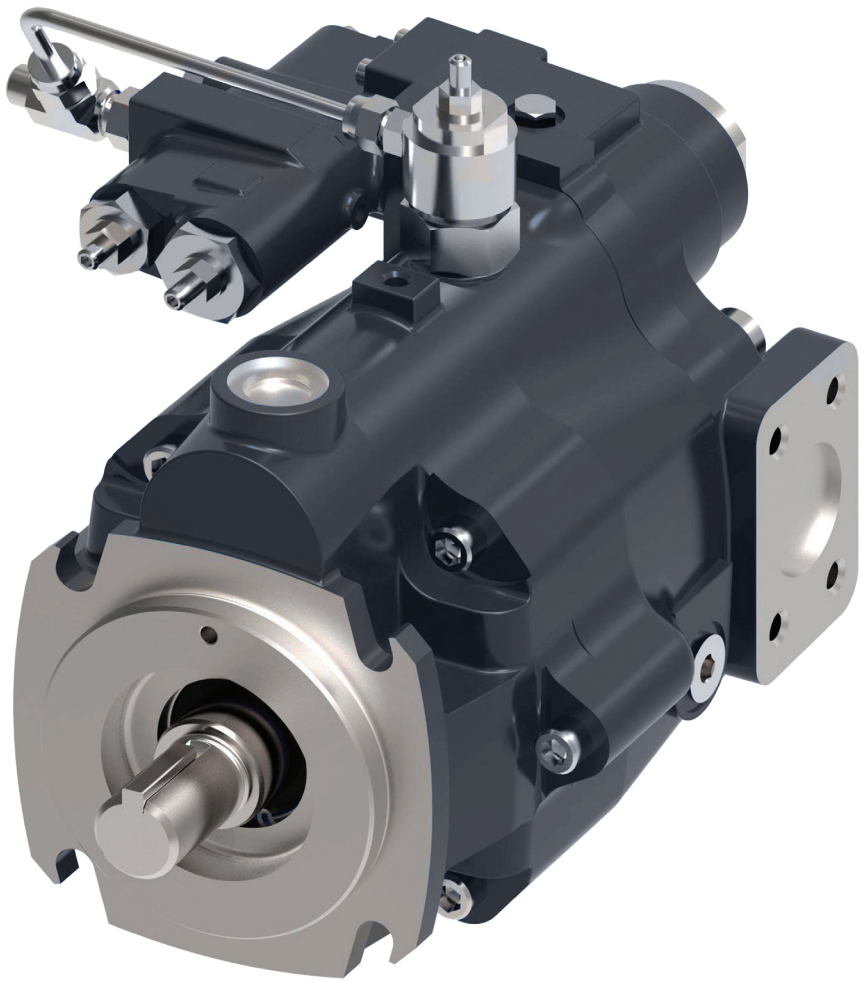
ENGINEERING
TOMORROW

Technical Catalog

Vickers by Danfoss
PVM Variable Displacement Piston Pumps

Up to 315 bar
18-141cc
(1.1-8.6in^3)
Variable Speed Drive Ready



VICKERS
by Danfoss

BC436067900311en-000103

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Introduction

Danfoss M Series pumps are open circuit, axial piston designs. A variety of control options allows the pumps to perform most efficiency in a specific application. Efficiency of the pump controls allows down-sizing of system cooling needs, saving up front cost in the machine. Alternatively, cooling capacity could be kept the same and the flow capability of the system increased, thus improving performance and customer satisfaction.

The M Series also contains a strong proven rotating group allowing the pumps to handle pressures to 315 bar (4568 psi) continuous with less maintenance cost. High-load bearings and a stiff drive shaft help provide very long life at rated industrial conditions, reducing operating costs and extending operating life.

M Series pumps feature a saddle-type yoke with steel-backed polymer bearings. The stiff yoke reduces deflection and allows even loading of bearings, improving life. A single control piston reduces loading on the yoke, resulting in reduced pump size which allows installation in tighter locations.

M Series pumps operate at a level of quietness that exceeds the requirements of today's demanding work conditions. The pumps feature a unique three-piece envelope (flange, housing and valve block) specifically created for low fluid-borne and structure-borne noise levels. Another pump feature - a bimetal timing plate - improves pump filling characteristics which, in turn, reduce fluid-borne noise and extend pump life.

M Series pumps reduce, or in some cases remove, the need for damping barriers between the noise source and the operator. This saves money on the installed cost of the system while improving customer comfort.

An adjustable maximum stop provides a means of tuning flow to your system, while gauge ports allow monitoring of inlet and outlet conditions. These standard features reduce system complexity and cost.

