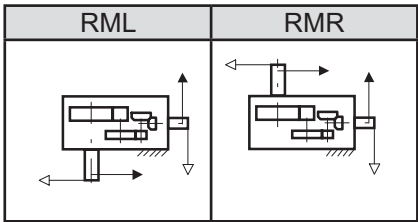
Selection
Tables

Dimension
Tables

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	 Refer to the Page D-18 for details.	 Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RMR is equipped with visible gauge. Refer to page D-28.

DIMENSIONS Right Angle Triple Reduction Vertical Mounting 9060 ▶ 9075

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060		299	414	251	530	282	265	35	35	160	35	180	885	140	277.5	35	117	460	190	213	564
9065	See below	338	460	290	600	317	300	35	35	175	35	180	970	175	277.5	38	117	530	190	213	610
9070		336	482	283	600	317	300	40	40	175	42	215	1020	155	302.5	38	117	520	215	233	657
9075		383	535	330	670	352	355	40	52	190	42	220	1120	195	302.5	40	117	590	215	233	710

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9060	1"	1"	28	680	690
9065	1"	1"	35	805	815
9070	1"	1"	46	950	960
9075	1"	1"	59	1200	1210

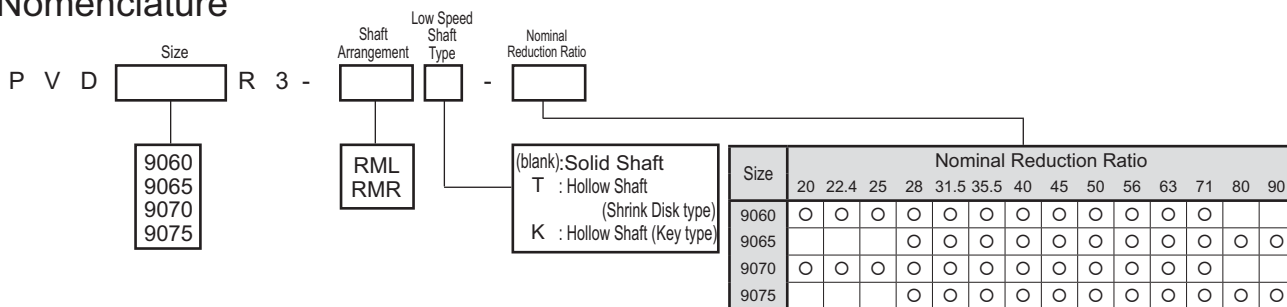
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9060	9065	9070	9075		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	744	790			11	76	96
15	545	324	350	700	324	350	232	744	790			11	131	175
18.5	625	394	400	835	394	400	297	774	820	882	935	33	213	258
22	625	394	400	835	394	400	297	774	820	882	935	33	213	258
30	625	394	400	835	394	400	297	774	820	882	935	33	224	280
37	715.5	394	450	930.5	394	450	297	774	820	882	935	15	259	320
45	715.5	394	450	930.5	394	450	297	774	820	882	935	15	259	320
55	769.5	484	550				412	774	820	882	935	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



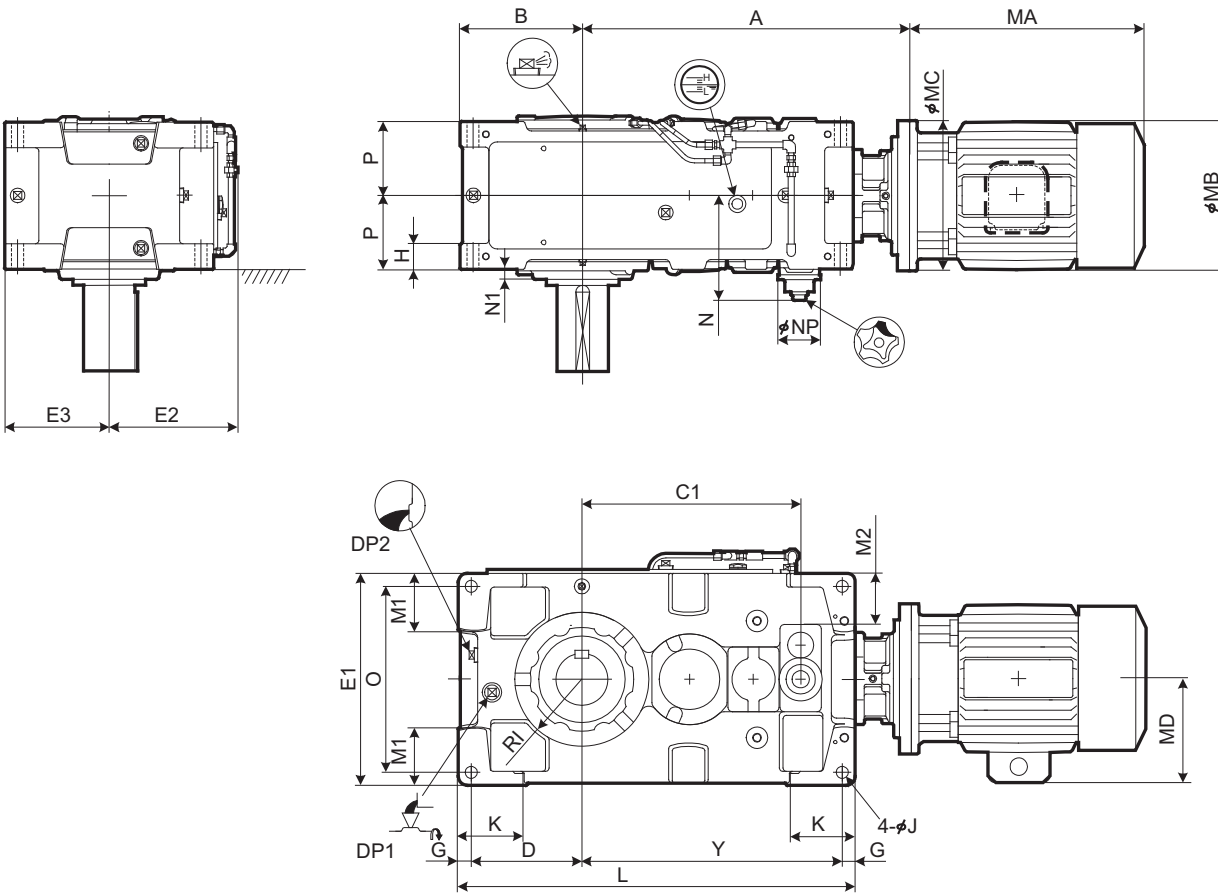
Oil Pump



Backstop (Option)



Opposite Side



Drive Unit

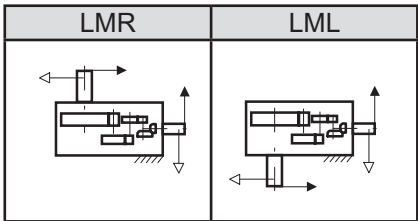
Selection
Tables

Dimension
Tables

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Vertical Mounting 9040 ▶ 9055

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	Y
9040		235	398	205	400	260	200	30	60	120	28	150	759	100	70	228.5	15	100	340	157.5	494
9045	See below	256	437	226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	533
9050		255	467	225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	563
9055		286	506	256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	602

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9040	1"	1"	18	355	365
9045	1"	1"	22	425	435
9050	1"	1"	24	490	500
9055	1"	1"	34	550	560

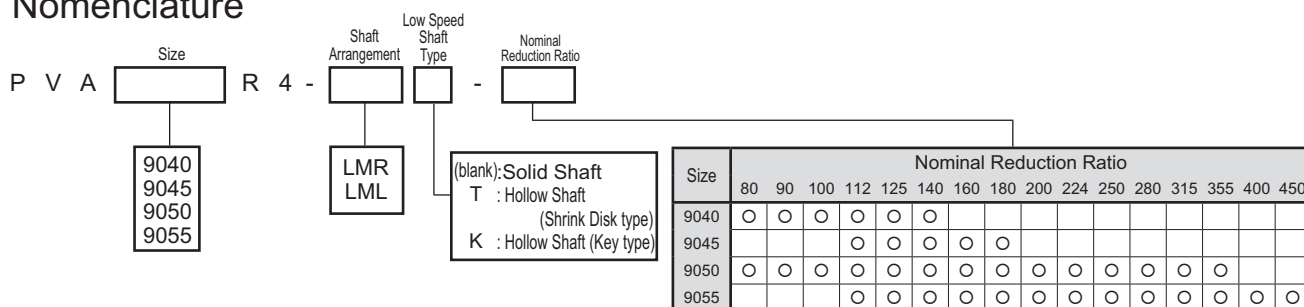
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
5.5	382	212	315	454	212	315	144	674	713	743	782	8	43	54
7.5	415	251	315	510	251	315	185	674	713	743	782	8	57	77
11	480	251	350	575	251	350	188	674	713	743	782	11	76	96
15	545	324	350	700	324	350	232	674	713	743	782	11	131	175
18.5	625	394	400	835	394	400	297	704	743	773	812	33	213	258
22	625	394	400	835	394	400	297	704	743	773	812	33	213	258
30	625	394	400	835	394	400	297			773	812	33	224	280

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1										
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



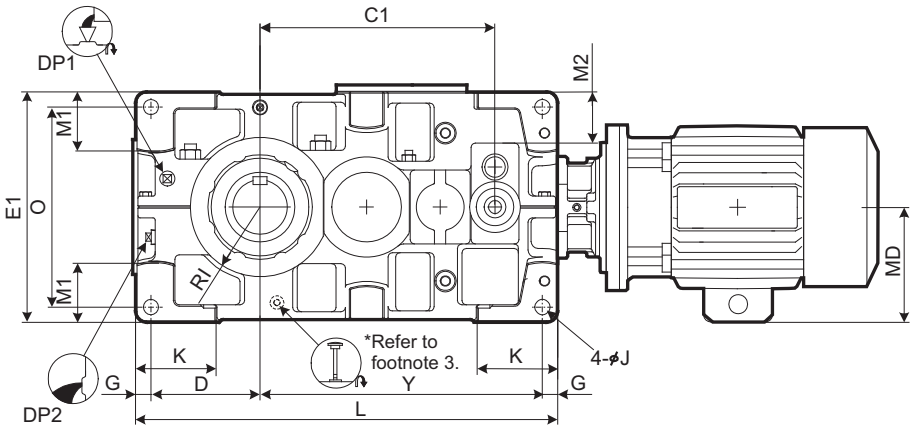
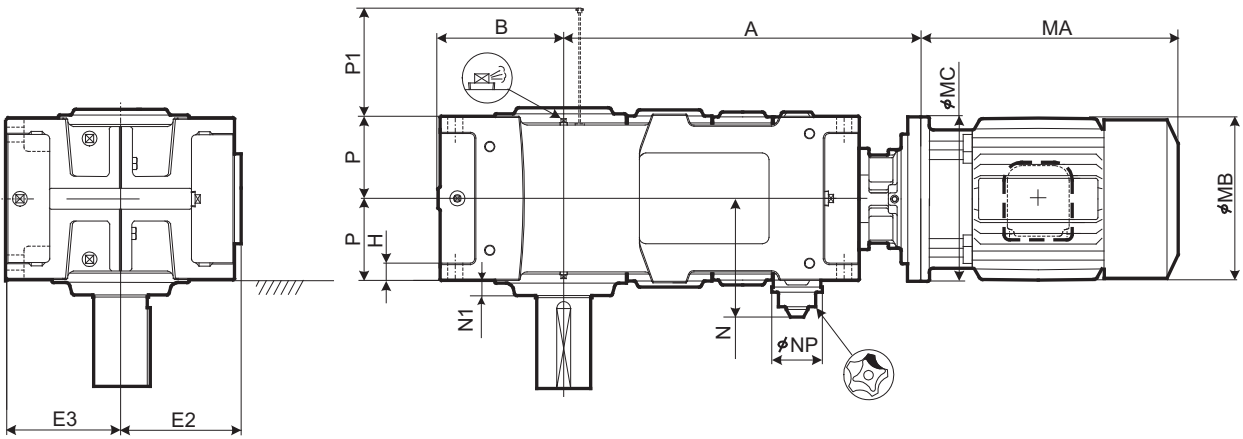
Oil Pump



Backstop (Option)



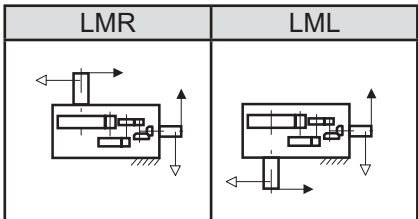
Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Technical drawing of Solid Shaft with dimensions TU1, U1, T1, L1, ϕV1, Y1, X1, Z1, W1.	Technical drawing of Hollow Shaft (Shrink Disk Type) with dimensions TU2, U2, T2, ϕV2, ϕV3. Refer to the Page D-18 for details.	Technical drawing of Hollow Shaft (Key Type) with dimensions TU4, U4, T4, ϕV4, ϕV5. Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement LMR is equipped with visible gauge. Refer to page D-28.

DIMENSIONS Right Angle Quadruple Reduction Vertical Mounting 9060 ▶ 9085

PARAMAX Vertical Split Right Angle Quadruple Reduction

P V D 9060 9085 R 4

Size	A	B	C1	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	NP	N1	O	P	P1	Y
9060	See below	299	540	251	530	282	265	35	35	160	35	180	970	140	118	277.5	117	35	460	190	203	649
9065		338	586	290	600	317	300	35	35	175	35	180	1055	175	153	277.5	117	38	530	190	203	695
9070		336	630	283	600	317	300	40	40	175	42	215	1115	155	128	302.5	117	38	520	215	233	752
9075		383	683	330	670	352	335	40	52	190	42	220	1215	195	163	302.5	117	40	590	215	233	805
9080		378	725	325	670	352	335	40	52	190	42	220	1275	170	140	322.5	117	45	590	230	263	870
9085		422	781	369	750	392	375	40	52	215	42	220	1375	210	180	322.5	117	40	670	230	263	926

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9060	1"	1"	36	700	710
9065	1"	1"	45	855	865
9070	1"	1"	54	990	1000
9075	1"	1"	68	1210	1220
9080	1"	1"	69	1410	1420
9085	1"	1"	94	1670	1680

*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD								Without Brake	With Brake
	MA	MB	MC	MA	MB	MC		9060	9065	9070	9075	9080	9085			
5.5	382	212	315	454	212	315	144	829	875	947	1000	1055	1111	8	43	54
7.5	415	251	315	510	251	315	185	829	875	947	1000	1055	1111	8	57	77
11	480	251	350	575	251	350	188	829	875	947	1000	1055	1111	11	76	96
15	545	324	350	700	324	350	232	829	875	947	1000	1055	1111	11	131	175
18.5	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33	213	258
22	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33	213	258
30	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33	224	280
37	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15	259	320
45	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15	259	320
55	769.5	484	550				412			977	1030	1085	1141	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
	X1	Y1	Z1	L1																
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Nomenclature

P V D Size R 4 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

9060
9065
9070
9075
9080
9085

LMR
LML

(blank): Solid Shaft
T : Hollow Shaft (Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																			
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450				
9060		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
9065				○	○	○	○	○	○	○	○	○	○	○	○	○				
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○				
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○				



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



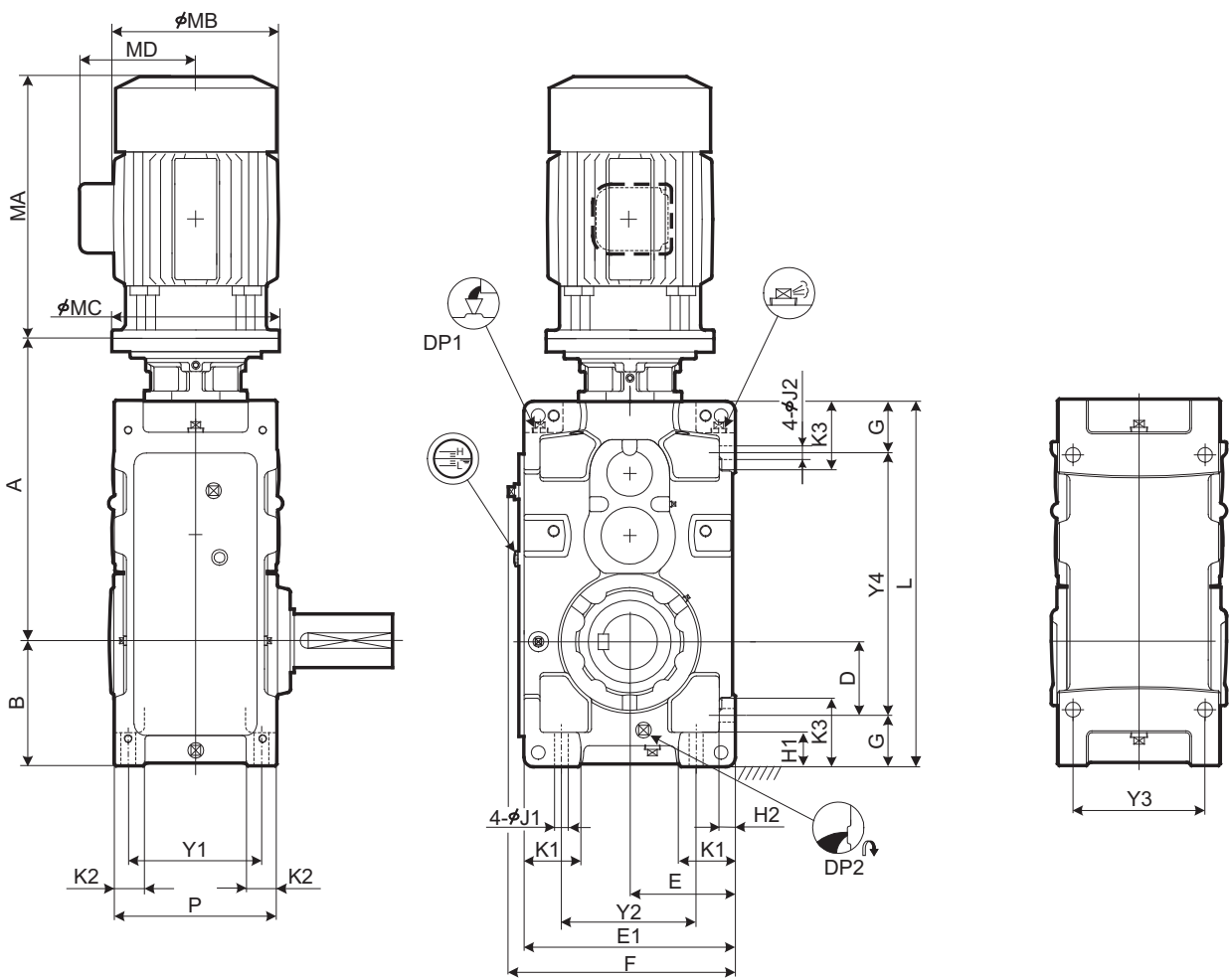
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Double Reduction Upright Mounting 9030 ▶ 9045

Size	A	B	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9030		200	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035	See below	219	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040		235	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045		256	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	14	240	255
9035	3/4"	3/4"	19	260	275
9040	1"	1"	24	340	350
9045	1"	1"	30	400	410

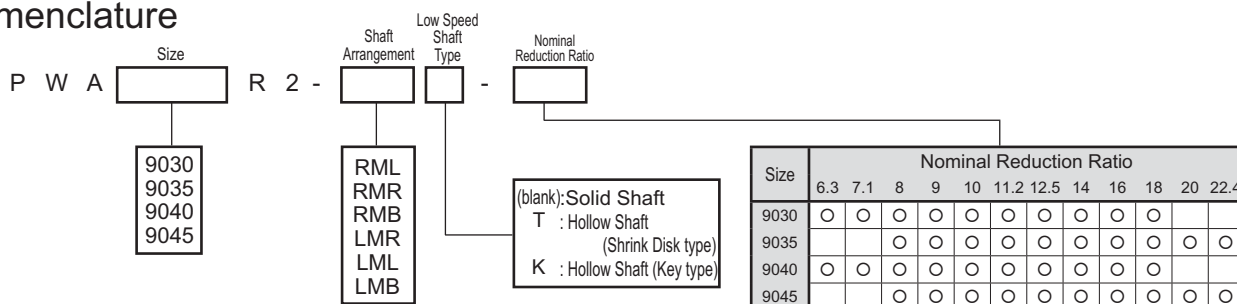
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9030	9035	9040	9045		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	540	571			11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	11	131	175
18.5	625	394	400	835	394	400	297		601	625	664	33	213	258
22	625	394	400	835	394	400	297		601	625	664	33	213	258
30	625	394	400	835	394	400	297			625	664	33	224	280
37	715.5	394	450	930.5	394	450	297			625	664	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	15	259	320
55	769.5	484	550				412			625	664	29	276	

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1										
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



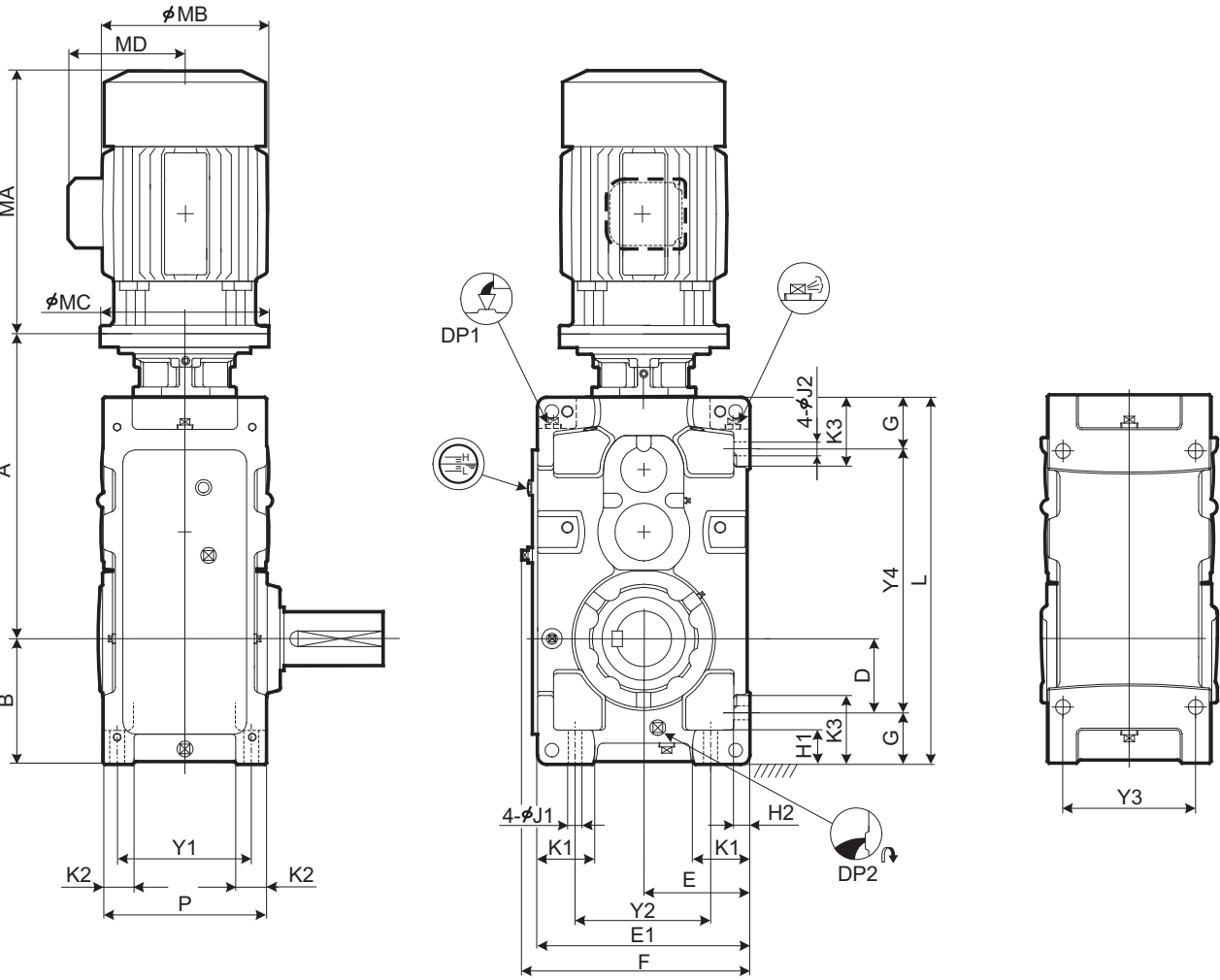
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Refer to the Page D-18 for details.	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Upright Mounting 9030 ▶ 9055

Size	A	B	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9030		200	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035		219	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040	See below	235	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045		256	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515
9050		255	138.5	210	420	450	116.5	75	32	28	28	110	60	150	775	345	285	280	285	542
9055		286	171	245	490	520	115	75	32	28	28	135	60	150	845	345	285	350	285	615

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9030	3/4"	3/4"	16	240	250
9035	3/4"	3/4"	21	260	270
9040	1"	1"	29	325	345
9045	1"	1"	36	385	405
9050	1"	1"	35	475	485
9055	1"	1"	46	535	545

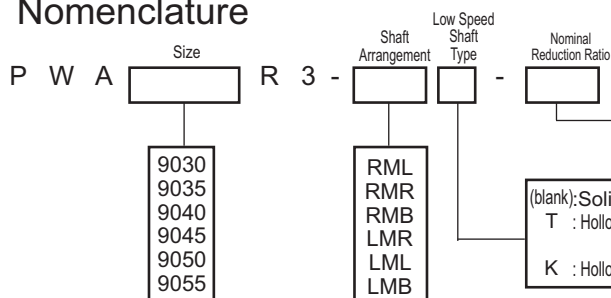
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	540	571	595	634			8	43	54
7.5	415	251	315	510	251	315	185	540	571	595	634	675	714	8	57	77
11	480	251	350	575	251	350	188	540	571	595	634	675	714	11	76	96
15	545	324	350	700	324	350	232	540	571	595	634	675	714	11	131	175
18.5	625	394	400	835	394	400	297		601	625	664	705	744	33	213	258
22	625	394	400	835	394	400	297		601	625	664	705	744	33	213	258
30	625	394	400	835	394	400	297			625	664	705	744	33	224	280
37	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
45	715.5	394	450	930.5	394	450	297			625	664	705	744	15	259	320
55	769.5	484	550				412					705	744	29	276	

Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9030																
9035																
9040																
9045																
9050																
9055																



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



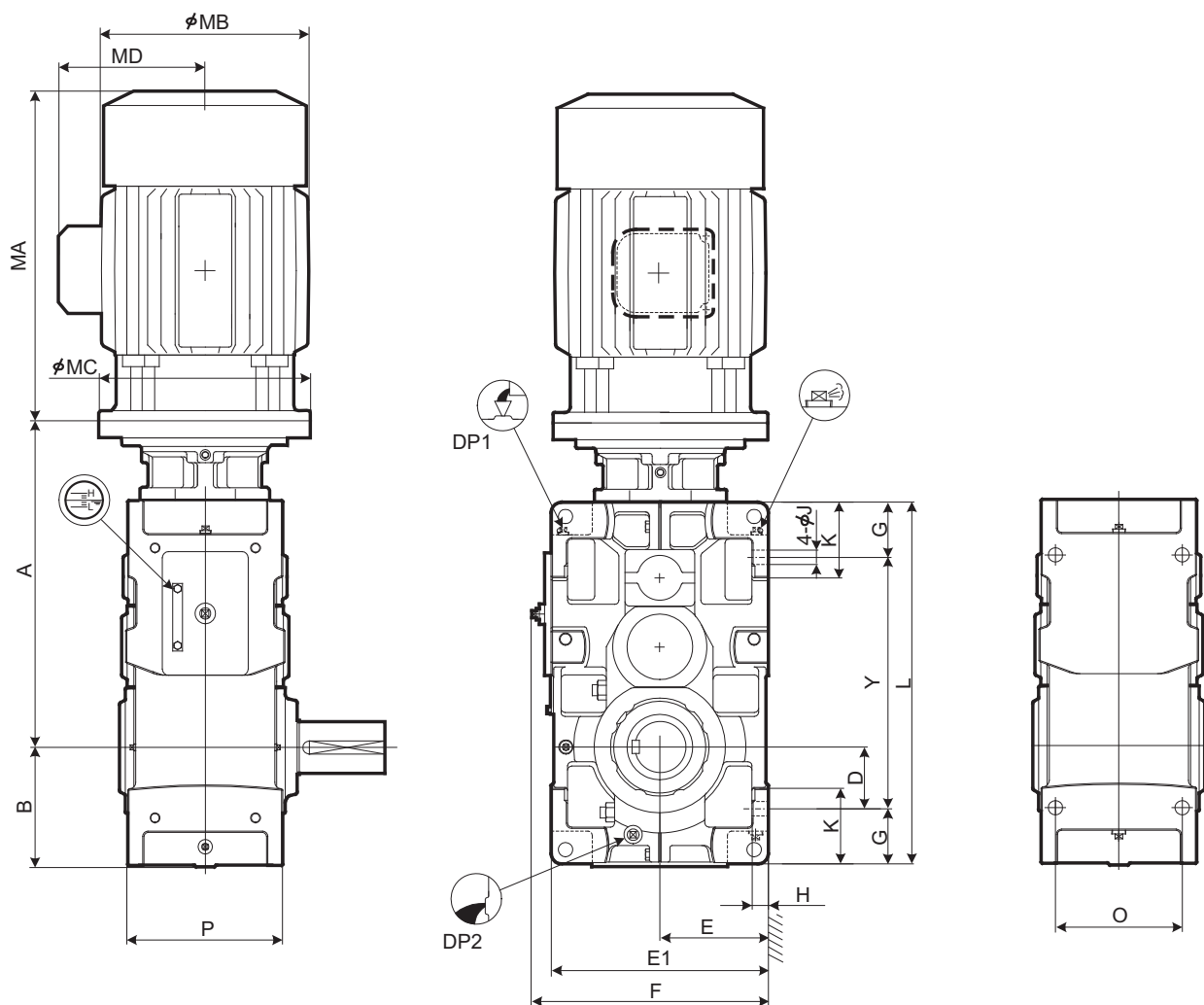
Oil Pump



Backstop (Option)



Opposite Side

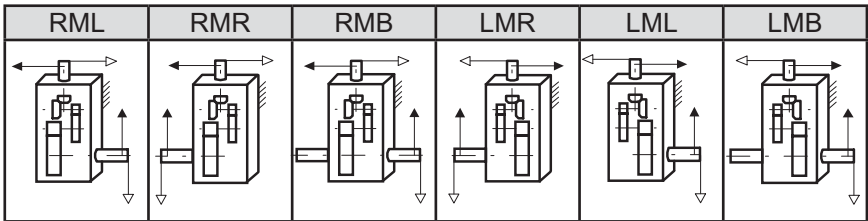


Drive Unit
Selection
Tables
Dimension
Tables

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the Page D-18 for details.	Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Triple Reduction Upright Mounting 9060 ▶ 9075

Size	A	B	D	E	E1	F	G	H	J	K	L	O	P	Y
9060		299	151	265	530	577	135	35	35	180	885	310	380	615
9065	See	338	190	300	600	647	135	35	35	180	975	310	380	700
9070	below	336	163	300	600	647	160	40	42	215	1020	350	430	700
9075		383	210	355	670	717	160	52	42	220	1120	350	430	800

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9060	1"	1"	56	680	690
9065	1"	1"	65	805	815
9070	1"	1"	83	950	960
9075	1"	1"	100	1200	1210

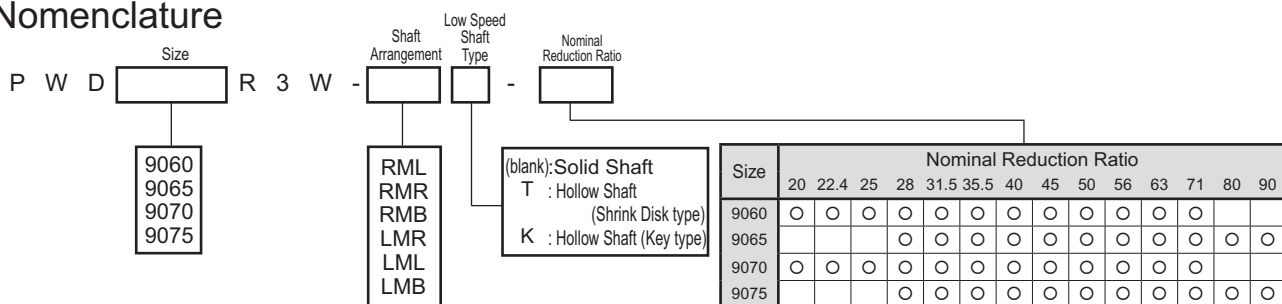
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9060	9065	9070	9075		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
11	480	251	350	575	251	350	188	744	790			11	76	96
15	545	324	350	700	324	350	232	744	790			11	131	175
18.5	625	394	400	835	394	400	297	774	820	882	935	33	213	258
22	625	394	400	835	394	400	297	774	820	882	935	33	213	258
30	625	394	400	835	394	400	297	774	820	882	935	33	224	280
37	715.5	394	450	930.5	394	450	297	774	820	882	935	15	259	320
45	715.5	394	450	930.5	394	450	297	774	820	882	935	15	259	320
55	769.5	484	550				412	774	820	882	935	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
	X1	Y1	Z1	L1																
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

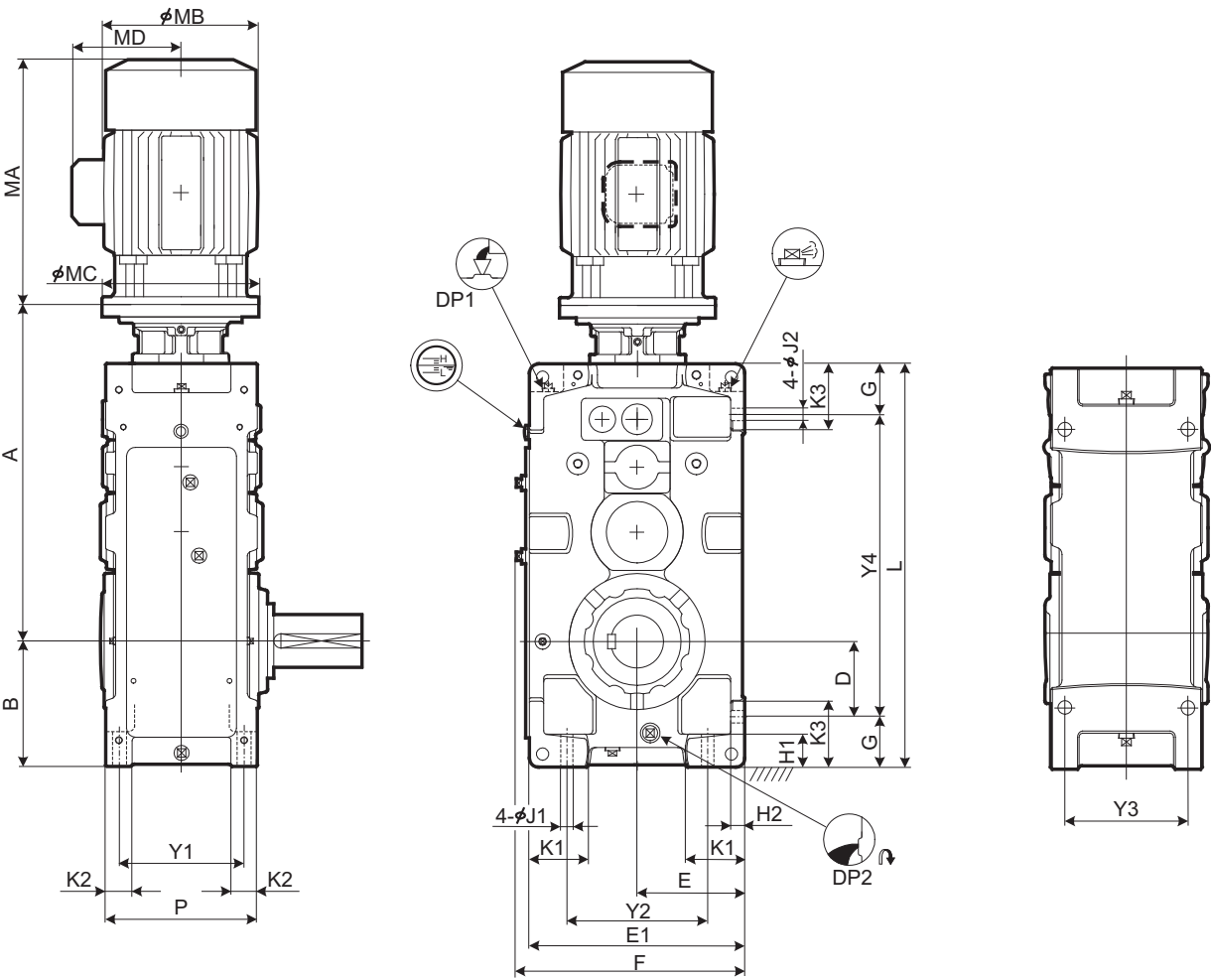


Backstop (Option)

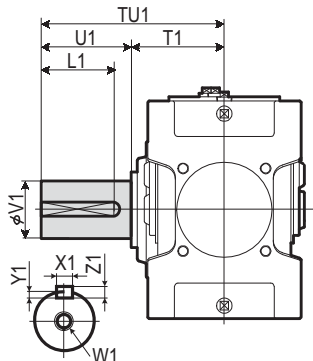
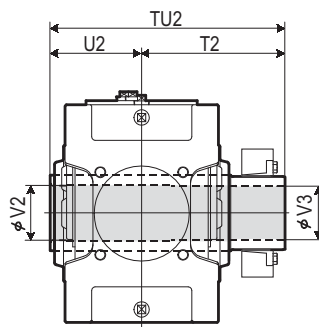
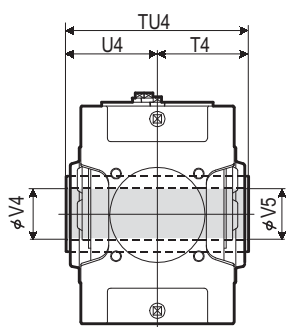


Opposite Side

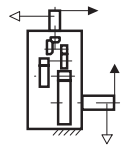
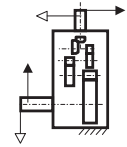
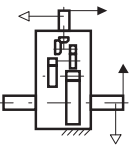
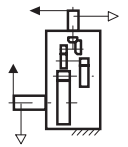
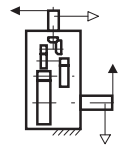
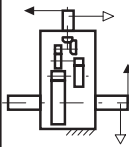
Drive Unit
Selection
Tables
Dimension
Tables



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	 Refer to the Page D-18 for details.	 Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB
					

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Upright Mounting 9040 ▶ 9055

Size	A	B	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9040		235	120	200	400	430	115	75	30	28	28	100	60	150	759	315	255	260	255	529
9045	See below	256	141	220	440	470	115	75	30	28	28	120	60	150	819	315	255	300	255	589
9050		255	138.5	210	420	450	116.5	75	32	28	28	110	60	150	848	345	285	280	285	615
9055		286	171	245	490	520	115	75	32	28	28	135	60	150	918	345	285	350	285	688

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9040	1"	1"	35	355	365
9045	1"	1"	43	425	435
9050	1"	1"	46	490	500
9055	1"	1"	59	550	560

*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A				Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			With Brake			MD	9040	9045	9050	9055		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC								
5.5	382	212	315	454	212	315	144	674	713	743	782	8	43	54
7.5	415	251	315	510	251	315	185	674	713	743	782	8	57	77
11	480	251	350	575	251	350	188	674	713	743	782	11	76	96
15	545	324	350	700	324	350	232	674	713	743	782	11	131	175
18.5	625	394	400	835	394	400	297	704	743	773	812	33	213	258
22	625	394	400	835	394	400	297	704	743	773	812	33	213	258
30	625	394	400	835	394	400	297			773	812	33	224	280

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature

Nomenclature

P

W

A

Size

R

4

-

Shaft Arrangement

Low Speed Shaft Type

Nominal Reduction Ratio

9040

9045

9050

9055

RML

RMR

RMB

LMR

LML

LMB

(blank):Solid Shaft

T : Hollow Shaft

(Shrink Disk type)

K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9040	○	○	○	○	○	○										
9045				○	○	○	○	○								
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9055				○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



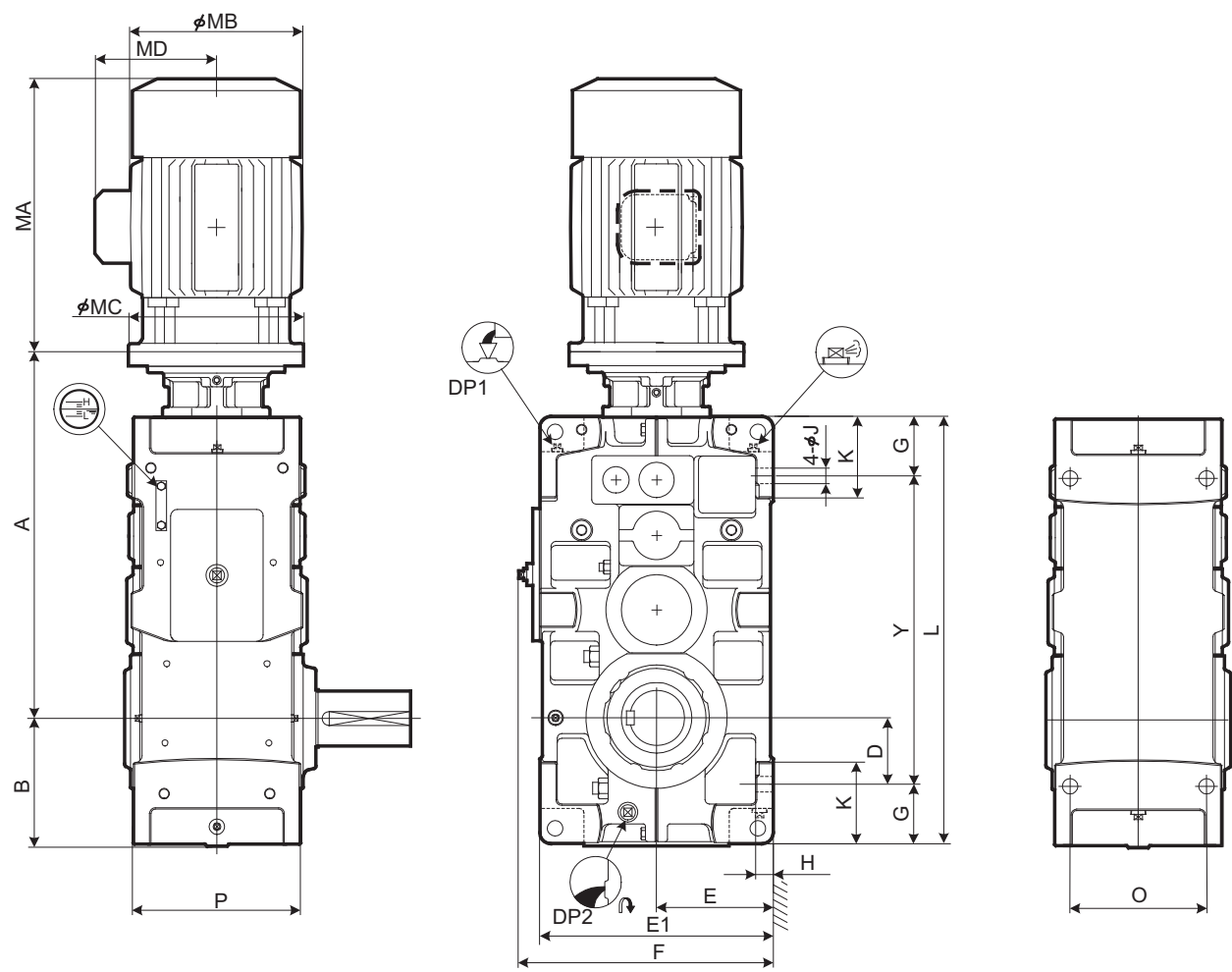
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Diagram of a solid shaft with dimensions: TU1, U1, T1, L1, Y1, X1, Z1, W1, and V1.	Diagram of a hollow shaft (Shrink Disk Type) with dimensions: TU2, U2, T2, V2, and V3. Refer to the Page D-18 for details.	Diagram of a hollow shaft (Key Type) with dimensions: TU4, U4, T4, V4, and V5. Refer to the Page D-18 for details.

Standard Shaft Arrangement Configuration

RML	RMR	RMB	LMR	LML	LMB
Diagram of RML shaft arrangement showing input and output shaft directions.	Diagram of RMR shaft arrangement showing input and output shaft directions.	Diagram of RMB shaft arrangement showing input and output shaft directions.	Diagram of LMR shaft arrangement showing input and output shaft directions.	Diagram of LML shaft arrangement showing input and output shaft directions.	Diagram of LMB shaft arrangement showing input and output shaft directions.

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

DIMENSIONS Right Angle Quadruple Reduction Upright Mounting 9060 ▶ 9085

Size	A	B	D	E	E1	F	G	H	J	K	L	O	P	Y
9060		299	151	265	530	577	135	35	35	180	970	310	380	700
9065		338	190	300	600	648	135	35	35	180	1055	310	380	785
9070	See below	336	163	300	600	648	160	40	42	215	1115	350	430	795
9075		383	210	335	670	717	160	52	42	220	1215	350	430	895
9080		378	205	335	670	717	160	52	42	220	1275	380	460	955
9085		422	249	375	750	797	160	52	42	220	1375	380	460	1055

Size	DP1	DP2	Oil Qty. (L)	Wt. [kg]*	
				5.5-30kW	37-55kW
9060	1"	1"	68	700	710
9065	1"	1"	85	855	865
9070	1"	1"	107	990	1000
9075	1"	1"	122	1210	1220
9080	1"	1"	128	1410	1420
9085	1"	1"	174	1670	1680

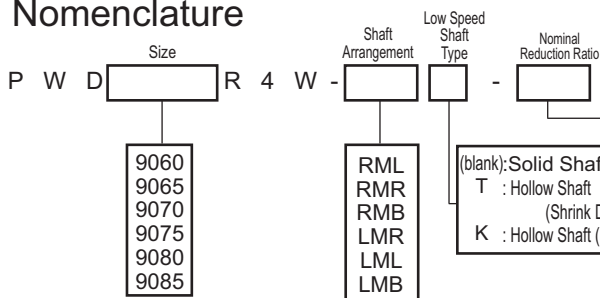
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							A						Mass of Motor Mounting Flange [kg]	Mass of Motor [kg]	
	Without Brake			Brake			MD	9060	9065	9070	9075	9080	9085		Without Brake	With Brake
	MA	MB	MC	MA	MB	MC										
5.5	382	212	315	454	212	315	144	829	875	947	1000	1055	1111	8	43	54
7.5	415	251	315	510	251	315	185	829	875	947	1000	1055	1111	8	57	77
11	480	251	350	575	251	350	188	829	875	947	1000	1055	1111	11	76	96
15	545	324	350	700	324	350	232	829	875	947	1000	1055	1111	11	131	175
18.5	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33	213	258
22	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33	213	258
30	625	394	400	835	394	400	297	859	905	977	1030	1085	1141	33	224	280
37	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15	259	320
45	715.5	394	450	930.5	394	450	297	859	905	977	1030	1085	1141	15	259	320
55	769.5	484	550				412			977	1030	1085	1141	29	276	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Nomenclature



Size	Nominal Reduction Ratio																		
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450			
9060		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9065			○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○			



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

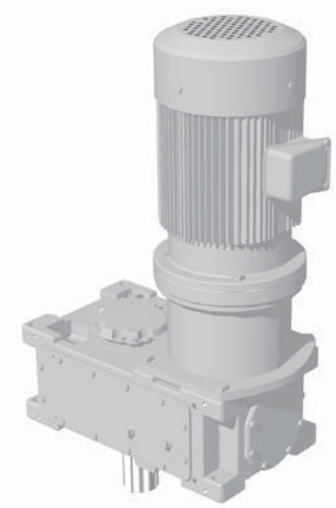


Backstop (Option)



Opposite Side





B

<Drive Unit Parallel Shaft Vertical Mounting>

Drive Unit: Parallel Shaft

Selection Tables	... B- 74
Allowable Radial and Axial Loads	... B- 98
Dimension Tables	... B-102
Actual Reduction Ratio	... B-111

SELECTION Drive Unit Parallel Shaft Combinations with 4P motor

Shaft Position	High Speed Shaft Speed	Ambient Temperature
Parallel Shaft	1500r/min	40 Dgree

kW	SF	Low Speed Shaft Speed (r/min)																
		238	211	188	168	150	134	120	107	94	83	75	67	60	54	48	42	38
		Nominal Reduction Ratio																
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5	40
5.5kW	1								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015
	1.25								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015
	4P								9015	9015	9015	9015	9015	9015	9015	9015	9015	9015
	2								9015	9015	9015	9015	9015	9015	9015	9015	9015	9025
7.5kW	1						9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015
	1.25						9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025
	4P						9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025
	2						9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030
11kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025
	4P	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030
	2	9015	9015	9015	9015	9015	9015	9015	9015	9025	9015	9025	9025	9025	9030	9030	9030	9035
15kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9030
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030
	4P	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9030	9035
	2	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9035	9040
18.5kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9035
	4P	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9030	9040
	2	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9030	9035	9040	9045
22kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9035
	1.25	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9035	9040
	4P	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030	9030	9035	9040	9045
	2	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9030	9030	9035	9035	9040	9045	9050
30kW	1	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035	9035	9035	9035	9040
	1.25	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9030	9035	9035	9035	9035	9040	9045
	4P	9025	9025	9025	9025	9025	9025	9025	9030	9030	9030	9030	9035	9035	9035	9040	9045	9050
	2	9025	9025	9025	9025	9025	9030	9030	9030	9030	9035	9035	9040	9040	9045	9045	9050	9055
37kW	1	9025	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9040	9040	9045
	1.25	9025	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9040	9045	9050
	4P	9025	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9045	9045	9050	9055
	2	9025	9030	9030	9030	9030	9030	9030	9035	9035	9040	9040	9045	9045	9050	9050	9055	9060
45kW	1	9040	9040	9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9045	9055
	1.25	9040	9040	9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9050	9055
	4P	9040	9040	9035	9035	9035	9035	9035	9035	9035	9035	9040	9045	9045	9045	9045	9050	9055
	2	9040	9040	9035	9035	9035	9035	9035	9035	9040	9045	9045	9050	9050	9055	9055	9060	9070
55kW	1	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055
	1.25	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9060
	4P	9040	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9065
	2	9040	9040	9040	9040	9040	9040	9040	9045	9045	9050	9050	9055	9055	9055	9060	9065	9065
75kW	1	9050	9050	9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065
	1.25	9050	9050	9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065
	4P	9050	9050	9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9070
	2	9050	9050	9055	9055	9055	9055	9055	9055	9055	9055	9055	9060	9065	9065	9065	9070	9075
90kW	1		9055	9055	9060	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9075
	1.25		9055	9055	9060	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9075
	4P		9055	9055	9060	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9075
	2		9055	9055	9060	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9075	9080
110kW	1			9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075
	1.25			9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075
	4P			9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9075	9075
	2			9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9080	9085

Drive Unit

Selection
TablesDimension
Tables

SELECTION Drive Unit Parallel Shaft Combinations with 4P motor

Low Speed Shaft Speed (r/min)					SF	kW
27	24	21	19	17		
Nominal Reduction Ratio						
56	63	71	80	90		
9030	9030	9030	9035	9035	1	
9030	9030	9030	9035	9035	1.25	5.5kW
9030	9030	9030	9035	9035	1.5	4P
9030	9030	9030	9035	9035	2	
9030	9030	9030	9035	9035	1	
9030	9030	9030	9035	9035	1.25	7.5kW
9030	9030	9030	9035	9035	1.5	4P
9030	9030	9035	9035	9035	2	
9030	9030	9030	9035	9035	1	
9030	9030	9030	9035	9035	1.25	11kW
9030	9030	9035	9035	9045	1.5	4P
9035	9040	9040	9045	9045	2	
9030	9030	9035	9035	9035	1	
9035	9035	9035	9045	9045	1.25	15kW
9035	9040	9045	9045	9045	1.5	4P
9045	9045	9050	9055	9055	2	
9030	9035	9035	9045	9045	1	
9035	9040	9045	9045	9045	1.25	18.5kW
9045	9045	9045	9055	9055	1.5	4P
9050	9050	9055	9055	9065	2	
9035	9040	9040	9045	9045	1	
9040	9045	9045	9055	9055	1.25	22kW
9045	9045	9055	9055	9055	1.5	4P
9055	9055	9055	9065	9065	2	
9045	9045	9050	9055	9055	1	
9050	9050	9055	9055	9065	1.25	30kW
9055	9055	9060	9065	9065	1.5	4P
9060	9060	9065	9065	9075	2	
9050	9050	9055	9055	9065	1	
9055	9055	9060	9065	9065	1.25	37kW
9060	9060	9065	9065	9075	1.5	4P
9065	9065	9070	9075	9075	2	
9055	9055	9060	9065	9065	1	
9060	9060	9065	9065	9075	1.25	45kW
9065	9065	9065	9065	9075	1.5	4P
9070	9070	9075	9075	9085	2	
9060	9060	9065	9065	9075	1	
9065	9065	9065	9075	9075	1.25	55kW
9065	9065	9070	9075	9075	1.5	4P
9075	9075	9080	9085	9085	2	
9070	9070	9070	9075	9075	1	
9070	9070	9075	9075	9085	1.25	75kW
9075	9075	9080	9085	9085	1.5	4P
9080	9080	9085	9085	9085	2	
9075	9075	9075	9075	9085	1	
9075	9075	9080	9085	9085	1.25	90kW
9075	9080	9085	9085	9085	1.5	4P
9085	9085	9085	9085	9085	2	
9080	9085	9085	9085	9085	1	
9080	9085	9085	9085	9085	1.25	110kW
9085	9085	9085	9085	9085	1.5	4P
9085	9085	9085	9085	9085	2	

SELECTION Drive Unit Parallel Shaft Combinations with 4P motor

Shaft Position	High Speed Shaft Speed	Ambient Temperature
Parallel Shaft	1800r/min	40 Dgree

kW	SF	Low Speed Shaft Speed (r/min)															
		286	254	225	200	180	161	144	129	113	100	90	80	72	64	57	51
		Nominal Reduction Ratio															
		6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4	25	28	31.5	35.5
5.5kW	1											9015	9015	9015	9015	9015	9015
	1.25											9015	9015	9015	9015	9015	9015
	4P											9015	9015	9015	9015	9015	9015
	2											9015	9015	9015	9015	9015	9015
7.5kW	1								9015	9015	9015	9015	9015	9015	9015	9015	9015
	1.25								9015	9015	9015	9015	9015	9015	9015	9015	9015
	4P								9015	9015	9015	9015	9015	9015	9015	9015	9015
	2								9015	9015	9015	9015	9015	9015	9015	9015	9015
11kW	1				9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015
	1.25				9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025
	4P				9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025
	2				9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030
15kW	1		9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025
	1.25		9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9030
	4P		9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030
	2		9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9035
18.5kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030
	4P	9015	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9035
	2	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9035	9040
22kW	1	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9025	9030	9030
	1.25	9015	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9025	9030	9030	9035
	4P	9015	9015	9015	9015	9015	9015	9015	9025	9025	9025	9025	9030	9030	9030	9035	9040
	2	9015	9015	9015	9015	9015	9025	9025	9025	9030	9030	9030	9030	9030	9035	9040	9045
30kW	1	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9035	9035	9035	9035	9035	9035
	1.25	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9035	9035	9035	9035	9035	9040
	4P	9025	9025	9025	9025	9025	9025	9025	9025	9030	9030	9035	9035	9035	9035	9040	9045
	2	9025	9025	9025	9025	9025	9025	9030	9030	9030	9030	9035	9035	9040	9040	9045	9050
37kW	1	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9040	9040
	1.25	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9045	9045
	4P	9030	9030	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9045	9050
	2	9030	9030	9030	9030	9030	9030	9030	9035	9035	9035	9040	9040	9045	9045	9050	9055
45kW	1		9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9045	9045
	1.25		9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9045	9050
	4P		9035	9035	9035	9035	9035	9035	9035	9035	9035	9045	9045	9045	9045	9050	9055
	2		9035	9035	9035	9035	9035	9035	9035	9040	9040	9045	9045	9050	9050	9055	9060
55kW	1	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055
	1.25	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9055
	4P	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9045	9055	9055	9055	9055	9060
	2	9040	9040	9040	9040	9040	9040	9040	9045	9045	9045	9050	9055	9055	9055	9060	9065
75kW	1		9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065
	1.25		9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065
	4P		9055	9055	9055	9055	9055	9055	9055	9055	9055	9055	9065	9065	9065	9065	9065
	2		9055	9055	9055	9055	9055	9055	9055	9055	9055	9060	9065	9065	9065	9065	9070
90kW	1			9055	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070
	1.25			9055	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070
	4P			9055	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9070
	2			9055	9055	9060	9060	9060	9060	9060	9065	9065	9070	9070	9070	9070	9075
110kW	1			9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9080
	1.25			9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9080
	4P			9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9080
	2			9065	9065	9065	9065	9065	9065	9070	9075	9075	9075	9075	9075	9075	9085

Size of Reducer



Drive Unit

Selection
TablesDimension
Tables

SELECTION Drive Unit Parallel Shaft Combinations with 4P motor

Low Speed Shaft Speed (r/min)					SF	kW
32	29	25	23	20		
Nominal Reduction Ratio						
56	63	71	80	90		
9030	9030	9030	9035	9035	1	5.5kW 4P
9030	9030	9030	9035	9035	1.25	
9030	9030	9030	9035	9035	1.5	
9030	9030	9030	9035	9035	2	
9030	9030	9030	9035	9035	1	7.5kW 4P
9030	9030	9030	9035	9035	1.25	
9030	9030	9030	9035	9035	1.5	
9030	9030	9035	9035	9035	2	
9030	9030	9030	9035	9035	1	11kW 4P
9030	9030	9030	9035	9035	1.25	
9030	9030	9030	9035	9035	1.5	
9030	9035	9035	9045	9045	2	
9030	9030	9030	9035	9035	1	15kW 4P
9030	9030	9035	9035	9035	1.25	
9035	9035	9035	9045	9045	1.5	
9040	9040	9045	9045	9055	2	
9030	9030	9035	9035	9035	1	18.5kW 4P
9035	9035	9035	9045	9045	1.25	
9035	9040	9045	9045	9045	1.5	
9045	9045	9050	9055	9055	2	
9030	9035	9035	9045	9045	1	22kW 4P
9035	9040	9045	9045	9045	1.25	
9040	9045	9045	9055	9055	1.5	
9050	9050	9055	9055	9065	2	
9040	9040	9045	9045	9055	1	30kW 4P
9045	9045	9050	9055	9055	1.25	
9050	9050	9055	9055	9065	1.5	
9055	9055	9060	9065	9065	2	
9045	9045	9050	9055	9055	1	37kW 4P
9050	9050	9055	9055	9065	1.25	
9055	9055	9060	9065	9065	1.5	
9060	9060	9065	9065	9075	2	
9050	9055	9055	9055	9065	1	45kW 4P
9055	9055	9060	9065	9065	1.25	
9060	9060	9065	9065	9075	1.5	
9065	9065	9070	9075	9075	2	
9055	9060	9060	9065	9065	1	55kW 4P
9060	9060	9065	9065	9075	1.25	
9065	9065	9065	9065	9075	1.5	
9070	9070	9075	9075	9085	2	
9070	9070	9070	9075	9075	1	75kW 4P
9070	9070	9070	9075	9075	1.25	
9070	9070	9075	9075	9085	1.5	
9075	9075	9080	9085	9085	2	
9075	9075	9075	9075	9075	1	90kW 4P
9075	9075	9075	9075	9085	1.25	
9075	9075	9080	9085	9085	1.5	
9080	9085	9085	9085	9085	2	
9080	9085	9085	9085	9085	1	110kW 4P
9080	9085	9085	9085	9085	1.25	
9080	9085	9085	9085	9085	1.5	
9085	9085	9085	9085	9085	2	

SELECTION Drive Unit Parallel Shaft 5.5kW, 7.5kW

5.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model		Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF		Reduction Ratio	
107	490	50	4.74	129	409	42	5.63	9015	P2	B-102
93.8	560	57	4.70	113	467	48	5.63	9015	P2	B-102
83.3	630	64	3.83	100	525	54	4.60	9015	P2	B-102
75.0	700	72	4.01	90.0	584	60	4.80	9015	P3	B-106
67.0	784	80	3.27	80.4	654	67	3.90	9015	P3	B-106
60.0	875	89	3.23	72.0	730	74	3.89	9015	P3	B-106
53.6	980	100	2.63	64.3	817	83	3.16	9015	P3	B-106
			4.25				5.09	9025	P3	B-106
47.6	1100	113	2.56	57.1	919	94	3.07	9015	P3	B-106
			3.96				4.74	9025	P3	B-106
42.3	1240	127	2.09	50.7	1040	106	2.49	9015	P3	B-106
			3.25				3.89	9025	P3	B-106
37.5	1400	143	2.07	45.0	1170	119	2.47	9015	P3	B-106
			3.21				3.85	9025	P3	B-106
			4.63				5.45	9030	P3	B-106
33.3	1580	161	1.69	40.0	1310	134	2.01	9015	P3	B-106
			2.63				3.16	9025	P3	B-106
			4.16				5.00	9030	P3	B-106
30.0	1750	179	3.72	36.0	1460	149	4.47	9030	P3	B-106
			4.85				5.63	9035	P3	B-106
26.8	1960	200	3.36	32.1	1630	167	4.01	9030	P3	B-106
			4.41				5.29	9035	P3	B-106
23.8	2210	225	3.00	28.6	1840	188	3.58	9030	P3	B-106
			3.90				4.67	9035	P3	B-106
			4.92				5.81	9040	P3	B-106
			2.69				3.21	9030	P3	B-106
21.1	2490	254	3.56	25.4	2070	212	4.25	9035	P3	B-106
			4.03				4.83	9040	P3	B-106
			3.12				3.74	9035	P3	B-106
18.8	2800	286	3.12	22.5	2330	238	3.74	9035	P3	B-106
16.7	3150	322	2.85	20.0	2630	268	3.41	9035	P3	B-106
			4.23				5.07	9045	P3	B-106

7.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model		Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF		Reduction Ratio	
134	535	55	4.26	161	446	46	5.20	9015	P2	B-102
120	597	61	4.26	144	497	51	5.06	9015	P2	B-102
107	669	68	3.48	129	557	57	4.13	9015	P2	B-102
93.8	764	78	3.45	113	637	65	4.13	9015	P2	B-102
83.3	860	88	2.81	100	716	73	3.37	9015	P2	B-102
			4.53				5.46	9025	P2	B-102
75.0	955	98	2.94	90.0	796	81	3.52	9015	P3	B-106
			4.40				5.20	9025	P3	B-106
67.0	1070	109	2.40	80.4	891	91	2.86	9015	P3	B-106
			3.84				4.53	9025	P3	B-106
60.0	1190	122	2.37	72.0	995	102	2.85	9015	P3	B-106
			3.76				4.26	9025	P3	B-106
53.6	1340	137	1.93	64.3	1110	114	2.31	9015	P3	B-106
			3.11				3.73	9025	P3	B-106
			4.93				5.86	9030	P3	B-106
47.6	1500	154	1.88	57.1	1250	128	2.25	9015	P3	B-106
			2.90				3.48	9025	P3	B-106
			4.13				5.06	9030	P3	B-106
42.3	1700	173	1.53	50.7	1410	144	1.82	9015	P3	B-106
			2.38				2.85	9025	P3	B-106
			3.81				4.53	9030	P3	B-106

SELECTION Drive Unit Parallel Shaft 7.5kW, 11kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF	Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF				
37.5	1910	195	1.52	45.0	1590	163	1.81	9015	P3	40	B-106
			2.36				2.82	9025	P3	40	B-106
			3.40				4.00	9030	P3	40	B-106
			4.40				5.20	9035	P3	40	B-106
33.3	2150	219	1.24	40.0	1790	183	1.48	9015	P3	45	B-106
			1.93				2.31	9025	P3	45	B-106
			3.05				3.66	9030	P3	45	B-106
			4.00				4.80	9035	P3	45	B-106
30.0	2390	244	4.53	36.0	1990	203	5.46	9040	P3	45	B-106
			2.73				3.28	9030	P3	50	B-106
			3.56				4.13	9035	P3	50	B-106
			4.40				5.33	9040	P3	50	B-106
26.8	2670	273	2.46	32.1	2230	228	2.94	9030	P3	56	B-106
			3.24				3.88	9035	P3	56	B-106
			3.68				4.40	9040	P3	56	B-106
			4.88				5.84	9045	P3	56	B-106
23.8	3010	307	2.20	28.6	2510	256	2.62	9030	P3	63	B-106
			2.86				3.42	9035	P3	63	B-106
			3.61				4.26	9040	P3	63	B-106
			4.50				5.41	9045	P3	63	B-106
21.1	3390	346	1.97	25.4	2830	288	2.36	9030	P3	71	B-106
			2.61				3.11	9035	P3	71	B-106
			2.96				3.54	9040	P3	71	B-106
			3.86				4.62	9045	P3	71	B-106
18.8	3820	390	4.26	22.5	3180	325	5.20	9050	P3	71	B-106
			2.29				2.74	9035	P3	80	B-106
			3.65				4.38	9045	P3	80	B-106
			2.09				2.50	9035	P3	90	B-106
16.7	4300	439	3.10	20.0	3580	366	3.72	9045	P3	90	B-106
			4.53				5.33	9055	P3	90	B-106

11kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF	Output Speed r/min	Output Torque (T _{out}) Nm	kgf m	SF				
211	497	51	4.72	254	414	42	5.63	9015	P2	7.1	B-102
188	560	57	4.63	225	467	48	5.54	9015	P2	8	B-102
167	630	64	3.72	200	525	54	4.45	9015	P2	9	B-102
150	700	72	3.63	180	584	60	4.27	9015	P2	10	B-102
134	784	80	2.90	161	654	67	3.54	9015	P2	11.2	B-102
			4.81				5.81	9025	P2	11.2	B-102
120	875	89	2.90	144	730	74	3.45	9015	P2	12.5	B-102
			4.63				5.54	9025	P2	12.5	B-102
107	980	100	2.37	129	817	83	2.81	9015	P2	14	B-102
			3.81				4.54	9025	P2	14	B-102
93.8	1120	114	2.35	113	934	95	2.81	9015	P2	16	B-102
			3.81				4.54	9025	P2	16	B-102
83.3	1260	129	1.91	100	1050	107	2.30	9015	P2	18	B-102
			3.09				3.72	9025	P2	18	B-102
			4.90				5.90	9030	P2	18	B-102
75.0	1400	143	2.00	90.0	1170	119	2.40	9015	P3	20	B-106
			3.00				3.54	9025	P3	20	B-106
			4.63				5.54	9030	P3	20	B-106

SELECTION Drive Unit Parallel Shaft 11kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz							
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
67.0	1570	160	1.63	80.4	1310	133	1.95	9015	P3	22.4	B-106
			2.61				3.09	9025	P3	22.4	B-106
			4.18				5.00	9030	P3	22.4	B-106
60.0	1750	179	1.61	72.0	1460	149	1.94	9015	P3	25	B-106
			2.56				2.90	9025	P3	25	B-106
			3.72				4.45	9030	P3	25	B-106
			4.81				5.81	9035	P3	25	B-106
53.6	1960	200	1.31	64.3	1630	167	1.58	9015	P3	28	B-106
			2.12				2.54	9025	P3	28	B-106
			3.36				4.00	9030	P3	28	B-106
			4.36				5.27	9035	P3	28	B-106
			4.90				5.90	9040	P3	28	B-106
47.6	2210	225	1.28	57.1	1840	188	1.53	9015	P3	31.5	B-106
			1.98				2.37	9025	P3	31.5	B-106
			2.81				3.45	9030	P3	31.5	B-106
			3.81				4.63	9035	P3	31.5	B-106
			4.72				5.72	9040	P3	31.5	B-106
42.3	2490	254	1.04	50.7	2070	212	1.24	9015	P3	35.5	B-106
			1.62				1.94	9025	P3	35.5	B-106
			2.60				3.09	9030	P3	35.5	B-106
			3.54				4.18	9035	P3	35.5	B-106
			3.90				4.63	9040	P3	35.5	B-106
37.5	2800	286	1.03	45.0	2330	238	1.23	9015	P3	40	B-106
			1.60				1.92	9025	P3	40	B-106
			2.31				2.72	9030	P3	40	B-106
			3.00				3.54	9035	P3	40	B-106
			3.81				4.54	9040	P3	40	B-106
			4.85				5.82	9045	P3	40	B-106
33.3	3150	322	0.84	40.0	2630	268	1.00	9015	P3	45	B-106
			1.31				1.58	9025	P3	45	B-106
			2.08				2.50	9030	P3	45	B-106
			2.72				3.27	9035	P3	45	B-106
			3.09				3.72	9040	P3	45	B-106
			4.12				4.94	9045	P3	45	B-106
			4.72				5.63	9050	P3	45	B-106
30.0	3500	358	1.86	36.0	2920	298	2.23	9030	P3	50	B-106
			2.42				2.81	9035	P3	50	B-106
			3.00				3.63	9040	P3	50	B-106
			3.93				4.71	9045	P3	50	B-106
			4.63				5.54	9050	P3	50	B-106
26.8	3920	400	1.68	32.1	3270	334	2.00	9030	P3	56	B-106
			2.20				2.64	9035	P3	56	B-106
			2.50				3.00	9040	P3	56	B-106
			3.32				3.98	9045	P3	56	B-106
			3.81				4.54	9050	P3	56	B-106
			4.90				5.90	9055	P3	56	B-106
23.8	4410	450	1.50	28.6	3680	375	1.79	9030	P3	63	B-106
			1.95				2.33	9035	P3	63	B-106
			2.46				2.90	9040	P3	63	B-106
			3.07				3.69	9045	P3	63	B-106
			3.54				4.27	9050	P3	63	B-106
			5.00				6.00	9055	P3	63	B-106
21.1	4970	508	1.34	25.4	4140	423	1.60	9030	P3	71	B-106
			1.78				2.12	9035	P3	71	B-106
			2.01				2.41	9040	P3	71	B-106
			2.63				3.15	9045	P3	71	B-106
			2.90				3.54	9050	P3	71	B-106
			4.00				4.81	9055	P3	71	B-106
			4.54				5.45	9060	P3	71	B-108
18.8	5600	572	1.56	22.5	4670	477	1.87	9035	P3	80	B-106
			2.49				2.99	9045	P3	80	B-106
			3.81				4.54	9055	P3	80	B-106
16.7	6300	644	1.42	20.0	5250	536	1.70	9035	P3	90	B-106
			2.11				2.53	9045	P3	90	B-106
			3.09				3.63	9055	P3	90	B-106
			4.81				5.76	9065	P3	90	B-106

SELECTION Drive Unit Parallel Shaft 15kW

15kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model		Reduction Ratio	Page of Dimension Sheet
50Hz				60Hz				Size	Assembly		Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF				
238	602	61	4.26	286	501	51	5.06	9015	P2	6.3	B-102
211	678	69	3.46	254	565	58	4.13	9015	P2	7.1	B-102
188	764	78	3.40	225	637	65	4.06	9015	P2	8	B-102
167	860	88	2.73	200	716	73	3.26	9015	P2	9	B-102
			4.53				5.40	9025	P2	9	B-102
150	955	98	2.66	180	796	81	3.13	9015	P2	10	B-102
			4.33				5.20	9025	P2	10	B-102
134	1070	109	2.13	161	891	91	2.60	9015	P2	11.2	B-102
			3.53				4.26	9025	P2	11.2	B-102
120	1190	122	2.13	144	995	102	2.53	9015	P2	12.5	B-102
			3.40				4.06	9025	P2	12.5	B-102
			5.00				5.93	9030	P2	12.5	B-102
107	1340	137	1.74	129	1110	114	2.06	9015	P2	14	B-102
			2.80				3.33	9025	P2	14	B-102
			4.46				5.40	9030	P2	14	B-102
93.8	1530	156	1.72	113	1270	130	2.06	9015	P2	16	B-102
			2.80				3.33	9025	P2	16	B-102
			4.00				4.80	9030	P2	16	B-102
83.3	1720	176	1.40	100	1430	146	1.68	9015	P2	18	B-102
			2.26				2.73	9025	P2	18	B-102
			3.60				4.33	9030	P2	18	B-102
			4.73				5.66	9035	P2	18	B-102
75.0	1910	195	1.47	90.0	1590	163	1.76	9015	P3	20	B-106
			2.20				2.60	9025	P3	20	B-106
			3.40				4.06	9030	P3	20	B-106
			4.20				5.00	9035	P2	20	B-102
67.0	2140	218	1.20	80.4	1780	182	1.43	9015	P3	22.4	B-106
			1.92				2.26	9025	P3	22.4	B-106
			3.06				3.66	9030	P3	22.4	B-106
			3.80				4.53	9035	P2	22.4	B-102
			4.46				5.33	9040	P3	22.4	B-106
			4.55				5.44	9045	P3	22.4	B-106
60.0	2390	244	1.18	72.0	1990	203	1.42	9015	P3	25	B-106
			1.88				2.13	9025	P3	25	B-106
			2.73				3.26	9030	P3	25	B-106
			3.53				4.26	9035	P3	25	B-106
			4.40				5.26	9040	P3	25	B-106
			0.96				1.15	9015	P3	28	B-106
53.6	2670	273	1.55	64.3	2230	228	1.86	9025	P3	28	B-106
			2.46				2.93	9030	P3	28	B-106
			3.20				3.86	9035	P3	28	B-106
			3.60				4.33	9040	P3	28	B-106
			4.72				5.64	9045	P3	28	B-106
			0.94				1.12	9015	P3	31.5	B-106
47.6	3010	307	1.45	57.1	2510	256	1.74	9025	P3	31.5	B-106
			2.06				2.53	9030	P3	31.5	B-106
			2.08				3.40	9035	P3	31.5	B-106
			3.46				4.20	9040	P3	31.5	B-106
			4.53				5.44	9045	P3	31.5	B-106
			1.19				1.42	9025	P3	35.5	B-106
42.3	3390	346	1.90	50.7	2830	288	2.26	9030	P3	35.5	B-106
			2.60				3.06	9035	P3	35.5	B-106
			2.86				3.40	9040	P3	35.5	B-106
			3.80				4.55	9045	P3	35.5	B-106
			4.53				5.40	9050	P3	35.5	B-106
			1.18				1.41	9025	P3	40	B-106
37.5	3820	390	1.70	45.0	3180	325	2.00	9030	P3	40	B-106
			2.20				2.60	9035	P3	40	B-106
			2.80				3.33	9040	P3	40	B-106
			3.56				4.27	9045	P3	40	B-106
			4.20				5.00	9050	P3	40	B-106

SELECTION Drive Unit Parallel Shaft 15kW, 18.5kW

Frequency							Model			Page of Dimension Sheet		
50Hz				60Hz								
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical	
33.3	4300	439	0.96	40.0	3580	366	1.15	9025	P3	45	B-106	
			1.52				1.83	9030	P3	45	B-106	
			2.00				2.40	9035	P3	45	B-106	
			2.26				2.73	9040	P3	45	B-106	
			3.02				3.62	9045	P3	45	B-106	
			3.46				4.13	9050	P3	45	B-106	
			4.73				5.66	9055	P3	45	B-106	
30.0	4780	488	1.36	36.0	3980	406	1.64	9030	P3	50	B-106	
			1.78				2.06	9035	P3	50	B-106	
			2.20				2.66	9040	P3	50	B-106	
			2.88				3.46	9045	P3	50	B-106	
			3.40				4.06	9050	P3	50	B-106	
			4.46				5.40	9055	P3	50	B-106	
26.8	5350	546	1.23	32.1	4460	455	1.47	9030	P3	56	B-106	
			1.62				1.94	9035	P3	56	B-106	
			1.84				2.20	9040	P3	56	B-106	
			2.44				2.92	9045	P3	56	B-106	
			2.80				3.33	9050	P3	56	B-106	
			3.60				4.33	9055	P3	56	B-106	
			4.40				5.26	9060	P3	56	B-108	
23.8	6020	614	1.10	28.6	5010	512	1.31	9030	P3	63	B-106	
			1.43				1.71	9035	P3	63	B-106	
			1.80				2.13	9040	P3	63	B-106	
			2.25				2.70	9045	P3	63	B-106	
			2.60				3.13	9050	P3	63	B-106	
			3.66				4.40	9055	P3	63	B-106	
			4.26				5.13	9060	P3	63	B-108	
21.1	6780	692	0.98	25.4	5650	577	1.18	9030	P3	71	B-106	
			1.30				1.55	9035	P3	71	B-106	
			1.48				1.77	9040	P3	71	B-106	
			1.93				2.31	9045	P3	71	B-106	
			2.13				2.60	9050	P3	71	B-106	
			2.93				3.53	9055	P3	71	B-106	
			3.33				4.00	9060	P3	71	B-108	
			4.61				5.52	9065	P3	71	B-108	
18.8	7640	780	1.14	22.5	6370	650	1.37	9035	P3	80	B-106	
			1.82				2.19	9045	P3	80	B-106	
			2.80				3.33	9055	P3	80	B-106	
			4.58				5.65	9065	P3	80	B-108	
16.7	8600	878	1.04	20.0	7160	731	1.25	9035	P3	90	B-106	
			1.55				1.86	9045	P3	90	B-106	
			2.26				2.66	9055	P3	90	B-106	
			3.53				4.22	9065	P3	90	B-108	

18.5kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency							Model			Page of Dimension Sheet	
50Hz			SF	60Hz			Size	Assembly	Reduction Ratio	Vertical	
Output Speed r/min	Output Torque (Tout) Nm	kgf m		Output Speed r/min	Output Torque (Tout) Nm	kgf m					
238	742	76	3.45	286	618	63	4.10	9015	P2	6.3	B-102
211	836	85	2.81	254	697	71	3.35	9015	P2	7.1	B-102
			4.48				5.40	9025	P2	7.1	B-102
188	942	96	2.75	225	785	80	3.29	9015	P2	8	B-102
			4.48				5.35	9025	P2	8	B-102
167	1060	108	2.21	200	883	90	2.64	9015	P2	9	B-102
			3.67				4.37	9025	P2	9	B-102
150	1180	120	2.16	180	982	100	2.54	9015	P2	10	B-102
			3.51				4.21	9025	P2	10	B-102
134	1320	135	1.72	161	1100	112	2.10	9015	P2	11.2	B-102
			2.86				3.45	9025	P2	11.2	B-102
			4.64				5.56	9030	P2	11.2	B-102
120	1470	150	1.72	144	1230	125	2.05	9015	P2	12.5	B-102
							3.29	9025	P2	12.5	B-102
			4.05				4.81	9030	P2	12.5	B-102

SELECTION Drive Unit Parallel Shaft 18.5kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
107	1650	168	1.41	129	1370	140	1.67	9015	P2	14	B-102
			2.27				2.70	9025	P2	14	B-102
			3.62				4.37	9030	P2	14	B-102
			4.91				5.89	9035	P2	14	B-102
			1.40				1.67	9015	P2	16	B-102
93.8	1880	192	2.27	113	1570	160	2.70	9025	P2	16	B-102
			3.24				3.89	9030	P2	16	B-102
			4.21				5.08	9035	P2	16	B-102
			1.14				1.36	9015	P2	18	B-102
			1.83				2.21	9025	P2	18	B-102
83.3	2120	216	2.91	100	1770	180	3.51	9030	P2	18	B-102
			3.83				4.59	9035	P2	18	B-102
			4.32				5.13	9040	P2	18	B-102
			1.78				2.10	9025	P3	20	B-106
			2.75				3.29	9030	P3	20	B-106
75.0	2360	241	3.40	90.0	1960	200	4.05	9035	P2	20	B-102
			4.43				5.29	9040	P3	20	B-106
			1.55				1.83	9025	P3	22.4	B-106
			2.48				2.97	9030	P3	22.4	B-106
			3.08				3.67	9035	P2	22.4	B-102
67.0	2640	269	3.62	80.4	2200	224	4.32	9040	P3	22.4	B-106
			4.55				5.44	9045	P3	22.4	B-106
			1.52				1.72	9025	P3	25	B-106
			2.21				2.64	9030	P3	25	B-106
			2.86				3.45	9035	P3	25	B-106
60.0	2940	301	3.56	72.0	2450	251	4.27	9040	P3	25	B-106
			4.53				5.43	9045	P3	25	B-106
			1.26				1.51	9025	P3	28	B-106
			2.00				2.37	9030	P3	28	B-106
			2.59				3.13	9035	P3	28	B-106
53.6	3300	337	2.91	64.3	2750	281	3.51	9040	P3	28	B-106
			3.82				4.57	9045	P3	28	B-106
			4.37				5.24	9050	P3	28	B-106
			1.17				1.41	9025	P3	31.5	B-106
			1.67				2.05	9030	P3	31.5	B-106
47.6	3710	379	2.27	57.1	3090	316	2.75	9035	P3	31.5	B-106
			2.81				3.40	9040	P3	31.5	B-106
			3.67				4.41	9045	P3	31.5	B-106
			4.43				5.29	9050	P3	31.5	B-106
			0.96				1.15	9025	P3	35.5	B-106
42.3	4180	427	1.54	50.7	3480	356	1.83	9030	P3	35.5	B-106
			2.10				2.48	9035	P3	35.5	B-106
			2.32				2.75	9040	P3	35.5	B-106
			3.08				3.69	9045	P3	35.5	B-106
			3.67				4.37	9050	P3	35.5	B-106
37.5	4710	481	4.59				5.45	9055	P3	35.5	B-106
			0.95				1.14	9025	P3	40	B-106
			1.37				1.62	9030	P3	40	B-106
			1.78				2.10	9035	P3	40	B-106
			2.27				2.70	9040	P3	40	B-106
33.3	5300	541	2.88	45.0	3930	401	3.46	9045	P3	40	B-106
			3.40				4.05	9050	P3	40	B-106
			4.75				5.67	9055	P3	40	B-106
			1.23				1.48	9030	P3	45	B-106
			1.62				1.94	9035	P3	45	B-106
30.0	5890	601	1.83	40.0	4420	451	2.21	9040	P3	45	B-106
			2.45				2.94	9045	P3	45	B-106
			2.81				3.35	9050	P3	45	B-106
			3.83				4.59	9055	P3	45	B-106
			4.43				5.29	9060	P3	45	B-108
30.0	5890	601	1.10	36.0	4910	501	1.32	9030	P3	50	B-106
			1.44				1.67	9035	P3	50	B-106
			1.78				2.16	9040	P3	50	B-106
			2.34				2.80	9045	P3	50	B-106
			2.75				3.29	9050	P3	50	B-106
30.0	5890	601	3.62				4.37	9055	P3	50	B-106
			4.54				5.40	9060	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 18.5kW, 22kW

Frequency							Model			Page of Dimension Sheet
50Hz			60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m				
26.8	6600	673	1.00	32.1	5500	561	9030	P3	56	B-106
			1.31				9035	P3	56	B-106
			1.49				9040	P3	56	B-106
			1.97				9045	P3	56	B-106
			2.27				9050	P3	56	B-106
			2.91				9055	P3	56	B-106
			3.56				9060	P3	56	B-108
			4.64				9065	P3	56	B-108
23.8	7420	758	0.89	28.6	6180	631	9030	P3	63	B-106
			1.16				9035	P3	63	B-106
			1.46				9040	P3	63	B-106
			1.82				9045	P3	63	B-106
			2.10				9050	P3	63	B-106
			2.97				9055	P3	63	B-106
			3.45				9060	P3	63	B-108
			4.80				9065	P3	63	B-108
21.1	8360	854	1.05	25.4	6970	711	9035	P3	71	B-106
			1.20				9040	P3	71	B-106
			1.56				9045	P3	71	B-106
			1.72				9050	P3	71	B-106
			2.37				9055	P3	71	B-106
			2.70				9060	P3	71	B-108
			3.74				9065	P3	71	B-106
			4.48				9070	P3	71	B-108
18.8	9420	962	0.92	22.5	7850	802	9035	P3	80	B-106
			1.48				9045	P3	80	B-106
			2.27				9055	P3	80	B-106
			3.71				9065	P3	80	B-108
16.7	10600	1080	0.84	20.0	8830	902	9035	P3	90	B-106
			1.25				9045	P3	90	B-106
			1.83				9055	P3	90	B-106
			2.86				9065	P3	90	B-108
			4.75				9075	P3	90	B-108

22kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency							Model			Page of Dimension Sheet
50Hz			60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m				
238	882	90	2.90	286	735	75	9015	P2	6.3	B-102
			4.63				9025	P2	6.3	B-102
211	994	102	2.36	254	829	85	9015	P2	7.1	B-102
			3.77				9025	P2	7.1	B-102
188	1120	114	2.31	225	934	95	9015	P2	8	B-102
			3.77				9025	P2	8	B-102
167	1260	129	1.86	200	1050	107	9015	P2	9	B-102
			3.09				9025	P2	9	B-102
			4.77				9030	P3	9	B-102
150	1400	143	1.81	180	1170	119	9015	P2	10	B-102
			2.95				9025	P2	10	B-102
			4.36				9030	P3	10	B-102
134	1570	160	1.45	161	1310	133	9015	P2	11.2	B-102
			2.40				9025	P2	11.2	B-102
			3.90				9030	P2	11.2	B-102
120	1750	179	1.45	144	1460	149	9015	P2	12.5	B-102
			2.31				9025	P2	12.5	B-102
			3.40				9030	P2	12.5	B-102
			4.54				9035	P2	12.5	B-102
107	1960	200	1.18	129	1630	167	9015	P2	14	B-102
			1.90				9025	P2	14	B-102
			3.04				9030	P2	14	B-102
			4.13				6035	P2	14	B-102
			4.50				9040	P2	14	B-102

SELECTION Drive Unit Parallel Shaft 22kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF				
93.8	2240	229	1.17	113	1870	191	1.40	9015	P2	16	B-102
			1.90				2.27	9025	P2	16	B-102
			2.72				3.27	9030	P2	16	B-102
			3.54				4.27	9035	P2	16	B-102
			4.40				5.27	9040	P2	16	B-102
83.3	2520	257	1.54	100	2100	215	1.86	9025	P2	18	B-102
			2.45				2.95	9030	P2	18	B-102
			3.22				3.86	9035	P2	18	B-102
			3.63				4.31	9040	P2	18	B-102
			4.75				5.67	9045	P2	18	B-102
75.0	2800	286	1.50	90.0	2330	238	1.77	9025	P3	20	B-106
			2.31				2.77	9030	P3	20	B-106
			2.86				3.40	9035	P2	20	B-102
			3.72				4.45	9040	P3	20	B-106
			4.68				5.60	9045	P2	20	B-102
67.0	3140	320	1.30	80.4	2610	267	1.54	9025	P3	22.4	B-106
			2.09				2.50	9030	P3	22.4	B-106
			2.59				3.09	9035	P2	22.4	B-102
			3.04				3.63	9040	P3	22.4	B-106
			3.82				4.57	9045	P2	22.4	B-102
60.0	3500	358	4.81	72.0	2920	298	5.77	9050	P3	22.4	B-106
			1.28				1.45	9025	P3	25	B-106
			1.86				2.22	9030	P3	25	B-106
			2.40				2.90	9035	P3	25	B-106
			3.00				3.59	9040	P3	25	B-106
53.6	3920	400	3.80	64.3	3270	334	4.57	9045	P3	25	B-106
			4.45				5.36	9050	P3	25	B-106
			1.06				1.27	9025	P3	28	B-106
			1.68				2.00	9030	P3	28	B-106
			2.18				2.63	9035	P3	28	B-106
47.6	4410	450	2.45	57.1	3680	375	2.95	9040	P3	28	B-106
			3.21				3.85	9045	P3	28	B-106
			3.68				4.40	9050	P3	28	B-106
			0.99				1.18	9025	P3	31.5	B-106
			1.40				1.72	9030	P3	31.5	B-106
42.3	4970	508	1.90	50.7	4140	423	2.31	9035	P3	31.5	B-106
			2.36				2.86	9040	P3	31.5	B-106
			3.09				3.70	9045	P3	31.5	B-106
			3.72				4.45	9050	P3	31.5	B-106
			4.77				5.72	9055	P3	31.5	B-106
37.5	5600	572	1.30	45.0	4670	477	1.54	9030	P3	35.5	B-106
			1.77				2.09	9035	P3	35.5	B-106
			1.95				2.31	9040	P3	35.5	B-106
			2.59				3.10	9045	P3	35.5	B-106
			3.09				3.68	9050	P3	35.5	B-106
33.3	6300	644	3.86	40.0	5250	536	4.59	9055	P3	35.5	B-106
			4.86				5.81	9060	P3	35.5	B-108
			1.15				1.36	9030	P3	40	B-106
			1.50				1.77	9035	P3	40	B-106
			1.90				2.27	9040	P3	40	B-106
30.0	7000	715	2.42	36.0	5840	596	2.91	9045	P3	40	B-106
			2.86				3.40	9050	P3	40	B-106
			4.00				4.77	9055	P3	40	B-106
			4.72				5.68	9060	P3	40	B-108
			1.04				1.25	9030	P3	45	B-106
			1.36				1.63	9035	P3	45	B-106
			1.54				1.86	9040	P3	45	B-106
			2.06				2.47	9045	P3	45	B-106
			2.36				2.81	9050	P3	45	B-106
			3.22				3.86	9055	P3	45	B-106
			3.72				4.45	9060	P3	45	B-108
			0.93				1.11	9030	P3	50	B-106
			1.21				1.40	9035	P3	50	B-106
			1.50				1.81	9040	P3	50	B-106
			1.96				2.35	9045	P3	50	B-106
			2.31				2.77	9050	P3	50	B-106
			3.04				3.68	9055	P3	50	B-106
			3.81				4.54	9060	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 22kW, 30kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
26.8	7840	801	0.84	32.1	6540	667	1.00	9030	P3	56	B-106
			1.10				1.32	9035	P3	56	B-106
			1.25				1.50	9040	P3	56	B-106
			1.66				1.99	9045	P3	56	B-106
			1.90				2.27	9050	P3	56	B-106
			2.45				2.95	9055	P3	56	B-106
			3.00				3.59	9060	P3	56	B-108
			3.90				4.67	9065	P3	56	B-108
			4.68				5.59	9070	P3	56	B-108
23.8	8820	901	0.97	28.6	7350	751	1.16	9035	P3	63	B-106
			1.23				1.45	9040	P3	63	B-106
			1.53				1.84	9045	P3	63	B-106
			1.77				2.13	9050	P3	63	B-106
			2.50				3.00	9055	P3	63	B-106
			2.90				3.50	9060	P3	63	B-108
			4.04				4.84	9065	P3	63	B-108
			4.50				5.40	9070	P3	63	B-108
21.1	9940	1020	0.89	25.4	8290	846	1.06	9035	P3	71	B-106
			1.00				1.20	9040	P3	71	B-106
			1.31				1.57	9045	P3	71	B-106
			1.45				1.77	9050	P3	71	B-106
			2.00				2.40	9055	P3	71	B-106
			2.27				2.72	9060	P3	71	B-108
			3.14				3.76	9065	P3	71	B-108
			3.77				4.50	9070	P3	71	B-108
			4.95				5.95	9075	P3	71	B-108
18.8	11210	1140	1.24	22.5	9340	953	1.49	9045	P3	80	B-106
			1.90				2.27	9055	P3	80	B-106
			3.12				3.75	9065	P3	80	B-108
			4.77				5.68	9075	P3	80	B-108
16.7	12610	1290	1.05	20.0	10510	1070	1.26	9045	P3	90	B-106
			1.54				1.81	9055	P3	90	B-106
			2.40				2.88	9065	P3	90	B-108
			4.00				4.77	9075	P3	90	B-108

30kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
238	1200	123	3.40	286	1000	102	4.06	9025	P2	6.3	B-102
			4.96				5.96	9030	P2	6.3	B-102
211	1360	138	2.76	254	1130	115	3.33	9025	P2	7.1	B-102
			4.50				5.36	9030	P2	7.1	B-102
188	1530	156	2.76	225	1270	130	3.30	9025	P2	8	B-102
			3.90				4.66	9030	P2	8	B-102
167	1720	176	2.26	200	1430	146	2.70	9025	P2	9	B-102
			3.50				4.20	9030	P2	9	B-102
			4.73				5.66	9035	P2	9	B-102
150	1910	195	2.16	180	1590	163	2.60	9025	P2	10	B-102
			3.20				3.83	9030	P2	10	B-102
			4.06				4.86	9035	P2	10	B-102
134	2140	218	1.76	161	1780	182	2.13	9025	P2	11.2	B-102
			2.86				3.43	9030	P2	11.2	B-102
			3.70				4.43	9035	P2	11.2	B-102
			4.30				5.13	9040	P2	11.2	B-102
120	2390	244	1.70	144	1990	203	2.03	9025	P2	12.5	B-102
			2.50				2.96	9030	P2	12.5	B-102
			3.33				4.00	9035	P2	12.5	B-102
			4.03				4.83	9040	P2	12.5	B-102
107	2670	273	1.40	129	2230	228	1.66	9025	P2	14	B-102
			2.23				2.70	9030	P2	14	B-102
			3.03				3.63	9035	P2	14	B-102
			3.30				3.93	9040	P2	14	B-102
			4.54				5.42	9045	P2	14	B-102

SELECTION Drive Unit Parallel Shaft 30kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
93.8	3060	312	1.40	113	2550	260	1.66	9025	P2	16	B-102
			2.00				2.40	9030	P2	16	B-102
			2.60				3.13	9035	P2	16	B-102
			3.23				3.86	9040	P2	16	B-102
			4.26				5.09	9045	P2	16	B-102
			4.73				5.66	9050	P2	16	B-102
83.3	3440	351	1.80	100	2870	293	2.16	9030	P2	18	B-102
			2.36				2.83	9035	P2	18	B-102
			2.66				3.16	9040	P2	18	B-102
			3.48				4.16	9045	P2	18	B-102
			3.90				4.66	9050	P2	18	B-102
75.0	3820	390	1.70	90.0	3180	325	2.03	9030	P3	20	B-106
			2.10				2.50	9035	P2	20	B-102
			2.73				3.26	9040	P3	20	B-106
			3.43				4.10	9045	P2	20	B-102
			4.30				5.13	9050	P3	20	B-106
67.0	4280	437	1.90	80.4	3570	364	2.26	9035	P2	22.4	B-102
			2.23				2.66	9040	P3	22.4	B-106
			2.80				3.35	9045	P2	22.4	B-102
			3.53				4.23	9050	P3	22.4	B-106
			4.06				4.86	9055	P2	22.4	B-102
60.0	4780	488	1.76	72.0	3980	406	2.13	9035	P3	25	B-106
			2.20				2.63	9040	P3	25	B-106
			2.79				3.35	9045	P3	25	B-106
			3.26				3.93	9050	P3	25	B-106
			4.59				5.50	9055	P3	25	B-106
53.6	5350	546	1.60	64.3	4460	455	1.93	9035	P3	28	B-106
			1.80				2.16	9040	P3	28	B-106
			2.36				2.82	9045	P3	28	B-106
			2.70				3.23	9050	P3	28	B-106
			3.70				4.40	9055	P3	28	B-106
			4.30				5.13	9060	P3	28	B-108
47.6	6020	614	1.40	57.1	5010	512	1.70	9035	P3	31.5	B-106
			1.73				2.10	9040	P3	31.5	B-106
			2.26				2.72	9045	P3	31.5	B-106
			2.73				3.26	9050	P3	31.5	B-106
			3.50				4.20	9055	P3	31.5	B-106
			4.53				5.43	9060	P3	31.5	B-108
42.3	6780	692	1.30	50.7	5650	577	1.53	9035	P3	35.5	B-106
			1.43				1.70	9040	P3	35.5	B-106
			1.90				2.27	9045	P3	35.5	B-106
			2.26				2.70	9050	P3	35.5	B-106
			2.83				3.36	9055	P3	35.5	B-106
			3.56				4.26	9060	P3	35.5	B-108
			4.48				5.36	9065	P3	35.5	B-108
37.5	7640	780	1.10	45.0	6370	650	1.30	9035	P3	40	B-106
			1.40				1.66	9040	P3	40	B-106
			1.78				2.13	9045	P3	40	B-106
			2.10				2.50	9050	P3	40	B-106
			2.93				3.50	9055	P3	40	B-106
			3.46				4.16	9060	P3	40	B-108
			4.83				5.80	9065	P3	40	B-108
33.3	8600	878	1.00	40.0	7160	731	1.20	9035	P3	45	B-106
			1.13				1.36	9040	P3	45	B-106
			1.51				1.81	9045	P3	45	B-106
			1.73				2.06	9050	P3	45	B-106
			2.36				2.83	9055	P3	45	B-106
			2.73				3.26	9060	P3	45	B-108
			3.74				4.47	9065	P3	45	B-108
			4.46				5.33	9070	P3	45	B-108
30.0	9550	975	0.89	36.0	7960	813	1.03	9035	P3	50	B-106
			1.10				1.33	9040	P3	50	B-106
			1.44				1.73	9045	P3	50	B-106
			1.70				2.03	9050	P3	50	B-106
			2.23				2.70	9055	P3	50	B-106
			2.80				3.33	9060	P3	50	B-108
			3.72				4.45	9065	P3	50	B-108
			4.13				4.93	9070	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 30kW, 37kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
26.8	10700	1090	0.92	32.1	8910	910	1.10	9040	P3	56	B-106
			1.22				1.46	9045	P3	56	B-106
			1.40				1.66	9050	P3	56	B-106
			1.80				2.16	9055	P3	56	B-106
			2.20				2.63	9060	P3	56	B-108
			2.86				3.43	9065	P3	56	B-108
			3.43				4.09	9070	P3	56	B-108
			4.73				5.66	9075	P3	56	B-108
23.8	12030	1230	0.90	28.6	10030	1020	1.06	9040	P3	63	B-106
			1.12				1.35	9045	P3	63	B-106
			1.30				1.56	9050	P3	63	B-106
			1.83				2.20	9055	P3	63	B-106
			2.13				2.56	9060	P3	63	B-108
			2.96				3.55	9065	P3	63	B-108
			3.30				3.96	9070	P3	63	B-108
			4.36				5.20	9075	P3	63	B-108
21.1	13560	1380	0.96	25.4	11300	1150	1.15	9045	P3	71	B-106
			1.06				1.30	9050	P3	71	B-106
			1.46				1.76	9055	P3	71	B-106
			1.66				2.00	9060	P3	71	B-108
			2.30				2.76	9065	P3	71	B-108
			2.76				3.30	9070	P3	71	B-108
			3.63				4.36	9075	P3	71	B-108
			4.33				5.16	9080	P3	71	B-108
18.8	15280	1560	0.91	22.5	12730	1300	1.09	9045	P3	80	B-106
			1.40				1.66	9055	P3	80	B-106
			2.29				2.75	9065	P3	80	B-108
			3.50				4.16	9075	P3	80	B-108
16.7	17190	1760	1.13	20.0	14330	1460	1.33	9055	P3	90	B-106
			1.76				2.11	9065	P3	90	B-108
			2.93				3.50	9075	P3	90	B-108
			4.53				5.40	9075	P3	90	B-108

37kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
238	1480	152	2.75	286	1240	126	3.29	9025	P2	6.3	B-102
			4.02				4.83	9030	P2	6.3	B-102
211	1670	171	3.64	254	1390	142	4.35	9030	P2	7.1	B-102
188	1880	192	3.16	225	1570	160	3.78	9030	P2	8	B-102
			4.21				5.05	9035	P2	8	B-102
167	2120	216	2.83	200	1770	180	3.40	9030	P2	9	B-102
			3.83				4.59	9035	P2	9	B-102
			4.27				5.08	9040	P2	9	B-102
150	2360	241	2.59	180	1960	200	3.10	9030	P2	10	B-102
			3.29				3.94	9035	P2	10	B-102
			4.27				5.08	9040	P2	10	B-102
134	2640	269	2.32	161	2200	224	2.78	9030	P2	11.2	B-102
			3.00				3.59	9035	P2	11.2	B-102
			3.48				4.16	9040	P2	11.2	B-102
			4.48				5.35	9045	P2	11.2	B-102
120	2940	301	2.02	144	2450	251	2.40	9030	P2	12.5	B-102
			2.70				3.24	9035	P2	12.5	B-102
			3.27				3.91	9040	P2	12.5	B-102
			4.47				5.16	9045	P2	12.5	B-102
			5.00				6.00	9050	P2	12.5	B-102
107	3300	337	1.81	129	2750	281	2.18	9030	P2	14	B-102
			2.45				2.94	9035	P2	14	B-102
			2.67				3.18	9040	P2	14	B-102
			3.68				4.39	9045	P2	14	B-102
			4.13				4.94	9050	P2	14	B-102

SELECTION Drive Unit Parallel Shaft 37kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
93.8	3770	385	1.62	113	3140	321	1.94	9030	P2	16	B-102
			2.10				2.54	9035	P2	16	B-102
			2.62				3.13	9040	P2	16	B-102
			3.45				4.12	9045	P2	16	B-102
			3.83				4.59	9050	P2	16	B-102
83.3	4240	433	1.45	100	3530	361	1.75	9030	P2	18	B-102
			1.91				2.29	9035	P2	18	B-102
			2.16				2.56	9040	P2	18	B-102
			2.82				3.37	9045	P2	18	B-102
			3.16				3.78	9050	P2	18	B-102
			4.29				5.16	9055	P2	18	B-102
			5.00				6.00	9060	P2	18	B-104
75.0	4710	481	1.70	90.0	3930	401	2.02	9035	P2	20	B-102
			2.21				2.64	9040	P3	20	B-106
			2.78				3.33	9045	P2	20	B-102
			3.48				4.16	9050	P3	20	B-106
			4.10				4.91	9055	P2	20	B-102
67.0	5280	539	1.54	80.4	4400	449	1.83	9035	P2	22.4	B-102
			1.81				2.16	9040	P3	22.4	B-106
			2.27				2.72	9045	P2	22.4	B-102
			2.86				3.43	9050	P3	22.4	B-106
			3.29				3.94	9055	P2	22.4	B-102
			4.54				5.43	9060	P3	22.4	B-108
60.0	5890	601	1.43	72.0	4910	501	1.72	9035	P3	25	B-106
			1.78				2.13	9040	P3	25	B-106
			2.26				2.71	9045	P3	25	B-106
			2.64				3.18	9050	P3	25	B-106
			3.72				4.45	9055	P3	25	B-106
			4.40				5.27	9060	P3	25	B-108
53.6	6600	673	1.45	64.3	5500	561	1.75	9040	P3	28	B-106
			1.91				2.28	9045	P3	28	B-106
			2.18				2.62	9050	P3	28	B-106
			3.00				3.56	9055	P3	28	B-106
			3.48				4.16	9060	P3	28	B-108
			4.73				5.66	9065	P3	28	B-108
47.6	7420	758	1.40	57.1	6180	631	1.70	9040	P3	31.5	B-106
			1.83				2.20	9045	P3	31.5	B-106
			2.21				2.64	9050	P3	31.5	B-106
			2.83				3.40	9055	P3	31.5	B-106
			3.67				4.40	9060	P3	31.5	B-108
			4.72				5.64	9065	P3	31.5	B-108
42.3	8360	854	1.16	50.7	6970	711	1.37	9040	P3	35.5	B-106
			1.54				1.84	9045	P3	35.5	B-106
			1.83				2.18	9050	P3	35.5	B-106
			2.29				2.72	9055	P3	35.5	B-106
			2.89				3.45	9060	P3	35.5	B-108
			3.63				4.34	9065	P3	35.5	B-108
			4.51				5.37	9070	P3	35.5	B-108
37.5	9420	962	1.13	45.0	7850	802	1.35	9040	P3	40	B-106
			1.44				1.73	9045	P3	40	B-106
			1.70				2.02	9050	P3	40	B-106
			2.37				2.83	9055	P3	40	B-106
			2.81				3.37	9060	P3	40	B-108
			3.92				4.70	9065	P3	40	B-108
			4.32				5.18	9070	P3	40	B-108
33.3	10600	1080	0.91	40.0	8830	902	1.10	9040	P3	45	B-106
			1.22				1.47	9045	P3	45	B-106
			1.40				1.67	9050	P3	45	B-106
			1.91				2.29	9055	P3	45	B-106
			2.21				2.64	9060	P3	45	B-108
			3.03				3.62	9065	P3	45	B-108
			3.62				4.32	9070	P3	45	B-108
			4.78				5.72	9075	P3	45	B-108
30.0	11780	1200	0.89	36.0	9820	1000	1.08	9040	P3	50	B-106
			1.17				1.40	9045	P3	50	B-106
			1.37				1.64	9050	P3	50	B-106
			1.81				2.18	9055	P3	50	B-106
			2.27				2.70	9060	P3	50	B-108
			3.01				3.61	9065	P3	50	B-108
			3.35				4.00	9070	P3	50	B-108
			4.56				5.48	9075	P3	50	B-108
			4.91				5.89	9080	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 37kW, 45kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF				
26.8	13190	1350	0.98	32.1	10990	1120	1.18	9045	P3	56	B-106
			1.13				1.35	9050	P3	56	B-106
			1.45				1.75	9055	P3	56	B-106
			1.78				2.13	9060	P3	56	B-108
			2.32				2.78	9065	P3	56	B-108
			2.78				3.32	9070	P3	56	B-108
			3.83				4.59	9075	P3	56	B-108
			4.27				5.10	9080	P3	56	B-108
23.8	14840	1520	0.91	28.6	12370	1260	1.09	9045	P3	63	B-106
			1.05				1.27	9050	P3	63	B-106
			1.48				1.78	9055	P3	63	B-106
			1.72				2.08	9060	P3	63	B-108
			2.40				2.88	9065	P3	63	B-108
			2.67				3.21	9070	P3	63	B-108
			3.54				4.21	9075	P3	63	B-108
			4.05				4.83	9080	P3	63	B-108
21.1	16730	1710	0.86	25.4	13940	1420	1.05	9050	P3	71	B-106
			1.18				1.43	9055	P3	71	B-106
			1.35				1.62	9060	P3	71	B-108
			1.87				2.23	9065	P3	71	B-108
			2.24				2.67	9070	P3	71	B-108
			2.94				3.54	9075	P3	71	B-108
			3.51				4.18	9080	P3	71	B-108
			4.45				5.32	9085	P3	71	B-108
18.8	18850	1920	1.13	22.5	15700	1600	1.35	9055	P3	80	B-106
			1.85				2.23	9065	P3	80	B-108
			2.83				3.37	9075	P3	80	B-108
			4.27				5.10	9085	P3	80	B-108
16.7	21200	2160	0.91	20.0	17670	1800	1.08	9055	P3	90	B-106
			1.43				1.71	9065	P3	90	B-108
			2.37				2.83	9075	P3	90	B-108
			3.67				4.37	9085	P3	90	B-108

45kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF	Output Speed r/min	Output Torque (Tout) Nm	kgf m	SF				
238	1800	184	4.95	286	1500	154	5.71	9040	P2	6.3	B-102
211	2030	208	4.46	254	1700	173	5.35	9040	P2	7.1	B-102
188	2290	234	3.46	225	1910	195	4.15	9035	P2	8	B-102
			4.22				4.86	9040	P2	8	B-102
			4.96				5.72	9045	P2	8	B-102
167	2580	263	3.15	200	2150	219	3.77	9035	P2	9	B-102
			3.51				4.17	9040	P2	9	B-102
			4.71				5.62	9045	P2	9	B-102
150	2870	293	2.71	180	2390	244	3.24	9035	P2	10	B-102
			3.51				4.17	9040	P2	10	B-102
			4.23				4.88	9045	P2	10	B-102
134	3210	328	2.46	161	2670	273	2.95	9035	P2	11.2	B-102
			2.86				3.42	9040	P2	11.2	B-102
			3.68				4.40	9045	P2	11.2	B-102
			4.17				5.00	9050	P2	11.2	B-102
120	3580	366	2.22	144	2980	305	2.66	9035	P2	12.5	B-102
			2.68				3.22	9040	P2	12.5	B-102
			3.68				4.24	9045	P2	12.5	B-102
			4.11				4.93	9050	P2	12.5	B-102
107	4010	410	2.02	129	3340	341	2.42	9035	P2	14	B-102
			2.20				2.62	9040	P2	14	B-102
			3.02				3.61	9045	P2	14	B-102
			3.40				4.06	9050	P2	14	B-102
			4.37				5.22	9055	P2	14	B-102

SELECTION Drive Unit Parallel Shaft 45kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
93.8	4580	468	1.73	113	3820	390	2.08	9035	P2	16	B-102
			2.15				2.57	9040	P2	16	B-102
			2.84				3.39	9045	P2	16	B-102
			3.15				3.77	9050	P2	16	B-102
			4.40				5.26	9055	P2	16	B-102
83.3	5160	527	1.57	100	4300	439	1.88	9035	P2	18	B-102
			1.77				2.11	9040	P2	18	B-102
			2.32				2.77	9045	P2	18	B-102
			2.60				3.11	9050	P2	18	B-102
			3.53				4.24	9055	P2	18	B-102
			4.11				4.93	9060	P2	18	B-104
75.0	5730	585	1.40	90.0	4780	488	1.66	9035	P2	20	B-102
			1.82				2.17	9040	P3	20	B-106
			2.28				2.73	9045	P2	20	B-102
			2.86				3.42	9050	P3	20	B-106
			3.37				4.04	9055	P2	20	B-102
			4.73				5.64	9060	P3	20	B-108
67.0	6420	655	1.87	80.4	5350	546	2.23	9045	P2	22.4	B-102
			2.35				2.82	9050	P3	22.4	B-106
			2.71				3.24	9055	P2	22.4	B-102
			3.73				4.46	9060	P3	22.4	B-108
			4.30				5.14	9065	P2	22.4	B-108
60.0	7160	731	1.86	72.0	5970	609	2.23	9045	P3	25	B-106
			2.17				2.62	9050	P3	25	B-106
			3.06				3.66	9055	P3	25	B-106
			3.62				4.33	9060	P3	25	B-108
53.6	8020	819	1.57	64.3	6690	683	1.88	9045	P3	28	B-106
			1.80				2.15	9050	P3	28	B-106
			2.46				2.93	9055	P3	28	B-106
			2.86				3.42	9060	P3	28	B-108
			3.89				4.65	9065	P3	28	B-108
			4.62				5.53	9070	P3	28	B-108
47.6	9020	921	1.51	57.1	7520	768	1.81	9045	P3	31.5	B-106
			1.82				2.17	9050	P3	31.5	B-106
			2.33				2.80	9055	P3	31.5	B-106
			3.02				3.62	9060	P3	31.5	B-108
			3.88				4.64	9065	P3	31.5	B-108
			4.44				5.31	9070	P3	31.5	B-108
42.3	10170	1040	1.26	50.7	8480	865	1.51	9045	P3	35.5	B-106
			1.51				1.80	9050	P3	35.5	B-106
			1.88				2.24	9055	P3	35.5	B-106
			2.37				2.84	9060	P3	35.5	B-108
			2.98				3.57	9065	P3	35.5	B-108
			3.71				4.42	9070	P3	35.5	B-108
37.5	11460	1170	4.91	45.0	9550	975	5.88	9075	P3	35.5	B-108
			1.18				1.42	9045	P3	40	B-106
			1.40				1.66	9050	P3	40	B-106
			1.95				2.33	9055	P3	40	B-106
			2.31				2.77	9060	P3	40	B-108
			3.22				3.86	9065	P3	40	B-108
33.3	12890	1320	3.55	40.0	10740	1100	4.26	9070	P3	40	B-108
			4.68				5.60	9075	P3	40	B-108
			1.00				1.20	9045	P3	45	B-106
			1.15				1.37	9050	P3	45	B-106
			1.57				1.88	9055	P3	45	B-106
			1.82				2.17	9060	P3	45	B-108
30.0	14330	1460	2.49	36.0	11940	1220	2.98	9065	P3	45	B-108
			2.97				3.55	9070	P3	45	B-108
			3.93				4.71	9075	P3	45	B-108
			4.68				5.62	9080	P3	45	B-108
			0.96				1.15	9045	P3	50	B-106
			1.13				1.35	9050	P3	50	B-106
			1.48				1.80	9055	P3	50	B-106
			1.86				2.22	9060	P3	50	B-108
			2.48				2.97	9065	P3	50	B-108
			2.75				3.28	9070	P3	50	B-108
			3.75				4.51	9075	P3	50	B-108
			4.04				4.84	9080	P3	50	B-108

SELECTION Drive Unit Parallel Shaft 45kW, 55kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
26.8	16040	1640	0.93	32.1	13370	1370	1.11	9050	P3	56	B-106
			1.20				1.44	9055	P3	56	B-106
			1.46				1.75	9060	P3	56	B-108
			1.91				2.28	9065	P3	56	B-108
			2.28				2.73	9070	P3	56	B-108
			3.15				3.77	9075	P3	56	B-108
			3.51				4.20	9080	P3	56	B-108
			4.91				5.86	9085	P3	56	B-108
23.8	18050	1840	1.22	28.6	15040	1540	1.46	9055	P3	63	B-106
			1.42				1.71	9060	P3	63	B-108
			1.97				2.36	9065	P3	63	B-108
			2.20				2.64	9070	P3	63	B-108
			2.91				3.46	9075	P3	63	B-108
			3.33				3.97	9080	P3	63	B-108
			4.26				5.11	9085	P3	63	B-108
21.1	20340	2080	0.97	25.4	16950	1730	1.17	9055	P3	71	B-106
			1.11				1.33	9060	P3	71	B-108
			1.53				1.84	9065	P3	71	B-108
			1.84				2.20	9070	P3	71	B-108
			2.42				2.91	9075	P3	71	B-108
			2.88				3.44	9080	P3	71	B-108
			3.66				4.37	9085	P3	71	B-108
18.8	22920	2340	0.93	22.5	19100	1950	1.11	9055	P3	80	B-106
			1.52				1.83	9065	P3	80	B-108
			2.33				2.77	9075	P3	80	B-108
			3.51				4.20	9085	P3	80	B-108
16.7	25790	2630	1.17	20.0	21490	2190	1.40	9065	P3	90	B-108
			1.95				2.33	9075	P3	90	B-108
			3.02				3.60	9085	P3	90	B-108

55kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
238	2210	225	4.05	286	1840	188	4.67	9040	P2	6.3	B-102
211	2490	254	3.65	254	2070	212	4.38	9040	P2	7.1	B-102
188	2800	286	3.45	225	2330	238	3.98	9040	P2	8	B-102
			4.06				4.68	9045	P2	8	B-102
			4.92				5.65	9050	P2	8	B-102
167	3150	322	2.87	200	2630	268	3.41	9040	P2	9	B-102
			3.85				4.60	9045	P2	9	B-102
			4.34				5.20	9050	P2	9	B-102
150	3500	358	2.87	180	2920	298	3.41	9040	P2	10	B-102
			3.46				3.99	9045	P2	10	B-102
			4.10				4.70	9050	P2	10	B-102
			4.92				5.65	9055	P2	10	B-102
134	3920	400	2.34	161	3270	334	2.80	9040	P2	11.2	B-102
			3.01				3.60	9045	P2	11.2	B-102
			3.41				4.09	9050	P2	11.2	B-102
			4.54				5.43	9055	P2	11.2	B-102
120	4380	447	2.20	144	3650	372	2.63	9040	P2	12.5	B-102
			3.01				3.47	9045	P2	12.5	B-102
			3.36				4.03	9050	P2	12.5	B-102
			4.10				4.70	9055	P2	12.5	B-102
107	4900	501	1.80	129	4090	417	2.14	9040	P2	14	B-102
			2.47				2.95	9045	P2	14	B-102
			2.78				3.32	9050	P2	14	B-102
			3.58				4.27	9055	P2	14	B-102
			4.40				5.25	9060	P2	14	B-104
93.8	5600	572	2.32	113	4670	477	2.77	9045	P2	16	B-102
			2.58				3.09	9050	P2	16	B-102
			3.60				4.30	9055	P2	16	B-102
			4.27				5.10	9060	P2	16	B-104

SELECTION Drive Unit Parallel Shaft 55kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
83.3	6300	644	1.90	100	5250	536	2.27	9045	P2	18	B-102
			2.12				2.54	9050	P2	18	B-102
			2.89				3.47	9055	P2	18	B-102
			3.36				4.03	9060	P2	18	B-104
			4.59				5.48	9065	P2	18	B-104
75.0	7000	715	1.87	90.0	5840	596	2.24	9045	P2	20	B-102
			2.34				2.80	9050	P3	20	B-106
			2.76				3.30	9055	P2	20	B-102
			3.87				4.61	9060	P3	20	B-108
			4.57				5.46	9065	P2	20	B-104
67.0	7840	801	1.53	80.4	6540	667	1.83	9045	P2	22.4	B-102
			1.92				2.30	9050	P3	22.4	B-106
			2.21				2.65	9055	P2	22.4	B-102
			3.05				3.65	9060	P3	22.4	B-108
			3.52				4.21	9065	P2	22.4	B-104
			4.72				5.63	9070	P3	22.4	B-108
60.0	8750	894	2.50	72.0	7300	745	3.00	9055	P3	25	B-106
			2.96				3.54	9060	P3	25	B-108
			4.12				4.76	9065	P3	25	B-108
			4.54				5.43	9070	P3	25	B-108
53.6	9800	1000	2.01	64.3	8170	834	2.40	9055	P3	28	B-106
			2.34				2.80	9060	P3	28	B-108
			3.18				3.81	9065	P3	28	B-108
			3.78				4.52	9070	P3	28	B-108
			5.00				5.98	9075	P3	28	B-108
47.6	11030	1130	1.90	57.1	9190	938	2.29	9055	P3	31.5	B-106
			2.47				2.96	9060	P3	31.5	B-108
			3.17				3.79	9065	P3	31.5	B-108
			3.63				4.34	9070	P3	31.5	B-108
			4.80				5.72	9075	P3	31.5	B-108
42.3	12430	1270	1.54	50.7	10360	1060	1.83	9055	P3	35.5	B-106
			1.94				2.32	9060	P3	35.5	B-108
			2.44				2.92	9065	P3	35.5	B-108
			3.03				3.61	9070	P3	35.5	B-108
			4.01				4.81	9075	P3	35.5	B-108
			4.67				5.58	9080	P3	35.5	B-108
37.5	14010	1430	1.60	45.0	11670	1190	1.90	9055	P3	40	B-106
			1.89				2.27	9060	P3	40	B-108
			2.63				3.16	9065	P3	40	B-108
			2.90				3.49	9070	P3	40	B-108
			3.83				4.58	9075	P3	40	B-108
			4.43				5.30	9080	P3	40	B-108
33.3	15760	1610	1.29	40.0	13130	1340	1.54	9055	P3	45	B-106
			1.49				1.78	9060	P3	45	B-108
			2.04				2.44	9065	P3	45	B-108
			2.43				2.90	9070	P3	45	B-108
			3.21				3.85	9075	P3	45	B-108
			3.83				4.59	9080	P3	45	B-108
30.0	17510	1790	4.89				5.83	9085	P3	45	B-108
			1.21	360	14590	1490	1.47	9055	P3	50	B-106
			1.52				1.81	9060	P3	50	B-108
			2.03				2.43	9065	P3	50	B-108
			2.25				2.69	9070	P3	50	B-108
			3.07				3.69	9075	P3	50	B-108
26.8	19610	2000	3.30				3.96	9080	P3	50	B-108
			0.98	32.1	16340	1670	1.18	9055	P3	56	B-106
			1.20				1.43	9060	P3	56	B-108
			1.56				1.87	9065	P3	56	B-108
			1.87				2.23	9070	P3	56	B-108
			2.58				3.09	9075	P3	56	B-108
23.8	22060	2250	2.87				3.43	9080	P3	56	B-108
			4.01				4.80	9085	P3	56	B-108
			1.16	28.6	18380	1880	1.40	9060	P3	63	B-108
			1.61				1.93	9065	P3	63	B-108
			1.80				2.16	9070	P3	63	B-108
			2.38				2.83	9075	P3	63	B-108
			2.72				3.25	9080	P3	63	B-108
			3.49				4.18	9085	P3	63	B-108

SELECTION Drive Unit Parallel Shaft 55kW, 75kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
21.1	24860	2540	0.90	25.4	20720	2120	1.09	9060	P3	71	B-108
			1.25				1.50	9065	P3	71	B-108
			1.50				1.80	9070	P3	71	B-108
			1.98				2.38	9075	P3	71	B-108
			2.36				2.81	9080	P3	71	B-108
			3.00				3.58	9085	P3	71	B-108
18.8	28010	2860	1.24	22.5	23340	2380	1.50	9065	P3	80	B-108
			1.90				2.27	9075	P3	80	B-108
			2.87				3.43	9085	P3	80	B-108
16.7	31520	3220	0.96	20.0	26260	2680	1.15	9065	P3	90	B-108
			1.60				1.90	9075	P3	90	B-108
			2.47				2.94	9085	P3	90	B-108

75kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
238	3010	307	4.06	286	2510	256	4.66	9050	P2	6.3	B-102
211	3390	346	3.90	254	2830	288	4.65	9050	P2	7.1	B-102
188	3820	390	4.06	225	3180	325	4.66	9055	P2	8	B-102
167	4300	439	4.06	200	3580	366	4.66	9055	P2	9	B-102
			4.94				5.90	9060	P2	9	B-104
150	4780	488	3.61	180	3980	406	4.14	9055	P2	10	B-102
134	5350	546	3.33	161	4460	455	3.98	9055	P2	11.2	B-102
			4.01				4.80	9060	P2	11.2	B-104
120	5970	609	3.01	144	4970	508	3.45	9055	P2	12.5	B-102
			4.09				4.88	9060	P2	12.5	B-104
107	6690	683	2.62	129	5570	569	3.13	9055	P2	14	B-102
			3.22				3.85	9060	P2	14	B-104
			4.19				5.00	9065	P2	14	B-104
93.8	7640	780	2.64	113	6370	650	3.16	9055	P2	16	B-102
			3.13				3.74	9060	P2	16	B-104
			4.37				5.19	9065	P2	16	B-104
			4.90				5.86	9070	P2	16	B-104
83.3	8600	878	2.12	100	7160	731	2.54	9055	P2	18	B-102
			2.46				2.96	9060	P2	18	B-104
			3.36				4.02	9065	P2	18	B-104
			4.10				4.90	9070	P2	18	B-104
75.0	9550	975	2.02	90.0	7960	813	2.42	9055	P2	20	B-102
			2.84				3.38	9060	P3	20	B-108
			3.35				4.01	9065	P2	20	B-104
			4.13				4.74	9070	P3	20	B-108
67.0	10700	1090	1.62	80.4	8910	910	1.94	9055	P2	22.4	B-102
			2.24				2.68	9060	P3	22.4	B-108
			2.58				3.08	9065	P2	22.4	B-104
			3.46				4.13	9070	P3	22.4	B-108
			4.34				5.20	9075	P2	22.4	B-104
60.0	11940	1220	3.02	72.0	9950	1020	3.49	9065	P3	25	B-108
			3.33				3.98	9070	P3	25	B-108
			4.13				4.74	9075	P3	25	B-108
53.6	13370	1370	2.33	64.3	11140	1140	2.79	9065	P3	28	B-108
			2.77				3.32	9070	P3	28	B-108
			3.66				4.38	9075	P3	28	B-108
			4.40				5.26	9080	P3	28	B-108
47.6	15040	1540	2.32	57.1	12530	1280	2.78	9065	P3	31.5	B-108
			2.66				3.18	9070	P3	31.5	B-108
			3.52				4.20	9075	P3	31.5	B-108
			3.96				4.73	9080	P3	31.5	B-108
42.3	16950	1730	1.79	50.7	14130	1440	2.14	9065	P3	35.5	B-108
			2.22				2.65	9070	P3	35.5	B-108
			2.94				3.53	9075	P3	35.5	B-108
			3.42				4.09	9080	P3	35.5	B-108
			4.61				5.50	9085	P3	35.5	B-108

SELECTION Drive Unit Parallel Shaft 75kW, 90kW

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
37.5	19100	1950	1.93	45.0	15920	1630	2.32	9065	P3	40	B-108
			2.13				2.56	9070	P3	40	B-108
			2.81				3.36	9075	P3	40	B-108
			3.25				3.89	9080	P3	40	B-108
			4.17				4.98	9085	P3	40	B-108
33.3	21490	2190	1.49	40.0	17910	1830	1.78	9065	P3	45	B-108
			1.78				2.13	9070	P3	45	B-108
			2.36				2.82	9075	P3	45	B-108
			2.81				3.37	9080	P3	45	B-108
			3.58				4.28	9085	P3	45	B-108
30.0	23880	2440	1.48	36.0	19900	2030	1.78	9065	P3	50	B-108
			1.65				1.97	9070	P3	50	B-108
			2.25				2.70	9075	P3	50	B-108
			2.42				2.90	9080	P3	50	B-108
			3.42				4.10	9085	P3	50	B-108
26.8	26740	2730	1.37	32.1	22280	2280	1.64	9070	P3	56	B-108
			1.89				2.26	9075	P3	56	B-108
			2.10				2.52	9080	P3	56	B-108
			2.94				3.52	9085	P3	56	B-108
23.8	30080	3070	1.32	28.6	25070	2560	1.58	9070	P3	63	B-108
			1.74				2.08	9075	P3	63	B-108
			2.00				2.38	9080	P3	63	B-108
			2.56				3.06	9085	P3	63	B-108
21.1	33900	3460	1.10	25.4	28250	2880	1.32	9070	P3	71	B-108
			1.45				1.74	9075	P3	71	B-108
			1.73				2.06	9080	P3	71	B-108
			2.20				2.62	9085	P3	71	B-108
18.8	38200	3900	1.40	22.5	31830	3250	1.66	9075	P3	80	B-108
			2.10				2.52	9085	P3	80	B-108
16.7	42980	4390	1.17	20.0	35810	3660	1.40	9075	P3	90	B-108
			1.81				2.16	9085	P3	90	B-108

90kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	60Hz Output Torque (Tout) Nm kgf m		SF	Size	Assembly	Reduction Ratio	Vertical
188	4580	468	3.38	225	3820	390	3.88	9055	P2	8	B-102
167	5160	527	3.38	200	4300	439	3.88	9055	P2	9	B-102
			4.12				4.92	9060	P2	9	B-104
150	5730	582	4.24	180	4780	488	5.02	9060	P2	10	B-104
134	6420	655	2.77	161	5350	546	3.32	9055	P2	11.2	B-102
			3.34				4.00	9060	P2	11.2	B-104
			4.30				5.13	9065	P2	11.2	B-104
120	7160	731	3.41	144	5970	609	4.06	9060	P2	12.5	B-104
			4.42				5.02	9065	P2	12.5	B-104
107	8020	819	2.68	129	6690	683	3.21	9060	P2	14	B-104
			3.49				4.17	9065	P2	14	B-104
			4.25				5.07	9070	P2	14	B-104
93.8	9170	936	2.61	113	7640	780	3.12	9060	P2	16	B-104
			3.64				4.33	9065	P2	16	B-104
			4.08				4.88	9070	P2	16	B-104
83.3	10310	1050	2.05	100	8600	878	2.46	9060	P2	18	B-104
			2.80				3.35	9065	P2	18	B-104
			3.42				4.08	9070	P2	18	B-104
			4.51				5.38	9075	P2	18	B-104
			2.79				3.34	9065	P2	20	B-104
75.0	11460	1170	3.44	90.0	9550	975	3.95	9070	P3	20	B-108
			4.32				5.16	9075	P2	20	B-104

SELECTION Drive Unit Parallel Shaft 90kW, 110kW

Frequency							Model			Page of Dimension Sheet	
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
67.0	12840	1310	2.15	80.4	10700	1090	2.57	9065	P2	22.4	B-104
			2.88				3.44	9070	P3	22.4	B-108
			3.62				4.33	9075	P2	22.4	B-104
			4.45				5.33	9080	P3	22.4	B-108
60.0	14330	1460	2.77	72.0	11940	1220	3.32	9070	P3	25	B-108
			3.44				3.95	9075	P3	25	B-108
			4.24				5.06	9080	P3	25	B-108
53.6	16040	1640	2.31	64.3	13370	1370	2.76	9070	P3	28	B-108
			3.05				3.65	9075	P3	28	B-108
			3.66				4.38	9080	P3	28	B-108
			4.66				5.57	9085	P3	28	B-108
47.6	18050	1840	2.22	57.1	15040	1540	2.65	9070	P3	31.5	B-108
			2.93				3.50	9075	P3	31.5	B-108
			3.30				3.94	9080	P3	31.5	B-108
			4.46				5.34	9085	P3	31.5	B-108
42.3	20340	2080	1.85	50.7	16950	1730	2.21	9070	P3	35.5	B-108
			2.45				2.94	9075	P3	35.5	B-108
			2.85				3.41	9080	P3	35.5	B-108
			3.84				4.58	9085	P3	35.5	B-108
37.5	22920	2340	1.77	45.0	19100	1950	2.13	9070	P3	40	B-108
			2.34				2.80	9075	P3	40	B-108
			2.71				3.24	9080	P3	40	B-108
			3.47				4.15	9085	P3	40	B-108
33.3	25790	2630	1.48	40.0	21490	2190	1.77	9070	P3	45	B-108
			1.96				2.35	9075	P3	45	B-108
			2.34				2.81	9080	P3	45	B-108
			2.98				3.56	9085	P3	45	B-108
30.0	28650	2930	1.87	36.0	23880	2440	2.25	9075	P3	50	B-108
			2.02				2.42	9080	P3	50	B-108
			2.85				3.42	9085	P3	50	B-108
26.8	32090	3280	1.57	32.1	26740	2730	1.88	9075	P3	56	B-108
			1.75				2.10	9080	P3	56	B-108
			2.45				2.93	9085	P3	56	B-108
23.8	36100	3690	1.45	28.6	30080	3070	1.73	9075	P3	63	B-108
			1.66				1.98	9080	P3	63	B-108
			2.13				2.55	9085	P3	63	B-108
21.1	40680	4150	1.21	25.4	33900	3460	1.45	9075	P3	71	B-108
			1.44				1.72	9080	P3	71	B-108
			1.83				2.18	9085	P3	71	B-108
18.8	45840	4680	1.16	22.5	38200	3900	1.38	9075	P3	80	B-108
			1.75				2.10	9085	P3	80	B-108
16.7	51570	5270	0.97	20.0	42980	4390	1.16	9075	P3	90	B-108
			1.51				1.80	9085	P3	90	B-108

110kW	Frequency Hz	50Hz	60Hz
	Pole P	4	4
	Speed n1 r/min	1500	1800

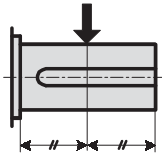
Frequency								Model			Page of Dimension Sheet
Output Speed r/min	50Hz		SF	Output Speed r/min	60Hz		SF	Size	Assembly	Reduction Ratio	Vertical
	Output Torque (Tout) Nm	kgf m			Output Torque (Tout) Nm	kgf m					
167	6310	644	4.44	161	5260	536	5.30	9065	P2	9	B-104
150	7010	715	4.13	144	5840	596	4.70	9065	P2	10	B-104
134	7840	801	3.51	161	6540	667	4.20	9065	P2	11.2	B-104
			4.50				5.38	9070	P2	11.2	B-104
120	8750	894	3.62	144	7300	745	4.11	9065	P2	12.5	B-104
			4.16				4.97	9070	P2	12.5	B-104
107	9800	1000	2.85	129	8170	834	3.41	9065	P2	14	B-104
			3.48				4.15	9070	P2	14	B-104
			4.78				5.70	9075	P2	14	B-104

SELECTION Drive Unit Parallel Shaft 110kW

Frequency								Model			Page of Dimension Sheet
50Hz				60Hz				Size	Assembly	Reduction Ratio	Vertical
Output Speed r/min	Output Torque (Tout) Nm kgf m		SF	Output Speed r/min	Output Torque (Tout) Nm kgf m		SF				
93.8	11210	1140	2.98	113	9340	953	3.54	9065	P2	16	B-104
			3.34				4.00	9070	P2	16	B-104
			4.40				5.13	9075	P2	16	B-104
83.3	12610	1290	2.80	100	10510	1070	3.34	9070	P2	18	B-104
			3.69				4.40	9075	P2	18	B-104
			4.37				5.21	9080	P2	18	B-104
75.0	14010	1430	3.53	90.0	11670	1190	4.22	9075	P2	20	B-104
			4.20				5.03	9080	P3	20	B-108
67.0	15690	1600	2.96	80.4	13070	1330	3.54	9075	P2	22.4	B-104
			3.64				4.36	9080	P3	22.4	B-108
			4.57				5.46	9085	P2	22.4	B-104
60.0	17510	1790	2.81	72.0	14590	1490	3.23	9075	P3	25	B-108
			3.47				4.14	9080	P3	25	B-108
			4.43				5.20	9085	P3	25	B-108
53.6	19610	2000	2.50	64.3	16340	1670	2.99	9075	P3	28	B-108
			3.00				3.59	9080	P3	28	B-108
			3.81				4.56	9085	P3	28	B-108
47.6	22060	2250	2.40	57.1	18380	1880	2.86	9075	P3	31.5	B-108
			2.70				3.22	9080	P3	31.5	B-108
			3.65				4.37	9085	P3	31.5	B-108
42.3	24860	2540	2.00	50.7	20720	2120	2.40	9075	P3	35.5	B-108
			2.33				2.79	9080	P3	35.5	B-108
			3.14				3.75	9085	P3	35.5	B-108
37.5	28010	2860	1.91	45.0	23340	2380	2.29	9075	P3	40	B-108
			2.21				2.65	9080	P3	40	B-108
			2.84				3.40	9085	P3	40	B-108
33.3	31520	3220	1.60	40.0	26260	2680	1.92	9075	P3	45	B-108
			1.91				2.29	9080	P3	45	B-108
			2.44				2.91	9085	P3	45	B-108
30.0	35020	3580	1.65	36.0	29180	2980	1.98	9080	P3	50	B-108
			2.33				2.80	9085	P3	50	B-108
26.8	39220	4000	1.43	32.1	32680	3340	1.71	9080	P3	56	B-108
			2.00				2.40	9085	P3	56	B-108
23.8	44120	4500	1.74	28.6	36770	3750	2.09	9085	P3	63	B-108
21.1	49720	5080	1.50	25.4	41440	4230	1.79	9085	P3	71	B-108
18.8	56030	5720	1.43	22.5	46690	4770	1.71	9085	P3	80	B-108
16.7	63030	6440	1.23	20.0	52530	5360	1.47	9085	P3	90	B-108

SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Allowable Radial Load (kN)



Sheet 1

Applicable to configurations: RML

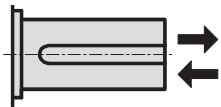
	L.Speed Shaft Speed r/min	Size of Reducer													
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	11.8	17.7	17.7	29.4	29.9	32.4	37.8	46.6	39.7	49.1	44.1	77.0	77.0	100.1
	160	11.8	17.7	20.1	31.4	32.4	33.8	39.7	48.1	41.7	50.5	46.1	89.0	89.0	108.9
	100	11.8	17.7	25.0	35.3	38.7	39.2	47.1	53.5	47.6	54.4	54.4	99.0	99.0	122.1
	63	11.8	17.7	26.5	35.3	42.2	47.1	54.9	62.3	58.9	64.3	65.2	131.5	131.5	125.6
	40	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	71.1	78.0	79.0	141.0	141.0	125.1
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	81.4	95.2	99.1	139.5	139.5	122.6
Heavy duty bearing model	250									71.1	93.7	70.1	122.5	122.5	141.8
	160									78.0	94.7	77.5	137.5	137.5	132.4
	100									81.4	98.1	92.2	149.5	149.5	127.0
	63									81.4	98.1	114.8	149.0	149.0	125.6
	40									81.4	98.1	117.7	148.5	148.5	125.1
	≤ 25									81.4	98.1	117.7	147.0	147.0	122.6

Sheet 2

Applicable to configurations: RMR

	L.Speed Shaft Speed r/min	Size of Reducer													
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	8.3	15.2	9.8	21.6	19.1	21.6	22.6	31.4	16.7	28.4	17.2	44.0	44.0	58.4
	160	9.8	17.7	12.3	23.1	20.6	23.1	24.0	31.4	18.1	27.0	17.7	55.5	55.5	64.3
	100	11.8	17.7	16.7	29.4	26.0	27.5	28.4	35.3	22.1	30.4	25.5	63.5	63.5	74.6
	63	11.8	17.7	21.6	35.3	32.9	35.3	37.3	42.7	33.4	38.3	33.8	95.0	95.0	104.5
	40	11.8	17.7	26.5	35.3	41.7	43.7	48.6	55.4	45.1	51.5	47.6	129.0	129.0	146.7
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	61.6	67.7	60.8	68.7	67.7	167.0	167.0	171.2
Heavy duty bearing model	250									46.1	74.6	40.2	90.0	90.0	114.8
	160									52.0	72.1	45.6	103.5	103.5	125.1
	100									60.3	79.1	59.4	116.0	116.0	140.8
	63									81.4	96.6	80.0	152.5	152.5	174.1
	40									81.4	98.1	108.9	192.0	192.0	191.8
	≤ 25									81.4	98.1	117.7	180.5	180.5	171.2

Allowable Axial Load (kN)



L.Speed Shaft Speed r/min	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	9.3	11.4	14.7	23.1	26.5	31.4	32.9	31.9	27.0	43.2	28.0	23.5	23.5
	160	9.3	11.4	18.1	23.1	28.4	31.4	33.4	31.9	28.9	43.2	28.4	27.5	27.5
	100	9.3	11.4	24.5	23.1	32.9	31.4	37.3	31.9	34.3	43.2	39.7	32.9	32.9
	63	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	52.5	45.6	45.6
	40	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	63.3	60.3
	≤ 25	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	67.7	60.3
Heavy duty bearing model	250								23.1	34.8	18.6	18.6	56.9	56.9
	160								25.0	33.4	21.1	21.1	56.9	56.9
	100								29.4	36.8	27.5	27.5	56.9	56.9
	63								39.2	43.2	36.3	36.3	56.9	56.9
	40								39.2	43.2	49.1	49.1	56.9	56.9
	≤ 25								39.2	43.2	56.9	56.9	56.9	56.9

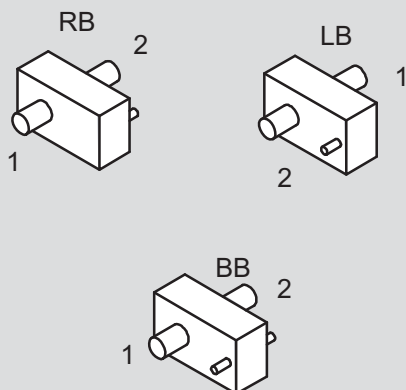
SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25

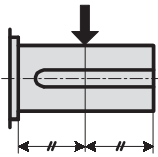
Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft). Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RMB,LMB,BMB)
 - (1) See sheet1 when the radial load is applied only to the shaft1.
 - (2) See sheet2 when the radial load is applied only to the shaft2.
 - (3) Consult us when the radial load is applied to both shafts.
- Refer to B-6 to check overhang load, and calculate equivalent load at peak load value.
Be careful under following condition because large peak load may be generated.
Application: When the inertia is large, such as for crane driving, slewing, etc.
Motor: inline motor
Connecting method: Sprocket or gear
Consult us when the peak load is larger than allowable value.



SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

Allowable Radial Load (kgf)



Sheet 1

Applicable to configurations: RML

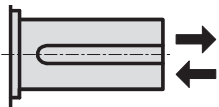
	L.Speed Shaft Speed r/min	Size of Reducer													
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	1200	1800	1800	3000	3050	3300	3850	4750	4050	5000	4500	7850	7850	10200
	160	1200	1800	2050	3200	3300	3450	4050	4900	4250	5150	4700	9050	9050	11100
	100	1200	1800	2550	3600	3950	4000	4800	5450	4850	5550	5550	10100	10100	12450
	63	1200	1800	2700	3600	4300	4800	5600	6350	6000	6550	6650	13400	13400	12800
	40	1200	1800	2700	3600	4300	5000	5600	6900	7250	7950	8050	14350	14350	12750
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	8300	9700	10100	14200	14200	12500
Heavy duty bearing model	250									7250	9550	7150	12500	12500	14450
	160									7950	9650	7900	14000	14000	13500
	100									8300	10000	9400	15250	15250	12950
	63									8300	10000	11700	15200	15200	12800
	40									8300	10000	12000	15150	15150	12750
	≤ 25									8300	10000	12000	15000	15000	12500

Sheet 2

Applicable to configurations: RMR

	L.Speed Shaft Speed r/min	Size of Reducer													
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	850	1550	1000	2200	1950	2200	2300	3200	1700	2900	1750	4500	4500	5950
	160	1000	1800	1250	2350	2100	2350	2450	3200	1850	2750	1800	5650	5650	6550
	100	1200	1800	1700	3000	2650	2800	2900	3600	2250	3100	2600	6450	6450	7600
	63	1200	1800	2200	3600	3350	3600	3800	4350	3400	3900	3450	9700	9700	10650
	40	1200	1800	2700	3600	4250	4450	4950	5650	4600	5250	4850	13150	13150	14950
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	6200	7000	6900	17000	17000	17450
Heavy duty bearing model	250									4700	7600	4100	9150	9150	11700
	160									5300	7350	4650	10550	10550	12750
	100									6150	8050	6050	11800	11800	14350
	63									8300	9850	8150	15550	15550	17750
	40									8300	10000	11100	19550	19550	19550
	≤ 25									8300	10000	12000	18400	18400	17450

Allowable Axial Load (kgf)



	L.Speed Shaft Speed r/min	Size of Reducer													
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Standard bearing model	250	950	1160	1500	2350	2700	3200	3350	3250	2750	4400	2850	2850	2400	2400
	160	950	1160	1850	2350	2900	3200	3400	3250	2950	4400	2900	2900	2800	2800
	100	950	1160	2500	2350	3350	3200	3800	3250	3500	4400	4050	4050	3350	3350
	63	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	5350	5350	4650	4650
	40	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6450	6150
	≤ 25	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6900	6150
Heavy duty bearing model	250									2350	3550	1900	1900	5800	5800
	160									2550	3400	2150	2150	5800	5800
	100									3000	3750	2800	2800	5800	5800
	63									4000	4400	3700	3700	5800	5800
	40									4000	4400	5000	5000	5800	5800
	≤ 25									4000	4400	5800	5800	5800	5800

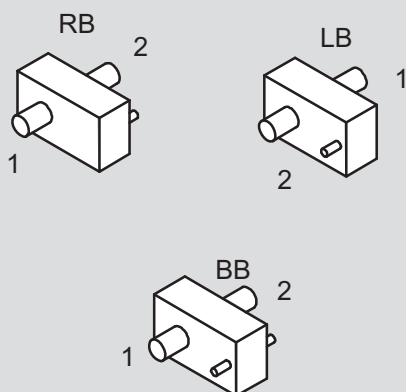
SELECTION Drive Unit Allowable Radial and Axial Loads on Slow Speed Shaft

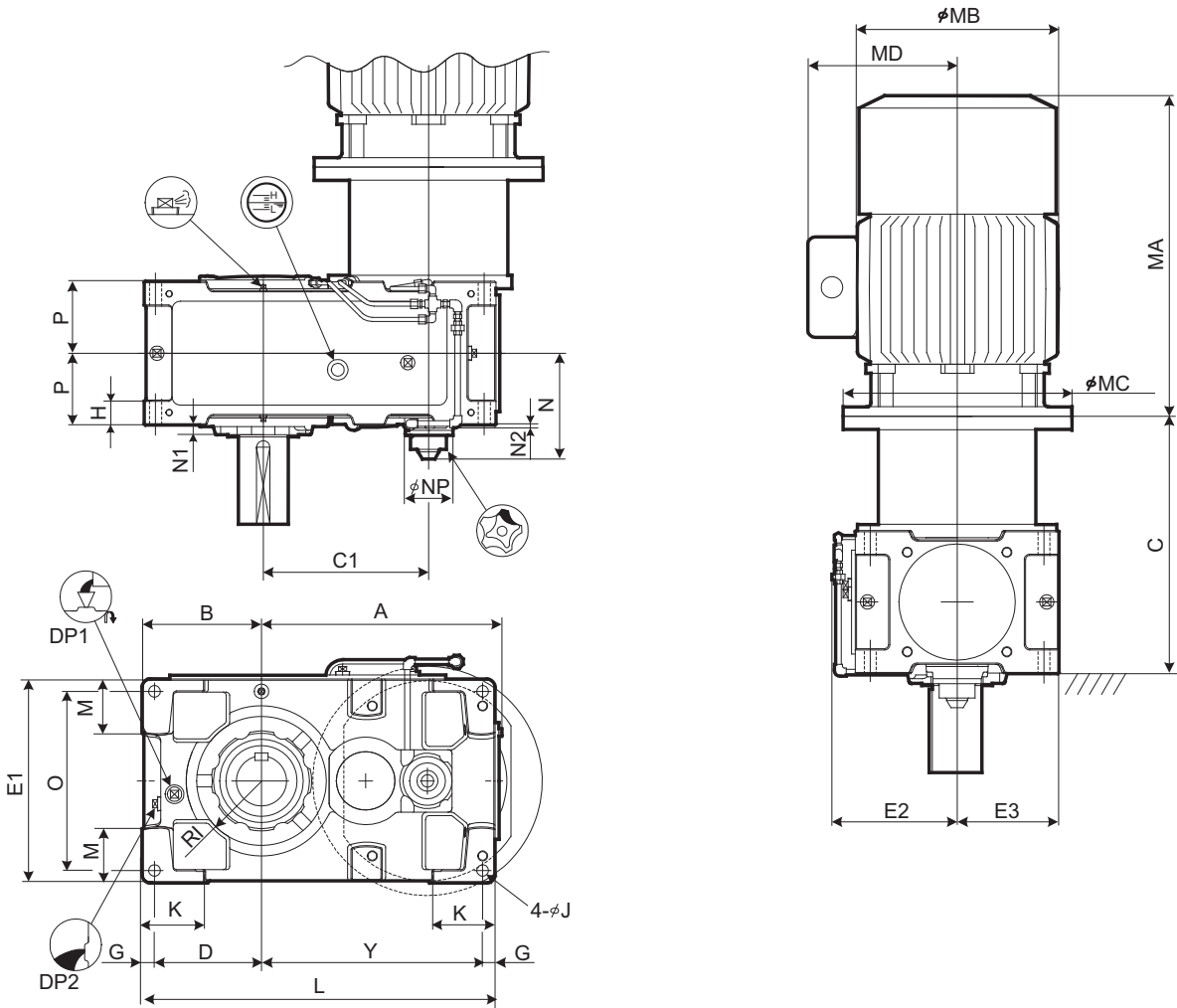
Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25

Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft). Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RMB,LMB,BMB)
 - (1) See sheet1 when the radial load is applied only to the shaft1.
 - (2) See sheet2 when the radial load is applied only to the shaft2.
 - (3) Consult us when the radial load is applied to both shafts.
- Refer to B-6 to check overhang load, and calculate equivalent load at peak load value.
Be careful under following condition because large peak load may be generated.
Application: When the inertia is large, such as for crane driving, slewing, etc.
Motor: inline motor
Connecting method: Sprocket or gear
Consult us when the peak load is larger than allowable value.





Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
Refer to the page D -18 for details.	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Standard Shaft Arrangement Configuration

RML	RMR
Diagram showing the RML (Right Motor Left Load) shaft arrangement configuration.	Diagram showing the RMR (Right Motor Right Load) shaft arrangement configuration.

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996) Parallel key in fastening type)

2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

3. Refer to the page D-12 for dimensions not shown in these drawings.
4. Refer to the page D -25 for the dimension of optional parts.

5. Refer to the page D-33 for motor terminal box position.

6. Refer to the page D-34 for flange dimension.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9015 ▶ 9055

PARAMAX Vertical Monoblock 9015 9025 9030 9035 9040 9045 9050 9055 Parallel Reduction Double 2

Size	A	B	C1	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9015	295	160	194		140	270	195	135	20	35	80	15	95	440	70	186	25	14	100	230	102.5	260
9025	346	175	227		155	310	215	155	20	40	87.5	19	110	505	75	198.5	23	12	100	270	117.5	310
9030	406	200	264		175	320	220	160	25	50	105	24	120	590	85	211	22	9	100	270	132.5	365
9035	437	219	295	See below	194	370	245	185	25	50	120	24	120	640	100	211	22	9	100	320	132.5	396
9040	467	235	306		205	400	260	200	30	60	128	28	150	685	100	237.5	15	2	117	340	157.5	420
9045	506	256	345		226	440	266	220	30	60	140	28	150	745	120	237.5	17.5	2	117	380	157.5	459
9050	537	255	358		225	420	270	210	30	60	140	28	150	775	110	257.5	23	7	117	360	172.5	490
9055	576	286	397		256	490	305	245	30	60	155	28	150	845	135	257.5	23	7	117	430	172.5	529

Size	DP1	DP2	Oil Qty (L)	Wt. (kg) ^{*)}
9015	3/4"	3/4"	5	125
9025	3/4"	3/4"	7	170
9030	3/4"	3/4"	9	235
9035	3/4"	3/4"	12	255
9040	1"	1"	18	345
9045	1"	1"	22	405
9050	1"	1"	22	485
9055	1"	1"	31	550

*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor								C							Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD		9015	9025	9030	9035	9040	9045	9050	9055	Without Brake	With Brake
	MA	MG	MC	MA	MB	MC												
5.5	382	212	315	454	212	315	144		397.5								8	43
7.5	415	251	315	510	251	315	185		397.5	427.5							8	57
11	480	251	350	575	251	350	188		427.5	457.5	515.5						11	76
15	545	324	350	700	324	350	232		427.5	457.5	515.5	515.5					11	131
18.5	625	394	400	835	394	400	297		427.5	457.5	515.5	515.5	555.5	555.5			17	213
22	625	394	400	835	394	400	297		427.5	457.5	515.5	515.5	555.5	555.5			17	213
30	625	394	400	835	394	400	297		457.5	515.5	515.5	555.5	555.5	589.5	589.5		17	224
37	715.5	394	450	930.5	394	450	297		487.5	545.5	545.5	585.5	585.5	619.5	619.5		15	259
45	715.5	394	450	930.5	394	450	297					545.5	585.5	585.5	619.5	619.5	15	259
55	769.5	484	550				412						585.5	585.5	619.5	619.5	29	276
75	799	490	545				485								619.5	619.5	31	490
90	799	490	545				485									619.5	31	540

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Nomenclature

P V A Size P 2 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

9015
9025
9030
9035
9040
9045
9050
9055

RML
RMR

(blank): Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



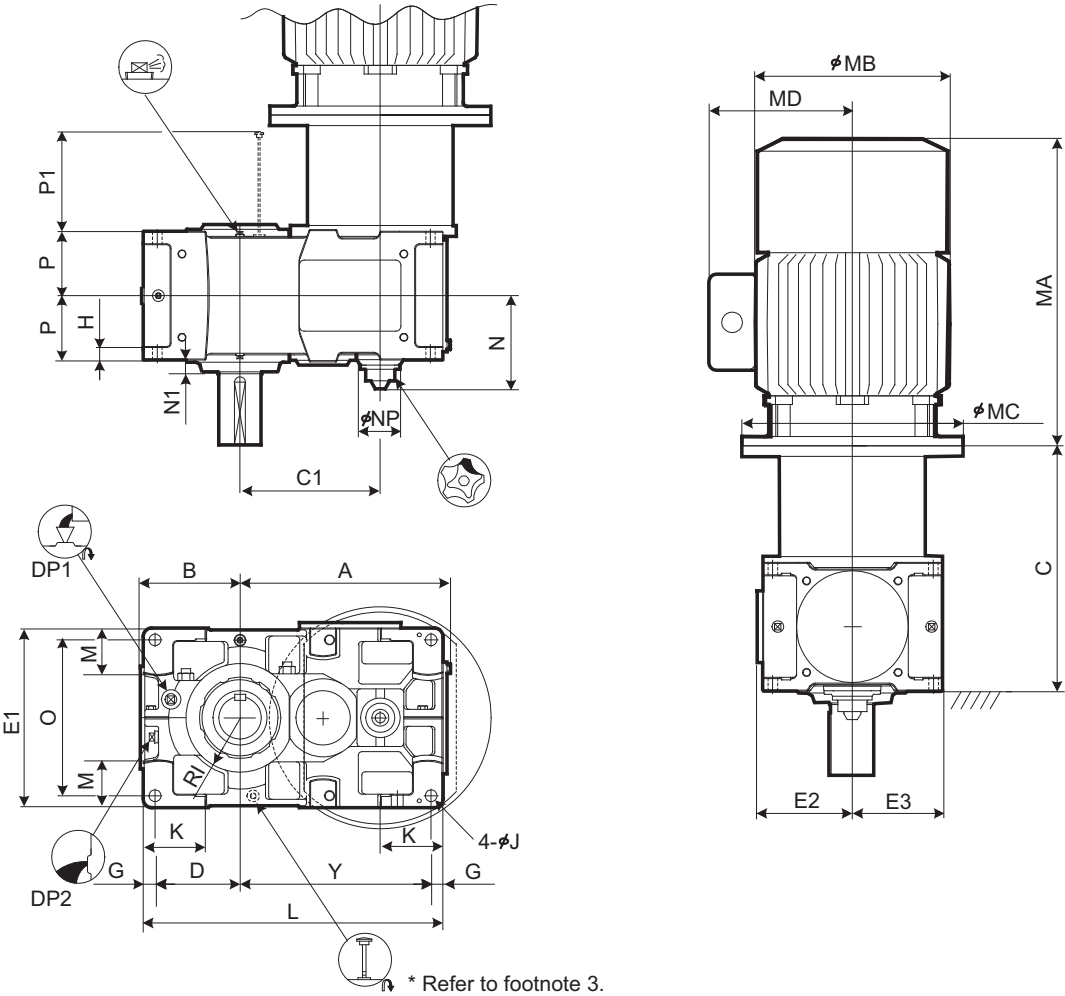
Oil Pump



Backstop (Option)



Opposite Side



Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)

Standard Shaft Arrangement Configuration

RML	RMR

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996) Parallel key in fastening type)

2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

3. Shaft arrangement RMR is equipped with oil gauge. Refer to the page D-28.

4. Refer to the page D-14 for dimensions not shown in these drawings.

5. Refer to the page D -28 for the dimension of optional parts.

6. Refer to the page D-33 for motor terminal box position.

7. Refer to the page D-34 for flange dimension.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9060 ▶ 9085

PARAMAX Vertical Split Parallel Double Reduction

P V D 9060 9085 P 2

Size	A	B	C1	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060	621	299	414		251	530	282	265	35	35	160	35	180	885	140	277.5	35	117	460	190	223	564
9065	667	338	460		290	600	317	300	35	35	175	35	180	970	175	277.5	38	117	530	190	223	610
9070	719	336	482	See below	283	600	317	300	40	40	175	42	215	1020	155	302.5	38	117	520	215	253	657
9075	772	383	535		330	670	352	335	40	52	160	42	220	1120	195	302.5	40	117	590	215	253	710
9080	812	378	556		325	670	352	335	40	52	190	42	220	1155	170	322.5	45	117	590	230	283	750
9085	868	422	612		369	750	392	375	40	52	215	42	220	1255	210	322.5	40	117	670	230	283	806

Size	DP1	DP2	Oil Qty (L)	Wt. (kg)*
9060	1"	1"	25	705
9065	1"	1"	32	830
9070	1"	1"	39	985
9075	1"	1"	49	1245
9080	1"	1"	54	1380
9085	1"	1"	71	1650

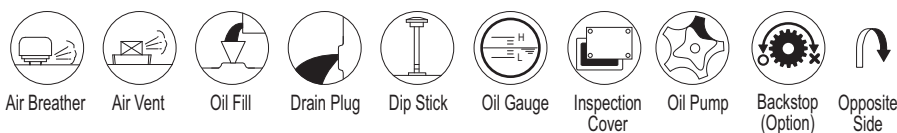
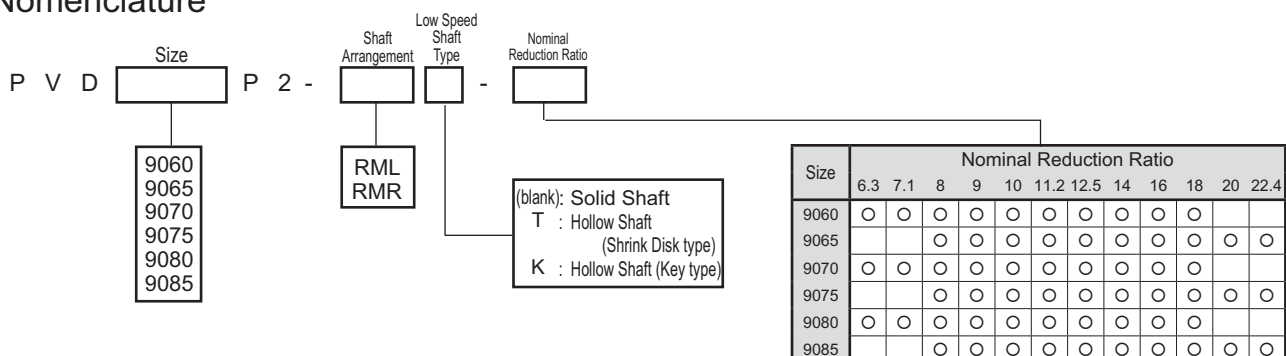
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

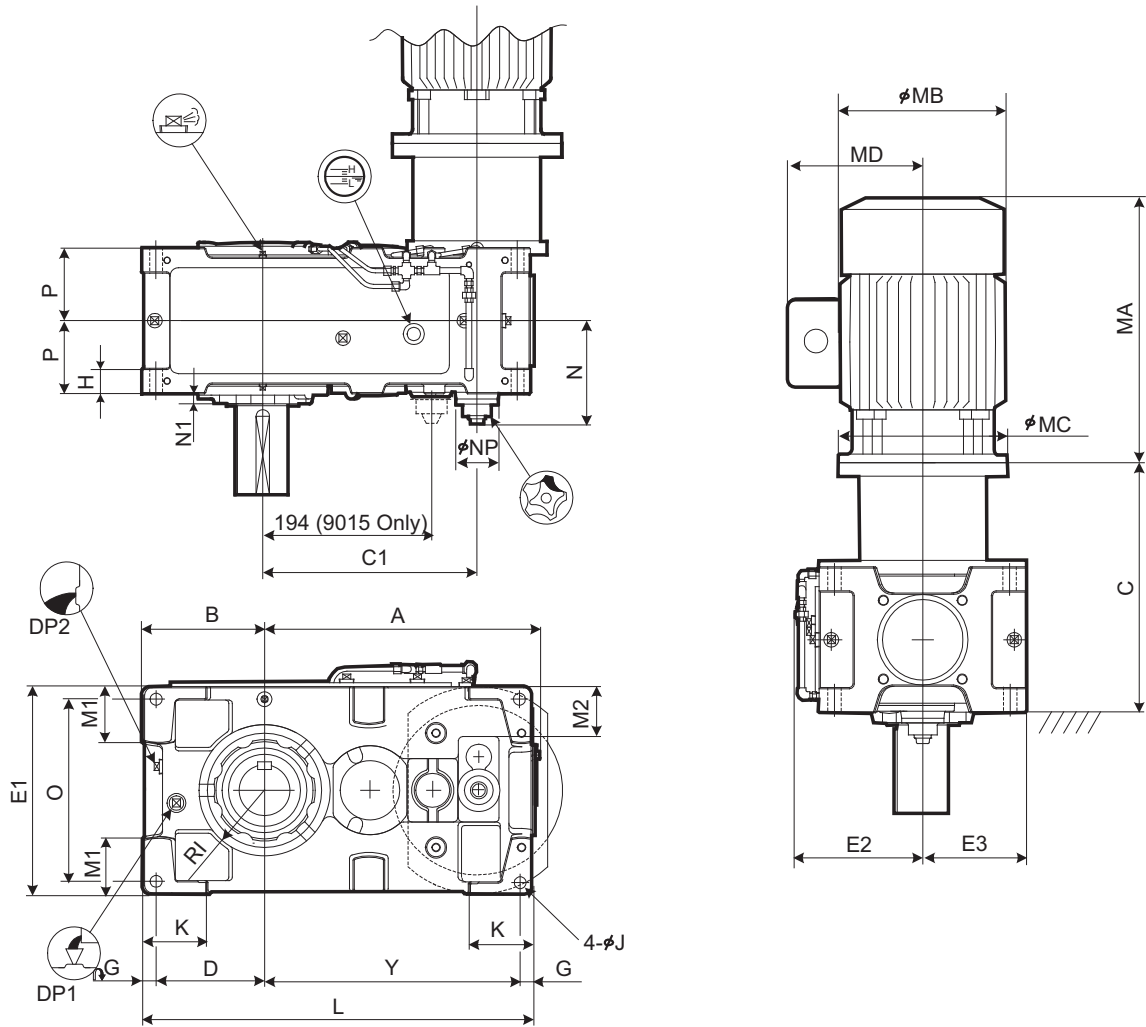
kW	Without Brake			With Brake			MD	C						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	MA	MG	MC	MA	MB	MC		9060	9065	9070	9075	9080	9085		Without Brake	With Brake
37	715.5	394	450	930.5	394	450	297	694	694					15	259	320
45	715.5	394	450	930.5	394	450	297	694	694					15	259	320
55	769.5	484	550				412	694	694					29	276	
75	799	490	545				485	694	694	744	744			31	490	
90	799	490	545				485	694	694	744	744			31	540	
110	898	550	655				515		724	774	774	838	838	56	675	

Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173

Unit: mm

Nomenclature





Drive Unit
Selection
Tables
Dimension
Tables

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Standard Shaft Arrangement Configuration

RML	RMR

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996) Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions not shown in these drawings.
4. Refer to the page D -25 for the dimension of optional parts.
5. Refer to the page D-33 for motor terminal box position.
6. Refer to the page D-34 for flange dimension.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9015 ▶ 9055

Size	A	B	C1	C	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	Y
9015	338	160	257		140	270	195	135	20	35	80	15	95	485	70	80	186	25	100	230	102.5	305
9025	408	175	306		155	310	215	155	20	40	87.5	19	110	570	75	90	198.5	23	100	270	117.5	375
9030	453	200	343		175	320	220	160	25	50	105	24	120	640	85	50	211	22	100	270	132.5	415
9035	484	219	374	See below	194	370	245	185	25	50	120	24	120	690	100	75	211	22	100	320	132.5	446
9040	540	235	398		205	400	260	200	28	60	120	28	150	759	100	70	228.5	15	100	340	157.5	494
9045	577	256	437		226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	533
9050	609	255	467		225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	563
9055	648	286	506		256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	602

Size	DP1	DP2	Oil Qty (L)	Wt. (kg)*
9015	3/4"	3/4"	6	125
9025	3/4"	3/4"	8	175
9030	3/4"	3/4"	10	235
9035	3/4"	3/4"	14	260
9040	1"	1"	18	340
9045	1"	1"	22	410
9050	1"	1"	25	490
9055	1"	1"	35	555

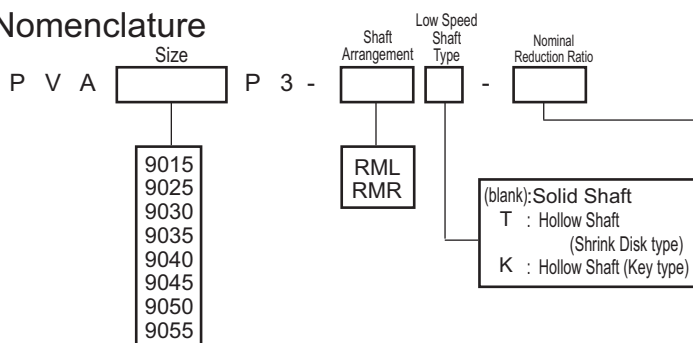
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	Motor							C								Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	Without Brake			With Brake			MD	9015	9025	9030	9035	9040	9045	9050	9055		Without Brake	With Brake
	MA	MG	MC	MA	MB	MC												
5.5	382	212	315	454	212	315	144	376.5	405.5	457.5	457.5	497.5	497.5			8	43	54
7.5	415	251	315	510	251	315	185	376.5	405.5	457.5	457.5	497.5	497.5	560.5	560.5	8	57	77
11	480	251	350	575	251	350	188	406.5	435.5	487.5	487.5	527.5	527.5	590.5	590.5	11	76	96
15	545	324	350	700	324	350	232	406.5	435.5	487.5	487.5	527.5	527.5	590.5	590.5	11	131	175
18.5	625	394	400	835	394	400	297		435.5	487.5	487.5	527.5	527.5	590.5	590.5	17	213	258
22	625	394	400	835	394	400	297		435.5	487.5	487.5	527.5	527.5	590.5	590.5	17	213	258
30	625	394	400	835	394	400	297			487.5	487.5	527.5	527.5	590.5	590.5	17	224	280
37	715.5	394	450	930.5	394	450	297				517.5	557.5	557.5	620.5	620.5	15	259	320
45	715.5	394	450	930.5	394	450	297					557.5	557.5	620.5	620.5	15	259	320
55	769.5	484	550				412							620.5	620.5	29	276	

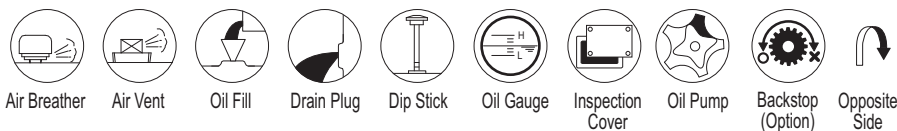
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

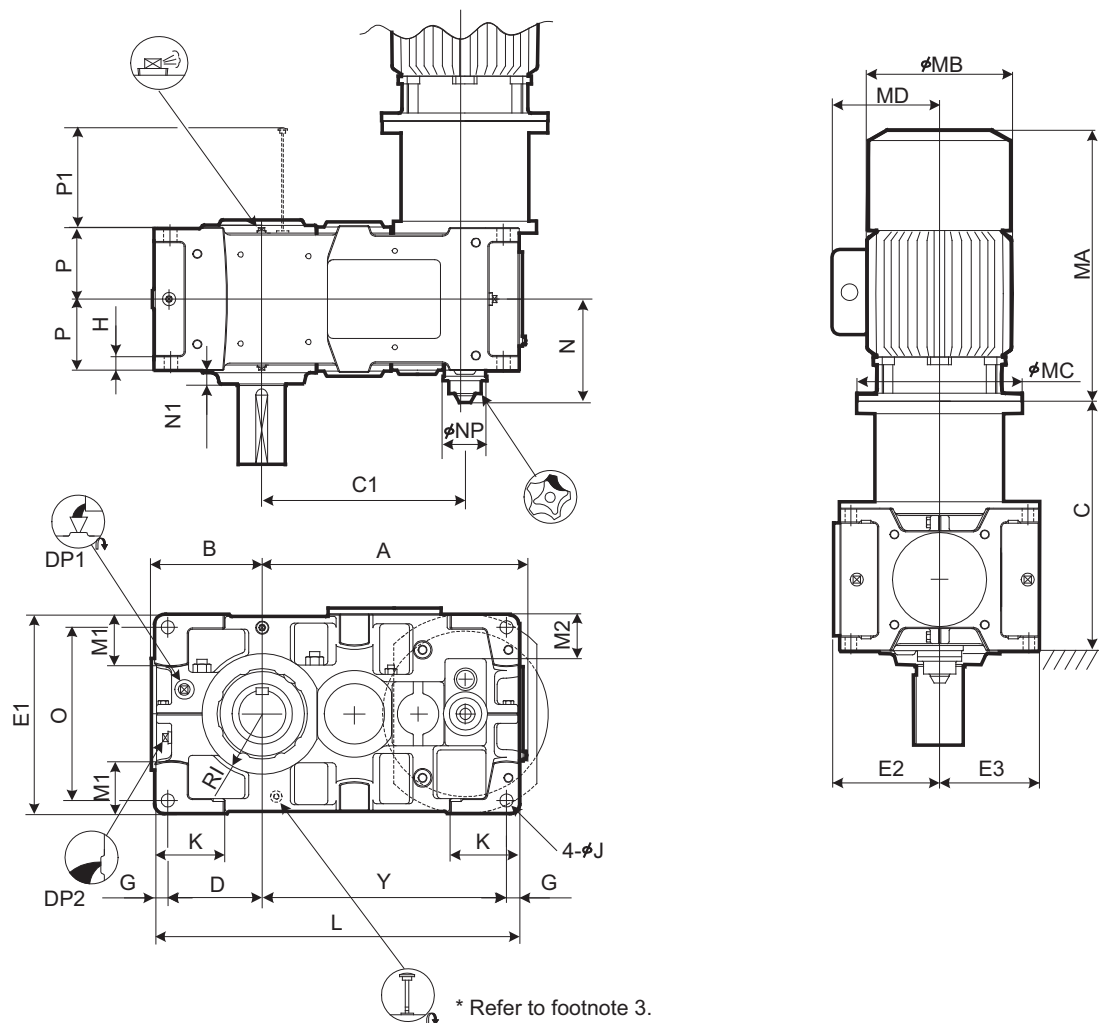
Unit: mm

Nomenclature



Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9015	○	○	○	○	○	○	○	○								
9025	○	○	○	○	○	○	○	○								
9030	○	○	○	○	○	○	○	○	○	○	○	○				
9035			○	○	○	○	○	○	○	○	○	○	○	○		
9040	○	○	○	○	○	○	○	○	○	○	○	○	○			
9045			○	○	○	○	○	○	○	○	○	○	○	○		
9050	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○		

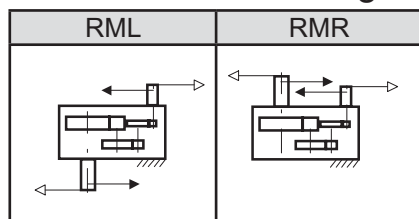




Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Standard Shaft Arrangement Configuration



1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996) Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RMR is equipped with oil gauge. Refer to the page D-28.

4. Refer to the page D-15 for dimensions not shown in these drawings.
5. Refer to the page D -28 for the dimension of optional parts.
6. Refer to the page D-33 for motor terminal box position.
7. Refer to the page D-34 for flange dimension.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9060 ▶ 9085

Size	A	B	C1	C	D	E1	E2	E3	G	H	RI	J	K	L	M	M2	N	N1	NP	O	P	P1	Y
9060	701	299	540		251	530	282	265	35	35	160	35	180	970	140	118	277.5	35	117	460	190	223	649
9065	747	338	586		290	600	317	300	35	35	175	35	180	1055	175	153	277.5	38	117	530	190	223	695
9070	809	336	630	See below	283	600	317	300	40	40	175	42	215	1115	155	128	302.5	38	117	520	215	253	752
9075	862	383	683		330	670	352	335	40	52	190	42	220	1215	195	163	302.5	40	117	590	215	253	805
9080	932	378	725		325	670	352	335	40	52	190	42	220	1275	170	140	322.5	45	117	590	230	283	870
9085	988	422	781		369	750	392	375	40	52	215	42	220	1375	210	180	322.5	40	117	670	230	283	926

Size	DP1	DP2	Oil Qty (L)	Wt. (kg) ^{*)}
9060	1"	1"	32	730
9065	1"	1"	35	885
9070	1"	1"	53	1030
9075	1"	1"	67	1255
9080	1"	1"	65	1460
9085	1"	1"	89	1730

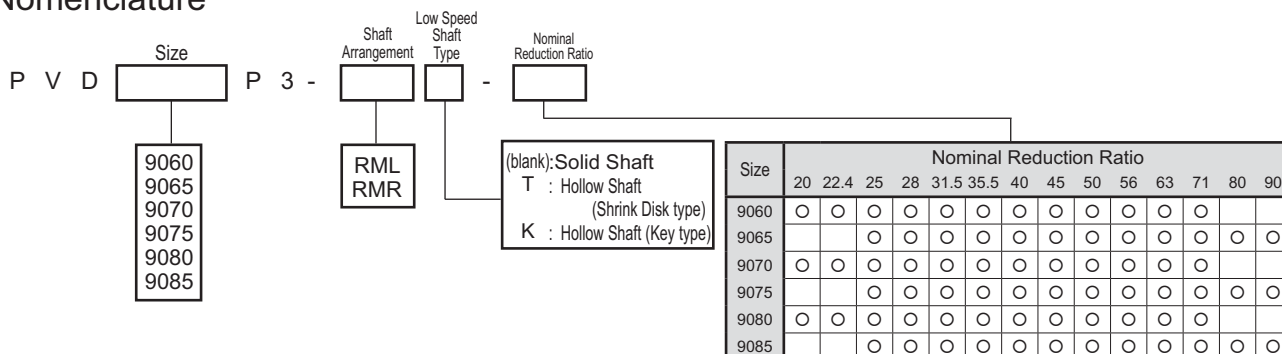
*) Mass of drive unit with motor, add mass of motor flange and mass of motor, shown in table below.

kW	With Brake			Motor				C						Mass of Motor Mounting Flange (kg)	Mass of Motor (kg)	
	MA	MG	MC	Without Brake MA	Without Brake MB	Without Brake MC	MD	9060	9065	9070	9075	9080	9085		Without Brake	With Brake
11	480	251	350	575	251	350	188	633	633					11	76	96
15	545	324	350	700	324	350	232	633	633					11	131	175
18.5	625	394	400	835	394	400	297	633	633	683	683			17	213	258
22	625	394	400	835	394	400	297	633	633	683	683			17	213	258
30	625	394	400	835	394	400	297	633	633	683	683	749	749	17	224	280
37	715.5	394	450	930.5	394	450	297	663	663	713	713	779	779	15	259	320
45	715.5	394	450	930.5	394	450	297	663	663	713	713	779	779	15	259	320
55	769.5	484	550				412	663	663	713	713	779	779	29	276	
75	799	490	545				485	663	663	713	713	779	779	31	490	
90	799	490	545				485			713	713	779	779	31	540	
110	898	550	655				515				743	809	809	56	675	

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump



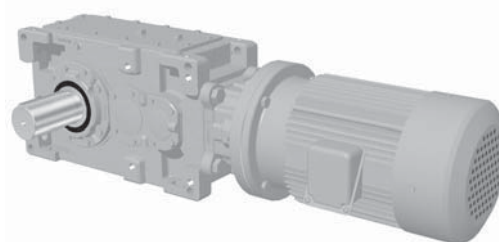
Backstop (Option)



Opposite Side

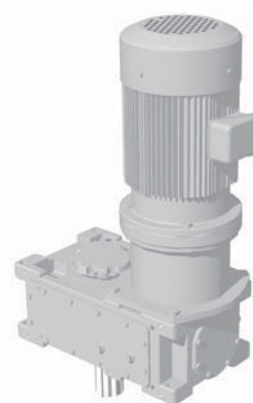
Exact Reduction Ratio Drive Unit Right Angle Shaft

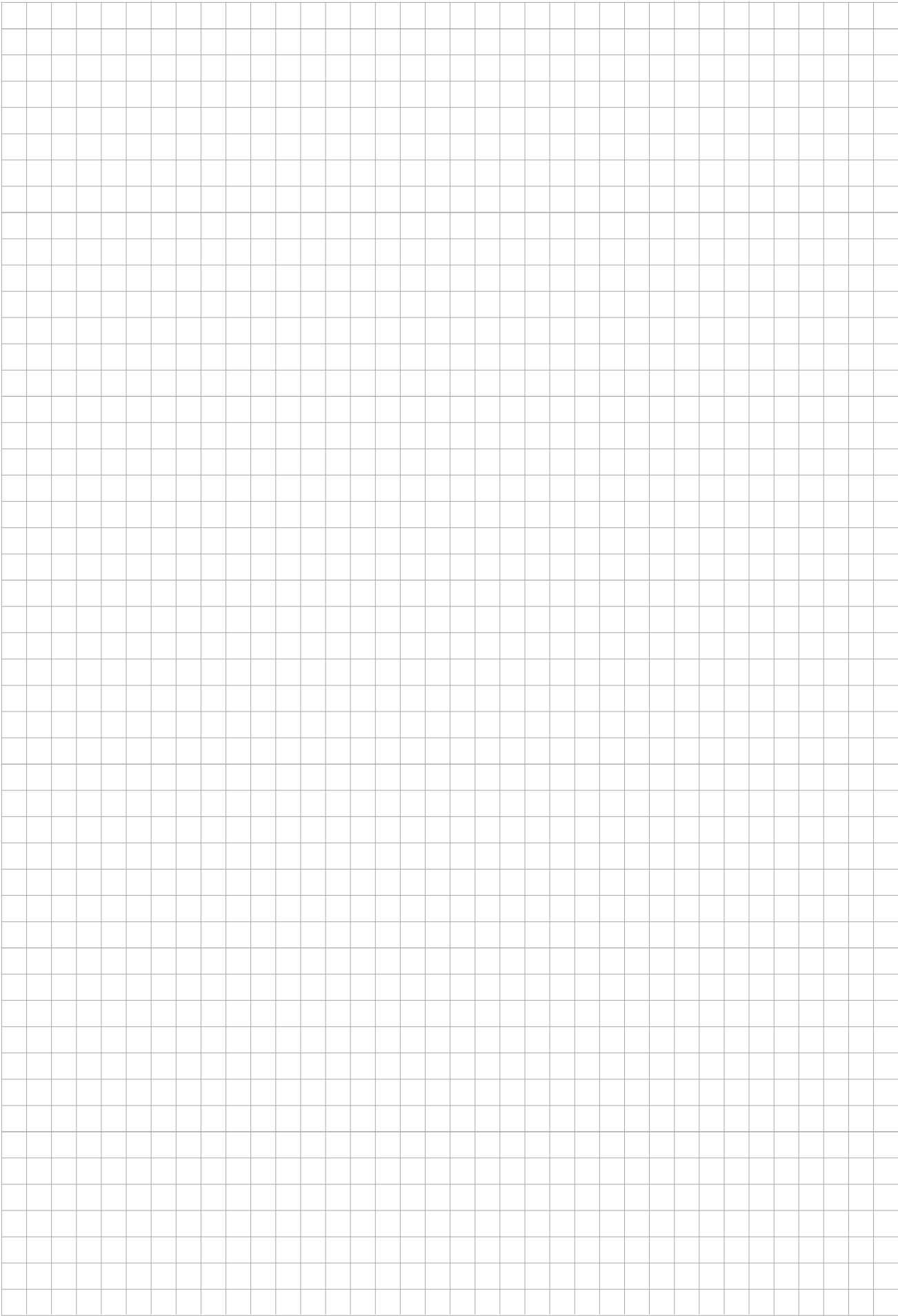
Nominal Reduction Ratio	Size of Reducer											
	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	6.378		6.111									
7.1	6.875		6.973									
8	8.118	7.950	7.778	7.770								
9	8.750	8.643	8.875	8.839								
10	10.303	10.118	9.608	9.889								
11.2	11.106	11.000	10.963	11.250								
12.5	12.756	12.842	12.222	12.216								
14	13.750	13.962	13.946	13.897								
16	15.897	15.899	15.556	15.540								
18	17.135	17.286	17.750	17.679								
20	20.091	19.814	19.620	19.778	19.790		19.181		19.950			
22.4	21.656	21.542	22.388	22.500	22.530		22.351		22.353			
25	25.137	25.041	24.444	24.945	25.935	24.662	25.137	24.053	24.938	24.700		
28	27.096	27.225	27.893	28.379	29.526	27.706	29.291	27.509	27.941	27.718		
31.5	32.455	31.331	31.694	31.079	31.969	32.319	30.157	31.521	31.129	30.875		
35.5	34.983	34.063	36.165	35.357	36.395	36.309	35.140	36.050	34.879	34.647		
40	40.607	40.451	39.487	40.296	41.895	39.838	39.520	37.815	38.912	38.541		
45	43.770	43.979	45.058	45.843	47.695	44.756	46.051	43.250	43.599	43.250		
50	51.141	50.611	49.942	50.205	51.869	52.207	50.273	49.557	49.500	48.176		
56	55.125	55.025	56.987	57.115	59.051	58.652	58.582	56.678	55.462	54.062		
63	63.986	53.741	62.222	63.497	64.640	64.637	63.984	63.041	63.000	61.286		
71	68.971	69.300	71.000	72.237	73.590	72.617	74.559	72.101	70.588	68.773		
80		79.751	77.989	79.111	79.341	80.552	78.377	80.234	78.120	78.000	79.124	
90		86.706	88.991	90.000	90.326	90.496	91.330	91.765	87.529	87.529	87.269	
100			99.259	99.158	103.97	98.871	102.71	98.282	97.650	96.720	96.444	96.432
112			113.26	112.81	118.37	111.08	119.69	112.41	109.41	108.54	106.37	105.89
125			122.72	126.20	130.09	129.57	127.97	128.80	127.97	120.90	126.39	117.54
140			140.03	143.57	148.10	145.56	149.12	147.31	143.38	135.67	139.40	129.07
160				156.02	158.68	162.11	156.75	160.47	152.99	158.44	158.25	154.04
180				177.50	180.65	182.13	182.66	183.53	171.41	177.79	174.54	169.14
200					207.95	197.74	205.42	196.56	191.23	189.41	192.89	192.86
224					236.74	222.15	239.37	224.81	214.26	212.55	212.75	211.77
250					260.18	259.14	255.94	257.59	250.61	236.76	252.78	235.08
280					296.20	291.13	298.24	294.61	280.79	265.69	278.80	258.13
315					315.95	324.22	332.51	320.94	322.08	310.27	318.63	308.07
355					367.08	364.25	369.46	367.06	343.56	348.18	355.25	338.28
400						388.53		409.25		399.38		386.60
450						451.41		454.72		426.01		431.03

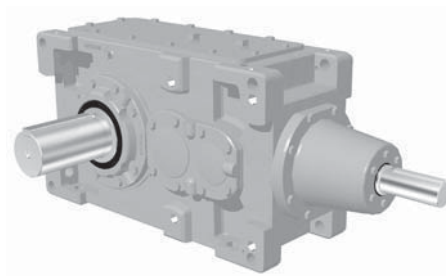


Exact Reduction Ratio Drive Unit Parallel Shaft

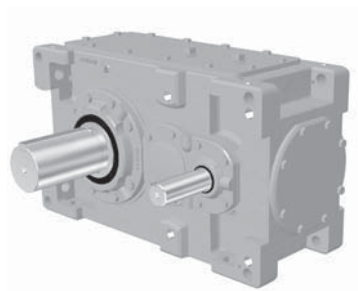
Nominal Reduction Ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	6.257	6.193	6.314		6.049		6.470		6.188		6.246		6.429	
7.1	7.237	7.067	6.806		6.903		7.366		7.210		6.998		7.090	
8	7.889	7.616	8.118	7.869	7.778	7.691	7.956	8.062	7.875	7.759	8.033	7.733	8.167	7.835
9	9.125	8.690	8.750	8.556	8.875	8.750	9.057	9.058	9.176	8.874	9.000	8.677	9.007	8.603
10	10.143	9.722	9.944	10.118	9.528	9.889	10.156	9.914	9.750	9.875	9.665	9.945	9.905	9.953
11.2	11.732	11.094	10.719	11.000	10.872	11.250	11.562	11.138	11.361	11.294	10.829	11.160	10.924	10.929
12.5	12.710	12.407	12.785	12.394	12.485	12.114	12.594	12.656	12.206	12.226	12.600	11.966	12.762	12.071
14	14.701	14.158	13.781	13.475	14.247	13.781	14.337	14.219	14.224	13.983	14.118	13.428	14.076	13.255
16	15.778	15.340	15.997	15.935	15.556	15.874	16.504	15.694	15.996	15.306	15.750	15.600	15.556	15.554
18	18.250	17.503	17.243	17.325	17.750	18.059	18.789	17.631	18.640	17.506	17.647	17.506	17.157	17.078
20	19.894	19.681	20.280	19.938	19.884	19.778	19.590	20.566	18.988	20.059	20.067	19.500	20.054	18.958
22.4	23.011	22.457	21.860	21.676	22.689	22.500	22.303	23.105	22.125	22.941	22.484	21.882	22.119	20.817
25	24.696	24.332	25.374	25.277	24.774	25.281	25.673	24.413	24.883	23.810	25.083	28.844	24.444	24.441
28	28.565	27.764	27.350	27.481	28.269	28.761	29.227	27.426	28.995	27.231	28.105	27.880	26.961	26.838
31.5	31.401	31.905	32.876	31.625	31.213	31.498	30.855	31.992	29.905	31.202	31.500	31.056	31.601	29.792
35.5	36.321	36.406	35.438	34.383	35.617	35.833	35.127	35.942	34.848	35.686	35.294	34.850	34.854	32.712
40	38.980	39.444	41.134	40.976	38.889	39.686	40.435	38.450	39.190	37.500	39.375	39.000	38.519	38.514
45	45.088	45.009	44.338	44.550	44.375	45.148	46.033	43.197	45.667	42.889	44.118	43.765	42.484	42.289
50			51.141	51.268	49.248	49.444	49.634	50.388	48.825	49.144	51.188	48.750	51.845	46.944
56			55.125	55.739	56.195	56.250	56.507	56.608	56.894	56.206	57.353	54.706	57.182	51.547
63			63.986	63.741	61.358	62.615	65.045	61.852	63.984	61.225	63.984	63.375	63.194	63.186
71			68.971	69.300	70.014	71.234	74.051	69.488	74.559	70.024	71.691	71.118	69.700	69.381
80				79.751		78.012		81.056		80.234		79.219		77.018
90				86.706		88.750		91.063		91.765		88.897		84.569







<Reducer: Right Angle Shaft Horizontal Mounting>



<Reducer: Parallel Shaft-Horizontal Mounting>

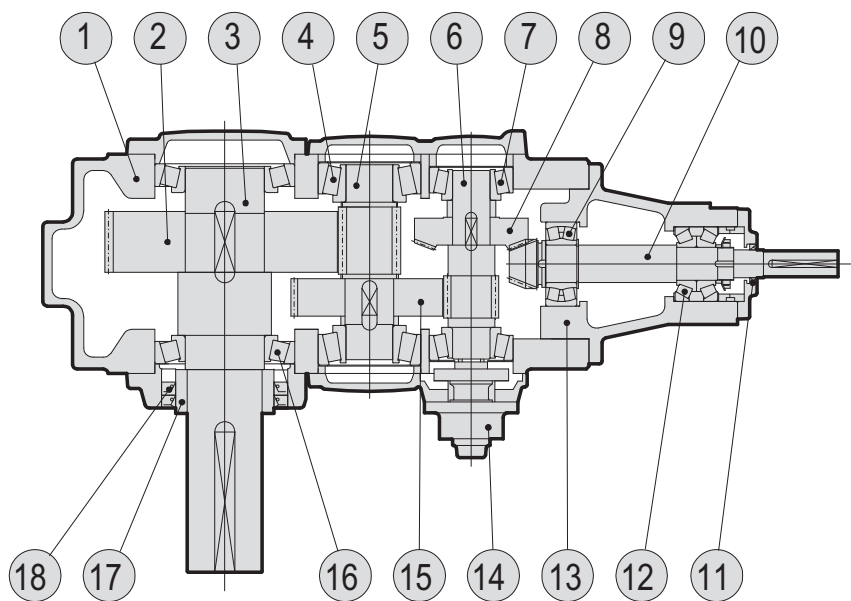
C

Reducer

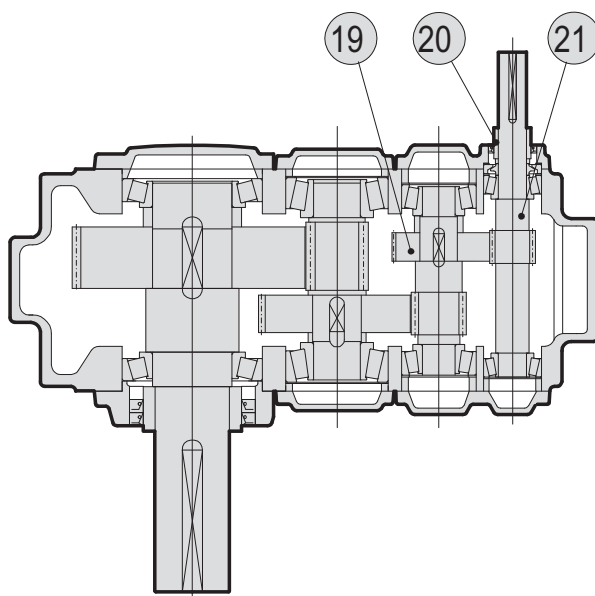
Standard Specifications	...	C- 2
Construction Drawing	...	C- 3
Nomenclature	...	C- 4
Selection Flowchart and Formula for Selection	...	C- 6
Service Factor	...	C- 8
Right Angle Shaft	...	C- 11
Parallel Shaft	...	C-101

Note : In general, a heating or cooling system is necessary when ambient temperature is lower than -10°C or higher than 50°C .
e.g. High temperature gas or liquid passes through the hollow shaft.
Consult us when substances lower than -10°C or higher than 50°C will be in contact with PARAMAX DRIVES.

Reducer Construction Drawing



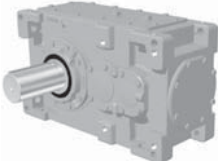
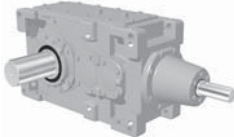
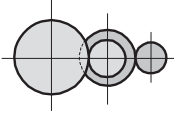
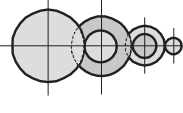
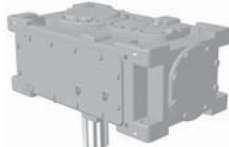
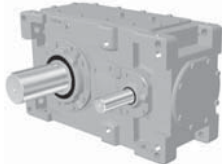
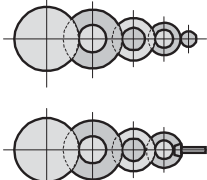
<Reducer: Right Angle Triple Reduction>



<Reducer: Parallel Shaft Triple Reduction>

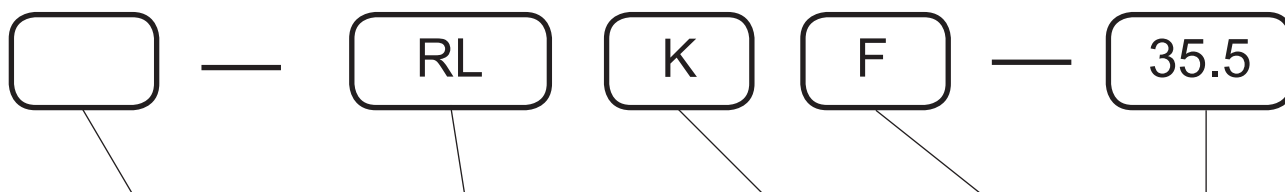
Ref.No.	Part Name	Ref.No.	Part Name	Ref.No.	Part Name	Ref.No.	Part Name
1	Housing	7	Taper roller bearing	13	Bearing housing	19	Helical gear
2	Helical gear	8	Bevel gear	14	Oil pump	20	Collar
3	Slow speed shaft	9	Spherical roller bearing	15	Helical gear	21	Helical pinion shaft
4	Taper roller bearing	10	Bevel pinion shaft	16	Taper roller bearing		
5	Helical pinion shaft	11	Oil seal	17	Collar		
6	Helical pinion shaft	12	Taper roller bearing	18	Oil seal		

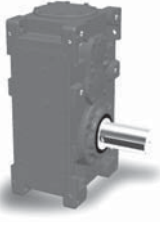
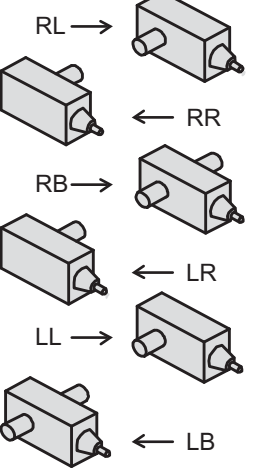
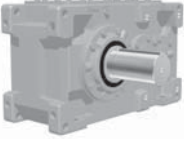
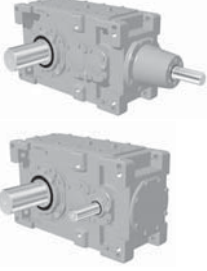
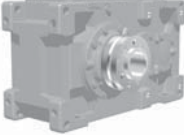
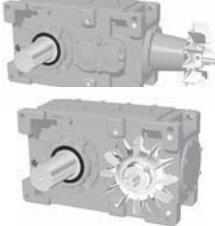
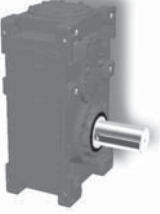
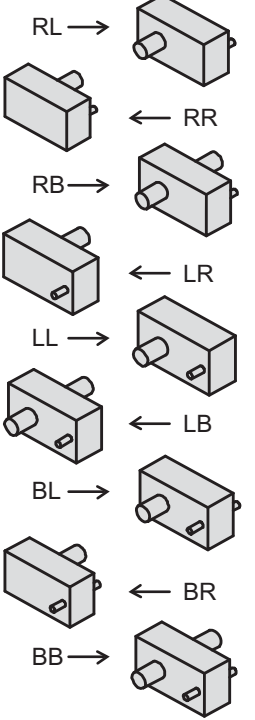
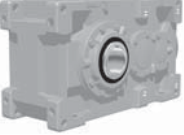
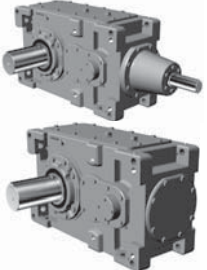
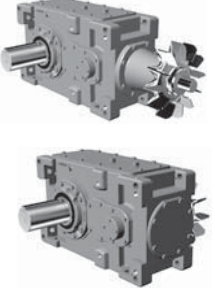
Reducer Nomenclature

P	H	D	9075		R	3	
Series	Mounting	Housing	Size	Torque kNm	Shaft Position	Number of Gear Stages	
P Paramax	H  Horizontal	A Monoblock	9015	2.6	R  Right Angle	2 	
			9025	4.2			
			9030	6.4		3 	
			9035	8.5			
			9040	10.1			
			9045	13.2			
			9050	15.3			
			9055	19.9			
	V  Vertical	D Split	9060	24.4	P  Parallel	4  Quadruple Reduction	
			9065	31.4			
			9070	38.2			
			9075	47.8			
			9080	58.5			
			9085	73.1			
			9090	85.9			
			9095	101			
	W  Upright		9100	122			
			9105	144			
			9110	174			
			9115	207			
			9118	260			
			9121	301			
			9126	351			
			9128	420			
			9131	473			
			9136	552			

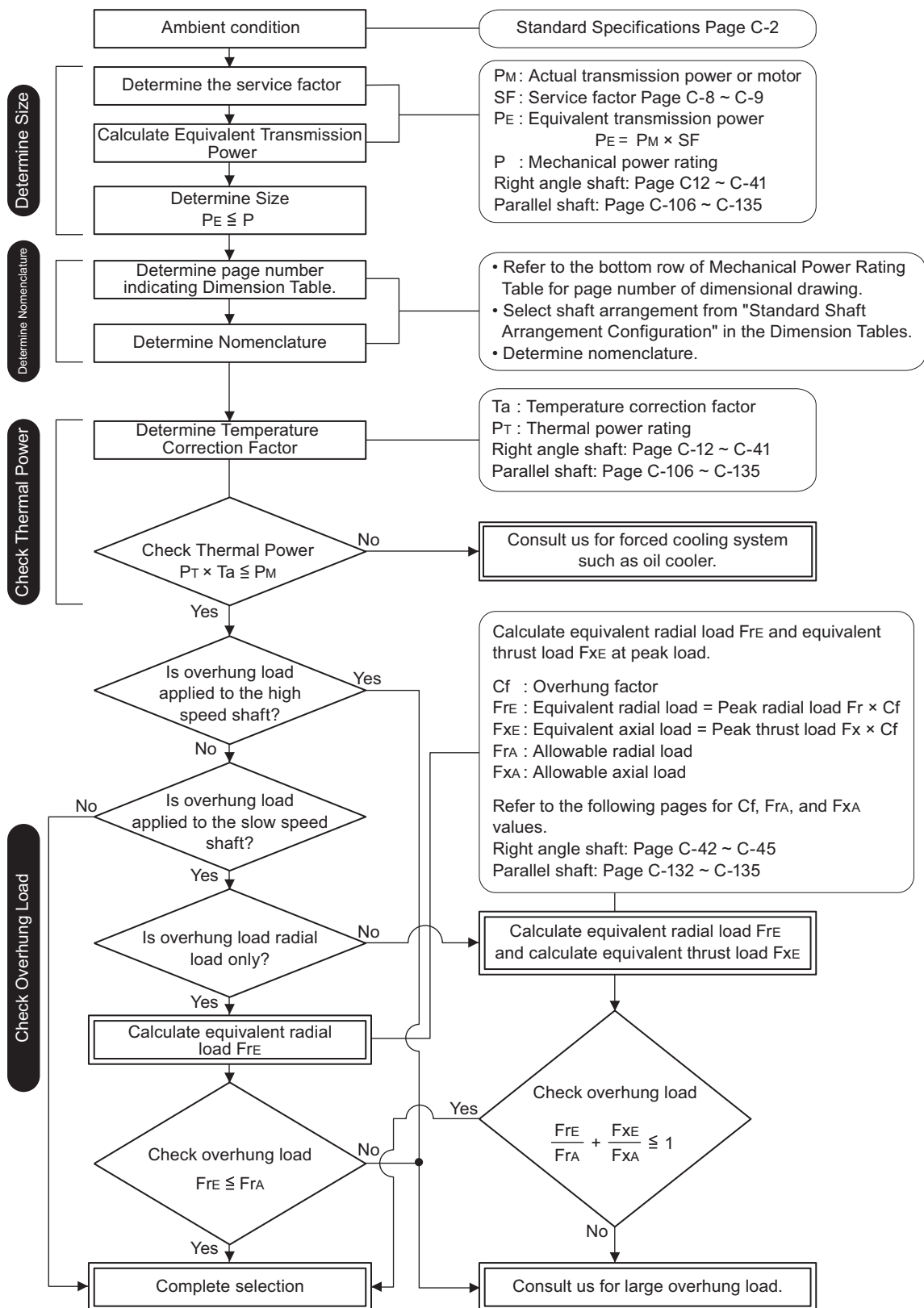
1. For shaft arrangement, refer to the dimension sheets.
2. Consult us for reduction ratios smaller than 6.3.

Reducer Nomenclature

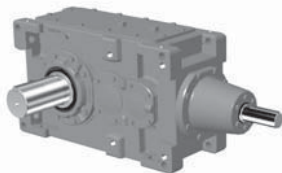


Mounting for Upright	Shaft Arrangement	Slow Speed Shaft	Option	Nominal Ratio	
(Blank) 		(Blank)  Solid Shaft	(Blank)  Without option	Right Angle Shaft	
		T  Hollow Shaft (Shrink Disk Type)	F  With fan	6.3 7.1 8 9 10 11.2 12.5 14 16 18 20 22.4 25 28 31.5 35.5 40 45 50	56 63 71 80 90 100 112 125 140 160 180 200 224 250 280 315 355 400 450
W  Wall Mount (Upright Mounting)		K  Hollow Shaft (Key Type)	B  With backstop	Parallel Shaft	
			FB  With fan & backstop	6.3 7.1 8 9 10 11.2 12.5 14 16 18 20 22.4 25 28 31.5 35.5 40 45 50	56 63 71 80 90 100 112 125 140 160 180 200 224 250 280 315 355 400 450 500

Reducer Selection



Reducer Selection Example

○ : Conditions ■ : Selected item		
○ Ambient condition : Indoor, Ambient temperature 40°C ■ Check ambient condition → OK ○ Motor power : 55 kW ○ High speed shaft speed : 1500 r/min ○ Shaft and mounting positions : Right Angle Shaft • Horizontal Mounting Load Condition ○ Type of load, Operating hours : Uniform load • 14 hours/day ■ Determine service factor → SF = 1.25 ■ Calculate equivalent transmission power → PE = 55 × 1.25 = 68.75 kW ○ Slow speed shaft speed : 85 r/min ■ Reduction ratio → 1500/85 = 17.6 Select nominal reduction ratio → 17.6 → 18 ■ Determine size → Size 9035, Nominal Reduction Ratio 18 Mechanical power rating P = 72 kW PE ≤ P → OK ■ Check dimension ■ Check shaft arrangement → RL ■ Check nomenclature → PHA9035R2-RLF-18 ○ Ambient temperature : 40°C ■ Temperature correction factor without fan Ta → Ta = 0.70 ■ Thermal rating without fan PT → PT = 48kW → PT × Ta = 33.6 < 55 = PM → OUT ■ Temperature correction factor with fan Ta → Ta = 0.73 ■ Thermal rating with fan PT → PT = 120kW → PT × Ta = 87.6 > 55 = PM → OK → With fan Check overhung load ○ Overhung load to high speed shaft : No load ○ Overhung member : Sprocket (Single row) ■ Overhang factor Cf → Cf = 1.0 ○ Radial load position and direction : Center of solid shaft, Downward ○ Peak radial load Fr : 10.6 kN ○ Peak thrust load Fx : 0 kN ■ Equivalent radial load FrE → FrE = 10.6 × 1.0 = 10.6 ■ Allowable radial load → 29.4 kN 10.6 ≤ 29.4 → OK ■ Complete selection Selected model → PHA9035R2-RLF-18		C-2 Standard Specifications C-8 Service Factor C-4 ~ C-5 Nomenclature C-18 Selection Tables C-50 *1 Dimension Tables Standard shaft arrangement configuration in Dimension Tables Nomenclature in Dimension Tables C-18 Selection Tables C-18 Selection Tables Standard Specifications C-18 Selection Tables C-42 Allowable External Load C-42 Allowable External Load
		*1 Page number of the relevant Dimension Table is indicated in the Selection Table.

Reducer Service Factor SF

Service Factor SF

Driven Machine		Operating Hours (hours/day)				
		3 hrs	10 hrs	24 hrs		
CRANES						
Classification of Crane	Hoisting	Traverse Motion	Travel Motion	Slewing Motion	Boom Hoisting	The crane classification is based on JIS B8821-1976 "Calculation standard for the structure of crane."
Group I	1.00	1.50		1.25	1.00	
Group II	1.25		1.50		1.00	
Group III	1.50		1.75		1.25	
Group IV	1.75		2.00		1.50	
CONVEYORS (General purpose)						
Uniformly load or fed				1.00	1.00	1.25
Heavy load						
Not uniformly fed				1.00	1.25	1.50
Reciprocating or shaker				1.50	1.75	2.00
ELEVATORS						
Elevators				1.50	1.50	1.50
Escalators				1.25	1.25	1.25
METAL MILLS						
Draw bench carriage and main drive				1.50	1.50	1.50
Runout table						
Non reversing						
Group drives				1.50	1.50	1.50
Individual drivers				2.00	2.00	2.00
Reversing				2.00	2.00	2.00
Slab pushers				1.50	1.50	1.50
Shears				2.00	2.00	2.00
Wire drawing				1.25	1.25	1.25
Wire winding machine				1.25	1.50	1.50
METAL STRIP PROCESSING MACHINERY						
Bridles				1.50	1.50	1.50
Coilers & uncoilers				1.00	1.25	1.50
Edge trimmers				1.00	1.25	1.50
Flatteners				1.25	1.25	1.50
Loopers (Accumulators)				1.50	1.50	2.00
Pinch rolls				1.25	1.25	1.50
Scrap choppers				2.00	2.00	2.00
Shears				2.00	2.00	2.00
Slitters				1.00	1.25	1.50
MILL, ROTARY TYPE						
Ball and rod				2.00	2.00	2.00
Cement Kilns				2.00	2.00	2.00
Kilns (Except cement kilns)				1.50	1.50	1.50
Dryers and coolers				1.50	1.50	1.50
SEWAGE DISPOSAL EQUIPMENT						
Aerators				2.00	2.00	2.00
Bar screens				1.25	1.25	1.25
Chemical feeders				1.25	1.25	1.25
Dewatering screens				1.50	1.50	1.50
Scum breakers				1.50	1.50	1.50
Slow or rapid mixers				1.50	1.50	1.50
Sludge collectors				1.25	1.25	1.25
Thickeners				1.50	1.50	1.50
Vacuum filters				1.50	1.50	1.50
EXTRUDERS						
Plastics				1.25	1.25	1.25
Rubber				1.50	1.50	1.50
FEEDERS						
Apron				1.00	1.25	1.50
Belt				1.00	1.25	1.50
Disk				1.00	1.00	1.25
Reciprocating				1.50	1.75	2.00
Screw				1.00	1.25	1.50

Driven Machine		Operating Hours (hours/day)		
		3 hrs	10 hrs	24 hrs
RUBBER INDUSTRY				
Mixers		1.75	1.75	2.00
Mixing mill -2 smooth rolls		1.50	1.50	1.75
Batch drop mill -2 smooth rolls		1.50	1.50	1.50
Cracker warmer				
-2 roll: 1 corrugated roll		1.75	1.75	1.75
Cracker -2 corrugated rolls		2.00	2.00	2.00
Holding, feed and blend mill				
-2 rolls		1.25	1.25	1.25
Refiner -2 rolls		1.50	1.50	1.50
Calenders		1.50	1.50	1.50
PAPER MILL				
All types incl. Paper making machine		2.00	2.00	2.00
AGITATORS AND MIXERS				
Pure liquids		1.00	1.00	1.25
Liquids and solids		1.00	1.25	1.50
Liquids variable density		1.00	1.25	1.50
MIXERS				
Concrete		1.25	1.25	1.50
CRUSHER				
Stone or ore		2.50	2.50	2.50
BLOWERS				
Centrifugal		1.00	1.00	1.25
Lobe		1.00	1.25	1.50
Vane		1.00	1.25	1.50
COMPRESSORS				
Centrifugal		1.00	1.00	1.25
Lobe		1.00	1.25	1.50
Reciprocating: multi cylinder		1.50	1.50	1.75
Reciprocating: single cylinder		1.75	1.75	2.00
FANS				
Centrifugal		1.00	1.00	1.25
Cooling towers		※	※	※
Forced draft		1.25	1.25	1.25
Suction draft		1.50	1.50	1.50
Industrial and mine		1.50	1.50	1.50
PUMPS				
Centrifugal		1.00	1.00	1.25
Screw pump		1.25	1.25	1.50
Gear pump		1.25	1.25	1.50
DREDGES				
Cable reels		1.25	1.25	1.50
Conveyors		1.25	1.25	1.50
Cutter head drive		2.00	2.00	2.00
Pumps		2.00	2.00	2.00
Screen drives		1.75	1.75	2.00
Stackers		1.25	1.25	1.50
Winches		1.25	1.25	1.50
GENERATORS AND EXCITERS		1.00	1.00	1.25
HAMMER MILLS		1.75	1.75	2.00
SUGAR INDUSTRY				
Beet slicer		2.00	2.00	2.00
Cane knives		1.50	1.50	1.50
Crushers		1.50	1.50	1.50
Mills (Slow speed end)		1.75	1.75	1.75

Notes:

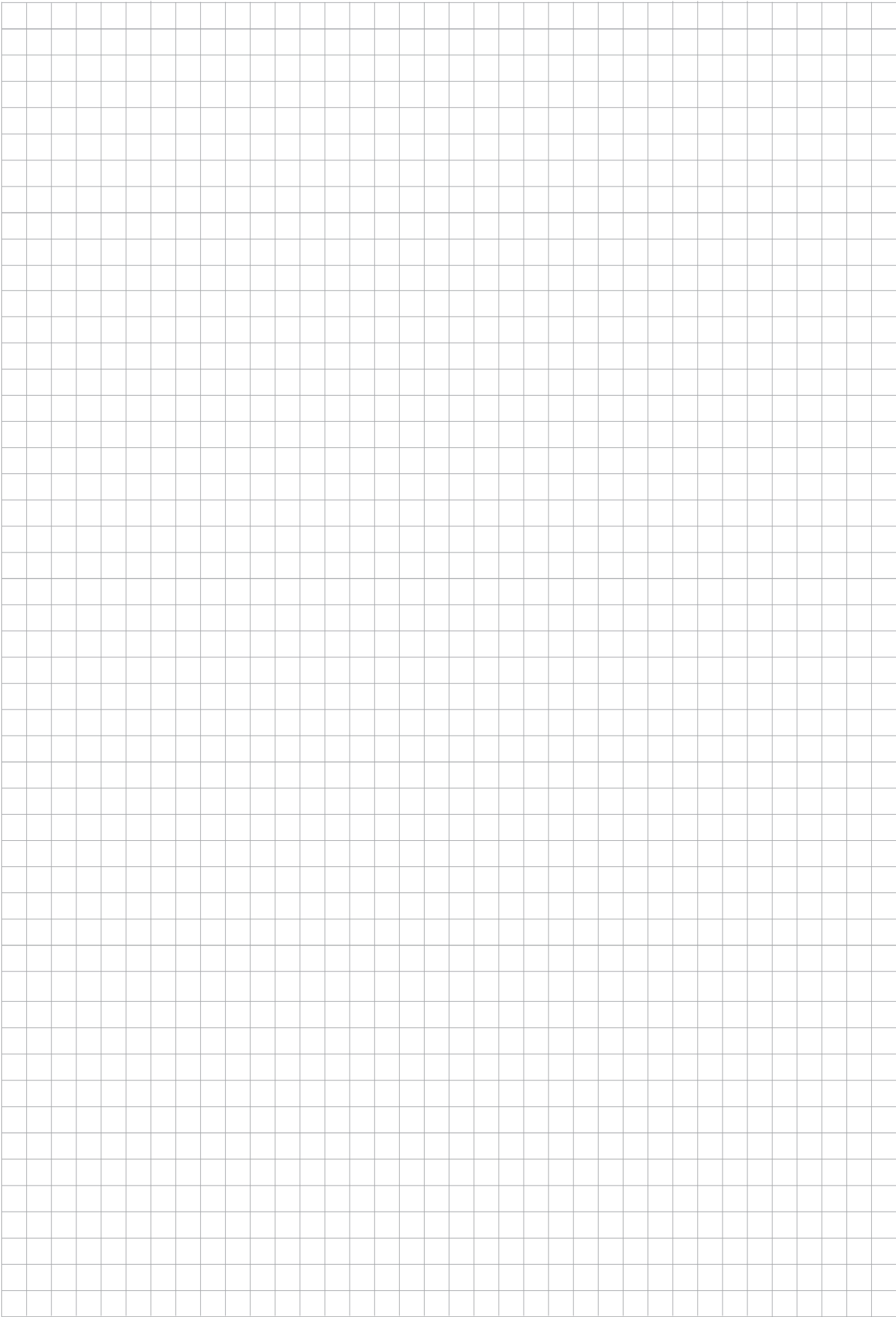
- (1) Values in the above table are based on AGMA standards and SUMITOMO's experience.
- (2) Values in the above table apply for electric motors as prime movers - if prime mover is a multi cylinder combustion engine, 0.25 has to be added to the SF.
- (3) Consult us for special duty or when special safety specifications are needed.
- (4) ※ : For SF, consult us.

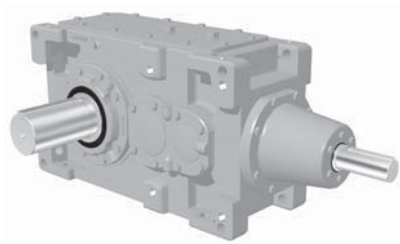
Reducer Service Factor SF

Refer to the following for driven machines not shown on the left page.

Prime Mover	Operating Hours	Type of Load		
		Uniform Load	Moderate Shock Load	Heavy Shock Load
		U	M	H
Electric Motor	3 hours/day	1.00	1.00	1.50
	10 hours/day	1.00	1.25	1.75
	24 hours/day	1.25	1.50	2.00
Internal Combustion Engine (multi cylinder)	3 hours/day	1.00	1.25	1.75
	10 hours/day	1.25	1.50	2.00
	24 hours/day	1.50	1.75	2.25

Note: Consult us when the operating hours are less than 3 hours/day or when an internal combustion engine (single cylinder) is used.

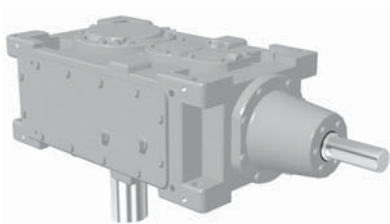




<Reducer: Right Angle Shaft-Horizontal Mounting>



<Reducer: Right Angle Shaft Upright Mounting>



<Reducer: Right Angle Shaft Vertical Mounting>

C

Reducer: Right Angle

Selection Tables	... C- 12
Allowable Loads	... C- 42
Dimension Sheets	... C- 46

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 6.3 ▶ 8

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
6.3	Exact Reduction Ratio		6.265	6.049	6.539		6.405		6.384		6.188		6.188		6.286		
	1800	286	74	98	152		236		334		568		798		1020 [±]		
	1500	238	62	81	127		197		279		475		667		857		
	1200	190	49	65	102		158		224		381		535		688		
	1000	159	41	54	85		132		187		318		447		575		
	900	143	37	49	76		119		168		287		403		518		
	750	119	31	41	64		99		141		240		337		433		
7.1	Exact Reduction Ratio		7.246	6.903	7.049		7.309		7.268		7.210		6.933		6.933		
	1800	254	62	98	152		228		334		559		798		1020 [±]		
	1500	211	52	81	127		191		279		469		667		857		
	1200	169	42	65	102		153		224		377		535		688		
	1000	141	35	54	85		128		187		316		447		575		
	900	127	31	49	76		116		168		285		403		518		
	750	106	26.5	41	64		97		141		238		337		433		
8	Exact Reduction Ratio		7.889	8.056	8.118	8.150	7.778	8.144	8.125		7.875	7.759	8.082		8.190		
	1800	225	57	76	140	152	217	236	340		544	568	810		1150 [±]		
	1500	188	47	63	117	127	181	197	285		467	475	705		1010		
	1200	150	38	51	94	102	145	158	229		374	381	568		834		
	1000	125	31	42	78	85	120	132	191		312	318	476		699		
	900	113	28.6	38	71	76	108	119	173		280	287	429		630		
	750	94	23.8	31	59	64	90	99	144		234	240	359		528		
Dimension Tables	Horizontal	C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-46		C-48	C-48	C-48		C-48		
	Vertical	C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-72		C-74	C-74	C-74		C-74		
	Upright	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-88		C-90	C-90	C-90		C-90		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	30 75	39 105	46 124	61 171	73 217	88 261	79 233	108 332	134 414	138 372		160 561				
		1500	-	31 68	40 95	49 117	64 160	77 203	92 243	86 224	118 326	146 402	154 369		183 574				
		1200	-	31 60	40 84	50 106	66 145	79 184	95 223	90 208	126 307	154 376	165 351		200 557				
		1000	-	30 52	39 73	50 94	65 128	78 163	95 198	91 186	128 276	156 337	169 319		207 511				
		▼	-	29 48	39 69	50 89	65 121	78 154	94 187	91 178	128 265	156 323	169 306		209 493				
		8	-	28 42	37 60	48 79	63 107	76 137	92 167	89 159	127 239	154 290	169 278		209 449				
	Dimension Tables	Double Reduction Vertical Type	1800	-	30 75	39 105	46 124	61 171	73 217	88 261	79 233	108 332	134 414	138 372		160 561			
			1500	-	31 68	40 95	49 117	64 160	77 203	92 243	86 224	118 326	146 402	154 369		183 574			
			1200	-	31 60	40 84	50 106	66 145	79 184	95 223	90 208	126 307	154 376	165 351		200 557			
			1000	-	30 52	39 73	50 94	65 128	78 163	95 198	91 186	128 276	156 337	169 319		207 511			
			▼	-	29 48	39 69	50 89	65 121	78 154	94 187	91 178	128 265	156 323	169 306		209 493			
			8	-	28 42	37 60	48 79	63 107	76 137	92 167	89 159	127 239	154 290	169 278		209 449			
Double Reduction Upright Type		1800	-	24 60	31 84	37 99	49 137	58 174	70 209	64 186	86 266	107 331	110 297		128 449				
		1500	-	25 54	32 76	39 93	51 128	61 162	74 195	69 179	95 260	117 321	123 295		146 459				
		1200	-	24 48	32 67	40 85	52 116	63 147	76 178	72 166	100 245	123 301	132 281		160 446				
		1000	-	24 41	31 58	40 75	52 102	63 130	76 158	73 149	102 221	125 270	135 255		166 408				
		▼	-	23 39	31 55	40 71	52 97	62 124	75 150	72 142	102 212	125 258	136 245		167 395				
		8	-	23 34	30 48	39 63	50 86	61 110	74 133	71 128	101 191	123 232	135 222		167 360				

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 6.3 ▶ 8

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.	
											Exact Reduction Ratio			6.3	2. _____ Consult us when the high speed shaft speed is over 1800r/min.
											286	1800			
											238	1500			
											190	1200			
											159	1000			
											143	900			
											119	750			
											Exact Reduction Ratio			7.1	3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.
											254	1800			
											211	1500			
											169	1200			
											141	1000			
											127	900			
											106	750		4. _____ When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $P_N = P_{750} \times \frac{N}{750}$	
											Exact Reduction Ratio			8	5. _____ Shown in the table are the ratings for the slow speed shaft.
											225	1800			
											188	1500			
											150	1200			
											125	1000			
											113	900			
											94	750		6. _____ Refer to C42-C45 for the allowable radial and axial load on each shaft.	
											Horizontal Vertical Upright	Dimension Tables			

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				Without Fan	With Fan
										-	1800	Double Reduction Horizontal Type	20	1.00	1.00
										-	1500		30	0.85	0.87
										1	1200		40	0.70	0.73
										1	1000		50	0.55	0.60
										1	900	6.3			
										1	750	8			
										-	1800	Double Reduction Vertical Type			
										-	1500				
										1	1200				
										1	1000				
										1	900	6.3			
										1	750	8			
										-	1800	Double Reduction Upright Type			
										-	1500				
										1	1200				
										1	1000				
										1	900	6.3			
										1	750	8			

Notes		
1.	Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)	
2.	The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.	
3.	When the high speed shaft speed is not shown in the table, find it by interpolation method.	

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 9 ▶ 11.2

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
9	Exact Reduction Ratio		9.125	9.192	8.750	8.861	8.875	9.265	9.250	8.938	9.176	8.874	9.056	8.597	9.034	
	1800	200	49	76	126	152	188	236	280	334	443	568	704	798	1070 [*]	
	1500	167	41	63	105	127	158	197	234	279	371	475	590	667	897	
	1200	133	33	51	85	102	127	158	188	224	298	381	474	535	722	
	1000	111	28.0	42	71	85	106	132	158	187	250	318	397	447	605	
	900	100	25.3	38	64	76	95	119	142	168	225	287	358	403	546	
	750	83	21.1	31	53	64	80	99	119	141	188	240	300	337	457	
10	Exact Reduction Ratio		10.040	9.899	10.303	10.118	10.171	9.889	10.000	10.125	9.995	9.875	10.125	10.007	9.882	9.982
	1800	180	43	72	111	143	161	217	278	351	434	546	677	810	1000 [*]	1150 [*]
	1500	150	36	60	92	119	134	181	232	297	362	469	567	713	863	1010
	1200	120	29.1	48	74	95	107	145	187	237	289	375	456	577	695	867
	1000	100	24.3	40	62	79	89	120	156	198	241	313	382	482	582	736
	900	90	21.9	36	55	71	80	108	141	178	217	281	344	435	525	663
	750	75	18.2	30	46	59	67	90	118	148	181	234	288	363	439	553
11.2	Exact Reduction Ratio		11.614	11.295	11.106	11.000	11.606	11.250	11.385	11.375	11.647	11.294	11.345	11.229	10.900	10.961
	1800	161	39	63	100	133	145	198	229	293	351	462	565	747	892 [*]	1120 [*]
	1500	134	33	52	83	111	121	166	191	245	294	387	473	626	748	938
	1200	107	26.5	42	67	89	97	133	154	197	236	311	381	504	602	756
	1000	89	22.1	35	56	75	81	111	129	165	198	260	319	421	504	633
	900	80	19.9	31	50	67	73	100	116	149	178	235	287	380	454	571
	750	67	16.7	26.6	42	56	61	84	97	124	149	196	240	318	380	478
Dimension Tables	Horizontal		C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-48	C-48	C-48	C-48	C-48	C-48
	Vertical		C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-74	C-74	C-74	C-74	C-74	C-74
	Upright		C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-90	C-90	C-90	C-90	C-90	C-90

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	27 67	36 96	44 118	56 156	69 205	82 244	78 227	99 290	109 337	130 402	142 382	173 467	164 577	203 715		
		1500	-	27 59	36 86	46 109	58 144	71 187	85 225	82 214	105 274	116 319	141 388	153 368	188 452	183 575	226 708		
		1200	-	26 52	36 76	46 98	59 129	71 166	86 202	84 195	108 250	120 292	147 359	160 341	198 422	195 543	242 673		
		1000	-	26 44	35 66	46 85	58 113	70 145	85 177	84 173	108 222	120 260	148 320	161 305	200 379	199 491	248 610		
		9	-	25 41	34 62	45 81	57 107	69 137	84 167	84 164	108 211	119 247	148 306	161 291	200 363	200 471	249 586		
		11.2	-	24 36	33 54	44 71	56 95	66 120	82 149	82 146	105 188	117 221	146 275	158 261	198 326	198 425	247 531		
	Dimension Tables	Double Reduction Vertical Type	1800	-	27 67	36 96	44 118	56 156	69 205	82 244	78 227	99 290	109 337	130 402	142 382	173 467	164 577	203 715	
			1500	-	27 59	36 86	46 109	58 144	71 187	85 225	82 214	105 274	116 319	141 388	153 368	188 452	183 575	226 708	
			1200	-	26 52	36 76	46 98	59 129	71 166	86 202	84 195	108 250	120 292	147 359	160 341	198 422	195 543	242 673	
			1000	-	26 44	35 66	46 85	58 113	70 145	85 177	84 173	108 222	120 260	148 320	161 305	200 379	199 491	248 610	
			9	-	25 41	34 62	45 81	57 107	69 137	84 167	84 164	108 211	119 247	148 306	161 291	200 363	200 471	249 586	
			11.2	-	24 36	33 54	44 71	56 95	66 120	82 149	82 146	105 188	117 221	146 275	158 261	198 326	198 425	247 531	
		Double Reduction Upright Type	1800	-	22 53	29 76	35 95	45 125	55 164	66 195	62 182	79 232	87 270	104 321	113 306	138 373	131 461	163 572	
			1500	-	22 47	29 69	37 87	46 115	57 150	68 180	66 171	84 219	93 255	113 310	123 295	151 362	147 460	181 567	
			1200	-	21 41	29 61	37 78	47 104	57 133	69 161	68 156	86 200	96 234	118 287	128 273	158 338	156 434	194 538	
			1000	-	20 35	28 52	36 68	46 91	56 116	68 141	67 138	87 178	96 208	118 256	129 244	160 303	159 392	198 488	
			9	-	20 33	28 49	36 64	46 86	55 109	67 134	67 131	86 169	96 198	118 245	129 233	160 290	160 377	199 469	
			11.2	-	19 29	26 43	35 57	45 76	53 96	66 119	65 117	84 151	94 176	117 220	127 209	158 261	158 340	198 425	

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor		
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan	
490											-	1800	Double Reduction Horizontal Type	11.2	20	1.00	1.00
200											-	1500			30	0.85	0.87
538 560 570											1	1200			40	0.70	0.73
220 270											-	1000			50	0.55	0.60
525 599 590											1	900					
210 280 320											-	750					
444 551 600											1						
210 270 330											-						
425 508 593											1						
190 250 320											-						
350 429 523											1						

Notes		
1. _____ Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)		
2. _____ The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.		
3. _____ When the high speed shaft speed is not shown in the table, find it by interpolation method.		

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 12.5 ▶ 16

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
12.5	Exact Reduction Ratio		12.162	12.020	12.545	12.842	12.727	12.932	12.188	12.462	12.469	12.534	12.797	12.536	12.923	12.044
	1800	144	36	58	89	111	122	161	225	284	322	435	512	700	732 [*]	1000 [*]
	1500	120	30	48	74	93	102	134	188	237	269	362	428	598	612	863
	1200	96	24.2	39	59	74	82	107	150	189	216	290	343	482	491	715
	1000	80	20.1	32	49	62	68	89	125	158	180	242	286	403	410	600
	900	72	18.1	29.3	44	55	61	80	112	142	162	217	258	364	369	540
	750	60	15.1	24.4	37	46	51	67	94	118	136	181	215	304	308	450
14	Exact Reduction Ratio		14.068	13.716	13.523	13.962	14.523	14.712	13.875	14.000	14.529	14.335	14.338	14.067	14.253	13.225
	1800	129	32	51	82	105	116	152	188	239	283	366	450	600	688 [*]	933 [*]
	1500	107	27.3	43	69	88	97	126	158	200	237	306	377	502	576	782
	1200	86	21.9	34	55	71	78	101	127	161	190	246	303	404	463	629
	1000	71	18.3	28.7	46	59	65	84	106	134	159	206	253	338	388	527
	900	64	16.5	25.8	41	53	58	76	95	121	143	186	228	305	350	475
	750	54	13.8	21.5	34	44	49	63	80	101	120	155	191	255	292	398
16	Exact Reduction Ratio		15.778	15.988	16.235	15.636	15.556	16.182	15.881	15.188	15.392	15.635	15.750	15.844	16.000	15.750
	1800	113	27.1	42	67	89	96	122	169	226	261	322	373	512	545 [*]	732 [*]
	1500	94	22.6	35	56	74	80	102	141	188	218	269	311	428	455	612
	1200	75	18.1	28.5	45	59	64	82	113	150	175	216	250	343	365	491
	1000	63	15.1	23.7	37	49	54	68	94	125	146	180	208	286	305	410
	900	56	13.5	21.4	33	44	48	61	84	113	131	162	188	258	275	369
	750	47	11.3	17.8	28.2	37	40	51	70	94	109	136	157	215	229	308
Dimension Tables	Horizontal	C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-48	C-48	C-48	C-48	C-48	C-48
	Vertical	C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-74	C-74	C-74	C-74	C-74	C-74
	Upright	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-90	C-90	C-90	C-90	C-90	C-90

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	23 57	33 88	41 110	54 150	63 187	79 235	73 214	96 282	101 312	130 402	137 369	175 472	172 607	208 731		
		1500	-	23 50	33 77	41 98	55 137	63 166	79 209	74 192	98 256	103 283	133 366	140 336	180 433	178 558	224 702		
		1200	-	22 42	31 66	40 85	55 121	61 144	78 183	73 169	98 227	103 250	134 327	140 298	181 387	180 500	230 641		
		1000	-	21 36	30 56	39 73	54 105	59 123	76 158	71 146	96 198	101 218	132 286	138 260	179 339	178 438	229 565		
	12.5 ▼	900	-	20 33	29 52	38 68	53 99	58 115	74 147	70 137	95 186	99 205	130 269	136 245	177 321	176 414	227 535		
		16	750	-	19 28	28 45	36 59	51 86	55 100	71 129	92 120	95 164	126 180	131 216	172 284	171 367	221 475		
	Dimension Tables	Double Reduction Vertical Type	1800	-	23 57	33 88	41 110	54 150	63 187	79 235	73 214	96 282	101 312	130 402	137 369	175 472	172 607	208 731	
			1500	-	23 50	33 77	41 98	55 137	63 166	79 209	74 192	98 256	103 283	133 366	140 336	180 433	178 558	224 702	
			1200	-	22 42	31 66	40 85	55 121	61 144	78 183	73 169	98 227	103 250	134 327	140 298	181 387	180 500	230 641	
			1000	-	21 36	30 56	39 73	54 105	59 123	76 158	71 146	96 198	101 218	132 286	138 260	179 339	178 438	229 565	
		12.5 ▼	900	-	20 33	29 52	38 68	53 99	58 115	74 147	70 137	95 186	99 205	130 269	136 245	177 321	176 414	227 535	
			16	750	-	19 28	28 45	36 59	51 86	55 100	71 129	92 120	95 164	126 180	131 216	172 284	171 367	221 475	
Double Reduction Upright Type		1800	-	18 46	26 70	33 88	43 120	50 150	63 188	58 171	77 225	81 250	104 321	109 295	140 378	138 485	166 585		
		1500	-	18 40	26 62	33 79	44 109	50 133	63 167	59 154	79 205	82 227	106 293	112 269	144 346	142 446	179 562		
		1200	-	17 34	25 53	32 68	44 97	49 115	62 146	58 135	79 182	82 200	107 262	112 239	145 310	144 400	184 513		
		1000	-	17 29	24 45	31 58	43 84	47 99	61 126	57 117	77 158	80 174	106 228	110 208	144 271	142 350	183 452		
		12.5 ▼	900	-	16 27	23 42	30 55	42 79	46 92	59 118	56 110	76 149	79 164	104 215	108 196	142 257	141 331	182 428	
			16	750	-	15 23	22 36	29 47	40 69	44 80	57 103	54 96	73 131	76 144	101 190	105 173	138 227	137 293	177 380

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 12.5 ▶ 16

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
12.349	12.349	12.929									Exact Reduction Ratio		1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.
1180 ※	1570 ※	2310 ※									144	1800	12.5
1010 ※	1380 ※	1980 ※									120	1500	
840 ※	1180 ※	1640 ※									96	1200	
721 ※	1040 ※	1410 ※									80	1000	
660 ※	971 ※	1290 ※									72	900	
566 ※	830 ※	1110 ※									60	750	2. _____ Consult us when the high speed shaft speed is over 1800r/min.
14.143	14.344	14.260									Exact Reduction Ratio		3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.
993 ※	1280 ※	1980 ※									129	1800	14
852 ※	1130 ※	1700 ※									107	1500	
706 ※	966 ※	1410 ※									86	1200	
605 ※	850 ※	1210 ※									71	1000	
554 ※	790 ※	1110 ※									64	900	
475 ※	678 ※	952 ※									54	750	4. _____ When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.
15.345	15.562	16.312									Exact Reduction Ratio		16
953 ※	1280 ※	1840 ※									113	1800	
817 ※	1130 ※	1580 ※									94	1500	
678 ※	966 ※	1310 ※									75	1200	
581 ※	850 ※	1120 ※									63	1000	
532 ※	790 ※	1020 ※									56	900	5. _____ Shown in the table are the ratings for the slow speed shaft.
456 ※	662 ※	883 ※									47	750	
C-50	C-50	C-50									Horizontal Vertical Upright	Dimension Tables	
													6. _____ Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
490											-	1800	Double Reduction Horizontal Type	20	1.00	1.00
200											-	1500		30	0.85	0.87
538 560 570											1	1200		40	0.70	0.73
220 270											-	1000		50	0.55	0.60
525 599 590											1	900				
210 280 320											-	750				
444 551 600											1					
210 270 330											-					
425 508 593											1					
190 250 320											-					
350 429 523											1					
											-	1800	Double Reduction Vertical Type			
											-	1500				
											1	1200				
											1	1000				
											-	900		12.5		
											-	750		16		
											-	1800	Double Reduction Upright Type			
											-	1500				
											1	1200				
											1	1000				
											-	900		12.5		
											-	750		16		

Notes

1. _____

Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)

2. _____

The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.

3. _____

When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 18 ▶ 22.4

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090		
18	Exact Reduction Ratio		18.250	18.243	17.500	17.000	17.750	18.409	18.080	17.063	17.936	17.882	17.647	17.779	17.647	17.294			
	1800	100	25.3	37	64	86	95	117	145	197	230	295	368	478	545 [*]	719 [*]			
	1500	83	21.1	31	53	72	79	98	122	165	193	247	308	400	455	602			
	1200	67	17.0	25.1	43	57	63	78	98	132	155	198	247	321	365	484			
	1000	56	14.2	20.9	36	48	53	65	81	111	129	166	207	269	305	405			
	900	50	12.8	18.9	32	43	47	58	73	100	116	149	186	242	275	366			
	750	42	10.7	15.7	27.1	36	39	49	61	83	97	125	156	203	229	306			
20	Exact Reduction Ratio		20.235				19.778			19.790			19.301			19.500		19.500	
	1800	90	*				67	*	96	*	170	*	261	*	373	*	545 [*]		
	1500	75	*				56	*	80	*	141	*	218	*	311	*	455		
	1200	60	*				45	*	64	*	113	*	175	*	250	*	365		
	1000	50	*				37	*	54	*	94	*	146	*	208	*	305		
	900	45	*				33	*	48	*	85	*	131	*	188	*	275		
	750	38	*				28.2	*	40	*	70	*	109	*	157	*	229		
22.4	Exact Reduction Ratio		22.000				22.500			22.233			22.075			21.882		21.412	
	1800	80	*				65	*	95	*	152	*	240	*	373	*	545 [*]		
	1500	67	*				54	*	79	*	127	*	201	*	311	*	455		
	1200	54	*				43	*	63	*	102	*	161	*	250	*	365		
	1000	45	*				36	*	53	*	85	*	135	*	208	*	305		
	900	40	*				32	*	47	*	77	*	121	*	188	*	275		
	750	33	*				27.4	*	39	*	64	*	101	*	157	*	229		
Dimension Tables	Horizontal	C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-46	C-48	C-48	C-48	C-48	C-48	C-48			
	Vertical	C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-72	C-74	C-74	C-74	C-74	C-74	C-74			
	Upright	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-88	C-90	C-90	C-90	C-90	C-90	C-90			

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	22 55	32 85	40 108	49 136	56 165	69 205	73 213	89 259	103 317	119 368	139 375	165 445	175 617	209 736		
		1500	-	22 48	31 74	40 96	48 120	55 146	69 182	74 192	89 231	104 287	120 330	142 341	167 401	181 567	213 668		
		1200	-	21 41	30 64	39 83	47 103	54 127	67 157	73 169	87 201	104 254	119 290	142 303	165 353	183 507	213 593		
		1000	-	20 35	29 54	38 71	45 88	53 110	64 133	71 146	84 173	102 220	116 251	140 264	162 306	181 445	210 517		
		900	-	19 32	28 50	37 67	44 82	52 103	63 125	70 137	83 162	100 207	114 236	138 249	159 288	178 421	207 487		
		750	-	18 27	27 43	35 58	42 71	50 90	60 109	67 120	79 141	97 182	109 205	133 219	154 253	173 372	200 430		
	Dimension Tables	Double Reduction Vertical Type	1800	-	22 55	32 85	40 108	49 136	53 157	69 205	73 213	89 259	103 317	119 368	139 375	165 445	175 617	209 736	
			1500	-	22 48	31 74	40 96	48 120	53 141	69 182	74 192	89 231	104 287	120 330	142 341	167 401	181 567	213 668	
			1200	-	21 41	30 64	39 83	47 103	53 124	67 157	73 169	87 201	104 254	119 290	142 303	165 353	183 507	213 593	
			1000	-	20 35	29 54	38 71	45 88	52 107	64 133	71 146	84 173	102 220	116 251	140 264	162 306	181 445	210 517	
			900	-	19 32	28 50	37 67	44 82	51 101	63 125	70 137	83 162	100 207	114 236	138 249	159 288	178 421	207 487	
			750	-	18 27	27 43	35 58	42 71	49 88	60 109	67 120	79 141	97 182	109 205	133 219	154 253	173 372	200 430	
Dimension Tables		Double Reduction Upright Type	1800	-	18 44	25 68	32 87	39 109	44 132	55 164	58 171	71 207	82 254	95 294	111 300	132 356	140 494	167 589	
			1500	-	17 38	25 60	32 77	39 96	44 117	55 146	59 154	71 185	84 230	96 264	114 273	133 321	145 453	171 535	
			1200	-	17 33	24 51	32 67	37 82	43 102	54 126	58 135	70 161	83 203	95 232	114 242	132 282	146 406	170 474	
			1000	-	16 28	23 43	30 57	36 70	42 88	51 106	57 116	68 138	82 176	93 201	112 211	130 245	144 356	168 413	
			900	-	15 26	23 40	30 53	35 66	41 82	50 100	56 109	66 130	80 166	91 189	110 199	127 230	143 336	165 390	
			750	-	15 22	21 35	28 46	33 57	40 72	48 87	54 96	63 113	77 146	87 164	107 176	123 202	139 298	160 344	

SELECTION Right Angle Shaft Double Reduction Nominal Reduction Ratio 18 ▶ 22.4

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
17.625	18.000	17.895									Exact Reduction Ratio	
803 [*]	1040 [*]	1590 [*]									100	1800
689 [*]	918 [*]	1370 [*]									83	1500
571 [*]	785 [*]	1130 [*]									67	1200
490 [*]	691 [*]	975 [*]									56	1000
448 [*]	642 [*]	892 [*]									50	900
384 [*]	551 [*]	765 [*]									42	750
19.123	19.529	20.471									Exact Reduction Ratio	
771 [*]	1040 [*]	1480 [*]									90	1800
662 [*]	918 [*]	1270 [*]									75	1500
548 [*]	785 [*]	1050 [*]									60	1200
470 [*]	691 [*]	905 [*]									50	1000
431 [*]	634 [*]	829 [*]									45	900
369 [*]	530 [*]	711 [*]									38	750
											Exact Reduction Ratio	
*	*	*									80	1800
*	*	*									67	1500
*	*	*									54	1200
*	*	*									45	1000
*	*	*									40	900
*	*	*									33	750
C-50	C-50	C-50									Horizontal Vertical Upright	Dimension Tables

*Marked models are triple reduction units. Refer to C-20 and C-21.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$P_N = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
490											-	1800
200											-	1500
538	560	570									1	1200
220	270										-	1000
525	599	590									1	900
210	280	320									-	750
444	551	600									1	
210	270	330									-	
425	508	593									1	
190	250	320									-	
350	429	523									1	

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

											-	1800	Double Reduction Vertical Type
											-	1500	
											1	1200	
											-	1000	
											1	900	
											-	750	18 ▼ 22.4
											-	1800	Double Reduction Upright Type
											-	1500	
											1	1200	
											-	1000	
											1	900	
											-	750	18 ▼ 22.4

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 20 ▶ 25

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																		
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090				
20	Exact Reduction Ratio		20.091			19.620			19.790			19.181			19.950			20.206		20.548	
	1800	90	61			*	81	*	124	*	194	*	295	*	516	*	735				
	1500	75	51			*	67	*	103	*	162	*	246	*	431	*	616				
	1200	60	41			*	54	*	83	*	130	*	198	*	346	*	495				
	1000	50	34			*	45	*	69	*	108	*	165	*	289	*	413				
	900	45	31			*	40	*	62	*	97	*	149	*	261	*	373				
	750	38	26.1			*	34	*	52	*	81	*	124	*	218	*	311				
22.4	Exact Reduction Ratio		21.656			22.388			22.530			22.351			22.353			22.286		22.353	
	1800	80	55			*	81	*	124	*	194	*	295	*	476	*	696				
	1500	67	46			*	67	*	103	*	162	*	246	*	398	*	582				
	1200	54	37			*	54	*	83	*	130	*	198	*	320	*	468				
	1000	45	31			*	45	*	69	*	108	*	165	*	268	*	391				
	900	40	28.1			*	40	*	62	*	97	*	149	*	241	*	353				
	750	33	23.5			*	34	*	52	*	81	*	124	*	202	*	295				
25	Exact Reduction Ratio		25.137			25.041	24.444		25.935		24.662	25.137		24.938		24.630		24.626	25.685		
	1800	72	49		64	80	117		124	193	295		453		516	625					
	1500	60	41		54	67	98		103	162	246		379		431	528					
	1200	48	33		43	53	78		83	130	198		304		346	424					
	1000	40	27.8		36	45	65		69	108	165		254		289	355					
	900	36	25.0		32	40	59		62	97	149		229		261	320					
	750	30	20.9		27.3	33	49		52	81	124		192		218	267					
Dimension Tables	Horizontal Vertical Upright	C-52		C-52	C-52	C-52		C-52	C-52	C-54	C-54		C-54		C-54	C-54	C-56				
		C-76		C-76	C-76	C-76		C-76	C-76	C-78	C-78		C-78		C-78	C-80					
		C-92		C-92	C-92	C-92		C-92	C-92	C-94	C-94		C-94		C-94						

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer													
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Selection Tables	Triple Reduction Horizontal Type	1800	-		34	43	53		61	77	84		113		138	172	213
			-		65	86	93		141	178	177		214		368	459	510
		1500	-		34	43	53		61	77	85		115		144	178	220
			-		58	77	83		126	159	160		195		340	421	468
	20	1200	-		33	43	52		60	76	85		115		146	180	222
			-		51	67	72		111	139	141		173		307	377	419
		1000	-		33	42	50		59	74	83		114		145	178	220
			-		44	58	62		96	120	122		151		271	332	369
	▼	900	-		32	41	49		58	73	82		112		144	176	218
			1		42	54	58		90	113	115		143		257	314	350
	25	750	-		31	39	47		56	70	79		109		141	172	213
			1		36	47	50		79	99	102		126		229	279	311
Dimension Tables	Triple Reduction Vertical Type	1800	-		31	41	51		57	73	79		105		126	159	181
			-		61	81	89		133	169	166		200		336	422	433
		1500	-		32	42	51		59	74	81		109		135	168	195
			-		55	74	80		121	153	152		185		319	397	416
	20	1200	-		32	41	51		59	74	82		111		140	172	205
			-		49	65	70		107	135	136		167		293	362	386
		1000	-		32	41	49		58	72	81		111		141	173	207
			-		43	56	60		93	117	119		147		262	321	346
	▼	900	-		31	40	48		57	71	80		110		140	172	207
			1		40	53	57		88	110	113		139		250	306	331
	25	750	-		30	38	46		55	69	78		107		138	169	205
			1		36	47	50		78	97	100		124		224	273	298
Dimension Tables	Triple Reduction Upright Type	1800	-		34	43	55		61	77	84		113		138	172	
			-		65	86	96		141	178	177		214		368	459	
		1500	-		34	43	55		61	77	85		115		144	178	
			-		58	77	85		126	159	160		195		340	421	
	20	1200	-		33	43	54		60	76	85		115		146	180	
			-		51	67	74		111	139	141		173		307	377	
		1000	-		33	42	52		59	74	83		114		145	178	
			-		44	58	64		96	120	122		151		271	332	
	▼	900	-		32	41	51		58	73	82		112		144	176	
			1		42	54	60		90	113	115		143		257	314	
	25	750	-		31	39	49		56	70	79		109		141	172	
			1		36	47	52		79	99	102		126		229	279	

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 20 ▶ 25

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio			
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136						
20.504					19.608					Exact Reduction Ratio						
*	992 *	*	1520 *	*								90	1800	20		
*	829	*	1270	*								75	1500			
*	666	*	1020	*								60	1200			
*	556	*	856	*								50	1000			
*	501	*	772	*								45	900			
*	419	*	645	*								38	750			
22.800	22.004	22.444	22.499	22.222								Exact Reduction Ratio				
735	992 *	992 *	1360 *	1520 *								80	1800	22.4		
616	829	829	1160	1270								67	1500			
495	666	666	936	1020								54	1200			
413	556	556	783	856								45	1000			
373	501	501	706	772								40	900			
311	419	419	591	645								33	750			
24.737	25.271	24.351	24.166	25.421	24.837								Exact Reduction Ratio			
714	912 *	992 *	1270 *	1360 *	1520 *								72	1800	25	
613	763	829	1090	1170	1270								60	1500		
495	613	666	910	970	1020								48	1200		
413	513	556	771	827	856								40	1000		
373	462	501	696	746	772								36	900		
311	386	419	582	624	645								30	750		
C-56	C-56	C-56	C-56	C-56	C-58								Horizontal	Dimension Tables		
C-80	C-80	C-80	C-80	C-80								Vertical				
											Upright					

*marked models are double reduction units. Refer to C-18 and C-19.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
239	273	306	348	385	426						-	1800	Triple Reduction Horizontal Type
572	767	860	933	1031	703						1		
246	282	317	366	402	443						-	1500	
524	705	792	874	958	730						1		
249	286	321	375	410	450						-	1200	
469	634	711	794	869	743						1		
247	284	319	375	410	449						-	1000	20 ▼ 25
413	558	627	703	769	741						1		
244	281	316	373	408	446						-	900	
391	530	595	669	732	736						1		
239	275	309	366	400	437						-	750	
348	472	530	599	654	722						1		
											-	1800	Triple Reduction Vertical Type
203	230	258	280	316						1			
485	646	724	750	847						-	1500		
219	249	280	315	350						1			
466	624	700	751	834						-	1200		
229	262	294	340	373						1			
433	582	653	719	791						-	1000		
232	266	299	349	382						1			
388	524	588	655	717						-	900	20 ▼ 25	
232	266	299	351	384						1			
371	502	563	630	689						-	750		
229	264	296	350	382						1			
334	453	508	571	625						-			
											-	1800	Triple Reduction Upright Type
											1		
											-	1500	
											1		
											-	1200	
											1		
											-	1000	20 ▼ 25
											1		
											-	900	
											1		
											-	750	
											1		

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 28 ▶ 35.5

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
28	Exact Reduction Ratio		27.096	27.225	27.893	28.379	29.526	27.706	29.291	27.509	27.941	27.718	27.165	27.041	27.941		
	1800	65	44	58	65	81	96	124	152	194	251	295	392	498	559		
	1500	54	37	49	55	67	80	103	127	162	210	246	328	417	468		
	1200	43	29.9	39	44	54	64	83	102	130	168	198	263	335	376		
	1000	36	25.0	33	36	45	54	69	85	108	141	165	220	280	314		
	900	32	22.5	29.7	33	40	48	62	77	97	127	149	198	252	283		
	750	27	18.8	24.8	28	34	40	52	64	81	106	124	166	211	237		
31.5	Exact Reduction Ratio		32.455	31.331	31.694	31.079	31.969	32.319	30.157	31.521	31.129	30.875	32.280	30.017	32.063		
	1800	57	32	51	57	81	92	124	140	194	225	295	331	473	508		
	1500	48	26.9	43	48	67	79	103	117	162	190	246	280	399	425		
	1200	38	21.5	34	38	54	64	83	94	130	152	198	224	321	341		
	1000	32	18.0	29.1	32	45	53	69	78	108	127	165	187	268	285		
	900	29	16.2	26.2	29	40	48	62	70	97	114	149	169	242	257		
	750	24	13.5	21.9	24.1	34	40	52	59	81	95	124	141	202	215		
35.5	Exact Reduction Ratio		34.983	34.063	36.165	35.357	36.395	36.309	35.140	36.050	34.879	34.647	35.603	32.960	34.879		
	1800	51	32	47	51	69	78	100	127	159	202	266	301	410	450		
	1500	42	26.9	39	42	57	65	84	106	133	169	223	251	343	376		
	1200	34	21.5	31	34	46	52	67	85	106	135	179	202	276	302		
	1000	28	18.0	26.4	29	38	44	56	71	89	113	149	169	230	253		
	900	25	16.2	23.8	25.7	34	39	50	64	80	102	134	152	208	228		
	750	21	13.5	19.9	21.5	29.2	33	42	53	67	85	112	127	173	190		
Dimension Tables	Horizontal Vertical Upright	C-52	C-52	C-52	C-52	C-52	C-52	C-54	C-54	C-54	C-54	C-54	C-54	C-54	C-56		
		C-76	C-76	C-76	C-76	C-76	C-76	C-78	C-78	C-78	C-78	C-78	C-78	C-78	C-80		
		C-92	C-92	C-92	C-92	C-92	C-92	C-94	C-94	C-94	C-94	C-94	C-94	C-94			

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Triple Reduction Horizontal Type	1800	-			31	40	49	59	58	74	81	99	109	136	137	168	210
				59	79	85	103	135	171	172	209	208	259	364	447	502		
		1500	-			30	40	48	58	58	73	81	100	110	138	139	172	212
			52	71	75	90	120	152	153	188	186	233	328	408	452			
	Type	1200	-			29	39	46	57	57	72	80	98	108	136	138	173	211
				44	61	64	79	104	132	133	163	162	205	289	364	398		
Dimension Tables	28	1000	-			28	38	44	55	55	70	78	96	106	134	135	172	207
				38	53	54	67	89	114	115	142	140	178	251	319	346		
	35.5	900	-			27	37	43	54	53	69	76	94	104	132	133	170	204
				35	50	51	63	83	106	108	133	132	168	236	302	327		
		750	-			26	36	41	51	51	66	73	91	100	128	128	165	198
				30	43	44	54	72	93	94	117	116	148	208	268	288		
	Triple Reduction Vertical Type	1800	-			30	38	47	56	56	70	77	94	103	128	128	156	180
				57	75	82	98	129	163	162	198	196	244	341	415	430		
		1500	-			29	38	47	56	56	71	78	96	105	132	132	163	194
			50	68	72	87	115	146	147	180	178	222	313	386	412			
	Type	1200	-			28	38	45	55	55	70	78	95	105	132	133	167	198
				43	60	62	76	101	128	129	158	157	198	279	351	373		
	28	1000	-			27	37	44	54	54	69	76	94	103	131	131	167	197
				37	52	54	66	87	111	112	139	137	174	244	310	330		
	35.5	900	-			27	37	43	53	52	67	75	92	102	129	130	165	196
				34	49	50	62	81	105	105	130	129	164	231	295	313		
		750	-			25	35	41	51	50	65	72	89	98	126	126	162	191
				30	43	43	54	71	92	92	115	114	146	204	263	279		
	Triple Reduction Upright Type	1800	-			31	40	51	59	58	74	81	99	109	136	137	168	
				59	79	90	103	135	171	172	209	208	259	364	447			
		1500	-			30	40	50	58	58	73	81	100	110	138	139	172	
			52	71	78	90	120	152	153	188	186	233	328	408				
	Type	1200	-			29	39	49	57	57	72	80	98	108	136	138	173	
				44	61	67	79	104	132	133	163	162	205	289	364			
	28	1000	-			28	38	47	55	55	70	78	96	106	134	135	172	
				38	53	57	67	89	114	115	142	140	178	251	319			
	35.5	900	-			27	37	45	54	53	69	76	94	104	132	133	170	
				35	50	53	63	83	106	108	133	132	168	236	302			
		750	-			26	36	43	51	51	66	73	91	100	128	128	165	
				30	43	46	54	72	93	94	117	116	148	208	268			

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 28 ▶ 35.5

Size of Reducer												L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
28.500	27.119	27.662	27.730	27.389		28.500	28.500		27.737	27.737	Exact Reduction Ratio			
625	812 *	970 *	1130 *	1280 *		1930 *	2060 *		3110 *	3260 *		65	1800	28
536	679	825	949	1090		1610 *	1770 *		2600 *	2800 *		54	1500	
444	546	663	763	910		1300	1460		2090 *	2320 *		43	1200	
379	456	554	638	781		1080	1250		1750	1990		36	1000	
341	411	500	575	715		982	1140		1580	1820		32	900	
285	344	418	481	612		821	955		1320	1560		27	750	
30.922	32.716	30.012	31.413	31.331	31.500	30.922	30.922		31.729	31.729	Exact Reduction Ratio			
589	708 *	877 *	988 *	1140 *	1380 *	1780 *	1920 *		2730 *	2910 *		57	1800	31.5
498	592	734	823	978	1150	1490 *	1640 *		2280 *	2500 *		48	1500	
400	476	590	658	806	923	1200	1360		1840 *	2070 *		38	1200	
335	398	493	548	674	769	1000	1160		1530	1770		32	1000	
302	359	445	494	608	692	906	1050		1380	1620		29	900	
252	300	372	411	508	576	758	882		1160	1360		24	750	
35.576	35.108	35.811	36.045	35.601	36.176	36.000	36.000	36.500	35.036	35.036	Exact Reduction Ratio			
522	630 *	766 *	878 *	988 *	1330 *	1530 *	1690 *	2110 *	2480 *	2680 *		51	1800	35.5
448	527	640	734	823	1110	1280 *	1450 *	1760 *	2070 *	2300 *		42	1500	
364	424	514	590	658	895	1030	1200	1420 *	1670 *	1910 *		34	1200	
304	354	430	493	548	748	866	1000	1180	1390	1630		28	1000	
274	319	388	445	494	675	780	908	1070	1260	1480		25	900	
229	267	324	372	411	564	652	759	895	1050	1240		21	750	
C-56	C-56	C-56	C-56	C-56	C-58	C-58	C-58	C-60	C-60	C-60	Horizontal Vertical Upright	Dimension Tables		
C-80	C-80	C-80	C-80	C-80	C-80									

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer												Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
229	272	298	340	376	417	500	500	455	537	537	-	1800	Triple Reduction Horizontal Type	
547	764	839	912	1007	688	824	824	751	886	886	1	1500		
230	275	303	348	389	428	529	529	488	586	586	-	1500		
490	688	758	830	929	706	872	872	805	966	966	1	1200		
228	274	300	348	390	431	546	546	509	619	619	-	1200		
430	607	666	736	825	712	901	901	841	1021	1021	1	1000	28 ▼ 35.5	
223	269	294	343	383	428	543	543	516	630	630	-	1000		
373	529	579	643	719	706	895	895	851	1040	1040	1	900		
220	265	290	338	378	424	538	538	516	629	629	-	900		
352	499	546	607	679	700	888	888	851	1038	1038	1	750		
213	257	281	329	367	415	526	526	511	622	622	-	750		
310	441	481	538	600	684	868	868	843	1026	1026	1			

200	232	255	280	315		-	1800	Triple Reduction Vertical Type	
477	651	717	750	844		-	1500		
212	251	274	310	343		-	1500		
450	627	685	738	819		-	1200		
215	256	282	324	363		-	1200		
405	569	627	686	768		-	1000	28 ▼ 35.5	
213	256	281	325	365		-	1000		
357	503	552	609	684		-	900		
211	254	278	323	362		-	900		
338	478	524	580	651		-	750		
206	248	272	317	355		-	750		
300	426	466	519	581		-			

-	1800	Triple Reduction Upright Type	
-	1500		
-	1200		
-	1000		
-	900		
-	750		

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 40 ▶ 50

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
40	Exact Reduction Ratio			40.607	40.451	39.487	40.296	41.895	39.838	39.520	37.815	38.912	38.541	39.346	39.341	40.078
	1800	45		30	32	50	57	73	92	124	140	194	225	286	331	408
	1500	38		25.8	26.9	41	48	61	79	103	117	162	190	239	280	341
	1200	30		20.7	21.5	33	38	49	65	83	94	130	152	192	224	274
	1000	25		17.3	18.0	28.0	32	40	56	69	78	109	127	160	187	229
	900	23		15.6	16.2	25.3	28.9	36	51	62	70	98	114	144	169	206
	750	19		13.0	13.5	21.1	24.1	30	42	52	59	82	95	121	141	172
45	Exact Reduction Ratio			43.770	43.979	45.058	45.843	47.695	44.756	46.051	43.250	43.599	43.250	43.397	43.198	43.599
	1800	40		27.8	32	41	53	60	82	97	133	162	214	248	315	362
	1500	33		23.2	26.9	34	44	50	68	81	111	135	179	207	263	302
	1200	27		18.6	21.5	28	35	40	55	65	89	108	144	166	211	243
	1000	22		15.6	18.0	23.0	30	33	46	54	74	91	120	139	176	203
	900	20		14.0	16.2	20.7	27.0	30	41	49	67	82	108	125	159	183
	750	17		11.7	13.5	17.3	22.6	25.3	34	41	56	68	90	104	133	152
50	Exact Reduction Ratio			51.141	50.611		50.205	51.869	52.207	50.273	49.557	49.500	48.176	48.889	47.953	50.984
	1800	36		19.3	32		51	59	78	97	130	153	199	231	295	322
	1500	30		16.1	26.9		42	49	65	81	110	128	170	193	252	269
	1200	24		12.9	21.5		34	39	52	65	88	102	137	155	202	216
	1000	20		10.8	18.0		28.6	33	43	54	73	86	115	129	169	180
	900	18		9.7	16.2		25.7	39.9	39	49	66	77	103	116	152	162
	750	15		8.1	13.5		21.4	24.9	32	41	55	64	86	97	127	136
Dimension Tables	Horizontal Vertical Upright		C-52	C-52	C-52	C-52	C-52	C-52	C-52	C-54	C-54	C-54	C-54	C-54	C-54	C-56
			C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-78	C-78	C-78	C-78	C-78	C-78	C-80
			C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-92	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Triple Reduction Horizontal Type	1800	-			26	37	44	54	53	67	74	91	102	126	129	159	196
			-			51	73	76	94	123	155	155	192	194	240	342	422	468
		1500	-			26	36	42	53	52	66	73	90	101	125	128	159	195
			-			44	63	66	83	108	136	136	169	171	212	304	376	415
		1200	-			24	34	40	51	50	64	70	87	98	122	126	156	191
			-			37	54	55	70	92	117	117	145	147	184	264	328	360
	40 ▼ 50	1000	-			23	33	38	49	48	61	68	85	95	119	122	152	186
			-			31	46	46	60	78	100	100	126	126	158	227	283	310
		900	-			22	32	37	48	47	60	66	83	93	117	120	149	182
			-			29	42	43	57	73	93	93	117	118	148	213	266	291
		750	-			21	30	34	45	45	57	63	79	89	112	115	144	175
			-			24	36	37	48	63	81	81	102	103	130	186	233	255
Dimension Tables	Triple Reduction Vertical Type	1800	-			26	36	43	53	51	64	71	87	98	121	123	151	179
			-			49	71	74	93	119	149	149	184	186	229	326	401	427
		1500	-			25	35	41	52	51	64	70	87	98	121	124	153	182
			-			43	62	64	81	105	132	132	163	165	205	293	362	387
		1200	-			24	34	39	50	49	62	69	85	96	119	122	152	182
			-			36	53	54	69	90	114	115	142	144	179	257	319	343
	40 ▼ 50	1000	-			23	32	37	48	48	60	67	83	93	117	120	149	179
			-			30	45	46	59	77	98	98	123	124	155	223	277	299
		900	-			22	31	36	47	46	59	65	81	91	115	117	147	176
			-			28	42	42	55	72	92	92	115	116	146	209	261	282
		750	-			20	30	34	45	44	56	62	78	87	110	113	142	170
			-			24	36	36	48	62	80	80	100	101	128	184	230	248
Dimension Tables	Triple Reduction Upright Type	1800	-			26	37	47	54	53	67	74	91	102	126	129	159	
			-			51	73	83	95	123	155	155	192	194	240	342	422	
		1500	-			26	36	47	53	52	66	73	90	101	125	128	159	
			-			44	63	72	83	108	136	136	169	171	212	304	376	
		1200	-			24	34	45	51	50	64	70	87	98	122	126	156	
			-			37	54	62	71	92	117	117	145	147	184	264	328	
	40 ▼ 50	1000	-			23	33	43	49	48	61	68	85	95	119	122	152	
			-			31	46	53	60	78	100	100	126	126	158	227	283	
		900	-			22	32	42	48	47	60	66	83	93	117	120	149	
			-			29	42	49	56	73	93	93	117	118	148	213	266	
		750	-			21	30	40	45	45	57	63	79	89	112	115	144	
			-			24	36	42	48	63	81	81	102	103	130	186	233	

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 40 ▶ 50

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					
38.599	40.322	38.853	38.716	40.726	38.824	39.059	39.059	39.601	40.079	40.079	Exact Reduction Ratio			40	1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.
479	577	682	861	917	1240	1420	1570	1940	2170	2390	45	1800			
401	483	570	723	775	1030	1180	1350	1630	1820	2050	38	1500			
322	388	458	581	623	835	955	1110	1310	1460	1700	30	1200			
269	324	383	486	521	698	799	930	1090	1220	1440	25	1000			
242	292	345	438	469	630	720	839	988	1100	1300	23	900			
202	244	288	366	392	526	602	701	826	923	1080	19	750		2. _____ Consult us when the high speed shaft speed is over 1800r/min.	
44.471	43.271	44.136	44.425	43.878	45.882	45.529	45.529	46.162	44.206	44.206	Exact Reduction Ratio			45	3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.
430	514	624	715	861	1050	1220	1390	1670	1970	2200	40	1800			
364	429	522	598	739	882	1020	1190	1400	1650	1890	33	1500			
292	345	419	480	610	709	822	957	1120	1330	1560	27	1200			
244	288	350	402	508	593	687	800	943	1110	1310	22	1000			
220	260	315	362	457	534	620	721	850	1000	1180	20	900			
184	217	264	302	381	446	518	603	710	838	988	17	750		4. _____ When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$	
48.249	50.875	47.886	48.680	50.194	49.040	49.398	49.398	50.084	50.569	50.569	Exact Reduction Ratio			50	5. _____ Shown in the table are the ratings for the slow speed shaft.
385	459	555	691	755	988	1120	1290	1540	1730	1970	36	1800			
322	384	464	578	632	827	945	1090	1290	1450	1690	30	1500			
258	308	373	464	507	664	759	883	1040	1160	1370	24	1200			
216	257	312	388	424	555	634	738	870	974	1140	20	1000			
194	232	281	349	382	500	572	666	785	878	1030	18	900			
162	194	234	292	319	416	478	556	656	734	866	15	750		6. _____ Refer to C42-C45 for the allowable radial and axial load on each shaft.	
C-56	C-56	C-56	C-56	C-56	C-58	C-58	C-58	C-60	C-60	C-60	Horizontal Vertical Upright	Dimension Tables			
C-80	C-80	C-80	C-80	C-80											

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor			
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan		
219	258	285	330	362	399	524	524	450	552	552	-	Triple Reduction Horizontal Type	40 ▼ 50	20	1.00	1.00		
524	724	801	885	969	658	864	864	743	911	911	1			1800	30	0.85	0.87	
220	257	287	335	365	401	529	529	481	586	586	-			1500	40	0.70	0.73	
468	642	717	798	870	662	872	872	793	966	966	1			1200	50	0.55	0.60	
217	252	283	330	362	397	525	525	490	593	593	-			Triple Reduction Vertical Type	40 ▼ 50			
410	558	629	700	767	655	866	866	809	978	978	1					1000		
213	245	277	323	356	389	516	516	490	590	590	-	900						
356	482	545	606	667	642	852	852	808	973	973	1	750						
209	240	273	317	351	383	509	509	487	585	585	-	Triple Reduction Upright Type	40 ▼ 50					
335	453	514	570	630	633	840	840	803	965	965	1			1800				
202	232	264	306	340	372	495	495	478	573	573	-			1500				
295	397	453	501	556	613	817	817	788	945	945	1			1200				
197	233	256	291	322							-			1000				
471	656	720	779	862							1			900				
203	239	265	305	335							-	Triple Reduction Upright Type	40 ▼ 50					
432	599	661	727	799							1			1800				
205	239	268	312	341							-			1500				
387	531	594	661	721							1			1200				
203	236	265	310	340							-			1000				
340	463	522	581	637							1			900				
201	232	263	306	337							-	Triple Reduction Upright Type	40 ▼ 50					
322	438	495	550	605							1			1800				
196	225	256	298	330							-			1500				
286	386	439	487	539							1			1200				
											-			1000				
											1			900				
											-	Triple Reduction Upright Type	40 ▼ 50					
											1			1800				
											1			1500				

Notes

1. —
Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)

2. —
The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.

