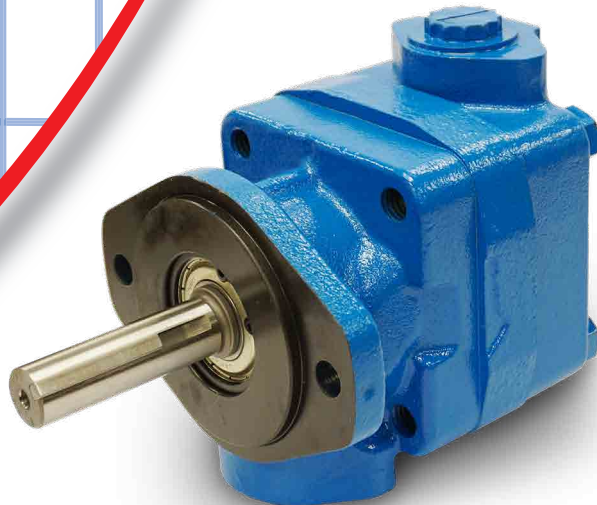




# V Series VANE PUMP





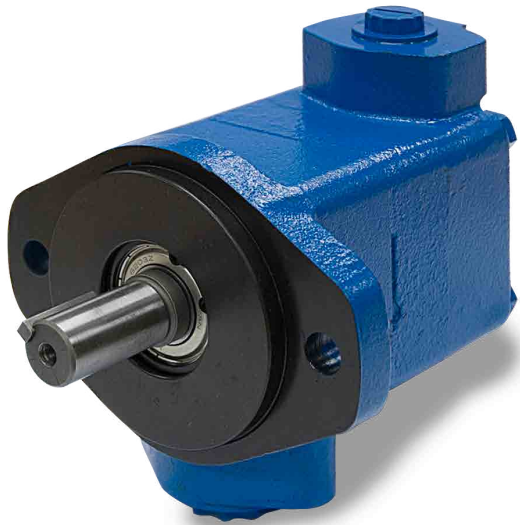
# INDEX - Vane Pumps



<b>AV10 &amp; AV20 - Single Pump</b> .....	<b>4</b>
Ordering Information .....	5
Installation Dimensions .....	6
Shaft Dimensions .....	7
<b>AVP -**VQ - Single Pump</b> .....	<b>8</b>
Ordering Information .....	9
Installation Dimensions .....	10
Installation Dimensions .....	11
Shaft Dimensions .....	12
Shaft Dimensions .....	13
<b>AVPD-**VQ - Double Pump</b> .....	<b>14</b>
Ordering Information .....	15
Installation Dimensions .....	16
Installation Dimensions .....	17
Installation Dimensions .....	18
Shaft Dimensions .....	19
<b>AVP-**V - Single Pump</b> .....	<b>20</b>
Ordering Information .....	21
Installation Dimensions .....	22
Installation Dimensions .....	23
Shaft Dimensions .....	24
Shaft Dimensions .....	25
<b>AVPD-***V - Double Pump</b> .....	<b>26</b>
Ordering Information .....	27
Installation Dimensions .....	28
Shaft Dimensions .....	29
<b>AVP-**V Series Cartridge</b> .....	<b>30</b>
<b>AVP-**VQ Series Cartridge</b> .....	<b>31</b>



# AV10 & AV20 - Single Pump



## Features

The AV10 & AV20 series single vane pumps are excellent for medium to low pressure mobile and industrial applications. The hydraulic balancing structure and design provides more stable performance and a longer life span by minimizing the pressure on the stator from the vane. This is achieved by incorporating diametrically opposed inlet and outlet pressure chambers. The 12 vane system provides low amplitude flow pulsation for quiet operation, ideal for industrial applications. Different outlet position options allow flexibility in various applications.

Technical Data - Operating Specifications							
Model Series	Delivery (gpm) at 1200 r/min 7 bar (100 psi)	Displacement		Max Speed	Max Pressure		Weight kg (lbs)
		cm <sup>3</sup> /rev	in <sup>3</sup> /rev	r/min	bar	psi	
AV10	1	3.3	0.20	4800	172	2500	4.5 - 6.8 (10 - 15)
	2	6.6	0.40	4500	172	2500	
	3	9.8	0.60	4000	172	2500	
	4	13.1	0.80	3400	172	2500	
	5	16.4	1.00	3200	172	2500	
	6	19.5	1.19	3000	152	2200	
	7	22.8	1.39	2800	138	2000	
AV20	6	19.5	1.19	3400	172	2500	7.3 - 8.2 (16 - 18)
	7	22.8	1.39	3000	172	2500	
	8	26.6	1.62	2800	172	2500	
	9	29.7	1.81	2800	172	2500	
	10	30.0	1.83	2800	172	2500	
	11	36.4	2.22	2500	172	2500	
	12	39.0	2.38	2400	152	2200	
	13	42.5	2.59	2400	152	2200	

# Ordering Information



<b>AV10</b>	<b>-</b>	<b>P</b>	<b>1</b>	<b>P</b>	<b>1</b>	<b>C</b>	<b>20</b>	<b>R</b>	<b>3</b>
1	2	3	4	5	6	7	8	9	10

1. Model Series	
	AV10
	AV20

6. Shaft Type	
1	Straight Keyed (Standard)
11	9 Tooth Splined for AV10 Series 11 Tooth Splined for AV20 Series

2. Mounting	
Omit	2 Bolt Flange (Standard)

7. Outlet Port Position (Viewed from the cover end of the pump)	
A	Opposite Inlet
B	90° CCW from Inlet
C	Inline With Inlet (Standard)
D	90° CW from Inlet

3. Inlet Port Connection		
	AV10	AV20
P	1" NPT	1-1/4" NPT
S	1-5/16-12 UN-2B	1-5/8-12 UN-2B

8. Design Number	
10	AV20 series
20	AV10 series

4. Displacement (gpm) At 1200 rpm & 100 psi		
	AV10	AV20
	1	6
	2	7
	3	8
	4	9
	5	10
	6	11
	7	12
		13

9. Rotation (View from shaft end of Pump)	
R	Right Hand Rotation
L	Left Hand Rotation

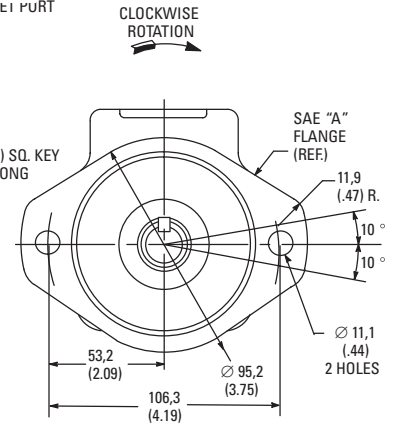
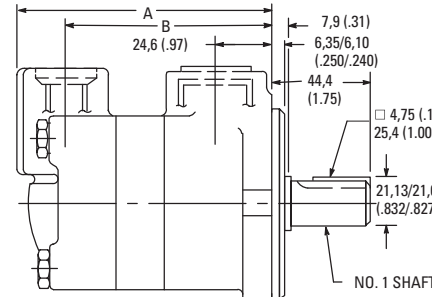
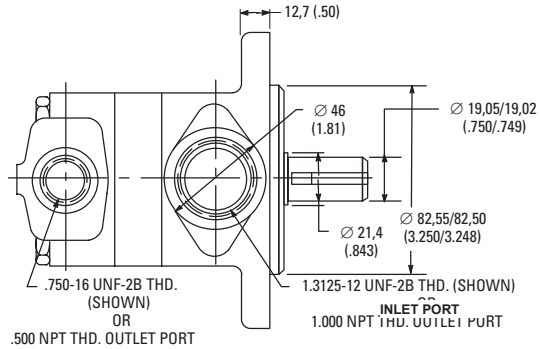
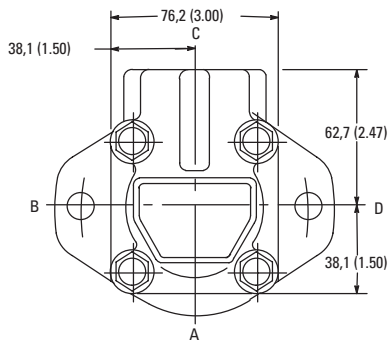
5. Outlet Port Connections		
	AV10	AV20
P	1/2" NPT	3/4" NPT
S	3/4-16 UNF-2B	1-1/16-12 UN-2B

10. Seals	
3	Viton (Standard)
OMIT	Nitrile

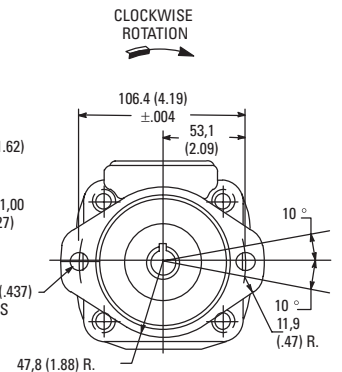
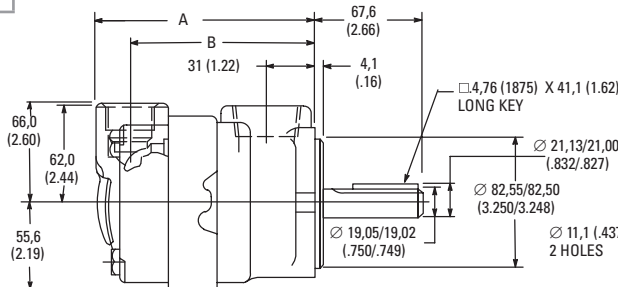
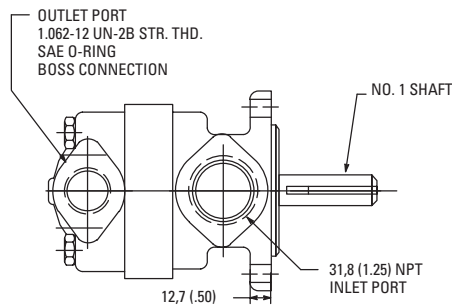
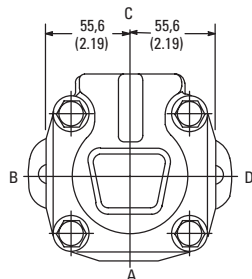


# Installation Dimensions

AV10				
Delivery at 1200 rpm & 100 psi	Dimensions			
	A		B	
	mm	in	mm	in
1 USgpm	115.6	4.55	91.9	3.62
2 USgpm	115.6	4.55	91.9	3.62
3 USgpm	115.6	4.55	91.9	3.62
4 USgpm	121.9	4.80	98.3	3.87
5 USgpm	121.9	4.80	98.3	3.87
6 USgpm	127.0	5.00	103.4	4.07
7 USgpm	127.0	5.00	103.4	4.07



AV20				
Delivery at 1200 rpm & 100 psi	Dimensions			
	A		B	
	mm	in	mm	in
6 USgpm	125.2	4.93	102.1	4.02
7 USgpm	131.6	5.18	108.4	4.27
8 USgpm	131.6	5.18	108.4	4.27
9 USgpm	131.6	5.18	108.4	4.27
10 USgpm	136.6	5.38	113.5	4.47
11 USgpm	136.6	5.38	113.5	4.47
12 USgpm	140.2	5.52	117.1	4.61
13 USgpm	140.2	5.52	117.1	4.61



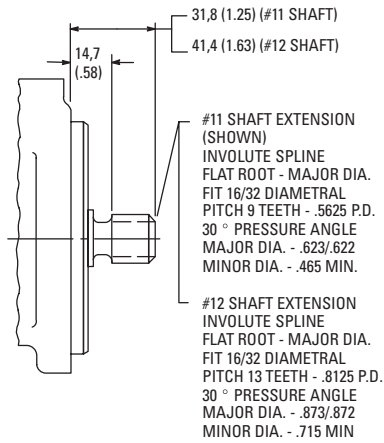
Dimensions in millimeters (inches)

# Shaft Dimensions



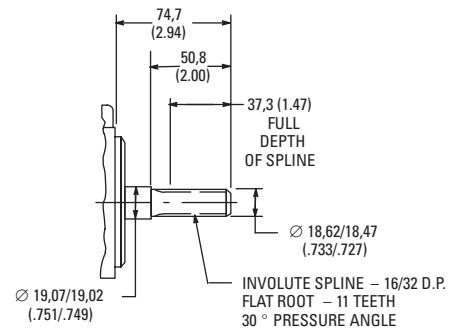
## AV10 Series

### #11 - Splined Shaft



## AV20 Series

### #11 - Splined Shaft



Dimensions in millimeters (inches)



# AVP -\*\*VQ - Single Pump



## Features

Anfield Series AVP-\*\*VQ fixed displacement single pumps have an integral hydraulic balancing vane design for high pressure operation, long service life and a low noise level. They are perfect for mobile applications, for their compact design and ease of service.

