BVI series - Stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

Section 4
Sezione 4

FEATURES

Caratteristiche

Stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*
X42I	150 Nm	21.8 mm	0.25 ÷ 1.5 kW	**ø25**
X62I	410 Nm	30 mm	0.75 ÷ 4.0 kW	**ø35**

This product is:

Output shaft in AISI 316L and special cover for full seals protection.

Mozzo e albero in uscita in AISI 316L e coperchietto protettivo per anelli paraolio.

New cover with O-ring.

Nuovo coperchietto protettivo per anelli paraolio chiuso con o-ring.

FEATURES

Smooth stainless steel housing.

Cassa in acciaio inox.

Fully modular IEC flanges and compact NEMA C motor flanges.

Flange IEC e NEMA completamente modulari.

Stainless steel hollow input/output shaft.
Viton seals with stainless steel shield.

Albero cavo in entrata/uscita in acciaio inox.
Anelli di tenuta in viton con schermo protettivo in acciao inox.

Hardened and ground gears.

Ingranaggi temprati e rettificati.

How to order

Codifica

M	X42I	I	7.29	-C	BR
Type *Tipo*	**Size** *Grandezza*	**Mounting** *Montaggio*	**Ratio** *Rapporto*	**Hub** *Mozzo corona*	**Type** *Tipo*
P 	**X42I** **X62I**	**I** **Hollow output shaft** *Foro albero uscita* 		**Hollow output shaft** *Foro albero uscita* 	**FB** **Universal** *Forma base* 
M 		**A** **Single output shaft** *Albero uscita singolo* 	See technical data table *Vedi tabelle dati tecnici*	→ **Standard** **X42I** **-C** → ø25 **X62I** **-E** → ø35	**BR** **Reaction arm** *Braccio di reazione* 
B 				**Single output shaft** *Albero uscita singolo*  **X42I** **-L** → ø25 **X62I** **-N** → ø35	**-F** **Output flange** *Flangia uscita* 

N	-Q	B	B3	-
Output flange *Flangia in uscita*	**Motor size** *Grandezza motore*	**Terminal box position** *Posizione morsettiera*	**Mounting position** *Posizione di montaggio*	**Coupling** *Giunto*
N Without flange *Senza flangia*   **X42I** **2** -> ø175 **X62I** **3** -> ø205	**IEC B5**  **-D** -> *80 B5* (ø200) **-E** -> *90 B5* (ø200) **IEC B14**  **-Q** -> *71 B14* (ø105) **-R** -> *80 B14* (ø120) **-T** > *90 B14* (ø140) **-U** -> *100÷112 B14* (ø160) **Without flange** *Senza flangia*  **-M** With coupling *Con giunto* **X42I** **-1** -> ø14 (*71 B5*) **-2** -> ø19 (*80 B5*) **-3** -> ø24 (*90 B5*) **X62I** **-2** -> ø19 (*80 B5*) **-3** -> ø24 (*90 B5*) **-4** -> ø28 (*100 B5*)	**A**  **B**  **C**  **D** 	**B3**  **B6**  **B7**  **B8**  **V5**  **V6**  **V8** 	**-** No indication **Standard bore** *Nessuna indicazione* **Foro standard** **COUPLING**  **A** -> *9mm* **B** -> *11mm* **C** -> *14mm* **D** -> 19mm **E** -> 24mm **F** -> *28mm* **0** **Without coupling** *Senza giunto* 

Useful formulas

Formule utili

Required power - *Potenza richiesta*

Lifting - *Sollevamento*

$$P_{[kW]} = \frac{M_{[Kg]} \cdot g_{[9.81]} \cdot v_{[m/s]}}{1000}$$

Rotation - *Rotazione*

$$P_{[kW]} = \frac{M_{[Nm]} \cdot n_{[rpm]}}{9550}$$

Linear movement - *Traslazione*

$$P_{[kW]} = \frac{F_{[N]} \cdot v_{[m/s]}}{1000}$$

Torque - *Coppia*

$$M_{[Nm]} = \frac{9550 \cdot P_{[kW]}}{n_{[rpm]}}$$

$$M_{[lb\ in]} = \frac{63030 \cdot P_{[HP]}}{n_{[rpm]}}$$

Radial loads - *Carichi radiali*

Radial load generated by external transmissions keyed onto input and/or output shafts.
Forza radiale generata da organi di trasmissione calettati sugli alberi di ingresso e/o uscita.

$$F_{R[N]} = \frac{M_{[Nm]} \cdot 2000}{d_{[mm]}} \cdot f_k$$

$$F_{R[N]} = \frac{M_{[lb\ in]} \cdot 8.9}{d_{[in]}} \cdot f_k$$

M: Output torque - *Momento torcente*
d: Diam. of driving element - *Diametro primitivo*
f_k: Factor - *Coefficiente di trasformazione*

- **1.15:** Gearwheels - *Ingranaggi*
- **1.25:** Chain sprochets - *Catena*
- **1.75:** Narrow v-belt pulley - *Cinghia Trapezoidale*
- **2.50:** Flat-belt pulley - *Cinghia piatta*

If your application requires higher radial loads, contact our technical office. Higher loads may be possible.
Nel caso la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.