Mounting flanges are offered in SAE and ISO configurations, and ports are offered in SAE ISO,



and BSPP in both tube and flange versions. This provides a wide variety of installation opportunities for global machine design.

Side- or end-ported models are available to facilitate plumbing and help fit the pump to your machine space needs. Multiple drain ports allow many mounting orientations, reducing installed costs.

M Series pumps are 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.

Typical Applications

- Mining machinery
- Injection molding machines
- Metal forming machines
- Oil and Gas Equipment
- Conveyor lines
- Primary metals
- Metal cutting equipment

Features and Benefits

- Bell shaped housing contains fluid borne sound and reduces operator fatigue
- Standard adjustable maximum volume screw and gage ports give the ultimate in flexibility to the engineer or service technician
- High overall efficiency reduces operating costs
- Robust shaft bearings extends operating life and lowers maintenance costs
- Multiple port type and locations aid in flexibility of machine design
- Very low pressure ripple reduces shock in the system resulting in fewer leaks

Hydraulic System Design Calculations

Basic Formulas

Output Flow (Q)

$$lpm = \frac{cm^3/r \times rpm}{1000} \qquad gpm = \frac{in^3/r \times rpm}{231}$$

Input Power (P)

$$kW = \frac{l/min \times bar}{600} \qquad hp = \frac{gpm \times psi}{1714}$$

Shaft Torque (M)

$$N\text{-}m = \frac{bar \times cm^3/r}{62.8} \qquad lb\text{-}in = \frac{psi \times in^3/r}{6.28}$$

Shaft Speed (n)

$$rpm = \frac{1000 \times 1/min}{cm^3/r} \qquad RPM = \frac{231 \times gpm}{in^3/r}$$

Output Power (P)

$$kW = \frac{N\text{-}m \times RPM}{9549} \qquad hp = \frac{lb\text{-}in \times rpm}{63{,}025}$$

Volumetric Displacement

$$cm^3/r = in^3/r = \frac{lpm \times 1000}{rpm} \qquad \frac{gpm \times 231}{rpm}$$

Basic Formulas

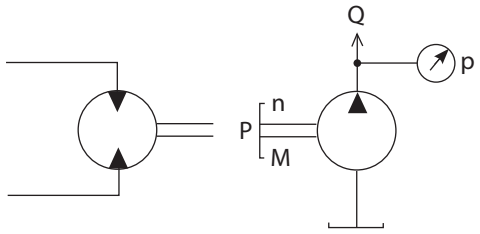
bar = 10 Newtons/cm ^{2}
gpm = gallons per minute
hp = horsepower
lb-in = pound inch
lb-ft = pound feet
kW = kilowatt
kgf = kilograms force
l/min = liters per minute
N-m = Newton meters
psi = pounds per square inch rpm = revolutions per minute

Efficiencies

Volumetric Nv = $\frac{\text{gpm actual}}{\text{gpm theorectical}}$

Mechanical Nm = $\frac{\text{lb-in actual}}{\text{lb-in theorectical}}$

Total Nt = Nv x Nm



Commonly Used Conversions

To Convert	Into	Multiply by
bar	psi	14.5
cm^3	in^3	0.06102
˚C	˚F	(˚C x 1.8) +32
gallons (US)	liters	3.785
kg	lbs	2.205
kgf/cm^2	psi	14.2
kW	hp	1.341
liters	US Gallons	0.2642
mm	inches	0.03937
N-m	lb-in	8.85
N-m	lb-ft	0.7375
˚F	˚C	(˚F-32)/1.8
hp	kW	0.7457
inch	mm	2.54
in^3	cm^3	16.39
lb-in	N-m	0.113
lb-ft	N-m	1.356
lbs	kg	0.4535
psi	bar	0.06896
psi	kgf/cm^2	.070307

Note: Performance charts can be found on subsequent pages.

Model Code Selection

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

Twelve displacements available 230 bar and 315 bar continuous ratings
See page 6

7 Valve Plate

E - Quiet version, optimized for 1000-1800 rpm

M - Higher speed version. ref speed performance data for individual displacements

8 Input Rotation

R – Clockwise (Right hand)
L[1] – Counter-clockwise (Lefthand)

See page 6

9, 10 Input Shaft

Standard SAE and ISO splined versions (Other configurations optional)

11 Mounting Flange

Thirteen options in SAE and ISO mounts
See page 6

12 Main Port Location

E[2] – End Ported
S[4] – Side Ported

13,14 Main Port Type

SAE & ISO tube ports and 4-bolt flange (Other configurations optional)
See page 7

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 (57cc through 141 cc only)

L - Power Control with Load Sense and Pressure compensator with plugged orifice.

