ENGINEERING
TOMORROW

Product Brochure

Vickers® by Danfoss
PVM Series Open Circuit Piston Pump

Do more.

VICKERS
by Danfoss

Do more with **PVM industrial open circuit piston pumps**

Danfoss has strengthened the versatility of its PVM open circuit piston pumps

- Nominal pressure rating 315 bar for standard displacements
- Easy conversion using base pump program
- "Power Control" option providing hydro mechanical torque limiter included
- Low shaft speed operation performance data available for variable speed applications

With best-in-class noise levels and versatility due to expansive configuration options, PVM series axial piston pumps are ideally suited for industrial applications. The robust three piece design and high performance components, such as high load bearings, contribute to the reliability and long life of the pump. Atex certified and alternate fluid compatible, PVM pumps continue to ensure safe operation for critical applications at installations worldwide.

Pressure ratings

Danfoss has tested and qualified its PVM series for pressure ratings as listed below.

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

Max pressure bar (psi)	Standard displacements (cc/r)						
		18	45	57	74	98	131
	Nominal	315 (4568)	315(4568)	315(4568)	315(4568)	315(4568)	315(4568)
	Peak**	350 (5000)	350 (5000)	350 (5000)	350 (5000)	350 (5000)	350 (5000)
	Overbored displacements (cc/r)						
		20	50	63	81	106	141
	Nominal	230 (3300)	230 (3300)	230 (3300)	230 (3300)	230 (3300)	230 (3300)
	Peak**	280 (4000)	280 (4000)	280 (4000)	280 (4000)	280 (4000)	280 (4000)

** Momentary system pressure spikes only

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

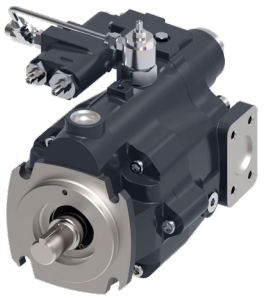
PVM **pump control strategies**

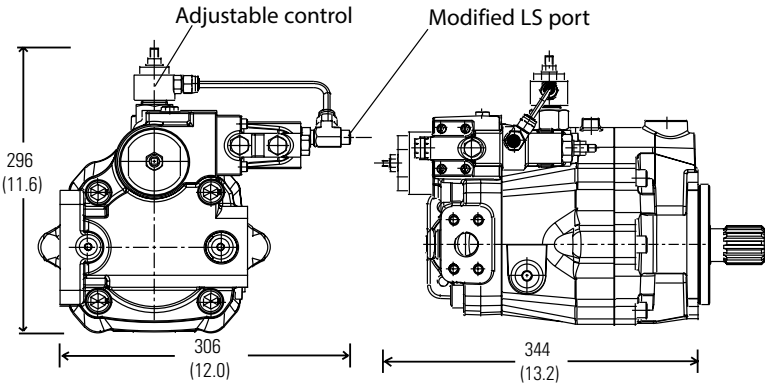
Flexibility is the name of the game with Vickers by Danfoss optional power control for PVM series pumps.

PVM pump controls

Pump size	Pressure compensator	Load sense compensator	Industrial compensator	Power limiter	Remote pressure compensator
	A	B and C	E	L	W
018-050	✓	✓	n/a	n/a	✓
057-141	✓	✓	✓	✓	n/a
Key Benefit	Fast response	Fast response	Remote control	Constant power	Remote control
Energy	Good	Better	Best	Best	Best

Hydro-mechanical power **control for PVM series pump**





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

One of the control options for PVM pumps, power control limits the maximum torque output 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. This power control option provides the option of operating a larger size pump with the same size motor. It also prevents the stalling of prime mover/motor by ensuring the set torque is not exceeded.

The pump makes use of the signal from modified load sensing port to regulate the flow to ensure constant torque as per selected setting. Another feature of this control is the 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.

PVM **piston pump**

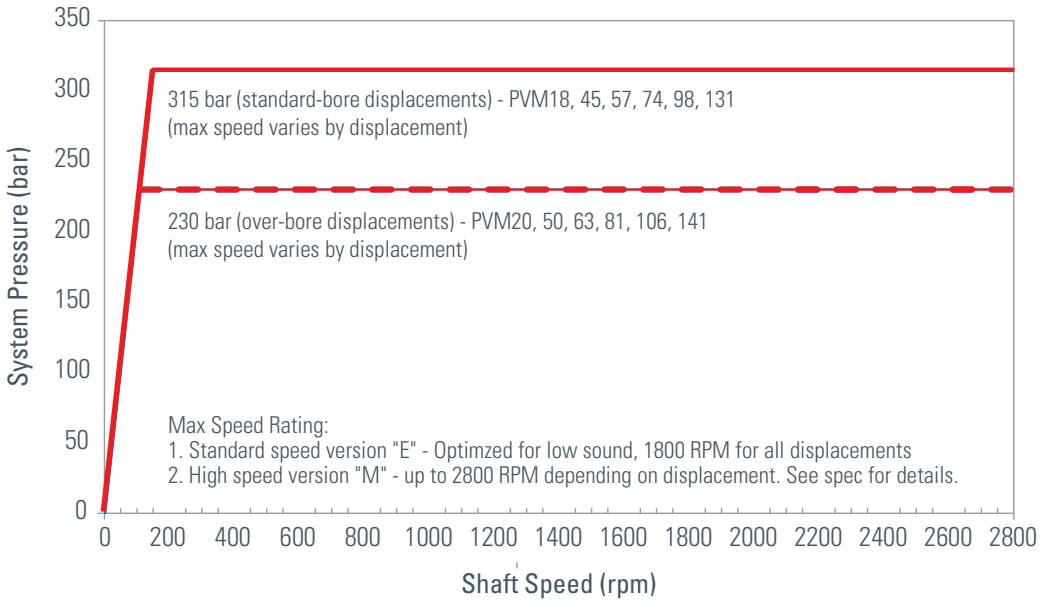
Variable speed performance

The wide speed range capability, enhanced pressure ratings, quiet pump operation, and low inertia make PVM series pumps the ideal choice for variable speed applications. In addition, they are suitable for applications in open or closed loop motion control mode.

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

Displacement [cc/r]	Max. Speed [rpm]				
		"M" Version			
		Flanged ports		Tube ports	Min. speed
	"E" Version	1 bar inlet	0.85 bar inlet		
18	1800	2800	2600	2800	0
20	1800	2800	2600	2800	0
45	1800	2600	2200	2400	0
50	1800	2600	2200	2400	0
57	1800	2500	2100	2300	0
63	1800	2500	2200	2400	0
74	1800	2400	1900	NA	0
81	1800	2400	1900	NA	0
98	1800	2200	1800	NA	0
106	1800	2200	1800	NA	0
131	1800	2000	1600	NA	0
141	1800	2000	1600	NA	0

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



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.

VICKERS by Danfoss

Danfoss Power Solutions, Nordborgvej 81, 6430 Nordborg, Denmark, Tel. +45 74 88 22 22, Fax +45 74 65 25 80
www.danfoss.com, E-mail: info@danfoss.com