

Service Data

Vickers®

# Vane Pumps

---



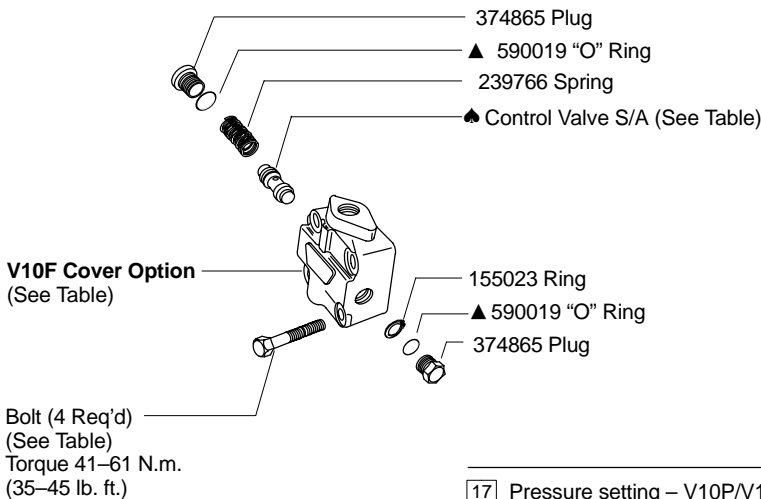
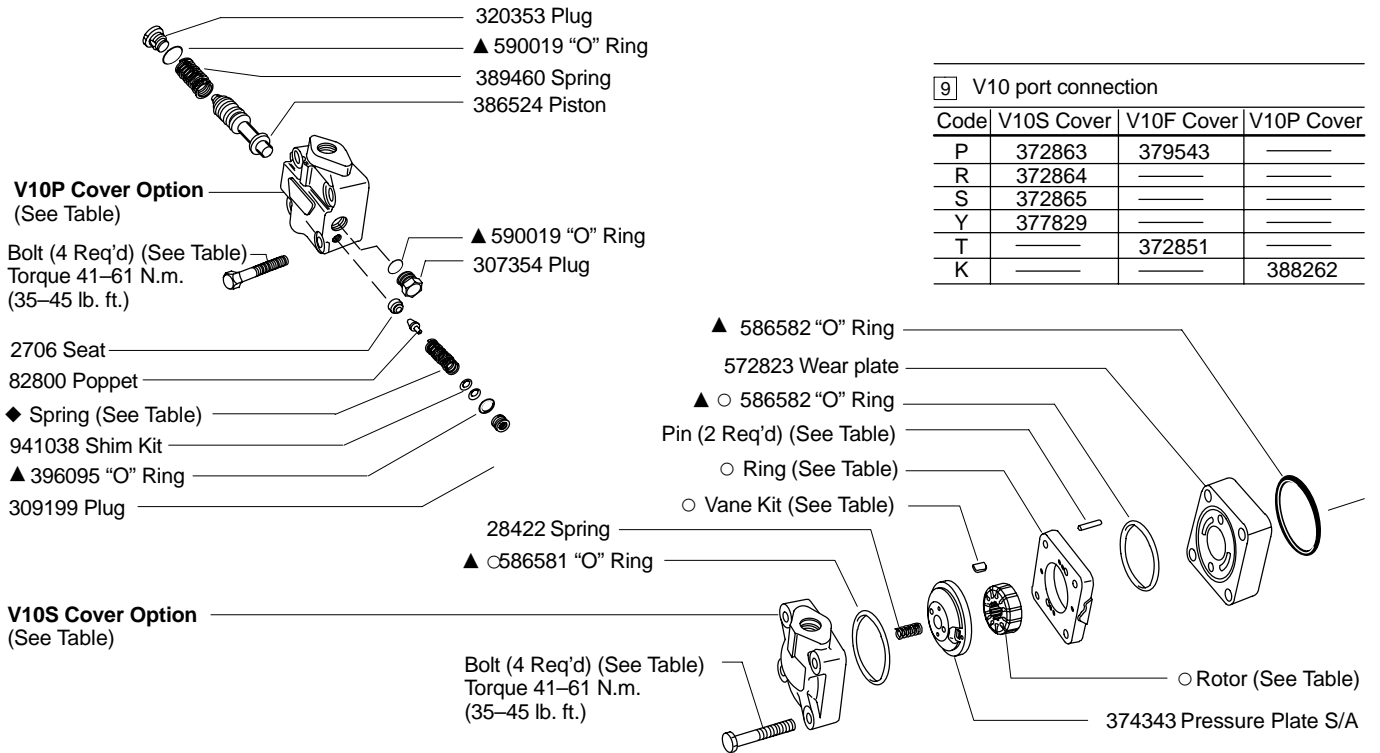
## Vane Type Triple Pump

