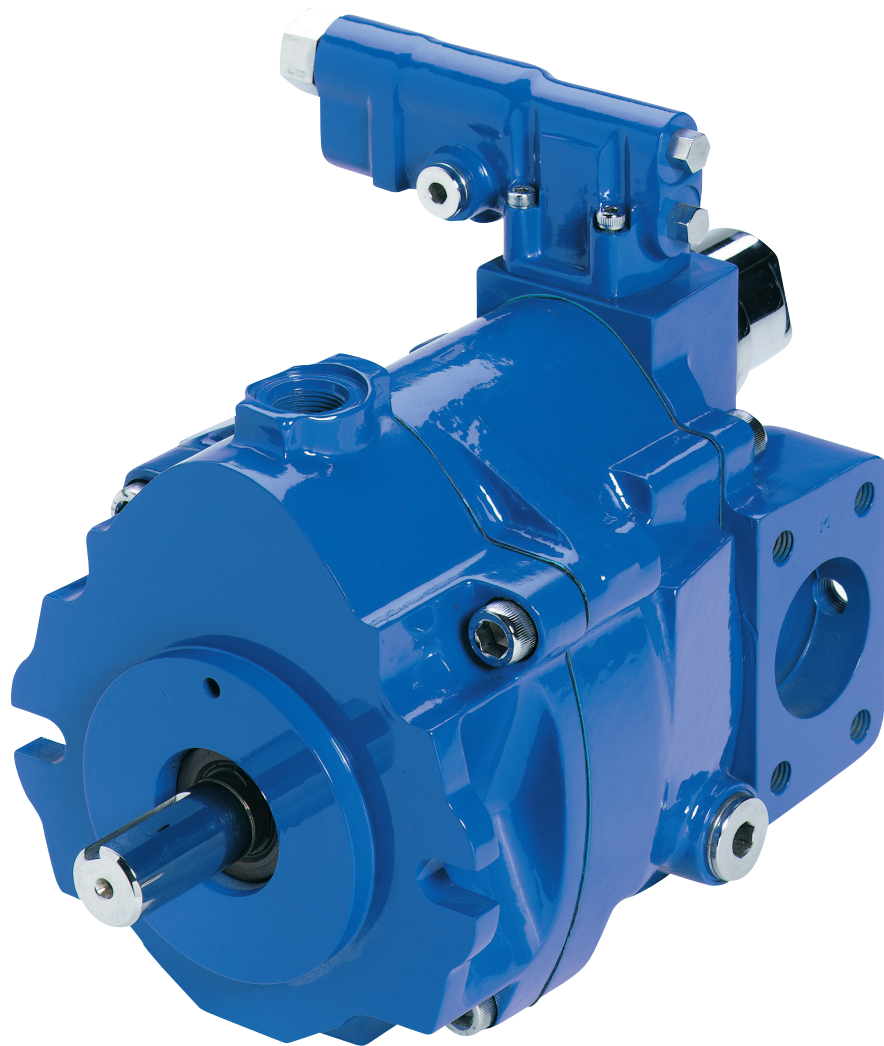


Do more with PVM open circuit piston pumps



Powering Business Worldwide

Do more with PVM open circuit piston pumps.

Eaton has strengthened the versatility of its PVM open circuit piston pumps:

- **Nominal pressure** rating upgraded from 280 to **315 bar** for standard displacements
- **New "Power Control"** option providing hydro mechanical torque limiter included
- **Low shaft speed operation performance data** available for variable speed applications

Eaton's PVM series axial piston pumps have always been ideally suited for industrial applications. Renowned for their best in class noise levels*, the various shafts*, ports*, mounting and through drive options* with high torque capability, help PVM pumps offer high levels of flexibility, to cater to the diverse system design needs for demanding applications. The robust three piece design with additional design considerations like High load bearings contribute to the high reliability and long life of the pump. Atex certified and alternate fluid compatible*, PVM pumps continue to ensure safe operation for safety critical applications at various installations worldwide.

* For additional information please refer PVM catalog #V-PUPI-TM007-E3

Pressure Upgrade:
Eaton has tested and qualified its PVM series for improved pressure ratings as listed below.