3. —
When the high speed shaft speed is not shown in the table, find it by interpolation method.

- Notes
- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
 - The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
 - When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 56 ▶ 71

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
56	Exact Reduction Ratio		55.125	55.025	56.987	57.115	59.051	58.652	58.582	56.678	55.462	54.062	53.922	52.655	55.462		
	1800	32	19.3	29.4	31	43	48	62	77	102	128	172	200	259	285		
	1500	27	16.1	24.6	26.1	36	40	52	64	85	107	144	167	216	238		
	1200	21	12.9	19.7	20.9	28.9	32	42	51	68	85	115	134	174	191		
	1000	18	10.8	16.5	17.5	24.1	27.3	35	43	57	71	96	112	145	160		
	900	16	9.7	14.8	15.7	21.7	24.6	31	38	51	64	87	101	131	144		
	750	13	8.1	12.4	13.1	18.1	20.5	26.5	32	43	54	72	84	109	120		
63	Exact Reduction Ratio		63.986		62.222		64.640	64.637	63.984	63.041	63.000	61.286	62.222	59.583	64.889		
	1800	29	19.3		31		47	63	75	97	111	156	172	238	254		
	1500	24	16.1		26.1		39	52	63	81	92	132	143	202	212		
	1200	19	12.9		20.9		31	42	50	65	74	106	115	162	170		
	1000	16	10.8		17.5		26.6	35	42	54	62	88	96	135	142		
	900	14	9.7		15.7		24.0	31	38	49	55	80	86	122	128		
	750	12	8.1		13.1		20.0	26.6	31	41	46	66	72	102	107		
71	Exact Reduction Ratio		68.971	69.300	71.000	72.237	73.590	72.617	74.559	72.101	70.588	68.773	68.627	65.425	70.588		
	1800	25	17.7	19.3	26	31	39	50	60	80	101	135	158	209	225		
	1500	21	14.8	16.1	21.9	26.1	32	42	50	67	84	113	132	175	188		
	1200	17	11.9	12.9	17.5	20.9	26.3	34	40	53	67	91	105	140	151		
	1000	14	9.9	10.8	14.6	17.5	21.9	28.5	34	45	56	76	88	117	126		
	900	13	8.9	9.7	13.2	15.7	19.7	25.6	30	40	50	68	79	105	113		
	750	11	7.4	8.1	11.0	13.1	16.5	21.4	25.6	33	42	57	66	88	95		
Dimension Tables	Horizontal Vertical Upright	C-52	C-52	C-52	C-52	C-52	C-52	C-52	C-54	C-54	C-54	C-54	C-54	C-54	C-56		
		C-76	C-76	C-76	C-76	C-76	C-76	C-76	C-78	C-78	C-78	C-78	C-78	C-78	C-80		
		C-92	C-92	C-92	C-92	C-92	C-92	C-92	C-94	C-94	C-94	C-94	C-94	C-94			

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Triple Reduction Horizontal Type	1800	-			25	31	41	48	49	64	68	86	93	121	118	153	182
			-			48	62	71	84	114	148	143	181	177	230	314	408	436
		1500	-			24	30	39	46	48	62	66	84	91	119	116	152	180
			-			41	53	61	72	98	129	124	158	154	202	276	359	382
		1200	-			23	28	37	44	46	60	63	81	88	115	113	148	174
			-			35	44	51	61	83	109	106	135	132	173	237	310	328
	56 ▼ 71	1000	-			22	27	35	41	43	57	61	78	84	111	109	143	168
			-			29	37	43	50	70	93	89	115	112	148	202	266	281
		900	-			21	26	34	40	42	56	59	76	82	109	106	140	164
			-			27	34	40	47	65	86	83	107	104	138	189	249	262
		750	-			19	24	32	37	40	53	56	72	78	103	101	134	156
			-			23	29	34	39	56	74	72	93	90	120	164	217	228
Dimension Tables	Triple Reduction Vertical Type	1800	-			24	30	40	47	47	62	65	83	90	117	113	147	169
			-			47	60	69	82	110	143	138	175	171	222	301	391	405
		1500	-			24	29	38	45	46	61	64	82	89	116	113	147	170
			-			40	52	60	70	96	125	121	154	150	196	267	348	361
		1200	-			22	28	37	43	45	59	62	80	86	113	110	144	167
			-			34	43	50	59	82	107	103	133	129	170	232	303	315
	56 ▼ 71	1000	-			21	26	35	41	43	56	60	77	83	109	107	140	162
			-			29	36	43	50	69	91	88	114	110	146	199	261	272
		900	-			21	25	34	39	42	55	58	75	81	107	104	138	159
			-			27	34	39	46	65	85	82	106	103	136	186	245	255
		750	-			19	24	32	37	39	52	55	72	77	102	100	132	153
			-			23	29	34	39	55	74	71	93	89	119	162	215	223
Dimension Tables	Triple Reduction Upright Type	1800	-			25	31	43	48	49	64	68	86	93	121	118	153	
			-			48	62	74	84	114	148	143	181	177	230	314	408	
		1500	-			24	30	41	46	48	62	66	84	91	119	116	152	
			-			41	53	64	72	98	129	124	158	154	202	276	359	
		1200	-			23	28	39	44	46	60	63	81	88	115	113	148	
			-			35	44	54	61	83	109	106	135	132	173	237	310	
	56 ▼ 71	1000	-			22	27	37	41	43	57	61	78	84	111	109	143	
			-			29	37	45	50	70	93	89	115	112	148	202	266	
		900	-			21	26	36	40	42	56	59	76	82	109	106	140	
			-			27	34	42	47	65	86	83	107	104	138	189	249	
		750	-			19	24	33	37	40	53	56	72	78	103	101	134	
			-			23	29	36	39	56	74	72	93	90	120	164	217	

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 56 ▶ 71

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
56.571	54.596	55.688	55.858	55.170	57.957	56.571	56.571	58.172	55.474	55.474	Exact Reduction Ratio		
344	409 *	497 *	571 *	706 *	839 *	989 *	1150 *	1330 *	1580 *	1820 *	32	1800	56
287	342	415	478	588	702	827 *	962 *	1110 *	1320 *	1560 *	27	1500	
231	274	333	383	470	563	664	773	899 *	1060 *	1250 *	21	1200	
193	229	278	320	392	471	555	646	751	889	1040	18	1000	
173	206	251	289	353	424	500	582	677	802	946	16	900	
145	172	209	241	294	354	418	487	566	670	790	13	750	
61.378	63.843	60.419	61.300	63.112	61.661	61.378	61.378	63.115	63.459	63.459	Exact Reduction Ratio		
304	367 *	442 *	548 *	603 *	763 *	913 *	1060 *	1230 *	1380 *	1620 *	29	1800	63
254	307	369	456	504	638	763 *	888 *	1030 *	1160 *	1360 *	24	1500	
204	246	296	365	405	512	613	713	829 *	932 *	1100 *	19	1200	
170	206	248	304	338	427	512	596	693	779	919	16	1000	
153	185	223	274	305	384	462	537	625	702	828	14	900	
128	155	186	228	255	320	386	449	522	587	692	12	750	
72.000	68.512	69.882	70.339	69.474	72.872	70.500	70.500	73.000			Exact Reduction Ratio		
271	327 *	397 *	456 *	548 *	660 *	797 *	927 *	1070 *	*	*	25	1800	71
226	273	332	381	456	550	666 *	775 *	895 *	*	*	21	1500	
182	219	266	305	365	440	535	622	719 *	*	*	17	1200	
152	183	222	255	304	367	447	520	601	*	*	14	1000	
137	165	200	230	274	330	403	469	541	*	*	13	900	
114	138	167	192	228	275	336	391	452	*	*	11	750	
C-56 C-80	C-56 C-80	C-56 C-80	C-56 C-80	C-56 C-80	C-58	C-58	C-58	C-60	C-60	C-60	Horizontal Vertical Upright	Dimension Tables	

* marked models are quadruple reduction units. Refer to C-30 and C-31.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Triple Reduction Horizontal Type		
197	243	267	306	344	387	489	489	454	554	554	-	1800	56
472	683	750	821	921	639	806	806	748	914	914	1	1500	
194	240	263	303	339	385	483	483	457	562	562	-	1500	
412	600	657	723	810	634	797	797	754	928	928	1	1200	
187	233	255	296	330	376	470	470	452	561	561	-	1200	
353	517	565	626	698	621	776	776	746	925	925	1	1000	71
180	225	246	287	319	366	456	456	443	553	553	-	1000	
302	443	483	537	599	604	752	752	731	912	912	1	900	
176	220	240	281	313	359	447	447	437	546	546	-	900	
282	415	452	504	561	593	737	737	720	900	900	1	750	
168	211	230	269	300	346	430	430	423	530	530	-	750	56
245	361	394	440	490	571	709	709	697	875	875	1	1800	
184	225	249	283	319							-	1800	
441	633	699	757	855							1	1500	
184	226	249	285	321							-	1500	
391	566	623	680	765							1	1200	71
180	223	245	283	317							-	1200	
340	495	543	598	670							1	1000	
175	218	238	277	309							-	1000	
293	429	469	519	580							1	900	
172	214	234	272	304							-	900	56
275	403	440	489	546							1	750	
164	206	225	263	293							-	750	
240	353	386	430	479							1	1800	
											-	1800	
											1	1500	71
											-	1500	
											1	1200	
											-	1200	
											1	1000	
											-	1000	56
											1	900	
											-	900	
											1	750	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 80 ► 90

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																	
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090			
80	Exact Reduction Ratio		79.751			79.111			80.552			80.234			78.000			75.833		77.090
	1800	23	19.3			*	31	*	51	*	75	*	111	*	172	206				
	1500	19	16.1			*	26.1	*	42	*	63	*	92	*	143	172				
	1200	15	12.9			*	20.9	*	34	*	50	*	74	*	115	138				
	1000	13	10.8			*	17.5	*	28.5	*	42	*	62	*	96	115				
	900	11	9.7			*	15.7	*	25.7	*	38	*	55	*	86	104				
	750	9.4	8.1			*	13.1	*	21.4	*	31	*	46	*	72	87				
90	Exact Reduction Ratio		86.706			90.000			90.496			91.765			87.529			83.268		
	1800	20	18.8			*	27.5	*	41	*	63	*	107	*	165	*				
	1500	17	15.7			*	23.0	*	34	*	53	*	89	*	138	*				
	1200	13	12.6			*	18.4	*	27.4	*	42	*	71	*	110	*				
	1000	11	10.5			*	15.4	*	22.9	*	35	*	59	*	92	*				
	900	10	9.4			*	13.8	*	20.6	*	32	*	54	*	83	*				
	750	8.3	7.9			*	11.6	*	17.2	*	26.7	*	45	*	69	*				
Dimension Tables	Horizontal Vertical Upright	C-52			C-52			C-52			C-54			C-54			C-54		C-56	
		C-76			C-76			C-76			C-78			C-78			C-78		C-80	
		C-92			C-92			C-92			C-94			C-94			C-94			

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Triple Reduction Horizontal Type	1800	-				30		46		59		79		110		140	185
			-				59		81		136		167		210		372	443
		1500	-				29		44		57		77		108		137	183
			-				51		69		117		145		182		325	388
	80	1200	-				27		42		54		73		103		132	177
			-				42		58		99		122		155		278	334
		1000	-				25		39		51		70		99		127	171
			-				35		48		83		103		131		237	285
	▼	900	-				24		38		50		68		96		124	167
			-				33		45		77		96		122		221	267
		750	-				23		36		47		64		91		118	159
			-				28		38		66		82		105		191	232
Dimension Tables	Triple Reduction Vertical Type	1800	-				29		45		57		76		107		135	173
			-				58		79		132		160		203		359	412
		1500	-				28		43		56		75		105		134	173
			-				50		67		115		141		178		316	367
	80	1200	-				27		41		53		72		101		130	170
			-				42		57		97		120		152		272	320
		1000	-				25		39		51		69		97		125	165
			-				35		48		82		102		129		233	276
	▼	900	-				24		38		49		67		95		122	162
			-				32		45		76		95		121		218	259
		750	-				23		35		46		63		90		117	156
			-				27		37		66		81		104		189	227
Dimension Tables	Triple Reduction Upright Type	1800	-				30		46		59		79		110		140	
			-				59		81		136		167		210		372	
		1500	-				29		44		57		77		108		137	
			-				51		69		117		145		182		325	
	80	1200	-				27		42		54		73		103		132	
			-				42		58		99		122		155		278	
		1000	-				25		39		51		70		99		127	
			-				35		48		83		103		131		237	
	▼	900	-				24		38		50		68		96		124	
			-				33		45		77		96		122		221	
		750	-				23		36		47		64		91		118	
			-				28		38		66		82		105		191	

SELECTION Right Angle Shaft Triple Reduction Nominal Reduction Ratio 80 ▶ 90

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
78.118	77.451	75.820	83.128	79.474	77.647	76.490	76.490	79.203			Exact Reduction Ratio	
240	290*	353*	386*	481*	587*	735*	856*	988*	*	*	23	1800
200	242	295	323	402	490	615*	716*	826*	*	*	19	1500
160	194	237	259	323	393	493	574	663*	*	*	15	1200
134	162	198	216	269	328	412	480	554	*	*	13	1000
121	146	178	195	243	296	372	432	499	*	*	11	900
101	122	149	163	203	247	310	361	417	*	*	9.4	750
85.313	85.712			93.924	91.765						Exact Reduction Ratio	
220	*	313*	*	408*	512*	*	*	*	*	*	20	1800
183	*	262	*	341	427	*	*	*	*	*	17	1500
147	*	210	*	273	341	*	*	*	*	*	13	1200
123	*	175	*	228	284	*	*	*	*	*	11	1000
111	*	158	*	206	256	*	*	*	*	*	10	900
92	*	132	*	172	213	*	*	*	*	*	8.3	750
C-56	C-56	C-56	C-56	C-56	C-58	C-58	C-58	C-60			Horizontal Vertical Upright	Dimension Tables
C-80	C-80	C-80	C-80	C-80								

* marked models are quadruple reduction units. Refer to C-30 and C-31.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
197	245	263	304	330	363	487	487	447			-	1800
471	689	738	814	885	599	803	803	737			1	1800
194	242	259	300	326	357	481	481	450			-	1500
412	605	647	717	778	590	793	793	742			1	1500
187	235	251	293	317	346	468	468	445			-	1200
353	521	556	619	671	571	772	772	734			1	1200
180	227	242	284	307	335	454	454	436			-	1000
301	447	476	532	575	553	749	749	719			1	1000
176	222	237	278	300	328	445	445	429			-	900
282	418	445	499	539	540	734	734	708			1	900
168	213	226	267	288	314	427	427	416			-	750
244	364	388	436	470	517	705	705	686			1	750

184	228	245	281	308		-	1800					
440	640	689	753	825		-	1800					
184	229	245	283	309		-	1500					
391	572	613	675	737		-	1500					
180	225	241	280	304		-	1200					
340	500	535	593	644		-	1200					
175	220	235	274	297		-	1000					
292	433	462	515	558		-	1000					
171	216	230	270	292		-	900					
274	407	433	484	524		-	900					
164	208	221	261	282		-	750					
239	357	380	426	460		-	750					

						-	1800					
						-	1500					
						-	1200					
						-	1000					
						-	900					
						-	750					

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 71 ► 90

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																											
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090													
71	Exact Reduction Ratio																													
	1800	25			*	*	*	*	*	*	*	*	*	*	*	*	*													
	1500	21			*	*	*	*	*	*	*	*	*	*	*	*	*													
	1200	17			*	*	*	*	*	*	*	*	*	*	*	*	*													
	1000	14			*	*	*	*	*	*	*	*	*	*	*	*	*													
	900	13			*	*	*	*	*	*	*	*	*	*	*	*	*													
	750	11			*	*	*	*	*	*	*	*	*	*	*	*	*													
80	Exact Reduction Ratio																													
	1800	23					77.989				79.341				78.120				79.124											
	1500	19					*	26		*	30		*	80		*	127		*	*										
	1200	15					*	21		*	25.3		*	66		*	106		*	*										
	1000	13					*	17		*	20.3		*	53		*	84		*	*										
	900	11					*	14		*	16.9		*	44		*	70		*	*										
	750	9.4					*	13		*	15.2		*	40		*	63		*	*										
							*	11		*	12.7		*	33		*	53		*	*										
90	Exact Reduction Ratio																													
	1800	20					88.991				90.326				91.330				87.529				87.269				90.353			
	1500	17					*	21.0		*	30		*	45		*	80		*	124		*	176							
	1200	13					*	17.5		*	25.3		*	37		*	66		*	104		*	147							
	1000	11					*	14.0		*	20.3		*	30		*	53		*	83		*	118							
	900	10					*	11.7		*	16.9		*	25.0		*	44		*	69		*	98							
	750	8.3					*	10.5		*	15.2		*	22.5		*	40		*	62		*	89							
							*	8.8		*	12.7		*	18.8		*	33		*	52		*	74							
Dimension Tables	Horizontal Vertical Upright						C-62				C-62				C-64				C-64				C-64				C-66			
						C-82				C-82				C-84				C-84				C-84				C-86				
						C-96				C-96				C-98				C-98				C-98								

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type	1800	-					40		50		70		94		119		157
		1500	-					40		49		69		93		118		157
		1200	-					39		47		66		90		115		155
		1000	-					38		45		63		87		112		151
		▼ 900	-					37		44		62		85		109		149
		750	-					36		42		59		82		105		143
Dimension Tables	Quadruple Reduction Vertical Type	1800	-					44		54		75		103		130		175
		1500	-					43		52		73		99		127		171
		1200	-					41		49		69		95		121		165
		1000	-					40		47		66		91		116		159
		▼ 900	-					39		45		64		88		113		155
		750	-					37		43		60		84		108		148
	Quadruple Reduction Upright Type	1800	-					43		50		70		94		118		
		1500	-					43		49		68		93		117		
		1200	-					42		47		66		90		115		
		1000	-					41		45		63		87		111		
		▼ 900	-					40		44		62		85		109		
		750	-					38		41		59		81		105		

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 71 ▶ 90

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio		
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					
											68.889	68.889	Exact Reduction Ratio		71
*	*	*	*	*	*	*	*	*	*	1280 [*]	1510 [*]	25	1800		
*	*	*	*	*	*	*	*	*	*	1070	1260	21	1500		
*	*	*	*	*	*	*	*	*	*	860	1010	17	1200		
*	*	*	*	*	*	*	*	*	*	718	848	14	1000		
*	*	*	*	*	*	*	*	*	*	648	764	13	900		
*	*	*	*	*	*	*	*	*	*	541	638	11	750		
											78.568	78.568	Exact Reduction Ratio		80
*	*	*	*	*	*	*	*	*	*	1120 [*]	1320 [*]	23	1800		
*	*	*	*	*	*	*	*	*	*	941	1110	19	1500		
*	*	*	*	*	*	*	*	*	*	755	891	15	1200		
*	*	*	*	*	*	*	*	*	*	631	745	13	1000		
*	*	*	*	*	*	*	*	*	*	569	671	11	900		
*	*	*	*	*	*	*	*	*	*	475	560	9.4	750		
88.676			89.695		91.800		91.800	91.022	87.371	87371	Exact Reduction Ratio			90	
*	254	*	379	*	*	615	715	862 [*]	1010 [*]	1190 [*]	20	1800			
*	212	*	316	*	*	514	598	720	848	1000	17	1500			
*	170	*	254	*	*	412	480	578	680	803	13	1200			
*	142	*	212	*	*	344	401	483	568	670	11	1000			
*	128	*	191	*	*	310	361	435	512	604	10	900			
*	106	*	159	*	*	259	301	363	428	505	8.3	750			
C-66		C-66		C-68		C-68	C-70	C-70	C-70	Horizontal Vertical Upright			Dimension Tables		
C-86		C-86													

* marked models are triple reduction units. Refer to C-28 ~ C-29.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed (N) is lower than 750r/min, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
202	259					359	359	386	472	472	-	1800
204	259					361	361	395	484	484	-	1500
202	255					356	356	397	488	488	-	1200
199	250					349	349	394	484	484	-	1000
196	246					344	344	390	480	480	-	900
190	237					334	334	381	469	469	-	750
												Quadruple Reduction Horizontal Type
228	288										-	1800
224	281										-	1500
216	271										-	1200
209	262										-	1000
205	256										-	900
197	245										-	750
												Quadruple Reduction Vertical Type
												71
												▼
												90
												Quadruple Reduction Upright Type
												71
												▼
												90

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 100 ▶ 125

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
100	Exact Reduction Ratio						99.259	99.158	103.97	98.871	102.71		97.650	96.720	96.444	96.432	103.82
	1800	18					20.1	26.0	29.8	30	45		78	80	118	127	160
	1500	15					16.8	21.7	24.9	25.3	37		65	66	99	106	133
	1200	12					13.5	17.4	19.9	20.3	30		52	53	79	84	107
	1000	10					11.2	14.5	16.6	16.9	25.0		43	44	66	70	89
	900	9.0					10.1	13.0	15.0	15.2	22.5		39	40	59	63	80
	750	7.5					8.4	10.8	12.5	12.7	18.8		33	33	49	53	67
112	Exact Reduction Ratio						113.26	112.81	118.37	111.08	119.69	112.41	109.41	108.54	106.37	105.89	112.94
	1800	16					16.5	22.0	24.5	30	38	45	65	80	102	127	141
	1500	13					13.8	18.4	20.4	25.3	31	37	54	66	85	106	118
	1200	11					11.0	14.7	16.4	20.3	25.5	30	43	53	68	84	95
	1000	8.9					9.2	12.3	13.7	16.9	21.3	25.0	36	44	57	70	79
	900	8.0					8.3	11.1	12.3	15.2	19.2	22.5	33	40	51	63	71
	750	6.7					6.9	9.2	10.3	12.7	16.0	18.8	27.5	33	43	53	59
125	Exact Reduction Ratio						122.72	126.20	130.09	129.57	127.97	128.80	127.97	120.90	126.39	117.54	129.78
	1800	14					16.3	20.4	23.9	30	38	45	60	80	90	124	128
	1500	12					13.6	17.0	19.9	25.3	32	37	50	66	75	104	107
	1200	9.6					10.6	13.6	16.0	20.3	26.0	30	40	53	60	83	86
	1000	8.0					9.1	11.4	13.3	16.9	21.7	25.0	33	44	50	69	71
	900	7.2					8.2	10.2	12.0	15.2	19.6	22.5	30	40	45	62	64
	750	6.0					6.8	8.5	10.0	12.7	16.3	18.8	25.2	33	38	52	53
Dimension Tables	Horizontal Vertical Upright					C-62	C-62	C-62	C-62	C-64	C-64	C-64	C-64	C-64	C-64	C-64	C-66
						C-82	C-82	C-82	C-82	C-84	C-84	C-84	C-84	C-84	C-84	C-84	C-86
						C-96	C-96	C-96	C-96	C-98	C-98	C-98	C-98	C-98	C-98	C-98	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type	1800	-					39	45	46	57	64	78	87	107	110	135	147	
		1500	-					38	44	45	55	63	76	86	105	109	133	147	
		1200	-					36	42	43	53	60	72	83	102	106	129	144	
		1000	-					35	40	41	50	58	69	80	98	103	125	140	
		▼	900	-					34	39	40	49	56	68	78	96	100	122	138
		125	750	-					32	37	38	46	54	64	74	91	96	117	133
Dimension Tables	Quadruple Reduction Vertical Type	1800	-					41	48	49	60	69	82	94	115	120	146	162	
		1500	-					40	46	47	58	66	79	91	111	116	142	158	
		1200	-					38	44	45	55	63	75	86	106	111	135	152	
		1000	-					36	42	43	52	60	71	83	101	107	130	147	
		▼	900	-					35	40	41	50	58	69	80	98	104	126	143
		125	750	-					33	38	39	47	55	65	76	93	99	120	137
	Quadruple Reduction Upright Type	1800	-					41	45	46	56	64	78	87	107	110	135		
		1500	-					40	44	45	55	63	76	85	105	109	133		
		1200	-					38	42	43	53	60	72	83	101	106	129		
		1000	-					37	40	41	50	58	69	80	98	103	125		
		▼	900	-					36	39	40	49	56	68	78	95	100	122	
		125	750	-					34	37	38	46	54	64	74	91	96	117	

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 100 ▶ 125

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.	
99.991	101.85	98.135	97.789	101.65	98.060	99.600	99.600	98.756	99.948	99.948	Exact Reduction Ratio			2. _____ Consult us when the high speed shaft speed is over 1800r/min.	
188	232	274	348	401	500	567	660	796※	889※	1040※	18	1800	100	3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.	
157	194	229	290	335	418	474	552	665	742	876	15	1500		4. _____ When the high speed shaft speed (N) is lower than 750r/min find the mechanical power rating (PN) according to the following formula.	
126	155	184	233	269	335	380	443	534	596	703	12	1200		$PN = P_{750} \times \frac{N}{750}$	
105	129	153	194	224	280	318	370	446	498	587	10	1000		5. _____ Shown in the table are the ratings for the slow speed shaft.	
94	117	138	175	202	252	286	333	402	448	529	9.0	900	112	6. _____ Refer to C42-C45 for the allowable radial and axial load on each shaft.	
79	97	115	146	169	210	239	278	335	374	442	7.5	750			
115.20	109.29	111.48	112.21	110.83	113.61	115.20	115.20	112.18	110.36	110.36	Exact Reduction Ratio				
170	206	251	287	368	433	492	572	702※	806※	951※	16	1800			
142	172	209	240	308	362	411	478	586	673	794	13	1500	125		
114	138	168	192	247	290	329	383	470	540	637	11	1200			
95	115	140	161	206	242	275	320	393	451※	532※	8.9	1000			
86	104	126	145	186	218	248	288	354	406	480	8.0	900			
71	86	105	121	155	181	207	241	295	339	400	6.7	750			
124.99	124.14	120.95	119.20	126.78	123.87	124.99	124.99	121.72	126.25	126.25	Exact Reduction Ratio				
151	191	223	286	304	397	454	528	648※	706※	833※	14	1800	125		
126	159	186	239	253	332	349	441	541	590	696	12	1500			
101	127	149	191	203	266	304	354	434	473	558	9.6	1200			
84	106	124	160	170	222	254	295	362	395	466	8.0	1000			
76	96	112	144	153	200	229	266	327	356	420	7.0	900	Dimension Tables		
63	80	94	120	127	167	191	222	273	297	350	6.0	750			
C-66	C-66	C-66	C-66	C-66	C-68	C-68	C-68	C-70	C-70	C-70	Horizontal Vertical Upright				
C-86	C-86	C-86	C-86	C-86											

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
164	189	211	252	275	302	355	355	374	470	470	-	1800	Quadruple Reduction Horizontal Type	20	1.00	1.00
163	190	212	250	273	300	355	355	380	470	470	-	1500		30	0.85	0.87
160	188	209	245	268	293	350	350	380	464	464	-	1200		40	0.70	0.73
156	184	205	239	261	285	342	342	375	454	454	-	1000		50	0.55	0.60
153	181	202	235	256	280	337	337	371	447	447	-	900				
148	176	195	227	247	270	326	326	362	433	433	-	750	125			

180	211	236	275	300	-	1800	Quadruple Reduction Vertical Type
176	207	230	268	293	-	1500	
169	200	223	258	282	-	1200	
163	193	215	249	272	-	1000	
159	189	210	243	265	-	900	
152	181	202	233	254	-	750	125

													Quadruple Reduction Upright Type

Notes

1. _____

Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)

2. _____

The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 140 ▶ 180

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
140	Exact Reduction Ratio						140.03	143.57	148.10	145.56	149.12	147.31	143.38	135.67	139.40	129.07	141.18
	1800	13					13.4	17.3	19.6	25.6	30	39	50	69	78	107	113
	1500	11					11.2	14.5	16.4	21.4	25.6	33	41	58	65	89	95
	1200	8.6					8.9	11.6	13.1	17.1	20.5	26.6	33	46	52	71	76
	1000	7.1					7.5	9.7	10.9	14.3	17.1	22.2	28.0	38	43	59	63
	900	6.4					6.7	8.7	9.9	12.9	15.4	20.0	25.2	35	39	54	57
	750	5.4					5.6	7.3	8.2	10.7	12.9	16.7	21.0	29.2	32	45	47
160	Exact Reduction Ratio						156.02	158.68	162.11	156.75	160.47	152.99	158.44	158.25	154.04	163.15	
	1800	11					16.5	17.1	25.5	25.7	40		63	68	95	102	
	1500	9.4					13.8	14.3	21.3	21.4	34		53	57	79	85	
	1200	7.5					11.0	11.4	17.1	17.1	27.2		42	46	64	68	
	1000	6.3					9.2	9.5	14.2	14.3	22.7		35	38	53	57	
	900	5.6					8.3	8.6	12.8	12.8	20.4		31	34	48	51	
	750	4.7					6.9	7.1	10.7	10.7	17.0		26.6	28.7	40	43	
180	Exact Reduction Ratio						177.50	180.65	182.13	182.66	183.53	171.41	177.79	174.54	169.14	177.48	
	1800	10					14.0	16.1	20.5	25.1	32	39	53	62	82	90	
	1500	8.3					11.7	13.4	17.1	20.9	26.7	33	44	52	68	75	
	1200	6.7					9.4	10.8	13.7	16.8	21.4	26.6	35	42	54	60	
	1000	5.6					7.8	9.0	11.4	14.0	17.8	22.1	29.7	35	45	50	
	900	5.0					7.1	8.1	10.3	12.6	16.1	19.9	26.7	31	41	45	
	750	4.2					5.9	6.7	8.6	10.5	13.4	16.6	22.3	26.4	34	38	
Dimension Tables	Horizontal Vertical Upright					C-62	C-62	C-62	C-62	C-64	C-64	C-64	C-64	C-64	C-64	C-66	
						C-82	C-82	C-82	C-82	C-84	C-84	C-84	C-84	C-84	C-84	C-86	
						C-96	C-96	C-96	C-96	C-98	C-98	C-98	C-98	C-98	C-98		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type	1800	-					38	42	40	55	59	75	81	102	101	130	144	
		1500	-					37	41	38	53	56	73	78	100	98	127	140	
		1200	-					35	39	36	51	53	70	73	97	93	123	135	
		140	1000	-					34	38	34	48	50	67	70	93	89	119	129
		▼	900	-					33	37	32	47	48	65	67	91	86	117	126
		180	750	-					31	35	30	45	45	62	63	86	81	111	120
Dimension Tables	Quadruple Reduction Vertical Type	1800	-					40	45	42	58	61	79	84	109	107	139	152	
		1500	-					39	43	39	55	58	76	81	105	102	135	147	
		1200	-					37	41	37	52	54	72	75	100	96	129	139	
		140	1000	-					35	39	34	50	51	68	71	96	91	123	133
		▼	900	-					34	38	33	48	49	66	69	93	88	120	129
		180	750	-					32	36	30	45	46	63	64	88	82	114	122
	Quadruple Reduction Upright Type	1800	-					39	42	40	54	59	75	81	102	101	129		
		1500	-					38	41	38	53	56	73	78	100	98	127		
		1200	-					37	39	36	51	53	70	73	96	93	123		
		140	1000	-					35	38	33	48	50	67	70	93	89	119	
		▼	900	-					34	37	32	47	48	65	67	91	86	116	
		180	750	-					33	35	30	44	45	62	63	86	81	111	

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 140 ▶ 180

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio				
144.00	133.22	135.88	136.77	135.09	146.39	142.31	142.31	145.23	136.02	136.02	Exact Reduction Ratio			140	1. For ※ marked values, the forced oil lubrication is required at continuous operation.
137	170	206	236	303	337	399	464	544※	656※	774※	13	1800			
114	141	172	197	253	281	333	388	454	548	646	11	1500			
91	113	138	158	203	226	267	311	364	439	518	8.6	1200			
76	95	115	132	169	188	223	260	304	367	433	7.1	1000			
69	85	104	119	152	170	201	234	274	330	390	6.4	900			
57	71	86	99	127	142	168	195	229	276	325	5.4	750	160	2. Consult us when the high speed shaft speed is over 1800r/min.	
156.24	158.28	147.43	153.67	154.53	150.98	154.40	154.40	157.57	155.60	155.60	Exact Reduction Ratio				
121	150	183	222	250	327	368	429	502※	574※	678※	11	1800			
101	125	153	186	208	273	307	358	419	480	566	9.4	1500			
81	100	123	149	167	219	246	287	336	385	454	7.5	1200			
67	84	102	124	139	183	206	240	281	321	379	6.3	1000			
61	75	92	112	126	165	185	216	253	289	341	5.6	900	180	3. When the high speed shaft speed is not shown in the table, find it by the interpolation method.	
50	63	77	93	105	137	155	180	211	241	285	4.7	750			
181.03	169.85	173.25	181.61	174.16	178.43	177.88	177.88	179.00	171.03	171.03	Exact Reduction Ratio				
109	133	162	189	236	277	320	373	443※	523※	617※	10	1800			
91	111	135	157	197	231	267	311	370	437	515	8.3	1500			
73	89	108	126	158	185	214	249	296	350	413	6.7	1200			
61	74	90	105	131	155	179	208	247	292	345	5.6	1000	Horizontal Vertical Upright	4. When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.	
55	67	81	95	118	139	161	187	223	263	311	5.0	900			
45	56	68	79	99	116	134	156	186	220	259	4.2	750			
C-66	C-66	C-66	C-66	C-66	C-68	C-68	C-68	C-70	C-70	C-70	Dimension Tables				
C-86	C-86	C-86	C-86	C-86											
6. Refer to C42-C45 for the allowable radial and axial load on each shaft.															

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
155	188	205	242	265	291	339	339	372	457	457	-	1800	Quadruple Reduction Horizontal Type 140 ▼ 180	20	1.00	1.00
151	184	201	237	258	288	334	334	369	456	456	-	1500		30	0.85	0.87
145	178	194	228	248	281	325	325	361	444	444	-	1200		40	0.70	0.73
139	171	186	219	238	273	316	316	352	431	431	-	1000		50	0.55	0.60
135	167	182	213	232	268	309	309	346	422	422	-	900				
129	160	174	204	221	258	298	298	334	406	406	-	750				

164	200	218	256	279	-	1800	Quadruple Reduction Vertical Type 140 ▼ 180
158	194	211	247	269	-	1500	
150	184	200	235	255	-	1200	
143	176	192	224	244	-	1000	
138	172	186	218	237	-	900	
131	163	177	207	225	-	750	

													Quadruple Reduction Upright Type 140 ▼ 180

Notes

1. _____

Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)

2. _____

The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 200 ▶ 250

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer															
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
200	Exact Reduction Ratio								207.95	197.74	205.42	196.56	191.23		192.89	192.86	207.64	
	1800	9.0							15.0	17.1	24.3	25.7	39		59	68	80	
	1500	7.5							12.5	14.3	20.3	21.4	33		49	57	67	
	1200	6.0							10.0	11.4	16.3	17.1	26.6		39	46	53	
	1000	5.0							8.4	9.5	13.6	14.3	22.1		33	38	45	
	900	4.5							7.5	8.6	12.2	12.8	19.9		30	34	40	
	750	3.8							6.3	7.1	10.2	10.7	16.6		25.0	28.7	33	
224	Exact Reduction Ratio								236.74	222.15	239.37	224.81	214.26	212.55	212.75	211.77	225.88	
	1800	8.0							12.3	16.8	19.2	25.7	33	39	51	65	71	
	1500	6.7							10.3	14.0	16.0	21.4	28.1	33	43	54	59	
	1200	5.4							8.2	11.3	12.8	17.1	22.5	26.6	34	44	47	
	1000	4.5							6.9	9.4	10.7	14.3	18.8	22.1	28.8	36	39	
	900	4.0							6.2	8.5	9.6	12.9	16.9	19.9	25.9	33	35	
	750	3.3							5.2	7.1	8.0	10.7	14.1	16.6	21.6	27.6	30	
250	Exact Reduction Ratio								260.18	259.14	255.94	257.59	250.61	236.76	252.78	235.08	259.56	
	1800	7.2							12.0	16.0	19.6	25.5	30	39	45	62	64	
	1500	6.0							10.0	13.4	16.3	21.2	25.8	33	38	52	53	
	1200	4.8							8.0	10.7	13.1	17.0	20.6	26.6	30	42	43	
	1000	4.0							6.7	8.9	10.9	14.1	17.2	22.2	25.5	35	36	
	900	3.6							6.0	8.0	9.8	12.7	15.5	19.9	22.9	31	32	
	750	3.0							5.0	6.7	8.2	10.6	12.9	16.6	19.1	26.4	27.1	
Dimension Tables	Horizontal Vertical Upright								C-62	C-62	C-64	C-64	C-64	C-64	C-64	C-64	C-66	
									C-82	C-82	C-84	C-84	C-84	C-84	C-84	C-84	C-86	
									C-96	C-96	C-98	C-98	C-98	C-98	C-98	C-98		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type	1800	-								37	45	54	65	74	91	94	114	128
		1500	-								35	43	52	62	71	87	91	110	124
		1200	-								33	40	48	58	67	82	86	104	118
		1000	-								31	38	46	55	64	78	82	99	112
	200 ▼	900	-								30	36	44	53	62	75	79	96	109
Dimension Tables	250	750	-								28	34	41	49	58	71	75	90	103
	Quadruple Reduction Vertical Type	1800	-								38	47	56	67	77	94	98	119	134
		1500	-								36	44	53	63	74	90	94	114	129
		1200	-								34	41	50	59	69	84	88	107	121
		1000	-								31	38	47	55	65	79	84	101	115
	200 ▼	900	-							30	37	45	53	63	76	81	98	111	
	250	750	-							28	34	42	50	59	72	76	92	105	
	Quadruple Reduction Upright Type	1800	-								37	45	54	65	74	91	94	114	
		1500	-								35	43	52	62	71	87	91	110	
		1200	-								33	40	48	58	67	82	86	104	
		1000	-								31	38	46	55	64	78	82	99	
		200 ▼	900	-							30	36	44	53	62	75	79	96	
		250	750	-							28	34	41	49	58	71	75	90	

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 200 ▶ 250

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					
196.41	203.69	187.97	195.58	205.82	190.95	193.00	193.00	194.21	195.65	195.65	Exact Reduction Ratio			200	1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation. 2. _____ Consult us when the high speed shaft speed is over 1800r/min. 3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method. 4. _____ When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$ 5. _____ Shown in the table are the ratings for the slow speed shaft. 6. _____ Refer to C42-C45 for the allowable radial and axial load on each shaft.
96	117	144	172	200	259	295	344	408※	458※	540※	9.0	1800			
80	97	120	143	167	216	246	287	341	382	451	7.5	1500			
64	78	96	115	133	173	198	230	273	307	362	6.0	1200			
53	65	80	96	111	145	165	192	228	256	302	5.0	1000			
48	58	72	86	100	130	148	173	205	230	272	4.5	900			
40	49	60	72	84	109	124	144	171	192	227	3.8	750			
230.40	218.59	222.96	224.42	221.65	230.04	226.29	226.29	229.95	215.37	215.37	Exact Reduction Ratio			224	
86	104	126	145	172	215	252	294	345※	417※	491※	8.0	1800			
71	86	105	121	143	180	211	245	288	348	410	6.7	1500			
57	69	84	97	115	144	169	196	231	279	329	5.4	1200			
48	58	70	81	96	120	141	164	193	233	274	4.5	1000			
43	52	63	73	86	108	127	148	174	209	247	4.0	900			
36	43	53	60	72	90	106	123	145	175	206	3.3	750			
249.98	248.28	241.90	238.39	253.56	237.26	245.51	245.51	249.49	246.37	246.37	Exact Reduction Ratio			250	
76	96	112	144	153	209	233	271	319※	365※	430※	7.2	1800			
63	80	94	120	127	174	194	226	266	304	359	6.0	1500			
50	64	75	96	102	140	156	181	213	244	288	4.8	1200			
42	53	62	80	85	117	130	151	178	203	240	4.0	1000			
38	48	56	72	77	105	117	136	160	183	216	3.6	900			
31	40	47	60	64	87	97	113	134	153	180	3.0	750			
C-66	C-66	C-66	C-66	C-66	C-68	C-68	C-68	C-70	C-70	C-70	Horizontal Vertical Upright	Dimension Tables			
C-86	C-86	C-86	C-86	C-86	C-86										

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
142	167	186	217	237	273	325	325	352	426	426	-	1800	Quadruple Reduction Horizontal Type 200 ▼ 250	20	1.00	1.00
137	162	180	210	229	265	317	317	344	417	417	-	1500		30	0.85	0.87
131	155	173	200	218	254	306	306	331	402	402	-	1200		40	0.70	0.73
125	149	165	191	208	244	294	294	318	388	388	-	1000		50	0.55	0.60
121	145	161	186	203	238	287	287	310	379	379	-	900				
114	137	152	176	192	226	275	275	296	362	362	-	750				
149	176	196	226	247							-	1800	Quadruple Reduction Vertical Type 200 ▼ 250	Notes 1. — Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan) 2. — The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above. 3. — When the high speed shaft speed is not shown in the table, find it by interpolation method.		
143	169	188	217	237							-	1500				
134	160	178	205	224							-	1200				
128	153	169	195	213							-	1000				
123	148	164	189	206							-	900				
116	140	155	179	195							-	750				
											-	1800	Quadruple Reduction Upright Type 200 ▼ 250			
											-	1500				
											-	1200				
											-	1000				
											-	900				
											-	750				

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 280 ▶ 355

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer															
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
280	Exact Reduction Ratio		296.20 291.13 298.24 294.61 280.79 265.69 278.80 258.13 282.35															
	1800	6.4	9.9 12.9 15.4 20.0 25.7 35 39 54 57															
	1500	5.4	8.2 10.7 12.9 16.7 21.5 29.8 32 45 47															
	1200	4.3	6.6 8.6 10.3 13.4 17.2 23.9 26.4 36 38															
	1000	3.6	5.5 7.2 8.6 11.1 14.4 19.9 22.0 30 31															
	900	3.2	4.9 6.5 7.7 10.0 12.9 17.9 19.8 27.1 28.8															
	750	2.7	4.1 5.4 6.4 8.4 10.8 15.0 16.5 22.6 24.0															
315	Exact Reduction Ratio		315.95 324.22 332.51 320.94 322.08 310.27 318.63 308.07 308.36															
	1800	5.7	9.2 12.8 13.8 20.4 22.5 32 34 48 52															
	1500	4.8	7.7 10.7 11.5 17.0 18.7 27.2 28.9 40 43															
	1200	3.8	6.2 8.6 9.2 13.6 15.0 21.8 23.1 32 35															
	1000	3.2	5.2 7.1 7.7 11.4 12.5 18.2 19.3 26.8 29.3															
	900	2.9	4.6 6.4 6.9 10.2 11.3 16.4 17.4 24.2 26.3															
	750	2.4	3.9 5.4 5.8 8.5 9.4 13.6 14.5 20.2 22.0															
355	Exact Reduction Ratio		367.08 364.25 369.46 367.06 343.56 348.18 355.25 338.28 353.71															
	1800	5.1	8.0 10.3 12.5 16.1 21.1 27.3 31 41 45															
	1500	4.2	6.6 8.6 10.4 13.4 17.6 22.8 25.9 34 38															
	1200	3.4	5.3 6.9 8.3 10.7 14.1 18.3 20.7 27.6 30															
	1000	2.8	4.4 5.7 6.9 9.0 11.7 15.2 17.3 23.0 25.5															
	900	2.5	4.0 5.2 6.2 8.1 10.6 13.7 15.6 20.7 23.0															
	750	2.1	3.3 4.3 5.2 6.7 8.8 11.4 13.0 17.3 19.2															
Dimension Tables	Horizontal Vertical Upright	C-62 C-62 C-64 C-64 C-64 C-64 C-64 C-64 C-66																
		C-82 C-82 C-84 C-84 C-84 C-84 C-84 C-84 C-86																
		C-96 C-96 C-98 C-98 C-98 C-98 C-98 C-98																

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type	1800	-							37	43	54	62	75	87	94	109	127
		1500	-							35	41	52	59	72	83	91	105	123
		1200	-							33	39	49	56	68	78	86	100	117
		1000	-							31	36	46	52	64	74	82	94	112
		900	-							30	35	44	50	62	72	80	91	109
	355	750	-							28	32	42	47	58	67	75	86	103
Dimension Tables	Quadruple Reduction Vertical Type	1800	-							38	45	56	64	78	90	99	114	133
		1500	-							36	42	54	61	74	85	95	109	128
		1200	-							34	39	50	57	70	80	89	102	121
		1000	-							31	37	47	53	66	75	84	96	114
		900	-							30	35	45	51	63	73	81	93	111
	355	750	-							28	33	42	48	59	68	76	87	104
	Quadruple Reduction Upright Type	1800	-							37	43	54	62	75	87	94	109	
		1500	-							35	41	52	59	72	83	91	105	
		1200	-							33	39	49	56	68	78	86	99	
		1000	-							31	36	46	52	64	74	82	94	
		900	-							30	35	44	50	62	71	80	91	
		355	750	-						28	32	42	47	58	67	75	86	

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 280 ▶ 355

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
288.00	266.44	271.77	273.54	270.18	280.39	288.00	288.00	283.41	291.16	291.16	Exact Reduction Ratio			1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.
69	85	104	119	152	177	199	231	281※	309※	365※	6.4	1800	280	2. _____ Consult us when the high speed shaft speed is over 1800r/min.
57	71	86	99	127	148	166	193	234	258	304	5.4	1500		3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.
46	57	69	79	102	118	133	155	188	207	244	4.3	1200		4. _____ When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.
38	47	58	66	85	99	111	129	157	172	203	3.6	1000		$PN = P_{750} \times \frac{N}{750}$
34	43	52	60	76	89	100	116	141	155	183	3.2	900		5. _____ Shown in the table are the ratings for the slow speed shaft.
28.9	35	43	50	64	74	83	97	118	129	153	2.7	750		6. _____ Refer to C42-C45 for the allowable radial and axial load on each shaft.
312.47	301.20	294.86	323.28	309.07	320.45	312.47	312.47	307.49			Exact Reduction Ratio			
61	75	92	101	126	155	183	213	259※			5.7	1800	315	
50	63	77	84	105	129	153	178	216			4.8	1500		
40	50	61	67	84	104	122	142	173			3.8	1200		
34	42	51	56	70	86	102	119	144			3.2	1000		
30	38	46	50	63	78	92	107	130			2.9	900		
25.5	31	38	42	52	65	77	89	108			2.4	750		
341.25	344.23	333.33	369.46	365.26	356.86	341.25	341.25	347.61			Exact Reduction Ratio			
55	66	81	88	106	139	168	195	229※			5.1	1800	355	
46	55	68	73	89	116	140	163	191			4.2	1500		
37	44	54	59	71	93	112	131	153			3.4	1200		
31	37	45	49	59	78	93	109	128			2.8	1000		
28.1	33	41	44	53	70	84	98	115			2.5	900		
23.4	27.8	34	37	44	58	70	82	96			2.1	750		
C-66	C-66	C-66	C-66	C-66	C-68	C-68	C-68	C-70	C-70	C-70	Horizontal Vertical Upright		Dimension Tables	
C-86	C-86	C-86	C-86	C-86										

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
137	167	180	208	228	248	304	304	340	421	421	-	1800	Quadruple Reduction Horizontal Type 280 ▼ 355	20	1.00	1.00
132	162	175	202	220	240	295	295	332	412	412	-	1500		30	0.85	0.87
126	155	167	192	210	228	282	282	319	397	397	-	1200		40	0.70	0.73
120	149	160	184	200	218	270	270	306	383	383	-	1000		50	0.55	0.60
116	145	155	179	195	212	263	263	299	374	374	-	900				
110	138	147	169	184	200	250	250	285	358	358	-	750				
143	176	189	217	237							-	1800	Quadruple Reduction Vertical Type 280 ▼ 355			
137	169	182	208	227							-	1500				
129	160	172	197	215							-	1200				
123	153	164	188	204							-	1000				
119	148	159	182	198							-	900				
112	140	150	172	187							-	750				
											-	1800	Quadruple Reduction Upright Type 280 ▼ 355			
											-	1500				
											-	1200				
											-	1000				
											-	900				
											-	750				

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 400 ▶ 450

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer															
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
400	Exact Reduction Ratio							388.53			409.25			399.38			386.60	
	1800	4.5						9.7			14.4			23.8			36	
	1500	3.8						8.1			12.0			19.9			30	
	1200	3.0						6.5			9.6			15.9			24.2	
	1000	2.5						5.4			8.0			13.3			20.2	
	900	2.3						4.8			7.2			12.0			18.2	
	750	1.9						4.0			6.0			10.0			15.1	
450	Exact Reduction Ratio							451.41			454.72			426.01			431.03	
	1800	4.0						8.3			13.0			22.4			32	
	1500	3.3						6.9			10.8			18.6			27.1	
	1200	2.7						5.6			8.7			14.9			21.7	
	1000	2.2						4.6			7.2			12.5			18.1	
	900	2.0						4.2			6.5			11.2			16.3	
	750	1.7						3.5			5.4			9.4			13.6	
Dimension Tables	Horizontal							C-62			C-64			C-64			C-64	
	Vertical							C-82			C-84			C-84			C-84	
	Upright							C-96			C-98			C-98			C-98	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type	1800	-								45		64		86		110	
		1500	-								43		61		83		106	
		1200	-								40		58		78		100	
	400	1000	-							37		54		74		95		
	▼	900	-							36		52		71		92		
	450	750	-							33		49		67		87		
Dimension Tables	Quadruple Reduction Vertical Type	1800	-								46		66		89		114	
		1500	-								44		63		85		109	
		1200	-								41		59		80		103	
	400	1000	-							38		55		75		97		
	▼	900	-							36		53		72		94		
	450	750	-							34		49		68		88		
	Quadruple Reduction Upright Type	1800	-									45		64		86		110
		1500	-									43		61		83		106
		1200	-									40		58		78		100
		400	1000	-								37		54		74		95
▼		900	-								36		52		71		92	
450		750	-								33		49		67		87	

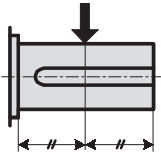
SELECTION Right Angle Shaft Quadruple Reduction Nominal Reduction Ratio 400 ▶ 450

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
391.44	380.94			417.44	407.84							Exact Reduction Ratio	1. For ※ marked values, the forced oil lubrication is required at continuous operation. 2. Consult us when the high speed shaft speed is over 1800r/min. 3. When the high speed shaft speed is not shown in the table, find it by the interpolation method. 4. When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$ 5. Shown in the table are the ratings for the slow speed shaft. 6. Refer to C42-C45 for the allowable radial and axial load on each shaft.
48	71			93	122							4.5 1800	
40	59			78	102							3.8 1500	
32	48			62	81							3.0 1200	
27.2	40			52	68							2.5 1000	
24.5	36			47	61							2.3 900	
20.4	30			39	51							1.9 750	
												Exact Reduction Ratio	450
												4.0 1800	
												3.3 1500	
												2.7 1200	
												2.2 1000	
												2.0 900	
												1.7 750	
C-66	C-66			C-66	C-68							Horizontal	Dimension Tables
C-86	C-86			C-86								Vertical Upright	

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor			
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan		
137	179			225	246						-	1800	Quadruple Reduction Horizontal Type 400 ▼ 450	20	1.00	1.00		
133	174			218	238						-	1500		30	0.85	0.87		
127	166			208	226						-	1200		40	0.70	0.73		
121	159			198	216						-	1000		50	0.55	0.60		
117	155			193	210						-	900						
111	147			183	198						-	750						
																Notes		
144	188			234							-	1800	Quadruple Reduction Vertical Type 400 ▼ 450	1. _____ Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)				
138	181			225							-	1500						
130	171			213							-	1200						
123	163			202							-	1000						
119	158			196							-	900		2. _____ The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.				
113	149			185							-	750						
												-	1800	Quadruple Reduction Upright Type 400 ▼ 450				
												-	1500					
												-	1200					
												-	1000					
												-	900					
												-	750					

SELECTION Allowable Radial and Axial Loads on Slow Speed Right Angle shaft

Allowable Radial Load (kN)



Sheet 1

Applicable to configurations: Double Reduction RR, LL/

	L.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	11.8	17.7	17.7	29.4	29.9	32.4	37.8	46.6	39.7	49.1	44.1	77.0	77.0	100.1	100.1	137.8	139.8
	160	11.8	17.7	20.1	31.4	32.4	33.8	39.7	48.1	41.7	50.5	46.1	89.0	89.0	108.9	108.9	145.7	157.5
	100	11.8	17.7	25.0	35.3	38.7	39.2	47.1	53.5	47.6	54.4	54.4	99.0	99.0	122.1	122.1	147.6	166.3
	63	11.8	17.7	26.5	35.3	42.2	47.1	54.9	62.3	58.9	64.3	65.2	131.5	131.5	125.6	125.6	143.7	165.3
	40	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	71.1	78.0	79.0	141.0	141.0	125.1	125.1	137.8	164.8
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	81.4	95.2	99.1	139.5	139.5	122.6	122.6	135.4	163.3
Heavy duty bearing model	250									71.1	93.7	70.1	122.5	122.5	141.8	141.8	158.9	181.0
	160									78.0	94.7	77.5	137.5	137.5	132.4	132.4	151.6	174.6
	100									81.4	98.1	92.2	149.5	149.5	127.0	127.0	147.6	166.8
	63									81.4	98.1	114.8	149.0	149.0	125.6	125.6	143.7	165.8
	40									81.4	98.1	117.7	148.5	148.5	125.1	125.1	137.8	165.3
	≤ 25									81.4	98.1	117.7	147.0	147.0	122.6	122.6	135.4	163.8

Sheet 2

Applicable to configurations: Double Reduction RL, LR/

	L.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	8.3	15.2	9.8	21.6	19.1	21.6	22.6	31.4	16.7	28.4	17.2	44.0	44.0	58.4	58.4	97.6	80.4
	160	9.8	17.7	12.3	23.1	20.6	23.1	24.0	31.4	18.1	27.0	17.7	55.5	55.5	64.3	64.3	103.0	96.1
	100	11.8	17.7	16.7	29.4	26.0	27.5	28.4	35.3	22.1	30.4	25.5	63.5	63.5	74.6	74.6	110.9	105.9
	63	11.8	17.7	21.6	35.3	32.9	35.3	37.3	42.7	33.4	38.3	33.8	95.0	95.0	104.5	104.5	148.1	153.5
	40	11.8	17.7	26.5	35.3	41.7	43.7	48.6	55.4	45.1	51.5	47.6	129.0	129.0	146.7	146.7	172.2	203.6
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	60.8	68.7	67.7	167.0	167.0	171.2	171.2	171.2	215.3
Heavy duty bearing model	250									46.1	74.6	40.2	90.0	90.0	114.8	114.8	156.0	150.6
	160									52.0	72.1	45.6	103.5	103.5	125.1	125.1	164.8	170.7
	100									60.3	79.0	59.4	116.0	116.0	140.8	140.8	176.1	187.4
	63									81.4	96.6	80.0	152.5	152.5	174.1	174.1	186.9	218.8
	40									81.4	98.1	108.9	192.0	192.0	191.8	191.8	193.7	241.8
	≤ 25									81.4	98.1	117.7	180.5	180.5	171.2	171.2	171.2	214.8

Allowable Axial Load (kN)



	L.Speed Shaft Speed r/min	Size of Reducer																	
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100	
Standard bearing model	250	9.3	11.4	14.7	23.1	26.5	31.4	32.9	31.9	27.0	43.2	28.0	28.0	23.5	23.5	31.4	52.0	45.1	
	160	9.3	11.4	18.1	23.1	28.4	31.4	33.4	31.9	28.9	43.2	28.4	28.4	27.5	27.5	34.3	53.0	53.0	
	100	9.3	11.4	24.5	23.1	32.9	31.4	37.3	31.9	34.3	43.2	39.7	39.7	32.9	32.9	43.2	59.4	58.4	
	63	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	52.5	52.5	45.6	45.6	54.0	59.8	81.4	
	40	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	63.3	60.3	59.8	59.8	83.4	
	≤ 25	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	67.7	60.3	59.8	59.8	83.4	
Heavy duty bearing model	250										23.1	34.8	18.6	18.6	56.9	56.9	59.8	59.8	83.4
	160										25.0	33.4	21.1	21.1	56.9	56.9	59.8	59.8	83.4
	100										29.4	36.8	27.5	27.5	56.9	56.9	59.8	59.8	83.4
	63										39.2	43.2	36.3	36.3	56.9	56.9	59.8	59.8	83.4
	40										39.2	43.2	49.1	49.1	56.9	56.9	59.8	59.8	83.4
	≤ 25										39.2	43.2	56.9	56.9	56.9	56.9	59.8	59.8	83.4

SELECTION Allowable Radial and Axial Loads on Slow Speed Right Angle shaft

Triple Reduction RL, LR/Quadruple Reduction RR, LL

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
192.3	167.8	222.7							250	Standard bearing model
200.6	174.1	234.9							160	
183.9	184.9	245.7	391.9	352.7	330.6	315.4	403.2	391.9	100	
178.1	190.8	303.1	387.5	369.3	341.4	328.6	462.5	430.7	63	Heavy duty bearing model
173.6	194.7	320.8	460.1	449.3	401.2	409.6	572.4	511.1	40	
167.3	184.9	316.4	448.3	554.8	497.4	534.6	733.8	638.6	≤ 25	
213.9	250.6	316.9							250	
200.6	214.8	334.5							160	

Unit: kN

Triple Reduction RR, LL/Quadruple Reduction RL, LR

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
131.5	94.2	152.5							250	Standard bearing model
138.3	92.2	155.0							160	
146.7	101.0	167.3	312.0	228.1	197.7	159.4	203.6	190.3	100	
200.1	144.7	220.7	292.3	244.3	206.0	170.7	260.9	218.8	63	Heavy duty bearing model
235.4	199.1	250.2	373.3	322.7	257.0	250.2	369.3	286.5	40	
304.1	272.7	353.2	460.1	427.2	348.7	373.3	528.3	398.3	≤ 25	
213.4	191.3	248.7							250	
223.2	197.7	261.4							160	

Unit: kN

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25

Notes

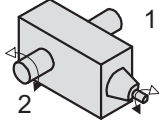
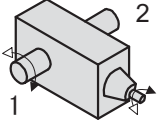
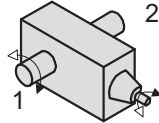
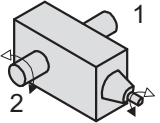
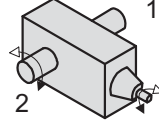
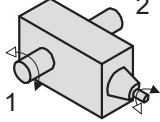
- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft). Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RB, LB)
 - See sheet1 when the radial load is applied only to the shaft1.
 - See sheet2 when the radial load is applied only to the shaft2.
 - Consult us when the radial load is applied to both shafts.
- Refer to C-6 to check overhang load, and calculate equivalent load at peak load value. Be careful under following condition because large peak load may be generated.

Application: When the inertia is large, such as for crane driving, slewing, etc.

Motor: inline motor
Connecting method: Sprocket or gear
Consult us when the peak load is larger than allowable value.

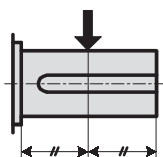
Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
50.0	50.0	76.5							250	Standard bearing model
49.5	49.5	76.5							160	
54.0	54.0	83.4	119.7	121.6	116.7	91.2	113.3	107.9	100	
74.6	74.6	83.4	119.7	121.6	121.6	96.6	140.3	122.6	63	Heavy duty bearing model
83.4	83.4	83.4	119.7	121.6	121.6	134.9	191.3	155.5	40	
83.4	83.4	83.4	119.7	121.6	121.6	144.2	192.3	192.3	≤ 25	
83.4	83.4	83.4							250	
83.4	83.4	83.4							160	

Unit: kN

	RB	LB
Double Reduction Ratio		
Triple Reduction Ratio		
Quadruple Reduction Ratio		

SELECTION Allowable Radial and Axial Loads on Slow Speed Right Angle shaft

Allowable Radial Load (kgf)



Sheet 1

Applicable to configurations: Double Reduction RR, LL/

	L.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	1200	1800	1800	3000	3050	3300	3850	4750	4050	5000	4500	7850	7850	10200	10200	14050	14250
	160	1200	1800	2050	3200	3300	3450	4050	4900	4250	5150	4700	9050	9050	11100	11100	14850	16050
	100	1200	1800	2550	3600	3950	4000	4800	5450	4850	5550	5550	10100	10100	12450	12450	15050	16950
	63	1200	1800	2700	3600	4300	4800	5600	6350	6000	6550	6650	13400	13400	12800	12800	14650	16850
	40	1200	1800	2700	3600	4300	5000	5600	6900	7250	7950	8050	14350	14350	12750	12750	14050	16800
	ⅡA 25	1200	1800	2700	3600	4300	5000	5600	6900	8300	9700	10100	14200	14200	12500	12500	13800	16650
Heavy duty bearing model	250									7250	9550	7150	12500	12500	14450	14450	16200	18450
	160									7950	9650	7900	14000	14000	13500	13500	15450	17800
	100									8300	10000	9400	15250	15250	12950	12950	15050	17000
	63									8300	10000	11700	15200	15200	12800	12800	14650	16900
	40									8300	10000	12000	15150	15150	12750	12750	14050	16850
	ⅡA 25									8300	10000	12000	15000	15000	12500	12500	13800	16700

Sheet 2

Applicable to configurations: Double Reduction RL, LR/

	L.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	850	1550	1000	2200	1950	2200	2300	3200	1700	2900	1750	4500	4500	5950	5950	9950	8200
	160	1000	1800	1250	2350	2100	2350	2450	3200	1850	2750	1800	5650	5650	6550	6550	10500	9800
	100	1200	1800	1700	3000	2650	2800	2900	3600	2250	3100	2600	6450	6450	7600	7600	11300	10800
	63	1200	1800	2200	3600	3350	3600	3800	4350	3400	3900	3450	9700	9700	10650	10650	15100	15650
	40	1200	1800	2700	3600	4250	4450	4950	5650	4600	5250	4850	13150	13150	14950	14950	17550	20750
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	6200	7000	6900	17000	17000	17450	17450	17450	21950
Heavy duty bearing model	250									4700	7600	4100	9150	9150	11700	11700	15900	15350
	160									5300	7350	4650	10550	10550	12750	12750	16800	17400
	100									6150	8050	6050	11800	11800	14350	14350	17950	19100
	63									8300	9850	8150	15550	15550	17750	17750	19050	22300
	40									8300	10000	11100	19550	19550	19550	19550	19750	24650
	≤ 25									8300	10000	12000	18400	18400	17450	17450	17450	21900

Allowable Axial Load (kgf)



	L.Speed Shaft Speed r/min	Size of Reducer																
		9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	950	1160	1500	2350	2700	3200	3350	3250	2750	4400	2850	2850	2400	2400	3200	5300	4600
	160	950	1160	1850	2350	2900	3200	3400	3250	2950	4400	2900	2900	2800	2800	3500	5400	5400
	100	950	1160	2500	2350	3350	3200	3800	3250	3500	4400	4050	4050	3350	3350	4400	6050	5950
	63	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	5350	5350	4650	4650	5500	6100	8300
	40	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6450	6150	6100	6100	8500
	≤ 25	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6900	6150	6100	6100	8500
Heavy duty bearing model	250									2350	3550	1900	1900	5800	5800	6100	6100	8500
	160									2550	3400	2150	2150	5800	5800	6100	6100	8500
	100									3000	3750	2800	2800	5800	5800	6100	6100	8500
	63									4000	4400	3700	3700	5800	5800	6100	6100	8500
	40									4000	4400	5000	5000	5800	5800	6100	6100	8500
	≤ 25									4000	4400	5800	5800	5800	5800	6100	6100	8500

SELECTION Allowable Radial and Axial Loads on Slow Speed Right Angle shaft

Triple Reduction RL, LR/Quadruple Reduction RR, LL

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
19600	17100	22700							250	Standard bearing model
20450	17750	23950							160	
18750	18850	25050	39950	35950	33700	32150	41100	39950	100	
18150	19450	30900	39500	37650	34800	33500	47150	43900	63	
17700	19850	32700	46900	45800	40900	41750	58350	52100	40	
17050	18850	32250	45700	56550	50700	54500	74800	65100	≤ 25	Heavy duty bearing model
21800	25550	32300							250	
20450	21900	34100							160	
18750	19900	34750							100	
18150	19450	34000							63	
17700	19850	32700							40	
17050	18850	32250							≤ 25	

Unit: kgf

Triple Reduction RR, LL/Quadruple Reduction RL, LR

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
13400	9600	15550							250	Standard bearing model
14100	9400	15800							160	
14950	10300	17050	31800	23250	20150	16250	20750	19400	100	
20400	14750	22500	29800	24900	21000	17400	26600	22300	63	
24000	20300	25500	38050	32900	26200	25500	37650	29200	40	
31000	27800	36000	46900	43550	35550	38050	53850	40600	≤ 25	Heavy duty bearing model
21750	19500	25350							250	
22750	20150	26650							160	
24150	21450	27950							100	
30750	27300	34850							63	
31000	33000	38950							40	
31000	33000	38200							≤ 25	

Unit: kgf

Overhang Factor

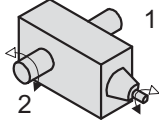
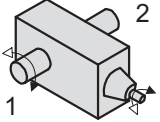
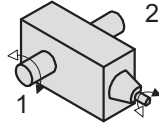
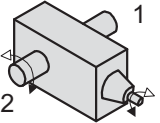
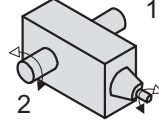
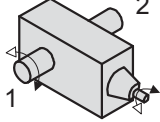
Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25

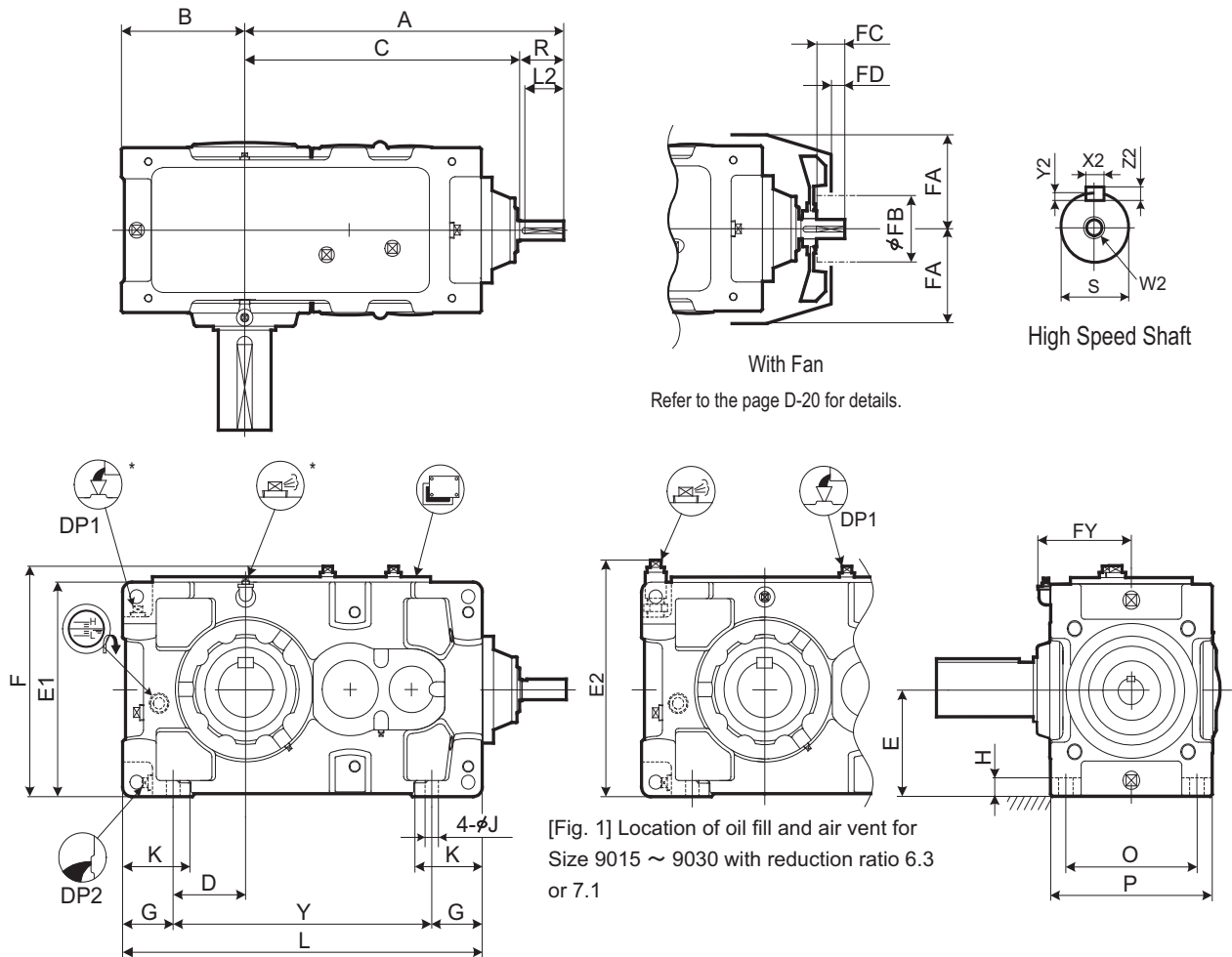
Notes

- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft). Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RB, LB)
 - See sheet1 when the radial load is applied only to the shaft1.
 - See sheet2 when the radial load is applied only to the shaft2.
 - Consult us when the radial load is applied to both shafts.
- Refer to C-6 to check overhang load, and calculate equivalent load at peak load value. Be careful under following condition because large peak load may be generated.
 Application: When the inertia is large, such as for crane driving, slewing, etc.
 Motor: inline motor
 Connecting method: Sprocket or gear
 Consult us when the peak load is larger than allowable value.

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
5100	5100	7800							250	Standard bearing model
5050	5050	7800							160	
5500	5500	8500	12200	12400	11900	9300	11550	11000	100	
7600	7600	8500	12200	12400	12400	9850	14300	12500	63	
8500	8500	8500	12200	12400	12400	13750	19500	15850	40	
8500	8500	8500	12200	12400	12400	14700	19600	19600	≤ 25	Heavy duty bearing model
8500	8500	8500							250	
8500	8500	8500							160	
8500	8500	8500							100	
8500	8500	8500							63	
8500	8500	8500							40	
8500	8500	8500							≤ 25	

Unit: kgf

	RB	LB
Double Reduction Ratio		
Triple Reduction Ratio		
Quadruple Reduction Ratio		



* Location of oil fill and air vent changes for Size 9015 ~ 9030 with reduction ratio 6.3 or 7.1.
Refer to Fig. 1.

Size	A	B	C	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9015	507	160	427	90	135	270	309	299	129	70	22	15	95	440	170	205	300
9025	545	175	465	95	155	310	346	339	142	80	25	19	110	505	195	235	345
9030	645	200	535	110	160	320	353	349	154	90	28	24	120	590	215	265	410
9035	676	219	566	129	185	370		399	154	90	28	24	120	640	215	265	460
9040	705	235	595	120	200	400		431	172	115	30	28	150	685	255	315	455
9045	744	256	634	141	220	440		471	172	115	30	28	150	745	255	315	515
9050	755	255	645	138.5	210	420		451	192	116.5	32	28	150	775	285	345	542
9055	794	286	684	171	245	490		521	192	115	32	28	150	845	285	345	615

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9015	80	28k6	M12/28	8	4	7	70	125	125	50	30	3/4"	3/4"	95	5
9025	80	35k6	M12/28	10	5	8	70	135	140	50	30	3/4"	3/4"	140	7
9030	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	205	10
9035	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	225	12
9040	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	305	16
9045	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	365	18
9050	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	435	21
9055	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	495	28

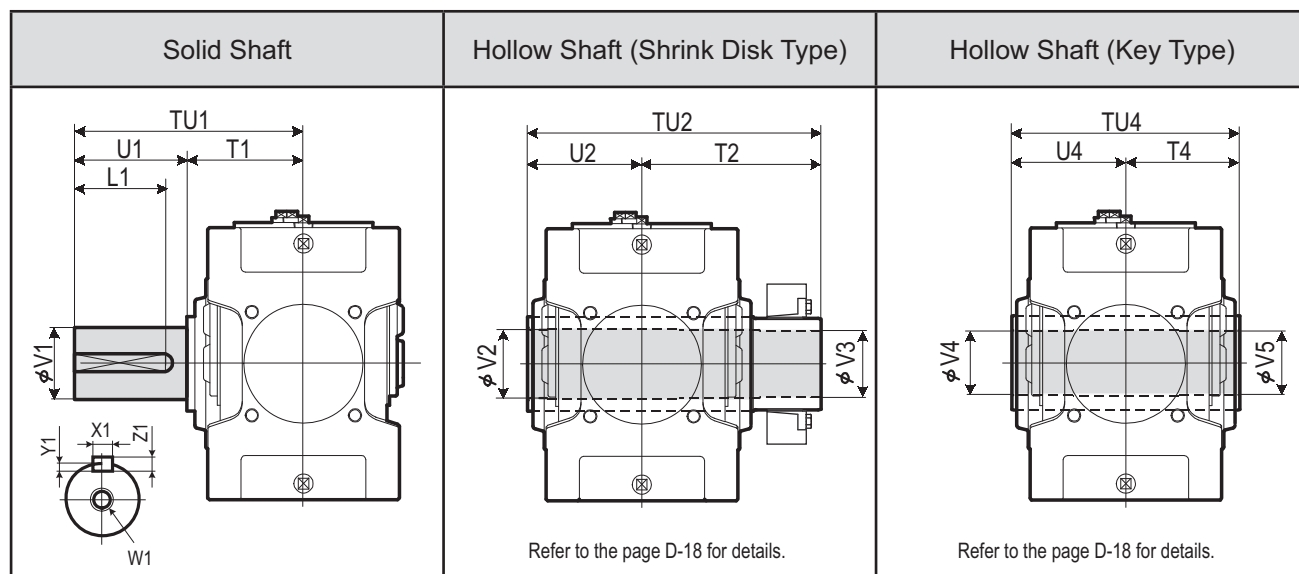
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-24 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9015 ▶ 9055

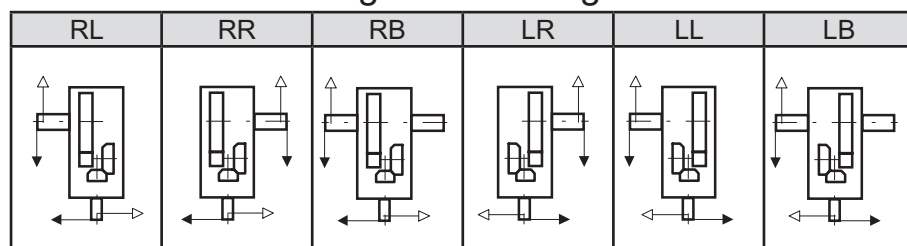
Slow Speed Shaft



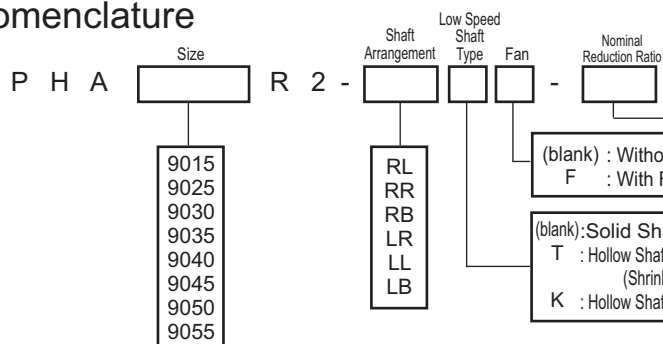
Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

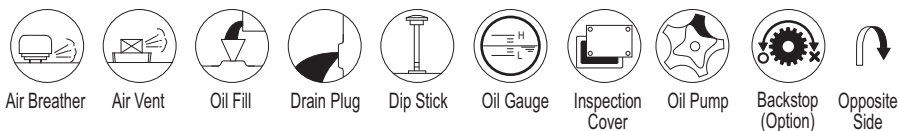
Standard Shaft Arrangement Configuration

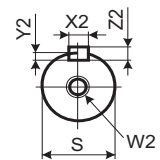
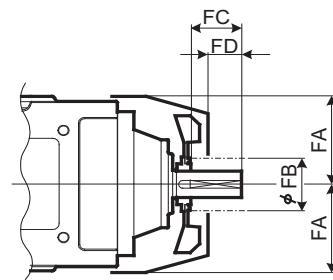
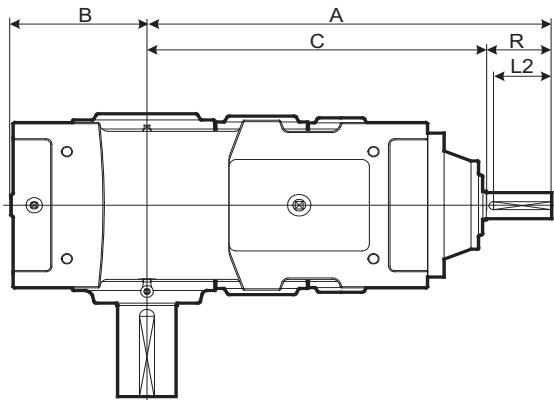


Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.5
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055				○	○	○	○	○	○	○	○	○

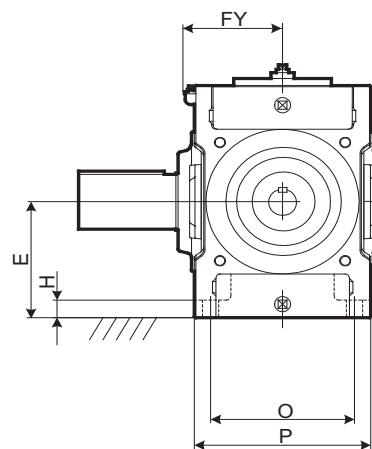
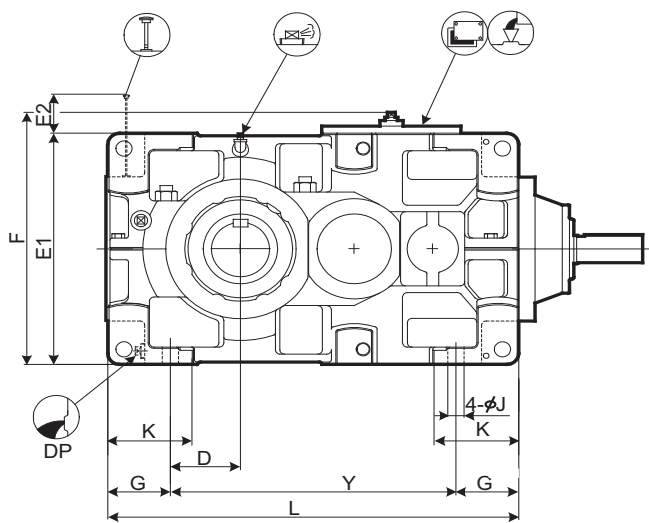




With Fan

High Speed Shaft

Refer to the page D-20 for details.

Speed
ReducerSelection
Tables
Dimension
Tables

Size	A	B	C	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9060	865	299	725	151	265	530	183	578	212	135	35	35	180	885	310	380	615
9065	911	338	771	190	300	600	148	648	212	135	35	35	180	970	310	380	700
9070	965	336	825	163	300	600	213	648	237	160	40	42	215	1020	350	430	700
9075	1018	383	878	210	335	670	178	718	237	160	52	42	220	1120	350	430	800
9080	1080	378	940	205	335	670	236	718	257	160	52	42	220	1155	380	460	835
9085	1136	422	996	249	375	750	196	798	257	160	52	42	220	1255	380	460	935

Size	Hight Speed Shaft								Fan				DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD				
				X2	Y2	Z2	L2								
9060	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	600	25	
9065	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	725	34	
9070	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	920	37	
9075	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1170	46	
9080	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1300	53	
9085	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1560	67	

Unit: mm

- Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
- The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
- Refer to the page D-14 for dimensions not shown in these drawings.

- Refer to the page D-27 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9060 ▶ 9085

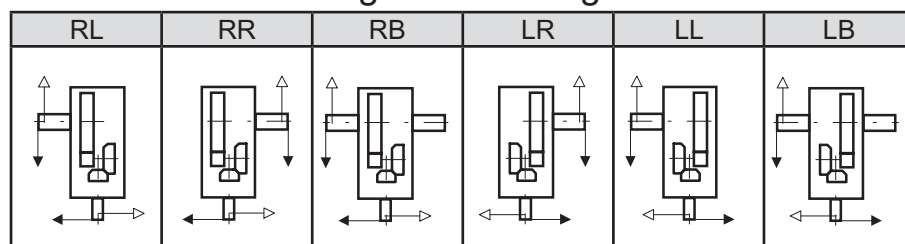
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

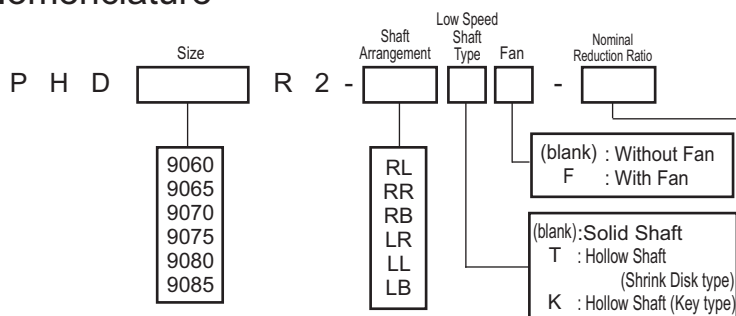
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

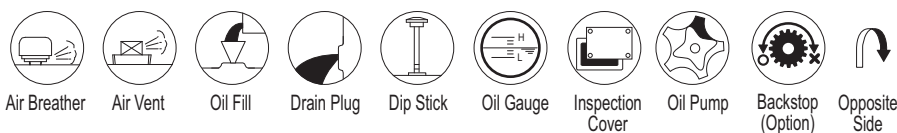
Standard Shaft Arrangement Configuration

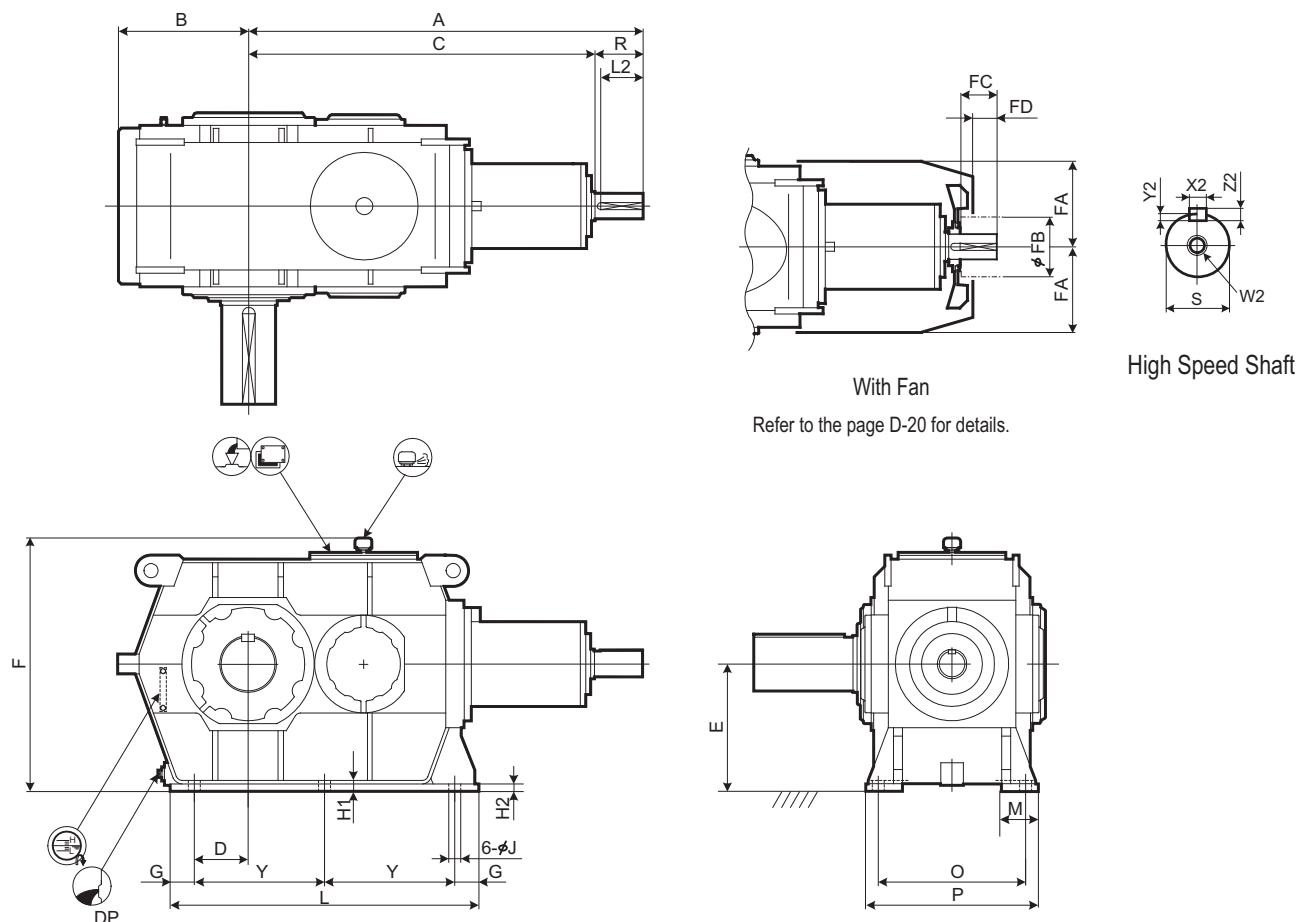


Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○	○	○
9065				○	○	○	○	○	○	○	○	○
9070		○	○	○	○	○	○	○	○	○	○	○
9075				○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○
9085					○	○	○	○	○	○	○	○



Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	F	G	H1	H2	J	L	M	O	P	Y
9095	1393	460	1223	190	450	895	85	39	27	42	1090	130	520	610	460
9105	1589	500	1379	210	500	995	90	39	27	42	1220	130	570	660	520
9115	1802	560	1592	240	560	1120	100	46	34	48	1390	140	630	730	595

Size	High Speed Shaft							Fan				DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD			
				X2	Y2	Z2	L2							
9095	170	90m6	M24/50	25	9	14	150	340	250	135	90	1 1/2"	2050	100
9105	210	100m6	M24/50	28	10	16	190	380	250	175	130	1 1/2"	2800	150
9115	210	110m6	M24/50	28	10	16	190	410	250	175	130	1 1/2"	3800	200

• In case of continuous load, the forced oil lubrication is necessary. For details, consult us.

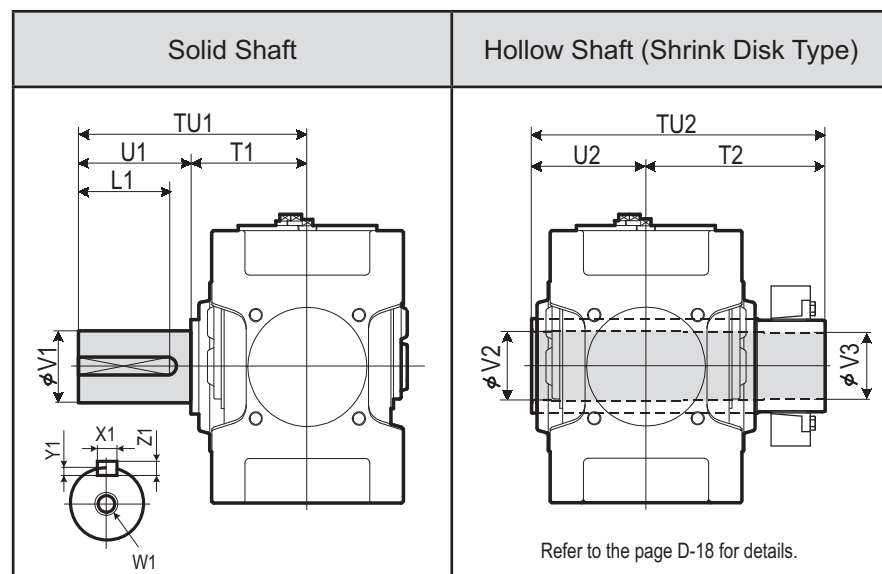
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

4. Refer to the page D -30 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Horizontal Mounting 9095, 9105, 9115

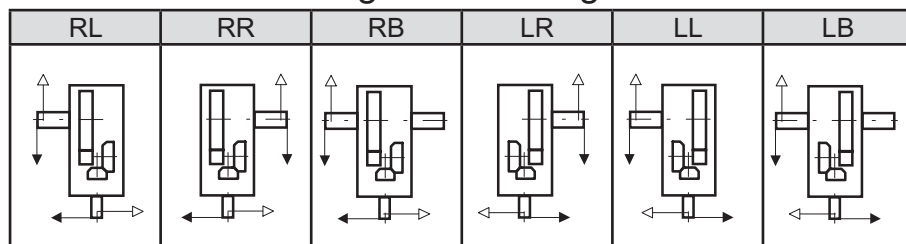
Slow Speed Shaft



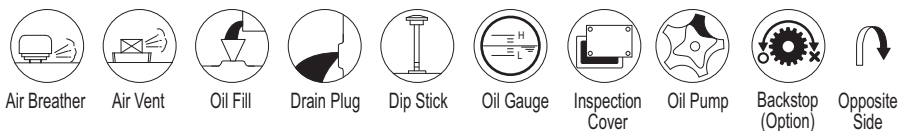
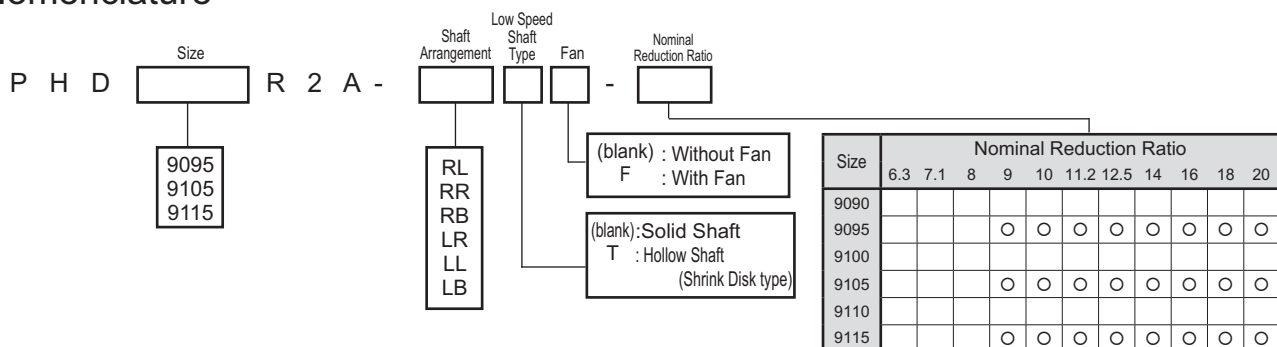
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3
9095	700	350	350	190m6	M30/60	45	15	25	320		859	509	350	203	200
9105	740	390	350	220m6	M30/60	50	17	28	320		949	559	390	223	220
9115	830	420	410	240m6	M30/60	56	20	32	375		1065	645	420	253	250

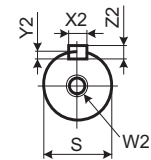
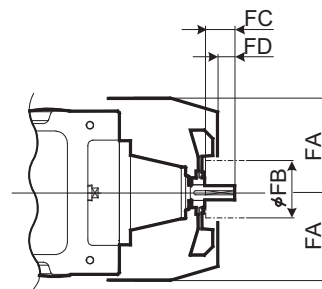
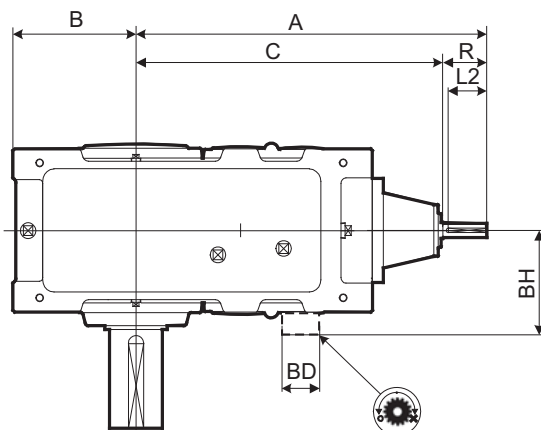
Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

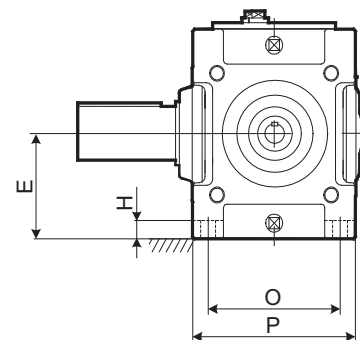
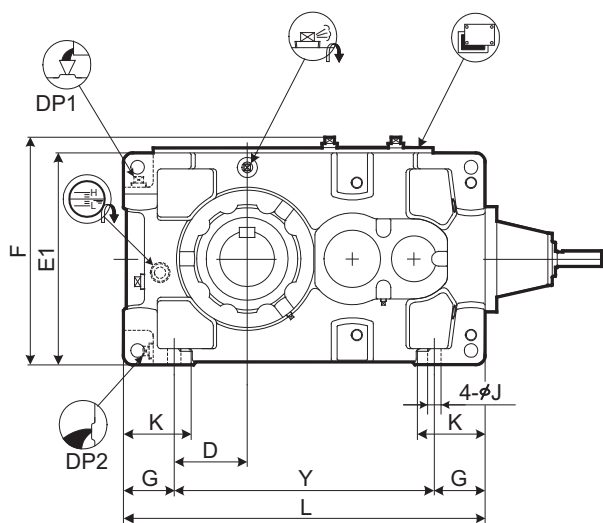




High Speed Shaft

With Fan

Refer to the page D-21 for details.

Speed
ReducerSelection
Tables
Dimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	Y
9030	656	200	576	110	160	320	349	90	28	24	120	590	215	265	410
9035	687	219	607	129	185	370	399	90	28	24	120	640	215	265	460
9040	716	235	636	120	200	400	431	115	30	28	150	685	255	315	455
9045	755	256	675	141	220	440	471	115	30	28	150	745	255	315	515
9050	808	255	728	138.5	210	420	451	116.5	32	28	150	775	285	345	542
9055	847	286	767	171	245	490	521	115	32	28	150	845	285	345	615

Size	High Speed Shaft							Fan				Backstop		DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD	BD	BH				
9030	80	28k6	M10/22	8	4	7	70	150	125	50	30			3/4"	3/4"	210	10
9035	80	28k6	M10/22	8	4	7	70	150	125	50	30			3/4"	3/4"	230	12
9040	80	30k6	M10/22	8	4	7	70	170	125	50	30			1"	1"	305	16
9045	80	30k6	M10/22	8	4	7	70	170	125	50	30			1"	1"	365	18
9050	80	35k6	M12/28	10	5	8	70	190	140	50	22	150	263	1"	1"	445	21
9055	80	35k6	M12/28	10	5	8	70	190	140	50	22	150	263	1"	1"	505	28

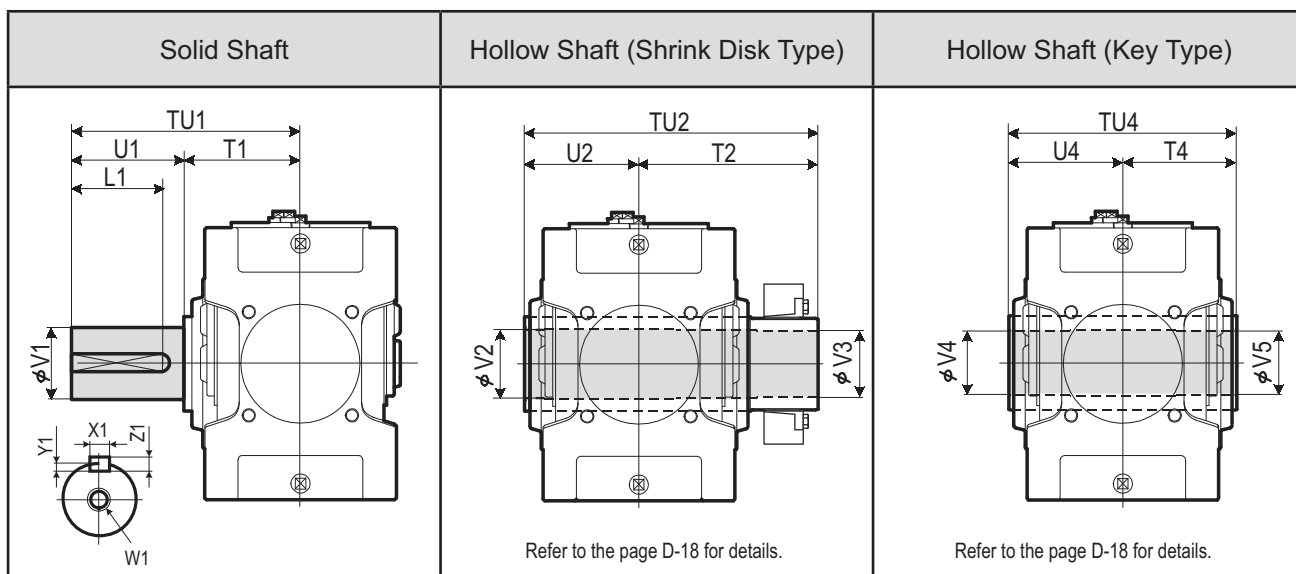
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-24 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9030 ▶ 9055

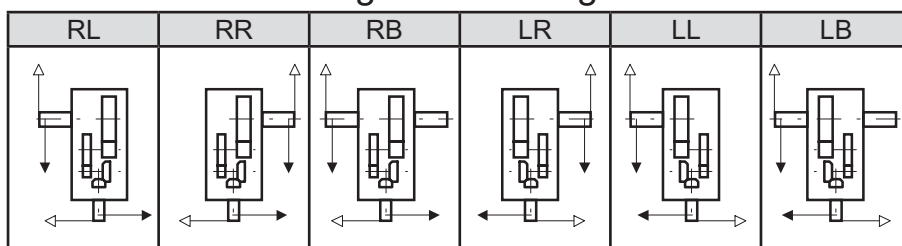
Slow Speed Shaft



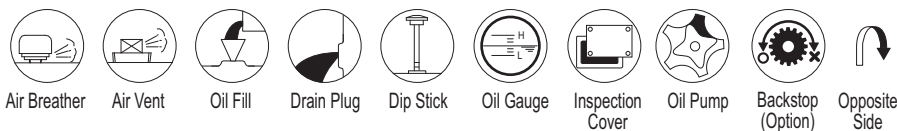
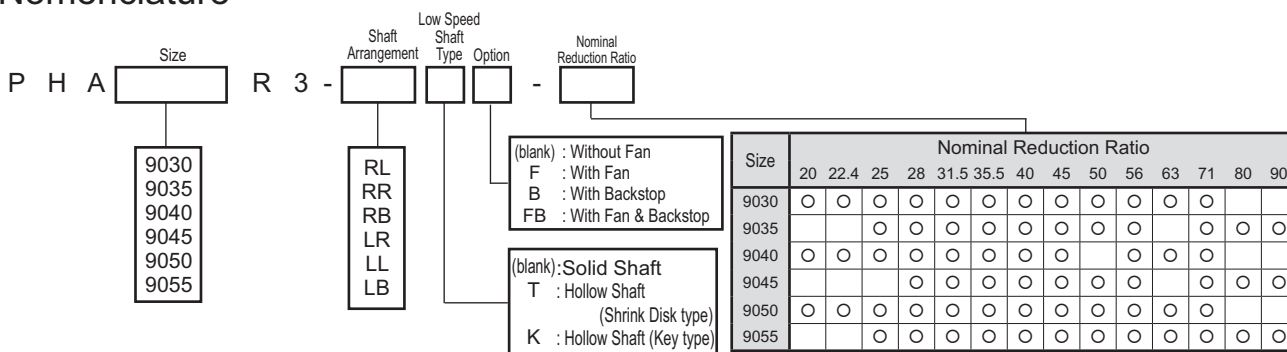
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

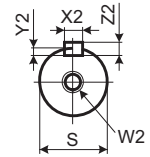
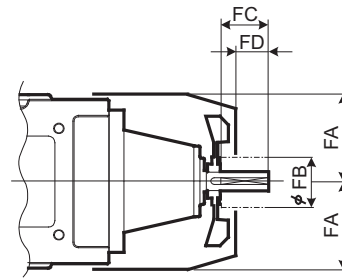
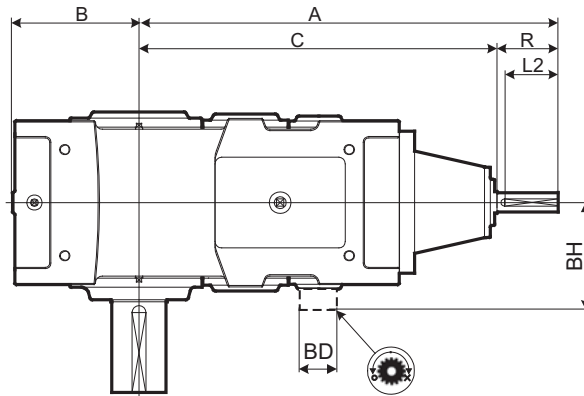
Standard Shaft Arrangement Configuration



Nomenclature



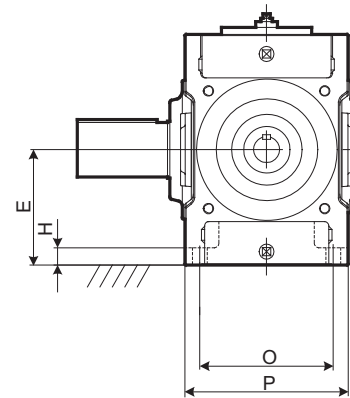
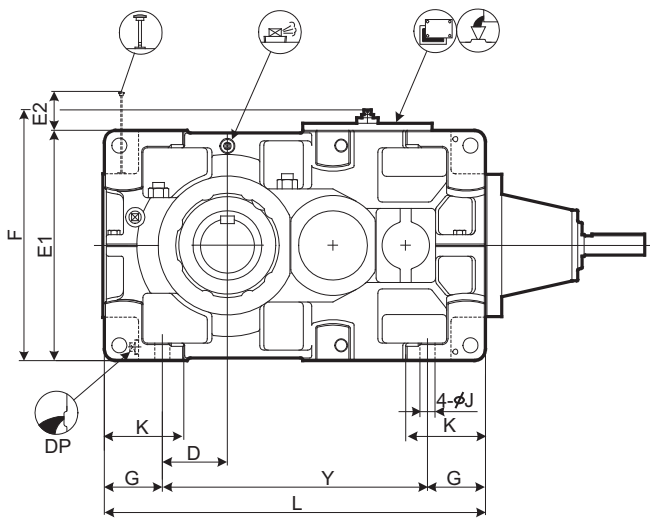
DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9060 ▶ 9085



High Speed Shaft

With Fan

Refer to the page D-21 for details.



Size	A	B	C	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060	939	299	829	151	265	530	158	578	135	35	35	180	885	310	380	615
9065	985	338	875	190	300	600	123	648	135	35	35	180	970	310	380	700
9070	1027	336	917	163	300	600	183	648	160	40	42	215	1020	350	430	700
9075	1080	383	970	210	335	670	148	718	160	52	42	220	1120	350	430	800
9080	1176	378	1036	205	335	670	208	718	160	52	42	220	1155	380	460	835
9085	1232	422	1092	249	375	750	168	798	160	52	42	220	1255	380	460	935

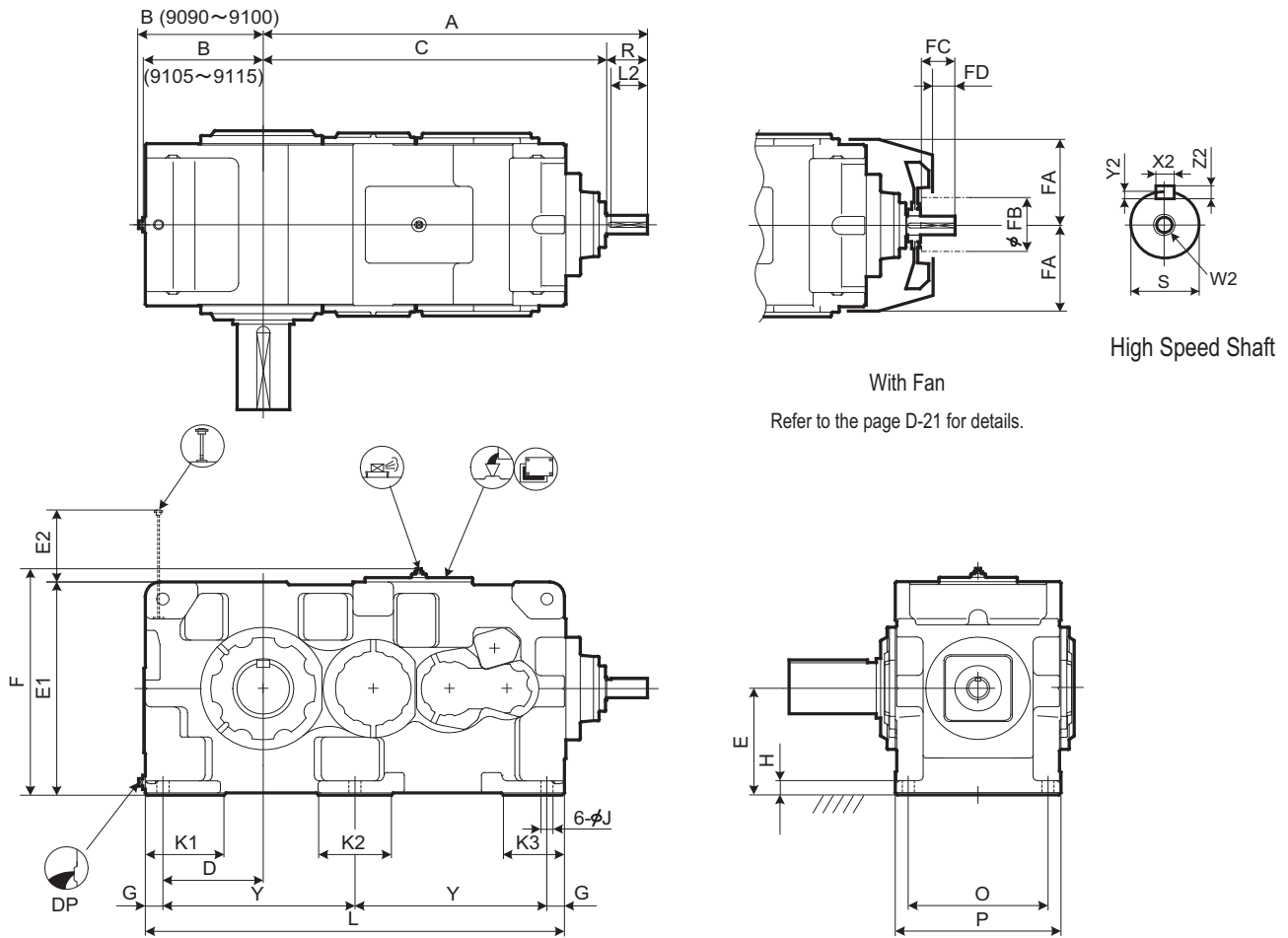
Size	High Speed Shaft							Fan				Backstop		DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD	BD	BH			
9060	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	175	308	1"	660	29
9065	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	175	308	1"	785	33
9070	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	190	330	1"	940	45
9075	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	190	330	1"	1190	52
9080	140	60m6	M20/42	18	7	11	125	270	160	105	65	210	365	1"	1350	60
9085	140	60m6	M20/42	18	7	11	125	270	160	105	65	210	365	1"	1610	75

Unit: mm

- Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
- The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
- Refer to the page D-14 for dimensions not shown in these drawings.

- Refer to the page D-27 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9090 ▶ 9115



Speed Reducer

Selection
Tables

Dimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9090	1320	428	1180	345	375	750	253	797	60	50	42	270	250	210	1440	480	570	660
9095	1350	458	1210	375	400	800	258	847	60	50	42	290	250	210	1500	480	570	690
9100	1474	468	1334	375	425	850	282	897	70	55	48	300	280	240	1610	560	650	735
9105	1508	493	1368	410	450	900	287	947	70	55	48	320	280	240	1680	560	650	770
9110	1684	508	1514	420	475	950	303	997	75	60	56	340	310	260	1810	610	710	830
9115	1733	558	1563	470	500	1000	302	1047	75	60	56	350	310	260	1910	610	710	880

Size	High Speed Shaft							Fan				DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9090	140	65m6	M20/42	18	7	11	125	340	200	105	65	1 1/2"	2150	120
9095	140	65m6	M20/42	18	7	11	125	340	200	105	65	1 1/2"	2400	155
9100	140	75m6	M20/42	20	7.5	12	125	380	225	105	60	1 1/2"	2880	180
9105	140	75m6	M20/42	20	7.5	12	125	380	225	105	60	1 1/2"	3440	220
9110	170	85m6	M20/42	22	9	14	150	410	225	135	90	1 1/2"	4160	250
9115	170	85m6	M20/42	22	9	14	150	410	225	135	90	1 1/2"	4610	310

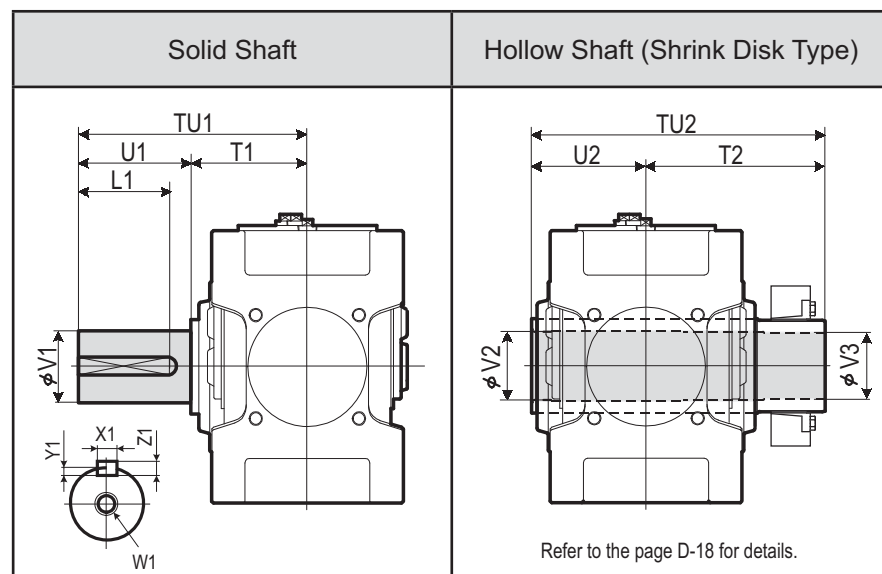
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D -16 for dimensions shown in these drawings.

