

Rexroth Sytronix

Motor-Pump Unit MPA02

PGH4 / PGM4 - MS2N10

Mounting instructions

R911375613

Edition 02

About this documentation

This documentation is for fitters and service engineers. This documentation contains important information to safely and properly assemble the product.

Validity of the documentation

This documentation is valid for the following motor-pump units:

- ▶ PGH4 pump series on MS2N10 motor
- ▶ PGM4 pump series on MS2N10 motor

General safety instructions

- ▶ Observe the valid regulations about accident prevention and environmental protection.
- ▶ Heed the safety regulations and instructions of the country in which the product is used.
- ▶ Use Rexroth products only in proper state.
- ▶ Please observe all notes on the product.
- ▶ Only use accessories and spare parts which are permitted by the manufacturer to prevent from risk of injury due to unsuitable spare parts.

Qualified personnel

Assembly and installation of motor-pump units MPA02 may be performed by qualified personnel or competent persons only. Persons

are qualified if they possess knowledge of or experience with the applicable standards and regulations. They must be able to evaluate the assigned work and to recognize any potential danger.

Scope of delivery

To connect the selected motor-pump unit, the scope of delivery contains all necessary small parts like screws and washers, beside the motor and the pump.

Other fastening material connecting the motor-pump unit with the machine, must be provided by the customer.

Tools and auxiliary materials

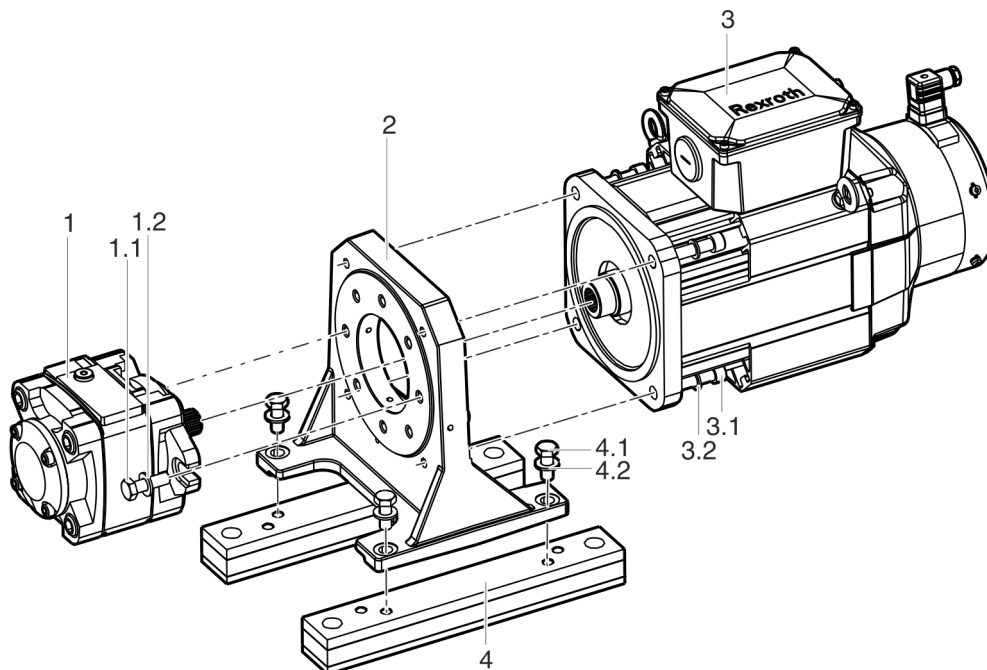
Keep the following tools and auxiliary materials ready for assembly:

- ▶ 1x Allen size 10 (torque wrench)
- ▶ 1x Allen size 4
- ▶ 2x Open-end wrench SW18 (Torque wrench)
- ▶ Screw lock Loctite 243®

Assembly

Motor-pump unit with foot fastening

Assemble the components according to the drawing and observe all assembly steps. Tolerance of the specified tightening torque $\pm 10\%$.

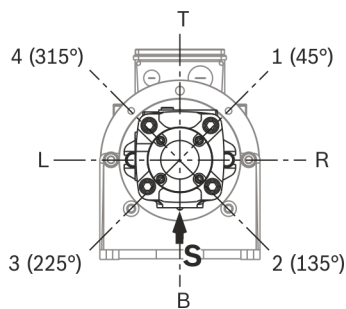


- 1 Internal gear pump PGH4
 - 1.1 ISO4017-M12X40-8.8 (tightening torque 87 Nm)
 - 1.2 ISO7089-12-200HV
 - 2 Adapter flange
 - 3 MS2N10 synchronous motor
- Assemble MPA02 with components for foot assembly

- 3.1 ISO4762-M12X45-10.9
- 3.2 ISO7092-12-200HV
- 4 Damper bar (option)
- 4.1 ISO4017-M12X30-8.8 (tightening torque 87 Nm)
- 4.2 ISO7089-12-200HV

For screw connections use screw lock, e.g. Loctite 243 when proceeding the following working steps 1 to 4.

