



HMF Fixed Motor Data and Specifications

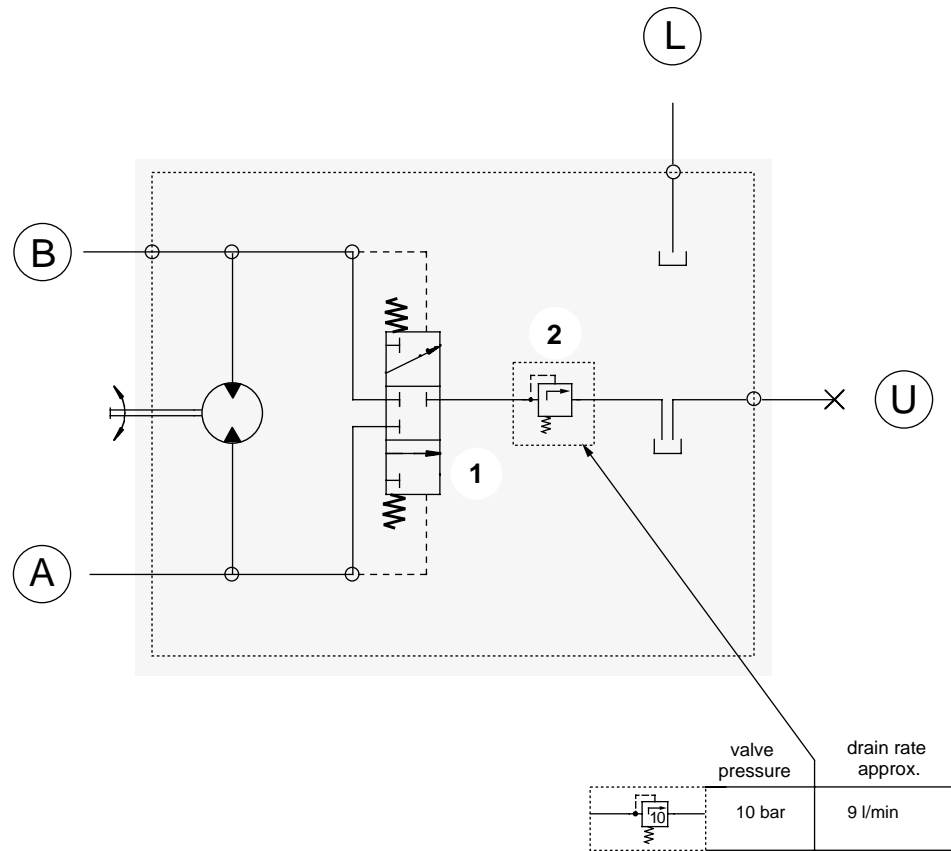


Specifications

		HMF 28		HMF 35		HMF 50		HMF 75		HMF 105		HMF 135	
cm 3/rev	in 3/rev	28	1.70	35	2.12	50	3.06	75	4.57	105	6.40	135	8.23
Pressure Ratings		Nominal 5000 PSIG				Maximum 6090PSIG				Peak 7250 PSIG			
Rated Speed		4500		4500		4200		3800		3500		3200	
Max. Disp.													
Rated Speed		Not Applicable											
Min. Disp.													
Envelope Size	L	7.4	7.4	7.9	9.0	10.0	10.9						
	W	6.4	6.4	7.9	7.9	7.9	9.8						
	H	5.8	5.8	6.1	6.7	7.2	7.5						
Weight		35.2	35.2	39.6	55.0	70.4	83.0						
HP Rating Count		70.0	88.0	117.0	161.0	205.0	241.0						

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Circuit Diagram



EXPLANATIONS	
(A)(B)	Working connections SAE (6000 psi)
(L)(U)	Drain (filling, vent) ports Connection enabling case to be filled with oil.