Model Series	Max pressure bar (psi)		
	Nominal	Peak*	
PVM018	315 (4568)	350 (5000)	updated
PVM045	315 (4568)	350 (5000)	updated
PVM057	315 (4568)	350 (5000)	updated
PVM074	315 (4568)	350 (5000)	updated
PVM098	315 (4568)	350 (5000)	updated
PVM131	315 (4568)	350 (5000)	updated

* Momentary system a pressure spikes only.

The higher pressure ratings helps provide more power in a smaller, compact package.

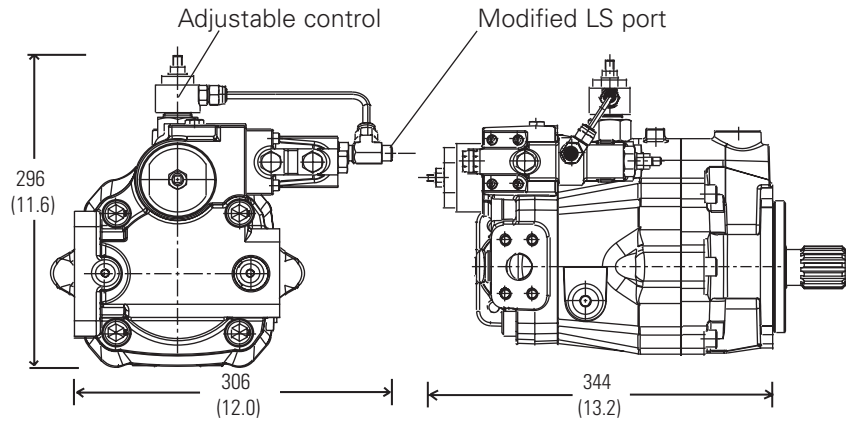
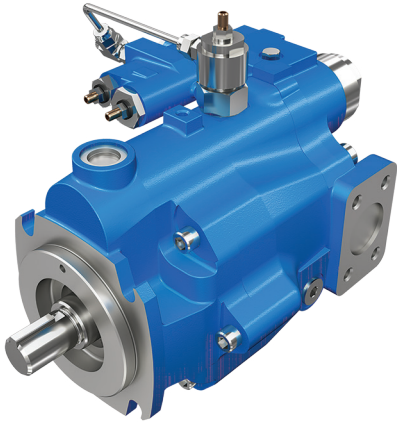
This increased power generation allows equipment manufacturers to provide more hydraulic power with a smaller displacement pump.

Now you can extend the advantages of using PVM pumps for newer applications in areas such as but not restricted to:

- Discrete Manufacturing – Press, Machine Tool, Test and Simulation
- Processing – Primary Metal, Food Processing, Wood Processing, etc.
- Oil/Gas/Marine
- Alternate Energy- Wind turbines
- General Industrial – Hydraulics Power Unit



Hydro-mechanical Power Control for PVM Series Pump



Approx. Dim. PVM 74/81cc with power control

The latest addition to control options* for PVM, the Power control** limits the maximum torque output by the piston pump by reducing the displacement as pressure increases hence limiting the power rating at a given speed.

As pressure increases the pump displacement is reduced such that the set torque value is not exceeded.

The addition of this Power control option provides the option of operating of larger size pump with same size motor. It also prevents the stalling of prime mover/motor by ensuring the set torque is not exceeded.

* Available control options are listed in the model code on the back page.

** Power control to be available on PVM displacements 57cc through 141cc.

The Pump makes use of signal from modified load sensing port to regulate the flow to ensure constant torque as per selected setting.