Technical Data - Operating Specifications								
Model Series	Delivery (gpm) at 1200 r/min 7 bar (100 psi)	Displacement		Min Speed	Max Speed	Max Pressure		Weight kg (lbs)
		cm <sup>3</sup> /rev	in <sup>3</sup> /rev	r/min	r/min	bar	psi	
AVP-20VQ	2	7	0.43	600	2700	210	3000	11.8 (26)
	3	10	0.61	600	2700	210	3000	
	4	13	0.79	600	2700	210	3000	
	5	18.0	1.10	600	2700	210	3000	
	6	19	1.16	600	2700	210	3000	
	7	22	1.40	600	2700	210	3000	
	8	27.4	1.67	600	2700	210	3000	
	11	36.4	2.22	600	2700	210	3000	
	12	39.5	2.41	600	2700	160	2300	
AVP-25VQ	14	45.9	2.80	600	2700	140	2000	14.5 (32)
	10	32.0	1.95	600	2700	210	3000	
	12	40.2	2.45	600	2700	210	3000	
	14	45.4	2.77	600	2700	210	3000	
	15	47.0	2.89	600	2500	210	3000	
	17	55.2	3.37	600	2500	210	3000	
	19	60	3.66	600	2500	210	3000	
	21	67.5	4.12	600	2500	210	3000	
AVP-35VQ	25	79.2	4.83	600	2500	210	3000	22.7 (50)
	21	67	4.13	600	2500	210	3000	
	25	81	4.94	600	2500	210	3000	
	30	97.7	5.96	600	2500	210	3000	
	32	101	6.16	600	2500	210	3000	
AVP-45VQ	35	112.8	6.88	600	2400	210	3000	34.1 (75)
	38	121.6	7.42	600	2400	210	3000	
	42	138.7	8.46	600	2200	175	2400	
	45	143.0	8.72	600	2200	175	2200	
	50	162.3	9.70	600	2200	175	2200	
	57	181	11.05	600	2200	175	2200	
	60	193.4	11.80	600	2200	175	2200	
	66	210	12.81	600	2200	175	2200	
	75	237	14.46	600	2200	140	2000	



# Ordering Information



<b>AVP-20VQ</b>	<b>2</b>	<b>A</b>	<b>F</b>	<b>1</b>	<b>C</b>	<b>22</b>	<b>R</b>	<b>-</b>
1	2	3	4	5	6	7	8	9

<b>1. Model Series</b>
AVP-20VQ
AVP-25VQ
AVP-35VQ
AVP-45VQ

<b>5. Shaft Type</b>
<b>1</b> Straight Keyed (Standard)
<b>11</b> Splined (AVP-25VQ, AVP-35VQ, AVP-45VQ Only)
<b>86</b> Straight keyed, heavy duty (AVP-25VQ, AVP-35VQ, AVP-45VQ Only)
<b>151</b> Splined (AVP-20VQ Only)

<b>2. Pump Displacement (gpm)</b> At 1200 RPM, 100 PSI			
AVP-20VQ	AVP-25VQ	AVP-35VQ	AVP-45VQ
<b>2</b>	<b>10</b>	<b>21</b>	<b>42</b>
<b>3</b>	<b>12</b>	<b>25</b>	<b>45</b>
<b>4</b>	<b>14</b>	<b>30</b>	<b>50</b>
<b>5</b>	<b>15</b>	<b>32</b>	<b>57</b>
<b>6</b>	<b>17</b>	<b>35</b>	<b>60</b>
<b>7</b>	<b>19</b>	<b>38</b>	<b>66</b>
<b>8</b>	<b>21</b>	<b>45</b>	<b>75</b>
<b>9</b>	<b>25</b>		
<b>10</b>			
<b>11</b>			
<b>12</b>			
<b>14</b>			

<b>6. Outlet Port Position</b> (Viewed from the cover end of the pump)	
<b>A</b>	Opposite Inlet port
<b>B</b>	90° CCW From Inlet
<b>C</b>	Inline With Inlet (Standard)
<b>D</b>	90° CW From Inlet

<b>3. Port Connection</b>	
<b>A</b>	SAE 4 - Bolt Flange (Inlet & Outlet)

<b>7. Design Number</b>	
<b>20</b>	AVP-25VQ, AVP-35VQ, AVP-45VQ
<b>30</b>	AVP-20VQ

<b>8. Rotation</b>	
<b>R</b>	Right Hand Rotation
<b>L</b>	Left Hand Rotation

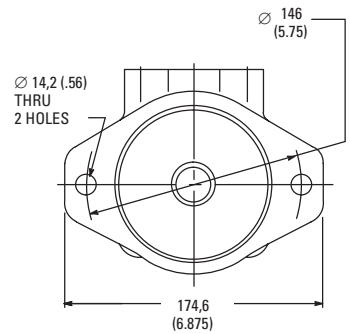
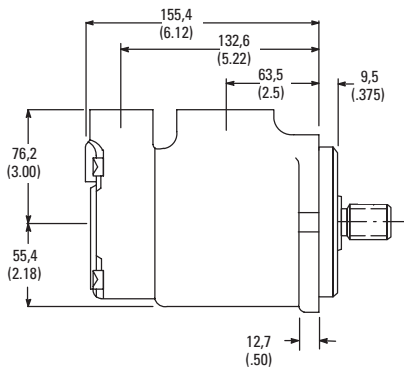
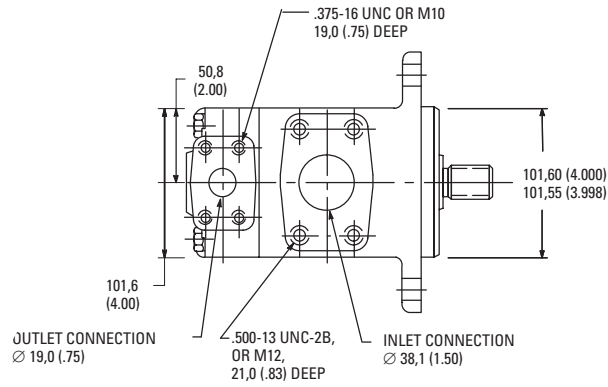
<b>4. Mounting &amp; Shaft Seal Assembly</b>	
<b>F</b>	Foot mount with single shaft seal
<b>Omit</b>	Flange mount with single shaft seal

<b>9. Seals</b>	
<b>Omit</b>	Nitrile (Standard)
<b>3</b>	Viton

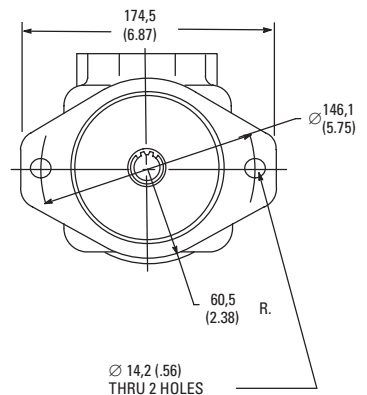
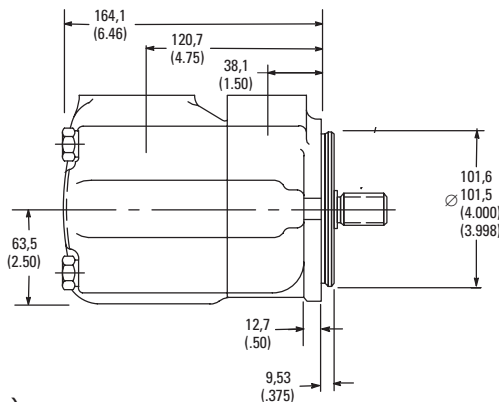
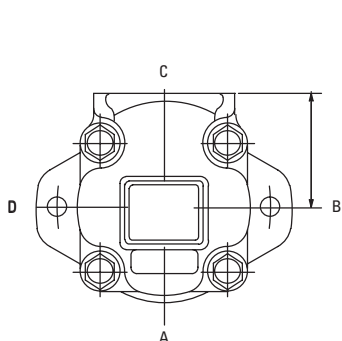
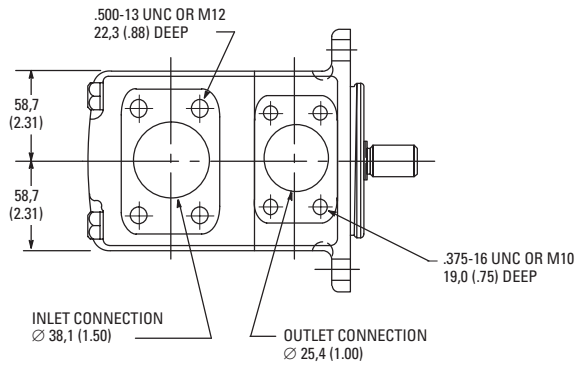


# Installation Dimensions

## AVP-20VQ



## AVP-25VQ

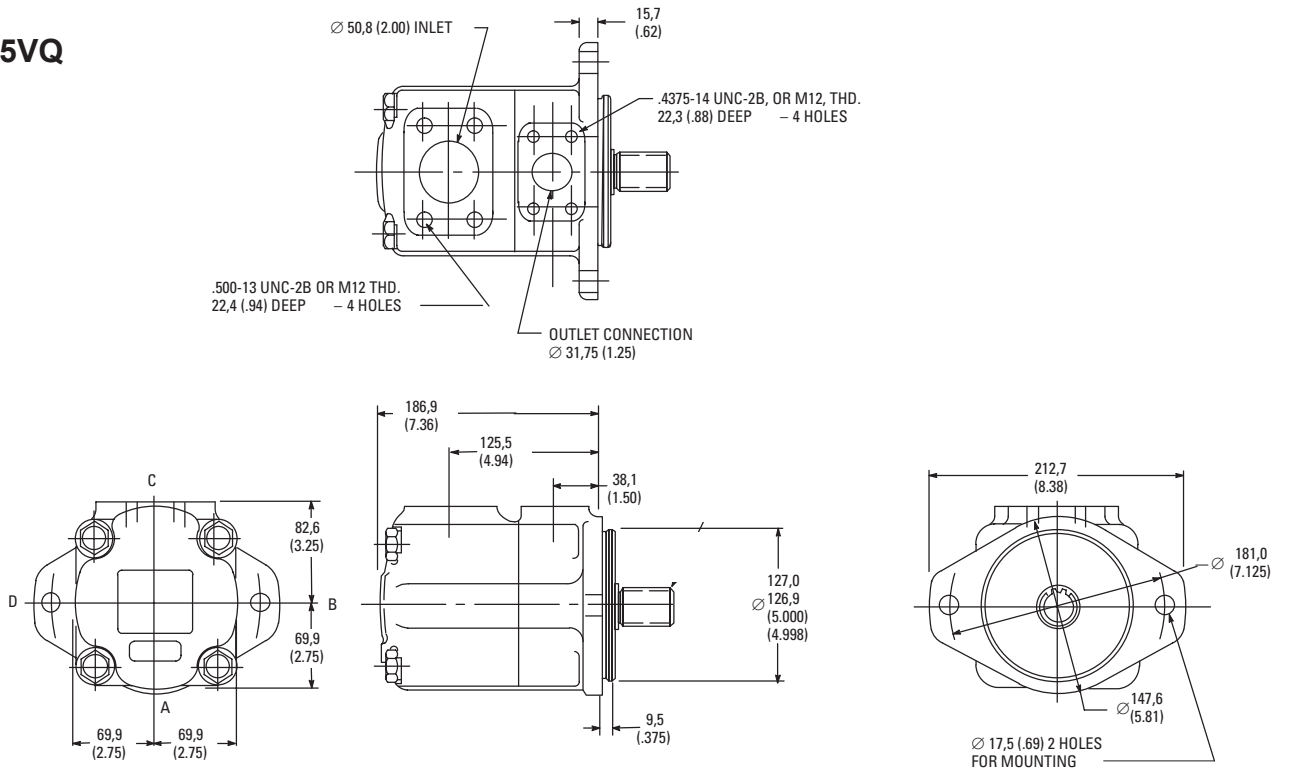


Dimensions in millimeters (inches)

