

Rexroth Sytronix

Mounting and Commissioning

Internal Gear Pump PGH/PGM/PGF

Mounting Instructions

R911340908
Edition 02

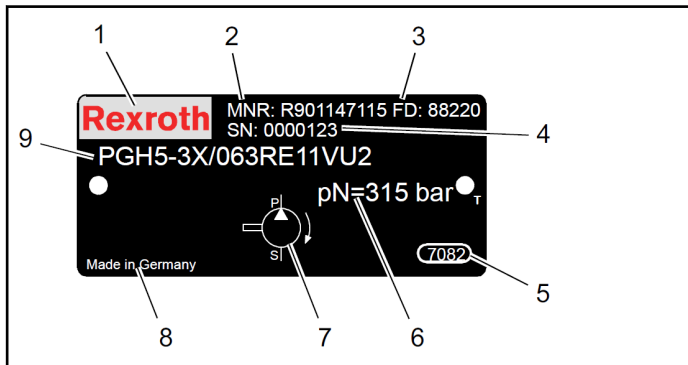
Overview

This instruction gives important information about safe and proper mounting and commissioning of the internal gear pump PGH, PGM or PGF. Completely read this instructions and the safety notes "Rexroth Sytronix, Safety Notes and Instructions on Use Motor-Pump-Unit MPA01" (MNR R911339831), before you work with the internal gear pump.

The internal gear pump is a system component. Also observe the instructions of the other system components and the documentation of the system manufacturer. You will find a list about supplementary documentation in the appendix of this data sheet.

Identification of the Internal Gear Pump via Type Plate

Example type plate internal gear pump PGH



- 1 Manufacturer
- 2 Part number
- 3 Production date
- 4 Serial number
- 5 Division/factory number
- 6 Rated pressure
- 7 Symbol acc. to ISO 1219
- 8 Country of origin
- 9 Material short text

Hydraulic Fluid

		PGH	PGM	PGF
Hydraulic Fluid	HL	Mineral oil acc. to DIN 51524 Part 1		x
	HLP	Mineral oil acc. to DIN 51524 Part 2	x	x
	HFC	aqueous Polymer solution acc. to DIN EN ISO 12922 ^{1) 2)} :	x	

		PGH	PGM	PGF
	seal design W			
	HEES Liquids acc. to DIN ISO 15380 ¹⁾	x		x
	HEPR Liquids acc. to DIN ISO 15380			x
	HFD-U Liquids acc. to VDMA 24317 ¹⁾ DIN EN ISO 12922 ¹⁾	x		
	Please observe our instructions acc. to data sheet RD90220 ⁴⁾ . Other liquids on demand!	x	x	
Hydraulic fluid temperature range [°C]	HLP liquid -10 bis +80; please require in the case of other temperatures!	x	x	
	Special liquid -10 bis +50; please require in the case of other temperatures!	x		
	-20 bis +100; please require in the case of other temperatures!			x
Environmental temperature range [°C]	-20 to +60	x	x	x
Viscosity range [mm ² /s]	10 to 300 (until n = 1,800 min ⁻¹)	x	x	x
	10 to 100 (until n = 3,000 min ⁻¹)	x	x	
	2,000 allowed start-up viscosity (400 to 1,800 min ⁻¹)	x	x	x
Degree of pollution ⁵⁾	Purity class acc. to ISO 4406 (c) Class 20/18/15 ³⁾	x	x	x

- 1) Limitations for special liquids are valid for these media.
- 2) Hydraulic fluid HFC: drive speed $n_{max} = 2,000 \text{ min}^{-1}$
- 3) The specified purity classes for the components must be kept in hydraulic systems. An effective filtration prevents malfunctions and increases the lifetime of the components at the same time. For selection of the filters refer to data sheets RE50070, RE50076 and RE50081.
- 4) Hydraulic fluids on the basis of mineral oils and congeneric hydrocarbon, notes about application and application demands for Rexroth hydraulic components.
- 5) Max. allowed degree of contamination of hydraulic fluid

Assembly

You may only start with the assembly if the hydraulic diagram of the system is readily available. The assembly of the internal gear pump may only be done by skilled personnel (refer to "Rexroth Sytronix, Safety Notes and Instructions on Use, Motor-Pump Unit", MNR R911339831).

