HAWE HD 20 hand pump, 20 cm³/stroke

Manufacturer: HAWE Hydraulik

Manufacturer part number / published order designation: HD 20

Published model: HD 20

About this compilation

Prepared by Hydmaster from selected manufacturer documentation. Original technical pages follow without cropped drawings, rewritten data or altered units. This cover and index are Hydmaster editorial material, not a manufacturer-issued exact-execution datasheet.

Coverage: selected pages relevant to the identified size and configuration. Other options or neighbouring models retained on an original page apply only where explicitly identified.

Execution notes and conditions

Publisher p11 heading is HE/HD pipe connection; one internal caption says HP13(20,30). Do not rename the proven HD article from this typographical caption. Hand lever is not included.

Source-page index

Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

Source A: Hawe H Hd He Hand Pumps

Original pages	Compiled pages	Relevant content
5-7	2-4	Exact basic-type row: pressure, displacement, action and mounting. Published execution: HD 20.; Additional-function compatibility confirms the unmodified base None option.; Default seal/fluid compatibility and optional FKM/ATEX restrictions.
9	5	Fluid, viscosity, cleanliness, temperature, installation and mass requirements.
11	6	HE/HD pipe-connected body/actuation drawings and G1/4 port specification; lever not included.
14-16	7-9	Intended use and manufacturer installation/assembly instructions.; Operating, pressure/flow configuration and maintenance instructions.; Suction-line and reservoir-position planning requirements.

2 Available versions, main data

2.1 Single pump

Order coding examples:

H 25 HD 30 P HE 4	S	- 400	- PYD	-EX

- -EX: ATEX "Table 4"
- - PYD: Sealing specification "Table 3"
- - 400: Pressure specification (bar) for version with pressure-limiting valve "Table 2"
- S: Additional function "Table 2"
- H 25 / HD 30 P / HE 4: Basic type and size "Table 1"

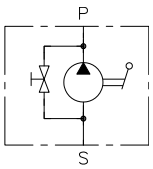
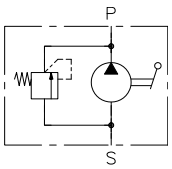
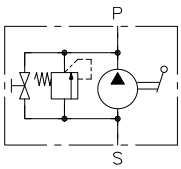
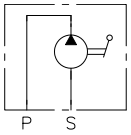
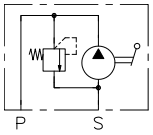
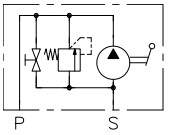
Table 1 Basic type and size

Basic type and size	Pressure p_{max} (bar) in P	Displacement volume V_{stroke} (cm^3)	Actuation torque (Nm)	Function, design
Pipe connection				
H 16	350	6	270	single-acting, open, suction port loadable (≤ 150 bar)
H 20	220	9.4		
H 25	150	14.7		
HE 3	800	3	250	single-acting, closed
HE 4	600	4		
HD 13	350	13	250	double-acting, closed
HD 20	220	20		
HD 30	150	30		
HD 301	150	30		double-acting, closed, suction port loadable (≤ 150 bar)
Manifold mounting				
H 16 P	350	6	270	single-acting, open
H 20 P	220	9.4		
HE 4 P	600	4	250	single-acting, closed
HD 13 P	350	13	250	double-acting, closed
HD 20 P	220	20		
HD 30 P	150	30		

NOTE

- Possible combinations with additional function, see "Table 2"
- Pressure at S acts through the pump via P to the connected consumer or the directional valve connected between. The hand lever is pushed into an end position.

Table 2 Additional function

Basic type and size	Additional function			
	None	Drain valve	Pressure-limiting valve	Drain valve and pressure-limiting valve
	--	A	S	AS
Pipe connection				
H 16	●			
H 20	●			
H 25	●			
HE 3	●		●	
HE 4	●	●	●	●
HD 13	●	●	●	●
HD 20	●	●	●	●
HD 30	●	●	●	●
HD 301			●	
				
Manifold mounting				
H 16 P	●			
H 20 P	●			
HE 4 P	●		●	
HD 13 P	●			●
HD 20 P	●			
HD 30 P	●			
				

NOTE

For version HD 301 please note:

- For versions ...S and AS, the pressure at the suction port is added to the factory-set pressure.

Pressure-limiting valve type S only available fixed.

Check valves are installed in ports P and S.

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Table 3 Sealing specification, for sealing with medium contact

Coding	Comment
No designation	Series, seals from NBR or AU, e.g. for mineral oil and HEES (synthetic ester)
PYD	Seals from FKM

NOTE
For the seal specification coding -PYD, the maximum operating pressure is limited to 250 bar.