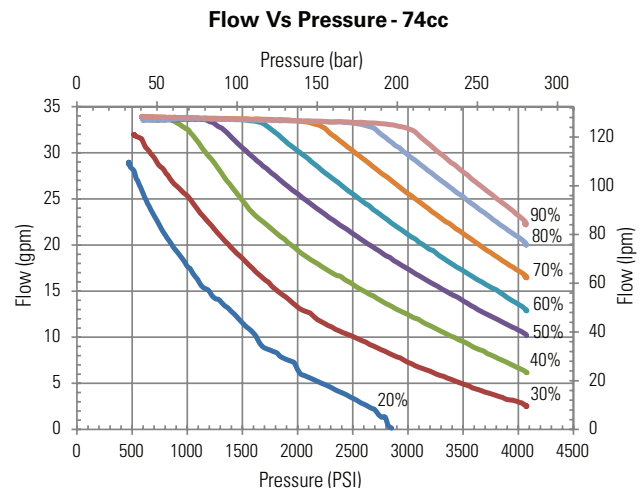
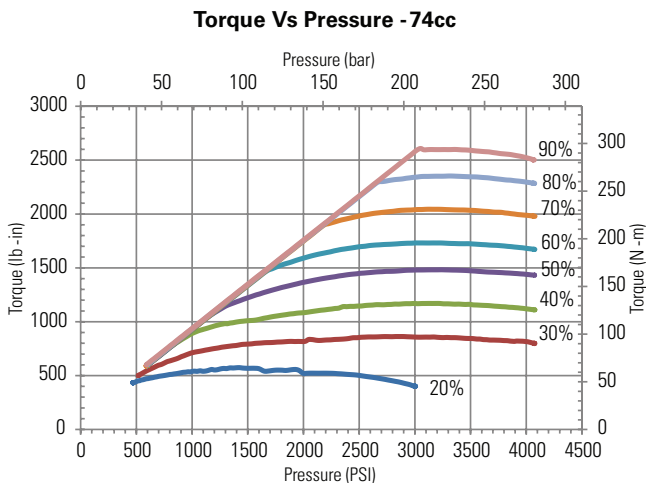
The highlight of the control is ability to adjust the torque setting in the field without requiring any change in components or springs, providing unmatched flexibility and convenience in adjusting the torque as per application needs.

The torque can be set between 20-90% of rated torque for given displacement (model code pos 22-23, ref table below for range of torque values).

Torque setting range by displacement

Pump Model	Displacement cc/rev (in ³ /rev)	Rated Torque Nm (lb-in)	Minimum torque setting Nm (lb-in), 20% of rated torque**	Maximum torque setting Nm (lb-in), 90% of rated torque
PVM057	57.4 (3.50)	272 (2407)	55 (482)	245 (2167)
PVM063	63.1 (3.85)	228 (2018)	46 (404)	206 (1817)
PVM074	73.7 (4.50)	334 (2956)	67 (592)	301 (2661)
PVM081	81.0 (4.94)	286 (2531)	58 (507)	258 (2278)
PVM098	98.3 (6.00)	464 (4107)	93 (822)	418 (3697)
PVM106	106.5 (6.50)	383 (3390)	77 (678)	345 (3051)
PVM131	131.1 (8.00)	596 (5275)	120 (1055)	537 (4748)
PVM141	141.0 (8.60)	497 (4399)	100 (880)	448 (3960)

Actual Power control performance characteristics 74cc



PVM Piston Pump

Variable Speed Performance

Whether it be for applications in open loop motion control mode or closed loop motion control mode.

The wide speed range capability, enhanced pressure ratings, optimized design for quiet pump operation and low inertia make the PVM series pumps, the ideal axial piston pump choice for Variable speed applications.