How to select a gearbox

Come selezionare un riduttore

A Select required torque (according to service factor)
Seleziona la coppia desiderata (comprensiva del fattore di servizio)

B Select output speed
Seleziona la velocità in uscita

C Select gear ratio in the line corresponding to the chosen motor power
Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione

D Select motor flange available (if requested)
Scegli la flangia disponibile (se richiesta)

Gear size *Grandezza riduttore* | **C** Ratio *Rapporto* | Transmitted torque *Momento torcente trasmesso* | Nominal power *Potenza nominale* | Flange code *Codice flangia* | Input speed *Velocità in entrata*

X42I **150 Nm**

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Riduttori a coppia conica completamente in acciaio inox

The dynamic efficienty is **0.96** for all ratios — Input speed (n_1) = 1400 min^{-1}

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges				Output shaft	Ratio code
							-	-	Q	-R	-T			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	71	80	90			
192	**7.29**	1.5	71	1.3	2.0	95			C	C		2811		01
125	**11.20**	1.5	110	1.4	2.0	150			C	C		288		02
106	**13.18**	1.5	129	1.2	1.7	150			C	C		1911	**Standard**	03
92	**15.27**	1.1	109	1.4	1.5	150			C	C		1711	**ø25**	04
78	**17.93**	1.1	128	1.2	1.3	150			C	C		1511		05
69	**20.25**	1.1	145	1.0	1.1	150			C	C		198	On	06
65	**21.40**	1.1	153	1.0	1.1	150			C	C		1311	Request	07
60	**23.47**	0.75	115	1.3	0.98	150			C	C		178	ø30	08
51	**27.55**	0.75	135	1.1	0.83	150			C	C		158		09
...	...	...	...	...	...	...			...	...		...		...

B Output speed *Velocità in uscita* | Motor power *Potenza motore* | Service factor *Fattore di servizio* | **A** Nominal torque *Momento torcente nominale* | Output shaft diam. *Diametro albero uscita* | Notes *Note*

Type of load and starts per hour

Tipo di carico e avviamenti per ora

			Oper. hours per day *Ore di funz. giorn.* 3h	10h	24h
Continuous or intermittent application with start / hour *Applicazione continua o intermittente con numero operazioni/ora*	≤ 10	Uniform - *Uniforme*	0.8	1	1.25
		Moderate - *Moderato*	1	1.25	1.5
		Heavy - *Forte*	1.25	1.5	1.75
Intermittent application with start / hour *Applicazione intermittente con numero operazioni/ora*	> 10	Uniform - *Uniforme*	1	1.25	1.5
		Moderate - *Moderato*	1.25	1.5	1.75
		Heavy - *Forte*	1.5	1.75	2.15

D Motor flange available *Flange disponibili*

B) Mounting with reduction bushing *Montaggio con boccola di riduzione*

C) Motor flange holes position/terminal box position *Posizione fori flangia/basetta motore*

B) Available without reduction bushing *Disponibile anche senza boccola*

X42I

150 Nm

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The dynamic efficienty is **0.96** for all ratios — **Input speed (n_1) = 1400 min^{-1}**

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges				Output shaft	Ratio code
							-	-	-Q	-R	-T			
							-	-	71	80	90			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]								
192	**7.29**	1.5	71	1.3	2.0	95			C	C		2811		01
125	**11.20**	1.5	110	1.4	2.0	150			C	C		288		02
106	**13.18**	1.5	129	1.2	1.7	150			C	C		1911		03
92	**15.27**	1.1	109	1.4	1.5	150			C	C		1711		04
78	**17.93**	1.1	128	1.2	1.3	150			C	C		1511		05
69	**20.25**	1.1	145	1.0	1.1	150			C	C		198		06
65	**21.40**	1.1	153	1.0	1.1	150			C	C		1311		07
60	**23.47**	0.75	115	1.3	0.98	150			C	C		178	**Standard**	08
51	**27.55**	0.75	135	1.1	0.83	150			C	C		158	**ø25**	09
47.9	**29.21**	0.75	143	1.0	0.78	150			C	C		1011		10
42.6	**32.88**	0.75	161	0.9	0.70	150			C	C		138		11
36.7	**38.12**	0.55	138	1.1	0.60	150			C	C		911		12
31.2	**44.89**	0.55	163	0.9	0.51	150			C	C		108		13
27.8	**50.34**	0.37	122	1.1	0.40	131			C	C		711		14
23.9	**58.58**	0.37	142	1.1	0.39	150			C	C		98		15
18.1	**77.36**	0.25	126	1.2	0.30	150			C	C		78		16

