Hydraulic Axial Piston Sauer MF Motor

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for the series 20 closed circuit

SAUER MF AXIAL PISTON MOTORS

SERIES 20 CLOSED CIRCUIT

Ordering code:

1	2	3	4	5	6	7	8	9
MF	**24**	**E**	**B**	**N**	**00**	**00**	**00**	**000**

1

MF	Fixed motor

2

Displacement Vg max [cm^3]	
20	33.3
21	51.6
22	69.8
23	89.0
24	118.7
25	165.8
26	227.3
27	333.7

3

Dimension of the input shaft	
A	14 teeth, 12/24 PITCH, Φ31.20
B	19 teeth, 16/32 PITCH, Φ31.75
C	21 teeth, 16/32 PITCH, Φ34.50
D	23 teeth, 16/32 PITCH, Φ37.68
E	27 teeth, 16/32 PITCH, Φ44.03
F	40 teeth, 16/32 PITCH, Φ64.66
G	3 teeth, 8/16 PITCH, Φ43.71
I	20 teeth, 16/32 PITCH, Φ32.91
J	cone 1:8 SAEJ501, Φ41.27
K	cone 1:8 SAEJ501, Φ31.75
L	parallel with key Φ34.925
M	parallel with key Φ44.45
P	15 teeth, 16/ 2 PITCH, Φ25.40
R	13 teeth, 16/ 32 PITCH, Φ21.80

4

Dimension of high pressure ports		Thread
A	SAEJ518c, code 62, size 1", 6000PSI	7/16"-14 UNC-2A
B	SAEJ518c, code 61, size 1", 5000PSI	3/8"-16 UNC-2A
C	ISO 6162, DN25, typeII, 40MPa	M12
D	SAEJ518c, code 62, size 3/4", 6000PSI	3/8"-16 UNC-2B
E	SAEJ518c, code 61, size 3/4", 5000PSI	3/8"-16 UNC-2B
F	ISO 6162, DN19, typeII, 40MPa	M10

5

Manifold assy	
A	Manifold assy with by-pass valve
B	Manifold assy without by-pass valve
C	Without manifold assy with cover plate
D	Without manifold assy with by-pass valve
N	Without manifold assy

6

Pressure setting of low-pressure valve in the manifold assy	
11	1.1 MPa
13	1.3 MPa
16	1.6 MPa
00	Without manifold assy

7

Pressure setting in port A	
11	11 MPa
14	14 MPa
35	35 MPa
40	40 MPa
42	42 MPa
00	Without pressure valve

8

Pressure setting in port B	
11	11 MPa
14	14 MPa
35	35 MPa
40	40 MPa
42	42 MPa
00	Without pressure valve

9

000	standard
xxx	Special production no.

