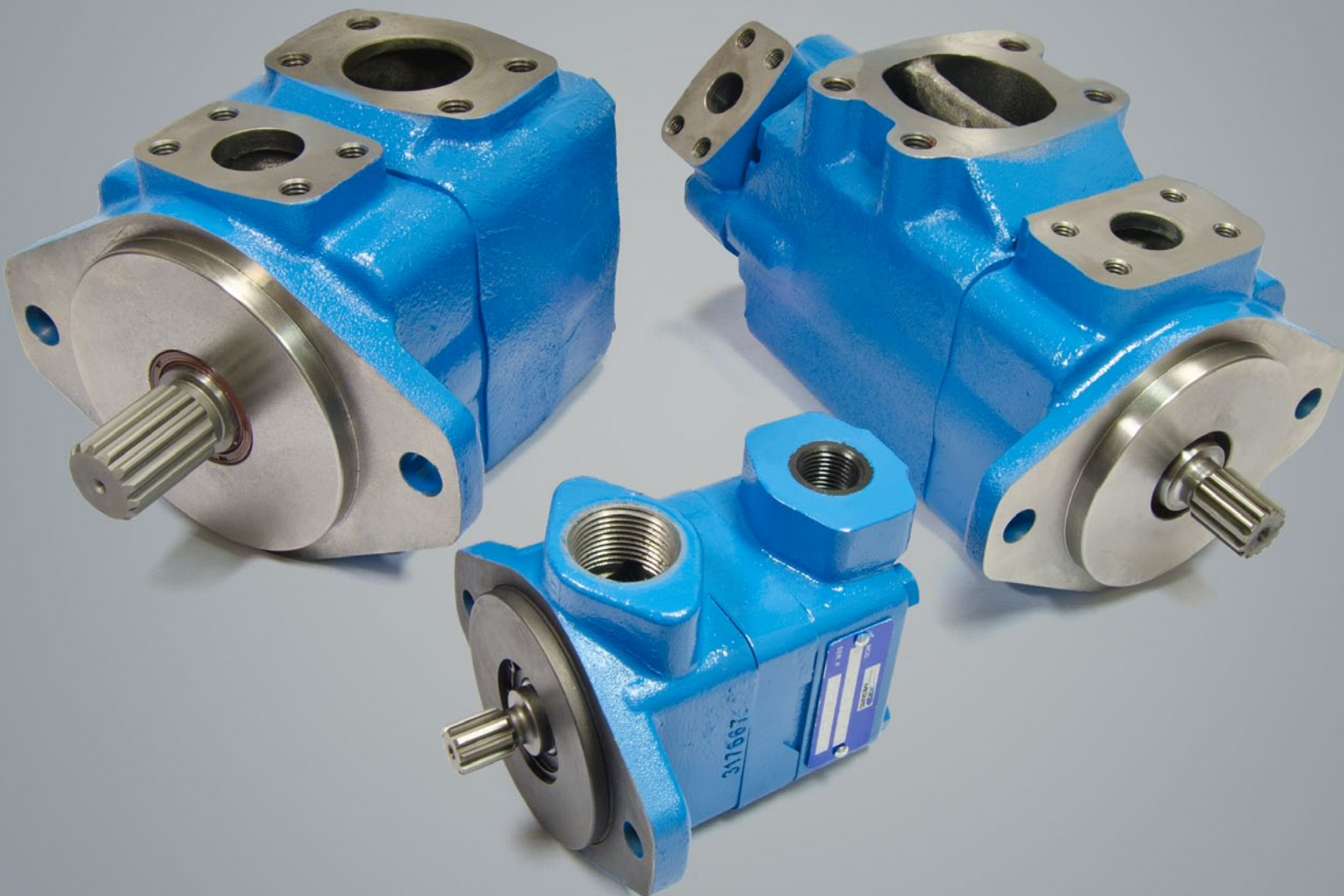


MOVICONTROL

Single and Double Fixed Vane Pumps

SERIES V10, V20, 25V/VQ, 35V/VQ, 45V/VQ



V10/V20 Series

Features

Balanced vane type pumps are excellent for medium- to low-pressure mobile and industrial applications. Available with integrated flow control valves to simplify system design and installation, these pumps are commonly used as pilot and auxiliary pumps for complex systems, and on heavy-duty trucks and interstate buses. Compact size and ease of service allow maximum equipment design flexibility.

- High Performance
- Pressure-balanced
- Low Cost/Economical
- Engineered for Extended Life
- Versatile and Low Noise



Specifications

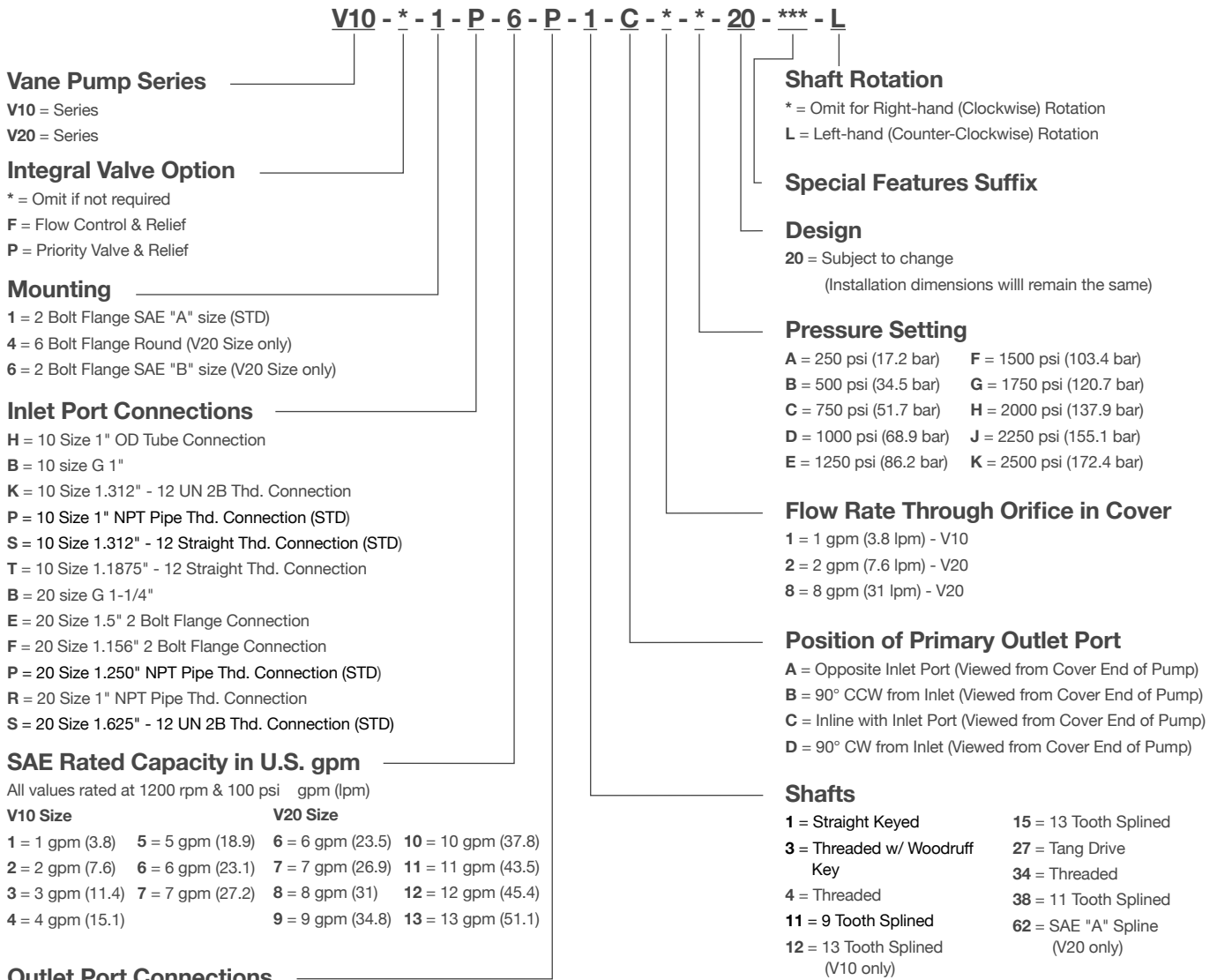
PUMP	FLOW IN GPM @ 1200 RPM & 100 PSI (LPM)	DISPL. IN ³ /R (CM ³ /R)	MAX. SPEED (RPM)	MAX. PRESSURE PSI (BAR)	TYP. DELIVERY GPM @ MAX. SPEED & PRESSURE (LPM)	TYPICAL INPUT POWER HP @ MAX. SPEED & PRESSURE (KW)	WEIGHT LBS (KG)
V10	1 (3.8)	0.20 (3.3)	4800	2500 (172)	3.60 (13.6)	7.00 (5.2)	10-15 (4.5-6.8)
	2 (7.6)	0.40 (6.6)	4500	2500 (172)	7.30 (27.6)	13.6 (10.1)	
	3 (11.4)	0.60 (9.8)	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)	
	6 (23.1)	1.19 (19.5)	3000	2200 (152)	14.6 (55.3)	24.5 (18.3)	
	7 (27.2)	1.39 (22.8)	2800	2000 (138)	16.0 (60.6)	24.0 (17.9)	
V20	6 (23.5)	1.19 (19.5)	3400	2500 (172)	16.1 (60.9)	29.0 (21.6)	16-18 (7.3-8.2)
	7 (26.9)	1.39 (22.8)	3000	2500 (172)	16.7 (63.2)	29.5 (22)	
	8 (31)	1.62 (26.5)	2800	2500 (172)	17.7 (67)	32.5 (24.2)	
	9 (34.8)	1.80 (29.7)	2800	2500 (172)	19.8 (75)	35.5 (26.5)	
	11 (43.5)	2.22 (36.4)	2500	2500 (172)	22.9 (86.7)	37.5 (28)	
	12 (45.4)	2.38 (39)	2400	2200 (152)	23.0 (87.1)	36.0 (26.8)	
	13 (51.1)	2.59 (42.4)	2400	2200 (152)	25.9 (98)	39.0 (29.1)	

Values based on using anti-wear type petroleum oil 150 SUS at 100° F (ISO rating of 32 cSt at 38° C) and 0 psi inlet pressure.

MOVICONTROL

V10/V20 Series

Model Code Breakdown



Outlet Port Connections

	Mode	Priority Cover			Flow Control Cover		Standard Cover
		Primary	Secondary	Tank	Pressure	Tank	Pressure
K	V10	9/16-18 Str. Thd.	3/4-16 Str. Thd.	9/16-18 Str. Thd.	-	-	-
B	V10	-	-	-	-	-	G 1/2"
B	V20	-	-	-	-	-	G 3/4"
P	V10	-	-	-	3/4-16 Str. Thd.	1/2-NPT Thd.	1/2-NPT Thd.
P	V20	-	-	-	3/4-16 Str. Thd.	1/2-NPT Thd.	3/4-NPT Thd.
R	V10	-	-	-	-	-	1.062-12 Str. Thd.
S	V20	-	-	-	3/4-16 Str. Thd.	1 1/16-12 Str. Thd.	1.062-12 Str. Thd.
S	V10	-	-	-	-	-	3/4-16 Str. Thd.
T	V10	-	-	-	3/4-16 Str. Thd.	3/4-16 Str. Thd.	-
T	V20	3/4-16 Str. Thd.	7/8-14 Str. Thd.	3/4-16 Str. Thd.	-	-	-
V	V10 & V20	-	-	-	-	-	7/8-14 Str. Thd.