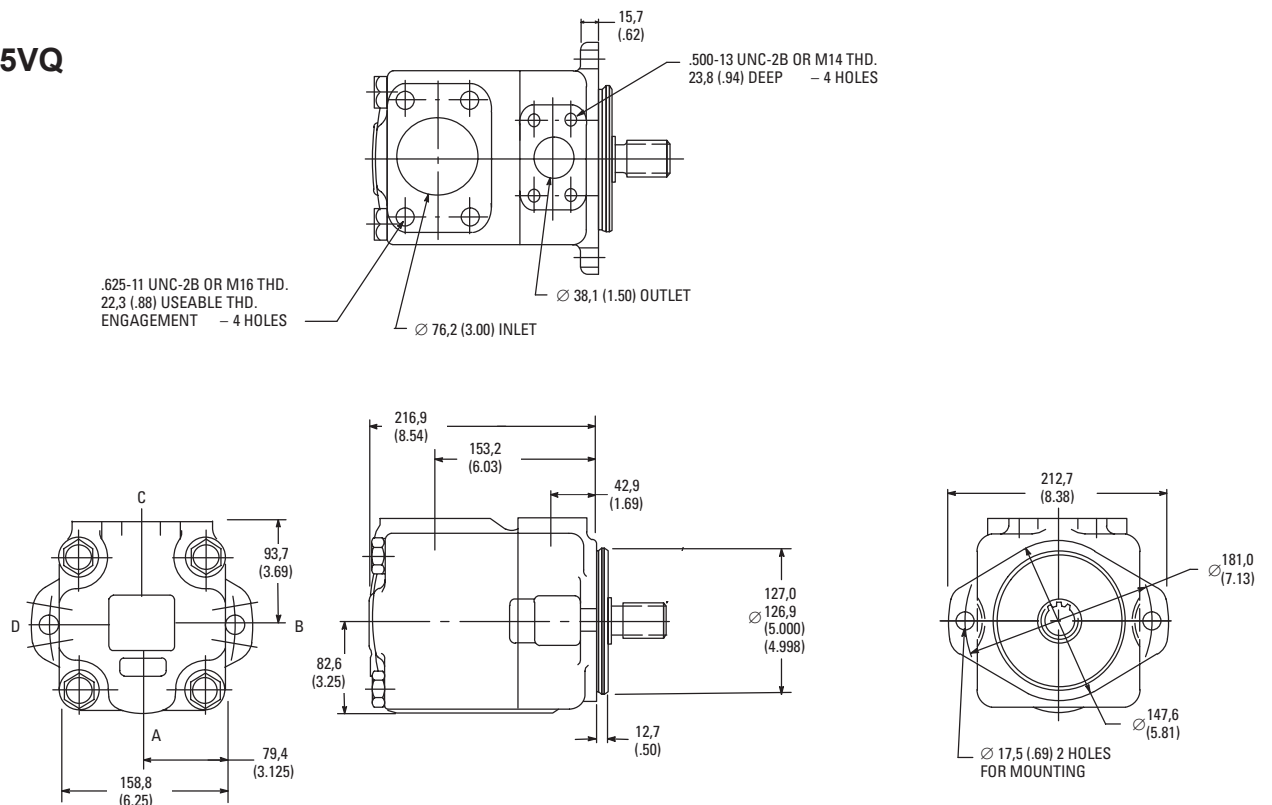
# Installation Dimensions



## AVP-35VQ



## AVP-45VQ

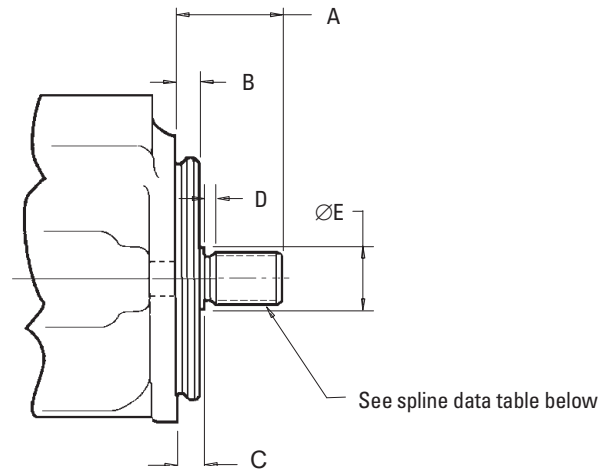


Dimensions in millimeters (inches)



# Shaft Dimensions

## Splined Shafts



Dimensions in millimeters (inches)

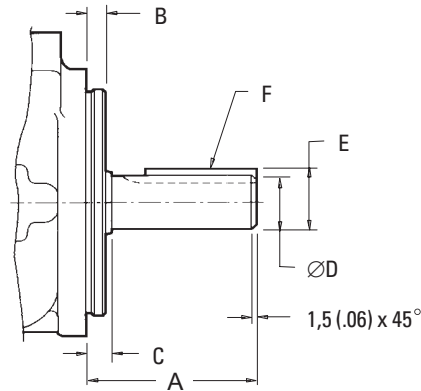
Shaft Dimensions												
Model	Shaft Code	A		B		C		D		E		Spline Data
		in	mm	in	mm	in	mm	in	mm	in	mm	
AVP-20VQ	151	1.62	44.1	0.375	9.53	0.468	11.9	0.16	4.1	1.09	27.8	A
AVP-25VQ	11	1.75	44.5	0.375	9.53	0.437	11.1	0.16	4.1	1.09	27.8	A
AVP-35VQ	11	2.31	58.7	0.375	9.53	0.437	11.1	0.25	6.4	1.38	35.1	D
AVP-45VQ	11	2.44	61.9	0.500	12.70	0.565	14.3	0.38	9.7	1.56	39.6	D

Spline Data Table - Involute splines from above chart									
Model	Number of Teeth	Pitch	Major Diameter		Former Diameter		Minor Diameter		Minor Diameter
			in	mm	in	mm	in	mm	
A	13	16/32	0.873 0.872	22.17 22.15	0.749	19.03	0.733 0.722	18.63 18.35	Major diameter fit
D	14	12/24	1.248 1.247	31.70 31.67	1.071	27.20	1.062 1.049	26.99 26.64	Major diameter fit

# Shaft Dimensions



## Straight Key Shafts



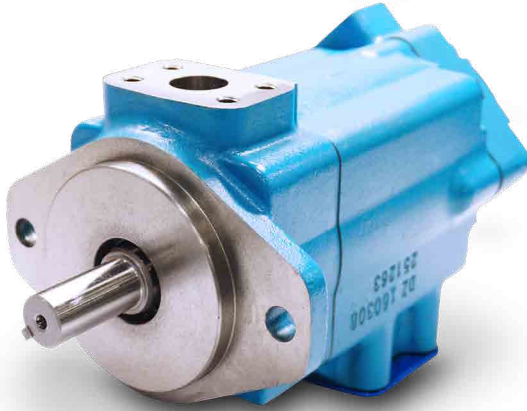
Dimensions in millimeters (inches)

### Shaft Dimensions

Model	Shaft Code	A		B		C		ØD		E		F key width x length	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
AVP-20VQ	1	2.31	58.7	0.375	9.53	0.476	12.1	0.875 0.874	22.23 22.20	0.996 0.961	24.5 24.4	0.187 x 1.25	4.76 x 32
AVP-25VQ	1	2.31	58.7	0.375	9.53	0.435	11.1	0.875 0.874	22.23 22.20	0.996 0.961	24.5 24.4	0.187 x 1.25	4.76 x 32
	86	3.06	77.7	0.375	9.53	0.435	11.1	0.999 0.998	25.37 25.35	1.11 1.10	28.3 28.1	0.250 x 2.00	6.36 x 50.8
AVP-35VQ	1	2.88	73.2	0.375	9.53	0.435	11.1	1.250 1.248	31.75 31.70	1.39 1.38	35.36 35.10	0.313 x 1.50	7.94 x 38.1
	86	3.38	85.9	0.375	9.53	0.435	11.1	1.374 1.373	34.90 34.87	1.52 1.51	38.6 38.3	0.313 x 2.13	7.94 x 54.0
AVP-45VQ	1	2.44	62.0	0.500	12.70	0.560	14.22	1.250 1.248	31.75 31.70	1.39 1.38	35.36 35.10	0.313 x 1.12	7.94 x 28.5
	86	3.44	87.4	0.500	12.70	0.560	14.22	1.499 1.498	38.07 38.05	1.67 1.66	42.4 42.1	0.376 x 2.00	9.54 x 50.8



# AVPD-\*\*VQ - Double Pump



## Features

Anfield Series AVPD-\*\*VQ fixed displacement double pumps have an integral hydraulic balancing vane design for high pressure operation, long service life and a low noise level. They are perfect for mobile applications, for their compact design and ease of service.

Technical Data - Operating Specifications																	
Model Series	Delivery (gpm) at 1200 r/min 7 bar (100 psi)	Displacement		Max Speed	Max Pressure		Typical delivery at max speed & pressure		Typical input at max. speed & pressure		Delivery (gpm) at 1200 r/min 7 bar (100 psi)	Displacement		Max	Max	Weight kg (lb)	
		cm <sup>3</sup> /rev	in <sup>3</sup> /rev		r/min	bar	psi	L/min	gpm	kW		hp	cm <sup>3</sup> /r				in <sup>3</sup> /r
AVPD-2520VQ	12	40.2	2.45	2700	210	3000	88.5	23	41.0	55	5	18.0	1.10	2700	210	3000	20.5 (45)
	14	45.5	2.77	2700	210	3000	103.8	27	46.6	62.5	8	27.4	1.67	2700	210	3000	
	17	55.2	3.37	2500	210	3000	119.2	31	51.8	69.5	11	36.4	2.22	2700	210	3000	
	21	67.7	4.12	2500	210	3000	146.2	38	61.9	83	12	39.5	2.41	2700	160	2300	
											14	45.9	2.80	2700	140	2000	
AVPD-3520VQ	25	81.6	4.98	2500	210	3000	173.1	45	75.3	101	5	18.0	1.10	2500	210	3000	34.0 (75)
	30	97.7	5.96	2500	210	3000	211.5	55	87.7	117.5	8	27.4	1.67	2500	210	3000	
	35	112.8	6.88	2400	210	3000	230.8	60	98.5	132	11	36.4	2.22	2500	210	3000	
	38	121.6	7.42	2400	210	3000	250.0	65	104.4	140	12	39.5	2.41	2500	160	2300	
											14	45.9	2.80	2500	140	2000	
AVPD-3525VQ	25	87.6	4.98	2500	210	3000	173.1	45	75.3	101	12	40.2	2.45	2500	210	3000	34.5 (76)
	30	97.7	5.96	2500	210	3000	211.5	55	87.7	117.5	14	45.4	2.77	2500	210	3000	
	35	112.8	6.88	2400	210	3000	230.8	60	98.5	132	17	55.2	3.37	2500	210	3000	
	38	121.6	7.42	2400	210	3000	250.0	65	104.4	140	21	67.5	4.12	2500	210	3000	
AVPD-4520VQ	42	138.7	8.46	2200	175	2500	255.8	66.5	91.4	122.5	5	18.0	1.10	2200	210	3000	43.0 (94)
	50	162.3	9.90	2200	175	2500	303.8	79	105.2	141	8	27.4	1.67	2200	210	3000	
	60	193.4	11.80	2200	175	2500	369.2	96	126.8	170	11	36.4	2.22	2200	210	3000	
											12	39.5	2.41	2200	160	2300	
											14	45.9	2.80	2200	140	2000	
AVPD-4525VQ	42	138.7	8.46	2200	175	2500	255.8	66.5	91.4	122.5	12	40.2	2.45	2200	210	3000	46.0 (101)
	50	162.3	9.90	2200	175	2500	303.8	79	105.2	141	14	45.4	2.77	2200	210	3000	
	60	193.4	11.80	2200	175	2500	369.2	96	126.8	170	17	55.2	2.37	2200	210	3000	
											21	67.5	4.12	2200	210	3000	
AVPD-4535VQ	42	138.7	8.46	2200	175	2500	255.8	66.5	91.4	122.5	25	81.6	4.98	2200	210	3000	53.6 (118)
	50	162.3	9.90	2200	175	2500	303.8	79	105.2	141	30	97.7	5.96	2200	210	3000	
	60	193.4	11.80	2200	175	2500	369.2	96	126.8	170	35	112.8	6.88	2200	210	3000	
											38	121.6	7.42	2200	210	3000	

# Ordering Information



**AVPD-2520VQ**

**12**

**A**

**5**

**1**

**AA**

**20**

**R**

**-**

1

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1. Model Series	
AVPD-2520VQ	AVPD-4520VQ
AVPD-3520VQ	AVPD-4525VQ
AVPD-3525VQ	AVPD-4535VQ

### 2. Displacement - Shaft End Pump

At 1200 RPM, 7 Bar (100 psi)

Size	gpm	cm <sup>3</sup> /rev	in <sup>3</sup> /rev
2520VQ	12	40.2	2.45
	14	45.4	2.77
	17	55.2	3.37
	21	67.5	4.12
35**VQ	25	81.6	4.98
	30	97.7	5.96
	35	112.8	6.88
45**VQ	38	121.6	7.42
	42	138.7	8.46
	50	162.3	9.90
	60	193.4	11.80

### 3. Port Connection

<b>A</b>	SAE 4-bolt flg (Inlet, Outlet No.1 & No. 2)
----------	---

### 4. Displacement - Cover End Pump

At 1200 RPM, 7 Bar (100 psi)