Motor flanges available *Flange motore disponibili*

B) **Supplied with reduction bushing** *Fornito con bussola di riduzione*

B) Available on request without reduction bushing *Disponibile a richiesta senza bussola di riduzione*

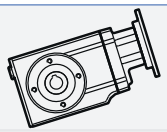
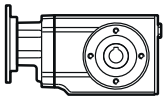
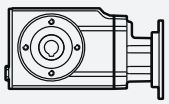
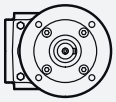
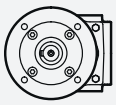
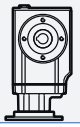
C) **Motor flange holes position** *Posizione fori flangia motore*

Lubrication

Lubrificazione

Unit X42I is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo X42I viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*	**Shell** *Omala S4 WE 320*	**V8** *On request* ASK	
B3 *Standard* 0.85 LT		**B8** *On request* 1.00 LT	
B6 *On request* 0.95 LT		**V5** *On request* 1.60 LT	
B7 *On request* 0.85 LT		**V6** *On request* 1.00 LT	

For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

Radial and axial loads

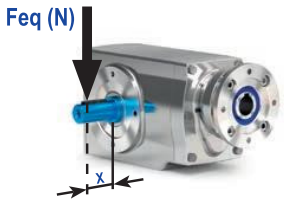
Carichi radiali e assiali

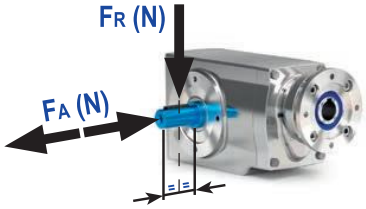
Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
250	500	2500
150	600	3000
100	700	3500
75	800	4000
50	960	4800
25	960	4800
15	960	4800

$$Feq = F_R \cdot \frac{54}{X + 28}$$



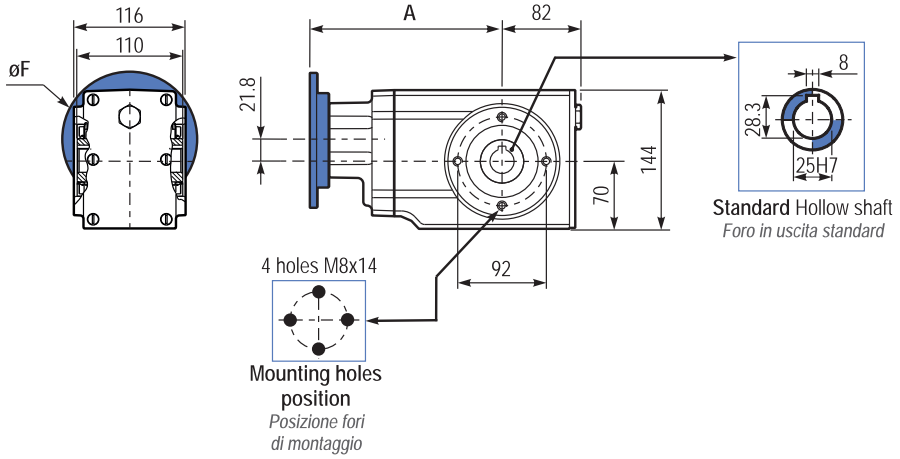


Tab. 2

PX42II... Basic gearbox
Riduttore base

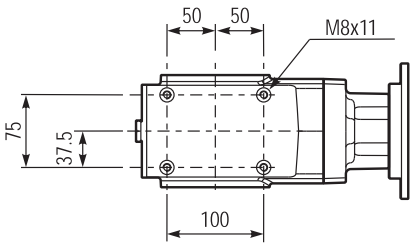
M. flanges	Kit code	øF	A
71B14	KI634047	105	197.5
80B14	KI634046	120	198.5
90B14	KI634041	140	199.5

