



PFVH Features

- 10 Vane Cartridge Design
- Cartridge Style Design to Facilitate Field Service and Conversions
- High Operating Speeds to Meet Mobile Equipment Requirements
- Wide Selection of Pumps to Meet Complex Circuit Requirements
- Efficient, Simple Design
- High Tolerance to System Contamination
- Low Noise Levels for Quiet Operation
- Hydraulically Balanced Design for Reduced Bearing Loads and Long Pump Life
- Mount Piston, Gear and other Vane Pumps on Common Drive Shaft
- Ideal for “HI/LO” Pump Circuits
- Replacement for popular competitor models

Installation Note: See *Installation Information Section* of this catalog for specific recommendations pertaining to system cleanliness, fluids, start-up, inlet conditions, shaft alignment, and other important factors relative to the proper installation and use of these pumps.

PFVH Specifications

Flow Ratings*: 45LPM (12gpm) to 227LPM (60gpm)
@ 1200 RPM single units
64LPM (17gpm) to 371LPM (98gpm)
@ 1200 RPM tandem units

Operating Speeds*: to 2700 RPM

Operating Pressures*: to 3000 PSI Continuous

Mountings: PFVH25 SAE - B - Two Bolt Flange
PFVH35 SAE - C - Two Bolt Flange
PFVH45 SAE - C - Two Bolt Flange

Housing Material: Cast-Iron

Operating temperature Range: -40°C to 85°C
(-40°F to 185°F)

Filtration: Maintain ISO 18/15 or Better

* Refer to Technical Information section of this catalog for individual model ratings.

Specifications

25 Series Code		12	14	17	19	21
Displacement	cc / rev.	40	45	55	60	68
	(cu. in./rev.)	(2.4)	(2.8)	(3.4)	(3.7)	(4.1)
Maximum Pressure	Continuous Bar	206	206	206	206	206
	(psi)	(3000)	(3000)	(3000)	(3000)	(3000)
Minimum Speed	Below 1000 psi	600	600	600	600	600
	Above 1000 psi	1000	1000	1000	1000	1000
Maximum Speed, RPM		2700	2700	2500	2500	2500
Typical Flow at Max. Speed & Pressure	Liters/min	96	108	122	137	153
	(GPM)	(25)	(28)	(32)	(36)	(40)
Typical Input HP at Max. Speed & Pressure	KW	40	50	51	56	63
	(HP)	(54)	(66)	(68)	(75)	(83)

Specifications

35 Series Code		21	25	30	35	38
Displacement	cc / rev.	69	82	98	113	122
	(cu. in./rev.)	(4.2)	(5.0)	(6.0)	(6.9)	(7.4)
Maximum Pressure	Continuous Bar	206	206	206	206	206
	(psi)	(3000)	(3000)	(3000)	(3000)	(3000)
Minimum Speed	Below 1000 psi	600	600	600	600	600
	Above 1000 psi	1000	1000	1000	1000	1000
Maximum Speed, RPM		2500	2500	2500	2400	2400
Typical Flow at Max. Speed & Pressure	Liters/min	151	178	215	242	263
	(GPM)	(40)	(47)	(57)	(64)	(69)
Typical Input HP at Max. Speed & Pressure	KW	63	73	91	96	106
	(HP)	(84)	(98)	(122)	(129)	(142)

Specifications

45 Series Code		42	47	50	57	60
Displacement	cc / rev.	138	154	162	183	193
	(cu. in./rev.)	(8.5)	(9.4)	(9.9)	(11.2)	(11.8)
Maximum Pressure	Continuous Bar	172	172	172	172	172
	(psi)	(2500)	(2500)	(2500)	(2500)	(2500)
Minimum Speed	Below 1000 psi	600	600	600	600	600
	Above 1000 psi	1000	1000	1000	1000	1000
Maximum Speed, RPM		2200	2200	2200	2200	2200
Typical Flow at Max. Speed & Pressure	Liters/min	263	294	313	364	375
	(GPM)	(69)	(77)	(82)	(96)	(99)
Typical Input HP at Max. Speed & Pressure	KW	94	102	109	118	125
	(HP)	(126)	(137)	(146)	(158)	(168)

PFVH 25

Pump
Fixed Vane
Mobile

Mounting

Shaft

Displacement

Rotation

Port Position

Port Connections

Seals

Shaft Seal

Design Series

Code	Mounting Style
Omit	Standard SAE 2-Bolt Mount

Code	Shaft
A	0.875" x 2.13" Keyed
B	13T Spline
C	1.00" x 3.06" Keyed
D	SAE 13T Spline

Code	Rotation**
R	Right Hand (CW)
L	Left Hand (CCW)

** As viewed from shaft end.

Code	Port Position***
1	Opposite Outlet
2	90° CW From Outlet
3	Inline With Outlet
4	90° CCW From Outlet

*** As viewed from end cover of pump.

Code	Seal Material
N	Nitrile
V	Fluorocarbon*

* "FLUOROCARBONS are available under various registered trademarks, including VITON (a registered trademark of DuPont) and FLUOREL (a registered trademark of 3M)."

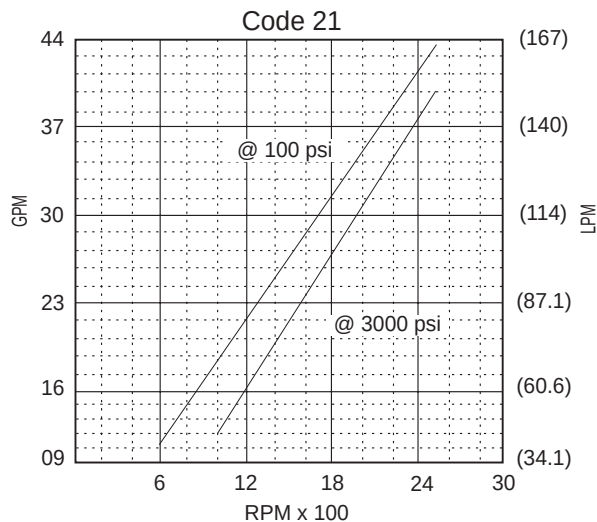
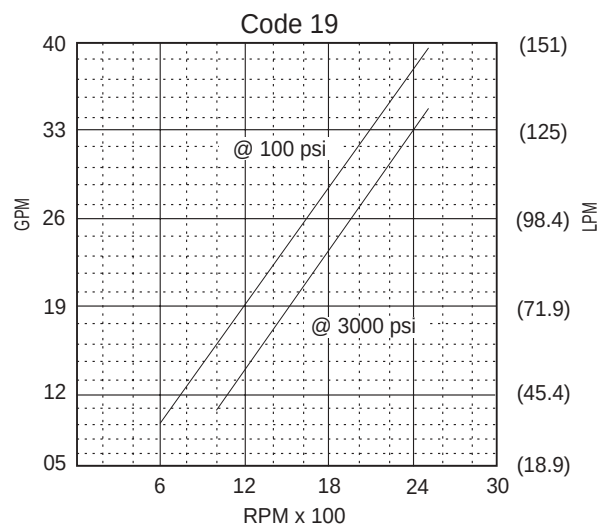
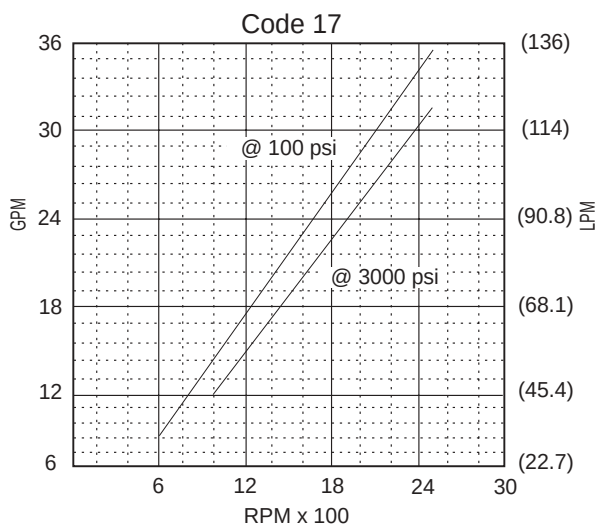
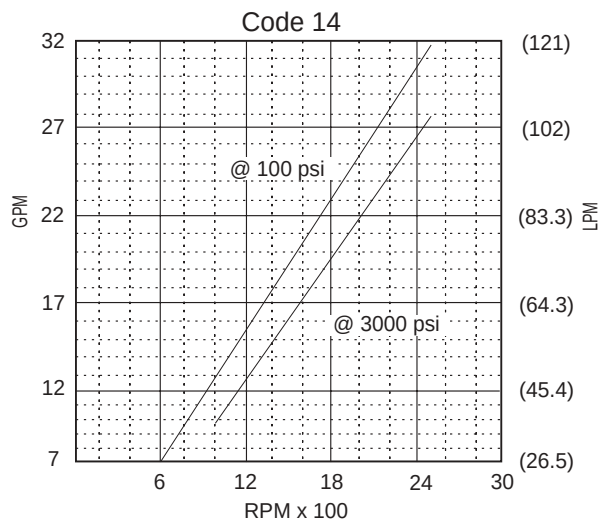
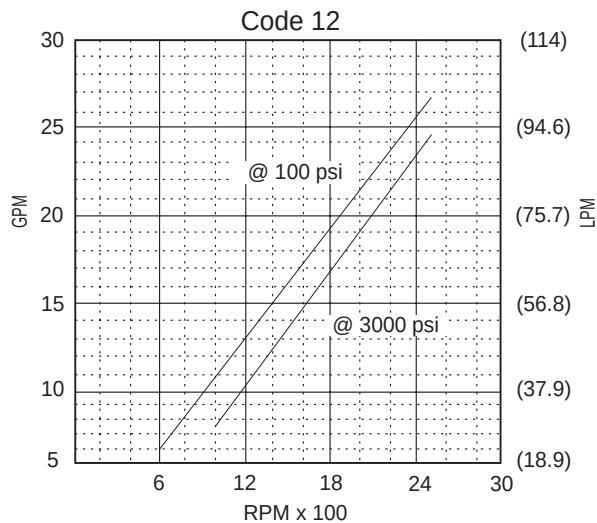
Code	Port Connections
F	SAE 4-Bolt Flange

Code	Shaft Seal
1	Single Shaft Seal
2	Double Shaft Seal

Code	Displacement CC's/Rev. (Cu. In's/Rev.)
12	40 (2.4)
14	45 (2.8)
17	55 (3.4)
19	60 (3.7)
21	68 (4.1)

A

Flow In Gallons Per Minute — LPM (GPM)

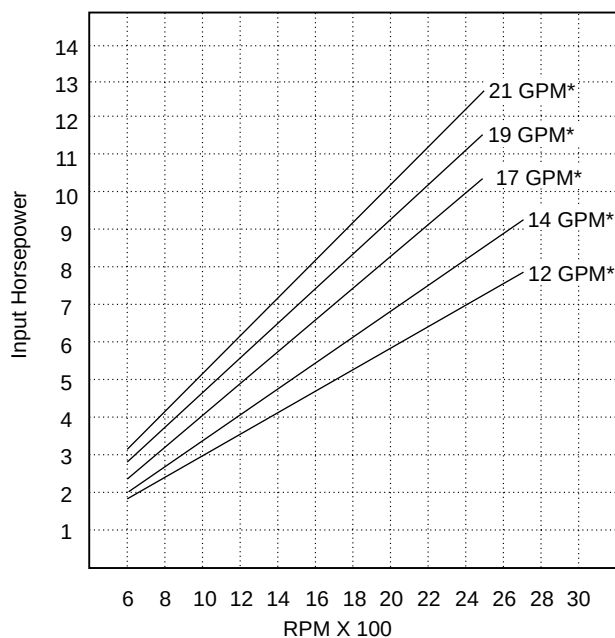


Data Based on SAE 20W Fluid @ 120°F and
 Pump Inlet @ 0 PSIG (14.7 PSIA)

