

## Short Description

# Axial piston pumps LH30VO



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

The medium-pressure pumps have a swashplate design and can be operated with through-drive up to 130%.

Further regulators have been added gradually, including performance controls (LR), electric volume controls (VE) with rising characteristic and additional additional step function at control signal loss (VK). They are designed for the most common applications, such as working hydraulics, ventilation, steering or power units.

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

### Valid for:

LH30VO028  
LH30VO045  
LH30VO085

### Features:

Series 20  
Open circuit

### Regulator types:

Load Sensing regulator with pressure cut-off  
Electric pressure regulator  
Remote controlled hydraulic pressure regulation with superimposed pressure cut-off

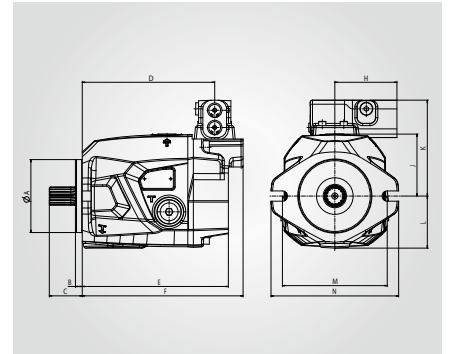
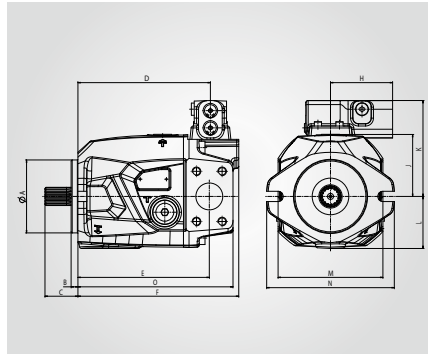
### Pressure range:

Nominal pressure  $p_{HD_N} = 280$  bar  
Maximum pressure  $p_{HD_{max}} = 320$  bar

# LIEBHERR

# Technical Data

## Medium Pressure Pump LH30VO



### LH30VO

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

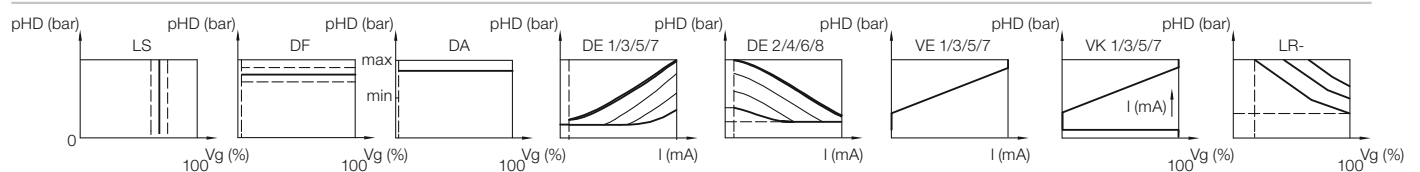
Nominal size		28	45	85
Displacement	$V_{g \max}$ [cm <sup>3</sup> ]	28.7	46.5	86.1
Max. speed	at $V_{g \max}$ , $n_{\max}$ [rpm]	3,300	3,000	2,400
Volumetric flow	at $n_{\max}$ , $q_{v \max}$ [l/min]	94.7	139.5	206.6
Drive power	$\Delta p = 280$ bar, $P_{\max}$ [kW]	44.2	65.1	96.4
Drive torque	$\Delta p = 280$ bar, $T_{\max}$ [Nm]	127.9	207.2	383.7
Max. through drive torque	[Nm]	158	300	532
Available controls		LS-DA, LS-DE, DF-DA, DE-DA, DA, DE, VE, VK, LR		

### Technical Data

Product dimensions (mm) *	LH30V0028		LH30V0045		LH30V0085	
	ports at the side turn. clockwise	ports at the rear turn. clockwise	ports at the side turn. clockwise	ports at the rear turn. clockwise	ports at the side turn. clockwise	ports at the rear turn. clockwise
Pilot diameter	A	101.6	101.6	101.6	127	127
Pilot diameter length	B	9.5	9.5	9.5	12.7	12.7
Shaft length (from flange to shaft end)	C	41	41	45.9	55.4	55.4
Position setting screw (from flange)	D	166	166	184.5	184.5	227
Port position (suction and pressure port to flange)	E	158.5	180	183	203.5	245
Overall length (from flange face)	F	207.5	207.5	224	224	280.5
Width (from center to pressure port)	G	66.5	33	73	40	86
Width (from center to controller)	H	86.5	86.5	86.5	86.5	86.5
Width (from center to suction port)	I	66.5	33	73	40	41
Height housing (center to top)	J	79	79	86.3	86.3	107
Height (controller)	K	123.3	123.3	133.6	133.6	155
Height housing (center to bottom)	L	67	67	72.5	72.5	98
Mounting bores distance	M	146	146	146	146	181
Width between SAE flanges	N	177.8	177.8	177.8	177.8	218.2
Off-centered suction port		-	5	-	7.5	-

\* Dimensions may vary according to configuration and additional equipment (installation drawing on request).

