

# Rexroth Sytronix

## Motor-Pump Unit MPA01

### PGH4 - MSK101 - Liquid Cooling

Mounting Instructions

**R911339838****Edition 02**

#### Mounting Instruction MPA01

##### 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 this Documentation

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

MPA01-PGH4 <b>F</b> -NN-V <b>NB</b> -M11 <b>DBHL</b> -S3 <b>A</b> -NN	
<u>Nominal Size 1. Pump</u> PGH4, NG20 = F PGH4, NG25 = H PGH4, NG32 = K PGH4, NG40 = M PGH4, NG50 = P PGH4, NG63 = R	<u>Electric Connection</u> Connector to A-side = A  <u>Cooling Mode</u> Liquid cooling = L  <u>Motor Frame Length</u> MSK101C = C MSK101D = D MSK101E = E
<u>Mounting Pump Direction</u> MPA not mounted = N	
<u>Fastening</u> Flange fastening (without foot) = N Foot fastening = B	

MPA01-0011TS

Type Codes

##### 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 Personell

Mounting and installing of motor-pump units MPA01 must be done by qualified personell or competent persons. A person is qualified, if knowledge or experiences of respective standards and regulations exists. Assigned work must be evaluated and possible danger be recognized.

##### Scope of Delivery

- ▶ 1× Internal gear pump PGH4
- ▶ 1× Synchronous motor MSK101
- ▶ 1× Flange
- ▶ (1)× Pump foot (option)
- ▶ 5× Washer (plain) ISO7089-12-200HV
- ▶ 2× Hexagon head screw ISO4017-M12X40-8.8
- ▶ 3× Hexagon socket head cap screw ISO4762-M12X50-8.8
- ▶ 3× Hexagon nut ISO4032-M12-8
- ▶ 3× Hexagon socket head cap screws ISO4762-M12X45-10.9
- ▶ 4× Washer (plain, small series) ISO7089-12-200HV
- ▶ 1× Mounting instruction