W - Remote pressure control (018-050 size only) with - 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 W control
11 – 11 bar setting
20 – 20-20 bar setting
24 – 24-24 bar setting

22,23 Power control Torque Limiter Setting

00 – None

50-50% of rated torque*

(Adjustable from 20-90% of rated torque,*for any other values specify % of rated torque)

24 Compensator Special Features

0 – None

25 Auxiliary Mounting Pad

0[3] – None

(Auxiliary mounting available on all frame sizes)
See page 7

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)

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

2 Not available on 074, 081, 098 and 106 displacement with CCW rotation ("L" in position 8)

3 Through drive not available on the CCW rotation ("L" in position 8) on 074, 081,098 and displacement

4 Not available on 018

Model Code Options

4,5,6 Maximum Geometric Displacement

Displacement Code	018	020	045	050	057	063	074	081	098	106	131	141
cm^3/r	18,0	21,1	45,1	50,0	57,4	63,1	73,7	81,0	98,3	106,5	131,1	141,0
in^3/r	1.1	1.29	2.75	3.05	3.50	3.85	4.50	4.94	6.00	6.50	8.00	8.60

9,10 Shaft-End Type at Electric Motor End

	Shaft Code					
Description	PVM018/020	PVM045/050	PVM057/063	PVM074/081	PVM098/106	PVM131/141
SAE, SAE A, Straight Keyed	01	–	–	–	–	–
SAE, SAE 19-1, Straight Keyed	02	–	–	–	–	–
SAE, SAE A, 9T Spline	03	–	–	–	–	–
SAE, SAE A, 11T Spline	04	–	–	–	–	–
SAE, SAE B, Straight Keyed	05	05	–	–	–	–
SAE, SAE B-B, Straight Keyed	06	06	06	–	–	–
SAE, SAE B, 13T Spline	07	07	07	–	–	–
SAE, SAE B-B, 15T Spline	08	08	08	–	–	–
SAE, SAE C, Straight Keyed	–	–	09	09	09	09
SAE, SAE C-C, Straight Keyed	–	–	–	10	10	10
SAE, SAE C, 14T Spline	–	–	11	11	11	11
SAE, SAE C-C, 17T Spline	–	–	–	12	12	12
SAE, SAE D, Straight Keyed	–	–	–	–	–	13
SAE, SAE D, 13T Spline	–	–	–	–	–	14
ISO E20N, Straight Keyed	15	–	–	–	–	–
ISO E25N, Straight Keyed, Short Spigot	16	–	–	–	–	–
ISO E25N, Straight Keyed	17	17	17	–	–	–
ISO E32N, Straight Keyed, Short Spigot	–	–	18	18	18	18
ISO E40N, Straight Keyed, Short Spigot	–	–	–	19	19	19

11 Mounting Flange Specifications

Code	Description	PVM018/020	PVM045/050	PVM057/063	PVM074/081	PVM098/106	PVM131/141
A	SAE A, 2-bolt	●	○	○	○	○	○
B	ISO 80A2HW	●	○	○	○	○	○
C	SAE B, 2-bolt	●	●	●	○	○	○
D	ISO 100A2HW	●	●	●	○	○	○
E	SAE C, 2-bolt	○	○	●	●	●	●
F	ISO 125-A2HW	○	○	●	●	●	●
G	SAE C, 4-bolt	○	○	●	●	●	●
H	ISO 125B4HW	○	○	●	●	●	●
J	SAE D, 4-bolt	○	○	○	○	○	●
K	ISO 160B4HW	○	○	○	○	○	●

●= Available

○= Not Available

Model Code Options

13,14 Main Port Options

Code	Description	Inlet Outlet	PVM018/020	PVM045/050	PVM057/063	PVM074/081	PVM098/106	PVM131/141
01	SAE J1926 Tube Ports	Inlet	–20	–24	–24 (End ports only)	–	–	–
		Outlet	–12	–16	–16 (End ports only)	–	–	–
02	SAE J518 Flange Ports	Inlet	1.25 inch	2.0 inch	2.0 inch	2.0 inch	2.5 inch	2.5 inch
		Outlet	0.75 inch	1.0 inch	1.0 inch	1.0 inch	1.0 inch	1.25 inch*
03	ISO 6149-1 Tube Ports	Inlet	M42	M48	M48 (End ports only)	–	–	–
		Outlet	M27	M33	M33 (End ports only)	–	–	–
04	ISO 6162 Flange Ports	Inlet	32mm	51mm	51mm	51mm	64mm	64mm
		Outlet	19mm	25mm	25mm	25mm	25mm	32mm*
05	British Standard Parallel Pipe – Tube Ports	Inlet	G 1-1/4	G 1-1/2	–	–	–	–
		Outlet	G 3/4	G 1	–	–	–	–