1. **Screw on pump on adapter flange.**
Fasten the pump (1) with screws (1.1) and washers (1.2) onto the adapter flange (2). Tightening torque 87 Nm.



S Suction port (figured option = B)
Pump assembly mounting direction

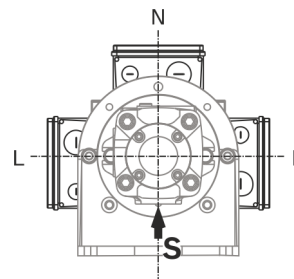
2. **Assemble the damper bars.**
This mounting step is not necessary in design without damper bars.
Fasten both damper bars (4) on the adapter flange (2) with the screws (4.1) and washers (4.2). Tightening torque 87 Nm.
3. **Mount the motor**
Use sufficiently measured lifting tools.

NOTICE

Damage by improper assembly operation!

Carefully join the motor shaft and pump shaft, aligning without being jammed. Strikes onto motor or pump can cause damage and are therefore not allowed.

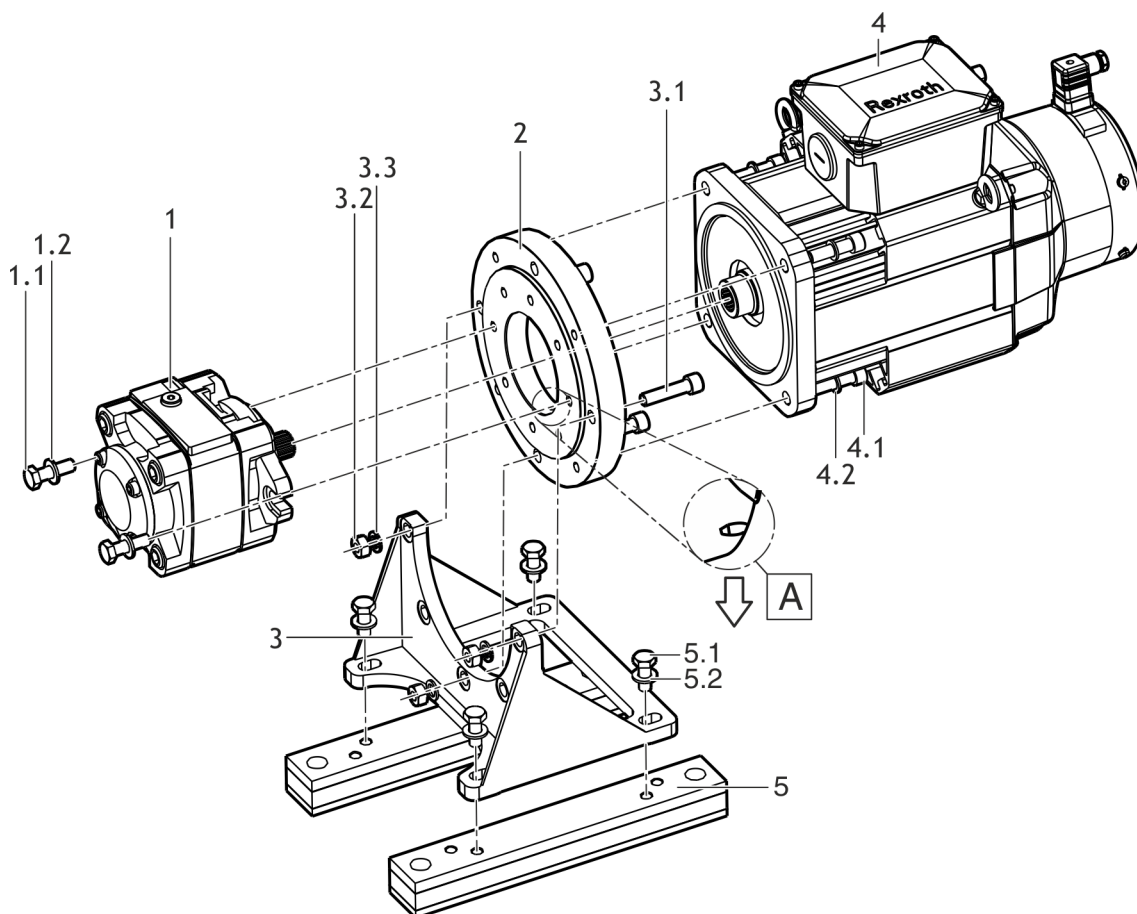
Insert the motor (3) in the required orientation (N, R or L) and the pump group (1), (2), (3) in vertical position. Screw the motor (3) with the screws (3.1) and washers (3.2) on the adapter flange. Tightening torque 87 Nm.