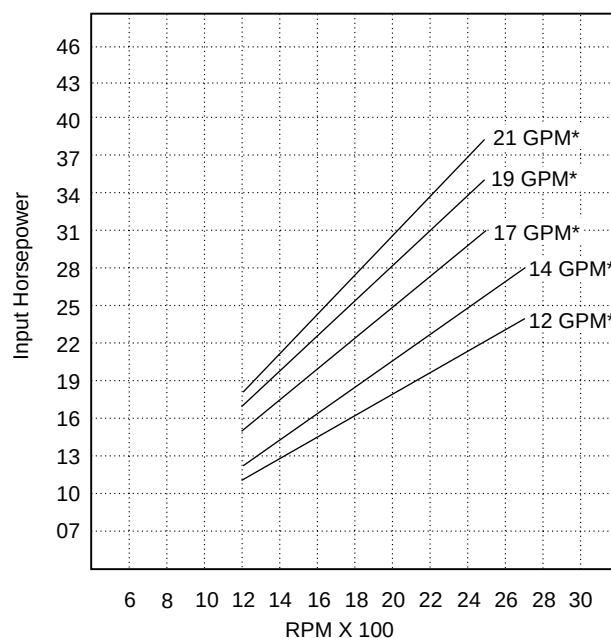
Input Horsepower

A

Outlet @ 500 PSI

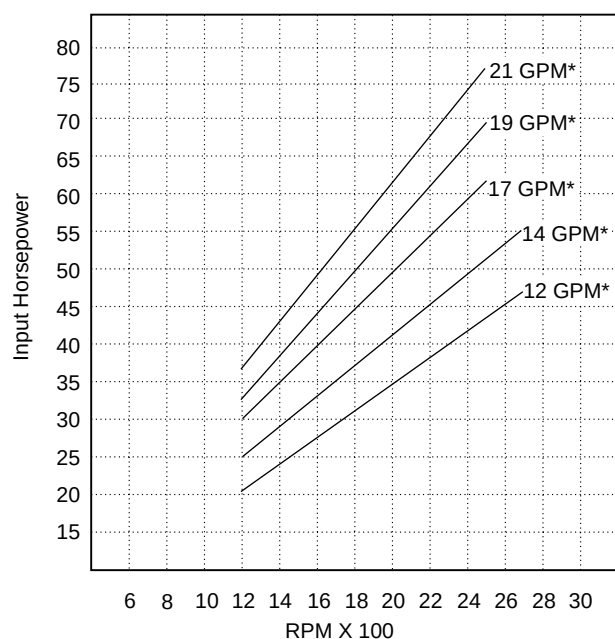


Outlet @ 1500 PSI



*GPM listed is at 1200 RPM

Outlet @ 3000 PSI

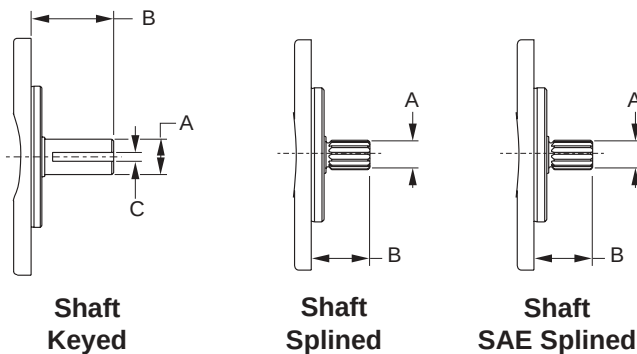
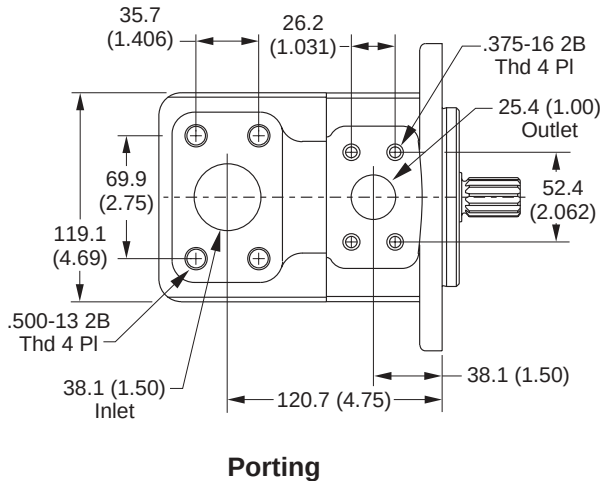
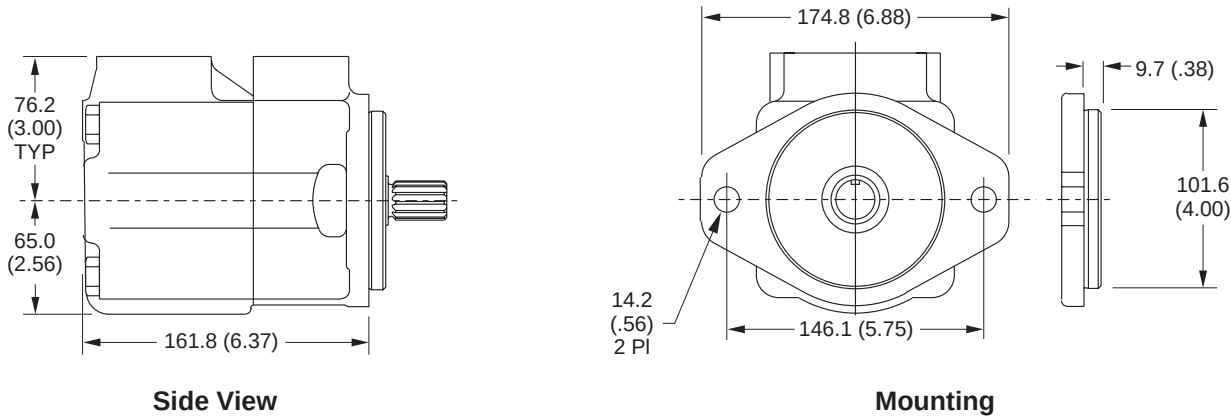


Data Based on SAE 20W Fluid @ 120°F and Pump Inlet @ 0 PSIG (14.7 PSIA)

Cat HY13-2600-250-3.pmd, rb, pm

Single Pump Dimensions

Inch equivalents for millimeter dimensions are shown in (**)



Code	Shaft Type (25 Only)	Dimensions	
		A	B
A	0.188 Square Keyed "C"	22 (0.875)	59 (2.31)
B	13T 16/32 Spline	22 (0.875)	45 (1.75)
C	0.250 Square Keyed "C"	25 (1.000)	78 (3.00)
D	SAE 13T 16/32 Spline	22 (0.875)	41 (1.62)

PFVH 35

Pump
Fixed Vane
Mobile

Mounting

Shaft

Displace-
ment

Rotation

Port
Position

Port
Connections

Seals

Shaft
Seal

Design
Series

Code	Mounting Style
Omit	Standard SAE 2-Bolt Mount

Code	Shaft
A	1.25" x 2.90" Keyed
B	14T Spline
C	1.38" x 3.47" Keyed
D	SAE 14T Spline

Code	Displacement CC's/Rev. (Cu. In's/Rev.)
21	69 (4.2)
25	82 (5.0)
30	98 (6.0)
35	113 (6.9)
38	122 (7.4)

Code	Rotation**
R	Right Hand (CW)
L	Left Hand (CCW)

** As viewed from shaft end.

Code	Port Position***
1	Opposite Outlet
2	90° CW From Outlet
3	Inline With Outlet
4	90° CCW From Outlet

*** As viewed from end cover of pump.

Code	Seal Material
N	Nitrile
V	Fluorocarbon*

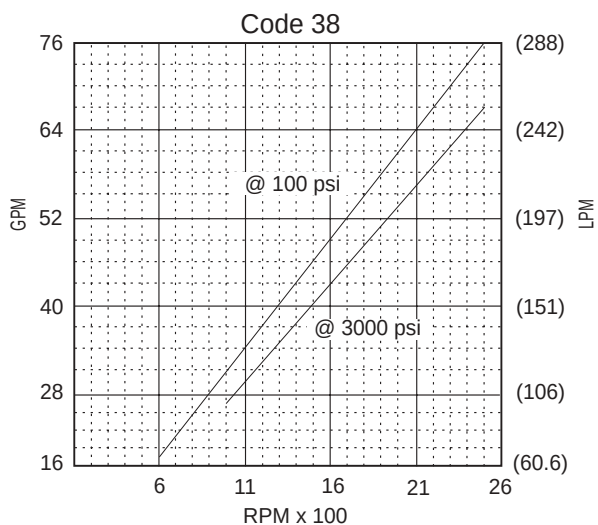
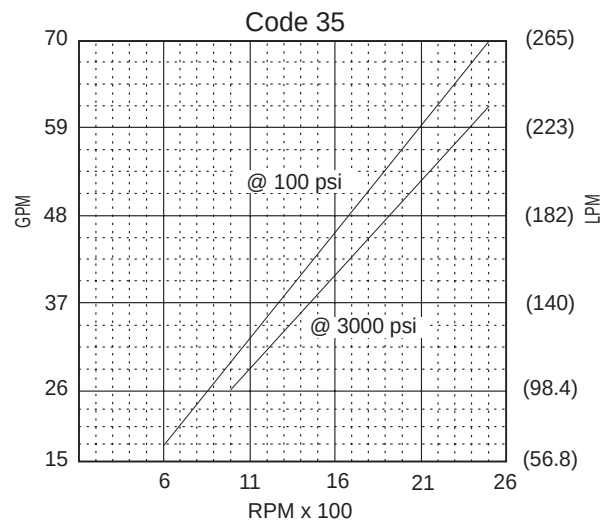
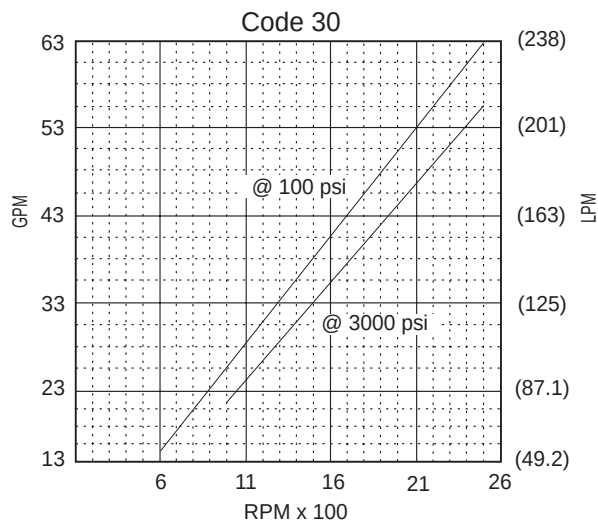
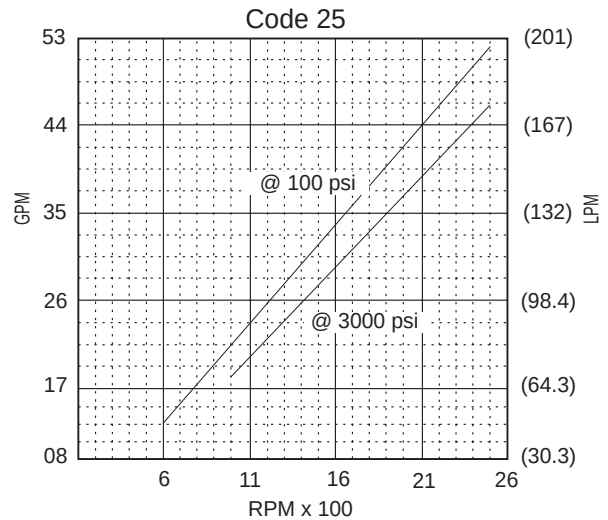
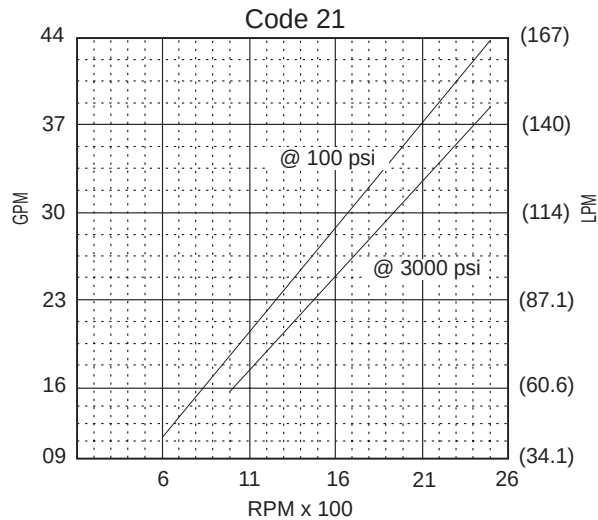
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Code	Shaft Seal
1	Single Shaft Seal
2	Double Shaft Seal

