Short description

Axial piston pump LH30VO

The Liebherr LH30VO axial piston pumps were developed for open circuits in mobile and stationary applications.

The medium pressure pumps are designed as swashplates and can be operated with through-drive up to 130%.

The through-drive design of the LH30VO is highly flexible, even after installation in the final application. Its modular control model kit provides more than 35 possible control combinations, including power control (LR), electrical volume flow control (VE) with rising characteristic, and additional jump function at signal loss (VK). They are designed for the most common applications, such as driving equipment, ventilation, or steering of a machine.

Its increased performance and the optimised production and assembly processes make the LH30VO an attractive and high-performing product for mobile and stationary applications where a pressure range up to 280 bar is required.

Valid for:
LH30VO028
LH30VO045
LH30VO085
LH30VO100

Features:
Open circuit
Modular design of through-drive and control

Control types:
Pressure control
Volume flow regulation
Performance regulation
Various combined forms of regulation

Pressure range:
Nominal pressure p_N = 280 bar
Maximum pressure p_{max} = 320 bar

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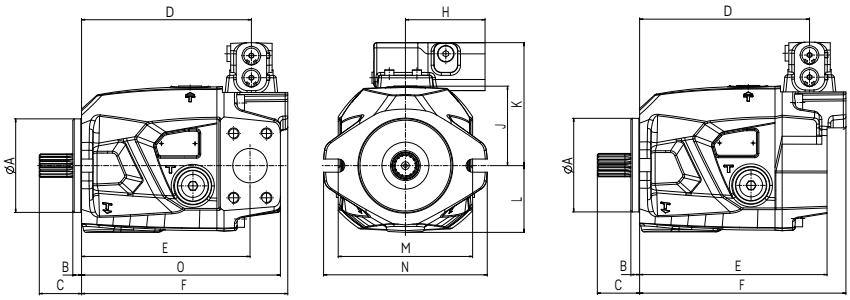
Axial piston pump LH30VO



LH30VO variable displacement, open circuit, nominal pressure 280 bar, maximum pressure 320 bar

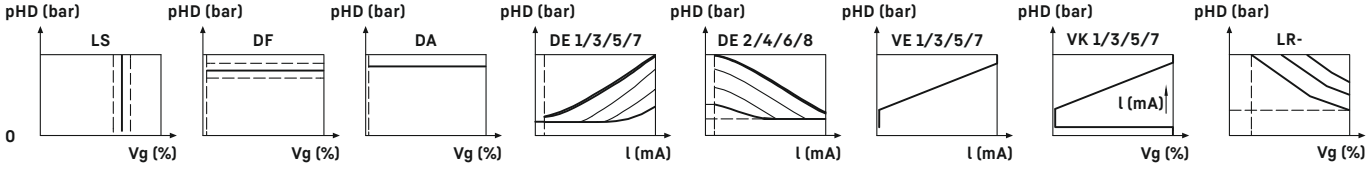
Nominal size		**28**	**45**	**85**	**100**
Displacement volume	$V_{g\,max}$ [cm³]	28.7	46.5	86.1	103.5
Max. speed	at $V_{g\,max}$, n_{max} [rpm]	3300	3000	2500	2400
Volume flow	at n_{max}, $q_{v\,max}$ [l/min]	94.7	139.5	206.6	248.4
Drive power	Δp = 280 bar, P_{max} [kW]	44.2	65.1	100.4	115.9
Drive torque	Δp = 280 bar, T_{max} [Nm]	127.9	207.2	383.7	461.1
Max. torque of through-drive	[Nm]	158	300	532	532
Available controls		LS-DA, LS-DE, DF-DA, DE-DA, DA, DE, VE, VK, LR			

Technical data

Product dimensions (mm)*		**LH30VO028 On side****	**LH30VO028 Rear****	**LH30VO045 On side****	**LH30VO045 Rear****	**LH30VO085 On side****	**LH30VO085 Rear****	**LH30VO100 On side****	**LH30VO100 Rear****
Centering diameter	A	101.6	101.6	101.6	101.6	127	127	127	127
Length, centring diameter	B	9.5	9.5	9.5	9.5	12.7	12.7	12.7	12.7
Length from the flange to the end of the shaft	C	41	41	45.9	45.9	55.4	55.4	55.4	55.4
Length from flange to the regulating screws of the control	D	166	166	184.5	184.5	227	227	238	238
Length from the flange to the suction channel and high-pressure channel	E	158.5	180	183	203.5	228	245	239	256
Total length of the pump (from the flange)	F	207.5	207.5	224	224	280.5	280.5	291.5	291.5
Width from the centre of the pump to high-pressure side	G	66.5	35	73	40	86	55	86	55
Width from the centre of the pump to the control	H	86.5	86.5	86.5	86.5	86.5	86.5	86.5	86.5
Width from the centre of the pump to suction side	I	66.5	33	73	40	86	41	86	41
Height of the pump (housing)	J	79	79	86.3	86.3	107	107	107	107
Height of the pump (control)	K	123.3	123.3	133.6	133.6	155	155	155	155
Depth of the pump	L	67	67	72.5	72.5	98	98	98	98
Distance between fastening holes	M	146	146	146	146	181	181	181	181
Width of the pump (SAE flange)	N	177.8	177.8	177.8	177.8	218.2	218.2	218.2	218.2
Length from the fastening flange to the back of the connecting plate	O	192	-	216	-	274.5	-	285.5	-
Eccentricity, low-pressure connection		-	5	-	7.5	-	10.5	10.5	10.5

* The dimensions can vary depending on the configuration and additional equipment (installation drawing available upon request).
** Clockwise rotation

Control



Type code

L	H	3	0	V	0		/		20	V					0	00		000			
1.	2.	3.	4.	5.	6.	7.		8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.

