

# **METARIS**

## **Hydraulics**

# **PRODUCT CATALOG**



**YOUR SOURCE FOR HIGH QUALITY  
HYDRAULIC VANE PRODUCTS**

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The Product information, specifications and descriptions contained in this catalog are subject to change without notice. All manufacturers names, numbers and descriptions are used for reference only. It is not implied any part listed is the product of any particular manufacturer.

# Introduction *About Our Company*

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Our origins date back to 1952, when our founder and chairman pioneered aftermarket parts for off-highway construction equipment.

During the 60, 70 and 80's, we designed and built asphalt paving equipment and road graders and operated facilities in Canada, Belgium, Portugal and Singapore.

By the late 80's, when our Company was acquired by Ingersoll-Rand, we had stocking dealers in over 60 countries worldwide.

In the early 90's, we began to manufacture hydraulic vane products in Italy and as our sales expanded we began to expand our production to North America and other overseas countries.

In December 1999, Metaris acquired a manufacturing base in Forest, Mississippi, allowing us to expand our product line to include replacement gear pumps and components, which are totally interchangeable with Commercial Intertech along with a large shaft production capability.

Today, Metaris builds vane and gear pumps in both our Toronto and Forest operations and maintains a parts depot in Reno, Nevada.

To service our growing customer base in Europe, the Middle East and Africa, Metaris has recently established an office in England.

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Metaris is capable of cross referencing Caterpillar and Vickers part numbers for all vane pump, cartridges and components.

# Vane Pumps V10/V20

Model & Series	Ring Size - delivery US gpm @1200 RPM & 100psi (LPM @ 1200 RPM & 7 Bar)	Displacement In 3/r (cm 3/r)	Max. Speed r/min	Max. Pressure psi (bar)	Typical delivery US gpm (L/min) @ max. speed & pressure	Typical input power hp (KW) @ max. speed & pressure	Weight lb (kg)
<b>V10</b>	1 (3.79)	0.20 (03,3)	4800	2500 (172)	3.60 (13,6)	07.0 (05,2)	<b>10 - 15</b> <b>(4,5 - 6,8)</b>
	2 (7.58)	0.40 (06,6)	4500	2500 (172)	7.30 (27,6)	13.6 (10,1)	
	3 (11.4)	0.60 (09,8)	4000	2500 (172)	9.40 (35,6)	17.8 (13,3)	
	4 (15.1)	0.80 (13,1)	3400	2500 (172)	10.9 (41,3)	20.4 (15,2)	
	5 (18.9)	1.00 (16,4)	3200	2500 (172)	12.8 (48,5)	22.8 (17,0)	
	6 (22.7)	1.19 (19,5)	3000	2500 (172)	14.6 (55,3)	26.0 (19,4)	
	7 (26.4)	1.39 (22,8)	2800	2500 (172)	16.0 (60,6)	28.0 (20,7)	
<b>V20</b>	6 (22.7)	1.19 (19,5)	3400	2500 (172)	16.1 (60,9)	29.0 (21,6)	<b>16 - 18</b> <b>(7,3 - 8,2)</b>
	7 (26.4)	1.39 (22,8)	3000	2500 (172)	16.7 (63,2)	29.5 (22,0)	
	8 (30.2)	1.62 (26,5)	2800	2500 (172)	17.7 (67,0)	32.5 (24,2)	
	9 (34.0)	1.81 (29,7)	2800	2500 (172)	19.8 (75,0)	35.5 (26,5)	
	11 (41.6)	2.22 (36,4)	2500	2500 (172)	22.9 (86,7)	37.5 (28,0)	
	12 (45.4)	2.38 (39,0)	2400	2500 (172)	23.0 (87,1)	38.5 (28,5)	
	13 (49.2)	2.59 (42,4)	2400	2500 (172)	25.9 (98,0)	42.0 (31,0)	

Based on using petroleum oil at 120°F(49°C), viscosity 150 SUS at 100°F (32 cSt at 38°C), and 0 psi inlet pressure.

## Single Pump ordering, operating specifications

**F3 - V10 - 1 P 5 S - 1 C 20 L**

1 2 3 4 5 6 7 8 9 10



- 1 Viton Seal**  
Omit if not required
- 2 Pump & Series**  
10 or 20
- 3 Mounting**  
1 - 2-bolt flange, 3.25" pilot (Standard)  
6 - 2-bolt flange, 4.00" pilot (Optional)
- 4 Inlet port connections**  
P - 1" NPT Thread (V10 only)  
1" NPT Thread (V20 only)  
S - 1.3125 - 12 Straight thread (V10 only)  
1.625 - 12 Straight thread (V20 only)
- 5 Ring Size**  
(Delivery at 1200 r/min and 100 psi)  
V10 - 1-7 gpm  
V20 - 6-13 gpm
- 6 Outlet port connections**  
P - 1/2" NPT thread (V10 only)  
1.1875-12 Straight thread (V20 only)  
S - .750-16 Straight thread (V10 only)  
1.0625-12 Straight thread (V20 only)
- 7 Shaft**  
1 - Straight Keyed  
11 - Splined  
38 - Splined
- 8 Position of outlet port**  
(Viewed from cover end of pump)  
A - Opposite inlet port  
B - 90° CCW from inlet  
C - Inline wth inlet  
D - 90° CW from inlet
- 9 Design**
- 10 Shaft rotation**  
(Viewed from the shaft end of the pump)  
L - Left handed (counterclockwise)  
Omit for right hand

# V10F/NF & V20F/NF Vane Pumps



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Series	Delivery US gpm @1200 rpm 7bar (100 psi)	Displ. cm 3/r (in 3/r)	Max. r/min	Wt. (lb.) kg.
V10F	1	3,3 (.20)	4800	10 - 15 (4,5 - 6,8)
	2	6,6 (.40)	4500	
	3	9,8 (.60)	4000	
	4	13,1 (.80)	3400	
	5	16,4 (1.00)	3200	
	6	19,5 (1.19)	3000	
	7	22,8 (1.39)	2800	
V20F	6	19,5 (1.19)	3400	16 - 18 (7,3 - 8,2)
	7	22,8 (1.39)	3000	
	8	26,6 (1.62)	2800	
	9	29,7 (1.81)	2800	
	11	36,4 (2.22)	2500	
	12	39 (2.38)	2400	
	13	42,5 (2.59)	2400	



## Double Pump ordering, operating specifications

FPO

**F3 - V10 F - 1 P 5 P - 1 C 4G L**

**1 2 3 4 5 6 7 8 9 10 11**

**1 Viton Seal** Omit if not required

**2 Pump & Series** 10 or 20

**3 Integral Valve Options** F - Flow control

**4 Mounting** 1 - 2 bolt flange (SAE "A" Size)

**5 Inlet port connections**

V-10F/NF Model

P - 1.3123" 12-Straight Thread

S - 1.1875" 12-Straight Thread

B - British Straight Parallel Pipe

V20 Model Series

P - 1 1/4" NPT Thread

S - 1.625 12-Straight Thread

**6 Ring Size**

Cam Ring Size & Rate Flow (@ 1200 rpm and 100 psi)

V10 - 1-7 gpm

V20 - 7-13 gpm

**7 Outlet port connections**

Code	Std. Cover	Flow Port Cover	
		Pressure	Tank
P	.50" NPT thd. (V10) 3/4" NPT thd. (V20)	- 3/4"-16 St. thd. (V10F & V20F)	- 1/2" NPT thd.
R	1.062"-12 St. thd. (V10)	-	-
S	.750"-16 St. thd. (V10) 1.062"-12 St. thd. (V20)	- 3/4"-16 St. thd. (V20F)	- 1-1/16"-12 St. thd. (V20F)
T	-	3/4"-16 St. thd. (V10F)	3/4"-16 St. thd. (V10F)
Y	.875" - 14 St. thd.	-	-