*SAE Code 62, high pressure series, or ISO 400 bar. Other flange ports are SAE Code 61, standard pressure series, or ISO 25-350 bar

25 Thru-Drive Options

Code	Description	PVM018/020	PVM045/050	PVM057/063	PVM074/081*	PVM098/106	PVM131/141
O	Single pump, non-thru-drive	●	●	●	●	●	●
A	SAE A, 2-bolt, 9T spline	●	●	●	●	●	●
B	SAE A, 2-bolt, 11T spline	●	●	○	●	●	●
C	SAE B, 2-/4-bolt, 13T spline	○	●	●	●	●	●
D	SAE B-B, 2-/4-bolt, 15T spline	○	●	●	●	●	●
E	SAE C, 2-/4-bolt, 14T spline	○	○	●	●	●	●
F	SAE C-C, 2-/4-bolt, 17T spline	○	○	○	●	●	●
G	ISO 80-A2HW, 9T SAE spline	●	●	●	●	●	●
H	ISO 80-A2HW, 11T SAE spline	●	●	○	●	●	●
J	ISO 100-A2/B4HW, 13T SAE spline	○	●	●	●	●	●
K	ISO 100-A2/B4HW, 15T SAE spline	○	○	●	●	●	●
L	ISO 125-A2/B4HW, 14T SAE spline	○	○	●	●	●	●
M	ISO 125-A2/B4HW, 17T SAE spline	○	○	○	●	●	●

●= Available

○= Not Available

* Not available on the 074/081 LH

Specifications and Performance

Quiet version, optimized for 1000-1800 rpm (E)

Displacement, Pressure and Flow Ratings — At 50°C (120°F), SAE 10W oil, 1 bar absolute (0 psig) inlet

Model Series	Maximum Geometric Displacement cm^3/r (in^3/r)	Maximum Pressure bar (psi)		Maximum Flow at 280 bar (4000 psi)* **l/min (USgpm) – Average measured flow rate**			
		Nominal	Peak**	@1800 r/min	@1500 r/min	@1200 r/min	@1000 r/min
PVM018	18 (1.1)	315 (4568)	350 (5000)	31 (8.2)	26 (7)	21 (5.5)	17 (4.5)
PVM020	21,1 (1.29)	230 (3300)	280 (4000)	35 (9)	29 (8)	23 (6)	19 (5)
PVM045	45,1 (2.75)	315 (4568)	350 (5000)	76 (20)	65 (17)	49 (13)	42 (11)
PVM050	50,0 (3.05)	230 (3300)	280 (4000)	87 (23)	75 (20)	62 (16)	49 (13)
PVM057	57,4 (3.50)	315 (4568)	350 (5000)	102 (27)	85 (22.4)	66 (17.4)	54 (14.3)
PVM063	63,1 (3.85)	230 (3300)	280 (4000)	111 (29)	93 (24)	74 (19)	60 (16)
PVM074	73,7 (4.50)	315 (4568)	350 (5000)	127 (33.5)	106 (28)	86 (22.7)	70 (18.5)
PVM081	81,0 (4.94)	230 (3300)	280 (4000)	139 (37)	116 (31)	93 (25)	76 (20)
PVM098	98,3 (6.00)	315 (4568)	350 (5000)	170 (45)	141 (37)	112 (29.6)	92 (24.3)
PVM106	106,5 (6.50)	230 (3300)	280 (4000)	187 (49)	155 (41)	123 (32)	102 (27)
PVM131	131,1 (8.00)	315 (4568)	350 (5000)	215 (57)	178 (47)	141 (37)	118 (31)
PVM141	141,0 (8.60)	230 (3300)	280 (4000)	238 (63)	199 (53)	158 (42)	131 (35)

**Momentary system pressure spikes only.

Speed, Input Power and Torque Ratings — At 50°C (120°F), SAE 10W oil, 1 bar absolute (0 psig) inlet