Gearbox weight *peso riduttore* 13.0 kg

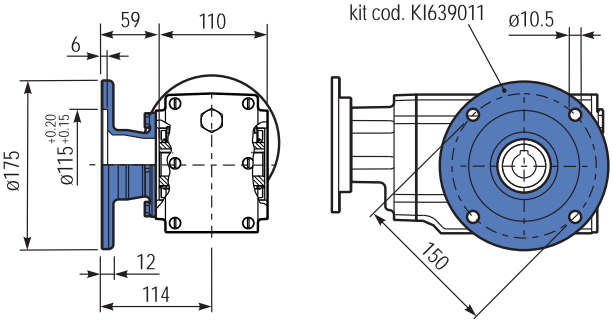


Standard Hollow shaft
Foro in uscita standard

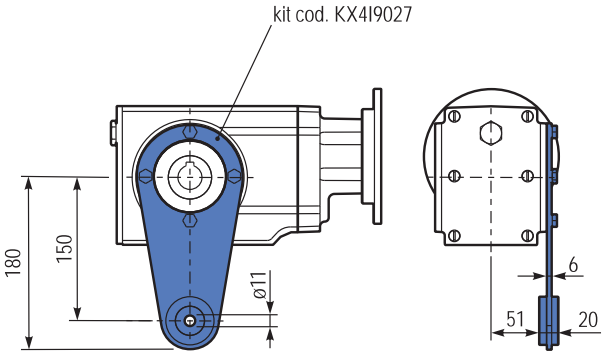
PX42I-FB.. Feet
Piedini



PX42I-FL.. Output flange
Flangia uscita

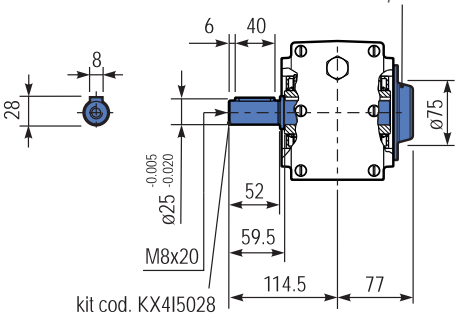


PX42IBR.. Reaction Arm
Braccio di reazione



PX42I..A.. Single output shaft
Albero semplice in uscita

kit cod. KI630211
Protection cup (on request)
A richiesta coperchio di protezione



X62I

410 Nm

Stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

The dynamic efficienty is **0.96** for all ratios — **Input speed (n_1) = 1400 min^{-1}**

Output speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges -D 80	B5 motor flanges -E 90	B14 motor flanges -U 100-112		Output shaft	Ratio code
232	**6.03**	4	155	1.6	6.1	240				3011		01
151	**9.26**	4	238	1.1	4.5	270				308		02
123	**11.36**	4	291	1.2	4.7	350				2011		03
91	**15.36**	4	394	1.0	3.8	385				1611		04
80	**17.46**	4	448	0.9	3.5	400				208		05
70	**19.97**	3	386	1.1	3.1	410				1311		06
59	**23.60**	3	456	0.9	2.7	410				168	**Standard ø35**	07
57	**24.45**	3	472	0.9	2.6	410				1111		08
45.6	**30.69**	2.2	436	0.9	2.0	410				138		09
39.6	**35.35**	1.5	346	1.2	1.8	410				811		10
37.3	**37.57**	1.5	368	1.1	1.7	410				118		11
28.8	**48.68**	1.1	348	1.0	1.1	365				611		12
25.8	**54.33**	1.1	389	1.1	1.2	410				88		13
18.7	**74.81**	0.75	367	1.0	0.73	360				68		14

Motor flanges available
Flange motore disponibili

B) **Supplied with reduction bushing**
Fornito con Bussola di Riduzione

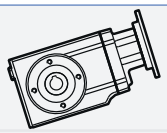
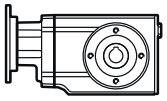
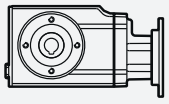
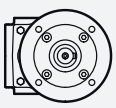
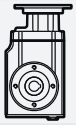
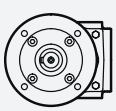
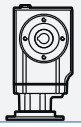
B) Available on request without reduction bushing
Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor flange holes position**
Posizione Fori Flangia Motore

Lubrication

Lubrificazione

Unit X62I is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo X62I viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*	**Shell** *Omala S4 WE 320*	**V8** *On request* ASK	
B3 *Standard* 1.85 LT		**B8** *On request* 2.00 LT	
B6 *On request* 2.00 LT		**V5** *On request* 3.35 LT	
B7 *On request* 1.70 LT		**V6** *On request* 2.30 LT	