**8 Shafts**

**9 Position of outlet port** (Viewed from cover end of pump)

A - Opposite inlet port

B - 90° CCW from inlet

C - Inline wth inlet

D - 90° CW from inlet

**10 Integral Valving**

Orifice No.	Flow Rate in GPM (LPM)	Relief Valve Setting PSI (Bar)
2	2 gpm (7.5)	A - 2500 PSI (17.2)
3	3 gpm (11.3)	B - 500 PSI (34.5)
4	4 gpm (15.1)	C - 750 PSI (513.7)
5	5 gpm (18.9)	D - 1000 PSI (69)
6	6 gpm (22.7)	E - 1250 PSI (86.2)
7	7 gpm (26.5)	F - 1500 PSI (103.5)
8	8 gpm (30.2)	G - 1750 PSI (120.7)
9	9 gpm (34.0)	H - 2000 PSI (138)
10	10 gpm (37.8)	J - 2250 PSI (155.2)
11	11 gpm (41.6)	K - 2500 PSI (172.5)
12	12 gpm (45.4)	-

**11 Shaft rotation**

(As viewed from the shaft end of the pump)

L - Left handed (counterclockwise)

Omit for right hand

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# Vane Pumps V2010/V2020

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Shaft End							Cover End					
Model & Series	Ring Size gpm @1200 RPM & 100psi (LPM @ 1200)	Displ. cu.in/r (cm 3/r)	Max. rpm	Max. psi (bar)	Typical delivery US gpm (L/min) @ max. speed & pressure	Typical input hp (KW) @max. speed & pressure	Ring Size gpm @1200 RPM & 100psi (LPM @ 1200)	Displ. cu.in/r (cm 3/r)	Max. rpm	Max. psi (bar)	Typical delivery US gpm (L/min) @ max. speed & pressure	Typical input hp (KW) @max. speed & pressure
<b>V2010</b>	6 (22.7)	1.19 (19,5)	3000	2500 (172)	14.5 (54,9)	24.5 (18,3)	1 (3.79)	3.3 (,20)	3000	2500 (172)	2.0 (7,6)	4.5 (3,4)
	7 (26.4)	1.39 (22,8)	3000	2500 (172)	16.5 (62,5)	30.0 (22,4)	2 (7.58)	6.6 (,40)	3000	2500 (172)	4.7 (17,8)	9.0 (6,7)
	8 (30.2)	1.62 (26,5)	2800	2500 (172)	17.5 (66,2)	32.5 (24,2)	3 (11.4)	9.8 (,60)	3000	2500 (172)	7.0 (26,5)	13.4 (10,0)
	9 (34.0)	1.81 (29,7)	2800	2500 (172)	20.0 (75,7)	36.0 (26,8)	4 (15.1)	0.80 (13,1)	3000	2500 (172)	9.5 (36,0)	18.0 (13,4)
	11 (41.6)	2.22 (36,4)	2500	2500 (172)	23.0 (87,1)	37.5 (28,0)	5 (18.9)	1.00 (16,4)	3000	2500 (172)	12.0 (45,4)	21.5 (16,0)
	12 (45.4)	2.38 (39,0)	2400	2200 (152)	23.0 (87,1)	36.0 (26,8)	6 (22.7)	1.19 (19,5)	3000	2500 (172)	14.5 (54,9)	24.5 (18,3)
	13 (49.2)	2.59 (42,4)	2400	2200 (152)	26.0 (98,4)	39.0 (29,1)	7 (26.4)	1.39 (22,8)	2800	2500 (172)	16.0 (60,6)	24.0 (17,9)
<b>V2020</b>	6 (22.7)	1.19 (19,5)	3000	2500 (172)	14.5 (54,9)	24.5 (18,3)	6 (22.7)	1.19 (19,5)	3000	2500 (172)	14.5 (54,9)	26.0 (19,4)
	7 (26.4)	1.39 (22,8)	3000	2500 (172)	16.5 (62,5)	30.0 (22,4)	7 (26.4)	1.39 (22,8)	3000	2500 (172)	16.5 (62,5)	30.0 (22,4)
	8 (30.2)	1.62 (26,5)	2800	2500 (172)	17.5 (66,2)	32.5 (24,2)	8 (30.2)	1.62 (26,5)	2800	2500 (172)	17.5 (66,2)	32.5 (24,2)
	9 (34.0)	1.81 (29,7)	2800	2500 (172)	20.0 (75,7)	36.0 (26,8)	9 (34.0)	1.81 (29,7)	2800	2500 (172)	20.0 (75,7)	36.0 (26,8)
	11 (41.6)	2.22 (36,4)	2500	2500 (172)	23.0 (87,1)	37.5 (28,0)	11 (41.6)	2.22 (36,4)	2500	2500 (172)	23.0 (87,1)	7.5 (28,0)
	12 (45.4)	2.38 (39,0)	2400	2200 (152)	23.0 (87,1)	36.0 (26,8)						
	13 (49.2)	2.59 (42,4)	2400	2000 (132)	26.0 (98,4)	39.0 (26,4)						

Based on using petroleum oil at 120°F(49°C), viscosity 150 SUS at 100°F (32 cSt at 38°C), and 0 psi inlet pressure

FPO

## Double Pump ordering, operating specifications

**F3 - V2010 - 1 F 13 S 3 S - 1 CC 12 L**

1 2 3 4 5 6 7 8 9 10 11 12



- 1** Viton Seal  
Omit if not required
- 2** Vane Pump & Series  
2010 or 2020
- 3** Mounting  
1 - 2-bolt flange, 4.00" pilot (Standard)  
6 - 2-bolt flange, 3.25" pilot (Optional)
- 4** Inlet port connections  
F - 4-bolt flange 1.50 dia (V2010)  
2.00 dia (V2020)
- 5** Ring Size (Shaft-end Pump)  
(Delivery at 1200 r/min and 100 psi)  
6 - 13 gpm
- 6** No. 1 outlet port (shaft end)  
S - .750 - 16 straight thread (V2010)  
1.062 - 12 straight thread (V2020)
- 7** Ring size (cover-end pump)  
(Delivery at 1200 r/min and 100 psi)  
V10 - 1-7 gpm  
V20 - 6-11 gpm
- 8** No. 2 outlet port (cover end)  
S - .750 - 16 straight thread (V2010)  
1.062 - 12 straight thread (V2020)
- 9** Shaft  
1 - Straight Keyed  
11 - Splined
- 10** Position of outlet  
(Viewed from cover end of pump)
- 11** Design
- 12** Shaft rotation  
L - Left handed for counterclockwise  
Omit for right hand

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# V & VQ Single Vane Pumps (10 & 12 Vane Design)

FPO

Model & Series	Ring Size - gpm @1200 RPM & 100psi (LPM @ 1200 RPM & 7 Bar)	Displacement cu.in/rev (cm3/rev)	Max. rpm VQ Series	Max. psi (bar) VQ Series	Max. rpm V-Series	Max. psi (bar) V-Series	Weight lb (kg)
25	12 (45,5)	02.45 (40)	2700	3000 (210)	1800	3000 (207)	32 (14,8)
	14 (53,1)	02.77 (45)	2700	3000 (210)	1800	3000 (207)	
	17 (64,4)	03.37 (55)	2500	3000 (210)	1800	3000 (207)	
	21 (79,6)	04.12 (67)	2500	3000 (210)	1800	3000 (207)	
35	25 (94,8)	04.98 (81)	2500	3000 (210)	1800	3000 (207)	50 (22,7)
	30 (113,7)	05.96 (97)	2500	3000 (210)	1800	3000 (207)	
	35 (132,6)	06.88 (112)	2400	3000 (210)	1800	3000 (207)	
	38 (144,0)	07.42 (121)	2400	3000 (210)	1800	3000 (207)	
45	42 (159,2)	08.46 (138)	2200	2500 (175)	1800	3000 (207)	75 (34)
	50 (189,5)	09.90 (162)	2200	2500 (175)	1800	3000 (207)	
	60 (227,4)	11.80 (193)	2200	2500 (175)	1800	3000 (207)	

Based on using petroleum oil at 120°F(49°C), viscosity 150 SUS at 100°F (32 cSt at 38°C), and 0 psi inlet pressure.