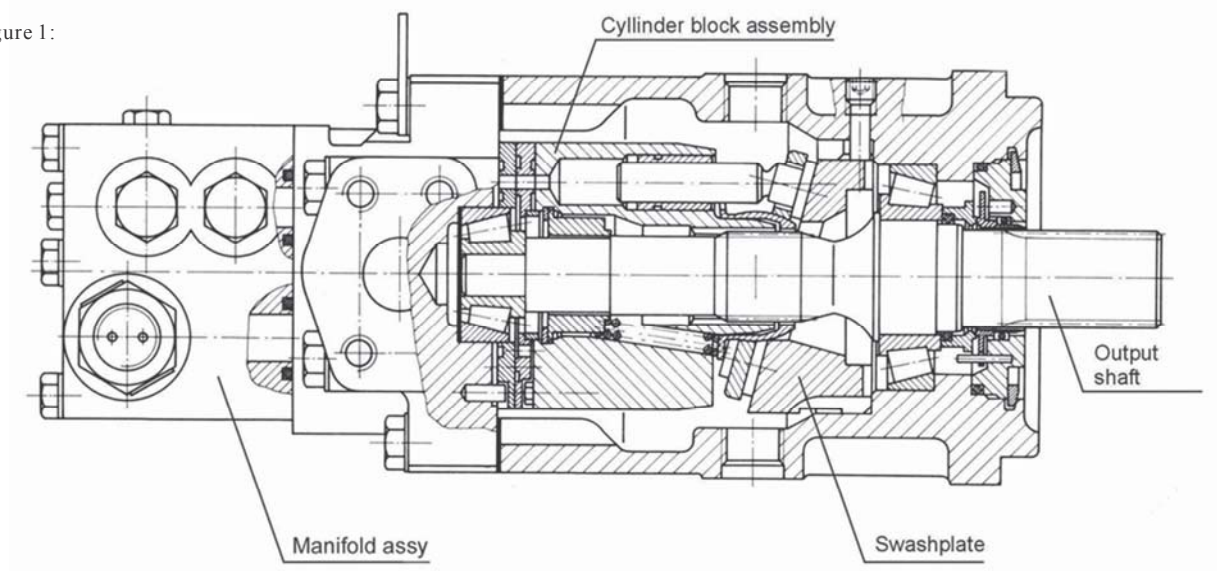
SAUER MF AXIAL PISTON MOTORS

SERIES 20 CLOSED CIRCUIT

GENERAL DESCRIPTION

Axial piston fixed displacement motors, Series 20, are of swash plate construction with preset displacement, and are intendent for closed circuit operation. The output speed is proportional to the flow rate of the input fluid. The output torque is proportional to the differential between high and low pressure sides of the fluid circuit. The direction of motor (output) shaft rotation depends upon which port the fluid enters the motor.

Figure 1:



FEATURES

Axial piston fixed displacement motors, Series 20, are well-engineered and easy to handle. The full-lenght shaft with a highly efficient tapered roller bearing arrangement offers a high loading capacity for external radial forces. High case pressures can be achieved without leakage even at the lowest temperatures by using suitable shaft seals. The moduar construction of the units simplifies the production of a wide variety of model options while limiting the number of different components involved.
Light weight,short version available on request.

Figure 2:

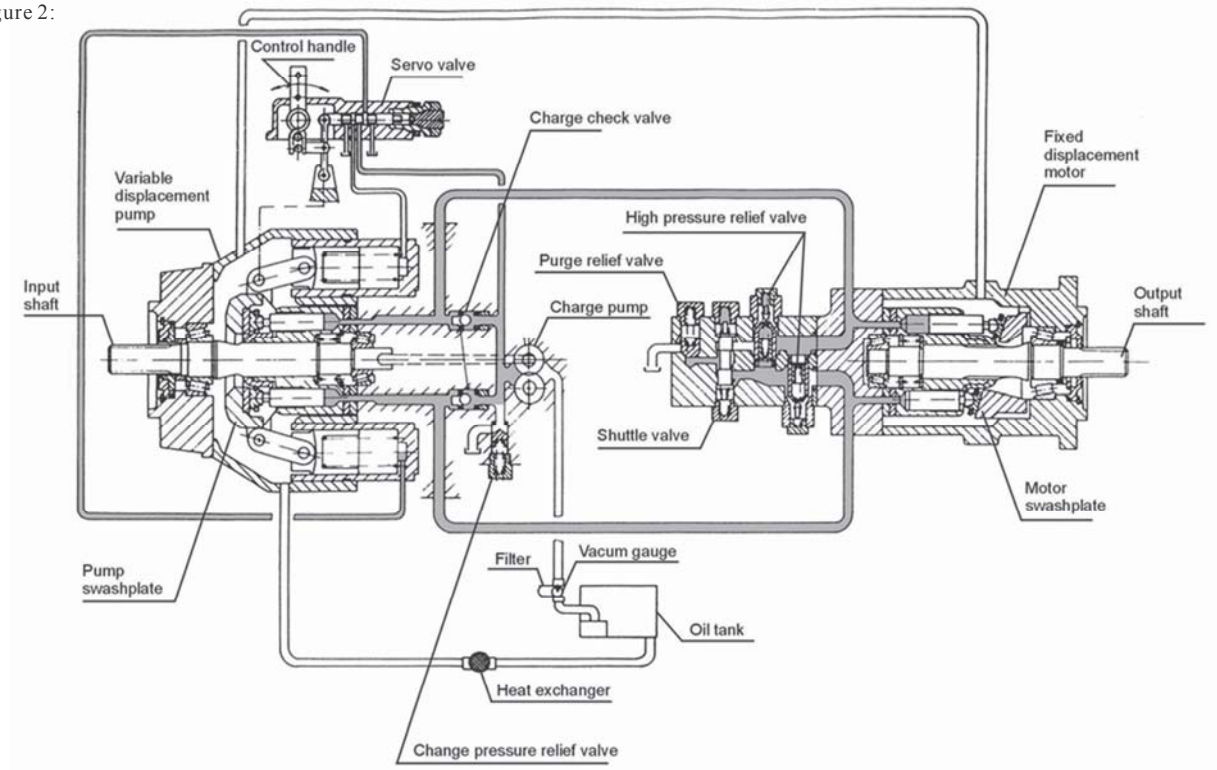


Figure 2 shows schematically the function of a hydrostatic transmission using an axial piston variable displacement pump a fixed displacement motor.

