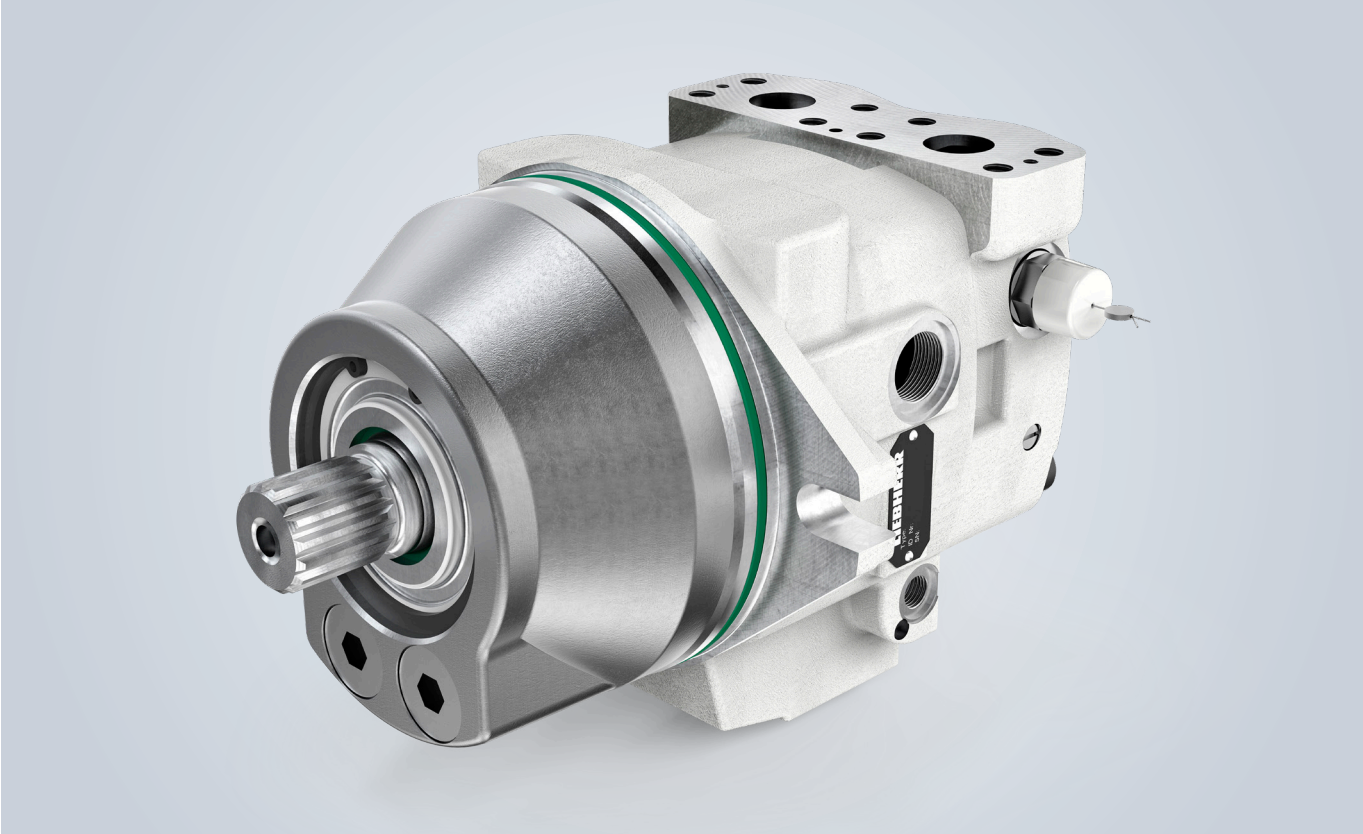
Short description

Axial piston motor FMV



The Liebherr axial piston motors in the FMV series are designed as swashplates for open and closed circuits. The variable-displacement plug-in motors are available in nominal sizes ranging from 4.58 to 15.26 inch³ (75 to 250 cm³).
The nominal pressure is 5,076 or 6,092 psi (350 or 420 bar) and the maximum pressure is 5,511 or 6,527 psi (380 or 450 bar), depending on the nominal size.

Special features of the FMV:
The plug-in motor has hydraulic two-point control and valves can be integrated into the connecting plate.
Speed sensor or preparation for speed sensor available on request.