Flow in at port (A) : Direction of rotation right
 Flow in at port (B) : Direction of rotation left

HMF Fixed Motor

Functional Description

HMF - 02 model fixed displacement motors are swash-plate axial piston motors, suitable for the open and closed circuit. The hydraulic motor has a fixed swash angle.

The flow of oil coming from the hydraulic pump is delivered to the high-pressure connection A or B of the hydraulic motor. The pressure fluid passes through the port in the port plate housing and the cylinder block to the end face of the piston, displacing it and setting the hydraulic motor in rotary motion. Whether the pressure oil is admitted into A or B determines the direction of rotation, to left or right.

Linde purging system

The hydraulic motor is equipped with a Linde purging system. This comprises two scavenging systems:

- circuit scavenging
- case scavenging

Circuit scavenging

If temperature problems occur (e.g. in the case of high ambient temperature), the temperature in the closed circuit can be substantially reduced by the scavenging system. The shuttle valve (1) connects the low-pressure side to the discharge valve (2). The purge oil can then be cooled and fed back into the system via a make up circuit (not in motor) to cool the closed loop.

Case scavenging

The heat generated in the rotating group of the hydraulic motor (bearings, linkages, slide faces) can only be discharged from the motor casing through the drained-off leakage. Under certain unfavorable operating conditions, e.g. high motor speed and low operating pressure, the resulting leakage is not sufficient to dissipate the "frictional heat."

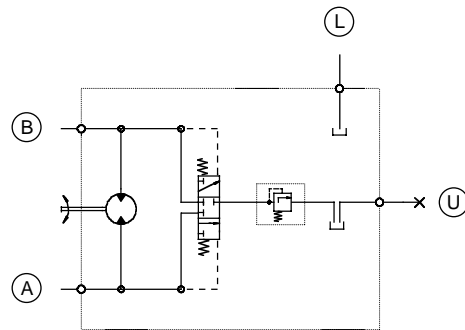
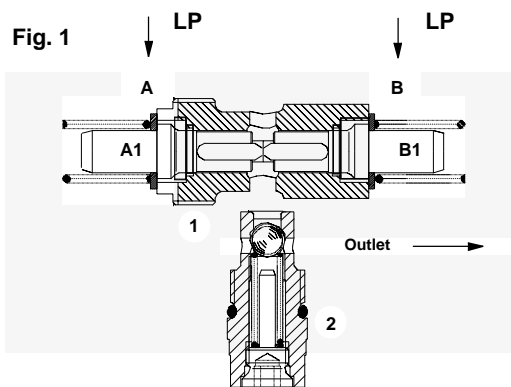
With the Linde purging system, a quantity of oil flows from the discharge valve (2) at about 10 l/min, into the casing of the hydraulic motor and, after having scavenged the casing, drains off together with the resultant leakage.

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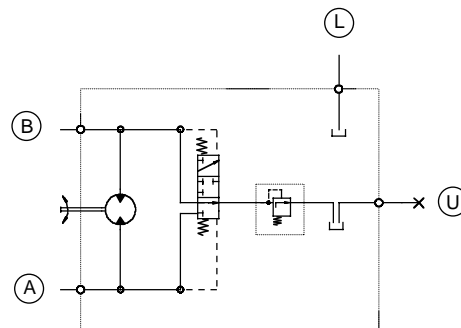
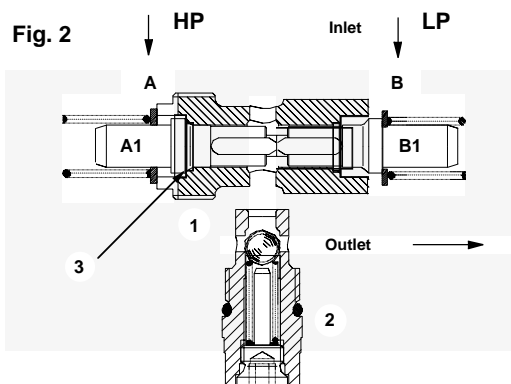
Functional Description

Functioning of the Linde purging system

When high-pressure lines are without load and have only boost pressure (e.g. when the pump is in the neutral position), the two pistons of the shuttle valve (1) (Fig.1) are in the spring-centered position. Operating fluid is unable to flow to the discharge valve (2) from either the high-pressure connection A or the high-pressure connection B.