Code	Port Connections
F	SAE 4-Bolt Flange

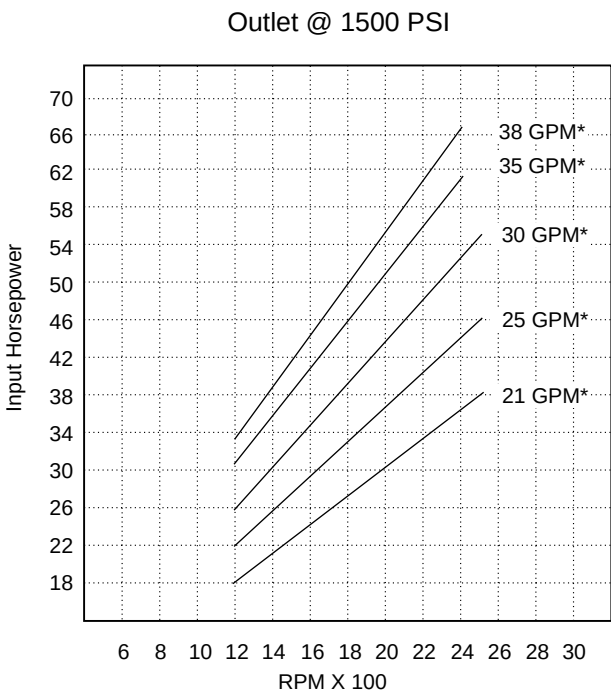
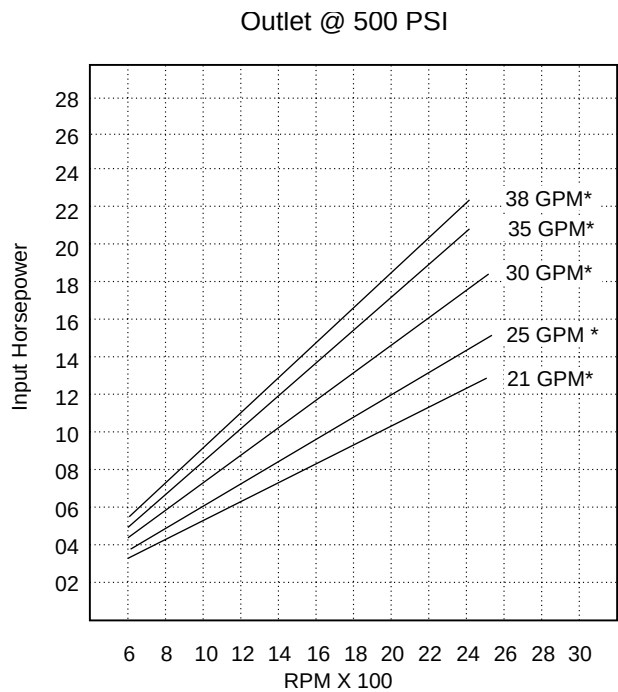
A

Flow In Gallons Per Minute — GPM (LPM)

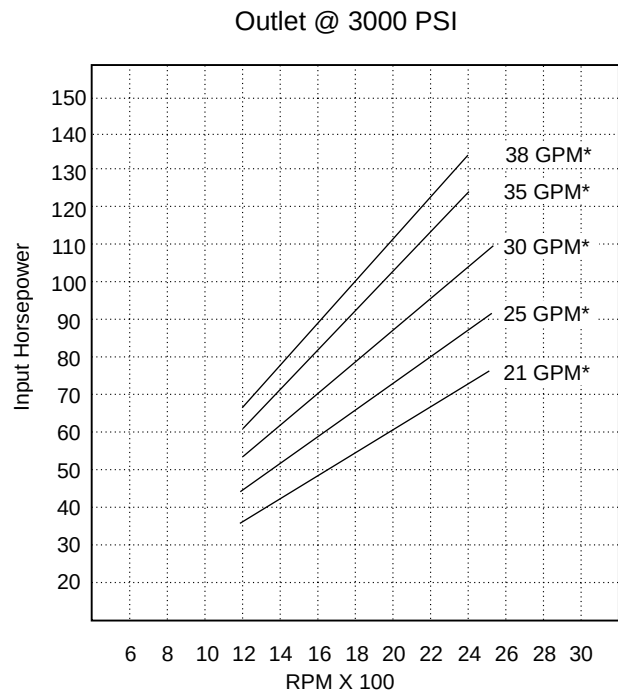


Data Based on SAE 20W Fluid @ 120°F and
 Pump Inlet @ 0 PSIG (14.7 PSIA)

Input Horsepower



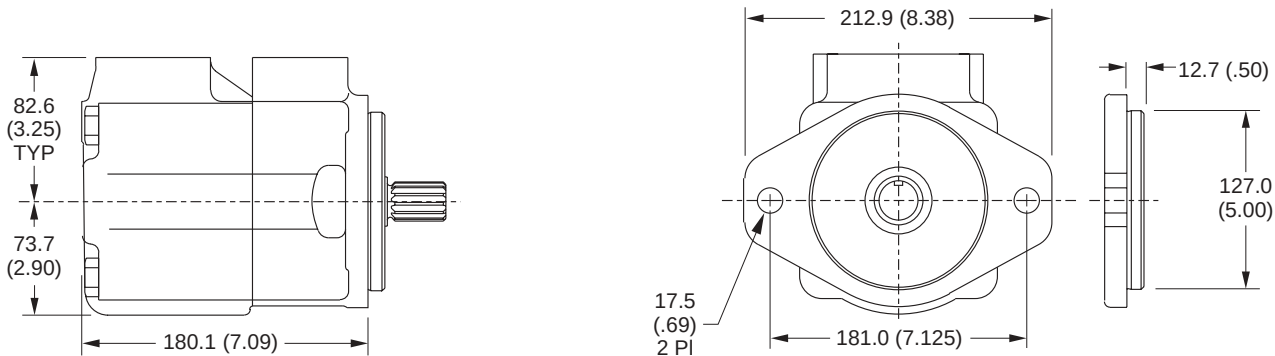
*GPM listed is at 1200 RPM



Data Based on SAE 20W Fluid @ 120°F and Pump Inlet @ 0 PSIG (14.7 PSIA)

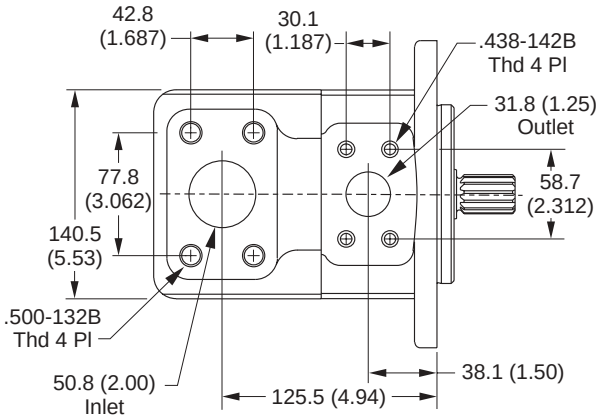
Single Pump Dimensions

Inch equivalents for millimeter dimensions are shown in (**)