Model Series	Maximum Operating Speed r/min	Maximum Input Power at 280 bar (4000 psi) kw (hp)*@88% M.E.				Maximum Torque at 280 bar (4000 psi)* Nm (lb-ft)	Approximate Weight kg (lb)
		@1800 r/min	@1500 r/min	@1200 r/min	@ 1000 r/min		
PVM018	1800	16 (22)	13 (18)	11 (15)	9 (12)	84 (62)	15 (33)
PVM020	1800	14 (18)	11 (15)	9 (12)	8 (10)	73 (54)	15 (33)
PVM045	1800	41 (55)	34 (46)	27 (37)	23 (31)	221 (163)	24 (52)
PVM050	1800	35 (47)	30 (40)	28 (38)	23 (31)	190 (140)	24 (52)
PVM057	1800	52 (70)	44 (59)	36 (49)	29 (39)	272 (201)	36 (79)
PVM063	1800	42 (57)	36 (48)	29 (39)	24 (32)	228 (168)	36 (79)
PVM074	1800	63 (84)	52 (70)	42 (56)	35 (47)	334 (246)	45 (99)
PVM081	1800	56 (75)	46 (62)	35 (47)	28 (37)	286 (211)	45 (99)
PVM098	1800	88 (118)	72 (97)	58 (78)	48 (64)	464 (342)	55 (121)
PVM106	1800	72 (97)	60 (80)	48 (64)	40 (54)	383 (282)	55 (121)
PVM131	1800	113 (152)	94 (126)	75 (101)	63 (85)	596 (440)	66 (145)
PVM141	1800	94 (126)	79 (106)	63 (85)	53 (71)	497 (367)	66 (145)

Standard Response Times*

Model Series	On Stroke (msec)	Off Stroke (msec)
PVM018	30	25
PVM020	39	26
PVM045	140	40
PVM050	140	40
PVM057	65	20
PVM063	85	20

* 3300 psi on overbore pumps

Standard Response Times*

Model Series	On Stroke (msec)	Off Stroke (msec)
PVM074	85	30
PVM081	85	30
PVM098	65	25
PVM106	72	29
PVM131	135	30
PVM141	100	30

*Values with pressure compensator control.

Specifications and Performance

Higher speed version (M)

Displacement, Pressure and Flow Ratings — At 93°C (200°F), SAE 10W oil, 1 bar absolute (0 psig) inlet

Model Series	Geometric Displacement cm³/r (in³/r)	Maximum Pressure bar (psi)		Maximum Flow at 280 bar (4000 psi)	
		Nominal	Peak**	Flange Ports l/min (USgpm) @ 1 bar inlet	Tube Ports l/min (USgpm) @ 1 bar inlet
PVM018	18,0 (1.10)	315 (4568)	350 (5000)	46 (12) @ 2800 r/min	46 (12) @ 2800 r/min
PVM020	20,1 (1.22)	230 (3300)	280 (4000)	53 (14) @ 2800 r/min	53 (14) @ 2800 r/min
PVM045	45,1 (2.75)	315 (4568)	350 (5000)	115 (30) @ 2600 r/min	106 (28) @ 2400 r/min
PVM050	50,0 (3.05)	230 (3300)	280 (4000)	125 (33) @ 2600 r/min	116 (31) @ 2400 r/min
PVM057	57,4 (3.50)	315 (4568)	350 (5000)	140 (37) @ 2500 r/min	128 (34) @ 2300 r/min
PVM063	63,1 (3.85)	230 (3300)	280 (4000)	150 (40) @ 2500 r/min	140 (37) @ 2400 r/min
PVM074	73,7 (4.50)	315 (4568)	350 (5000)	163 (43) @ 2400 r/min	–
PVM081	81,0 (4.94)	230 (3300)	280 (4000)	181 (48) @ 2400 r/min	–
PVM098	98,3 (6.00)	315 (4568)	350 (5000)	200 (53) @ 2200 r/min	–
PVM106	106,5 (6.50)	230 (3300)	280 (4000)	222 (59) @ 2200 r/min	–
PVM131	131,1 (8.00)	315 (4568)	350 (5000)	233 (62) @ 2000 r/min	–
PVM141	141,0 (8.60)	230 (3300)	280 (4000)	258 (68) @ 2000 r/min	–

**Less than 0.5 second.

Standard Response Times*

Model Series	On Stroke (msec)	Off Stroke (msec)
PVM018	50	20
PVM020	57	22
PVM045	140	40
PVM050	140	23
PVM057	65	20
PVM063	94	20

Standard Response Times*

Model Series	On Stroke (msec)	Off Stroke (msec)
PVM074	95	30
PVM081	135	30
PVM098	85	24
PVM106	90	25
PVM131	100	30
PVM141	128	28

*Values with pressure compensator control.

