HOF
HYDRAULIC SOLUTIONS

Hydraulic Single Vane Pumps
HV10 & HV20 Series

Catalog 2021

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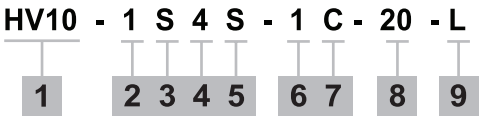
Single Vane Pump
HV10 Series

Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm³/r (in³/r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Maximum Pressure bar (psi)	Maximum Speed rpm	Minimum Speed rpm	Weight kg (lb)
HV 10	1	3.3 (0.20)	4.70 (1.25)	172 (2500)	4800	650	HV10 5.4 - 5.8 (11.88 - 12.76)
	2	6.6 (0.40)	9.40 (2.50)		4500		
	3	9.8 (0.60)	14.20 (3.75)		4000		
	4	13.1 (0.80)	18.90 (5.00)		3400		
	5	16.4 (1.00)	23.60 (6.25)		3200		
	6	19.5 (1.19)	28.40 (7.50)	152 (2200)	3000		HV10F, HV10P 6.00 - 6.70 (13.2 - 14.74)
	7	22.8 (1.39)	33.10 (8.75)	138 (2000)	2800		

Single Vane Pump
HV10 Series

Ordering Code : Single Pump



1. Model :
   HV10 - Standard Cover
   SAE A 2 bolts mounting flange J744
2. Mounting
   1 - Bolt Flange

3. Inlet Port Connection
   S - 1" 5/16 - 12 UN(SAE#16)
   P - 1" NPT
   B - 1" BSP

4. Displacement (at 1200 rpm)
   Volumetric displacement cm^3/rev (in^3/rev)
   1 - 3.3 (0.20)
   2 - 6.6 (0.40)
   3 - 9.8 (0.60)
   4 - 13.1 (0.80)
   5 - 16.4 (1.00)
   6 - 19.5 (1.19)
   7 - 22.8 (1.39)

5. Outlet Port Connection
   S - 3/4" - 16 UNF(SAE#8)
   P - 1/2" NPT
   B - 1/2" BSP

6. Type of shaft
   1 - Straight Keyed Shaft
   3 - Threaded with woodruff Keyed Shaft
   11 - Splined Shaft
   12 - Splined Shaft
   38 - Splined Shaft