Size	gpm	cm <sup>3</sup> /rev	in <sup>3</sup> /rev
**20VQ	5	18.0	1.10
	8	27.4	1.67
	11	36.4	2.22
	12	39.5	2.41
	14	45.9	2.80
**25VQ	12	40.2	2.45
	14	45.4	2.77
	17	55.2	3.37
	21	67.5	4.12
4535VQ	25	81.6	4.98
	30	97.7	5.96
	35	112.8	6.88
	38	121.6	7.42

### 5. Shaft Type

<b>1</b>	Straight Keyed (Standard)
<b>11</b>	Splined
<b>86</b>	Straight keyed, heavy duty

### 6. Port Orientation (All series except AVPD-4535VQ)

With No.1 outlet opposite inlet:	
<b>AA</b>	No. 2 outlet 135° CCW from inlet
<b>AB</b>	No. 2 outlet 45° CCW from inlet
<b>AC</b>	No. 2 outlet 45° CW from inlet
<b>AD</b>	No. 2 outlet 135° CW from inlet
With No. 1 outlet 90 CCW from inlet	
<b>BA</b>	No. 2 outlet 135° CCW from inlet
<b>BB</b>	No. 2 outlet 45° CCW from inlet
<b>BC</b>	No. 2 outlet 45° CW from inlet
<b>BD</b>	No. 2 outlet 135° CW from inlet
With No.1 outlet inline with inlet:	
<b>CA</b>	No. 2 outlet 135° CCW from inlet
<b>CB</b>	No. 2 outlet 45° CCW from inlet
<b>CC</b>	No. 2 outlet 45° CW from inlet
<b>CD</b>	No. 2 outlet 135° CW from inlet
With No. 1 outlet 90 CW from inlet:	
<b>DA</b>	No. 2 outlet 135° CCW from inlet
<b>DB</b>	No. 2 outlet 45° CCW from inlet
<b>DC</b>	No. 2 outlet 45° CW from inlet
<b>DD</b>	No. 2 outlet 135° CW from inlet

### Series AVPD-4535VQ

With No.1 outlet opposite inlet:	
<b>AA</b>	No. 2 opposite inlet
<b>AB</b>	No. 2 opposite 90° CCW from inlet
<b>AC</b>	No. 2 outlet inline with inlet
<b>AD</b>	No. 2 outlet 90° CW from inlet
With No. 1 outlet 90° CCW from inlet	
<b>BA</b>	No. 2 outlet opposite inlet
<b>BB</b>	No. 2 outlet 90° CCW from inlet
<b>BC</b>	No. 2 outlet inline with inlet
<b>BD</b>	No. 2 outlet 90° CW from inlet
With No.1 outlet inline with inlet:	
<b>CA</b>	No. 2 outlet opposite inlet
<b>CB</b>	No. 2 outlet 90° CCW from inlet
<b>CC</b>	No. 2 outlet inline with inlet
<b>CD</b>	No. 2 outlet 90° CW from inlet
With No. 1 outlet 90° CW from inlet:	
<b>DA</b>	No. 2 outlet opposite inlet
<b>DB</b>	No. 2 outlet 90° CCW from inlet
<b>DC</b>	No. 2 outlet inline with inlet
<b>DD</b>	No. 2 outlet 90° CW from inlet

### 7. Design Number

<b>20</b>	Standard
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### 8. Shaft Rotation (View from shaft end of pump)

<b>R</b>	Right Hand Rotation
<b>L</b>	Left Hand Rotation

### 9. Seals

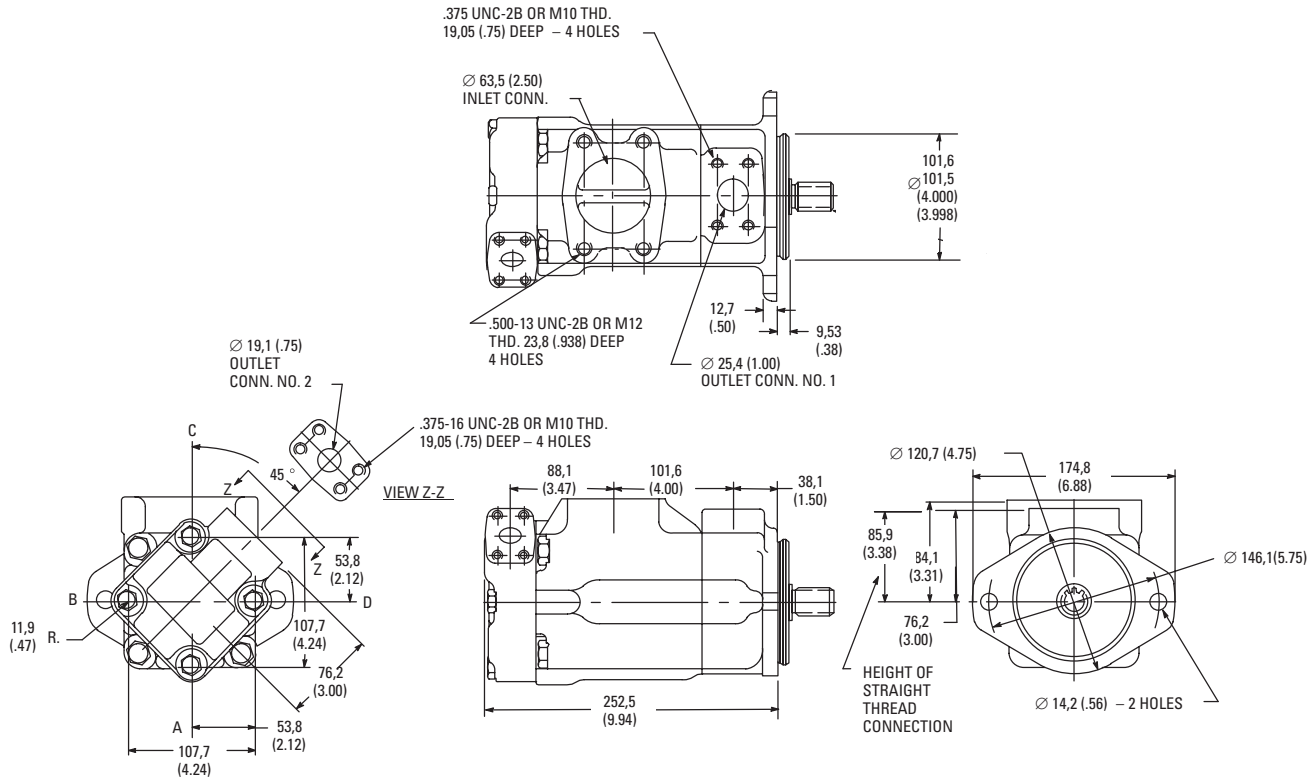
<b>Omit</b>	Nitrile (Standard)
<b>3</b>	Viton

\*Viewed from cover end of pump

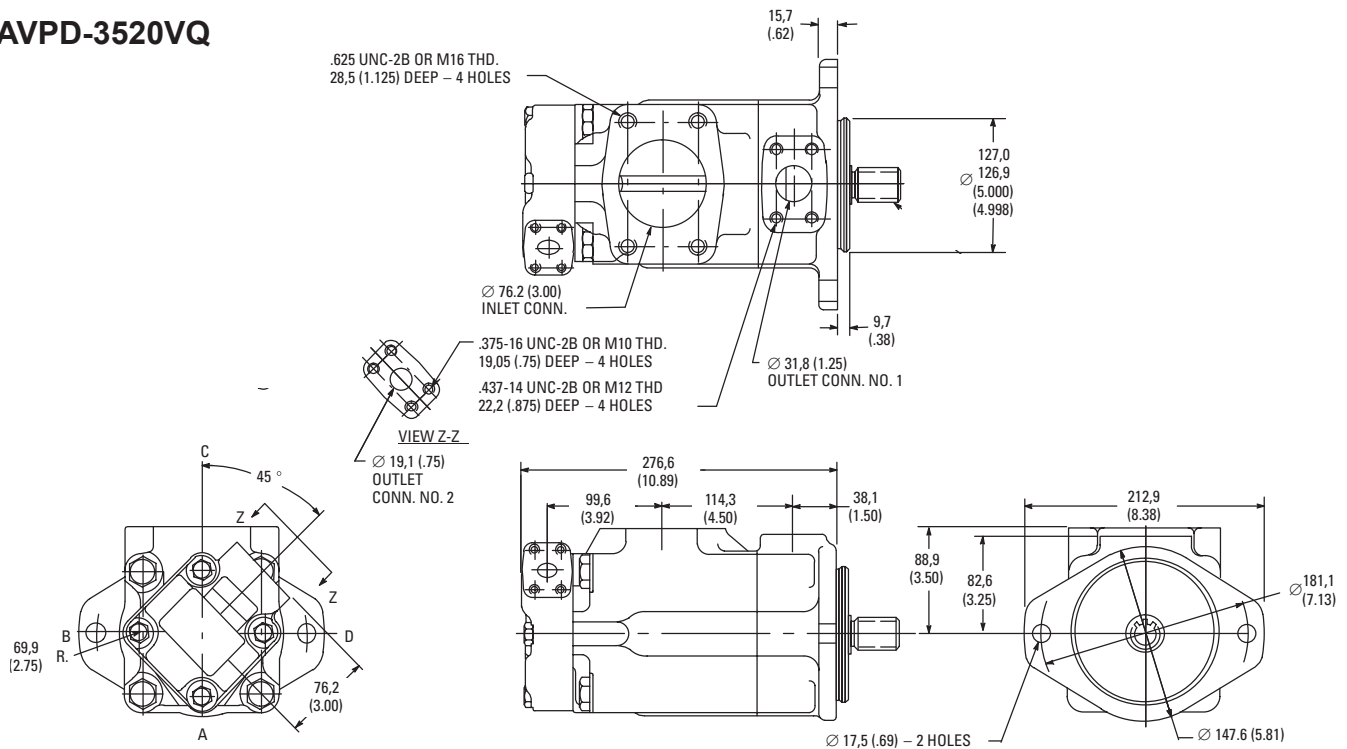


# Installation Dimensions

## AVPD-2520VQ



## AVPD-3520VQ



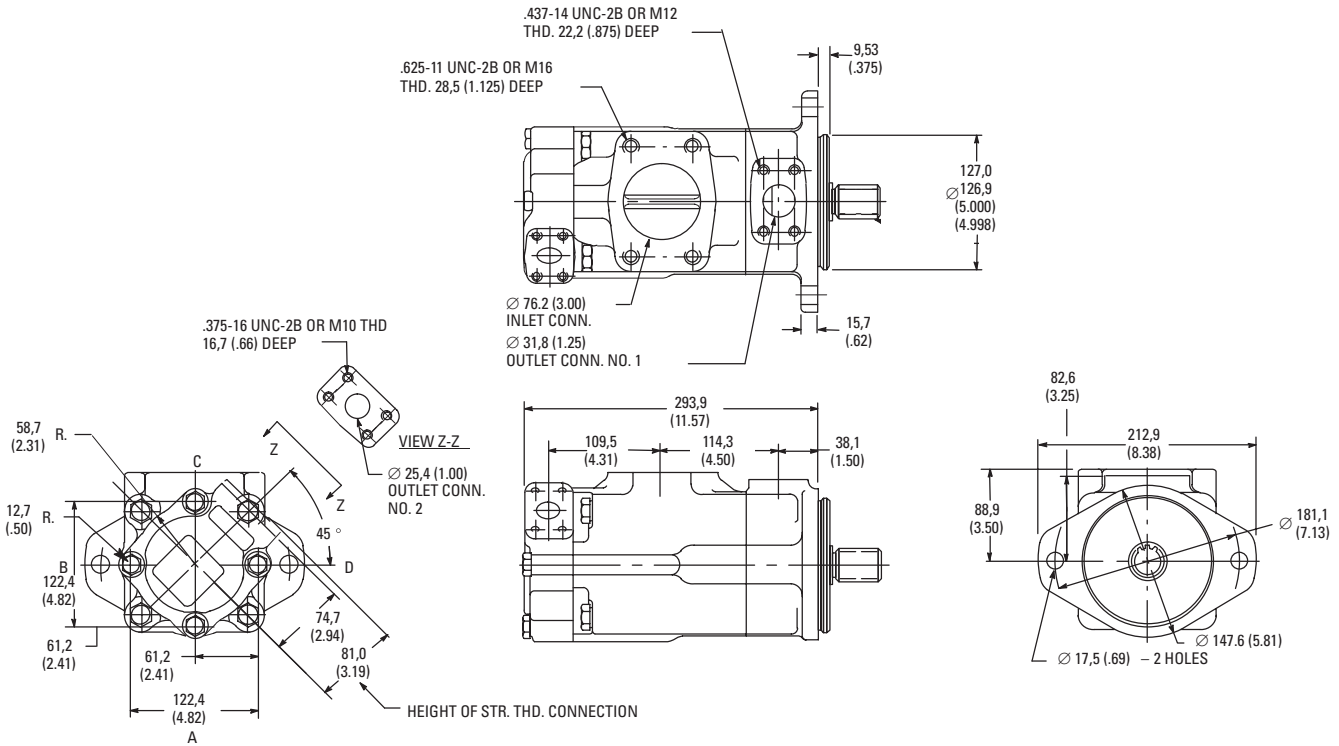
Dimensions in millimeters (inches)