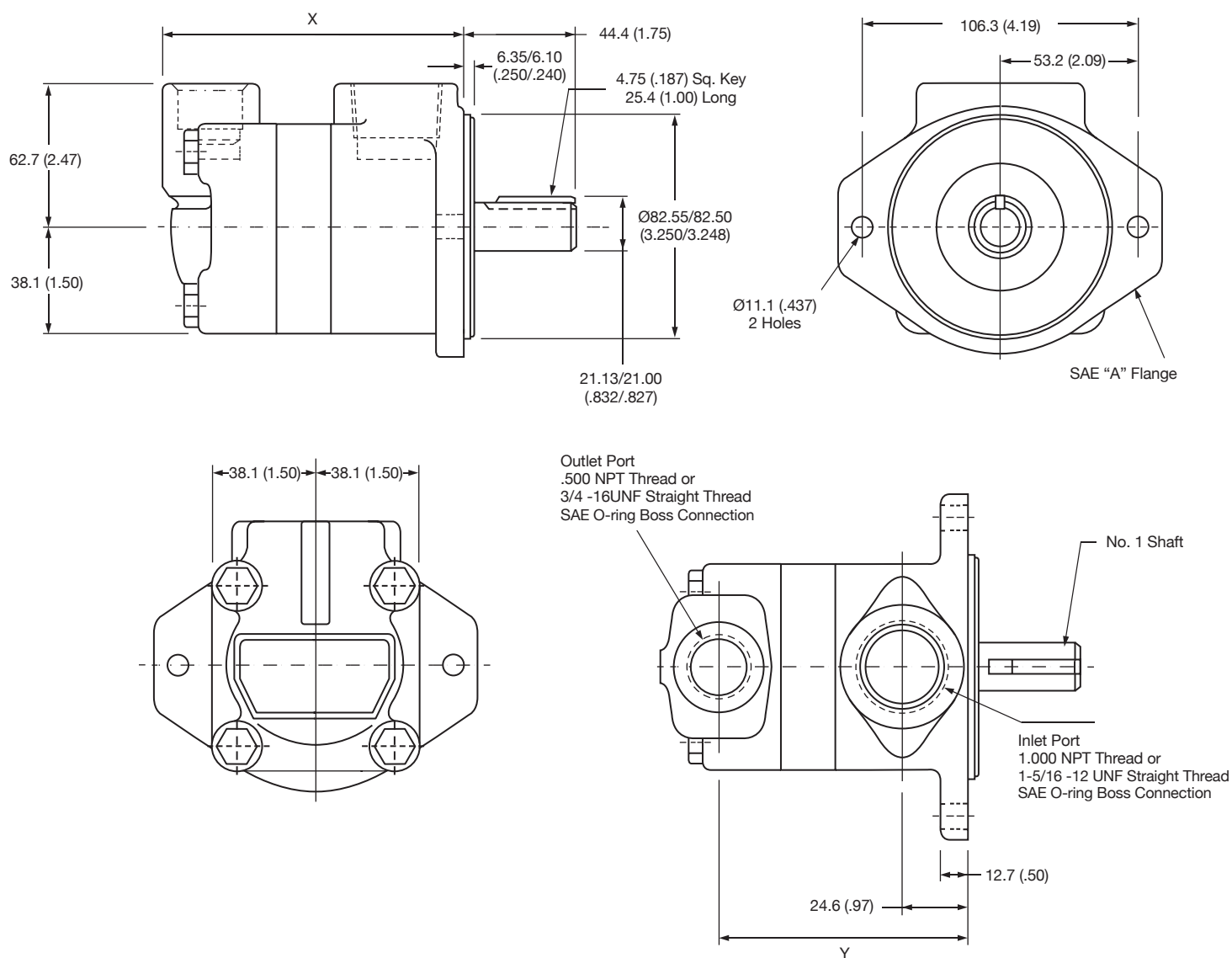
V10 Series

Dimensions

Dimensions are in millimeters (inches).

- Weight: 10 - 15 lbs (4.5 - 6.8 kgs)
- Pressure: 1/2" NPT
- Suction: 1" NPT
- Optional BSPT/SAE Ports Available

DELIVERY AT 1200 RPM & 100 PSI	DIMENSIONS	
	X	Y
1 gpm (3.8 lpm)	115.6 (4.55)	91.9 (3.62)
2 gpm (7.6 lpm)	115.6 (4.55)	91.9 (3.62)
3 gpm (11.4 lpm)	115.6 (4.55)	91.9 (3.62)
4 gpm (15.1 lpm)	121.9 (4.80)	98.3 (3.87)
5 gpm (18.9 lpm)	121.9 (4.80)	98.3 (3.87)
6 gpm (22.7 lpm)	127.0 (5.00)	103.4 (4.07)
7 gpm (26.5 lpm)	127.0 (5.00)	103.4 (4.07)



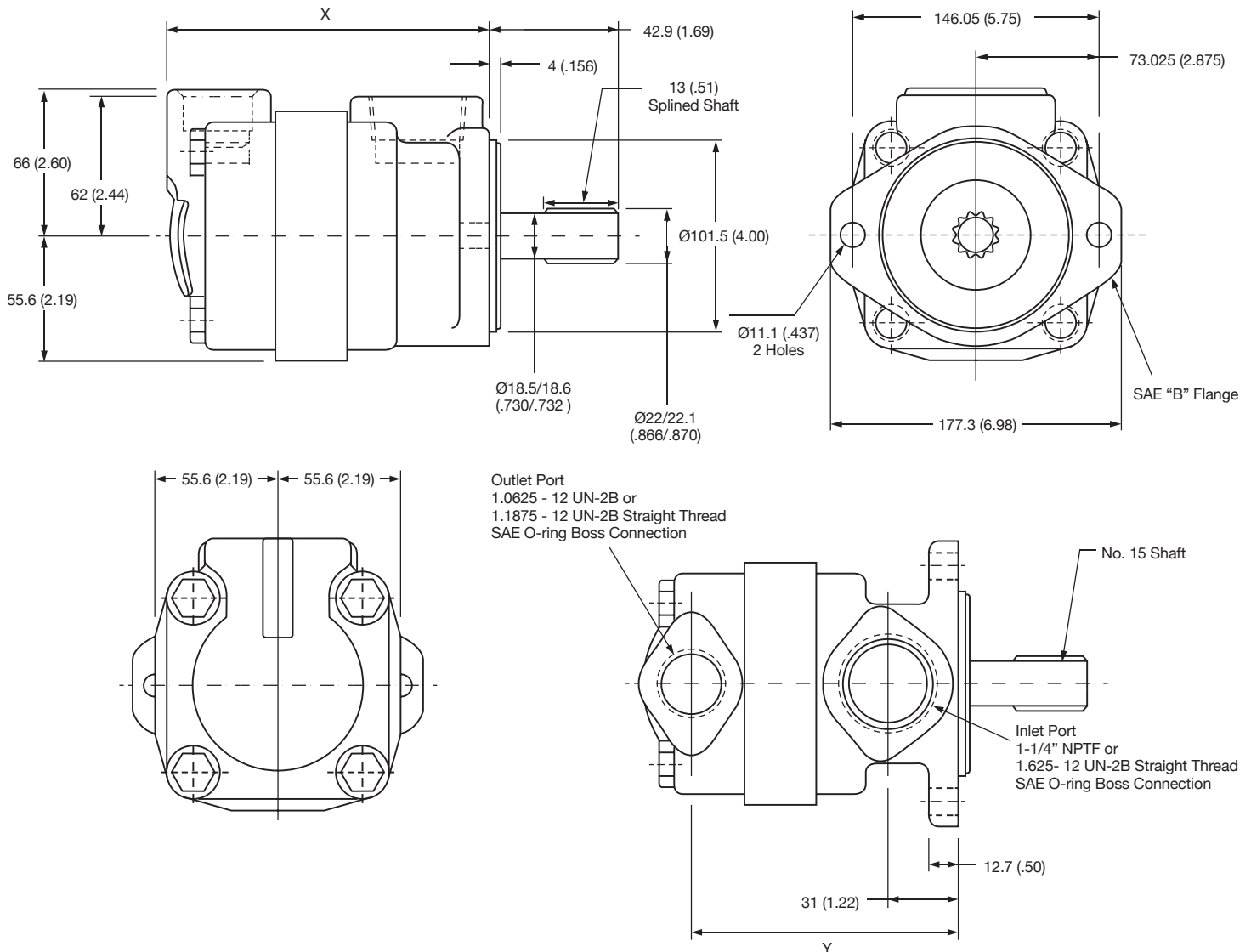
V20 Series

Dimensions

Dimensions are in millimeters (inches).

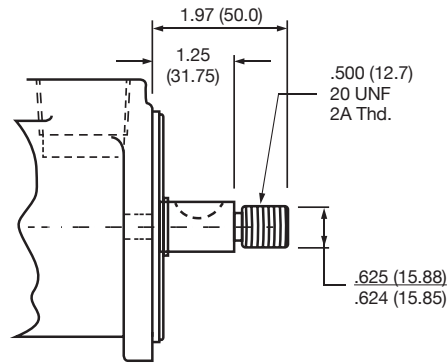
- Weight: 16 - 18 lbs (7.3 - 8.2 kgs)
- Pressure: 3/4" NPT
- Suction: 1-1/4" NPT
- Optional BSPT/SAE Ports Available

DELIVERY AT 1200 RPM & 100 PSI	DIMENSIONS	
	X	Y
6 gpm (22.7 lpm)	125.2 (4.93)	102.1 (4.02)
7 gpm (26.5 lpm)	131.6 (5.18)	108.4 (4.27)
8 gpm (30.3 lpm)	131.6 (5.18)	108.4 (4.27)
9 gpm (34.1 lpm)	131.6 (5.18)	108.4 (4.27)
11 gpm (41.6 lpm)	136.6 (5.38)	113.5 (4.47)
12 gpm (45.4 lpm)	140.2 (5.52)	117.1 (4.61)
13 gpm (49.2 lpm)	140.2 (5.52)	117.1 (4.61)