(F3)-4520VQSV10\*-\*\*\*\*\*-\*\*\*\*\*-20\*



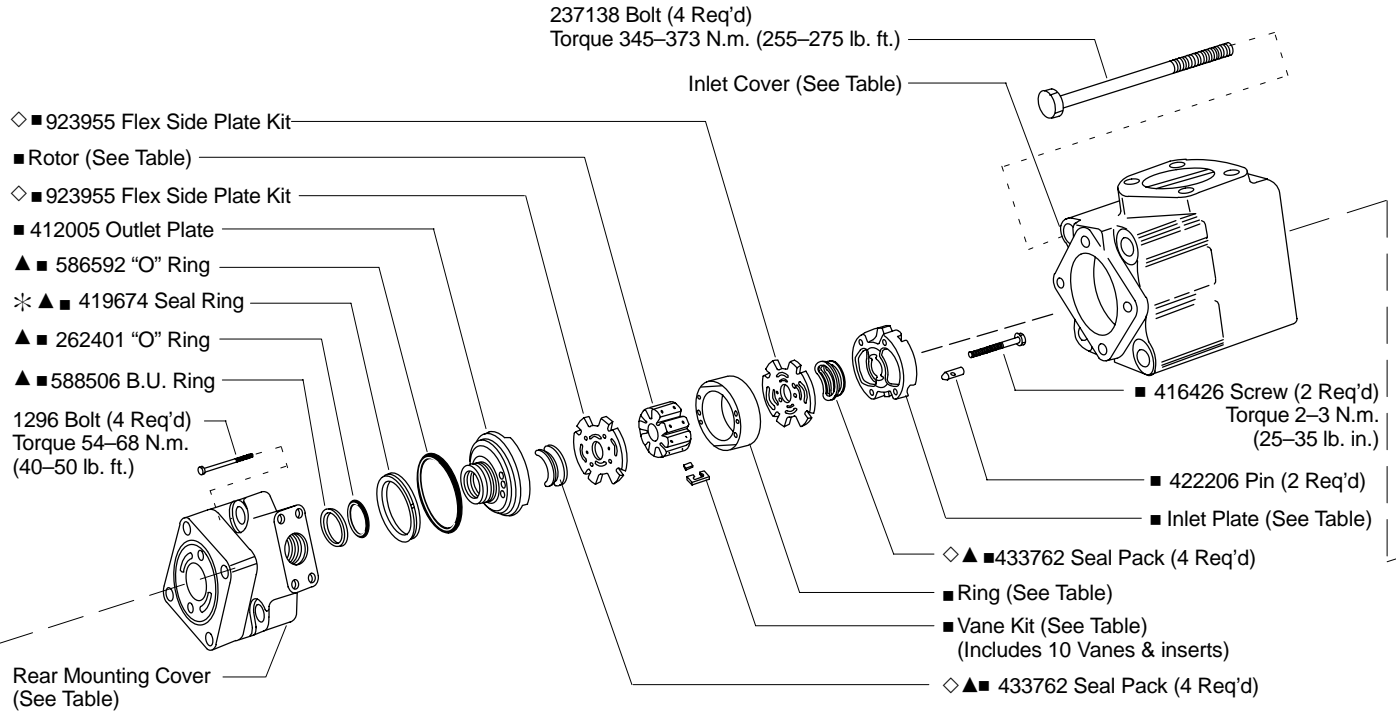
10 SAE rated capacity (V10 cover end cartridge)