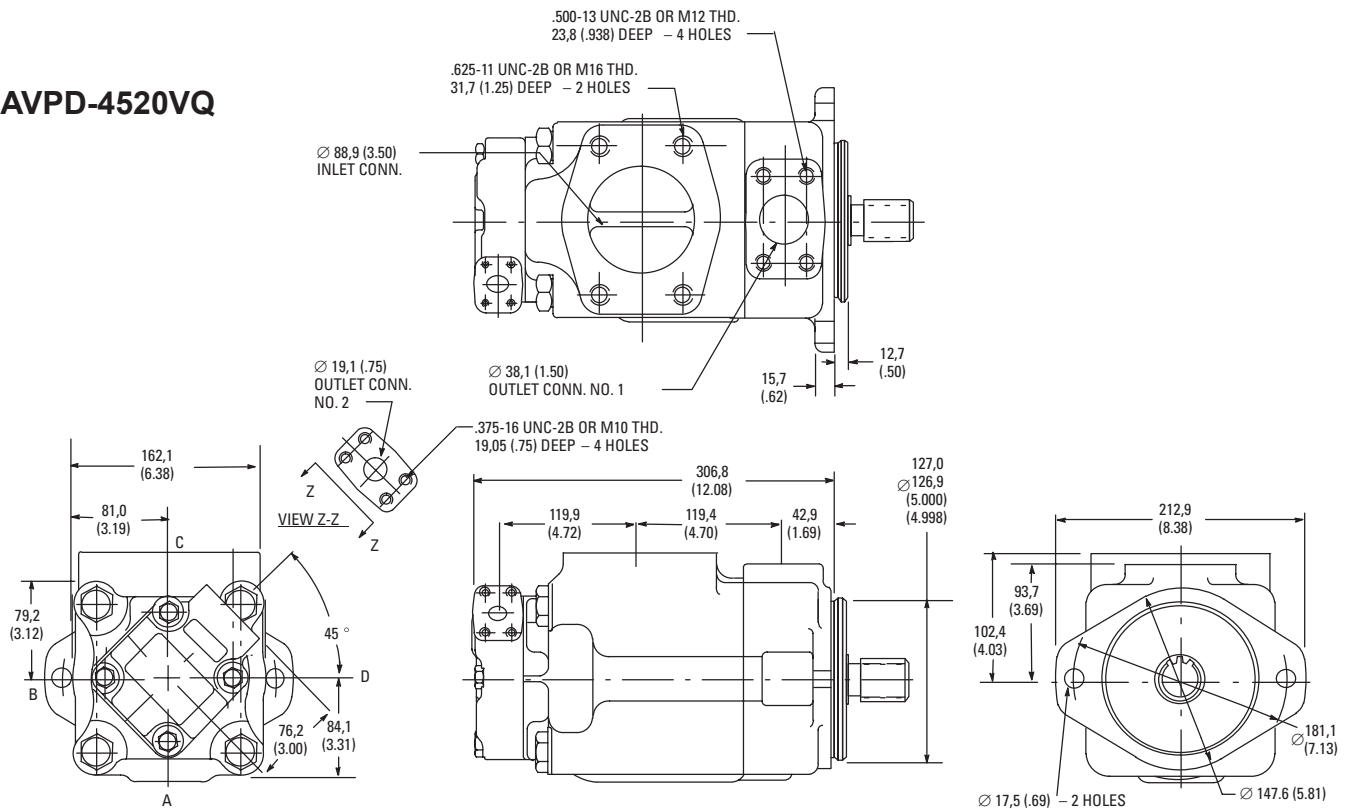
# Installation Dimensions



## AVPD-3525VQ



## AVPD-4520VQ

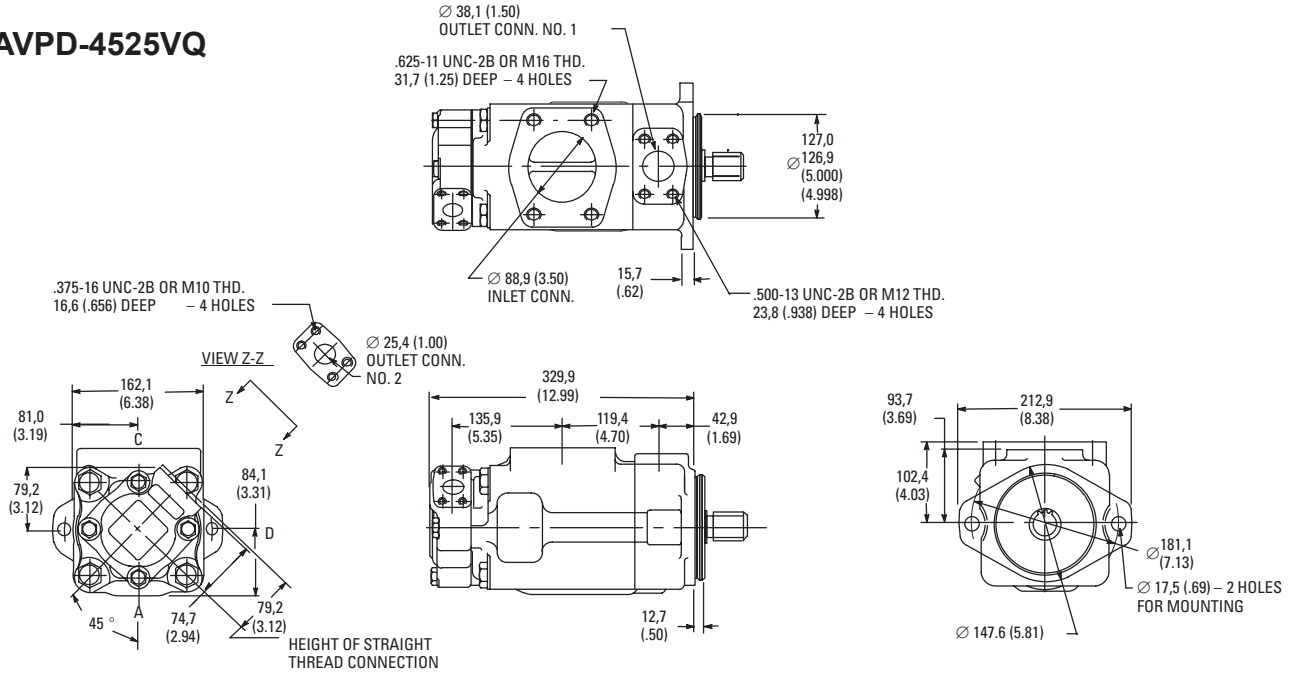


Dimensions in millimeters (inches)

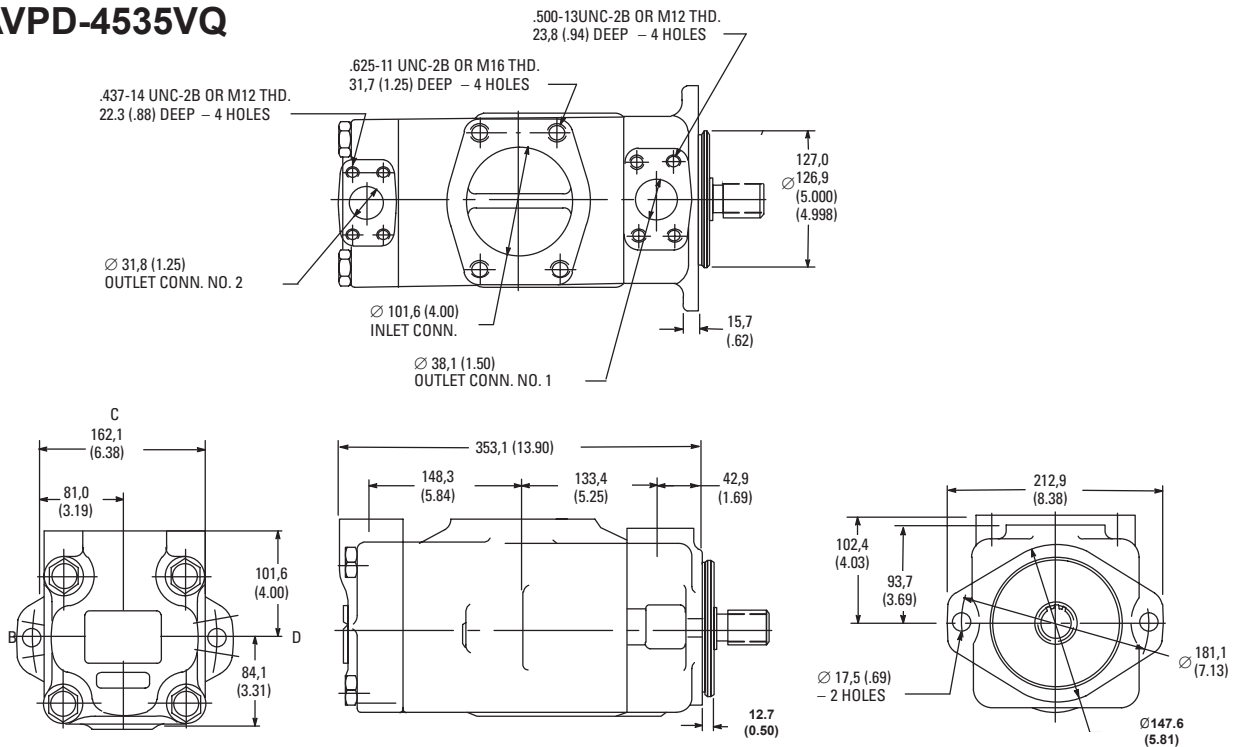


# Installation Dimensions

## AVPD-4525VQ



## AVPD-4535VQ

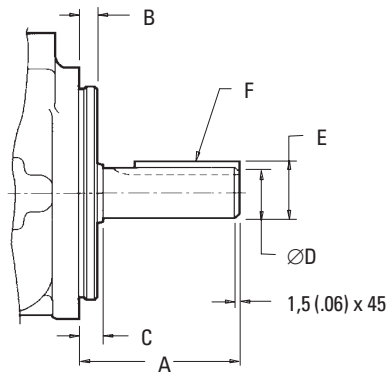


Dimensions in millimeters (inches)

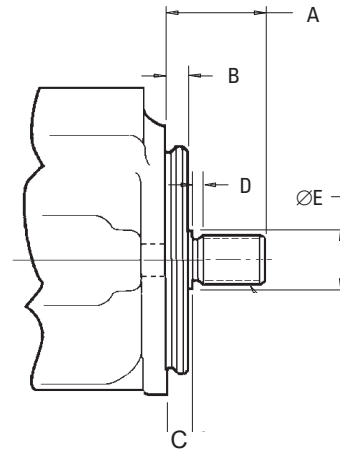
# Shaft Dimensions



## Straight Key Shafts



## Splined Shafts



### Shaft Dimensions

Model	Shaft Code	A		B		C		ØD		E		F key width x length	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
AVPD-2520VQ	1	2.31	58.7	0.375	9.53	0.435	11.1	0.875 0.874	22.23 22.20	0.996 0.961	24.5 24.4	0.187 x 1.25	4.76 x 32.0
	86	3.06	77.7	0.375	9.53	0.435	11.1	0.999 0.998	25.37 25.35	1.11 1.10	28.3 28.1	0.250 x 2.00	6.36 x 50.8
AVPD-3520VQ AVPD-3525VQ	1	2.88	73.2	0.375	9.53	0.435	11.1	1.250 1.248	31.75 31.70	1.39 1.38	35.36 35.10	0.313 x 1.50	7.94 x 38.1
	86	3.38	85.9	0.375	9.53	0.435	11.1	1.374 1.373	34.90 34.87	1.52 1.51	38.6 38.3	0.313 x 2.13	7.94 x 54.0
AVPD-4520VQ AVPD-4525VQ AVPD-4535VQ	1	2.44	62.0	0.500	12.70	0.560	14.22	1.250 1.248	31.75 31.70	1.39 1.38	35.36 35.10	0.313 x 1.12	7.94 x 28.5
	86	3.44	87.4	0.500	12.70	0.560	14.22	1.499 1.498	38.07 38.05	1.67 1.66	42.4 42.1	0.376 x 2.00	9.54 x 50.8