### Control/regulation



# Type Code

# Axial Piston Pump LH30VO

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

<b>1. Manufacturer</b>	Liebherr Machines Bulle SA	L
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<b>2. Department</b>	Hydraulics	H
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<b>3. Nominal pressure range</b>	Nominal pressure $p_n = 280$ bar / maximum pressure $p_{max} = 320$ bar	3
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<b>4. Setup</b>	Single unit (pump) (inline multiple unit)	0
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<b>5. Design</b>	Variable	V
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<b>6. Circuit</b>	Open circuit	0
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<b>7. Nominal size (NS)</b>	NS (inline multiple unit)	028	045	085
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<b>8. Regulator (3- / 6- or 9-digit)</b>	1. Regulator axis	XX-
	2. Regulator axis (combination regulator)	XX-XX-
	3. Regulator axis	XX-XX-XX-

<b>Mechanic-hydraulic regulators</b>				
Pressure cut-off	■	■	■	DA-
Hydraulic pressure regulation (remote-controllable)/Pressure cut-off (Combination regulator)	■	■	■	DF-DA-
Load sensing regulator (without vent nozzle in regulator) / Pressure cut-off (Combination regulator)	▼	▼	▼	LSODA-
Load sensing regulator (with vent nozzle in regulator) / Pressure cut-off (Combination regulator)	□	□	□	LS1DA-
Performance regulator	■	■	■	LR-

<b>Electro-hydraulic regulators</b>				
Electric pressure regulation	▼	▼	▼	DE_
Load sensing regulator (without vent nozzle in regulator) / Electric pressure regulation (Combination regulator)	■	■	■	LSODE_
Load sensing regulator (with vent nozzle in regulator) / Electric pressure regulation (Combination regulator)	□	□	□	LS1DE_

For electro-hydraulic regulators, the underscore is a placeholder for the desired voltage / curve / 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

Volume electric	■	■	■	VE_
Volume electric additional step function at control signal loss	■	■	■	VK_
Volume electric override (retarder)	■	■	■	VO_

For electro-volume regulators, the underscore is a placeholder for the desired voltage / curve / plug.

Voltage / characteristic / plug: 24V, rising characteristic, Deutsch plug	□	□	□	1
Voltage / characteristic / plug: 12V, rising characteristic, Deutsch plug	□	□	□	3
Voltage / characteristic / plug: 24V, rising characteristic, AMP plug	■	■	■	5
Voltage / characteristic / plug: 12V, rising characteristic, AMP plug	□	□	□	7

<b>Regulator availability matrix (1-3 regulator axes)</b>												
		Basic option										
		DA-	DE_-	LSODA-	LS1DA-	LSODE_	LS1DE_	DF-DA-	DE_DA-	VE_	VK_	LR-
Additional option	None	■	▼	▼	□	□	□	■	■	■	■	■
	DA-	-	■	-	-	■	□	-	-	■	■	■
	VE_	■	■	■	□	■	□	■	-	-	-	-
	VK_	■	■	■	□	■	□	■	■	-	-	-
	LR-	■	-	-	□	■	□	■	■	-	-	-
	VO_	■	■	■	□	■	□	■	■	-	-	■

<b>9. Series</b>	Design	20
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<b>10. Sealing material</b>	Viton	V
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<b>11. Direction of rotation (front view of the drive shaft)</b>	Left	■	■	■	L
	Right	■	■	■	R

<b>12. Mounting flange</b>	SAE B = 101.6 mm (SAE J744) 2-hole mounting	▼	▼	-	B2
	SAE C = 127.0 mm (similar to SAE J744) 2+4-hole mounting	-	-	▼	C6

<b>13. Driving shaft end</b>	ANSI, 7/8", 13 teeth, with undercutting	■	■	-	A1
	ANSI, 7/8", 13 teeth, without undercutting	▼	■	-	A2
	ANSI, 1", 15 teeth, with undercutting	□	■	-	A3
	ANSI, 1", 15 teeth, without undercutting	□	▼	-	A4
	ANSI, 1 1/4", 14 teeth, with undercutting	-	-	■	A5
	ANSI, 1 1/4", 14 teeth, without undercutting	-	-	□	A6
	ANSI, 1 1/2", 17 teeth, with undercutting	-	-	□	A9
	ANSI, 1 1/2", 17 teeth, without undercutting	-	-	▼	A0