FPO

## Double Pump ordering, operating specifications

25 VQ 12 - A - 1 - CC - 20 (L)

1 2 3 4 5 6 7 8

- 1 Series
- 2 V - Industrial  
VQ - Mobile
- 3 V - Industrial
- 4 Port Connection
- 5 Shaft
- 6 Port Positions
- 7 Design Number
- 8 Rotation

### Vane Pump Series

25V/VQ      3525V/VQ  
 35V/VQ      4520V/VQ  
 45V/VQ      4525V/VQ  
 2520V/VQ    4535V/VQ  
 3520V/VQ

When Ordering please specify:

- Pump rotation
- Port position
- Cartridge gallonage
- Viton/Nitrile
- Single/Double seal
- Shaft Code



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# V & VQ Double Vane Pumps (10 & 12 Vane Design)

Shaft End							Cover End					
Model & Series	Ring Size gpm @1200 RPM & 100psi (LPM @ 1200 RPM & 7 Bar)	Displ. cu.in/r (cm 3/r)	Max. rpm VQ Series	Max. psi (bar) VQ Series	Max. rpm V Series	Max. psi (bar) V Series	Ring Size gpm @1200 RPM & 100psi (LPM @ 1200 RPM & 7 Bar)	Displ. cu.in/r (cm 3/r)	Max. rpm VQ Series	Max. psi (bar) VQ Series	Max. rpm V Series	Max. psi (bar) V Series
2520 45 (20)	12 (45,5)	02.45 (40)	2700	3000 (210)	1800	2500 (172)	05 (19,0)	1.10 (18)	2700	3000 (210)	1800	3000 (207)
	14 (53,1)	02.76 (45)	2700	3000 (210)	1800	2500 (172)	08 (30,3)	1.67 (27)	2700	3000 (210)	1800	3000 (207)
	17 (64,4)	03.37 (55)	2700	3000 (210)	1800	2500 (172)	11 (41,7)	2.22 (36)	2700	3000 (210)	1800	3000 (207)
	21 (79,6)	04.12 (67)	2700	3000 (210)	1800	2500 (172)	12 (45,5)	2.41 (39)	2700	2300 (160)	1800	3000 (207)
3520 77 (34)	14 (53,0)	2.80 (46)	2700	3000 (210)	1800	2500 (172)	14 (53,0)	2.80 (46)	2700	2000 (140)	1800	3000 (207)
	25 (94,8)	04.98 (81)	2500	3000 (210)	1800	2500 (172)	05 (19,0)	1.10 (18)	2500	3000 (210)	1800	3000 (207)
	30 (113,7)	05.96 (97)	2500	3000 (210)	1800	2500 (172)	08 (30,3)	1.67 (27)	2500	3000 (210)	1800	3000 (207)
	35 (132,6)	06.88 (112)	2400	3000 (210)	1800	2500 (172)	11 (41,7)	2.22 (36)	2500	3000 (210)	1800	3000 (207)
3525 76 (34,5)	38 (144,0)	07.42 (121)	2400	3000 (210)	1800	2500 (172)	12 (45,5)	2.41 (39)	2500	2300 (160)	1800	3000 (207)
	25 (94,8)	04.98 (81)	2500	3000 (210)	1800	2500 (172)	14 (53,0)	2.80 (46)	2500	2000 (140)	1800	3000 (207)
	30 (113,7)	05.96 (97)	2500	3000 (210)	1800	2500 (172)	05 (19,0)	1.10 (18)	2500	3000 (210)	1800	2500 (172)
	35 (132,6)	06.88 (112)	2400	3000 (210)	1800	2500 (172)	08 (30,3)	1.67 (27)	2500	3000 (210)	1800	2500 (172)
4520 94 (43)	38 (144,0)	07.42 (121)	2400	3000 (210)	1800	2500 (172)	17 (64,4)	3.37 (55)	2500	3000 (210)	1800	2500 (172)
	25 (94,8)	04.98 (81)	2500	3000 (210)	1800	2500 (172)	21 (79,6)	4.12 (67)	2500	3000 (210)	1800	2500 (172)
	30 (113,7)	05.96 (97)	2500	3000 (210)	1800	2500 (172)	12 (45,5)	2.41 (39)	2200	3000 (210)	1800	3000 (207)
	35 (132,6)	06.88 (112)	2400	3000 (210)	1800	2500 (172)	08 (30,3)	1.67 (27)	2200	3000 (210)	1800	3000 (207)
4525 101 (46)	60 (227,4)	11.80 (193)	2200	2500 (175)	1800	2500 (172)	11 (41,7)	2.22 (36)	2200	3000 (210)	1800	3000 (207)
	42 (159,2)	08.46 (138)	2200	2500 (175)	1800	2500 (172)	12 (45,5)	2.41 (39)	2200	2300 (160)	1800	3000 (207)
	50 (189,5)	09.90 (162)	2200	2500 (175)	1800	2500 (172)	14 (53,0)	2.80 (46)	2200	2000 (140)	1800	3000 (207)
	60 (227,4)	11.80 (193)	2200	2500 (175)	1800	2500 (172)	12 (45,5)	2.41 (39)	2200	3000 (210)	1800	2500 (172)
4535 118 (54)	14 (53,0)	2.80 (46)	2200	2500 (175)	1800	2500 (172)	17 (64,4)	3.37 (55)	2200	3000 (210)	1800	2500 (172)
	42 (159,2)	08.46 (138)	2200	2500 (175)	1800	2500 (172)	21 (79,6)	4.12 (67)	2200	3000 (210)	1800	2500 (172)
	50 (189,5)	09.90 (162)	2200	2500 (175)	1800	2500 (172)	12 (45,5)	2.41 (39)	2200	3000 (210)	1800	2500 (172)
	60 (227,4)	11.80 (193)	2200	2500 (175)	1800	2500 (172)	14 (53,0)	2.80 (46)	2200	3000 (210)	1800	2500 (172)

Based on using petroleum oil at 120°F(49°C), viscosity 150 SUS at 100°F (32 cSt at 38°C), and 0 psi inlet pressure.

## Double Pump ordering, operating specifications

3525 VQ 35 A 17 S - 1 - CC - 20 (L)

1 2 3 4 5 6 7 8 9 10

- 1 Series
- 2 V - Industrial  
VQ - Mobile
- 3 Shaft End gpm
- 4 Port Connection
- 5 Cover End gpm
- 6 Mounting
- 7 Shaft Code
- 8 Port Position
- 9 Design
- 10 Rotation



# VTM Pumps



Model & Series	Delivery GPM @ 1200 RPM 100 PSI	Displacement cu.in/rev	Max. Speed - Rpm @ 100 PSI	Max. Speed - Rpm @ 1500 PSI	Max. Speed - Rpm @ 2000 PSI	Max. Pressure PSI	Approx. Weight lbs.
VTM28	1	.21	7000	5000	-	1500	14
	1.5	.31	7000	4500	-	1500	
	2	.38	7000	4200	-	1500	
	4	.79	7000	2800	-	1500	
	5	.96	6000	2600	-	1500	
	6	1.18	5000	2500	-	1500	
VTM42	1	.21	7000	5000	4250	2000	14
	1.5	.31	7000	4500	4000	2000	
	2	.38	7000	4200	3800	2000	
	4	.79	7000	2800	2800	2000	
	5	.96	6000	2600	2300	2000	
	6	1.18	5000	2500	2000	2000	

## Pump ordering, operating specifications

VT M 42 - 60 - 20 - T5 - (F) (S) \*\* - \*1 - 14

- 1
2
3
4
5
6
7
8
9
10
11



- 1 Vane Type**
- 2 Mobile Application**
- 3 Series 42**
- 4 Capacity**
  - 10 - 1.0 US GPM
  - 15 - 1.5 US GPM
  - 20 - 2.0 US GPM
  - 40 - 4.0 US GPM
  - 50 - 5.0 US GPM
  - 60 - 6.0 US GPM
- 5 Controlled Flow** (1500 rpm @ 100 psi)
  - 07 - 0.7 US GPM
  - 15 - 1.5 US GPM
  - 20 - 2.0 US GPM
  - 25 - 2.5 US GPM
  - 30 - 3.0 US GPM
  - 35 - 3.5 US GPM
  - 40 - 4.0 US GPM
  - 45 - 4.5 US GPM
  - 50 - 5.0 US GPM
  - 55 - 5.5 US GPM
  - 60 - 6.0 US GPM
  - 65 - 6.5 US GPM
  - 75 - 7.5 US GPM

