EATON Vickers V10 and V20 Series
Fixed Displacement Vane Pump

Features

- EATON Vickers 10 and V20 series are fixed displacement and balanced type vane pumps. With compact sizes, they are available in single pumps and double pumps for both industrial and mobile application.

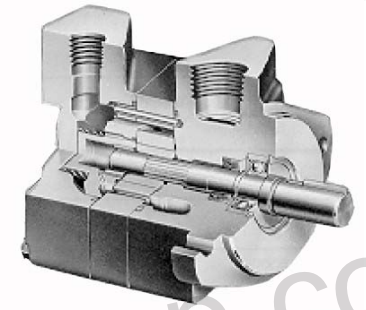
- The vane design with self compensation for wear and clearances makes volumetric efficiency of pump nearly constant over the service life. (the vanes always adjust its orbit to contact with the cam ring, even though wear occurs between the cam ring and vane tips)

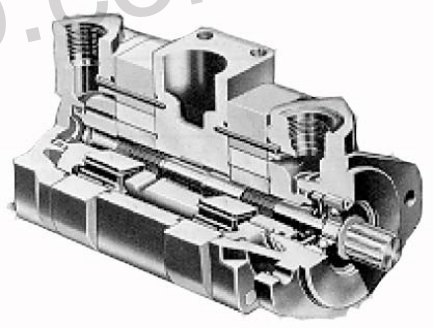
- The vane pump is not damaged at low speed and high pressure operation because pumping action does not start until the speed is high enough for the vane to throw out. With hydraulically balanced design, the bearing is externally loaded only. Therefore, the pump requires minimized maintenance with long service life.

- The inlet or outlet ports can be rotated through increments of 90° in relation to each other, providing application flexibility and easy installation.

- With optional flow control and priority valve covers, the pump can be used in more applications. The flow control cover can limit the flow to the primary circuit at the required flow rate, while diverts remaining flow to the tank. The priority valve cover maintains a constant flow to the primary circuit, while diverts remaining flow to the secondary circuit. Each cover comes with a relief valve to limits the maximum pressure of the primary circuit.

- Interchangeable with original Vickers pump of the same model.





Handling

- For maximum service life, the pump should be protected from contamination. Filtering fluid before filling and during operation to maintain or exceed ISO cleanliness code 17/ 14. Replaceable elements should be changed as filter supplier instructions

- The drive shaft must align with the power source shaft. Avoiding shaft end thrust and applications that impose radial loading.

- The start-up procedures should be as follows:
  - Check the rotation of power source to match the rotation of pump.
  - Check inlet and outlet ports to assure all connections are properly installed and check all mounting bolts and flanges to assure all are tight and properly aligned.

- Fill pump with fluid through the outlet port if the pump is mounted above the fluid level. The spline shaft models also need to be lubricated with an anti-fretting grease or similar lubricant.

- Place all controls in the neutral position so the pump is unloaded during initial start-up.
- Prime the pump within a few second when the pump is started.
- Bleed off entrapped air from outlet circuit until a steady output flow is observed.

V20(F) - 1P11S - 1C(8)-(H)-(L)

Model V10, V20

Cover
Omit - Standard Cover
F - Flow Control Cover
P - Priority Valve Cover

Mounting
1 - 2-Bolt Flange

Inlet Port Connection
S - 1.3125"-12 Str. thd. (V10)
- 1.625"-12 Str. thd. (V20)
P - 1.00" NPT (V10)
- 1.25" NPT (V20)
B - 1.00" BSP (V10)
- 1.25" BSP (V20)
T - 1.1875"-12 Str. thd. (V10)

Delivery (USgpm at 1200 rpm)
V10 - 1, 2, 3, 4, 5, 6, 7
V20 - 6, 7, 8, 9, 11, 12, 13

Outlet Port Connection
V10 and V20
S - .750"-16 Str. thd. (V10)
- 1.0625"-12 Str. thd. (V20)
P - .500" NPT (V10)
- .750" NPT (V20)
B - .500" BSP (V10)
- .750" BSP (V20)

V10F, V10P, V20F, and V20P
S - .750"-16 Str. thd. for outlet and 1.0625"-12 Str. thd. for tank port (V20F)
P - .750"-16 Str. thd. for outlet and .500" NPT for tank port (V10F and V20F)
T - .750"-16 Str. thd. for outlet and tank port (V10F)
- .750"-16 Str. thd. for primary outlet and tank port and .875"-14 Str. thd. for secondary outlet (V20P)
K - .5625"-18 Str. thd. for primary outlet and tank port and .750"-16 Str. thd. for secondary outlet (V10P)

Outlet Port Position
(Viewed from cover end)
A - Opposite inlet
B - 90° CCW from inlet
C - Inline with inlet
D - 90° CW from inlet

Shaft
1 - Straight keyed
3 - Threaded with woodruff key
6 - Woodruff key stub (V20 only)
11 - Splined
12 - Splined (V10 only)
15 - Splined (V20 only)
38 - Splined

Flow rate Setting for Flow control and Priority Valve Cover L/min (USgpm)
2 - 7.6 (2)
3 - 11.4 (3)
4 - 15.2 (4)
5 - 19.0 (5)
6 - 22.7 (6)
7 - 26.5 (7)
8 - 30.3 (8)

Pressurer Setting for Flow control and Priority Valve Cover bar (psi)
A - 17 (250)
B - 34 (500)
C - 52 (750)
D - 69 (1000)
E - 86 (1250)
F - 103 (1500)
G - 121 (1750)
H - 138 (2000)
J - 155 (2250)
K - 172 (2500)

Shaft Rotation
(Viewed from shaft end)
Omit - Turn right
L - Turn left

Model Series	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm^3/r (in^3/r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Maximum Pressure bar (psi)	Maximum Speed rpm	Minimum Speed rpm	Weight kg (lb)
V10 V10F V10P	1	3.3 (0.20)	4.70 (1.25)	172 (2500)	4800	650	4.5 - 6.8 (10 - 15)
	2	6.6 (0.40)	9.40 (2.50)	172 (2500)	4500	650	
	3	9.8 (0.60)	14.20 (3.75)	172 (2500)	4000	650	
	4	13.1 (0.80)	18.90 (5.00)	172 (2500)	3400	650	
	5	16.4 (1.00)	23.60 (6.25)	172 (2500)	3200	650	
	6	19.5 (1.19)	28.40 (7.50)	152 (2200)	3000	650	
	7	22.8 (1.39)	33.10 (8.75)	138 (2000)	2800	650	
V20 V20F V20P	6	19.5 (1.19)	28.39 (7.50)	172 (2500)	3400	650	7.3 - 8.2 (16 - 18)
	7	22.8 (1.39)	33.11 (8.75)	172 (2500)	3000	650	
	8	26.5 (1.62)	37.85 (10.00)	172 (2500)	2800	650	
	9	29.7 (1.81)	42.57 (11.25)	172 (2500)	2800	650	
	11	36.4 (2.22)	52.04 (13.75)	172 (2500)	2500	650	
	12	39.0 (2.38)	56.77 (15.00)	152 (2200)	2400	650	
	13	42.4 (2.59)	61.50 (16.25)	152 (2200)	2400	650	