Specifications and Performance

Higher speed version (M)

Speed, Input Power and Torque Ratings — At 93°C (200°F), SAE 10W oil, 1 bar absolute (0 psig) inlet

Approximate Model Series	Operating Speed and Pressure r/min: 1 bar Inlet Flange Ports	1 bar Inlet Tube Ports	0,85 bar Inlet Flange Ports	Max. Input Power at Max. Speed and 280 bar (4000 psi) kW (hp)	Max. Torque at 280 bar (4000 psi) Nm (lb-ft)	Weight (dry) kg (lbs)
PVM018	2800 r/min			24 (32)	82 (60)	15 (33)
		2800 r/min		24 (32)		
			2600 r/min	22 (30)		
PVM020	2800 r/min			21 (28)	72 (53)	15 (33)
		2800 r/min		21 (28)		
			2600 r/min	20 (27)		
PVM045	2600 r/min			56 (75)	198 (46)	24 (52)
		2400 r/min		53 (71)		
			2200 r/min	48 (64)		
PVM050	2600 r/min			51 (68)	204 (150)	24 (52)
		2400 r/min		48 (64)		
			2200 r/min	44 (59)		
PVM057	2500 r/min			68 (91)	262 (193)	36 (79)
		2300 r/min		62 (83)		
			2100 r/min	56 (75)		
PVM063	2500 r/min			59 (79)	225 (166)	36 (79)
		2400 r/min		57 (76)		
			2200 r/min	52 (69)		
PVM074	2400 r/min			84 (113)	334 (246)	45 (99)
			1900 r/min	69 (93)		
PVM081	2400 r/min			69 (93)	276 (204)	45 (99)
			1900 r/min	55 (74)		
PVM098	2200 r/min			105 (141)	457 (337)	55 (121)
			1800 r/min	86 (115)		
PVM106	2200 r/min			87 (117)	377 (278)	55 (121)
			1800 r/min	70 (94)		
PVM131	2000 r/min			122 (164)	581 (429)	66 (145)
			1600 r/min	98 (131)		
PVM141	2000 r/min			102 (137)	483 (356)	66 (145)
			1600 r/min	81 (109)		