- 6 Relief Valve Setting**
  - 02 - 250 psi
  - 03 - 300 psi
  - 05 - 500 psi
  - 07 - 750 psi
  - 08 - 850 psi
  - 10 - 1000 psi
  - 12 - 1250 psi
  - 15 - 1500 psi
  - 17 - 1750 psi
  - 20 - 2000 psi
  - 35 - 3500 psi
- 7 Filter Parts**
- 8 Inlet Screen**
- 9 Pump Rotation** (Viewed from Shaft End)
  - R - Clockwise
  - L - Counterclockwise
- 10 Shaft No. 1**
- 11 Design**

For satisfactory service life of these components in industrial applications, use full flow filtration to provide fluid which meets ISO cleanliness code 18/15 or cleaner. Selections from Vickers OFP, OFR, and OFRS series are recommended.

### Caterpillar Pumps

Here are just a few of the Caterpillar pumps we can supply.

- |        |        |
|--------|--------|
| 9J5050 | 9J8182 |
| 9J5070 | 9J8195 |
| 9J5053 | 3G7636 |
| 3G7640 | 9J5080 |
| 9J5075 | 9J5051 |
| 9J5048 | 9T0486 |
| 3G5810 |        |

Contact our Sales Department with your Caterpillar number and we will do the rest.



# Triple Pumps

## 2520 VQV10 Triple Pump

**F3 2520VQ S V10 S 17 A 8 S 3 - S 297 B C A 4 G - 20 R**  
**1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19**

- 1** F3 - Viton seal (Omit if not required)
- 2** Double Pump Series
- 3** SAE Mounting
- 4** Single Pump series
- 5** Cover option for V10 pump  
S – Standard Cover, F – Integral Flow & relief valve
- 6** SAE rate Flow, Shaft –End Pump  
12 gpm, 14 gpm, 17 gpm, 19 gpm, 21 gpm
- 7** Double pump port connection  
A – All SAE 4 bolt flange
- 8** SAE rate flow, Center Pump  
5 gpm, 8 gpm, 9 gpm, 11 gpm, 12 gpm, 14 gpm
- 9** Outlet port connection – No. 3  
Standard Cover  
S - .750 – 16 st. thd.  
Flow Control Cover  
T - .750 – 16 st. thd, control port & Tank
- 10** SAE rate flow, cover end pump  
1 – 7 gpm
- 11** Shaft Seal  
S – Double, *Blank* – Single seal
- 12** Shaft  
277 – SAE B Spline, 297 – SAE BB Spline

- 13** Outlet port position – No. 1 (see table below)
- 14** Outlet port position - No. 2
- 15** Outlet port position - No. 3

Position viewed from cover end	No 1	No. 2	No. 3
Opposite inlet	<b>A</b>	-	<b>A</b>
135 CCW from inlet	-	<b>A</b>	-
90 CCW from inlet	<b>B</b>	-	<b>B</b>
45 CCW from inlet	-	<b>B</b>	-
Inline with inlet	<b>C</b>	-	<b>C</b>
45 CW from inlet	-	<b>C</b>	-
90 CW from inlet	<b>D</b>	-	<b>D</b>
135 CW from inlet	-	<b>D</b>	-

- 16** Control flow rate, V10F - only (Omit for standard cover)  
3 gpm - 11 L/min      6 gpm - 23 L/min  
4 gpm - 15 L/min      7 gpm - 27 L/min  
5 gpm - 19 L/min      8 gpm - 30 L/min
- 17** Relief valve setting - V10F only  
**A** – 17 bar (250 PSI)      **F** – 100 bar (1500 PSI)  
**B** – 35 bar (500 PSI)      **G** – 121 bar (1750 PSI)  
**C** – 52 bar (750 PSI)      **H** – 140 bar (2000 PSI)  
**D** – 70 bar (1000 PSI)      **J** – 155 bar (2250 PSI)  
**E** – 86 bar (1250 PSI)      **K** – 175 bar (2500 PSI)

**18** Design - 20

**19** Shaft rotation (Viewed from the shaft end of pump)  
L – Left hand (counter clockwise), R – Right hand

## 3525 VQV10 Triple Pump

**(F3) - 3525VQ S V10 \* - \* \* \* \* \* - \* \* \* \* \* \* \* - 20 \***  
**1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19**

- 1** Special seals  
F3 - Viton "O" Rings and shaft seals
- 2** Pump series designation  
35\*\*VQ - Shaft end pump  
\*\*25VQ - Center pump
- 3** Body mounting flange  
S - SAE mounting per J-744 101-2
- 4** Pump series designation  
V10 cover end pump

- 5** V10 pump cover options  
S - Standard cover  
F - Flow control and relief cover  
P - Priority valve and relief cover
- 6** SAE rated capacity  
(VQ shaft - end cartridge)  
21 - 21 USgpm      35 - 35 USgpm  
25 - 25 USgpm      38 - 38 USgpm  
30 - 30 USgpm

- 8** Rated capacity  
(VQ center cartridge)  
12 - 12 USgpm      19 - 19 USgpm  
14 - 14 USgpm      21 - 21 USgpm  
17 - 17 USgpm

- 7** VQ port connections  
(inlet & outlet #1 & #2)  
A - 4 bolt flange (inch threads)

- 9** V10 port connections  
V10s standard covers and outlet #3  
S - .750 - 16 Str/ thd.      Y - .875 - 14 Str. thd.  
P - 1/2" - NPT thd.      R - 1.062 - 12 Str. thd.

- V10F flow/relief control cover  
T - .750 - 16 Str. thd.      .750 - 16 Str. thd.  
P - .750 - 16 Str. thd.      1/2" - NPT thd.

# Triple Pumps

## 4535 VQV10 Triple Pump

(F3) - 4535VQ S V10 \* - \* \* \* \* \* - \* \* \* \* \* \* \* - 20 \*

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

**1 Special seals**  
F3 - Viton "O" Rings and shaft seals

**2 Pump series designation**  
45\*\*VQ - Shaft end pump  
\*\*35VQ - Center pump

**3 Body mounting flange**  
S - SAE mounting per J-744 101-2

**4 Pump series designation**  
V10 cover end pump

**5 V10 pump cover options**  
S - Standard cover  
F - Flow control and relief cover  
P - Priority valve and relief cover

**6 SAE rated capacity**  
(VQ shaft - end cartridge)  
42 - 42 USgpm    57 - 57 USgpm  
47 - 47 USgpm    60 - 60 USgpm  
50 - 50 USgpm

**7 VQ port connections**  
(inlet & outlet #1 & #2)  
A - 4 bold flange (inch threads)  
AM - 4 bolt flange (metric threads)

**8 SAE rated capacity**  
(VQ center cartridge)  
21 - 21 USgpm    35 - 35 USgpm  
25 - 25 USgpm    38 - 38 USgpm  
30 - 30 USgpm

**9 V10 port connections**  
**V10S standard covers and outlet #3**  
S - .750 - 16 Str. thd.  
P - 1/2" - NPT thd.  
Y - .875 - 14 Str. thd.  
R - 1.062 - 12 Str. thd.

**V10F flow/relief control cover**

	<i>Outlet #3</i>	<i>Tank Port</i>
T -	.750 - 16 Str. thd.	.750 - 16Str. thd.
P -	.750 - 16 Str. thd.	1/2" - NPT thd.