### Splined Shaft Dimension

Model	Shaft Code	A		B		C		D		E		Spline Data
		in	mm	in	mm	in	mm	in	mm	in	mm	
AVPD-2520VQ	11	1.75	44.5	0.375	9.53	0.437	11.1	0.16	3.9	1.09	27.8	A
AVPD-35**VQ	11	1.75	44.5	0.375	9.53	0.437	11.1	0.25	6.35	1.38	35.1	C
AVPD-45**VQ	11	2.44	61.9	0.500	12.7	0.563	14.3	0.38	9.7	1.56	39.6	C

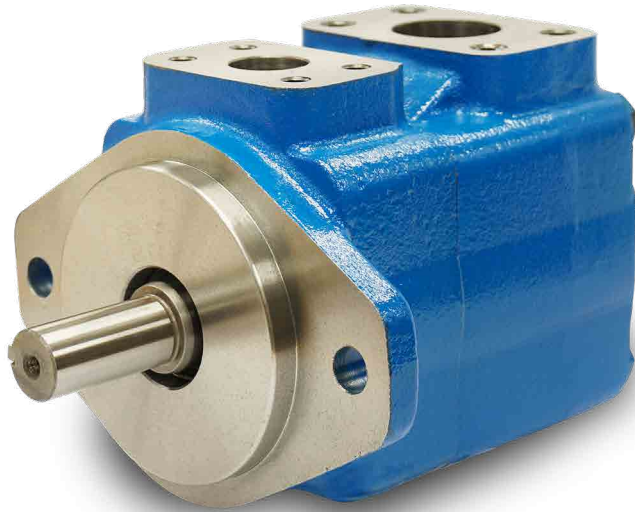
### Spline Data Table - Involute splines from above chart

Model	Number of Teeth	Pitch	Major Diameter		Former Diameter		Minor Diameter		Minor Diameter
			in	mm	in	mm	in	mm	
A	13	16/32	0.873 0.872	22.17 22.15	0.749	19.03	0.733 0.722	18.63 18.35	Major diameter fit
C	14	12/24	1.248 1.247	31.70 31.67	1.071	27.20	1.062 1.049	26.99 26.64	Major diameter fit



# AVP-\*\*V - Single Pump

## Features



The AVP series single vane pumps are excellent for medium to low pressure mobile and industrial applications. The hydraulic balancing structure and intravane design provides more stable performance and a longer life span by minimizing the pressure on the stator from the vane. This is achieved by incorporating diametrically opposed inlet and outlet pressure chambers. The 12 vane system provides low amplitude flow pulsation for quiet operation, ideal for industrial applications. Four different outlet position options allow flexibility in various applications. The AVP's cartridge is independent from the drive shaft, which allows for easy servicing without having to remove the pump from its mount.

### Operational Specifications

Model	Code	Using anit-wear oil or phosphate ester fluid*			Using water-oil emulsions*			Using water glycol fluid*		
		bar	psi	Max / Min rpm	bar	psi	Max / Min rpm	bar	psi	Max /Min rpm
AVP-20V	2	138	2000	1800 / 600	69	1000	1200 / 600	138	2000	1500 / 600
AVP-20V	5,8,9,11	207	3000	1800 / 600	69	1000	1200 / 600	159	2300	1500 / 600
AVP-20V	12	159	2300	1800 / 600	69	1000	1200 / 600	138	2000	1500 / 600
AVP-20V	14	138	2000	1800 / 600	69	1000	1200 / 600	138	2000	1500 / 600
AVP-25V	10,12,14,17,19,21	172	2500	1800 / 600	69	1000	1500 / 600	159	2300	1500 / 600
AVP-35V	25,30,35,38	172	2500	1800 / 600	69	1000	1500 / 600	159	2300	1500 / 600
AVP-35V	45	138	2000	1800 / 600	69	1000	1500 / 600	138	2300	1500 / 600
AVP-45V	42,45,50,60	172	2500	1800 / 600	69	1000	1500 / 600	159	2300	1500 / 600
AVP-45V	75	138	2000	1800 / 600	69	1000	1500 / 600	138	2000	1500 / 600

\*Outlet pressure

# Ordering Information



<b>AVP-25V</b>	<b>10</b>	<b>A</b>	<b>1</b>	<b>C</b>	<b>22</b>	<b>L</b>	<b>-</b>
1	2	3	4	5	6	7	8

1. Model Series
AVP-20V
AVP-25V
AVP-35V
AVP-45V

2. Displacement (gpm) At 1200 RPM, 100 PSI			
AVP-20V	AVP-25V	AVP-35V	AVP-45V
2	10	21	42
3	12	25	45
4	14	30	50
5	15	32	57
6	17	35	60
7	19	38	66
8	21	45	75
9	25		
10			
11			
12			
14			

3. Port Connection
A SAE 4 - Bolt Flange

4. Shaft Type	
1	Straight Keyed (Standard)
11	Splined (Not offered for AVP-20V model)
86	Straight Keyed (Heavy Duty) (Not offered for AVP-20V model)
151	Splined (AVP-20V Only)

5. Outlet Port Position (Viewed from the cover end of the pump)	
A	Opposite Inlet
B	90° CCW From Inlet
C	Inline With Inlet (Standard)
D	90° CW From Inlet

6. Design Number	
22	Standard

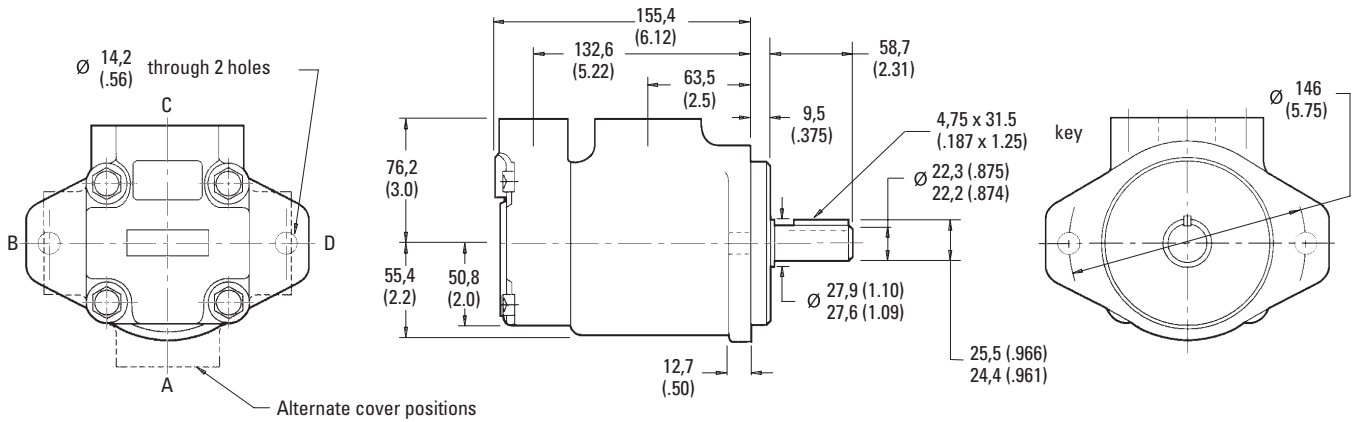
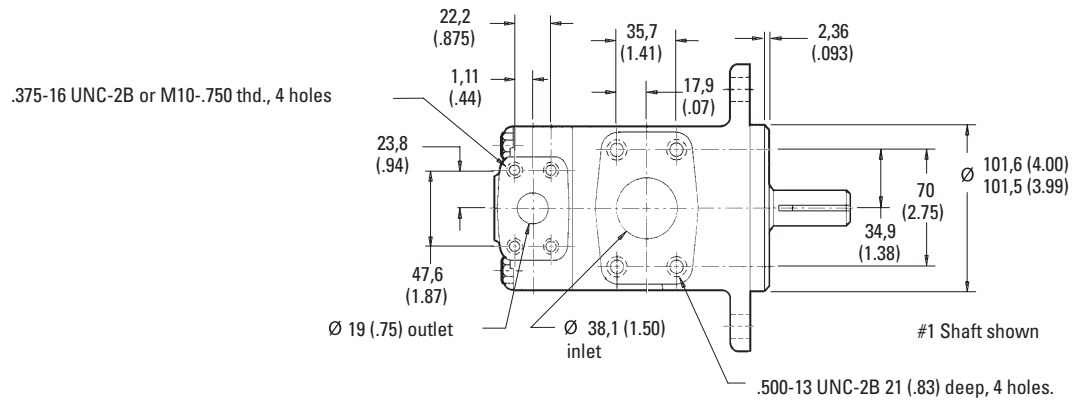
7. Rotation	
R	Right Hand Rotation
L	Left Hand Rotation

8. Seals	
Omit	Nitrile (Standard)
3	Viton



# Installation Dimensions

## AVP-20V

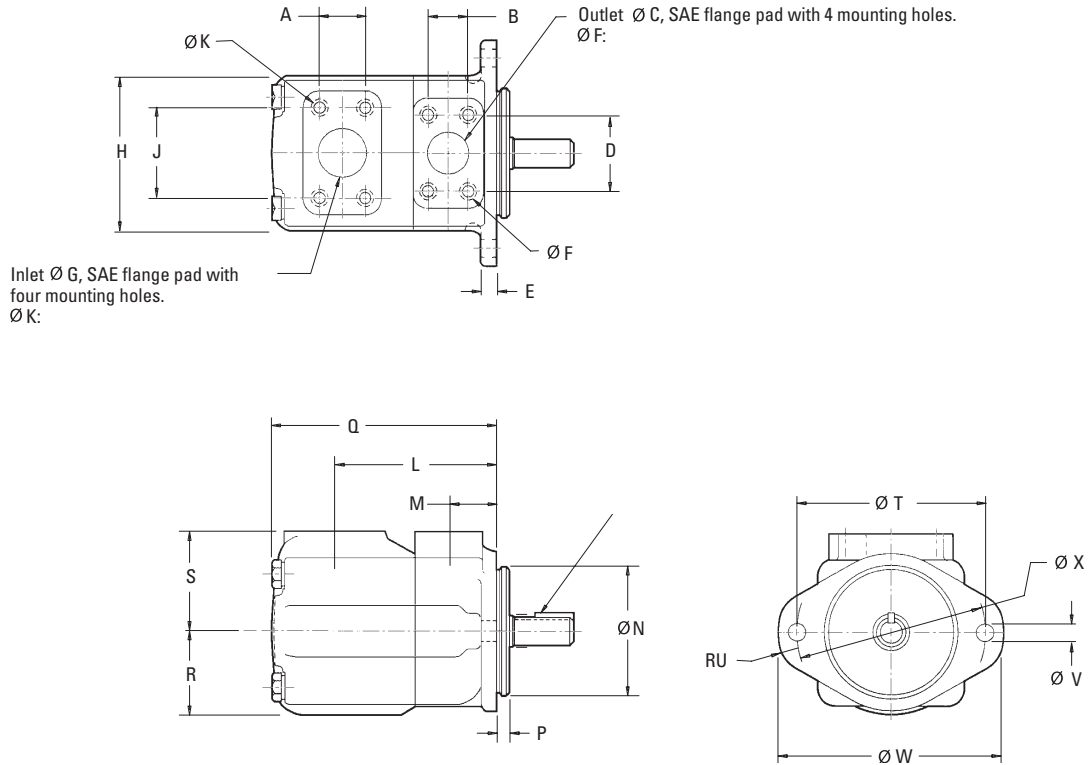


Dimensions in millimeters (inches)

# Installation Dimensions



## AVP-25V, AVP-35V, AVP-45V



Model	$\varnothing F$ x full thread depth, 4 holes	$\varnothing K$ x full thread depth, 4 holes
AVP25V	3/8"-16 UNC-2B x 19 (0.75) deep	1/2"-13 UNC-2B x 23.8 (0.94) deep
AVP-35V	7/16-14 UNC-2B x 22.3 (0.88) deep	1/2"-13 UNC-2B x 22.3 (0.88) deep
AVP-45V	1/2"-13 UNC-2B x 23.8 (0.94) deep	5/8"-11 UNC-2B x 25.4 (1.18) deep

Model	A	B	C	D	E	G	H	J	L	L	M	N	P
AVP-25V	35.7	26.2	25.4	52.4	12.7	38.1	118	69.9	121	149	38.1	101.6	9.53
	(1.41)	(1.03)	(1.00)	(2.06)	(0.50)	(1.50)	(4.62)	(2.75)	(4.76)	(5.88)	(1.50)	101.5 (3.99)	(0.385)
AVP-35V	42.9	30.2	31.8	58.7	16	50.8	140	77.8	125.5	133.4	38.1	127.0 (5.00)	9.53
	(1.69)	(1.19)	(1.25)	(2.31)	(0.63)	(2.00)	(5.50)	(3.06)	(4.94)	(5.25)	(1.50)	126.9 (4.99)	(0.38)
AVP-45V	61.9	35.7	38.1	69.9	16	76.2	159	106.4	153	164	43	127.0 (5.00)	12.7
	(2.43)	(1.41)	(1.50)	(2.75)	(0.63)	(3.00)	(6.25)	(4.19)	(6.03)	(6.44)	(1.69)	126.9 (4.99)	(0.50)