4. Refer to the page D -30 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9090 ▶ 9115

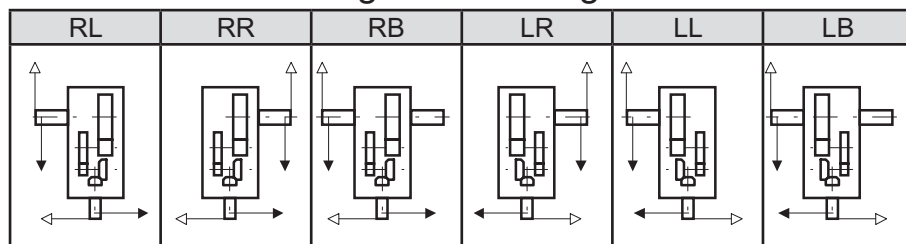
Slow Speed Shaft



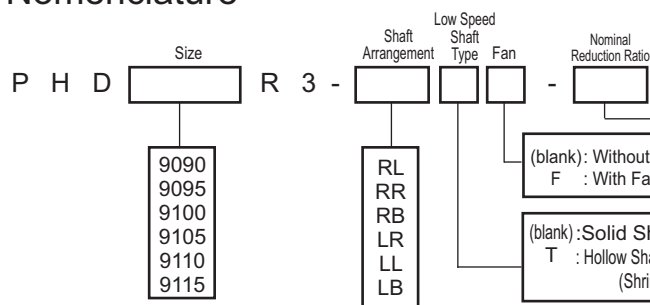
Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

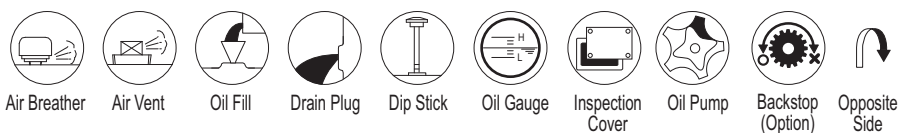
Standard Shaft Arrangement Configuration



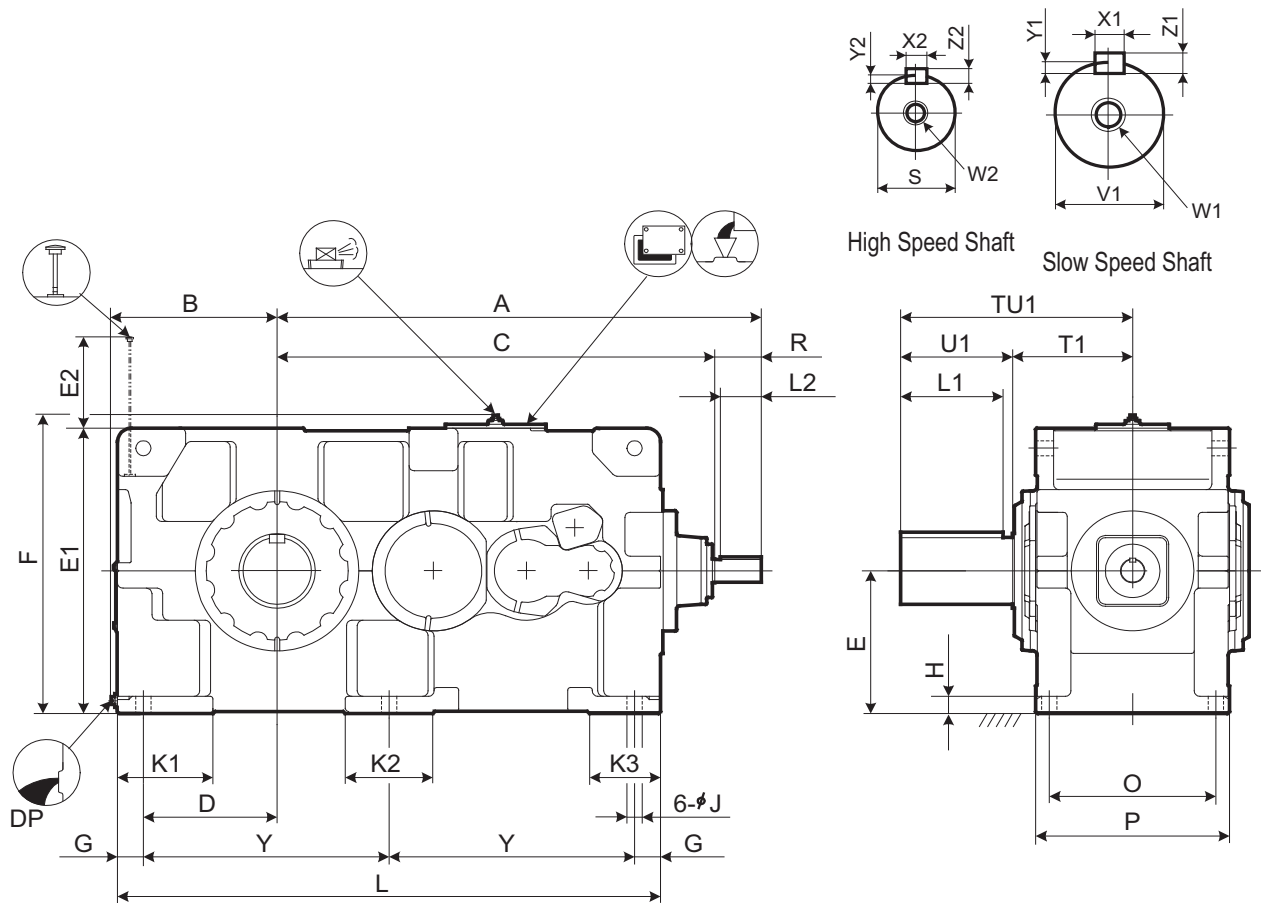
Nomenclature



Size	Nominal Reduction Ratio													
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9095	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9105	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9115	○	○	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9118 ▶ 9126

Speed
ReducerSelection
TablesDimension
Tables

Size	Ratio	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9118	ALL	1774	608	1604	490	535	1070	343	1117	95	65	56	350	320	260	1990	610	710	900
9121	≤ 31.5	2053	663	1843	545	580	1160	357	1207	95	70	56	390	300	270	2180	680	780	995
	≥ 35.5	2013	663	1843	545	580	1160	357	1207	95	70	56	390	300	270	2180	680	780	995
9126	≤ 31.5	2053	663	1843	545	580	1160	357	1207	95	70	56	390	300	270	2180	680	780	995
	≥ 35.5	2013	663	1843	545	580	1160	357	1207	95	70	56	390	300	270	2180	680	780	995

Size	Ratio	High Speed Shaft							DP	Wt. kg	Oil Qty. L
		R	S	W2/Depth	X2	Y2	Z2	L2			
9118	ALL	170	85m6	M20/42	22	9	14	150	1 1/2"	5200	350
9121	≤ 31.5	210	110m6	M24/50	28	10	16	190	1 1/2"	6200	460
	≥ 35.5	170	90m6	M24/50	25	9	14	150	1 1/2"	6200	460
9126	≤ 31.5	210	110m6	M24/50	28	10	16	190	1 1/2"	6550	460
	≥ 35.5	170	90m6	M24/50	25	9	14	150	1 1/2"	6550	460

Size	Ratio	Solid Shaft								Key	X1	Y1	Z1	L1
		TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1					
9118	ALL	850	440	410	260m6	M36/70	56	20	32	375				
9121	≤ 31.5	935	465	470	280m6	M36/70	63	20	32	425				
	≥ 35.5	935	465	470	280m6	M36/70	63	20	32	425				
9126	≤ 31.5	935	465	470	300m6	M36/70	70	22	36	425				
	≥ 35.5	935	465	470	300m6	M36/70	70	22	36	425				

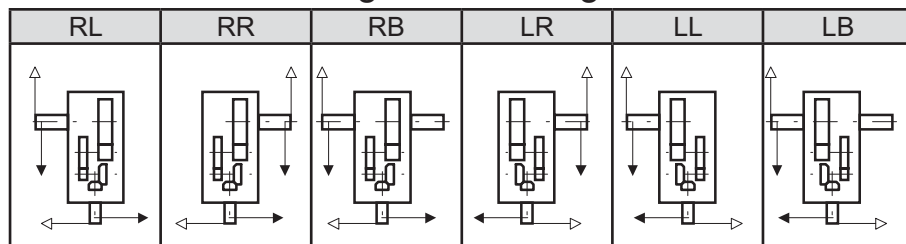
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

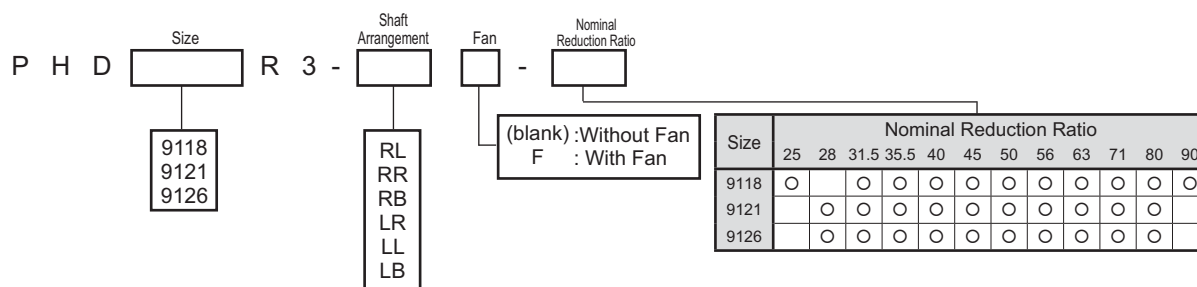
DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9118 ▶ 9126

PARAMAX Horizontal Split
9118
9126
Right Angle Triple Reduction
R
3

Standard Shaft Arrangement Configuration



Nomenclature



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick

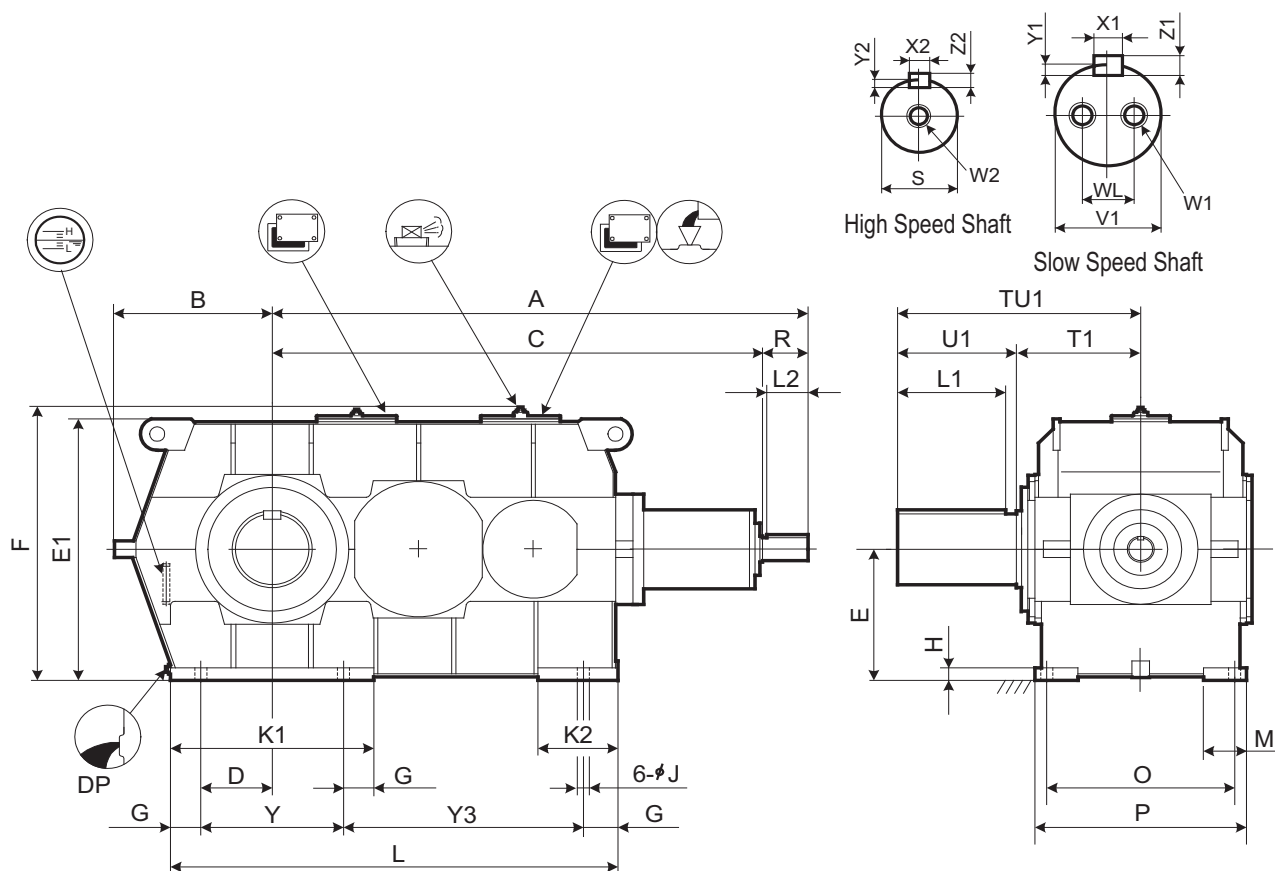


Oil Gauge

Inspection
Cover

Oil Pump

Backstop
(Option)Opposite
Side

Speed
ReducerSelection
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K1	K2	L	M	O	P	Y	Y3
9128	2244	680	2034	330	600	1194	1241	140	55	66	940	280	1930	170	710	840	660	990
9131	2479	730	2269	330	630	1256	1303	140	60	66	940	280	2070	200	850	980	660	1130
9136	2479	730	2269	330	630	1256	1303	140	60	66	940	280	2070	200	850	980	660	1130

Dimension
Tables

Size	High Speed Shaft							DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key						
				X2	Y2	Z2	L2			
9128	210	100m6	M24/50	28	10	16	190	1 1/2"	7400	350
9131	210	110m6	M24/50	28	10	16	190	1 1/2"	9850	510
9136	210	110m6	M24/50	28	10	16	190	1 1/2"	10200	500

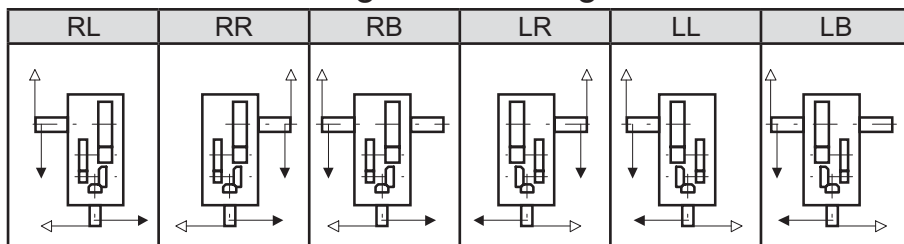
Size	Solid Shaft									
	TU1	T1	U1	V1	W1/Depth	WL	Key			
							X1	Y1	Z1	L1
9128	950	480	470	320m6	M36/70	200	70	22	36	425
9131	1100	550	550	340m6	M36/70	215	80	25	40	500
9136	1110	560	550	360m6	M36/70	230	80	25	40	500

Unit: mm

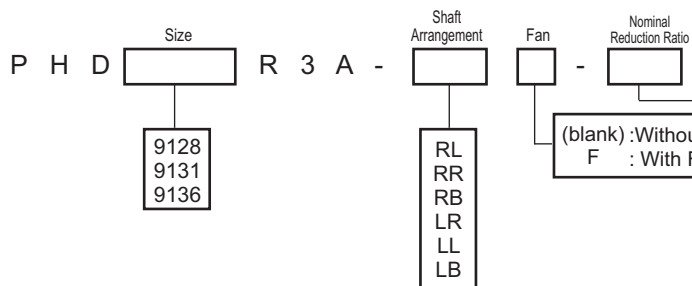
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

DIMENSIONS Right Angle Shaft Triple Reduction Horizontal Mounting 9128 ▶ 9136

Standard Shaft Arrangement Configuration



Nomenclature



Size	28	31.5	35.5	40	45	50	56	63	71	80
9128			○	○	○	○	○	○	○	○
9131	○	○	○	○	○	○	○	○		
9136	○	○	○	○	○	○	○	○		

PARAMAX Horizontal Split
 9128
 9136
 Right Angle Triple Reduction
 Steel Housing



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



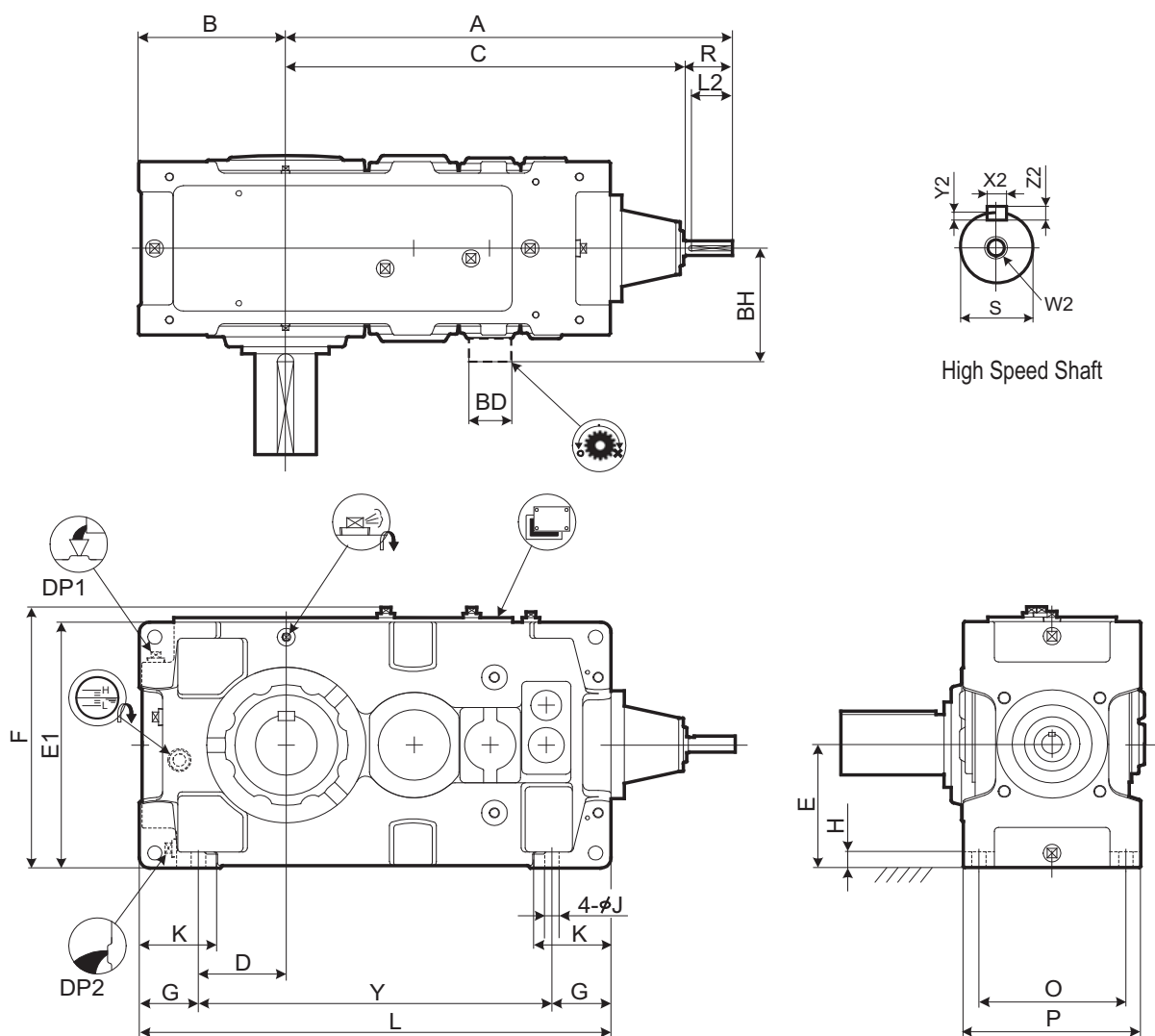
Oil Gauge

Inspection
Cover

Oil Pump

Backstop
(Option)Opposite
Side

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9040 ▶ 9055



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	Y
9040	790	235	710	120	200	400	431	115	30	28	150	759	255	315	529
9045	829	256	749	141	220	440	471	115	30	28	150	819	255	315	589
9050	859	255	779	138.5	210	420	451	116.5	32	28	150	848	285	345	615
9055	898	286	818	171	245	490	521	115	32	28	150	918	285	345	688

Size	High Speed Shaft							Backstop		DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	BD	BH				
9040	80	28k6	M10/22	8	4	7	70			1"	1"	325	19
9045	80	28k6	M10/22	8	4	7	70			1"	1"	395	21
9050	80	28k6	M10/22	8	4	7	70	150	263	1"	1"	460	24
9055	80	28k6	M10/22	8	4	7	70	150	263	1"	1"	520	29

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions shown in these drawings.

4. Refer to the page D-24 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9040 ▶ 9055

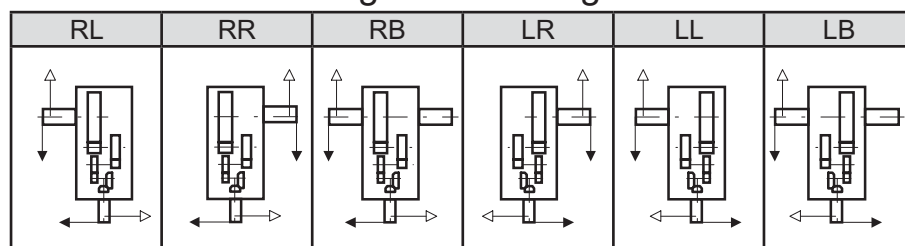
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

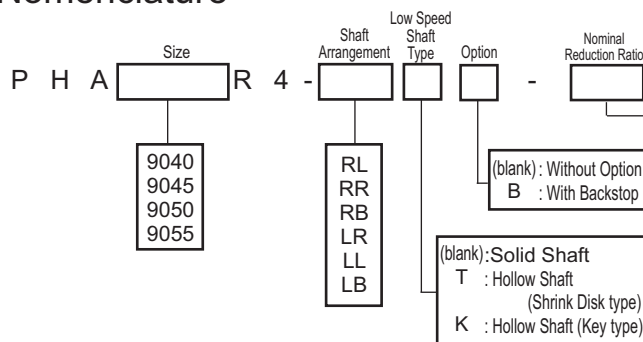
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

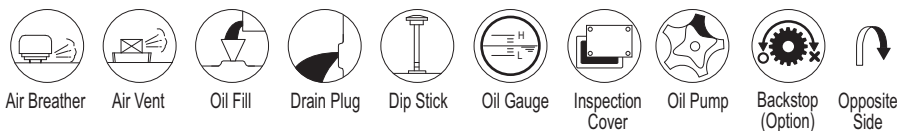
Standard Shaft Arrangement Configuration



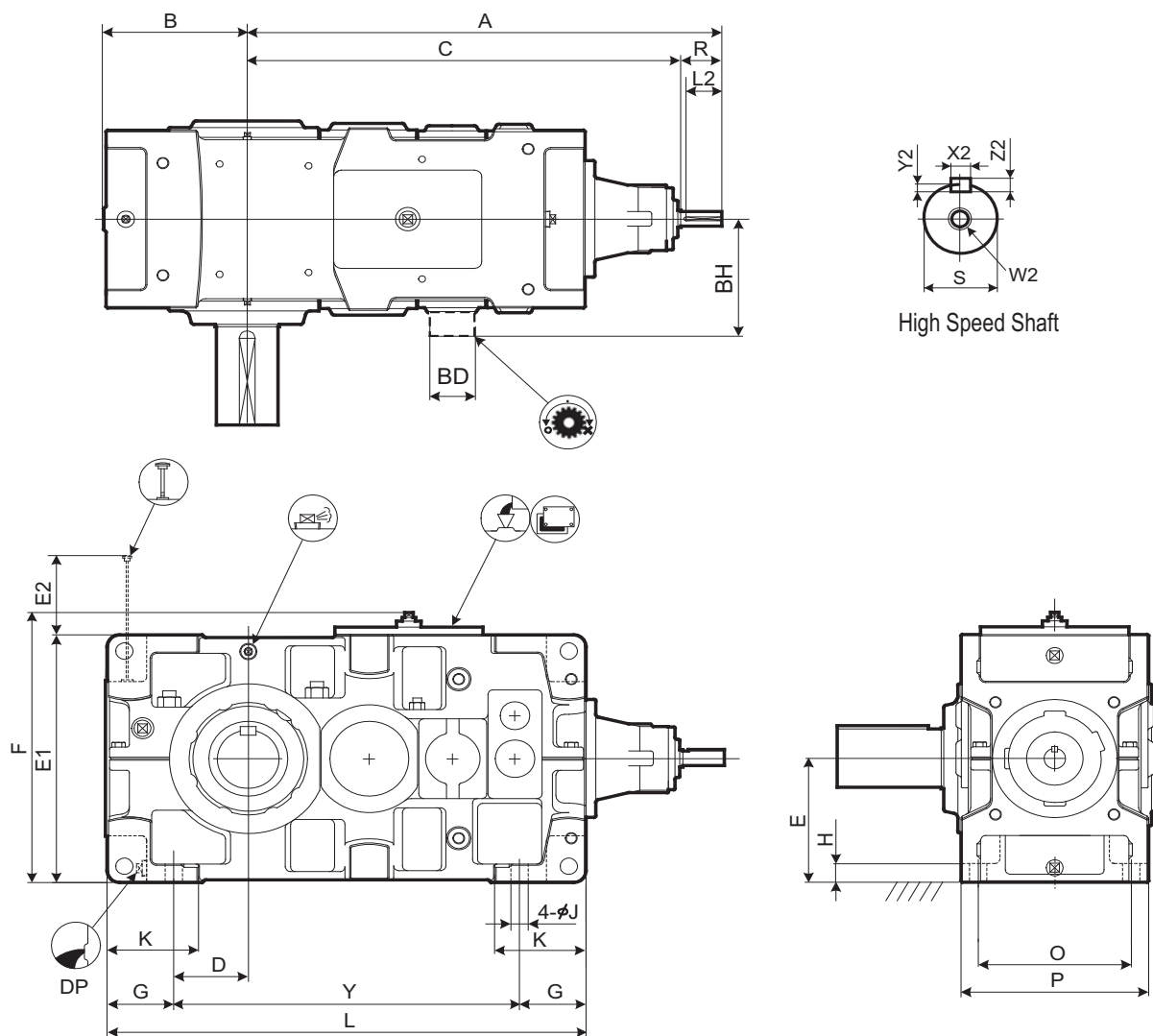
Nomenclature



Size	Nominal Reduction Ratio																		
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450			
9040	○	○	○	○	○	○													
9045				○	○	○	○	○											
9050		○	○	○	○	○	○	○	○	○	○	○	○	○	○				
9055				○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060	950	299	870	151	265	530	121	578	135	35	35	180	970	310	380	700
9065	996	338	916	190	300	600	86	648	135	35	35	180	1055	310	380	785
9070	1080	336	1000	163	300	600	140	648	160	40	42	215	1115	350	430	795
9075	1133	383	1053	210	335	670	105	718	160	52	42	220	1215	350	430	895
9080	1250	378	1140	205	335	670	162	718	160	52	42	220	1275	380	460	955
9085	1306	422	1196	249	375	750	122	798	160	52	42	220	1375	380	460	1055

Size	High Speed Shaft							Backstop		DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				BD	BH			
				X2	Y2	Z2	L2					
9060	80	30k6	M10/22	8	4	7	70	175	308	1"	670	38
9065	80	30k6	M10/22	8	4	7	70	175	308	1"	825	43
9070	80	35k6	M12/28	10	5	8	70	190	330	1"	960	57
9075	80	35k6	M12/28	10	5	8	70	190	330	1"	1180	67
9080	110	45k6	M16/36	14	5.5	9	95	210	365	1"	1390	73
9085	110	45k6	M16/36	14	5.5	9	95	210	365	1"	1650	90

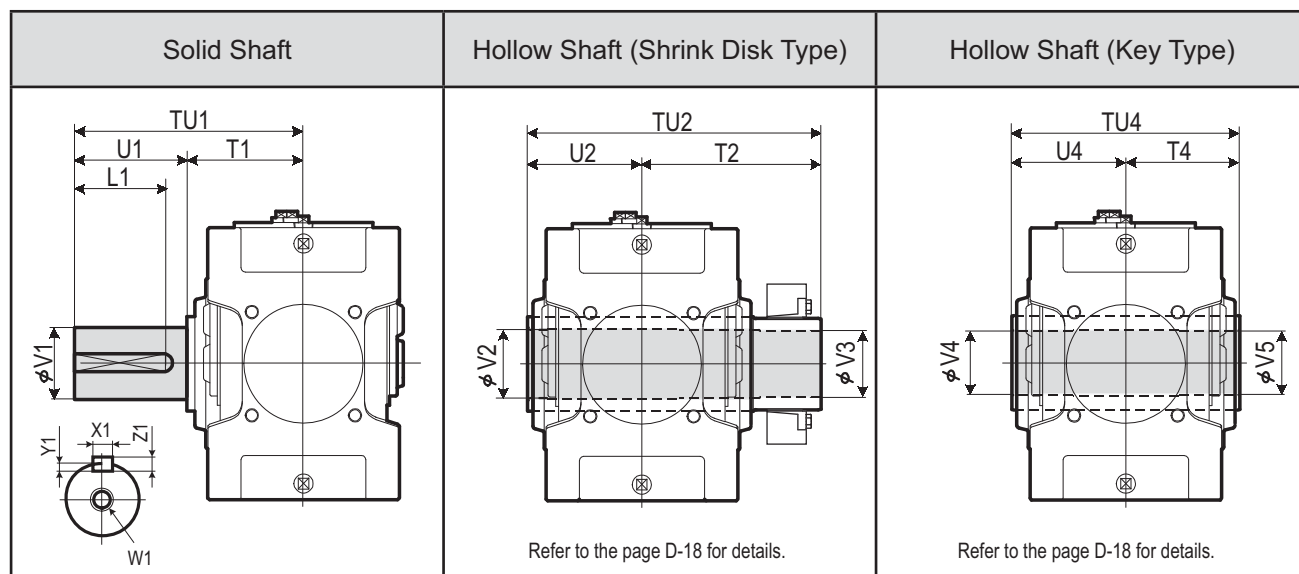
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-15 for dimensions shown in these drawings.

4. Refer to the page D-27 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9060 ▶ 9085

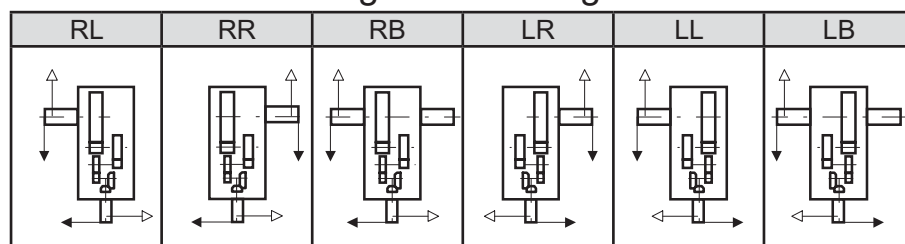
Slow Speed Shaft



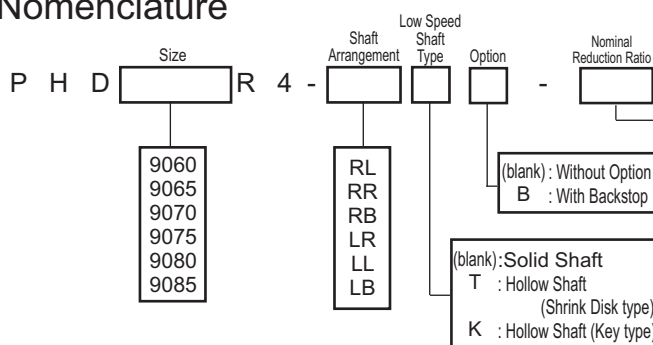
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

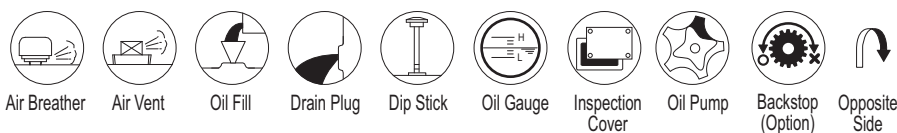
Standard Shaft Arrangement Configuration



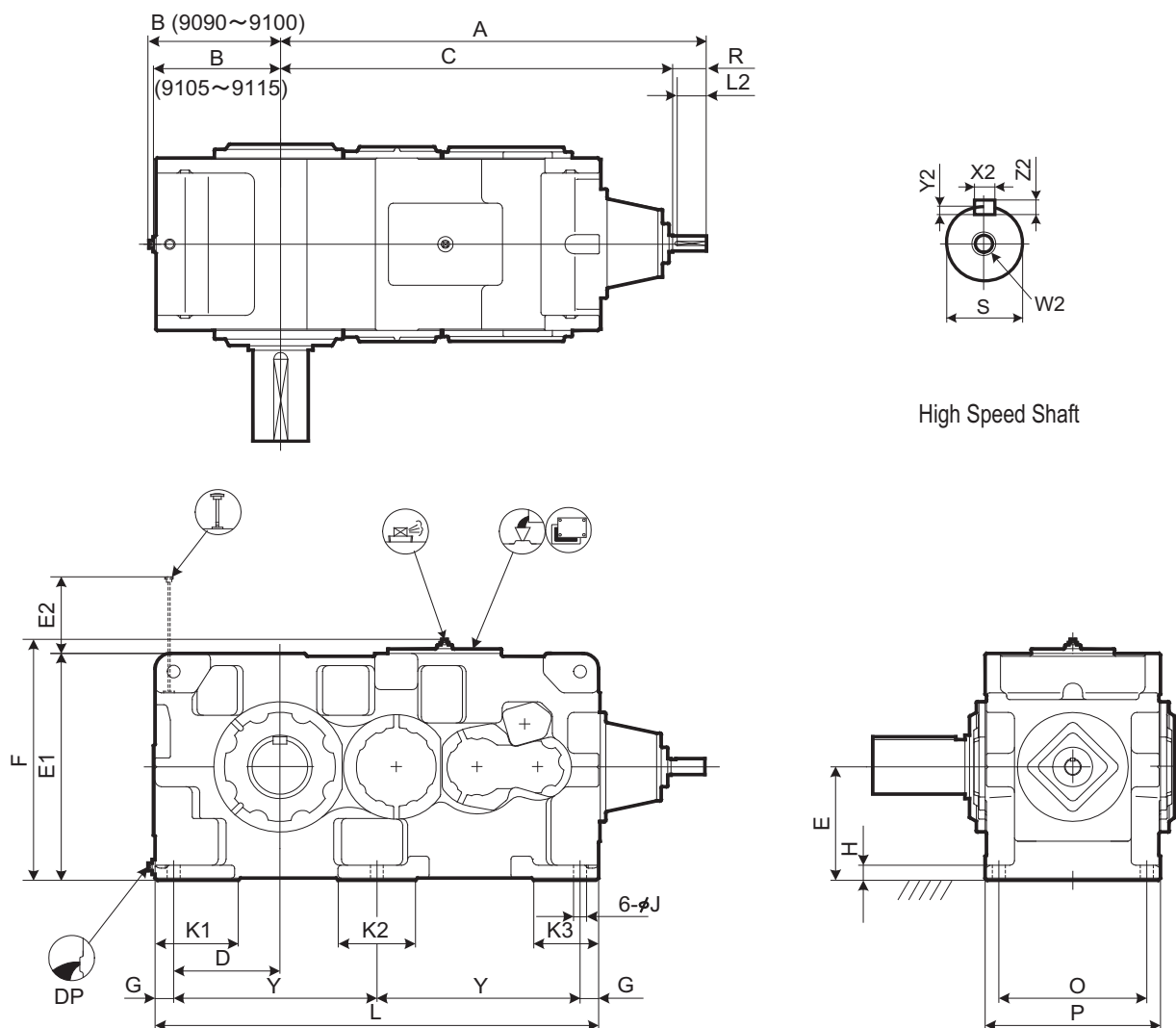
Nomenclature



Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9060		○	○	○	○	○	○	○	○	○	○	○	○	○		
9065				○	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9075			○	○	○	○	○	○		○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	



DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9090 ▶ 9115



Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9090	1382	428	1272	345	375	750	198	797	60	50	42	270	250	210	1440	480	570	660
9095	1412	458	1302	375	400	800	203	847	60	50	42	290	250	210	1500	480	570	690
9100	1570	468	1430	375	425	850	215	897	70	55	48	300	280	240	1610	560	650	735
9105	1604	493	1464	410	450	900	220	947	70	55	48	320	280	240	1680	560	650	770
9110	1670	508	1530	420	475	950	225	997	75	60	56	340	310	260	1810	610	710	830
9115	1719	558	1579	470	500	1000	224	1047	75	60	56	350	310	260	1910	610	710	880

Size	High Speed Shaft							DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2			
9090	110	50k6	M16/36	14	5.5	9	95	1 1/2"	2150	150
9095	110	50k6	M16/36	14	5.5	9	95	1 1/2"	2400	180
9100	140	60m6	M20/42	18	7	11	125	1 1/2"	2880	210
9105	140	60m6	M20/42	18	7	11	125	1 1/2"	3440	255
9110	140	60m6	M20/42	18	7	11	125	1 1/2"	4060	300
9115	140	60m6	M20/42	18	7	11	125	1 1/2"	4510	360

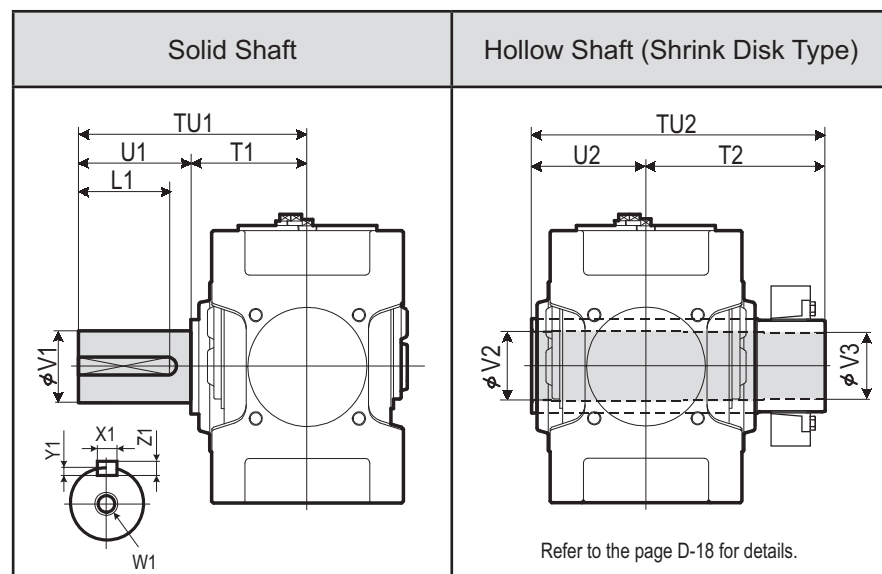
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-16 for dimensions shown in these drawings.

4. Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9090 ▶ 9115

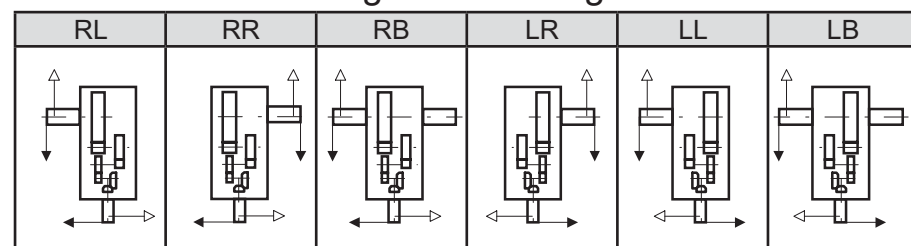
Slow Speed Shaft



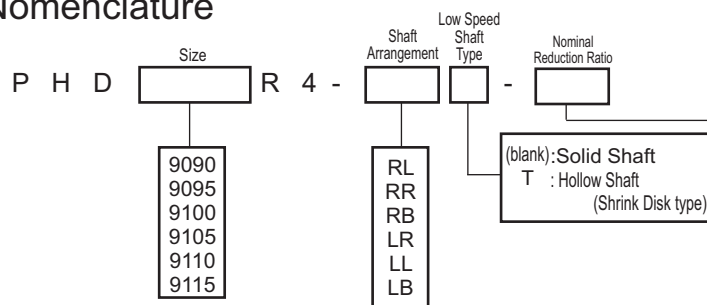
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270		844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320		859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320		934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320		949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320		1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375		1065	645	420	253	250

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio															
	90	100	112	125	140	160	180	200	224	250	280	315	355	400		
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9095	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9105	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9115	○	○	○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



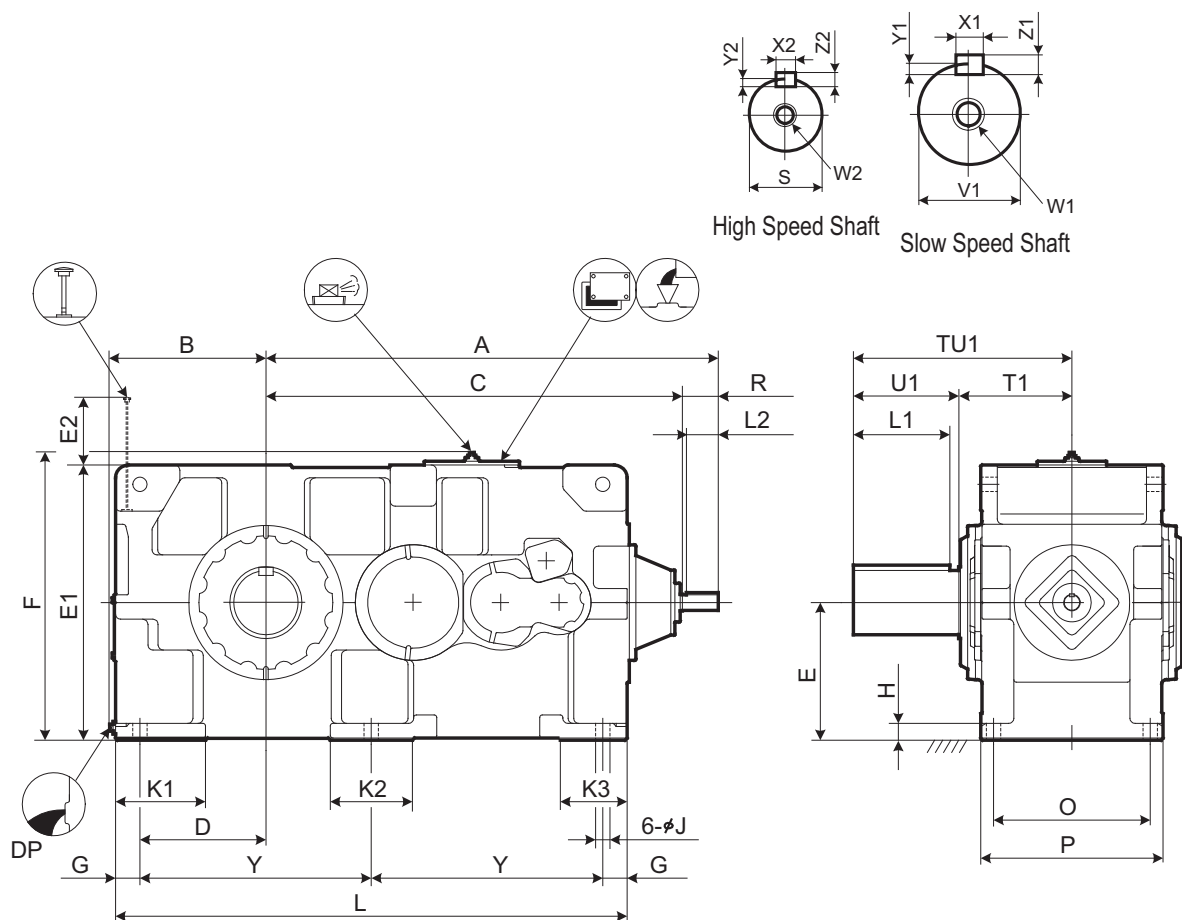
Oil Pump



Backstop (Option)



Opposite Side

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9118	1760	608	1620	490	535	1070	263	1117	95	65	56	350	320	260	1990	610	710	900
9121	1970	663	1830	545	580	1160	257	1207	95	70	56	390	300	270	2180	680	780	995
9126	1970	663	1830	545	580	1160	257	1207	95	70	56	390	300	270	2180	680	780	995

Size	High Speed Shaft							DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key						
				X2	Y2	Z2	L2			
9118	140	60m6	M20/42	18	7	11	125	1 1/2"	5100	390
9121	140	65m6	M20/42	18	7	11	125	1 1/2"	6150	540
9126	140	65m6	M20/42	18	7	11	125	1 1/2"	6450	530

Size	Solid Shaft					Key			
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1
9118	850	440	410	260m6	M36/70	56	20	32	375
9121	935	465	470	280m6	M36/70	63	20	32	425
9126	935	465	470	300m6	M36/70	70	22	36	425

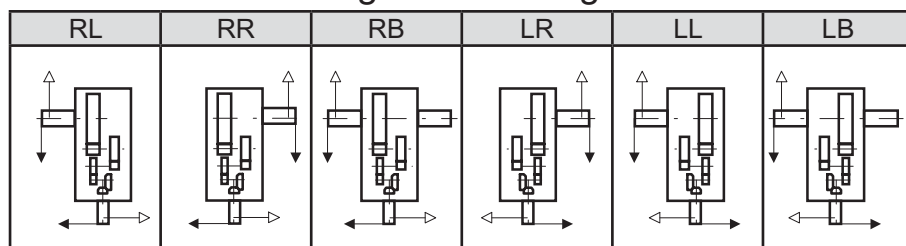
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

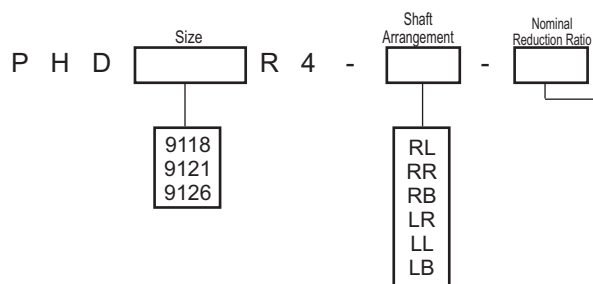
DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9118 ▶ 9126

PARAMAX Horizontal Split
9118
9126
R
4
Right Angle Quadruple Reduction

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio															
	90	100	112	125	140	160	180	200	224	250	280	315	355	400		
9118		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9121	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9126	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick

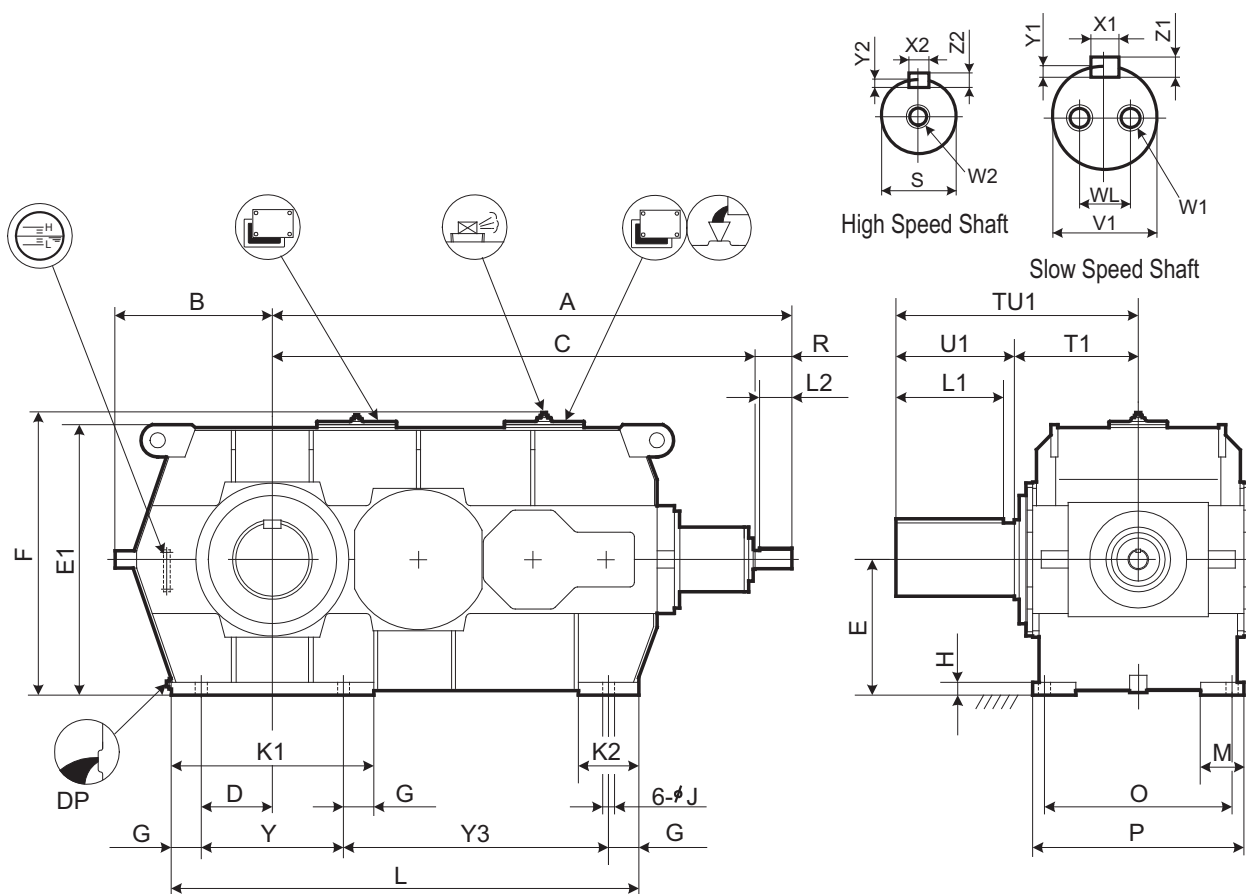


Oil Gauge

Inspection
Cover

Oil Pump

Backstop
(Option)Opposite
Side

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K1	K2	L	M	O	P	Y	Y3
9128	2163	680	2023	330	600	1194	1241	140	55	66	940	280	1990	170	710	840	660	1050
9131	2410	730	2240	330	630	1256	1303	140	60	66	940	280	2170	200	850	980	660	1230
9136	2410	730	2240	330	630	1256	1303	140	60	66	940	280	2170	200	850	980	660	1230

Size	High Speed Shaft							DP	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key						
				X2	Y2	Z2	L2			
9128	140	75m6	M20/42	20	7.5	12	125	1 1/2"	7400	460
9131	170	85m6	M20/42	22	9	14	150	1 1/2"	9850	680
9136	170	85m6	M20/42	22	9	14	150	1 1/2"	10200	660

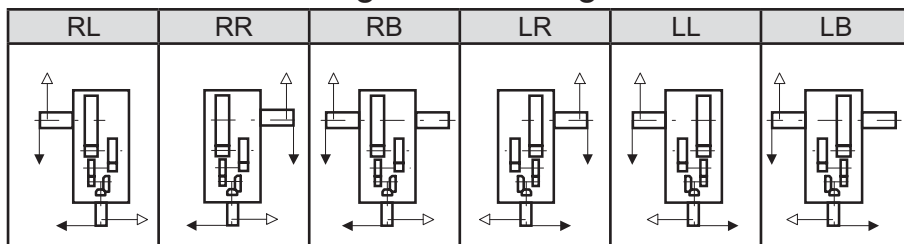
Size	Solid Shaft							Key			
	TU1	T1	U1	V1	W1/Depth	WL		X1	Y1	Z1	L1
9128	950	480	470	320m6	M36/70	200		70	22	36	425
9131	1100	550	550	340m6	M36/70	215		80	25	40	500
9136	1110	560	550	360m6	M36/70	230		80	25	40	500

Unit: mm

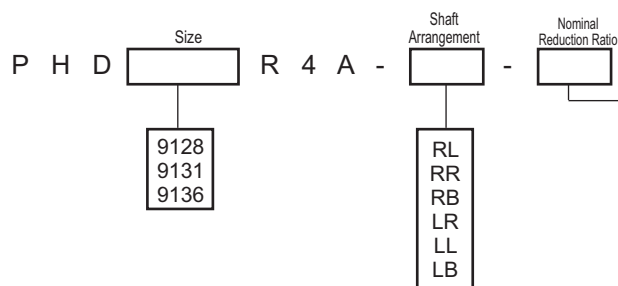
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for the dimensions not shown in these drawings.

DIMENSIONS Right Angle Shaft Quadruple Reduction Horizontal Mounting 9128 ▶ 9136

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio															
	71	80	90	100	112	125	140	160	180	200	224	250	280	315	355	
9128			○	○	○	○	○	○	○	○	○	○	○	○	○	
9131	○	○	○	○	○	○	○	○	○	○	○	○	○			
9136	○	○	○	○	○	○	○	○	○	○	○	○	○			

PARAMAX Horizontal Split
 9128
 9136
 Right Angle Reduction
 Quadruple
 Steel Housing
 P H D R 4 A



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

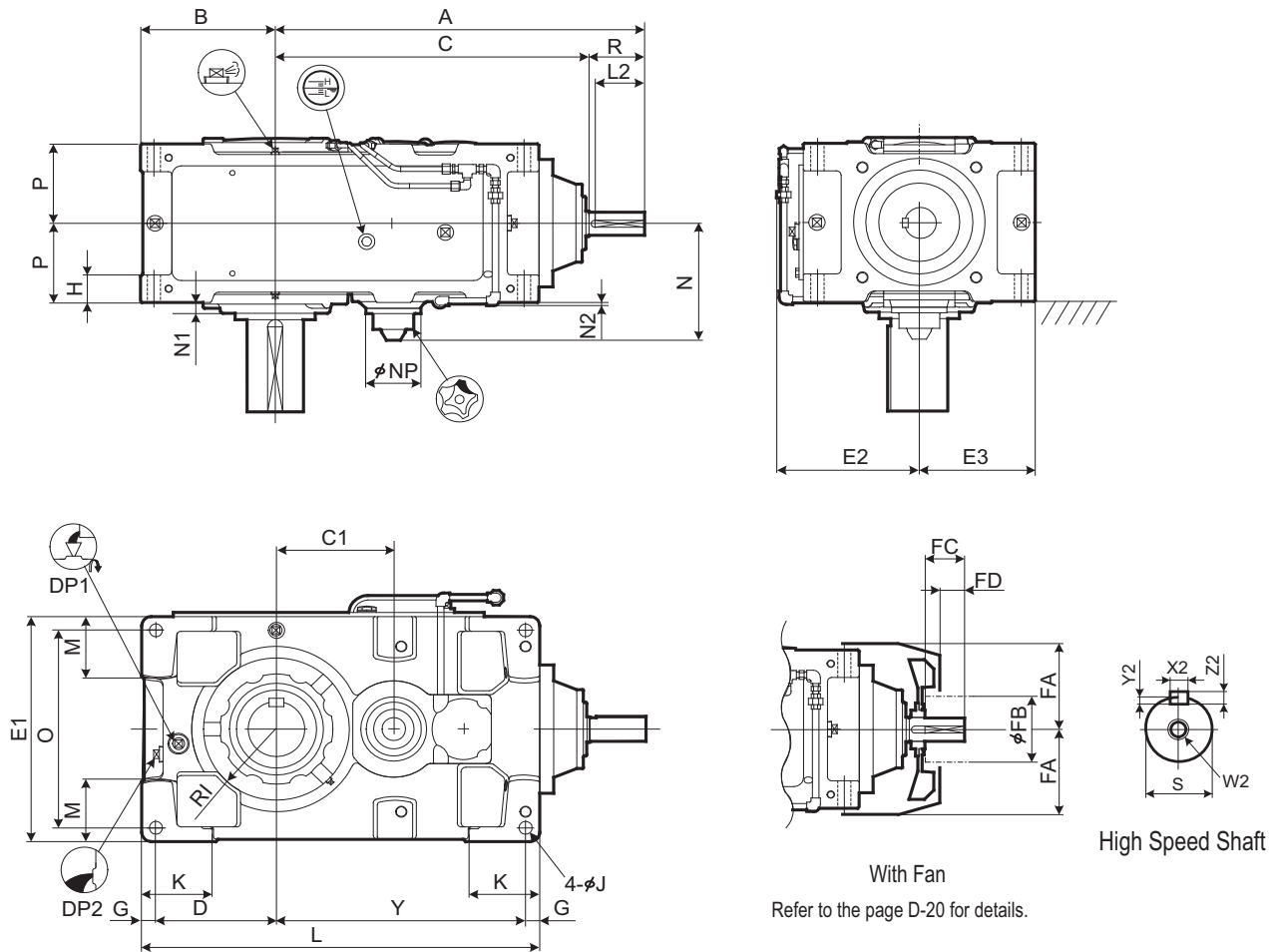


Backstop (Option)



Opposite Side

DIMENSIONS Right Angle Shaft Double Reduction Vertical Mounting 9015 ▶ 9055



Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9015	507	160	427	115	140	270	195	135	20	35	80	15	95	440	70	189	25	14	100	230	102.5	260
9025	545	175	465	135	155	310	215	155	20	40	87.5	19	110	505	75	201.5	23	12	100	270	117.5	310
9030	645	200	535	155	175	320	220	160	25	50	105	24	120	590	85	224	22	9	117	270	132.5	365
9035	676	219	566	186	194	370	245	185	25	50	120	24	120	640	100	224	22	9	117	320	132.5	396
9040	705	235	595	180	205	400	260	200	30	60	120	28	150	685	100	241.5	15	2	117	340	157.5	420
9045	744	256	634	219	226	440	266	220	30	60	140	28	150	745	120	241.5	17.5	2	117	380	157.5	459
9050	755	255	645	210	225	420	270	210	30	60	140	28	150	775	110	252	23	7	137	360	172.5	490
9055	794	286	684	249	256	490	305	245	30	60	155	28	150	845	135	252	23	7	137	430	172.5	529

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9015	80	28k6	M12/28	8	4	7	70	125	125	50	30	3/4"	3/4"	95	5
9025	80	35k6	M12/28	10	5	8	70	135	140	50	30	3/4"	3/4"	140	7
9030	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	205	7
9035	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	225	9
9040	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	305	19
9045	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	365	23
9050	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	435	20
9055	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	495	26

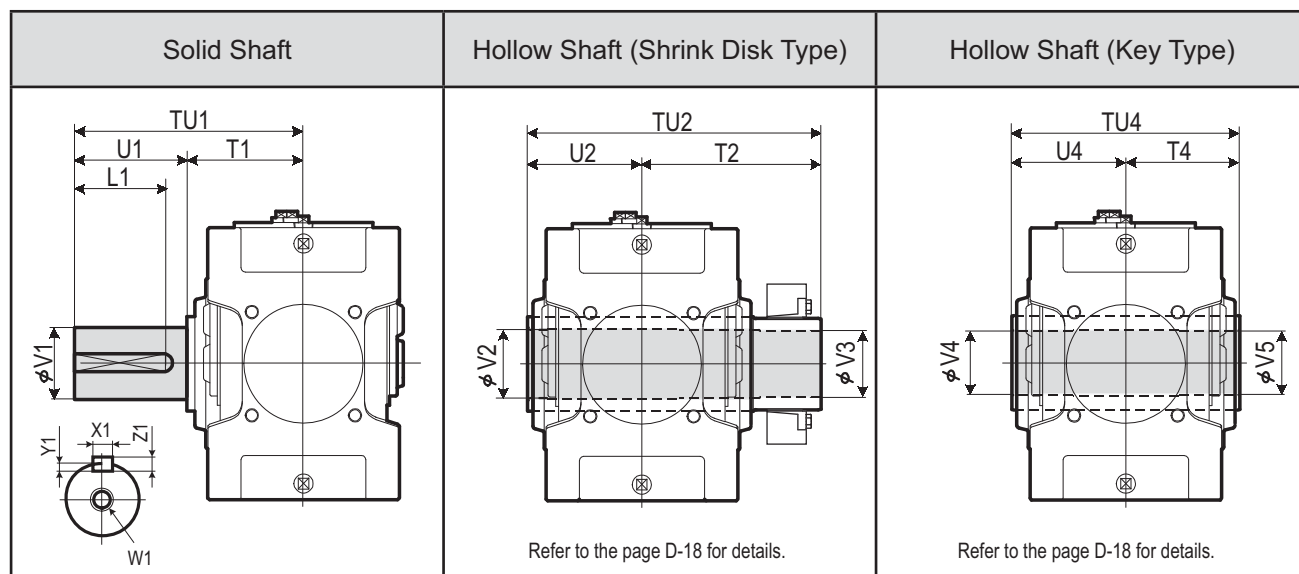
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Vertical Mounting 9015 ▶ 9055

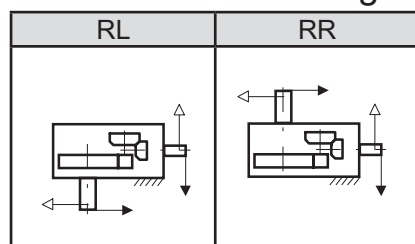
Slow Speed Shaft



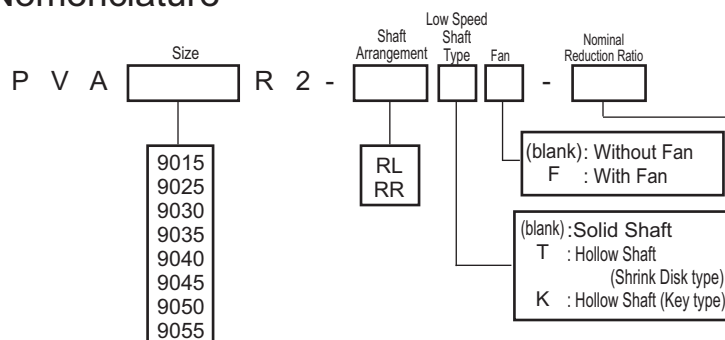
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

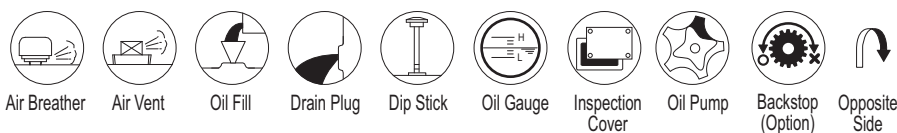
Standard Shaft Arrangement Configuration



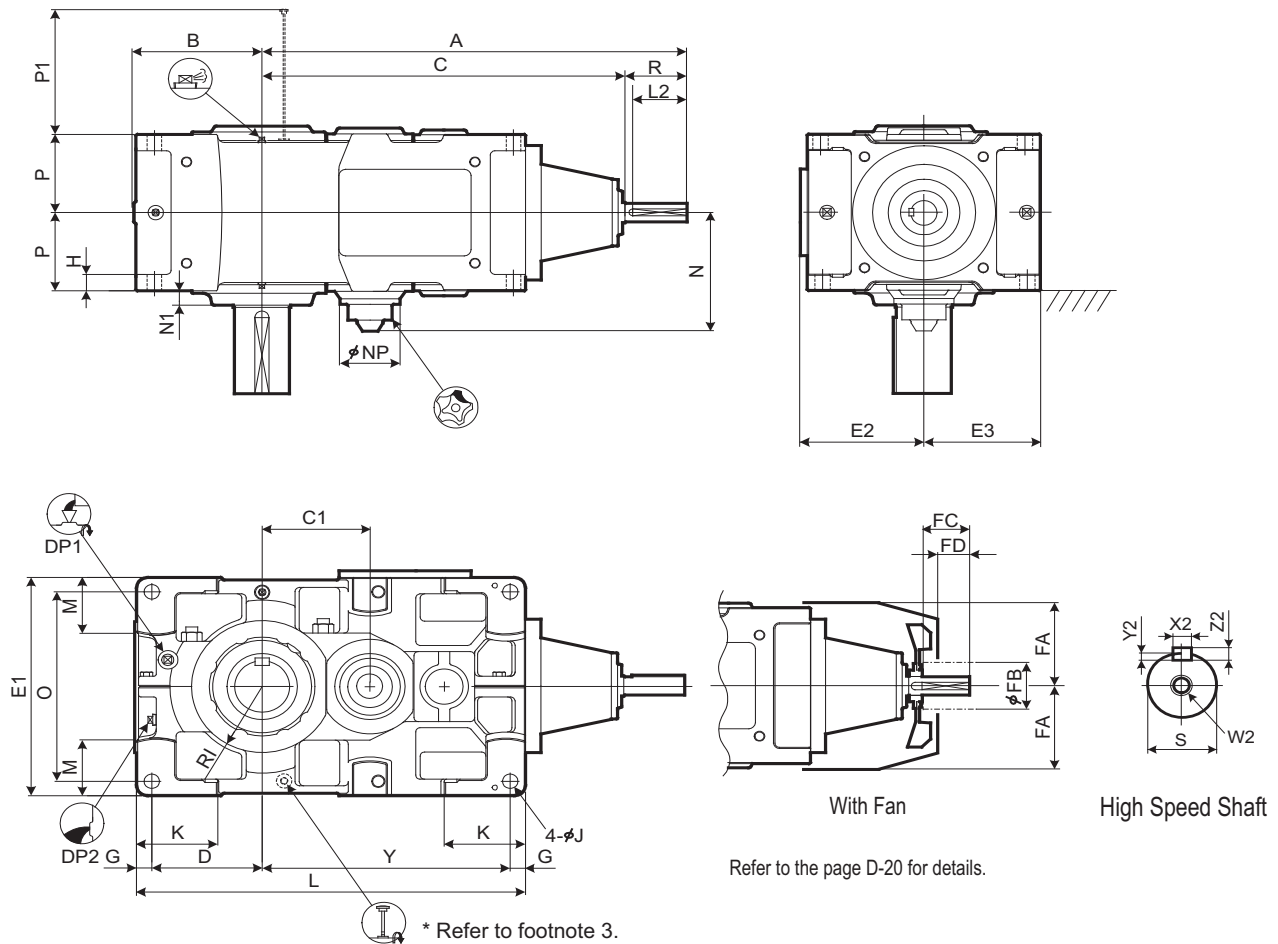
Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○	○	○
9025	○	○	○	○	○	○	○	○	○	○	○	○
9030	○	○	○	○	○	○	○	○	○	○	○	○
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○	○	○
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○	○	○
9055	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Double Reduction Vertical Mounting 9060 ▶ 9085



Speed Reducer

Selection Tables

Dimension Tables

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060	865	299	725	245	251	530	282	265	35	35	160	35	180	885	140	272	35	137	460	190	229	564
9065	911	338	771	291	290	600	317	300	35	35	175	35	180	970	175	272	38	137	530	190	229	610
9070	965	336	825	285	283	600	317	300	40	40	175	42	215	1020	155	303	38	137	520	215	262	657
9075	1018	383	878	338	330	670	352	335	40	52	190	42	220	1120	195	303	40	137	590	215	262	710
9080	1080	378	940	330	325	670	352	335	40	52	190	42	220	1155	170	323	45	137	590	230	295	750
9085	1136	422	996	386	369	750	392	375	40	52	215	42	220	1255	210	323	40	137	670	230	295	806

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD				
				X2	Y2	Z2	L2								
9060	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	1"	600	Refer to the next page.
9065	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	1"	725	
9070	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1"	920	
9075	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1"	1170	
9080	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1"	1300	
9085	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1"	1560	

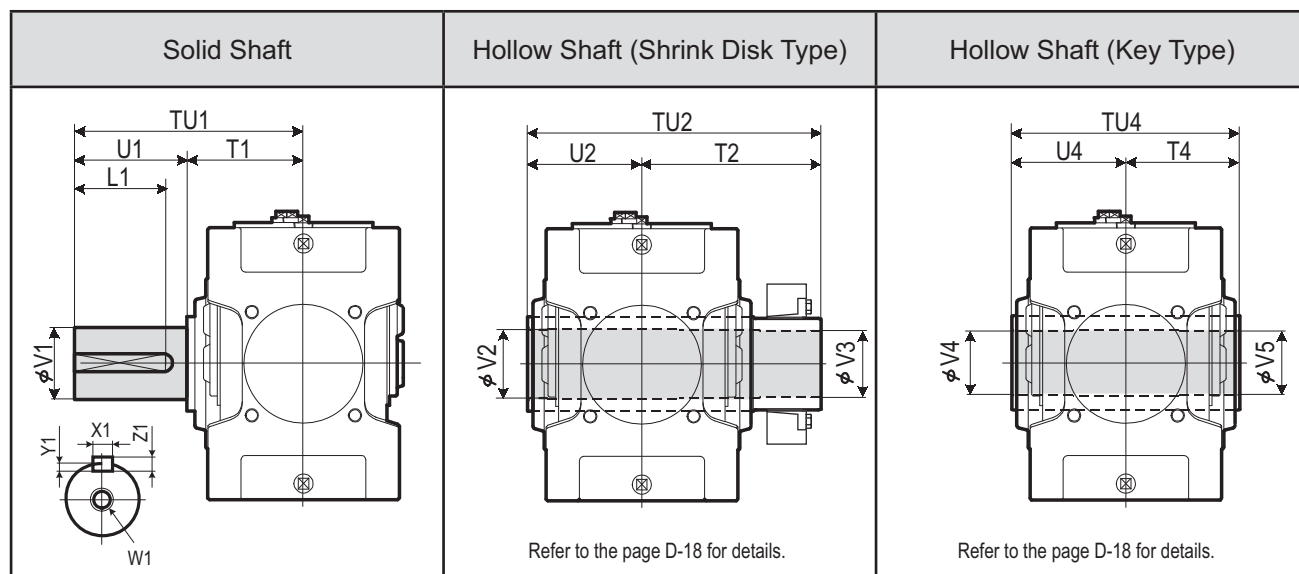
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-28.

4. Refer to the page D-14 for dimensions shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Vertical Mounting 9060 ▶ 9085

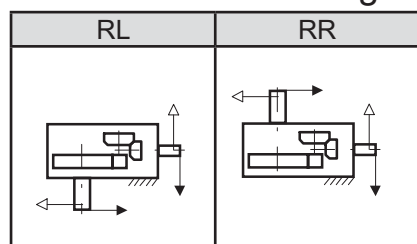
Slow Speed Shaft



Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Shaft Arrangement Configuration

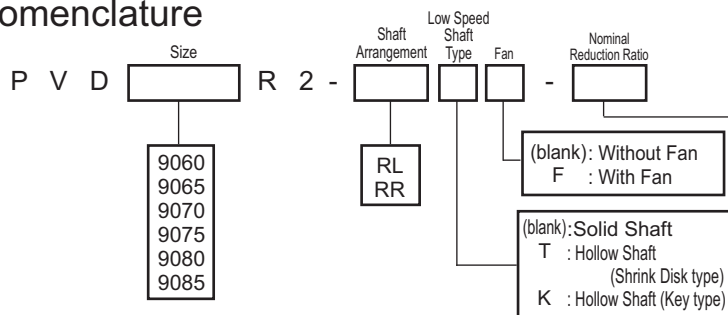


Approx. Oil Qty.

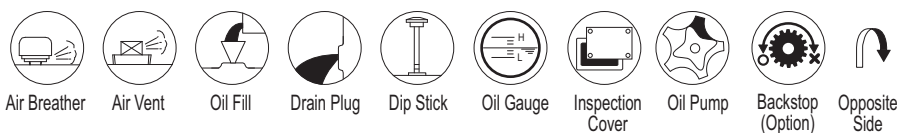
Size	Nominal Reduction Ratio			
	6.3-9	10-18	8-11.2	12.5-22.4
9060	25	25		
9065			32	32
9070	35	41		
9075			47	54
9080	46	55		
9085			58	68

Unit: liters

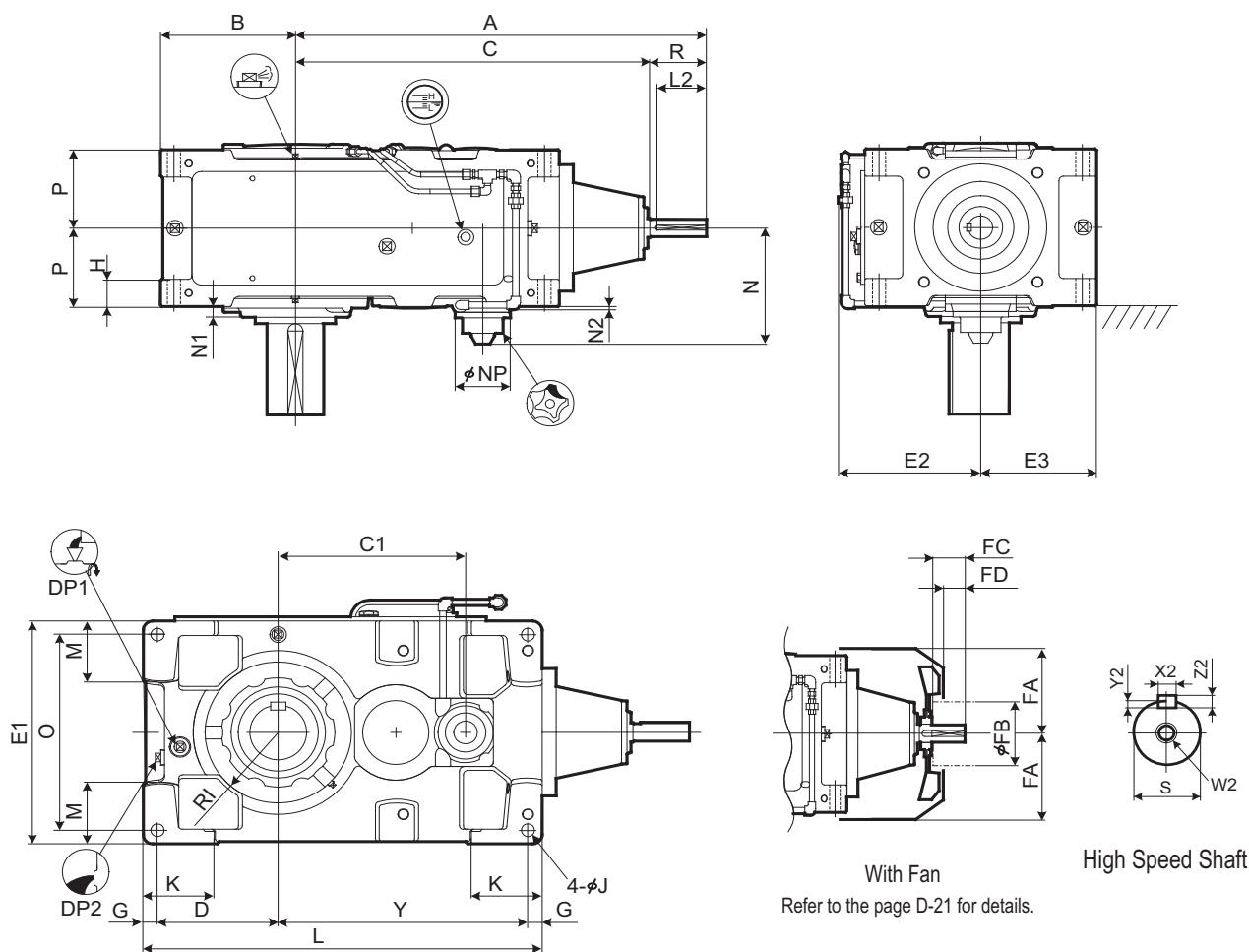
Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○		
9065				○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○		
9075				○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○		
9085					○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9030 ▶ 9055



High Speed Shaft

With Fan

Refer to the page D-21 for details.

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9030	656	200	576	264	175	320	220	160	25	50	105	24	120	590	85	211	22	9	100	270	132.5	365
9035	687	219	607	295	194	370	245	185	25	50	120	24	120	640	100	211	22	9	100	320	132.5	396
9040	716	235	636	306	205	400	260	200	30	60	120	28	150	685	100	237.5	15	2	117	340	157.5	420
9045	755	256	675	345	226	440	266	220	30	60	140	28	150	745	120	237.5	17.5	2	117	380	157.5	459
9050	808	255	728	358	225	420	270	210	30	60	140	28	150	775	110	257.5	23	7	117	360	172.5	490
9055	847	286	767	397	256	490	305	245	30	60	155	28	150	845	135	257.5	23	7	117	430	172.5	529

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9030	80	28k6	M10/22	8	4	7	70	150	125	50	30	3/4"	3/4"	210	9
9035	80	28k6	M10/22	8	4	7	70	150	125	50	30	3/4"	3/4"	230	12
9040	80	30k6	M10/22	8	4	7	70	170	125	50	30	1"	1"	305	18
9045	80	30k6	M10/22	8	4	7	70	170	125	50	30	1"	1"	365	22
9050	80	35k6	M12/28	10	5	8	70	190	140	50	22	1"	1"	445	21
9055	80	35k6	M12/28	10	5	8	70	190	140	50	22	1"	1"	505	30

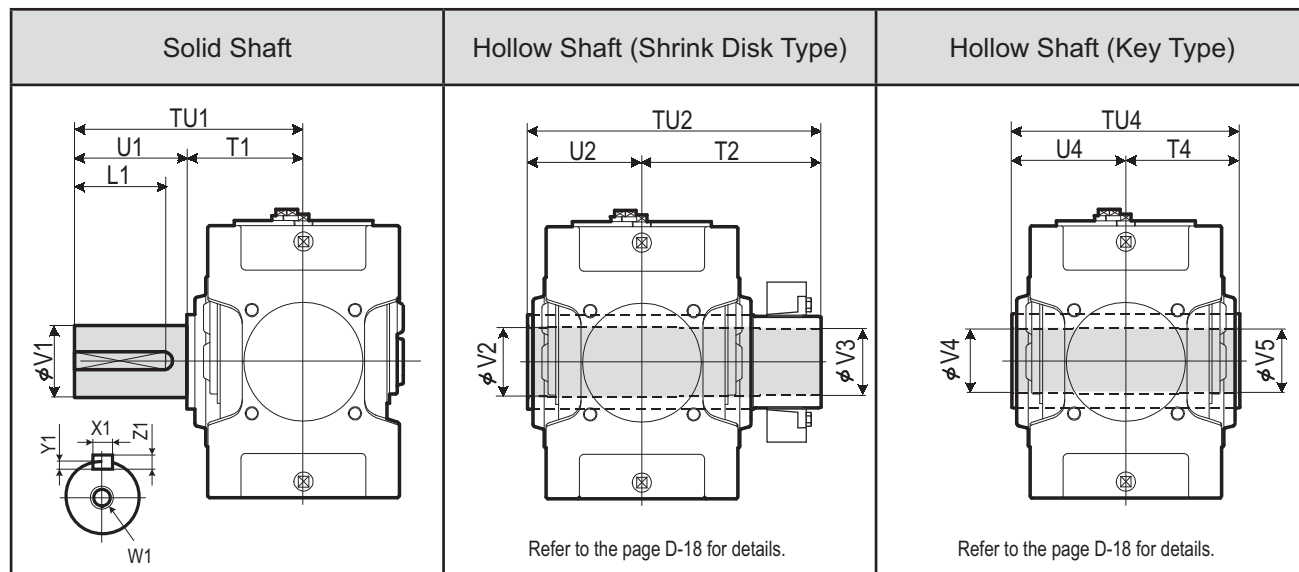
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9030 ▶ 9055

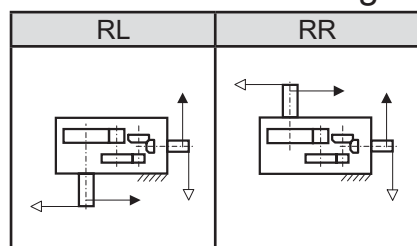
Slow Speed Shaft



Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

P V A Size R 3 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

9030
 9035
 9040
 9045
 9050
 9055

RL
RR

(blank): Without Fan
 F : With Fan
 (blank): Solid Shaft
 T : Hollow Shaft
 (Shrink Disk type)
 K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio														
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9030	○	○	○	○	○	○	○	○	○	○	○	○			
9035			○	○	○	○	○	○	○	○		○	○	○	
9040	○	○	○	○	○	○	○	○		○	○	○			
9045				○	○	○	○	○	○	○		○	○	○	
9050	○	○		○	○	○	○	○	○	○		○		○	
9055			○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



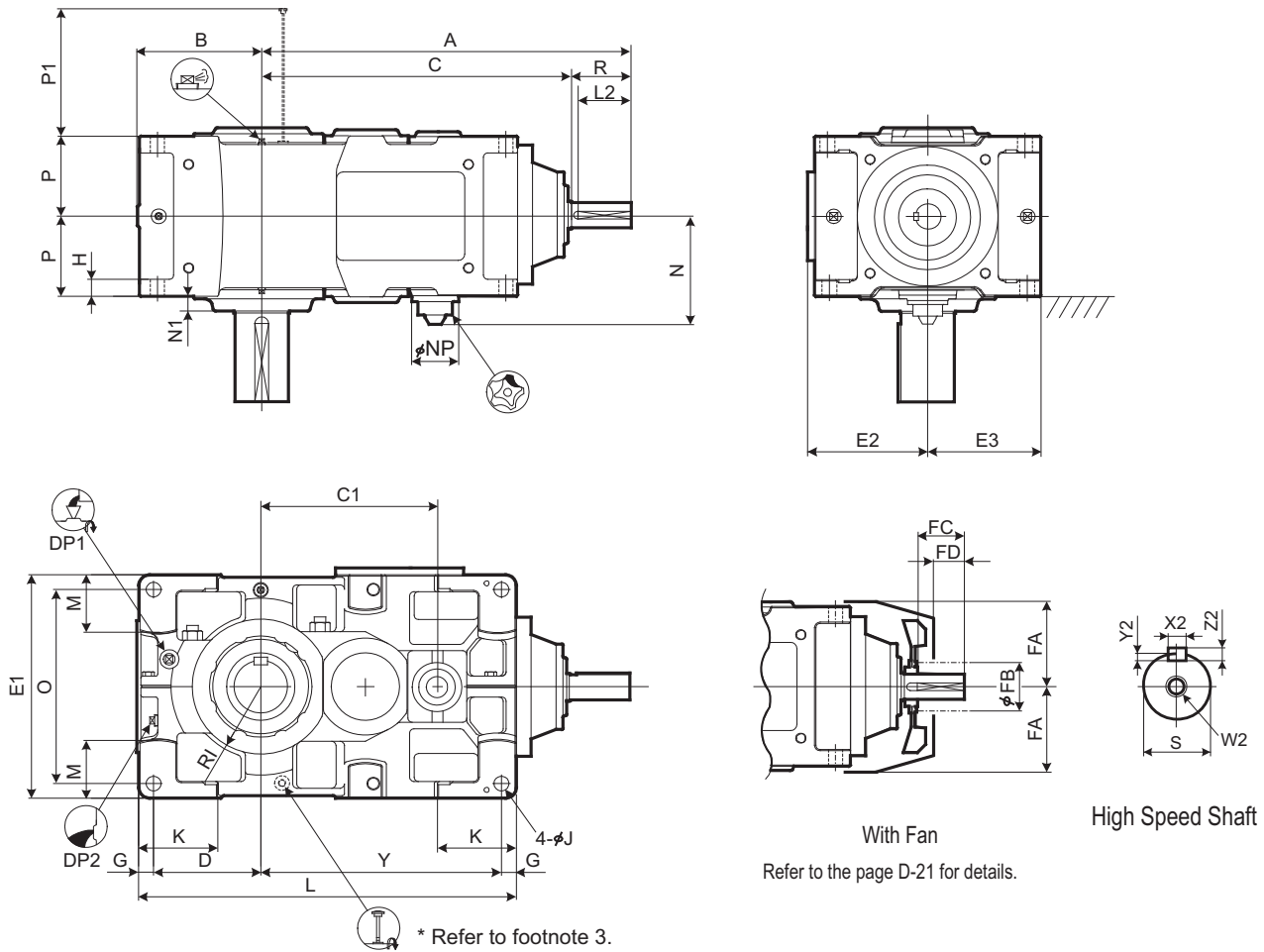
Oil Pump



Backstop (Option)



Opposite Side



Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060	939	299	829	414	251	530	282	265	35	35	160	35	180	885	140	277.5	35	117	460	190	213	564
9065	985	338	875	460	290	600	317	300	35	35	175	35	180	970	175	277.5	38	117	530	190	213	610
9070	1027	336	917	482	283	600	317	300	40	40	175	42	215	1020	155	302.5	38	117	520	215	233	657
9075	1080	383	970	535	330	670	352	335	40	52	190	42	220	1120	195	302.5	40	117	590	215	233	710
9080	1176	378	1036	556	325	670	352	335	40	52	190	42	220	1155	170	322.5	45	117	590	230	268	750
9085	1232	422	1092	612	369	750	392	375	40	52	215	42	220	1255	210	322.5	40	117	670	230	268	806

Size	High Speed Shaft								Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Key	Z2	L2	FA	FB	FC	FD				
9060	110	45k6	M16/36	14	5.5	9	95	95	220	160	80	52	1"	1"	660	28
9065	110	45k6	M16/36	14	5.5	9	95	95	220	160	80	52	1"	1"	785	35
9070	110	50k6	M16/36	14	5.5	9	95	95	245	160	80	52	1"	1"	940	46
9075	110	50k6	M16/36	14	5.5	9	95	95	245	160	80	52	1"	1"	1190	59
9080	140	60m6	M20/42	18	7	11	125	125	270	160	105	65	1"	1"	1350	60
9085	140	60m6	M20/42	18	7	11	125	125	270	160	105	65	1"	1"	1610	80

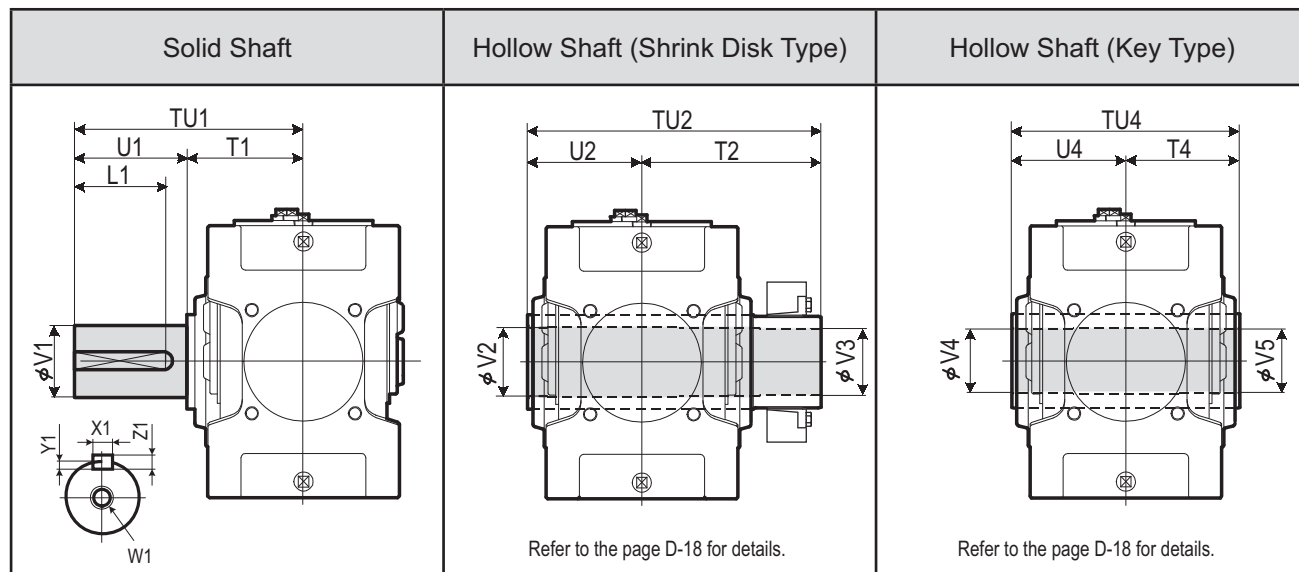
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-28.

4. Refer to the page D-14 for dimensions shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9060 ▶ 9085

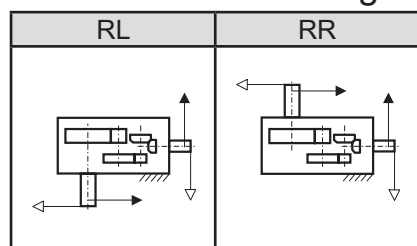
Slow Speed Shaft



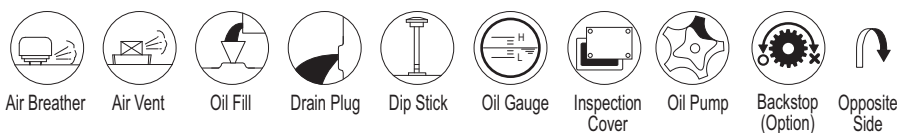
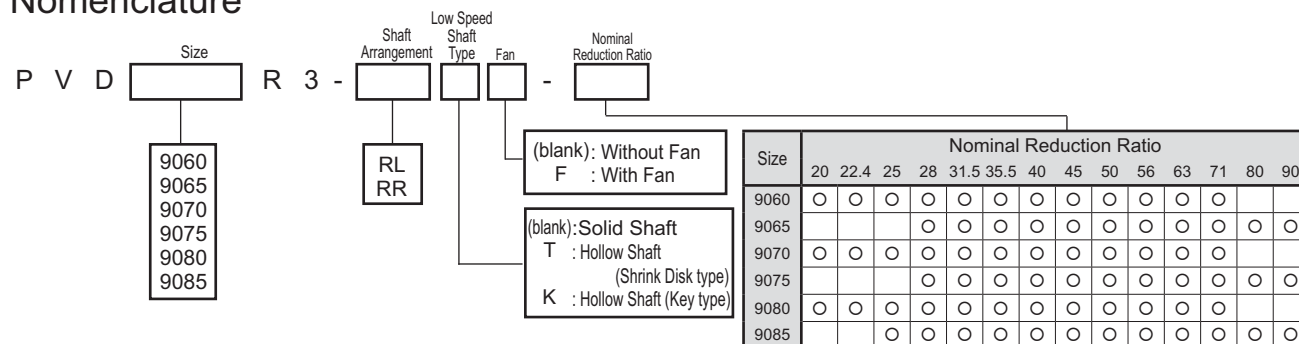
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

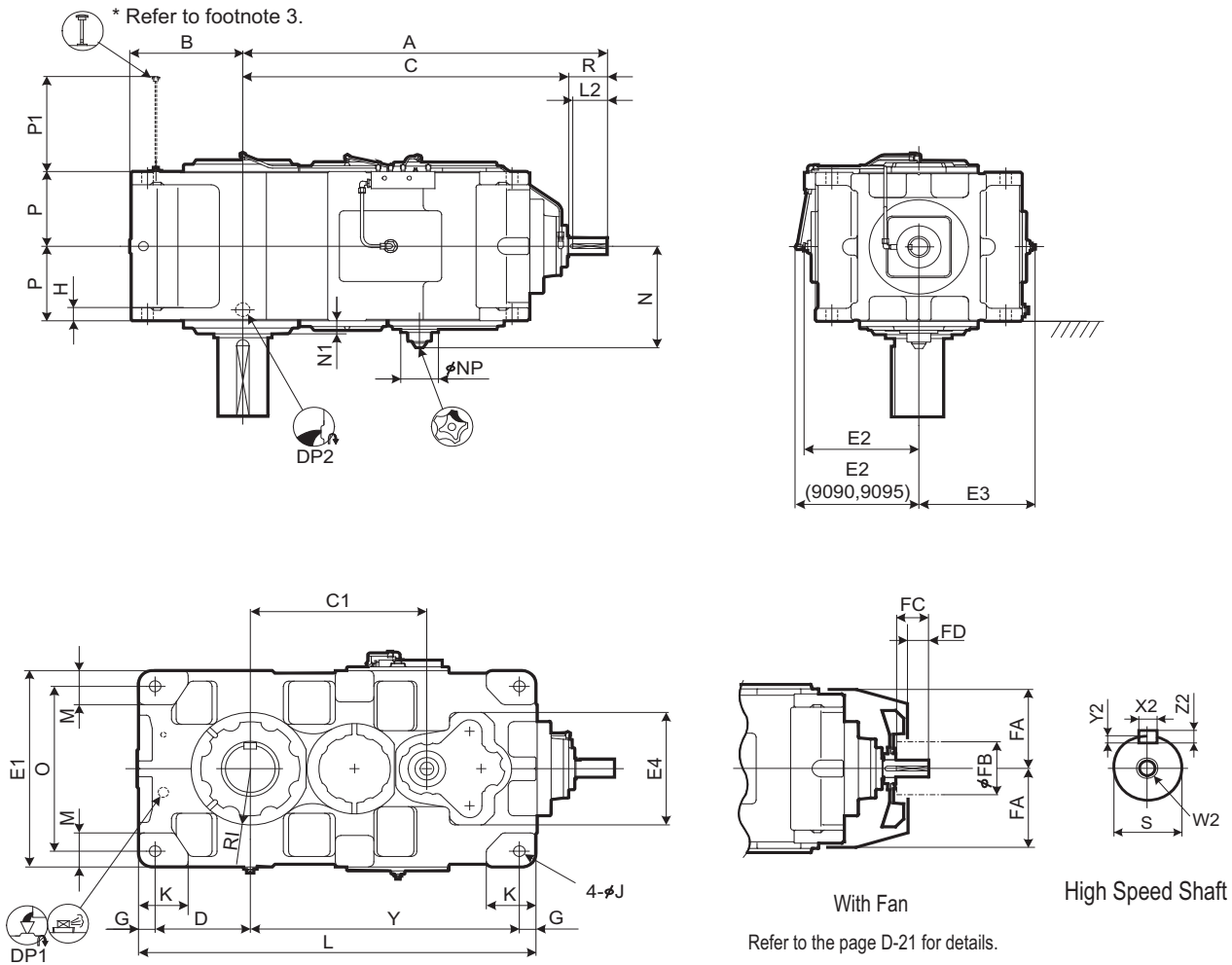
Standard Shaft Arrangement Configuration



Nomenclature



DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9090 ▶ 9115



Size	A	B	C	C1	D	E1	E2	E3	E4	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9090	1320	410	1180	640	345	750	449	421	430	60	50	215	42	180	1440	130	381	50	137	630	285	363	975
9095	1350	440	1210	670	375	800	474	446	430	60	50	235	42	200	1500	140	381	50	137	680	285	363	1005
9100	1474	450	1334		375	850	471	471	500	70	55	235	48	200	1610	150		60		710	325	411	1095
9105	1508	485	1368		410	900	496	496	500	70	55	260	48	220	1680	160		60		760	325	411	1130
9110	1684	500	1514		420	950	521	521	500	75	60	265	56	220	1810	170		55		800	355	446	1240
9115	1733	550	1563		470	1000	546	546	500	75	60	280	56	250	1910	180		55		850	355	446	1290

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9090	140	65m6	M20/42	18	7	11	125	340	200	105	65	1"	1 1/2"	2170	120
9095	140	65m6	M20/42	18	7	11	125	340	200	105	65	1"	1 1/2"	2430	145
9100	140	75m6	M20/42	20	7.5	12	125	380	225	105	60	1"	1 1/2"	2970	170
9105	140	75m6	M20/42	20	7.5	12	125	380	225	105	60	1"	1 1/2"	3450	210
9110	170	85m6	M20/42	22	9	14	150	410	225	135	90	1"	1 1/2"	4150	230
9115	170	85m6	M20/42	22	9	14	150	410	225	135	90	1"	1 1/2"	4670	290

※ 9100 ~ 9115 are equipped with motor driven pumps. For details consult us.

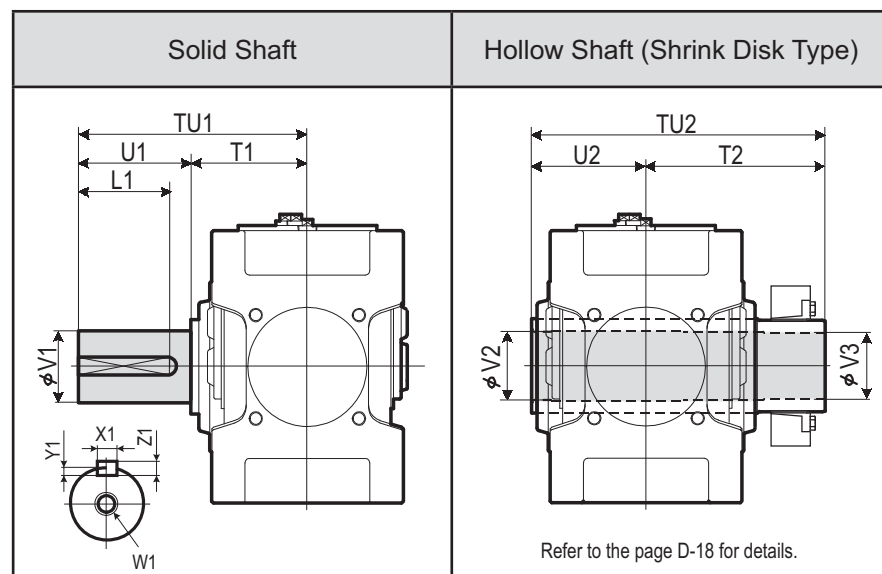
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-31.

4. Refer to the page D-16 for dimensions shown in these drawings.
5. Refer to the page D-31 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Vertical Mounting 9090 ▶ 9115

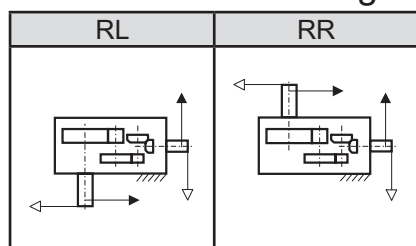
Slow Speed Shaft



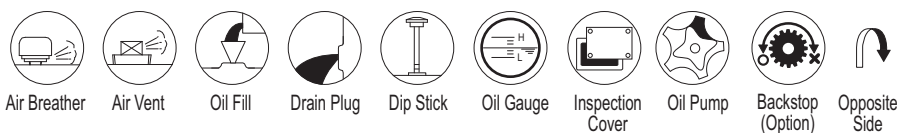
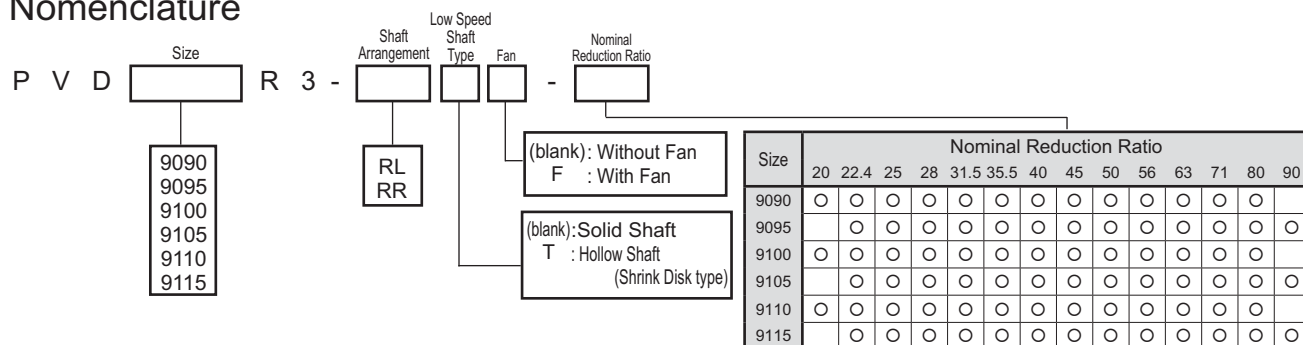
Size	Solid Shaft					Hollow Shaft (Shrink Disk Type)									
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	
9090	650	350	300	180m6	M30/60	X1	Y1	Z1	L1	844	494	350	193	190	
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200	
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210	
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220	
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240	
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250	

Unit: mm

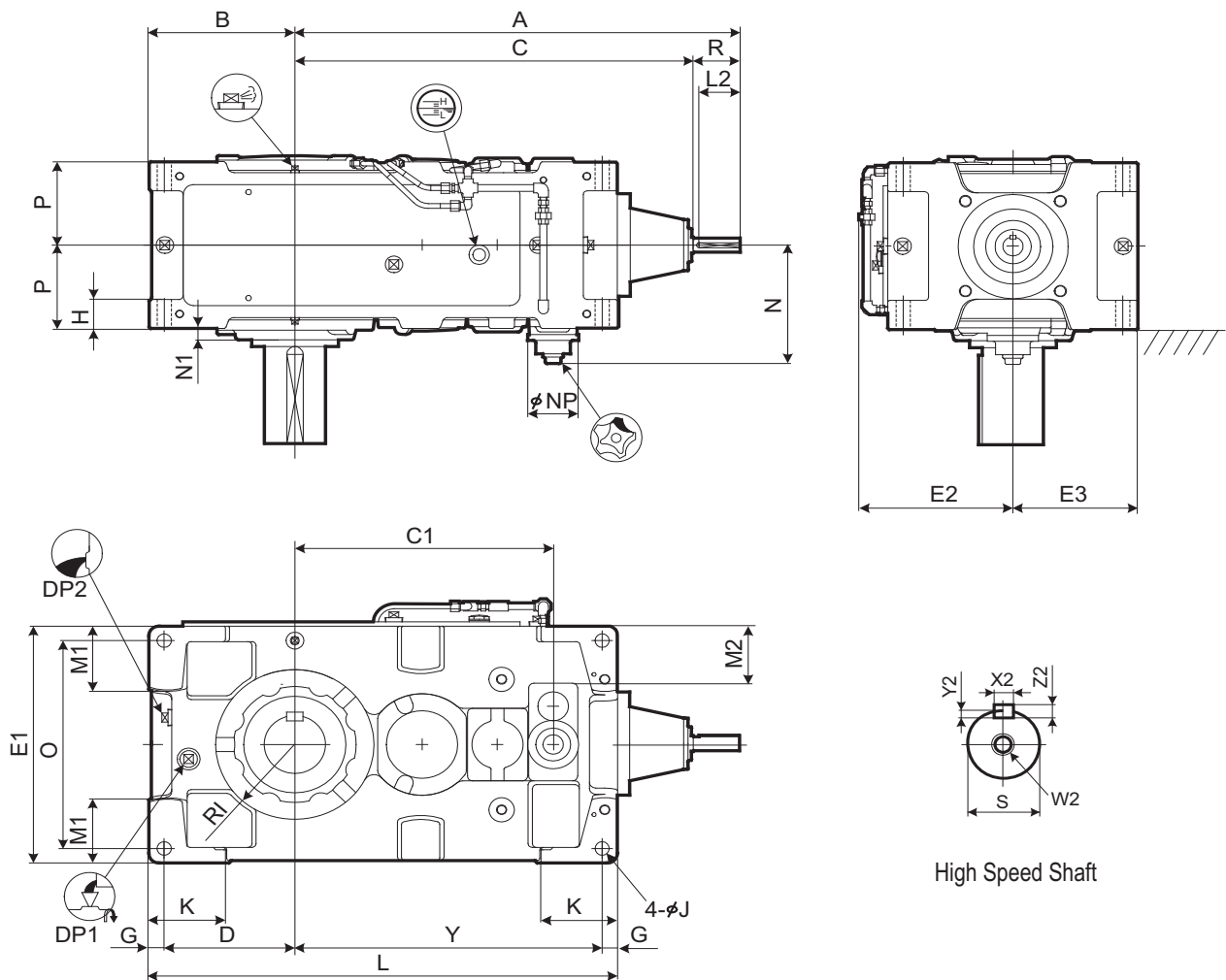
Standard Shaft Arrangement Configuration



Nomenclature



DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9040 ▶ 9055



High Speed Shaft

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	Y
9040	790	235	710	398	205	400	260	200	30	60	120	28	150	759	100	70	228.5	15	100	340	157.5	494
9045	829	256	749	437	226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	533
9050	859	255	779	467	225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	563
9055	898	286	818	506	256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	602

Size	High Speed Shaft							DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key							
				X2	Y2	Z2	L2				
9040	80	28k6	M10/22	8	4	7	70	1"	1"	325	18
9045	80	28k6	M10/22	8	4	7	70	1"	1"	395	22
9050	80	28k6	M10/22	8	4	7	70	1"	1"	460	24
9055	80	28k6	M10/22	8	4	7	70	1"	1"	520	34

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9040 ▶ 9055

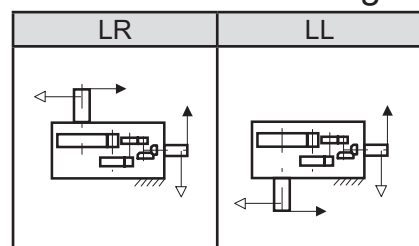
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

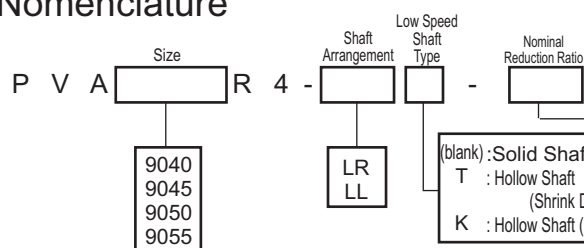
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

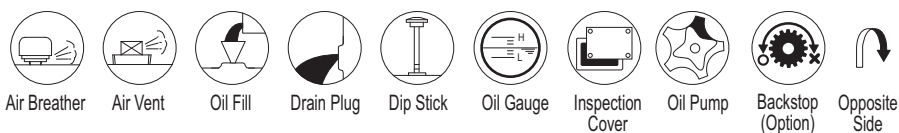
Standard Shaft Arrangement Configuration



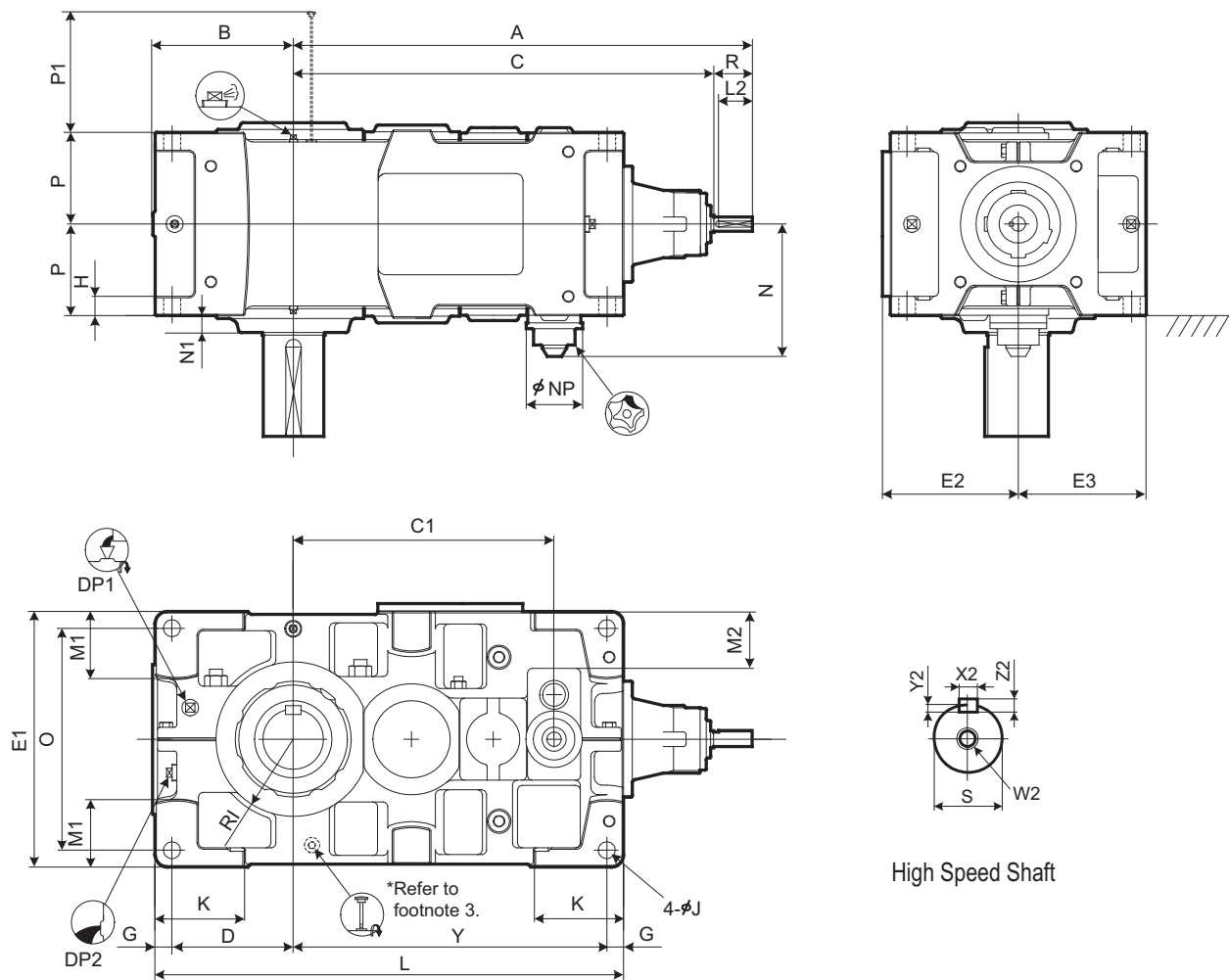
Nomenclature



Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450		
9040	○	○	○	○	○	○												
9045				○	○	○	○	○										
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055				○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9060 ▶ 9085



High Speed Shaft

Size	A	B	C	C1	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	P1	Y
9060	950	299	870	540	251	530	282	265	35	35	160	35	180	970	140	118	277.5	35	117	460	190	203	649
9065	996	338	916	586	290	600	317	300	35	35	175	35	180	1055	175	153	277.5	38	117	530	190	203	695
9070	1080	336	1000	630	283	600	317	300	40	40	175	42	215	1115	155	128	302.5	38	117	520	215	233	752
9075	1133	383	1053	683	330	670	352	335	40	52	190	42	220	1215	195	163	302.5	40	117	590	215	233	805
9080	1250	378	1140	725	325	670	352	335	40	52	190	42	220	1275	170	140	322.5	45	117	590	230	263	870
9085	1306	422	1196	781	369	750	392	375	40	52	215	42	220	1375	210	180	322.5	40	117	670	230	263	926

Size	High Speed Shaft							DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Key	L2				
9060	80	30k6	M10/22	8	4	7	70	1"	1"	670	36
9065	80	30k6	M10/22	8	4	7	70	1"	1"	825	45
9070	80	35k6	M12/28	10	5	8	70	1"	1"	960	54
9075	80	35k6	M12/28	10	5	8	70	1"	1"	1180	68
9080	110	45k6	M16/36	14	5.5	9	95	1"	1"	1390	69
9085	110	45k6	M16/36	14	5.5	9	95	1"	1"	1650	94

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement LR is equipped with oil gauge. Refer to the page D-28.

4. Refer to the page D-15 for dimensions shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9060 ▶ 9085

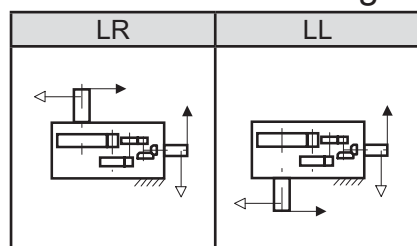
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

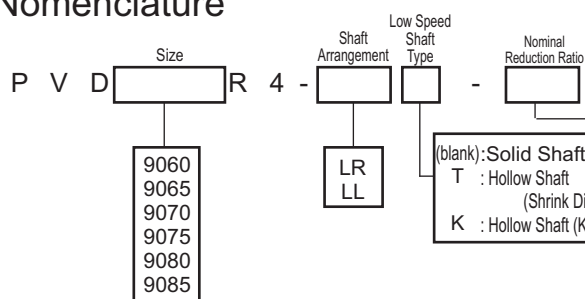
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

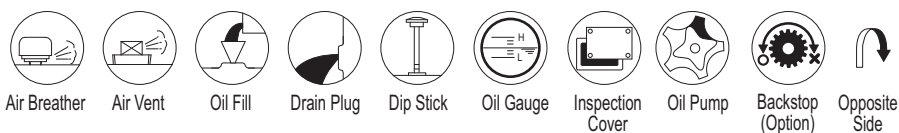
Standard Shaft Arrangement Configuration



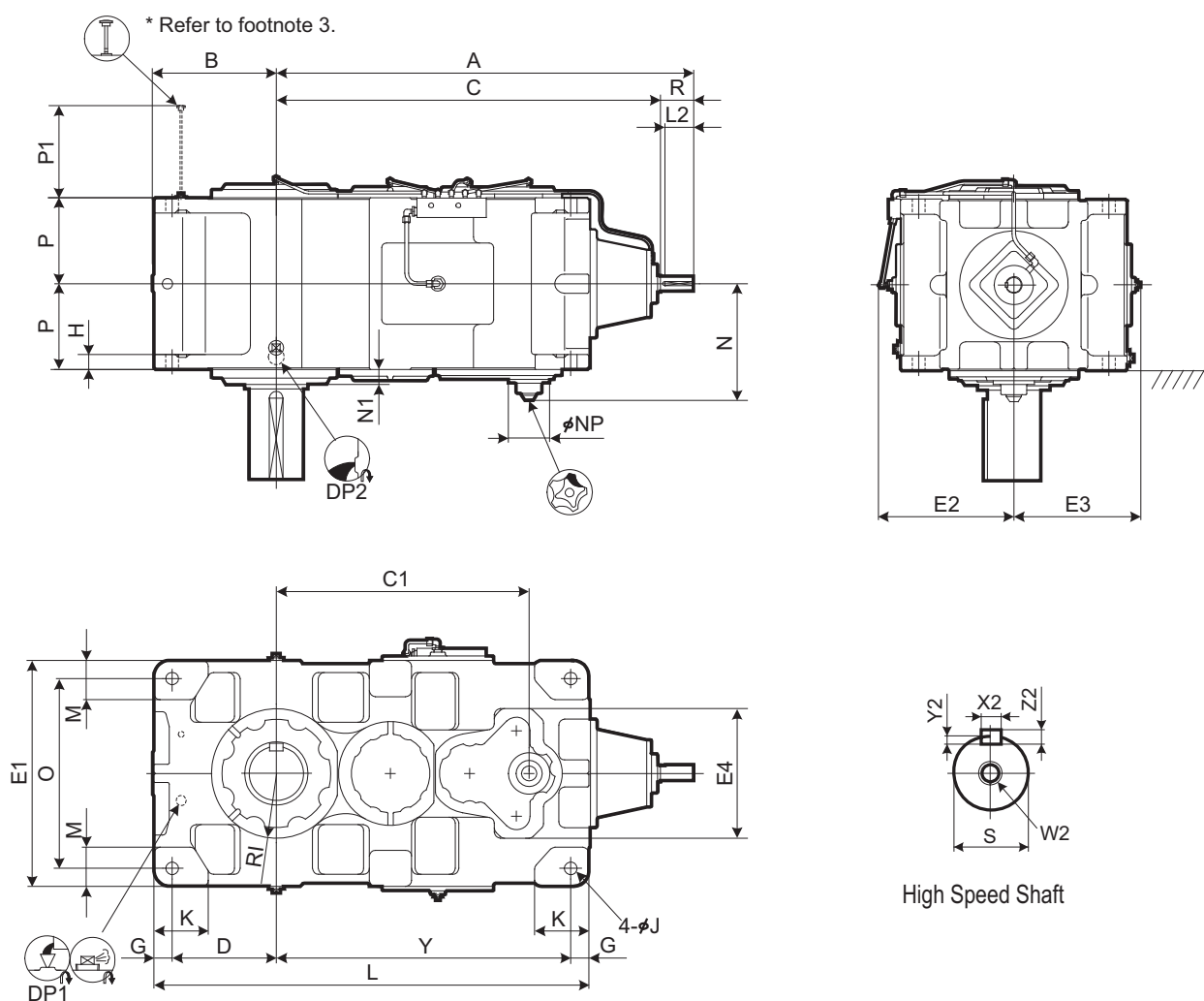
Nomenclature



Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9060		○	○	○	○	○	○	○	○	○	○	○	○	○		
9065				○	○	○	○	○	○	○	○	○	○	○	○	○
9070		○	○	○	○	○	○	○	○	○	○	○	○	○		
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○



DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9090 ▶ 9115



Size	A	B	C	C1	D	E1	E2	E3	E4	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9090	1382	410	1272	837	345	750	449	421	430	60	50	215	42	180	1440	130	381	50	137	630	285	354	975
9095	1412	440	1302	867	375	800	474	446	430	60	50	235	42	200	1500	140	381	50	137	680	285	354	1005
9100	1570	450	1430	950	375	850	499	471	500	70	55	235	48	200	1610	150	421	60	137	710	325	399	1095
9105	1604	485	1464	984	410	900	524	496	500	70	55	260	48	220	1680	160	421	60	137	760	325	399	1130
9110	1670	500	1530	1050	420	950	559	521	500	75	60	265	56	220	1810	170	451	55	137	800	355	429	1240
9115	1719	550	1579	1099	470	1000	584	546	500	75	60	280	56	250	1910	180	451	55	137	850	355	429	1290

Size	High Speed Shaft							DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Key	L2				
9090	110	50k6	M16/36	14	5.5	9	95	1"	1 1/2"	2170	120
9095	110	50k6	M16/36	14	5.5	9	95	1"	1 1/2"	2430	155
9100	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	2970	180
9105	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	3450	220
9110	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	4100	250
9115	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	4620	315

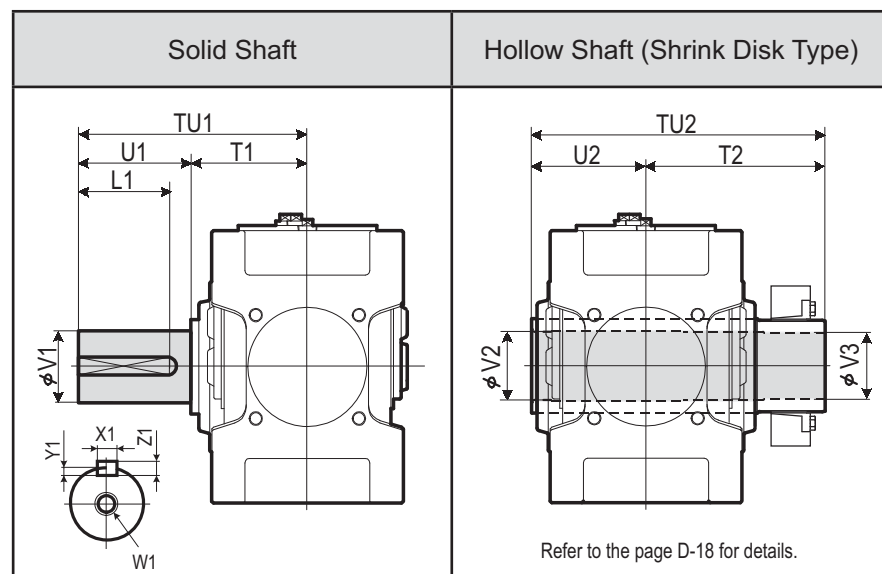
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement LR is equipped with oil gauge. Refer to the page D-31.

4. Refer to the page D-16 for dimensions shown in these drawings.
5. Refer to the page D-31 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Vertical Mounting 9090 ▶ 9115

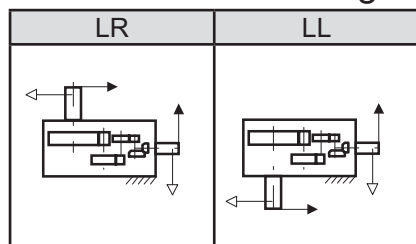
Slow Speed Shaft



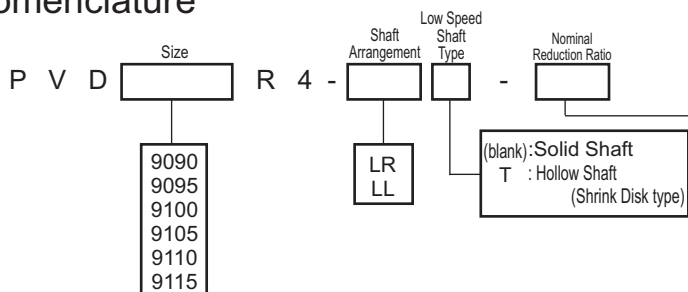
Size	Solid Shaft					Hollow Shaft (Shrink Disk Type)									
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190	
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200	
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210	
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220	
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240	
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250	

Unit: mm

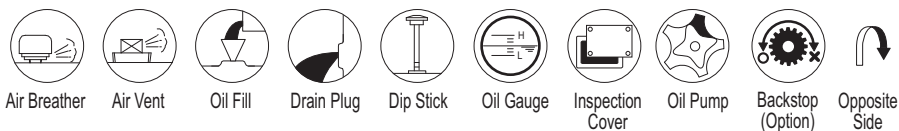
Standard Shaft Arrangement Configuration



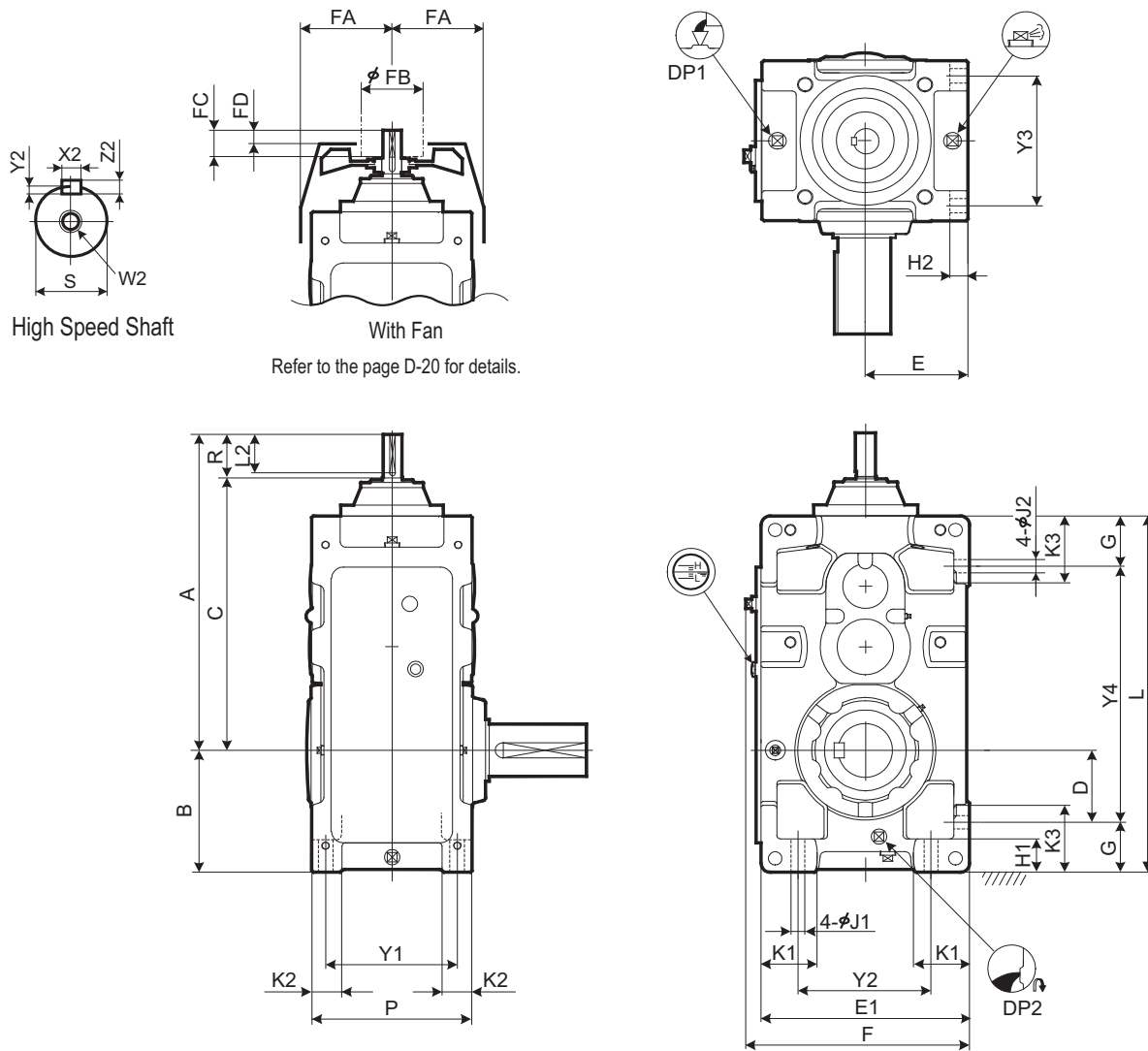
Nomenclature



Size	Nominal Reduction Ratio														
	90	100	112	125	140	160	180	200	224	250	280	315	355	400	
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9095		○	○	○	○	○	○	○	○	○	○	○	○	○	
9100		○	○	○	○	○	○	○	○	○	○	○	○	○	
9105		○	○	○	○	○	○	○	○	○	○	○	○	○	
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9115		○	○	○	○	○	○	○	○	○	○	○	○	○	



DIMENSIONS Right Angle Shaft Double Reduction Upright Mounting 9015 ▶ 9055



Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9015	507	160	427	90	135	270	298	70	50	22	15	15	70	35	95	440	205	170	180	170	300
9025	545	175	465	95	155	310	338	80	55	25	19	19	75	40	110	505	235	195	210	195	345
9030	645	200	535	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035	676	219	566	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040	705	235	595	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045	744	256	634	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515
9050	755	255	645	138.5	210	420	450	116.5	75	32	28	28	110	60	150	775	345	285	280	285	542
9055	794	286	684	171	245	490	520	115	75	32	28	28	135	60	150	845	345	285	350	285	615

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty L
	R	S	W2/Depth	Key				FA	FB	FC	FD				
				X2	Y2	Z2	L2								
9015	80	28k6	M12/28	8	4	7	70	125	125	50	30	3/4"	3/4"	95	7
9025	80	35k6	M12/28	10	5	8	70	135	140	50	30	3/4"	3/4"	140	11
9030	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	205	14
9035	110	40k6	M16/36	14	5.5	9	95	150	140	80	52	3/4"	3/4"	225	19
9040	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	305	24
9045	110	45k6	M16/36	14	5.5	9	95	170	160	80	52	1"	1"	365	30
9050	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	435	31
9055	110	50k6	M16/36	14	5.5	9	95	190	160	80	52	1"	1"	495	45

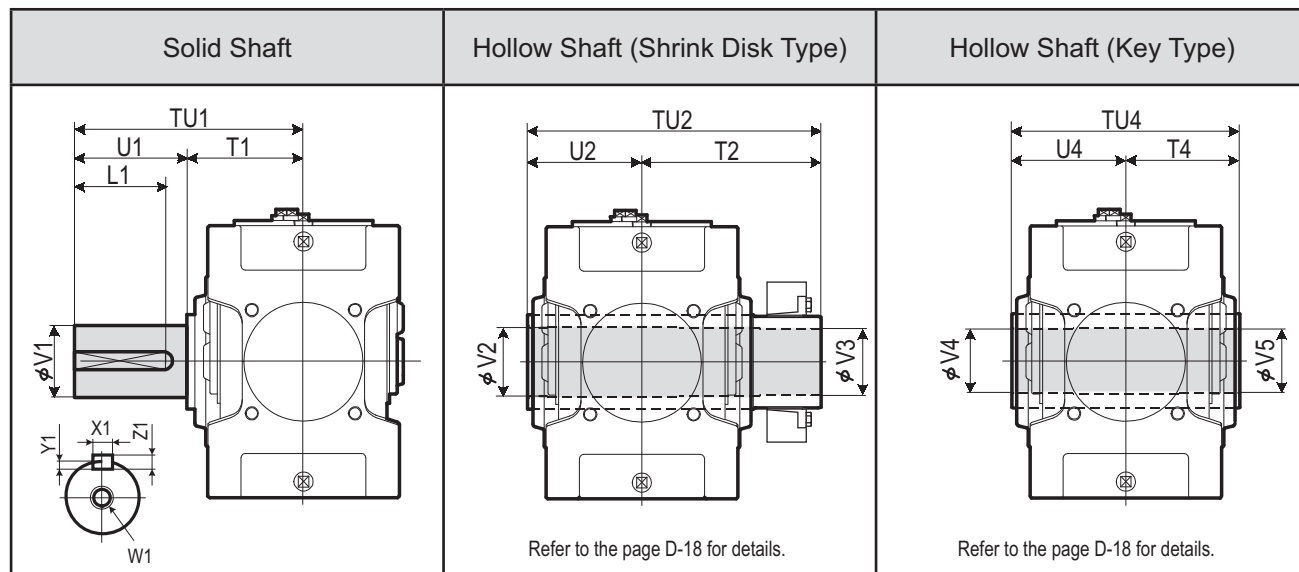
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Upright Mounting 9015 ▶ 9055

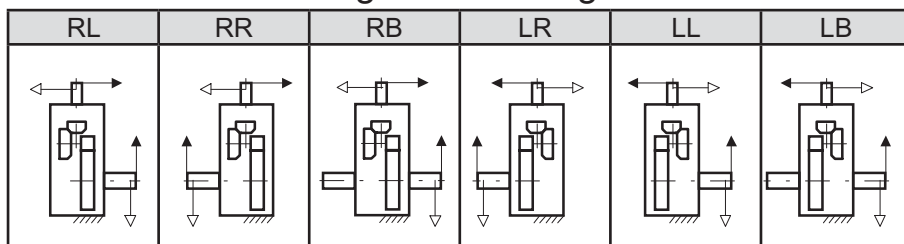
Slow Speed Shaft



Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

P W A Size R 2 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

9015
9025
9030
9035
9040
9045
9050
9055

RL
RR
RB
LR
LL
LB

(blank): Without Fan
F : With Fan

(blank): Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○			○	○	○	○	○	○		
9055					○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



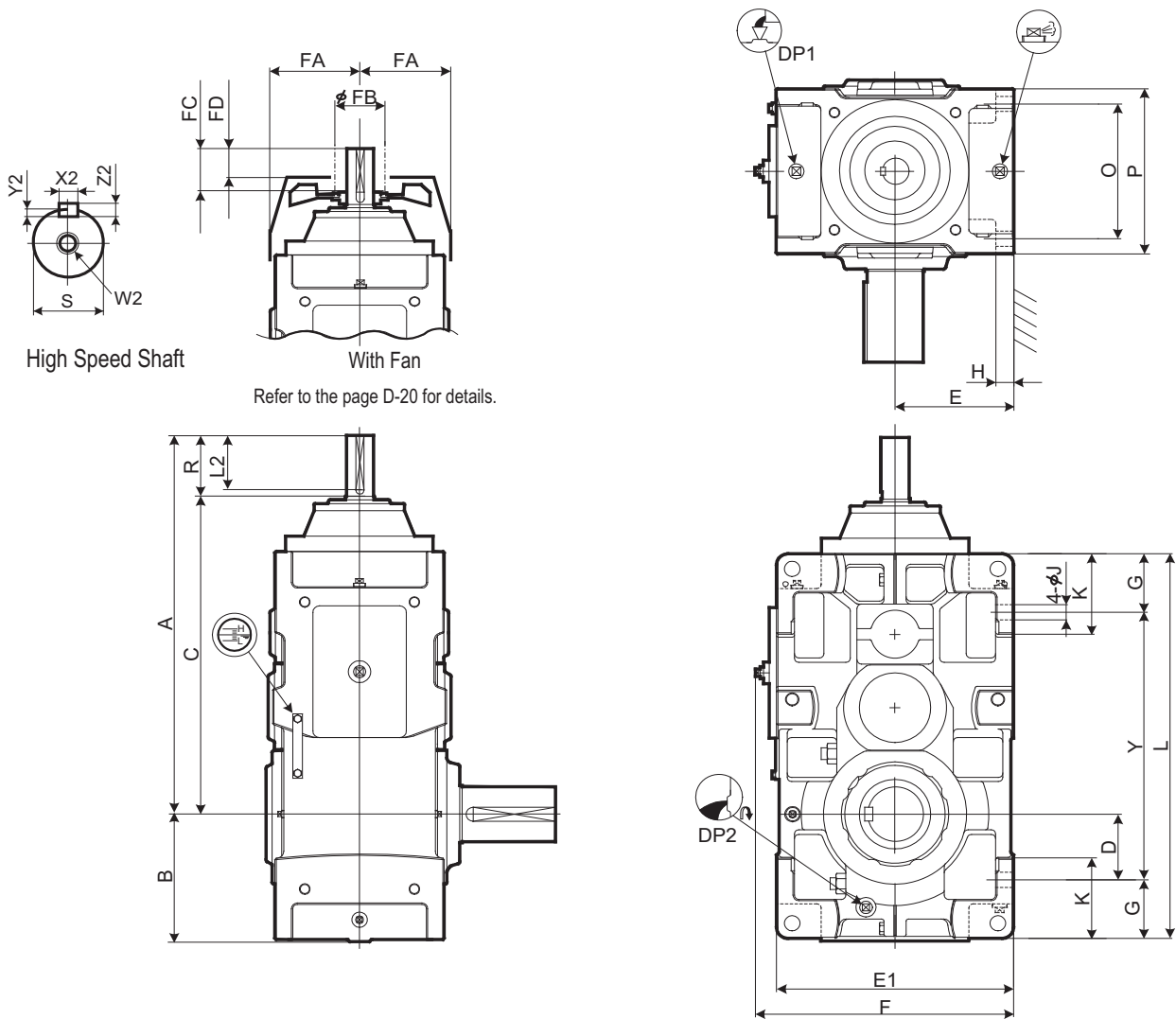
Oil Pump



Backstop (Option)



Opposite Side

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	Y
9060	865	299	725	151	265	530	577	135	35	35	180	885	310	380	615
9065	911	338	771	190	300	600	647	135	35	35	180	970	310	380	700
9070	965	336	825	163	300	600	647	160	40	42	215	1020	350	430	700
9075	1018	383	878	210	335	670	717	160	52	42	220	1120	350	430	800
9080	1080	378	940	205	335	670	717	160	52	42	220	1155	380	460	835
9085	1136	422	996	249	375	750	797	160	52	42	220	1255	380	460	935

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	Key				FA	FB	FC	FD				
				X2	Y2	Z2	L2								
9060	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	1"	600	44
9065	140	60m6	M20/42	18	7	11	125	220	160	105	65	1"	1"	725	56
9070	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1"	920	65
9075	140	65m6	M20/42	18	7	11	125	245	200	105	65	1"	1"	1170	87
9080	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1"	1300	90
9085	140	75m6	M20/42	20	7.5	12	125	270	225	105	60	1"	1"	1560	126

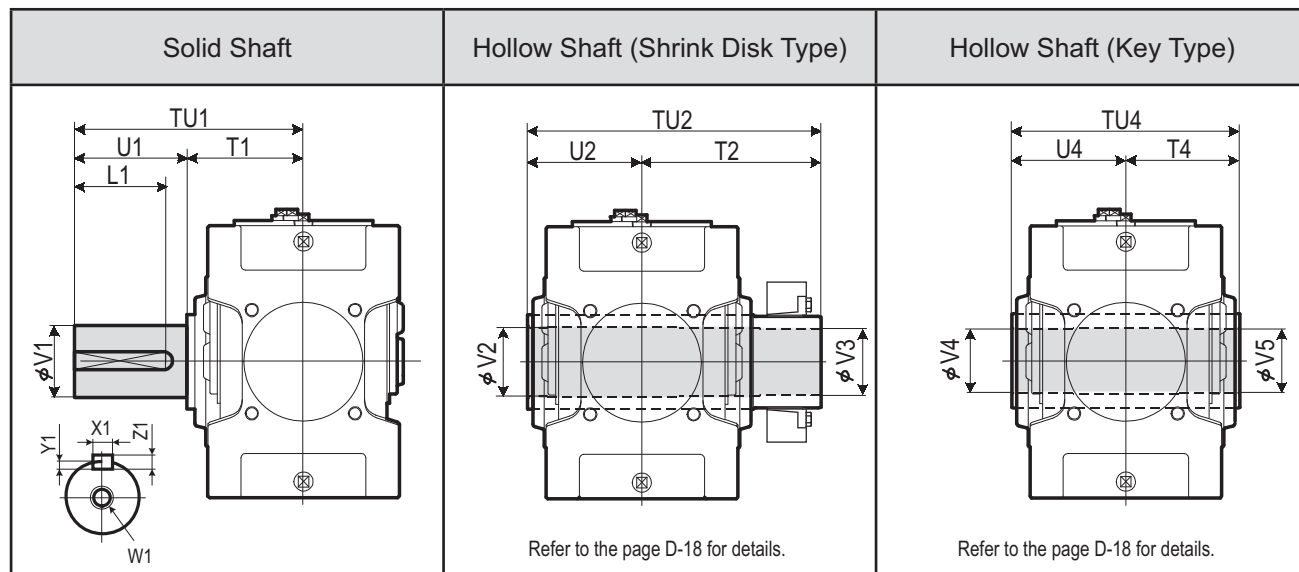
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-14 for dimensions shown in these drawings.