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

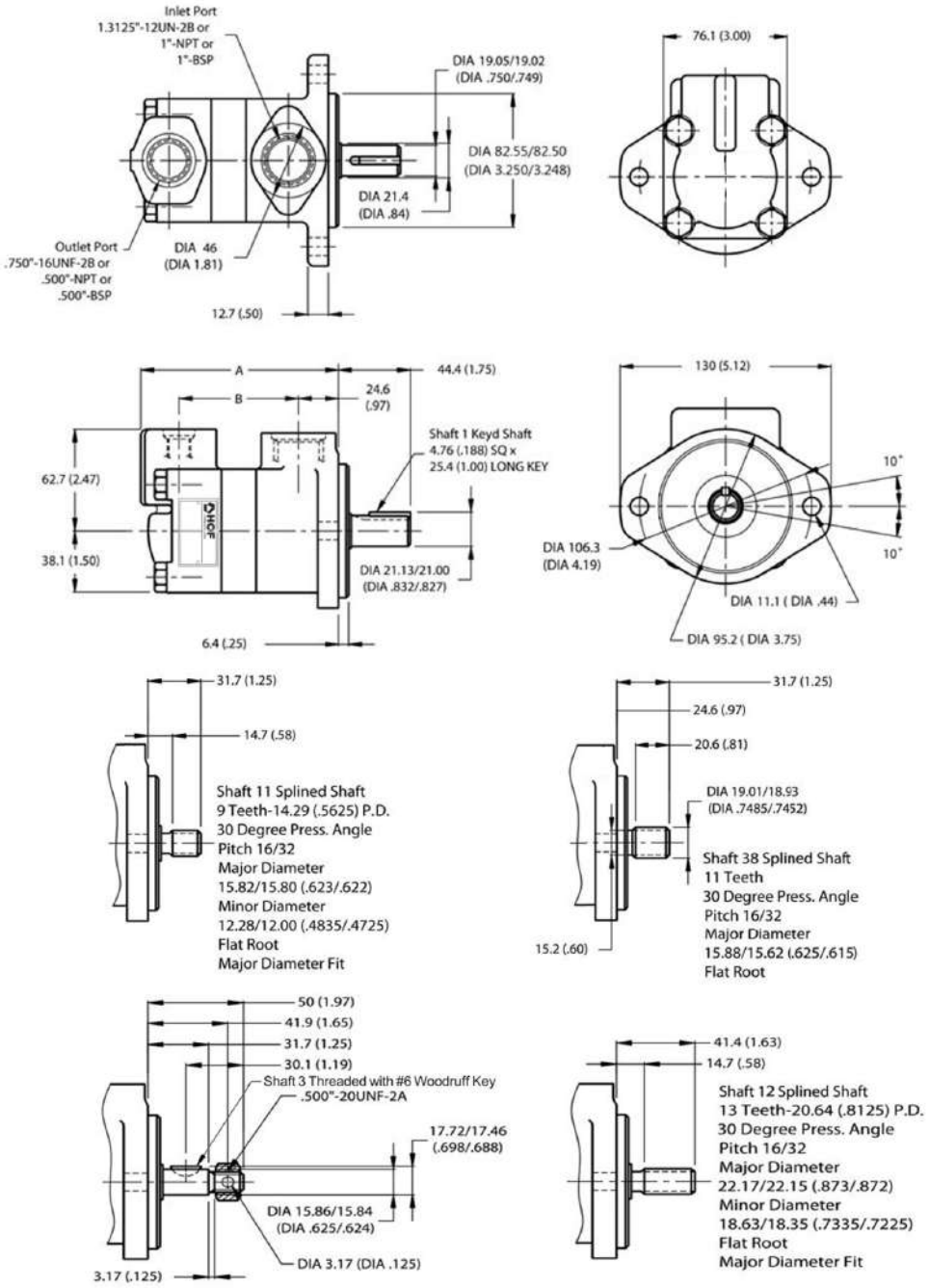
8. Design
   Subject to change. Installation dimension remain the same for designs - 20 through -29

9. Shaft Rotation (viewed from shaft end)
   R - Turn right
   L - Turn left

Single Vane Pump
HV10 Series

Installation Dimension mm (inch)