**V10P priority control covers**

	<i>Primary</i>	<i>Secondary</i>	<i>Tank</i>
	<i>Port Str. thd.</i>	<i>Port Str. thd.</i>	<i>Port Str. thd.</i>
K -	.5625-18	.750-16	.5625-18

**10 SAE rated capacity**  
(V10 cover end cartridge)  
1 - 1 USgpm    5 - 5 USgpm  
2 - 2 USgpm    6 - 6 USgpm  
3 - 3 USgpm    7 - 7 USgpm  
4 - 4 USgpm

**11 Shaft seal**  
Blank - Single seal  
S - Double seal

**12 Shaft type**  
297 - All Series

**13 Port orientation (Outlet #1)**  
(Viewed from cover end of pump;  
refer to table on next page)

**14 Port orientation (Outlet #2)**  
(Viewed from cover end of pump;  
refer to table on next page)

**15 Port orientation (Outlet #3 or primary outlet)**  
(Viewed from cover end of pump;  
refer to table on next page)

**16 Controlled flow rate, V10F & V10P**  
(Omit for standard cover)

3 - 3 USgpm	6 - 6 USgpm
4 - 4 USgpm	7 - 7 USgpm
5 - 5 USgpm	8 - 8 USgpm

**17 Relief valve pressure setting, V10F & V10P** (Omit for standard cover)

A - 250 psi	F - 1500 psi
B - 500 psi	G - 1750 psi
C - 750 psi	H - 2000 psi
D - 1000 psi	J - 2250 psi
E - 1250 psi	K - 2500 psi

**18 Design** (Subject to change)

**19 Rotation**  
(Viewed from shaft end of pump)  
L - Left hand for counterclockwise  
R - Right hand for clockwise

**V10P priority control covers**

	<i>Primary</i>	<i>Secondary</i>	<i>Tank</i>
	<i>Port Str. thd.</i>	<i>Port Str. thd.</i>	<i>Port Str. thd.</i>
K -	.5625-18	.750-16	.5625-18

**10 SAE rated capacity (V10 Cover end cartridge)**  
1 - 1 USgpm    5 - 5 USgpm  
2 - 2 USgpm    6 - 6 USgpm  
3 - 3 USgpm    7 - 7 USgpm  
4 - 4 USgpm

**11 Shaft seal**  
Blank - Single seal  
S - Double seal

**12 Shaft type**  
297 - All series

**13 Port orientation (Outlet #1)**  
(Viewed from cover end of pump; refer to  
table on next page)

**14 Port orientation (Outlet #2)**  
(Viewed from cover end of pump; refer to  
table on next page)

**15 Port orientation (Outlet #3 or primary outlet)**  
(Viewed from cover end of pump; refer to  
table on next page)

**16 Controlled flow rate, V10F & V10P**  
(Omit for standard cover)

3 - 3 USgpm	6 - 6 USgpm
4 - 4 USgpm	7 - 7 USgpm
5 - 5 USgpm	8 - 8 USgpm

**17 Relief valve pressure setting, V10F & V10P** (Omit for standard cover)

A - 250 psi	F - 1500 psi
B - 500 psi	G - 1750 psi
C - 750 psi	H - 2000 psi
D - 1000 psi	J - 2250 psi
E - 1250 psi	K - 2500 psi

**18 Design** (Subject to change)

**19 Rotation**  
(Viewed from shaft end of pump)  
L - Left hand for counterclockwise  
R - Right hand for clockwise

# VQ Replacement Cartridge Kits

## 20VQ Series

Part Number	Description	Vickers #
MPN-00101	20VQ05 gpm	417053
MPN-00102	20VQ05 gpm - Viton	421588
MPN-00103	20VQ08 gpm	417054
MPN-00104	20VQ08 gpm - Viton	421589
MPN-00105	20VQ09 gpm	423096
MPN-00106	20VQ09 gpm - Viton	423097
MPN-00107	20VQ11 gpm	416427
MPN-00108	20VQ11 gpm - Viton	423097
MPN-00109	20VQ12 gpm	416428
MPN-00110	20VQ12 gpm - Viton	421590
MPN-00111	20VQ14 gpm	416429
MPN-00112	20VQ14 gpm - Viton	421592

20VQ Series Specifications		6 lbs	5	8	11	12	14
<b>Displacement</b>	Cu.in./rev. (cc/ rev.)	1.1 (18)	1.7 (27)	2.2 (36)	2.4 (39)	2.8 (46)	
<b>Max. Pressure</b>	Continuous psi (Bar)	3000 (206)	3000 (206)	3000 (206)	2300 (159)	2000 (138)	
<b>Min. Speed</b>	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000	
<b>Max. Speed, RPM</b>		2700	2700	2700	2700	2700	
<b>Typical Flow at Max. Speed &amp; Pressure</b>	GPM (Liters/ Min)	11 (43)	17 (64)	23 (86)	23 (86)	24 (90)	
<b>Typical Input HP at Max. Speed &amp; Pressure</b>	HP (KW)	25 (18)	32 (24)	49 (37)	32 (24)	36 (27)	

\*Rotation must be specified when ordering  
\* Also available without Bushing

## 25VQ Series

Part Number	Description	Vickers #
MPN-00113	25VQ12 gpm	416439
MPN-00114	25VQ12 gpm - Viton	421570
MPN-00115	25VQ14 gpm	416440
MPN-00116	25VQ14 gpm - Viton	421571
MPN-00119	25VQ17 gpm	416441
MPN-00120	25VQ17 gpm - Viton	421572
MPN-00123	25VQ19 gpm	421232
MPN-00124	25VQ19 gpm - Viton	421573
MPN-00127	25VQ21 gpm	416442
MPN-00128	25VQ21 gpm - Viton	421574

25VQ Series Specifications		8 lbs	12	14	17	19	21
<b>Displacement</b>	Cu.in./rev. (cc/ rev.)	2.4 (40)	2.8 (45)	3.4 (55)	3.7 (60)	4.1 (68)	
<b>Max. Pressure</b>	Continuous psi (Bar)	3000 (206)	3000 (206)	3000 (206)	2300 (159)	2000 (138)	
<b>Min. Speed</b>	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000	
<b>Max. Speed, RPM</b>		2700	2700	2500	2500	2500	
<b>Typical Flow at Max. Speed &amp; Pressure</b>	GPM (Liters/ Min)	25 (96)	28 (108)	32 (122)	36 (137)	40 (153)	
<b>Typical Input HP at Max. Speed &amp; Pressure</b>	HP (KW)	25 (40)	32 (50)	49 (51)	32 (56)	36 (63)	

\*Rotation must be specified when ordering  
\* Also available without Bushing



# VQ Replacement Cartridge Kits

FPO

## 30VQ Series

Part Number	Description	Vickers #
MPN-00131	35VQ21gpm	413420
MPN-00132	35VQ25 gpm	413421
MPN-00133	35VQ25 gpm - Viton	421583

\*Rotation must be specified when ordering  
\* Also available without Bushing

## 35VQ Series

Part Number	Description	Vickers #
MPN-00134	35VQ21gpm	413420
MPN-00135	35VQ25 gpm	413421
MPN-00136	35VQ25 gpm - Viton	421583
MPN-00139	35VQ30 gpm	413422
MPN-00140	35VQ30 gpm - Viton	421584
MPN-00143	35VQ35 gpm	413418
MPN-00144	35VQ35gpm - Viton	421585
MPN-00147	35VQ38 gpm	413419
MPN-00148	35VQ38 gpm - Viton	421586
MPN-00163	35VQ21 gpm - Viton	-

\*Rotation must be specified when ordering  
\* Also available without Bushing

35VQ Series Specifications		4 lbs	21	25	30	35	38
<b>Displacement</b>	Cu.in./rev.	4.2	5.0	6.0	6.9	7.4	
	(cc/ rev.)	(69)	(82)	(98)	(113)	(122)	
<b>Max. Pressure</b>	Continuous psi	3000	3000	3000	2300	2000	
	(Bar)	(206)	(206)	(206)	(206)	(206)	
<b>Min. Speed</b>	Below 1000 psi	600	600	600	600	600	
	Above 1000 psi	1000	1000	1000	1000	1000	
<b>Max. Speed, RPM</b>		2500	2500	2500	2400	2400	
<b>Typical Flow at Max. Speed &amp; Pressure</b>	GPM	27	47	57	64	69	
	(Liters/ Min)	(101)	(178)	(215)	(242)	(263)	
<b>Typical Input HP at Max. Speed &amp; Pressure</b>	HP	92	98	122	129	142	
	(KW)	(68)	(73)	(91)	(96)	(106)	