DIMENSIONS

Table 3. Dimensions (mm)

Frame size	A	C	C_1	D	D_1	D_2	D_3	D_4	D_5	F	H
MF-20	15,7 ±1,5	56	190	162	146	140	127 - 0,05	108	25,4	15 + 0,8 - 0,3	340
MF-21	15,7 ±1,5	56	190	162	147	154	127 - 0,05	108	25,4	15 + 0,8 - 0,3	360
MF-22	15,7 ±1,5	56	194	162	194	161	127 - 0,05	108	25,4	15 + 0,8 - 0,3	380
MF-23	17,2 ±1,5	56	194	162	194	180	127 - 0,05	108	25,4	15 + 0,8 - 0,3	395
MF-24	25	75	214	229	204	200	152,4 - 0,05	121	25,4	21,3 + 0,8 - 0,3	442
MF-25	25	77	285	317,5	254	230	165,1 - 0,05	127	36,5	20,5 + 0,8 - 0,3	542
MF-26	27	77	281	317,5	273	271,5	165,1 - 0,05	127	36,5	20,6 + 0,8 - 0,3	572
MF-27	38	77	298	350	298	292	177,8 - 0,05	140	36,5	27	603

Frame size	H_1	H_2	H_3	H_4	H_5	H_6	K	P_1 , P_2 , P_3	R	R_1	R_2	U_2
MF-20	36	252	315	227	11	25	214	7/8-14 UNF-2B	88,7	82	18	19
MF-21	36	270	354	295	9	32	235		97	88	18	19
MF-22	36	291	382	315	12	30	255,3		108	98	18	19
MF-23	36	306	400	331	6	44	272,3		117	107	18	19
MF-24		362	481	388,7			305		125	109		21
MF-25		387	524	442,5			330		136,5	136		21
MF-26		410	547				346		139,7	152		21
MF-27		447	588	483,5			387		154	161		21

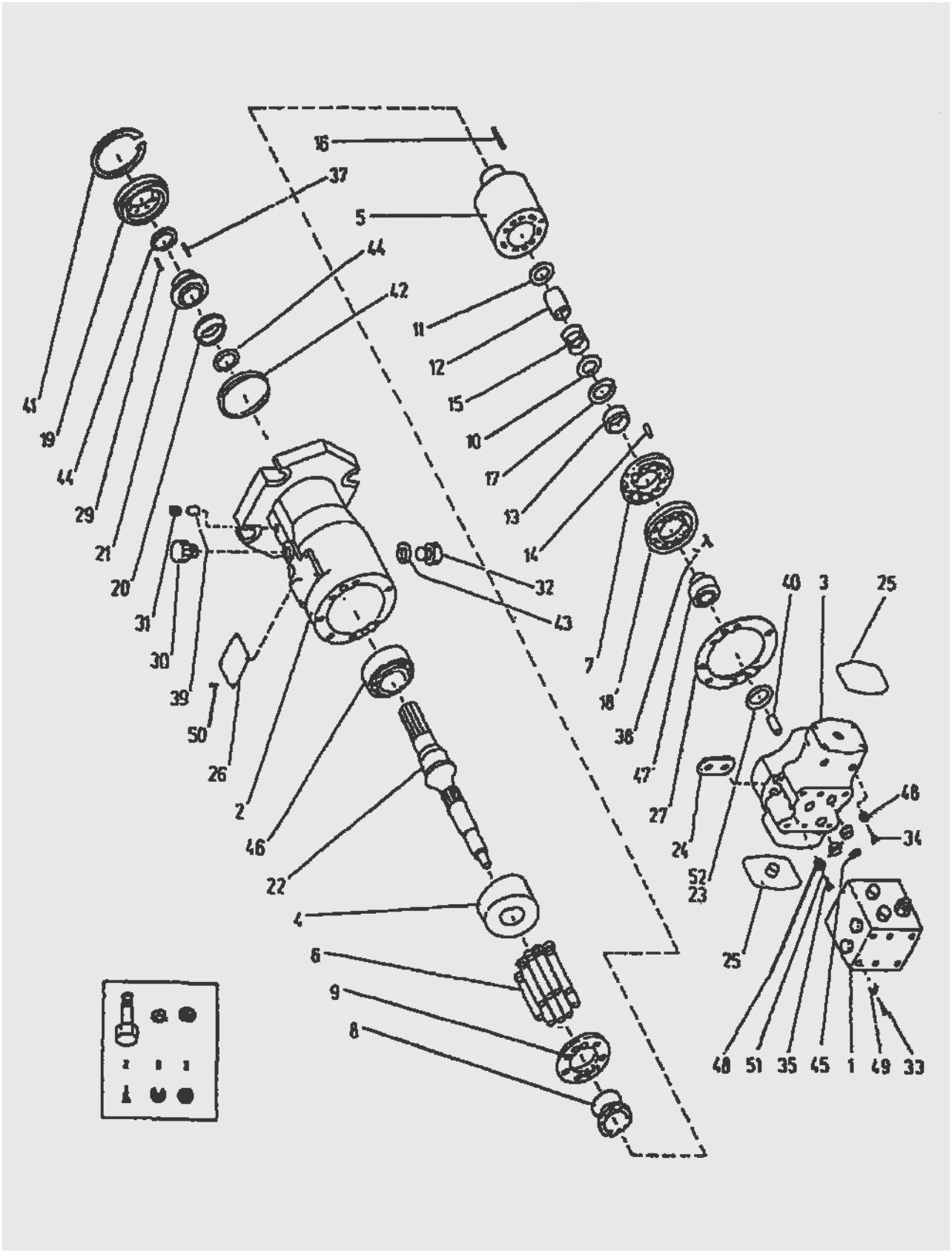
Frame size	U_1	W	b	B_1	d	d_1	h	H_1	k
MF-20	7/8-14 UNF-2B	3/8-16 UNC-2B	162	82,5	34,5 - 0,17	M10		71	48
MF-21			171	85,8	34,5 - 0,17	M10	103	76	48
MF-22			172	86	34,5 - 0,17	M10	100,6	87	48
MF-23			192	96	37,68 - 0,18	M10	115	96	48
MF-24			214	107	44 - 0,18	M14		100	67
MF-25		5/8-11 UNC-2B	260	130	44 - 0,18	M14		124	67
MF-26			292	146	44 - 0,18	M14	170	138	67
MF-27			317	159	64,7 - 0,18	M16	183	146	67