Table 4 Explosion-proof version (ATEX)

Order coding	Certified according to	Classification / marking	Declaration of conformity	Operating and maintenance manual(s)	Permissible ambient temperature
...-EX	**ATEX EU**	Group II, category 2, 3: Ex II 2 G Ex h IIC T4 Gb Ex II 2 D Ex h IIIC T135°C Gb	On request	B ATEX	-20°C...+40°C

ATEX classification as per:

- DIN EN ISO 80079-36:2016-12
- DIN EN ISO 80079-37:2016-12

3 Parameters

General data

Designation	Hand pump
Design	Piston pump
Model	Pipe connection, manifold mounting
Material	Pump housing zinc-nickel coated steel; zinc-nickel coated valve housing, hardened and ground functional inner parts
Installation position	Single pump: arbitrary Version with mounted oil tank: vertical
Ports	**P** = Pressure connection **S** = Suction port
Hydraulic fluid	Hydraulic oil: according to part 1 to 3; ISO VG 10 to 68 according to DIN ISO 3448 Viscosity limits: min. approx. 4, max. approx. 1500 mm^2/s opt. operation approx. 10... 500 mm^2/s. Also suitable for biologically degradable hydraulic fluids type HEPG (polyalkylene glycol) and HEES (synthetic ester) at operating temperatures up to approx. +70°C.

Cleanliness level

ISO 4406	NAS 1638	SAE T 490
20/17/14...18/15/12	11 ... 6	5 ... 3

Temperatures	Ambient: approx. -40 ... +80°C, Fluid: -25 ... +80°C, Note the viscosity range! Permissible temperature during start: -40°C (observe start-viscosity!), as long as the service temperature is at least 20K higher for the following operation. Biologically degradable pressure fluids: Observe manufacturer's specifications. By consideration of the compatibility with seal material not over +70°C. Please note restriction with ATEX-compliant version! Surrounding area: -20 ....+40°C