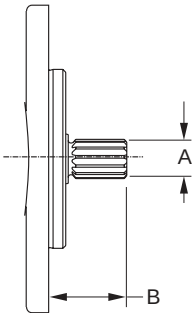


Side View

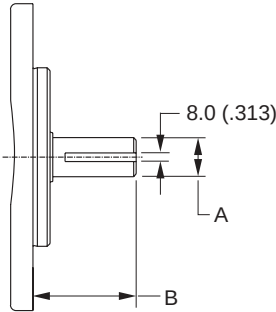
Mounting



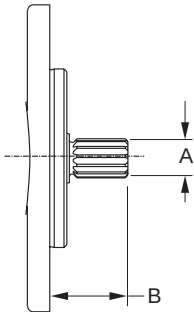
Porting



Shaft
SAE Splined

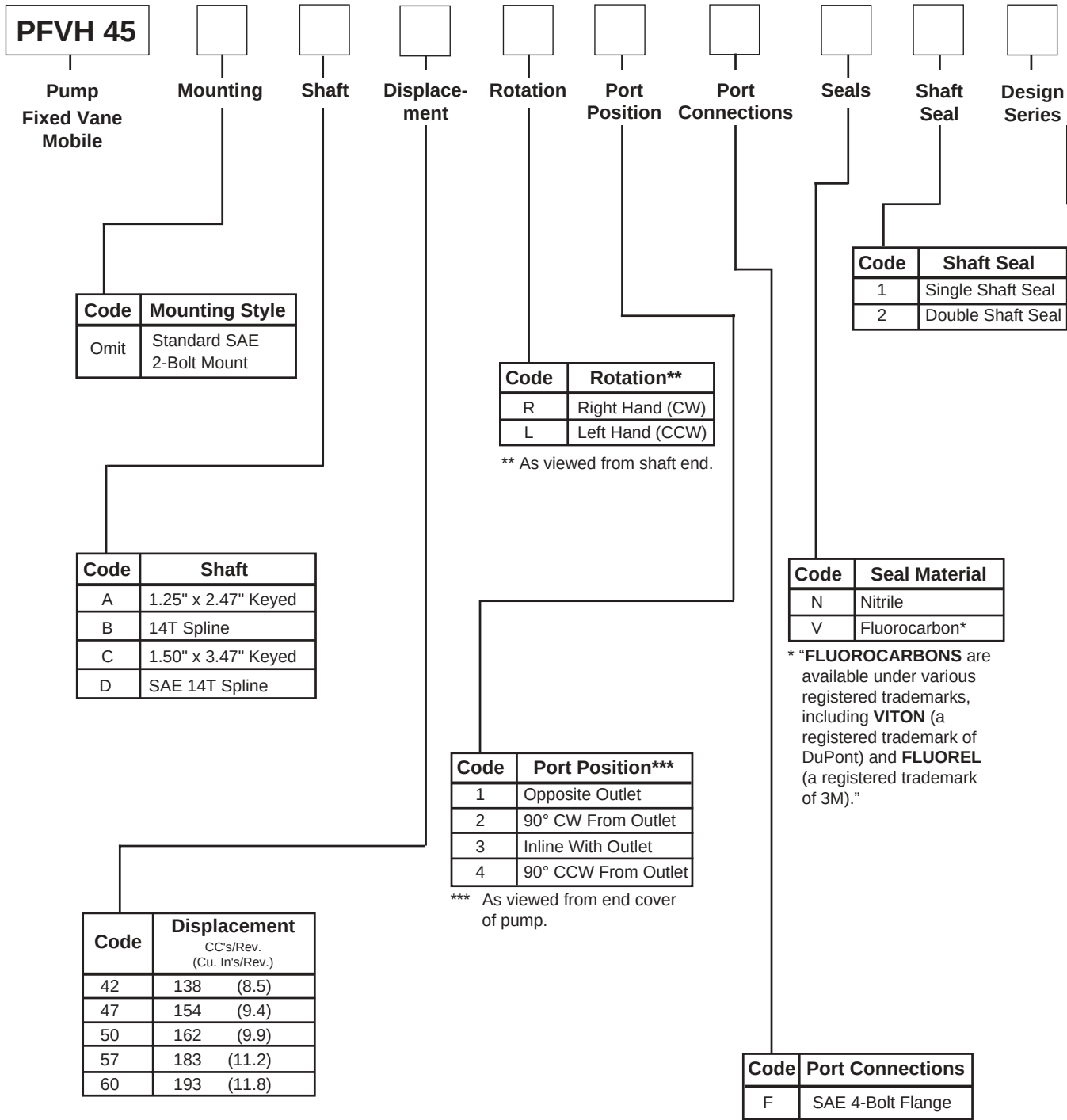


Shaft
Keyed

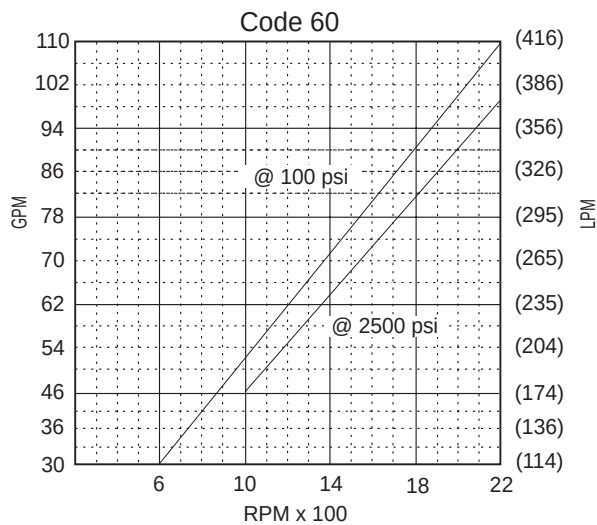
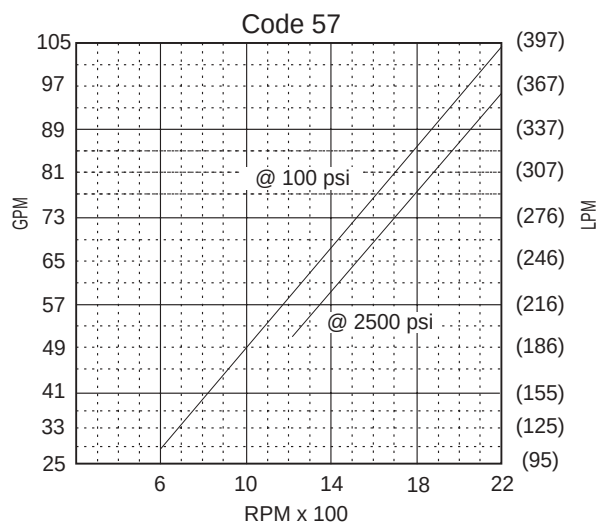
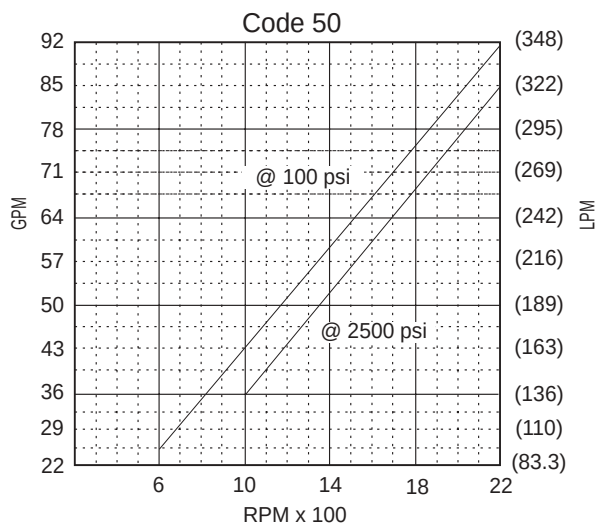
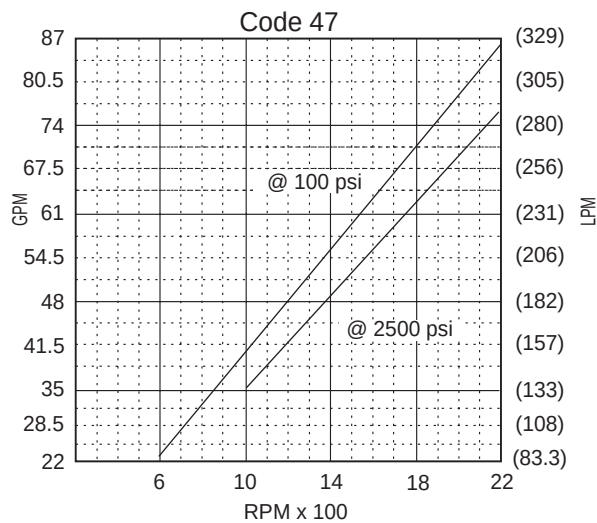
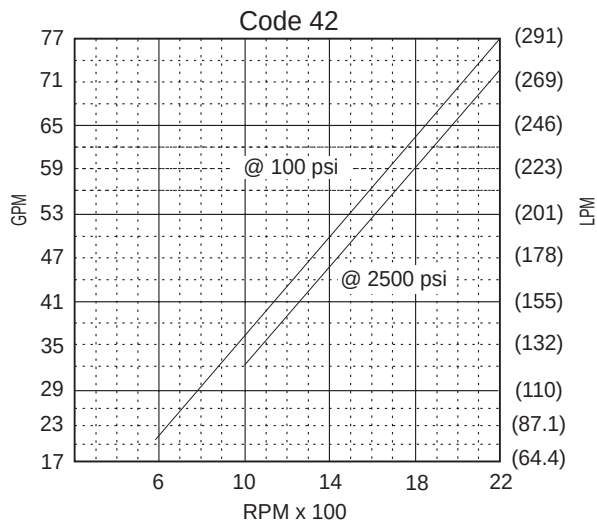


Shaft
Splined

Code	Shaft Type (35 Only)	Dimensions	
		A	B
A	0.313 Square Keyed	32 (1.250)	74 (2.90)
B	14T 12/24 Spline	32 (1.250)	58 (2.31)
C	0.313 Keyed	35 (1.375)	84 (3.31)
D	SAE 14T 12/24 Spline	32 (1.250)	56 (2.19)



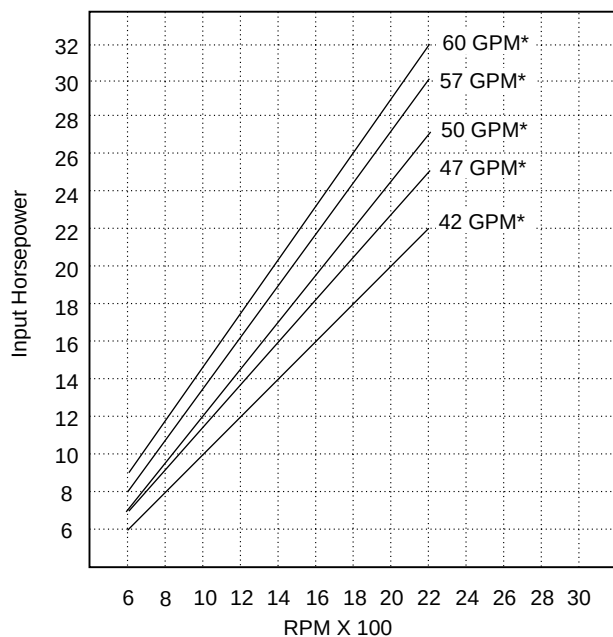
Flow In Gallons Per Minute — GPM (LPM)



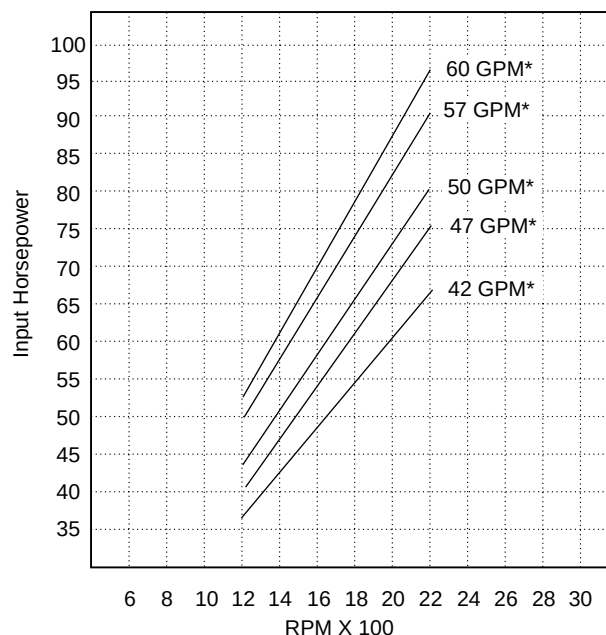
Data Based on SAE 20W Fluid @ 120° and
 Pump Inlet @ 0 PSIG (14.7 PSIA)

Input Horsepower

Outlet @ 500 PSI

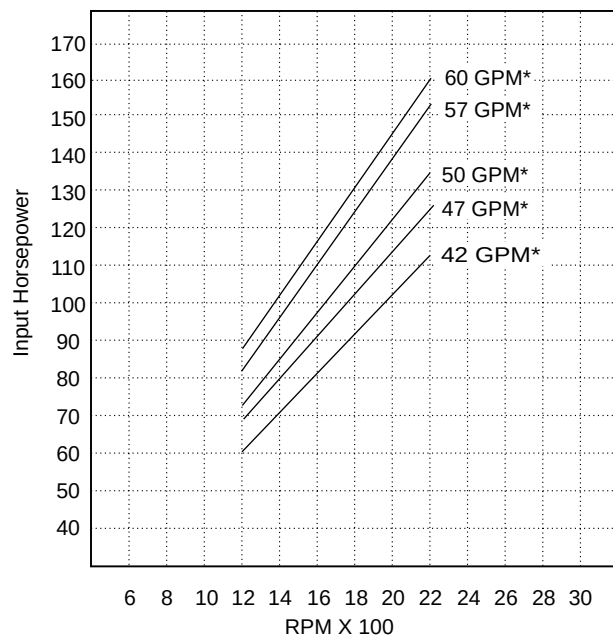


Outlet @ 1500 PSI



*GPM listed is at 1200 RPM

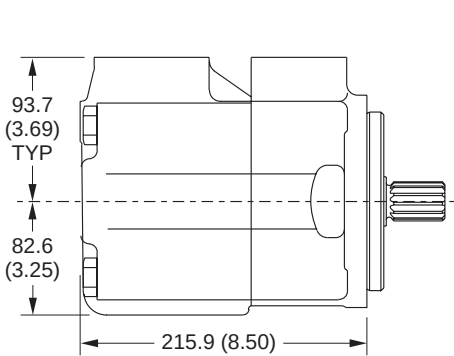
Outlet @ 2500 PSI



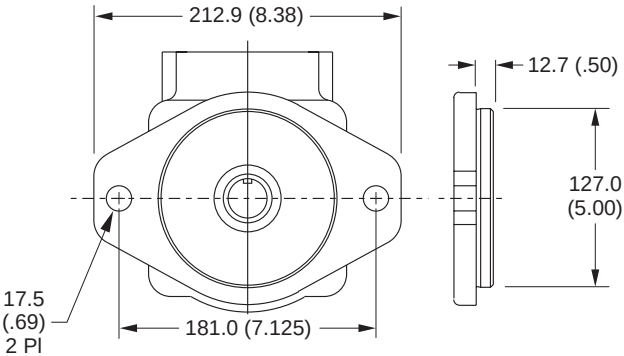
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Single Pump Dimensions

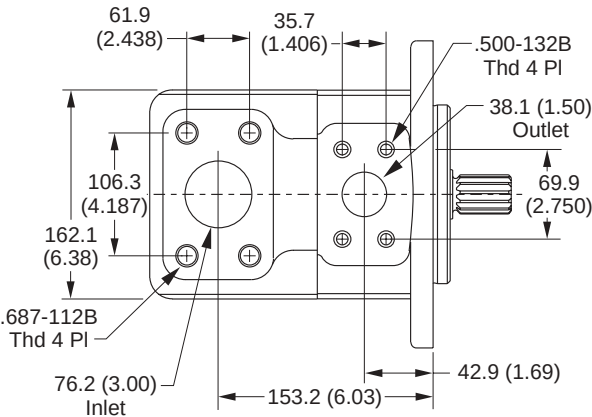
Inch equivalents for millimeter dimensions are shown in (**)



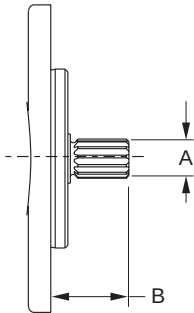
Side View



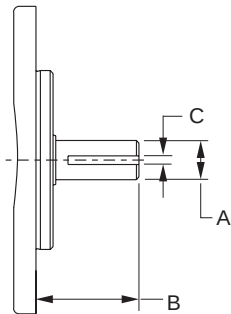
Mounting



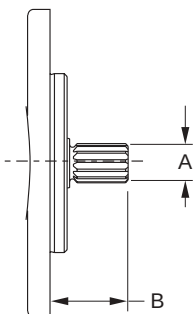
Porting



Shaft
SAE Splined



Shaft
Keyed



Shaft
Splined

Code	Shaft Type (45 Only)	Dimensions	
		A	B
A	0.313 Square Keyed "C"	32 (1.25)	63 (2.47)
B	14T 12/24 Spline	32 (1.25)	63 (2.47)
C	0.375 Square Keyed "C"	38 (1.50)	89 (3.47)
D	SAE 14T 12/24 Spline	32 (1.25)	56 (2.19)

Specifications		Shaft End Pump					Cover End Pump				
2520 Series Code		12	14	17	19	21	5	8	11	12	14
Displacement	cc / rev. (cu. in./rev.)	40 (2.4)	45 (2.8)	55 (3.4)	60 (3.7)	68 (4.1)	18 (1.1)	27 (1.67)	36 (2.22)	39 (2.41)	46 (2.79)
Maximum Pressure	Continuous Bar (psi)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	207 (3000)	207 (3000)	207 (3000)	159 (2300)	138 (2000)
Minimum Speed	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000
Maximum Speed, RPM		2700	2700	2500	2500	2500	2700	2700	2700	2700	2700
Typical Flow at Max. Speed & Pressure	Liters/min (GPM)	96 (25)	108 (28)	122 (32)	137 (36)	153 (40)	43 (11)	64 (17)	86 (23)	86 (23)	90 (24)
Typical Input HP at Max. Speed & Pressure	KW (HP)	40 (54)	50 (66)	51 (68)	56 (75)	63 (83)	18 (25)	24 (32)	37 (49)	24 (32)	27 (36)

A

Specifications		Shaft End Pump					Cover End Pump				
3520 Series Code		21	25	30	35	38	5	8	11	12	14
Displacement	cc / rev. (cu. in./rev.)	69 (4.2)	82 (5.0)	98 (6.0)	113 (6.9)	122 (7.4)	18 (1.1)	27 (1.67)	36 (2.22)	39 (2.41)	46 (2.79)
Maximum Pressure	Continuous Bar (psi)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	207 (3000)	207 (3000)	207 (3000)	159 (2300)	138 (2000)
Minimum Speed	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000
Maximum Speed, RPM		2500	2500	2500	2400	2400	2700	2700	2700	2700	2700
Typical Flow at Max. Speed & Pressure	Liters/min (GPM)	151 (40)	178 (47)	215 (57)	242 (64)	263 (69)	43 (11)	64 (17)	86 (23)	86 (23)	90 (24)
Typical Input HP at Max. Speed & Pressure	KW (HP)	63 (84)	73 (98)	91 (122)	96 (129)	106 (142)	18 (25)	24 (32)	37 (49)	24 (32)	27 (36)