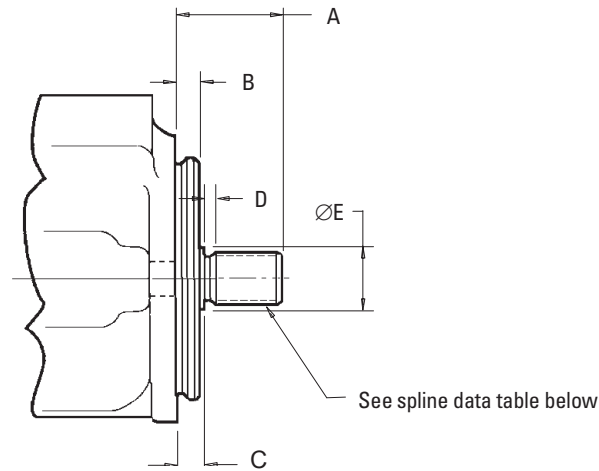
Model	Q	R	S	T	RU	$\varnothing V$	W	$\varnothing X$
AVP-25V	162.1	63.5	76.2	146	14	14.2	175	121
	(6.38)	(2.50)	(3.00)	(5.75)	(0.55)	(0.56)	(6.88)	(4.76)
AVP-35V	185	69.9	82.6	181	16	17.5	213	148
	(7.28)	(2.75)	(3.25)	(7.13)	(0.63)	(0.69)	(8.38)	(5.83)
AVP-45V	216	82.6	93.7	181	16	17.5	213	148
	(8.50)	(3.25)	(3.69)	(7.13)	(0.63)	(0.69)	(8.38)	(5.83)

Dimensions in millimeters (inches)



# Shaft Dimensions

## Splined Shafts



Dimensions in millimeters (inches)

Shaft Dimensions												
Model	Shaft Code	A		B		C		D		E		Spline Data
		in	mm	in	mm	in	mm	in	mm	in	mm	
AVP-20V	151	1.62	44.1	0.375	9.53	0.468	11.9	0.16	4.1	1.09	27.8	A
AVP-25V	11	1.75	44.5	0.375	9.53	0.437	11.1	0.16	4.1	1.09	27.8	A
AVP-35V	11	2.31	58.7	0.375	9.53	0.437	11.1	0.25	6.4	1.38	35.1	D
AVP-45V	11	2.44	61.9	0.500	12.70	0.565	14.3	0.38	9.7	1.56	39.6	D

### Spline Data Table - Involute splines from above chart

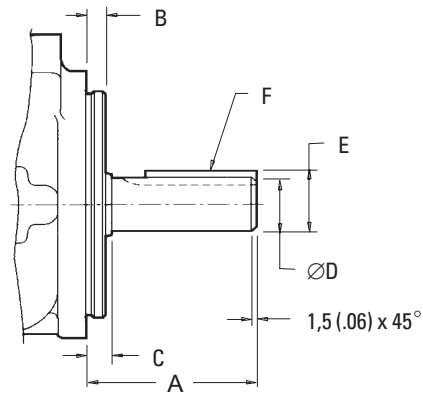
Model	Number of Teeth	Pitch	Major Diameter		Former Diameter		Minor Diameter		Minor Diameter
			in	mm	in	mm	in	mm	
A	13	16/32	0.873 0.872	22.17 22.15	0.749	19.03	0.733 0.722	18.63 18.35	Major diameter fit
D	14	12/24	1.248 1.247	31.70 31.67	1.071	27.20	1.062 1.049	26.99 26.64	Major diameter fit



# Shaft Dimensions



## Straight Key Shafts



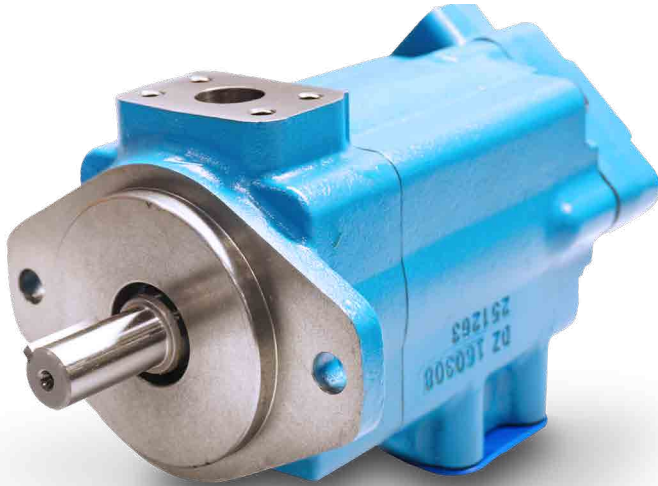
Dimensions in millimeters (inches)

Shaft Dimensions													
Model	Shaft Code	A		B		C		ØD		E		F key width x length	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
AVP-20V	1	2.31	58.7	0.375	9.53	0.476	12.1	0.875 0.874	22.23 22.20	0.996 0.961	24.5 24.4	0.187 x 1.25	4.76 x 32.0
AVP-25V	1	2.31	58.7	0.375	9.53	0.435	11.1	0.875 0.874	22.23 22.20	0.996 0.961	24.5 24.4	0.187 x 1.25	4.76 x 32.0
	86	3.06	77.7	0.375	9.53	0.435	11.1	0.999 0.998	25.37 25.35	1.11 1.10	28.3 28.1	0.250 x 2.00	6.36 x 50.8
AVP-35V	1	2.88	73.2	0.375	9.53	0.435	11.1	1.250 1.248	31.75 31.70	1.39 1.38	35.36 35.10	0.313 x 1.50	7.94 x 38.1
	86	3.38	85.9	0.375	9.53	0.435	11.1	1.374 1.373	34.90 34.87	1.52 1.51	38.6 38.3	0.313 x 2.13	7.94 x 54.0
AVP-45V	1	2.44	62.0	0.500	12.70	0.560	14.22	1.250 1.248	31.75 31.70	1.39 1.38	35.36 35.10	0.313 x 1.12	7.94 x 28.5
	86	3.44	87.4	0.500	12.70	0.560	14.22	1.499 1.498	38.07 38.05	1.67 1.66	42.4 42.1	0.376 x 2.00	9.54 x 50.8



# AVPD-\*\*\*\*V - Double Pump

## Features



The AVPD-\*\*\*\*V series double vane pumps are excellent for medium to low pressure mobile and industrial applications. The hydraulic balancing structure and intravane design provides more stable performance and a longer life span by minimizing the pressure on the stator from the vane. This is achieved by incorporating diametrically opposed inlet and outlet pressure chambers. The 12 vane system provides low amplitude flow pulsation for quiet operation, ideal for industrial applications. Four different outlet position options allow flexibility in various applications.

Operational Specifications							
Model	Code	Using anit-wear oil or phoshate ester fluid*		Using water-in-oil emulsions*		Using water glycol fluid*	
		bar	psi	bar	psi	bar	psi
AVPD-**20V	10	159	2300	69	1000	159	2300
AVPD-**20V	14	138	2000	69	1000	138	2000
AVPD-25**V	10,12,14,15, 17, 19, 21,25	172	2500	69	1000	159	2300
AVPD-**25V	12,14,17,21	172	2500	69	1000	159	2300
AVPD-35**V	21,25,30,32,35,38,45	172	2500	69	1000	159	2300
AVPD-**35V	25,30,35,38	172	2500	69	1000	159	2300
AVPD-45**V	42,45,50,5760	172	2500	69	1000	159	2300

\*Outlet pressure

Speed (rpm)			
Model	Using anit-wear oil or phosphate ester fluid	Using water-in-oil emulsions	Using water glycol fluid
AVPD-**20V	1800	1500	600
AVPD-25**V	1800	1500	600
AVPD-**25V	1800	1500	600
AVPD-35**V	1800	1500	600
AVPD-**35V	1800	1500	600
AVPD-45**V	1800	1500	600

# Ordering Information



AVPD-2520V

10

A

5

1

AA

22

R

-

1

2

3

4

5

6

7

8

9

## 1. Model Series

AVPD-2520V	AVPD-4520V
AVPD-3520V	AVPD-4525V
AVPD-3525V	AVPD-4535V

## 2. Shaft End Pump (gpm)

At 1200 RPM, 100 PSI

25**V	35**V	45**V
10	21	42
12	25	45
14	30	50
15	32	57
17	35	60
19	38	66
21	45	75
25		

## 3. Port Connection

A	SAE 4 - Bolt Flange
---	---------------------

## 4. Shaft End Displacement (GPM) @1200 RPM, 100 PSI

**20V	**25V	**35V
2	10	21
3	12	25
4	14	30
5	15	32
6	17	35
7	19	38
8	21	45
9	25	
10		
11		
12		
14		

## 5. Shaft Type

1	Straight Keyed (Standard)
11	Splined
86	Straight keyed, heavy duty

## 6. Port Orientation\* (All series except AVPD 4535V)

With No.1 outlet opposite inlet:

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 90° CCW from inlet

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 inline with inlet

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 90° CW from inlet:

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 AVPD-4535V

AA	No. 2 opposite inlet
AB	No. 2 opposite 90° CCW from inlet
AC	No. 2 outlet inline with inlet
AD	No. 2 outlet 90° CW from inlet

With No. 1 outlet 90° CCW from inlet

BA	No. 2 outlet opposite 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 inline with inlet:

CA	No. 2 outlet opposite 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 90° CW from inlet:

DA	No. 2 outlet opposite inlet
DB	No. 2 outlet 90° CCW from inlet
DC	No. 2 outlet inline with inlet
DD	No. 2 outlet 90° CW from inlet