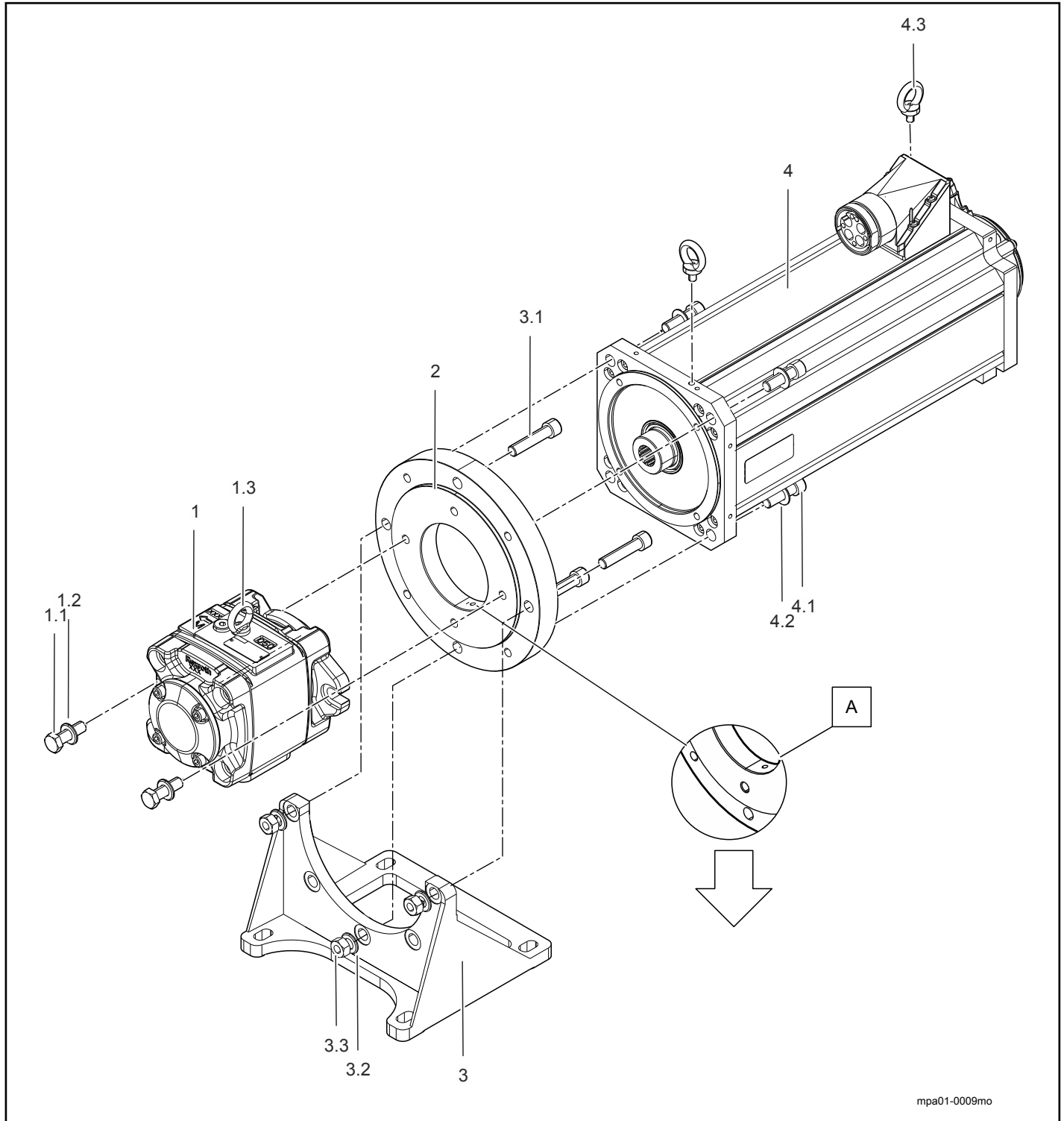
##### Tools and Auxiliary Materials

Keep the following tools and auxiliary materials ready for assembly:

- ▶ 1× Allen size 10 (torque wrench)
- ▶ 1× Allen size 3
- ▶ 2× Open-end wrench SW18 (Torque wrench)
- ▶ Screw lock Loctite 243®

##### Assembly

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



mpa01-0009mo

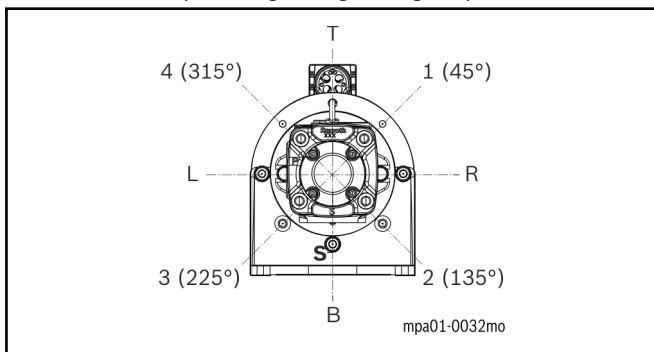
- 1** Internal gear pump PGH4
  - 1.1** ISO4017-M12X40-8.8 (tightening torque 87 Nm)
  - 1.2** ISO7089-12-200HV
  - 1.3** DIN580-M8
  - 2** Adapter flange
  - 3** Pump foot
  - 3.1** ISO4762-M12X50-8.8 (tightening torque 87 Nm)
- Assemble the motor-pump unit MPA01 composed of components

- 3.2** ISO4032-M12-8
- 3.3** ISO7089-12-200HV
- 4** Synchronous motor MSK101
- 4.1** ISO4762-M12X45-10.9
- 4.2** ISO7092-12-200HV
- 4.3** DIN580-M8
- A** Leakage hole

For screw connections use screw lock, e.g. Loctite 243 when proceeding the following working steps 1 to 3.

**1. Screw on pump on adapter flange.**

Screw the pump 1 in the required orientation (T, 1 (45°), R, 2 (135°), B, 3 (225°), L or 4 (315°) with the screws 1.1 and washers 1.2 on 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 3.

Fasten the optional pump foot 3 with the screws 3.1, washers 3.2 and nut 3.3 on the adapter flange (tightening torque 87 Nm).