## 45VQ Series

FPO

Part Number	Description	Vickers #
MPN-00151	45VQ42 gpm	416435
MPN-00151	45VQ42 gpm - Viton	419511
MPN-00153	45VQ47 gpm	421234
MPN-00153	45VQ47 gpm - Viton	421954
MPN-00155	45VQ50 gpm	416436
MPN-00155	45VQ50 gpm - Viton	419510
MPN-00157	45VQ57 gpm	421233
MPN-00157	45VQ57 gpm - Viton	421955
MPN-00159	45VQ60 gpm	416437
MPN-00159	45VQ60 gpm - Viton	419509

\*Rotation must be specified when ordering  
\* Also available without Bushing

45VQ Series Specifications		22 lbs	42	47	50	57	60
<b>Displacement</b>	Cu.in./rev.	8.5	9.4	9.9	11.2	11.8	
	(cc/ rev.)	(69)	(82)	(98)	(113)	(122)	
<b>Max. Pressure</b>	Continuous psi	2500	2500	2500	2500	2500	
	(Bar)	(172)	(172)	(172)	(172)	(172)	
<b>Min. Speed</b>	Below 1000 psi	600	600	600	600	600	
	Above 1000 psi	1000	1000	1000	1000	1000	
<b>Max. Speed, RPM</b>		2200	2200	2200	2200	2200	
<b>Typical Flow at Max. Speed &amp; Pressure</b>	GPM	69	77	82	96	99	
	(Liters/ Min)	(263)	(294)	(313)	(364)	(375)	
<b>Typical Input HP at Max. Speed &amp; Pressure</b>	HP	126	137	146	158	168	
	(KW)	(94)	(102)	(109)	(118)	(125)	



FPO

# V Series Replacement Cartridge Kits

## 20V Series

Part Number	Description	Vickers #
MPN-00901	20V05 gpm	102507
MPN-00902	20V05 gpm - Viton	102507
MPN-00903	20V08 gpm	102508
MPN-00904	20V08 gpm - Viton	102508
MPN-00905	20V11 gpm	102509
MPN-00906	20V11 gpm - Viton	102509
MPN-00907	20V12 gpm	102510
MPN-00908	20V12 gpm - Viton	102510
MPN-00909	20V14 gpm	102511
MPN-00910	20V14 gpm - Viton	102511

\*Rotation must be specified when ordering  
 \* Also available without Bushing

20V Series Specifications	6 lbs	5	8	11	12	14
<b>Displacement</b>	Cu.in./rev. (cc/ rev.)	1.0 (16)	1.5 (25)	2.1 (35)	2.3 (38)	2.7 (44)
<b>Max. Pressure</b>	Continuous psi (Bar)	3000 (206)	3000 (206)	3000 (206)	2500 (172)	2200 (138)
<b>Min. Speed</b>	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000
<b>Max. Speed, RPM</b>		1800	1800	1800	1800	1800
<b>Typical Flow at Max. Speed &amp; Pressure</b>	GPM (Liters/ Min)	7 (27)	11 (43)	13 (50)	16 (59)	20 (74)
<b>Typical Input HP at Max. Speed &amp; Pressure</b>	HP (KW)	13 (17)	21 (28)	29 (39)	26 (35)	25 (34)

## 25V Series

Part Number	Description	Vickers #
MPN-00911	25V12 gpm	102532
MPN-00912	25V12 gpm - Viton	102532
MPN-00915	25V14 gpm	102533
MPN-00916	25V14 gpm - Viton	102533
MPN-00919	25V17 gpm	102534
MPN-00920	25V17 gpm - Viton	102534
MPN-00923	25V21 gpm	102535
MPN-00924	25V21 gpm - Viton	102535

\*Rotation must be specified when ordering  
 \* Also available without Bushing

25V Series Specifications	8 lbs	12	14	17	21
<b>Displacement</b>	Cu.in./rev. (cc/ rev.)	2.3 (38)	2.7 (44)	3.3 (54)	4.0 (66)
<b>Max. Pressure</b>	Continuous psi (Bar)	2500 (206)	2500 (206)	2500 (206)	2500 (159)
<b>Min. Speed</b>	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000
<b>Max. Speed, RPM</b>		1800	1800	1800	1800
<b>Typical Flow at Max. Speed &amp; Pressure</b>	GPM (Liters/ Min)	14 (54)	17 (64)	23 (87)	27 (101)
<b>Typical Input HP at Max. Speed &amp; Pressure</b>	HP (KW)	26 (35)	31 (42)	37 (50)	46 (62)



# VQ Replacement Cartridge Kits

## 35V Series

FPO

Part Number	Description	Vickers #
MPN-00927	35V25 gpm	102552
MPN-00928	35V25 gpm – Viton	102552
MPN-00931	35V30 gpm	102553
MPN-00932	35V30 gpm – Viton	102553
MPN-00935	35V35 gpm	102554
MPN-00936	35V35 gpm – Viton	102554
MPN-00939	35V38 gpm	102555
MPN-00940	35V38 gpm – Viton	102555

\*Rotation must be specified when ordering

\* Also available without Bushing

35V Series Specifications		14 lbs	25	30	35	38
<b>Displacement</b>	Cu.in./rev. (cc/ rev.)	4.8 (79)	5.8 (95)	6.7 (110)	7.3 (120)	
<b>Max. Pressure</b>	Continuous psi (Bar)	2500 (172)	2500 (172)	2500 (172)	2500 (172)	
<b>Min. Speed</b>	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	
<b>Max. Speed, RPM</b>		1800	1800	1800	1800	
<b>Typical Flow at Max. Speed &amp; Pressure</b>	GPM (Liters/ Min)	32 (27)	40 (43)	48 (50)	51 (59)	
<b>Typical Input HP at Max. Speed &amp; Pressure</b>	HP (KW)	55 (74)	66 (88)	77 (130)	83 (111)	

## 45V Series

FPO

Part Number	Description	Vickers #
MPN-00945	45V42 gpm	102572
MPN-00925	45V42 gpm – Viton	102576
MPN-00947	45V50 gpm	102574
MPN-00948	45V50 gpm – Viton	102577
MPN-00949	45V60 gpm	102575
MPN-00950	45V60 gpm – Viton	102578

\*Rotation must be specified when ordering

\* Also available without Bushing

45V Series Specifications		42	50	60
<b>Displacement</b>	Cu.in./rev. (cc/ rev.)	8.1 (132)	9.6 (158)	11.6 (189)
<b>Max. Pressure</b>	Continuous psi (Bar)	2500 (172)	2500 (172)	2500 (172)
<b>Min. Speed</b>	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000
<b>Max. Speed, RPM</b>		1800	1800	1800
<b>Typical Flow at Max. Speed &amp; Pressure</b>	GPM (Liters/ Min)	56 (211)	67 (252)	83 (310)
<b>Typical Input HP at Max. Speed &amp; Pressure</b>	HP (KW)	92 (123)	109 (146)	131 (176)



FPO

# Components

## VQ Rotors

Series	Part #	Vickers #
20VQ(Short)	MPN-00401	402690
20VQ	MPN-00402	403539
25VQ	MPN-00403	270597
30VQ	MPN-00408	262152
35VQ	MPN-00404	262154
45VQ	MPN-00405	283871

## VQ Series Rotors

Series	Part #	Vickers #
25V	MPN-00989	584618
35V	MPN-00990	575478
45V	MPN-00991	578000