Specifications		Shaft End Pump					Cover End Pump				
3525 Series Code		21	25	30	35	38	12	14	17	19	21
Displacement	cc / rev. (cu. in./rev.)	69 (4.2)	82 (5.0)	98 (6.0)	113 (6.9)	122 (7.4)	40 (2.4)	45 (2.8)	55 (3.4)	60 (3.7)	68 (4.1)
Maximum Pressure	Continuous Bar (psi)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)
Minimum Speed	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000
Maximum Speed, RPM		2500	2500	2500	2400	2400	2700	2700	2500	2500	2500
Typical Flow at Max. Speed & Pressure	Liters/min (GPM)	151 (40)	178 (47)	215 (57)	242 (64)	263 (69)	96 (25)	108 (28)	122 (32)	137 (36)	153 (40)
Typical Input HP at Max. Speed & Pressure	KW (HP)	63 (84)	73 (98)	91 (122)	96 (129)	106 (142)	40 (54)	50 (66)	51 (68)	56 (75)	63 (83)

Specifications		Shaft End Pump					Cover End Pump				
4520 Series Code		42	47	50	57	60	5	8	11	12	14
Displacement	cc / rev. (cu. in./rev.)	138 (8.5)	154 (9.4)	162 (9.9)	183 (11.2)	193 (11.8)	18 (1.1)	27 (1.67)	36 (2.22)	39 (2.41)	46 (2.79)
Maximum Pressure	Continuous Bar (psi)	172 (2500)	172 (2500)	172 (2500)	172 (2500)	172 (2500)	207 (3000)	207 (3000)	207 (3000)	159 (2300)	138 (2000)
Minimum Speed	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000
Maximum Speed, RPM		2200	2200	2200	2200	2200	2700	2700	2700	2700	2700
Typical Flow at Max. Speed & Pressure	Liters/min (GPM)	263 (69)	294 (77)	313 (82)	364 (96)	375 (99)	43 (11)	64 (17)	86 (23)	86 (23)	90 (24)
Typical Input HP at Max. Speed & Pressure	KW (HP)	94 (126)	102 (137)	109 (146)	118 (158)	125 (168)	18 (25)	24 (32)	37 (49)	24 (32)	27 (36)

Specifications		Shaft End Pump					Cover End Pump				
4525 Series Code		42	47	50	57	60	12	14	17	19	21
Displacement	cc / rev. (cu. in./rev.)	138 (8.5)	154 (9.4)	162 (9.9)	183 (11.2)	193 (11.8)	40 (2.4)	45 (2.8)	55 (3.4)	60 (3.7)	68 (4.1)
Maximum Pressure	Continuous Bar (psi)	172 (2500)	172 (2500)	172 (2500)	172 (2500)	172 (2500)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)
Minimum Speed	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000
Maximum Speed, RPM		2200	2200	2200	2200	2200	2700	2700	2500	2500	2500
Typical Flow at Max. Speed & Pressure	Liters/min (GPM)	263 (69)	294 (77)	313 (82)	364 (96)	375 (99)	96 (25)	108 (28)	122 (32)	137 (36)	153 (40)
Typical Input HP at Max. Speed & Pressure	KW (HP)	94 (126)	102 (137)	109 (146)	118 (158)	125 (168)	40 (54)	50 (66)	51 (68)	56 (75)	63 (83)

Specifications		Shaft End Pump					Cover End Pump				
4535 Series Code		42	47	50	57	60	21	25	30	35	38
Displacement	cc / rev. (cu. in./rev.)	138 (8.5)	154 (9.4)	162 (9.9)	183 (12)	193 (11.8)	69 (4.2)	82 (5.0)	98 (6.0)	113 (6.9)	122 (7.4)
Maximum Pressure	Continuous Bar (psi)	172 (2500)	172 (2500)	172 (2500)	172 (2500)	172 (2500)	206 (3000)	206 (3000)	206 (3000)	206 (3000)	206 (3000)
Minimum Speed	Below 1000 psi Above 1000 psi	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000	600 1000
Maximum Speed, RPM		2200	2200	2200	2200	2200	2500	2500	2500	2400	2400
Typical Flow at Max. Speed & Pressure	Liters/min (GPM)	263 (69)	294 (77)	313 (82)	364 (96)	375 (99)	151 (40)	178 (47)	215 (57)	242 (64)	263 (69)
Typical Input HP at Max. Speed & Pressure	KW (HP)	94 (126)	102 (137)	109 (146)	118 (158)	125 (168)	63 (84)	73 (98)	91 (122)	96 (129)	106 (142)

PFVH 2520

Pump
Fixed Vane
Mobile

Mounting

Code	Mounting Style
Omit	Standard SAE 2-Bolt Mount

Shaft

Code	Shaft
A	0.875" x 2.32" Keyed
B	13T Spline
C	1.00" x 3.06" Keyed
D	SAE 13T Spline

Shaft End Pump Displacement

Code	Displacement Shaft End Pump CC's/Rev. (Cu. In's/Rev.)
12	40 (2.4)
14	45 (2.8)
17	55 (3.4)
19	60 (3.7)
21	68 (4.1)

Cover End Pump Displacement

Code	Displacement Cover End Pump CC's/Rev. (Cu. In's/Rev.)
5	18 (1.1)
8	27 (1.7)
11	36 (2.2)
12	39 (2.4)
14	46 (2.8)

Rotation

Code	Rotation**
R	Right Hand (CW)
L	Left Hand (CCW)

Port Position

Code	# 1 Outlet Port ***
1	Opposite Inlet
2	90° CW From Inlet
3	Inline With Inlet
4	90° CCW From Inlet

Port Position

Code	# 2 Outlet Port ***
5	Outlet 135° CCW From Inlet
6	Outlet 45° CCW From Inlet
7	Outlet 45° CW From Inlet
8	Outlet 135° CW From Inlet

Port Connections

Code	Port Connections
F	SAE 4-Bolt Flange

Seals

Code	Seal Material
N	Nitrile
V	Fluorocarbon*

Shaft Seal

Code	Shaft Seal
1	Single Shaft Seal
2	Double Shaft Seal

Design Series

A

* "FLUOROCARBONS are available under various registered trademarks, including **VITON** (a registered trademark of DuPont) and **FLUOREL** (a registered trademark of 3M)."

*** As viewed from end cover of pump.

*** As viewed from end cover of pump.

** As viewed from shaft end.

Cat HY13-2600-250-3.pmd, rb, pm

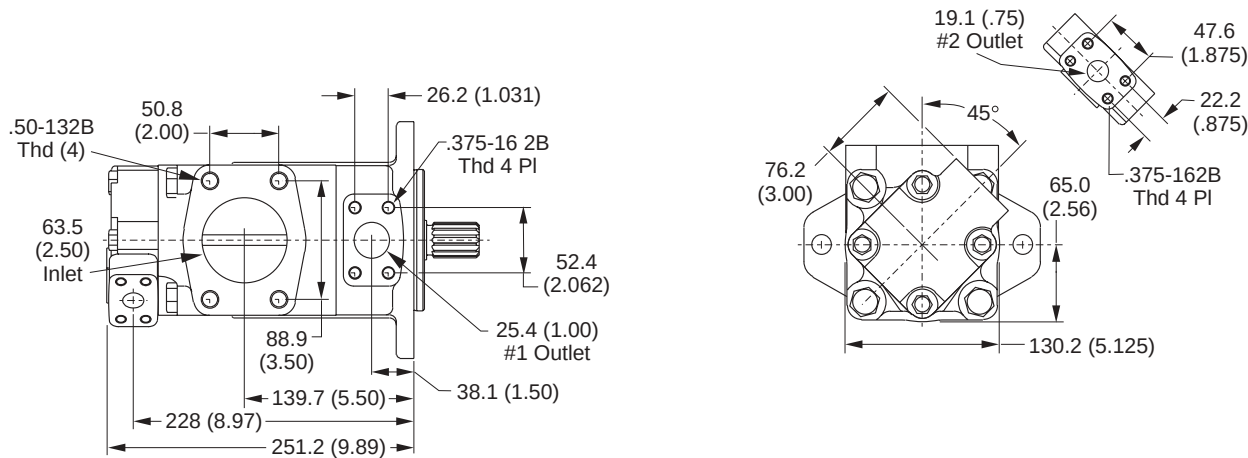
 Parker

A231

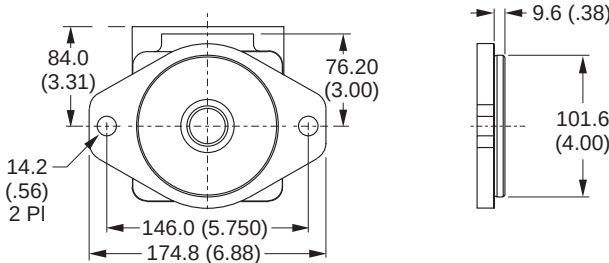
Parker Hannifin Corporation
Hydraulic Pump/Motor Division
Greeneville, Tennessee, USA

Tandem Pump Dimensions

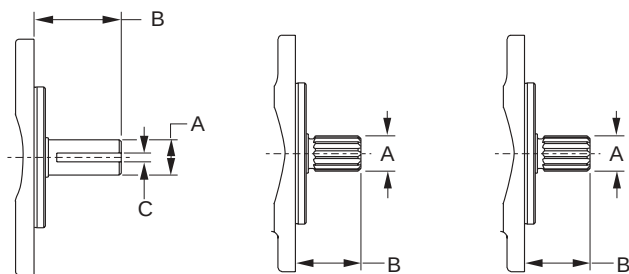
Inch equivalents for millimeter dimensions are shown in (**)



Porting



Mounting



Shaft
Keyed

Shaft
Splined

Shaft
SAE Splined

Code	Shaft Type (2520 Only)	Dimensions	
		A	B
A	0.188 Square Keyed "C"	22 (0.875)	59 (2.31)
B	13T 16/32 Spline	22 (0.875)	45 (1.75)
C	0.250 Square Keyed "C"	32 (1.250)	78 (3.06)
D	SAE 13T 16/32 Spline	22 (0.875)	41 (1.62)

PFVH 3520

	Pump	Fixed Vane	Mobile
1. Capacity	1000-1000000	1000-1000000	1000-1000000
2. Efficiency	80-90%	80-90%	80-90%
3. Maintenance	Low	Low	Low
4. Cost	Low	Low	Low
5. Noise	Low	Low	Low
6. Vibration	Low	Low	Low
7. Life	10-20 years	10-20 years	10-20 years
8. Applications	Water, oil, gas, etc.	Water, oil, gas, etc.	Water, oil, gas, etc.

Mounting

Shaft

Shaft
End
Pump
Displace-
ment

Cover	End	Pump	Displace-
ment			
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Rotation

Port
PositionPort
Position

Port
Connections

Seals

Shaft Seal

Design Series

A

Code	Mounting Style
Omit	Standard SAE 2-Bolt Mount

Code	Shaft
A	1.25" x 2.90" Keyed
B	14T Spline
C	1.375" x 3.31" Keyed
D	SAE 14T Spline

Code	Displacement Shaft End Pump CC's/Rev. (Cu. In's/Rev.)
21	69 (4.2)
25	82 (5.0)
30	98 (6.0)
35	113 (6.9)
38	122 (7.4)

Code	Displacement Cover End Pump CC's/Rev. (Cu. In's/Rev.)
5	18 (1.1)
8	27 (1.7)
11	36 (2.2)
12	39 (2.4)
14	46 (2.8)

Code	Rotation**
R	Right Hand (CW)
L	Left Hand (CCW)

** As viewed from shaft end.

Code	Shaft Seal
1	Single Shaft Seal
2	Double Shaft Seal

Code	Seal Material
N	Nitrile
V	Fluorocarbon*

* "FLUOROCARBONS are available under various registered trademarks, including **VITON** (a registered trademark of DuPont) and **FLUOREL** (a registered trademark of 3M)."

