

## OPERATION MANUAL

### NON-ATEX MR

planetroll variable speed gearboxes plaromaster<sup>®</sup> series MR

(NON-explosion-proof variable speed gearboxes)

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#### 1. General references

This operation manual must be carefully read before putting drive into service and references, terms and regulations must be strictly observed!

This operation manual is only valid for variable speed gearboxes plaromaster<sup>®</sup> (in the following simply called gearboxes) of series MR, used in non-explosion-proof areas.

Possible warranty claims should be fulfilled only after prove of compliance with regulations and references of this operation manual.

For applications of variable speed gearboxes plaromaster<sup>®</sup> of series MR in explosion-proof areas, other service conditions as well as marketing and putting into service conditions are valid.  
Another operation manual is available for these gearboxes.

#### 2. Variable speed gearbox engineering

The infinitely variable speed gearboxes plaromaster<sup>®</sup> are destined for installing into machines or appliances in the field of industrial areas. The desired output torques of variable speed gearboxes may be adjusted even at rest. Full supply of the internal transmission parts is effected by means of traction fluid with splash lubrication and/or injection lubrication.

The variable speed gearboxes are supplied filled with traction fluid ready for operation, according to specifications of acknowledgement.

#### ATTENTION!

Traction fluids are no commonly used and typical lubricating oils!

The traction fluid used in these variable speed gearboxes is a special oil and must NOT be replaced by a gear lubricant or mixed up with smallest quantities of gear lubricating oil!

The filling of gear lubricating oil into the variable speed gearbox plaromaster<sup>®</sup> would cause a total failure of the variable speed gearbox within a short time.

The planetroll variable speed gearboxes plaromaster<sup>®</sup> are so-called zero variable speed gearboxes.

This means that they can be operated from output speed zero up to maximum and also reciprocally.

The desired rotational speed of output shaft is adjusted infinitely by means of hand wheel or a remote setting motor fixed on gearbox housing.



It is possible to realize a limitation of speed range by a factory-made pre-setting, according to customer's requirements.

By using the mechanical speed limitation type DBM, the operator itself is in a position to realize a limitation of speed range without problems.

The DBM is a standard planetroll component.

Often transmission or reduction gearboxes (in the following named supplementary gearboxes) are mounted frontend or backend on the variable speed gearbox plaromaster®. Through this you will get a change of total transmission or reduction and therefore total output torque of drive.

The particular type of construction results in a coaxial, axially parallel or angled position of output shaft compared to input shaft of total drive.

### 3. Technical data

Technical data of gearbox/drive is specified on identification plate as well as in the corresponding acknowledgement and also refer to traction fluid stated on identification plate.

Before mounting gearbox/drive on the engine, please ensure that the required continuous driving torque is not higher than the maximum permissible torque stated on identification plate of gearbox/drive.

Please consider radial and axial forces permissible for in and output shafts.

Input dimensions and further technical data can be seen from dimension sheets of the corresponding planetroll catalog (see also web-sites: [www.planetroll.com](http://www.planetroll.com)) and as the case may be from the specific drive dimension sheet.

The planetroll variable speed gearbox plaromaster® is always executed with protective system IP 65.

### 4. Protection

#### 4.1. Conventional use of drive

The variable speed gearboxes are planned for the permissible power rating and torques stated in the planetroll catalog plaromaster® and acknowledgements.

Please note that the specifications of the acknowledgement take priority over the catalog, as they consider custom-designed specialities.

Each overload of drives is to be put on a pare with non-conventional use.

Failure to follow specifications of acknowledgement and changes deviating from it may lead to gearbox and/or motor damage and will void any warranty of manufacturer.

The permissible ambient temperature range for operating variable speed gearboxes of standard execution is - 10° C up to +40 ° C.

Note:

For use in other temperature ranges it is necessary to have prepared the drive factory-made.



## **ATTENTION!**

### Lifting and countersink operations!

The variable speed gearbox is not self-locking.

Special applications with changes from operating conditions "driving" to "driven" (e.g. to lift – to countersink) require special safety arrangements. Please consider the relevant safety regulations (e.g. VBG 8) for staying under floating loads when carrying out assembly works.

For reversing and eccentric operating conditions the variable speed gearbox plaromaster® of series MR could possibly not be suited for special application conditions. For these applications we supply the variable speed gearbox plaromaster® of series MA.

The selection of variable speed gearbox type series for these special operating conditions depends on specific application conditions. For special applications please contact planetroll.

## 4.2. Mechanical, electrical and thermal safety instructions

In order to avoid all types of danger during assembly, placing into service, maintenance etc. of mechanical or electrical driving components in connection with a planetroll variable speed gearbox plaromaster® of series MR, it is necessary to follow safety instructions of the corresponding operating manual and its references for possible mounted supplementary gearboxes and motors.

The contact of gearbox housing resp. of total drive unit having a certain temperature with one's bare hand may cause jumpy reactions or burn.

Rotating accessible parts must be protected against contact (e.g. protective grating).