Motor assembly direction

Motor-pump unit with flange and foot assembly

Assemble the components according to the drawing and observe all assembly steps. Tolerance of the specified tightening torque $\pm 10\%$.



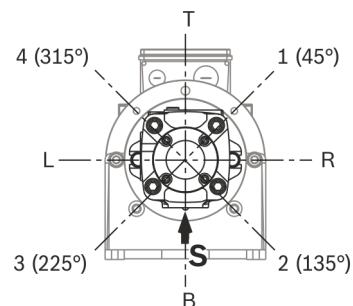
- | | |
|---|---|
| 1 Internal gear pump PGH4 | 4 MS2N10 synchronous motor |
| 1.1 ISO4017-M12X40-8.8 (tightening torque 87 Nm) | 4.1 ISO4762-M12X45-10.9 |
| 1.2 ISO7089-12-200HV | 4.2 ISO7092-12-200HV |
| 2 Adapter flange | 5 Damping bars (option) |
| 3 Pump foot (option) | 5.1 ISO4017-M12X30-8.8 (Tightening torque 87 Nm) |
| 3.1 ISO4762-M12X50-8.8 (tightening torque 87 Nm) | 5.2 ISO7089-12-200HV |
| 3.2 ISO4032-M12-8 | A Leakage hole |
| 3.3 ISO7089-12-200HV | |

Assemble MPA02 with components for foot/flange assembly

For screw connections use screw lock, e.g. Loctite 243 when proceeding the following working steps 1 to 4.

1. Screw on pump on adapter flange.

Fasten the pump (1) with screws (1.1) and washers (1.2) onto the adapter flange (2). Tightening torque 87 Nm.



S Suction port (figured option = B)
Pump assembly mounting direction

In assembled state, the leakage hole (A) must be at the bottom that escaping oil can flow out.

2. Mount pump foot

This mounting step is not necessary in design without pump foot. Fasten the pump foot (3) with the screws (3.1), washers (3.2) and hexagon nuts (3.3) on the adapter flange. Tightening torque 87 Nm.

In design “pump foot with damper bars”, additionally fasten both damper bars (5) on the pump foot (3) with screws (5.1) and washers (5.2). Tightening torque 87 Nm. This mounting step is not necessary in design with damper bars.

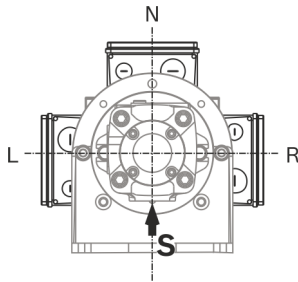
3. Mount the motor

Use sufficiently measured lifting tools.

NOTICE

Damage by improper assembly operation!
Carefully join the motor shaft and pump shaft, aligning without being jammed. Strikes onto motor or pump can cause damage and are therefore not allowed.

Insert the motor (4) in the required orientation (N, R or L) and the pump group (1), (2), (3) in vertical position. Screw the motor (4) with the screws (4,1) and washers (4.2) on the adapter flange. Tightening torque 87 Nm.



Motor assembly direction

Transport the motor-pump unit with cranes or lifting tools

The transport with cranes or lifting tools may only be done with suitable lifting means, like e.g. lifting belts, belts and chains. The components have the following lifting points for ring screws DIN 580.

- ▶ MS2N10 (2× M8)
- ▶ PGH4 / PGM4 (1× M8)

For further information about carrying capacity of the ring screws, refer to standard DIN 580.

Weight of motor-pump units

Frame size	PGH4 / PGM4					
Nominal size	20	25	32	40	50	63
Weight (kg)	13.5	14	14.5	15	16	18

Weight internal gear pumps

Frame size	MS2N10 with natural convection (weight in kg)			
Frame lengths	C	D	E	F
without brake	-	35	-	-
with brake	-	40	-	-

Weight motors

Frame size	MS2N10 with axial fan (weight in kg)			
Frame lengths	C	D	E	F
without brake	24.5	35	46	56
with brake	In prep.	40	53	63
i.p. = in preparation				

Weight motors with axial fan

Frame size	MS2N10 with liquid cooling (weight in kg)			
Frame lengths	C	D	E	F
without brake	29	39	49	59
with brake	In prep.	In prep.	In prep.	In prep.
In prep. = In preparation				

Weights motors

	Adapter flange	Pump foot	Adapter flange with integrated pump foot
Frame size	MS2N10	MS2N10	MS2N10
Weight kg	2.8	6	13.1

Weight motor components

The specified weights are valid for the components only, weights of motor-pump combinations add together from the single values.