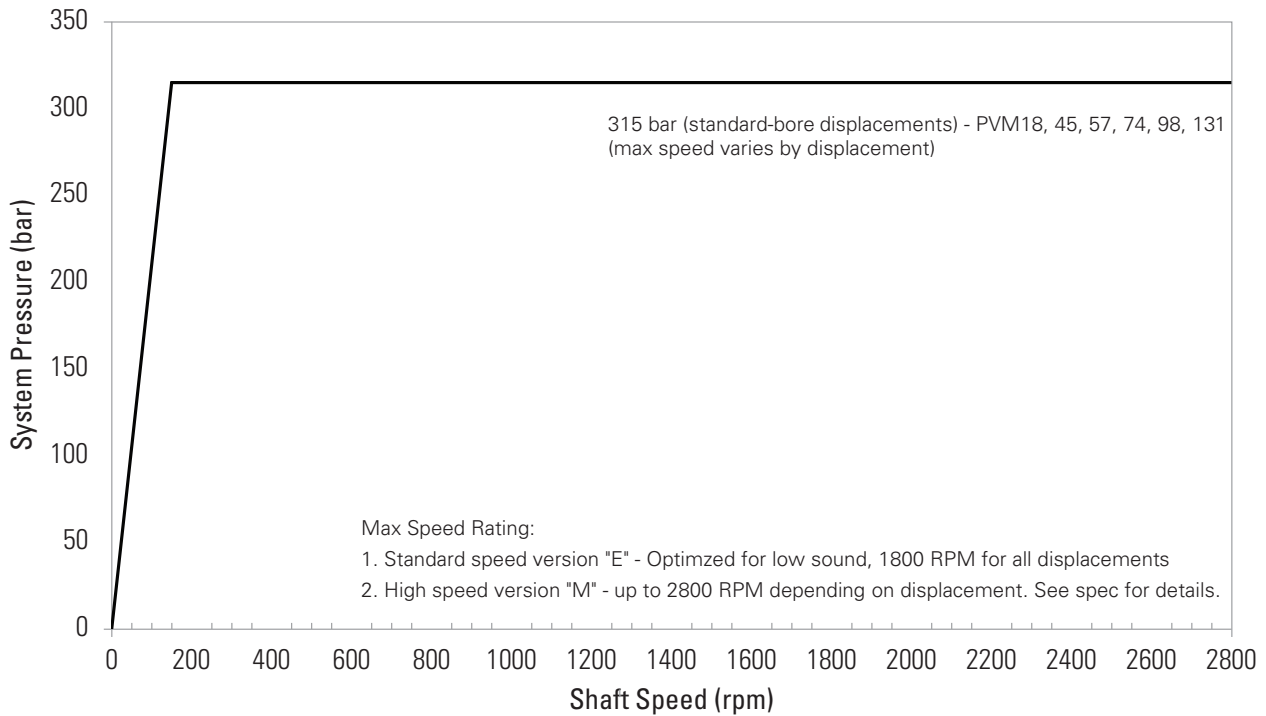
Table below provides details regarding the variable speed capability of PVM series pumps for standard displacements.



Pump family	Displacement (cc/rev)	Max speed "E" option (rpm)	Max speed "M" option (rpm)	Min speed* (rpm)	Inertia (kg*cm ²)
PVM	18	1800	2800	0	11.8
PVM	45	1800	2600	0	36.2
PVM	57	1800	2500	0	51.6
PVM	74	1800	2400	0	78.1
PVM	98	1800	2200	0	131.6
PVM	131	1800	2000	0	213.5

* For details see speed-pressure performance curve
 For above listed standard displacements
 (18, 45, 57, 74, 98, 131 cc/rev), nominal pressure 315 bar, peak pressure 350 bar (momentary pressure spikes only).

PVM System Pressure vs. Shaft Speed



Test condition: Mineral oil SAE 10W, oil temperature 49° C (120° F),
 1 bar absolute inlet pressure.
 For extended displacements (20,50,63,81,106, 141 cc/rev), pressure and variable speed capability being evaluated.
 For additional information please refer PVM catalog #V-PUPI-TM007-E2

PVM Piston Pump

Model code



For additional information please refer PVM catalog #V-PUPI-TM007-E2

PVM			045			E	R	01		A	E	01		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
 For details see the specifications in catalog

7 Valve plate
E Optimized for low sound, max speed 1800 rpm
M High speed version, max speed up to 2800 rpm

8 Input rotation
R Clockwise
L* Clockwise

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
AA Adjustable maximum displacement stop and single shaft (standard)
AB Double shaft seal, two way

17 Control
0 None
A Pressure Compensator
B Pressure and flow compensator with bleed orifice
C Pressure and flow compensator with plugged orifice

E Industrial/Remote Pressure Control (57cc through 141 cc only)
L Power control with load sense and pressure compensator with plugged orifice. (74 81cc only ,other displacements 57 cc and above under development)
W Remote pressure control (018-050 size only) -4 SAE O-ring port, left side

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
10 Standard for V control
11 11 bar setting
20 20-20 bar setting
24 24-24 bar setting

22 23 Torque limiter setting
00 None
50 50% of rated torque (for any other values specify % of rated torque)

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)

* Not available on 074, 081, 098 and 106 End Port

** Not available on 074, 081, 098 and 106 LH

*** Through drive not available on the LH

**** Not available on 018

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