

External Gear Motors

Series APM



hydraulic pressure is converted into mechanical torque at the active surfaces of the gear wheels.

The pressure is produced by the motor resistance (the load resistance) and corresponds to the torque required at the drive shaft. The maximum torque value is determined by the pressure and the geometric consumption of the motor. The speed is a function of the flow rate at which the oil is supplied.

The bushing blocks of APM motors have an asymmetric design i.e. the required direction of rotation dictates which side is the high-pressure side and which the low-pressure, and the optimum internal sealing arrangement is different for each side. The leakage oil that occurs is drained internally to the tank side. Consequently, no drain port is required. The maximum tank line pressure is limited to 7 bar, however.

1.2 Advantages

- High drive speeds
- Compact dimensions and low weight in relation to the power rating
- Cost-effective

1.3 Reversible motors

In reversible motors, the bushing blocks have a symmetrical design, which means that pressure can be applied to either side. The leakage oil that occurs must be externally drained (leakage drain port). Oil leaving the motor can be subjected to pressure, which in turn makes it possible to connect motors in series.

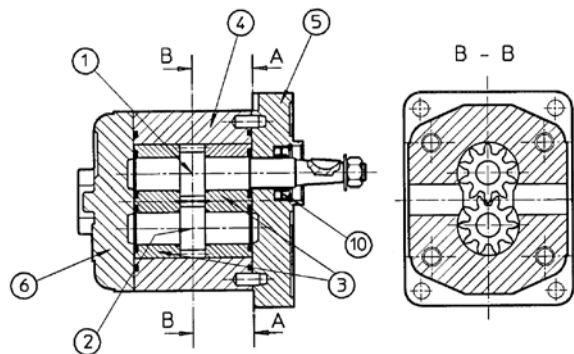
For other styles of motors, and for motor dimensions, please refer to the AP pump catalogue. Reversible motors have a leakage drain port in the motor end-cover.

1 General

1.1 Product description

Series APM hydraulic motors are external gear motors. In gear motors, the principle of the gear pump is reversed. By providing a supply of oil under pressure, rotary motion can be taken from the motor shaft i.e. hydraulic energy is converted into mechanical energy. The

2 Design features



1. Gear wheel 1
2. Gear wheel 2
3. Bushing blocks
4. Body
5. Flange
6. End cover
10. Shaft seal

3 Technical data

3.1 General

Fluid temperature range	°C	-15 to +80
Viscosity range	mm ² /s (cSt)	20 to 700
Filter rating	µm	20 - 30
Max. tank line pressure without drain port	bar	7

3.2 APM05

Model	Geometric consumption cm ³ /rev	Maximum pressure			Speed (rpm)		Torque Nm at Δ P=100 bar
		P ₁ bar	P ₂ bar	P ₃ bar	n min	n max ₁	
APM0.5/0.5	0.5	210	230	250	650	7000	0.75
APM0.5/0.75	0.75	210	230	250	650	7000	1.15
APM0.5/0.9	0.9	210	230	250	650	7000	1.45
APM0.5/1.2	1.2	190	200	220	550	6000	1.90
APMR0.5/0.5	0.5	190	210	230	650	7000	0.73
APMR0.5/0.75	0.75	190	210	230	650	7000	1.14
APMR0.5/0.9	0.9	190	210	230	650	7000	1.45
APMR0.5/1.2	1.2	170	180	200	550	6000	1.87

3.3 APM100

Model	Geometric consumption cm ³ /rev	Maximum pressure			Speed (rpm)		Torque Nm at Δ P=100 bar
		P ₁ bar	P ₂ bar	P ₃ bar	n min	n max ₁	
APM100/1.7	1.7	210	250	280	650	5000	2.6
APM100/2.5	2.5	210	250	280	650	5000	3.5
APM100/3.5	3.5	210	230	250	650	4000	4.75
APM100/4.3	4.3	210	230	250	550	4000	5.8
APM100/5	5	210	230	250	500	3500	6.85
APM100/6.5	6.5	190	220	240	500	3000	8.9
APM100/8	8	180	210	230	500	3000	10.8

3.4 APM200

Model	Geometric consumption cm ³ /rev	Maximum pressure			Speed (rpm)		Torque Nm at Δ P=100 bar
		P ₁ bar	P ₂ bar	P ₃ bar	n min	n max ₁	
APM200/6.5	6.5	220	250	280	800	4000	8.5
APM200/8.5	8.5	220	250	280	800	4000	11.25
APM200/11	11	210	230	250	700	4000	14.85
APM200/15	15	210	230	250	650	4000	20.0
APM200/19	19	210	230	250	650	3500	25.7
APM200/22	22	200	220	240	600	3500	29.75
APM200/26	26	190	210	230	600	3000	35.0