HV10



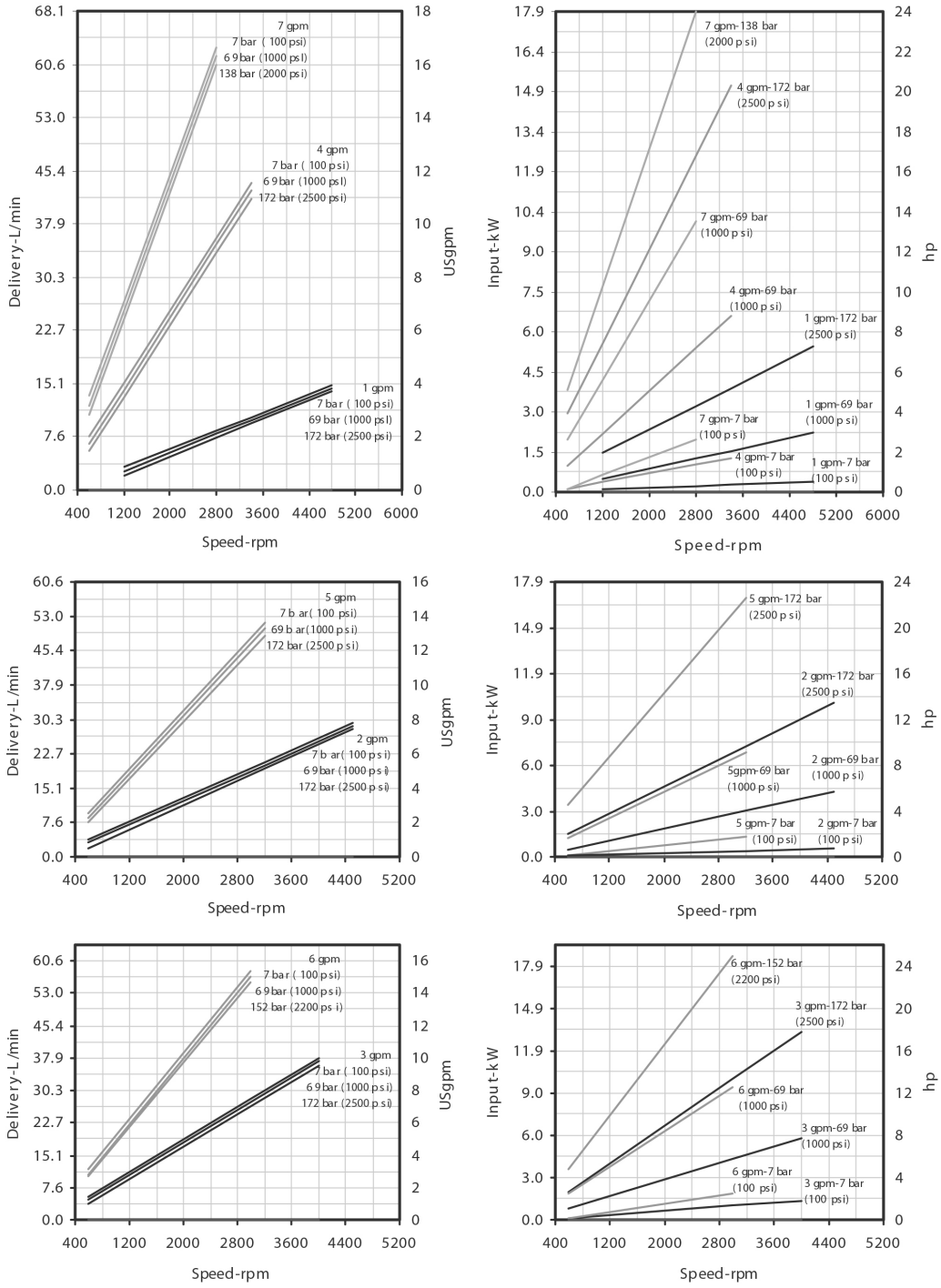
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	115.6 (4.55)	67.3 (2.65)
4, 5	121.9 (4.80)	73.7 (2.90)
6, 7	127.0 (5.00)	78.7 (3.10)

Single Vane Pump
HV10 Series

Performance Characteristics

HV10, Cover End of HV2010

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

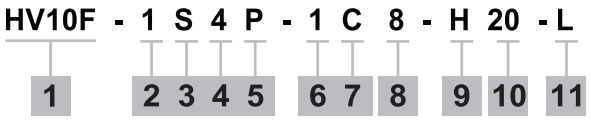
Single Vane Pump
HV10F/HV10P Series

Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm³/r (in³/r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Maximum Pressure bar (psi)	Maximum Speed rpm	Minimum Speed rpm	Weight kg (lb)
HV 10 F HV 10 P	1	3.3 (0.20)	4.70 (1.25)	172 (2500)	4800	650	HV10 5.4 - 5.8 (11.88 - 12.76)
	2	6.6 (0.40)	9.40 (2.50)		4500		
	3	9.8 (0.60)	14.20 (3.75)		4000		
	4	13.1 (0.80)	18.90 (5.00)		3400		
	5	16.4 (1.00)	23.60 (6.25)		3200		
	6	19.5 (1.19)	28.40 (7.50)	152 (2200)	3000		HV10F, HV10P 6.00 - 6.70 (13.2 - 14.74)
	7	22.8 (1.39)	33.10 (8.75)	138 (2000)	2800		