4. Refer to the page D -29 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Double Reduction Upright Mounting 9060 ▶ 9085

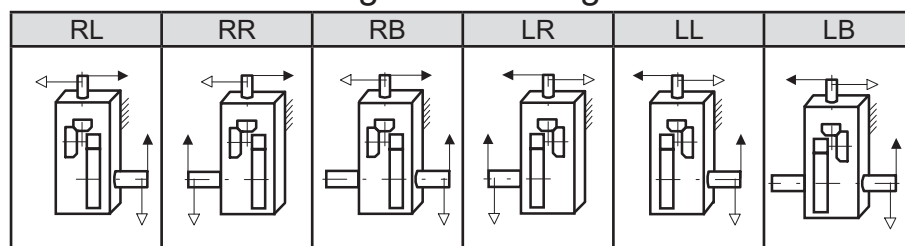
Slow Speed Shaft



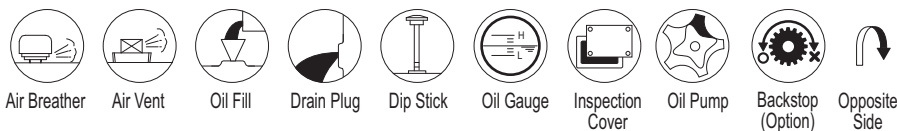
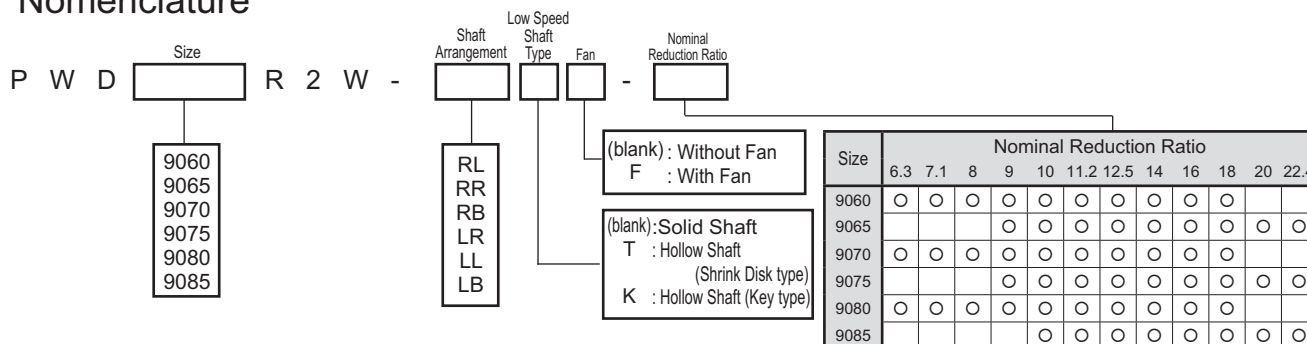
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

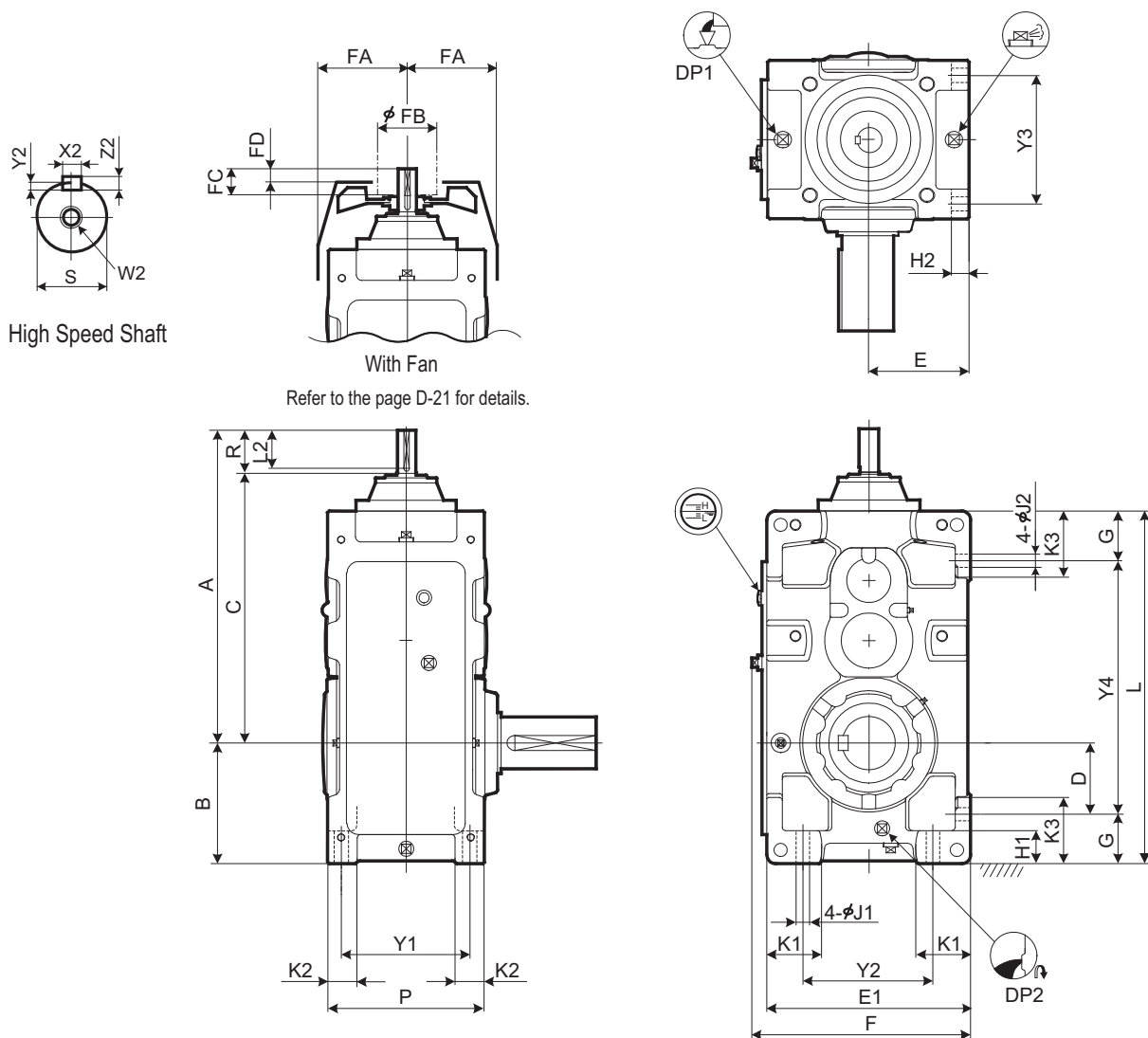
Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature





Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9030	656	200	576	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035	687	219	607	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040	716	235	636	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045	755	256	675	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515
9050	808	255	728	138.5	210	420	450	116.5	75	32	28	28	110	60	150	775	345	285	280	285	542
9055	847	286	797	171	245	490	520	115	75	32	28	28	135	60	150	845	345	285	350	285	615

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9030	80	28k6	M10/22	8	4	7	70	150	125	50	30	3/4"	3/4"	210	16
9035	80	28k6	M10/22	8	4	7	70	150	125	50	30	3/4"	3/4"	230	21
9040	80	30k6	M10/22	8	4	7	70	170	125	50	30	1"	1"	305	29
9045	80	30k6	M10/22	8	4	7	70	170	125	50	30	1"	1"	365	36
9050	80	35k6	M12/28	10	5	8	70	190	140	50	22	1"	1"	445	35
9055	80	35k6	M12/28	10	5	8	70	190	140	50	22	1"	1"	505	46

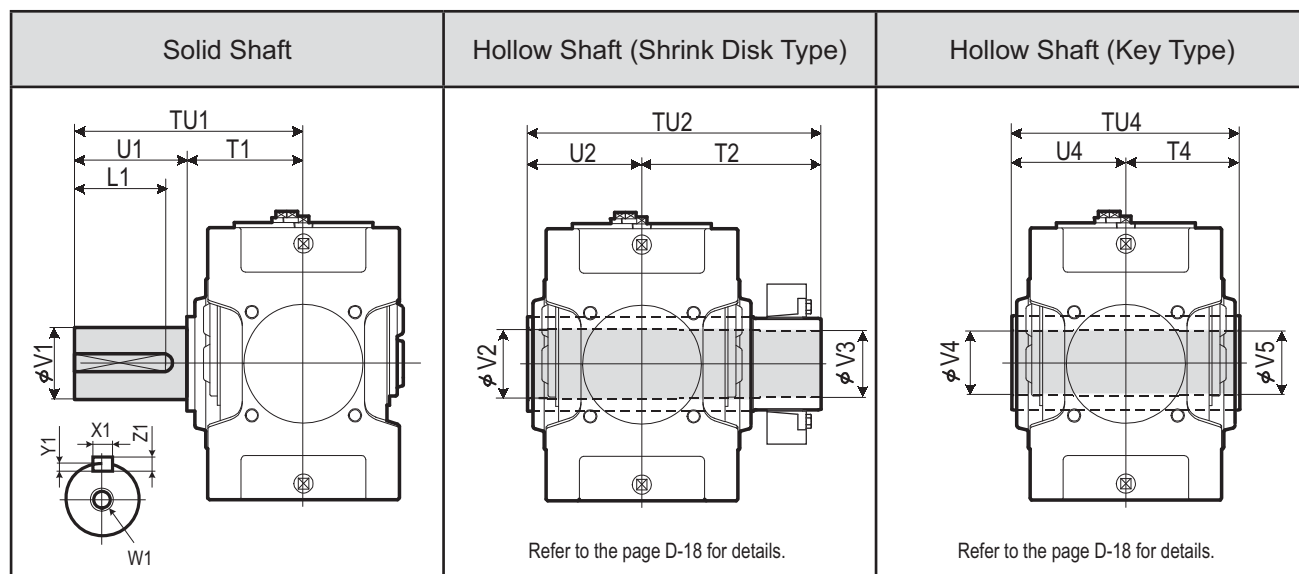
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Upright Mounting 9030 ▶ 9055

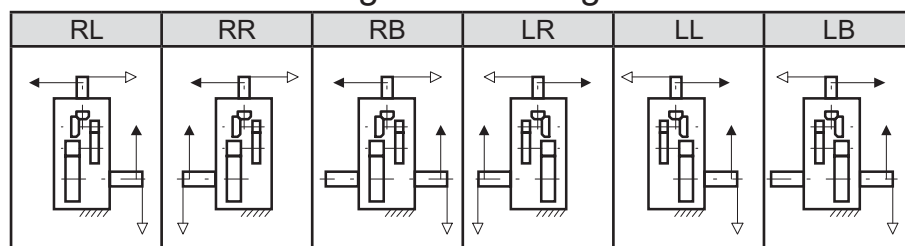
Slow Speed Shaft



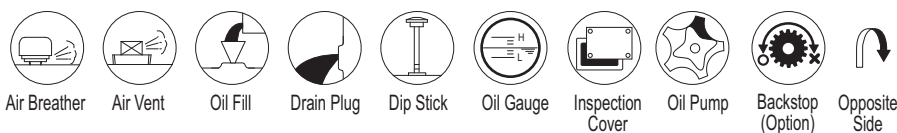
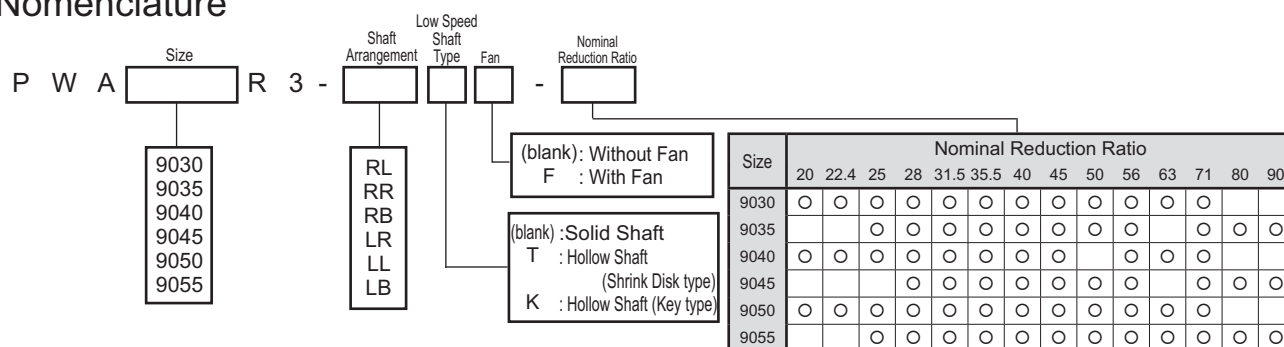
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

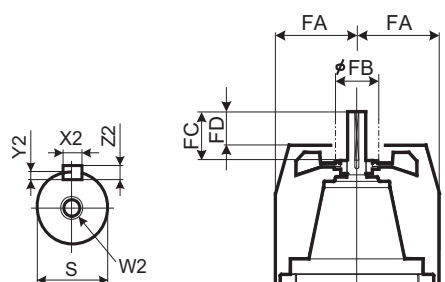
Unit: mm

Standard Shaft Arrangement Configuration

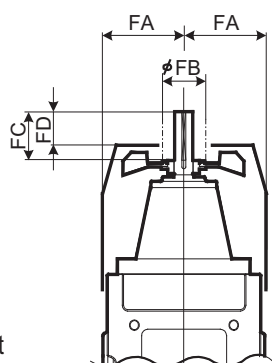


Nomenclature



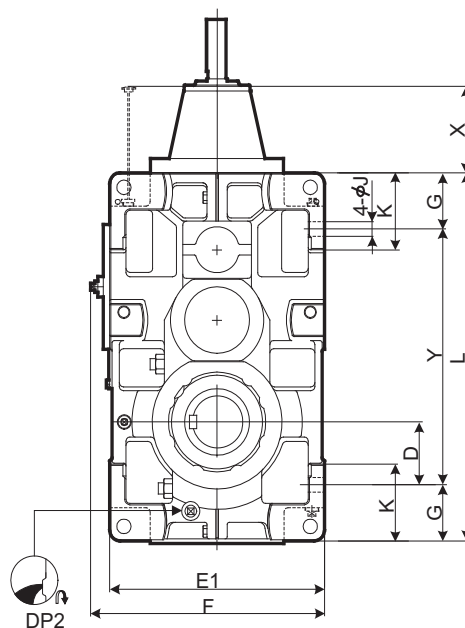
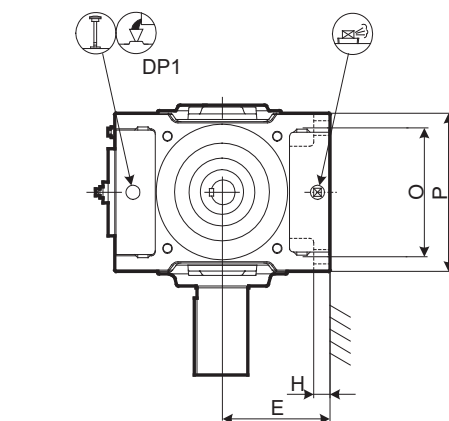
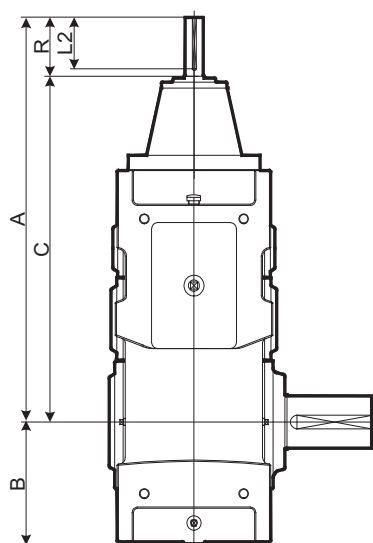


High Speed Shaft



With Fan

Refer to the page D-21 for details.



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9060	939	299	829	151	265	530	577	135	35	35	180	885	310	380	131	615
9065	985	338	875	190	300	600	647	135	35	35	180	970	310	380	131	700
9070	1027	336	917	163	300	600	647	160	40	42	215	1020	350	430	138	700
9075	1080	383	970	210	335	670	717	160	52	42	220	1120	350	430	138	800
9080	1176	378	1036	205	335	670	717	160	52	42	220	1155	380	460	165	835
9085	1232	422	1092	249	375	750	797	160	52	42	220	1255	380	460	165	935

Size	High Speed Shaft							Fan				DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD				
9060	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	1"	1"	660	56
9065	110	45k6	M16/36	14	5.5	9	95	220	160	80	52	1"	1"	785	65
9070	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	1"	1"	940	83
9075	110	50k6	M16/36	14	5.5	9	95	245	160	80	52	1"	1"	1190	100
9080	140	60m6	M20/42	18	7	11	125	270	160	105	65	1"	1"	1350	115
9085	140	60m6	M20/42	18	7	11	125	270	160	105	65	1"	1"	1610	144

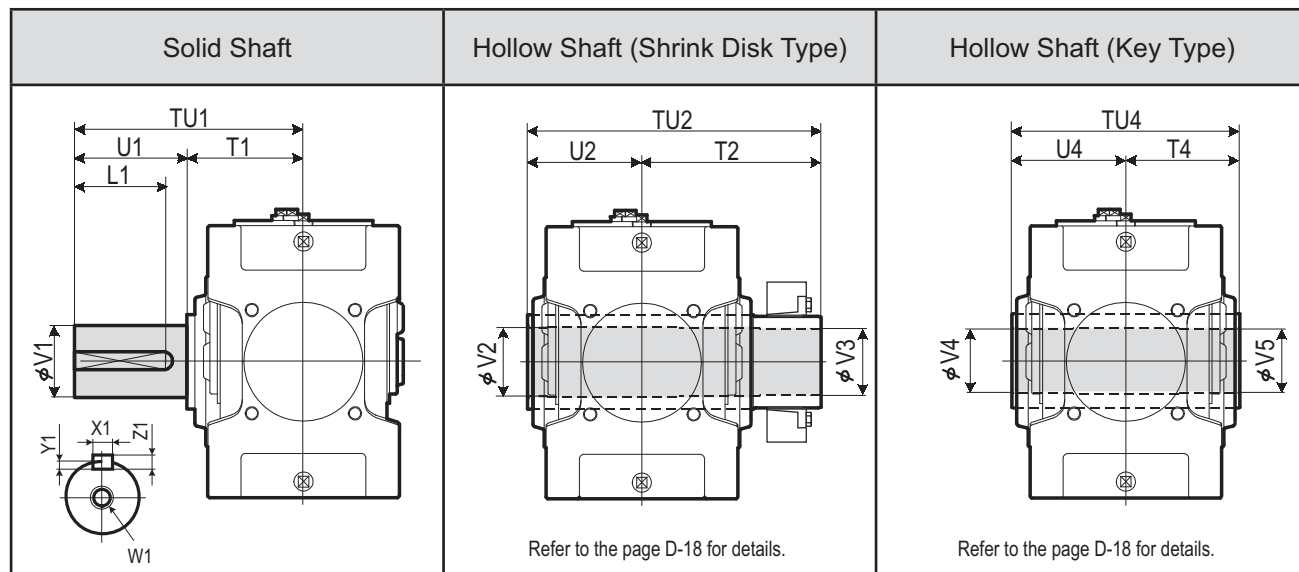
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-14 for dimensions shown in these drawings.

4. Refer to the page D -29 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Triple Reduction Upright Mounting 9060 ▶ 9085

Slow Speed Shaft

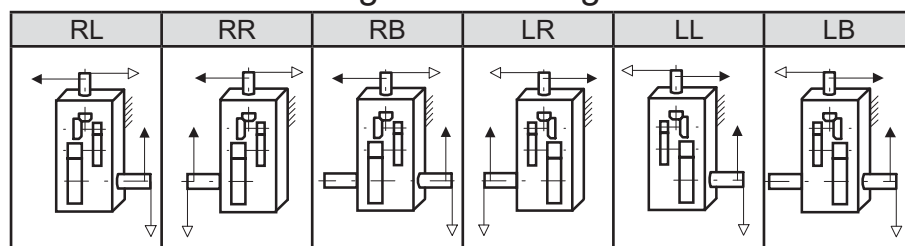


Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

PARAMAX Upright Split 9060 9085 Right Angle Triple Reduction Mount Wall W

Standard Shaft Arrangement Configuration

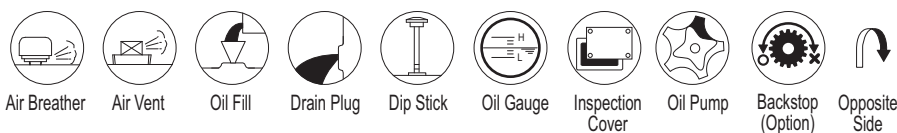


Nomenclature

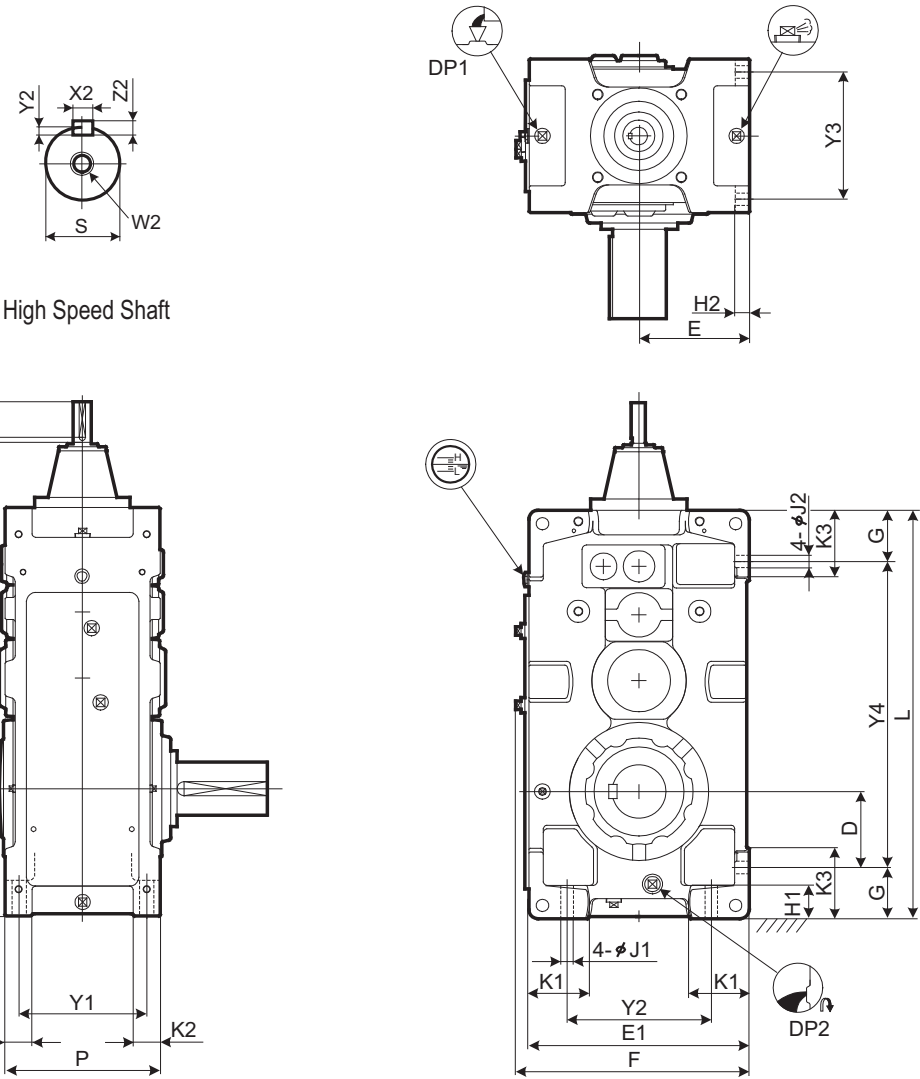
P W D Size R 3 W - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

Size: 9060, 9065, 9070, 9075, 9080, 9085
 Shaft Arrangement: RL, RR, RB, LR, LL, LB
 Low Speed Shaft Type: (blank): Without Fan, F: With Fan
 Fan: (blank): Solid Shaft, T: Hollow Shaft (Shrink Disk type), K: Hollow Shaft (Key type)

Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9065	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9075	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085	○	○	○	○	○	○	○	○	○	○	○	○	○	○		



DIMENSIONS Right Angle Shaft Quadruple Reduction Upright Mounting 9040 ▶ 9055



Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9040	790	235	710	120	200	400	430	115	75	30	28	28	100	60	150	759	315	255	260	255	529
9045	829	256	749	141	220	440	470	115	75	30	28	28	120	60	150	819	315	255	300	255	589
9050	859	255	779	138.5	210	420	450	116.5	75	32	28	28	110	60	150	848	345	285	280	285	615
9055	898	286	818	171	245	490	520	115	75	32	28	28	135	60	150	918	345	285	350	285	688

Size	High Speed Shaft							DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2				
9040	80	28k6	M10/22	8	4	7	70	1"	1"	325	35
9045	80	28k6	M10/22	8	4	7	70	1"	1"	395	43
9050	80	28k6	M10/22	8	4	7	70	1"	1"	460	46
9055	80	28k6	M10/22	8	4	7	70	1"	1"	520	59

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)

2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.

3. Refer to the page D-13 for dimensions shown in these drawings.

4. Refer to the page D -26 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Upright Mounting 9040 ▶ 9055

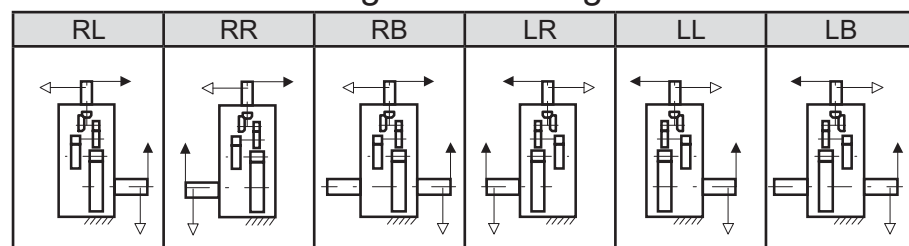
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

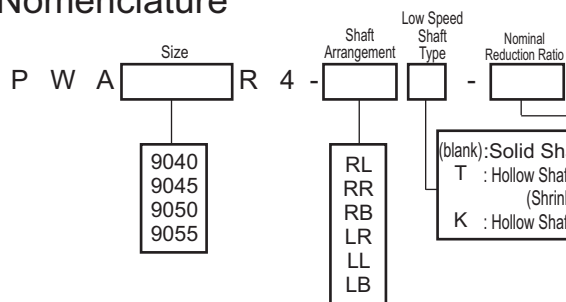
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

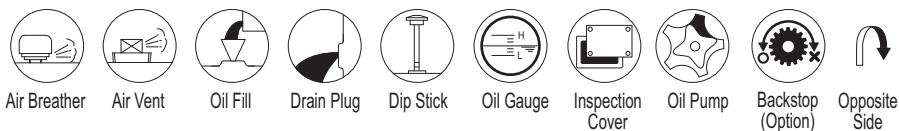
Standard Shaft Arrangement Configuration

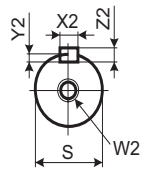


Nomenclature

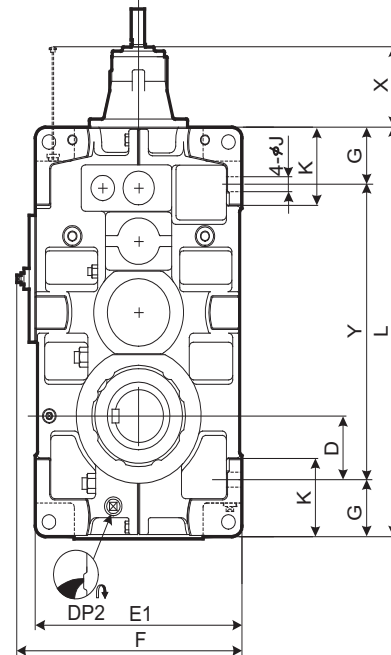
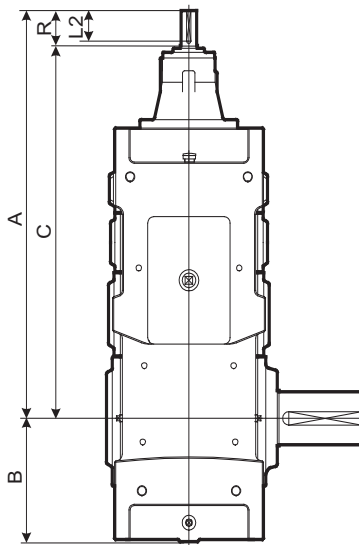
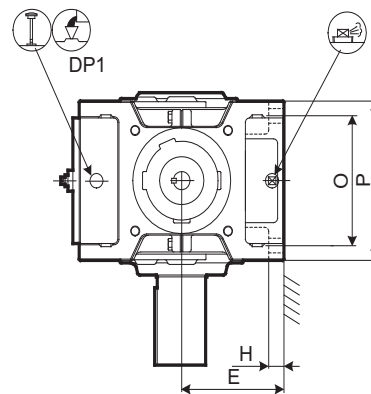


Size	Nominal Reduction Ratio																		
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450			
9040	○	○	○	○	○	○													
9045				○	○	○	○	○											
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055				○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○





High Speed Shaft



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9060	950	299	870	151	265	530	577	135	35	35	180	970	310	380	79	700
9065	996	338	916	190	300	600	647	135	35	35	180	1055	310	380	79	785
9070	1080	336	1000	163	300	600	647	160	40	42	215	1115	350	430	70	795
9075	1133	383	1053	210	335	670	717	160	52	42	220	1215	350	430	70	895
9080	1250	378	1140	205	335	670	717	160	52	42	220	1275	380	460	101	955
9085	1306	422	1196	249	375	750	797	160	52	42	220	1375	380	460	101	1055

Size	High Speed Shaft							DP1	DP2	Wt. kg	Oil Qty. L
	R	S	W2/Depth	X2	Y2	Z2	L2				
9060	80	30k6	M10/22	8	4	7	70	1"	1"	670	68
9065	80	30k6	M10/22	8	4	7	70	1"	1"	825	85
9070	80	35k6	M12/28	10	5	8	70	1"	1"	960	107
9075	80	35k6	M12/28	10	5	8	70	1"	1"	1180	122
9080	110	45k6	M16/36	14	5.5	9	95	1"	1"	1390	128
9085	110	45k6	M16/36	14	5.5	9	95	1"	1"	1650	174

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-15 for dimensions shown in these drawings.

4. Refer to the page D -29 for the dimension of optional parts.

DIMENSIONS Right Angle Shaft Quadruple Reduction Upright Mounting 9060 ▶ 9085

Slow Speed Shaft

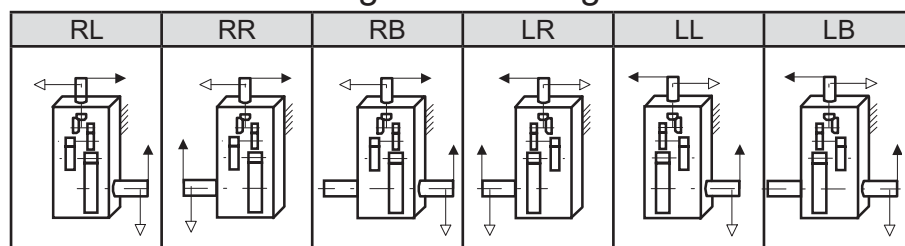
Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

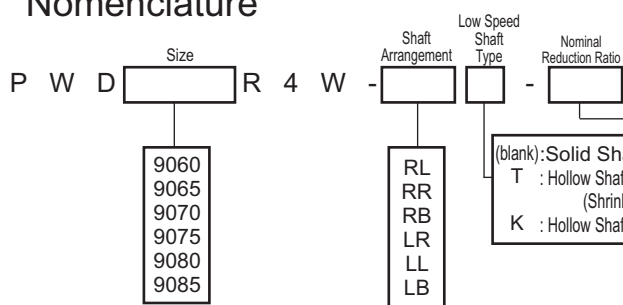
Unit: mm

PARAMAX Upright Split 9060 9085 Right Angle Quadruple Reduction Mount Wall

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9060		○	○	○	○	○	○	○	○	○	○	○	○	○		
9065				○	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



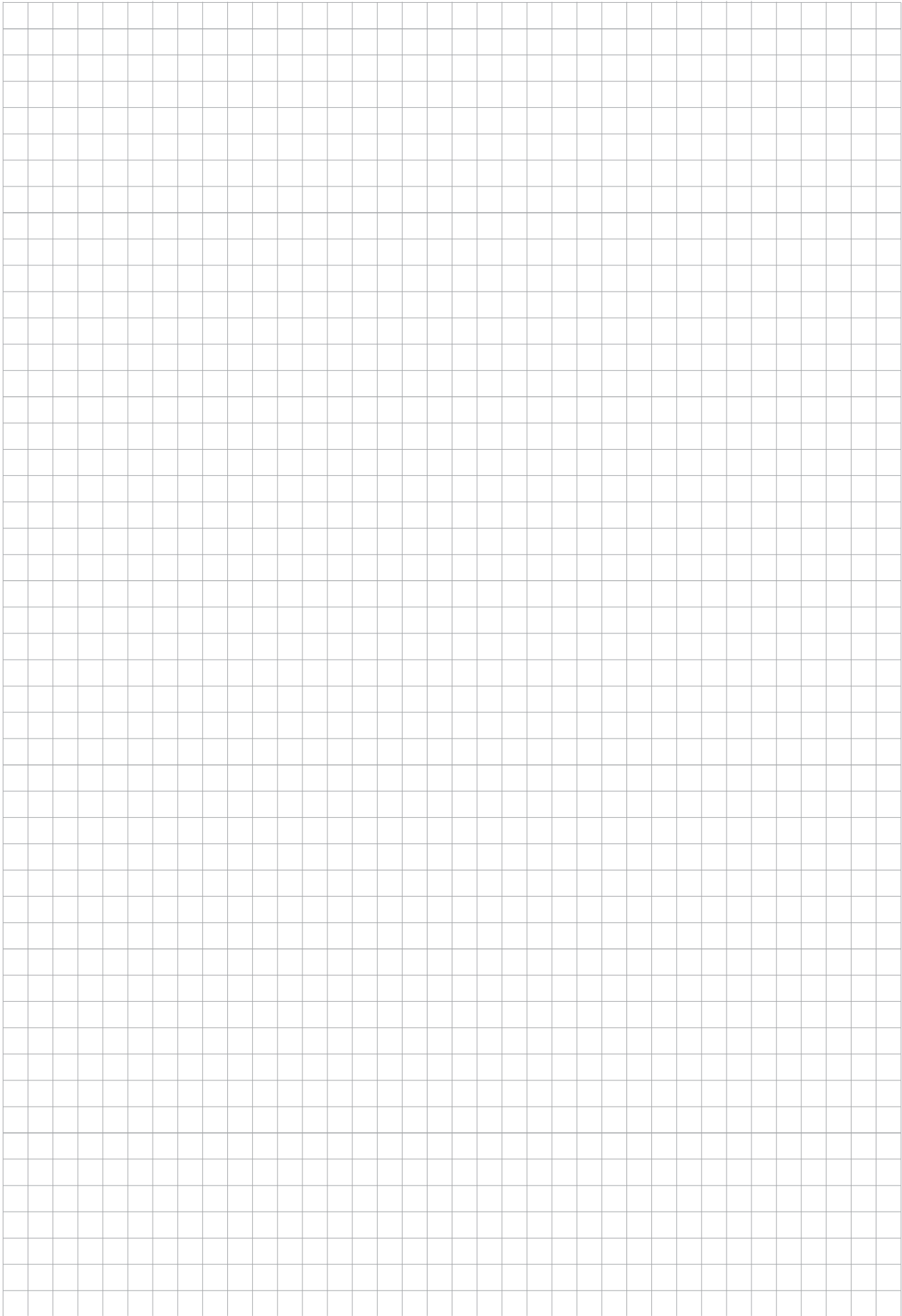
Oil Pump

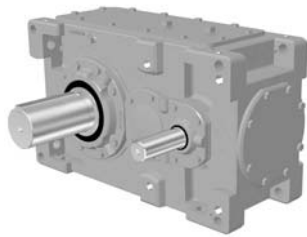


Backstop (Option)

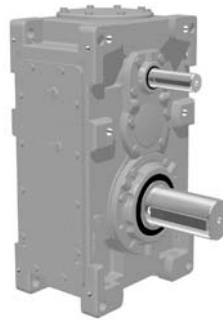


Opposite Side

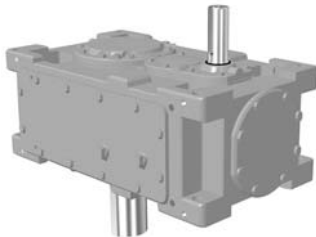




<Reducer: Parallel Shaft Horizontal Mounting>



<Reducer: Parallel Shaft Upright Mounting>



<Reducer: Parallel Shaft Vertical Mounting>

C

Reducer: Parallel shaft

Selection Tables	··· C- 102
Allowable Loads	··· C- 132
Dimension Sheets	··· C- 136

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 6.3 ▶ 8

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
6.3	Exact Reduction Ratio		6.257	6.193	6.314	6.049		6.470		6.188		6.246		6.429		6.609	
	1800	286	76	122	179	257		350		603		900		1430		1950	
	1500	238	64	102	149	223		305		530		792		1250		1710	
	1200	190	51	82	120	187		256		448		677		1050		1450	
	1000	159	43	68	100	162		222		388		588		884		1240	
	900	143	39	62	91	148		203		355		538		798		1120	
	750	119	32	51	76	125		174		302		462		668		943	
7.1	Exact Reduction Ratio		7.237	7.067	6.806	6.903		7.366		7.210		6.998		7.090		7.190	
	1800	254	62	100	161	241		349		559		900		1350		1830	
	1500	211	52	83	135	201		293		469		757		1130		1610	
	1200	169	42	67	108	162		235		377		610		914		1320	
	1000	141	35	56	90	136		197		316		511		766		1100	
	900	127	31	50	82	122		178		285		461		691		999	
	750	106	26.5	42	68	102		149		238		386		579		836	
8	Exact Reduction Ratio		7.889	7.616	8.118	7.869	7.778	7.691	7.956	8.062	7.875	7.759	8.033	7.733	8.167	7.835	8.111
	1800	225	61	99	140	187	219	257	311	350	517	603	781	900	1230	1430	1660
	1500	188	51	83	117	156	190	223	271	305	455	530	687	792	1030	1250	1450
	1200	150	41	67	94	126	154	187	227	256	378	448	571	677	836	1070	1200
	1000	125	34	56	78	105	129	162	195	222	317	388	478	588	700	932	1020
	900	113	31	50	71	95	116	148	176	203	286	355	432	538	632	841	923
	750	94	25.9	42	59	79	97	127	147	174	239	304	361	462	529	704	773
Dimension Tables	Horizontal	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-138	C-138	C-138	C-138	C-138	C-138	C-140
	Vertical	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-164	C-164	C-164	C-164	C-164	C-164	C-166
	Upright	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-182	C-182	C-182	C-182	C-182	C-182	C-182

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Double Reduction Horizontal Type	1800	-	40 111	51 132	57 143	73 193	88 216	108 265	103 250	127 308	147 415	174 491	184 479	225 531	214 510	263 709	340 1048
		1500	-	39 97	50 117	58 130	75 176	89 195	110 240	106 228	131 282	151 378	180 452	192 446	238 500	232 492	284 679	360 986
		1200	-	38 83	49 101	58 115	75 156	88 171	110 213	106 202	131 251	151 337	182 405	196 404	245 456	240 452	296 629	370 901
		1000	-	36 71	47 86	56 100	74 136	86 148	108 185	104 176	130 220	149 294	180 355	195 356	245 405	241 402	299 562	371 799
		900	-	35 66	46 81	55 94	73 128	85 139	107 176	103 166	128 208	147 277	178 336	193 337	243 385	240 382	298 537	369 761
		750	-	33 57	44 70	53 82	70 113	81 122	103 154	99 146	124 183	142 245	173 298	188 300	239 343	235 342	293 481	362 680
	6.3 ▼ 8																	
Dimension Tables	Double Reduction Vertical Type	1800	-	39	49	54	69	84	102	98	120	135	158	163	200	182	229	220
		1500	-	38	49	56	72	86	106	102	125	142	168	182	219	210	258	277
		1200	-	37	48	56	73	86	107	103	128	145	174	194	231	231	278	317
		1000	-	36	46	55	72	85	106	102	127	144	174	195	235	239	285	330
		900	-	35	45	54	71	83	105	101	126	143	173	193	235	240	286	334
		750	-	33	43	52	69	80	101	98	122	139	169	188	232	235	284	336
	6.3 ▼ 8																	
Dimension Tables	Double Reduction Upright Type	1800	-	32 89	40 106	45 115	59 154	70 173	86 212	82 200	102 246	118 332	139 393	147 383	180 425	171 408	211 567	
		1500	-	31 78	40 94	46 104	60 141	71 156	88 192	85 182	105 225	121 303	144 361	154 357	190 400	186 394	227 543	
		1200	-	30 66	39 81	46 92	60 125	71 137	88 170	85 162	105 201	121 269	146 324	157 323	196 365	192 361	237 503	
		1000	-	29 56	38 69	45 80	59 109	69 118	86 148	83 141	104 176	119 235	144 284	156 285	196 324	193 321	239 450	
		900	-	28 53	37 65	44 75	58 103	68 111	86 141	82 133	102 166	117 222	142 269	154 270	195 308	192 306	238 429	
		750	-	26 45	35 56	43 66	56 90	65 97	82 123	79 117	99 147	114 196	138 238	151 240	191 275	188 273	235 385	
	6.3 ▼ 8																	

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 6.3 ▶ 8

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					
6.460 6.203											Exact Reduction Ratio			6.3	1. For ※ marked values, the forced oil lubrication is required at continuous operation. 2. Consult us when the high speed shaft speed is over 1800r/min.
2970※ 3900※											286	1800			
2610 3440※											238	1500			
2160 2940											190	1200			
1810 2550											159	1000			
1630 2340											143	900			
1370 2000											119	750			
7.333	6.933	7.071	7.118	7.030							Exact Reduction Ratio			7.1	3. When the high speed shaft speed is not shown in the table, find it by the interpolation method. 4. When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$
1950	2790※	2970※	3460※	3910※							254	1800			
1710	2380	2610	3050※	3440※							211	1500			
1450	1920	2230	2600	2940							169	1200			
1240	1610	1930	2240	2550							141	1000			
1140	1450	1760	2020	2340							127	900			
978	1220	1480	1690	2000							106	750			
7.956	8.222	7.672	8.059	8.042							Exact Reduction Ratio			8	5. Shown in the table are the ratings for the slow speed shaft. 6. Refer to C42-C45 for the allowable radial and axial load on each shaft.
1830	2480※	2790※	3200※	3460※							225	1800			
1610	2120	2450	2820※	3050※							188	1500			
1360	1710	2080	2350	2610							150	1200			
1170	1430	1740	2020	2260							125	1000			
1060	1290	1570	1850	2070							113	900			
891	1080	1310	1580	1780							94	750			
C-140	C-140	C-140	C-140	C-140							Horizontal Vertical Upright	Dimension Tables			
C-166	C-166	C-166	C-166	C-166											

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				Without Fan	With Fan	
376	415	471	504	575							-	1800	Double Reduction Horizontal Type	20	1.00	1.00
1113	1179	1291	1337	1471							1	1800		30	0.85	0.87
401	454	509	567	633							-	1500		40	0.70	0.73
1056	1148	1241	1336	1443							1	1500		50	0.55	0.60
415	471	533	610	673							-	1200				
970	1056	1153	1277	1362							1	1200				
417	474	539	621	687							-	1000	6.3 ▼ 8			
864	942	1034	1152	1231							1	1000				
415	472	538	621	689							-	900	8			
823	898	988	1103	1182							1	900				
408	465	532	616	685							-	750				
737	805	889	995	1069							1	750				

Notes																
1. _____ Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)																
2. _____ The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.																
3. _____ When the high speed shaft speed is not shown in the table, find it by interpolation method.																

											-	1800	Double Reduction Upright Type			
											-	1500				
											1	1500				
											-	1200				
											1	1200				
											-	1000		6.3		
											-	900	▼			
											1	900	8			
											-	750				
											1	750				

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 9 ▶ 11.2

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
9	Exact Reduction Ratio		9.125	8.690	8.750	8.556	8.875	8.750	9.057	9.058	9.176	8.874	9.000	8.677	9.007	8.603	8.824
	1800	200	49	81	126	170	188	253	286	350	443	583	708	900	1070	1410	1560
	1500	167	41	68	105	142	158	212	239	305	371	489	593	792	900	1180	1340
	1200	133	33	55	85	114	127	170	192	246	298	393	477	647	725	956	1080
	1000	111	28.0	46	71	96	106	142	161	206	250	329	400	542	607	801	907
	900	100	25.3	41	64	86	95	128	145	186	225	297	361	489	548	723	818
	750	83	21.1	34	53	72	80	107	121	155	188	249	302	409	458	605	685
10	Exact Reduction Ratio		10.143	9.722	9.944	10.118	9.528	9.889	10.156	9.914	9.750	9.875	9.665	9.945	9.905	9.953	10.342
	1800	180	47	78	115	146	188	219	259	311	452	517	689	781	1020	1230	1380
	1500	150	40	65	96	122	158	190	226	271	382	455	593	687	861	1080	1180
	1200	120	32	52	77	98	127	159	184	227	307	384	477	588	693	881	964
	1000	100	26.9	44	64	82	106	136	154	197	257	333	399	505	580	738	807
	900	90	24.2	39	58	74	95	123	139	180	232	304	360	456	524	666	728
	750	75	20.2	33	48	62	80	103	116	155	194	255	301	381	438	558	610
11.2	Exact Reduction Ratio		11.732	11.094	10.719	11.000	10.872	11.250	11.563	11.138	11.361	11.294	10.829	11.160	10.924	10.929	11.250
	1800	161	39	64	103	133	154	198	225	299	360	462	592	751	891	1120	1260
	1500	134	32	53	86	111	129	166	188	250	301	387	495	629	746	941	1060
	1200	107	26.2	43	69	89	104	133	151	201	242	311	399	507	600	758	855
	1000	89	21.9	36	58	75	87	111	127	168	202	260	334	424	503	635	716
	900	80	19.7	32	52	67	78	100	114	152	183	235	301	383	453	573	646
	750	67	16.5	27.3	43	56	65	84	95	127	153	196	252	320	379	479	540
Dimension Tables	Horizontal		C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-138	C-138	C-138	C-138	C-138	C-138	C-140
	Vertical		C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-164	C-164	C-164	C-164	C-164	C-164	C-166
	Upright		C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-182	C-182	C-182	C-182	C-182	C-182	C-182

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Double Reduction Horizontal Type	1800	-	35 97	46 119	53 134	67 175	81 199	100 245	99 240	124 300	141 397	171 482	180 469	222 523	216 515	266 716	333 1024	
		1500	-	34 84	45 104	53 120	67 158	81 177	100 218	100 215	126 271	143 358	174 437	185 431	229 481	226 479	279 669	344 942	
		1200	-	32 71	43 89	52 105	66 138	79 154	99 192	98 188	125 239	142 315	173 385	187 385	231 431	230 433	286 607	347 844	
		1000	-	31 60	41 76	51 90	65 119	77 132	96 165	96 163	122 207	139 273	170 336	185 337	229 378	229 382	285 536	344 741	
		9	-	30 56	40 70	50 85	63 112	75 124	94 154	94 153	120 195	136 257	167 316	182 319	226 357	227 362	283 509	340 702	
		11.2	-	28 48	38 61	48 74	61 98	72 108	90 135	90 133	116 171	131 226	162 279	177 282	220 316	222 322	276 453	331 622	
	Dimension Tables	Double Reduction Vertical Type	1800	-	35	46	53	64	81	96	98	118	139	158	180	203	216	238	241
			1500	-	34	45	53	65	81	97	100	121	143	164	185	221	226	266	284
			1200	-	32	43	52	65	79	97	98	122	142	166	187	231	230	285	306
			1000	-	31	41	51	63	77	94	96	120	139	165	185	229	229	285	313
			9	-	30	40	50	62	75	93	94	118	136	163	182	226	227	283	314
			11.2	-	28	38	48	60	72	89	90	115	131	159	177	220	222	276	311
Double Reduction Upright Type		1800	-	28 78	36 96	42 107	53 140	65 159	80 196	79 192	99 240	113 317	137 386	144 375	177 419	173 412	213 573		
		1500	-	27 68	36 84	43 96	54 126	65 141	80 174	80 172	101 217	114 287	139 349	148 345	183 385	181 383	224 535		
		1200	-	26 57	34 71	42 84	53 110	64 123	79 153	79 150	100 191	113 252	138 308	149 308	185 345	184 346	228 485		
		1000	-	25 48	33 61	41 72	52 95	62 106	77 132	77 130	98 166	111 219	136 268	148 270	183 302	183 305	228 429		
		9	-	24 45	32 56	40 68	51 89	60 99	75 123	75 122	96 156	109 206	134 252	146 255	181 286	182 290	226 407		
		11.2	-	22 38	30 48	38 59	49 78	58 86	72 108	72 107	93 137	105 181	130 223	142 225	176 253	177 257	221 362		

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 9 ▶ 11.2

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
9.000	8.824	9.000	9.248	9.134								Exact Reduction Ratio	1. — For ※ marked values, the forced oil lubrication is required at continuous operation.
1660	2250 ※	2480 ※	2840 ※	3200 ※							200	1800	9
1450	1890	2190	2500 ※	2820 ※							167	1500	
1200	1520	1820	2070	2350							133	1200	
1030	1270	1550	1740	2020							111	1000	
948	1150	1390	1570	1850							100	900	
813	965	1170	1310	1580							83	750	
9.765	9.984	9.765	9.774	10.449								Exact Reduction Ratio	2. — Consult us when the high speed shaft speed is over 1800r/min.
1560	2090 ※	2330 ※	2780 ※	2850 ※							180	1800	10
1370	1760	2040	2400 ※	2500 ※							150	1500	
1130	1410	1640	1990	2090							120	1200	
966	1180	1380	1700	1790							100	1000	
872	1070	1240	1560	1640							90	900	
730	897	1040	1310	1390							75	750	
11.475	10.714	10.929	11.216	11.078								Exact Reduction Ratio	3. — When the high speed shaft speed (N) is lower than 750r/min, find it by the interpolation method.
1380	1860 ※	2150 ※	2470 ※	2780 ※							161	1800	11.2
1180	1560	1850	2130 ※	2400 ※							134	1500	
981	1260	1530	1720	1990							107	1200	
842	1050	1280	1440	1710							89	1000	
770	954	1150	1300	1560							80	900	
651	799	970	1090	1340							67	750	
C-140	C-140	C-140	C-140	C-140							Horizontal Vertical Upright	Dimension Tables	4. — When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$
C-166	C-166	C-166	C-166	C-166									5. — Shown in the table are the ratings for the slow speed shaft.
													6. — Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				Without Fan	With Fan
365	423	476	511	578							—	1800	20	1.00	1.00
1079	1200	1303	1354	1480							1	1500	30	0.85	0.87
374	443	496	544	619							1	1200	40	0.70	0.73
986	1119	1210	1282	1411							1	1000	50	0.55	0.60
376	452	504	563	644							1	900			
879	1015	1090	1178	1302							1	750			
371	451	500	565	646							1				
770	897	960	1049	1157							1				
367	448	496	563	642							1				
728	852	910	1000	1102							1				
357	438	484	554	631							1				
644	759	809	896	985							1				
274	279	326	276	338							—	1800			
315	344	388	379	441							—	1500			
335	384	434	456	518							—	1200			
340	400	448	485	554							—	1000			
340	404	451	495	566							—	900			
337	405	451	502	575							—	750			
											—	1800			
											1	1500			
											1	1200			
											1	1000			
											1	900			
											1	750			

Notes		
1. —	Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (—: none fan, 1: with a fan)	
2. —	The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.	
3. —	When the high speed shaft speed is not shown in the table, find it by interpolation method.	

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 12.5 ▶ 16

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
12.5	Exact Reduction Ratio		12.710	12.407	12.785	12.394	12.485	12.114	12.594	12.656	12.206	12.226	12.600	11.966	12.762	12.071	12.978
	1800	144	38	61	89	120	145	191	222	259	366	452	547	689	804	1060	1110
	1500	120	32	51	75	100	121	165	185	226	307	398	458	607	673	908	959
	1200	96	25.8	41	60	80	97	133	149	190	246	328	368	504	542	731	773
	1000	80	21.5	34	50	67	81	111	125	164	206	274	308	422	453	612	647
	900	72	19.4	31	45	61	73	101	112	148	186	247	278	380	409	552	584
	750	60	16.2	26.2	38	51	61	84	94	124	155	207	232	318	342	462	488
14	Exact Reduction Ratio		14.701	14.158	13.781	13.475	14.247	13.781	14.337	14.219	14.224	13.983	14.118	13.428	14.076	13.255	14.118
	1800	129	31	50	81	109	118	162	183	235	289	375	457	628	696	931	1010
	1500	107	26.1	42	67	91	99	136	153	197	242	314	383	526	583	780	851
	1200	86	21.0	34	54	73	79	109	123	158	194	252	308	423	469	628	685
	1000	71	17.5	28.5	45	61	66	91	102	132	162	211	257	354	392	526	573
	900	64	15.8	25.7	41	55	60	82	92	119	146	190	232	319	354	474	517
	750	54	13.2	21.4	34	46	50	69	77	100	122	159	194	267	296	397	433
16	Exact Reduction Ratio		15.778	15.340	15.997	15.935	15.556	15.874	16.504	15.694	15.996	15.306	15.750	15.600	15.556	15.554	16.222
	1800	113	31	50	72	94	116	152	170	237	281	389	440	565	663	846	920
	1500	94	25.9	42	60	78	97	127	142	198	235	327	368	484	555	709	773
	1200	75	20.8	33	48	63	78	102	114	159	189	263	296	389	446	571	622
	1000	63	17.4	28.2	40	52	65	85	95	133	158	220	248	325	373	478	520
	900	56	15.7	25.4	36	47	59	77	86	120	142	198	223	293	337	431	469
	750	47	13.1	21.2	30	39	49	64	72	100	119	166	187	245	281	360	392
Dimension Tables	Horizontal Vertical Upright	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-138	C-138	C-138	C-138	C-138	C-138	C-140
		C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-164	C-164	C-164	C-164	C-164	C-164	C-166
		C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-182	C-182	C-182	C-182	C-182	C-182	C-182

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Double Reduction Horizontal Type	1800	-	30 85	42 111	51 130	63 167	74 182	95 233	89 214	116 281	125 353	159 448	※※ ※※	※※ ※※	※※ ※※	※※ ※※	※※ ※※
		1500	-	29 72	41 95	50 113	63 148	73 159	94 205	87 188	115 248	124 311	159 399	164 380	211 444	209 442	265 635	315 862
		1200	-	27 60	39 80	48 96	62 129	70 135	91 176	85 162	112 214	121 268	155 345	161 332	209 389	208 390	264 561	311 757
	12.5 ▼ 16	1000	-	26 50	37 67	46 81	60 110	67 115	88 151	81 138	108 183	116 230	150 296	157 286	204 336	204 339	259 488	304 656
		900	-	25 46	36 62	44 75	59 103	65 107	85 140	79 128	106 171	113 214	147 278	154 269	200 316	200 319	255 460	299 617
		750	-	23 39	33 53	42 64	56 90	62 92	81 121	75 111	101 149	108 186	141 243	147 235	192 277	193 280	247 404	288 542
Dimension Tables	Double Reduction Vertical Type	1800	-	31	43	52	63	75	95	90	116	130	159	170	210	216	261	258
		1500	-	29	41	51	63	74	95	88	115	127	159	169	211	220	265	274
		1200	-	27	39	48	62	71	92	85	112	123	155	165	209	216	264	283
	12.5 ▼ 16	1000	-	26	37	46	60	67	88	82	108	118	150	160	204	210	259	283
		900	-	25	36	45	59	65	86	80	106	115	147	156	200	205	255	281
		750	-	23	33	42	56	62	81	76	101	109	141	149	192	197	247	274
Selection Tables	Double Reduction Upright Type	1800	-	24 68	34 89	41 104	51 133	59 145	76 186	71 171	93 225	100 283	127 359	130 340	168 396	164 391	209 561	
		1500	-	23 58	33 76	40 90	51 119	58 127	75 164	70 151	92 198	99 249	127 319	131 304	169 355	167 354	212 508	
		1200	-	22 48	31 64	38 77	50 103	56 108	73 141	68 129	90 171	96 215	124 276	129 266	167 311	166 312	211 449	
	12.5 ▼ 16	1000	-	20 40	29 54	37 65	48 88	54 92	70 121	65 110	87 147	93 184	120 237	125 229	163 269	163 271	207 390	
		900	-	20 37	28 50	35 60	47 83	52 85	68 112	63 103	85 137	91 171	118 222	123 215	160 253	160 255	204 368	
		750	-	18 31	27 42	33 51	45 72	49 74	65 97	60 89	81 119	86 149	113 194	118 188	154 221	154 224	197 324	

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 12.5 ▶ 16

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
12.450	12.950	11.857	12.434	12.672								Exact Reduction Ratio	1. For ※ marked values, the forced oil lubrication is required at continuous operation.
1290	1630 ※	2020 ※	2240 ※	2470 ※							144	1800	12.5
1110	1360	1690 ※	1920 ※	2130 ※							120	1500	
910	1100	1360	1590	1770							96	1200	
762	922	1140	1360	1520							80	1000	
688	832	1030	1240	1370							72	900	
576	696	864	1040	1150							60	750	
14.400	13.897	14.175	14.268	14.092								Exact Reduction Ratio	2. Consult us when the high speed shaft speed is over 1800r/min.
1110	1450 ※	1700 ※	1990 ※	2240 ※							129	1800	14
958	1210	1460	1690 ※	1920 ※							107	1500	
794	980	1190	1360	1590							86	1200	
681	821	996	1140	1370							71	1000	
623	740	899	1030	1250							64	900	
521	619	752	862	1070							54	750	
15.624	15.961	15.379	15.325	16.121								Exact Reduction Ratio	3. When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.
1050	1330 ※	1570 ※	1870 ※	2000 ※							113	1800	16
902	1110	1310	1600 ※	1710 ※							94	1500	
730	898	1060	1330	1420							75	1200	
611	752	887	1120	1200							63	1000	
551	678	800	1010	1080							56	900	
461	567	670	850	911							47	750	
C-140	C-140	C-140	C-140	C-140							Horizontal Vertical Upright	Dimension Tables	4. When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $P_N = P_{750} \times \frac{N}{750}$
C-166	C-166	C-166	C-166	C-166									5. Shown in the table are the ratings for the slow speed shaft.
													6. Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				Without Fan	With Fan
※※	※※	※※	※※	※※							-	1800	Double Reduction Horizontal Type	20	1.00
※※	※※	※※	※※	※※							1	1500		30	0.85
364	405	471	522	585							1	1200		40	0.70
959	1024	1149	1230	1332							1	1000		50	0.55
362	404	471	527	592							1	900			0.60
847	905	1020	1103	1197							1	750	12.5 ▼ 16		
355	396	464	522	588							1	1800			
736	788	890	968	1053							1	1500			
350	390	458	516	582							1	1200			
694	743	841	916	998							1	1000			
338	378	444	502	568							1	900	Double Reduction Vertical Type		
611	654	743	812	887							1	750			
289	315	344	343	373							-	1800			
316	342	392	406	452							-	1500			
328	359	417	449	504							-	1200			
329	362	423	463	521							-	1000	12.5 ▼ 16		
328	361	423	466	525							-	900			
322	356	418	464	525							-	750			
											-	1800	Double Reduction Upright Type		
											1	1500			
											1	1200			
											1	1000			
											1	900			
											1	750			

Notes		
1.	Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)	
2.	The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.	
3.	When the high speed shaft speed is not shown in the table, find it by interpolation method.	
4.	For ※ ※ marked, please consult us.	

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 18 ▶ 22.4

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090		
18	Exact Reduction Ratio		18.250	17.503	17.243	17.325	17.750	18.059	18.789	17.631	18.640	17.506	17.647	17.506	17.157	17.078	17.647		
	1800	100	25.3	41	65	85	95	124	140	191	222	301	368	485	574	728	818		
	1500	83	21.1	34	54	71	80	104	117	159	185	252	308	406	481	610	685		
	1200	67	17.0	27.6	43	57	64	84	94	128	149	203	247	326	386	490	551		
	1000	56	14.2	23.1	36	48	53	70	78	107	124	169	207	273	323	410	461		
	900	50	12.8	20.8	32	43	48	63	71	96	112	153	186	246	291	370	416		
	750	42	10.7	17.4	27.5	36	40	52	59	81	94	128	156	206	244	310	348		
20	Exact Reduction Ratio		19.938				19.778			20.566			20.059			19.500		18.958	
	1800	90	*	*	*	75	*	123	*	182	*	300	*	465	*	699	*		
	1500	75	*	*	*	63	*	103	*	152	*	251	*	389	*	585	*		
	1200	60	*	*	*	50	*	82	*	122	*	202	*	313	*	470	*		
	1000	50	*	*	*	42	*	69	*	102	*	169	*	261	*	393	*		
	900	45	*	*	*	38	*	62	*	92	*	152	*	236	*	355	*		
	750	38	*	*	*	31	*	52	*	77	*	127	*	197	*	297	*		
22.4	Exact Reduction Ratio		21.676				22.500			23.105			22.941			21.882		20.817	
	1800	80	*	*	*	68	*	100	*	146	*	231	*	390	*	601	*		
	1500	67	*	*	*	57	*	84	*	122	*	193	*	326	*	503	*		
	1200	54	*	*	*	46	*	67	*	98	*	155	*	262	*	404	*		
	1000	45	*	*	*	38	*	56	*	82	*	130	*	219	*	338	*		
	900	40	*	*	*	34	*	51	*	74	*	117	*	198	*	305	*		
	750	33	*	*	*	29.1	*	42	*	62	*	98	*	165	*	255	*		
Dimension Tables	Horizontal	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-136	C-138	C-138	C-138	C-138	C-138	C-138	C-140		
	Vertical	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-162	C-164	C-164	C-164	C-164	C-164	C-164	C-166		
	Upright	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-180	C-182	C-182	C-182	C-182	C-182	C-182			

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Double Reduction Horizontal Type	1800	-	29 81	41 106	50 127	60 156	66 162	83 203	88 213	106 255	127 358	153 431	166 433	※※ ※※	※※ ※※	※※ ※※	※※ ※※
		1500	-	28 69	39 91	49 110	58 135	65 142	81 177	87 187	104 223	126 316	150 376	167 387	194 407	213 450	249 595	311 854
		1200	-	26 58	37 77	47 93	55 114	63 121	78 151	84 161	100 190	122 272	145 323	164 338	189 353	211 397	245 521	308 750
	18 ▼ 22.4	1000	-	25 48	35 65	45 79	52 96	60 103	74 127	81 137	96 162	118 233	140 276	160 291	184 303	207 345	239 450	301 650
		900	-	24 44	34 60	43 73	51 89	59 97	72 118	79 128	93 151	115 217	136 257	156 273	180 284	204 325	235 423	296 611
		750	-	22 37	32 51	41 63	48 76	56 84	68 102	75 110	88 130	110 188	129 222	150 239	172 247	196 285	226 370	285 536

Dimension Tables	Double Reduction Vertical Type	1800	-	29	41	51	60	62	85	90	107	131	149	173	201	224	262	256
		1500	-	28	40	49	58	62	82	88	105	129	146	172	199	224	260	272
		1200	-	26	37	47	55	61	79	85	100	124	140	168	193	219	253	280
	18 ▼ 22.4	1000	-	25	35	45	53	59	75	82	96	120	135	162	186	213	246	280
		900	-	24	34	43	51	57	73	79	93	116	131	159	182	209	240	278
		750	-	22	32	41	48	55	68	75	88	111	124	152	174	200	230	272

Dimension Tables	Double Reduction Upright Type	1800	-	23 65	32 85	40 102	48 125	53 130	66 163	71 171	84 204	102 287	122 345	133 346	156 367	168 399	198 532
		1500	-	22 55	31 73	39 88	46 108	52 114	65 141	70 150	83 178	101 253	120 301	133 310	155 326	170 360	199 476
		1200	-	21 46	30 61	37 75	44 91	50 97	62 121	67 129	80 152	98 218	116 258	131 270	152 282	169 318	196 417
	18 ▼ 22.4	1000	-	20 38	28 52	36 63	42 77	48 83	59 102	65 110	76 129	94 186	112 221	128 233	147 243	166 276	191 360
		900	-	19 35	27 48	35 59	40 71	47 77	58 95	63 102	74 121	92 174	109 206	125 219	144 227	163 260	188 339
		750	-	18 30	25 41	32 50	38 61	45 67	54 81	60 88	70 104	88 151	103 178	120 191	138 198	157 228	181 296

SELECTION Parallel Shaft Double Reduction Nominal Reduction Ratio 18 ▶ 22.4

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
18.000	17.128	17.471	17.585	17.368								Exact Reduction Ratio	1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.
920	1180 ※	1420 ※	1650 ※	1870 ※							100	1800	18
789	994	1200	1380 ※	1610 ※							83	1500	
654	799	971	1110	1330							67	1200	
555	669	812	931	1140							56	1000	
501	603	733	840	1040							50	900	
419	505	613	703	899							42	750	
19.529		18.955		19.869								Exact Reduction Ratio	2. _____ Consult us when the high speed shaft speed is over 1800r/min.
867	*	1280 ※	*	1670 ※							90	1800	20
730	*	1070	*	1430 ※							75	1500	
587	*	864	*	1170							60	1200	
491	*	723	*	983							50	1000	
443	*	652	*	887							45	900	
370	*	546	*	742							38	750	
												Exact Reduction Ratio	3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.
*	*	*	*	*							80	1800	22.4
*	*	*	*	*							67	1500	
*	*	*	*	*							54	1200	
*	*	*	*	*							45	1000	
*	*	*	*	*							40	900	
											33	750	
C-140	C-140	C-140	C-140	C-140							Horizontal	Dimension	5. _____ Shown in the table are the ratings for the slow speed shaft.
C-166	C-166	C-166	C-166	C-166							Vertical Upright	Tables	
* marked models are triple reduction units. Refer to C-110 and C-111.													6. _____ Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
※※	※※	※※	※※	※※							-	1800	Double Reduction Horizontal Type	20	1.00	1.00
※※	※※	※※	※※	※※							1			1500	30	0.85
338	408	441	500	550							-	1200			40	0.70
889	1032	1076	1179	1252							1			1000	50	0.55
332	406	437	504	551							-	900				
777	911	946	1056	1114							1		750			
324	399	428	499	543							-	18				
672	793	821	926	973							1		22.4			
318	393	421	493	536							-	900				
631	747	773	876	920							1		750			
306	380	406	480	521							-	1800				
553	658	679	776	813							1		1500			
284	319	355	349	402							-	1200				
298	346	380	397	447							-		1000			
305	362	393	431	478							-	900				
303	365	395	444	488							-		750			
300	364	393	446	489							-	1800				
293	358	385	444	485							-		1500			
											-	1200				
											-		1000			
											-	900				
											-		750			
											-	1800				
											-		1500			
											-	1200				
											-		1000			
											-	900				
											-		750			

Notes

1. _____
Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)

2. _____
The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.

3. _____
When the high speed shaft speed is not shown in the table, find it by interpolation method.

4. _____
For ※ ※ marked, please consult us.

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 20 ▶ 25

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
20	Exact Reduction Ratio		19.894	19.681	20.280		19.884		19.590		18.988		20.067		20.054		20.585
	1800	90	26.4	39	61	*	98	*	154	*	254	*	356	*	554	*	758
	1500	75	22.1	33	51	*	82	*	129	*	213	*	310	*	463	*	650
	1200	60	17.7	27.8	41	*	66	*	103	*	171	*	250	*	372	*	527
	1000	50	14.8	23.6	34	*	55	*	86	*	143	*	209	*	311	*	441
	900	45	13.3	21.2	30	*	49	*	78	*	129	*	188	*	281	*	397
	750	38	11.1	17.7	25.8	*	41	*	65	*	107	*	157	*	235	*	332
22.4	Exact Reduction Ratio		23.011	22.457	21.860		22.689		22.303		22.125		22.484		22.119		22.394
	1800	80	21.5	34	55	*	80	*	127	*	201	*	310	*	480	*	694
	1500	67	18.0	28.8	46	*	67	*	106	*	168	*	260	*	401	*	581
	1200	54	14.4	23.1	37	*	54	*	85	*	135	*	208	*	322	*	467
	1000	45	12.1	19.3	30	*	45	*	71	*	112	*	174	*	269	*	391
	900	40	10.9	17.4	27.9	*	40	*	64	*	101	*	157	*	243	*	352
	750	33	9.1	14.5	23.3	*	34	*	53	*	85	*	131	*	203	*	294
25	Exact Reduction Ratio		24.696	24.332	25.374	25.277	24.774	25.281	25.673	24.413	24.883	23.810	25.083	24.844	24.444	24.441	25.732
	1800	72	21.4	32	49	64	79	100	118	165	195	261	299	356	456	572	624
	1500	60	17.8	28.2	41	53	66	83	98	138	163	226	250	310	382	488	527
	1200	48	14.3	22.9	32	43	53	67	79	110	131	182	201	260	307	392	423
	1000	40	12.0	19.1	27.5	35	44	55	66	92	109	152	168	220	256	328	354
	900	36	10.8	17.2	24.8	32	40	50	59	83	99	137	151	199	231	296	319
	750	30	9.0	14.4	20.7	27.0	33	41	50	69	82	114	126	166	193	247	267
Dimension Tables	Horizontal	C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-144	C-144	C-144	C-144	C-144	C-144	C-146
	Vertical	C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-170	C-170	C-170	C-170	C-170	C-170	C-172
	Upright	C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-186	C-186	C-186	C-186	C-186	C-186	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-	24 66	36 93	42 78	54 114	63 155	77 189	77 187	97 234	107 210	131 257	145 269	179 309	184 437	225 605	235 556	
		1500	-	23 58	35 81	42 68	53 99	62 135	76 166	76 164	95 205	106 185	130 227	145 238	178 273	185 391	226 540	238 501	
		1200	-	22 49	34 70	40 58	51 85	60 115	73 141	74 141	92 176	104 160	126 195	142 207	175 237	183 343	223 473	237 443	
		1000	-	21 41	32 59	38 50	49 72	57 98	70 120	71 121	89 151	101 138	123 169	138 179	170 204	179 298	217 409	233 386	
		20	-	20 38	31 55	37 46	47 67	56 91	68 112	70 113	87 141	98 129	120 158	135 168	166 192	176 280	214 385	229 364	
		25	-	19 33	30 48	36 40	45 58	53 79	64 96	67 98	83 122	94 113	115 137	130 147	160 168	170 247	206 338	223 322	
	Dimension Tables	Triple Reduction Vertical Type	1800	-	22	33	40	51	60	73	73	91	100	122	135	167	168	206	212
			1500	-	22	33	40	50	59	73	73	91	101	123	137	169	173	212	221
			1200	-	21	32	39	49	58	70	71	89	100	122	136	168	174	212	225
		20	-	21	31	37	47	56	68	69	87	97	119	134	165	172	210	223	
		25	-	20	31	37	46	55	66	68	85	96	117	132	162	170	207	222	
		750	-	19	29	35	44	52	63	65	81	92	113	127	156	166	201	217	
Selection Tables	Triple Reduction Upright Type	1800	-	24 66	36 93	42 78	54 113	69 168	77 189	76 185	96 231	106 208	131 257	144 266	178 306	182 434	223 601		
		1500	-	23 57	35 81	41 68	53 99	67 147	76 166	76 163	94 203	105 184	130 227	144 236	177 271	184 389	225 537		
		1200	-	22 49	34 70	40 58	51 85	65 126	73 141	73 140	92 175	103 159	126 195	141 206	174 236	182 342	222 471		
		1000	-	21 41	32 59	38 50	48 72	62 107	70 120	71 120	89 150	100 137	123 169	137 178	169 203	178 297	217 408		
		20	-	20 38	31 55	37 46	47 67	61 100	68 112	69 112	86 140	98 129	120 158	135 167	166 191	175 280	213 384		
		25	-	19 33	30 48	35 40	45 58	58 86	64 96	66 98	83 122	94 112	115 137	130 146	159 167	170 246	206 338		

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 20 ▶ 25

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio		
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					
20.812					19.984					Exact Reduction Ratio					
*	1100	*	1500	*								90	1800	20	
*	922	*	1290	*								75	1500		
*	742	*	1070	*								60	1200		
*	620	*	919	*								50	1000		
*	559	*	838	*								45	900		
*	468	*	701	*								38	750		
22.841	22.335	22.781	22.930	22.648						21.793	21.793	Exact Reduction Ratio			
758	981	1140	1340	1500								80	1800	22.4	
650	821	982	1140	1290						3290 [*]	3430 [*]	67	1500		
539	660	801	919	1070						2650 [*]	2840 [*]	54	1200		
462	552	670	769	919						2220 [*]	2440 [*]	45	1000		
423	498	605	693	841						2000	2230	40	900		
355	416	506	580	708						1670	1910	33	750		
24.782	25.651	24.717	24.630	25.908	25.313						24.930	24.930	Exact Reduction Ratio		
713	898	1060	1250	1340	1590								72	1800	25
612	752	888	1080	1150	1400						2890 [*]	3060 [*]	60	1500	
497	604	714	895	954	1190						2320 [*]	2530 [*]	48	1200	
416	505	597	757	812	1050						1940 [*]	2170 [*]	40	1000	
375	456	538	683	732	955						1750	1990	36	900	
313	381	450	571	612	796						1470	1710	30	750	
C-146	C-146	C-146	C-146	C-146	C-148						C-150	C-150	Horizontal Vertical Upright	Dimension Tables	
C-172	C-172	C-172	C-172	C-172	C-172										

* marked models are double reduction units. Refer to C-108 and C-109.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$P_N = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
264	296	333	391	429	481						-	1800
603	651	713	813	867	794						1	
267	301	340	399	436	486						-	1500
545	590	647	738	784	801						1	
266	301	340	397	435	481						-	1200
481	524	575	653	694	794						1	
262	297	336	391	428	472						-	1000
419	458	503	569	605	779						1	
258	294	332	386	423	465						-	900
396	433	475	538	572	768						1	
250	285	322	375	410	451						-	750
349	383	421	475	506	744						1	

238	265	298	348	386						-	1800	Triple Reduction Vertical Type
248	278	313	367	404						-	1500	
252	285	321	377	412						-	1200	
251	285	321	375	411						-	1000	20 ▼ 25
249	283	319	372	408						-	900	
243	277	313	364	399						-	750	

										-	1800	Triple Reduction Upright Type
										-	1500	
										-	1200	
										-	1000	
										-	900	
										-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 28 ▶ 35.5

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
28	Exact Reduction Ratio		28.565	27.764	27.350	27.481	28.269	28.761	29.227	27.426	28.995	27.231	28.105	27.880	26.961	26.838	27.992
	1800	64	17.4	28.0	44	58	65	84	97	132	154	209	249	329	395	502	558
	1500	54	14.5	23.4	37	48	54	70	81	111	129	175	208	275	330	420	467
	1200	43	11.7	18.8	29.7	39	43	56	65	89	103	140	167	221	265	337	375
	1000	36	9.7	15.7	24.8	32	36	47	54	74	86	117	140	185	222	282	314
	900	32	8.8	14.1	22.3	29.5	32	42	49	67	78	106	126	167	200	254	283
	750	27	7.3	11.8	18.6	24.6	27	35	41	56	65	88	105	139	167	212	236
31.5	Exact Reduction Ratio		31.401	31.905	32.876	31.625	31.213	31.498	30.855	31.992	29.905	31.202	31.500	31.056	31.601	29.792	31.855
	1800	57	16.9	26.1	38	51	63	81	98	126	163	208	239	315	355	481	511
	1500	48	14.1	21.8	31	42	52	68	82	105	136	174	200	264	297	402	427
	1200	38	11.3	17.4	25.5	34	42	54	66	84	109	140	160	212	238	323	343
	1000	32	9.4	14.5	21.3	28.8	35	45	55	71	91	117	134	177	199	270	287
	900	29	8.5	13.1	19.2	25.9	31	40	49	64	82	105	121	159	179	244	259
	750	24	7.1	10.9	16.0	21.7	26.6	34	41	53	69	88	101	133	150	203	216
35.5	Exact Reduction Ratio		36.321	36.406	35.438	34.383	35.617	35.833	35.127	35.942	34.848	35.686	35.294	34.850	34.854	32.712	34.652
	1800	51	13.7	21.4	34	46	51	68	81	101	128	160	199	265	307	413	453
	1500	42	11.5	17.9	28.6	39	43	57	68	85	107	134	167	221	257	346	379
	1200	34	9.2	14.4	23.0	31	34	45	54	68	86	107	134	178	206	278	304
	1000	28	7.7	12.0	19.2	26.2	29.0	38	45	57	72	90	112	148	172	232	254
	900	25	6.9	10.8	17.3	23.6	26.1	34	41	51	65	81	101	134	155	209	229
	750	21	5.8	9.0	14.4	19.7	21.8	28.8	34	43	54	67	84	112	130	175	191
Dimension Tables	Horizontal		C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-144	C-144	C-144	C-144	C-144	C-144	C-146
	Vertical		C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-170	C-170	C-170	C-170	C-170	C-170	C-172
	Upright		C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-186	C-186	C-186	C-186	C-186	C-186	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Triple Reduction Horizontal Type	1800	-	21 60	32 84	39 72	49 104	58 142	70 172	74 179	92 222	104 203	124 243	140 258	171 295	177 422	218 586	230 545	
		1500	-	21 51	31 72	38 62	48 91	56 122	69 150	72 156	90 194	102 178	123 215	137 226	170 260	176 372	218 521	229 484	
		1200	-	19 43	30 61	36 52	46 77	53 103	66 128	69 132	87 166	98 152	119 184	133 194	165 225	171 322	214 454	225 421	
		1000	-	18 36	28 51	34 44	44 65	51 87	64 110	66 112	84 142	94 129	115 158	128 166	161 193	166 277	208 392	219 363	
		900	-	18 33	27 48	33 41	43 61	49 81	62 102	64 104	82 132	92 121	113 148	125 155	157 181	162 259	205 369	215 341	
		750	-	17 28	26 41	31 35	41 52	46 69	59 88	61 90	78 115	87 104	108 129	119 135	151 158	156 226	197 323	206 298	
	28 ▼ 35.5	Triple Reduction Vertical Type	1800	-	21	31	37	47	55	68	70	87	98	117	132	161	165	201	211
			1500	-	20	30	36	46	54	67	69	86	97	117	131	162	167	205	217
			1200	-	19	29	35	45	52	65	67	84	95	115	129	160	165	205	216
			1000	-	18	27	33	43	50	62	65	82	92	112	125	156	161	202	212
			900	-	17	27	32	42	48	61	63	80	90	110	122	153	158	199	209
			750	-	16	25	30	40	46	58	60	76	86	106	117	148	152	193	202
Dimension Tables	Triple Reduction Upright Type	1800	-	21 60	32 84	39 72	49 104	65 158	70 172	74 179	91 220	104 203	124 243	140 258	170 292	177 422	216 582		
		1500	-	21 51	31 72	38 62	48 90	62 136	69 150	72 156	89 193	102 178	123 215	137 226	169 258	176 372	216 518		
		1200	-	19 43	30 61	36 52	46 77	59 115	66 128	69 132	86 165	98 152	119 184	133 194	165 224	171 322	213 452		
		1000	-	18 36	28 51	34 44	44 65	56 97	64 110	66 112	83 141	94 129	115 158	128 166	160 193	166 277	208 391		
		900	-	18 33	27 48	33 41	43 61	55 90	62 102	64 104	81 132	92 121	113 148	125 155	157 181	162 259	204 368		
		750	-	17 28	26 41	31 35	41 52	51 77	59 88	61 90	77 114	87 104	108 129	119 135	151 158	156 226	197 323		
	28 ▼ 35.5	Triple Reduction Upright Type	1800	-	21 60	32 84	39 72	49 104	65 158	70 172	74 179	91 220	104 203	124 243	140 258	170 292	177 422	216 582	
			1500	-	21 51	31 72	38 62	48 90	62 136	69 150	72 156	89 193	102 178	123 215	137 226	169 258	176 372	216 518	
			1200	-	19 43	30 61	36 52	46 77	59 115	66 128	69 132	86 165	98 152	119 184	133 194	165 224	171 322	213 452	
			1000	-	18 36	28 51	34 44	44 65	56 97	64 110	66 112	83 141	94 129	115 158	128 166	160 193	166 277	208 391	
			900	-	18 33	27 48	33 41	43 61	55 90	62 102	64 104	81 132	92 121	113 148	125 155	157 181	162 259	204 368	
			750	-	17 28	26 41	31 35	41 52	51 77	59 88	61 90	77 114	87 104	108 129	119 135	151 158	156 226	197 323	

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 28 ▶ 35.5

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
28.552	27.527	28.078	28.261	27.914		29.333	29.333	28.679	28.315	28.315	Exact Reduction Ratio		
624	800	957	1110	1260		1870 *	2000 *	2640 *			64	1800	28
535	669	813	932	1080		1570 *	1720 *	2230 *	2550 *	2750 *	54	1500	
444	538	653	749	896		1260	1430	1790 *	2050 *	2280 *	43	1200	
378	450	546	626	768		1050	1220	1500	1720 *	1960 *	36	1000	
341	405	492	565	703		954	1110	1350	1550	1790	32	900	
285	339	412	472	603		798	929	1130	1290	1530	27	750	
30.978	32.067	30.463	30.789	31.932	31.197	31.826	31.826	31.115	32.390	32.390	Exact Reduction Ratio		
588	722	865	1040	1120	1530	1730 *	1870 *	2460 *			57	1800	31.5
497	604	724	898	963	1280	1450 *	1600 *	2060 *	2240 *	2450 *	48	1500	
400	485	581	727	791	1030	1160	1330	1660 *	1800 *	2030 *	38	1200	
334	406	486	608	661	865	977	1130	1380	1500 *	1740 *	32	1000	
301	366	438	548	596	780	881	1020	1250	1360	1590	29	900	
252	306	366	458	499	653	736	857	1040	1130	1340	24	750	
35.345	34.412	35.100	35.329	34.895	36.870	36.000	36.000	36.500	34.341	34.341	Exact Reduction Ratio		
525	643	781	895	1040	1300	1530 *	1690 *	2110 *			51	1800	35.5
450	538	653	749	899	1090	1280 *	1450 *	1760 *	2110 *	2340 *	42	1500	
366	432	525	602	745	878	1030	1200	1420 *	1700 *	1940 *	34	1200	
306	361	439	503	639	735	866	1000	1180	1420 *	1660 *	28	1000	
276	325	395	454	581	662	780	908	1070	1280	1510	25	900	
231	272	330	379	485	554	652	759	895	1070	1260	21	750	
C-146	C-146	C-146	C-146	C-146	C-148	C-148	C-148	C-150	C-150	C-150	Horizontal	Dimension Tables	
C-172	C-172	C-172	C-172	C-172							Vertical Upright		

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
250	294	323	378	417	467	508	508	564	657	657	-	1800	Triple Reduction Horizontal Type
572	647	691	786	842	770	838	838	931	1084	1084	1	1500	
248	295	325	377	421	466	515	515	577	682	682	-	1500	
506	577	618	697	757	769	849	849	952	1125	1125	1	1200	
243	290	319	369	415	458	512	512	579	689	689	-	1200	
439	504	538	607	661	756	845	845	955	1137	1137	1	1000	28 ▼ 35.5
236	283	310	359	403	448	504	504	572	683	683	-	1000	
378	436	465	523	570	739	831	831	943	1128	1128	1	900	
231	278	305	353	395	440	497	497	565	677	677	-	900	
355	410	437	491	535	726	820	820	933	1117	1117	1	750	
222	268	294	340	380	426	483	483	551	661	661	-	750	35.5
310	360	383	431	468	702	796	796	909	1091	1091	1		

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

231	267	292	344	380	-	1800	Triple Reduction Vertical Type
235	277	304	356	393	-	1500	
233	277	306	355	398	-	1200	
229	273	301	348	391	-	1000	
225	270	296	343	385	-	900	
218	262	287	332	373	-	750	35.5

-	1	1800	Triple Reduction Upright Type
-	1	1500	
-	1	1200	
-	1	1000	
-	1	900	
-	1	750	35.5

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 40 ▶ 50

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
40	Exact Reduction Ratio		38.980	39.444	41.134	40.976	38.889	39.686	40.435	38.450	39.190	37.500	39.375	39.000	38.519	38.514	39.818
	1800	45	13.6	21.2	30	39	50	64	75	105	125	174	192	252	292	374	411
	1500	38	11.4	17.7	25.5	33	42	53	63	88	104	145	160	211	244	313	343
	1200	30	9.1	14.2	20.4	26.7	34	42	50	70	84	116	129	169	196	251	276
	1000	25	7.6	11.9	17.1	22.3	28.5	35	42	59	70	96	107	141	164	210	230
	900	23	6.9	10.7	15.4	20.1	25.6	32	38	53	63	87	97	127	147	189	207
	750	19	5.7	8.9	12.8	16.8	21.4	26.7	31	44	52	72	81	106	123	158	173
45	Exact Reduction Ratio		45.088	45.009	44.338	44.550	44.375	45.148	46.033	43.197	45.667	42.889	44.118	43.765	42.484	42.289	43.316
	1800	40	11.1	17.4	27.5	36	41	54	62	85	98	134	160	212	253	321	364
	1500	33	9.3	14.5	22.9	30	34	45	52	71	82	112	134	177	211	269	304
	1200	27	7.4	11.6	18.4	24.3	27.9	36	41	57	66	90	107	142	170	216	244
	1000	22	6.2	9.7	15.4	20.3	23.3	30	34	47	55	75	89	118	142	180	204
	900	20	5.6	8.7	13.8	18.3	21.0	27.4	31	42	49	67	81	107	128	162	184
	750	17	4.7	7.3	11.5	15.3	17.5	22.9	26.2	35	41	56	67	89	106	135	153
50	Exact Reduction Ratio				51.141	51.268	49.248	49.444	49.634	50.388	48.825	49.144	51.188	48.750	51.845	46.944	51.911
	1800	36			24.6	31	40	51	61	81	100	133	148	203	218	308	316
	1500	30			20.5	26.7	33	43	51	67	84	111	124	169	182	257	264
	1200	24			16.5	21.4	27.0	34	41	54	67	89	99	136	146	207	212
	1000	20			13.8	17.9	22.5	28.9	34	45	56	74	83	113	122	173	177
	900	18			12.4	16.1	20.3	26.0	31	40	50	67	74	102	110	155	160
	750	15			10.3	13.4	16.9	21.6	26.0	34	42	56	62	85	92	130	133
Dimension Tables	Horizontal	C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-144	C-144	C-144	C-144	C-144	C-144	C-146
	Vertical	C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-170	C-170	C-170	C-170	C-170	C-170	C-172
	Upright	C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-186	C-186	C-186	C-186	C-186	C-186	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Triple Reduction Horizontal Type	1800	-	20	31	34	46	53	66	66	83	92	113	125	157	159	201	210
		1500	-	57	80	63	97	130	162	159	200	180	221	230	270	377	540	497
		1200	-	49	69	54	83	111	137	137	173	155	192	199	235	328	473	434
	40	1000	-	18	28	30	42	48	60	60	77	84	106	115	148	148	191	198
		900	-	41	58	44	70	92	116	115	146	130	164	168	201	279	406	371
		750	-	17	27	29	39	45	57	57	73	80	101	110	142	142	185	191
	50	1000	1	34	49	37	58	77	98	96	124	110	139	142	171	237	348	317
		900	1	17	26	27	38	43	55	55	71	78	99	106	138	138	180	186
		750	1	31	45	34	54	71	90	89	115	102	130	132	159	220	325	295
	50	900	-	16	24	25	36	40	52	51	67	73	94	101	132	131	172	177
		750	1	27	39	29	46	60	78	76	99	87	112	113	138	190	283	256
Dimension Tables	Triple Reduction Vertical Type	1800	-	20	29	33	44	51	64	64	80	88	108	119	150	151	190	199
		1500	-	19	29	32	43	50	62	62	78	86	107	117	148	149	189	198
		1200	-	18	27	30	41	47	59	59	75	82	103	112	144	144	185	192
	40	1000	-	17	26	28	39	44	56	56	72	78	99	108	139	139	180	186
		900	-	16	25	27	37	43	54	54	70	76	97	105	136	136	177	182
		750	-	15	24	25	35	40	51	51	66	72	92	99	130	129	170	174
	40	1800	-	20	31	34	46	59	66	66	83	92	113	125	157	159	201	
		1500	-	57	80	63	97	145	162	159	200	180	221	230	270	377	540	
		1200	-	49	69	54	83	125	137	137	173	155	192	199	235	328	473	
	50	1000	-	18	28	30	42	54	60	60	77	84	106	115	148	148	191	
		900	-	41	58	44	70	105	116	115	146	130	164	168	201	279	406	
		750	-	17	27	29	39	52	57	57	73	80	101	110	142	142	185	

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 40 ▶ 50

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
38.349	39.522	38.082	37.948	39.918	39.000	39.059	39.059	39.601	39.284	39.284	Exact Reduction Ratio			40
482	589	695	875	933	1190	1420 [*]	1570 [*]	1940 [*]			45	1800		
403	492	581	738	791	1030	1180 [*]	1350 [*]	1630 [*]	1850 [*]	2080 [*]	38	1500		
324	395	467	593	635	831	955	1110	1310 [*]	1490 [*]	1730 [*]	30	1200		
271	330	390	495	531	695	799	930	1090	1240 [*]	1470 [*]	25	1000		
244	298	352	447	479	627	720	839	988	1120	1320	23	900		
204	249	294	373	400	524	602	701	826	941	1110	19	750	45	
44.182	42.412	43.261	43.543	43.008	46.838	45.900	45.900	44.321	43.686	43.686	Exact Reduction Ratio			
432	524	636	730	876	1030	1210 [*]	1380 [*]	1740 [*]			40	1800		
366	438	532	610	751	865	1010 [*]	1180 [*]	1460 [*]	1670 [*]	1910 [*]	33	1500		
294	352	427	490	623	695	816	949	1170 [*]	1340 [*]	1580 [*]	27	1200		
246	294	357	410	524	581	682	794	981	1120 [*]	1320 [*]	22	1000		
222	265	322	369	473	523	615	715	885	1010	1190	20	900		
185	221	269	308	395	437	514	598	740	848	1000	17	750	50	
47.936	50.361	46.936	48.355	49.198	48.067	49.800	49.800	48.087	49.974	49.974	Exact Reduction Ratio			
388	464	566	695	770	1000	1120 [*]	1280 [*]	1610 [*]			36	1800		
324	388	474	581	644	843	937 [*]	1090 [*]	1340 [*]	1460 [*]	1700 [*]	30	1500		
260	311	380	467	517	677	753	876	1080 [*]	1170 [*]	1390 [*]	24	1200		
217	260	318	390	432	566	629	732	906	986 [*]	1160 [*]	20	1000		
196	234	286	352	390	510	567	660	817	889	1040	18	900		
163	196	239	294	326	426	474	552	682	742	876	15	750	Horizontal Vertical Upright	
C-146	C-146	C-146	C-146	C-146	C-148	C-148	C-148	C-150	C-150	C-150	Dimension Tables			
C-172	C-172	C-172	C-172	C-172										

1. _____
For ⌘ marked values, the forced oil lubrication is required at continuous operation.

2. _____
Consult us when the high speed shaft speed is over 1800r/min.

3. _____
When the high speed shaft speed is not shown in the table, find it by the interpolation method.

4. _____
When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$

5. _____
Shown in the table are the ratings for the slow speed shaft.

6. _____
Refer to C42-C45 for the allowable radial and axial load on each shaft.

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
238	274	307	363	396	440	488	488	545	631	631	-	1800	Triple Reduction Horizontal Type	20	1.00	1.00
545	603	656	756	801	726	805	805	899	1042	1042	1	1800		30	0.85	0.87
236	270	305	357	393	434	489	489	550	641	641	-	1500		40	0.70	0.73
481	529	581	661	706	715	807	807	908	1058	1058	1	1500		50	0.55	0.60
230	262	299	344	383	421	482	482	546	639	639	-	1200				
416	454	505	566	611	695	795	795	901	1055	1055	1	1200				
223	253	291	332	371	408	471	471	537	630	630	-	1000	40 ▼ 50			
358	389	435	483	525	673	777	777	886	1039	1039	1	1000				
219	247	285	324	364	399	463	463	529	622	622	-	900				
335	364	409	451	493	659	764	764	873	1026	1026	1	900				
210	236	275	309	350	383	448	448	514	604	604	-	750				
293	316	358	392	431	632	739	739	847	997	997	1	750				
223	259	286	340	373							-	1800	Triple Reduction Vertical Type			
225	258	289	343	374							-	1500				
222	253	288	334	370							-	1200				
217	246	282	324	362							-	1000				
213	241	278	317	356							-	900				
206	232	269	304	343							-	750				
											-	1800	Triple Reduction Upright Type			
											-	1500				
											-	1200				
											-	1000				
											-	900				
											-	750				

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 56 ▶ 71

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
56	Exact Reduction Ratio			55.125	55.739	56.195	56.250	56.507	56.608	56.894	56.206	57.353	54.706	57.182	51.547	56.471
	1800	32		22.1	29.1	33	43	50	65	79	102	123	170	189	264	280
	1500	27		18.5	24.3	27.6	36	42	54	66	86	103	142	158	221	234
	1200	21		14.8	19.5	22.1	29.3	34	43	53	69	83	114	126	177	188
	1000	18		12.4	16.2	18.5	24.5	28.5	36	44	57	69	95	105	148	157
	900	16		11.1	14.6	16.6	22.1	25.6	32	40	51	62	86	95	133	141
	750	13		9.3	12.2	13.9	18.4	21.4	27.4	33	43	52	71	79	111	118
63	Exact Reduction Ratio			63.986	63.741	61.358	62.615	65.045	61.852	63.984	61.225	63.984	63.375	63.194	63.186	64.889
	1800	29		19.7	25.7	32	40	47	66	77	106	119	156	179	230	254
	1500	24		16.5	21.5	27.1	33	39	55	64	88	99	131	150	192	212
	1200	19		13.2	17.2	21.7	27.1	31	44	51	71	79	105	120	154	170
	1000	16		11.0	14.4	18.1	22.6	26.5	37	43	59	66	87	100	129	142
	900	14		9.9	13.0	16.3	20.3	23.9	33	38	53	60	79	90	116	128
	750	12		8.3	10.8	13.6	16.9	19.9	27.8	32	44	50	66	75	97	107
71	Exact Reduction Ratio			68.971	69.300	70.014	71.234	74.051	69.488	74.559	70.024	71.691	71.118	69.700	69.381	70.588
	1800	25		17.7	23.4	26.6	34	39	53	60	82	99	131	155	197	225
	1500	21		14.8	19.6	22.2	29.0	32	44	50	69	83	109	130	165	188
	1200	17		11.9	15.7	17.8	23.2	26.1	35	40	55	66	88	104	132	151
	1000	14		9.9	13.1	14.8	19.4	21.8	29.7	34	46	55	73	87	110	126
	900	13		8.9	11.8	13.4	17.5	19.6	26.8	30	41	50	66	78	99	113
	750	11		7.4	9.8	11.2	14.6	16.4	22.4	25.6	34	41	55	65	83	95
Dimension Tables	Horizontal Vertical Upright		C-142	C-142	C-142	C-142	C-142	C-142	C-142	C-144	C-144	C-144	C-144	C-144	C-144	C-146
			C-168	C-168	C-168	C-168	C-168	C-168	C-168	C-170	C-170	C-170	C-170	C-170	C-170	C-172
			C-184	C-184	C-184	C-184	C-184	C-184	C-184	C-186	C-186	C-186	C-186	C-186	C-186	C-186

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Triple Reduction Horizontal Type	1800	-			32	39	49	59	62	78	86	106	119	146	152	186	198
				59	83	120	145	150	188	169	208	219	250	362	500	469		
		1500	-		30	37	47	57	60	75	83	102	115	141	148	181	194	
	56			50	70	102	124	128	161	145	178	189	216	314	432	409		
		1200	-		28	35	44	53	56	70	79	96	109	134	142	172	187	
			1		42	58	85	103	107	134	122	149	160	182	267	366	350	
Dimension Tables	Triple Reduction Vertical Type	1000	-		27	33	41	50	53	66	75	92	104	127	136	165	180	
				34	48	71	86	90	112	103	126	135	153	227	310	298		
		900	-		26	31	40	48	51	64	73	89	101	123	132	160	175	
	71			32	44	65	79	83	104	95	117	125	142	211	289	278		
		750	-		24	29	37	45	48	60	68	83	95	116	125	152	167	
			1		27	38	55	67	71	89	82	99	108	122	182	249	241	
Selection Tables	Triple Reduction Vertical Type	1800	-			31	38	47	58	60	75	83	102	114	140	145	178	188
				30	36	46	55	58	73	81	99	111	137	143	175	187		
		1200	-		28	34	43	52	55	69	77	94	107	131	138	168	182	
	56	1000	-		26	32	41	49	52	65	74	90	102	125	133	162	176	
				25	31	39	47	51	63	72	87	100	122	130	157	172		
		900	-		24	29	37	44	48	59	68	82	94	115	124	150	164	
Dimension Tables	Triple Reduction Upright Type	1800	-		32	39	54	59	62	78	86	106	119	146	152	186		
				59	83	133	145	150	188	169	208	219	250	362	500			
		1500	-		30	37	52	57	60	75	83	102	115	141	148	181		
	56			50	70	113	124	128	161	145	178	189	216	314	432			
		1200	-		28	35	49	53	56	70	79	96	109	134	142	172		
			1		42	58	94	103	107	134	122	149	160	182	267	366		
71	1000	-		27	33	46	50	53	66	75	92	104	127	136	165			
			34	48	79	86	90	112	103	126	135	153	227	310				
	900	-		26	31	44	48	51	64	73	89	101	123	132	160			
71			32	44	72	79	83	104	95	117	125	142	211	289				
	750	-		24	29	41	45	48	60	68	83	95	116	125	152			
		1		27	38	61	67	71	89	82	99	108	122	182	249			

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 56 ▶ 71

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio		
57.600	54.044	55.125	55.485	54.803	56.807	57.600	57.487	53.842	53.842		56		
338	413	502	575	717	856	972 *	1130 *	1350 *					
282	345	419	481	615	716	812 *	946 *	1130 *	1360 *	1600 *			
226	277	336	386	494	575	652	759	909 *	1090 *	1290 *			
189	231	281	322	413	480	545	635	760	916 *	1080 *			
170	208	253	291	372	433	492	572	685	826	974	63		
142	174	212	243	311	362	411	478	572	690	814			
62.494	62.070	59.809	59.598	62.691	61.933	62.494	62.494	62.372	61.592	61.592			
299	378	446	566	607	786	897 *	1040 *	1240 *					
249	316	373	473	508	657	750 *	873 *	1040 *	1190 *	1410 *			
200	253	299	380	408	528	602	701	839 *	960 *	1130 *			
167	212	250	317	340	441	503	586	701	802 *	946 *			
151	191	225	286	307	397	454	528	632	723	853	71		
126	159	188	239	256	332	379	441	528	604	713			
72.000	66.609	67.941	68.385	67.544	73.193	72.000	72.000	70.853	72.791	72.791			
271	336	408	468	599	667	780 *	908 *	1100 *					
226	281	341	391	501	558	652 *	759 *	922 *	1010 *	1190 *			
182	225	274	314	402	448	524	610	740 *	814 *	961 *	71		
152	188	229	262	336	374	438	509	618	681 *	803 *			
137	170	206	236	303	337	394	459	557	613 *	724			
114	141	172	197	253	281	329	383	466	512	604			
C-146	C-146	C-146	C-146	C-146	C-148	C-148	C-148	C-150	C-150	C-150	Horizontal Vertical Upright		
C-172	C-172	C-172	C-172	C-172	C-172								

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Triple Reduction Horizontal Type		
214	262	288	337	378	422	448	448	512	591	591	-	1800	56
491	576	617	700	764	696	739	739	845	975	975	1	1500	
210	258	283	329	370	413	443	443	509	592	592	-	1500	
427	504	539	610	664	681	731	731	840	977	977	1	1200	
201	249	273	318	356	398	432	432	498	583	583	-	1200	
364	433	462	522	567	657	712	712	821	962	962	1	1000	71
193	241	264	306	342	384	418	418	484	570	570	-	1000	
310	371	395	445	483	633	690	690	799	940	940	1	900	
188	235	257	298	333	375	410	410	475	560	560	-	900	
289	346	369	415	451	618	676	676	784	924	924	1	750	
179	225	246	284	318	358	393	393	457	540	540	-	750	71
250	301	320	361	391	591	648	648	754	891	891	1	750	

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

205	248	274	321	362	-	1800	Triple Reduction Vertical Type
202	247	272	318	357	-	1500	
196	242	266	309	347	-	1200	
189	235	258	299	335	-	1000	
185	230	252	293	328	-	900	
177	221	242	280	313	-	750	71

-	1	1800	Triple Reduction Upright Type
-	1	1500	
-	1	1200	
-	1	1000	
-	1	900	
-	1	750	71

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 80 ► 90

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																	
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090			
80	Exact Reduction Ratio		79.751			78.012			81.056			80.234			79.219			77.018		77.090
	1800	23	*	20.6	*	32	*	50	*	82	*	125	*	189	206					
	1500	19	*	17.2	*	27.4	*	42	*	68	*	105	*	158	172					
	1200	15	*	13.8	*	21.9	*	33	*	55	*	84	*	127	138					
	1000	13	*	11.5	*	18.3	*	28.3	*	45	*	70	*	106	115					
	900	11	*	10.4	*	16.5	*	25.5	*	41	*	63	*	95	104					
	750	9.4	*	8.7	*	13.7	*	21.3	*	34	*	53	*	79	87					
90	Exact Reduction Ratio		86.706			88.750			91.063			91.765			88.897			84.569		
	1800	20	*	18.8	*	27.9	*	40	*	63	*	105	*	162	*					
	1500	17	*	15.7	*	23.3	*	34	*	53	*	88	*	136	*					
	1200	13	*	12.6	*	18.7	*	27.3	*	42	*	70	*	109	*					
	1000	11	*	10.5	*	15.6	*	22.8	*	35	*	59	*	91	*					
	900	10	*	9.4	*	14.0	*	20.5	*	32	*	53	*	82	*					
	750	8.3	*	7.9	*	11.7	*	17.1	*	26.7	*	44	*	68	*					
Dimension Tables	Horizontal		C-142			C-142			C-142			C-144			C-144			C-144		C-146
	Vertical		C-168			C-168			C-168			C-170			C-170			C-170		C-172
	Upright		C-184			C-184			C-184			C-186			C-186			C-186		

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer													
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
Selection Tables	Triple Reduction Horizontal Type	1800	-				37	56	73			100	139	178	202		
					79	137	177			196			238	479	479		
		1500	-				36	54	70			96	134	173	198		
					67	118	151			167			205	414	417		
		1200	-				33	50	66			91	127	165	190		
					55	97	126			141			173	351	356		
	80 ▼ 90	1000	-				31	47	62			86	121	158	183		
					46	81	106			118			146	297	304		
		900	-				30	45	60			83	117	153	178		
					42	74	97			109			135	276	283		
		750	-				28	42	56			78	111	145	170		
					36	63	83			93			116	238	246		
Dimension Tables	Triple Reduction Vertical Type	1800	-				36	55	71			96	134	171	192		
					35	52	69			93			130	168	190		
		1200	-				33	49	65			89	125	161	185		
					31	47	61			85			119	155	179		
		1000	-				29	45	59			82	116	151	175		
					27	42	56			77			109	143	167		
	80 ▼ 90	900	-				27	42	56			77	109	143	167		
					27	42	56			77			109	143	167		
		750	-				27	42	56			77	109	143	167		
					27	42	56			77			109	143	167		
		750	-				27	42	56			77	109	143	167		
					27	42	56			77			109	143	167		
Dimension Tables <td rowspan="6">Triple Reduction Upright Type</td> <td>1800</td> <td>-</td> <td></td> <td></td> <td></td> <td>37</td> <td>56</td> <td>73</td> <td></td> <td></td> <td>100</td> <td>139</td> <td>178</td> <td></td> <td></td>	Triple Reduction Upright Type	1800	-				37	56	73			100	139	178			
					79	137	177			196			238	479			
		1500	-				36	54	70			96	134	173			
					67	118	151			167			205	414			
		1200	-				33	50	66			91	127	165			
					55	97	126			141			173	351			
	80 ▼ 90	1000	-				31	47	62			86	121	158			
					46	81	106			118			146	297			
		900	-				30	45	60			83	117	153			
					42	74	97			109			135	276			
		750	-				28	42	56			78	111	145			
					36	63	83			93			116	238			

SELECTION Parallel Shaft Triple Reduction Nominal Reduction Ratio 80 ▶ 90

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
78.118	75.300	73.714	80.819	77.266	75.490	78.118	78.118	76.873			Exact Reduction Ratio	
240	298	363	397	495	647	720*	839*	1010*			23	1800
200	249	304	332	413	541	602*	701*	851*			19	1500
160	200	244	266	332	434	483	563	683*			15	1200
134	167	203	222	277	363	404	470	571			13	1000
121	150	183	200	250	327	364	424	514			11	900
101	125	153	167	208	273	304	354	430			9.4	750
85.313	83.332			91.315	89.216	85.313	85.313	86.903			Exact Reduction Ratio	
220	*	322	*	420	549	661*	769*	902*			20	1800
183	*	269	*	351	459	552*	643*	754*			17	1500
147	*	216	*	281	368	443	516	605*			13	1200
123	*	180	*	235	308	370	431	506			11	1000
111	*	162	*	212	277	334	388	456			10	900
92	*	135	*	177	231	278	324	380			8.3	750
C-146	C-146	C-146	C-146	C-146	C-148	C-148	C-148	C-150			Horizontal Vertical Upright	Dimension Tables
C-172	C-172	C-172	C-172	C-172								

* marked models are quadruple reduction units. Refer to C-120 and C-121.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$P_N = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
214	265	283	333	362	399	446	446	500			-	1800
490	582	606	693	732	659	735	735	825			1	1500
209	260	278	326	354	389	441	441	495			-	1200
426	510	530	604	636	642	727	727	817			1	1000
201	252	269	314	340	373	429	429	482			-	900
363	438	454	516	543	615	708	708	796			1	750
193	243	259	302	327	358	415	415	468			-	
309	374	388	440	462	591	685	685	772			1	
188	237	253	295	319	349	406	406	459			-	
288	350	362	411	431	576	670	670	757			1	
179	227	241	281	304	332	389	389	440			-	
250	304	315	357	374	548	642	642	726			1	

204	251	269	319	347							-	1800
202	250	268	315	343							-	1500
196	244	261	306	332							-	1200
189	237	253	296	321							-	1000
185	233	248	290	314							-	900
176	223	238	277	300							-	750

											-	1800
											-	1500
											-	1200
											-	1000
											-	900
											-	750

Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 80 ▶ 100

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer																								
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090										
80	Exact Reduction Ratio		82.394			79.669			79.341			76.744			78.120			79.124									
	1800	23	15.3			*	25.0			*	32			*	50			*	82			*	134			*	*
	1500	19	12.8			*	20.9			*	27.2			*	41			*	68			*	111			*	*
	1200	15	10.3			*	16.7			*	21.7			*	33			*	54			*	89			*	*
	1000	13	8.6			*	13.9			*	18.1			*	27.9			*	45			*	74			*	*
	900	11	7.7			*	12.6			*	16.3			*	25.1			*	41			*	67			*	*
	750	9.4	6.4			*	10.5			*	13.6			*	20.9			*	34			*	55			*	*
90	Exact Reduction Ratio		88.813			90.908			90.326			89.427			87.529			87.269			88.471						
	1800	20	13.8			*	20.5			*	32			*	50			*	81			*	124			*	180
	1500	17	11.5			*	17.1			*	26.7			*	41			*	68			*	104			*	150
	1200	13	9.2			*	13.7			*	21.4			*	33			*	54			*	83			*	120
	1000	11	7.7			*	11.5			*	17.9			*	27.9			*	45			*	69			*	101
	900	10	6.9			*	10.3			*	16.1			*	25.1			*	41			*	62			*	91
	750	8.3	5.8			*	8.6			*	13.4			*	20.9			*	34			*	52			*	75
100	Exact Reduction Ratio		103.09			102.69	99.26	101.29	103.97	98.871	100.57	97.650			96.720	96.444	96.432	101.66									
	1800	18	12.3			16.1	20.1	25.1	29.8	32	49	78			82	118	134	163									
	1500	15	10.3			13.4	16.8	20.9	24.9	27.2	41	65			68	99	111	136									
	1200	12	8.2			10.7	13.5	16.7	19.9	21.7	33	52			54	79	89	109									
	1000	10	6.9			9.0	11.2	13.9	16.6	18.1	27.6	43			45	66	74	91									
	900	9.0	6.2			8.1	10.1	12.6	15.0	16.3	24.9	39			41	59	67	82									
	750	7.5	5.2			6.7	8.4	10.5	12.5	13.6	20.7	33			34	49	55	68									
Dimension Tables	Horizontal Vertical Upright	C-152			C-152	C-152	C-152	C-152	C-152	C-152	C-154	C-154			C-154	C-154	C-154	C-156									
		C-174			C-174	C-174	C-174	C-174	C-174	C-174	C-176	C-176			C-176	C-176	C-176	C-178									
		C-188			C-188	C-188	C-188	C-188	C-188	C-188	C-190	C-190			C-190	C-190	C-190										

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type	1800	-			27	34	42	51	52	65	73		100	122	128	155	157
		1500	-			26	32	41	50	50	62	71		97	118	125	151	156
		1200	-			24	30	39	47	47	59	67		93	113	120	145	152
		1000	-			23	29	37	45	45	56	64		89	108	115	139	148
		900	-			22	28	36	43	44	54	62		86	105	112	135	145
Dimension Tables	100	750	-			21	26	34	41	41	51	59		82	99	107	128	139
	Quadruple Reduction Vertical Type	1800	-			28	35	45	54	54	67	77		105	128	136	164	172
		1500	-			27	33	43	51	52	64	73		101	123	131	157	167
		1200	-			25	31	40	48	49	60	69		96	116	124	149	160
		1000	-			24	29	38	46	46	57	65		91	110	119	142	154
		900	-			23	28	37	44	45	55	63		88	107	115	138	150
	100	750	-			21	26	34	41	42	51	60		83	101	109	130	143
	Quadruple Reduction Upright Type	1800	-			27	34	47	51	52	65	74		101	124	130	157	
		1500	-			26	32	45	50	50	63	71		98	120	126	153	
		1200	-			25	31	43	47	48	59	68		93	114	121	146	
		1000	-			23	29	41	45	45	56	64		89	108	116	139	
		900	-			22	28	39	43	44	54	62		87	105	113	136	
		750	-			21	26	37	41	41	51	59		82	100	107	129	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 80 ▶ 100

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
80.205 80.205											Exact Reduction Ratio		
*	*	*	*	*	*	*	*	*	1100	1210	80	23	1800
*	*	*	*	*	*	*	*	*	922	1060		19	1500
*	*	*	*	*	*	*	*	*	740	872		15	1200
*	*	*	*	*	*	*	*	*	618	727		13	1000
*	*	*	*	*	*	*	*	*	557	654		11	900
*	*	*	*	*	*	*	*	*	465	545		9.4	750
88.676 91.041 89.191 89.191											Exact Reduction Ratio		
*	254	*	353	*	*	*	*	*	994	1170	90	20	1800
*	212	*	295	*	*	*	*	*	831	980		17	1500
*	170	*	237	*	*	*	*	*	667	786		13	1200
*	142	*	198	*	*	*	*	*	557	657		11	1000
*	128	*	178	*	*	*	*	*	502	592		10	900
*	106	*	149	*	*	*	*	*	419	494		8.3	750
97.907	101.85	98.135	97.789	102.87	96.134	101.59	101.59	98.178	102.03	102.03	Exact Reduction Ratio		
192	232	274	348	373	465	556	648	800	871	1020	100	18	1800
160	194	229	290	312	388	465	541	669	728	858		15	1500
128	155	184	233	250	310	373	434	537	584	689		12	1200
107	129	153	194	209	258	311	363	448	488	575		10	1000
96	117	138	175	188	232	281	327	404	439	518		9.0	900
80	97	115	146	157	194	234	273	337	367	433		7.5	750
C-156 C-178	C-156 C-178	C-156 C-178	C-156 C-178	C-156 C-178	C-158 C-178	C-158 C-178	C-158 C-178	C-160 C-178	C-160 C-178	C-160 C-178	Horizontal Vertical Upright		
C-156 C-178 C-156 C-178 C-156 C-178 C-158 C-178 C-158 C-178 C-160 C-178											Dimension Tables		

* marked models are triple reduction units. Refer to C-118 and C-119.

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136			
177	204	230	271	299	328	392	392	425	521	521	-	1800	Quadruple Reduction Horizontal Type 80 ▼ 100
175	203	228	268	295	322	386	386	422	515	515	-	1500	
170	199	223	261	286	311	374	374	413	502	502	-	1200	
165	193	217	253	277	300	362	362	402	487	487	-	1000	
162	190	213	248	271	293	354	354	395	478	478	-	900	
155	182	205	238	260	280	339	339	381	460	460	-	750	
193	225	252	294	323							-	1800	Quadruple Reduction Vertical Type 80 ▼ 100
187	219	245	286	313							-	1500	
179	210	235	273	299							-	1200	
172	202	226	262	287							-	1000	
167	197	221	256	280							-	900	
159	188	211	244	267							-	750	
											-	1800	Quadruple Reduction Upright Type 80 ▼ 100
											-	1500	
											-	1200	
											-	1000	
											-	900	
											-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 112 ▶ 140

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
112	Exact Reduction Ratio			111.12	111.65	113.26	115.23	118.37	111.08	117.19	110.06	109.41	108.54	106.37	105.89	110.59
	1800	16		11.1	14.6	16.5	21.5	24.5	32	38	50	65	82	102	130	144
	1500	13		9.2	12.2	13.8	18.0	20.4	27.2	32	41	54	68	85	108	120
	1200	11		7.4	9.8	11.0	14.4	16.4	21.8	26.0	33	43	54	68	87	97
	1000	8.9		6.2	8.2	9.2	12.0	13.7	18.1	21.7	27.9	36	45	57	72	80
	900	8.0		5.6	7.3	8.3	10.8	12.3	16.3	19.6	25.1	33	41	51	65	72
	750	6.7		4.6	6.1	6.9	9.0	10.3	13.6	16.3	20.9	27.5	34	43	54	60
125	Exact Reduction Ratio			127.97	128.49	122.72	126.20	130.09	129.57	125.30	126.11	127.97	120.90	126.39	117.54	127.07
	1800	14		9.9	12.9	16.3	20.3	23.9	31	39	50	60	82	90	124	131
	1500	12		8.3	10.7	13.6	17.0	19.9	26.6	33	41	50	68	75	104	109
	1200	9.6		6.6	8.6	10.9	13.6	16.0	21.3	26.6	33	40	54	60	83	87
	1000	8.0		5.5	7.2	9.1	11.3	13.3	17.8	22.2	27.9	33	45	50	69	73
	900	7.2		5.0	6.5	8.2	10.2	12.0	16.0	20.0	25.1	30	41	45	62	66
	750	6.0		4.2	5.4	6.8	8.5	10.0	13.4	16.7	20.9	25.2	34	38	52	55
140	Exact Reduction Ratio			137.94	139.69	140.03	143.57	148.10	145.56	146.01	144.24	143.38	135.67	139.40	129.07	138.24
	1800	13		8.9	11.7	13.4	17.3	19.6	25.6	31	40	50	69	78	107	116
	1500	11		7.4	9.8	11.2	14.5	16.4	21.4	26.1	33	41	58	65	89	97
	1200	8.6		6.0	7.8	8.9	11.6	13.1	17.1	20.9	27.1	33	46	52	71	77
	1000	7.1		5.0	6.5	7.5	9.7	10.9	14.3	17.5	22.7	28.0	38	43	59	64
	900	6.4		4.5	5.9	6.7	8.7	9.9	12.9	15.7	20.4	25.2	35	39	54	58
	750	5.4		3.7	4.9	5.6	7.3	8.2	10.7	13.1	17.0	21.0	29.2	32	45	48
Dimension Tables	Horizontal Vertical Upright		C-152	C-152	C-152	C-152	C-152	C-152	C-154	C-154	C-154	C-154	C-154	C-154	C-154	C-156
			C-174	C-174	C-174	C-174	C-174	C-174	C-176	C-176	C-176	C-176	C-176	C-176	C-176	C-178
			C-188	C-188	C-188	C-188	C-188	C-188	C-190	C-190	C-190	C-190	C-190	C-190	C-190	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type	1800	-			25	31	40	48	50	61	70	84	95	117	122	150	151	
		1500	-			24	30	38	46	48	59	68	81	92	113	119	146	149	
		1200	-			23	28	36	43	45	56	64	77	88	108	114	139	145	
		1000	-			22	27	35	41	43	53	61	73	84	103	109	134	141	
	▼	900	-			21	26	34	40	42	51	59	71	82	100	106	130	138	
Dimension Tables	140	750	-			20	24	32	38	39	48	56	67	77	95	101	124	132	
	Quadruple Reduction Vertical Type	1800	-			27	33	42	50	52	64	73	88	100	122	129	158	164	
		1500	-			25	31	40	47	50	61	70	84	96	117	124	151	159	
		1200	-			24	29	37	45	47	57	66	79	90	111	118	144	152	
		1000	-			22	27	35	42	44	54	62	75	86	105	112	137	146	
	▼	900	-			21	26	34	41	43	52	60	72	83	102	109	133	143	
	140	750	-			20	24	32	38	40	49	57	68	79	96	103	126	136	
	Quadruple Reduction Upright Type	1800	-			26	31	44	48	50	62	71	84	96	118	124	152		
		1500	-			25	30	43	46	48	59	68	81	93	114	120	147		
		1200	-			23	28	40	43	46	56	65	77	89	108	115	140		
		1000	-			22	27	38	41	43	53	61	73	84	103	110	134		
		▼	900	-			21	26	37	40	42	51	60	71	82	100	107	131	
		140	750	-			20	24	35	38	39	48	56	67	78	95	102	124	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 112 ▶ 140

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
112.80	109.29	111.48	112.21	110.83	113.61	117.50	117.50	117.37	109.93	109.93	Exact Reduction Ratio		112	1. — For ※ marked values, the forced oil lubrication is required at continuous operation. 2. — Consult us when the high speed shaft speed is over 1800r/min. 3. — When the high speed shaft speed is not shown in the table, find it by the interpolation method. 4. — When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$ 5. — Shown in the table are the ratings for the slow speed shaft. 6. — Refer to C42-C45 for the allowable radial and axial load on each shaft.
174	206	251	287	368	433	482	561	671	809	954	16	1800		
145	172	209	240	308	362	403	469	561	676	797	13	1500		
116	138	168	192	247	290	323	376	450	542	640	11	1200		
97	115	140	161	206	242	270	314	376	453	534	8.9	1000		
87	104	126	145	186	218	243	283	338	408	481	8.0	900		
73	86	105	121	155	182	203	236	283	341	402	6.7	750		
122.38	124.14	120.95	119.20	126.78	123.87	127.49	127.49	127.34	129.91	129.91	Exact Reduction Ratio		125	
154	191	223	286	304	397	445	518	619	686	810	14	1800		
128	159	186	239	253	332	371	432	517	573	676	12	1500		
103	127	149	191	203	266	298	347	415	460	542	9.6	1200		
86	106	124	160	170	222	249	290	347	384	453	8.0	1000		
77	96	112	144	153	200	224	261	312	346	408	7.2	900		
64	80	94	120	127	167	187	218	261	289	341	6.0	750		
141.00	133.22	135.88	136.77	135.09	146.39	146.88	146.88	142.35	133.32	133.32	Exact Reduction Ratio		140	
139	170	206	236	303	337	387	450	555	669	789	13	1800		
116	141	172	197	253	281	323	376	464	559	659	11	1500		
93	113	138	158	203	226	259	301	372	448	529	8.6	1200		
78	95	115	132	169	188	216	252	310	374	441	7.1	1000		
70	85	104	119	152	170	195	227	280	337	398	6.4	900		
58	71	86	99	127	142	162	189	233	281	332	5.4	750		
C-156 C-156 C-156 C-156 C-156 C-158 C-158 C-158 C-160 C-160 C-160											Horizontal Vertical Upright		Dimension Tables	
C-178 C-178 C-178 C-178 C-178														

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
164	198	218	256	287	321	372	372	413	502	502	-	1800	Quadruple Reduction Horizontal Type 112 ▼ 140	20	1.00	1.00
162	196	216	252	282	314	365	365	406	493	493	-	1500		30	0.85	0.87
157	192	210	245	273	303	352	352	394	476	476	-	1200		40	0.70	0.73
152	187	204	237	264	292	340	340	381	461	461	-	1000		50	0.55	0.60
149	183	200	232	258	285	333	333	373	451	451	-	900				
142	176	192	223	247	273	319	319	358	432	432	-	750				
177	216	237	276	307							-	1800	Quadruple Reduction Vertical Type 112 ▼ 140			
172	211	230	267	297							-	1500				
164	202	220	256	284							-	1200				
157	194	212	245	272							-	1000				
153	189	207	239	265							-	900				
146	181	197	228	253							-	750				
											-	1800	Quadruple Reduction Upright Type 112 ▼ 140			
											-	1500				
											-	1200				
											-	1000				
											-	900				
											-	750				

Notes	
1. —	Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
2. —	The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
3. —	When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 160 ▶ 200

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
160	Exact Reduction Ratio			165.49	159.50	159.92	156.02	158.68	162.11	154.58	157.13	153.94	158.44	158.25	154.04	168.71
	1800	11		7.7	10.4	12.6	16.5	17.4	25.5	26.6	42	44	63	71	95	99
	1500	9.4		6.4	8.7	10.5	13.7	14.5	21.3	22.2	35	37	53	59	79	82
	1200	7.5		5.1	6.9	8.4	11.0	11.6	17.1	17.8	28.1	29.9	42	47	64	66
	1000	6.3		4.3	5.8	7.0	9.1	9.7	14.2	14.8	23.4	24.9	35	39	53	55
	900	5.6		3.9	5.2	6.3	8.2	8.7	12.8	13.3	21.1	22.4	31	35	48	49
	750	4.7		3.2	4.3	5.3	6.9	7.2	10.7	11.1	17.5	18.7	26.6	29.7	40	41
180	Exact Reduction Ratio			178.38	173.41	182.48	177.50	180.65	182.13	180.12	179.71	172.48	177.79	174.54	169.14	183.53
	1800	10		6.9	9.4	10.3	14.0	16.1	20.5	25.4	32	41	53	62	82	87
	1500	8.3		5.8	7.9	8.6	11.7	13.4	17.1	21.2	27.2	34	44	52	68	73
	1200	6.7		4.6	6.3	6.9	9.4	10.8	13.7	17.0	21.8	27.9	35	42	54	58
	1000	5.6		3.9	5.3	5.7	7.8	9.0	11.4	14.2	18.2	23.3	29.7	35	45	49
	900	5.0		3.5	4.7	5.2	7.1	8.1	10.3	12.8	16.4	21.0	26.7	31	41	44
	750	4.2		2.9	4.0	4.3	5.9	6.7	8.6	10.7	13.7	17.5	22.3	26.4	34	36
200	Exact Reduction Ratio			205.43	206.26	197.71	203.32	207.95	197.74	202.57	193.83	192.43	190.60	192.89	192.86	210.89
	1800	9.0		6.2	8.0	10.2	12.6	15.0	17.4	24.7	26.6	40	44	59	71	79
	1500	7.5		5.2	6.7	8.5	10.5	12.5	14.5	20.6	22.2	33	37	49	59	66
	1200	6.0		4.1	5.4	6.8	8.4	10.0	11.6	16.5	17.8	26.8	29.9	39	47	53
	1000	5.0		3.5	4.5	5.7	7.0	8.4	9.7	13.8	14.8	22.4	24.9	33	39	44
	900	4.5		3.1	4.0	5.1	6.3	7.5	8.7	12.4	13.3	20.2	22.4	30	35	39
	750	3.8		2.6	3.4	4.3	5.3	6.3	7.3	10.3	11.1	16.8	18.7	25.0	29.7	33
Dimension Tables	Horizontal Vertical Upright		C-152	C-152	C-152	C-152	C-152	C-152	C-152	C-154	C-154	C-154	C-154	C-154	C-154	C-156
			C-174	C-174	C-174	C-174	C-174	C-174	C-174	C-176	C-176	C-176	C-176	C-176	C-176	C-178
			C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-190	C-190	C-190	C-190	C-190	C-190	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type 160	1800	-			23	29	36	43	42	52	61	74	85	103	109	131	138
		1500	-			22	28	34	41	40	49	58	71	81	98	105	126	134
		1200	-			20	26	32	38	37	46	55	66	76	92	99	118	127
		1000	-			19	24	30	36	35	43	51	62	72	87	93	112	121
		▼																
		900	-			18	23	29	35	33	41	49	59	69	84	90	108	117
	200	750	-			17	21	27	32	31	38	46	55	65	78	85	101	111
Dimension Tables	Quadruple Reduction Vertical Type 160	1800	-			24	30	37	44	43	53	63	76	88	106	113	136	145
		1500	-			23	28	35	42	41	50	60	72	83	101	108	129	139
		1200	-			21	26	33	39	38	46	56	67	78	94	101	121	131
		1000	-			20	24	31	37	35	43	52	63	73	88	95	114	124
		▼																
		900	-			19	23	30	35	34	41	50	60	70	85	92	110	120
	200	750	-			17	21	27	33	31	38	47	56	66	79	86	103	113
	Quadruple Reduction Upright Type 160	1800	-			23	29	39	43	42	52	62	74	85	104	110	132	
		1500	-			22	28	37	41	40	49	59	71	81	99	105	126	
		1200	-			21	26	35	38	37	46	55	66	76	93	99	119	
		1000	-			19	24	33	36	35	43	51	62	72	87	94	112	
		▼																
		900	-			18	23	32	35	33	41	50	59	69	84	91	108	
		200	750	-			17	21	30	32	31	38	46	55	65	79	85	102

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 160 ▶ 200

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	Exact Reduction Ratio				
152.98	167.85	147.43	151.57	154.53	150.98	160.41	160.41	154.45	157.56	157.56	Exact Reduction Ratio			160	1. _____ For ※ marked values, the forced oil lubrication is required at continuous operation.
123	141	183	226	250	327	355	413	512	567	669	11	1800			
103	118	153	188	208	273	296	345	428	474	559	9.4	1500			
82	94	123	151	167	219	237	276	343	380	448	7.5	1200			
69	79	102	126	139	183	198	231	286	317	374	6.3	1000			
62	71	92	113	126	165	178	208	258	286	337	5.6	900			
51	59	77	95	105	137	149	173	215	238	281	4.7	750	180	2. _____ Consult us when the high speed shaft speed is over 1800r/min.	
187.20	180.12	183.73	173.92	171.78	178.43	176.73	176.73	175.45	171.78	171.78	Exact Reduction Ratio				
105	126	153	186	239	277	322	375	451	521	614	10	1800			
88	105	127	155	199	231	269	313	377	435	513	8.3	1500			
70	84	102	125	160	185	216	251	302	349	411	6.7	1200			
59	70	85	104	133	155	180	209	252	291	343	5.6	1000			
53	63	77	94	120	139	162	189	227	262	309	5.0	900	200	3. _____ When the high speed shaft speed is not shown in the table, find it by the interpolation method.	
44	53	64	78	100	116	135	157	190	219	258	4.2	750			
203.11	206.87	199.34	198.63	196.51	191.99	193.01	193.01	190.35	203.02	203.02	Exact Reduction Ratio				
93	115	136	173	197	258	295	344	416	442	521	9.0	1800			
78	96	113	144	164	215	246	287	348	369	435	7.5	1500			
62	77	91	115	132	172	198	230	279	296	349	6.0	1200			
52	64	76	96	110	144	165	192	233	247	291	5.0	1000	200	4. _____ When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula. $PN = P_{750} \times \frac{N}{750}$	
47	58	68	87	99	130	148	173	210	222	262	4.5	900			
39	48	57	72	82	108	124	144	175	185	219	3.8	750			
C-156	C-156	C-156	C-156	C-156	C-158	C-158	C-158	C-160	C-160	C-160	Horizontal Vertical Upright				Dimension Tables
C-178	C-178	C-178	C-178	C-178	C-178										
															5. _____ Shown in the table are the ratings for the slow speed shaft.
														6. _____ Refer to C42-C45 for the allowable radial and axial load on each shaft.	