## Bearings

Series	Part #	Vickers #
20VQ Std.	MPN-01500	98574
25VQ Std.	MPN-01501	1705
26VQ Hvy.Duty	MPN-01502	232750
35VQ Std.	MPN-01504	38441
45VQ Std.	MPN-01503	131812

## Flex Plate Kits

Series	Part #	Vickers #
20VQ	MPN-00345	923955
25VQ	MPN-00346	923956
30VQ	MPN-00349	923956
35VQ	MPN-00347	923953
45VQ	MPN-00348	923954

*Flex Plates are also available individually*

## V Series Vane Kits

Series	Part #	Vickers #
25V	MPN-00980	941214
35V	MPN-00981	941019
45V	MPN-00982	941049

## V Series Cam Rings

Series	Part #	Vickers #
25V12	MPN-01100	584610
25V14	MPN-01101	584612
25V17	MPN-01102	584614
25V21	MPN-01103	584616
35V25	MPN-01105	576210
35V30	MPN-01106	576212
35V35	MPN-01107	576214
35V38	MPN-01108	575476
45V42	MPN-01110	581679
45V50	MPN-01112	581680
45V60	MPN-01114	578904

## V10 Cam Rings

Series	Part #	Vickers #
V10 #1	MPN-00494	317674
V10 #2	MPN-00996	317675
V10 #3	MPN-43375	317676
V10 #4	MPN-00998	317677
V10 #5	MPN-00999	317678
V10 #6	MPN-01000	355641
V10 #7	MPN-01001	331813

## VQ Vane Kits

Series	Part #	Vickers #
20VQ(L)	MPN-00701	922741
20VQ	MPN-00702	922743
25VQ	MPN-00703	922710
30VQ	MPN-00704	922648
35VQ	MPN-00705	922700
45VQ	MPN-00706	922701

## VQ Cam Rings

Series	Part #	Vickers #
20VQ05	MPN-00451	333624
20VQ08	MPN-00452	333625
20VQ09	MPN-00453	374799
20VQ11	MPN-00454	333626
20VQ12	MPN-00455	353901
20VQ14	MPN-00456	353902
25VQ12	MPN-00457	326984
25VQ14	MPN-00458	326985
25VQ17	MPN-00459	326986
25VQ19	MPN-00460	326987
25VQ21	MPN-00461	326988
30VQ24	MPN-00482	234470
30VQ28	MPN-00483	224525
35VQ21	MPN-00467	394961
35VQ25	MPN-00468	319396
35VQ30	MPN-00469	319397
35VQ35	MPN-00470	319398
35VQ38	MPN-00471	319399
45VQ42	MPN-00472	297510
45VQ47	MPN-00473	297718
45VQ50	MPN-00474	297502
45VQ57	MPN-00475	306772
45VQ60	MPN-00476	297503

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# Components

Metaris offers a broad selection of shafts

- Standard
- Splined
- Keyed

## Shafts

Part #	Shaft-Code	Vickers #
MPN-00600	25V/VQ Keyed #1	238755
MPN-00601	25V/VQ Keyed W/Nut #3	242747
MPN-00602	25V/VQ Splined #11	238929
MPN-00603	25V/VQ HD Keyed #86	419082
MPN-00604	25V/VQ Tapered #5	242784
MPN-00605	25V/VQ 14 Tooth # 25	270187
MPN-00606	25V/VQ 14 Tooth # 127	424457
MPN-00611	35V/VQ Keyed #1	233624
MPN-00610	35V/VQ Splined (14 tooth) #4	247803
MPN-00612	35V/VQ Splined #11	242287
MPN-00613	35V/VQ X-long Splined #19	275270
MPN-00614	35V/VQ HD Keyed #86	392669
MPN-00615	35V/VQ 14 Tooth #127	417331
MPN-00616	45V/VQ 14 Tooth #111	413020
MPN-00621	45V/VQ Keyed #1	233369
MPN-00622	45V/VQ Splined (14 tooth) #4	233370
MPN-00623	45V/VQ Splined #11	242885
MPN-00624	45V/VQ X-long Splined #19	265575
MPN-00625	45V/VQ HD Keyed #86	361760
MPN-00626	45V/VQ Splined #130	422541
MPN-00627	2520V/VQ Keyed #1	254964
MPN-00628	2520V/VQ Splined #11	254848
MPN-00629	2520V/VQ X-long Splined #25	293360
MPN-00630	2520V/VQ Splined #123	413433
MPN-00631	2520V/VQ HD Keyed # 86	419083
MPN-00633	3520V/VQ Keyed #1	258249
MPN-00634	3520V/VQ Splined #11	258250
MPN-00635	3520V/VQ X-long Splined #19	260604
MPN-00636	3520V/VQ HD Keyed #86	394571
MPN-00637	3520V/VQ 14 Tooth # 114	413434
MPN-00642	3525V/VQ Keyed #1	243448
MPN-00643	3525V/VQ Splined #11	243449
MPN-00644	3525V/VQ X-long Splined #19	247019
MPN-00645	3525V/VQ HD Keyed #86	394036
MPN-00647	3525V/VQ 14 Tooth #111	413023
MPN-00655	4520V/VQ Keyed #1	255533
MPN-00656	4520V/VQ Splined #11	255536
MPN-00657	4520V/VQ HD Keyed #86	361761
MPN-00658	4520V/VQ 14 Tooth # 114	413436

Metaris offers a growing range of components for cartridges and vane pumps.

We can cross reference most manufacturers numbers including Vickers and Caterpillar

In addition to the items shown, Metaris now produces a full range of housings for vane pumps.

Part #	Shaft-Code	Vickers #
MPN-00661	4525V/VQ Keyed #1	233524
MPN-00662	4525V/VQ Splined #11	233527
MPN-00663	4525V/VQ X-long Splined #19	247102
MPN-00664	4525V/VQ HD Keyed #86	361762
MPN-00665	4525V/VQ 14 Tooth # 114	413024
MPN-00677	4535V/VQ Keyed #1	289083
MPN-00678	4535V/VQ Splined #11	289084
MPN-00679	4535V/VQ X-long Splined #19	289094
MPN-00670	4535V/VQ HD Keyed #86	361763
MPN-00669	4535V/VQ 14 Tooth # 114	413027
MPN-00590	V10 Keyed #1	374338
MPN-00591	V10 Splined #11	374339
MPN-00592	V10 13 Tooth #12	375480
MPN-00593	V10 11 Tooth #38	387481
MPN-00594	V10 Keyed #3	374340
MPN-00673	V20 Keyed #1	280372
MPN-00674	V20 Thr. Key #3	280504
MPN-00675	V20 Woodruff Key #6	297330
MPN-00676	V20 Splined #11	280515
MPN-00683	V20 Splined #15	294922
MPN-00684	V20 Splined #38	328096
MPN-00689	V2020 Keyed #1	308686
MPN-00680	V2020 Thr. Key #3	308925
MPN-00681	V2020 Splined #11	308926
MPN-00682	V2020 Splined #51	385517
MPN-00685	V210 Square Key #1	116644
MPN-00688	V210 Thr. Key #3	120037
MPN-00690	V210 Key Slot #6	131420
MPN-00691	V2010 #1	351249
MPN-00692	V2010 #3	321214
MPN-00693	V2010 #11	321215