1. Manufacturer					
Liebherr Machines Bulle SA					**L**
2. Department					
Hydraulics					**H**
3. Nominal pressure range					
Nominal pressure p_N = 280 bar / maximum pressure p_{max} = 320 bar					**3**
4. Design					
Single unit (pump) (multiple unit inline)					**0**
5. Design type					
Variable displacement					**V**
6. Circuit					
Open circuit					**0**
7. Nominal size					
	028	**045**	**085**	**100**	
8. Control (3-/6- or 9-digit)					
1. Control axis					**XX-**
2. Control axis (combination control)					**XX-XX-**
3. Control axis (combination control)					**XX-XX-XX-**
Mechanical-hydraulic control					
Pressure cut-off	■	■	■	■	**DA-**
Hydraulic pressure control (remote-controlled) / pressure cut-off (combination control)	■	■	■	■	**DF-DA-**
Load sensing (without vent nozzle in control) / pressure cut-off (combination control)	▼	▼	▼	▼	**LS0DA-**
Load sensing (with vent nozzle in control) / pressure cut-off (combination control)	□	□	□	□	**LS2DA-**
Power control	■	■	■	■	**LR-**
Electric-hydraulic control					
Electrical pressure control	▼	▼	▼	▼	**DE_**
Load sensing (without vent nozzle in control) / electrical pressure cut-off (combination control)	■	■	■	■	**LS0DE_**
Load sensing (with vent nozzle in control) / electrical pressure cut-off (combination control)	□	□	□	□	**LS2DE_**
For electrical pressure controls, the underscore is a placeholder for the desired voltage / characteristic / plug.					
24V, rising characteristic, Deutsch plug	■	■	■	■	**1**
24V, falling characteristic, Deutsch plug	■	■	■	■	**2**
12V, rising characteristic, Deutsch plug	□	□	□	□	**3**
12V, falling characteristic, Deutsch plug	□	□	□	□	**4**
24V, rising characteristic, AMP plug	▼	▼	▼	▼	**5**
24V, falling characteristic, AMP plug	▼	▼	▼	▼	**6**
12V, rising characteristic, AMP plug	□	□	□	□	**7**
12V, falling characteristic, AMP plug	□	□	□	■	**8**
Electrical volume control	■	■	■	■	**VE_**
Electrical volume control with jump function at signal loss	■	■	■	■	**VK_**
Volume, electrical override (retarder)	■	■	■	■	**VO_**
For electrical volume flow controls, the underscore is a placeholder for the desired voltage / characteristic / plug.					
24V, rising characteristic, Deutsch	■	■	■	■	**1**
12V, rising characteristic, Deutsch	□	□	□	□	**3**
24V, rising characteristic, AMP	■	■	■	■	**5**
12V, rising characteristic, AMP plug	□	□	□	□	**7**

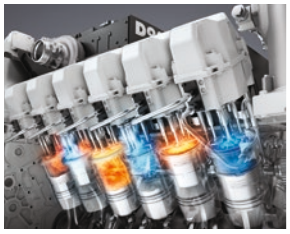
Availability matrix for controls (1-3 control axes)

		Control axis 1-2										
		DA-	DE_	LS0DA-	LS2DA-	LS0DE_	LS2DE_	DF-DA-	DE_DA-	VE_	VK_	LR-
Additional option	None	■	■	■	□	■	□	■	■	■	■	■
	DA-	-	■	-	□	■	□	-	-	■	■	■
	VE_	■	■	■	□	■	□	■	■	-	-	-
	VK_	■	■	■	□	■	□	■	■	-	-	-
	LR-	■	■	■	□	■	□	■	■	-	-	-
	VO_	■	■	■	□	■	□	■	■	-	-	-