<b>14. Working connection</b>	Metric mounting thread at the side ISO 6162-2 / SAE J518-2	-	□	▼	A1
	Metric mounting thread at the rear ISO 6162-2 / SAE J518-2	-	□	■	A3
	Metric mounting thread at the side ISO 6162-1 / SAE J518-1	▼	▼	-	B1
	Metric mounting thread at the rear ISO 6162-1 / SAE J518-1	■	■	-	B3

<b>15. Add-on parts</b>	Without add-on parts	0
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<b>16. Gear pump</b>	Without gear pump	00
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<b>17. Through drive</b>			■	■	▼	0000
Without through-drive						
Centring diameter	Shaft teeth	Fastening				
082.55 (SAE J744-A)	ANSI B92.1a, 5/8 in 9T 16/32DP	2-hole / open bore	■	■	■	A11D
082.55 (SAE J744-A)	ANSI B92.1a, 3/4 in 11T 16/32DP	2-hole / open bore	■	■	■	A21D
0101.6 (SAE J744-B)	ANSI B92.1a, 7/8 in 13T 16/32DP	2-hole / open bore	▼	■	■	B11D
0101.6 (SAE J744-B)	ANSI B92.1a, 1 in 15T 16/32DP	2-hole / open bore	-	▼	■	B21D
0127 (SAE J744-C)	ANSI B92.1a, 1 1/4 in 14T 12/24DP	2-hole / open bore	-	-	□	C11D
0127 (SAE J744-C)	ANSI B92.1a, 1 1/2 in 17T 12/24DP	2-hole / open bore	-	-	▼	C21D
Special centring diameter	No shaft coupling	4-hole / closed bore	▼	▼	▼	K02G

<b>18. Valves</b>	Without valve	000
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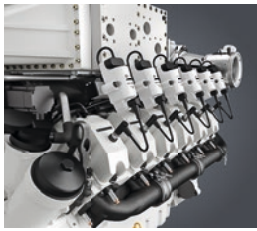
<b>19. Sensors</b>	Without sensor	▼	▼	▼	0
	Preparation for pressure measuring port (Minimeas)	-	□	□	V

<b>20. Swivel angle stops</b>	Standard (without $Q_{min}$ + $Q_{max}$ limit stop)	▼	▼	▼	0
	With $Q_{max}$ fixed stop (specify when ordering)	□	□	□	5

<b>21. Special versions and options</b>	Primer	▼	▼	▼	G
	Primer and finish (colour specified by customer)	□	□	□	F
	Conservation without primer (tank pump)	□	□	□	K

▼ preferred series, ■ available, □ on request, - not possible

# Liebherr Components



Gas engines



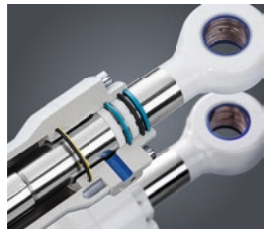
Diesel engines



Fuel injection systems



Axial piston hydraulics



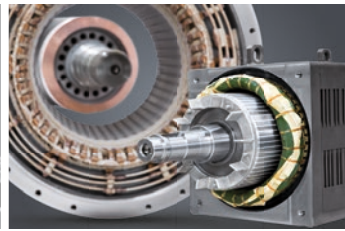
Hydraulic cylinders



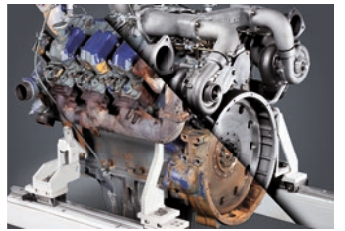
Slewing bearings



Gearboxes and winches



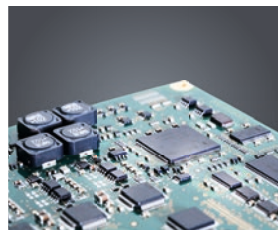
Electric machines



Remanufacturing



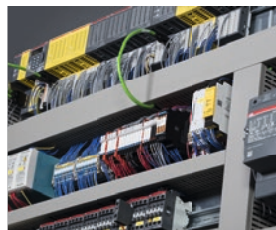
Human-machine interfaces and gateways



Control electronics and sensor technology



Power electronics



Control cabinets



Software

From A to Z – the components division of the Liebherr Group offers a broad range of solutions in the area of mechanical, hydraulic, electric and electronic drive system 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 contact persons for all product lines are available to our customers at Liebherr-

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