Single Vane Pump
HV10F/HV10P Series

Ordering Code : Single Pump HV10F



1. Model :
   HV10F - Flow Control Cover

2. Mounting
   1 - Bolt Flange

3. Inlet Port Connection
   S - 1" 5/16 - 12 UN(SAE#16)
   P - 1" NPT
   B - 1" BSP

4. Displacement (at 1200 rpm)
   Volumetric displacement cm³/rev (in³/rev)
   1 - 3.3 (0.20)
   2 - 6.6 (0.40)
   3 - 9.8 (0.60)
   4 - 13.1 (0.80)
   5 - 16.4 (1.00)
   6 - 19.5 (1.19)
   7 - 22.8 (1.39)

5. Outlet Port Connection
   HV10F
   P - 3/4" - 16 UNF(SAE#8) for outlet and
   1/2" NPT for tank port
   T - 3/4" - 16 UNF(SAE#8) for outlet and tank port

6. Type of shaft
   1 - Straight Keyed Shaft
   3 - Threaded with woodruff Keyed Shaft
   11 - Splined Shaft
   12 - Splined Shaft
   38 - Splined Shaft

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

8. Flow rate Setting L/min (USgpm)
   2 - 7.6 (2)
   3 - 11.4 (3)
   4 - 15.2 (4)
   5 - 19.0 (5)
   6 - 22.7 (6)
   7 - 26.5 (7)
   8 - 30.3 (8)

9. Pressure Setting bar (psi)
   A - 17 (250)
   B - 34 (500)
   C - 52 (750)
   D - 69 (1000)
   E - 86 (1250)
   F - 103 (1500)
   G - 121 (1750)
   H - 138 (2000)
   J - 150 (2250)
   K - 172 (2500)

10. Design
    Subject to change. Installation dimension remain the same for designs - 20 through -29

11. Shaft Rotation (viewed from shaft end)
    R - Turn right
    L - Turn left

Single Vane Pump
HV10F/HV10P Series

Ordering Code : Single Pump HV10P

HV10P	-	1	S	4	K	-	1	C	8	-	H	20	-	L
1		2	3	4	5		6	7	8		9	10		11

1. Model :
   HV10P - Priority Valve Cover SAE A 2 bolts mounting flange J744

2. Mounting
   1 - Bolt Flange

3. Inlet Port Connection
   S - 1" 5/16 - 12 UN(SAE#16)
   P - 1" NPT
   B - 1" BSP

4. Displacement (at 1200 rpm)
   Volumetric displacement cm³/rev (in³/rev)
   1 - 3.3 (0.20)
   2 - 6.6 (0.40)
   3 - 9.8 (0.60)
   4 - 13.1 (0.80)
   5 - 16.4 (1.00)
   6 - 19.5 (1.19)
   7 - 22.8 (1.39)

5. Outlet Port Connection
   K - 9/16" - 18 UNF for primary outlet and tank port and 3/4" - 16 UNF(SAE#8) for secondary outlet

6. Type of shaft
   1 - Straight Keyed Shaft
   3 - Threaded with woodruff Keyed Shaft
   11 - Splined Shaft
   12 - Splined Shaft
   38 - Splined Shaft

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

8. Flow rate Setting L/min (USgpm)
   2 - 7.6 (2)
   3 - 11.4 (3)
   4 - 15.2 (4)
   5 - 19.0 (5)
   6 - 22.7 (6)
   7 - 26.5 (7)
   8 - 30.3 (8)

9. Pressure Setting bar (psi)
   A - 17 (250)
   B - 34 (500)
   C - 52 (750)
   D - 69 (1000)
   E - 86 (1250)
   F - 103 (1500)
   G - 121 (1750)
   H - 138 (2000)
   J - 150 (2250)
   K - 172 (2500)