Frame size	l	l_1	x	z		m	n	x_1 , x_2 , x_3
MF-20	12,5 0,2	min.20	156	7/8-14 UNF-2B	45°	52,4	26,2	7/16-20 UNF-2B
MF-21	12,5 0,2	min.20	160		45°	52,4	26,2	
MF-22	12,5 0,2	min.20	165		45°	52,4	26,2	
MF-23	12,5 0,2	min.20	170		45°	52,4	26,2	
MF-24	12,5 0,2	min.30	175		45°	52,4	26,2	
MF-25	16 0,2	min.30	219	15/16-12 UN-2B	45°	79,4	36,5	
MF-26	16 0,2	min.30	228,5		45°	79,4	36,5	
MF-27	16 0,2	min.40	278		45°	79,4	36,5	

SPARE PARTS FOR FIXED PISTON MOTOR

MF 20, MF 21, MF 22, MF 23, MF 24, MF 25, MF 26, MF 27
At your inquiry is needed to give number of spare parts from sketch and size of the motor.

1 – Manifold Assy 35 Mpa	27 – End Cap Gasket
2 – Motor Housing	29 – Seal Spring
3 – End Cap	30 – Plug
4 – Swash Plate	31 – Plug
5 – Cylinder Barrel	32 – Hex Head Plug
6 – Piston Assembly	33 – Hex Head Screw
7 – Bearing Plate	34 – End Cap Screw
8 – Retainer Guide	35 – Hex Head Screw
9 – Slipper Retainer	37 – Drive Screw
10 – Spring Retainer	38 – Pin
11 – Spring Retainer	39 – Pin
12 – Spring Guide	40 – Pin
13 – Bearing Plate Pilot	41 – Retaining Ring
14 – Pin	42 – O Ring
15 – Cylinder Barrel Spring	43 – O ring
16 – Retainer Spring	44 – O Ring
17 – Reatining Ring	45 – O Ring
18 – Valve Plate	46 – Front Bearing
19 – Seal Retainer	47 – Rear Bearing
20 – Rotating Seal	48 – Washer
21 – Stationary Seal	49 – Washer
22 – Drive Shaft	50 – Drive Screw
23 – Shim	51 – O Ring
24 – Loop	52 – Washer
25 – Cap	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Victory Hydraulic Manufacturing

SPARE PARTS FOR MANIFOLD ASSEMBLY (VALVE BLOCK) FOR FIXED PISTON MOTOR

MF 20, MF 21, MF 22, MF 23, MF 24, MF 25, MF 26, MF 27

At your inquiry is needed to give number of spare parts from sketch of manifold assembly and size of the motor.

1 – Manifold Housing	8 – Relief Valve Shim	15 – Retaining Ring	22 – Spring
1A – Shuttle Valve	9 – Relief Valve Spring	16 – Seat	23 – Relief Valve
2 – Washer	10 – Plug	17 – O-Ring	24 – Piston
3 – Spring	11 – O-Ring	18 – O-Ring	25 – Hex Head Screw
4 – O-Ring	12 – High Pressure Valve	19 – Plug	26 – Washer
5 – Plug	13 – Valve Body	20 – O-Ring	27 – O-Ring
6 – Relief Valve	14 – Spring	21 – Washer	
7 – Plug