## 7. Design Number

22	Standard
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## 8. Rotation

View from shaft end of pump

R	Right Hand Rotation
L	Left Hand Rotation

## 9. Seals

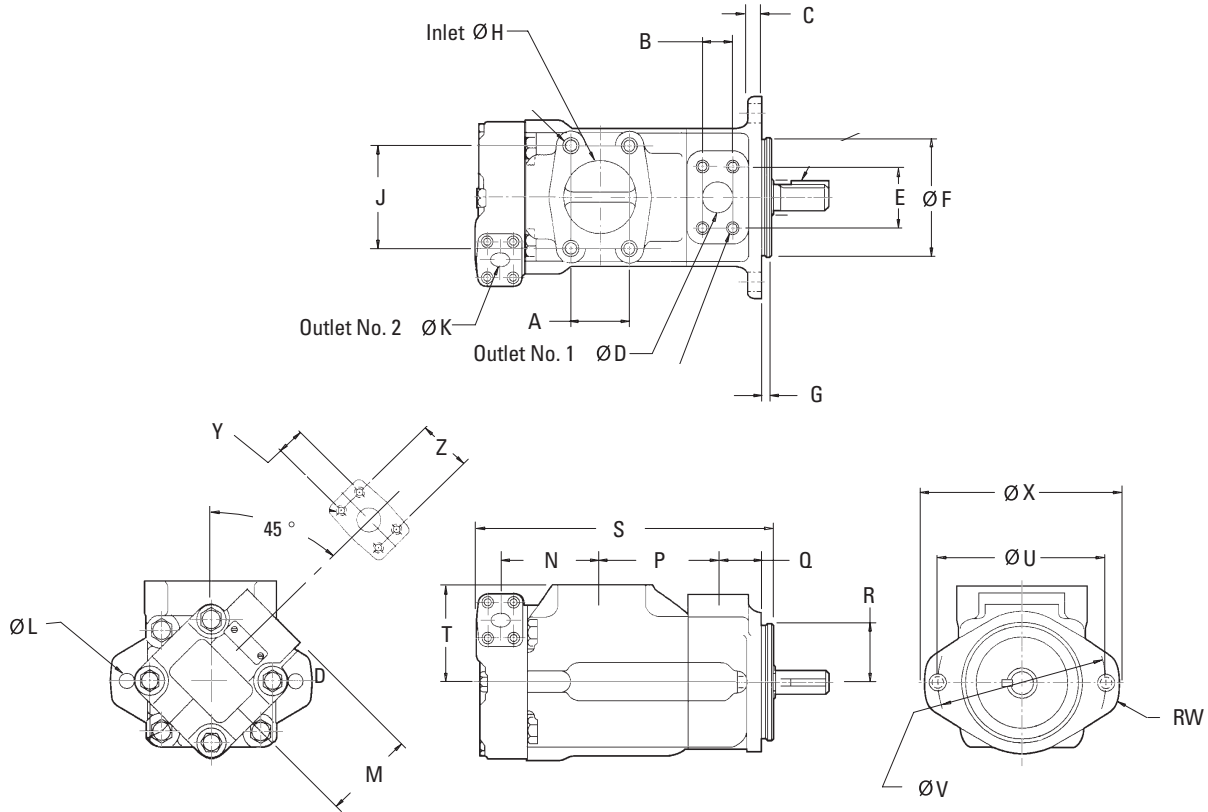
Omit	Nitrile (Standard)
3	Viton

\*Viewed from cover end of pump



# Installation Dimensions

**AVPD-2520V , AVPD-3520V , AVPD-3525V , AVPD-4520V , AVPD-4520V**



Model	A	B	C	D	E	F	G	H	J	K	L	M	N
AVPD-2520V	50.8	26.2	12.7	25.4	52.4	101.6 (4.0)	9.53	63.5	88.9	19.1	14.2	76.2	88.1
	(2.00)	(1.03)	(0.50)	(1.00)	(2.06)	101.5 (3.9)	(0.38)	(2.50)	(3.50)	(0.75)	(0.56)	(3.00)	(3.47)
AVPD-3520V	62	30.1	15.9	31.7	58.7	127 (5.00)	9.53	76.2	106.3	19.1	17.5	76.2	99.6
	(2.44)	(1.19)	(0.62)	(1.25)	(2.31)	126 (4.99)	(0.38)	(3.00)	(4.19)	(1.00)	(0.69)	(2.94)	(4.31)
AVPD-3525V	62	30.1	15.9	31.7	58.7	127 (5.00)	9.53	76.2	106.3	25.4	17.5	74.7	109.5
	(2.44)	(1.19)	(0.62)	(1.25)	(2.31)	126 (4.99)	(0.38)	(3.00)	(4.19)	(1.00)	(0.69)	(2.94)	(4.31)
AVPD-4520V	69.9	35.7	15.9	38.1	69.9	127 (5.00)	12.7	88.9	120.6	25.4	17.5	74.7	136
	(2.75)	(1.41)	(0.62)	(1.50)	(2.75)	126 (4.99)	(0.50)	(3.50)	(4.75)	(1.00)	(0.69)	(2.94)	(5.35)
AVPD-4525V	69.9	35.7	15.9	38.1	69.9	127 (5.00)	12.7	88.9	120.6	25.4	17.5	74.7	136
	(2.75)	(1.41)	(0.62)	(1.50)	(2.75)	126 (4.99)	(0.50)	(3.50)	(4.75)	(1.00)	(0.69)	(2.94)	(5.35)

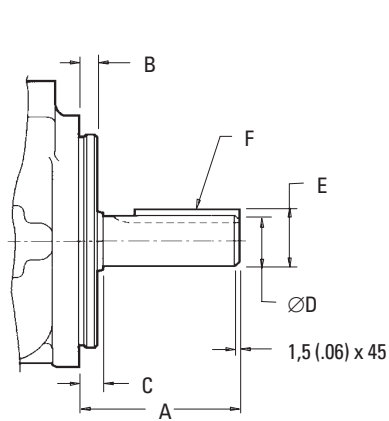
Model	P	Q	R	S	T	U	V	RW	X	Y	Z
AVPD-2520V	101.6	38.1	76.2	250	85.3	146.1	175	14	174.7	22.2	47.6
	(6.38)	(2.50)	(3.00)	(9.81)	(3.38)	(5.75)	(6.88)	(0.55)	(6.88)	(0.88)	(1.88)
AVPD-3520V	114.3	38.1	82.6	273.3	88.9	181	148	16	213	22.2	47.6
	(4.5)	(1.50)	(3.25)	(10.8)	(3.50)	(7.13)	(5.83)	(0.63)	(8.38)	(0.88)	(1.88)
AVPD-3525V	114.3	38.1	82.6	287.3	88.9	181	148	16	213	26.2	52.4
	(4.50)	(1.50)	(3.25)	(9.81)	(3.50)	(7.13)	(5.83)	(0.63)	(8.38)	(1.03)	(2.06)
AVPD-4520V	119.4	42.9	93.7	303.5	102.4	181	148	16	213	22.2	47.6
	(4.70)	(1.69)	(3.69)	(11.95)	(4.03)	(7.13)	(5.83)	(0.63)	(8.38)	(0.88)	(1.88)
AVPD-4525V	119.4	42.9	93.7	325	102.4	181	148	16	213	26.2	52.4
	(4.70)	(1.69)	(3.69)	(12.8)	(4.03)	(7.13)	(5.83)	(0.63)	(8.38)	(1.03)	(2.06)

Dimensions in millimeters (inches)

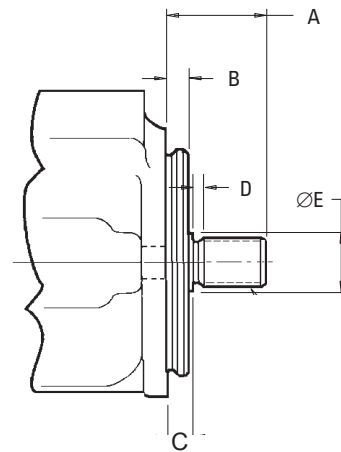
# Shaft Dimensions



## Straight Key Shafts



## Splined Shafts



### Shaft Dimensions

Model	Shaft Code	A		B		C		ØD		E		F key width x length	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
AVPD-2520V	1	2.31	58.7	0.375	9.53	0.435	11.1	0.875 0.874	22.23 22.20	0.996 0.961	24.5 24.4	0.187 x 1.25	4.76 x 32
	86	3.06	77.7	0.375	9.53	0.435	11.1	0.999 0.998	25.37 25.35	1.11 1.10	28.3 28.1	0.250 x 2.00	6.36 x 50.8
AVPD-3520V AVPD-3525V	1	2.88	73.2	0.375	9.53	0.435	11.1	1.250 1.248	31.75 31.70	1.39 1.38	35.36 35.10	0.313 x 1.50	7.94 x 38.1
	86	3.38	85.9	0.375	9.53	0.435	11.1	1.374 1.373	34.90 34.87	1.52 1.51	38.6 38.3	0.312 x 2.13	7.92 x 54
AVPD-4520V AVPD-4525V AVPD-4535V	1	2.44	62.0	0.500	12.7	0.560	14.22	1.250 1.248	31.75 31.70	1.39 1.38	35.36 35.10	0.312 x 1.12	7.94x 28.5
	86	3.44	87.4	0.500	12.7	0.560	14.22	1.499 1.498	38.07 38.05	1.67 1.66	42.4 42.1	0.375 x 2.00	9.54 x 50.8

### Splined Shaft Dimension

Model	Shaft Code	A		B		C		D		E		Spline Data
		in	mm	in	mm	in	mm	in	mm	in	mm	
AVPD-2520V	11	1.75	44.5	0.375	9.53	0.437	11.1	0.16	3.9	1.09	27.8	A
AVPD-35**V	11	1.75	44.5	0.375	9.53	0.437	11.1	0.25	6.35	1.38	35.1	C
AVPD-45**V	11	2.44	61.9	0.500	12.7	0.563	14.3	0.38	9.7	1.56	39.6	C

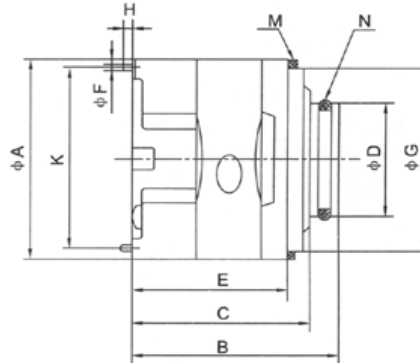
### Spline Data Table - Involute splines from above chart

Model	Number of Teeth	Pitch	Major Diameter		Former Diameter		Minor Diameter		Minor Diameter
			in	mm	in	mm	in	mm	
A	13	16/32	0.873 / 0.872	22.17 / 22.15	0.749	19.03	0.733/ 0.722	18.63 / 18.35	Major diameter fit
C	14	12/24	1.248 / 1.247	31.70 / 31.67	1.071	27.2	1.062 / 1.049	26.99 / 26.64	Major diameter fit



# AVP-\*\*V Series Cartridge

## Dimensions



Model	ØA	B	C	ØD	E	ØF	ØG	H	K	M (Gasket)	M (O-ring)
AVP-20V	82.55	81.5	70.1	47	61.5	4.8	76.2	7	73.6	82.76 x 76.26 x 3.5	40 x 3.55
AVP-25V	96.8	98.8	87	52.2	71.2	4.8	90.5	7	88.19	97 x 91 x 3.5	44 x 3.53
AVP-35V	114.3	117.7	105	72.2	90.3	6.4	108	8	103.94	114.5 x 108.5 x 3.5	63.09 x 3.53
AVP-45V	133.35	141.1	129.6	80.2	105.5	6.4	127	8	123.8	133.6 x 127.6 x 6.5	71 x 3.55

Model	Inside spline tooth outline parameter of rotor				
	Number of teeth	Pitch	Pressure Angle	Major Diameter	Minor Diameter
AVP-20V	30	48/96	45°	16.617	15.56
AVP-25V	40	48/96	45°	21.90	20.86
AVP-35V	37	40/80	45°	24.38	23.10
AVP-45V	14	12/24	30°	32.59	27.60

Dimensions in millimeters

## Ordering Code

**PC**      **AVP-20V**      **4**      **L**  
 1                      2                      3                      4

### 1. Cartridge Mark

PC	Cartridge kit for single pump, double pump, shaft end
PCT	Cartridge kit for double pump cover end

### 3. Flow

AVP-20V	2,3,4,5,6,7,8,9,10,11,12,14
AVP-25V	10,12,14,15,17,19,21,25
AVP-35V	21,25,30,32,35,38,45
AVP-45V	42,45,50,57, 60, 66,75

### 2. Series

AVP-20V
AVP-25V
AVP-35V
AVP-45V

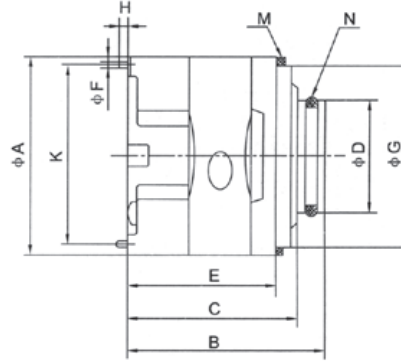
### 4. Rotation (View from shaft end of pump)

L	Left hand for counter clockwise
R	Right hand for clockwise

# AVP-\*\*VQ Series Cartridge



## Dimensions



Model	ØA	B	C	ØD	E	ØF	ØG	H	K	M (Gasket)	M (O-ring)
AVP-20VQ	82.55	81.5	70.1	47.2	61.5	4.8	76.2	7	73.6	82.76 x 76.26 x 3.5	40 x 3.55
AVP-25VQ	96.8	98.8	87	52.2	71.2	4.8	90.5	7	88.19	97 x 91 x 3.5	44 x 3.53
AVP-35VQ	114.3	117.7	105	72.2	90.3	6.4	108	7	103.94	114.5 x 108.5 x 3.5	63.09 x 3.53
AVP-45VQ	133.35	141.1	129.6	80.2	105.5	6.4	127	11	123.8	133.6 x 127.6 x 6.5	71 x 3.55

Model	Inside spline tooth outline parameter of rotor				
	Number of teeth	Pitch	Pressure Angle	Major Diameter	Minor Diameter
AVP-20VQ	30	48/96	45°	16.617	15.56
AVP-25VQ	40	48/96	45°	21.90	20.86
AVP-35VQ	37	40/80	45°	24.38	23.10
AVP-45VQ	14	12/24	30°	32.59	27.60

Dimensions in millimeters

## Ordering Code

**PC**      **AVP-20VQ**      **4**      **L**  
 1                      2                      3                      4

1. Carriage Mark	
PC	Cartridge kit for single pump, double pump, shaft end
PCT	Cartridge kit for double pump cover end

3. Flow	
AVP-20VQ	2,3,4,5,6,7,8,9,10,11,12,14
AVP-25VQ	10,12,14,15,17,19,21,25
AVP-35VQ	21,25,30,32,35,38,45
AVP-45VQ	42,45,50,57, 60, 66,75

2. Series	
AVP-20VQ	
AVP-25VQ	
AVP-35VQ	
AVP-45VQ	

3. Rotation (View from shaft end of pump)	
L	Left hand for counter clockwise
R	Right hand for clockwise



Toll Free (US & CANADA):  
1-877-774-8808

### Canada

#### MP Filtri Canada

8831 Keele Street,  
Concord, Ontario, Canada, L4K 2N1  
Phone : (905) 303-1369  
Fax : (905) 303-7256  
Email : [sales@mpfiltricanada.com](mailto:sales@mpfiltricanada.com)

### USA

#### Anfield Industries Inc.

375 International Park, Suite 300  
Newnan, GA, 30265  
Phone : (404) 530-3804  
Fax : (404) 530-3805  
Email : [info@anfieldind.com](mailto:info@anfieldind.com)

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