## 5. Transport, bearing and preservation

### **ATTENTION!**

The gearbox resp. total drive unit must not be hold on in- or output shaft or on input components for transportation. For possible damages on the shafts or shaft bearing please avoid impacts on in- an output shaft.

In case of a long-term stocking is intendend, then the gearbox has to be preserved specifically and has to be stored under adequate ambient conditions.

Owing to specific long-term conditions, in this case it is absolutely necessary to consult the manufacturer.

## 6. Assembly

### 6.1. General references

Before assembly the protective lacquer on the shaft ends has to be removed completely.

### **ATTENTION!**

When using solvents please take care that they do not come into contact with seal of shaft sealing ring.



## 6.2. Mounting position

The gearboxes/drives are completely closed and can be operated in each vertical and horizontal mounting position. In case of deviating mounting positions, please contact planetroll.

### **ATTENTION!**

The gearboxes/drives may only be mounted according to the intended mounting position, well-defined in the acknowledgement.

Traction fluid filling quantity depends on mounting position.

Therefore, the variable speed gearbox is supplied with traction fluid ex works, appropriate to mounting position intended to be used.

Further changes of mounting positions require new traction fluid capacities – otherwise the variable speed gearbox could be damaged and would lose functionality.

In order to avoid heat accumulation all-over the drive unit, it is important to provide for unrestricted circulation of air.

## 6.3. Ventilation

The variable speed gearboxes plaromaster® are closed all-side and not deaerated.

For mounted supplementary gearboxes please consider their appendant operation manual or other special references by planetroll.

## 7. Placing into service

### 7.1. Mechanical placing into service

Substructure for fixing gearbox must be plane, with low vibration and torsionally-rigid, in order to avoid any deformation of gearbox housing and/or output shaft bearing.

The tapped centre hole on output shaft of variator or backend supplementary gearbox is intended for winding-up as well as for axial fixing of transmission elements like gears, sprocket wheels, clutch hubs etc.

### **ATTENTION!**

Impacts to in and output shaft must be strictly avoided, as they will damage the shafts and shaft bearings.

It is absolutely necessary to carry out an aligned assembly between driving components with the utmost accuracy.

### 7.2. Electrical placing into service

Electrical circuit points have to correspond to applicable regulations and they have to be executed by qualified people.



#### Motor connection:

A corresponding motor operation manual will be supplied together with the mounted motors factory-made.  
The specified references and safety regulations of this manual have to be strictly observed.

Further references are given on rating plates or identification plates of motor and possible built-on accessories.

For protection of motor against overload the customer has to provide a motor-circuit switch, unless the motors are not equipped with PTC-thermistor or thermostat relay protection.  
In case of using no motor protection, any warranty claim will be voided for the complete planetroll drive.

#### ATTENTION!

Before placing drive into service it is to be guaranteed that

- the drive does not drive against blockade
- possibly existing brakes are ventilated
- all protection and security devices are installed properly (also valid for trial operation)
- the rotational direction of drive is correct

#### 8. Maintenance

A general maintenance of the wear-resistant working planetroll variable speed gearbox plaromaster® is not necessary!

The single maintenance work is limited to the change of traction fluid.

The necessity of changing traction fluid depends definitely on operating conditions and application conditions with operator. Therefore, the changing interval of traction fluid can be substantially different for each individual case.

For variable speed gearboxes having a higher operating temperature than approx. 70 °C - depending on application and ambience - a change of traction fluid after 5.000 hours of operation, however at the latest after 10.000 hours of operation is recommended.

For applications with an operating temperature of variable speed gearbox under 70 °C it is recommended to arrange for a change of traction fluid after 15.000 hours of operation at the latest.

The variable speed gearbox may reach a housing surface temperature of 95 °C during continuous-duty.

Please see technical documentation „Traction fluid capacities MR“ with documentation no. DOKU SekGF-148-T GB (attached to each gearbox), for carrying out the change of traction fluid as well as for traction fluid filling quantities.



## **ATTENTION!**

During change of traction fluid it is to be considered that the drive cannot be switched on.

Please avoid dust deposit on drives because of overheating.

### 9. Supplementary gearboxes (maintenance, servicing, lubricating)

The supplementary gearboxes mounted frontend or backend on planetroll variable speed gearboxes have own and separate lubricating rooms. In case of necessary maintenance or servicing works of these supplementary gearboxes please have a look on their proper operational manual.

### 10. Service and emergency maintenance

The planetroll variable speed gearboxes are precisely manufactured products, regarding the specifications of a certified Quality Management System according to DIN EN ISO 9001:2000.

The variable speed gearboxes plaromaster® have a high life span and the operation is free of wear. However, if you will state any noticeable problems like unusual noises, vibrations or a higher abnormal gearbox housing surface temperature at the gear, then the drive should be stopped. In any case you will have to inform our service department. They are your partners for emergency maintenance.

Please contact us:

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For further information and technical documentation, please see our web-sites [www.planetroll.com](http://www.planetroll.com).

We wish you much pleasure with our variable speed gearboxes.

Your  
- planetroll GmbH & Co. KG -