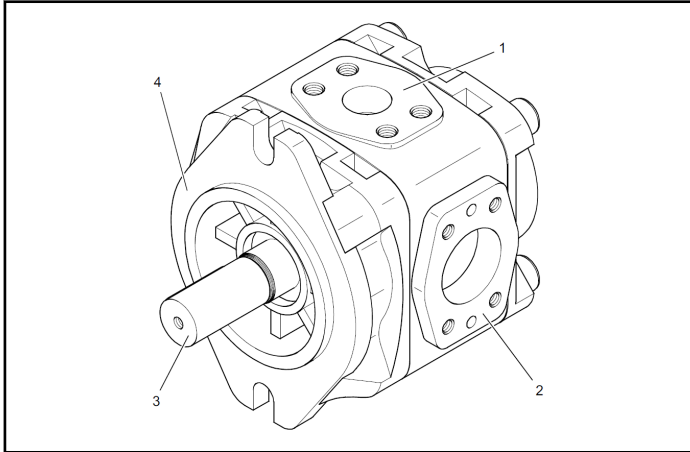


Figure deviating for PGF, see RE10213

- 1 Pressure connection "P"
- 2 Suction port "S"
- 3 Shaft
- 4 Fastening flange

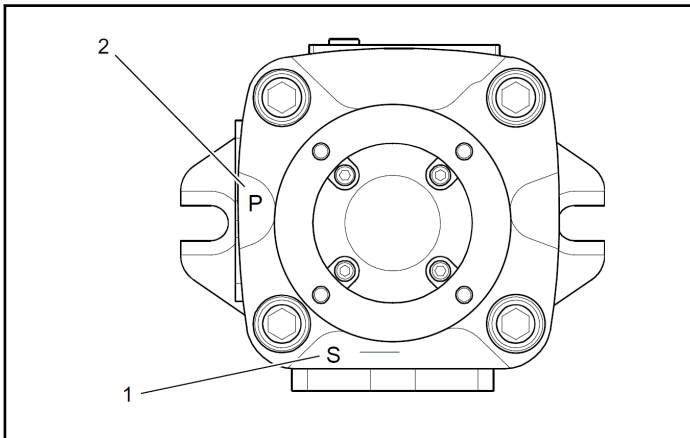


Figure deviating for PGF, see RE10213

- 1 Designation suction port "S"
- 2 Designation pressure connection "P"

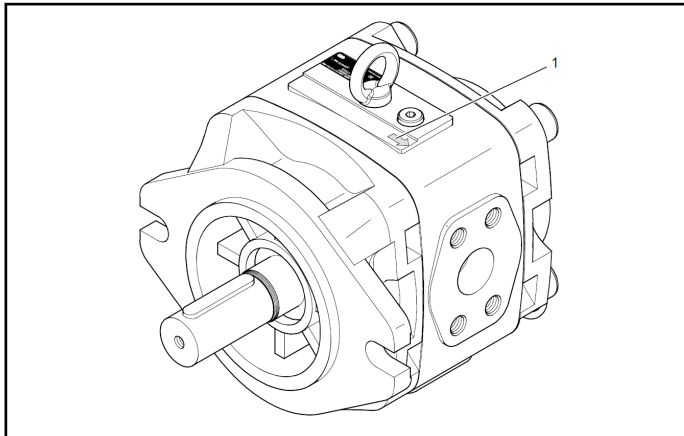


Figure deviating for PGF, see RE10213

- 1 Rotational direction arrow

- ▶ Ensure that the rotational direction of the internal gear pump is according to the rotational direction arrow on the housing complies with the rotational direction of the electric motor.