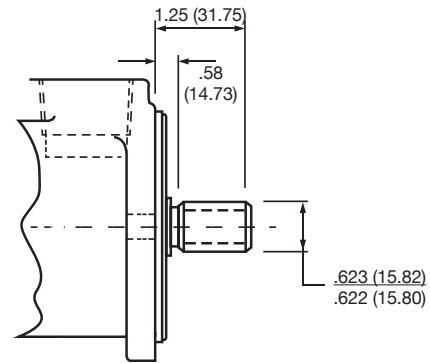


V10 Series

Optional Shaft Dimensions



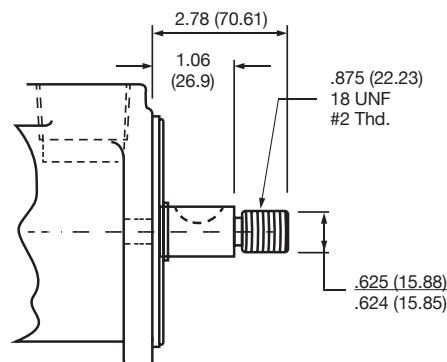
No. 3 Keyed Shaft



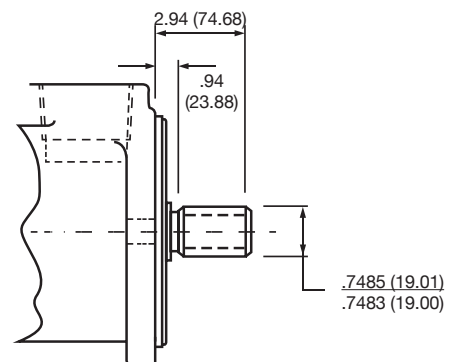
No. 11 Splined Shaft, 9 Tooth

V20 Series

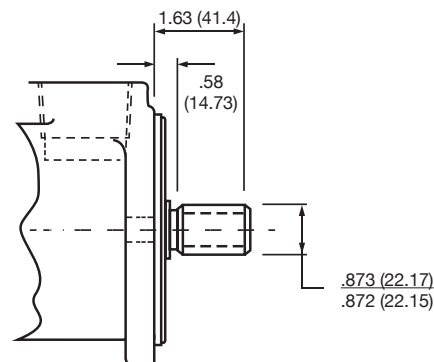
Optional Shaft Dimensions



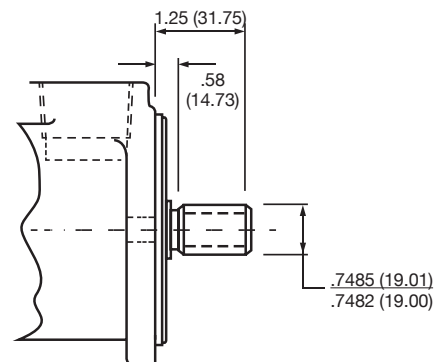
No. 3 Keyed Shaft



No. 11 Splined Shaft, 11 Tooth



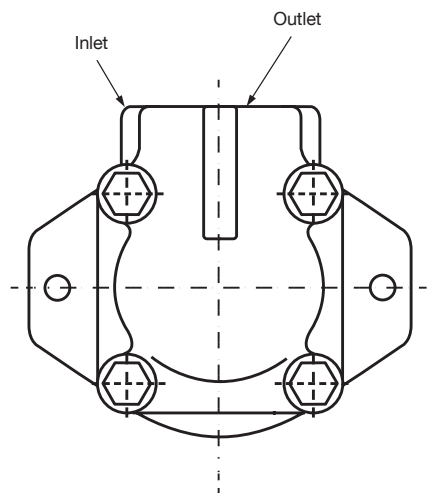
No. 12 Splined Shaft, 13 Tooth



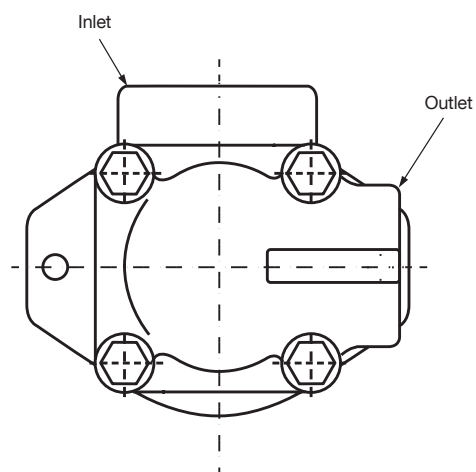
No. 38 Splined Shaft, 11 Tooth

V10/V20 Series

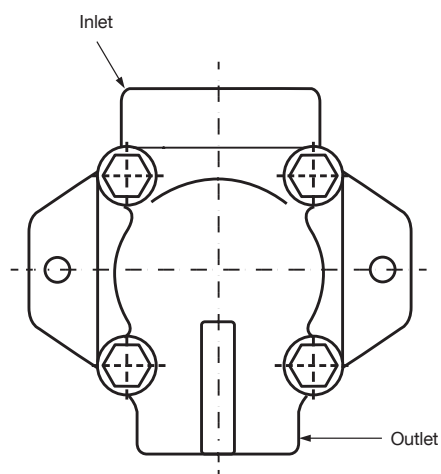
Optional Port Position



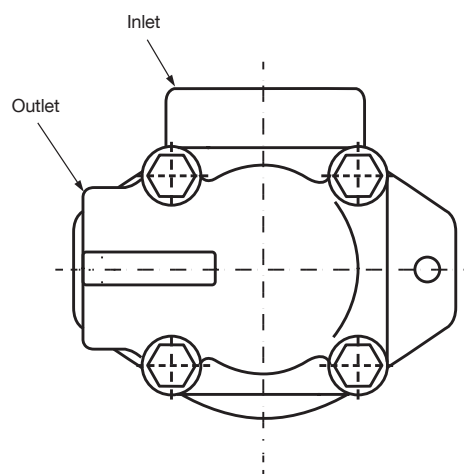
C - Inline with Inlet



D - 90° Clockwise from Inlet



A - Opposite of Inlet



B - 90° Counter-Clockwise from Inlet

Rear Cover Bolt Torque

- V10 - 40 ft/lbs (54.2 Nm)
- V20 - 80 ft/lbs (108.5 Nm)

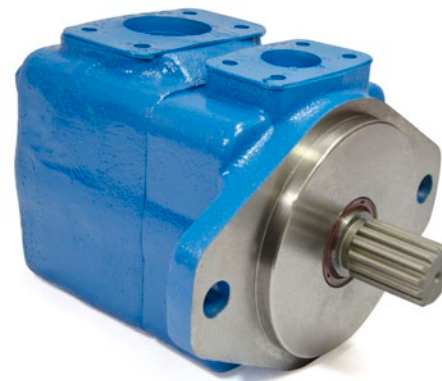
Note: Remove rear cover bolts and rotate cover for proper port position.

V Series - Single Pump

Features

Intravane design pumps provide longer life and increased productivity. Not to mention, they provide application versatility. These units are also known for extremely low sound levels, making them perfect for industrial applications. Compact size and ease of service allow maximum equipment design flexibility. Pumps are available in single, double and thru-drive configurations.

- High Volumetric Efficiency
- Maximum 3000 psi Operating Pressure
- Twelve Vane Design for Quiet Operation
- Hydraulically Balanced for Extended Life
- Versatile
- Compact



Specifications

PUMP	FLOW IN GPM @ 1200 RPM & 100 PSI (LPM)	DISPL. IN ³ /R (CM ³ /R)	MAX. SPEED (RPM)	MAX. PRESSURE PSI (BAR)	TYP. DELIVERY GPM @ MAX. SPEED & PRESSURE (LPM)	TYPICAL INPUT POWER (HP) @ MAX. SPEED & PRESSURE (KW)	WEIGHT LBS (KG)
20V	5 (18.9)	1.10 (27.9)	1800	3000 (207)	7.5 (28.4)	15.00 (11.2)	26 (11.8)
	8 (30.3)	1.67 (42.4)	1800	3000 (207)	12 (45.4)	22.78 (17.0)	
	11 (41.6)	2.22 (56.4)	1800	3000 (207)	15 (56.8)	30.28 (22.6)	
	12 (45.4)	2.47 (62.7)	1800	3000 (207)	16.4 (62.1)	33.69 (25.1)	
	14 (53.0)	2.78 (70.6)	1800	3000 (207)	18.4 (69.7)	37.91 (28.3)	
25V	12 (45.4)	2.47 (62.7)	1800	2500 (172)	16.4 (62.1)	30.75 (22.9)	32 (14.5)
	14 (53.0)	2.78 (70.6)	1800	2500 (172)	18.4 (69.7)	34.50 (25.7)	
	17 (64.4)	3.39 (86.1)	1800	2500 (172)	22.8 (86.3)	40.00 (29.8)	
	21 (79.5)	4.13 (104.9)	1800	2500 (172)	28 (106.0)	45.60 (34.0)	
35V	21 (79.5)	4.13 (104.9)	1800	2500 (172)	28 (106.0)	45.60 (34.0)	50 (22.7)
	25 (94.6)	4.94 (125.5)	1800	2500 (172)	33 (125.0)	61.00 (45.5)	
	30 (113.6)	5.91 (150.1)	1800	2500 (172)	40.8 (154.4)	73.00 (54.4)	
	35 (132.5)	6.83 (173.5)	1800	2500 (172)	48 (181.7)	82.40 (61.4)	
	38 (143.8)	7.37 (187.2)	1800	2500 (172)	51.2 (193.8)	88.30 (65.8)	
45V	42 (159.0)	8.41 (213.6)	1800	2500 (172)	55 (208.2)	101.00 (75.3)	75 (34)
	50 (189.3)	9.85 (250.2)	1800	2500 (172)	67 (263.6)	117.00 (87.2)	
	60 (227.1)	11.75 (298.5)	1800	2500 (172)	82 (310.4)	139.00 (103.7)	

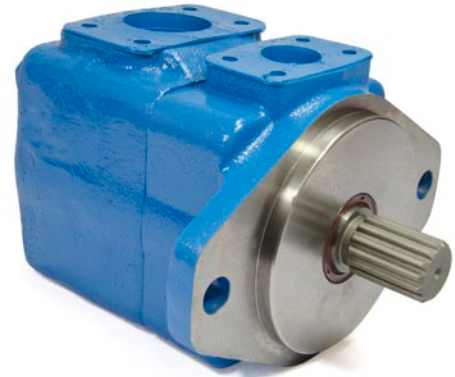
Values based on using anti-wear type petroleum oil 150 SUS at 100° F (ISO rating of 32 cSt at 38° C) and 0 psi inlet pressure.

VQ Series - Single Pump

Features

Intravane design pumps provide longer life and increased productivity. Not to mention, they provide application versatility. These units are also known for extremely low sound levels, making them perfect for mobile applications. Compact size and ease of service allow maximum equipment design flexibility. Pumps are available in single, double and thru-drive configurations.