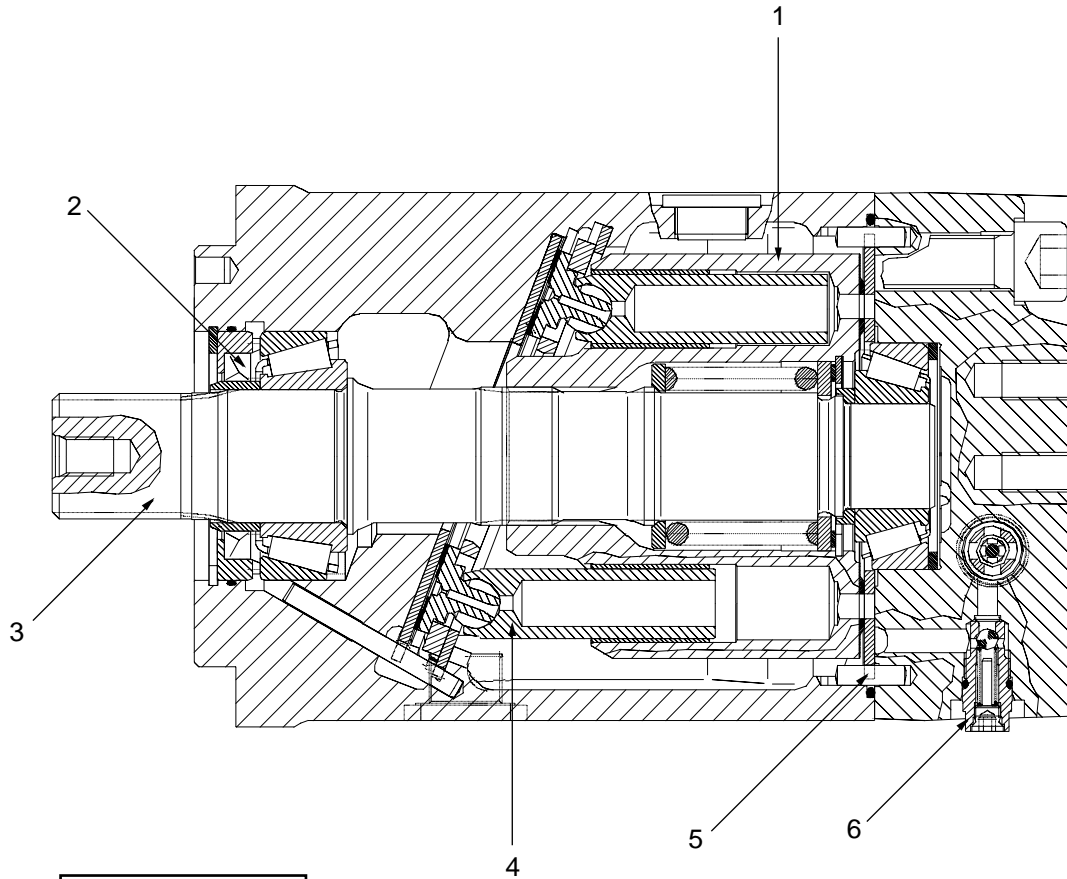


However, if high pressure (HP) builds up on, for example, the A side, then this high pressure displaces the piston A1, driving the piston B1 towards the low-pressure (LP) connection B (Fig.2). The conical seat (3) on piston A1 acts as a stop, thereby simultaneously preventing high-pressure fluid from being transferred out of the spring compartment A1 towards the discharge valve (2).



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Basic Design of Rotating Group



EXPLANATIONS	
1	Cylinder barrel
2	Shaft seal
3	Shaft
4	Working piston
5	Valve plate
6	Discharge valve