USgpm	○Rotor	○Vane Kit (12 vanes)	○Ring	Pin (V10S)	Pin (V10F/V10P)	Bolt (V10S)	Bolt (V10F)	Bolt (V10P)	○Cartridge Kit
1	317681	923499	317674	2456	2456	11156	295344	295344	923471
2			317675						923470
3			317676						923496
4	351247	923500	317677	16662	16662	1278	432511	432511	923469
5			317678						923468
6			355641						923497
7	357286	923501	331813	179341	179341	432509	295346	295346	923498



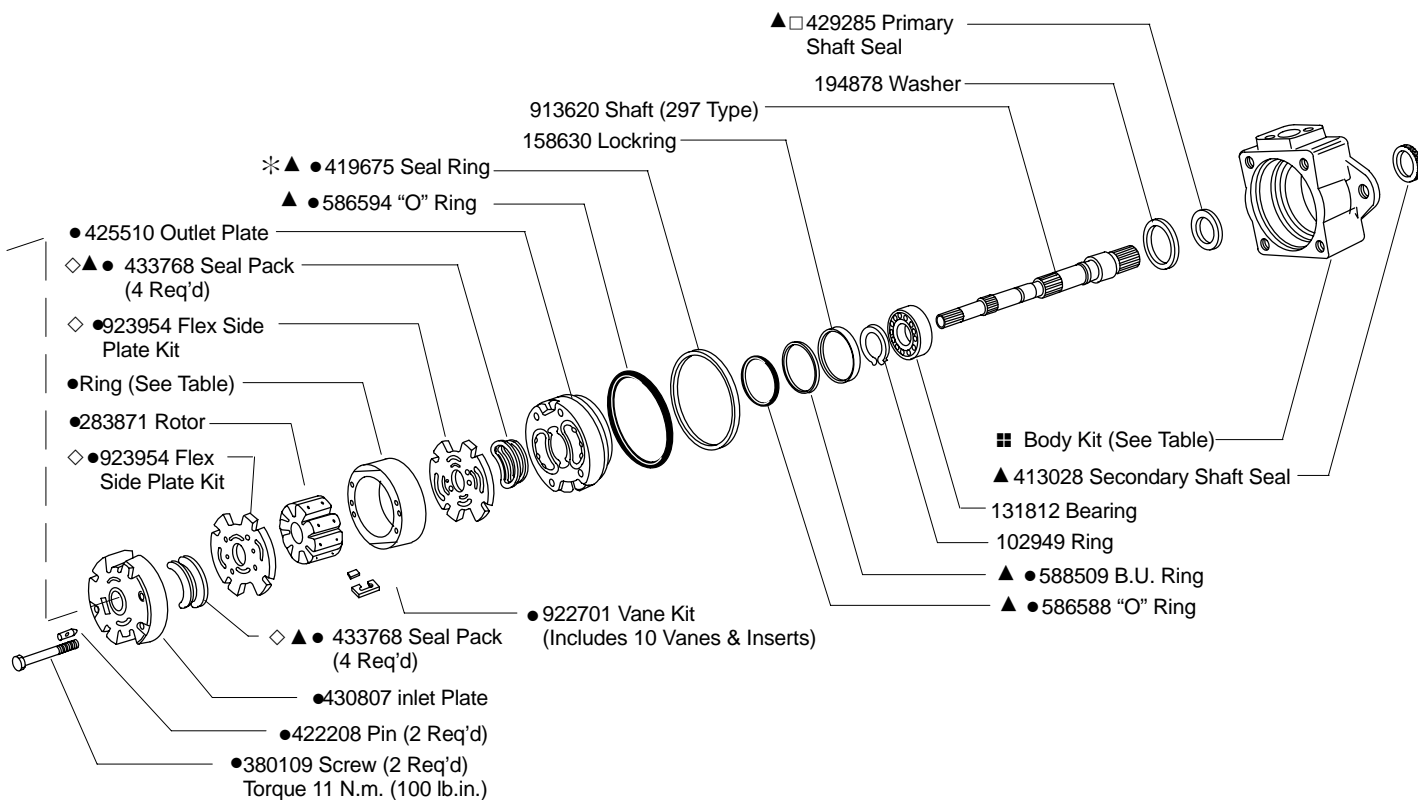
17 Pressure setting – V10P/V10F (Omit for V10S)