Valid for:
FMV 075 involute gear hub profile
FMV 100 involute gear hub profile
FMV 140 involute gear hub profile
FMV 165 involute gear hub profile
FMV 250 involute gear hub profile

Features:
Axial piston motor (travel drive)
A series
Variable displacement
Open and closed circuit

Pressure range:
Nominal pressure, NS 100 / 140 / 165 / 250
p_N = 5,076 psi (350 bar)
Nominal pressure, NS 075
p_N = 6,092 psi (420 bar)
Maximum pressure, NS 100 / 140 / 165 / 250
p_{max} = 5,511 psi (380 bar)
Maximum pressure, NS 075
p_{max} = 6,527 psi (450 bar)

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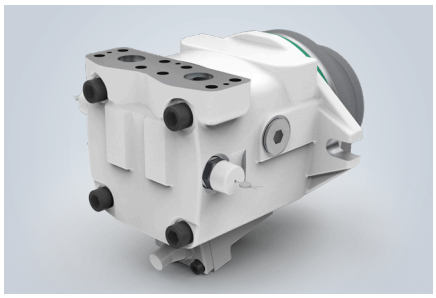
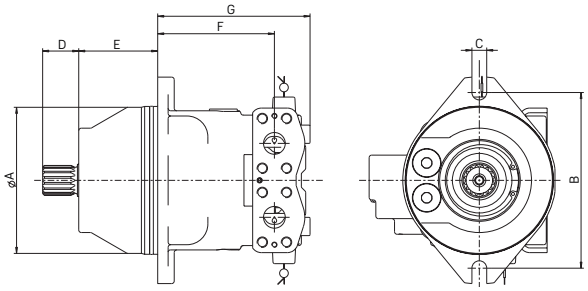
Axial piston motor FMV





FMV variable displacement, open circuit, nominal pressure 5,076/6,092* psi (350/420* bar), maximum pressure 5,511/6,527* psi (380/450* bar) (*NS 75)

Nominal size			**75**	**100**	**140**	**165**	**250**
Displacement to hydraulic motor	$V_{g\,max}$	$inch^3$ (cm^3)	4.58 (75)	6.30 (103.2)	8.62 (141.2)	10.12 (165.8)	15.67 (256.8)
Max. speed	at $V_{g\,max}$ and Δp = 4,786 psi (330 bar), n_{max}	rpm	3,900	3,540	3,160	3,000	2,600
Max. speed	at $V_g / V_{g\,max}$= 0.04 (0.65) and Δp = 2,901 psi (200 bar), n_{max}	rpm	5,460	4,950	4,420	4,200	3,640
Displacement flow to hydraulic motor	at n_{max}, $q_{v\,max}$	US.liq.gal/min (l/min)	77 (293)	96 (365)	118 (446)	131 (497)	176 (668)
Output power	Δp = 4,786 psi (330 bar), P_{max}	hp (kW)	216 (161)	270 (201)	329 (245)	367 (274)	492 (367)
Output torque	Δp = 4,786 psi (330 bar), T_{max}	lbf·ft (Nm)	291 (394)	400 (542)	547 (742)	642 (871)	995 (1,349)
Available controls			2D				

Technical data

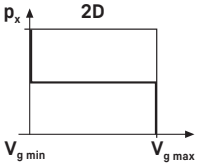
Product dimensions [inch (mm)]*		**75**	**100**	**140**	**165**	**250**
Splined shaft profile	DIN 5480 involute gear hub profile	W35 x 2 x 16	W35 x 2 x 16	W40 x 2 x 18	W45 x 2 x 21	W50 x 2 x 24
Centering diameter	A, h8 tolerance fit	6.69 (170)	7.48 (190)	8.27 (210)	9.06 (230)	10.24 (260)
Connection dimension, screws	B	7.95 (202)	8.82 (224)	9.84 (250)	11.02 (280)	12.20 (310)
Fastening holes	C	0.67 (17)	0.83 (21)	0.87 (22)	1.02 (26)	1.02 (26)
Splined shaft length	D	1.57 (40)	1.57 (40)	1.77 (45)	1.97 (50)	2.17 (55)
Plug-in length	E	3.63 (92.3)	4.35 (110.5)	4.84 (123)	5.12 (130)	5.71 (145)
Connection length, SAE flange	F	5.28 (134.2)	5.51 (140)	6.10 (155)	6.85 (174)	7.40 (188)
Total length	G	6.90 (175.2)	6.89 (175)	7.64 (194)	8.66 (220)	9.37 (238)
Pressure connections	SAE J518 (6,000 psi)	1"	1"	1 1/4"	1 1/4"	1 1/4"
Leakage oil connection	ISO 9974-1	M26 x 1.5	R 3/4"	R 3/4"	M33 x 2	M33 x 2

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

Note: This motor is designed in particular for installation in a mechanical travel gearbox. An external brake valve can be attached to the SAE connection.

Control

Hydraulic regulation, two-position hydraulically operated



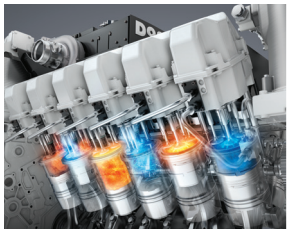
Type code

FMV		/	1			7			D
1.	2.		3.	4.	5.	6.	7.	8.	9.