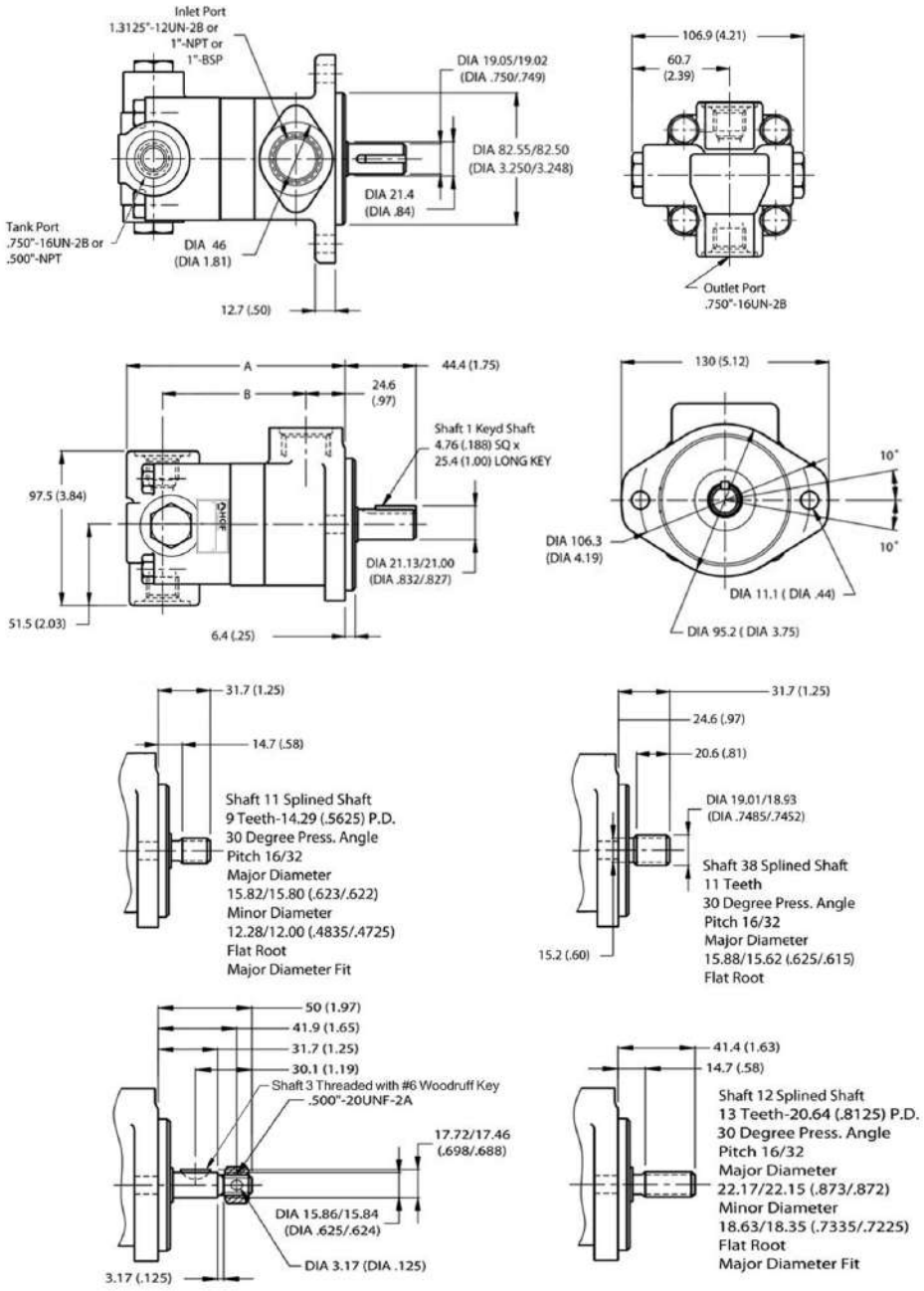
10. Design
    Subject to change. Installation dimension remain the same for designs - 20 through -29

11. Shaft Rotation (viewed from shaft end)
    R - Turn right
    L - Turn left

Single Vane Pump
HV10F/HV10P Series

Installation Dimension mm (inch)