Code	Pressure setting V10P/V10F	◆ V10P Spring	♣ V10F control valve S/A
A	250 psi	252886	229613
B	500 psi	2280	233018
C	750 psi	2282	232794
D	1000 psi		232795
E	1250 psi		232796
F	1500 psi	2281	232797
G	1750 psi		232798
H	2000 psi		232799
J	2250 psi		233019
K	2500 psi		233020



8 SAE rated capacity (**20 VQ center cartridge)					
■ USgpm	■ Ring	■ Inlet Plate	■ Rotor	■ Vane Kit	■ F3 Cart. Kit
5	333624	419502	402690	922741	574918
6	431883				574919
8	333625				574920
9	374799				574921
11	333626	419501	403539	922745	574922
12	353901				574923
14	353902				574924

- Included in 45\*\* VQ shaft end cartridge kit.
- Included in \*\*20 VQ center cartridge kit.
- Included in V10 cover end cartridge kit.
- ▲ Included in 02–315624 seal kit. (Kit contains F3 components & both shaft seals.)
- ◆ Included in flex side plate kit; bronze face of plate must be installed toward the rotor. Kit also contains four seal packs.
- Assemble seal with spring loaded sealing member towards bearing. Seals to be completely wetted with oil prior to assembly.
- \* Install 419675 & 419674 sealing ring into body, then install cartridge kit.



6 SAE rated capacity (45\*\*VQ shaft end cartridge)

●USgpm	●Ring	●F3 Cart. Kit
42	297510	419511
47	297718	421954
50	297502	419510
57	306772	421955
60	297503	419509

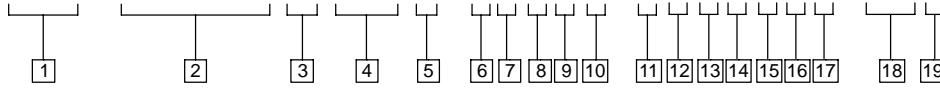
7 Port connections

Connection Type	■ Body Kit	Inlet Cover	Rear Mounting Cover
A – 4 Bolt Flange (Inch)	02-136923	252283	572822
AM – 4 Bolt Flange (Metric)	02-136924	478507	860778

■ NOTE: Body kit includes body, ball, and plug. (Ball and plug not shown)

# Model Code

**(F3) - 4520VQ S V10 \* - \* \* \* \* - \* \* \* \* \* - 20 \***



**1 Special seals**

**F3** – Viton "O"Rings and shaft seals

**2 Pump series designation**

**45\*\*VQ** – Shaft end pump  
**\*\*20VQ** – 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)**

Code	Code
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 bolt flange (Inch threads)  
**AM** – 4 bolt flange ( Metric threads)

**8 SAE rated capacity (VQ center cartridge)**

Code	Code
5 – 5 USgpm	11 – 11 USgpm
6 – 6 USgpm	12 – 12 USgpm
8 – 8 USgpm	14 – 14 USgpm
9 – 9 USgpm	

**9 V10 port connections**

**V10S standard covers and outlet # 3**

**Code**

**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**

Code	Outlet # 3	Tank port
<b>T</b>	.750–16 Str. thd	.750–16 Str. thd.
<b>P</b>	.750–16 Str. thd.	1/2" – NPT thd.

