External Features and Benefits

Flange Dimensions Per SAE and ISO Specifications:

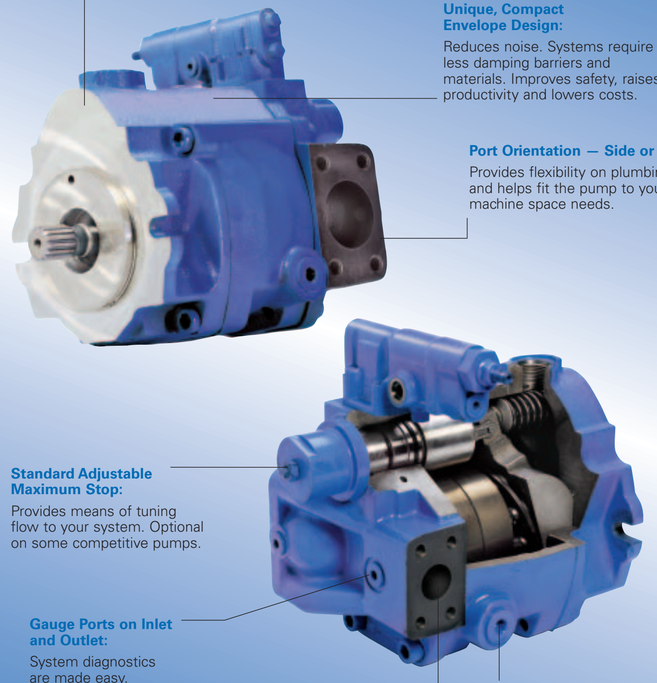
Provides a wide variety of installation opportunities for global machine design.

Unique, Compact Envelope Design:

Reduces noise. Systems require less damping barriers and materials. Improves safety, raises productivity and lowers costs.

Port Orientation — Side or End:

Provides flexibility on plumbing and helps fit the pump to your machine space needs.



Standard Adjustable Maximum Stop:

Provides means of tuning flow to your system. Optional on some competitive pumps.

Gauge Ports on Inlet and Outlet:

System diagnostics are made easy. Reduces number of special connectors.

Porting Includes SAE, ISO, and BSPP in Both Tube and Flange Versions:

Connectors are easier to find world-wide which reduces installed costs.

Multiple Drain Ports:

Allows many mounting orientations as standard (including shaft-up), reducing installed costs.

M Series Model Code Selection

PVM	018	E	R	01	A E	0 1	AA	A	28	00	00	0	0	A	0	A
1 2 3	4 5 6	7	8	9 10	11 12	13 14	15 16	17	18 19	20 21	22 23	24	25	26	27	28

1, 2, 3 – PRODUCT SERIES
PVM – M Series Variable Piston Pump

4, 5, 6 – DISPLACEMENT
Fourteen displacements available
230 bar and 280 bar continuous ratings

7 – VALVE PLATE
E – Electric Motor Speeds

8 – INPUT ROTATION
R – Clockwise (righthand)
L – Counter-clockwise (lefthand)

9, 10 – INPUT SHAFT
Standard SAE and ISO splined versions
(Other configurations optional)

11 – MOUNTING FLANGE
Thirteen options in SAE and ISO mounts

12 – MAIN PORT LOCATION
E – End Ported
S – Side Ported

13, 14 – MAIN PORT TYPE
SAE & ISO tube ports and 4-bolt flange
(Other configurations optional)

15, 16 – PUMP SPECIAL FEATURES
00 – None (single shaft seal)
AA – Adjustable Maximum Displacement Stop and Single Shaft Seal (standard)
AB – Double Shaft Seal, Two Way

17 – CONTROL OPTIONS
0 – None
A – Pressure Compensator
B – Pressure and Flow Compensator with Bleed Orifice
C – Pressure and Flow Compensator with Plugged Orifice
E – Industrial Control (57cc through 141cc only)

18, 19 – PRESSURE COMPENSATOR SETTING
00 – None
07 – 70 bar (Adjustable between 40 bar and 130 bar)
23 – 230 bar (Adjustable between 130 bar and 320 bar)
28 – 280 bar (Adjustable between 130 bar and 320 bar)

20, 21 – FLOW COMPENSATOR SETTING
00 – None
11 – 11 bar setting
20 – 20 bar setting
24 – 24 bar setting

22, 23 – TORQUE LIMITER SETTING
00 – None (Not available on M Series)

24 – COMPENSATOR SPECIAL FEATURES
0 – None

25 – AUXILIARY MOUNTING PAD
0 – None
(Auxiliary mounting available on all frame sizes)

26 – PAINT
0 – No paint
A – Standard Blue Paint

27 – CUSTOMER IDENTIFICATION
0 – None (Contact Eaton for Options)

28 – DESIGN CODE
A – A (Initial Release)

For complete model codes and information see catalog number V-PP-MC-0004-E.