- High Volumetric Efficiency
- Maximum 3000 psi Operating Pressure
- High Operating Speeds
- Pressure Balanced Brass Flex Plates
- Versatile and Compact
- Contaminant Tolerant



Specifications

PUMP	FLOW IN GPM @ 1200 RPM & 100 PSI (LPM)	DISPL. IN ³ /R (CM ³ /R)	MAX. SPEED (RPM)	MAX. PRESSURE PSI (BAR)	TYP. DELIVERY GPM @ MAX. SPEED & PRESSURE (LPM)	TYPICAL INPUT POWER (HP) @ MAX. SPEED & PRESSURE (KW)	WEIGHT LBS (KG)
20VQ	5 (18.9)	1.10 (18.0)	2700	3000 (207)	11.0 (41.6)	24.0 (17.9)	26 (11.8)
	8 (30.3)	1.67 (27.4)	2700	3000 (207)	17.0 (64.4)	35.0 (26.1)	
	11 (41.6)	2.22 (36.4)	2700	3000 (207)	23.0 (87.1)	47.5 (35.4)	
	12 (45.4)	2.41 (39.5)	2700	2300 (159)	22.5 (85.2)	38.0 (28.3)	
	14 (53.0)	2.80 (45.9)	2700	2000 (138)	30.0 (113.6)	39.0 (29.1)	
25VQ	12 (45.4)	2.45 (40.1)	2700	3000 (207)	23.0 (87.1)	55.0 (41.0)	32 (14.5)
	14 (53.0)	2.77 (45.4)	2700	3000 (207)	27.0 (102.2)	62.5 (46.6)	
	17 (64.4)	3.39 (55.6)	2500	3000 (207)	31.0 (117.3)	69.5 (51.8)	
	19 (71.9)	3.72 (61.0)	2500	3000 (207)	35.0 (132.5)	76.0 (56.7)	
	21 (79.5)	4.12 (67.5)	2500	3000 (207)	38.0 (143.8)	83.0 (61.9)	
35VQ	21 (79.5)	4.12 (67.5)	2500	3000 (207)	38.0 (143.8)	83.0 (61.9)	50 (22.7)
	25 (94.6)	4.98 (81.6)	2500	3000 (207)	45.0 (170.3)	101.0 (75.3)	
	30 (113.6)	5.96 (97.7)	2500	3000 (207)	55.0 (208.2)	117.5 (87.6)	
	35 (132.5)	6.88 (112.7)	2400	3000 (207)	60.0 (227.1)	132.0 (98.4)	
	38 (143.8)	7.42 (121.6)	2400	3000 (207)	65.0 (246.1)	140.0 (104.4)	
45VQ	42 (159.0)	8.46 (138.6)	2200	2500 (172)	66.5 (251.7)	122.5 (91.3)	75 (34.0)
	45 (170.3)	8.95 (146.7)	2200	2500 (172)	71.0 (268.8)	131.0 (97.7)	
	50 (189.3)	9.90 (162.2)	2200	2500 (172)	79.0 (299.0)	141.0 (105.1)	
	60 (227.1)	11.80 (193.4)	2200	2500 (172)	96.0 (363.4)	170.0 (126.8)	

Values based on using anti-wear type petroleum oil 150 SUS at 100° F (ISO rating of 32 cSt at 38° C) and 0 psi inlet pressure.

V/VQ Series - Single Pump

Model Code Breakdown

35 - V - 38 - A - (S) - 11 - C - 22 - R

Model _____

20
25
35
45

Series _____

V = Industrial Series
VQ = Mobile Series

Ring Capacity in U.S. gpm _____

Rated capacity at 1200 rpm & 100 psi

Frame Size	Code (US gpm)	cm ³ /r	in ³ /r
20V/VQ	2	7	0.43
	5	18	1.10
	8	27	1.67
	9	30	1.85
	11	36	2.22
	12	40	2.47
	14	45	2.78
25V/VQ	12	39	2.47
	14	45	2.78
	17	55	3.39
	19	61	3.72
	21	67	4.13
35V/VQ	25	81	4.94
	30	97	5.91
	35	112	6.83
	38	121	7.37
45V/VQ	42	138	8.41
	45	147	8.95
	50	162	9.85
	60	193	11.75

Shaft Rotation
R = Omit for Right-hand (Clockwise) Rotation
L = Left-hand (Counter-Clockwise) Rotation

Design

Outlet Position
(Viewed from cover end of pump)
A = Outlet opposite of inlet
B = Outlet 90° CCW from inlet
C = Outlet inline with inlet
D = Outlet 90° CW from inlet

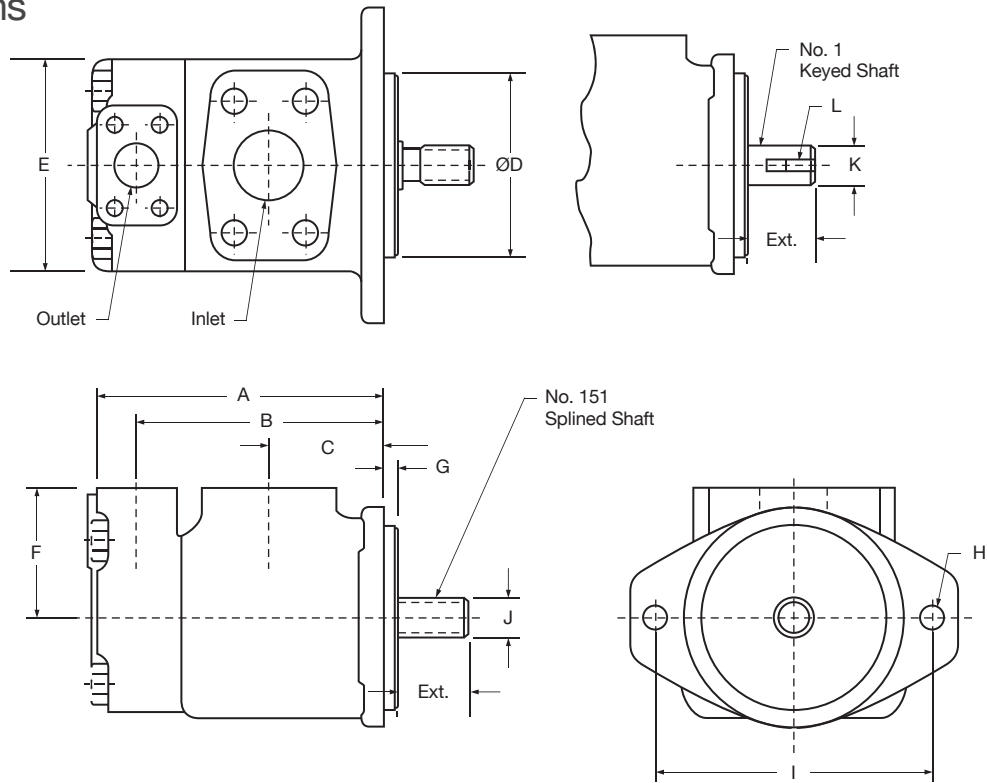
Shaft
1 = Straight Keyed
11 = Splined
86 = Keyed (Heavy-Duty)
151 = Splined (For 20V/VQ only)
(Other Shafts Available)

Mounting & Shaft Seal Assembly
S = Flange mount and double shaft seal
Omit for flange mount with single shaft seal

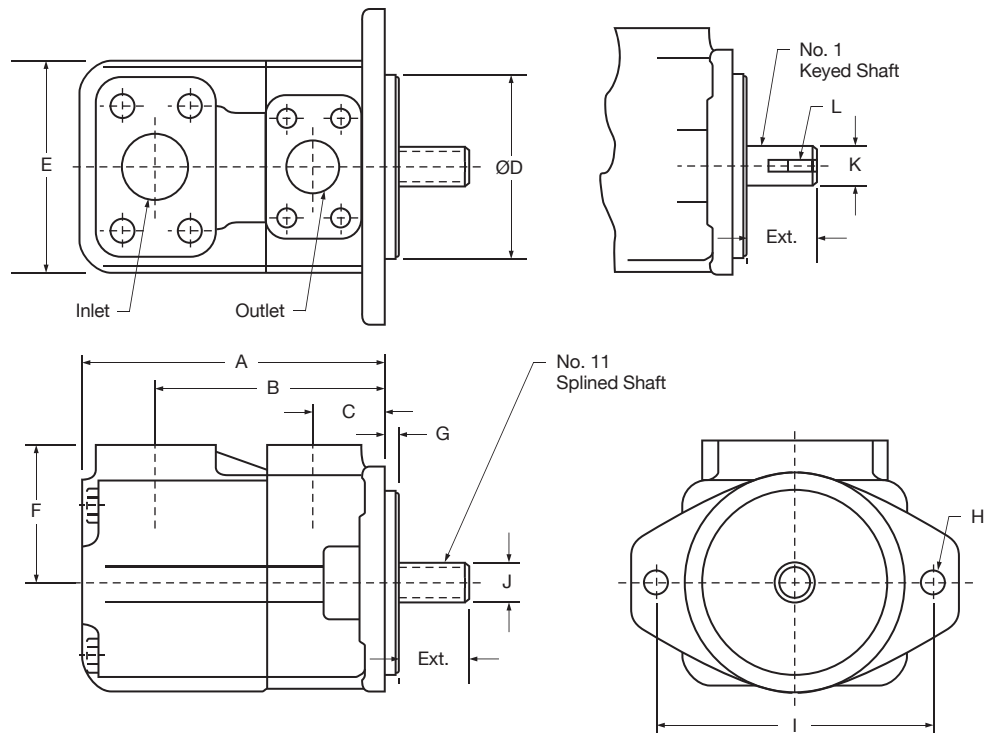
Port Connections
A = SAE 4-Bolt Flange

V/VQ Series - Single Pump

Dimensions



20V/20VQ



25V/25VQ, 35V/35VQ, 45V/45VQ

V/VQ Series - Single Pump

Dimensions Chart

	20 SERIES	25 SERIES	30 SERIES	35 SERIES	45 SERIES
A	6.12 (155.4)	6.38 (162.1)	6.96 (176.8)	7.28 (185.0)	8.50 (215.9)
B	5.22 (132.6)	4.75 (120.7)	4.85 (123.2)	4.94 (125.4)	6.02 (153.0)
C	2.50 (63.5)	1.50 (38.1)	1.50 (38.1)	1.50 (38.1)	1.69 (43.0)
D	4" Ø SAE 'B'	4" Ø SAE 'B'	4" Ø SAE 'B'	5" Ø SAE 'C'	5" Ø SAE 'C'
E	4.00 (101.6)	4.62 (117.3)	4.62 (117.3)	5.51 (140.0)	6.36 (161.5)
F	3.00 (76.2)	3.00 (76.2)	3.00 (76.2)	3.25 (82.6)	3.69 (93.7)
G	.375 (9.5)	.375 (9.5)	.375 (9.5)	.375 (9.5)	.500 (12.7)
H	.56 (14.2)	.56 (14.2)	.56 (14.2)	.688 (17.5)	.688 (17.5)
I	5.75 (146.1)	5.75 (146.1)	5.75 (146.1)	7.125 (181.0)	7.125 (181.0)
J	.875 Ø 13t 1.75 Ext.	.875 Ø 13t 1.75 Ext.	.875 Ø 13t 1.75 Ext.	1.25 Ø 14t 2.31 Ext.	1.25 Ø 14t 2.44 Ext.
K	.875 Ø 13t 2.13 Ext.	.875 Ø 13t 2.31 Ext.	.875 Ø 13t 2.31 Ext.	1.25 Ø 14t 2.88 Ext.	1.25 Ø 14t 2.44 Ext.
L	Key .187	Key .187	Key .187	Key .3125	Key .3125
Inlet	1-1/2" FL	1-1/2" FL	1-1/2" FL	2" FL	3" FL
Outlet	3/4" FL	1" FL	1-1/4" FL	1-1/4" FL	1-1/2" FL
Weight	32 lbs (14.5 kg)	32 lbs (14.5 kg)	36 lbs (16.3 kg)	50 lbs (22.7 kg)	75 lbs (34.0 kg)

Dimensions are in inches (millimeters).