**3. Mount the motor**

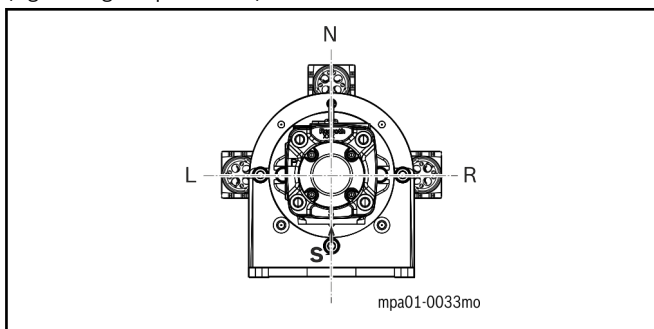
Use sufficiently measured lifting tools.

**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 (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.

- ▶ MSK101 (2× M8)
- ▶ PGM4 (1× M8)

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

**Weight of Motor-Pump Units**

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

Weight internal gear pumps

Frame size	MSK101		
Nominal size	C	D	E
Weight kg	28.3	40.0	53.5

Weight MSK motors

	Adapter flange	Pump foot
Frame size	MSK101	MSK101
Weight kg	2.8	6.1

Weight motor components

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

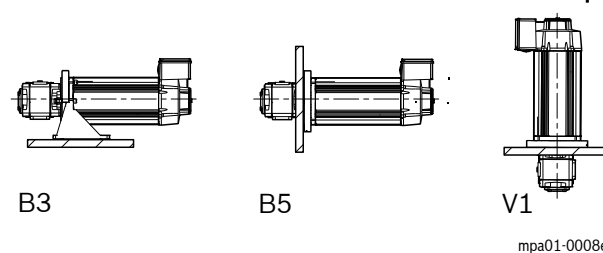
- ▶ Ensure a sufficiently dimensioned loading capacity of the lifting tools to ensure a safe transport of the weight of the motor-pump unit or the single parts.

**Check Motor-Pump Unit**

- ▶ Check the motor-pump unit for visible damage.
- ▶ Check the installation measures of the motor-pump unit according to the dimension sheets.

Deviating installation measures or tolerances can show a wrong assembly. Check and correct the failure cause before you mount the motor-pump unit into the construction.

**Permitted Installation Positions of the Motor-Pump Unit**



The assembly of motor-pump units can be made in foot or flange mounting. Allowed installation positions according to EN 60037-7 are **IM B3, IM B5 and IM V1**. Vertical installation IM V3 (motor under the pump) is not permitted.

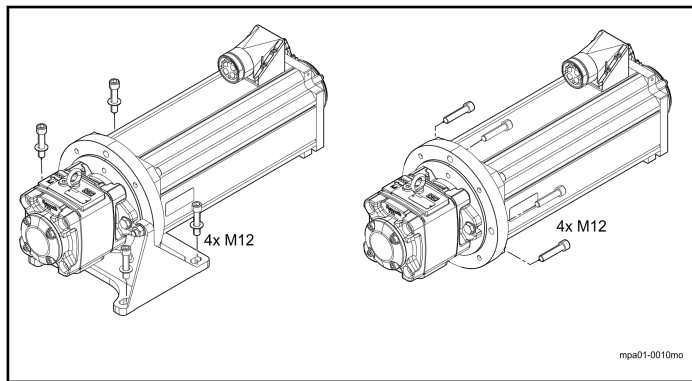
**Installation MPA01-PGH4-MSK101 Liquid Cooling**

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.

Fastening	Hole ø [mm]	Bolt size-ISO-grade	Washer
Foot	14	M12	Yes
Flange	13,5	M12	-

MPA accessory for fastening



Assemble motor-pump unit MPA01 into the construction.

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.

**Dismantling**

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.

**Additional 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 (R911...) Documentation Type (Dok-...)
Rexroth Sytronix Safety Notes and Instructions on Use Motor-Pump Unit	R911339831 DOK-SYTRON-SAFETY*MP**-SARS-EN-P
Rexroth Sytronix Mounting and Start-up Internal Gear Pump PGH/PGM/PGF	R911340908 DOK-SYTRON-PG**-*****-ASRS-EN-P
Rexroth IndraDyn S Electrical Connection MSK101 Terminal Box	R911340001 DOK-MOTOR*-MSK101*F*NP-ASRS-EN-P
Rexroth Sytronix SvP70xx Motor-Pump Unit MPA 01	R911339824 DOK-SYTRON-MPA01*****-ITRS-EN-P

Additional valid documentation