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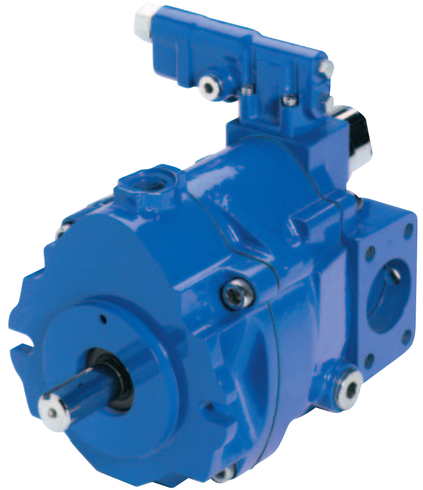
M Series Industrial Axial Piston Pumps



VICKERS®

M Series 280 Bar (4000 psi) For Industrial Applications

Medium Pressure, High Performance, Quiet Operation

As system performance demands trend toward higher pressure, Eaton's new M Series pumps are prepared to meet your needs. These compact pumps provide a rugged alternative when higher power demands are made on your system.

Eaton's M Series pumps cover medium pressure industrial equipment applications. Like other Eaton pumps, the M Series incorporates proven engineering design, as well as quality manufacturing techniques and operating features.

The Right Pump for the Right Application.

With the new M Series Axial Piston pumps, Eaton now offers a selection of displacements to provide system design flexibility. Seven different frame sizes span the low to medium pressure application range with displacements from 18 cm^3 (0. $in.^3$) to 141 cm^3 ($in.^3$.) With such a broad offering of flows at industrial electric motor speeds, the M Series is the solution to many pump needs.

Quiet Performer.

Eaton M Series pumps operate at a level of quietness that exceeds today's demanding industrial conditions. Special design techniques focus on reducing both structure-borne and fluid-borne noise, resulting in a pump that requires little external sound damping.

Built for Long Life.

Studies also show overhaul costs can be reduced because of the ease of replacing worn rotating parts when rebuilding major machine systems.

Efficient controls in the M Series allow the downsizing of cooling needs and the use of a smaller, less expensive system design. Another option is to use the same cooling capacity and increase system flow capability, thus improving performance and customer satisfaction.

Fluids.

M Series pumps are fully capable of operating with many types of hydraulic fluids used in industrial systems. High water content and phosphate ester fluids can be accommodated, in addition to the typical petroleum-based and synthetic fluids.

Lower Installed and Operating Costs.

The M Series line provides a medium pressure range of pumps that reduce both the installed cost and operating cost for customers' applications. This is achieved by incorporating many standard features others offer as options, such as adjustable maximum displacement stops and gauge ports.

A design constraint of 30,000 hours B_{10} bearing life in industrial applications provides long component and system operation without costly breakdowns and maintenance. Replaceable wear surfaces ensure that a rebuild is done quickly and less expensively than by the purchase of a new pump.

The Eaton tradition of full torque thru-drive capability is continued with the M Series. Both SAE and ISO mounting versions are provided. Ports in both English and metric designs are standard options. End-ported and side-ported connections allow the optimum design to be selected for the system application, reducing other component costs.

Designed for Many Applications.

The flexibility built into these M Series pumps makes them ideal for many applications including:

- Automotive Transfer Lines
- Process Industry Machines
- Clamping Fixtures
- Robotic Loaders
- Tool Changers for Machining
- Wind Turbines
- Entertainment Rides
- Tube Forming and Bending
- Sheet Metal Brakes
- Blow Molding Machines