Shaft Descriptions & Codes

PUMP STYLE	CODE	DESCRIPTION	MAJOR DIAM.	EXT.
20V/20VQ	1	3/16 Square Keyed	0.875 (22.2)	2.310 (58.7)
	151	13T 16/32 Splined	0.875 (22.2)	1.750 (44.5)
25V/25VQ	1	13/16 Square Keyed	0.875 (22.2)	2.312 (58.7)
	3	#15 Woodruff Keu	0.875 (22.2)	2.440 (62.0)
30V/30VQ	11	13T 16/32 Splined	0.875 (22.2)	1.750 (44.5)
	25	14T 12/24 Splined	1.250 (31.8)	1.750 (44.5)
	127	14T 12/24 Splined	1.250 (31.8)	2.310 (58.7)
35V/35VQ	1	5/16 Square Keyed	1.250 (31.8)	2.880 (73.2)
	11	14T 12/24 Splined	1.250 (31.8)	2.310 (58.7)
	19	14T 12/24 Extra Long Splined	1.250 (31.8)	3.050 (77.5)
	86	5/16 Heavy-Duty Square Keyed	1.375 (34.9)	3.380 (85.9)
45V/45VQ	1	5/16 Square Keyed	1.250 (31.8)	2.440 (62.0)
	11	14T 12/24 Splined	1.248 (31.7)	2.440 (62.0)
	19	14T 12/24 Extra Long Splined	1.248 (31.7)	3.060 (77.7)
	86	3/8 Heavy-Duty Square Keyed	1.500 (38.1)	3.440 (87.4)

V Series - Industrial Double Pump

Features & Specifications

Intravane design pumps provide longer life and increased productivity. Not to mention, they provide application versatility. These units are also known for extremely low sound levels, making them perfect for industrial applications. Compact size and ease of service allow maximum equipment design flexibility. Pumps are available in single, double and thru-drive configurations.

- High Volumetric Efficiency
- Maximum 3000 psi Operating Pressure
- Twelve Vane Design for Quiet Operation
- Hydraulically Balanced for Extended Life
- Versatile & Compact



PUMP	SHAFT END FLOW IN GPM @ 1200 RPM & 100 PSI (LPM)	DISPL. IN ³ /R (CM ³ /R)	MAX. SPEED (RPM)	MAX. PRESS. PSI (BAR)	TYP. DELIVERY GPM @ MAX. SPEED & PRESSURE (LPM)	TYPICAL INPUT POWER (HP) @ MAX. SPEED & PRESSURE (KW)	COVER END FLOW IN GPM @ 1200 RPM & 100 PSI (LPM)	DISPL. IN ³ /R (CM ³ /R)	MAX. SPEED (RPM)	MAX. PRESS. PSI (BAR)	TYP. DELIVERY GPM @ MAX. SPEED & PRESSURE (LPM)	TYPICAL INPUT POWER (HP) @ MAX. SPEED & PRESSURE (KW)
2520V	12 (45.4)	2.47 (40.5)	1800	2500 (172)	16.4 (62.1)	30.75 (22.9)	5 (18.9)	1.10 (18.0)	1800	3000 (207)	7.2 (27.3)	17.00 (12.7)
	14 (53.0)	2.78 (45.6)	1800	2500 (172)	18.4 (69.7)	34.50 (25.7)	8 (30.3)	1.67 (27.4)	1800	3000 (207)	11.1 (42.0)	25.00 (18.6)
	17 (64.4)	3.39 (55.6)	1800	2500 (172)	22.8 (86.3)	35.80 (26.7)	11 (41.6)	2.22 (36.4)	1800	3000 (207)	13.1 (49.6)	34.00 (25.4)
	21 (79.5)	4.13 (67.7)	1800	2500 (172)	28.8 (109.0)	31.00 (23.1)	12 (45.4)	2.41 (39.5)	1800	2500 (172)	17.4 (65.9)	29.75 (22.2)
							14 (53.0)	2.78 (45.6)	1800	2000 (138)	18.6 (70.4)	34.50 (25.7)
3520V	21 (79.5)	4.13 (67.7)	1800	2500 (172)	28.8 (109.0)	31.00 (23.1)	5 (18.9)	1.10 (18.0)	1800	3000 (207)	7.2 (27.3)	17.00 (12.7)
	25 (94.6)	4.94 (81.0)	1800	2500 (172)	33.9 (128.3)	61.00 (45.5)	8 (30.3)	1.67 (27.4)	1800	3000 (207)	11.1 (42.0)	25.00 (18.6)
	30 (113.6)	5.91 (96.8)	1800	2500 (172)	40.8 (154.4)	73.00 (54.4)	11 (41.6)	2.22 (36.4)	1800	3000 (207)	13.1 (49.6)	34.00 (25.4)
	35 (132.5)	6.83 (111.9)	1800	2500 (172)	48.0 (181.7)	82.40 (61.4)	12 (45.4)	2.41 (39.5)	1800	2500 (172)	17.4 (65.9)	29.75 (22.2)
	38 (143.8)	7.37 (120.8)	1800	2500 (172)	51.2 (193.8)	88.30 (65.8)	14 (53.0)	2.78 (45.6)	1800	2500 (172)	18.6 (70.4)	34.50 (25.7)
3525V	21 (79.5)	4.13 (67.7)	1800	2500 (172)	28.8 (109.0)	31.00 (23.1)						
	25 (94.6)	4.94 (81.0)	1800	2500 (172)	33.9 (128.3)	61.00 (45.5)	12 (45.4)	2.41 (39.5)	1800	2500 (172)	16.0 (60.6)	30.75 (22.9)
	30 (113.6)	5.91 (96.8)	1800	2500 (172)	40.8 (154.4)	73.00 (54.4)	14 (53.0)	2.81 (46.0)	1800	2500 (172)	18.6 (70.4)	34.50 (25.7)
	35 (132.5)	6.83 (111.9)	1800	2500 (172)	48.0 (181.7)	82.40 (61.4)	17 (64.4)	3.39 (55.6)	1800	2500 (172)	22.5 (85.2)	35.80 (26.7)
	38 (143.8)	7.37 (120.8)	1800	2500 (172)	51.2 (193.8)	88.30 (65.8)	21 (79.5)	4.13 (67.7)	1800	2500 (172)	27.5 (104.1)	45.60 (34.0)
4520V	42 (159.0)	8.41 (137.8)	1800	2500 (172)	55.0 (208.2)	101.00 (75.3)	5 (18.9)	1.10 (18.0)	1800	3000 (207)	7.2 (27.3)	17.00 (12.7)
	50 (189.2)	9.85 (161.4)	1800	2500 (172)	57.0 (215.8)	110.00 (82.0)	8 (30.3)	1.67 (27.4)	1800	3000 (207)	11.1 (42.0)	25.00 (18.6)
	60 (227.1)	11.75 (192.5)	1800	2500 (172)	67.0 (253.6)	117.00 (87.2)	11 (41.6)	2.22 (36.4)	1800	3000 (207)	13.1 (49.6)	34.00 (25.4)
							12 (45.4)	2.41 (39.5)	1800	2500 (172)	17.4 (65.9)	29.75 (22.2)
							14 (53.0)	2.78 (45.6)	1800	2500 (172)	18.6 (70.4)	34.50 (25.7)
4525V	42 (159.0)	8.41 (137.8)	1800	2500 (172)	55.0 (208.2)	101.00 (75.3)	12 (45.4)	2.41 (39.5)	1800	2500 (172)	16.0 (60.6)	30.75 (22.9)
	50 (189.2)	9.85 (161.4)	1800	2500 (172)	57.0 (215.8)	110.00 (82.0)	14 (53.0)	2.81 (46.0)	1800	2500 (172)	18.6 (70.4)	34.50 (25.7)
	60 (227.1)	11.75 (192.5)	1800	2500 (172)	67.0 (253.6)	117.00 (87.2)	17 (64.4)	3.39 (55.6)	1800	2500 (172)	22.5 (85.2)	35.80 (26.7)
							21 (79.5)	4.13 (67.7)	1800	2500 (172)	27.5 (104.1)	45.60 (34.0)
4535V	42 (159.0)	8.41 (137.8)	1800	2500 (172)	55.0 (208.2)	101.00 (75.3)	21 (79.5)	4.13 (67.7)	1800	2500 (172)	28.8 (109.0)	31.00 (23.1)
	50 (189.2)	9.85 (161.4)	1800	2500 (172)	57.0 (215.8)	110.00 (82.0)	25 (94.6)	4.94 (81.0)	1800	2500 (172)	33.9 (128.3)	61.00 (45.5)
	60 (227.1)	11.75 (192.5)	1800	2500 (172)	67.0 (253.6)	117.00 (87.2)	30 (113.6)	5.91 (96.8)	1800	2500 (172)	40.8 (154.4)	73.00 (54.4)
							35 (132.5)	6.83 (111.9)	1800	2500 (172)	48.0 (181.7)	82.40 (61.4)
							38 (143.8)	7.37 (120.8)	1800	2500 (172)	51.2 (193.8)	88.30 (65.8)

Values based on using anti-wear type petroleum oil 150 SUS at 100° F (ISO rating of 32 cSt at 38° C) and 0 psi inlet pressure.

VQ Series - Mobile Double Pump

Features & Specifications

Intravane design pumps provide longer life and increased productivity. Not to mention, they provide application versatility. These units are also known for extremely low sound levels, making them perfect for mobile applications. Compact size and ease of service allow maximum equipment design flexibility. Pumps are available in single, double and thru-drive configurations.