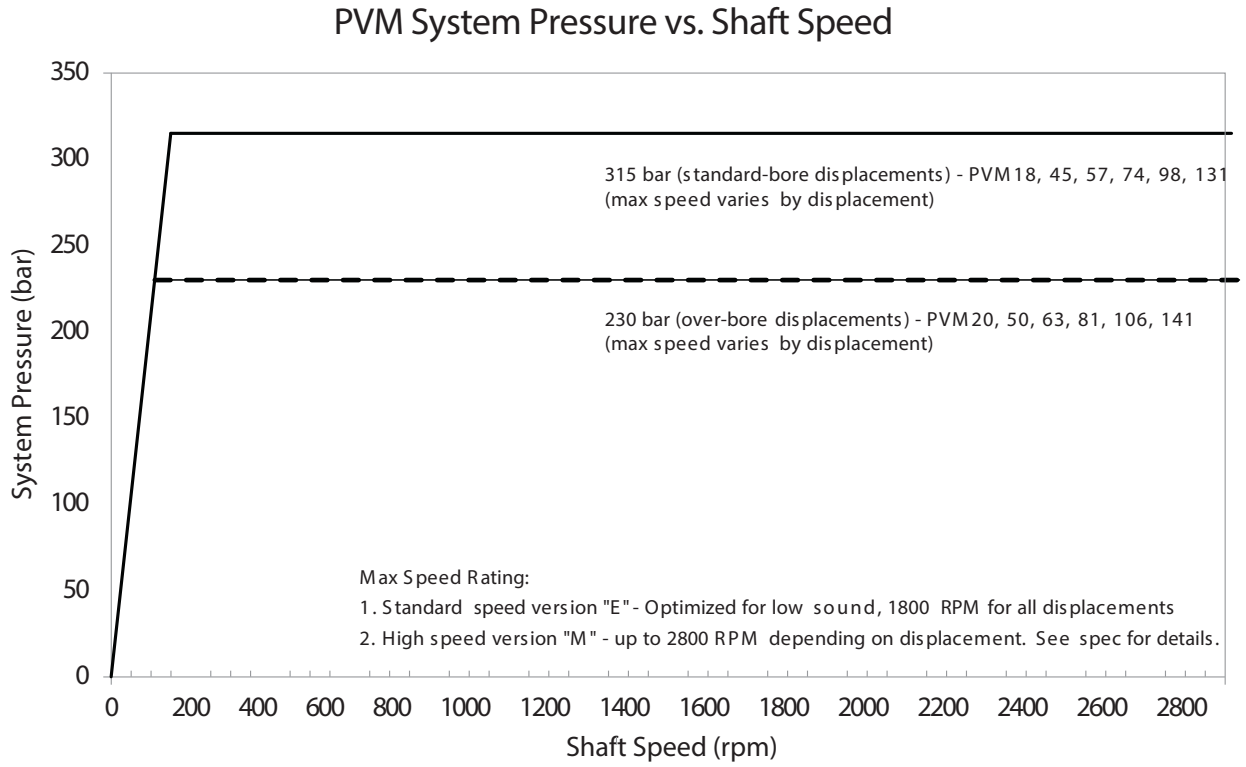
Specifications and Performance

Variable Speed Drive

Variable Speed Performance- System Pressure vs Speed

Model Series	Max Speed "E"* (rpm)	Max Speed "M"*(rpm)	Min Speed (rpm)	Nominal Pressure (bar)	Peak Pressure (bar) **	Inertia (kg-cm2)
PVM018	1800	2800	0	315	350	11.8
PVM020	1800	2800	0	230	280	11.8
PVM045	1800	2600	0	315	350	36.2
PVM050	1800	2600	0	230	280	33.9
PVM057	1800	2500	0	315	350	51.6
PVM063	1800	2500	0	230	280	50.5
PVM074	1800	2400	0	315	350	78.1
PVM081	1800	2400	0	230	280	72.7
PVM098	1800	2200	0	315	350	131.6
PVM106	1800	2200	0	230	280	122.7
PVM131	1800	2000	0	315	350	213.5
PVM141	1800	2000	0	230	280	209.7

* Valve plate type
**Less than 0.5 second.



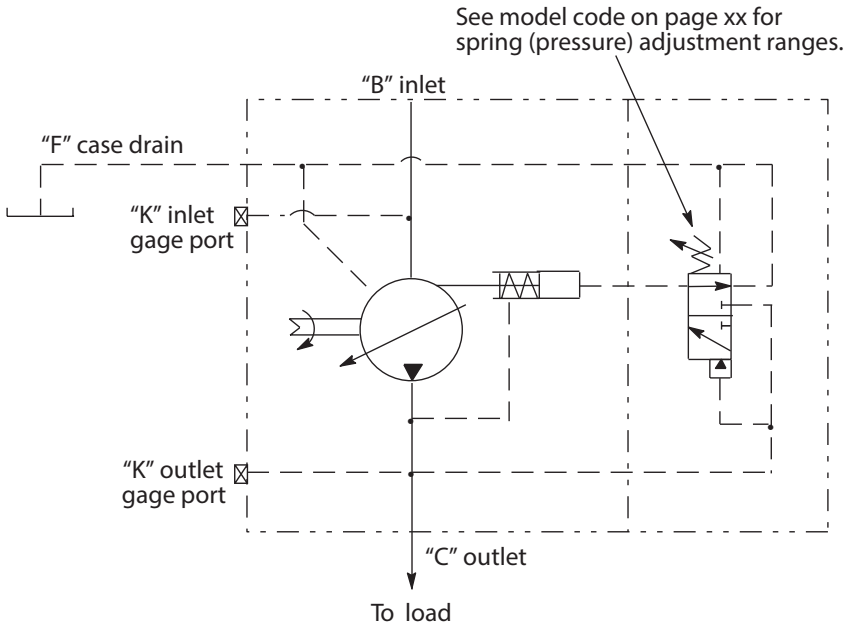
Test condition: Mineral oil SAE 10W, oil temperature 49° C (120° F), 1 bar absolute inlet pressure.

Control Options

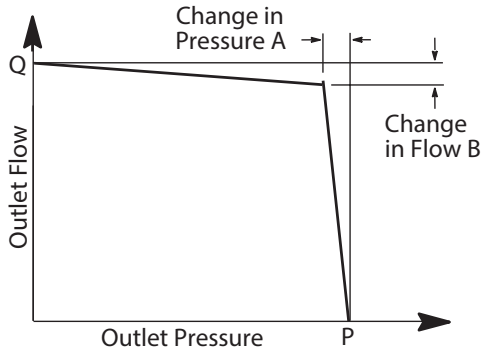
Pressure Compensator Control – Code A

The pump will provide a continuously modulated flow to meet changing load demands at a pre-adjusted compensator pressure. At pressures below the compensator setting, the pump will operate at maximum displacement. See model code on page 4 for compensator pressure ranges.

⚠ Warning: The pressure compensator may be adjusted beyond the rated pressure of the pump. When adjusting the pressure limiter, install a 0-350 bar (0-5000 psi) gage in the outlet gage port and limit the pressure setting to the continuous rated pressure for the pump displacement shown on page 7.



Industrial Pressure Cut-off Characteristics of Code A Pressure Compensator Control at 50°C (120°F), static conditions.