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
154	180	202	236	269	297	360	360	393	480	480	-	1800	Quadruple Reduction Horizontal Type 160 ▼ 200	20	1.00	1.00
149	175	196	229	262	288	351	351	385	467	467	-	1500		30	0.85	0.87
142	167	187	218	250	275	337	337	373	449	449	-	1200		40	0.70	0.73
135	160	179	207	240	263	325	325	361	432	432	-	1000		50	0.55	0.60
131	155	174	201	234	256	317	317	353	422	422	-	900				
123	147	164	190	222	243	303	303	339	403	403	-	750				

162	190	213	247	283	-	1800	Quadruple Reduction Vertical Type 160 ▼ 200		
155	183	204	237	272	-	1500			
146	173	193	223	258	-	1200			
138	164	183	212	246	-	1000			
133	159	177	205	239	-	900			
125	150	167	193	226	-	750			

													Quadruple Reduction Upright Type 160 ▼ 200		

Notes		
1. —	Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)	
2. —	The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor	

Notes		
1.	Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)	
2.	The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.	
3.	When the high speed shaft speed is not shown in the table, find it by interpolation method.	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 224 ► 280

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer													
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
224	Exact Reduction Ratio			221.43	224.24	225.60	231.31	236.74	222.15	236.05	221.69	215.61	213.88	212.75	211.77	229.41
	1800	8.0		5.6	7.3	8.3	10.8	12.3	16.8	19.4	26.5	33	44	51	65	70
	1500	6.7		4.7	6.1	6.9	9.0	10.3	14.0	16.2	22.1	27.9	37	43	54	58
	1200	5.4		3.7	4.9	5.6	7.2	8.2	11.3	13.0	17.7	22.4	29.6	34	44	47
	1000	4.5		3.1	4.1	4.6	6.0	6.9	9.4	10.8	14.8	18.7	24.7	28.8	36	39
	900	4.0		2.8	3.7	4.2	5.4	6.2	8.5	9.8	13.3	16.8	22.3	25.9	33	35
	750	3.3		2.3	3.1	3.5	4.5	5.2	7.1	8.1	11.1	14.0	18.6	21.6	27.6	29.5
250	Exact Reduction Ratio			256.04		251.37	260.18	259.14	252.38	254.02	252.17	238.24	252.78	235.08	263.61	
	1800	7.2			6.5		10.2	12.0	16.0	19.8	26.0	30	42	45	62	63
	1500	6.0			5.4		8.5	10.0	13.4	16.6	21.7	25.6	35	38	52	53
	1200	4.8			4.3		6.8	8.0	10.7	13.3	17.4	20.5	28.3	30	42	42
	1000	4.0			3.6		5.7	6.7	8.9	11.1	14.5	17.1	23.6	25.5	35	35
	900	3.6			3.3		5.1	6.0	8.0	10.0	13.0	15.4	21.3	22.9	31	32
	750	3.0			2.7		4.3	5.0	6.7	8.3	10.9	12.8	17.8	19.1	26.4	26.7
280	Exact Reduction Ratio			278.37		285.97	296.20	291.13	294.09	290.52	282.55	267.35	278.80	258.13	286.77	
	1800	6.4			5.9		8.7	9.9	12.9	15.6	20.3	25.6	35	39	54	56
	1500	5.4			4.9		7.3	8.2	10.7	13.0	16.9	21.3	29.6	32	45	47
	1200	4.3			3.9		5.8	6.6	8.6	10.4	13.5	17.1	23.7	26.4	36	37
	1000	3.6			3.3		4.9	5.5	7.2	8.7	11.3	14.3	19.8	22.0	30	31
	900	3.2			3.0		4.4	4.9	6.5	7.8	10.2	12.8	17.8	19.8	27.1	28.3
	750	2.7			2.5		3.7	4.1	5.4	6.5	8.5	10.7	14.9	16.5	22.6	23.6
Dimension Tables	Horizontal Vertical Upright		C-152	C-152	C-152	C-152	C-152	C-152	C-152	C-154	C-154	C-154	C-154	C-154	C-154	C-156
			C-174	C-174	C-174	C-174	C-174	C-174	C-174	C-176	C-176	C-176	C-176	C-176	C-176	C-178
			C-188	C-188	C-188	C-188	C-188	C-188	C-188	C-190	C-190	C-190	C-190	C-190	C-190	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type 224	1800	-			23	27	35	40	40	49	59	71	80	99	104	127	132
		1500	-			22	25	33	38	38	47	56	67	77	94	99	121	127
		1200	-			20	24	31	36	36	43	52	63	72	88	94	114	121
		1000	-			19	22	29	34	33	41	49	59	68	83	89	108	115
	▼	900	-			18	21	28	32	32	39	47	56	66	80	86	104	112
	280	750	-			17	20	26	30	30	36	44	53	61	75	80	98	106
Dimension Tables	Quadruple Reduction Vertical Type 224	1800	-			24	28	36	41	42	51	60	72	83	102	107	131	138
		1500	-			22	26	34	39	39	48	57	68	79	96	102	124	132
		1200	-			21	24	32	36	36	44	53	64	74	90	96	116	125
		1000	-			19	22	30	34	34	41	50	59	69	84	90	110	118
	▼	900	-			18	21	29	33	32	39	48	57	67	81	87	106	114
	280	750	-			17	20	27	31	30	36	44	53	62	76	81	99	107
	Quadruple Reduction Upright Type 224	1800	-			23	27	38	40	41	50	59	71	81	99	104	127	
		1500	-			22	25	36	38	38	47	56	67	77	95	100	122	
		1200	-			20	24	34	36	36	44	52	63	72	89	94	115	
		1000	-			19	22	32	34	33	41	49	59	68	83	89	108	
	▼	900	-			18	21	30	32	32	39	47	56	66	80	86	105	
	280	750	-			17	20	28	30	30	36	44	53	62	75	81	98	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 224 ▶ 280

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
234.00	222.00	226.44	227.92	225.12	226.90	230.40	230.40	223.56	232.24	232.24	Exact Reduction Ratio			224
84	102	124	142	183	218	248	288	355	387	456	8.0	1800		
70	85	104	119	152	182	207	241	297	323	381	6.7	1500		
56	68	83	95	122	146	166	193	238	259	305	5.4	1200		
47	57	69	79	102	122	138	161	198	216	255	4.5	1000		
42	51	62	71	92	110	124	145	179	194	229	4.0	900		
35	43	52	60	76	91	104	121	149	162	191	3.3	750		
253.88	252.16	245.68	242.12	257.52	251.60	251.62	251.62	242.56	247.46	247.46	Exact Reduction Ratio			250
74	94	110	142	150	197	227	264	328	363	428	7.2	1800		
62	79	92	118	126	165	189	221	274	303	357	6.0	1500		
50	63	74	95	101	132	152	177	219	243	287	4.8	1200		
41	52	61	79	84	110	127	147	183	203	239	4.0	1000		
37	47	55	71	75	99	114	133	165	182	215	3.6	900		
31	39	46	59	63	83	95	111	137	152	180	3.0	750		
292.50	270.60	276.01	277.82	274.40	276.57	288.00	288.00	275.54	283.08	283.08	Exact Reduction Ratio			280
67	84	102	117	150	179	199	231	289	318	375	6.4	1800		
56	70	85	98	125	150	166	193	241	265	313	5.4	1500		
45	56	68	78	100	120	133	155	193	212	251	4.3	1200		
37	47	57	65	84	100	111	129	161	177	209	3.6	1000		
34	42	51	59	75	90	100	116	145	160	188	3.2	900		
28.5	35	42	49	63	75	83	97	121	133	157	2.7	750		
C-156	C-156	C-156	C-156	C-156	C-158	C-158	C-158	C-160	C-160	C-160	Horizontal Vertical Upright	Dimension Tables		
C-178	C-178	C-178	C-178	C-178										

1. _____
For ※ marked values, the forced oil lubrication is required at continuous operation.

2. _____
Consult us when the high speed shaft speed is over 1800r/min.

3. _____
When the high speed shaft speed is not shown in the table, find it by the interpolation method.

4. _____
When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$

5. _____
Shown in the table are the ratings for the slow speed shaft.

6. _____
Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	-	1800	Quadruple Reduction Horizontal Type 224 ▼ 280	20	Without Fan	With Fan
142	174	190	222	247	275	322	322	366	443	443					1.00	1.00
137	169	184	215	239	265	311	311	356	430	430					0.85	0.87
130	161	176	204	227	251	296	296	341	411	411					0.70	0.73
124	154	168	195	216	239	283	283	328	395	395					0.55	0.60
120	150	163	189	210	232	275	275	319	384	384						
114	142	155	179	198	219	261	261	304	366	366	-	750				
149	183	200	232	257							-	1800	Quadruple Reduction Vertical Type 224 ▼ 280	Notes		
142	176	192	222	246							-	1500				
134	166	181	209	232							-	1200				
127	158	172	199	220							-	1000				
123	153	167	192	213							-	900				
115	144	157	181	201							-	750				
											-	1800	Quadruple Reduction Upright Type 224 ▼ 280	1. Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan) 2. The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above. 3. When the high speed shaft speed is not shown in the table, find it by interpolation method.		
											-	1500				
											-	1200				
											-	1000				
											-	900				
											-	750				

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 315 ▶ 400

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
315	Exact Reduction Ratio								315.95	324.22	327.89	316.48	324.10	312.22	318.63	308.07	313.18
	1800	5.7							9.2	12.8	14.0	20.9	22.3	32	34	48	51
	1500	4.8							7.7	10.7	11.7	17.4	18.6	27.0	28.9	40	43
	1200	3.8							6.2	8.6	9.4	13.9	14.9	21.6	23.1	32	34
	1000	3.2							5.2	7.1	7.8	11.6	12.4	18.1	19.3	26.8	28.8
	900	2.9							4.6	6.4	7.0	10.5	11.2	16.3	17.4	24.2	25.9
	750	2.4							3.9	5.4	5.9	8.7	9.3	13.6	14.5	20.2	21.6
355	Exact Reduction Ratio								367.08	364.25	364.33	361.96	345.71	350.36	355.25	338.28	359.23
	1800	5.1							8.0	10.3	12.6	16.3	20.9	27.1	31	41	45
	1500	4.2							6.6	8.6	10.5	13.6	17.5	22.6	25.9	34	37
	1200	3.4							5.3	6.9	8.4	10.9	14.0	18.1	20.7	27.6	30
	1000	2.8							4.4	5.7	7.0	9.1	11.7	15.1	17.3	23.0	25.1
	900	2.5							4.0	5.2	6.3	8.2	10.5	13.6	15.6	20.7	22.6
	750	2.1							3.3	4.3	5.3	6.8	8.8	11.4	13.0	17.3	18.9
400	Exact Reduction Ratio								400.89	388.53	421.41	403.56	401.65	401.88	394.72	386.60	383.18
	1800	4.5							7.3	9.7	10.9	14.6	18.0	23.7	28.0	36	42
	1500	3.8							6.1	8.1	9.1	12.2	15.0	19.8	23.3	30	35
	1200	3.0							4.9	6.5	7.3	9.8	12.1	15.8	18.7	24.2	28.3
	1000	2.5							4.1	5.4	6.1	8.1	10.1	13.2	15.6	20.2	23.6
	900	2.3							3.7	4.8	5.5	7.3	9.1	11.9	14.0	18.2	21.2
	750	1.9							3.1	4.0	4.6	6.1	7.5	9.9	11.7	15.1	17.7
Dimension Tables	Horizontal Vertical Upright								C-152	C-152	C-154	C-154	C-154	C-154	C-154	C-154	C-156
									C-174	C-174	C-176	C-176	C-176	C-176	C-176	C-176	C-178
									C-188	C-188	C-190	C-190	C-190	C-190	C-190	C-190	

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer														
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
Selection Tables	Quadruple Reduction Horizontal Type 315	1800	-							41	47	57	67	80	93	103	120	133
		1500	-							39	45	54	64	76	89	99	115	128
		1200	-							36	42	51	60	72	83	93	108	122
		1000	-							34	39	48	56	67	79	88	102	116
		▼ 900	-							33	37	46	54	65	76	85	99	113
		400 750	-							30	35	42	50	61	71	80	93	106
Dimension Tables	Quadruple Reduction Vertical Type 315	1800	-							42	49	59	69	82	96	107	124	139
		1500	-							40	46	56	65	78	91	101	118	133
		1200	-							37	42	52	61	73	85	95	110	125
		1000	-							34	39	48	57	68	80	89	104	119
		▼ 900	-							33	38	46	55	66	77	86	100	115
		400 750	-							31	35	43	51	61	72	81	94	108
	Quadruple Reduction Upright Type 315	1800	-							41	48	58	67	81	94	104	121	
		1500	-							39	45	55	64	77	89	99	116	
		1200	-							36	42	51	60	72	84	93	109	
		1000	-							34	39	48	56	68	79	88	103	
		▼ 900	-							33	37	46	54	65	76	85	99	
		400 750	-							30	35	42	50	61	71	80	93	

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 315 ▶ 400

Size of Reducer											L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Notes
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136				
317.35	305.90	299.46	328.33	313.90	316.08	314.53	314.53	298.95	323.52	323.52	Exact Reduction Ratio			315
60	74	91	99	124	157	182	212	266	278	328	5.7	1800		
50	62	76	83	103	131	152	177	222	232	274	4.8	1500		
40	49	60	66	83	105	122	142	178	186	220	3.8	1200		
33	41	50	55	69	88	101	118	149	155	183	3.2	1000		
30	37	45	50	62	79	91	106	134	140	165	2.9	900		
25.2	31	38	41	52	66	76	89	112	117	138	2.4	750	355	
346.58	349.61	338.53	375.23	370.97	362.44	341.25	341.25	355.99	Exact Reduction Ratio					
55	65	80	87	105	137	168	195	224	5.1 1800					
45	54	67	72	87	114	140	163	187	4.2 1500					
36	43	53	58	70	92	112	131	150	3.4 1200					
30	36	45	48	58	76	93	109	125	2.8 1000					
27.6	32	40	43	52	69	84	98	112	2.5 900					
23.0	27.4	33	36	44	57	70	82	94	2.1 750				400	
397.55	389.79	386.90	418.36	423.96	414.22	391.44	391.44	386.24	Exact Reduction Ratio					
48	58	70	78	92	120	146	170	207	4.5 1800					
40	49	59	65	76	100	122	142	172	3.8 1500					
32	39	47	52	61	80	98	114	138	3.0 1200					
26.8	32	39	43	51	67	81	95	115	2.5 1000					
24.1	29.5	35	39	46	60	73	85	104	2.3 900					
20.1	24.6	29.6	32	38	50	61	71	86	1.9 750				Horizontal Vertical Upright	
C-156	C-156	C-156	C-156	C-156	C-158	C-158	C-158	C-160	C-160	C-160	Dimension Tables			
C-178	C-178	C-178	C-178	C-178										

1. For ※ marked values, the forced oil lubrication is required at continuous operation.

2. Consult us when the high speed shaft speed is over 1800r/min.

3. When the high speed shaft speed is not shown in the table, find it by the interpolation method.

4. When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$

5. Shown in the table are the ratings for the slow speed shaft.

6. Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer											Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio	Ambient Temperature °C	Temperature Correction Factor	
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136					Without Fan	With Fan
142	172	187	215	237	260	316	316	353	433	433	-	1800	Quadruple Reduction Horizontal Type 315 ▼ 400	20	1.00	1.00
137	166	181	207	229	250	304	304	342	419	419	-	1500		30	0.85	0.87
130	158	173	197	217	237	289	289	327	400	400	-	1200		40	0.70	0.73
124	151	165	188	207	226	275	275	313	383	383	-	1000		50	0.55	0.60
120	147	160	182	201	219	267	267	305	372	372	-	900				
113	139	152	172	190	207	253	253	289	354	354	-	750				

Notes		
1.	Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)	
2.	The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor	

-	1800	Quadruple Reduction Upright Type 315 ▼ 400
-	1500	
-	1200	
-	1000	
-	900	
-	750	

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 450 ► 500

MECHANICAL POWER RATING (kW)

Nominal Reduction Ratio	H.Speed Shaft Speed r/min	L.Speed Shaft Speed r/min	Size of Reducer														
			9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090
450	Exact Reduction Ratio							451.41		448.40		428.67		431.03			
	1800	4.0						8.3		13.2		22.2		32			
	1500	3.3						6.9		11.0		18.5		27.1			
	1200	2.7						5.6		8.8		14.8		21.7			
	1000	2.2						4.6		7.3		12.4		18.1			
	900	2.0						4.2		6.6		11.1		16.3			
	750	1.7						3.5		5.5		9.3		13.6			
500	Exact Reduction Ratio							492.99		518.66		498.04		478.93			
	1800	3.6						7.6		11.4		19.1		29.2			
	1500	3.0						6.4		9.5		16.0		24.4			
	1200	2.4						5.1		7.6		12.8		19.5			
	1000	2.0						4.2		6.3		10.7		16.3			
	900	1.8						3.8		5.7		9.6		14.7			
	750	1.5						3.2		4.8		8.0		12.2			
Dimension Tables	Horizontal							C-152		C-154		C-154		C-154			
	Vertical							C-174		C-176		C-176		C-176			
	Upright							C-188		C-190		C-190		C-190			

THERMAL POWER RATING (kW)

Speed Reducer	Nominal Reduction Ratio	H.Speed Shaft Speed r/min	Number of Cooling Fans	Size of Reducer															
				9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	
Selection Tables	Quadruple Reduction Horizontal Type 450	1800	-							49		67		92		120			
		1500	-							47		64		88		115			
		1200	-							43		59		82		108			
		1000	-							40		56		77		102			
		▼	900	-							39		53		74		98		
Dimension Tables	500	750	-							36		50		69		92			
		Quadruple Reduction Vertical Type 450	1800	-							50		69		94		123		
			1500	-							48		65		89		117		
			1200	-							44		60		83		109		
1000	-								41		56		78		103				
▼	900		-							39		54		75		99			
500	750	-							36		50		70		93				
	Quadruple Reduction Upright Type 450	1800	-							49		67		92		120			
		1500	-							47		64		88		115			
		1200	-							43		59		82		108			
		1000	-							41		56		77		102			
		▼	900	-							39		53		74		98		
500	750	-							36		50		69		92				

SELECTION Parallel Shaft Quadruple Reduction Nominal Reduction Ratio 450 ▶ 500

Size of Reducer										L.Speed Shaft Speed r/min	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
424.05	431.36			472.69	461.82						Exact Reduction Ratio	
45	63			82	108						4.0	1800
37	52			69	90						3.3	1500
30	42			55	72						2.7	1200
25.1	35			46	60						2.2	1000
22.6	31			41	54						2.0	900
18.9	26.6			34	45						1.7	750
										Exact Reduction Ratio		
										3.6	1800	
										3.0	1500	
										2.4	1200	
										2.0	1000	
										1.8	900	
										1.5	750	
C-156	C-156			C-156	C-158						Horizontal	
C-178	C-178			C-178							Vertical	
											Upright	Dimension Tables

Notes

- For ※ marked values, the forced oil lubrication is required at continuous operation.
- Consult us when the high speed shaft speed is over 1800r/min.
- When the high speed shaft speed is not shown in the table, find it by the interpolation method.
- When the high speed shaft speed (N) is lower than 750r/min, find the mechanical power rating (PN) according to the following formula.

$$PN = P_{750} \times \frac{N}{750}$$
- Shown in the table are the ratings for the slow speed shaft.
- Refer to C42-C45 for the allowable radial and axial load on each shaft.

Size of Reducer										Number of Cooling Fans	H.Speed Shaft Speed r/min	Nominal Reduction Ratio
9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
143	184			233	256						-	1800
138	178			225	246						-	1500
131	170			213	233						-	1200
125	162			203	221						-	1000
121	157			196	214						-	900
114	148			185	202						-	750
												Quadruple Reduction Horizontal Type 450
149	192			241							-	1800
143	184			231							-	1500
134	174			217							-	1200
127	165			206							-	1000
123	160			199							-	900
116	151			188							-	750
												Quadruple Reduction Vertical Type 450
												▼
												500
												Quadruple Reduction Upright Type 450
												▼
												500

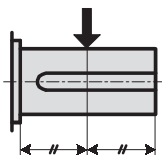
Ambient Temperature °C	Temperature Correction Factor	
	Without Fan	With Fan
20	1.00	1.00
30	0.85	0.87
40	0.70	0.73
50	0.55	0.60

Notes

- Shown in the table are the ratings for models without a fan cooling unit and those with a fan. (-: none fan, 1: with a fan)
- The values are applicable to continuous operation at ambient temperatures of 20 °C or less. When the temperature is out of the range, refer to the temperature correction factor shown above.
- When the high speed shaft speed is not shown in the table, find it by interpolation method.

SELECTION Allowable Radial and Axial Loads on Slow Speed Parallel shaft

Allowable Radial Load (kN)



Sheet 1

Applicable to configurations: RL, LR, BL

L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	11.8	17.7	17.7	29.4	29.9	32.4	37.8	46.6	39.7	49.1	44.1	77.0	77.0	100.1	100.1	137.8
	160	11.8	17.7	20.1	31.4	32.4	33.8	39.7	48.1	41.7	50.5	46.1	89.0	89.0	108.9	108.9	145.7
	100	11.8	17.7	25.0	35.3	38.7	39.2	47.1	53.5	47.6	54.4	54.4	99.0	99.0	122.1	122.1	147.6
	63	11.8	17.7	26.5	35.3	42.2	47.1	54.9	62.3	58.9	64.3	65.2	131.5	131.5	125.6	125.6	143.7
	40	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	71.1	78.0	79.0	141.0	141.0	125.1	125.1	137.8
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	81.4	95.2	99.1	139.5	139.5	122.6	122.6	135.4
Heavy duty bearing model	250								71.1	93.7	70.1	122.5	122.5	141.8	141.8	158.9	181.0
	160								78.0	94.7	77.5	137.5	137.5	132.4	132.4	151.6	174.6
	100								81.4	98.1	92.2	149.5	149.5	127.0	127.0	147.6	166.8
	63								81.4	98.1	114.8	149.0	149.0	125.6	125.6	143.7	165.8
	40								81.4	98.1	117.7	148.5	148.5	125.1	125.1	137.8	165.3
	≤ 25								81.4	98.1	117.7	147.0	147.0	122.6	122.6	135.4	163.8

Sheet 2

Applicable to configurations: RR, LL, BR

L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	8.3	15.2	9.8	21.6	19.1	21.6	22.6	31.4	16.7	28.4	17.2	44.0	44.0	58.4	58.4	97.6
	160	9.8	17.7	12.3	23.1	20.6	23.1	24.0	31.4	18.1	27.0	17.7	55.5	55.5	64.3	64.3	103.0
	100	11.8	17.7	16.7	29.4	26.0	27.5	28.4	35.3	22.1	30.4	25.5	63.5	63.5	74.6	74.6	110.9
	63	11.8	17.7	21.6	35.3	32.9	35.3	37.3	42.7	33.4	38.3	33.8	95.0	95.0	104.5	104.5	148.1
	40	11.8	17.7	26.5	35.3	41.7	43.7	48.6	55.4	45.1	51.5	47.6	129.0	129.0	146.7	146.7	203.6
	≤ 25	11.8	17.7	26.5	35.3	42.2	49.1	54.9	67.7	60.8	68.7	67.7	167.0	167.0	171.2	171.2	215.3
Heavy duty bearing model	250								46.1	74.6	40.2	90.0	90.0	114.8	114.8	156.0	150.6
	160								52.0	72.1	45.6	103.5	103.5	125.1	125.1	164.8	170.7
	100								60.3	79.0	59.4	116.0	116.0	140.8	140.8	176.1	187.4
	63								81.4	96.6	80.0	152.5	152.5	174.1	174.1	186.9	218.8
	40								81.4	98.1	108.9	192.0	192.0	191.8	191.8	193.7	241.8
	≤ 25								81.4	98.1	117.7	180.5	180.5	171.2	171.2	171.2	214.8

Allowable Axial Load (kN)



L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	9.3	11.4	14.7	23.1	26.5	31.4	32.9	31.9	27.0	43.2	28.0	28.0	23.5	23.5	31.4	45.1
	160	9.3	11.4	18.1	23.1	28.4	31.4	33.4	31.9	28.9	43.2	28.4	28.4	27.5	27.5	34.3	53.0
	100	9.3	11.4	24.5	23.1	32.9	31.4	37.3	31.9	34.3	43.2	39.7	39.7	32.9	32.9	43.2	58.4
	63	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	52.5	52.5	45.6	45.6	54.0	81.4
	40	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	63.3	60.3	59.8	83.4
	≤ 25	9.3	11.4	26.5	23.1	32.9	31.4	37.3	31.9	49.1	43.2	61.4	61.4	67.7	60.3	59.8	83.4
Heavy duty bearing model	250								23.1	34.8	18.6	18.6	56.9	56.9	59.8	59.8	83.4
	160								25.0	33.4	21.1	21.1	56.9	56.9	59.8	59.8	83.4
	100								29.4	36.8	27.5	27.5	56.9	56.9	59.8	59.8	83.4
	63								39.2	43.2	36.3	36.3	56.9	56.9	59.8	59.8	83.4
	40								39.2	43.2	49.1	49.1	56.9	56.9	59.8	59.8	83.4
	≤ 25								39.2	43.2	56.9	56.9	56.9	56.9	59.8	59.8	83.4

SELECTION Allowable Radial and Axial Loads on Slow Speed Parallel shaft

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
192.3	167.8	222.7							250	Standard bearing model
200.6	174.1	234.9							160	
183.9	184.9	245.7	391.9	352.7	330.6	315.4	403.2	391.9	100	
178.1	190.8	303.1	387.5	369.3	341.4	328.6	462.5	430.7	63	
173.6	194.7	320.8	460.1	449.3	401.2	409.6	572.4	511.1	40	
167.3	184.9	316.4	448.3	554.8	497.4	534.6	733.8	638.6	≤ 25	Heavy duty bearing model
213.9	250.6	316.9							250	
200.6	214.8	334.5							160	
183.9	195.2	340.9							100	
178.1	190.8	333.5							63	
173.6	194.7	320.8							40	
167.3	184.9	316.4							≤ 25	

Unit: kN

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
131.5	94.2	152.5							250	Standard bearing model
138.3	92.2	155.0							160	
146.7	101.0	167.3	312.0	228.1	197.7	159.4	203.6	190.3	100	
200.1	144.7	220.7	292.3	244.3	206.0	170.7	260.9	218.8	63	
235.4	199.1	250.2	373.3	322.7	257.0	250.2	369.3	286.5	40	
304.1	272.7	353.2	460.1	427.2	348.7	373.3	528.3	398.3	≤ 25	Heavy duty bearing model
213.4	191.3	248.7							250	
223.2	197.7	261.4							160	
236.9	210.4	274.2							100	
301.7	267.8	341.9							63	
304.1	323.7	382.1							40	
304.1	323.7	374.7							≤ 25	

Unit: kN

Size of Reducer									L.Speed Shaft Speed r/min	
9105	9110	9115	9118	9121	9126	9128	9131	9136		
50.0	50.0	76.5							250	Standard bearing model
49.5	49.5	76.5							160	
54.0	54.0	83.4	119.7	121.6	116.7	91.2	113.3	107.9	100	
74.6	74.6	83.4	119.7	121.6	121.6	96.6	140.3	122.6	63	
83.4	83.4	83.4	119.7	121.6	121.6	134.9	191.3	155.5	40	
83.4	83.4	83.4	119.7	121.6	121.6	144.2	192.3	192.3	≤ 25	Heavy duty bearing model
83.4	83.4	83.4							250	
83.4	83.4	83.4							160	
83.4	83.4	83.4							100	
83.4	83.4	83.4							63	
83.4	83.4	83.4							40	
83.4	83.4	83.4							≤ 25	

Unit: kN

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25

Notes

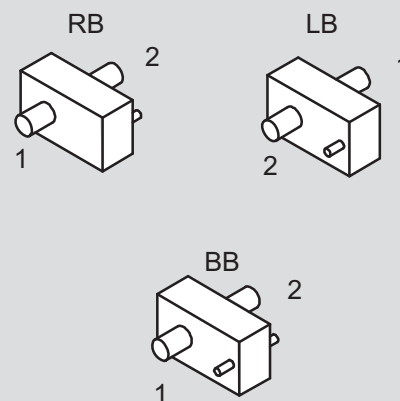
- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft). Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RB, LB, BB)
 - See sheet1 when the radial load is applied only to the shaft1.
 - See sheet2 when the radial load is applied only to the shaft2.
 - Consult us when the radial load is applied to both shafts.
- Refer to C-6 to check overhang load, and calculate equivalent load at peak load value. Be careful under following condition because large peak load may be generated.

Application: When the inertia is large, such as for crane driving, slewing, etc.

Motor: inline motor

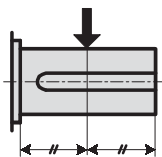
Connecting method: Sprocket or gear

Consult us when the peak load is larger than allowable value.



SELECTION Allowable Radial and Axial Loads on Slow Speed Parallel shaft

Allowable Radial Load (kgf)



Sheet 1

Applicable to configurations: RL, LR, BL

L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	1200	1800	1800	3000	3050	3300	3850	4750	4050	5000	4500	7850	7850	10200	10200	14050
	160	1200	1800	2050	3200	3300	3450	4050	4900	4250	5150	4700	9050	9050	11100	11100	14850
	100	1200	1800	2550	3600	3950	4000	4800	5450	4850	5550	5550	10100	10100	12450	12450	15050
	63	1200	1800	2700	3600	4300	4800	5600	6350	6000	6550	6650	13400	13400	12800	12800	14650
	40	1200	1800	2700	3600	4300	5000	5600	6900	7250	7950	8050	14350	14350	12750	12750	14050
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	8300	9700	10100	14200	14200	12500	12500	13800
Heavy duty bearing model	250								7250	9550	7150	12500	12500	14450	14450	16200	18450
	160								7950	9650	7900	14000	14000	13500	13500	15450	17800
	100								8300	10000	9400	15250	15250	12950	12950	15050	17000
	63								8300	10000	11700	15200	15200	12800	12800	14650	16900
	40								8300	10000	12000	15150	15150	12750	12750	14050	16850
	≤ 25								8300	10000	12000	15000	15000	12500	12500	13800	16700

Sheet 2

Applicable to configurations: RR, LL, BR

L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	850	1550	1000	2200	1950	2200	2300	3200	1700	2900	1750	4500	4500	5950	5950	9950
	160	1000	1800	1250	2350	2100	2350	2450	3200	1850	2750	1800	5650	5650	6550	6550	10500
	100	1200	1800	1700	3000	2650	2800	2900	3600	2250	3100	2600	6450	6450	7600	7600	11300
	63	1200	1800	2200	3600	3350	3600	3800	4350	3400	3900	3450	9700	9700	10650	10650	15100
	40	1200	1800	2700	3600	4250	4450	4950	5650	4600	5250	4850	13150	13150	14950	14950	17550
	≤ 25	1200	1800	2700	3600	4300	5000	5600	6900	6200	7000	6900	17000	17000	17450	17450	21950
Heavy duty bearing model	250								4700	7600	4100	9150	9150	11700	11700	15900	15350
	160								5300	7350	4650	10550	10550	12750	12750	16800	17400
	100								6150	8050	6050	11800	11800	14350	14350	17950	19100
	63								8300	9850	8150	15550	15550	17750	17750	19050	22300
	40								8300	10000	11100	19550	19550	19550	19550	19750	24650
	≤ 25								8300	10000	12000	18400	18400	17450	17450	17450	21900

Allowable Axial Load (kgf)



L.Speed Shaft Speed r/min	Size of Reducer																
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085	9090	9095	9100
Standard bearing model	250	950	1160	1500	2350	2700	3200	3350	3250	2750	4400	2850	2850	2400	2400	3200	5300
	160	950	1160	1850	2350	2900	3200	3400	3250	2950	4400	2900	2800	2800	3500	5400	5400
	100	950	1160	2500	2350	3350	3200	3800	3250	3500	4400	4050	3350	3350	4400	6050	5950
	63	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	5350	5350	4650	4650	5500	8300
	40	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6450	6150	6100	8500
	≤ 25	950	1160	2700	2350	3350	3200	3800	3250	5000	4400	6260	6260	6900	6150	6100	8500
Heavy duty bearing model	250								2350	3550	1900	1900	5800	5800	6100	6100	8500
	160								2550	3400	2150	2150	5800	5800	6100	6100	8500
	100								3000	3750	2800	2800	5800	5800	6100	6100	8500
	63								4000	4400	3700	3700	5800	5800	6100	6100	8500
	40								4000	4400	5000	5000	5800	5800	6100	6100	8500
	≤ 25								4000	4400	5800	5800	5800	5800	6100	6100	8500

SELECTION Allowable Radial and Axial Loads on Slow Speed Parallel shaft

Size of Reducer									L.Speed Shaft Speed r/min
9105	9110	9115	9118	9121	9126	9128	9131	9136	
19600	17100	22700							250
20450	17750	23950							160
18750	18850	25050	39950	35950	33700	32150	41100	39950	100
18150	19450	30900	39500	37650	34800	33500	47150	43900	63
17700	19850	32700	46900	45800	40900	41750	58350	52100	40
17050	18850	32250	45700	56550	50700	54500	74800	65100	≤ 25
21800	25550	32300							250
20450	21900	34100							160
18750	19900	34750							100
18150	19450	34000							63
17700	19850	32700							40
17050	18850	32250							≤ 25

Unit: kgf

Size of Reducer									L.Speed Shaft Speed r/min
9105	9110	9115	9118	9121	9126	9128	9131	9136	
13400	9600	15550							250
14100	9400	15800							160
14950	10300	17050	31800	23250	20150	16250	20750	19400	100
20400	14750	22500	29800	24900	21000	17400	26600	22300	63
24000	20300	25500	38050	32900	26200	25500	37650	29200	40
31000	27800	36000	46900	43550	35550	38050	53850	40600	≤ 25
21750	19500	25350							250
22750	20150	26650							160
24150	21450	27950							100
30750	27300	34850							63
31000	33000	38950							40
31000	33000	38200							≤ 25

Unit: kgf

Size of Reducer									L.Speed Shaft Speed r/min
9105	9110	9115	9118	9121	9126	9128	9131	9136	
5100	5100	7800							250
5050	5050	7800							160
5500	5500	8500	12200	12400	11900	9300	11550	11000	100
7600	7600	8500	12200	12400	12400	9850	14300	12500	63
8500	8500	8500	12200	12400	12400	13750	19500	15850	40
8500	8500	8500	12200	12400	12400	14700	19600	19600	≤ 25
8500	8500	8500							250
8500	8500	8500							160
8500	8500	8500							100
8500	8500	8500							63
8500	8500	8500							40
8500	8500	8500							≤ 25

Unit: kgf

Overhang Factor

Overhang Member	Overhang Factor
Sprocket (Single Row)	1
Sprocket (Double Row)	1.25
Gears	1.25

Notes

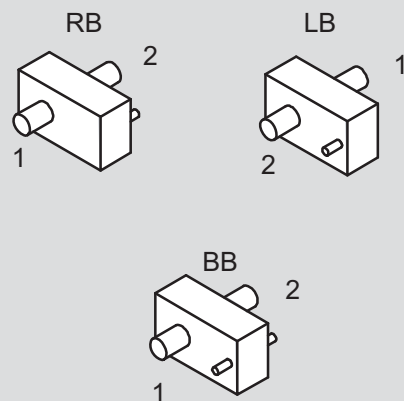
- The value shown in the table is allowable radial load when it is applied to the center of the solid shaft (except hollow shaft). Consult us when a load is not in the center.
- Consult us for the blanks in the table.
- Consult us when the radial load is applied upward.
- In case of double projection shaft (RB, LB, BB)
 - See sheet1 when the radial load is applied only to the shaft1.
 - See sheet2 when the radial load is applied only to the shaft2.
 - Consult us when the radial load is applied to both shafts.
- Refer to C-6 to check overhang load, and calculate equivalent load at peak load value. Be careful under following condition because large peak load may be generated.

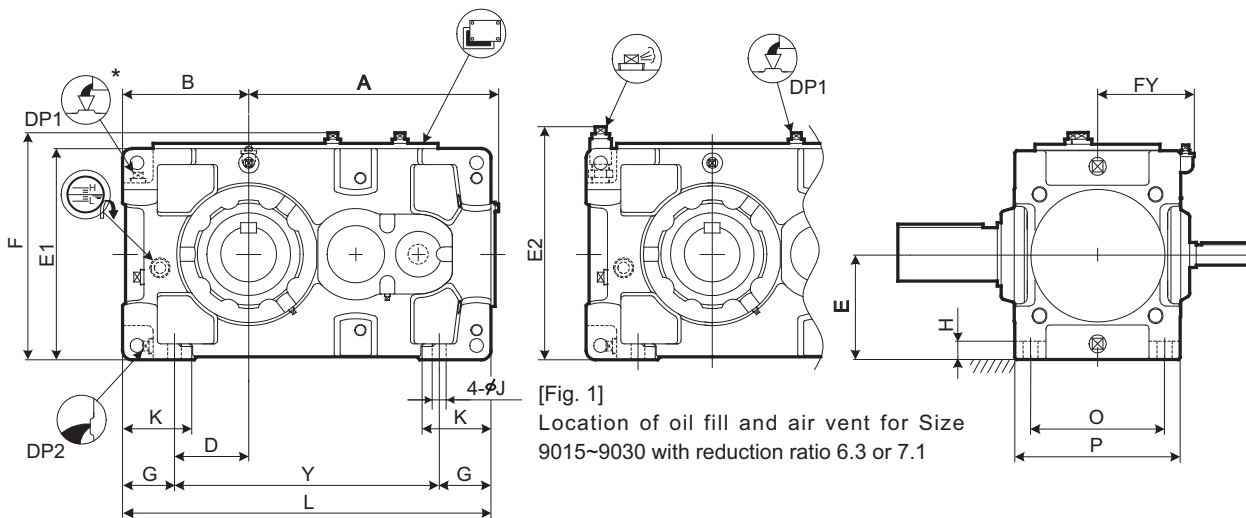
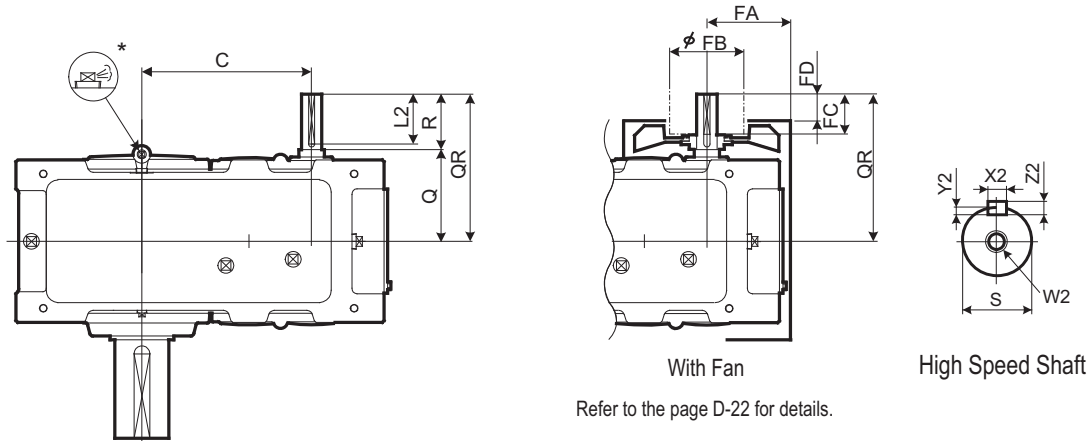
Application: When the inertia is large, such as for crane driving, slewing, etc.

Motor: inline motor

Connecting method: Sprocket or gear

Consult us when the peak load is larger than allowable value.





* Location of oil fill and air vent changes for Size 9015~9030 with reduction ratio 6.3 or 7.1. Refer to Fig. 1.

Size	A	B	C	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9015	295	160	194	90	135	270	309	299	129	70	22	15	95	440	170	205	300
9025	346	175	227	95	155	310	346	339	142	80	25	19	110	505	195	235	345
9030	406	200	264	110	160	320	353	349	154	90	28	24	120	590	215	265	410
9035	437	219	295	129	185	370		399	154	90	28	24	120	640	215	265	460
9040	467	235	306	120	200	400		431	172	115	30	28	150	685	255	315	455
9045	506	256	345	141	220	440		471	172	115	30	28	150	745	255	315	515
9050	537	255	358	138.5	210	420		451	192	116.5	32	28	150	775	285	345	542
9055	576	286	397	171	245	490		521	192	115	32	28	150	845	285	345	615

Size	High Speed Shaft									Fan				DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Key		L2	FA	FB	FC	FD				
9015	131	211	80	30k6	M10/22	8	4	7	70	129	125	50	30	3/4"	3/4"	100	5
9025	146	226	80	35k6	M12/28	10	5	8	70	143	140	50	30	3/4"	3/4"	140	7
9030	159	269	110	40k6	M16/36	12	5	8	95	169	140	80	52	3/4"	3/4"	195	10
9035	159	269	110	40k6	M16/36	12	5	8	95	169	140	80	52	3/4"	3/4"	215	12
9040	174	284	110	50k6	M16/36	14	5.5	9	95	188	160	80	52	1"	1"	285	16
9045	174	284	110	50k6	M16/36	14	5.5	9	95	188	160	80	52	1"	1"	345	18
9050	193	303	110	55m6	M20/42	16	6	10	95	208	160	80	52	1"	1"	415	21
9055	193	303	110	55m6	M20/42	16	6	10	95	208	160	80	52	1"	1"	475	28

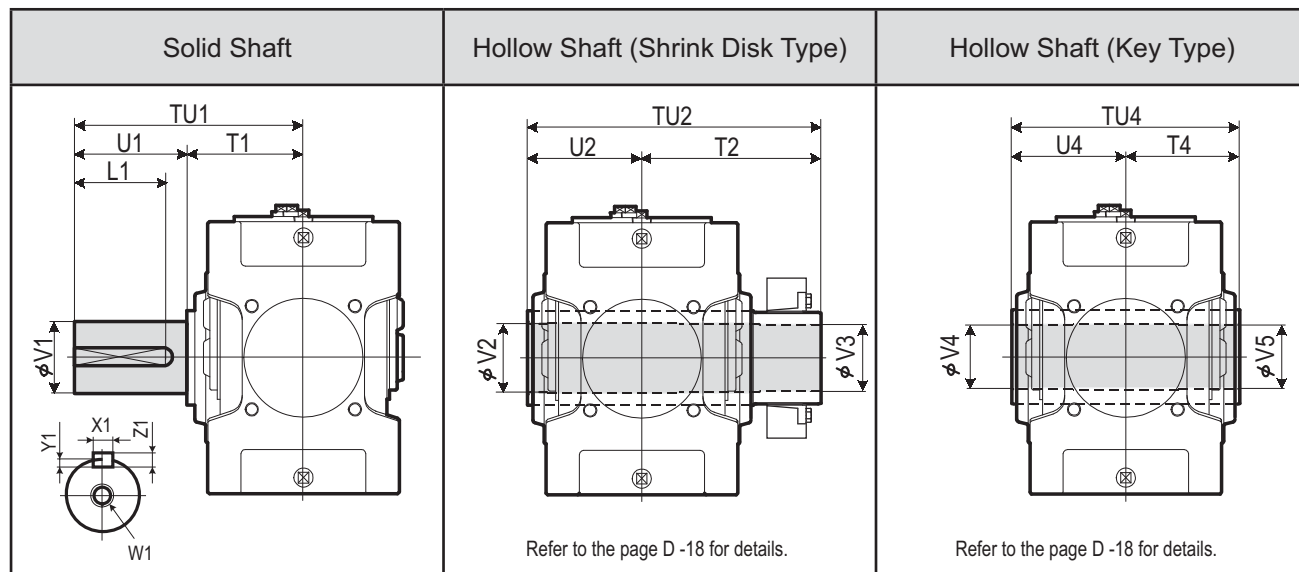
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions shown in these drawings.

4. Refer to the page D-24 for the dimension of optional parts.
5. When fastening the mounting bolt, it is necessary to remove the fan food.

DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9015 ▶ 9055

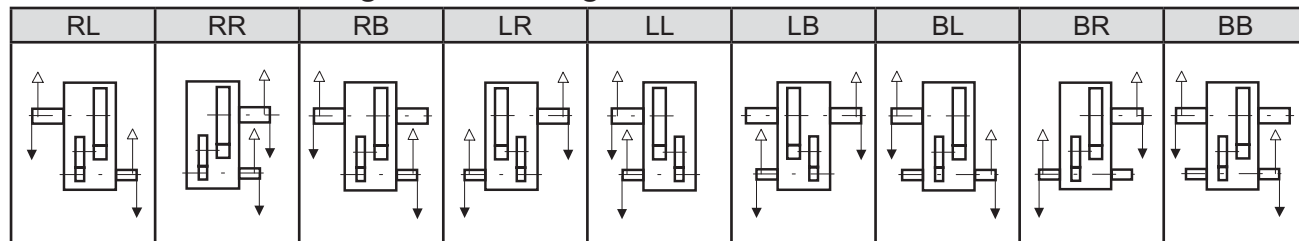
Slow Speed Shaft



Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

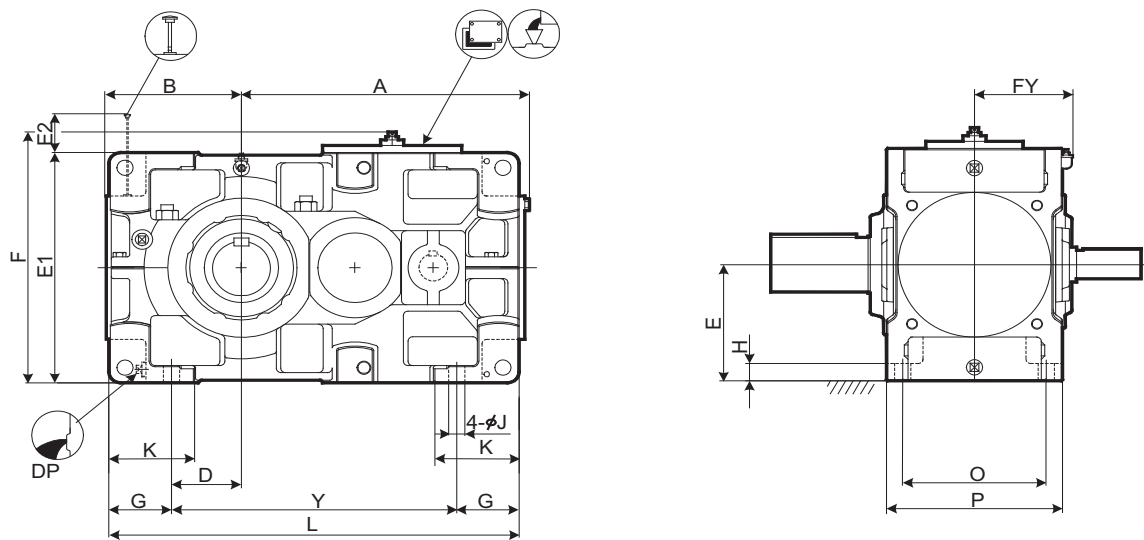
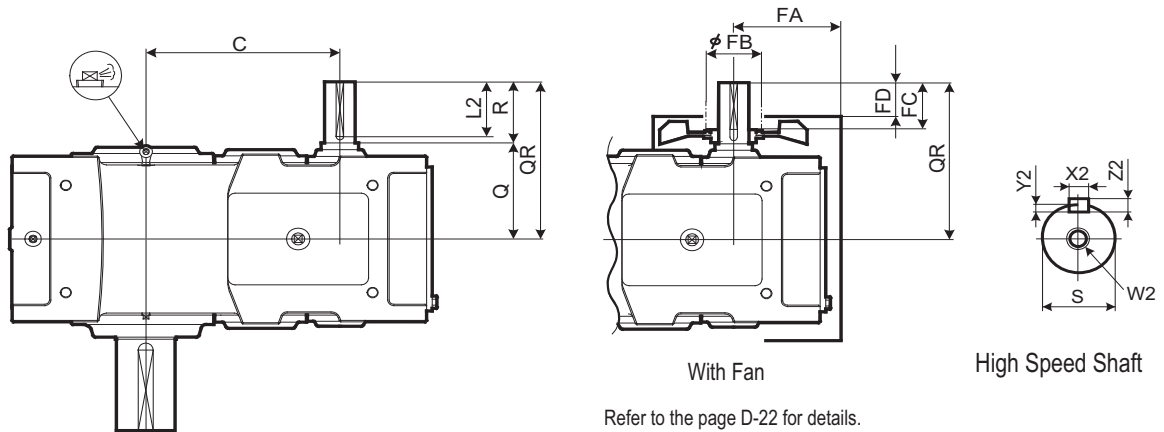
P H A Size P 2 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

Size: 9015, 9025, 9030, 9035, 9040, 9045, 9050, 9055
 Shaft Arrangement: RL, RR, RB, LR, LL, LB, BL, BR, BB
 Low Speed Shaft Type: (blank) : Without Fan, F : With Fan
 Fan: (blank) : Solid Shaft, T : Hollow Shaft (Shrink Disk type), K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○	○	○
9025	○	○	○	○	○	○	○	○	○	○	○	○
9030	○	○	○	○	○	○	○	○	○	○	○	○
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○	○	○
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○										
9055			○	○	○	○	○	○	○	○	○	○

Air Breather, Air Vent, Oil Fill, Drain Plug, Dip Stick, Oil Gauge, Inspection Cover, Oil Pump, Backstop (Option), Opposite Side

DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9060 ▶ 9085



Size	A	B	C	D	E	E1	E2	F	FY	G	H	J	K	L	O	P	Y
9060	621	299	414	151	265	530	183	578	212	135	35	35	180	885	310	380	615
9065	667	338	460	190	300	600	148	648	212	135	35	35	180	970	310	380	700
9070	719	336	482	163	300	600	213	648	237	160	40	42	215	1020	350	430	700
9075	772	383	535	210	335	670	178	718	237	160	52	42	220	1120	350	430	800
9080	812	378	556	205	335	670	233	718	257	160	52	42	220	1155	380	460	835
9085	868	422	612	249	375	750	193	798	257	160	52	42	220	1255	380	460	935

Size	High Speed Shaft									Fan				DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9060	220	360	140	65m6	M20/42	18	7	11	125	240	200	105	65	1"	610	25
9065	220	360	140	65m6	M20/42	18	7	11	125	240	200	105	65	1"	735	34
9070	245	385	140	75m6	M20/42	20	7.5	12	125	274	225	105	65	1"	860	38
9075	245	385	140	75m6	M20/42	20	7.5	12	125	274	225	105	65	1"	1110	47
9080	264	434	170	85m6	M20/42	22	9	14	150	296	225	135	95	1"	1240	54
9085	264	434	170	85m6	M20/42	22	9	14	150	296	225	135	95	1"	1500	68

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. When fastening the mounting bolt, it is necessary to remove the fan food.

4. Refer to the page D -14 for dimensions not shown in these drawings.
5. Refer to the page D -27 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

P	H	D	Size	P	2	-	Shaft Arrangement	Low Speed Shaft Type	Fan	-	Nominal Reduction Ratio
			9060 9065 9070 9075 9080 9085				RL RR RB LR LL LB BL BR BB	(blank) : Without Fan F : With Fan			
							(blank) : Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)				

Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○	○	○
9065			○	○	○	○	○	○	○	○	○	○
9070			○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



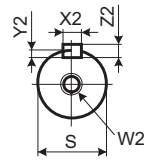
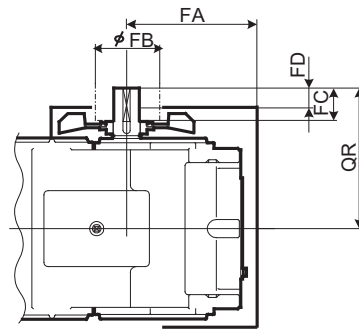
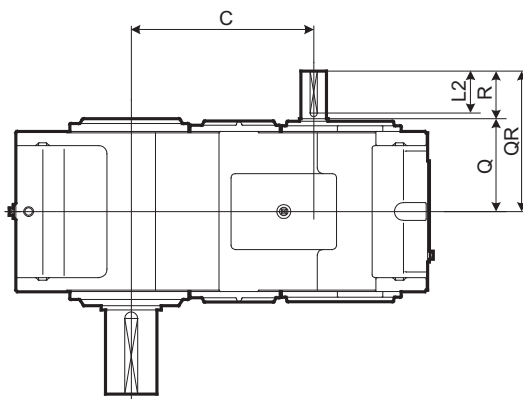
Oil Pump



Backstop (Option)



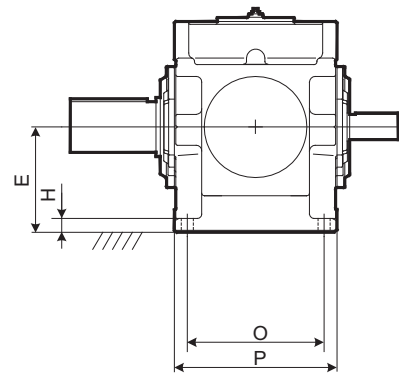
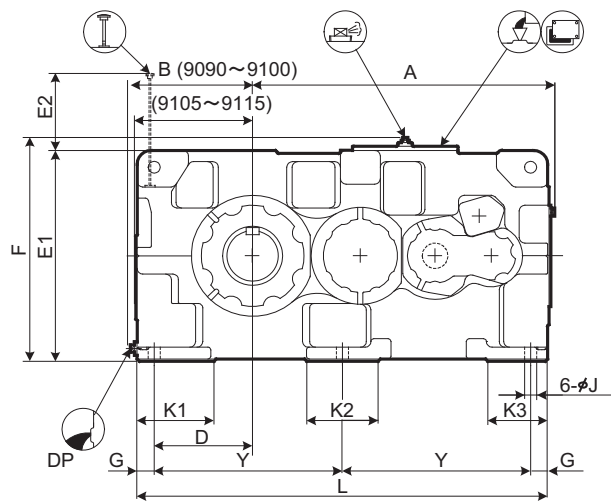
Opposite Side



High Speed Shaft

With Fan

Refer to the page D-22 for details.

Speed
ReducerSelection
Tables
Dimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9090	1060	428	640	345	375	750	274	797	60	50	42	270	250	210	1440	480	570	660
9095	1090	458	670	375	400	800	286	847	60	50	42	290	250	210	1500	480	570	690
9100	1194	468	724	375	425	850	299	897	70	55	48	300	280	240	1610	560	650	735
9105	1228	493	758	410	450	900	316	947	70	55	48	320	280	240	1680	560	650	770
9110	1344	508	824	420	475	950	321	997	75	60	56	340	310	260	1810	610	710	830
9115	1393	558	873	470	500	1000	333	1047	75	60	56	350	310	260	1910	610	710	880

Size	High Speed Shaft									Fan				DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Key Y2 Z2 L2			FA	FB	FC	FD			
9090	330	500	170	90m6	M24/50	25	9	14	150	465	250	135	90	1 1/2"	2050	120
9095	330	500	170	90m6	M24/50	25	9	14	150	465	250	135	90	1 1/2"	2300	140
9100	375	585	210	100m6	M24/50	28	10	16	190	515	250	175	130	1 1/2"	2730	170
9105	375	585	210	100m6	M24/50	28	10	16	190	515	250	175	130	1 1/2"	3290	205
9110	405	615	210	110m6	M24/50	28	10	16	190	565	250	175	130	1 1/2"	3960	240
9115	405	615	210	110m6	M24/50	28	10	16	190	565	250	175	130	1 1/2"	4410	290

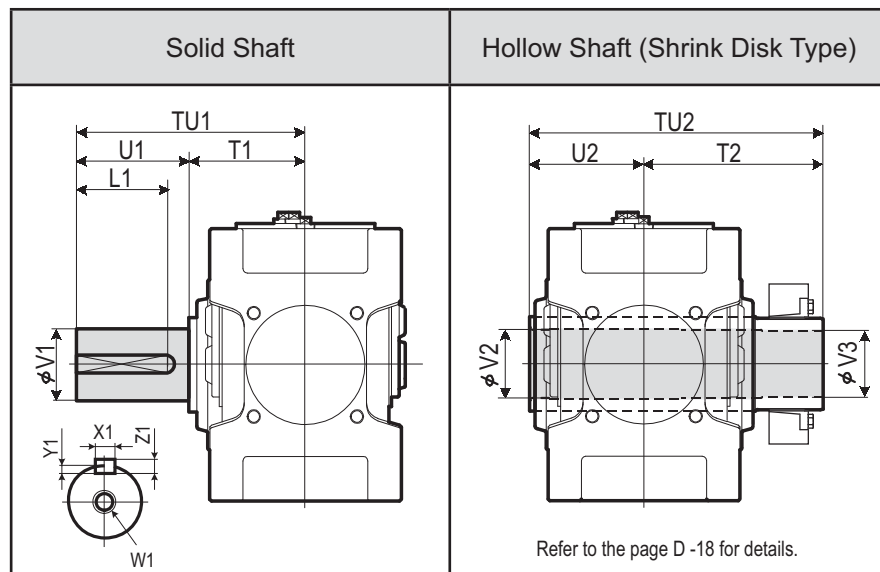
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-16 for dimensions not shown in these drawings.

4. Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Horizontal Mounting 9090 ▶ 9115

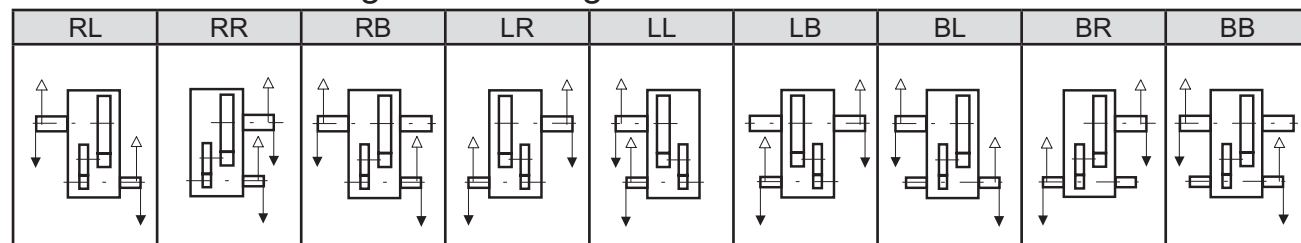
Slow Speed Shaft



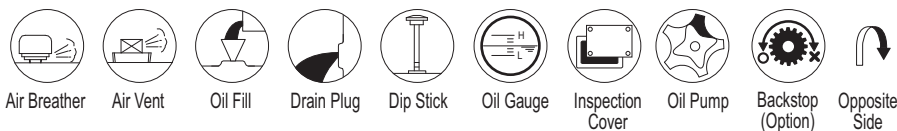
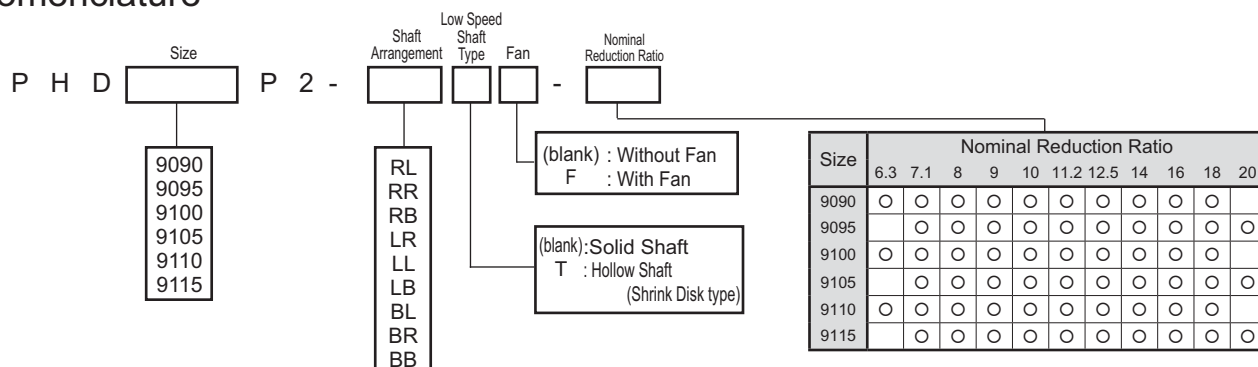
Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

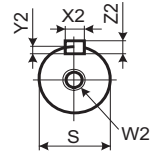
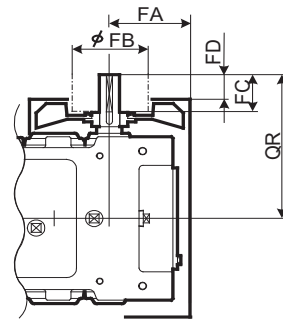
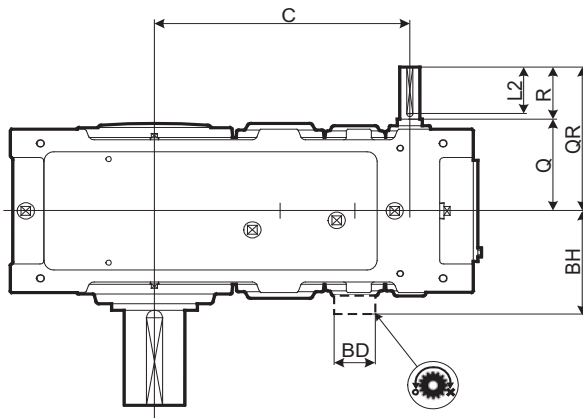
Standard Shaft Arrangement Configuration



Nomenclature



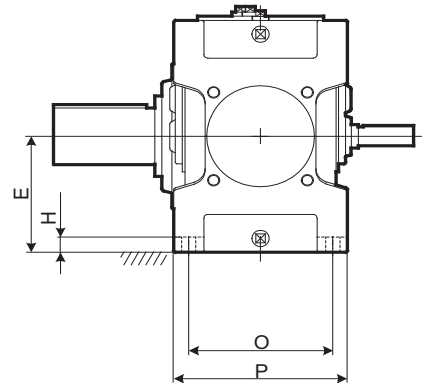
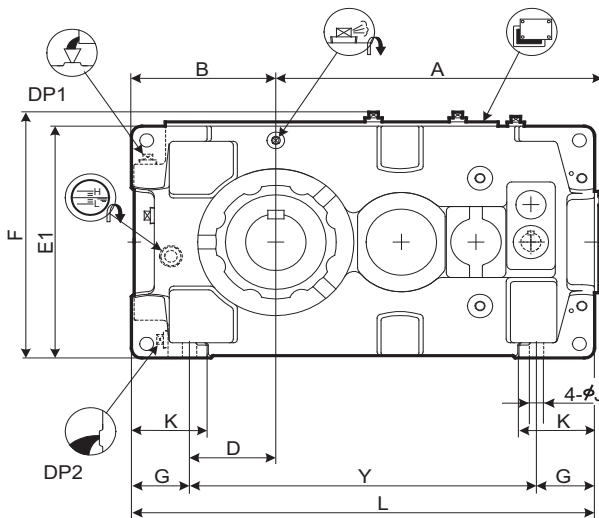
DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9015 ▶ 9055



High Speed Shaft

With Fan

Refer to the page D-23 for details.

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	Y
9015	338	160	257	90	135	270	299	70	22	15	95	485	170	205	345
9025	408	175	306	95	155	310	339	80	25	19	110	570	195	235	410
9030	453	200	343	110	160	320	349	90	28	24	120	640	215	265	460
9035	484	219	374	129	185	370	399	90	28	24	120	690	215	265	510
9040	540	235	398	120	200	400	431	115	30	28	150	759	255	315	529
9045	577	256	437	141	220	440	471	115	30	28	150	819	255	315	589
9050	609	255	467	138.5	210	420	451	116.5	32	28	150	848	285	345	615
9055	648	286	506	171	245	490	521	115	32	28	150	918	285	345	688

Size	High Speed Shaft										Fan				Backstop		DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key				L2	FA	FB	FC	FD	BD	BH				
9015	130	190	60	25k6	M10/22	8	4	7	50		111	125	30	10			3/4"	3/4"	105	5
9025	144	204	60	28k6	M10/22	8	4	7	50		129	125	30	10			3/4"	3/4"	150	8
9030	161	241	80	30k6	M10/22	8	4	7	70		140	125	50	30			3/4"	3/4"	205	10
9035	161	241	80	30k6	M10/22	8	4	7	70		150	140	50	22			3/4"	3/4"	225	13
9040	176	256	80	35k6	M12/28	10	5	8	70		170	140	50	22			1"	1"	305	19
9045	176	256	80	35k6	M12/28	10	5	8	70		170	140	50	22			1"	1"	375	21
9050	194	304	110	40k6	M16/36	12	5	8	95		172	140	80	52	150	263	1"	1"	445	24
9055	194	304	110	40k6	M16/36	12	5	8	95		172	140	80	52	150	263	1"	1"	505	29

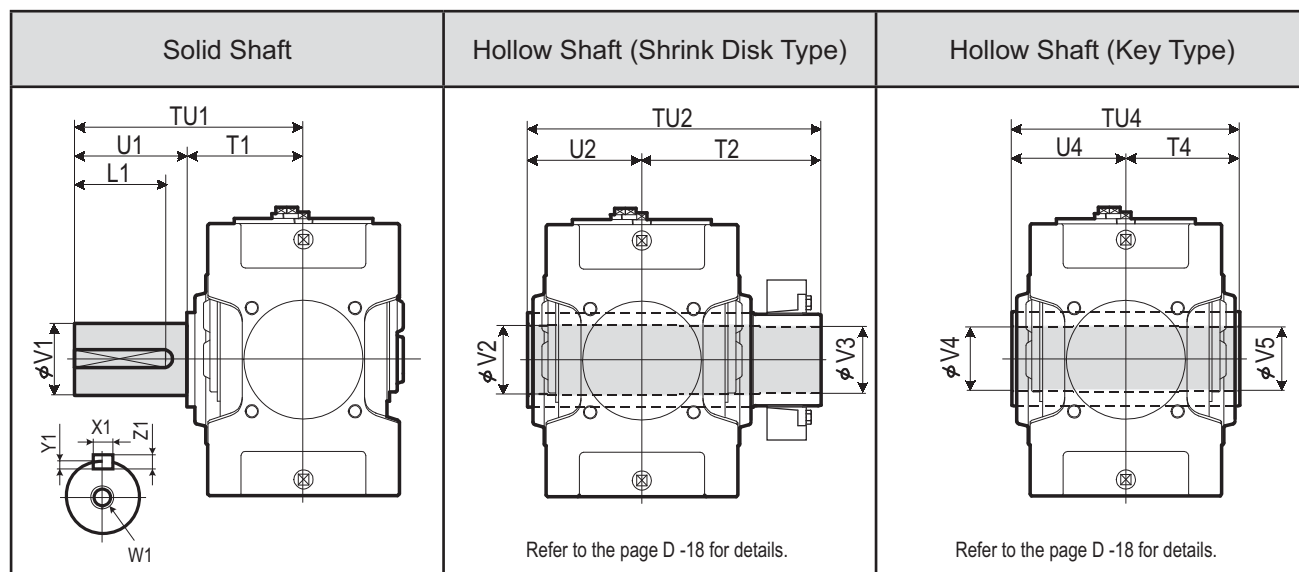
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. When fastening the mounting bolt, it is necessary to remove the fan food.

4. Refer to the page D-13 for dimensions not shown in these drawings.
5. Refer to the page D-24 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9015 ▶ 9055

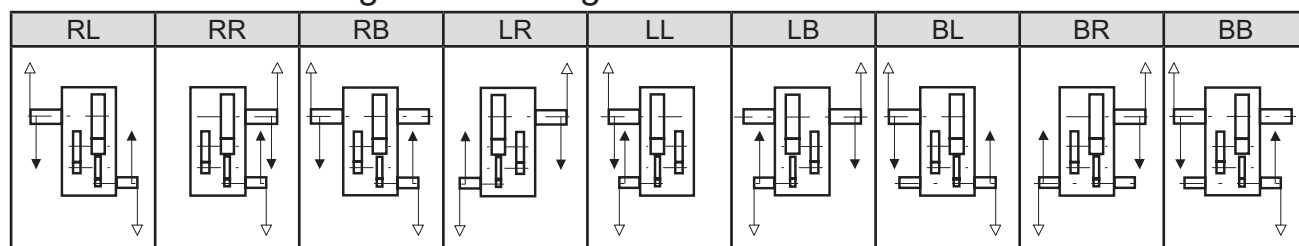
Slow Speed Shaft



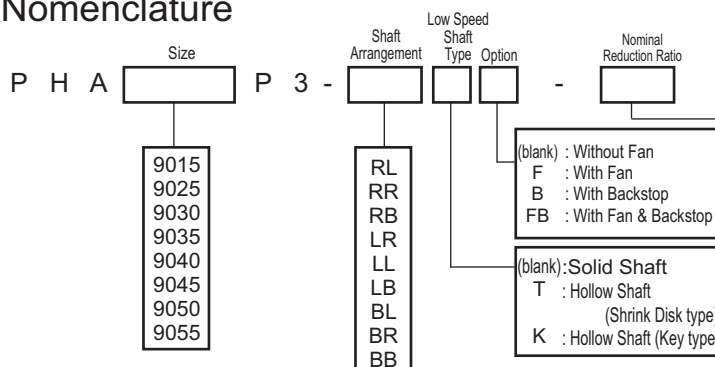
Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

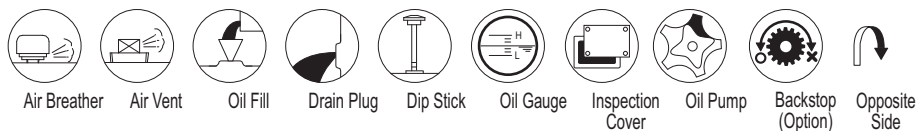
Standard Shaft Arrangement Configuration

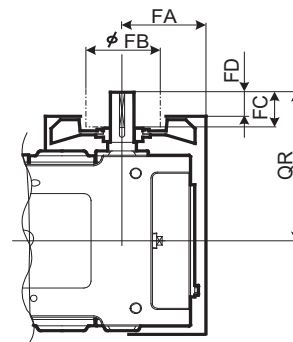
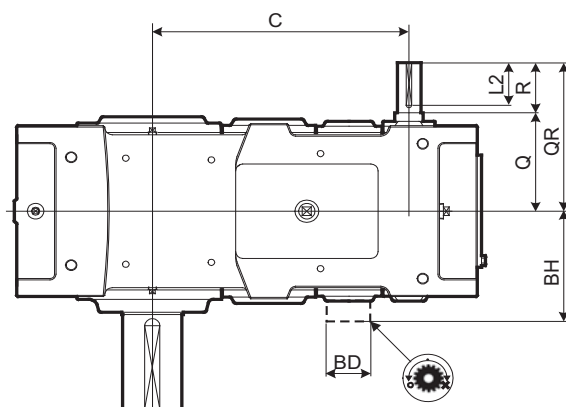


Nomenclature



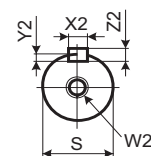
Size	Nominal Reduction Ratio														
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9015	○	○	○	○	○	○	○	○							
9025	○	○	○	○	○	○	○	○							
9030	○	○	○	○	○	○	○	○	○	○	○	○			
9035			○	○	○	○	○	○	○	○	○	○	○	○	
9040	○	○	○	○	○	○	○	○	○	○	○	○			
9045			○	○	○	○	○	○	○	○	○	○	○	○	
9050	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○	



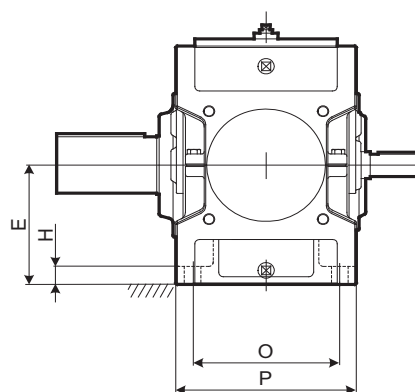
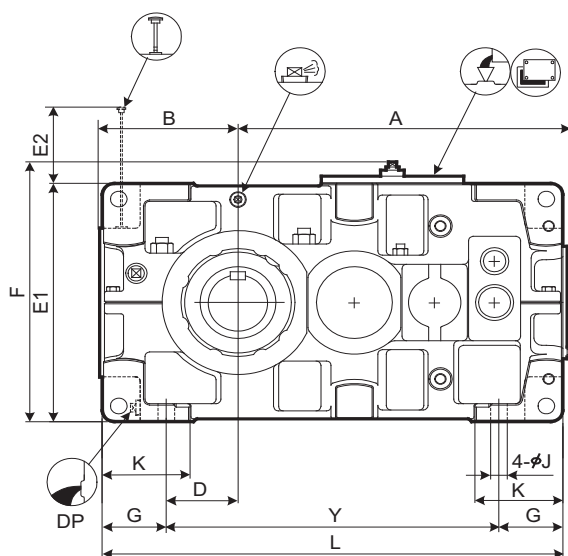


With Fan

Refer to the page D-23 for details.



High Speed Shaft

Speed
ReducerSelection
Tables
Dimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K	L	O	P	Y
9060	701	299	540	151	265	530	155	578	135	35	35	180	970	310	380	700
9065	747	338	586	190	300	600	120	648	135	35	35	180	1055	310	380	785
9070	809	336	630	163	300	600	181	648	160	40	42	215	1115	350	430	795
9075	862	383	683	210	335	670	146	718	160	52	42	220	1215	350	430	895
9080	932	378	725	205	335	670	205	718	160	52	42	220	1275	380	460	955
9085	988	422	781	249	375	750	165	798	160	52	42	220	1375	380	460	1055

Size	High Speed Shaft										Fan				Backstop		DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key				L2	FA	FB	FC	FD	BD	BH			
9060	219	329	110	50k6	M16/36	14	5.5	9	95		199	160	80	52	175	308	1"	660	33
9065	219	329	110	50k6	M16/36	14	5.5	9	95		199	160	80	52	175	308	1"	815	38
9070	244	354	110	55m6	M20/42	16	6	10	95		221	160	80	52	190	330	1"	940	49
9075	244	354	110	55m6	M20/42	16	6	10	95		221	160	80	52	190	330	1"	1160	59
9080	265	405	140	65m6	M20/42	18	7	11	125		247	200	105	65	210	365	1"	1350	64
9085	265	405	140	65m6	M20/42	18	7	11	125		247	200	105	65	210	365	1"	1610	80

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. When fastening the mounting bolt, it is necessary to remove the fan food.

4. Refer to the page D -15 for dimensions not shown in these drawings.
5. Refer to the page D -27 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

Size	Shaft Arrangement	Low Speed Shaft Type	Option	Nominal Reduction Ratio
P H D	P 3			
9060 9065 9070 9075 9080 9085	RL RR RB LR LL LB BL BR BB	(blank) : Without Fan F : With Fan B : With Backstop FB : With Fan & Backstop	(blank) : Solid Shaft T : Hollow Shaft (Shrink Disk type) K : Hollow Shaft (Key type)	

Size	Nominal Reduction Ratio													
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9060	○	○	○	○	○	○	○	○	○	○	○	○		
9065	○		○	○	○	○	○	○	○	○	○	○	○	○
9070			○	○	○	○	○	○	○	○	○	○		
9075			○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

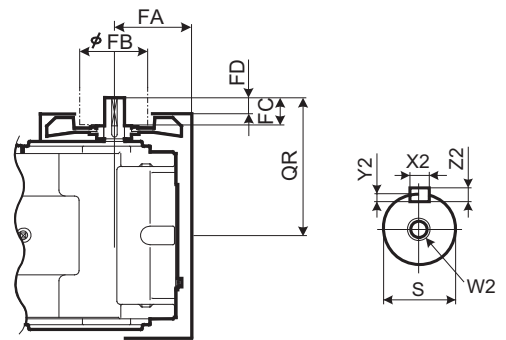
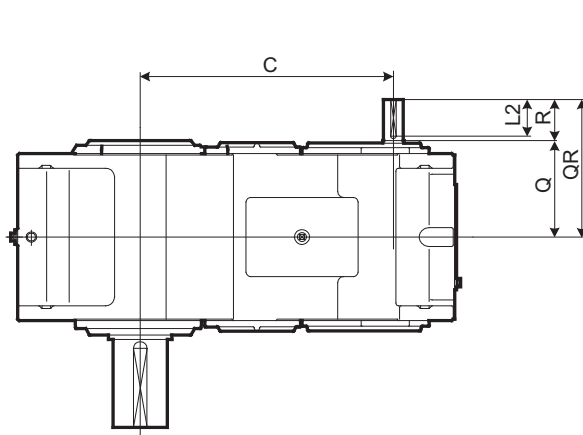


Backstop (Option)



Opposite Side

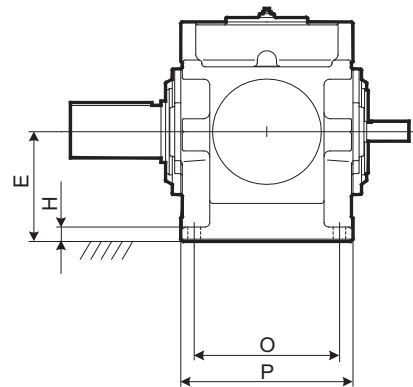
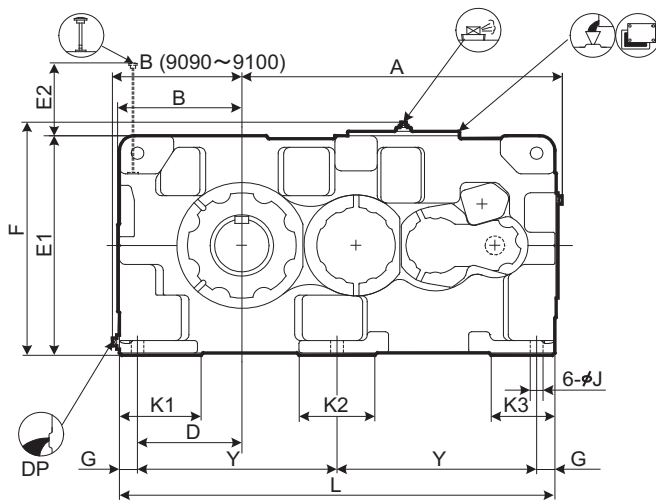
DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9090 ▶ 9115



High Speed Shaft

With Fan

Refer to the page D-23 for details.

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	Y
9090	1060	428	837	345	375	750	249	797	60	50	42	270	250	210	1440	480	570	660
9095	1090	458	867	375	400	800	254	847	60	50	42	290	250	210	1500	480	570	690
9100	1194	468	950	375	425	850	273	897	70	55	48	300	280	240	1610	560	650	735
9105	1228	493	984	410	450	900	278	947	70	55	48	320	280	240	1680	560	650	770
9110	1344	508	1050	420	475	950	283	997	75	60	56	340	310	260	1810	610	710	830
9115	1393	558	1099	470	500	1000	282	1047	75	60	56	350	310	260	1910	610	710	880

Size	High Speed Shaft										Fan				DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key				L2	FA	FB	FC	FD			
9090	330	470	140	65m6	M20/42	18	7	11	125	125	268	200	105	65	1 1/2"	2100	120
9095	330	470	140	65m6	M20/42	18	7	11	125	125	268	200	105	65	1 1/2"	2350	155
9100	375	515	140	75m6	M20/42	20	7.5	12	125	125	289	225	105	65	1 1/2"	2780	180
9105	375	515	140	75m6	M20/42	20	7.5	12	125	125	289	225	105	65	1 1/2"	3340	225
9110	405	575	170	80m6	M20/42	22	9	14	150	150	339	225	135	95	1 1/2"	4010	260
9115	405	575	170	80m6	M20/42	22	9	14	150	150	339	225	135	95	1 1/2"	4460	325

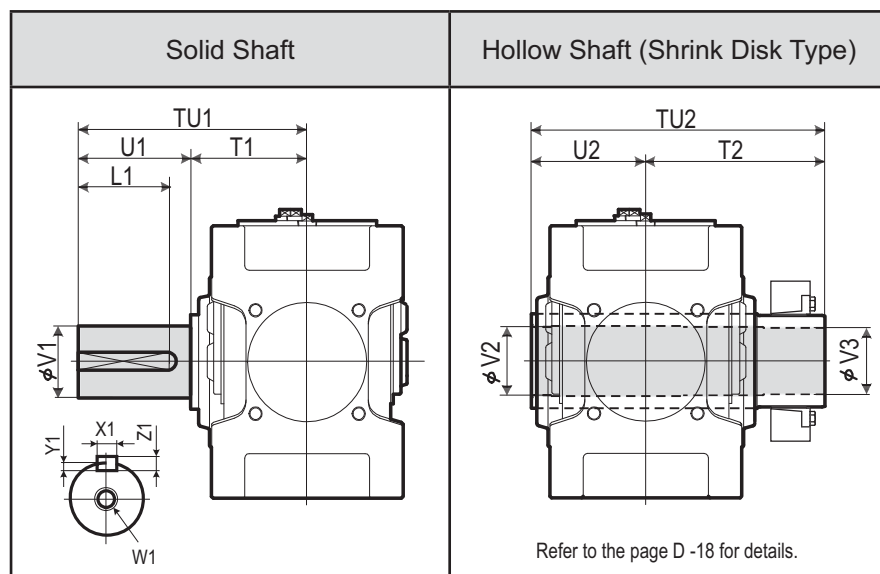
Unit: mm

- Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
- The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
- Refer to the page D-16 for dimensions not shown in these drawings.

- Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9090 ▶ 9115

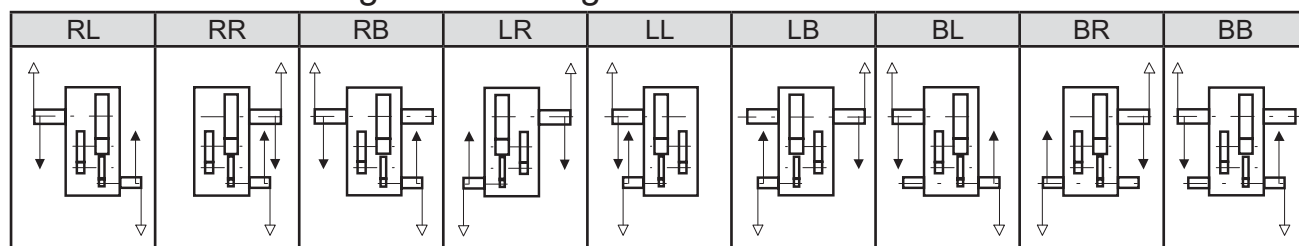
Slow Speed Shaft



Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270		844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320		859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320		934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320		949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320		1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375		1065	645	420	253	250

Unit: mm

Standard Shaft Arrangement Configuration

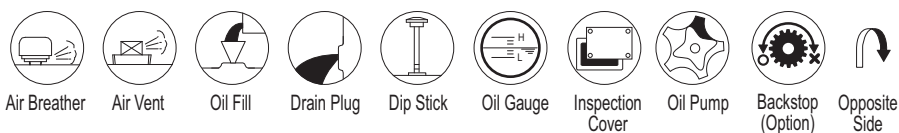


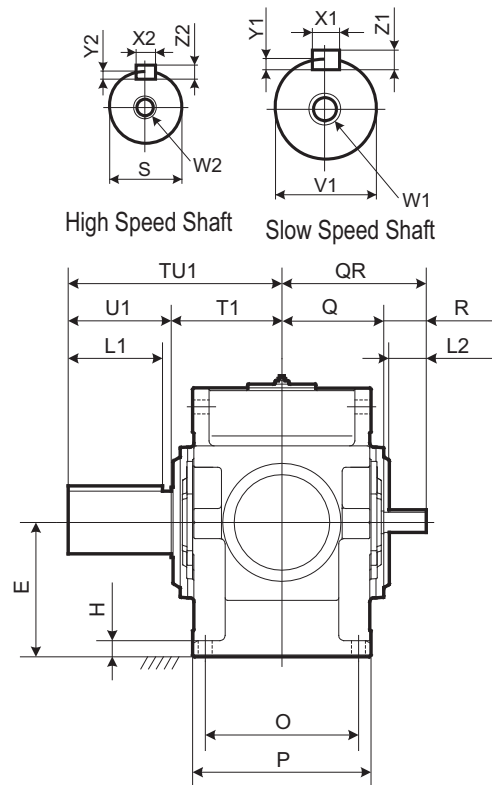
Nomenclature

P H D Size P 3 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

Size: 9090, 9095, 9100, 9105, 9110, 9115
 Shaft Arrangement: RL, RR, RB, LR, LL, LB, BL, BR, BB
 Low Speed Shaft Type: (blank) : Without Fan, F : With Fan
 Fan: (blank) : Solid Shaft, T : Hollow Shaft (Shrink Disk type)
 Nominal Reduction Ratio: 20, 22.4, 25, 28, 31.5, 35.5, 40, 45, 50, 56, 63, 71, 80, 90

Size	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9095	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9105	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9115	○	○	○	○	○	○	○	○	○	○	○	○	○	○





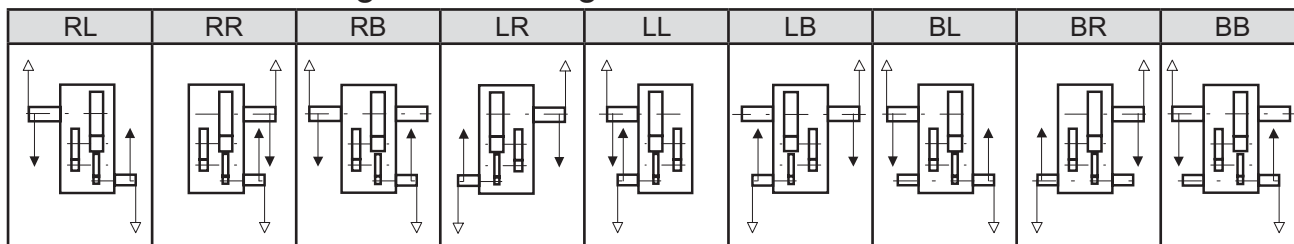
Dimension Tables

Size	Solid Shaft					Key			
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1
9118	850	440	410	260m6	M36/70	56	20	32	375
9121	935	465	470	280m6	M36/70	63	20	32	425
9126	935	465	470	300m6	M36/70	70	22	36	425

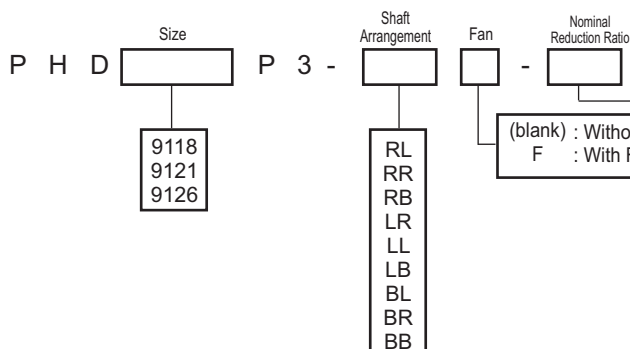
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for dimensions not shown in these drawings.

DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9118 ▶ 9126

Standard Shaft Arrangement Configuration



Nomenclature



Size	Nominal Reduction Ratio													
	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9118		○		○	○	○	○	○	○	○	○	○	○	
9121			○	○	○	○	○	○	○	○	○	○	○	
9126			○	○	○	○	○	○	○	○	○	○	○	

PARAMAX Horizontal Split
 9118
 9126
 Parallel Triple Reduction
 P
 H
 D
 P
 3



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



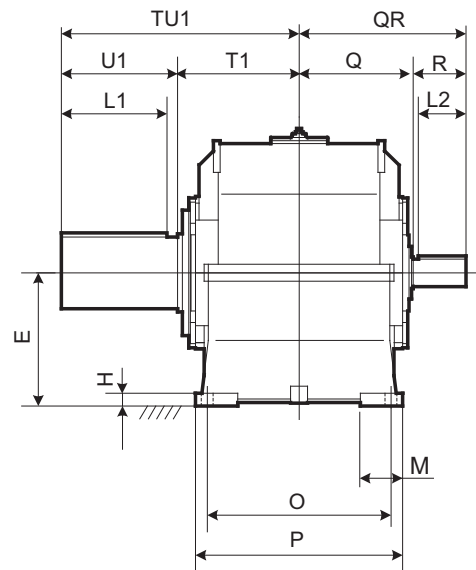
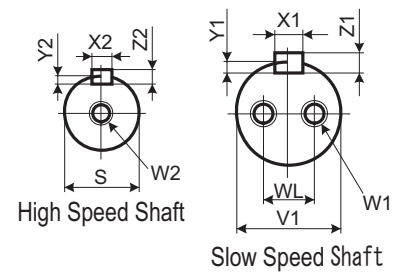
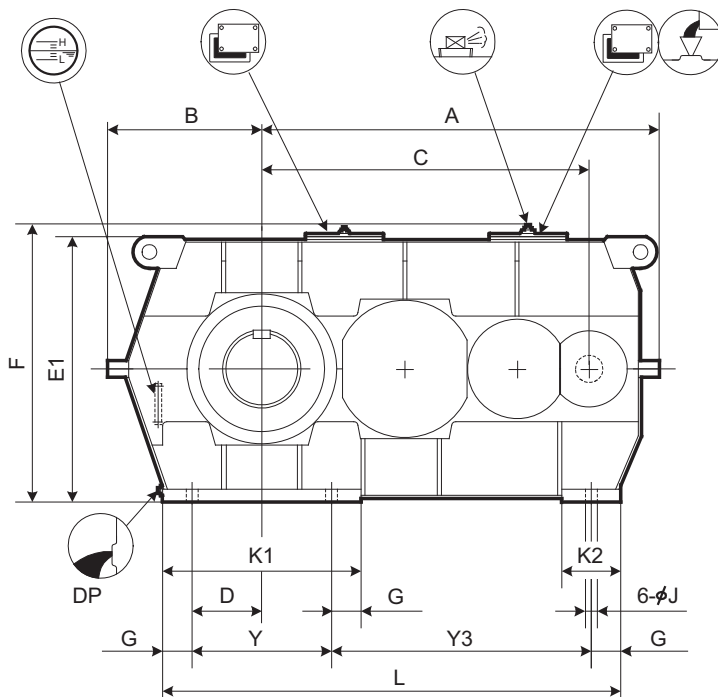
Oil Pump



Backstop (Option)



Opposite Side

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K1	K2	L	M	O	P	Y	Y3
9128	1720	680	1413	330	600	1194	1241	140	55	66	940	280	1990	170	710	840	660	1050
9131	1882	730	1550	330	630	1256	1303	140	60	66	940	280	2170	200	850	980	660	1230
9136	1882	730	1550	330	630	1256	1303	140	60	66	940	280	2170	200	850	980	660	1230

Size	High Speed Shaft									DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key						
						X2	Y2	Z2	L2			
9128	470	680	210	100m6	M24/50	28	10	16	190	1 1/2"	7250	390
9131	540	790	250	130m6	M24/50	32	11	18	225	1 1/2"	9550	550
9136	540	790	250	130m6	M24/50	32	11	18	225	1 1/2"	9900	540

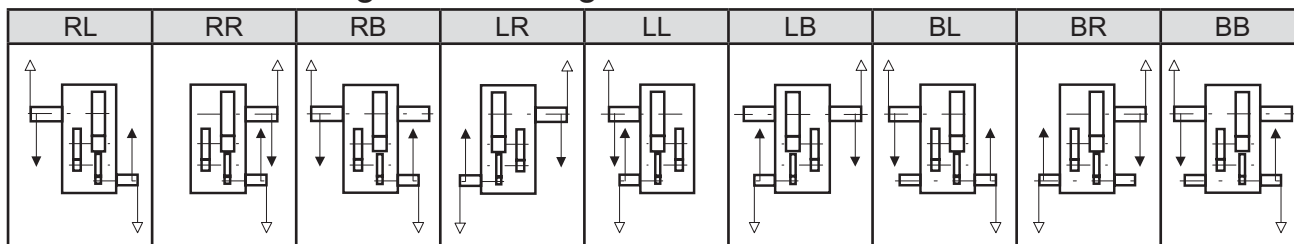
Size	Solid Shaft						Key			
	TU1	T1	U1	V1	W1/Depth	WL	X1	Y1	Z1	L1
9128	950	480	470	320m6	M36/70	200	70	22	36	425
9131	1100	550	550	340m6	M36/70	215	80	25	40	500
9136	1110	560	550	360m6	M36/70	230	80	25	40	500

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for dimensions not shown in these drawings.

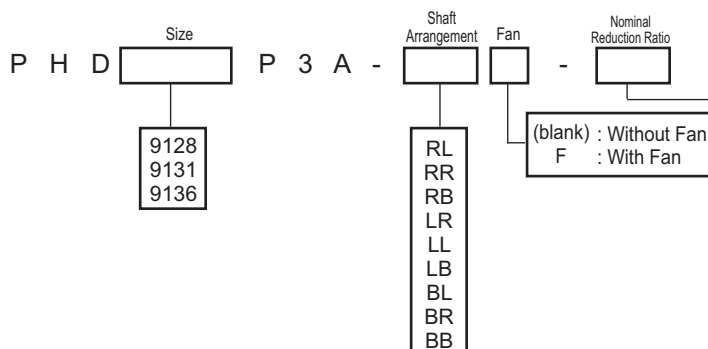
DIMENSIONS Parallel Shaft Triple Reduction Horizontal Mounting 9128 ▶ 9136

Standard Shaft Arrangement Configuration



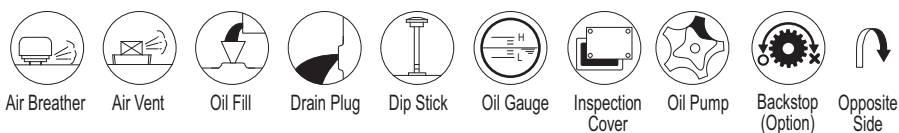
Consult us each time for delivery date of reducer type BL, BR, and BB (with double extended shaft) for size 9131 and 9136.

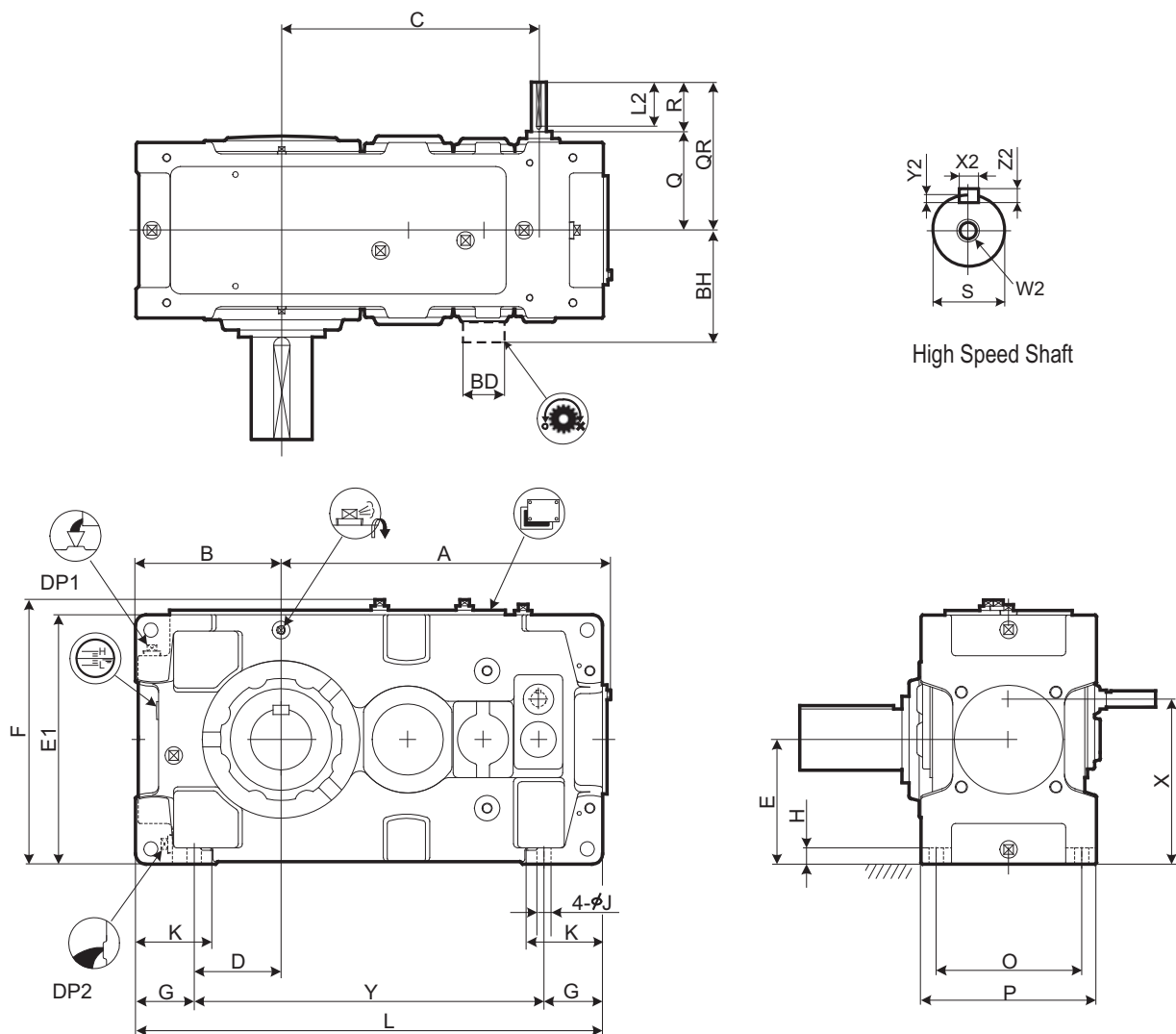
Nomenclature



Size	Nominal Reduction Ratio												
	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
9128			○	○	○	○	○	○	○	○	○	○	○
9131	○	○	○	○	○	○	○	○	○	○	○		
9136	○	○	○	○	○	○	○	○	○	○	○		

PARAMAX Horizontal Split 9128 9136 Parallel Reduction Housing P H D P 3 A



Speed
ReducerSelection
Tables
Dimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9030	453	200	343	110	160	320	349	90	28	24	120	640	215	265	223	460
9035	484	219	374	129	185	370	399	90	28	24	120	690	215	265	248	510
9040	540	235	398	120	200	400	431	115	30	28	150	759	255	315	279	529
9045	577	256	437	141	220	440	471	115	30	28	150	819	255	315	299	589
9050	609	255	467	138.5	210	420	451	116.5	32	28	150	848	285	345	289	615
9055	648	286	506	171	245	490	521	115	32	28	150	918	285	345	324	688

Size	High Speed Shaft									Backstop		DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	BD	BH				
9030	159	219	60	25k6	M10/22	8	4	7	50			3/4"	3/4"	210	14
9035	159	219	60	25k6	M10/22	8	4	7	50			3/4"	3/4"	230	17
9040	175	235	60	28k6	M10/22	8	4	7	50			1"	1"	310	25
9045	175	235	60	28k6	M10/22	8	4	7	50			1"	1"	380	28
9050	195	275	80	30k6	M10/22	8	4	7	70	150	263	1"	1"	450	32
9055	195	275	80	30k6	M10/22	8	4	7	70	150	263	1"	1"	510	40

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D -13 for dimensions not shown in these drawings.

4. Refer to the page D -24 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9030 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

Nomenclature

P

H

A

Size

P

4

-

Shaft Arrangement

Low Speed Shaft Type

Option

-

Nominal Reduction Ratio

9030

9035

9040

9045

9050

9055

RL

RR

RB

LR

LL

LB

BL

BR

BB

(blank) : Without Option

B : With Backstop

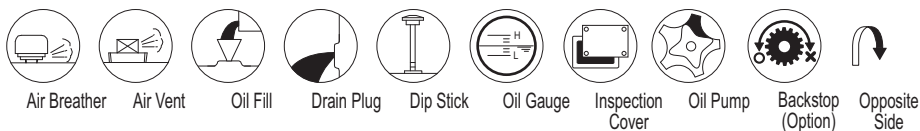
(blank):Solid Shaft

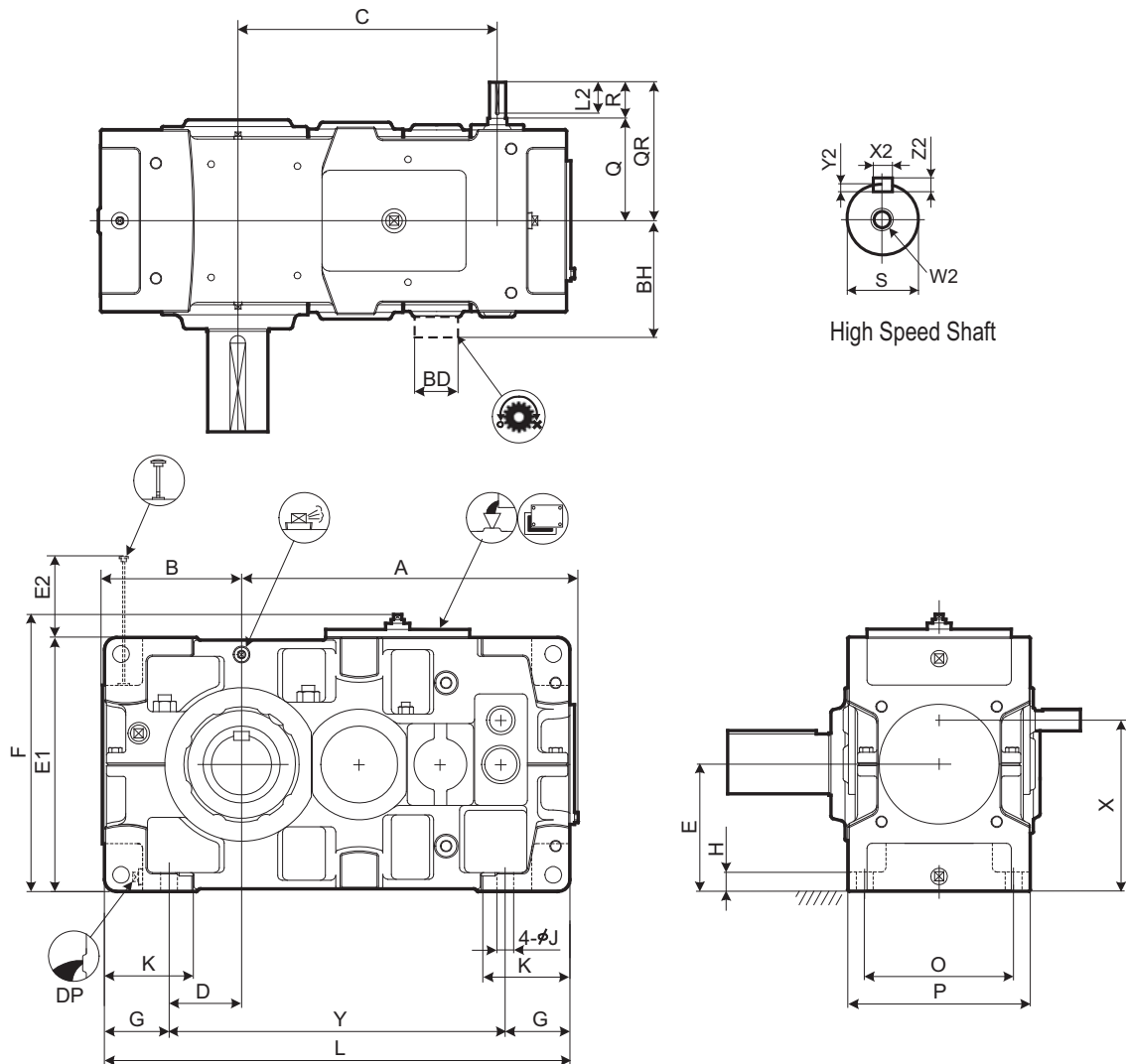
T : Hollow Shaft

(Shrink Disk type)

K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500
9030	○	○	○	○	○	○	○	○	○	○							
9035			○	○	○	○	○	○	○	○	○	○					
9040	○	○	○	○	○	○	○	○	○	○							
9045	○	○	○	○	○	○	○	○	○	○	○	○					
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○





Size	A	B	C	D	E	E1	E2	F	G	H	J	K	L	O	P	X	Y
9060	701	299	540	151	265	530	126	578	135	35	35	180	970	310	380	357	700
9065	747	338	586	190	300	600	91	648	135	35	35	180	1055	310	380	392	785
9070	809	336	630	163	300	600	144	648	160	40	42	215	1115	350	430	409	795
9075	862	383	683	210	335	670	109	718	160	52	42	220	1215	350	430	444	895
9080	932	378	725	205	335	670	167	718	160	52	42	220	1275	380	460	461	955
9085	988	422	781	249	375	750	127	798	160	52	42	220	1375	380	460	501	1055

Size	High Speed Shaft									Backstop		DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	BD	BH			
9060	221	301	80	35k6	M12/28	10	5	8	70	175	308	1"	660	37
9065	221	301	80	35k6	M12/28	10	5	8	70	175	308	1"	815	42
9070	244	354	110	40k6	M16/36	12	5	8	95	190	330	1"	950	56
9075	244	354	110	40k6	M16/36	12	5	8	95	190	330	1"	1170	67
9080	264	374	110	45k6	M16/36	14	5.5	9	95	210	365	1"	1360	73
9085	264	374	110	45k6	M16/36	14	5.5	9	95	210	365	1"	1620	90

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D -15 for dimensions not shown in these drawings.

4. Refer to the page D -27 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D -18 for details.	Refer to the page D -18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

Standard Shaft Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

Nomenclature

P

H

D

Size

P

4

-

Shaft Arrangement

Low Speed Shaft Type

Option

-

Nominal Reduction Ratio

9060

9065

9070

9075

9080

9085

RL

RR

RB

LR

LL

LB

BL

BR

BB

(blank) : Without Option

B : With Backstop

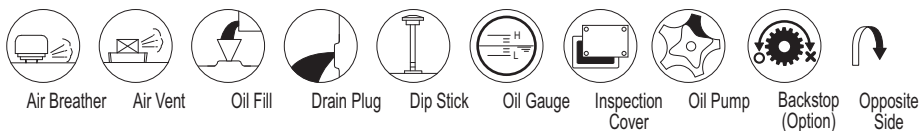
(blank):Solid Shaft

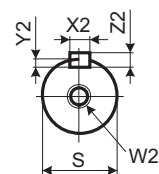
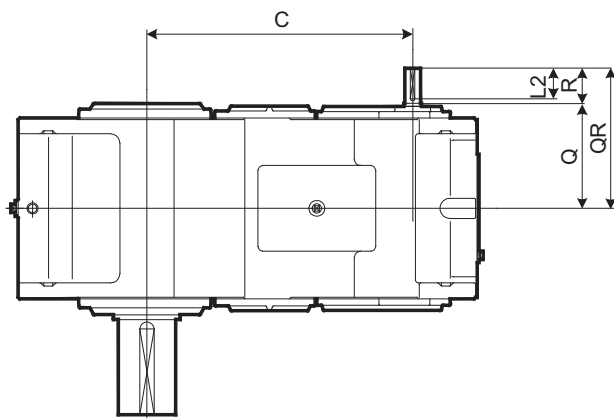
T : Hollow Shaft

(Shrink Disk type)

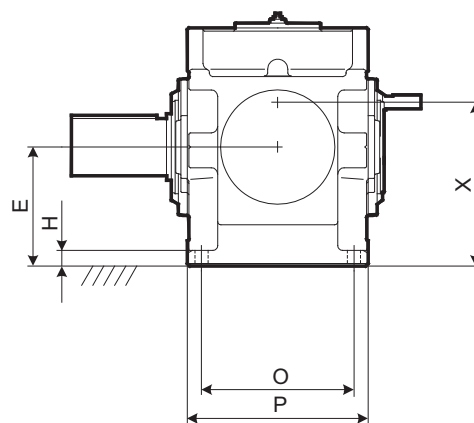
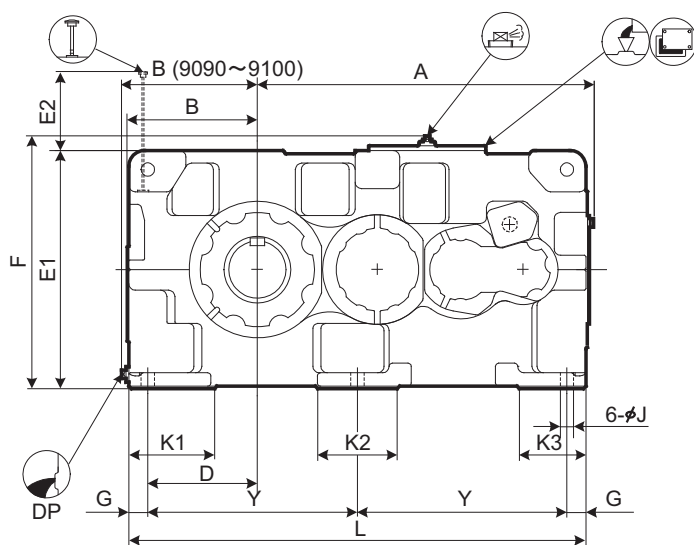
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9065	○	○			○	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○





High Speed Shaft

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	X	Y
9090	1060	428	795	345	375	750	194	797	60	50	42	270	250	210	1440	480	570	517	660
9095	1090	458	825	375	400	800	199	847	60	50	42	290	250	210	1500	480	570	542	690
9100	1194	468	901	375	425	850	208	897	70	55	48	300	280	240	1610	560	650	587	735
9105	1228	493	935	410	450	900	213	947	70	55	48	320	280	240	1680	560	650	612	770
9110	1344	508	1001	420	475	950	218	997	75	60	56	340	310	260	1810	610	710	637	830
9115	1393	558	1050	470	500	1000	217	1047	75	60	56	350	310	260	1910	610	710	662	880

Size	High Speed Shaft									DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key						
						X2	Y2	Z2	L2			
9090	330	440	110	50k6	M16/36	14	5.5	9	95	1 1/2"	2150	150
9095	330	440	110	50k6	M16/36	14	5.5	9	95	1 1/2"	2400	180
9100	375	515	140	60m6	M20/42	18	7	11	125	1 1/2"	2830	220
9105	375	515	140	60m6	M20/42	18	7	11	125	1 1/2"	3390	260
9110	405	545	140	60m6	M20/42	18	7	11	125	1 1/2"	4060	300
9115	405	545	140	60m6	M20/42	18	7	11	125	1 1/2"	4510	365

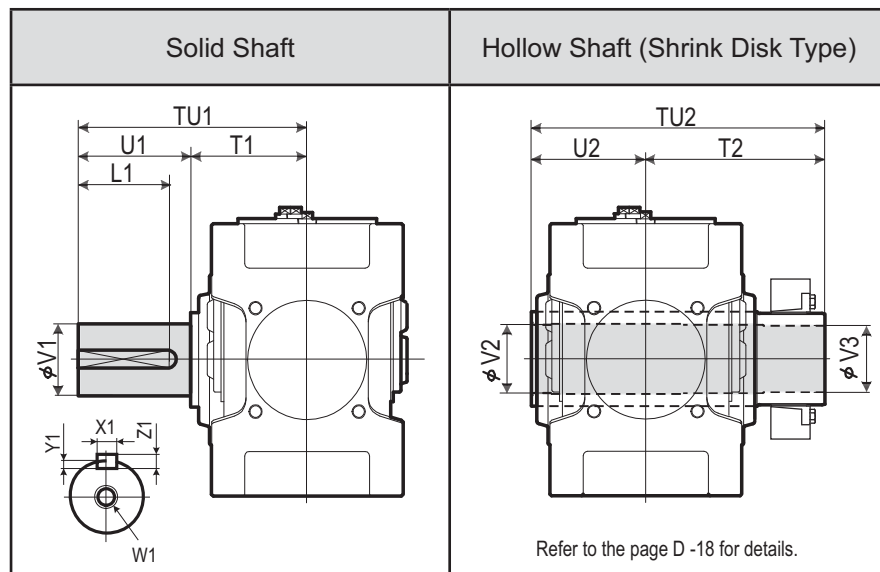
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-16 for dimensions not shown in these drawings.

4. Refer to the page D-30 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9090 ▶ 9115

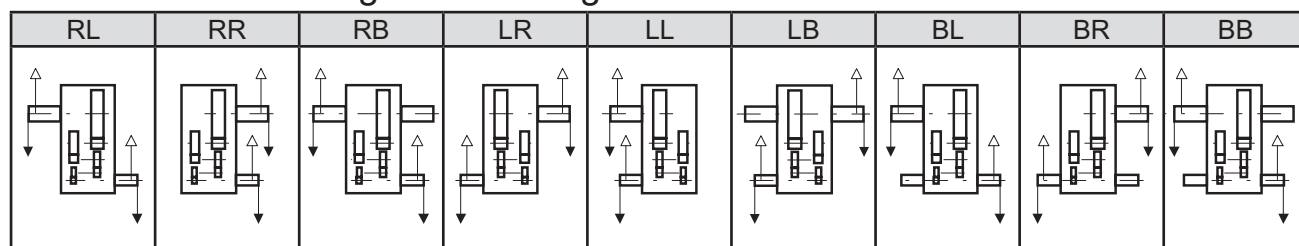
Slow Speed Shaft



Size	Solid Shaft					Key				Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270	844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320	859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320	934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320	949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320	1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375	1065	645	420	253	250

Unit: mm

Standard Shaft Arrangement Configuration



Nomenclature

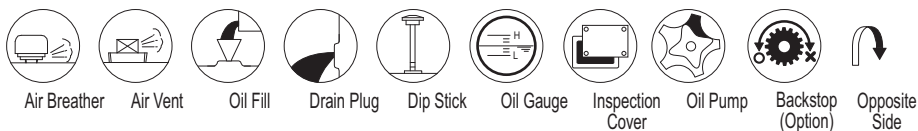
P H D Size P 4 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

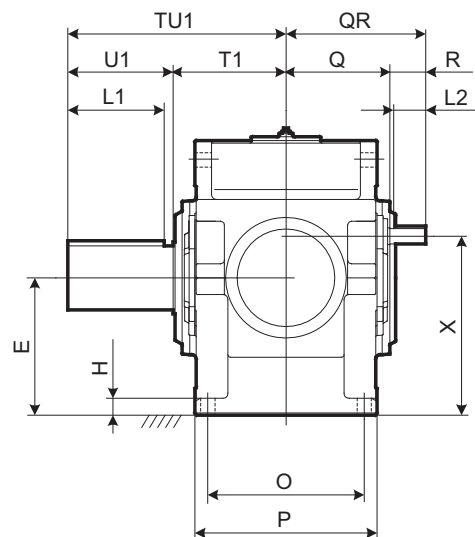
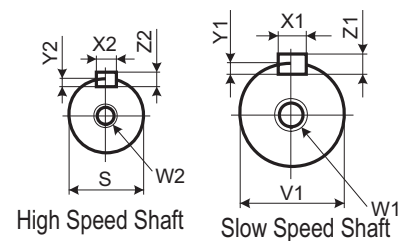
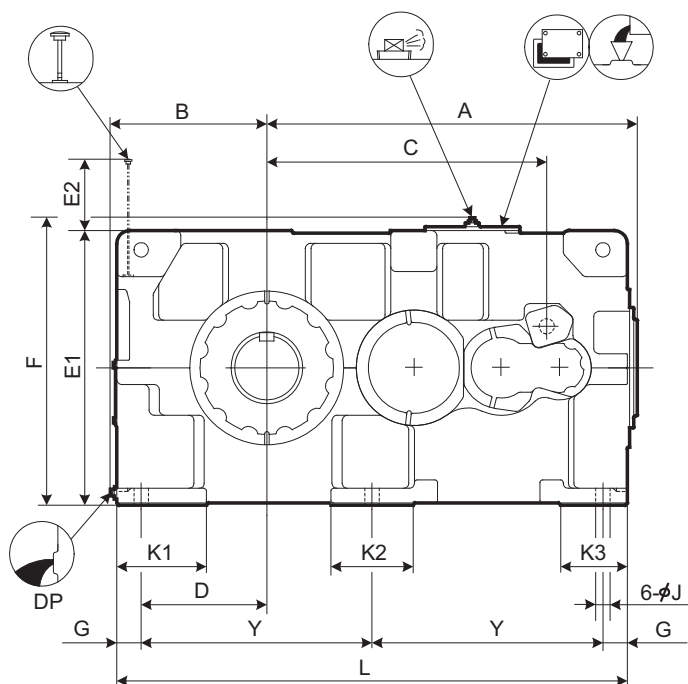
9090
9095
9100
9105
9110
9115

RL
RR
RB
LR
LL
LB
BL
BR
BB

(blank): Solid Shaft
T : Hollow Shaft
(Shrink Disk type)

Size	Nominal Reduction Ratio															
	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9095		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9100		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9105		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9115		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	E2	F	G	H	J	K1	K2	K3	L	O	P	X	Y
9118	1434	608	1091	490	535	1070	278	1117	95	65	56	350	320	260	1990	610	710	697	900
9121	1585	663	1290	545	580	1160	277	1207	95	70	56	390	300	270	2180	680	780	777	995
9126	1585	663	1290	545	580	1160	277	1207	95	70	56	390	300	270	2180	680	780	777	995

Size	High Speed Shaft									DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key						
						X2	Y2	Z2	L2			
9118	405	545	140	60m6	M20/42	18	7	11	125	1 1/2"	5050	390
9121	440	580	140	65m6	M20/42	18	7	11	125	1 1/2"	6100	530
9126	440	580	140	65m6	M20/42	18	7	11	125	1 1/2"	6350	520

Size	Solid Shaft					Key			
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1
9118	850	440	410	260m6	M36/70	56	20	32	375
9121	935	465	470	280m6	M36/70	63	20	32	425
9126	935	465	470	300m6	M36/70	70	22	36	425

Unit: mm

- Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
- The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
- Consult us for dimensions not shown in these drawings.

RL	RR	RB	LR	LL	LB	BL	BR	BB

Diagram illustrating a 4-shaft gearbox layout. The input shafts are labeled P, H, and D. The intermediate shaft is labeled P 4. The output shafts are labeled RL, RR, RB, LR, LL, LB, BL, BR, and BB. The diagram shows the arrangement of shafts and the corresponding gear ratios.

Size

Shaft Arrangement

Nominal Reduction Ratio

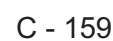
P H D

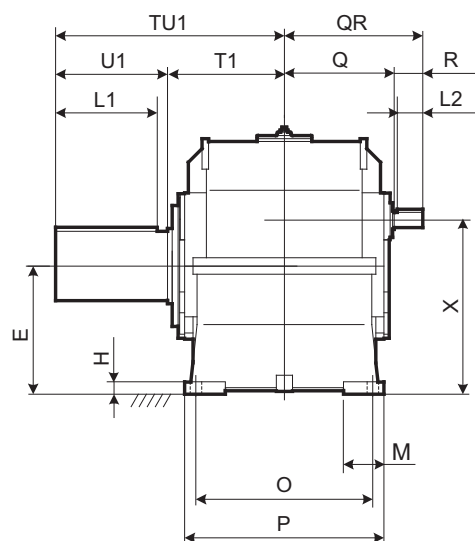
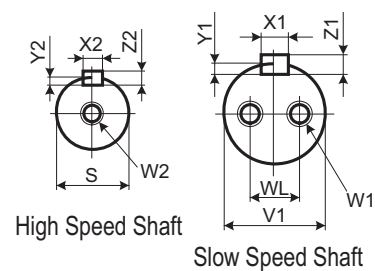
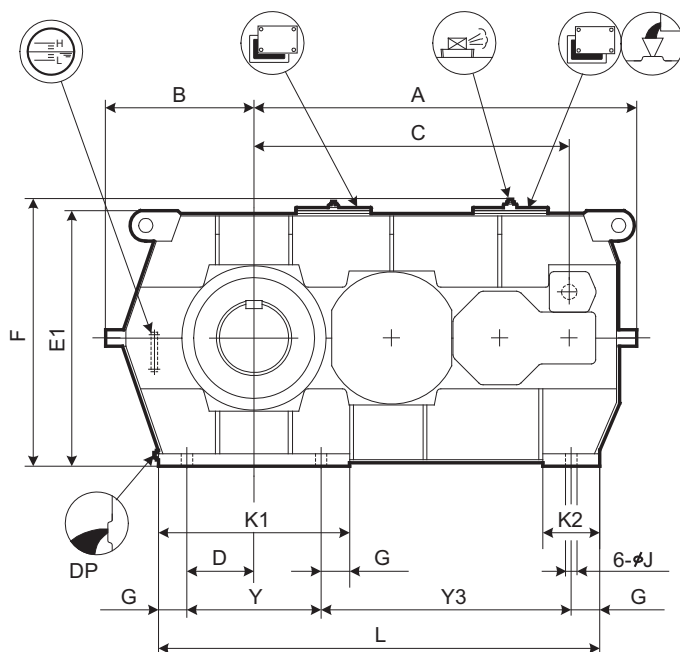
P 4 -

9118
9121
9126

RL
RR
RB
LR
LL
LB
BL
BR
BB

Size	100	112
9118	○	○
9121	○	○
9126	○	○

[illegible]

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K1	K2	L	M	O	P	X	Y	Y3
9128	1720	680	1413	330	600	1194	1241	140	55	66	940	280	1990	170	710	840	826	660	1050
9131	1882	730	1550	330	630	1256	1303	140	60	66	940	280	2170	200	850	980	856	660	1230
9136	1882	730	1550	330	630	1256	1303	140	60	66	940	280	2170	200	850	980	856	660	1230

Size	High Speed Shaft									DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2			
9128	465	605	140	75m6	M20/42	20	7.5	12	125	1 1/2"	7400	450
9131	540	680	140	75m6	M20/42	20	7.5	12	125	1 1/2"	9600	650
9136	540	680	140	75m6	M20/42	20	7.5	12	125	1 1/2"	10000	640

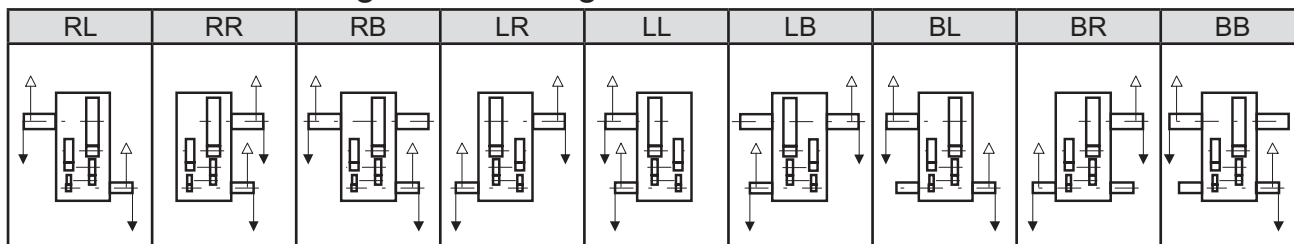
Size	Slow Speed Shaft (Solid)										Key	X1	Y1	Z1	L1
	TU1	T1	U1	V1	W1/Depth	WL	X1	Y1	Z1	L1					
9128	950	480	470	320m6	M36/70	200	70	22	36	425					
9131	1100	550	550	340m6	M36/70	215	80	25	40	500					
9136	1110	560	550	360m6	M36/70	230	80	25	40	500					

Unit: mm

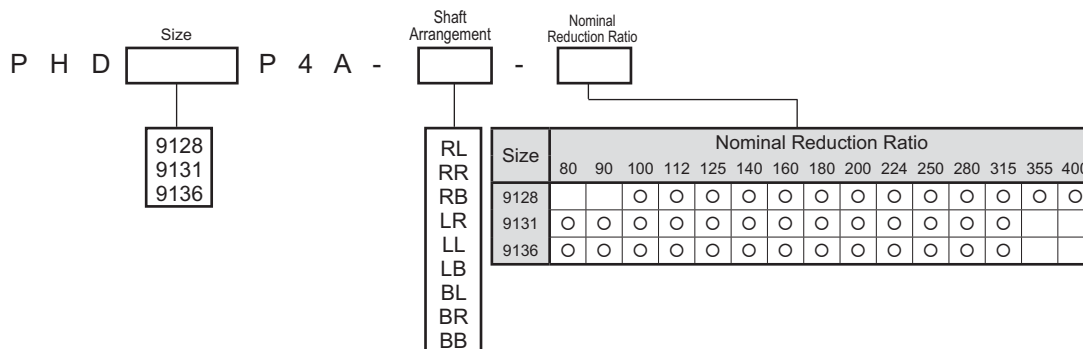
1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Consult us for dimensions not shown in these drawings.