Code	Port Connections
F	SAE 4-Bolt Flange

Code	# 2 Outlet Port ***
5	Outlet 135° CCW From Inlet
6	Outlet 45° CCW From Inlet
7	Outlet 45° CW From Inlet
8	Outlet 135° CW From Inlet

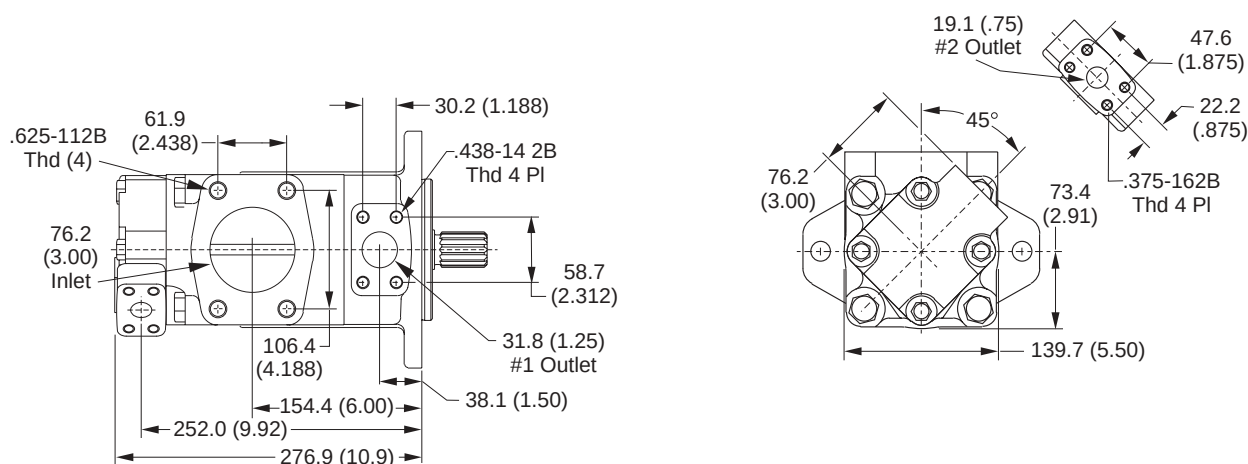
*** As viewed from end cover of pump.

Code	# 1 Outlet Port ***
1	Opposite Inlet
2	90° CW From Inlet
3	Inline With Inlet
4	90° CCW From Inlet

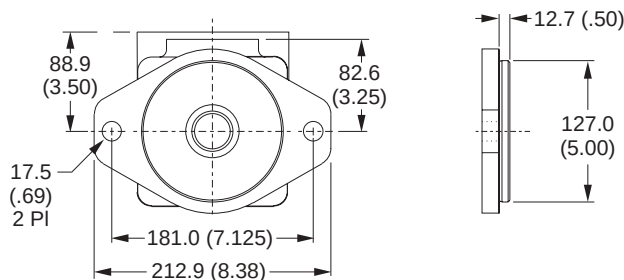
*** As viewed from end cover of pump.

Tandem Pump Dimensions

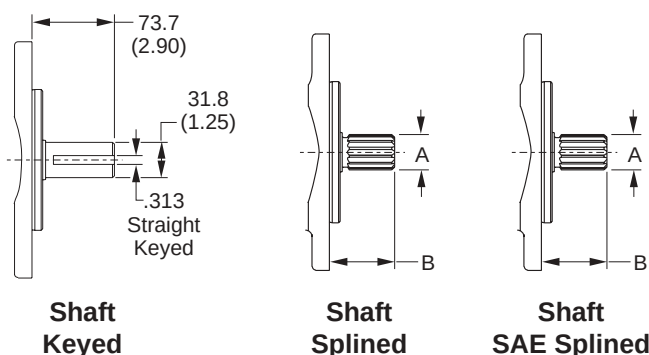
Inch equivalents for millimeter dimensions are shown in (**)



Porting



Mounting



**Shaft
Keyed**

**Shaft
Splined**

**Shaft
SAE Splined**

Code	Shaft Type (35XX Only)	Dimensions	
		A	B
A	0.313 Square Keyed	1.250 (32)	2.90 (74)
B	14T 12/24 Spline	1.250 (32)	2.31 (58)
C	0.313 Square Keyed	1.375 (35)	3.31 (84)
D	SAE 14T 12/24 Spline	1.250 (32)	2.19 (56)

PFVH 3525

	Pump	Fixed Vane	Mobile
1. Capacity	1000-1000000	1000-1000000	1000-1000000
2. Efficiency	80-90%	80-90%	80-90%
3. Maintenance	Low	Low	Low
4. Cost	Low	Low	Low
5. Noise	Low	Low	Low
6. Vibration	Low	Low	Low
7. Life	10-20 years	10-20 years	10-20 years
8. Applications	Water, oil, gas, etc.	Water, oil, gas, etc.	Water, oil, gas, etc.

Mounting

Shaft

Shaft
End
Pump
Displace-
ment

Cover
End
Pump
Displace-
ment

Rotation

Port
PositionPort
Position

Port
Connections

Seals

Shaft Seal

Design Series

A

Code	Mounting Style
Omit	Standard SAE 2-Bolt Mount

Code	Shaft
A	1.25" x 2.90" Keyed
B	14T Spline
C	1.375" x 3.31" Keyed
D	SAE 14T Spline

Code	Displacement Shaft End Pump CC's/Rev. (Cu. In's/Rev.)
21	69 (4.2)
25	82 (5.0)
30	98 (6.0)
35	113 (6.9)
38	122 (7.4)

Code	Displacement Cover End Pump CC's/Rev. (Cu. In's/Rev.)
12	40 (2.4)
14	45 (2.8)
17	55 (3.4)
19	60 (3.7)
21	68 (4.1)

Code	Rotation**
R	Right Hand (CW)
L	Left Hand (CCW)

** As viewed from shaft end.

Code	Shaft Seal
1	Single Shaft Seal
2	Double Shaft Seal

Code	Seal Material
N	Nitrile
V	Fluorocarbon*

* "FLUOROCARBONS are available under various registered trademarks, including **VITON** (a registered trademark of DuPont) and **FLUOREL** (a registered trademark of 3M)."

Code	Port Connections
F	SAE 4-Bolt Flange

Code	# 2 Outlet Port ***
5	Outlet 135° CCW From Inlet
6	Outlet 45° CCW From Inlet
7	Outlet 45° CW From Inlet
8	Outlet 135° CW From Inlet

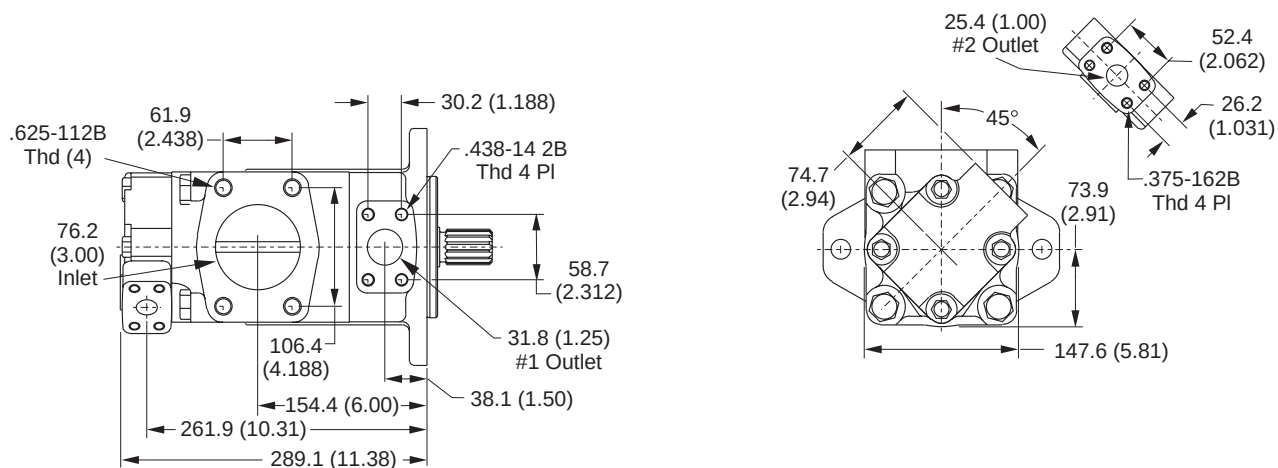
*** As viewed from end cover of pump.

Code	# 1 Outlet Port ***
1	Opposite Inlet
2	90° CW From Inlet
3	Inline With Inlet
4	90° CCW From Inlet

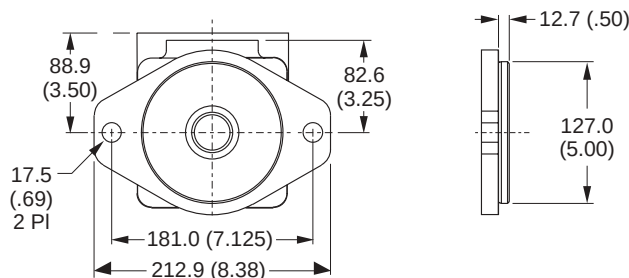
*** As viewed from end cover of pump.

Tandem Pump Dimensions

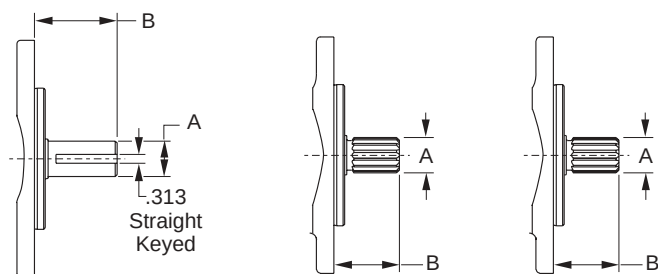
Inch equivalents for millimeter dimensions are shown in (**)



Porting



Mounting



**Shaft
Keyed**

**Shaft
Splined**

**Shaft
SAE Splined**

Code	Shaft Type (35XX Only)	Dimensions	
		A	B
A	0.313 Square Keyed	32 (1.250)	74 (2.90)
B	14T 12/24 Spline	32 (1.250)	58 (2.31)
C	0.313 Square Keyed	35 (1.375)	84 (3.31)
D	SAE 14T 12/24 Spline	32 (1.250)	56 (2.19)

PFVH 4520

	Pump	Fixed Vane	Mobile
1. Capacity	1000-1000000	1000-1000000	1000-1000000
2. Efficiency	80-90%	80-90%	80-90%
3. Maintenance	Low	Low	Low
4. Cost	Low	Low	Low
5. Noise	Low	Low	Low
6. Vibration	Low	Low	Low
7. Life	10-20 years	10-20 years	10-20 years
8. Applications	Water supply, sewage treatment, industrial process	Water supply, sewage treatment, industrial process	Water supply, sewage treatment, industrial process

Mounting

Shaft

Shaft
End
Pump
Displace-
ment

Cover
End
Pump
Displace-
ment

Rotation

Port Position

Port Position

Port
Connections

Seals

Shaft Seal

Design Series

A

Code	Mounting Style
Omit	Standard SAE 2-Bolt Mount

Code	Shaft
A	1.25" x 2.47" Keyed
B	14T Spline
C	1.50" x 3.47" Keyed
D	SAE 14T Spline

Code	Displacement Shaft End Pump CC's/Rev. (Cu. In's/Rev.)
42	138 (8.5)
47	154 (9.4)
50	162 (9.9)
57	183 (11.2)
60	193 (11.8)

Code	Displacement Cover End Pump CC's/Rev. (Cu. In's/Rev.)
5	18 (1.1)
8	27 (1.7)
11	36 (2.2)
12	39 (2.4)
14	46 (2.8)

Code	Rotation**
R	Right Hand (CW)
L	Left Hand (CCW)

** As viewed from shaft end.

Code	Shaft Seal
1	Single Shaft Seal
2	Double Shaft Seal

Code	Seal Material
N	Nitrile
V	Fluorocarbon*

* "FLUOROCARBONS are available under various registered trademarks, including **VITON** (a registered trademark of DuPont) and **FLUOREL** (a registered trademark of 3M)."