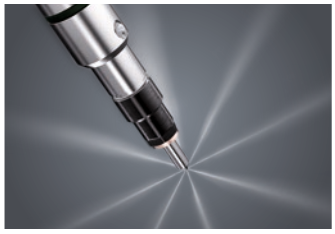
9. Series						
Design						**20**
10. Sealing material						
Viton						**V**
11. Direction of rotation (viewed towards the drive shaft)						
Right					■ ■ ■ ■	**R**
Left					■ ■ ■ ■	**L**
12. Mounting flange						
SAE B = 101.6mm (SAE J744) 2-hole mounting					▼ ▼ - -	**B2**
SAE C = 127.0mm (similar to SAE J744) 2+4-hole mounting					- - ▼ ▼	**C6**
13. Driving shaft end						
ANSI, 7/8“, 13 teeth, with undercut					■ ■ - -	**A1**
ANSI, 7/8“, 13 teeth, without undercut					▼ ■ - -	**A2**
ANSI, 1", 15 teeth, with undercut					□ ■ - -	**A3**
ANSI, 1", 15 teeth, without undercut					□ ▼ - -	**A4**
ANSI, 1 1/4", 14 teeth, with undercut					- - ■ ■	**A5**
ANSI, 1 1/4", 14 teeth, without undercut					- - ■ □	**A6**
ANSI, 1 1/2", 17 teeth, with undercut					- - ■ □	**A9**
ANSI, 1 1/2", 17 teeth, without undercut					- - ▼ ▼	**A0**
14. Working connection						
Fastening thread metric lateral ISO 6162-2 / SAE J518-2					- - ▼ ▼	**A1**
Fastening thread metric rear ISO 6162-2 / SAE J518-2					- - ■ ■	**A3**
Fastening thread metric lateral ISO 6162-1 / SAE J518-1					▼ ▼ - -	**B1**
Fastening thread metric rear ISO 6162-1 / SAE J518-1					■ ■ - -	**B3**
15. Add-on parts						
Without add-on parts						**0**
16. Gear pump						
Without gear pump						**00**
17. Through drive						
Without through-drive with side working connections A1/B1 (rear working connections A3/B3 = without through-drive available for all NS, see type code 14)					□ □ □ □	**0000**
Centering diameter	Shaft teeth	Fastening				
Ø 82.55 mm (SAE J744-A)	ANSI B92.1a, 5/8 in 9T 16/32DP	2-hole / open hole			■ ■ ■ ■	**A11D**
Ø 82.55 mm (SAE J744-A)	ANSI B92.1a, 3/4 in 11T 16/32DP	2-hole / open hole			■ ■ ■ ■	**A21D**
Ø 101.6 mm (SAE J744-B)	ANSI B92.1a, 7/8 in 13T 16/32DP	2-hole / open hole			▼ ■ ■ ■	**B11D**
Ø 101.6 mm (SAE J744-B)	ANSI B92.1a, 1 in 15T 16/32DP	2-hole / open hole			- ▼ ■ ■	**B21D**
Ø 127 mm (SAE J744-C)	ANSI B92.1a, 1 1/4 in 14T 12/24DP	2-hole / open hole			- - ■ ■	**C11D**
Ø 127 mm (SAE J744-C)	ANSI B92.1a, 1 1/2 in 17T 12/24DP	2-hole / open hole			- - ■ ■	**C21D**
Special / centring diameter	No shaft coupling	4-hole / closed hole			▼ ▼ ▼ ▼	**K02G**
18. Valve						
Without valve						**000**
19. Sensors						
Without sensor					▼ ▼ ▼ ▼	**0**
Preparation of pressure measuring connection (Minimess)					- □ □ □	**V**
20. Swing angle limit stops						
Standard (without Q_{min} + Q_{max} limit stop)					▼ ▼ ▼ ▼	**0**
With fixed Q_{min} limit stop (specify when ordering)					□ □ □ □	**4**
With fixed Q_{max} limit stop (specify when ordering)					□ □ □ □	**5**
21. Special designs and options						
Primer					▼ ▼ ▼ ▼	**G**
Primer and paintwork (colour specified by customer)					□ □ □ □	**F**
Conservation without primer (tank pump)					□ □ □ □	**K**
Additional leakage oil connection					■ ■ ■ ■	**Z**

▼ Preferred series ■ Available □ Upon request - Not available

Components



Diesel engines



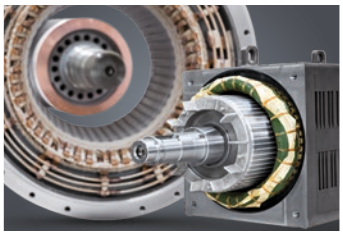
Injection systems

Axial piston hydraulics

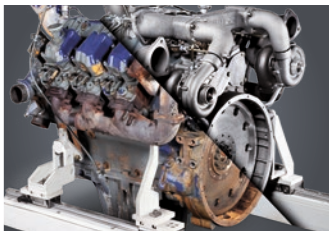
Hydraulic cylinders

Large diameter bearings

Gearboxes and rope winches

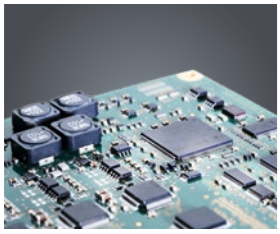


Electrical machines



Preparation of components

Human-machine interfaces and gateways



Control electronics and sensors

Power electronics

Switchgear

Software

From A to Z, the components division of the Liebherr Group offers a broad range of solutions for mechanical, hydraulic, electric and electronic drive and control technology. The efficient components and systems are produced at a total of ten production sites around the world to the highest standards of quality. Central contacts for all product lines are available to customers at Liebherr Component Technologies AG and our regional sales branches.

Liebherr is your partner for joint success: from product idea to development, manufacture and commissioning, right through to customer service solutions, such as preparation of components.

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