**V10P priority control covers**

Code	Primary port Str. thd	Secondary port Str. thd.	Tank port Str. thd
<b>K</b>	.5625–18	.750–16	.5625 –18

**10 SAE rated capacity (V10 cover end cartridge)**

Code	Code
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)**

Code	Code
3 – 3 USgpm	6 – 6 USgpm
4 – 4 USgpm	7 – 7 USgpm
5 – 5 USgpm	8 – 8 USgpm

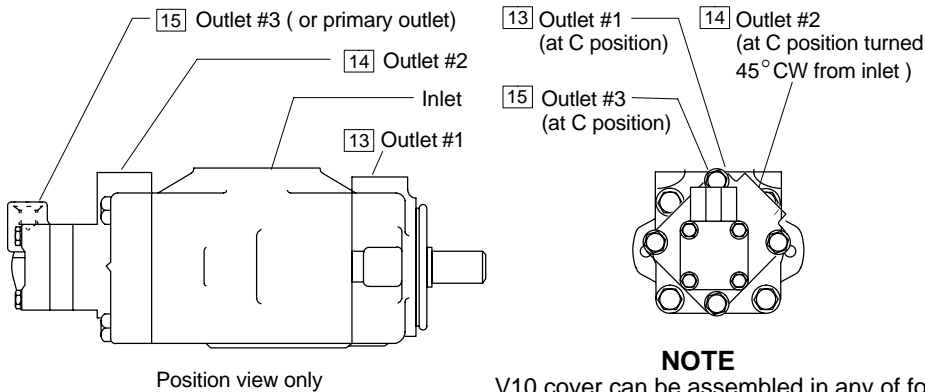
**17 Relief valve pressure setting, V10F & V10P (Omit for standard cover)**

Code	Code
<b>A</b> – 250 psi	<b>F</b> – 1500 psi
<b>B</b> – 500 psi	<b>G</b> – 1750 psi
<b>C</b> – 750 psi	<b>H</b> – 2000 psi
<b>D</b> – 1000 psi	<b>J</b> – 2250 psi
<b>E</b> – 1250 psi	<b>K</b> – 2500 psi

**18 Design**

**19 Rotation (Viewed from shaft end of pump)**

**L** – Left hand for counterclockwise  
**R** – Right hand for clockwise

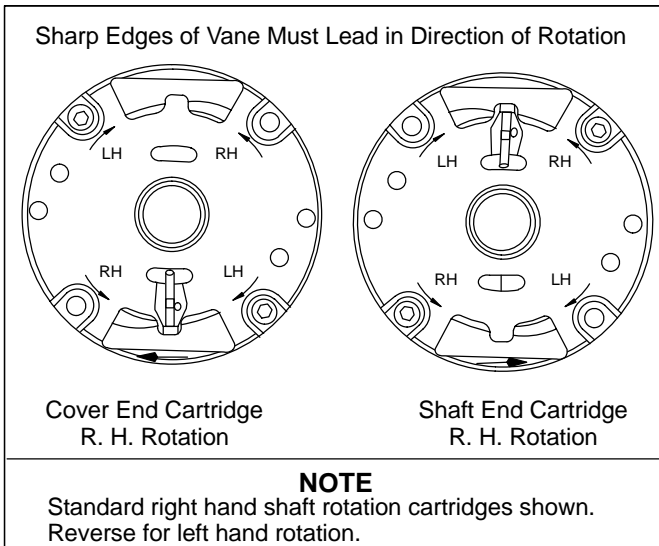


13 14 15 Port orientation code  
 (Viewed from cover end of pump)

Outlet	13 #1	14 #2	15 #3
Opposite inlet	A		A
135° CCW from inlet		A	
90° CCW from inlet	B		B
45° CCW from inlet		B	
Inline with inlet	C		C
45° CW from inlet		C	
90° CW from inlet	D		D
135° CW from inlet		D	

**NOTE**

V10 cover can be assembled in any of four positions refer to drawing M-2005-S.



**NOTE**

To reverse cartridge kit rotation, remove the two screws and reverse the location of the inlet support plate and the outlet support plate. Reinstall the two screws hand tight. Use pump cover to align all sections of the cartridge. Carefully remove the cover and tighten the screws.

When ordering spare cartridge parts, it is recommended they be obtained in cartridge kits. Kits are assembled and tested for either right or left hand rotation. If left hand rotation is required, it should be specified on parts order by adding suffix "L" to cartridge kit number.