# Seal Kits/ Seal Packs

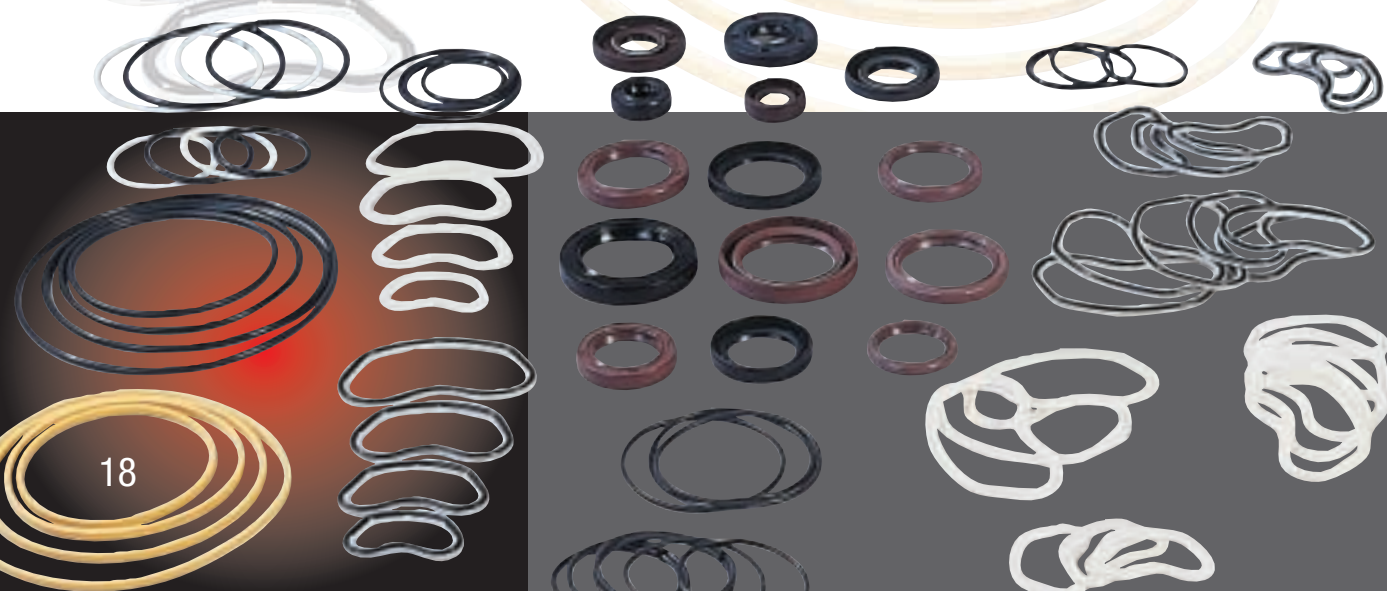
Series	Part #	Description	Vickers#	Series	Part #	Description	Vickers#
20VQ	MPN-25000	Seal Pack*	433762	25 & 30V	MPN-02800	Standard V Seal Kit	922850
25VQ	MPN-02501	Single Seal Kit	920021		MPN-02801	V Seal Kit - Viton	919656
	MPN-02502	Single Seal Kit - Viton	920023	35V	MPN-02802	Standard Seal Kit	922851
	MPN-02503	Double Seal Kit	920022		MPN-02803	Seal Kit - Viton	919262
	MPN-02504	Double Seal Kit - Viton	920024	45V	MPN-02805	Standard Seal Kit	919850
	MPN-02505	Seal Pack*	433764		MPN-02806	Seal Kit - Viton	919632
35VQ	MPN-02510	Single Seal Kit	920015	2520V	MPN-02808	Standard Seal Kit	922856
	MPN-02511	Single Seal Kit	920029		MPN-02809	Seal Kit - Viton	919303
	MPN-02512	Double Seal Kit	920016	3520V	MPN-02810	Standard Seal Kit	922859
	MPN-02513	Double Seal Kit - Viton	920030		MPN-02811	Seal Kit - Viton	919304
	MPN-02514	Seal Pack*	433766	3525V	MPN-02812	Standard Seal Kit	922862
45VQ	MPN-02515	Single Seal Kit	920025		MPN-02813	Seal Kit - Viton	919305
	MPN-02516	Single Seal Kit - Viton	920027	4520V	MPN-02814	Standard Seal Kit	922863
	MPN-02517	Double Seal Kit	920026		MPN-02815	Seal Kit - Viton	919616
	MPN-02518	Double Seal Kit - Viton	920028				
	MPN-02519	Seal Pack*	433768				
2520VQ	MPN-02520	Single Seal Kit	920040				
	MPN-02521	Single Seal Kit - Viton	920042				
	MPN-02522	Double Seal Kit	920041				
	MPN-02523	Double Seal Kit - Viton	920043				
3520VQ	MPN-02530	Single Seal Kit	920048				
	MPN-02531	Single Seal Kit - Viton	920050				
	MPN-02532	Double Seal Kit	920049				
	MPN-02533	Double Seal Kit - Viton	920051				
3525VQ	MPN-02535	Single Seal Kit	920056				
	MPN-02536	Single Seal Kit - Viton	920058				
	MPN-02537	Double Seal Kit	920057				
	MPN-02538	Double Seal Kit - Viton	920059				
4520VQ	MPN-02550	Single Seal Kit	920060				
	MPN-02551	Single Seal Kit - Viton	920062				
	MPN-02552	Double Seal Kit	920061				
	MPN-02553	Double Seal Kit - Viton	920063				
4525VQ	MPN-02554	Single Seal Kit	920068				
	MPN-02555	Single Seal Kit - Viton	920070				
	MPN-02556	Double Seal Kit	920069				
	MPN-02557	Double Seal Kit - Viton	920071				
4535VQ	MPN-02558	Single Seal Kit	920072				
	MPN-02559	Single Seal Kit - Viton	920074				
	MPN-02560	Double Seal Kit	920073				
	MPN-02561	Double Seal Kit - Viton	920075				

\* Seal Pack includes retainer and o-ring

Note: All double seal kits include primary & secondary shaft seals.

## Flex Plate Kits

Series	Part #	Description	Vickers#
V20	MPN-02001	Primary	229235
V200	MPN-02002	Primary	229236
25VQ &	MPN-02003 MPN-02004	Primary	394976
30VQ	MPN-02005	Primary - Viton Secondary	429286 429283
35VQ	MPN-02006	Primary	394973
	MPN-02007	Primary - Viton	429284
	MPN-02008	Secondary	429281
45VQ	MPN-02009	Primary	394974
	MPN-02010	Primary - Viton	429285
	MPN-02011	Secondary - Viton	429282



# Warranty Policy

## *and Procedures for Metaris Inc. products.*

### **Warranty**

Metaris Inc., hereinafter “Metaris”, Warrants all of its products to be free from defects in material and workmanship under normal operating conditions and proper application in accordance with the specifications for operation as described by the manufacturer for the period of twelve (12) months in service.

### **Limitations on Warranty**

This Warranty is expressly in lieu of any other warranties expressed or implied. Buyer’s sole and exclusive remedy under this Warranty shall be limited to the repair, replacement or exchange of warranted products at our option, F.O.B. our factory, or designated service center.

No special, incidental, consequential or other damage shall be recoverable. Metaris shall not be liable for consequential damages or contingent liabilities including, but not limited to, loss of life, personal injury, loss of crops, loss due to fire or water damage, loss of business or business income, down time costs and trade or other commercial loss arising out of the failure of the product. Metaris will in no event be liable for any sum in excess of the price received by it for the product for which liability is claimed or asserted.

No product shall be returned without prior authorization from Metaris. Buyers and their agents shall prepay all transportation charges for the return of such products to Metaris’s factory or designated service center. There will be no acceptance of any charges for labor and/or parts incidental to the removal or remounting of product repaired or replaced under this Warranty.

The above Warranty does not cover conditions over which Metaris has no control, including, without limitation, contamination, pressures in excess of recommended maximum, products damaged or subject to accident abuse or misuse after shipment from our factory, products altered or repaired by anyone other than Metaris personnel, authorized Metaris factory personnel or persons so designated in writing by Metaris prior to commencement of said work.

A return goods authorization number must be obtained from Metaris or Metaris’s authorized Service center, or Metaris’s authorized agent prior to any products being returned for Warranty.

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## METARIS BRAND REPLACEMENT PARTS

Our extensive inventory assures you of same day shipping of pumps and parts anywhere in the world.

Our parts are 100% interchangeable with OEM products. We are committed to high quality, zero defects, and getting your orders out correctly, and on time.

Your satisfaction is guaranteed. All of our products are easily field serviceable. We offer tooling for porting, doweling, and installation, to give you the edge on price and delivery.

Whatever your application, Metaris has a high quality replacement product 100% backed by our commitment to service.

We want to be the supplier for all your vane product needs.



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