Connect pump hydraulically

- ▶ Remove the flange covers on suction and pressure connection.
- ▶ Check the lines for cleanliness.
- ▶ Ensure that the line connection contains the specified sealings.
- ▶ Lock O-rings with assembly grease against slipping, if necessary.
- ▶ Now, hydraulically connect the pump according to the specifications of the plant or machine manufacturers.



If the motor-pump unit should be used in a master-slave bond, we recommend to secure the slave drive on the high pressure side with check valves and therewith ensure a depressurization only via the master drive. For more information refer to the operation instruction (MNR R911339824).

Commissioning

Preparation Commissioning

- ▶ Ensure a free suction channel.
- ▶ Ensure that the piping has been assembled in a clean and tight form.
- ▶ Check the hydraulic diagram for direct functions/movements when pressure is set-up.
- ▶ Check the hydraulic fluid tank for cleanliness.
- ▶ Fill in the hydraulic fluid according to the specification of the system manufacturer. For this purpose, only use filters with the required minimum retention rate.
- ▶ Check the suction line for tight assembly.
- ▶ Make sure that the direction of rotation of the motor complies with the direction of rotation of the pump.

First Commissioning

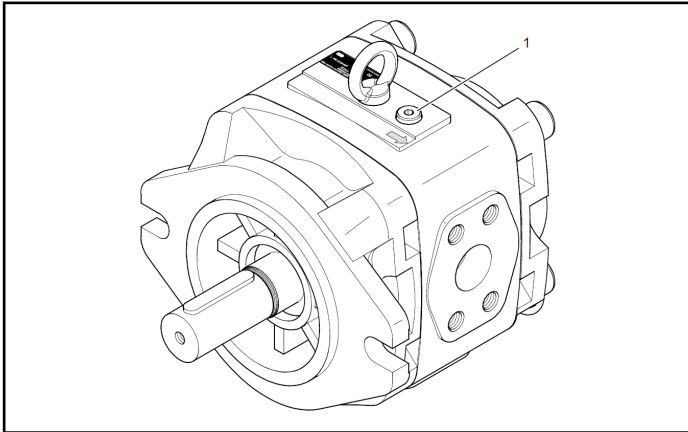


Figure deviating for PGF, see RE10213

- 1 Bleed port internal gear pump

Proceed as follows to commission the internal gear pump PGH/PGM:

CAUTION

Slip hazard! Slipping may cause serious injuries. When removing shaft protection, protective plugs and flange covers, residual oil may leak at zero pressure.

- ▶ Immediately absorb leaking residual oil.

WARNING

Risk of intoxication and injury due to the leaking hydraulic medium! Contact with hydraulic fluids causes health hazards (e.g. eye injuries, skin lesions, intoxication in case of inhaling).

- ▶ Before each commissioning, always check the lines for wear and/or damage.
- ▶ Wear protective gloves, protective goggles and suitable working clothes.
- ▶ Immediately consult a doctor if there is nevertheless contact between the hydraulic fluid and your eyes or your skin.

- ▶ Pre-fill the pump with filtered fluid. Depending on the installation position, filling can be performed via the suction, pressure or measurement port. For information regarding a suitable connection, please refer to the operating instruction of the system.
- ▶ Bleed the pump. If no switchable or automatic bleeding is provided, you must bleed the pump manually.



When using an internal gear pump PGF, provide an additionally manual, switchable or automatic bleeding. The bleeding point for manual bleeding must be provided in the pressure line before the first valve or check valve to do a pressureless bleeding. See also data sheet RE10213.

Manual bleeding the pump (only PGH and PGM)

As standard, the bleed and measurement port of the internal gear pump is closed by means of a G1/4 screw plug.

WARNING

Risk of injuries due to wrong locking screw!