DIMENSIONS Parallel Shaft Quadruple Reduction Horizontal Mounting 9128 ▶ 9136

Standard Shaft Arrangement Configuration



Nomenclature



PARAMAX Horizontal Split
 9128
 9136
 Parallel
 P
 Quadruple Reduction
 4
 Steel Housing
 A



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



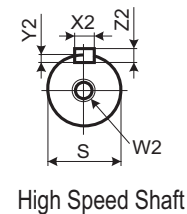
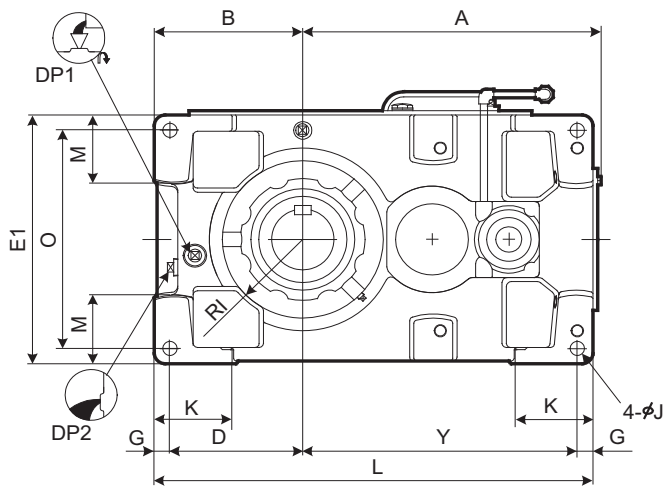
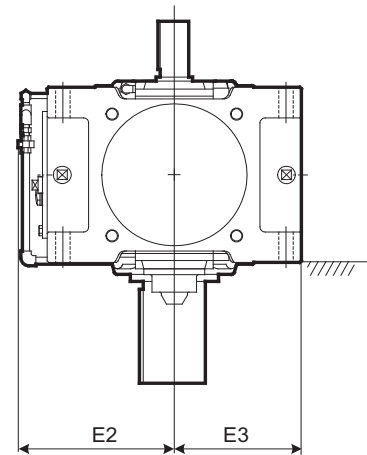
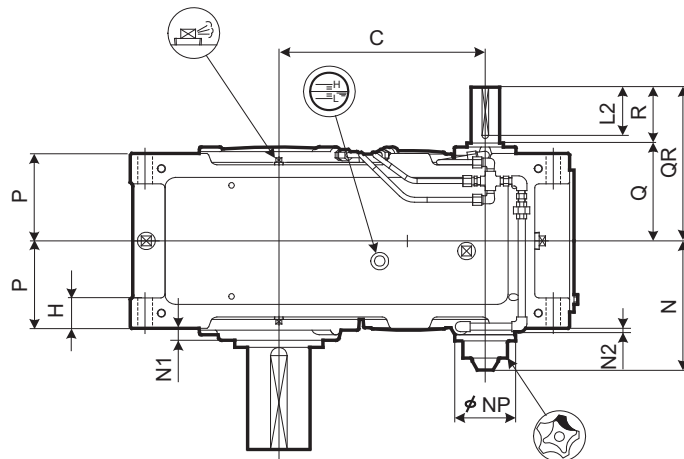
Oil Pump



Backstop (Option)



Opposite Side

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	N2	NP	O	P	Y
9015	295	160	194	140	270	195	135	20	35	80	15	95	440	70	186	25	14	100	230	102.5	260
9025	346	175	227	155	310	215	155	20	40	87.5	19	110	505	75	198.5	23	12	100	270	117.5	310
9030	406	200	264	175	320	220	160	25	50	105	24	120	590	85	211	22	9	100	270	132.5	365
9035	437	219	295	194	370	245	185	25	50	120	24	120	640	100	211	22	9	100	320	132.5	396
9040	467	235	306	205	400	246	200	30	60	120	28	150	685	100	237.5	15	2	117	340	157.5	420
9045	506	256	345	226	440	266	220	30	60	140	28	150	745	120	237.5	17.5	2	117	380	157.5	459
9050	537	255	358	225	420	270	210	30	60	140	28	150	775	110	257.5	23	7	117	360	172.5	490
9055	576	286	397	256	490	305	245	30	60	155	28	150	845	135	257.5	23	7	117	430	172.5	529

Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9015	131	211	80	30k6	M10/22	8	4	7	70	3/4"	3/4"	100	5
9025	146	226	80	35k6	M12/28	10	5	8	70	3/4"	3/4"	140	7
9030	159	269	110	40k6	M16/36	12	5	8	95	3/4"	3/4"	195	9
9035	159	269	110	40k6	M16/36	12	5	8	95	3/4"	3/4"	215	12
9040	174	284	110	50k6	M16/36	14	5.5	9	95	1"	1"	285	18
9045	174	284	110	50k6	M16/36	14	5.5	9	95	1"	1"	345	22
9050	193	303	110	55m6	M20/42	16	6	10	95	1"	1"	415	22
9055	193	303	110	55m6	M20/42	16	6	10	95	1"	1"	472	31

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-12 for dimensions not shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9015 ▶ 9055

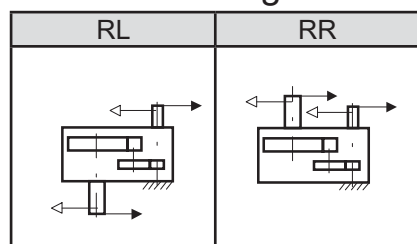
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Arrangement Configuration



Nomenclature

P V A Size P 2 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

9015
 9025
 9030
 9035
 9040
 9045
 9050
 9055

RL
RR

(blank) : Solid Shaft
 T : Hollow Shaft (Shrink Disk type)
 K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



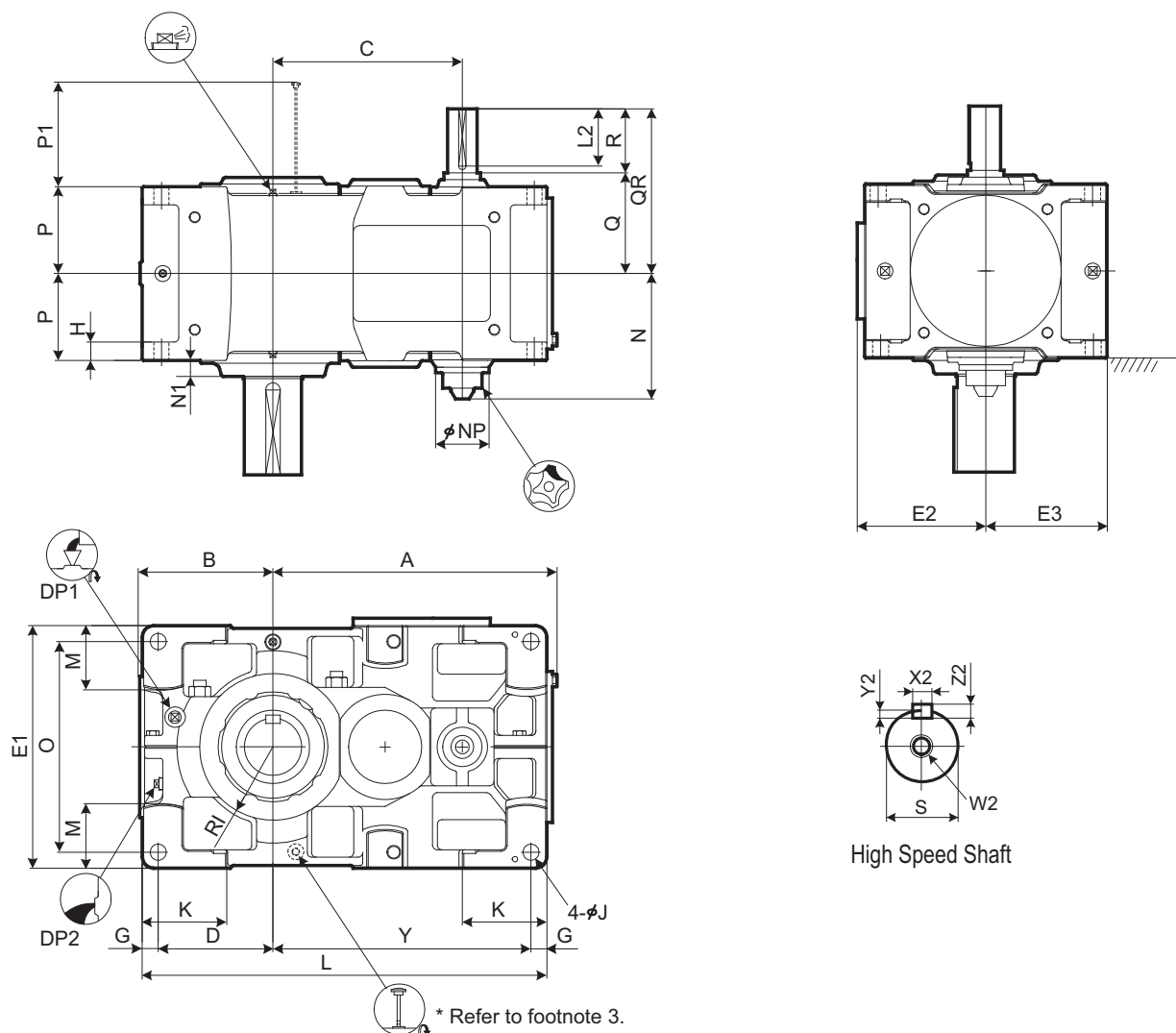
Oil Pump



Backstop (Option)



Opposite Side



Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N	N1	NP	O	P	P1	Y
9060	621	299	414	251	530	282	265	35	35	160	35	180	885	140	277.5	35	117	460	190	223	564
9065	667	338	460	290	600	317	300	35	35	175	35	180	970	175	277.5	38	117	530	190	223	610
9070	719	336	482	283	600	317	300	40	40	175	42	215	1020	155	302.5	38	117	520	215	253	657
9075	772	383	535	330	670	352	335	40	52	190	42	220	1120	195	302.5	40	117	590	215	253	710
9080	812	378	556	325	670	352	335	40	52	190	42	220	1155	170	322.5	45	117	590	230	283	750
9085	868	422	612	369	750	392	375	40	52	215	42	220	1255	210	322.5	40	117	670	230	283	806

Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9060	220	360	140	65m6	M20/42	18	7	11	125	1"	1"	610	25
9065	220	360	140	65m6	M20/42	18	7	11	125	1"	1"	735	32
9070	245	385	140	75m6	M20/42	20	7.5	12	125	1"	1"	860	39
9075	245	385	140	75m6	M20/42	20	7.5	12	125	1"	1"	1110	49
9080	264	434	170	85m6	M20/42	22	9	14	150	1"	1"	1240	54
9085	264	434	170	85m6	M20/42	22	9	14	150	1"	1"	1500	71

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with visible gauge. Refer to page D-28.

4. Refer to the page D-14 for dimensions not shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9060 ▶ 9085

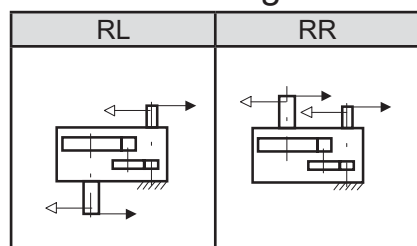
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Arrangement Configuration



Nomenclature

P V D Size P 2 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

9060
 9065
 9070
 9075
 9080
 9085

RL
 RR

(blank) : Solid Shaft
 T : Hollow Shaft (Shrink Disk type)
 K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○	○	○
9065			○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



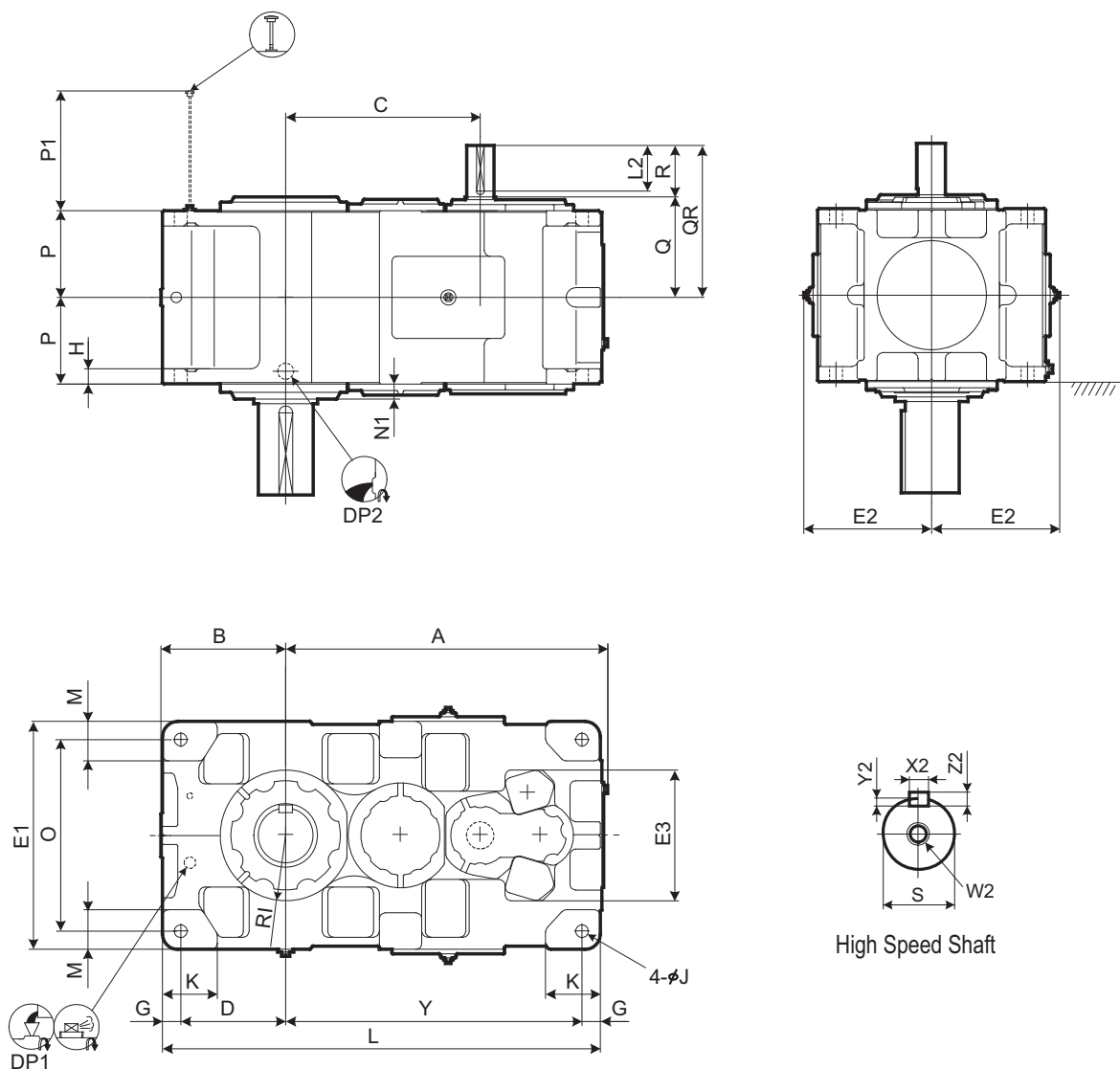
Oil Pump



Backstop (Option)



Opposite Side



High Speed Shaft

Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N1	O	P	P1	Y
9090	1060	410	640	345	750	421	430	60	50	215	42	180	1440	130	50	630	285	394	975
9095	1090	440	670	375	800	446	430	60	50	235	42	200	1500	140	50	680	285	394	1005
9100	1194	450	724	375	850	471	500	70	55	235	48	200	1610	150	60	710	325	443	1095
9105	1228	485	758	410	900	496	500	70	55	260	48	220	1680	160	60	760	325	443	1130
9110	1344	500	824	420	950	521	500	75	60	265	56	220	1810	170	55	800	355	475	1240
9115	1393	550	873	470	1000	546	500	75	60	280	56	250	1910	180	55	850	355	475	1290

Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9090	330	500	170	90m6	M24/50	25	9	14	150	1"	1 1/2"	2070	90
9095	330	500	170	90m6	M24/50	25	9	14	150	1"	1 1/2"	2330	120
9100	375	585	210	100m6	M24/50	28	10	16	190	1"	1 1/2"	2820	140
9105	375	585	210	100m6	M24/50	28	10	16	190	1"	1 1/2"	3300	175
9110	405	615	210	110m6	M24/50	28	10	16	190	1"	1 1/2"	3950	200
9115	405	615	210	110m6	M24/50	28	10	16	190	1"	1 1/2"	4470	255

※ 9090 ~ 9115 are equipped with motor driven pumps. For details consult us.

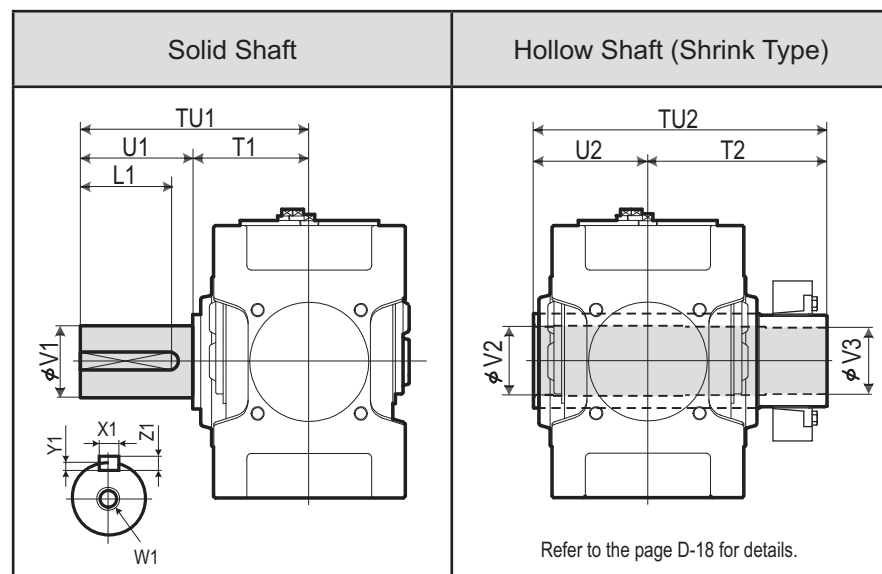
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with visible. Refer to page D-31.

4. Refer to the page D -16 for dimensions not shown in these drawings.
5. Refer to the page D -31 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Vertical Mounting 9090 ▶ 9115

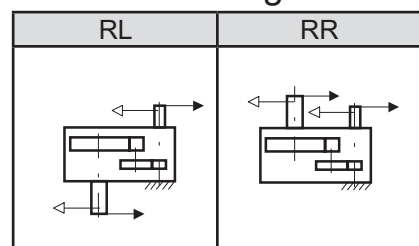
Slow Speed Shaft



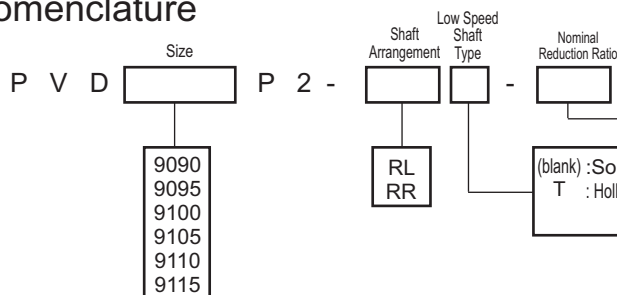
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270		844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320		859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320		934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320		949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320		1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375		1065	645	420	253	250

Unit: mm

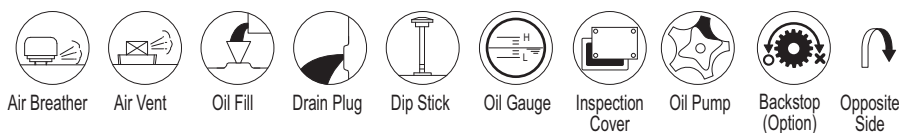
Standard Arrangement Configuration



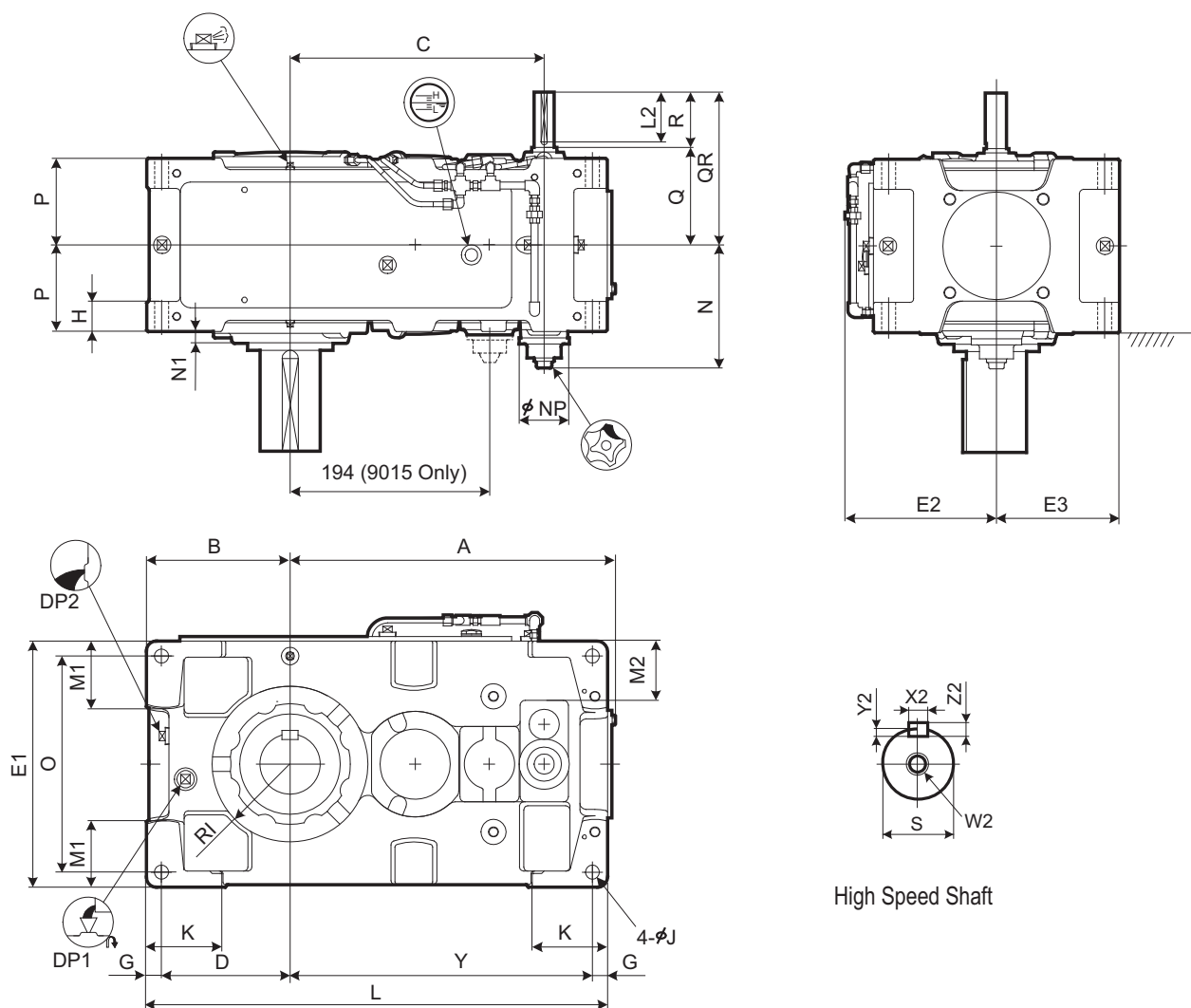
Nomenclature



Size	Nominal Reduction Ratio										
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20
9090	○	○	○	○	○	○	○	○	○	○	
9095		○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	
9105		○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	
9115		○	○	○	○	○	○	○	○	○	○



DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9015 ▶ 9055



High Speed Shaft

Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	Y
9015	338	160	257	140	270	195	135	20	35	80	15	95	485	70	80	186	25	100	230	102.5	305
9025	408	175	306	155	310	215	155	20	40	87.5	19	110	570	75	90	198.5	23	100	270	117.5	375
9030	453	200	343	175	320	220	160	25	50	105	24	120	640	85	50	211	22	100	270	132.5	415
9035	484	219	374	194	370	245	185	25	50	120	24	120	690	100	75	211	22	100	320	132.5	446
9040	540	235	398	205	400	260	200	30	60	120	28	150	759	100	70	228.5	15	100	340	157.5	494
9045	577	256	437	226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	533
9050	609	255	467	225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	563
9055	648	286	506	256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	602

Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	Key							
						X2	Y2	Z2	L2				
9015	130	190	60	25k6	M10/22	8	4	7	50	3/4"	3/4"	105	6
9025	144	204	60	28k6	M10/22	8	4	7	50	3/4"	3/4"	150	8
9030	161	241	80	30k6	M10/22	8	4	7	70	3/4"	3/4"	205	10
9035	161	241	80	30k6	M10/22	8	4	7	70	3/4"	3/4"	225	14
9040	176	256	80	35k6	M12/28	10	5	8	70	1"	1"	305	18
9045	176	256	80	35k6	M12/28	10	5	8	70	1"	1"	375	22
9050	194	304	110	40k6	M16/36	12	5	8	95	1"	1"	445	25
9055	194	304	110	40k6	M16/36	12	5	8	95	1"	1"	505	35

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions not shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9015 ▶ 9055

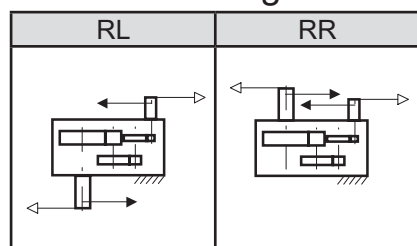
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft									Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1	TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95	328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125	358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Arrangement Configuration



Nomenclature

P V A Size P 3 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

9015
 9025
 9030
 9035
 9040
 9045
 9050
 9055

RL
 RR

(blank) : Solid Shaft
 T : Hollow Shaft (Shrink Disk type)
 K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio														
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9015	○	○	○	○	○	○	○	○							
9025	○	○	○	○	○	○	○	○							
9030	○	○	○	○	○	○	○	○	○	○	○	○			
9035			○	○	○	○	○	○	○	○	○	○	○	○	
9040	○	○	○	○	○	○	○	○	○	○	○	○			
9045			○	○	○	○	○	○	○	○	○	○	○	○	
9050	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump



Backstop (Option)



Opposite Side



Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9060	219	329	110	50k6	M16/36	14	5.5	9	95	1"	1"	660	28
9065	219	329	110	50k6	M16/36	14	5.5	9	95	1"	1"	815	35
9070	244	354	110	55m6	M20/42	16	6	10	95	1"	1"	940	44
9075	244	354	110	55m6	M20/42	16	6	10	95	1"	1"	1160	56
9080	265	405	140	65m6	M20/42	18	7	11	125	1"	1"	1350	57
9085	265	405	140	65m6	M20/42	18	7	11	125	1"	1"	1610	79

4. Refer to the page D-15 for dimensions not shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9060 ▶ 9085

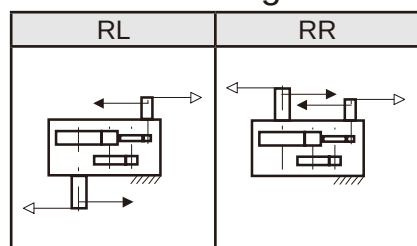
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

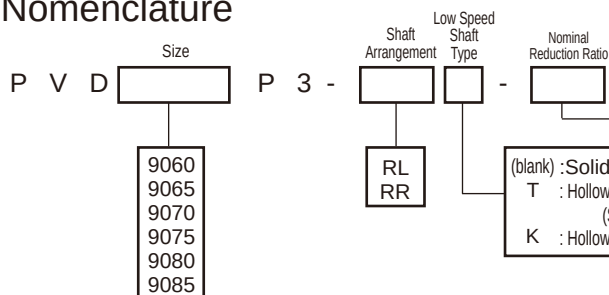
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

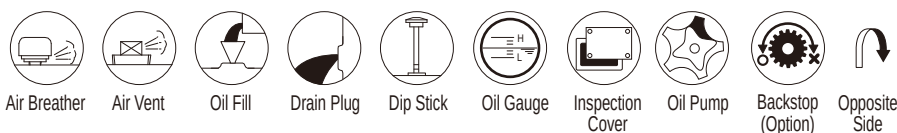
Standard Arrangement Configuration

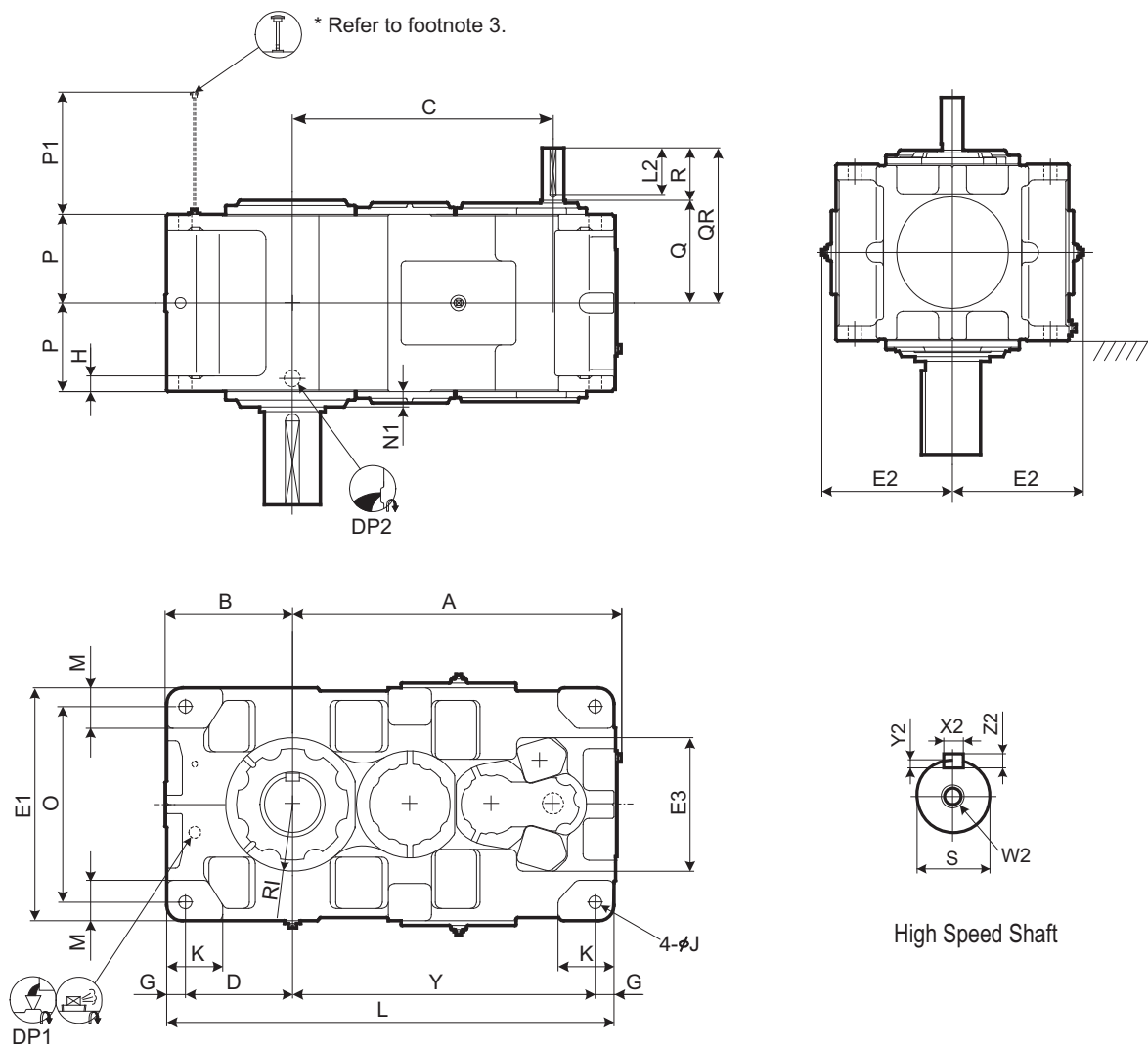


Nomenclature



Size	Nominal Reduction Ratio														
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90	
9060	○	○	○	○	○	○	○	○	○	○	○	○			
9065			○	○	○	○	○	○	○	○	○	○	○	○	
9070	○	○	○	○	○	○	○	○	○	○	○	○			
9075			○	○	○	○	○	○	○	○	○	○	○	○	
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9085			○	○	○	○	○	○	○	○	○	○	○	○	





Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M	N1	O	P	P1	Y
9090	1060	410	837	345	750	421	430	60	50	215	42	180	1440	130	50	630	285	394	975
9095	1090	440	867	375	800	446	430	60	50	235	42	200	1500	140	50	680	285	394	1005
9100	1194	450	950	375	850	471	500	70	55	235	48	200	1610	150	60	710	325	443	1095
9105	1228	485	984	410	900	496	500	70	55	260	48	220	1680	160	60	760	325	443	1130
9110	1344	500	1050	420	950	521	500	75	60	265	56	220	1810	170	55	800	355	475	1240
9115	1393	550	1099	470	1000	546	500	75	60	280	56	250	1910	180	55	850	355	475	1290

Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9090	330	470	140	65m6	M20/42	18	7	11	125	1"	1 1/2"	2120	90
9095	330	470	140	65m6	M20/42	18	7	11	125	1"	1 1/2"	2380	120
9100	375	515	140	75m6	M20/42	20	7.5	12	125	1"	1 1/2"	2870	140
9105	375	515	140	75m6	M20/42	20	7.5	12	125	1"	1 1/2"	3350	175
9110	405	575	170	80m6	M20/42	22	9	14	150	1"	1 1/2"	4000	200
9115	405	575	170	80m6	M20/42	22	9	14	150	1"	1 1/2"	4520	255

※ 9090 ~ 9115 are equipped with motor driven pumps. For details consult us.

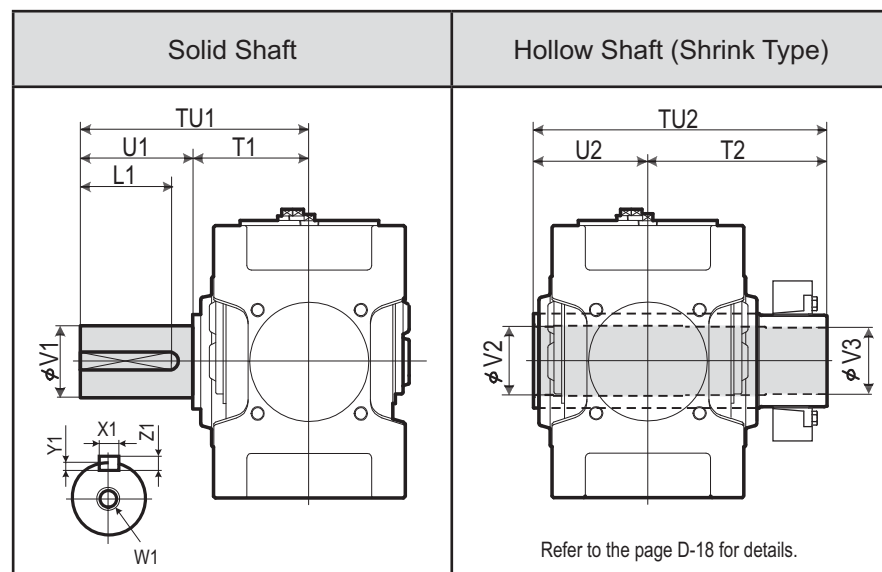
Unit: mm

- Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
- The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
- Shaft arrangement RR is equipped with oil gauge. Refer to the page D-31.

- Refer to the page D -16 for dimensions not shown in these drawings.
- Refer to the page D -31 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Vertical Mounting 9090 ▶ 9115

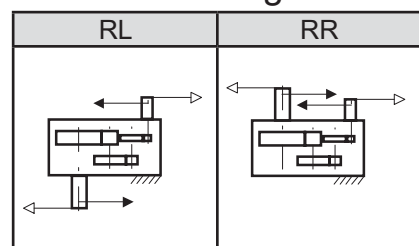
Slow Speed Shaft



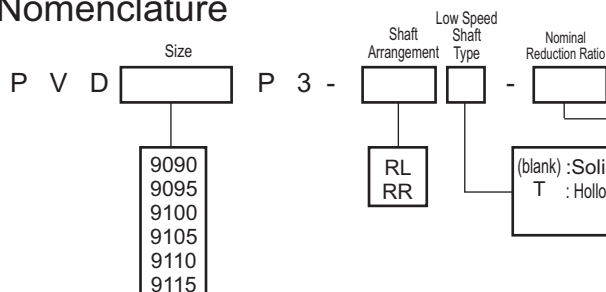
Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270		844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320		859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320		934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320		949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320		1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375		1065	645	420	253	250

Unit: mm

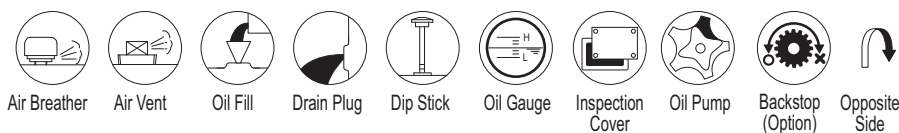
Standard Arrangement Configuration

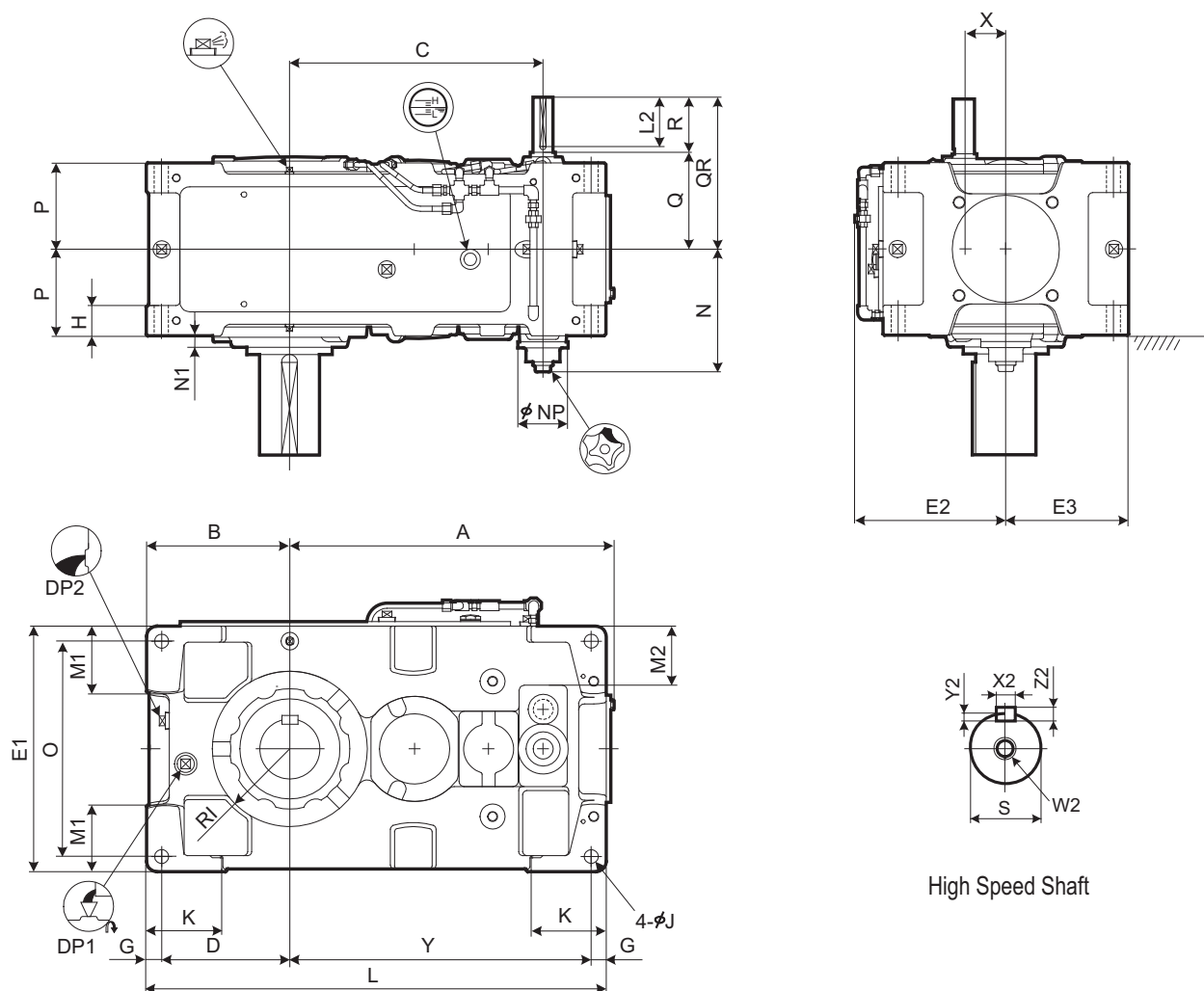


Nomenclature



Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9095		○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9105		○	○	○	○	○	○	○	○	○	○	○	○	○	○	
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9115		○	○	○	○	○	○	○	○	○	○	○	○	○	○	





High Speed Shaft

Size	A	B	C	D	E1	E2	E3	G	H	RI	J	K	L	M1	M2	N	N1	NP	O	P	X	Y
9030	453	200	343	175	320	220	160	25	50	105	24	120	640	85	50	211	22	100	270	132.5	63	415
9035	484	219	374	194	370	245	185	25	50	120	24	120	690	100	75	211	22	100	320	132.5	63	446
9040	540	235	398	205	400	260	200	30	60	120	28	150	759	100	70	228.5	15	100	340	157.5	79	494
9045	577	256	437	226	440	277	220	30	60	140	28	150	819	120	90	228.5	17.5	100	380	157.5	79	533
9050	609	255	467	225	420	270	210	30	60	140	28	150	848	110	83	248.5	23	100	360	172.5	79	563
9055	648	286	506	256	490	305	245	30	60	155	28	150	918	135	118	248.5	23	100	430	172.5	79	602

Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9030	159	219	60	25k6	M10/22	8	4	7	50	3/4"	3/4"	210	10
9035	159	219	60	25k6	M10/22	8	4	7	50	3/4"	3/4"	230	14
9040	175	235	60	28k6	M10/22	8	4	7	50	1"	1"	310	17
9045	175	235	60	28k6	M10/22	8	4	7	50	1"	1"	380	21
9050	195	275	80	30k6	M10/22	8	4	7	70	1"	1"	450	23
9055	195	275	80	30k6	M10/22	8	4	7	70	1"	1"	510	33

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions not shown in these drawings.

4. Refer to the page D-25 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9030 ▶ 9055

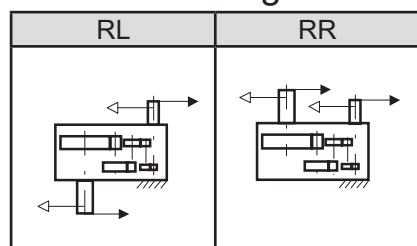
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Arrangement Configuration



Nomenclature

P V A Size P 4 - Shaft Arrangement - Low Speed Shaft Type - Nominal Reduction Ratio

9030
 9035
 9040
 9045
 9050
 9055

RL
RR

(blank) : Solid Shaft
 T : Hollow Shaft (Shrink Disk type)
 K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500	
9030	○	○	○	○	○	○	○	○	○	○								
9035			○	○	○	○	○	○	○	○	○	○						
9040	○	○	○	○	○	○	○	○	○	○								
9045	○	○	○	○	○	○	○	○	○	○	○	○						
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump



Backstop (Option)



Opposite Side



Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9060	221	301	80	35k6	M12/28	10	5	8	70	1"	1"	660	32
9065	221	301	80	35k6	M12/28	10	5	8	70	1"	1"	815	40
9070	244	354	110	40k6	M16/36	12	5	8	95	1"	1"	950	53
9075	244	354	110	40k6	M16/36	12	5	8	95	1"	1"	1170	67
9080	264	374	110	45k6	M16/36	14	5.5	9	95	1"	1"	1360	65
9085	264	374	110	45k6	M16/36	14	5.5	9	95	1"	1"	1620	89

4. Refer to the page D-15 for dimensions not shown in these drawings.
5. Refer to the page D-28 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

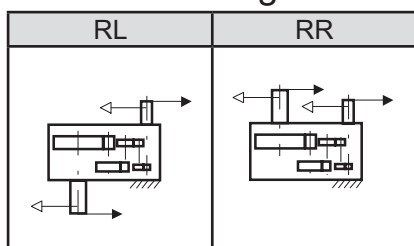
PARAMAX Vertical Split Parallel Quadruple Reduction

P V D 9060 9085 P 4

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Arrangement Configuration



Nomenclature

P V D Size P 4 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

9060
9065
9070
9075
9080
9085

RL
RR

(blank) : Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																			
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500			
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9065	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9075			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9085			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



Oil Pump

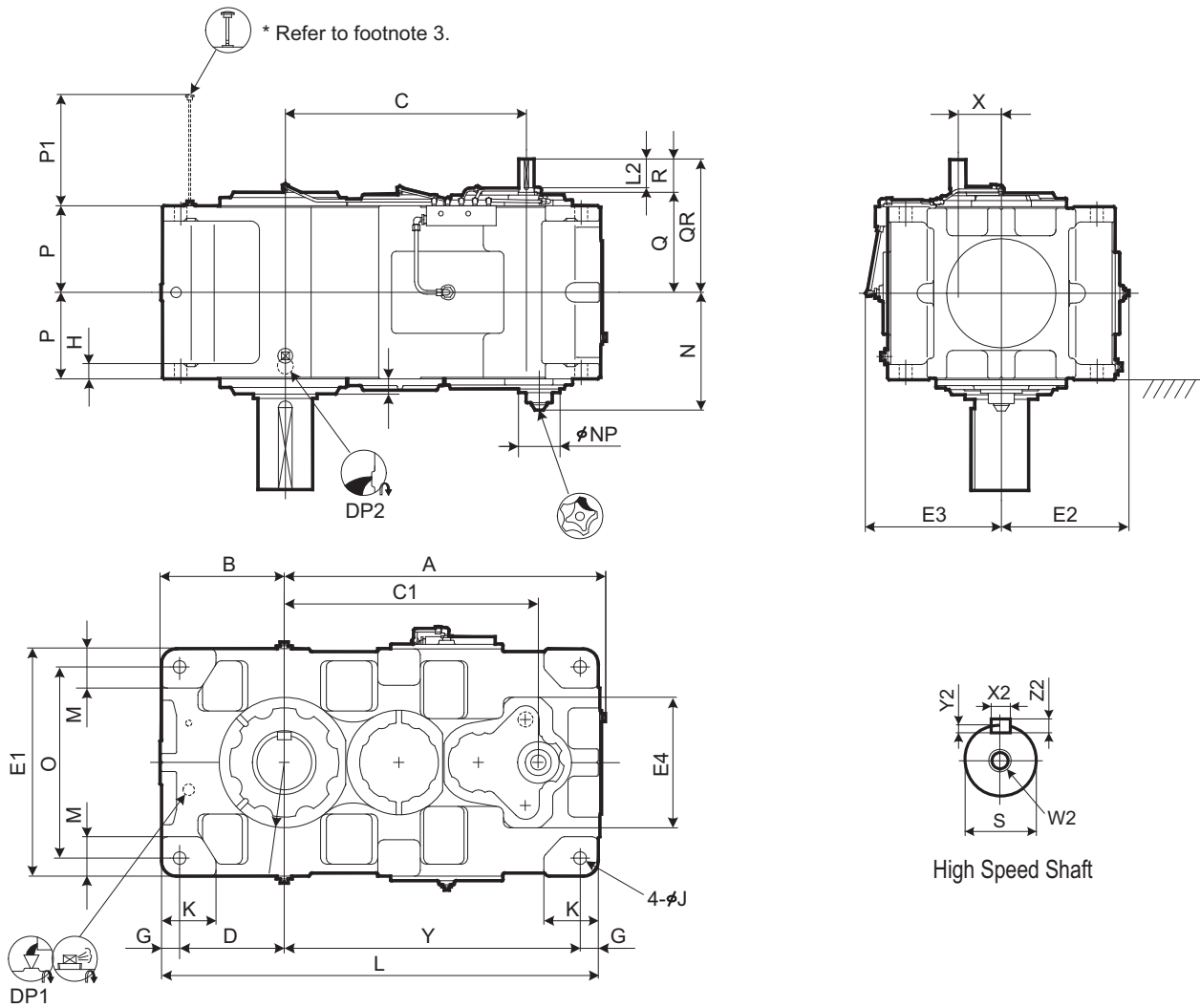


Backstop (Option)



Opposite Side

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9090 ▶ 9115



Size	A	B	C	C1	D	E1	E2	E3	E4	G	H	RI	J	K	L	M	N	NP	N1	O	P	P1	X	Y
9090	1060	410	795	837	345	750	421	449	430	60	50	215	42	180	1440	130	381	137	50	630	285	367	142	975
9095	1090	440	825	867	375	800	446	474	430	60	50	235	42	200	1500	140	381	137	50	680	285	367	142	1005
9100	1194	450	901	950	375	850	471	499	500	70	55	235	48	200	1610	150	421	137	60	710	325	409	162	1095
9105	1228	485	935	984	410	900	496	524	500	70	55	260	48	220	1680	160	421	137	60	760	325	409	162	1130
9110	1344	500	1001	1050	420	950	521		500	75	60	265	56	220	1810	170			55	800	355	442	162	1240
9115	1393	550	1050	1099	470	1000	546		500	75	60	280	56	250	1910	180			55	850	355	442	162	1290

Size	High Speed Shaft									DP1	DP2	Wt. kg	Oil Qty L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2				
9090	330	440	110	50k6	M16/36	14	5.5	9	95	1"	1 1/2"	2170	110
9095	330	440	110	50k6	M16/36	14	5.5	9	95	1"	1 1/2"	2430	140
9100	375	515	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	2920	170
9105	375	515	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	3400	210
9110	405	545	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	4050	240
9115	405	545	140	60m6	M20/42	18	7	11	125	1"	1 1/2"	4570	295

※ 9110 ~ 9115 are equipped with motor driven pumps. For details consult us.

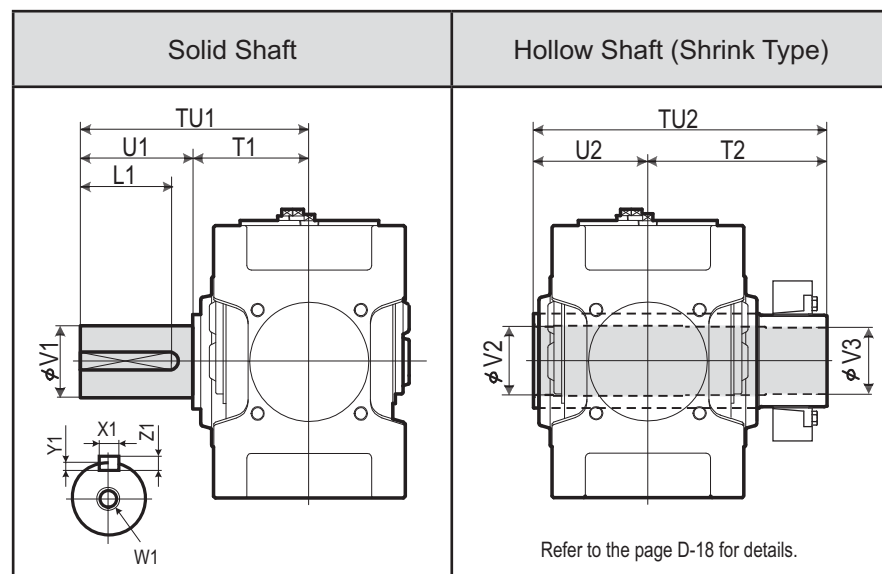
Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Shaft arrangement RR is equipped with oil gauge. Refer to the page D-31.

4. Refer to the page D-16 for dimensions not shown in these drawings.
5. Refer to the page D-31 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Vertical Mounting 9090 ▶ 9115

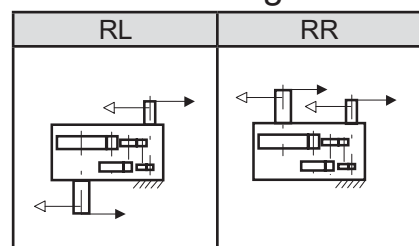
Slow Speed Shaft



Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3
9090	650	350	300	180m6	M30/60	45	15	25	270		844	494	350	193	190
9095	700	350	350	190m6	M30/60	45	15	25	320		859	509	350	203	200
9100	740	390	350	200m6	M30/60	45	15	25	320		934	544	390	213	210
9105	740	390	350	220m6	M30/60	50	17	28	320		949	559	390	223	220
9110	770	420	350	220m6	M30/60	50	17	28	320		1030	610	420	243	240
9115	830	420	410	240m6	M30/60	56	20	32	375		1065	645	420	253	250

Unit: mm

Standard Arrangement Configuration



Nomenclature

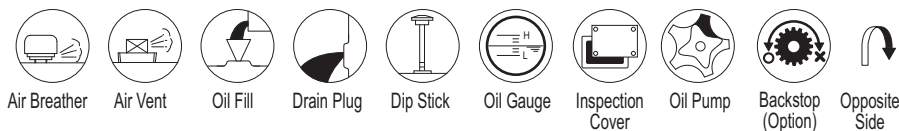
P V D Size P 4 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

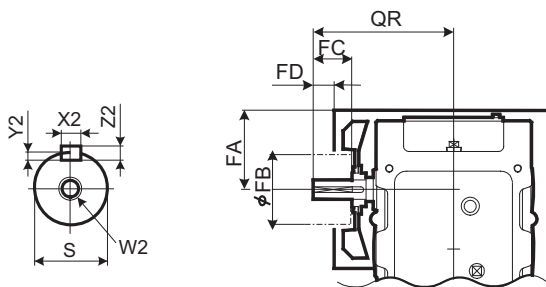
Size: 9090, 9095, 9100, 9105, 9110, 9115

Shaft Arrangement: RL, RR

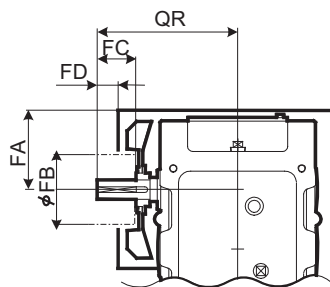
Low Speed Shaft Type: (blank): Solid Shaft, T: Hollow Shaft (Shrink Disk type)

Size	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9090	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9095		○	○	○	○	○	○	○	○	○	○	○	○	○	○
9100	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9105		○	○	○	○	○	○	○	○	○	○	○	○	○	○
9110	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9115		○	○	○	○	○	○	○	○	○	○	○	○	○	○



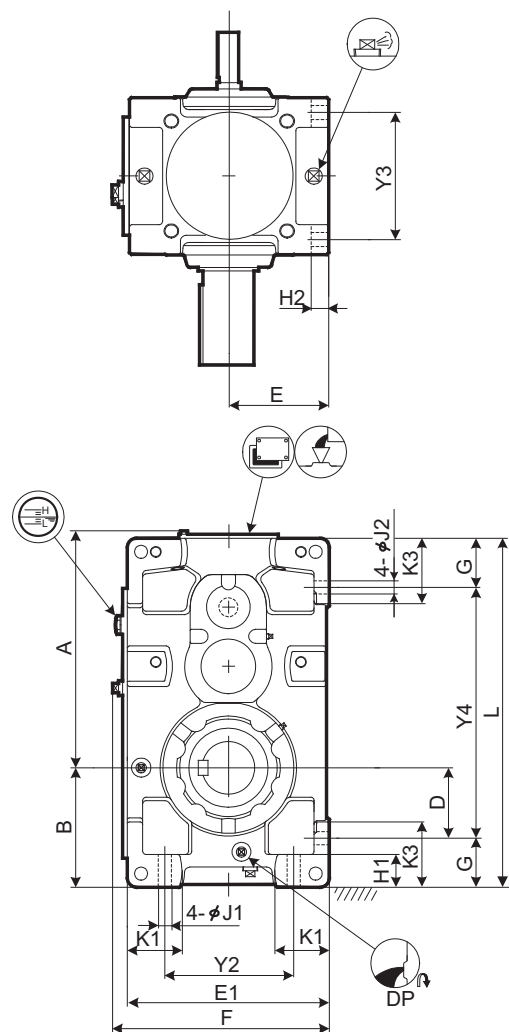
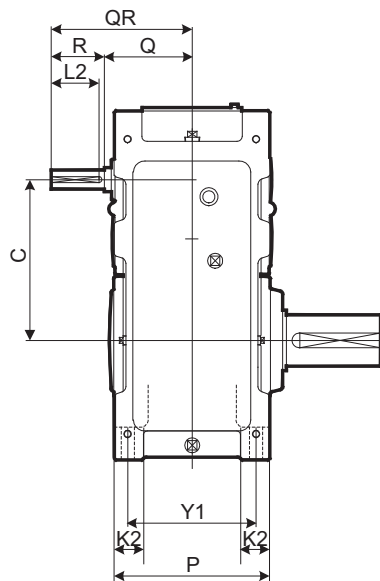


High Speed Shaft



With Fan

Refer to the page D-22 for details.

Speed
ReducerSelection
Tables
Dimension
Tables

Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9015	296	160	194	90	135	270	298	70	50	22	15	15	70	35	95	440	205	170	180	170	300
9025	347	175	227	95	155	310	338	80	55	25	19	19	75	40	110	505	235	195	210	195	345
9030	407	200	264	110	160	320	348	90	60	28	24	24	85	50	120	590	265	215	200	215	410
9035	438	219	295	129	185	370	398	90	60	28	24	24	100	50	120	640	265	215	250	215	460
9040	468	235	306	120	200	400	430	115	75	30	28	28	100	60	150	685	315	255	260	255	455
9045	507	256	345	141	220	440	470	115	75	30	28	28	120	60	150	745	315	255	300	255	515
9050	538	255	358	138.5	210	420	450	116.5	75	32	28	28	110	60	150	775	345	285	280	285	542
9055	577	286	397	171	245	490	520	115	75	32	28	28	135	60	150	845	345	285	350	285	615

Size	High Speed Shaft									Fan				DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9015	131	211	80	30k6	M10/22	8	4	7	70	129	125	50	30	3/4"	100	9
9025	146	226	80	35k6	M12/28	10	5	8	70	143	140	50	30	3/4"	140	13
9030	159	269	110	40k6	M16/36	12	5	8	95	169	140	80	52	3/4"	195	16
9035	159	269	110	40k6	M16/36	12	5	8	95	169	140	80	52	3/4"	215	22
9040	174	284	110	50k6	M16/36	14	5.5	9	95	188	160	80	52	1"	285	29
9045	174	284	110	50k6	M16/36	14	5.5	9	95	188	160	80	52	1"	345	36
9050	193	303	110	55m6	M20/42	16	6	10	95	208	160	80	52	1"	415	36
9055	193	303	110	55m6	M20/42	16	6	10	95	208	160	80	52	1"	475	47

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Always remove fan hood when tightening mounting bolt.

4. Refer to the page D-12 for dimensions not shown in these drawings.
5. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Upright Mounting 9015 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

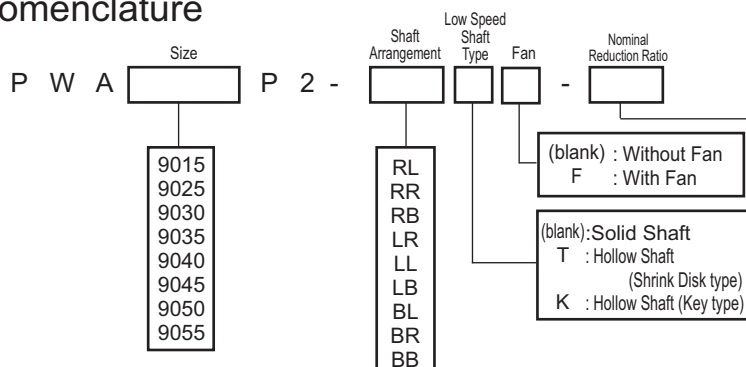
Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

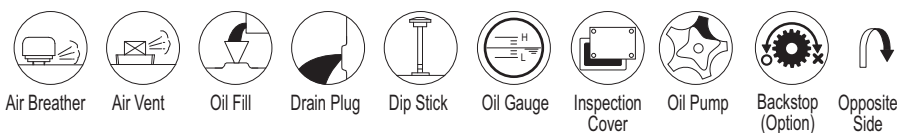
Standard Arrangement Configuration

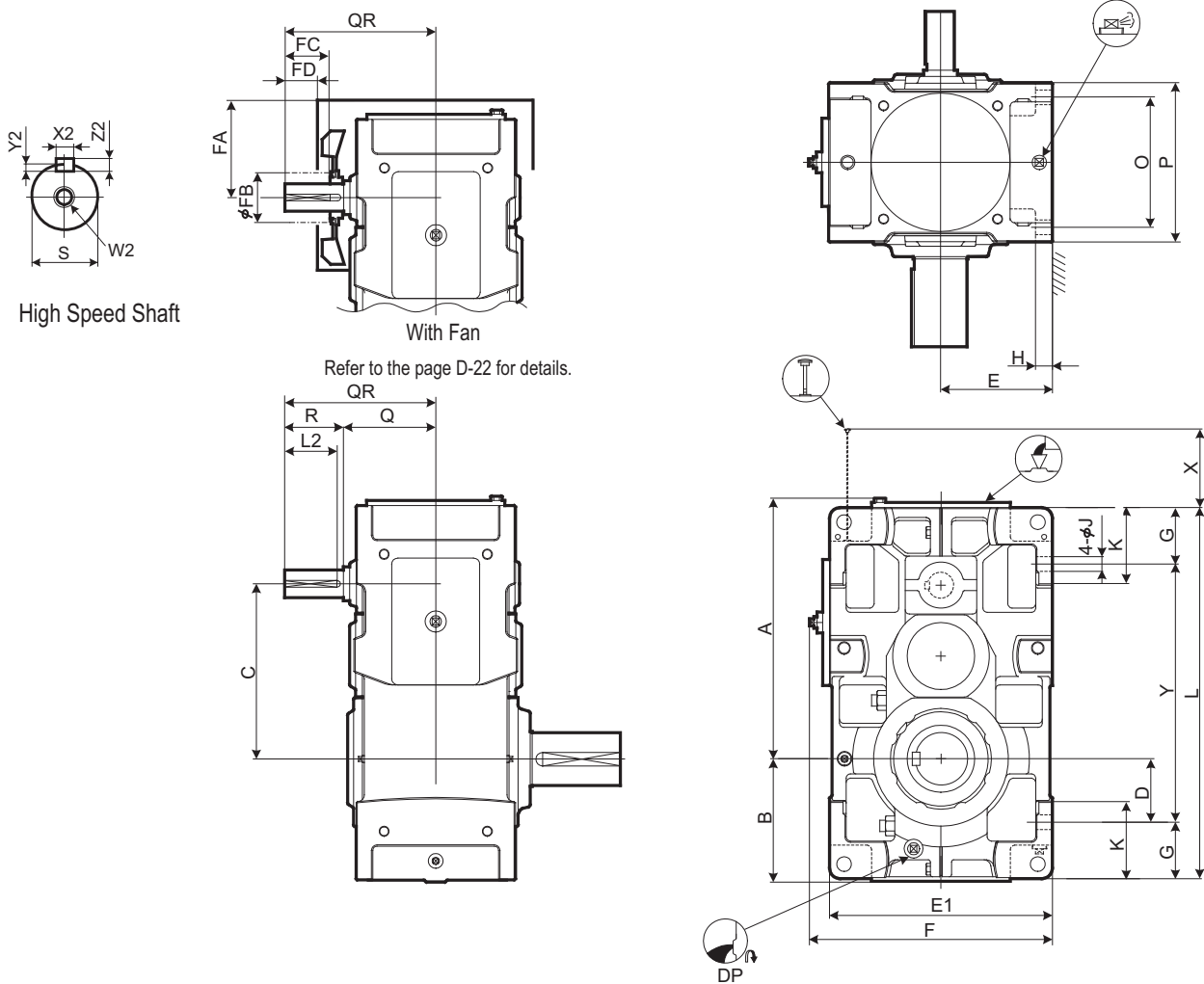
RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature



Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9015	○	○	○	○	○	○	○	○	○	○		
9025	○	○	○	○	○	○	○	○	○	○		
9030	○	○	○	○	○	○	○	○	○	○		
9035			○	○	○	○	○	○	○	○	○	○
9040	○	○	○	○	○	○	○	○	○	○		
9045			○	○	○	○	○	○	○	○	○	○
9050	○	○	○	○	○	○	○	○	○	○		
9055			○	○	○	○	○	○	○	○	○	○





Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9060	622	299	414	151	265	530	577	135	35	35	180	885	310	380	133	615
9065	668	338	460	190	300	600	647	135	35	35	180	970	310	380	133	700
9070	720	336	482	163	300	600	647	160	40	42	215	1020	350	430	138	700
9075	773	383	535	210	335	670	717	160	52	42	220	1120	350	430	138	800
9080	813	378	556	205	335	670	717	160	52	42	220	1155	380	460	169	835
9085	869	422	612	249	375	750	797	160	52	42	220	1255	380	460	169	935

Size	High Speed Shaft									Fan				DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9060	220	360	140	65m6	M20/42	18	7	11	125	240	200	105	65	1"	610	53
9065	220	360	140	65m6	M20/42	18	7	11	125	240	200	105	65	1"	735	67
9070	245	385	140	75m6	M20/42	20	7.5	12	125	274	225	105	65	1"	860	84
9075	245	385	140	75m6	M20/42	20	7.5	12	125	274	225	105	65	1"	1110	100
9080	264	434	170	85m6	M20/42	22	9	14	150	296	225	135	95	1"	1240	109
9085	264	434	170	85m6	M20/42	22	9	14	150	296	225	135	95	1"	1500	137

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Always remove fan hood when tightening mounting bolt.

4. Refer to the page D-14 for dimensions not shown in these drawings.
5. Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Double Reduction Upright Mounting 9060 ▶ 9085

Slow Speed Shaft

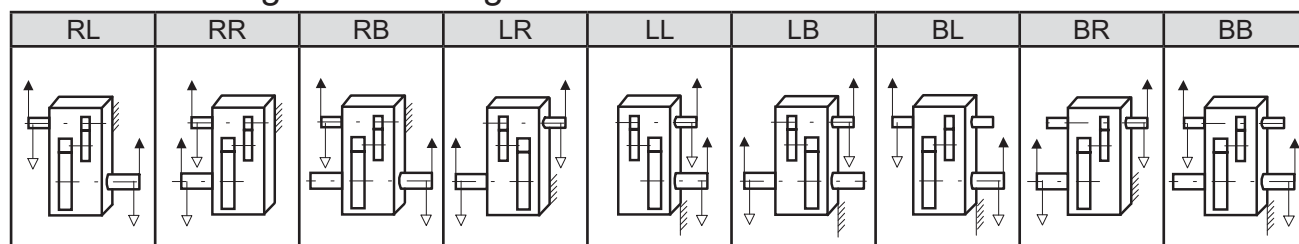
Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

PARAMAX Upright Split 9060 9085 Parallel Double Reduction Wall Mount P 2 W

Standard Arrangement Configuration

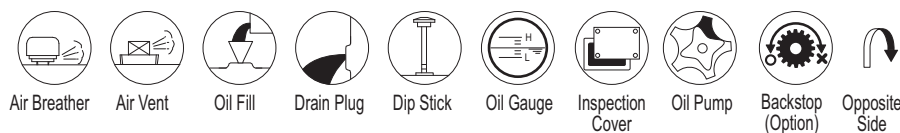


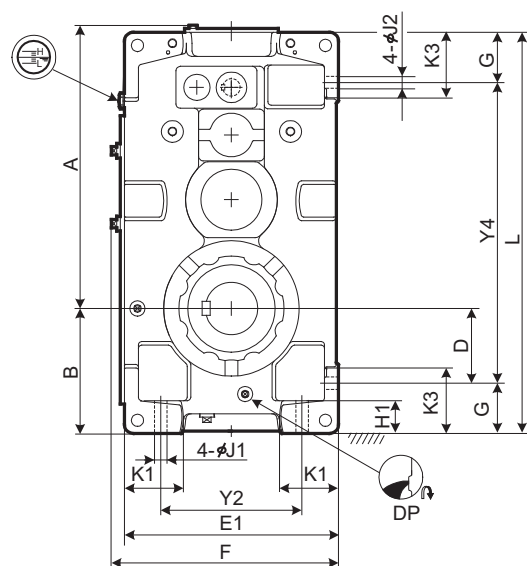
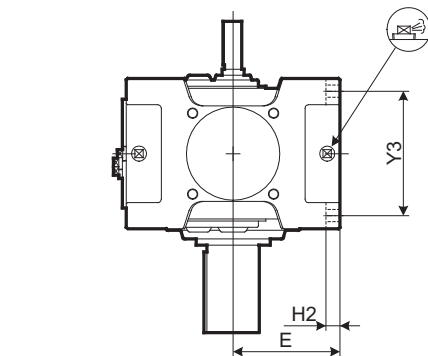
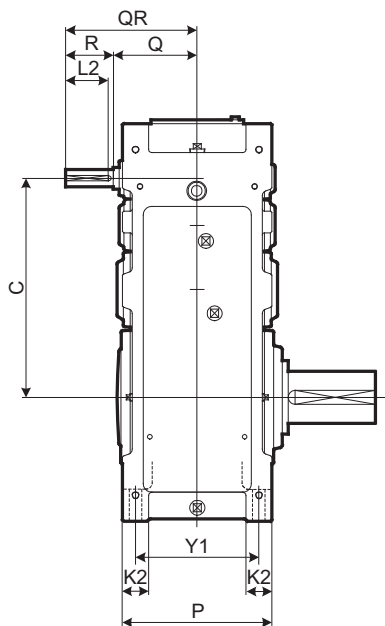
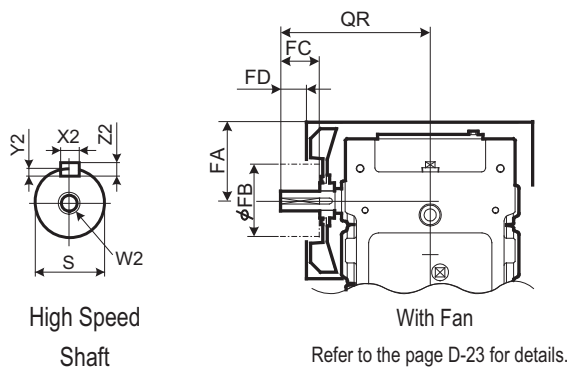
Nomenclature

P W D Size P 2 W - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

Size: 9060, 9065, 9070, 9075, 9080, 9085
 Shaft Arrangement: RL, RR, RB, LR, LL, LB, BL, BR, BB
 Low Speed Shaft Type: (blank): Without Fan, F: With Fan
 Fan: (blank): Solid Shaft, T: Hollow Shaft (Shrink Disk type), K: Hollow Shaft (Key type)

Size	Nominal Reduction Ratio											
	6.3	7.1	8	9	10	11.2	12.5	14	16	18	20	22.4
9060	○	○	○	○	○	○	○	○	○	○	○	○
9065			○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○
9075			○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○
9085			○	○	○	○	○	○	○	○	○	○





Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	Y1	Y2	Y3	Y4
9015	339	160	257	90	135	270	298	70	50	22	15	15	70	35	95	485	205	170	180	170	345
9025	409	175	306	95	155	310	338	80	55	25	19	19	75	40	110	570	235	195	210	195	410
9030	454	200	343	110	160	320	348	90	60	28	24	24	85	50	120	640	265	215	200	215	460
9035	485	219	374	129	185	370	398	90	60	28	24	24	100	50	120	690	265	215	250	215	510
9040	541	235	398	120	200	400	430	115	75	30	28	28	100	60	150	759	315	255	260	255	529
9045	577	256	437	141	220	440	470	115	75	30	28	28	120	60	150	819	315	255	300	255	589
9050	610	255	467	138.5	210	420	450	116.5	75	32	28	28	110	60	150	848	345	285	280	285	615
9055	649	286	506	171	245	490	520	115	75	32	28	28	135	60	150	918	345	285	350	285	688

Size	High Speed Shaft										Fan				DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Key Y2 Z2			L2	FA	FB	FC	FD			
9015	130	190	60	25k6	M10/22	8	4	7	50	111	125	30	10	3/4"	105	11	
9025	144	204	60	28k6	M10/22	8	4	7	50	129	125	30	10	3/4"	150	15	
9030	161	241	80	30k6	M10/22	8	4	7	70	140	125	50	30	3/4"	205	20	
9035	161	241	80	30k6	M10/22	8	4	7	70	150	140	50	22	3/4"	225	25	
9040	176	256	80	35k6	M12/28	10	5	8	70	170	140	50	22	1"	305	35	
9045	176	256	80	35k6	M12/28	10	5	8	70	170	140	50	22	1"	375	43	
9050	194	304	110	40k6	M16/36	12	5	8	95	172	140	80	52	1"	445	45	
9055	194	304	110	40k6	M16/36	12	5	8	95	172	140	80	52	1"	505	59	

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Always remove fan hood when tightening mounting bolt.

4. Refer to the page D-13 for dimensions not shown in these drawings.
5. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Upright Mounting 9015 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9015	245	135	110	58m6	M20/42	18	7	11	95		328	193	135	63	60	270	135	135	55	55
9025	285	145	140	70m6	M20/42	20	7.5	12	125		358	213	145	73	70	300	150	150	65	65
9030	330	160	170	80m6	M20/42	22	9	14	150		393	233	160	83	80	330	165	165	75	75
9035	330	160	170	90m6	M20/42	25	9	14	150		403	243	160	88	85	330	165	165	85	85
9040	349	179	170	95m6	M24/50	25	9	14	150		448	268	180	98	95	360	180	180	90	90
9045	391	181	210	105m6	M24/50	28	10	16	190		463	283	180	108	105	370	185	185	105	105
9050	411	201	210	110m6	M24/50	28	10	16	190		503	303	200	108	105	410	205	205	105	105
9055	411	201	210	120m6	M24/50	32	11	18	185		528	323	205	123	120	410	205	205	115	115

Unit: mm

Standard Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

P W A Size P 3 - Shaft Arrangement Low Speed Shaft Type Fan - Nominal Reduction Ratio

9015
9025
9030
9035
9040
9045
9050
9055

RL
RR
RB
LR
LL
LB
BL
BR
BB

(blank): Without Fan
F : With Fan

 (blank): Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9015	○	○	○	○	○	○	○	○								
9025	○	○	○	○	○	○	○	○								
9030	○	○	○	○	○	○	○	○	○	○	○	○				
9035			○	○	○	○	○	○	○	○	○	○	○	○		
9040	○	○	○	○	○	○	○	○	○	○	○	○	○			
9045			○	○	○	○	○	○	○	○	○	○	○	○		
9050	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○		



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



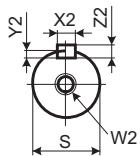
Oil Pump



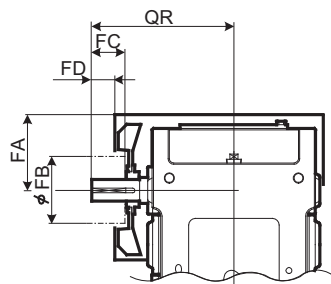
Backstop (Option)



Opposite Side

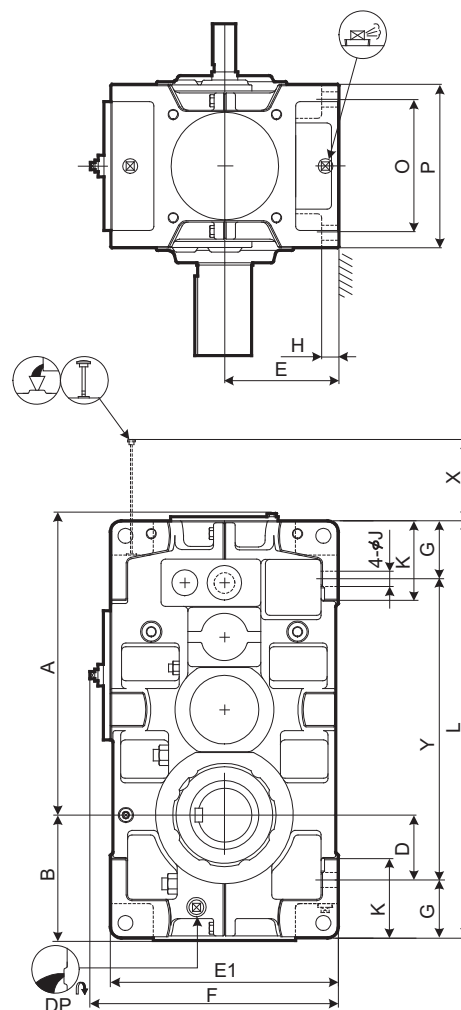
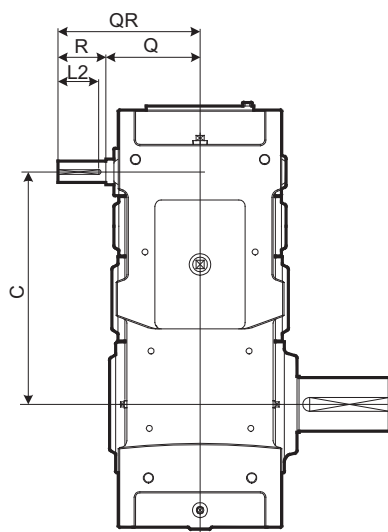


High Speed Shaft



With Fan

Refer to the page D-23 for details.

Speed
ReducerSelection
TablesDimension
Tables

Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	Y
9060	702	299	540	151	265	530	577	135	35	35	180	970	310	380	216	700
9065	748	338	586	190	300	600	647	135	35	35	180	1055	310	380	216	785
9070	810	336	630	163	300	600	647	160	40	42	215	1115	350	430	233	795
9075	863	383	683	210	335	670	717	160	52	42	220	1215	350	430	233	895
9080	933	378	725	205	335	670	717	160	52	42	220	1275	380	460	285	955
9085	989	422	781	249	375	750	797	160	52	42	220	1375	380	460	285	1055

Size	High Speed Shaft									Fan				DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2	FA	FB	FC	FD			
9060	219	329	110	50k6	M16/36	14	5.5	9	95	199	160	80	52	1"	660	68
9065	219	329	110	50k6	M16/36	14	5.5	9	95	199	160	80	52	1"	815	85
9070	244	354	110	55m6	M20/42	16	6	10	95	221	160	80	52	1"	940	106
9075	244	354	110	55m6	M20/42	16	6	10	95	221	160	80	52	1"	1160	120
9080	265	405	140	65m6	M20/42	18	7	11	125	247	200	105	65	1"	1350	130
9085	265	405	140	65m6	M20/42	18	7	11	125	247	200	105	65	1"	1610	176

Unit: mm

- Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type).
- The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
- Always remove fan hood when tightening mounting bolt.

- Refer to the page D-15 for dimensions not shown in these drawings.
- Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Triple Reduction Upright Mounting 9060 ▶ 9085

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key					TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
						X1	Y1	Z1	L1											
9060	440	230	210	125m6	M24/50	32	11	18	185	583	353	230	128	125	470	235	235	125	123	
9065	484	234	250	140m6	M30/60	36	12	20	225	594	359	235	143	140	480	240	240	145	143	
9070	509	259	250	145m6	M30/60	36	12	20	225	644	384	260	148	145	530	265	265	145	143	
9075	562	262	300	160m6	M30/60	40	13	22	275	651	386	265	158	155	530	265	265	150	148	
9080	582	282	300	165m6	M30/60	40	13	22	275	714	429	285	173	170	570	285	285	165	163	
9085	585	285	300	175m6	M30/60	45	15	25	270	714	429	285	183	180	570	285	285	175	173	

Unit: mm

PARAMAX Upright Split Parallel Triple Reduction Wall Mount

P W D 9060 9085 P 3 W

Standard Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

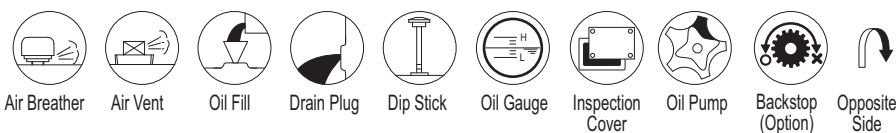
Size: P W D P 3 W - -

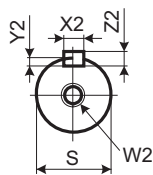
Shaft Arrangement: RL, RR, RB, LR, LL, LB, BL, BR, BB

Low Speed Shaft Type: (blank) : Without Fan, F : With Fan

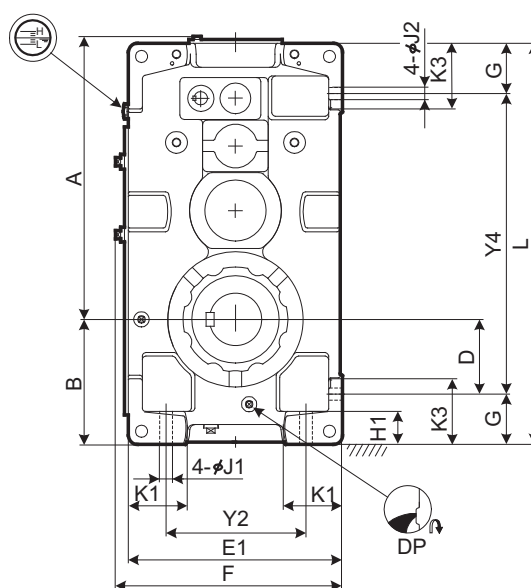
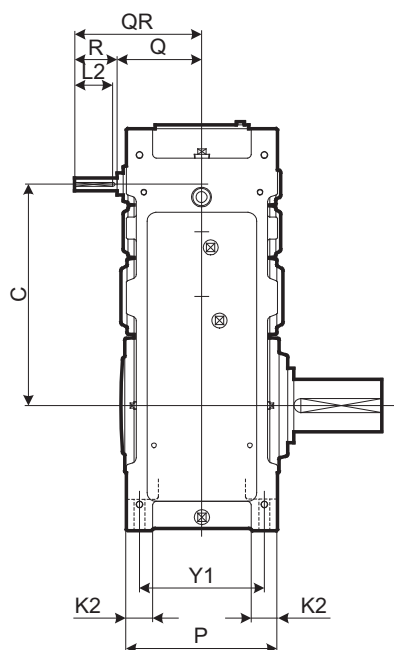
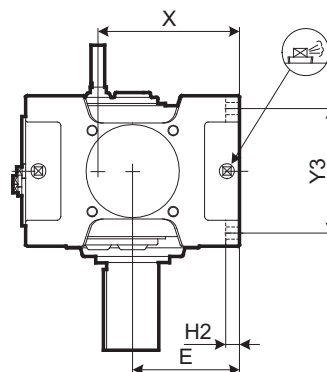
Nominal Reduction Ratio: (blank) : Solid Shaft, T : Hollow Shaft (Shrink Disk type), K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio															
	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90		
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9065			○	○	○	○	○	○	○	○	○	○	○	○		
9070			○	○	○	○	○	○	○	○	○	○	○	○		
9075				○	○	○	○	○	○	○	○	○	○	○		
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
9085			○	○	○	○	○	○	○	○	○	○	○	○		





High Speed Shaft



Size	A	B	C	D	E	E1	F	G	H1	H2	J1	J2	K1	K2	K3	L	P	X	Y1	Y2	Y3	Y4
9030	454	200	343	110	160	320	348	90	60	28	24	24	85	50	120	640	265	223	215	200	215	460
9035	485	219	374	129	185	370	398	90	60	28	24	24	100	50	120	690	265	248	215	250	215	510
9040	541	235	398	120	200	400	430	115	75	30	28	28	100	60	150	759	315	279	255	260	255	529
9045	577	256	437	141	220	440	470	115	75	30	28	28	120	60	150	819	315	299	255	300	255	589
9050	610	255	467	138.5	210	420	450	116.5	75	32	28	28	110	60	150	848	345	289	285	280	285	615
9055	649	286	506	171	245	490	520	115	75	32	28	28	135	60	150	918	345	324	285	350	285	688

Size	High Speed Shaft									DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2			
9030	159	219	60	25k6	M10/22	8	4	7	50	3/4"	210	20
9035	159	219	60	25k6	M10/22	8	4	7	50	3/4"	230	25
9040	175	135	60	28k6	M10/22	8	4	7	50	1"	310	35
9045	175	235	60	28k6	M10/22	8	4	7	50	1"	380	43
9050	195	275	80	30k6	M10/22	8	4	7	70	1"	450	46
9055	195	275	80	30k6	M10/22	8	4	7	70	1"	510	59

Unit: mm

1. Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
2. The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
3. Refer to the page D-13 for dimensions not shown in these drawings.

4. Refer to the page D-26 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Upright Mounting 9030 ▶ 9055

Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft										Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	Key				TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5	
9030	330	160	170	80m6	M20/42	22	9	14	150	393	233	160	83	80	330	165	165	75	75	
9035	330	160	170	90m6	M20/42	25	9	14	150	403	243	160	88	85	330	165	165	85	85	
9040	349	179	170	95m6	M24/50	25	9	14	150	448	268	180	98	95	360	180	180	90	90	
9045	391	181	210	105m6	M24/50	28	10	16	190	463	283	180	108	105	370	185	185	105	105	
9050	411	201	210	110m6	M24/50	28	10	16	190	503	303	200	108	105	410	205	205	105	105	
9055	411	201	210	120m6	M24/50	32	11	18	185	528	323	205	123	120	410	205	205	115	115	

Unit: mm

Standard Arrangement Configuration

RL	RR	RB	LR	LL	LB	BL	BR	BB

Nomenclature

P W A Size P 4 - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

9030
 9035
 9040
 9045
 9050
 9055

RL
 RR
 RB
 LR
 LL
 LB
 BL
 BR
 BB

(blank): Solid Shaft
 T : Hollow Shaft
 : Hollow Shaft (Shrink Disk type)
 K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio																	
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450	500	
9030	○	○	○	○	○	○	○	○	○	○								
9035			○	○	○	○	○	○	○	○	○	○						
9040	○	○	○	○	○	○	○	○	○	○								
9045	○	○	○	○	○	○	○	○	○	○	○	○						
9050	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
9055			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



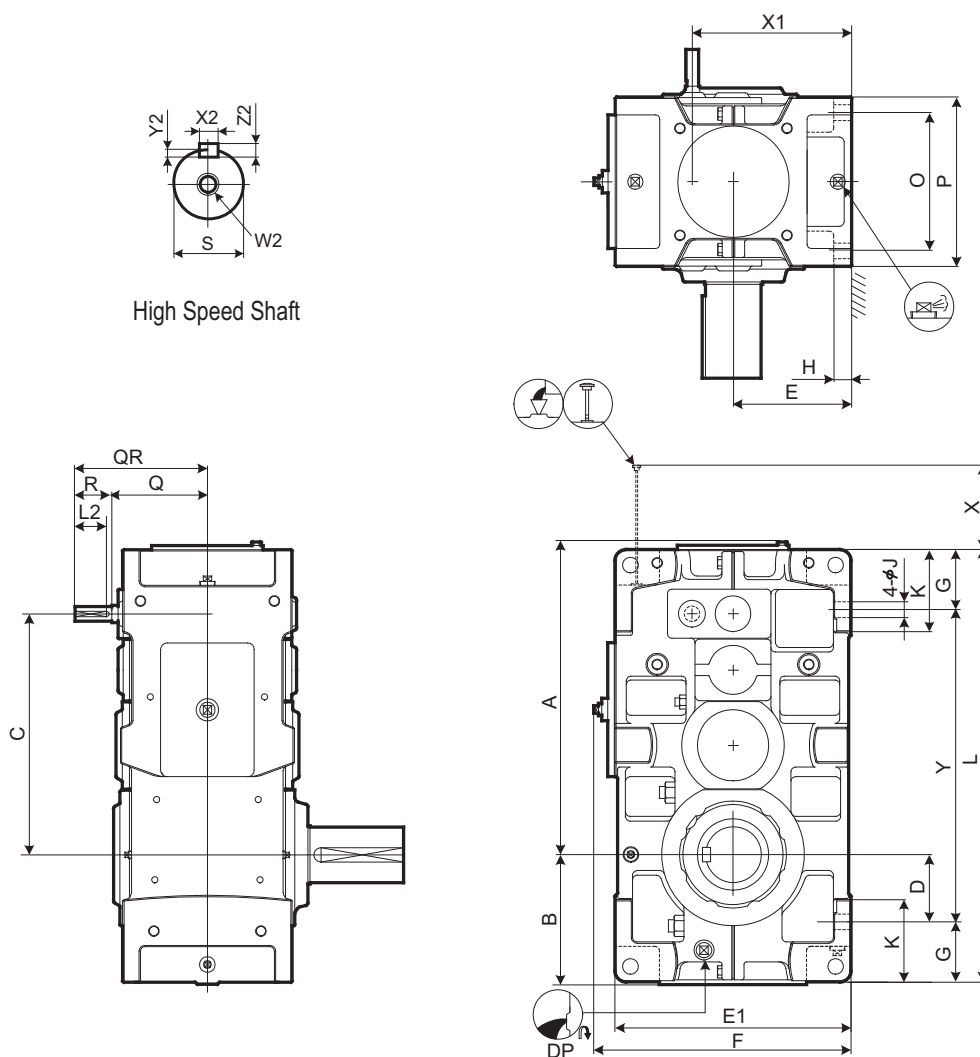
Oil Pump



Backstop (Option)



Opposite Side



Size	A	B	C	D	E	E1	F	G	H	J	K	L	O	P	X	X1	Y
9060	702	299	540	151	265	530	577	135	35	35	180	970	310	380	73	357	700
9065	748	338	586	190	300	600	647	135	35	35	180	1055	310	380	73	392	785
9070	810	336	630	163	300	600	647	160	40	42	215	1115	350	430	67	409	795
9075	863	383	683	210	335	670	717	160	52	42	220	1215	350	430	67	444	895
9080	933	378	725	205	335	670	717	160	52	42	220	1275	380	460	93	461	955
9085	989	422	781	249	375	750	797	160	52	42	220	1375	380	460	93	501	1055

Size	High Speed Shaft									DP	Wt. kg	Oil Qty. L
	Q	QR	R	S	W2/Depth	X2	Y2	Z2	L2			
9060	221	301	80	35k6	M12/28	10	5	8	70	1"	660	69
9065	221	301	80	35k6	M12/28	10	5	8	70	1"	815	86
9070	244	354	110	40k6	M16/36	12	5	8	95	1"	950	108
9075	244	354	110	40k6	M16/36	12	5	8	95	1"	1170	122
9080	264	374	110	45k6	M16/36	14	5.5	9	95	1"	1360	130
9085	264	374	110	45k6	M16/36	14	5.5	9	95	1"	1620	175

Unit: mm

- Key and keyways are based on ISO R773-1969 Close keys (JIS B1301-1996 Parallel key in fastening type)
- The oil quantity is approximate. Oil shall be supplied within the range shown on the oil gauge.
- Refer to the page D-15 for dimensions not shown in these drawings.

- Refer to the page D-29 for the dimension of optional parts.

DIMENSIONS Parallel Shaft Quadruple Reduction Upright Mounting 9060 ▶ 9085

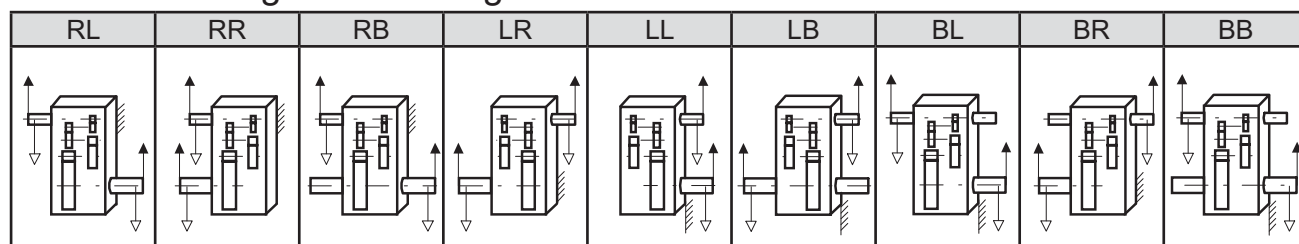
Slow Speed Shaft

Solid Shaft	Hollow Shaft (Shrink Disk Type)	Hollow Shaft (Key Type)
	Refer to the page D-18 for details.	Refer to the page D-18 for details.

Size	Solid Shaft					Key					Hollow Shaft (Shrink Disk Type)					Hollow Shaft (Key Type)				
	TU1	T1	U1	V1	W1/Depth	X1	Y1	Z1	L1		TU2	T2	U2	V2	V3	TU4	T4	U4	V4	V5
9060	440	230	210	125m6	M24/50	32	11	18	185		583	353	230	128	125	470	235	235	125	123
9065	484	234	250	140m6	M30/60	36	12	20	225		594	359	235	143	140	480	240	240	145	143
9070	509	259	250	145m6	M30/60	36	12	20	225		644	384	260	148	145	530	265	265	145	143
9075	562	262	300	160m6	M30/60	40	13	22	275		651	386	265	158	155	530	265	265	150	148
9080	582	282	300	165m6	M30/60	40	13	22	275		714	429	285	173	170	570	285	285	165	163
9085	585	285	300	175m6	M30/60	45	15	25	270		714	429	285	183	180	570	285	285	175	173

Unit: mm

Standard Arrangement Configuration



Nomenclature

P W D Size P 4 W - Shaft Arrangement Low Speed Shaft Type - Nominal Reduction Ratio

9060
9065
9070
9075
9080
9085

RL
RR
RB
LR
LL
LB
BL
BR
BB

(blank): Solid Shaft
T : Hollow Shaft
(Shrink Disk type)
K : Hollow Shaft (Key type)

Size	Nominal Reduction Ratio															
	80	90	100	112	125	140	160	180	200	224	250	280	315	355	400	450
9060	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9065	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9070	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9075	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9080	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9085	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



Air Breather



Air Vent



Oil Fill



Drain Plug



Dip Stick



Oil Gauge



Inspection Cover



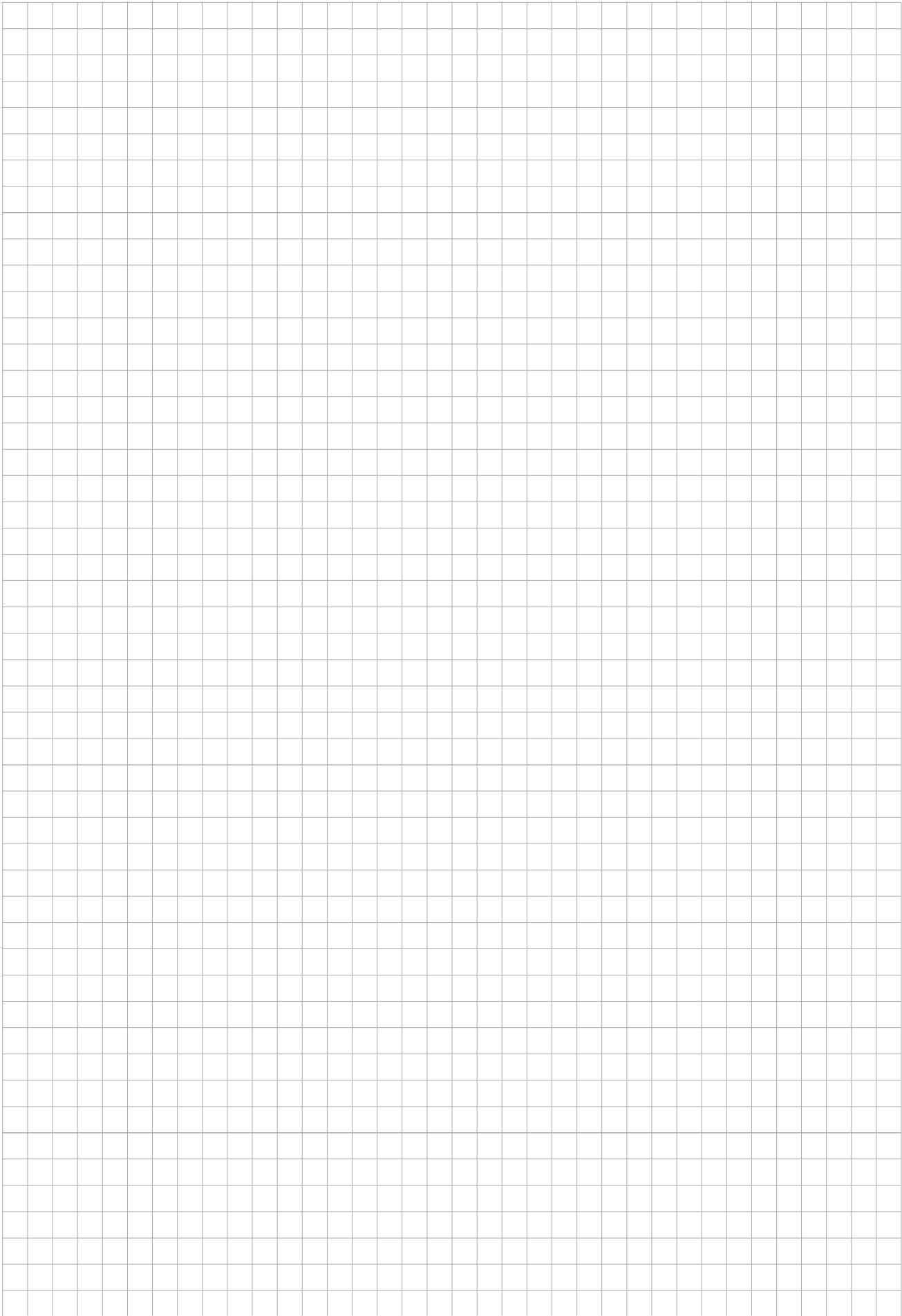
Oil Pump



Backstop (Option)



Opposite Side



D

TECHNICAL DATA

Lubricant and Installation	... D- 2
Painting Specifications and Rust Proof Standard	... D- 3
Moment of Inertia of Right Angle Shaft	... D- 4
GD ² of Right Angle Shaft	... D- 6
Moment of Inertia of Parallel Shaft	... D- 8
GD ² of Parallel Shaft	... D-10
Supplementary Dimension Drawing	... D-12
Supplementary Matters to Hollow Shaft	... D-17
Hollow Shaft Related Dimensions	... D-18
Cooling Fan Dimension	... D-20
Option Dimension	... D-24
Motor Terminal Box	... D-32
Motor Flange Dimension	... D-34
Formula of Drive System	... D-36

TECHNICAL DATA Lubricant, Installation

Lubricant

Operation Condition / Application	Output Speed		Ambient Temperature °C		
			-10 to 15	0 to 30	10 to 50
Continuous Operation	Over 100r/min	ISO* AGMA	VG68 2EP	VG150 4EP	VG220 5EP
	Under 100r/min	ISO* AGMA	VG100 3EP	VG220 5EP	VG320 6EP
Intermittent Operation (ex. Crane Drive)	All	ISO* AGMA	VG68 2EP	VG150 4EP	VG220 5EP

* Kinetic Viscosity (mm²/s) at ISO 40°C

PARAMAX DRIVE is shipped without lubrication oil.

Supply oil within the range shown on the dip stick before operation.

The table on the right shows appropriate viscosity of oil based on ISO and AGMA for respective ambient temperatures and slow speed shaft r/min.

When the ambient temperature is lower than -10 deg or higher than +50 deg, a heating or cooling unit is necessary, in general.

Recommended Lubricants

Brand	BP	CASTROL			CHEVRON TEXACO		EXXON MOBIL		SHELL	TOTAL	
Gear Oil	ISO VG68 AGMA 2EP	ENERGOL GR-XP-68	ALPHA SP68	OPTIGEAR BM68	TRIBOL 1100/68	GEAR COMPOUNDS EP68	MEROPA WM68	SPARTAN EP68	MOBIL- GEAR 626	OMALA 68	CARTER EP68
	ISO VG100 AGMA 3EP	ENERGOL GR-XP-100	ALPHA SP100	OPTIGEAR BM100	TRIBOL 1100/100	GEAR COMPOUNDS EP100	MEROPA WM100	SPARTAN EP100	MOBIL- GEAR 627	OMALA 100	CARTER EP100
	ISO VG150 AGMA 4EP	ENERGOL GR-XP-150	ALPHA SP150	OPTIGEAR BM150	TRIBOL 1100/150	GEAR COMPOUNDS EP150	MEROPA WM150	SPARTAN EP150	MOBIL- GEAR 629	OMALA 150	CARTER EP150
	ISO VG220 AGMA 5EP	ENERGOL GR-XP-220	ALPHA SP220	OPTIGEAR BM220	TRIBOL 1100/220	GEAR COMPOUNDS EP220	MEROPA WM220	SPARTAN EP220	MOBIL- GEAR 630	OMALA 220	CARTER EP220
	ISO VG320 AGMA 6EP	ENERGOL GR-XP-320	ALPHA SP320	OPTIGEAR BM320	TRIBOL 1100/320	GEAR COMPOUNDS EP320	MEROPA WM320	SPARTAN EP320	MOBIL- GEAR 632	OMALA 320	CARTER EP320
Bearing grease	ENER- GREASE LS EP2	SPEEROL AP3	Olista Long- time 3EP	TRIBOL 3020/ 1000-2	DURALITH GREASE 68	MULTI- FAK EP2	BEACON EP2	MOBIL- PLEX 48	ALVANIA EP2	MULTIS EP2	

Technical

Common

Installation

- (1) Consult us when PARAMAX DRIVE is to be installed on an inclined surface or on a ceiling.
Additional lubrication system may be necessary.
- (2) Install PARAMAX DRIVE horizontally on a sufficiently rigid base.
When the unit is made for inclined installation according to your specification,
do not install it at any other angle other than the specified angle.
- (3) Installation bolts for PARAMAX DRIVE shall be equivalent to JIS strength classification 10.9.
Consult us when the force that pushes up PARAMAX DRIVE is to be applied.
- (4) Refer to the maintenance manual attached to the unit for other installation notes.

TECHNICAL DATA Painting Specifications, Rust Proof Standard

Painting Specifications

Painting Area	Surface Conditioning	Kind of Painting		Painting Specification of				Application
		Class	Painting of Finish Coat	Type	Coating	Thickness μ	Type of Coating	
Outside Painting	Cast Iron Class 1	Standard painting	Acrylic modified phthalic	Under	1	20 ~ 40	Modified alkyd resin	Standard under coat
				Finish	1	15 ~ 30	Acrylic modified alkyd resin	Standard finish coat
		Standard export painting	Acrylic modified phthalic	Under	2	40 ~ 80	Modified alkyd resin	Export standard
				Finish	1	15 ~ 30	Acrylic modified alkyd resin	
		Special painting (Including rust-proof and heat resisting painting) One layer of Unigrand PTC Primer as the first primer	Acrylic modified phthalic	Under	2	40 ~ 80	Modified alkyd resin	Moderate corrosive atmosphere, seaside, outdoor humid atmosphere, chemical plant area, ... etc.
				Finish	2	30 ~ 60	Acrylic modified alkyd resin	
			Long of oil phthalic	Under	2	40 ~ 80	Modified alkyd resin	Ocean-going vessel & boat, bridge, seaside, outdoor humid atmosphere, ... etc.
				Finish	2	30 ~ 60	Synthetics resin paint	
			Chloride rubber	Under	2	40 ~ 80	Modified alkyd resin	Ocean-going vessel & boat, bridge, seaside, outdoor humid atmosphere, ... etc.
				Second	1	20 ~ 40	Phenol M.I.O paint	
			Phenol	Finish	2	30 ~ 60	Chloride rubber paint	In-and-outdoor of acid treating plant and chemical plant etc...
				Under	2	40 ~ 80	Modified alkyd resin	
			Heat-proof silver	Finish	2	30 ~ 60	Phenol resin enamel	Heating furnace (120 deg), ... etc.
				Under	1	20 ~ 40	Modified alkyd resin	
			Finish	1	15 ~ 30	Aluminum paint		
	Steel Plate Class 2	Extra rust-proof painting	Epoxy	Under	2	40 ~ 80	Special permeability epoxy aluminium paint	Indoor anti-corrosion area, Chemical plant
				Finish	3	120 ~ 240	Polyamide epoxy	
			Polyurethane	Under	2	40 ~ 80	Special permeability epoxy aluminium paint	Outdoor anti-corrosion area, Chemical plant
				Finish	3	45 ~ 90	Polyisocyanate urethane resin paint	
		Extra rust-proof painting (Sand blast under coating)	Thick film epoxy			5	250 ~ 350	Thick film type modified epoxy resin paint
Inside Painting	Cast Iron Class 1 Steel Plate Class 3	Standard painting			1	20 ~ 40	Modified alkyd resin	Standard inside painting

Note : SUMITOMO standard color is Donau Blue (equivalent Munsell color: 6.5PB 3.6 / 8.2)

Rust Proof Standard

Rust proofing treatment has been conducted on all completely assembled models, prior to shipment.

1. Standard rust proofing specifications

(1) Outside rust proofing

Rust proofing oil has been applied to products before shipment.

Check the rust proofing conditions every 6 months after shipment, and conduct rust proofing treatment, as necessary.

Rust proofing period	6 months
Storage condition	Generally to be stored inside the shop or warehouse, relatively free of humidity, dust, extreme temperature fluctuation, corrosive gas, and similar atmosphere. After shipment, the product shall be operated 5-10 minutes every 2-3 months with recommended lubricants.

2. Export rust proofing specifications

Consult us for export rust proofing when export specifications or severe specifications are required.

TECHNICAL DATA Moment of Inertia Right Angle Shaft

Right Angle Shaft Double Reduction

Moment of Inertia at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	0.00423	0.00805	0.0157		0.0333		0.0662		0.146		0.301		0.502	
7.1	0.00400	0.00750	0.0153		0.0313		0.0621		0.135		0.281		0.475	
8	0.00288	0.00508	0.0137	0.0181	0.0283	0.0374	0.0603	0.0745	0.130	0.166	0.253	0.337	0.480	0.562
9	0.00275	0.00475	0.0134	0.0175	0.0269	0.0346	0.0577	0.0681	0.124	0.149	0.242	0.311	0.464	0.524
10	0.00218	0.00488	0.0111	0.0152	0.0201	0.0311	0.0492	0.0653	0.0981	0.1426	0.203	0.274	0.398	0.516
11.2	0.00210	0.00468	0.0109	0.0149	0.0193	0.0292	0.0475	0.0614	0.0939	0.1319	0.196	0.259	0.387	0.493
12.5	0.00188	0.00390	0.00843	0.0120	0.0138	0.0217	0.0357	0.0525	0.0691	0.1056	0.139	0.216	0.268	0.422
14	0.00183	0.00375	0.00830	0.0118	0.0133	0.0206	0.0345	0.0499	0.0664	0.0990	0.135	0.207	0.261	0.407
16	0.00133	0.00258	0.00583	0.00908	0.0107	0.0149	0.0243	0.0379	0.0514	0.0739	0.102	0.147	0.194	0.282
18	0.00130	0.00250	0.00575	0.00890	0.0104	0.0142	0.0237	0.0362	0.0497	0.0697	0.0987	0.141	0.190	0.273
20				0.00620		0.0114		0.0257		0.0546		0.107		0.203
22.4				0.00610		0.0109		0.0246		0.0518		0.103		0.198

Right Angle Shaft Triple Reduction

Moment of Inertia at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
20			0.00378		0.00693		0.0140		0.0289		0.0590		0.121	
22.4			0.00373		0.00670		0.0136		0.0278		0.0571		0.118	
25			0.00338	0.00403	0.00608	0.00735	0.0115	0.0149	0.0237	0.0310	0.0515	0.0624	0.106	0.126
28			0.00333	0.00395	0.00595	0.00705	0.0112	0.0142	0.0230	0.0292	0.0503	0.0600	0.104	0.123
31.5			0.00193	0.00353	0.00433	0.00635	0.00835	0.0120	0.0183	0.0248	0.0359	0.0537	0.0700	0.110
35.5			0.00190	0.00350	0.00425	0.00618	0.00818	0.0116	0.0178	0.0238	0.0351	0.0521	0.0689	0.108
40			0.00178	0.00203	0.00403	0.00450	0.00738	0.00868	0.0161	0.0191	0.0328	0.0373	0.0644	0.0722
45			0.00175	0.00200	0.00398	0.00440	0.00730	0.00843	0.0159	0.0184	0.0323	0.0363	0.0636	0.0708
50			0.00118	0.00183	0.00233	0.00413	0.00555	0.00758	0.0120	0.0166	0.0239	0.0337	0.0484	0.0659
56			0.00115	0.00183	0.00230	0.00405	0.00550	0.00743	0.0118	0.0162	0.0236	0.0331	0.0479	0.0649
63			0.00110	0.00120	0.00220	0.00240	0.00423	0.00568	0.00893	0.01230	0.0173	0.0245	0.0349	0.0493
71			0.00110	0.00120	0.00218	0.00235	0.00418	0.00558	0.00883	0.01203	0.0171	0.0241	0.0346	0.0487
80				0.00113		0.00225		0.00430		0.00910		0.0176		0.0355
90				0.00113		0.00223		0.00423		0.00895		0.0174		0.0351
100														

Right Angle Shaft Quadruple Reduction

Moment of Inertia at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
63														
71														
80					0.00295		0.00283		0.00553		0.0113		0.0229	
90					0.00293		0.00280		0.00548		0.0112		0.0227	
100					0.00215	0.00298	0.00268	0.00288	0.00523	0.00565	0.0108	0.0115	0.0219	0.0233
112					0.00215	0.00295	0.00265	0.00283	0.00518	0.00555	0.0107	0.0114	0.0218	0.0230
125					0.00203	0.00218	0.00243	0.00270	0.00473	0.00530	0.00923	0.0110	0.0188	0.0222
140					0.00203	0.00215	0.00243	0.00268	0.00470	0.00523	0.00918	0.0109	0.0188	0.0220
160						0.00205	0.00120	0.00245	0.00243	0.00475	0.00480	0.00930	0.00993	0.0190
180						0.00203	0.00120	0.00243	0.00240	0.00473	0.00478	0.00925	0.00990	0.0189
200							0.00118	0.00123	0.00235	0.00245	0.00468		0.00970	0.0100
224							0.00118	0.00120	0.00233	0.00243	0.00465	0.00483	0.00968	0.0100
250							0.00110	0.00118	0.00223	0.00235	0.00428	0.00473	0.00893	0.00978
280							0.00110	0.00118	0.00220	0.00235	0.00425	0.00470	0.00893	0.00973
315							0.00110	0.00113	0.00220	0.00223	0.00420	0.00430	0.00885	0.00898
355							0.00108	0.00110	0.00215	0.00223	0.00418	0.00428	0.00868	0.00895
400								0.00110		0.00220		0.00423		0.00885
450								0.00108		0.00218		0.00418		0.00868
500														

Technical

Common

TECHNICAL DATA Moment of Inertia Right Angle Shaft

Unit: kg·m²

Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131		9136
												6.3
												7.1
												8
												9
												10
												11.2
												12.5
												14
												16
												18
												20
												22.4

Unit: kg·m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
0.240		0.460		0.889								20
0.237	0.249	0.453	0.476	0.866	0.926							22.4
0.212	0.245	0.401	0.470	0.774	0.896	0.959						25
0.210	0.218	0.397	0.412	0.759	0.798		2.18	2.21		4.48	4.53	28
0.141	0.215	0.264	0.408	0.454	0.779	0.701	2.12	2.15		4.24	4.28	31.5
0.140	0.144	0.262	0.271	0.445	0.468	0.731	1.29	1.31	2.39	3.31	3.34	35.5
0.129	0.143	0.241	0.268	0.409	0.456	0.615	1.25	1.27	2.33	3.16	3.18	40
0.129	0.132	0.239	0.245	0.403	0.418	0.559	0.939	0.952	1.78	2.41	2.43	45
0.0931	0.131	0.175	0.244	0.311	0.411	0.443	0.917	0.928	1.74	2.32	2.33	50
0.0927	0.0945	0.174	0.178	0.307	0.317	0.408	0.683	0.691	1.28	1.76	1.77	56
0.0664	0.0940	0.127	0.177	0.225	0.312	0.322	0.668	0.675	1.26	1.70	1.71	63
0.0661	0.0673	0.126	0.129	0.223	0.229	0.300	0.509	0.515	0.934			71
0.0642	0.0669	0.121	0.128	0.211	0.226	0.232	0.500	0.505	0.919			80
	0.0648		0.123		0.214	0.218						90
												100

Unit: kg·m²

Size of Reducer												Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
											0.979	0.987	63
											0.819	0.825	71
0.0467		0.0962		0.108			0.235	0.238	0.502	0.713	0.718	80	
0.0452	0.0472	0.0930	0.0972	0.102	0.110	0.139	0.230	0.233	0.492	0.688	0.692	90	
0.0451	0.0455	0.0927	0.0937	0.101	0.104	0.123	0.199	0.201	0.429	0.505	0.508	100	
0.0409	0.0454	0.0846	0.0934	0.0908	0.102	0.105	0.196	0.198	0.423	0.489	0.492	112	
0.0408	0.0411	0.0844	0.0850	0.0902	0.0918	0.100	0.152	0.154	0.281	0.448	0.450	125	
0.0243	0.0410	0.0493	0.0849	0.0527	0.0910	0.0927	0.150	0.151	0.277	0.438	0.439	140	
0.0242	0.0244	0.0492	0.0496	0.0523	0.0533	0.0890	0.137	0.138	0.252	0.326	0.327	160	
0.0183	0.0244	0.0370	0.0495	0.0393	0.0528	0.0693	0.136	0.136	0.250	0.319	0.320	180	
0.0183	0.0184	0.0369	0.0371	0.0391	0.0397	0.0544	0.0978	0.0983	0.143	0.234	0.235	200	
0.0172	0.0183	0.0349	0.0371	0.0364	0.0394	0.0516	0.0969	0.0974	0.141	0.230	0.231	224	
0.0172	0.0172	0.0348	0.0350	0.0363	0.0367	0.0501	0.0693	0.0696	0.131	0.217	0.217	250	
0.0171	0.0172	0.0345	0.0350	0.0355	0.0365	0.0477	0.0688	0.0690	0.130			280	
0.0163	0.0171	0.0334	0.0346	0.0341	0.0357	0.0360	0.0664	0.0667	0.125			315	
	0.0164		0.0334		0.0343	0.0345						355	
												400	
												450	
												500	

TECHNICAL DATA GD² Right Angle Shaft

Right Angle Shaft Double Reduction

GD² at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	0.0169	0.0322	0.0629		0.133		0.265		0.584		1.20		2.01	
7.1	0.0160	0.0300	0.0610		0.125		0.248		0.541		1.13		1.90	
8	0.0115	0.0203	0.0548	0.0723	0.113	0.150	0.241	0.298	0.522	0.663	1.01	1.35	1.92	2.25
9	0.0110	0.0190	0.0536	0.0699	0.108	0.138	0.231	0.272	0.495	0.594	0.968	1.24	1.86	2.10
10	0.0087	0.0195	0.0443	0.0609	0.0805	0.1242	0.197	0.261	0.392	0.570	0.812	1.10	1.59	2.06
11.2	0.0084	0.0187	0.0436	0.0594	0.0772	0.1167	0.190	0.246	0.376	0.528	0.783	1.04	1.55	1.97
12.5	0.0075	0.0156	0.0337	0.0481	0.0553	0.0869	0.143	0.210	0.276	0.423	0.556	0.865	1.07	1.69
14	0.0073	0.0150	0.0332	0.0472	0.0532	0.0825	0.138	0.200	0.266	0.396	0.538	0.827	1.04	1.63
16	0.0053	0.0103	0.0233	0.0363	0.0428	0.0594	0.0972	0.152	0.206	0.296	0.407	0.590	0.777	1.13
18	0.0052	0.0100	0.0230	0.0356	0.0414	0.0566	0.0946	0.145	0.199	0.279	0.395	0.566	0.759	1.09
20				0.0248		0.0455		0.103		0.218		0.429		0.814
22.4				0.0244		0.0437		0.0985		0.207		0.413		0.790

Right Angle Shaft Triple Reduction

GD² at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
20			0.0151		0.0277		0.0559		0.116		0.236		0.482	
22.4			0.0149		0.0268		0.0542		0.111		0.229		0.471	
25			0.0135	0.0161	0.0243	0.0294	0.0459	0.0594	0.0946	0.1238	0.206	0.250	0.425	0.505
28			0.0133	0.0158	0.0238	0.0282	0.0449	0.0567	0.0919	0.1167	0.201	0.240	0.418	0.491
31.5			0.0077	0.0141	0.0173	0.0254	0.0334	0.0479	0.0730	0.0993	0.144	0.215	0.280	0.440
35.5			0.0076	0.0140	0.0170	0.0247	0.0327	0.0464	0.0712	0.0952	0.141	0.208	0.276	0.431
40			0.0071	0.0081	0.0161	0.0180	0.0295	0.0347	0.0645	0.0764	0.131	0.149	0.257	0.289
45			0.0070	0.0080	0.0159	0.0176	0.0292	0.0337	0.0635	0.0735	0.129	0.145	0.255	0.283
50			0.0047	0.0073	0.0093	0.0165	0.0222	0.0303	0.0480	0.0665	0.0957	0.135	0.193	0.264
56			0.0046	0.0073	0.0092	0.0162	0.0220	0.0297	0.0473	0.0648	0.0945	0.132	0.192	0.260
63			0.0044	0.0048	0.0088	0.0096	0.0169	0.0227	0.0357	0.0492	0.0690	0.0979	0.140	0.197
71			0.0044	0.0048	0.0087	0.0094	0.0167	0.0223	0.0353	0.0481	0.0682	0.0963	0.139	0.195
80				0.0045		0.0090		0.0172		0.0364		0.0704		0.142
90				0.0045		0.0089		0.0169		0.0358		0.0694		0.141
100														

Right Angle Shaft Quadruple Reduction

GD² at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
63														
71														
80					0.0118		0.0113		0.0221		0.0452		0.0914	
90					0.0117		0.0112		0.0219		0.0447		0.0907	
100					0.0086	0.0119	0.0107	0.0115	0.0209	0.0226	0.0432	0.0461	0.0877	0.0930
112					0.0086	0.0118	0.0106	0.0113	0.0207	0.0222	0.0429	0.0455	0.0872	0.0920
125					0.0081	0.0087	0.0097	0.0108	0.0189	0.0212	0.0369	0.0438	0.0753	0.0887
140					0.0081	0.0086	0.0097	0.0107	0.0188	0.0209	0.0367	0.0434	0.0751	0.0881
160						0.0082	0.0048	0.0098	0.0097	0.0190	0.0192	0.0372	0.0397	0.0759
180						0.0081	0.0048	0.0097	0.0096	0.0189	0.0191	0.0370	0.0396	0.0756
200							0.0047	0.0049	0.0094	0.0098	0.0187	0.0195	0.0388	0.0401
224							0.0047	0.0048	0.0093	0.0097	0.0186	0.0193	0.0387	0.0399
250							0.0044	0.0047	0.0089	0.0094	0.0171	0.0189	0.0357	0.0391
280							0.0044	0.0047	0.0088	0.0094	0.0170	0.0188	0.0357	0.0389
315							0.0044	0.0045	0.0088	0.0089	0.0168	0.0172	0.0354	0.0359
355							0.0043	0.0044	0.0086	0.0089	0.0167	0.0171	0.0347	0.0358
400								0.0044		0.0088		0.0169		0.0354
450								0.0043		0.0087		0.0167		0.0347
500														

Technical

Common

TECHNICAL DATA GD² Right Angle ShaftUnit: kgf-m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
												6.3
												7.1
												8
	4.72		8.94		16.6							9
	4.63		8.78		15.9							10
	3.48		6.70		12.4							11.2
	3.43		6.61		12.0							12.5
	2.55		4.88		9.14							14
	2.52		4.82		8.85							16
	1.86		3.57		6.71							18
	1.84		3.54		6.53							20
												22.4

Unit: kgf-m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
0.960		1.84		3.56								20
0.949	0.994	1.81	1.91	3.47	3.70							22.4
0.848	0.981	1.60	1.88	3.10	3.59	3.84						25
0.842	0.870	1.59	1.65	3.04	3.19		8.71	8.84		17.9	18.1	28
0.563	0.862	1.06	1.63	1.81	3.12	2.80	8.48	8.59		17.0	17.1	31.5
0.559	0.578	1.05	1.08	1.78	1.87	2.92	5.16	5.24	9.58	13.2	13.4	35.5
0.518	0.572	0.964	1.07	1.64	1.83	2.46	5.01	5.08	9.34	12.6	12.7	40
0.515	0.527	0.958	0.982	1.61	1.67	2.24	3.76	3.81	7.10	9.65	9.73	45
0.372	0.523	0.699	0.975	1.24	1.64	1.77	3.67	3.71	6.95	9.27	9.33	50
0.371	0.378	0.695	0.710	1.23	1.27	1.63	2.73	2.76	5.13	7.04	7.09	56
0.266	0.760	0.507	0.706	0.900	1.25	1.29	2.67	2.70	5.03	6.79	6.83	63
0.265	0.269	0.505	0.514	0.890	0.915	1.20	2.04	2.06	3.73			71
0.257	0.268	0.485	0.512	0.845	0.903	0.928	2.00	2.02	3.67			80
	0.259		0.491		0.854	0.872						90
												100

Unit: kgf-m²

Size of Reducer												Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136		
											3.91	3.95	63
											3.28	3.30	71
0.187	0.385		0.431				0.941	0.954	2.01	2.85	2.87	80	
0.181	0.189	0.372	0.389	0.409	0.439	0.554	0.920	0.930	1.97	2.75	2.77	90	
0.180	0.182	0.371	0.375	0.405	0.415	0.490	0.797	0.805	1.72	2.02	2.03	100	
0.163	0.182	0.338	0.374	0.363	0.410	0.420	0.784	0.790	1.69	1.96	1.97	112	
0.163	0.164	0.338	0.340	0.361	0.367	0.398	0.609	0.614	1.12	1.79	1.80	140	
0.0970	0.164	0.197	0.339	0.211	0.364	0.371	0.600	0.605	1.11	1.75	1.76	160	
0.0969	0.0976	0.197	0.198	0.209	0.213	0.356	0.548	0.552	1.01	1.30	1.31	180	
0.0731	0.0974	0.148	0.198	0.157	0.211	0.277	0.542	0.545	0.998	1.28	1.28	200	
0.0730	0.0734	0.148	0.149	0.156	0.159	0.217	0.391	0.393	0.571	0.936	0.940	224	
0.0687	0.0733	0.140	0.148	0.146	0.157	0.206	0.388	0.389	0.565	0.920	0.923	250	
0.0687	0.0689	0.139	0.140	0.145	0.147	0.200	0.277	0.279	0.525	0.867	0.868	280	
0.0682	0.0689	0.138	0.140	0.142	0.146	0.191	0.275	0.276	0.521			315	
0.0653	0.0683	0.133	0.138	0.137	0.143	0.144	0.266	0.267	0.498			355	
0.0654		0.134		0.137		0.138						400	
												450	
												500	

TECHNICAL DATA Moment of Inertia Parallel shaft

Parallel Shaft Double Reduction

Moment of Inertia at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	0.00238	0.00508	0.0110		0.0211		0.0416		0.109		0.226		0.447	
7.1	0.00215	0.00455	0.0105		0.0188		0.0376		0.0977		0.207		0.420	
8	0.00185	0.00433	0.00913	0.0135	0.0158	0.0257	0.0336	0.0496	0.0787	0.128	0.167	0.262	0.326	0.502
9	0.00170	0.00398	0.00880	0.0129	0.0144	0.0226	0.0309	0.0434	0.0721	0.111	0.155	0.236	0.309	0.466
10	0.00133	0.00305	0.00718	0.0107	0.0136	0.0186	0.0267	0.0389	0.0619	0.0909	0.132	0.188	0.256	0.360
11.2	0.00125	0.00283	0.00698	0.0103	0.0126	0.0167	0.0251	0.0348	0.0576	0.0803	0.124	0.173	0.245	0.337
12.5	0.00100	0.00218	0.00463	0.00820	0.00933	0.0154	0.0210	0.0300	0.0443	0.0699	0.0898	0.147	0.165	0.279
14	0.00095	0.00205	0.00450	0.00795	0.00878	0.0142	0.0200	0.0275	0.0415	0.0629	0.0851	0.136	0.158	0.264
16	0.00078	0.00173	0.00365	0.00523	0.00725	0.0104	0.0149	0.0232	0.0312	0.0493	0.0708	0.0984	0.129	0.179
18	0.00073	0.00163	0.00355	0.00508	0.00690	0.00965	0.0142	0.0215	0.0296	0.0449	0.0678	0.0922	0.124	0.169
20				0.00403		0.00795		0.0161		0.0342		0.0764		0.138
22.4				0.00393		0.00748		0.0151		0.0316		0.0724		0.132

Parallel Shaft Triple Reduction

Moment of Inertia at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
20	0.00085	0.00210	0.00288		0.00558		0.0135		0.0303		0.0588		0.121	
22.4	0.00083	0.00205	0.00280		0.00538		0.0131		0.0291		0.0570		0.118	
25	0.00073	0.00190	0.00248	0.00310	0.00478	0.00600	0.0109	0.0144	0.0249	0.0324	0.0514	0.0622	0.106	0.127
28	0.00073	0.00188	0.00245	0.00305	0.00463	0.00573	0.0107	0.0137	0.0242	0.0306	0.0502	0.0598	0.104	0.123
31.5	0.00048	0.00115	0.00153	0.00263	0.00335	0.00505	0.00763	0.0115	0.0164	0.0261	0.0317	0.0536	0.0690	0.110
35.5	0.00048	0.00115	0.00153	0.00260	0.00328	0.00485	0.00743	0.0111	0.0159	0.0251	0.0309	0.0520	0.0679	0.108
40	0.00043	0.00108	0.00138	0.00163	0.00303	0.00353	0.00658	0.00798	0.0142	0.0172	0.0287	0.0331	0.0632	0.0714
45	0.00043	0.00108	0.00138	0.00160	0.00298	0.00343	0.00648	0.00770	0.0140	0.0165	0.0282	0.0321	0.0624	0.0699
50			0.00090	0.00145	0.00190	0.00315	0.00433	0.00680	0.00868	0.0147	0.0175	0.0296	0.0347	0.0648
56			0.00088	0.00143	0.00188	0.00308	0.00425	0.00663	0.00850	0.0143	0.0172	0.0289	0.0343	0.0637
63			0.00083	0.00093	0.00178	0.00198	0.00393	0.00448	0.00788	0.00900	0.0164	0.0180	0.0325	0.0356
71			0.00083	0.00093	0.00175	0.00193	0.00390	0.00435	0.00778	0.00873	0.0162	0.0177	0.0323	0.0350
80				0.00085		0.00183		0.00400		0.00805		0.0167		0.0331
90				0.00085		0.00180		0.00395		0.00790		0.0165		0.0328

Parallel Shaft Quadruple Reduction

Moment of Inertia at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
63														
71														
80			0.00078		0.00200		0.00278		0.00618		0.0124		0.0248	
90			0.00078		0.00200		0.00275		0.00610		0.0123		0.0246	
100			0.00075	0.00080	0.00195	0.00203	0.00263	0.00283	0.00585	0.00630	0.0119	0.0126	0.0238	0.0252
112			0.00075	0.00078	0.00195	0.00200	0.00260	0.00278	0.00580	0.00620	0.0118	0.0125	0.0237	0.0249
125			0.00068	0.00075	0.00183	0.00198	0.00238	0.00265	0.00533	0.00593	0.0103	0.0121	0.0207	0.0241
140			0.00068	0.00075	0.00183	0.00195	0.00238	0.00263	0.00530	0.00585	0.0103	0.0120	0.0207	0.0239
160			0.00043	0.00068	0.00110	0.00185	0.00103	0.00240	0.00220	0.00538	0.00493	0.0104	0.00883	0.0209
180			0.00043	0.00068	0.00110	0.00183	0.00103	0.00238	0.00218	0.00533	0.00490	0.0104	0.00878	0.0208
200			0.00040	0.00043	0.00105	0.00110	0.00098	0.00105	0.00213	0.00223	0.00480	0.00498	0.00860	0.00893
224			0.00040	0.00043	0.00105	0.00110	0.00098	0.00103	0.00210	0.00220	0.00478	0.00495	0.00858	0.00888
250				0.00040		0.00105	0.00093	0.00100	0.00200	0.00213	0.00440	0.00483	0.00783	0.00865
280				0.00040		0.00105	0.00093	0.00100	0.00198	0.00213	0.00438	0.00480	0.00780	0.00863
315							0.00093	0.00093	0.00198	0.00200	0.00433	0.00440	0.00773	0.00785
355							0.00088	0.00093	0.00193	0.00200	0.00430	0.00440	0.00755	0.00783
400							0.00080	0.00093	0.00163	0.00198	0.00353	0.00435	0.00685	0.00775
450								0.00090		0.00193		0.00430		0.00758
500								0.00080		0.00165		0.00353		0.00685