Code	Port Connections
F	SAE 4-Bolt Flange

Code	# 2 Outlet Port ***
5	Outlet 135° CCW From Inlet
6	Outlet 45° CCW From Inlet
7	Outlet 45° CW From Inlet
8	Outlet 135° CW From Inlet

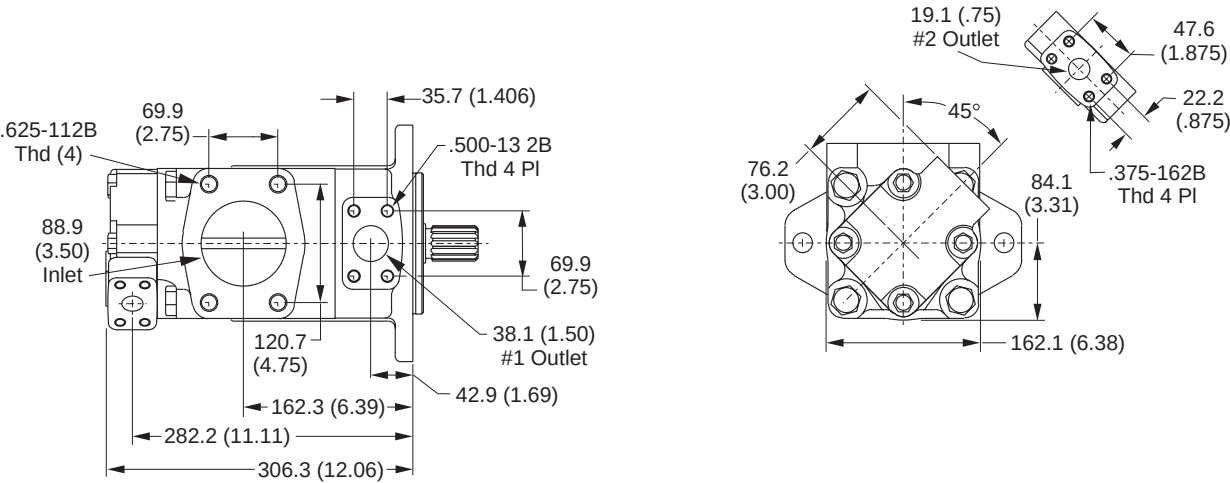
*** As viewed from end cover of pump.

Code	# 1 Outlet Port ***
1	Opposite Inlet
2	90° CW From Inlet
3	Inline With Inlet
4	90° CCW From Inlet

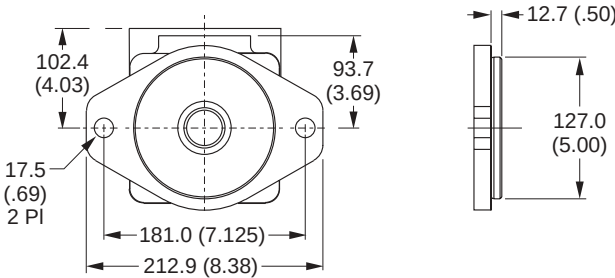
*** As viewed from end cover of pump.

Tandem Pump Dimensions

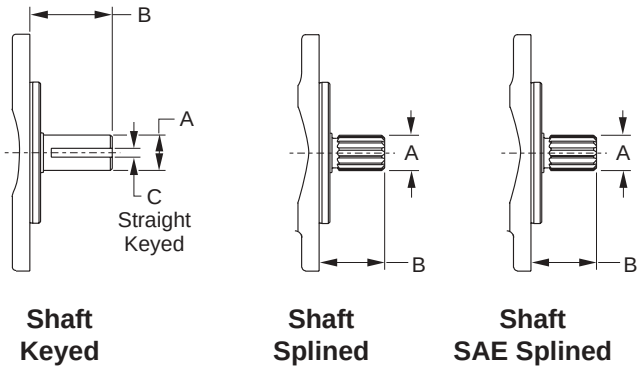
Inch equivalents for millimeter dimensions are shown in (**)



Porting



Mounting



Code	Shaft Type (4520 & 4525 Only)	Dimensions	
		A	B
A	0.313 Square Keyed "C"	32 (1.25)	63 (2.47)
B	14T 12/24 Spline	32 (1.25)	63 (2.47)
C	0.313 Square Keyed "C"	38 (1.50)	89 (3.47)
D	SAE 14T 12/24 Spline	32 (1.25)	56 (2.19)

PFVH 4525

	Pump	Fixed Vane	Mobile
1. Capacity	1000-1000000	1000-1000000	1000-1000000
2. Efficiency	80-90%	80-90%	80-90%
3. Maintenance	Low	Low	Low
4. Cost	Low	Low	Low
5. Noise	Low	Low	Low
6. Vibration	Low	Low	Low
7. Life	10-20 years	10-20 years	10-20 years
8. Applications	Water, oil, gas, etc.	Water, oil, gas, etc.	Water, oil, gas, etc.

Mounting

Shaft

Shaft
End
Pump
Displace-
ment

Cover	End	Pump	Displace-
			ment
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Rotation

Port
Position

Port Position

Port
Connections

Seals

Shaft Seal

Design Series

A

Code	Mounting Style
Omit	Standard SAE 2-Bolt Mount

Code	Shaft
A	1.25" x 2.47" Keyed
B	14T Spline
C	1.50" x 3.47" Keyed
D	SAE 14T Spline

Code	Displacement Shaft End Pump CC's/Rev. (Cu. In's/Rev.)
42	138 (8.5)
47	154 (9.4)
50	162 (9.9)
57	183 (11.2)
60	193 (11.8)

Code	Displacement Cover End Pump CC's/Rev. (Cu. In's/Rev.)
12	40 (2.4)
14	45 (2.8)
17	55 (3.4)
19	60 (3.7)
21	68 (4.1)

Code	Rotation**
R	Right Hand (CW)
L	Left Hand (CCW)

** As viewed from shaft end.

Code	Shaft Seal
1	Single Shaft Seal
2	Double Shaft Seal

Code	Seal Material
N	Nitrile
V	Fluorocarbon*

* "FLUOROCARBONS are available under various registered trademarks, including **VITON** (a registered trademark of DuPont) and **FLUOREL** (a registered trademark of 3M)."

Code	Port Connections
F	SAE 4-Bolt Flange

Code	# 2 Outlet Port ***
5	Outlet 135° CCW From Inlet
6	Outlet 45° CCW From Inlet
7	Outlet 45° CW From Inlet
8	Outlet 135° CW From Inlet

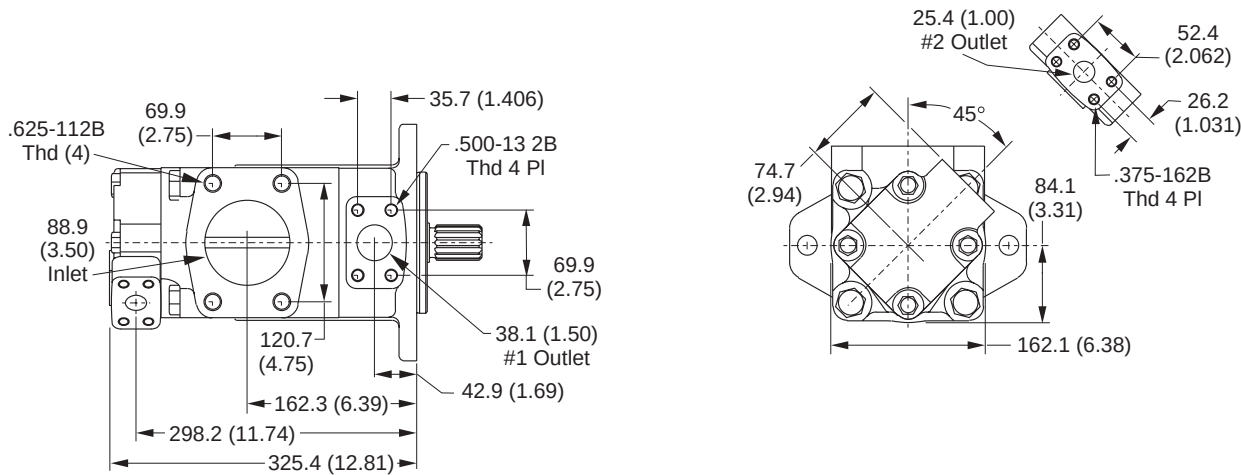
*** As viewed from end cover of pump.

Code	# 1 Outlet Port ***
1	Opposite Inlet
2	90° CW From Inlet
3	Inline With Inlet
4	90° CCW From Inlet

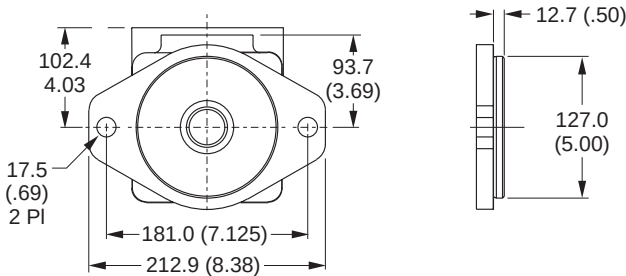
*** As viewed from end cover of pump.

Tandem Pump Dimensions

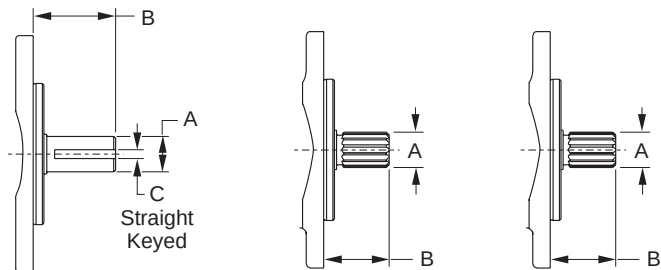
Inch equivalents for millimeter dimensions are shown in (**)



Porting



Mounting



Shaft
Keyed

Shaft
Splined

Shaft
SAE Splined

Code	Shaft Type (4520 & 4525 Only)	Dimensions	
		A	B
A	0.313 Square Keyed "C"	32 (1.25)	63 (2.47)
B	14T 12/24 Spline	32 (1.25)	63 (2.47)
C	0.375 Square Keyed "C"	38 (1.50)	89 (3.47)
D	SAE 14T 12/24 Spline	32 (1.25)	56 (2.19)

PFVH4535	Mounting	Shaft	Shaft End Pump Displacement	Cover End Pump Displacement	Rotation	Port Position	Port Position	Port Connections	Seals	Shaft Seal	Design Series												
Pump Fixed Vane Mobile																							
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Code</th> <th>Mounting Style</th> </tr> </thead> <tbody> <tr> <td>Omit</td> <td>Standard SAE 2-Bolt Mount</td> </tr> </tbody> </table>	Code	Mounting Style	Omit	Standard SAE 2-Bolt Mount																		
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D	SAE 14T Spline																						
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* "FLUOROCARBONS are available under various registered trademarks, including **VITON** (a registered trademark of DuPont) and **FLUOREL** (a registered trademark of 3M)."

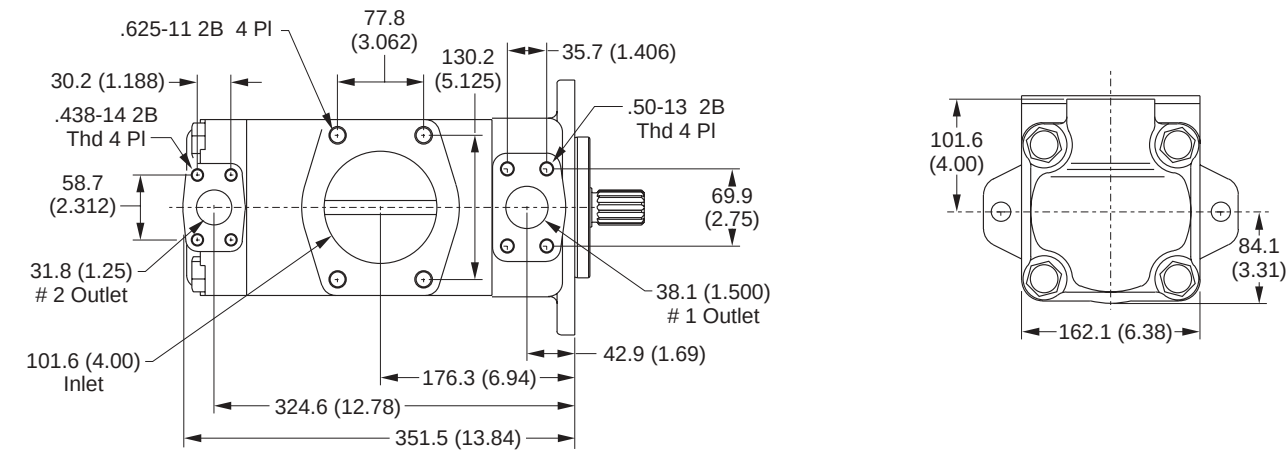
*** As viewed from end cover of pump.

*** As viewed from end cover of pump.

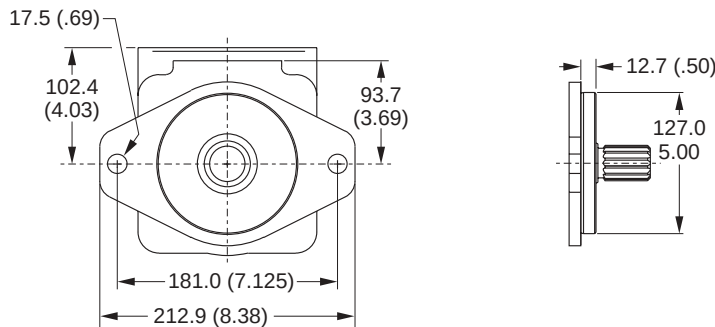
** As viewed from shaft end.