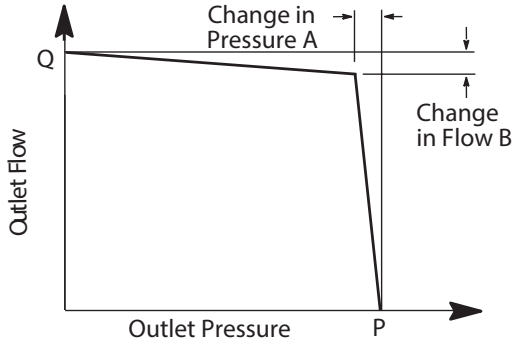


Pressure Cut-off Characteristics of Pressure Compensator Control @ 50°C (120°F), Static Conditions

Model Series	Max. Speed r/min	"Q" Outlet Flow l/min (USgpm)	"P" Outlet Pressure bar (psi)	A bar (psi)	B L/min (USgpm)
PVM018	1800	32 (8.5)	315 (4568)	2,8 (40)	4,5 (1.2)
PVM020	1800	35 (9.25)	230 (3300)	2,8 (40)	4,5 (1.2)
PVM045	1800	76 (20)	315 (4568)	10 (150)	4,5 (1.2)
PVM050	1800	87 (23)	230 (3300)	10 (150)	4,5 (1.2)
PVM057	1800	102 (27)	315 (4568)	3,5 (51)	14 (3.7)
PVM063	1800	113 (29)	230 (3300)	7,4 (107)	7,6 (2.00)
PVM074	1800	127 (33.5)	315 (4568)	1,5 (22)	37 (9.8)
PVM081	1800	141 (37)	230 (3300)	1,5 (22)	37 (9.8)
PVM098	1800	179 (47)	315 (4568)	1,5 (22)	25 (6.6)
PVM106	1800	195 (51.5)	230 (3300)	1,5 (22)	20 (5.3)
PVM131	1800	229 (60.5)	315 (4568)	3,5 (51)	19 (5.0)
PVM141	1800	238 (63)	230 (3300)	3,5 (51)	14 (3.70)

Control Options

Mobil Pressure Cut-off Characteristics of Pressure Compensator Control at 93°C (200°F), static conditions.



Pressure Cut-off Characteristics of Pressure Compensator Control @ 93°C (200°F), Static Conditions

Model Series	Rated Speed r/min	"Q" Outlet Flow l/min (USgpm)	"P" Outlet Pressure bar (psi)	A bar (psi)	B L/min (USgpm)
PVM018	2800	42 (11)	315 (4568)	2,8 (40)	4,5 (1.2)
PVM020	2800	52 (14)	230 (3300)	2,8 (41)	4,5 (1.2)
PVM045	2600	115 (30)	315 (4568)	10 (150)	4,5 (1.2)
PVM050	2600	125 (33)	230 (3300)	10 (150)	4,5 (1.2)
PVM057	2500	140 (37)	315 (4568)	3,5 (50)	14 (3.7)
PVM063	2500	159 (42)	230 (3300)	7,4 (107)	11,4 (3.00)
PVM074	2400	174 (46)	315 (4568)	1,5 (20)	37 (9.8)
PVM081	2400	185 (49)	230 (3300)	1,5 (22)	37 (9.8)
PVM098	2200	217 (57)	315 (4568)	1,5 (20)	32 (8.4)
PVM106	2200	234 (62)	230 (3300)	1,5 (22)	24 (6.33)
PVM131	2000	253 (67)	315 (4568)	1,0 (15)	23 (6.0)
PVM141	2000	258 (68)	230 (3300)	7,0 (100)	14 (3.70)

Control Options

Load Sensing and Pressure Compensator Control – Code B or C

The pump will provide power matching of pump output to system load demand, maximizing efficiency and improving load metering characteristics of any directional control valve installed between the pump and the load.

Load sensing ensures that the pump always provides only the amount of flow needed by the load. At the same time, the pump operating pressure adjusts to the actual load pressure plus a pressure differential required for the control action. When the system is not demanding power, the load sense control will operate in an energy-saving stand-by mode.

Typically, the differential pressure is that between the pressure inlet and service port of a proportionally controlled directional valve, or a load sensing directional control valve. See the model code on page 4 for differential pressure settings for load sensing.

If the load pressure exceeds the system pressure setting, the pressure compensator de-strokes the pump. The load sensing line must be as short as possible and can also be used for remote control or unloading of the pump pressure. For remote control purposes, it is recommended that you contact your Danfoss representative for the correct configuration of the control.

⚠ Warning: The pressure compensator may be adjusted beyond the rated pressure of the pump. When adjusting the pressure limiter, install a 0-350 bar (0-5000 psi) gage in the outlet gage port and limit the pressure setting to the continuous rated pressure for the pump displacement shown on page 7.