- High Volumetric Efficiency
- Maximum 3000 psi Operating Pressure
- High Operating Speeds
- Pressure Balanced Brass Flex Plates
- Contaminant Tolerant



PUMP	SHAFT END FLOW IN GPM @ 1200 RPM & 100 PSI (LPM)	DISPL. IN³/R (CM³/R)	MAX. SPEED (RPM)	MAX. PRESS. PSI (BAR)	TYP. DELIVERY GPM @ MAX. SPEED & PRESSURE (LPM)	TYPICAL INPUT POWER (HP) @ MAX. SPEED & PRESSURE (KW)	COVER END FLOW IN GPM @ 1200 RPM & 100 PSI (LPM)	DISPL. IN³/R (CM³/R)	MAX. SPEED (RPM)	MAX. PRESS. PSI (BAR)	TYP. DELIVERY GPM @ MAX. SPEED & PRESSURE (LPM)	TYPICAL INPUT POWER (HP) @ MAX. SPEED & PRESSURE (KW)
2520VQ	12 (45.4)	2.47 (40.5)	2700	3000 (207)	23.0 (87.1)	55.0 (41.0)	5 (18.9)	1.10 (18.0)	2700	3000 (207)	11.0 (41.6)	24.0 (17.9)
	14 (53.0)	2.78 (45.6)	2700	3000 (207)	27.0 (102.2)	62.5 (46.6)	8 (30.3)	1.67 (27.4)	2700	3000 (207)	17.0 (64.4)	35.0 (26.1)
	17 (64.4)	3.39 (55.6)	2700	3000 (207)	31.0 (117.3)	69.5 (51.8)	11 (41.6)	2.22 (36.4)	2700	3000 (207)	23.0 (87.1)	47.5 (35.4)
	21 (79.5)	4.13 (67.7)	2700	3000 (207)	38.0 (143.8)	76.0 (56.7)	12 (45.4)	2.41 (39.5)	2700	2300 (159)	25.5 (96.5)	38.0 (28.3)
							14 (53.0)	2.78 (45.6)	2700	2000 (138)	30.0 (113.6)	39.0 (29.1)
3520VQ	21 (79.5)	4.13 (67.7)	2500	3000 (207)	38.0 (143.8)	83.0 (61.9)	5 (18.9)	1.10 (18.0)	2500	3000 (207)	11.0 (41.6)	24.0 (17.9)
	25 (94.6)	4.94 (81.0)	2500	3000 (207)	45.0 (170.3)	101.0 (75.3)	8 (30.3)	1.67 (27.4)	2500	3000 (207)	17.0 (64.4)	35.0 (26.1)
	30 (113.6)	5.91 (96.8)	2500	3000 (207)	55.0 (208.2)	117.5 (87.6)	11 (41.6)	2.22 (36.4)	2500	3000 (207)	23.0 (87.1)	47.5 (35.4)
	35 (132.5)	6.83 (111.9)	2400	3000 (207)	60.0 (227.1)	132.0 (98.4)	12 (45.4)	2.41 (39.5)	2500	2300 (159)	25.5 (96.5)	38.0 (28.3)
	38 (143.8)	7.37 (120.8)	2400	3000 (207)	65.0 (246.1)	140.0 (104.4)	14 (53.0)	2.78 (45.6)	2500	2000 (138)	30.0 (113.6)	39.0 (29.1)
3525VQ	21 (79.5)	4.13 (67.7)	2500	3000 (207)	38.0 (143.8)	83.0 (61.9)						
	25 (94.6)	4.94 (81.0)	2500	3000 (207)	45.0 (170.3)	101.0 (75.3)	12 (45.4)	2.41 (39.5)	2500	3000 (207)	21.0 (79.5)	51.0 (38.0)
	30 (113.6)	5.91 (96.8)	2500	3000 (207)	55.0 (208.2)	117.5 (87.6)	14 (53.0)	2.81 (46.0)	2500	3000 (207)	24.0 (90.8)	58.0 (43.3)
	35 (132.5)	6.83 (111.9)	2400	3000 (207)	60.0 (227.1)	132.0 (98.4)	17 (64.4)	3.39 (55.6)	2500	3000 (207)	31.0 (117.3)	69.0 (51.5)
	38 (143.8)	7.37 (120.8)	2400	3000 (207)	65.0 (246.1)	140.0 (104.4)	21 (79.5)	4.13 (67.7)	2500	3000 (207)	38.0 (143.8)	83.0 (61.9)
4520VQ	42 (159.0)	8.41 (137.8)	2200	2500 (172)	66.5 (251.7)	122.5 (91.3)	5 (18.9)	1.10 (18.0)	2200	3000 (207)	11.0 (41.6)	24.0 (17.9)
	50 (189.2)	9.85 (161.4)	2200	2500 (172)	79.0 (299.0)	141.0 (105.1)	8 (30.3)	1.67 (27.4)	2200	3000 (207)	17.0 (64.4)	35.0 (26.1)
	60 (227.1)	11.75 (192.5)	2200	2500 (172)	96.0 (363.4)	170.0 (126.8)	11 (41.6)	2.22 (36.4)	2200	3000 (207)	23.0 (87.1)	47.5 (35.4)
							12 (45.4)	2.41 (39.5)	2200	2300 (159)	25.5 (96.5)	38.0 (28.3)
							14 (53.0)	2.78 (45.6)	2200	2000 (138)	30.0 (113.6)	39.0 (29.1)
4525VQ	42 (159.0)	8.41 (137.8)	2200	2500 (172)	66.5 (251.7)	122.5 (91.3)	12 (45.4)	2.41 (39.5)	2200	3000 (207)	21.0 (79.5)	51.0 (38.0)
	50 (189.2)	9.85 (161.4)	2200	2500 (172)	79.0 (299.0)	141.0 (105.1)	14 (53.0)	2.81 (46.0)	2200	3000 (207)	24.0 (90.8)	58.0 (43.3)
	60 (227.1)	11.75 (192.5)	2200	2500 (172)	96.0 (363.4)	170.0 (126.8)	17 (64.4)	3.39 (55.6)	2200	3000 (207)	31.0 (117.3)	69.0 (51.5)
							21 (79.5)	4.13 (67.7)	2200	3000 (207)	38.0 (143.8)	83.0 (61.9)
4535VQ	42 (159.0)	8.41 (137.8)	2200	2500 (172)	66.5 (251.7)	122.5 (91.3)	21 (79.5)	4.13 (67.7)	2200	3000 (207)	38.0 (143.8)	83.0 (61.9)
	50 (189.2)	9.85 (161.4)	2200	2500 (172)	79.0 (299.0)	141.0 (105.1)	25 (94.6)	4.94 (81.0)	2200	3000 (207)	45.0 (170.3)	101.0 (75.3)
	60 (227.1)	11.75 (192.5)	2200	2500 (172)	96.0 (363.4)	170.0 (126.8)	30 (113.6)	5.91 (96.8)	2200	3000 (207)	55.0 (208.2)	117.5 (87.6)
							35 (132.5)	6.83 (111.9)	2200	3000 (207)	60.0 (227.1)	132.0 (98.4)
							38 (143.8)	7.37 (120.8)	2200	3000 (207)	65.0 (246.1)	140.0 (104.4)

Values based on using anti-wear type petroleum oil 150 SUS at 100° F (ISO rating of 32 cSt at 38° C) and 0 psi inlet pressure.

V/VQ Series - Double Pump

Model Code Breakdown

2520 - V - 12 - A - 14 - (S) - 1 - CC - 22 - R

Model

2520	4520
3520	4525
3525	4535

Series

V = Industrial Series
VQ = Mobile Series

Shaft End Ring Capacity in U.S. gpm

Rated capacity at 1200 rpm & 100 psi

Frame Size	Code (US gpm)	cm ³ /r	in ³ /r
25V/VQ	10	33	2.01
	12	39	2.47
	14	45	2.78
	17	55	3.39
	21	67	4.13
35V/VQ	25	81	4.94
	30	97	5.91
	35	112	6.83
	38	121	7.37
45V/VQ	42	138	8.41
	45	147	8.95
	50	162	9.85
	60	193	11.75

Port Connections

Code	Inlet	Outlet #1 Shaft End	Outlet #2 Cover End	Pump Series
A	4 Bolt Flg.	4 Bolt Flg.	4 Bolt Flg.	All
C	4 Bolt Flg.	SAE St. Thd.	SAE St. Thd.	2520
E	4 Bolt Flg.	4 Bolt Flg.	SAE St. Thd.	All except 4535

Cover End Ring Capacity in U.S. gpm

Rated capacity at 1200 rpm & 100 psi

Frame Size	Code (US gpm)	cm ³ /r	in ³ /r
**20V/VQ	2	7	0.43
	5	18	1.10
	8	27	1.67
	9	30	1.85
	11	36	2.22
	12	40	2.47
	14	45	2.78
**25V/VQ	10	33	2.01
	12	39	2.47
	14	45	2.78
	17	55	3.39
	21	67	4.13
**35V/VQ	25	81	4.94
	30	97	5.91
	35	112	6.83
	38	121	7.37

Shaft Rotation

R = Omit for Right-hand (Clockwise) Rotation
L = Left-hand (Counter-Clockwise) Rotation

Design

Outlet Port Position

(Viewed from cover end of pump)