Weight

Type

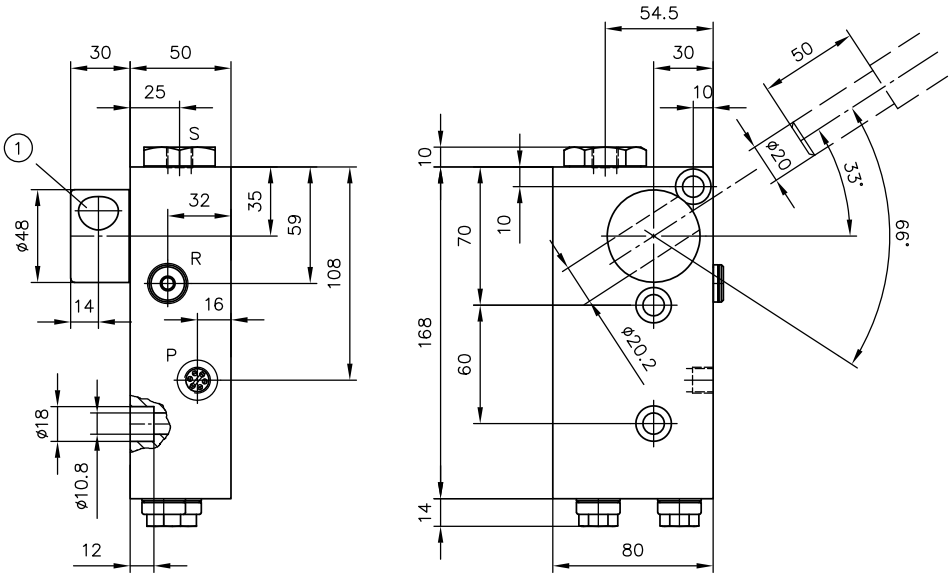
H	= 3.1 kg
HD, HE	= 4.8 kg

Tank

K 0,35	= + 0.2 kg
K 0,5	= + 0.49 kg

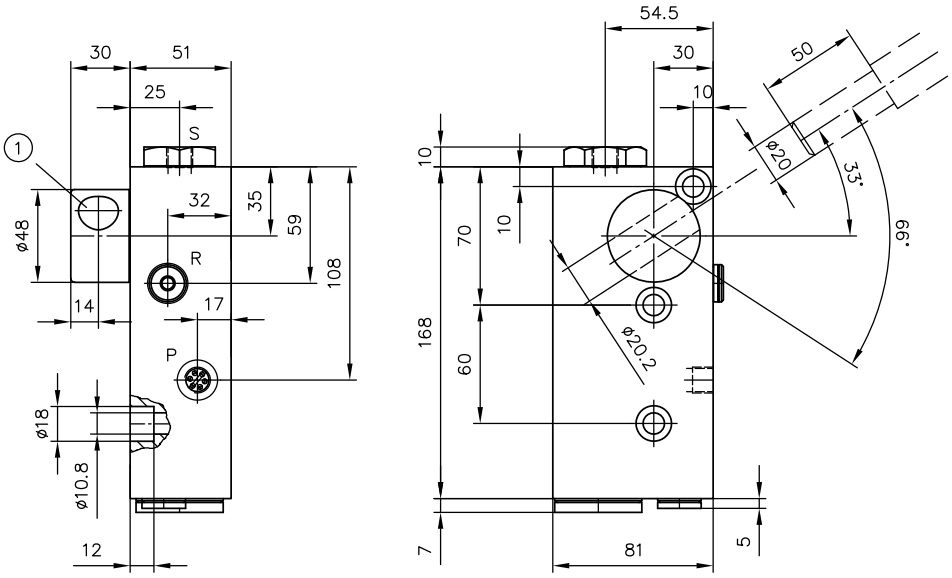
Type HE, HD, pipe connection

Hand pumps type HE 3(4)



1 Hole for hand lever

Hand pumps type HP 13(20, 30)



1 Hole for hand lever

	Connections (ISO 228-1) (BSPP)
P, S	G 1/4

NOTE
The hand lever is not included in the scope of delivery! The port S is supplied with a screw plug.

5 Assembly, operation and maintenance recommendations

5.1 Intended use

This pump is intended exclusively for use in hydraulic applications (fluid technology).

The user must observe the safety measures and warnings in this documentation.

Essential requirements for the product to function correctly and safely:

- All information in this documentation must be observed. This applies in particular to all safety measures and warnings.
- The product must only be assembled and put into operation by qualified personnel.
- The product must only be operated within the specified technical parameters. The technical parameters are described in detail in this documentation.
- All components must be suitable for the operating conditions in the event of application in an assembly.
- The operating and maintenance manual of the components, assemblies and the specific complete system must also always be observed.

If the product can no longer be operated safely:

1. Remove the product from operation and mark it accordingly.

✓ It is then not permitted to continue using or operating the product.

5.2 Assembly information

The product must only be installed in the complete system with standard and compliant connection components (screw fittings, hoses, pipes, fixtures etc.).

The product must be shut down correctly prior to dismounting (in particular in combination with hydraulic accumulators).

⚠ **DANGER**

Risk to life caused by sudden movement of the hydraulic drives when dismantled incorrectly!

Risk of serious injury or death.

- Depressurise the hydraulic system.
- Perform safety measures in preparation for maintenance.

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5.3 Operating instructions

Note product configuration and pressure / flow rate

The statements and technical parameters in this documentation must be strictly observed.
The instructions for the complete technical system must also always be followed.

NOTE

- Read the documentation carefully before usage.
- The documentation must be accessible to the operating and maintenance staff at all times.
- Keep documentation up to date after every addition or update.

Purity and filtering of the hydraulic fluid

Fine contamination can significantly impair the function of the hydraulic component. Contamination can cause irreparable damage.

Examples of fine contamination include:

- Metal chips
- Rubber particles from hoses and seals
- Dirt due to assembly and maintenance
- Mechanical debris
- Chemical ageing of the hydraulic fluid

NOTE
New hydraulic fluid from the manufacturer does not necessarily have the required level of purity.
The hydraulic fluid must be filtered during filling.

Pay attention to the cleanliness level of the hydraulic fluid to maintain faultless operation.
(Also see cleanliness level in Chapter 3, "Parameters").

Additionally applicable document: D 5488/1 Oil recommendations

5.4 Maintenance information

Conduct a visual inspection at regular intervals, but at least once per year, to check if the hydraulic connections are damaged. If external leakages are found, shut down and repair the system.

In relation to the drive (lever mechanism), there is a difference between a closed design and an open design.

In the closed design, it is inside the housing (suction chamber) and is lubricated by the oil without requiring maintenance.

In open version it is outside; occasional maintenance (cleaning and greasing) is recommended.

Clean the device surface of dust deposits and dirt at regular intervals, but at least once per year.

6 Other information

6.1 Functional safety

The MTTFd values as described in B 5488 ISO apply.

6.2 Planning information

Setting up:

1. Keep suction line short.
2. Set up oil tank at the same level or higher than the suction ports.

✓ Suction lines do not run empty when idle.

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