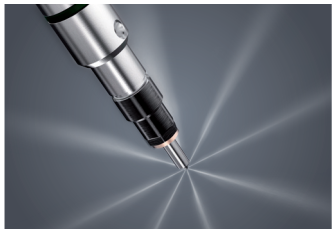
1. Motor type						
Travel drive / motor / variable displacement						**FMV**
2. Nominal size						
	75	**100**	**140**	**165**	**250**	
	■	■	■	■	■	
3. Series						
	■	■	■	■	■	**1**
4. Control						
Without control	-	-	-	-	-	**00**
Two-point control	■	■	■	■	■	**2D**
5. Valve						
Without valve	□	□	□	□	□	**00**
Flushing, closed circuit	□	□	□	□	□	**SO**
Flushing, closed circuit with high-pressure limitation	□	□	□	□	□	**SH**
Flushing, open circuit	□	□	□	□	□	**MO**
Flushing, open circuit with high-pressure limitation	□	□	□	□	□	**MH**
High-pressure limitation with preparation for an external brake valve	■	■	■	■	■	**VBH**
6. Mounting flange (other mounting flanges upon request)						
2-hole flange	■	■	■	■	■	**7**
7. Through drive						
No through drive	■	■	■	■	■	**00**
Special through-drive	-	-	-	-	-	**10**
8. Minimum displacement to hydraulic motor						
$V_{g\,min}$ = 2.01 inch³ (33 cm³)	■	-	-	-	-	**33**
$V_{g\,min}$ = 2.68 inch³ (44 cm³)	■	-	-	-	-	**44**
$V_{g\,min}$ = 3.42 inch³ (56 cm³)	-	■	-	-	-	**56**
$V_{g\,min}$ = 3.87 inch³ (63.5 cm³)	-	■	-	-	-	**63.5**
$V_{g\,min}$ = 5.43 inch³ (89 cm³)	-	-	■	-	-	**89**
$V_{g\,min}$ = 6.16 inch³ (101 cm³)	-	-	■	-	-	**101**
$V_{g\,min}$ = 6.71 inch³ (110 cm³)	-	-	-	-	■	**110**
$V_{g\,min}$ = 7.14 inch³ (117 cm³)	-	-	-	■	-	**117**
$V_{g\,min}$ = 8.54 inch³ (140 cm³)	-	-	-	-	■	**140**
$V_{g\,min}$ = 9.76 inch³ (160 cm³)	-	-	-	-	■	**160**
$V_{g\,min}$ = 12.33 inch³ (202 cm³)	-	-	-	-	■	**202**
$V_{g\,min}$ upon customer request, enter value in inch³ (cm³)	□	□	□	□	□	
9. Sensors						
Speed sensor	□	□	□	□	□	**D**

■ Available □ On request - Not available

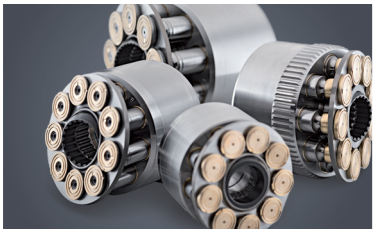
Components



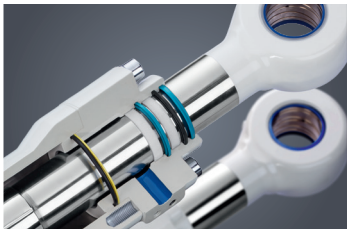
Diesel engines



Injection systems



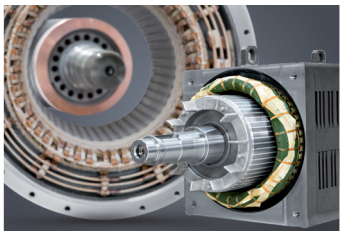
Axial piston hydraulics



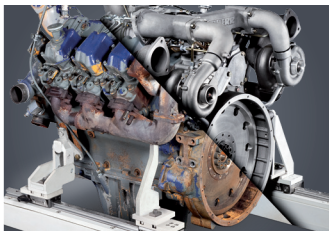
Hydraulic cylinders

Large diameter bearings

Gearboxes and rope winches

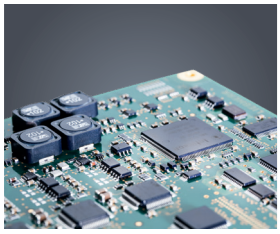


Electrical machines



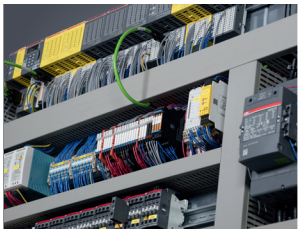
Preparation of components

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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