- ▶ For closing the bleed and measurement port, only use the supplied screw plug G1/4.
- ▶ Screws with another thread or another size do not have a tight seat and can therefore loosen at high pressure during operation and heavily harm persons in their environment.

1. Open the bleed and measurement port by removing the screw plug or switch to depressurized circulation according to the system's operating instruction.
2. For bleeding the pump, switch the motor on shortly and immediately off again (jog-mode). Repeat this procedure until the fluid leaks free from bubbles and complete bleeding is ensured.
3. Cover the manually opened bleed port by screwing in the G 1/4 screw-plug. Tightening torque T = 30 Nm, tolerance +/- 10%.

Now, the internal gear pump is bled.

- ▶ Ensure that the system is depressurized.
- ▶ Switch on the drive motor and start-up the pump shortly until it reaches the maximum speed.
- ▶ Build up pressure slowly. In doing so, observe the instructions of the system manufacturer.
- ▶ When commissioning the system make sure that no fluid leaks under high pressure.
- ▶ When commissioning the system make sure that no bubbles and/or foams are generated in the hydraulic fluid.
- ▶ Switch the motor off again.

Re-commissioning after Standstill

- ▶ Upon re-commissioning after disconnection from supply, check the direction of rotation of the electric motor for compliance with the arrow indicating the direction of rotation on the pump housing.
- ▶ Check pump and system for leakage. Loss of oil indicates leakage below the hydraulic fluid level. An increased hydraulic fluid level in the tank indicates leakage above the hydraulic fluid level.
- ▶ When the pump is arranged above the hydraulic fluid level, the pump can drain via leakage, e.g. a worn-out shaft sealing ring. In this case, it must be bled again during re-commissioning. Have the damage repaired.
- ▶ Switch on the motor if the system is faultless.

Additional valid documentation

Title	Part number Documentation Type (Dok-...)
Rexroth Sytronix Safety Notes and Instructions on Use Motor-Pump Unit	R911339831 SYTrox-SAFETY*MP**SARS-EN-P Safety Notes

Rexroth Sytronix SvP70xx Motor-Pump Unit MPA01 (with MSK Air Cooling)	R911339499 SYTROX-MPA01*M11A*-ASRS-EN-P Mounting Instructions
Rexroth Sytronix SvP70xx Motor-Pump Unit MPA01 (with MSK Liquid Cooling)	R911339838 SYTROX-MPA01*M11L*-ASRS-EN-P Mounting Instructions
Rexroth Sytronix SvP70xx Motor-Pump Unit MPA01 PGH5 - MSK133 - Air / Liquid Cooling	R911341600 SYTROX-MPA01*M13*-ASRS-EN-P Mounting Instructions
Rexroth Sytronix Motor-Pump Unit MPA01	R911339824 SYTROX-MPA01*****-ITRS-EN-P Operating Instructions
Rexroth Sytronix Motor-Pump Unit MPAS1	R911342449 SYTROX-MPAS1*M11*-ASRS-EN-P Mounting Instructions
Rexroth Sytronix Motor-Pump Unit MPAS1	R911343224. SYTROX-MPAS1*****-ITRS-EN-P Operating Instructions
Rexroth Sytronix Motor-Pump Unit MPES2	R911342700 SYTROX-MPES2*****-ASRS-EN-P Mounting Instructions
Rexroth Sytronix Motor-Pump Unit MPES3	R911342707 SYTROX-MPES3*****-ASRS-EN-P Mounting Instructions
Rexroth Sytronix Motor-Pump Unit MPES2/MPES3	R911342715 SYTROX-MPES*****-ITRS-EN-P Operating Instructions
Rexroth Sytronix Motor-Pump Unit MPAT1	R912005194 SYTROX-MPAT1*****-ASRS-EN-P Mounting Instructions
Hydraulic Fluids Bases on Mineral Oils and Related Hydrocarbons	RE90220 Data Sheet
Environmentally Acceptable Hydraulic Fluids	RE90221 Data Sheet

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