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Tab. 1

Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
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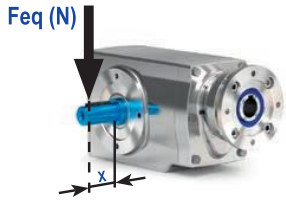
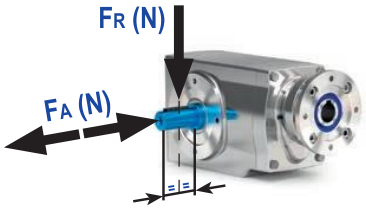
50	1140	5700
25	1330	6650
15	1660	8300

$$Feq = F_R \cdot \frac{69}{X + 39}$$



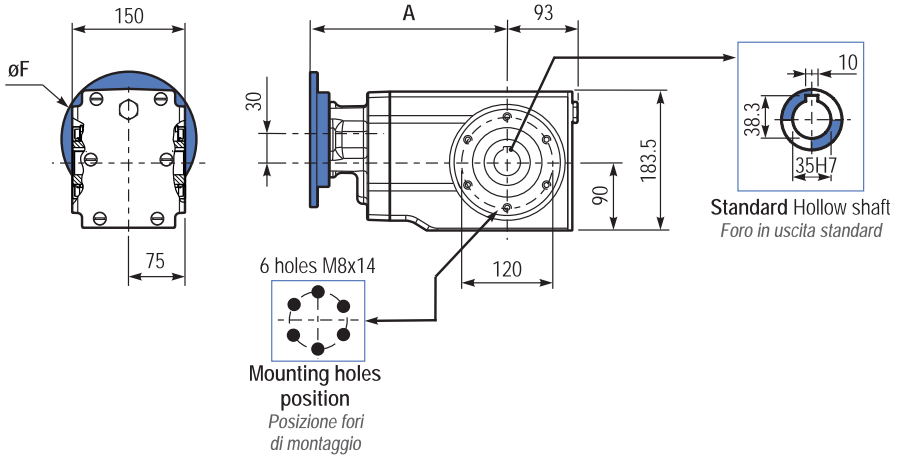


Tab. 2

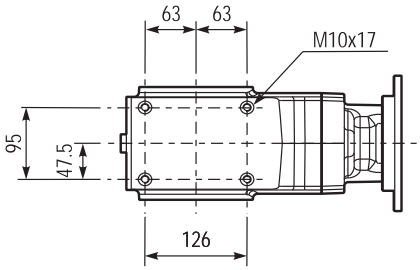
PX62II... Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
80-90B5	KI854042	200	255
100-112B14	KI854041	160	264

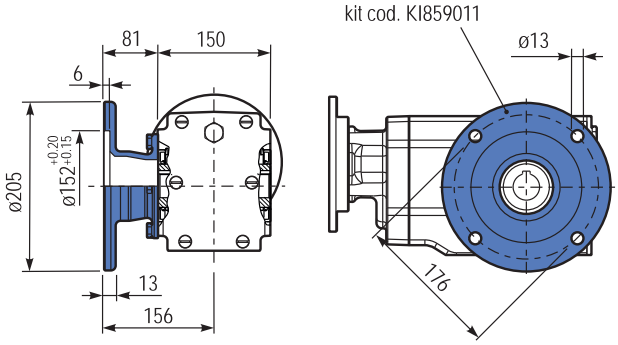
Gearbox weight *peso riduttore* 25.8 kg



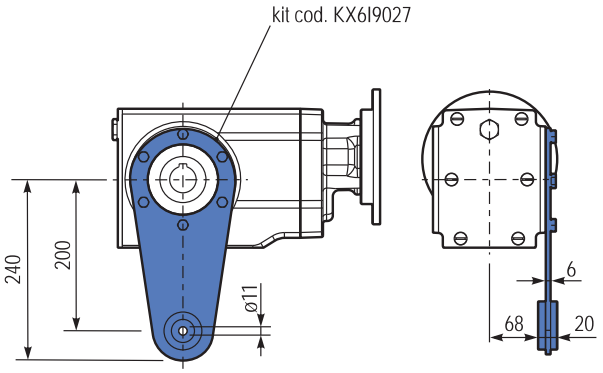
PX62I-FB.. Feet
Piedini



PX62I-FL.. Output flange
Flangia uscita



PX62IBR.. Reaction Arm
Braccio di reazione



PX62I..A.. Single output shaft
Albero semplice in uscita