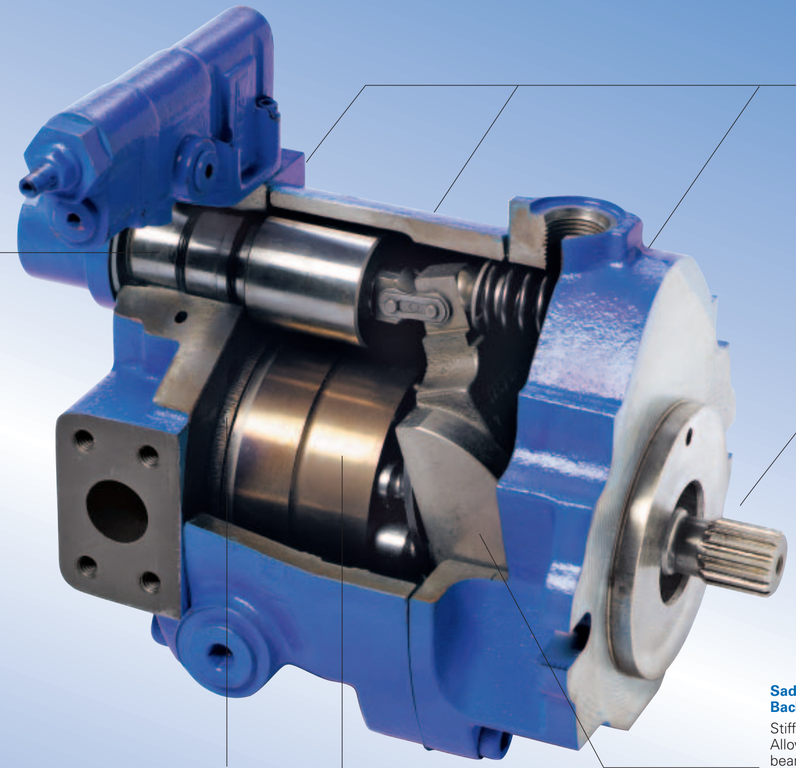
Many popular control options are also available. See your application brochure for details.

PVM	DISPLACEMENT		
018	18,0 cm^3/r	[1.10 in^3/r]	(280 bar MAX)
020	21,1 cm^3/r	[1.29 in^3/r]	(230 bar MAX)
045	45,1 cm^3/r	[2.75 in^3/r]	(280 bar MAX)
050	50,0 cm^3/r	[3.05 in^3/r]	(230 bar MAX)
057	57,4 cm^3/r	[3.50 in^3/r]	(280 bar MAX)
063	63,1 cm^3/r	[3.85 in^3/r]	(230 bar MAX)
074	73,7 cm^3/r	[4.50 in^3/r]	(280 bar MAX)
081	81,0 cm^3/r	[4.94 in^3/r]	(230 bar MAX)
098	98,3 cm^3/r	[6.00 in^3/r]	(280 bar MAX)
106	106,5 cm^3/r	[6.50 in^3/r]	(230 bar MAX)
131	131,1 cm^3/r	[8.00 in^3/r]	(280 bar MAX)
141	141,0 cm^3/r	[8.60 in^3/r]	(230 bar MAX)

NOISE LEVEL (dBA)		PRESS (BAR)	
MODEL	DISP	230	280
PVM018	FF	65	64
	CO	54	56
PVM020	FF	63	
	CO	55	
PVM045	FF	69	71
	CO	63	67
PVM050	FF	72	
	CO	64	
PVM057	FF	70	73
	CO	65	68
PVM063	FF	73	
	CO	64	
PVM074	FF	71	74
	CO	67	70
PVM081	FF	74	
	CO	68	
PVM098	FF	75	77
	CO	68	74
PVM106	FF	78	
	CO	75	
PVM131	FF	78	79
	CO	73	74
PVM141	FF	80	
	CO	73	

NFPA Equivalent @ 1800 rpm 120 F

Internal Features and Benefits



Single Control Piston

Reduces loading on pump yoke. Size of pump is reduced allowing installation in tighter locations.

Three Piece Pump Envelope – Flange, Housing and Valve Block:

Design is stiffer and incorporates features that reduce structure-borne noise. Pumps are quieter.

High Load Bearings and Stiff Drive Shaft:

B10 bearing life of 10,000 hours reduces operating costs. Extends machine life.

Saddle-Type Yoke with Steel Backed Polymer Bearings:

Stiff yoke reduces deflection. Allows even loading of bearings for improved life.

Bi-Metal Timing Plate:

Designed for operation at industrial equipment speeds. Improves pump filling characteristics which extends pump life and reduces fluid-borne noise.

Strong, Proven, Rotating Group Assembly:

Provides 280 bar (4000 psi) continuous, 320 bar (4600 psi) intermittent pressure requiring less maintenance cost.