All Series except 4535V/VQ

With No. 1 Outlet (shaft end) opposite inlet port

AA = No. 2 Outlet 135° CCW from inlet

AB = No. 2 Outlet 45° CCW from inlet

AC = No. 2 Outlet 45° CW from inlet

AD = No. 2 Outlet 135° CW from inlet

With No. 1 Outlet (shaft end) 90° CCW from inlet port

BA = No. 2 Outlet 135° CCW from inlet

BB = No. 2 Outlet 45° CCW from inlet

BC = No. 2 Outlet 45° CW from inlet

BD = No. 2 Outlet 135° CW from inlet

With No. 1 Outlet (shaft end) inline with inlet port

CA = No. 2 Outlet 135° CCW from inlet

CB = No. 2 Outlet 45° CCW from inlet

CC = No. 2 Outlet 45° CW from inlet

CD = No. 2 Outlet 135° CW from inlet

With No. 1 Outlet (shaft end) 90° CW from inlet port

DA = No. 2 Outlet 135° CCW from inlet

DB = No. 2 Outlet 45° CCW from inlet

DC = No. 2 Outlet 45° CW from inlet

DD = No. 2 Outlet 135° CW from inlet

Series 4535V/VQ

With No. 1 Outlet (shaft end) opposite inlet port

AA = No. 2 Outlet opposite of inlet

AB = No. 2 Outlet 90° CCW from inlet

AC = No. 2 Outlet inline with inlet

AD = No. 2 Outlet 90° CW from inlet

With No. 1 Outlet (shaft end) 90° CCW from inlet port

BA = No. 2 Outlet opposite of inlet

BB = No. 2 Outlet 90° CCW from inlet

BC = No. 2 Outlet inline with inlet

BD = No. 2 Outlet 90° CW from inlet

With No. 1 Outlet (shaft end) inline with inlet port

CA = No. 2 Outlet opposite of inlet

CB = No. 2 Outlet 90° CCW from inlet

CC = No. 2 Outlet inline with inlet

CD = No. 2 Outlet 90° CW from inlet

With No. 1 Outlet (shaft end) 90° CW from inlet port

DA = No. 2 Outlet opposite of inlet

DB = No. 2 Outlet 90° CCW from inlet

DC = No. 2 Outlet inline with inlet

DD = No. 2 Outlet 90° CW from inlet

Mounting & Shaft Seal Assembly

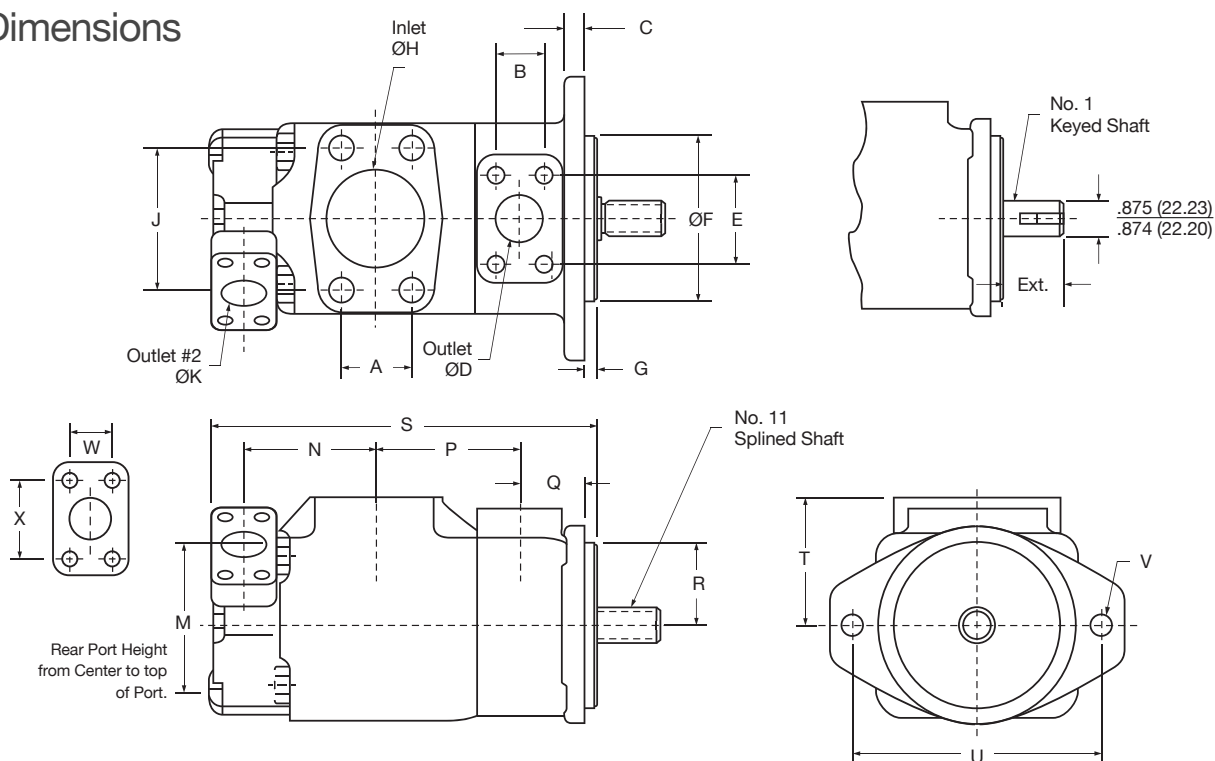
S = Flange mount and double shaft seal
Omit for flange mount with single shaft seal

Shaft

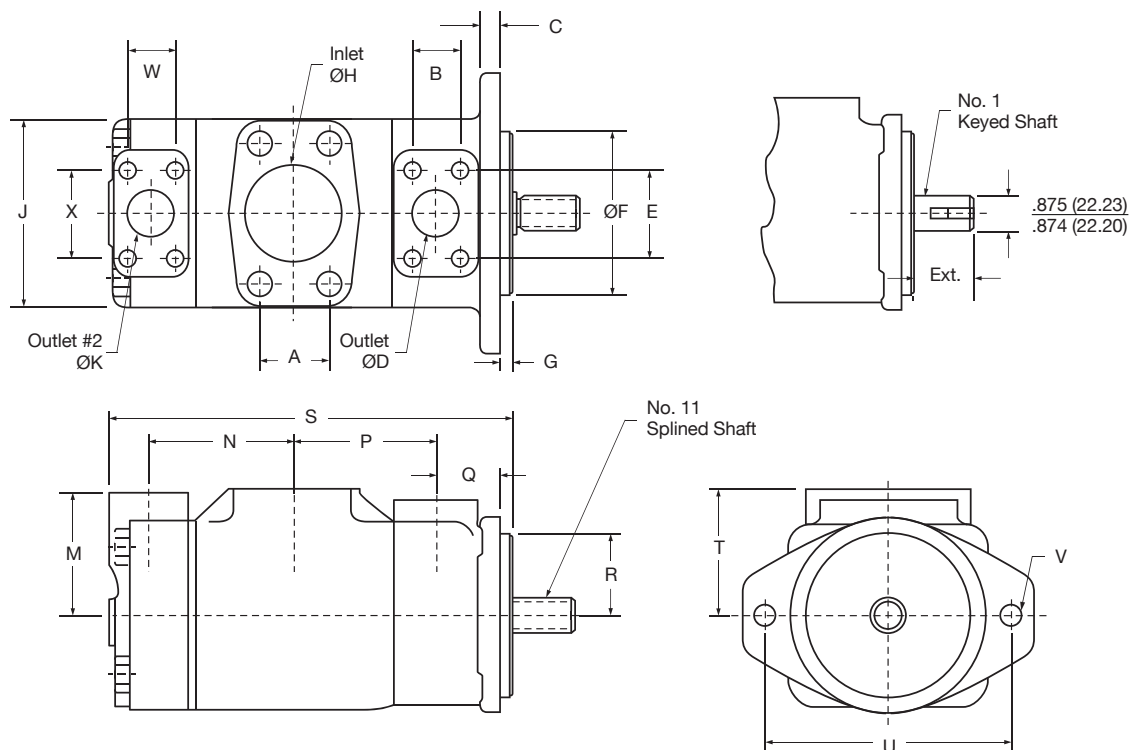
1 = Straight Keyed
11 = Splined
86 = Keyed (Heavy-Duty)
(Other Shafts Available)

V/VQ Series - Double Pump

Dimensions



**2520V/2520VQ, 3520V/3520VQ, 3525V/3525VQ
4520V/4520VQ, 4525V/4525VQ**



4535V/4535VQ

MOVICONTROL

V/VQ Series - Double Pump

Dimensions Chart

	2520	3520	3525	4520	4525	4535
A	2.00 (50.8)	2.44 (62.0)	2.44 (62.0)	2.75 (69.9)	2.75 (69.9)	3.06 (77.7)
B	1.03 (26.2)	1.19 (30.2)	1.19 (30.2)	1.41 (35.8)	1.41 (35.8)	1.41 (35.8)
C	0.50 (12.7)	0.62 (15.7)	0.62 (15.7)	0.62 (15.7)	0.62 (15.7)	0.62 (15.7)
D	1.00 (25.4)	1.25 (31.8)	1.25 (31.8)	1.50 (38.1)	1.50 (38.1)	1.50 (38.1)
E	2.06 (52.3)	2.31 (58.7)	2.31 (58.7)	2.75 (69.9)	2.75 (69.9)	2.75 (69.9)
F	4.0-3.9 (101.6-99.1)	5.0-4.9 (127-124.5)	5.0-4.9 (127-124.5)	5.0-4.9 (127-124.5)	5.0-4.9 (127-124.5)	5.0-4.9 (127-124.5)
G	0.38 (9.65)	0.38 (9.65)	0.38 (9.65)	0.50 (12.7)	0.50 (12.7)	0.50 (12.7)
H	2.50 (63.5)	3.00 (76.2)	3.00 (76.2)	3.50 (88.9)	3.50 (88.9)	4.00 (101.6)
J	3.50 (88.9)	4.19 (106.4)	4.19 (106.4)	4.75 (120.7)	4.75 (120.7)	5.13 (130.3)
K	0.75 (19.1)	0.75 (19.1)	1.00 (25.4)	0.75 (19.1)	1.00 (25.4)	1.25 (31.8)
M	3.00 (76.2)	3.00 (76.2)	2.94 (74.7)	3.00 (76.2)	2.94 (74.7)	4.00 (101.6)
N	3.47 (88.1)	3.92 (99.6)	4.31 (109.5)	4.72 (119.9)	5.35 (135.9)	5.84 (148.3)
P	4.00 (101.6)	4.50 (114.3)	4.50 (114.3)	4.70 (119.4)	4.70 (119.4)	5.25 (133.4)
Q	1.50 (38.1)	1.50 (38.1)	1.50 (38.1)	1.69 (43.0)	1.69 (43.0)	1.69 (43.0)
R	3.00 (76.2)	3.25 (82.6)	3.25 (82.6)	3.69 (93.7)	3.69 (93.7)	3.69 (93.7)
S	9.81 (249.2)	10.8 (274.3)	9.81 (249.2)	11.95 (303.5)	12.8 (325.1)	13.9 (353.1)
T	3.38 (85.9)	3.50 (88.9)	3.50 (88.9)	4.03 (102.4)	4.03 (102.4)	4.03 (102.4)
U	5.75 (146.1)	7.13 (181.1)	7.13 (181.1)	7.13 (181.1)	7.13 (181.1)	7.13 (181.1)
V	0.56 (14.2)	0.69 (17.5)	0.69 (17.5)	0.69 (17.5)	0.69 (17.5)	0.69 (17.5)
W	0.88 (22.4)	0.88 (22.4)	1.03 (26.2)	0.88 (22.4)	1.03 (26.2)	1.19 (30.2)
X	1.88 (47.8)	1.88 (47.8)	2.06 (52.3)	1.88 (47.8)	2.06 (52.3)	2.31 (58.7)

Dimensions are in inches (millimeters).

V/VQ Series

Maximum Torque Loading

Single Pumps

All listed shafts are satisfactory up to maximum pressures in listed in the corresponding pump/series' operating data.

Double Pumps

Where both cartridges are to be on-load together, check that the sum of their separate torques do not exceed the torque limit of the desired shaft.

Single Thru-drive Pumps

Where both the thru-drive pump and its rear-mounted pump are to be on-load together, check that the sum of the torques generated will never exceed the torque limit in shaft torque tables below. Also check that the torque required on the rear-mounted pump never exceeds the thru-drive torque limit in tables below.

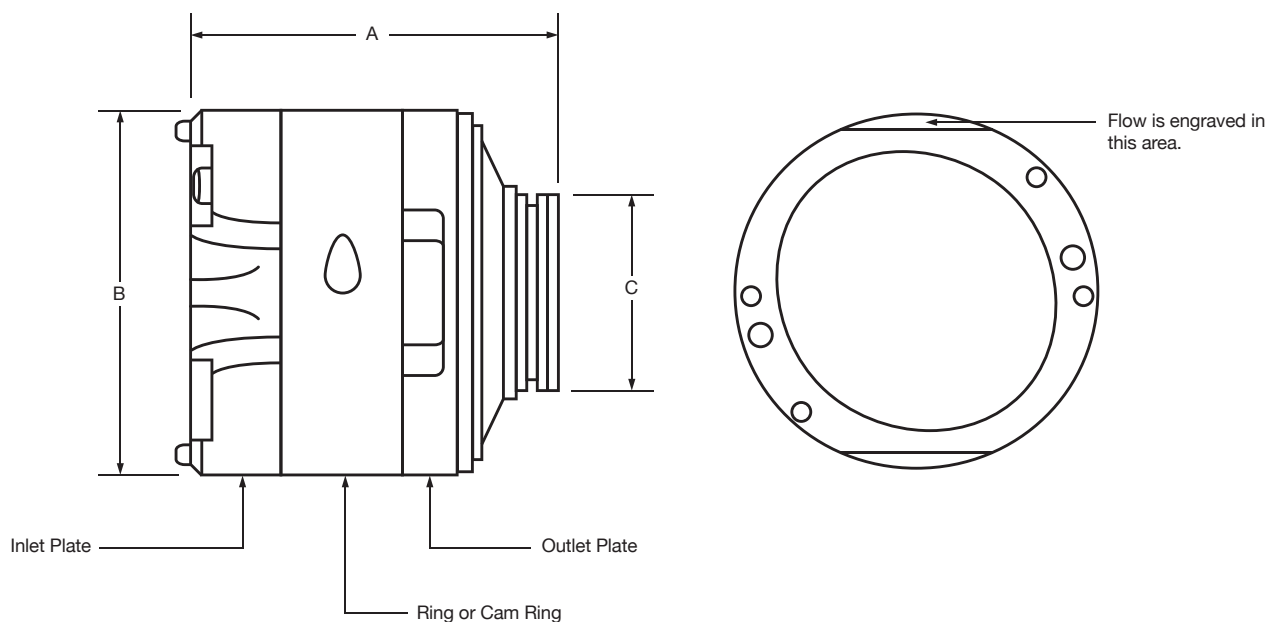
Shaft Torque Ratings

PUMP	SHAFT NUMBER	MAXIMUM INPUT TORQUE NM (LB. IN.)
25VQ or 25**VQ	1	316 (2800)
	86	402 (3560)
	11	316 (2800)
	123	316 (2800)
	203	402 (3560)
	297	344 (3040)
35VQ or 35**VQ	1	402 (3560)
	11	791 (7000)
	86	659 (5830)
	123	791 (7000)
	203	659 (5830)
	297	791 (7000)
45VQ or 45**VQ	1	402 (3560)
	11	1017 (9000)
	86	982 (8690)
	130	1017 (9000)
	203	982 (8690)
	297	1017 (9000)

Example: A 3525VQ38A17 pump operating at 175 bar (2500 psi) front section and 140 bar (2000 psi) rear section will require over 452 Nm (4000 lb. in.) input torque. Therefore, all listed shafts are acceptable except No. 1.