- ▶ Ensure a sufficiently dimensioned loading capacity of the lifting tools to ensure a safe transport of the weight of the motor-pump unit or the single parts.

Check motor-pump unit

- ▶ Check motor-pump unit for visible damage.
- ▶ Check the installation dimension of the motor-pump unit according to the dimension sheets of the Operating Instructions DOK-SY-TROX-MPA02*****-ITRS-xx-P.

Deviating installation dimensions and tolerances can indicate to faulty assembly. Check and eliminate the error cause before you mount the motor-pump unit into the device.

Installation in the machine

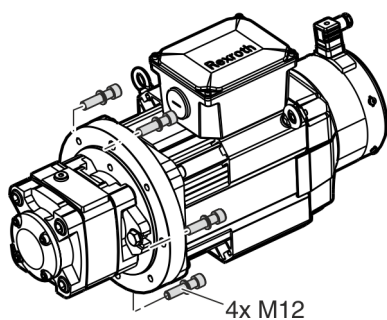
The screw connection must be adjusted to the installation situation (screw-length, property class, screw-in depth, material, ...). The dimensioning of the screw connection is in the responsibility of the customer.

- ▶ Assemble in dry, dust free environment.
- ▶ Ensure a burr-free machine-side contact surface.
- ▶ Securely screw the motor-pump-unit with the machine construction.

Flange fastening

Fastening mode	Hole ø [mm]	Screw size (Amount)	Washer
Flange	13.5	M12 (4x)	yes

Fastening accessory for flange mounting

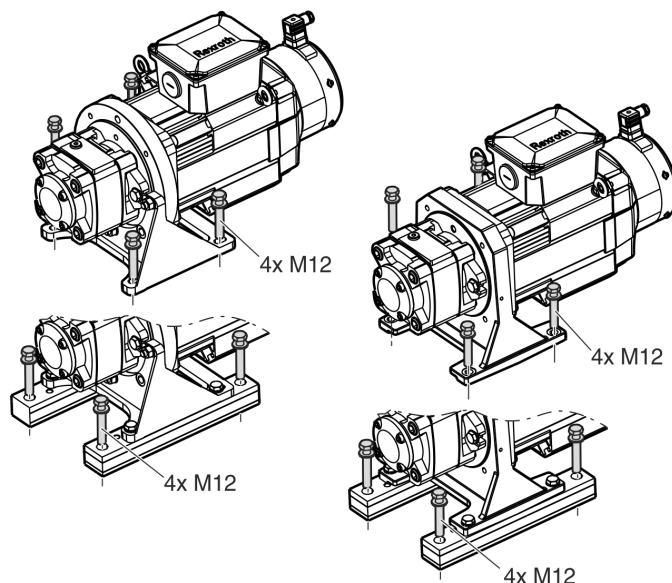


MPA02 flange fastening

Foot fastening

Fastening mode	Hole ø [mm]	Screw size (Amount)	Washer
Foot	14	M12 (4x)	yes
Damping bars	13	M12 (4x)	yes

MPA02 fastening accessories for foot fastening



MPA02 foot fastening

Disassembly

For disassembly proceed in reverse order, as described in chapter "Assembly". Proceed carefully and avoid damages on the components. Only components in proper state can be reused.

Supplementary documentation

All documentation listed in the following are very important for the whole system. They are available in the Bosch Rexroth Media Directory.

<http://www.boschrexroth.com/various/utilities/mediadirectory/index.jsp>

Title	Material number Documentation type (Dok-...)
Rexroth Sytronix Safety Notes and Instructions on Use Motor-Pump Unit	R911339831 DOK-SYTROX-SAFETY*MP**-SARS-EN-P
Rexroth Sytronix Mounting and Commissioning Internal Gear Pump PGH/PGM/PGF	R911340908 DOK-SYTROX-PG**-*****-ASRS-EN-P
Rexroth IndraDyn S MS2N Synchronous Motors	R911347581 DOK-MOTOR*-MS2N*****-ITRS-EN-P

Supplementary documentation

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