Tandem Pump Dimensions

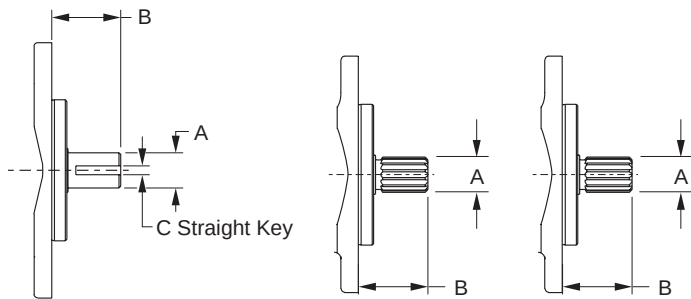
Inch equivalents for millimeter dimensions are shown in (**)



Porting



Mounting



**Shaft
Keyed**

**Shaft
Splined**

**Shaft
SAE Splined**

Code	Shaft Type (4535 Only)	Dimensions	
		A	B
A	0.313 Square Keyed "C"	32 (1.25)	63 (2.47)
B	14T 12/24 Spline	32 (1.25)	63 (2.47)
C	0.375 Square Keyed "C"	38 (1.50)	89 (3.47)
D	SAE 14T 12/24 Spline	32 (1.25)	56 (2.19)



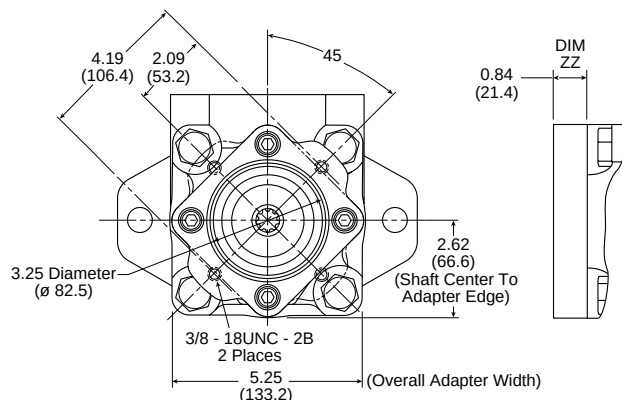
Cat HY13-2600-250-3.pmd, rb, pm

Note: The units with Thru-Drive capability will accept a pump which conforms to flange and shaft codes specified in SAE J744 Jul 88 (ISO 3019/1).

Code 1 – SAE-A Adapter

Frame Sizes: 25, 35 & 45

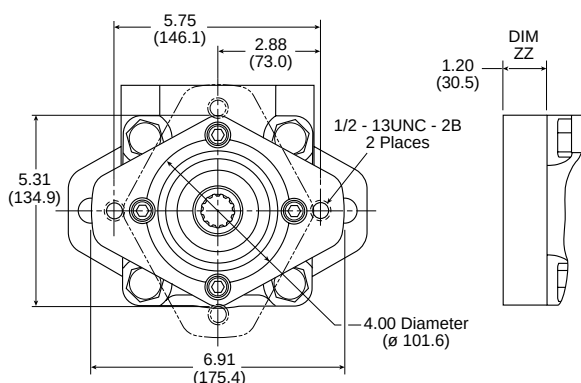
Couplings Accepts: SAE 9T 16/32 Spline



Code 2 – SAE-B Adapter

Frame Sizes: 25, 35 & 45

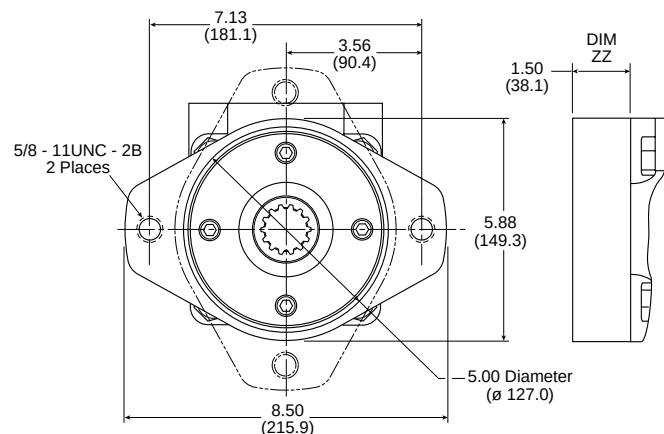
Couplings Accepts: SAE 13T 16/32 Spline



Code 3 – SAE-C Adapter

Frame Sizes: 35 & 45

Couplings Accepts: SAE 14T 12/24 Spline



Single Thru-Drive Pumps

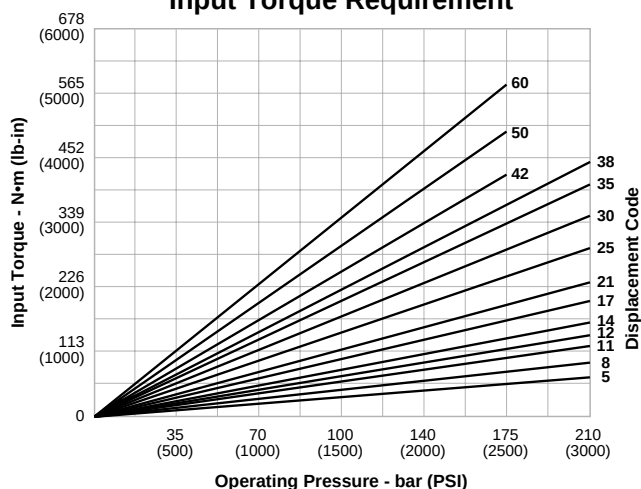
Where both the thru-drive pump and its rear-mounted pump are to be on-load together, check that the sum of the torques generated will never exceed the torque limit in the shaft torque. Also check that the torque required on the rear-mounted pump never exceeds the thru-drive torque limit in shaft torque (Table 1).

Table 1

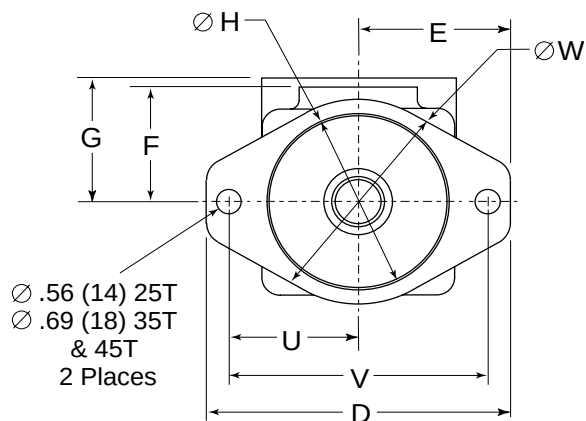
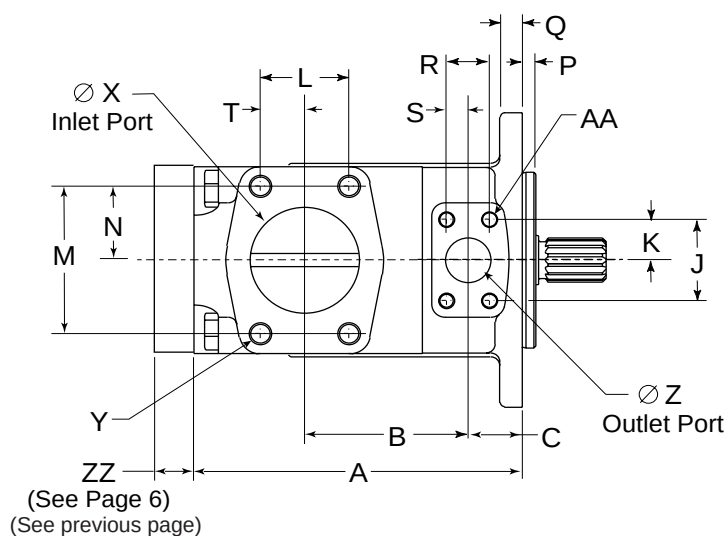
Shaft Code	Max Input Torque N·m (lb-in)*	Thru-Drive Connection Code	Max. Thru-Drive Torque N·m (lb-in)
PFV*25T			
C	339 (3000)	1 (SAE-A) 2 (SAE-B)	68 (600) 203 (1800)
D	282 (2500)	1 (SAE-A) 2 (SAE-B)	68 (600) 203 (1800)
PFV*35T			
C	474 (4200)	1 (SAE-A) 2 (SAE-B) 3 (SAE-C)	248 (2200) 248 (2200) 293 (2600)
D	474 (4200)	1 (SAE-A) 2 (SAE-B) 3 (SAE-C)	248 (2200) 248 (2200) 293 (2600)
PFV*45T			
C	734 (6500)	1 (SAE-A) 2 (SAE-B) 3 (SAE-C)	248 (2200) 248 (2200) 508 (4500)
D	734 (6500)	1 (SAE-A) 2 (SAE-B) 3 (SAE-C)	248 (2200) 248 (2200) 508 (4500)

* Combined torque of Thru-Drive pump "T" plus the driven pump (driven pump drive torque obtained from appropriate model information). Ratings are consistent with SAE guidelines.

Input Torque Requirement

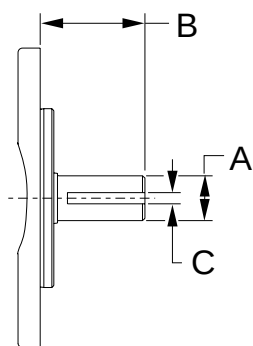


Refer to Technical Information section for individual model ratings.

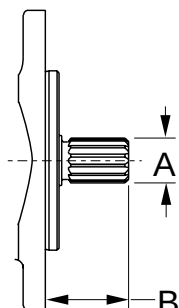


Model	A	B	C	D	E	F	G	ØH	J	K	L	M	N
25T	205.5 (8.09)	101.6 (4.00)	38.1 (1.50)	174.8 (6.88)	87.4 (3.44)	76.2 (3.00)	84.1 (3.31)	101.6 (4.00) 101.5 (3.99)	52.4 (2.06)	26.2 (1.03)	50.8 (2.00)	88.9 (3.50)	44.5 (1.75)
35T	229.9 (9.05)	114.3 (4.50)	38.1 (1.50)	213.0 (8.38)	106.2 (4.18)	82.6 (3.25)	88.9 (3.50)	127.0 (5.00) 126.9 (4.99)	58.7 (2.31)	29.4 (1.16)	61.9 (2.44)	106.4 (4.19)	53.2 (2.09)
45T	260.4 (10.25)	119.1 (4.69)	42.9 (1.69)	213.0 (8.38)	106.2 (4.18)	93.7 (3.69)	102.3 (4.03)	127.0 (5.00) 126.9 (4.99)	69.9 (2.75)	34.9 (1.38)	69.9 (2.75)	120.7 (4.75)	60.3 (2.38)

Model	P	Q	R	S	T	U	V	ØW	ØX	Y	ØZ	AA
25T	9.52 (.375)	12.7 (.50)	26.2 (1.03)	13.1 (.52)	25.4 (1.00)	73.0 (2.88)	146.0 (5.75)	52.4 (4.75)	63.5 (2.50)	.500-13 UNC-2B or M12 thread 23.8 (.938) deep 4 holes	25.4 (1.00)	.375-16 UNC-2B or M10 thread 20.1 (.79) deep 4 holes
35T	12.7 (.50)	15.7 (.62)	30.2 (1.19)	15.1 (.59)	30.9 (1.22)	90.5 (3.56)	181.0 (7.13)	147.6 (5.81)	76.2 (3.00)	.625-11 UNC-2B or M16 thread 30.0 (1.18) deep 4 holes	31.8 (1.25)	.437-14 UNC-2B or M10 thread 30.0 (1.18) deep 4 holes
45T	12.7 (.50)	15.7 (.62)	35.7 (1.41)	17.9 (.70)	35.9 (1.38)	90.5 (3.56)	181.0 (7.13)	147.6 (5.81)	88.9 (3.50)	.625-11 UNC-2B or M16 thread 30.0 (1.18) deep 4 holes	38.1 (1.50)	.500-13 UNC-2B or M12 thread 22.2 (.875) deep 4 holes



Shaft Keyed



Shaft SAE Splined

Code	Shaft Type	Dimensions		
		A	B	C
25 SHAFT ONLY				
C	0.250 Square Keyed “C”	25 (1.000)	78 (3.00)	6 (0.250)
D	SAE 13T 16/32 Spline	32 (0.875)	41 (1.62)	—
35 SHAFT ONLY				
C	0.313 Square Keyed “C”	35 (1.375)	84 (3.31)	8 (0.313)
D	SAE 14T 12/24 Spline	32 (1.250)	56 (2.19)	—
45 SHAFT ONLY				
C	0.313 Square Keyed “C”	38 (1.500)	89 (3.47)	8 (0.313)
D	SAE 14T 12/24 Spline	32 (1.250)	56 (2.19)	—