Pump & Cartridge Identification

Cartridge Kit Dimensions and Flow



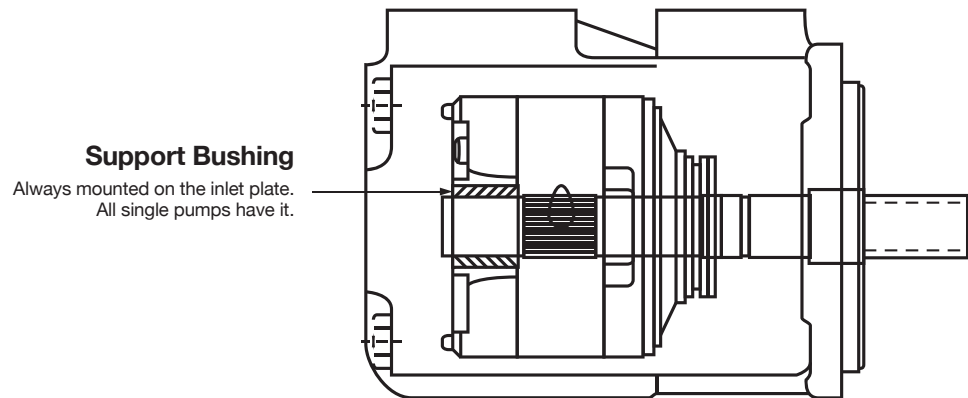
DIMS.	20V SERIES	25V SERIES	30V SERIES	35V SERIES	45V SERIES
A	3.22 (81.8)	3.92 (99.6)	4.35 (110.5)	4.66 (118.4)	5.53 (140.5)
B	3.25 (82.6)	3.81 (96.8)	3.81 (96.8)	4.50 (114.3)	5.25 (133.4)
C	1.86 (47.2)	2.05 (52.1)	2.05 (52.1)	2.84 (72.1)	3.16 (80.3)
Weight	5.07 lbs (2.3 kgs)	8.34 lbs (3.8 kgs)	9.04 lbs (4.1 kgs)	14.11 lbs (6.4 kgs)	22.49 lbs (10.2 kgs)
Flow (in gal. at 1200 rpm) (lpm)	2 (7.6)	8 (30.3)	24 (90.8)	21 (79.5)	42 (159.0)
	5 (18.9)	12 (45.4)	28 (106.0)	25 (94.6)	47 (177.9)
	8 (30.3)	14 (53.0)		30 (113.6)	50 (189.2)
	9 (34.1)	17 (64.4)		35 (132.4)	57 (215.8)
	11 (41.6)	19 (72.0)		38 (143.8)	60 (227.1)
	12 (45.4)	21 (79.5)			
	14 (53.0)				

Pump & Cartridge Identification

Pump Rotation

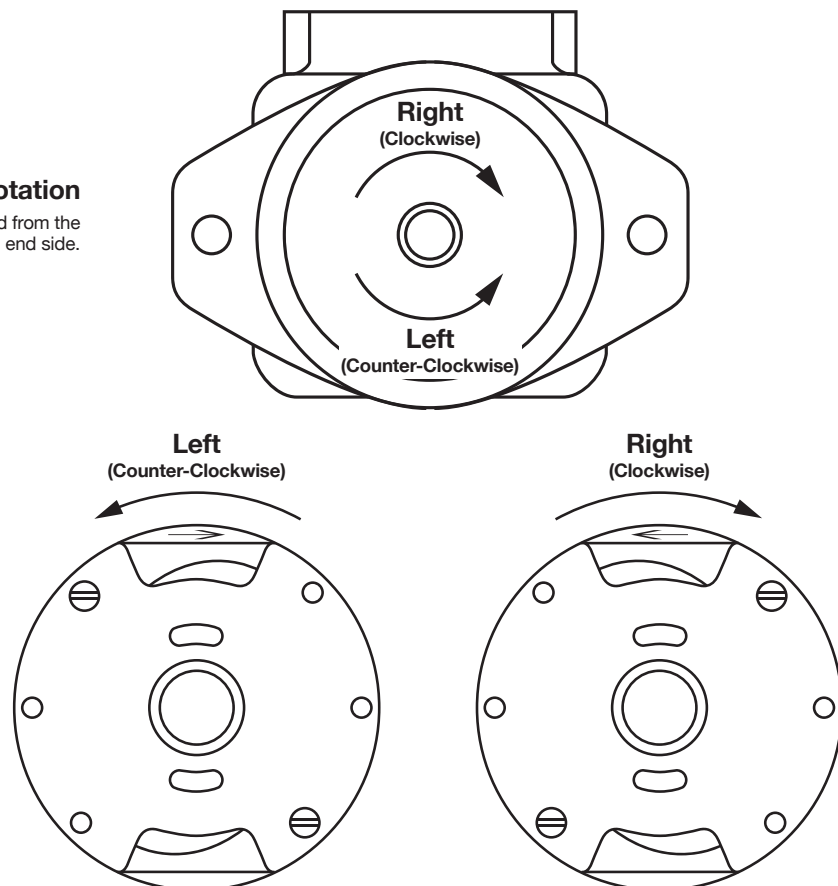
To determine pump rotation look at it from the shaft end side. So, if clockwise, it is right hand rotation, if counter-clockwise, it is left hand rotation.

When taking out the cartridge and putting it on to the outlet plate, take into account that rotation is seen the other way round; an arrow engraved in the ring or cam ring shows the real turning sense/direction.



Pump Rotation

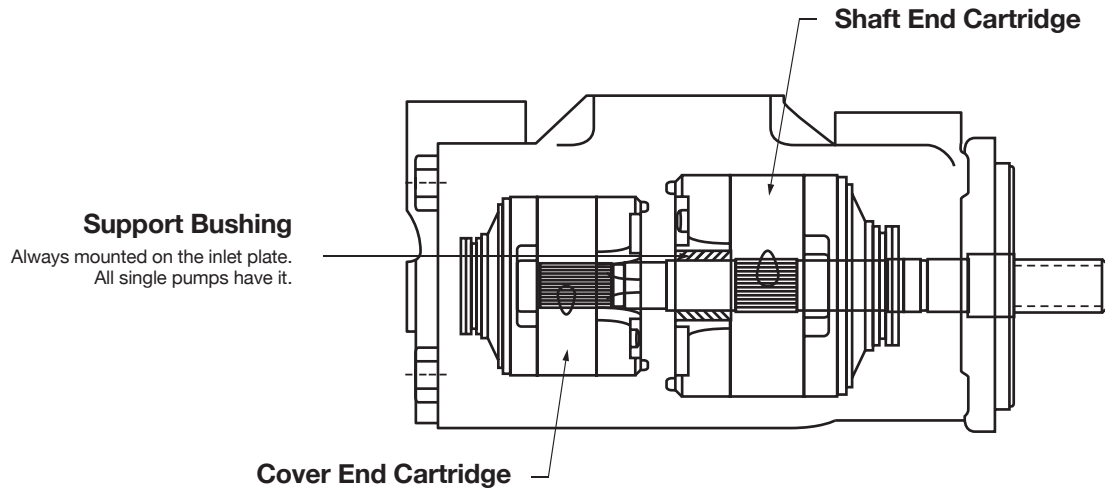
Always viewed from the shaft end side.



Pump & Cartridge Identification

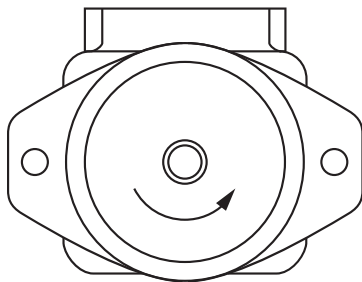
Pump Rotation

A double pump is setup so that the 2 cartridges are opposite to each other, therefore when putting them on the outlet plate, they will apparently have opposite turning sense. The arrow in the ring shows the correct rotation. (Pump and cover end cartridge rotation always coincide.) See diagrams below.

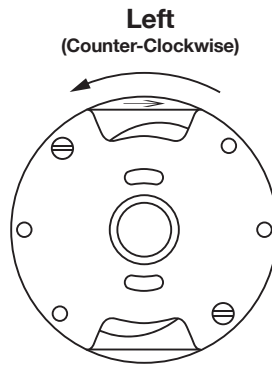


Pump Rotation

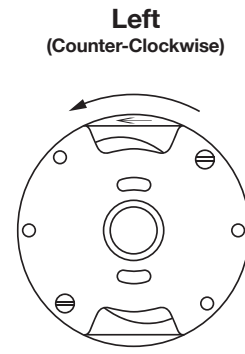
Always viewed from the shaft end side.



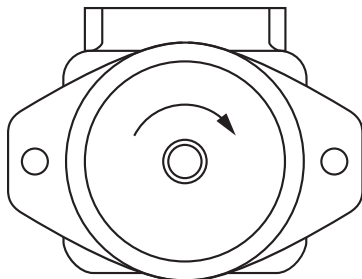
Left
(Counter-Clockwise)



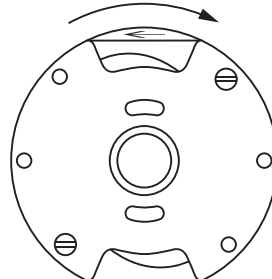
Shaft End Cartridge



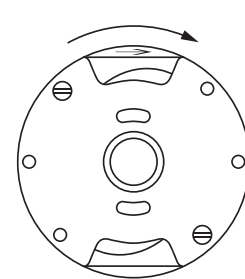
Cover End Cartridge



Right
(Clockwise)



Right
(Clockwise)



Right
(Clockwise)

Fabricante/Fornecedor: Metaris/Hmc/Vista