Technical

Common

TECHNICAL DATA Moment of Inertia Parallel shaft

Unit: kg·m²

Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131		9136
0.865		1.78		3.33								6.3
0.840	0.950	1.72	1.95	3.10	3.70							7.1
0.693	0.918	1.32	1.89	2.48	3.40							8
0.675	0.748	1.28	1.42	2.34	2.70							9
0.490	0.725	1.02	1.39	1.91	2.53							10
0.480	0.523	0.990	1.09	1.81	2.05							11.2
0.323	0.510	0.658	1.06	1.29	1.94							12.5
0.318	0.345	0.640	0.700	1.23	1.38							14
0.253	0.338	0.510	0.683	1.01	1.31							16
0.250	0.268	0.500	0.538	0.968	1.06							18
	0.263		0.528		1.02							20
												22.4

Unit: kg·m²

Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
0.239		0.508		0.720								20
0.237	0.248	0.500	0.523	0.698	0.755					4.58	4.66	22.4
0.212	0.245	0.450	0.518	0.610	0.728	0.787				4.19	4.25	25
0.210	0.217	0.445	0.460	0.595	0.633		1.20	1.23	2.34	3.36	3.41	28
0.139	0.215	0.300	0.458	0.398	0.615	0.654	1.15	1.17	2.24	3.13	3.16	31.5
0.138	0.143	0.298	0.308	0.388	0.413	0.567	0.941	0.962	1.72	2.32	2.35	35.5
0.128	0.142	0.275	0.305	0.350	0.400	0.426	0.906	0.923	1.65	2.16	2.18	40
0.127	0.130	0.275	0.280	0.345	0.360	0.418	0.630	0.643	1.14	1.73	1.75	45
0.0695	0.129	0.138	0.278	0.178	0.353	0.370	0.609	0.619	1.10	1.63	1.65	50
0.0693	0.0710	0.137	0.141	0.174	0.184	0.333	0.486	0.494	0.810	1.34	1.36	56
0.0653	0.0705	0.128	0.140	0.159	0.179	0.216	0.473	0.479	0.786	1.28	1.29	63
0.0650	0.0660	0.127	0.130	0.157	0.163	0.194	0.367	0.372	0.626	1.02	1.03	71
0.0630	0.0658	0.122	0.129	0.145	0.160	0.166	0.358	0.362	0.610			80
	0.0638		0.124		0.147	0.152	0.309	0.312	0.491			90

Unit: kg·m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
												63
												71
										0.713	0.719	80
0.0675	0.108								0.611	0.616	90	
0.0658	0.0680	0.105	0.109	0.118	0.125	0.147	0.250	0.253	0.517	0.588	0.592	100
0.0658	0.0663	0.105	0.106	0.117	0.119	0.138	0.221	0.223	0.447	0.525	0.528	112
0.0613	0.0660	0.0963	0.105	0.106	0.118	0.121	0.218	0.219	0.441	0.469	0.471	125
0.0613	0.0615	0.0963	0.0968	0.106	0.107	0.115	0.199	0.200	0.291	0.368	0.371	140
0.0193	0.0615	0.0398	0.0965	0.0678	0.107	0.108	0.189	0.190	0.287	0.331	0.332	160
0.0193	0.0194	0.0395	0.0400	0.0673	0.0683	0.105	0.164	0.165	0.261	0.260	0.261	180
0.0189	0.0194	0.0388	0.0398	0.0425	0.0678	0.0688	0.158	0.159	0.258	0.237	0.238	200
0.0189	0.0190	0.0388	0.0390	0.0423	0.0428	0.0665	0.113	0.114	0.158	0.232	0.233	224
0.0178	0.0189	0.0368	0.0390	0.0398	0.0425	0.0431	0.110	0.110	0.156	0.171	0.172	250
0.0178	0.0179	0.0368	0.0370	0.0395	0.0400	0.0621	0.0830	0.0833	0.146	0.168	0.169	280
0.0177	0.0179	0.0365	0.0368	0.0388	0.0398	0.0597	0.0805	0.0808	0.145	0.141	0.141	315
0.0170	0.0177	0.0353	0.0365	0.0375	0.0390	0.0392	0.0801	0.0803	0.112			355
0.0156	0.0170	0.0295	0.0355	0.0313	0.0375	0.0378	0.0626	0.0628	0.111			400
	0.0156		0.0295		0.0313	0.0315						450
												500

TECHNICAL DATA GD² Parallel shaft

Parallel Shaft Double Reduction

GD² at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
6.3	0.0095	0.0203	0.0440		0.0845		0.166		0.434		0.906		1.79	
7.1	0.0086	0.0182	0.0419		0.0753		0.150		0.391		0.830		1.68	
8	0.0074	0.0173	0.0365	0.0541	0.0633	0.1027	0.134	0.199	0.315	0.513	0.666	1.05	1.30	2.01
9	0.0068	0.0159	0.0352	0.0515	0.0577	0.0903	0.124	0.174	0.288	0.444	0.620	0.946	1.24	1.86
10	0.0053	0.0122	0.0287	0.0426	0.0542	0.0743	0.107	0.156	0.248	0.364	0.529	0.751	1.02	1.44
11.2	0.0050	0.0113	0.0279	0.0410	0.0505	0.0668	0.100	0.139	0.230	0.321	0.497	0.690	0.978	1.35
12.5	0.0040	0.0087	0.0185	0.0328	0.0373	0.0616	0.0841	0.120	0.177	0.280	0.359	0.587	0.658	1.12
14	0.0038	0.0082	0.0180	0.0318	0.0351	0.0566	0.0798	0.110	0.166	0.252	0.340	0.545	0.631	1.06
16	0.0031	0.0069	0.0146	0.0209	0.0290	0.0415	0.0594	0.0926	0.125	0.197	0.283	0.394	0.514	0.714
18	0.0029	0.0065	0.0142	0.0203	0.0276	0.0386	0.0569	0.0860	0.119	0.180	0.271	0.369	0.496	0.678
20				0.0161		0.0318		0.0643		0.137		0.305		0.552
22.4				0.0157		0.0299		0.0605		0.126		0.290		0.527

Parallel Shaft Triple Reduction

GD² at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
20	0.0034	0.0084	0.0115		0.0223		0.0539		0.121		0.235		0.483	
22.4	0.0033	0.0082	0.0112		0.0215		0.0522		0.117		0.228		0.472	
25	0.0029	0.0076	0.0099	0.0124	0.0191	0.0240	0.0437	0.0574	0.0996	0.130	0.206	0.249	0.425	0.507
28	0.0029	0.0075	0.0098	0.0122	0.0185	0.0229	0.0427	0.0547	0.0969	0.122	0.201	0.239	0.418	0.492
31.5	0.0019	0.0046	0.0061	0.0105	0.0134	0.0202	0.0305	0.0458	0.0655	0.105	0.127	0.214	0.276	0.441
35.5	0.0019	0.0046	0.0061	0.0104	0.0131	0.0194	0.0297	0.0442	0.0637	0.100	0.124	0.208	0.272	0.431
40	0.0017	0.0043	0.0055	0.0065	0.0121	0.0141	0.0263	0.0319	0.0568	0.0689	0.115	0.132	0.253	0.285
45	0.0017	0.0043	0.0055	0.0064	0.0119	0.0137	0.0259	0.0308	0.0558	0.0659	0.113	0.128	0.250	0.279
50			0.0036	0.0058	0.0076	0.0126	0.0173	0.0272	0.0347	0.0588	0.0700	0.118	0.139	0.259
56			0.0035	0.0057	0.0075	0.0123	0.0170	0.0265	0.0340	0.0571	0.0689	0.116	0.137	0.255
63			0.0033	0.0037	0.0071	0.0079	0.0157	0.0179	0.0315	0.0360	0.0655	0.0721	0.130	0.142
71			0.0033	0.0037	0.0070	0.0077	0.0156	0.0174	0.0311	0.0349	0.0647	0.0706	0.129	0.140
80				0.0034		0.0073		0.0160		0.0322		0.0668		0.133
90				0.0034		0.0072		0.0158		0.0316		0.0659		0.131

Parallel Shaft Quadruple Reduction

GD² at high speed shaft

Nominal reduction ratio	Size of Reducer													
	9015	9025	9030	9035	9040	9045	9050	9055	9060	9065	9070	9075	9080	9085
63														
71														
80			0.0031		0.0080		0.0111		0.0247		0.0496		0.0990	
90			0.0031		0.0080		0.0110		0.0244		0.0491		0.0983	
100			0.0030	0.0032	0.0078	0.0081	0.0105	0.0113	0.0234	0.0252	0.0476	0.0505	0.0953	0.101
112			0.0030	0.0031	0.0078	0.0080	0.0104	0.0111	0.0232	0.0248	0.0473	0.0499	0.0948	0.0996
125			0.0027	0.0030	0.0073	0.0079	0.0095	0.0106	0.0213	0.0237	0.0413	0.0482	0.0829	0.0963
140			0.0027	0.0030	0.0073	0.0078	0.0095	0.0105	0.0212	0.0234	0.0411	0.0478	0.0827	0.0957
160			0.0017	0.0027	0.0044	0.0074	0.0041	0.0096	0.0088	0.0215	0.0197	0.0416	0.0353	0.0835
180			0.0017	0.0027	0.0044	0.0073	0.0041	0.0095	0.0087	0.0213	0.0196	0.0414	0.0351	0.0832
200			0.0016	0.0017	0.0042	0.0044	0.0039	0.0042	0.0085	0.0089	0.0192	0.0199	0.0344	0.0357
224			0.0016	0.0017	0.0042	0.0044	0.0039	0.0041	0.0084	0.0088	0.0191	0.0198	0.0343	0.0355
250				0.0016		0.0042	0.0037	0.0040	0.0080	0.0085	0.0176	0.0193	0.0313	0.0346
280				0.0016		0.0042	0.0037	0.0040	0.0079	0.0085	0.0175	0.0192	0.0312	0.0345
315							0.0037	0.0037	0.0079	0.0080	0.0173	0.0176	0.0309	0.0314
355							0.0035	0.0037	0.0077	0.0080	0.0172	0.0176	0.0302	0.0313
400							0.0032	0.0037	0.0065	0.0079	0.0141	0.0174	0.0274	0.0310
450								0.0036		0.0077		0.0172		0.0303
500								0.0032		0.0066		0.0141		0.0274

Technical

Common

TECHNICAL DATA GD² Parallel shaftUnit: kgf-m²

Size of Reducer											Nominal reduction ratio	
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131		9136
3.46		7.10		13.3								6.3
3.36	3.80	6.86	7.79	12.4	14.8							7.1
2.77	3.67	5.28	7.54	9.91	13.6							8
2.70	2.99	5.12	5.69	9.37	10.8							9
1.96	2.90	4.06	5.54	7.62	10.1							10
1.92	2.09	3.96	4.34	7.25	8.21							11.2
1.29	2.04	2.63	4.24	5.16	7.74							12.5
1.27	1.38	2.56	2.80	4.93	5.52							14
1.01	1.35	2.04	2.73	4.02	5.23							16
0.998	1.07	2.00	2.15	3.87	4.25							18
	1.05		2.11		4.06							20
												22.4

Unit: kgf-m²

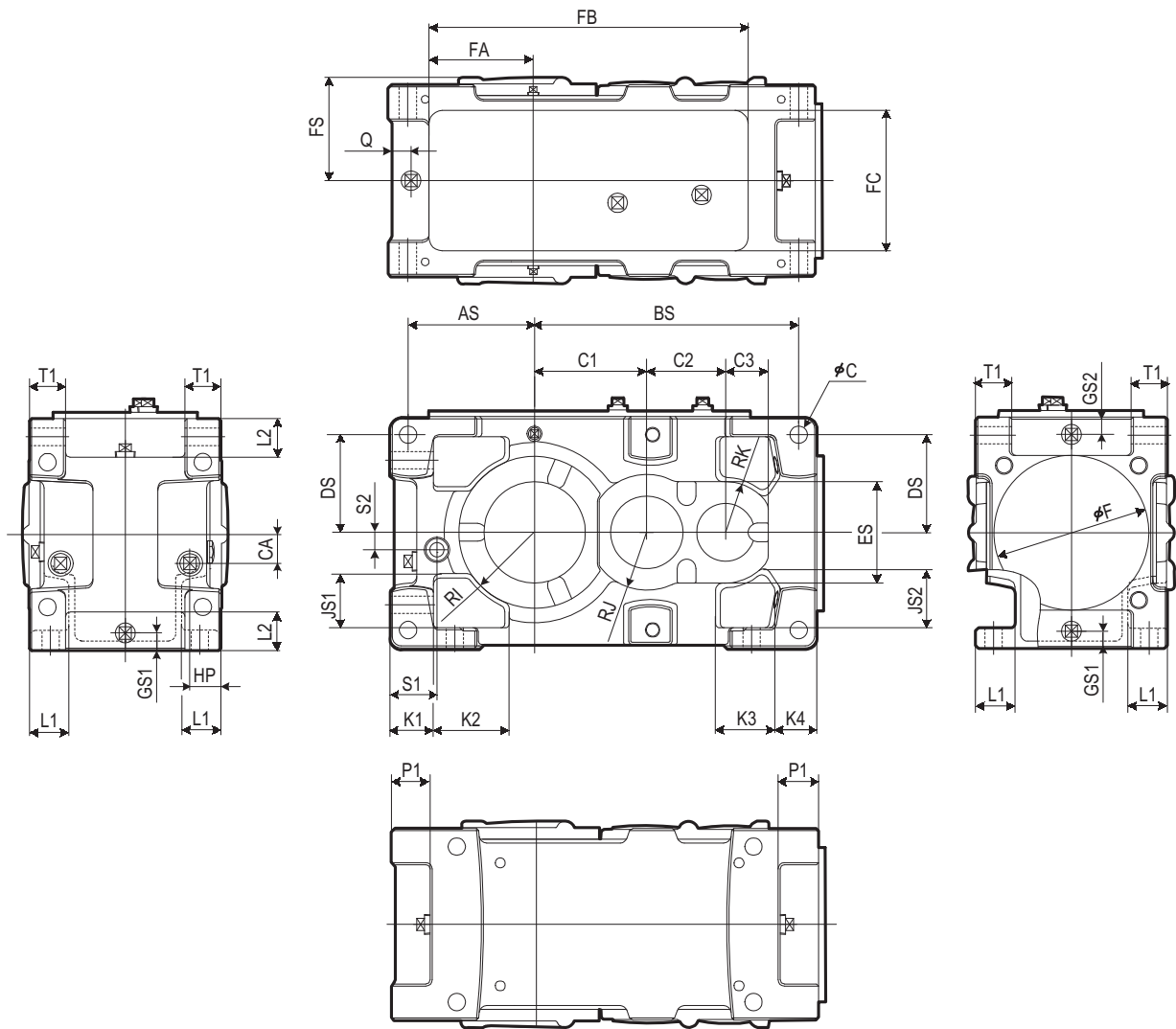
Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
0.957		2.03		2.88								20
0.946	0.991	2.00	2.09	2.79	3.02					18.3	18.7	22.4
0.846	0.978	1.80	2.07	2.44	2.91	3.15				16.7	17.0	25
0.839	0.868	1.78	1.84	2.38	2.53		4.80	4.92	9.35	13.4	13.6	28
0.557	0.859	1.20	1.83	1.59	2.46	2.62	4.58	4.69	8.96	12.5	12.7	31.5
0.553	0.571	1.19	1.23	1.55	1.65	2.27	3.77	3.85	6.86	9.26	9.40	35.5
0.510	0.566	1.10	1.22	1.40	1.60	1.70	3.62	3.69	6.62	8.63	8.73	40
0.508	0.520	1.10	1.12	1.38	1.44	1.67	2.52	2.57	4.57	6.93	7.01	45
0.278	0.516	0.551	1.11	0.711	1.41	1.48	2.43	2.48	4.41	6.54	6.60	50
0.277	0.284	0.547	0.562	0.696	0.735	1.33	1.95	1.98	3.24	5.37	5.42	56
0.261	0.282	0.512	0.558	0.636	0.716	0.863	1.89	1.92	3.14	5.11	5.15	63
0.260	0.264	0.509	0.519	0.626	0.651	0.776	1.47	1.49	2.51	4.08	4.11	71
0.252	0.263	0.489	0.517	0.578	0.639	0.666	1.43	1.45	2.44			80
	0.255		0.495		0.587	0.607	1.24	1.25	1.96			90

Unit: kgf-m²

Size of Reducer												Nominal reduction ratio
9090	9095	9100	9105	9110	9115	9118	9121	9126	9128	9131	9136	
												63
												71
										2.85	2.88	80
0.270	0.432		0.493						2.45	2.47	90	
0.263	0.272	0.419	0.436	0.471	0.501	0.589	1.00	1.01	2.07	2.35	2.37	100
0.263	0.265	0.418	0.422	0.467	0.477	0.552	0.884	0.892	1.79	2.10	2.11	112
0.245	0.264	0.385	0.421	0.425	0.472	0.482	0.871	0.878	1.77	1.88	1.88	125
0.245	0.246	0.385	0.387	0.423	0.429	0.460	0.795	0.800	1.16	1.47	1.48	140
0.0771	0.246	0.159	0.386	0.271	0.426	0.433	0.758	0.762	1.15	1.32	1.33	160
0.0770	0.0777	0.158	0.160	0.269	0.273	0.418	0.657	0.661	1.04	1.04	1.04	180
0.0755	0.0775	0.155	0.159	0.170	0.271	0.275	0.632	0.634	1.03	0.948	0.952	200
0.0754	0.0758	0.155	0.156	0.169	0.171	0.266	0.454	0.455	0.631	0.930	0.933	224
0.0713	0.0757	0.147	0.156	0.159	0.170	0.173	0.438	0.440	0.625	0.685	0.688	250
0.0712	0.0715	0.147	0.148	0.158	0.160	0.249	0.332	0.333	0.583	0.673	0.675	280
0.0707	0.0714	0.146	0.147	0.155	0.159	0.239	0.322	0.323	0.579	0.562	0.564	315
0.0680	0.0709	0.141	0.146	0.150	0.156	0.157	0.320	0.321	0.448			355
0.0622	0.0681	0.118	0.142	0.125	0.150	0.151	0.251	0.251	0.445			400
	0.0623		0.118		0.125	0.126						450
												500

TECHNICAL DATA Supplementary Dimension Drawing

9015 ▶ 9055 / Right Angle Double, Triple / Parallel double
/ Horizontal, Vertical, Upright



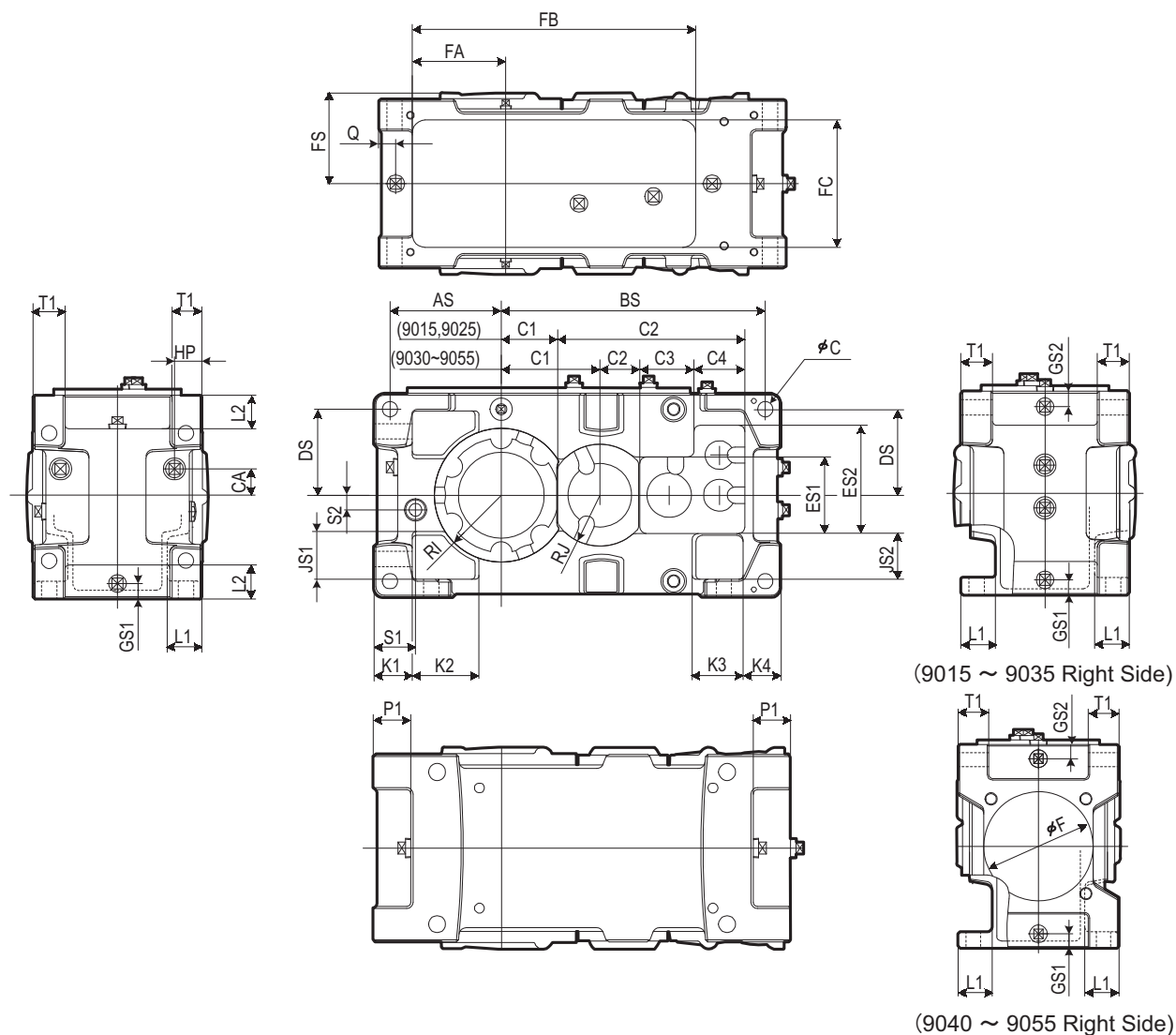
Technical
Common

Size	FS	FA	FB	FC	AS	BS	C	CA	HP	DS	GS1	GS2	JS1	JS2	K1	K2	K3	K4
9015	118	110	325	175	140	260	15	25	38	115	23	23	60	58	50	75	85	50
9025	130	125	385	190	155	310	19	30	41	135	24	24	70	65	55	90	110	55
9030	143	147	445	200	175	365	24	40	43	135	24	24	75	81	60	105	80	60
9035	143	166	495	200	194	396	24	40	43	160	24	24	90	106	60	105	80	60
9040	165	168	510	240	205	420	28	48	55	170	28	28	95	107	75	125	100	75
9045	165	189	570	240	226	459	28	48	55	190	28	28	115	127	75	125	100	75
9050	185	188	590	250	225	490	28	55	50	180	29	29	95	103	75	135	100	75
9055	185	219	660	250	256	529	28	55	50	215	29	29	120	138	75	135	100	75

Size	L1	L2	P1	Q	T1	S1	S2	RI	RJ	RK	F	C1	C2	C3	ES
9015	38	47	50	25	35	53	23	80	65		175	115	79	55	110
9025	45	50	50	26	40	58	26	87.5	75		200	135	92	60	130
9030	54	53	53	27	50	65	24	105	80	70	214	155	109	59	140
9035	54	60	53	27	50	65	24	120	80	70	214	186	109	59	140
9040	66	67	67	30	60	70	28	120	90	72.5	250	180	126	72.5	145
9045	66	87	67	30	60	70	28	140	90	72.5	250	219	126	72.5	145
9050	68	67	67	31	60	78	32	140	105		280	210	148	59	150
9055	68	80	67	31	60	78	32	155	105		280	249	148	59	150

TECHNICAL DATA Supplementary Dimension Drawing

9015 ▶ 9055 / Right Angle Quadruple / Parallel Triple, Quadruple
/ Horizontal, Vertical, Upright

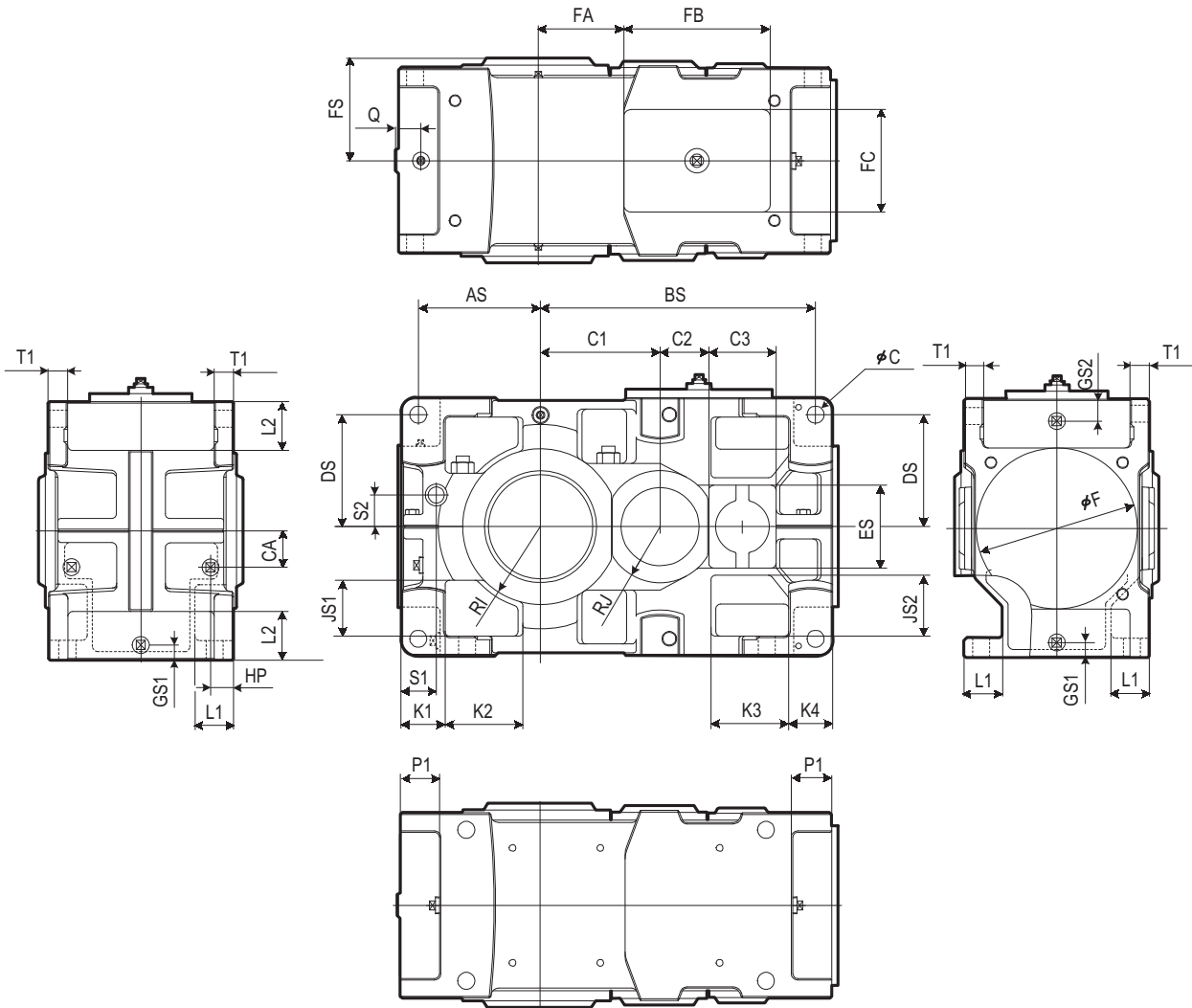


Size	FS	FA	FB	FC	AS	BS	C	CA	HP	DS	GS1	GS2	JS1	JS2	K1	K2	K3	K4
9015	118	110	325	175	140	305	15	25	38	115	23	23	60	58	50	75	65	50
9025	130	125	385	190	155	375	19	23	41	135	24	24	70	65	55	90	85	55
9030	143	147	445	200	175	415	24	44	43	135	24	24	75	72	60	105	80	60
9035	143	166	495	200	194	446	24	44	43	160	24	24	90	97	60	105	80	60
9040	165	168	510	240	205	494	28	56	55	170	28	28	95	100	75	125	100	75
9045	165	189	570	240	226	533	28	56	55	190	28	28	115	120	75	125	100	75
9050	185	188	590	250	225	563	28	56	50	180	29	29	95	103	75	135	100	75
9055	185	219	660	250	256	602	28	56	50	215	29	29	120	138	75	135	100	75

Size	L1	L2	P1	Q	T1	S1	S2	RI	RJ	F	C1	C2	C3	C4	ES1	ES2
9015	38	47	50	25	35	53	19	80			70	20			110	
9025	45	50	50	26	40	58	23	87.5			82.5	281			130	
9030	54	53	53	27	50	65	23	105	80		155	63	85	80	120	170
9035	54	60	53	27	50	65	23	120	80		186	63	85	80	120	170
9040	66	67	67	30	60	70	24	120	90	214	180	74	99	90	140	200
9045	66	87	67	30	60	70	24	140	90	170	219	74	99	90	140	200
9050	68	67	67	31	60	78	24	140	105	214	210	89	118	96	150	202
9055	68	80	67	31	60	78	24	155	105	214	249	89	118	96	150	202

TECHNICAL DATA Supplementary Dimension Drawing

9060 ▶ 9085 / Right Angle Double, Triple / Parallel Double
/ Horizontal, Vertical, Upright



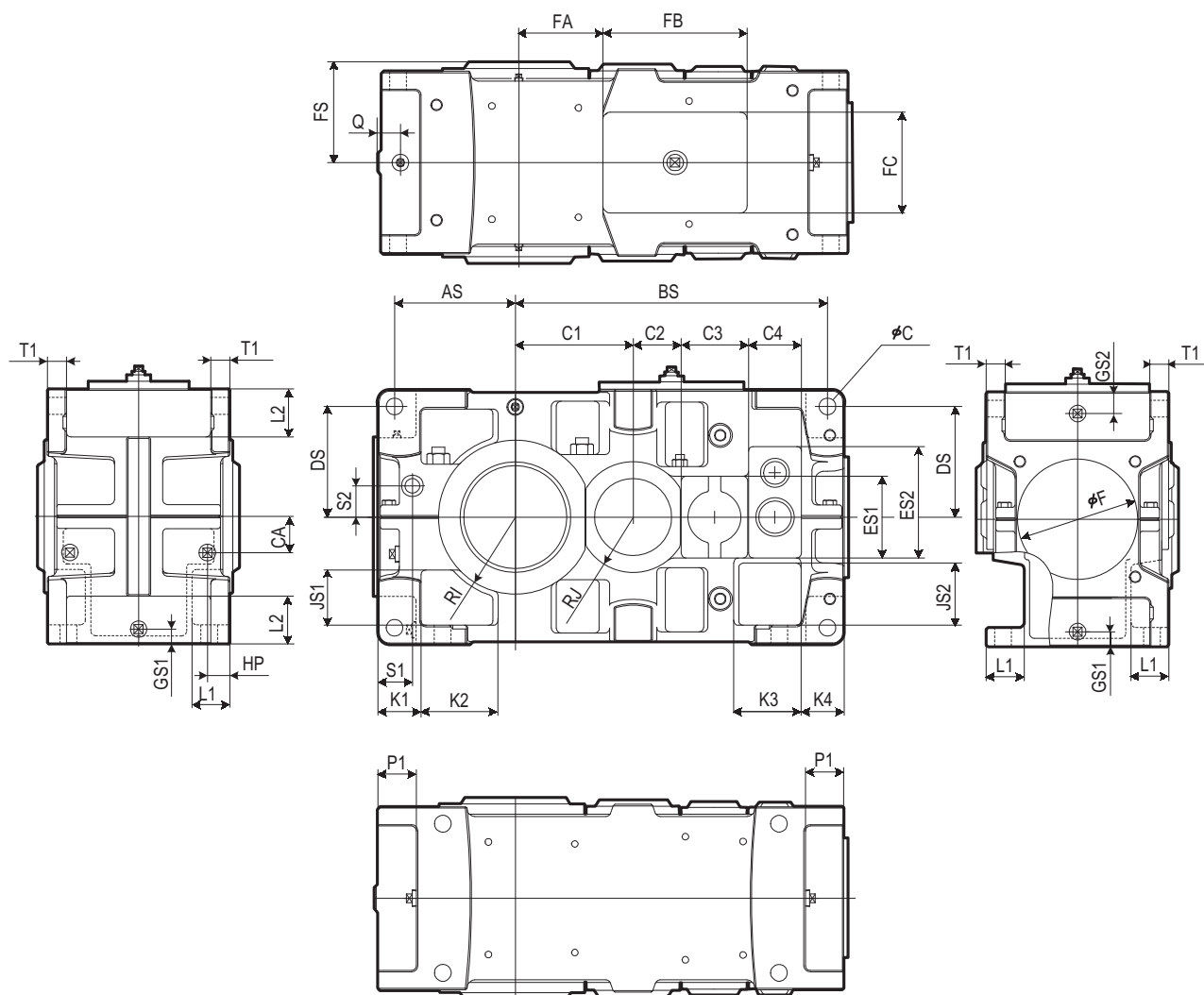
Size	FS	FA	FB	FC	AS	BS	C	CA	HP	DS	GS1	GS2	JS1	JS2	K1	K2	K3	K4
9060	210	175	300	210	251	564	35	75	47	230	31	45	105	120	90	160	160	90
9065	210	221	300	210	290	610	35	75	47	265	31	45	140	155	90	160	160	90
9070	235	185	370	270	283	657	42	85	47	260	33	45	125	135	105	190	190	105
9075	235	238	370	270	330	710	42	85	47	295	33	45	148	158	105	190	190	105
9080	255	275	370	270	325	750	42	100	47	295	34	45	138	148	105	190	190	105
9085	265	331	370	270	369	806	42	100	47	335	34	45	168	188	105	190	190	105

Size	L1	L2	P1	Q	T1	S1	S2	RI	RJ	F	C1	C2	C3	ES
9060	79	100	80	40	35	72	65	160	115	330	245	100	138	170
9065	79	135	80	40	35	72	65	175	115	330	291	100	138	170
9070	94	110	95	40	40	72	75	175	138	380	285	94.5	203	200
9075	94	145	95	40	52	72	75	190	138	380	338	94.5	203	200
9080	96	120	95	45	52	82	85	190	160	420	330	132	188	220
9085	96	160	95	45	52	82	85	215	160	420	386	132	188	220

Technical
Common

TECHNICAL DATA Supplementary Dimension Drawing

9060 ▶ 9085 / Right Angle Quadruple / Parallel Triple, Quadruple
/ Horizontal, Vertical, Upright

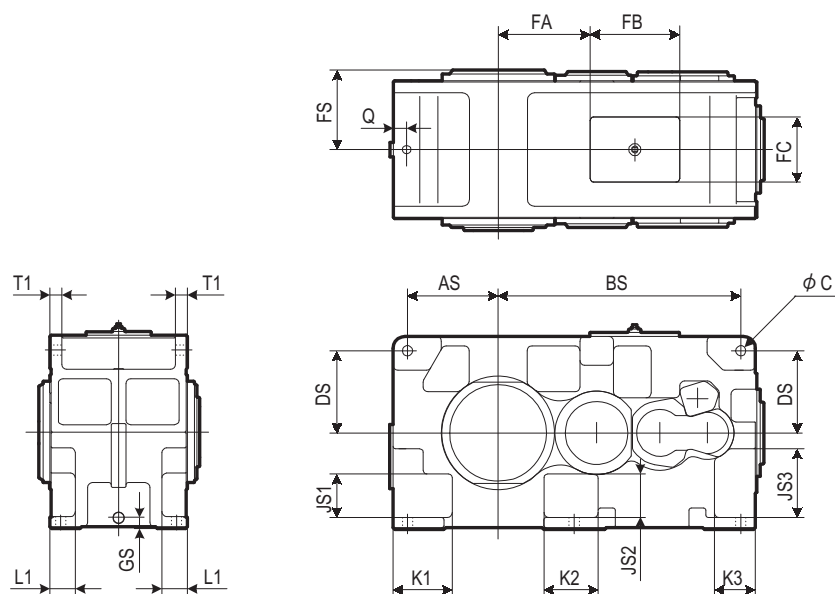


Size	FS	FA	FB	FC	AS	BS	C	CA	HP	DS	GS1	GS2	JS1	JS2	K1	K2	K3	K4
9060	210	175	300	210	251	649	35	75	47	230	31	45	105	145	90	160	140	90
9065	210	221	300	210	290	695	35	75	47	265	31	45	140	180	90	160	140	90
9070	235	185	370	270	283	752	42	85	47	260	33	45	125	165	105	190	165	105
9075	235	238	370	270	330	805	42	85	47	295	33	45	148	188	105	190	165	105
9080	255	275	370	270	325	870	42	100	47	295	34	45	138	173	105	190	190	105
9085	265	331	370	270	369	926	42	100	47	335	34	45	168	213	105	190	190	105

Size	L1	L2	P1	Q	T1	S1	S2	RI	RJ	F	C1	C2	C3	C4	ES1	ES2
9060	79	100	80	40	35	72	65	160	115	250	245	100	138	110	170	232
9065	79	135	80	40	35	72	65	175	115	250	291	100	138	110	170	232
9070	94	110	95	40	40	72	75	175	138	280	285	94.5	203	120	200	267
9075	94	145	95	40	52	72	75	190	138	280	338	94.5	203	120	200	267
9080	96	120	95	45	52	82	85	190	160	330	330	132	188	146	220	305
9085	96	160	95	45	52	82	85	215	160	330	386	132	188	146	220	305

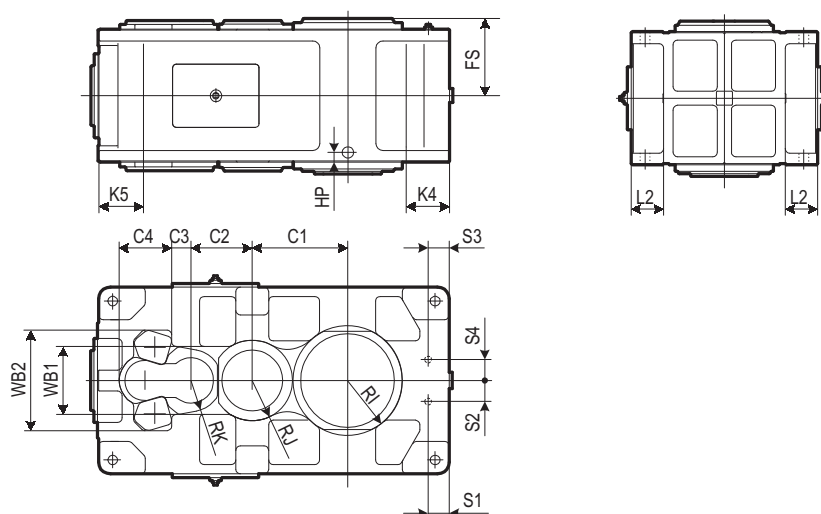
TECHNICAL DATA Supplementary Dimension Drawing

9090 ► 9115/ Parallel Double, Triple, Quadruple / Horizontal
/ Right Angle Double, Triple, Quadruple / Horizontal



Size	FS	FA	FB	FC	AS	BS	C	DS	GS	JS1	JS2	JS3	K1	K2	K3	L1	Q	T1
9090	330	350	370	270	345	975	42	315	45	155	152	260	230	240	170	96	45	50
9095	330	380	370	270	375	1005	42	340	45	180	177	285	245	225	170	106	45	50
9100	375	435	370	270	375	1095	48	355	46	185	170	305	265	290	190	110	45	55
9105	375	470	370	270	410	1130	48	380	46	210	195	330	270	260	190	120	45	55
9110	407	525	370	270	420	1240	56	400	48	230	202	350	285	325	310	119	45	60
9115	407	575	370	270	470	1290	56	425	48	255	227	375	315	305	310	129	45	60

9090 ► 9115/ Parallel Double, Triple, Quadruple / Vertical
/ Right Angle Double, Triple, Quadruple/Vertical



Size	FS	HP	K4	K5	L2	RI	RJ	RK	S1	S2	S3	S4	C1	C2	C3	C4	WB1	WB2
9090	330	42	170	190	130	215	173	133	90	130	90	90	378	262	82	225	290	430
9095	330	42	185	215	140	235	173	133	80	140	90	90	408	262	82	225	290	430
9100	375	43	190	220	150	235	200	145	85	145	90	100	425	299	91	260	370	500
9105	375	43	215	240	160	260	200	145	80	155	90	100	459	299	91	260	370	500
9110	407	44	210	240	170	265	213	160	90	150	105	100	483	341	90	261	370	500
9115	407	44	235	270	180	280	213	160	85	150	105	100	532	341	90	261	370	500

Technical

Common

TECHNICAL DATA Supplementary Matters to Hollow Shaft

Feature and Benefits

PARAMAX DRIVE units have a number of outstanding features compared to conventional solid shaft speed reducers.

1. There is no necessity for a large sized coupling, permitting substantial cost reduction.
2. It can be directly mounted onto the driven shaft, eliminating the necessity for foundation working for speed reducer installation and alignment operation.
3. Any unit is designed for compactness and ease of operation.

How to Install Unit

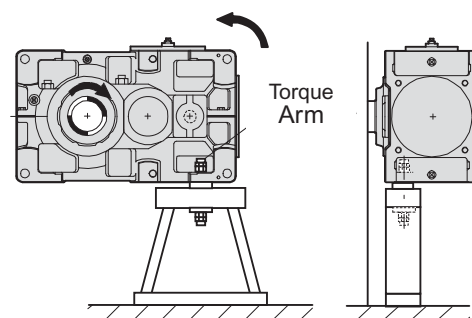
a. Torque Arm (Option)

The hollow shaft type PARAMAX DRIVE is secured with the torque arm to prevent it from being turned by the counter force.

A torque arm is subjected to a compression or tensile load depending upon the direction of rotation of the slow speed shaft, and it must have a sufficient strength against shock loading at the start and during operation. Being prepared as a optional accessory, the torque arm is designed in consideration of such loading conditions.

Please order us, if it is necessary.

The construction and strength of the torque arm mounting legs must be determined in consideration of impact load.



(DRG D1701)

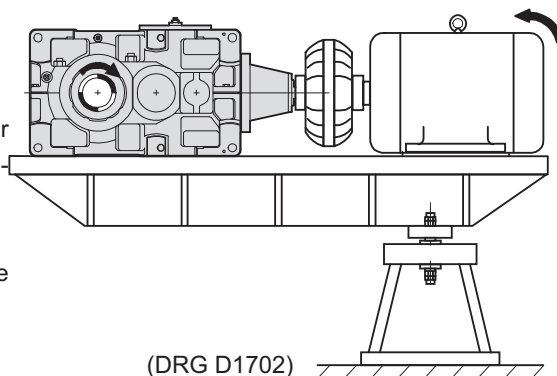
b. How to Use Torque Arm

- (1) When the torque arm is used with the speed reducer housing

The torque arm must be mounted in an installation hole closer to the application machine. (For torque arm mounting dimensions, refer to the dimension drawing.)

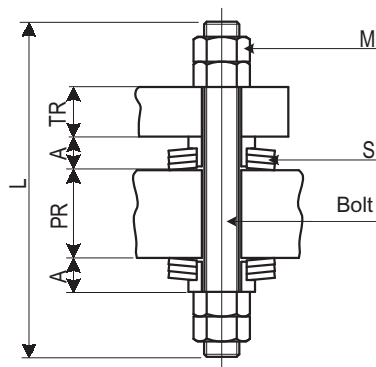
- (2) When the torque arm is used with the common base plate

The torque arm must be mounted in a position as far from the low speed shaft as possible.



(DRG D1702)

Torque Arm Dimensions



(DRG D1703)

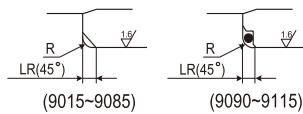
Use bolt and nut classified as JIS strength class 8.8

Size	A	L	M (nut)	PR max	TR	S (belleville spring)	
						DIN2093(nom.)	Qty
9015	13.1	140	M12	35	22	A50	2X2
9025	16.1	170	M16	40	25	A50	2X3
9030	18.9	200	M20	50	28	A63	2X3
9035	18.9	200	M20	50	28	A63	2X3
9040	21.7	240	M24	60	30	A80	2X2
9045	21.7	240	M24	60	30	A80	2X2
9050	21.7	240	M24	60	32	A80	2X2
9055	21.7	240	M24	60	32	A80	2X2
9060	32.2	310	M30	85	35	A100	2X3
9065	32.2	310	M30	85	35	A100	2X3
9070	38.2	370	M36	95	40	A100	2X4
9075	38.2	370	M36	95	52	A100	2X4
9080	38.2	370	M36	95	52	A100	2X4
9085	38.2	370	M36	95	52	A100	2X4
9090	38.6	370	M36	95	50	A125	2X3
9095	38.6	370	M36	95	50	A125	2X3
9100	47.6	420	M42	100	55	A125	2X4
9105	47.6	420	M42	100	55	A125	2X4
9110	48.5	460	M48	110	60	A160	2X3
9115	48.5	460	M48	110	60	A160	2X3

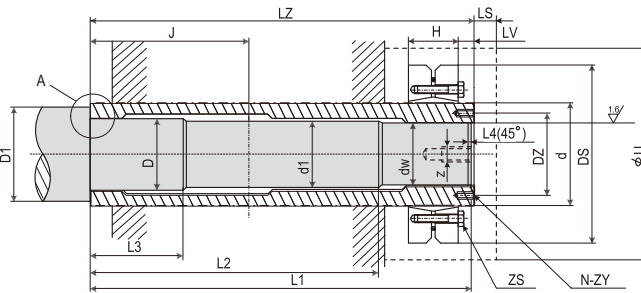
TECHNICAL DATA Hollow Shaft Related Dimensions

1. Hollow Shaft Dimensions

Shrink Disk Coupling



Detail A
(DRG D1801)



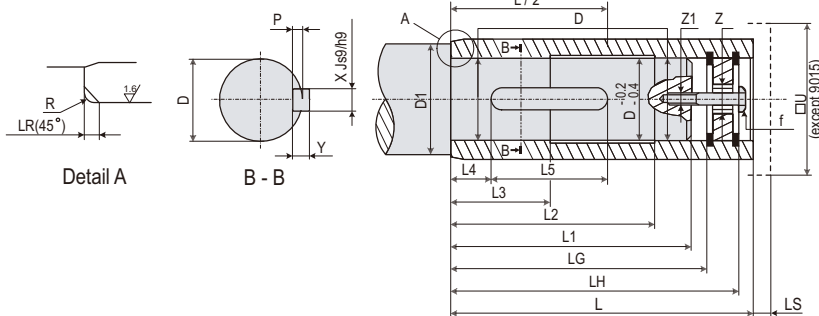
Unit: mm

Size	Shrink Disk						Hollow Shaft								Driven Shaft											
	MODEL (note 1)	d	Ds	H	ZS	TA N · m	J	LZ	LR	LV	N-ZY	DZ	LS	U	dw	d1	D h7	D1 min	L1	L2	L3	L4	R	Z (Deep)		
9015	TAS3091.4-080	80	145	38	M8	35	135	328	3	14	4-M6	70	15	161	60h6	61	63	78	325	240	80	3	2.5	M20 (30)		
9025	TAS3081. -090	90	155	39	M8	35	145	358	3	14	4-M6	80	17	176	70h6	71	73	88	355	270	80	3	2.5	M20 (30)		
9030	TAS3091.1-100	100	170	54	M10	59	160	393	3	14	4-M6	90	20	209	80h6	81	83	98	390	295	90	3	2.5	M20 (30)		
9035	TAS3093. -110	110	185	60	M10	70	160	403	3	14	4-M6	97	20	244	85h6	86	88	103	390	295	90	3	2.5	M24 (35)		
9040	TAS3081. -125	125	215	54	M10	70	180	448	3	20	4-M8	110	17	244	95h6	96	98	113	445	335	110	3	2.5	M24 (35)		
9045	TAS3093. -140	140	230	74	M12	120	180	463	3	20	4-M10	124	17	277	105h6	106	108	123	460	355	110	3	2.5	M24 (35)		
9050	TAS3093. -140	140	230	74	M12	120	200	503	3	22	4-M10	124	17	277	105h6	106	108	123	500	380	110	3	2.5	M24 (35)		
9055	TAS3091. -165	165	290	88	M16	250	205	528	3	27	4-M12	146	17	314	120h6	121	123	138	525	385	120	3	2.5	M24 (35)		
9060	TAS3091. -165	165	290	88	M16	250	230	583	4.5	27	4-M12	146	12	322	125h6	126	128	143	580	435	130	3	3	M24 (35)		
9065	TAS3091. -175	175	300	88	M16	250	235	594	4.5	26	4-M12	157.5	21	349	140h6	141	143	158	589	450	130	5	3	M30 (45)		
9070	TAS3081. -185	185	330	86	M16	290	260	644	4.5	26	4-M12	167	21	349	145h6	146	148	163	640	475	160	5	3	M30 (45)		
9075	TAS3081. -200	200	350	86	M16	290	265	651	4.5	26	4-M12	177	21	379	155h6	156	158	173	646	475	160	5	3	M30 (45)		
9080	TAS3081. -220	220	370	104	M16	290	285	714	4.5	26	4-M12	195	21	401	170g6	171	173	188	709	520	190	5	3	M30 (45)		
9085	TAS3081. -240	240	405	109	M20	570	285	714	4.5	27	4-M12	210	21	456	180g6	181	183	198	709	520	190	5	3	M30 (45)		
9090	TAS3081. -240	240	405	109	M20	570	350	844	6	27	6-M12	215	21	451	190g6	191	193	212	840	635	200	5	4.5	M36 (55)		
9095	TAS3081.1-260	260	440	120	M20	535	350	859	6	27	6-M12	230	14	450	200g6	201	203	222	855	640	205	5	4.5	M36 (55)		
9100	TAS3081.1-260	260	440	120	M20	535	390	934	6	27	6-M12	235	21	491	210g6	211	213	234	930	705	215	5	4.5	M36 (55)		
9105	TAS3081.1-280	280	460	134	M20	535	390	949	6	27	6-M12	250	19	480	220g6	221	223	244	945	715	225	5	4.5	M36 (55)		
9110	TAS3081.1-300	300	485	142	M20	535	420	1030	6	32	6-M16	270	15	551	240g6	241	243	263	1025	770	245	5	4.5	M36 (55)		
9115	TAS3091. -320	320	520	184	M20	490	420	1065	6	32	6-M16	285	15	550	250g6	251	253	273	1060	785	245	5	4.5	M36 (55)		

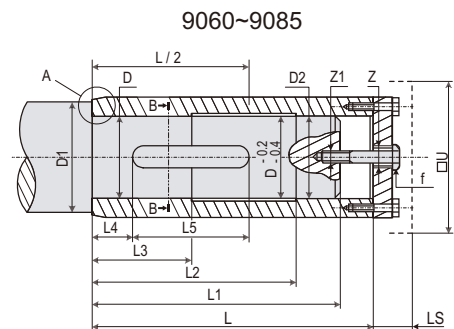
Note: 1 Shrink disk (made by SCHÄFER) type No.

2 For vertical types, thrust washer is necessary to prevent the reducer move when loosening the locking bolt ZS.

Key Coupling



(DRG D1802)



Unit: mm

Size	Hollow Shaft								Driven Shaft													Locking Screw Thread Size X Body Length DRG D1802(f)	Locking Distance Ring O.D. X W DRG D1906,1910(h)
	L	LG	LH	LR	Z	LS	U	Safety Cover	D j6	D1 min	D2 j6	L1	L2	L3	L4	L5 min	X	Y	P	R	Z1 (Deep)		
9015	270	240	258	3	M24	7.5	φ161		55	70		235	200	70	30	115	16	10	6	2.5	M20(30)	M20X50	φ 55X5
9025	300	265	286	3	M24	10	190		65	80		260	220	80	35	125	18	11	7	2.5	M20(30)	M20X50	φ 65X5
9030	330	290	314	3	M24	9.5	230		75	90		285	240	90	35	145	22	14	9	2.5	M20(30)	M20X55	φ 75X5
9035	330	290	315	3	M24	10	260		85	100		285	240	90	35	160	22	14	9	2.5	M20(30)	M20X55	φ 85X5
9040	360	314	340	3	M30	10	260		90	105		310	260	100	40	180	25	14	9	2.5	M24(35)	M24X60	φ 90X4
9045	370	316	348	3	M30	10	300		105	120		310	260	100	40	180	28	16	10	2.5	M24(35)	M24X65	φ 105X6
9050	410	356	388	3	M30	10	300		105	120		350	300	110	45	220	28	16	10	2.5	M24(35)	M24X65	φ 105X6
9055	410	356	388	3	M30	10	330		115	130		350	300	110	45	220	32	18	11	2.5	M24(35)	M24X65	φ 115X6
9060	470			4.5	M30	47	340		125	140	123	445	395	90	5	260	32	18	11	3	M24(35)	M24X80	φ 125X25
9065	480			4.5	M36	54	350		145	160	143	455	405	100	5	265	36	20	12	3	M30(45)	M30X100	φ 145X30
9070	530			4.5	M36	54	370		145	160	143	500	445	120	5	310	36	20	12	3	M30(45)	M30X100	φ 145X30
9075	530			4.5	M36	54	400		150	165	148	500	445	120	5	365	40	22	13	3	M30(45)	M30X100	φ 150X30
9080	570			4.5	M36	54	400		165	180	163	540	480	125	5	370	40	22	13	3	M30(45)	M30X100	φ 165X30
9085	570			4.5	M36	54	450		175	190	173	540	480	125	5	385	45	25	15	3	M30(45)	M30X100	φ 175X30

Note: 1 The key and keyway conform to JIS B 1301-1996(ISO) "Sunk keys and keyways" parallel keys (regular class)

2 The locking screw and distance ring will not be supplied. Please prepare, if they are necessary.

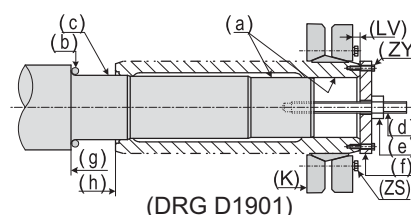
3 Dimension from center of housing to shaft end is L/2.

TECHNICAL DATA Hollow Shaft Related Dimensions

2. Shrink Disk Coupling / Mounting & Removal Procedure

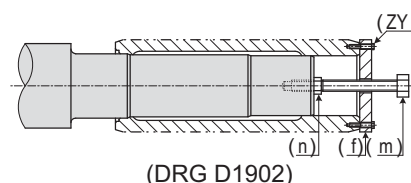
Mounting Procedure (DRG D1901)

- (1) Clean and degrease contact surface (a) and (c).
- (2) Smear surface (c) with "Molykote 321" or its equivalent.
However, keep surface (a) as clean as possible (no grease).
- (3) Slide O-ring (b) onto the shaft. (Size 9090 to 9115)
- (4) Mount the reducer on the driven shaft and screw nuts (e) until faces (g) and (h) make contact.
- (5) Set the shrink disk (k) at dimensions (LV). Tighten locking bolt (ZS) at specified torque (TA) (using a torque wrench).



Removal Procedure (DRG D1902)

- (1) Loosen locking bolt (ZS) and remove shrink disk (k).
 - (2) Set thrust washer (f) and hexagon head bolt (n).
Remove the reducer from the driven shaft using bolt (m).
- Note: Parts (d), (e), (f), (ZY), (m) and (n) are optional.
Order these as required.

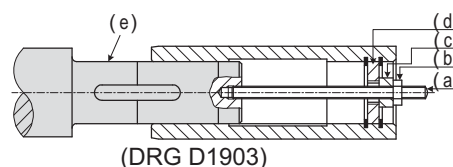


3. Key Coupling / Mounting & Removal Procedure

Size 9015 to 9055

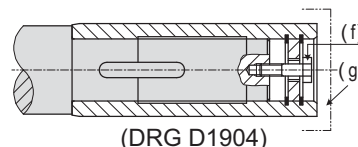
Mounting Procedure (DRG D1903)

- The Hollow shaft bore is provided with retaining ring (d).
Ring (d) is the essential component for mounting, securing, and removing the unit.
- (1) Smear surface of the shaft (e) with "molykote 321" or its equivalent.
 - (2) Turn nut (b) and slide the reducer over the driven shaft.
Use plain washer (c), if they are necessary.



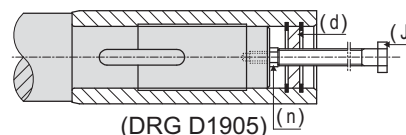
Securing (DRG D1904)

- (1) After mounting the reducer on the driven shaft, fix bolt (f). (Bolt (f) is not supplied with the unit.)
- (2) The bore should be protected by cover (g).



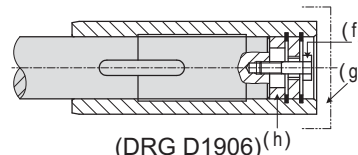
Removal Procedure (DRG D1905)

- (1) Remove ring (d), mount bolt (n), and reset ring (d).
Attach bolt (J) to ring (d), and turn bolt (J) to disconnect the hollow shaft from the driven shaft.
Screw size, refer to the lower table (Z) of the page D-18.



Special Cases (DRG D1906)

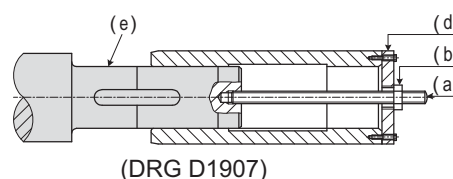
- (1) If the driven shaft has no shoulder (DRG D1906) when mounting, provide a distance ring (h) for fixing in place. (Ring (h) is not supplied with the unit).



Size 9060 to 9085

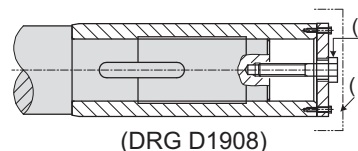
Mounting Procedure (DRG D1907)

- The Hollow shaft end is provided with thrust washer (d).
Thrust washer (d) is the essential component for mounting, securing, and removing the unit.
- (1) Smear surface of the shaft (e) with "molykote 321" or its equivalent.
 - (2) Turn nut (b) and slide the reducer over the driven shaft.



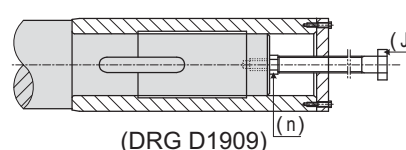
Securing (DRG D1908)

- (1) After mounting the reducer on the driven shaft, fix bolt (f). Bolt (f) is not supplied with the unit.)
- (2) The bore should be protected by cover (g)



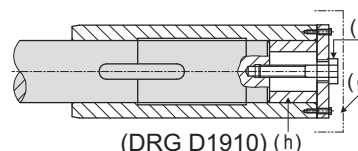
Removal Procedure (DRG D1909)

- (1) Remove thrust washer (d), mount bolt (n), and reset thrust washer (d).
Attach bolt (J) to thrust washer (d), and turn bolt (J) to disconnect the hollow shaft from the driven shaft.
Screw size, refer to the lower table (Z) of the page D-18.



Special Cased (DRG D1910)

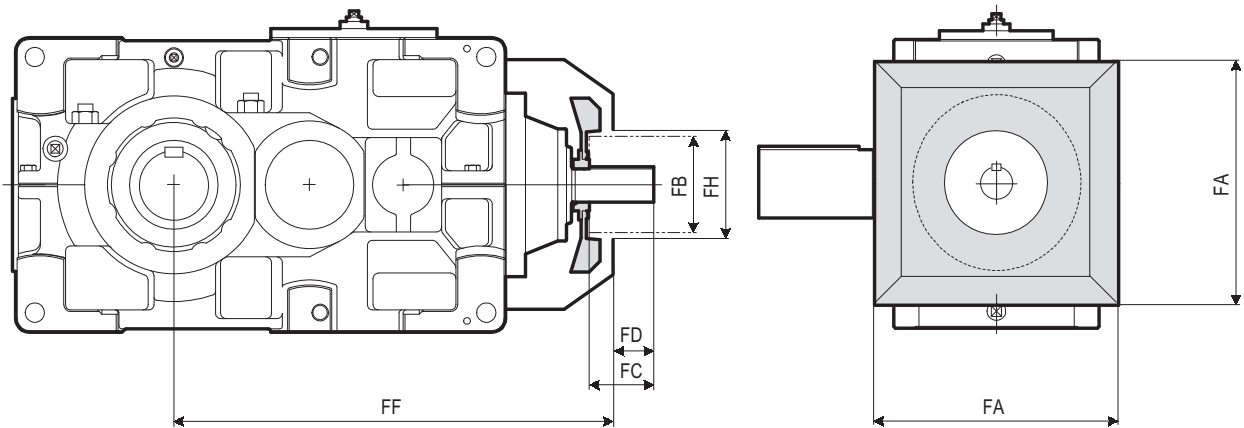
- (1) If the driven shaft has no shoulder (DRG D1906) when mounting, provide a distance ring (h) for fixing in place. (Ring (h) is not supplied with the unit.)
Distance ring dimension, refer to the lower table of the page D-18.



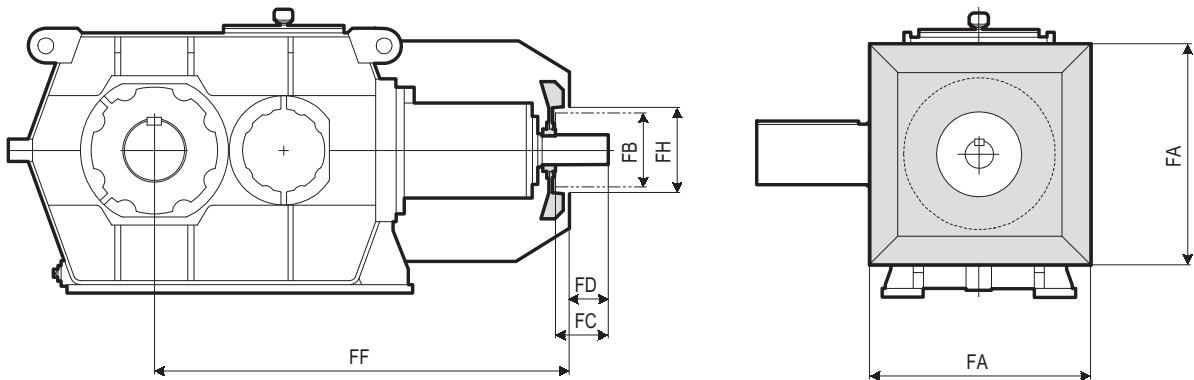
Note : Parts (a),(b),(c),(n) and (J) are optional. Order these as required.

TECHNICAL DATA Cooling Fan Dimension

9015 ▶ 9085 Right Angle Double Reduction



9090 ▶ 9115 Right Angle Double Reduction



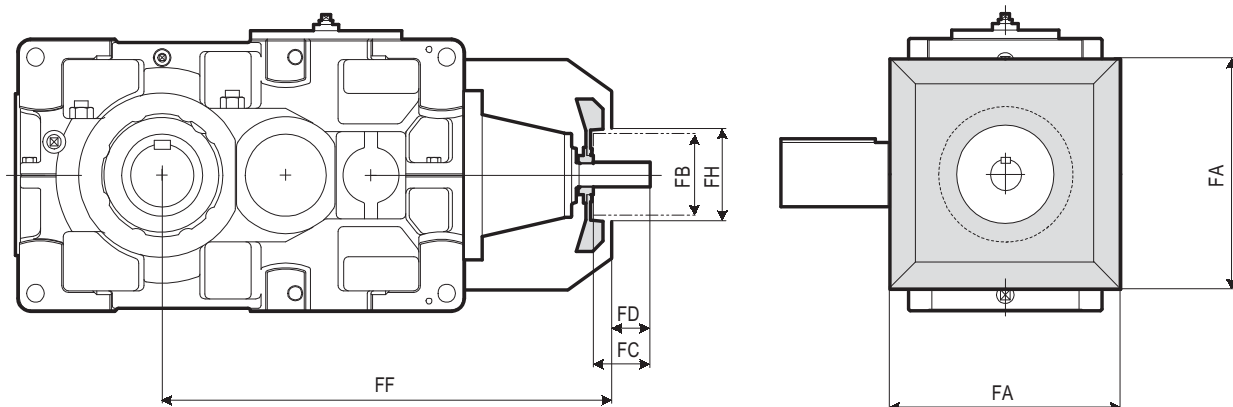
Size	FA	FB	FC	FD	FF	FH
9015	250	125	50	30	477	145
9025	270	140	50	30	515	160
9030	300	140	80	52	593	160
9035	300	140	80	52	624	160
9040	340	160	80	52	653	180
9045	340	160	80	52	692	180
9050	380	160	80	52	703	180
9055	380	160	80	52	742	180
9060	440	160	105	65	800	180
9065	440	160	105	65	846	180
9070	490	200	105	65	900	220
9075	490	200	105	65	953	220
9080	540	225	105	60	1020	245
9085	540	225	105	60	1076	245

Size	FA	FB	FC	FD	FF	FH
9095	680	250	135	90	1303	270
9105	760	250	175	130	1459	270
9115	820	250	175	130	1672	270

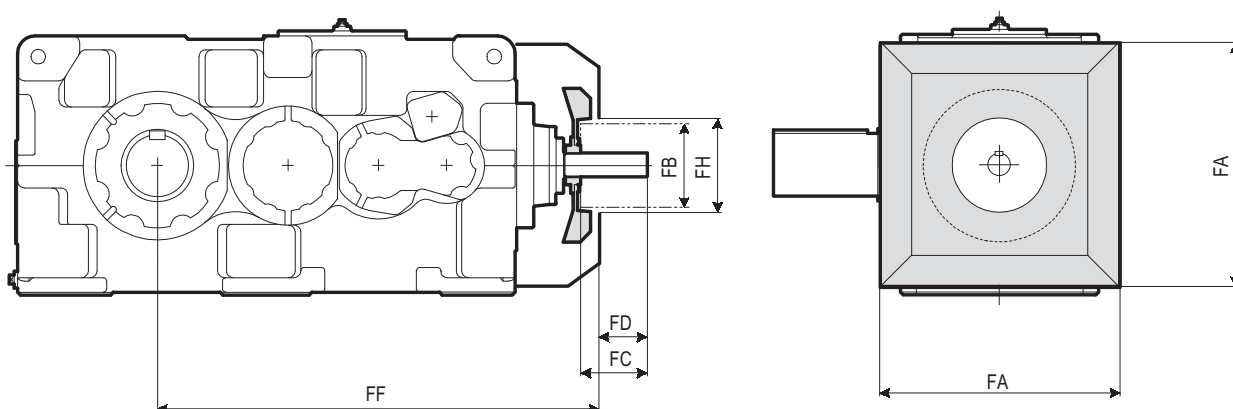
- Sufficient space must be allowed for air intake when mounting the safety guards for the coupling or other component.
- The split fan hood is prepared as a optional accessory for conducting maintenance work on a large coupling. 【Refer to the "PARAMAX 9000 Series Option Catalog No.G2052E".】

TECHNICAL DATA Cooling Fan Dimension

9015 ▶ 9085 Right Angle Triple Reduction



9090 ▶ 9115 Right Angle Triple Reduction



Size	FA	FB	FC	FD	FF	FH
9030	300	125	50	30	626	145
9035	300	125	50	30	657	145
9040	340	125	50	30	686	145
9045	340	125	50	30	725	145
9050	380	140	50	22	786	160
9055	380	140	50	22	825	160
9060	440	160	80	52	887	180
9065	440	160	80	52	933	180
9070	490	160	80	52	975	180
9075	490	160	80	52	1028	180
9080	540	160	105	65	1111	180
9085	540	160	105	65	1167	180

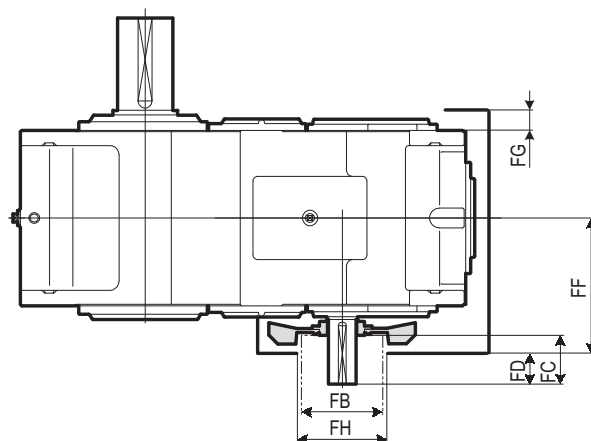
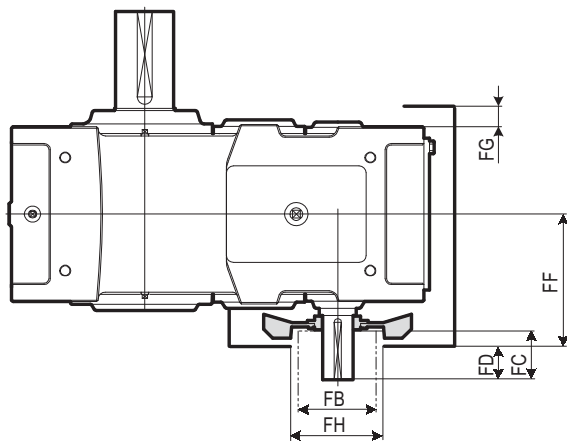
Size	FA	FB	FC	FD	FF	FH
9090	680	200	105	65	1255	220
9095	680	200	105	65	1285	220
9100	760	225	105	60	1414	245
9105	760	225	105	60	1448	245
9110	820	225	135	90	1594	245
9115	820	225	135	90	1643	245

Note) Consult us for cooling fan dimension of size 9118 and 9136.

TECHNICAL DATA Cooling Fan Dimension

9015 ▶ 9085 Parallel Double Reduction

9090 ▶ 9115 Parallel Double Reduction



※ When tightening installation bolt,
remove fan hood.

Size	FA1	FA2	FA	FB	FC	FD	FE	FF	FG	FH
9015	129	129	258	125	50	30	130	181	32.5	145
9025	143	143	286	140	50	30	150	196	27.5	160
9030	169	169	338	140	80	52	155	217	27.5	160
9035	169	169	338	140	80	52	180	217	27.5	160
9040	188	188	376	160	80	52	195	232	21.5	180
9045	188	188	376	160	80	52	215	232	21.5	180
9050	208	208	416	160	80	52	205	251	28.5	180
9055	208	208	416	160	80	52	240	251	28.5	180
9060	240	240	480	200	105	65	260	295	40	220
9065	240	240	480	200	105	65	295	295	40	220
9070	274	274	548	225	105	65	295	320	44	245
9075	274	274	548	225	105	65	330	320	44	245
9080	296	296	592	225	135	95	330	339	52	245
9085	296	296	592	225	135	95	370	339	52	245

Size	FA1	FA2	FA	FB	FC	FD	FE	FF	FG	FH
9090	465	277	742	250	135	90	345	410	65	270
9095	465	277	742	250	135	90	345	410	65	270
9100	515	314	829	250	175	130	395	455	65	270
9105	515	314	829	250	175	130	395	455	65	270
9110	565	356	921	250	175	130	445	485	65	270
9115	565	356	921	250	175	130	445	485	65	270

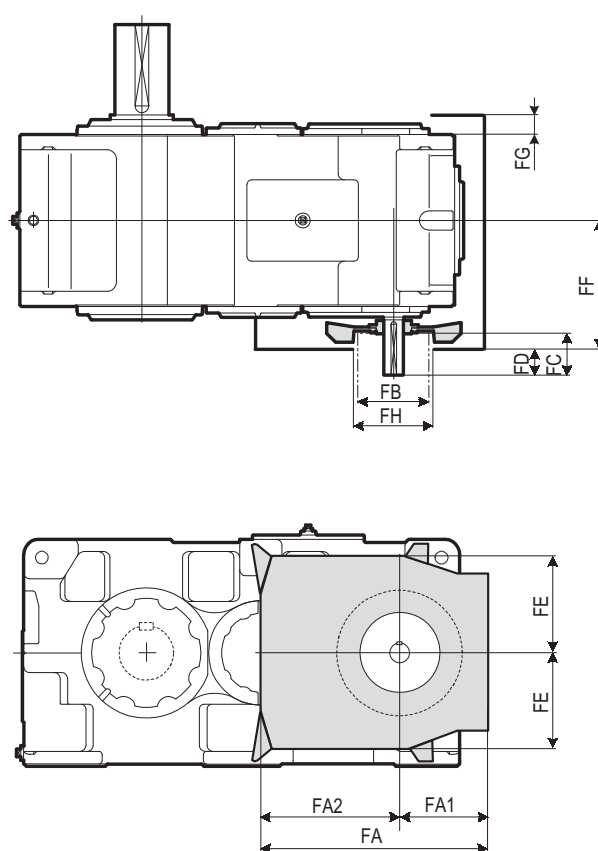
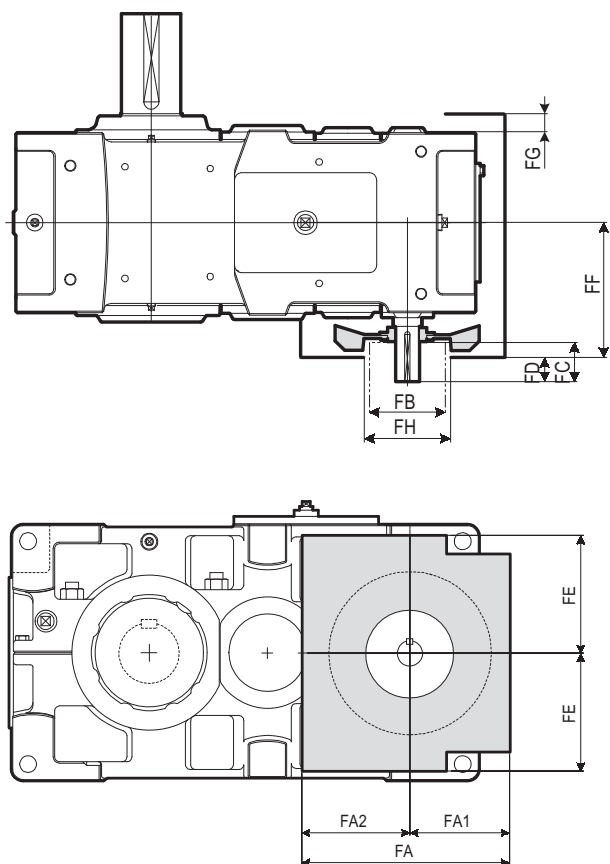
■ Sufficient space must be allowed for air intake when mounting the safety guards for the coupling or other component.

■ The split fan hood is prepared as a optional accessory for conducting maintenance work on a large coupling. 【Refer to the "PARAMAX 9000 Series Option Catalog No.G2052E".】

TECHNICAL DATA Cooling Fan Dimension

9015 ▶ 9085 Parallel Triple Reduction

9090 ▶ 9115 Parallel Triple Reduction



※ When tightening installation bolt,
remove fan hood.

Size	FA1	FA2	FA	FB	FC	FD	FE	FF	FG	FH
9015	111	111	222	125	30	10	105	180	32.5	145
9025	129	129	258	125	30	10	125	194	27.5	145
9030	140	140	280	125	50	30	125	211	27.5	145
9035	150	150	300	140	50	22	150	219	27.5	160
9040	170	170	340	140	50	22	165	234	21.5	160
9045	170	170	340	140	50	22	185	234	21.5	160
9050	172	172	344	140	80	52	170	252	28.5	160
9055	172	172	344	140	80	52	205	252	28.5	160
9060	199	199	398	160	80	52	220	277	40	180
9065	199	199	398	160	80	52	255	277	40	180
9070	221	221	442	160	80	52	250	302	44	180
9075	221	221	442	160	80	52	285	302	44	180
9080	247	247	494	200	105	65	280	340	52	220
9085	247	247	494	200	105	65	320	340	52	220

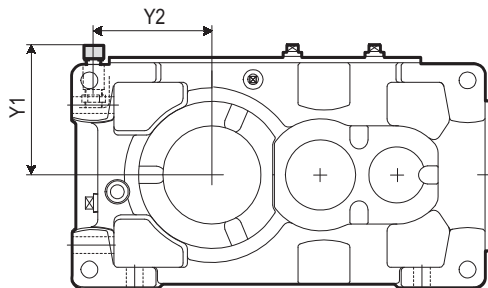
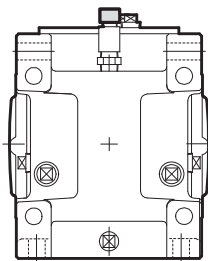
Size	FA1	FA2	FA	FB	FC	FD	FE	FF	FG	FH
9090	268	474	742	200	105	65	345	405	65	220
9095	268	474	742	200	105	65	345	405	65	220
9100	289	540	829	225	105	65	395	450	65	245
9105	289	540	829	225	105	65	395	450	65	245
9110	339	582	921	225	135	95	445	480	65	245
9115	339	582	921	225	135	95	445	480	65	245

Note) Consult us for cooling fan dimension of size 9118 and 9136.

TECHNICAL DATA Option Dimension

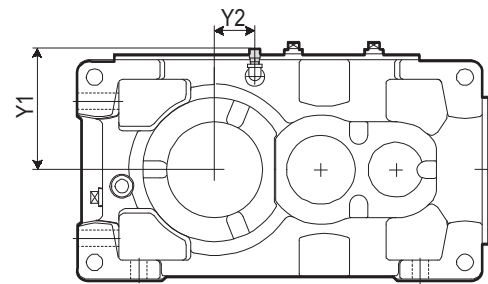
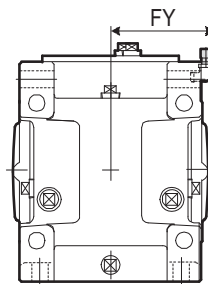
9015 ▶ 9055 Right Angle Double, Triple, Quadruple
/ Parallel Double, Triple, Quadruple

Air Breather



Size	Y1	Y2
9015	216	135
9025	233	149
9030	235	173

[9015~9030 Reduction Ratio 6.3~7.1]



Size	Y1	Y2	FY
9015	162	35	129
9025	182	25	141
9030	187	0	154
9035	212	0	154
9040	227	30	171
9045	247	*30	171
9050	232	25	191
9055	267	0	191

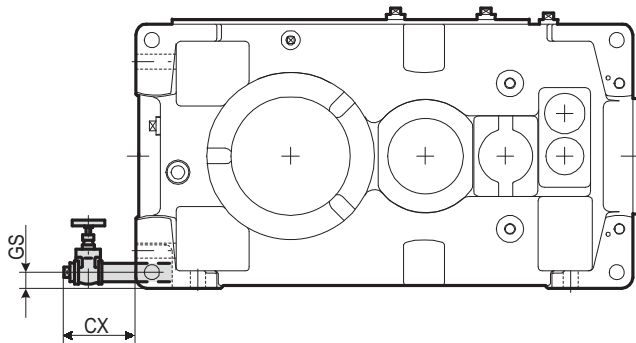
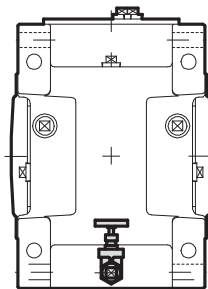
[9015~9030 Reduction Ratio 6.3~7.1
9035~9055 Reduction Ratio All]

* Double and triple reduction
right angle, and double
reduction parallel is 29mm.

Technical

Common

Drain Valve

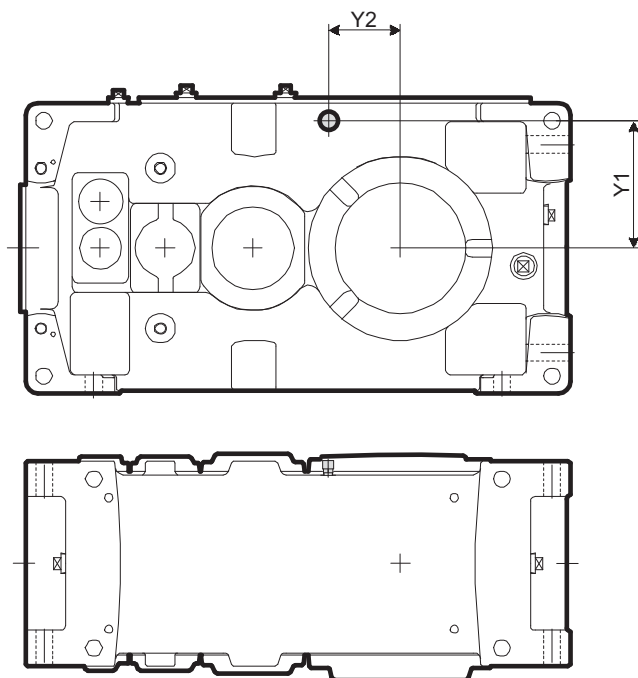


Size	CX	GS
9015	122	23
9025	122	24
9030	119	24
9035	119	24
9040	133	28
9045	133	28
9050	133	29
9055	133	29

TECHNICAL DATA Option Dimension

9015 ▶ 9055 Right Angle Double, Triple, Quadruple / Parallel Double, Triple, Quadruple

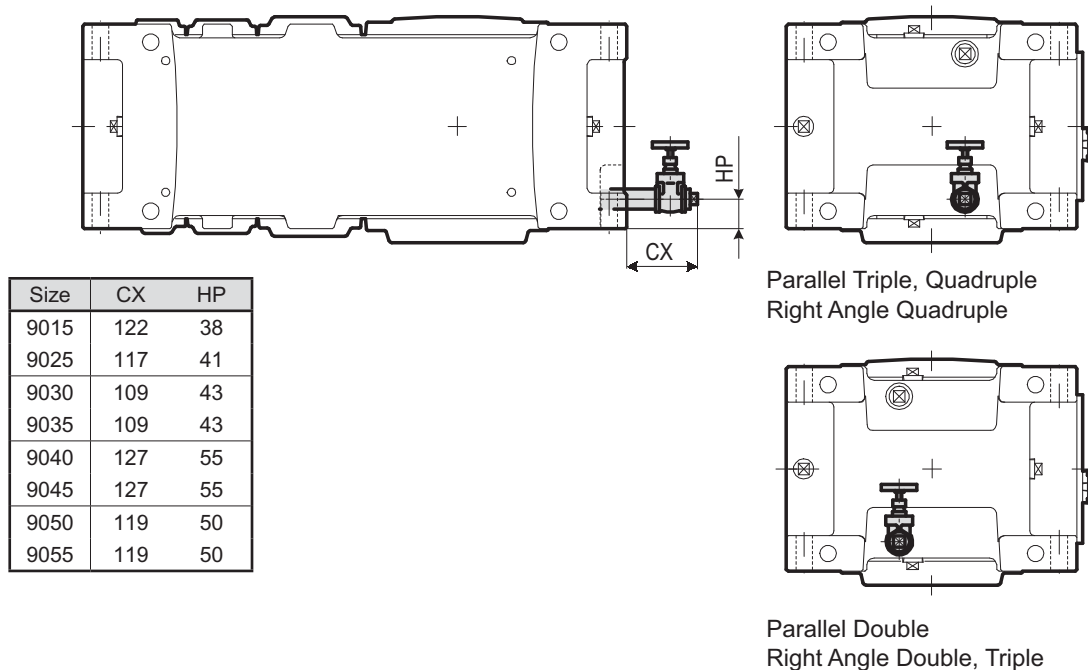
Air Breather



Size	Y1	Y2
9015	110	35
9025	130	25
9030	135	0
9035	160	0
9040	175	30
9045	195	*30
9050	180	25
9055	215	0

* Double and triple reduction right angle, and double reduction parallel is 29mm.

Drain Valve



Size	CX	HP
9015	122	38
9025	117	41
9030	109	43
9035	109	43
9040	127	55
9045	127	55
9050	119	50
9055	119	50

Parallel Triple, Quadruple
Right Angle Quadruple

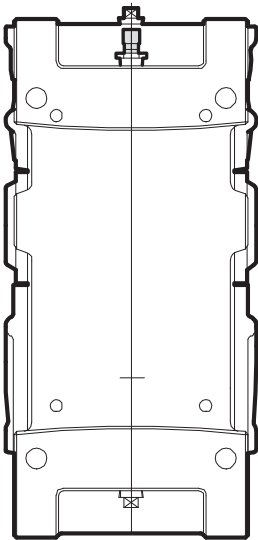
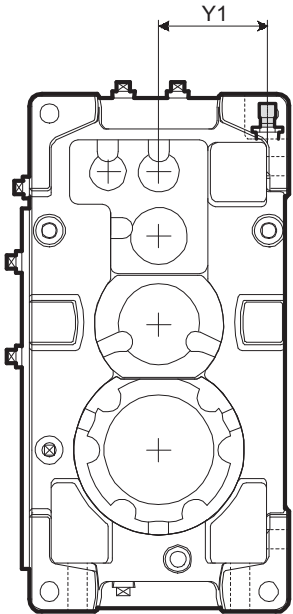
Parallel Double
Right Angle Double, Triple

TECHNICAL DATA Option Dimension

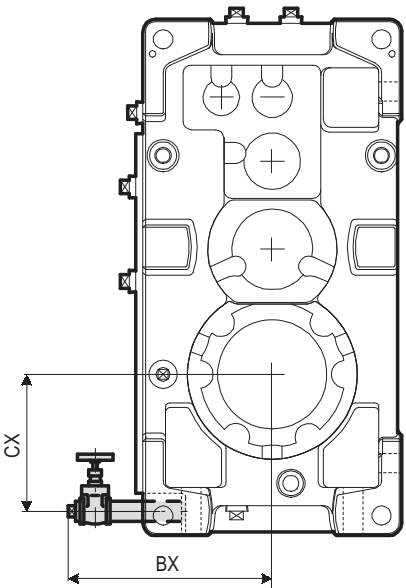
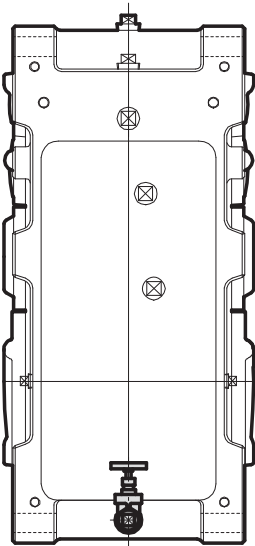
9015 ▶ 9055 Right Angle Double, Triple, Quadruple
/Parallel Double, Triple, Quadruple

Air Breather

Size	Y1
9015	112
9025	131
9030	136
9035	161
9040	172
9045	192
9050	181
9055	216



Drain Valve



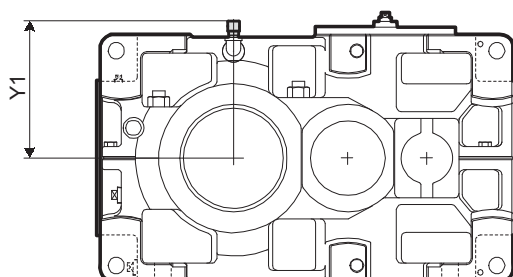
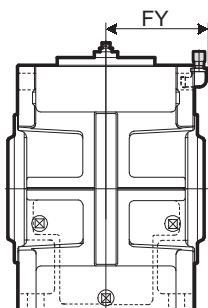
Size	BX	CX
9015	260	135
9025	277	149
9030	279	173
9035	297	192
9040	333	205
9045	353	226
9050	343	224
9055	365	255

Technical
Common

TECHNICAL DATA Option Dimension

9060 ▶ 9085 Right Angle Double, Triple, Quadruple /Parallel Double, Triple, Quadruple

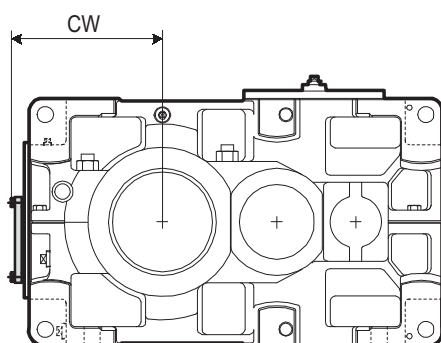
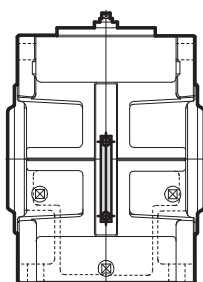
Air Breather



Size	Y1	FY
9060	281	211
9065	316	211
9070	315	236
9075	350	236
9080	350	256
9085	390	256

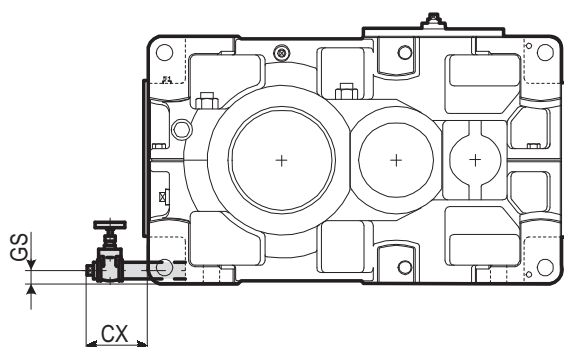
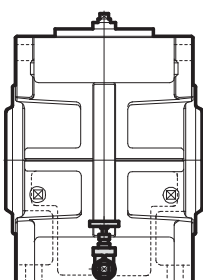
[9060~9085 Double reduction right angle and double reduction parallel]

Oil Level Gauge



Size	CW
9060	318
9065	357
9070	355
9075	402
9080	397
9085	441

Drain Valve

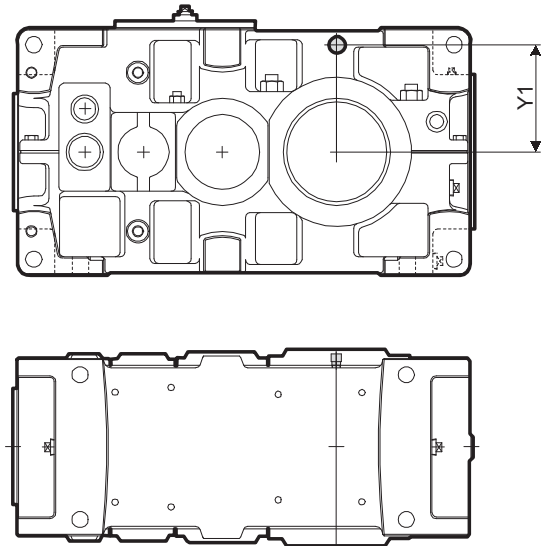


Size	CX	GS
9060	170	31
9065	170	31
9070	155	33
9075	155	33
9080	155	34
9085	157	34

TECHNICAL DATA Option Dimension

9060 ▶ 9085 Right Angle Double, Triple, Quadruple
/Parallel Double, Triple, Quadruple

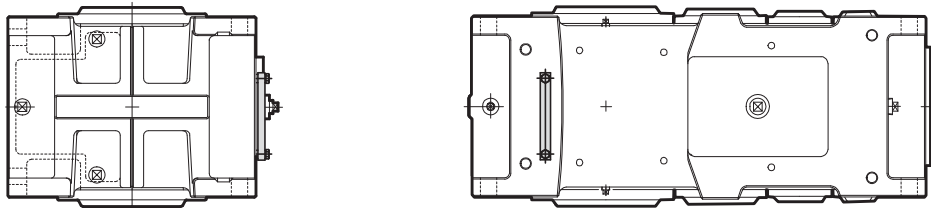
Air Breather



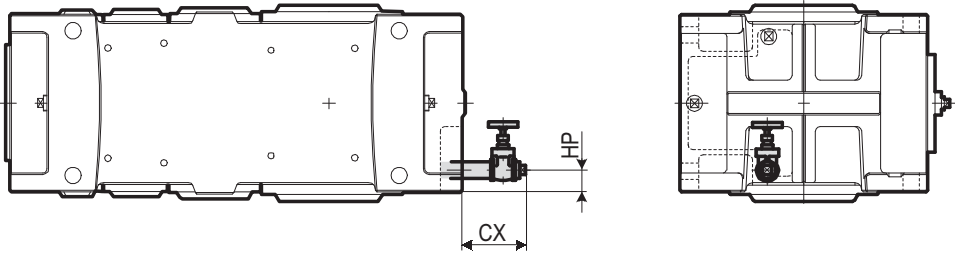
Size	Y1
9060	229
9065	264
9070	263
9075	298
9080	298
9085	338

Oil Level Gauge

Note) Oil level gauge is not max dimension.



Drain Valve



Size	CX	HP
9060	120	47
9065	120	47
9070	120	47
9075	120	47
9080	110	47
9085	110	47

Technical

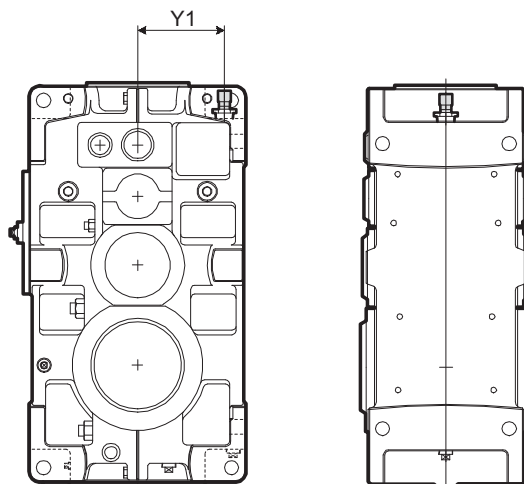
Common

TECHNICAL DATA Option Dimension

9060 ▶ 9085 Right Angle Double, Triple, Quadruple /Parallel Double, Triple, Quadruple

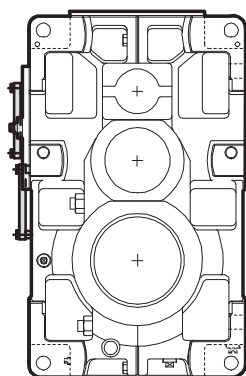
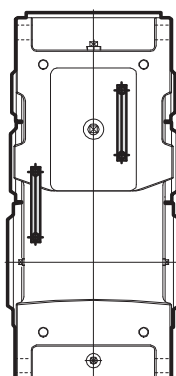
Air Breather

Size	Y1
9060	234
9065	264
9070	267
9075	302
9080	301
9085	341

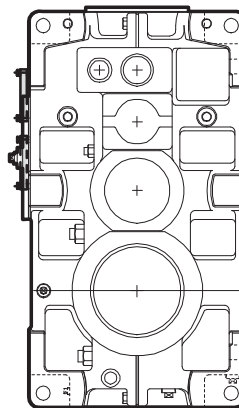
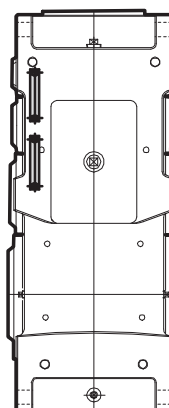


Oil Level Gauge

Note) Oil level gauge is not max dimension.

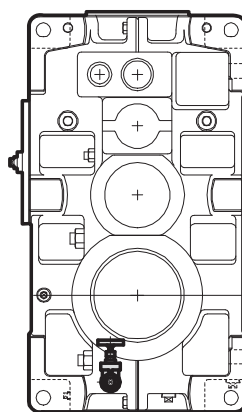
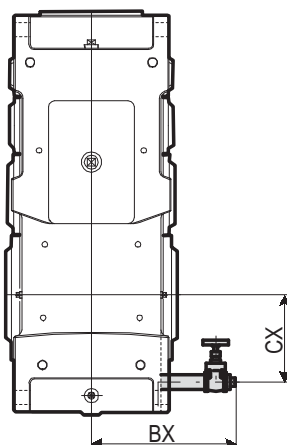


Right Angle Double, Triple / Parallel Double



Right Angle Quadruple / Parallel Triple, Quadruple

Drain Valve

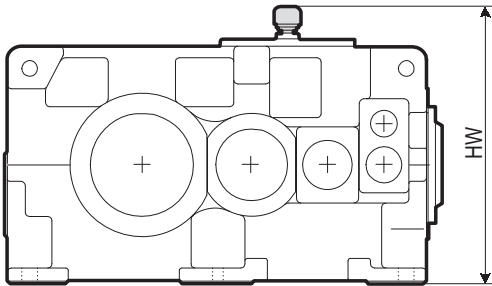


Size	BX	CY
9060	335	214
9065	335	253
9070	360	251
9075	360	298
9080	380	283
9085	380	327

TECHNICAL DATA Option Dimension

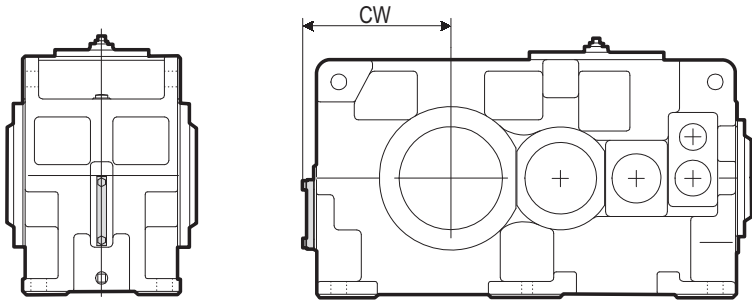
9090 ▶ 9115 Right Angle Double, Triple, Quadruple
/Parallel Double, Triple, Quadruple

Air Breather



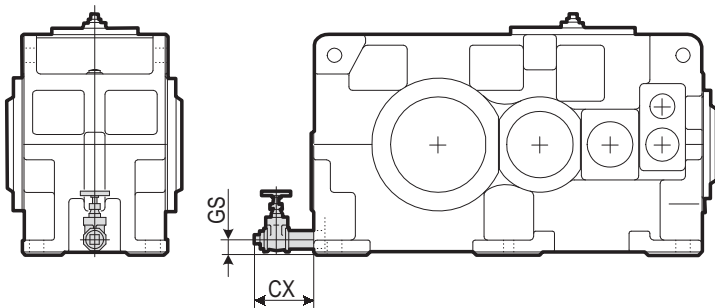
Size	HW
9090	839
9095	889
9100	939
9105	989
9110	1039
9115	1089

Oil Level Gauge

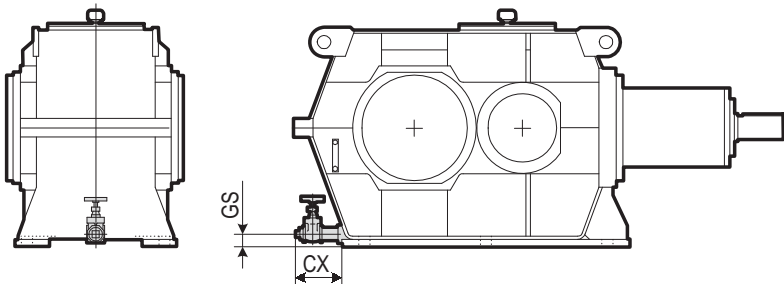


Size	CW
9090	435
9095	465
9100	475
9105	510
9110	525
9115	575

Drain Valve



Size	CX	GS
9090	162	45
9095	162	45
9100	162	46
9105	162	46
9110	162	48
9115	162	48

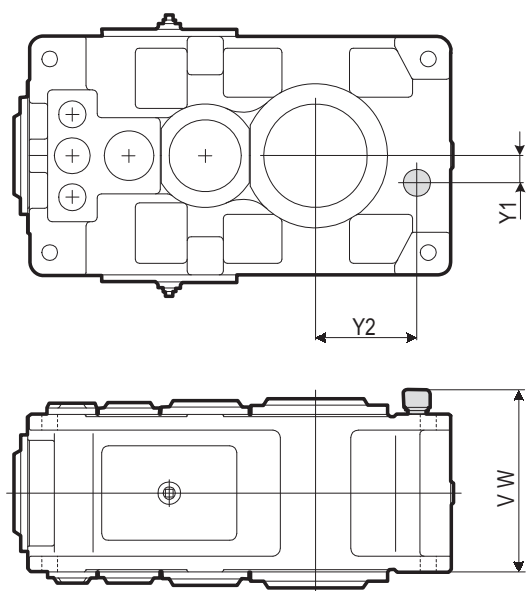


Size	CX	GS
9095R2	172	62
9105R2	172	62
9115R2	172	69

TECHNICAL DATA Option Dimension

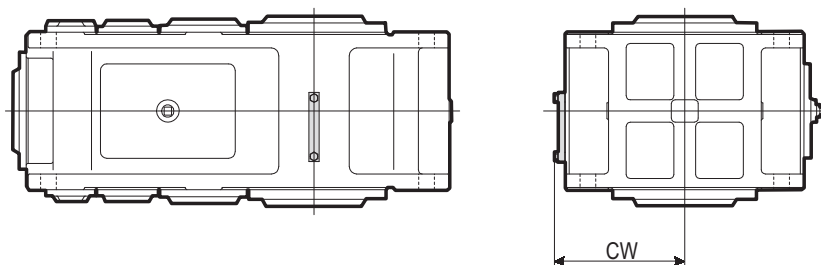
9090 ▶ 9115 Right Angle Double, Triple, Quadruple
/ Parallel Double, Triple, Quadruple

Air Breather



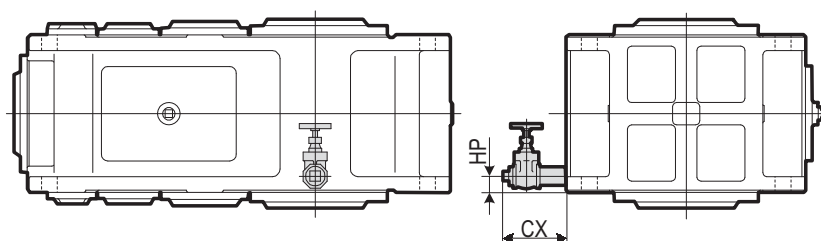
Size	V W	Y1	Y2
9090	626	90	315
9095	626	90	345
9100	706	100	355
9105	706	100	390
9110	766	100	405
9115	766	100	440

Oil Level Gauge



Size	CW
9090	405
9095	430
9100	455
9105	480
9110	505
9115	530

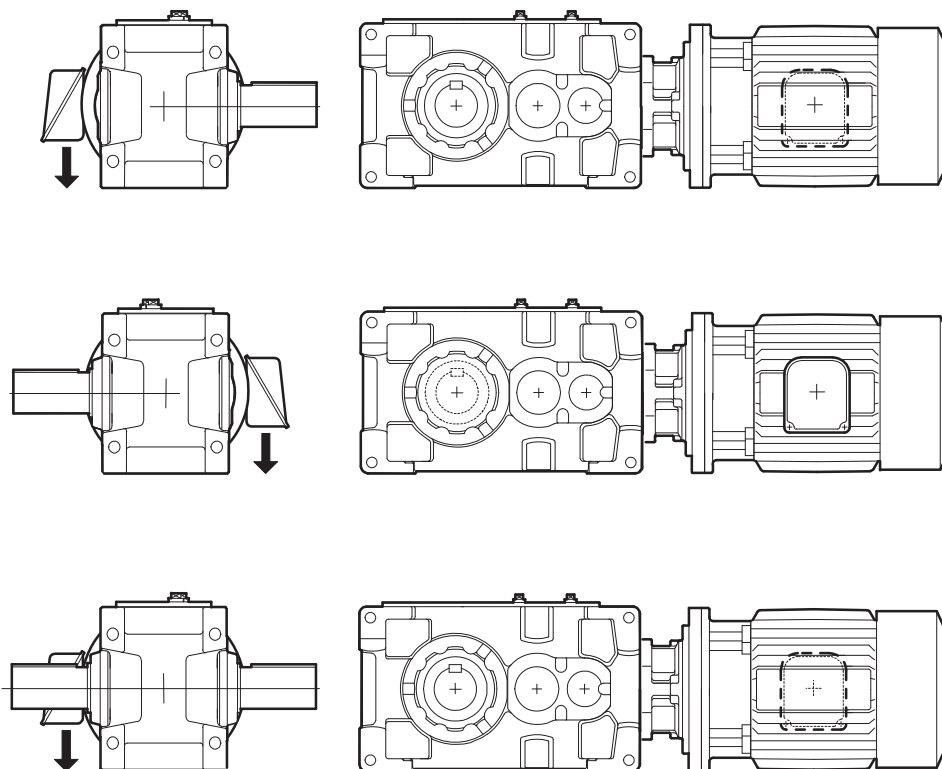
Drain Valve



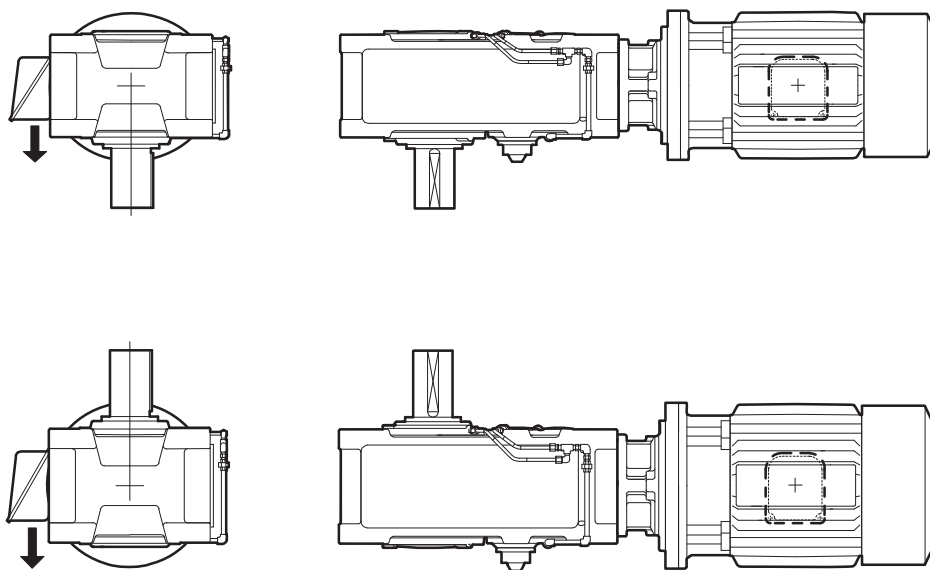
Size	CX	HP
9090	162	42
9095	162	42
9100	162	43
9105	162	43
9110	162	44
9115	162	44

TECHNICAL DATA Motor Terminal Box Drive Unit

Right Angle Shaft Horizontal Mounting



Right Angle Shaft Vertical Mounting



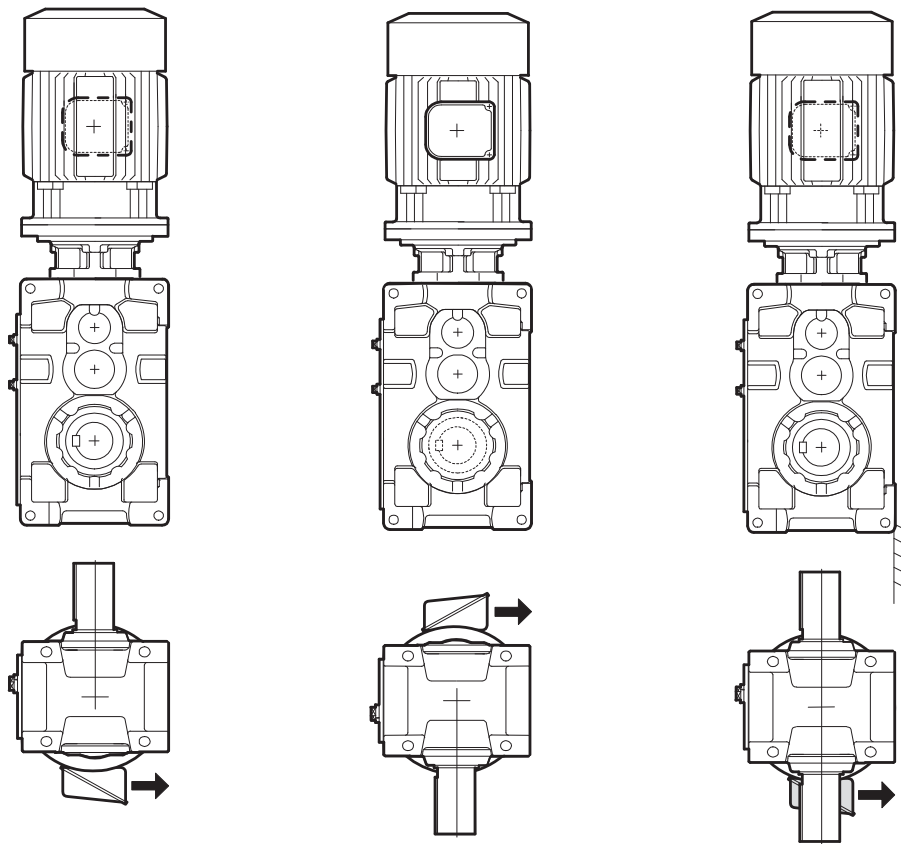
Technical

Common

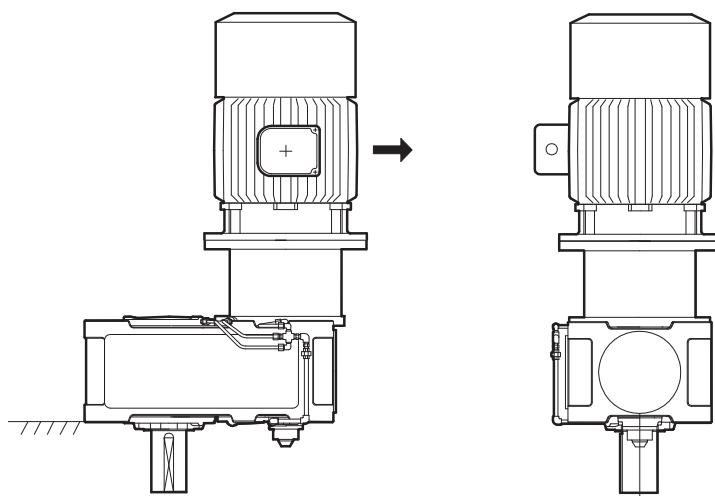
1. Direction shows lead wire outside of terminal box.
2. The terminal box mounting direction can be changed in units of 90 degree in our factory. Please specify the direction when placing an order.

TECHNICAL DATA Motor Terminal Box Drive Unit

Right Angle Shaft Upright Mounting

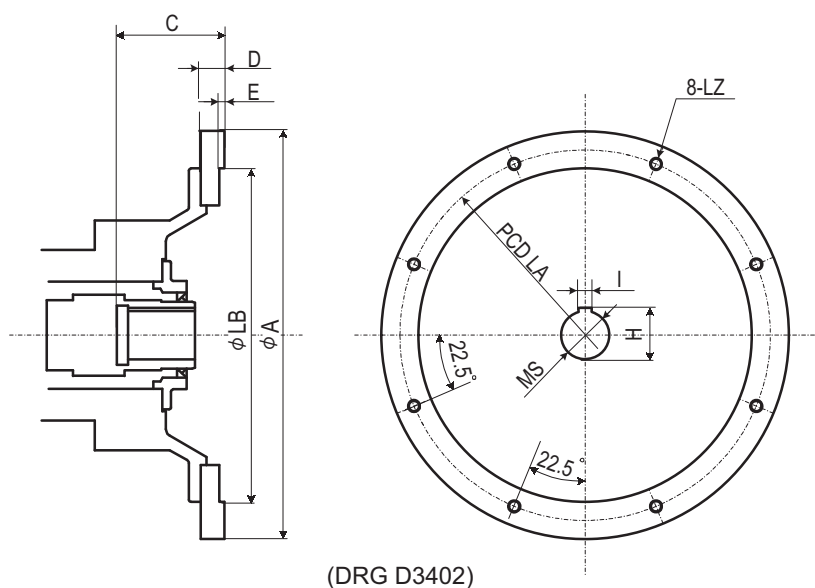
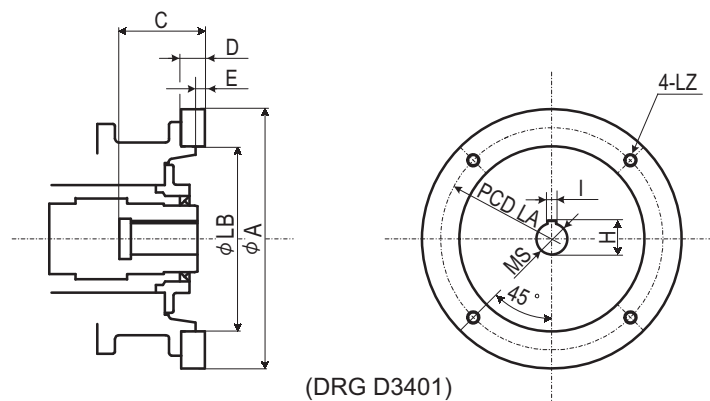


Parallel Shaft Vertical Mounting



1. Direction shows lead wire outside of terminal box.
2. The terminal box mounting direction can be changed in units of 90 degree in our factory. Please specify the direction when placing an order.

TECHNICAL DATA Motor Flange Dimension IEC, JEM Standard



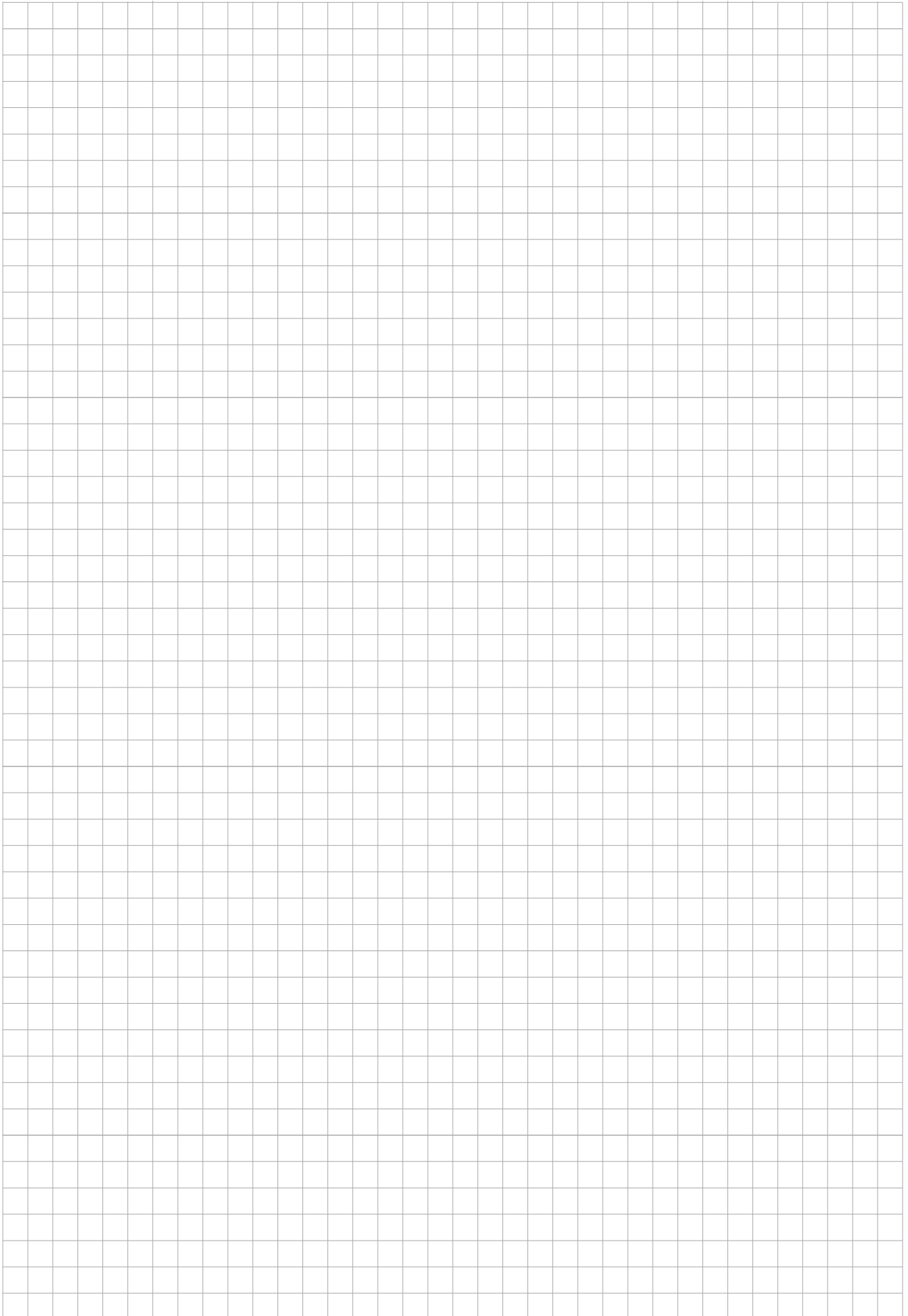
(JEM Standard)

kWxP	Motor Flame	A	LB	C	D	E	φ MS	H	I	LA	LZ	Thread Length	Fig.
5.5 × 4P	132S	315	230	84	48	7	38	41.3	10	265	4-M12	22	D3401
7.5 × 4P	132M	315	230	84	48	7	38	41.3	10	265	4-M12	22	D3401
11 × 4P	160M	350	250	114	32	7	42	45.3	12	300	4-M16	32	D3401
15 × 4P	160L	350	250	114	32	7	42	45.3	12	300	4-M16	32	D3401
18.5 × 4P	180M	400	300	144	62	7	48	51.8	14	350	4-M16	62	D3401
22 × 4P	180M	400	300	144	62	7	48	51.8	14	350	4-M16	62	D3401
30 × 4P	180L	400	300	144	62	7	55	59.3	16	350	4-M16	62	D3401
37 × 4P	200L	450	350	144	48	7	60	64.4	18	400	8-M16	32	D3402
45 × 4P	200L	450	350	144	48	7	60	64.4	18	400	8-M16	32	D3402
55 × 4P	225S	550	450	144	32	7	65	69.4	18	500	8-M16	32	D3402

(IEC Standard)

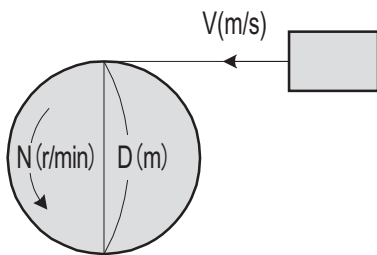
kWxP	Motor Flame	A	LB	C	D	E	φ MS	H	I	LA	LZ	Thread Length	Fig.
5.5 × 4P	132S	315	230	84	48	7	38	41.3	10	265	4-M12	22	D3401
7.5 × 4P	132M	315	230	84	48	7	38	41.3	10	265	4-M12	22	D3401
11 × 4P	160M	350	250	114	32	7	42	45.3	12	300	4-M16	32	D3401
15 × 4P	160L	350	250	114	32	7	42	45.3	12	300	4-M16	32	D3401
18.5 × 4P	180M	350	250	144	62	7	48	51.8	14	300	4-M16	62	D3401
22 × 4P	180L	350	250	144	62	7	48	51.8	14	300	4-M16	62	D3401
30 × 4P	200L	400	300	144	62	7	55	59.3	16	350	4-M16	62	D3401
37 × 4P	225S	450	350	144	48	7	60	64.4	18	400	8-M16	32	D3402
45 × 4P	225M	450	350	144	48	7	60	64.4	18	400	8-M16	32	D3402
55 × 4P	250M	550	450	144	32	7	65	69.4	18	500	8-M16	32	D3402

If no specification is made, production will follow JEM Standard.



TECHNICAL DATA Formula of Drive System SI Units

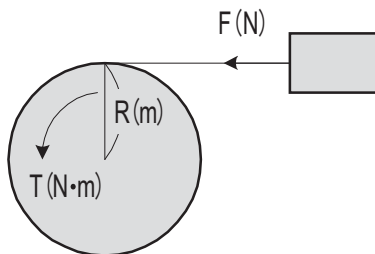
1. Revolving Speed N(r/min), Velocity V(m/s)



$$V = \pi \cdot D \cdot \frac{N}{60} \quad (\text{m/s})$$

D : Wheel Diameter (m)
($\pi \doteq 3.14$)

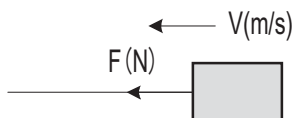
2. Torque T (Nm)



$$T = F \cdot R \quad (\text{N} \cdot \text{m})$$

F : Load (N)
R : Wheel Radius (m)

3. Power P(kW)



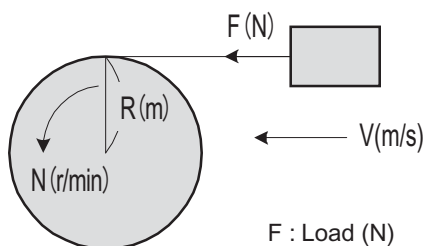
$$P = \frac{F \cdot V}{1000} \quad (\text{kW})$$

F : Load (N)
V : Velocity (m/s)

4. Power P(kW), Torque T(Nm), Revolving Speed N(r/min)

$$P = \frac{N \cdot T}{9550} \quad (\text{kW}), \quad T = \frac{9550 \cdot P}{N} \quad (\text{N} \cdot \text{m})$$

$$P = \frac{F \cdot V}{1000} \quad (\text{kW}), \quad V = \pi \cdot 2 \cdot R \cdot \frac{N}{60} \quad (\text{m/s})$$



F : Load (N)

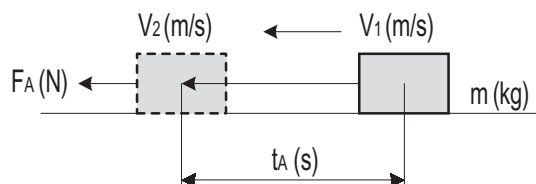
$$\therefore P = \frac{F \cdot \pi \cdot 2 \cdot R \cdot \frac{N}{60}}{1000} = \frac{2 \cdot \pi}{1000 \times 60} \cdot N \cdot F \cdot R \quad (\text{kW})$$

Since $T = F \cdot R$

$$P = \frac{2 \cdot \pi}{1000 \times 60} \cdot N \cdot T = \frac{N \cdot T}{9550} \quad (\text{kW})$$

TECHNICAL DATA Formula of Drive System SI Units

5. Acceleration Force F_A (N)



$$F_A = m \cdot \alpha = m \cdot \frac{V_2 - V_1}{t_A} \text{ (N)}$$

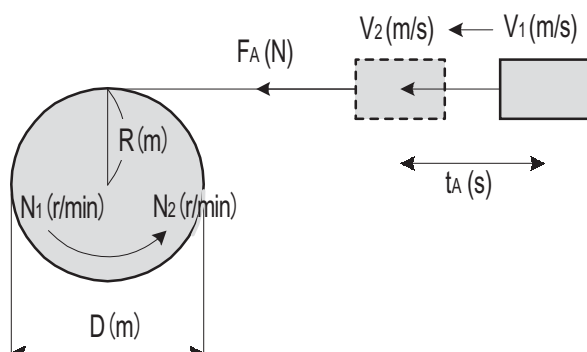
$$\alpha = m \cdot \frac{V_2 - V_1}{t_A}$$

m : Weight (kg)

α : Acceleration (m/s^2)

t_A : Acceleration Time (s)

6. Acceleration Torque T_A (Nm)



$$T_A = F_A \cdot R, \quad F_A = m \cdot \frac{V_2 - V_1}{t_A}$$

$$V_2 = \pi \cdot D \cdot \frac{N_2}{60}, \quad V_1 = \pi \cdot D \cdot \frac{N_1}{60},$$

$$D = 2 \cdot R$$

$$\therefore T_A = m \cdot \frac{\frac{\pi \cdot 2 \cdot R}{60} (N_2 - N_1)}{t_A} \cdot R$$

$$= \frac{2 \pi \cdot m \cdot R}{60} \cdot \frac{N_2 - N_1}{t_A} \cdot R$$

$$= \frac{m \cdot R^2}{9.55} \cdot \frac{N_2 - N_1}{t_A} \text{ (N} \cdot \text{m)}$$

Since $m \cdot R^2$ is J (Moment of Inertia : $\text{kg} \cdot \text{m}^2$)

$$T_A = \frac{J}{9.55} \cdot \frac{N_2 - N_1}{t_A} \text{ (N} \cdot \text{m)}$$

7. Synchronized Revolving Speed of AC Motor N_0 (r/min)

$$N_0 = \frac{120 \cdot f}{P} \text{ (r/min)}$$

f : Power Supply Frequency (Hz)

P : No. of Motor Poles

8. Rated Revolving Speed of AC Motor N (r/min)

$$N = N_0 (1 - S) \text{ (r/min)}$$

N_0 : Synchronized Revolving Speed (r/min)

S : Slippage

Warranty

Warranty Period	The warranty period for the Products shall be 18 months after the commencement of delivery or 18 months after the shipment of the Products from the seller's works or 12 months from the Products coming into operation, whichever comes first.
Warranty Condition	In Case that any problems, troubles or damages on the Products arise due to the defects in the Products during the above "Warranty Period" , although the Products are appropriately and properly installed in, connected or combined to the equipment or machines, or maintained in accordance with the maintenance manual and are properly operated under the conditions as described in the catalogue or otherwise as agreed upon in writing between the Seller and the Buyer or its customers, the Seller will provide, at its sole discretion, appropriate repair or replacement on the Products free of charge, except as stipulated in the "Exception for Warranty" as described below. However, in the event that the Products is installed in, connected or combined to or integrated into the equipment or machines, the Seller shall not reimburse the costs for removal or re-installation of the Products or other incidental costs related thereto and any lost opportunity, loss of profit or any other incidental or consequential losses or damages incurred by the Buyer or its customers.
Exception for Warranty	Notwithstanding the above warranty, the warranty as set forth herein shall not be applied to the problems, troubles or damages on the Products which are caused by: 1. installations, connections, combinations or integration of the Products in or to the other equipment or machines, which are rendered by any person or entity other than the Seller, 2. the insufficient maintenance or improper operation by the Buyer or its customers, such that the Product is not appropriately maintained in accordance with the maintenance manual provided or designated by the Seller, 3. the improper use or operation of the Products by the Buyer or its customers which are not informed to the Seller, including, without limitation, the Buyer's or its customers' operation of the Products not in conformity with the specifications, or use of the lubrication oil in the Products which is not recommended by the Seller, 4. troubles, problems or damages on any equipment or machines in or to which the Products are installed, connected or combined or installed, or any specifications particular to the Buyer or its customers.



SAFETY PRECAUTIONS

- Strictly observe the safety rules for the installation place and the equipment to use.
(Industrial Safety and Health Law, Technical Standard for Electric Facilities, Extension Rules, Plant Explosion Guidelines, Building Standards Law, etc.)
- Carefully read the maintenance manual before use. If the maintenance manual is not on hand, make a request for one to the distributor at which you purchased the product or to our sales department. The maintenance manual should be sent to the actual user.
- Select an appropriate product that matches the operating environment and usage.
- Install a protective equipment on the machine side when the machine is used for transportation of passengers or for elevators, escalators, and dumbwaiters.
- When the machine is used for food processing equipment and others that are susceptible to oil, install an oil pan or other damage preventive devices in case of oil leakage due to failure or termination of service life.