3.5 APM300

Model	Geometric consumption cm ³ /rev	Maximum pressure			Speed (rpm)		Torque Nm at Δ P=100 bar
		P ₁ bar	P ₂ bar	P ₃ bar	n min	n max ₁	
APM300/27	27	220	250	280	600	3500	36.5
APM300/31	31	220	250	280	600	3500	42.0
APM300/38	38	220	250	280	600	3000	51.50
APM300/45	45	200	230	260	600	3000	61.0
APM300/53	53	200	230	260	600	3000	71.50
APM300/63	63	180	210	240	550	3000	85.0
APM300/75	75	170	190	220	550	2500	102.0
APM300/93	93	150	170	200	500	2500	125.0

P₁ = continuous operation (constant)

P₂ = non-continuous operation (intermittent)

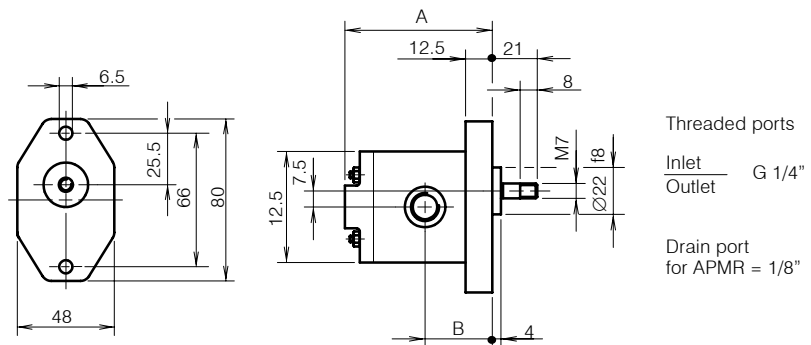
P₃ = peak pressure (briefly)

4 Dimensions of standard motors

4.1 Code 810

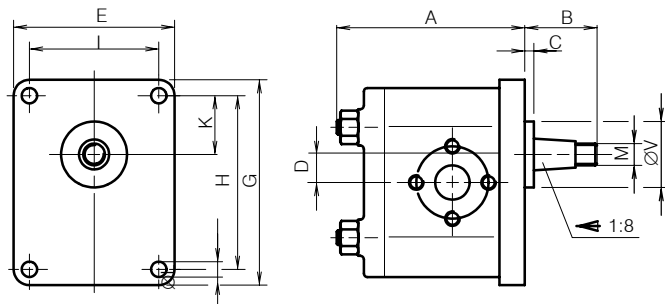
	A	B
APM0.5/0.5	67	30.5
APM0.5/0.75	69	31.5
APM0.5/0.9	70.5	32
APM0.5/01.2	73	33.5

Dimensions also apply to APMR models



4.2 Code 218

Other shaft and flange designs, and all other dimensions, are the same as for external gear pumps. They are available in the detailed catalogue on the AP series external gear pumps.



Model	A	B	C	D	E	G	H	I	K	ØL	M	ØV
APM100/1.7	84.4											
APM100/2.5	88											
APM100/3.5	92											
APM100/4.3	96	29.2	4	11	68	87	17.9	52.4	26.2	7.1	M7	25.4, f8
APM100/5	98.5											
APM100/6.5	103.5											
APM100/8	109											
APM200/6.5	88											
APM200/8.5	88											
APM200/11	104											
APM200/15	104	40	5	15.9	89	113.5	96	71.5	32.5	8.5	M12x1.5	25.4, f8
APM200/19	118											
APM200/22	118											
APM200/26	118											
APM300/27	126											
APM300/31	129											
APM300/38	133.5											
APM300/45	138.5	47	5	23.5	120	152	128	98	42	10.5	M14x1.5	50.8, f8
APM300/53	143											
APM300/63	150											
APM300/75	157.5											
APM300/93	168											

5 Ordering code

	A	P	M	2	0	0	/	1	9	D	2	1	8				
External gear motors																	
Series 05 / 100 / 200 / 300																	
Geometric consumption in cm ³ /rev																	
Direction of rotation																	
S = anticlockwise																	
D = clockwise																	
Type																	
Special feature																	

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