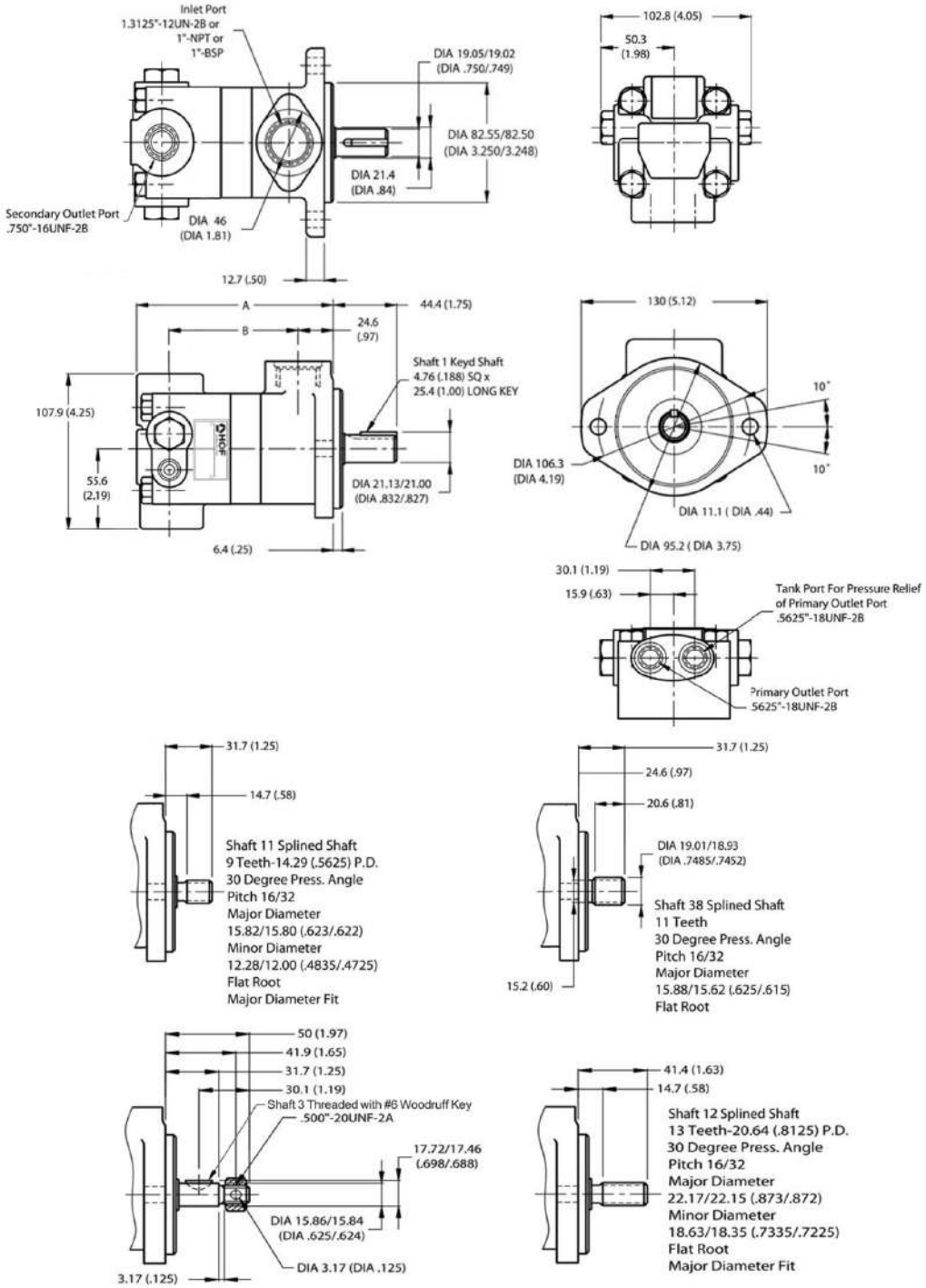
HV10F



Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	128.8 (5.07)	84.8 (3.34)
4, 5	135.1 (5.32)	91.2 (3.59)
6, 7	140.2 (5.52)	96.3 (3.79)

Single Vane Pump
HV10F/HV10P Series

HV10P



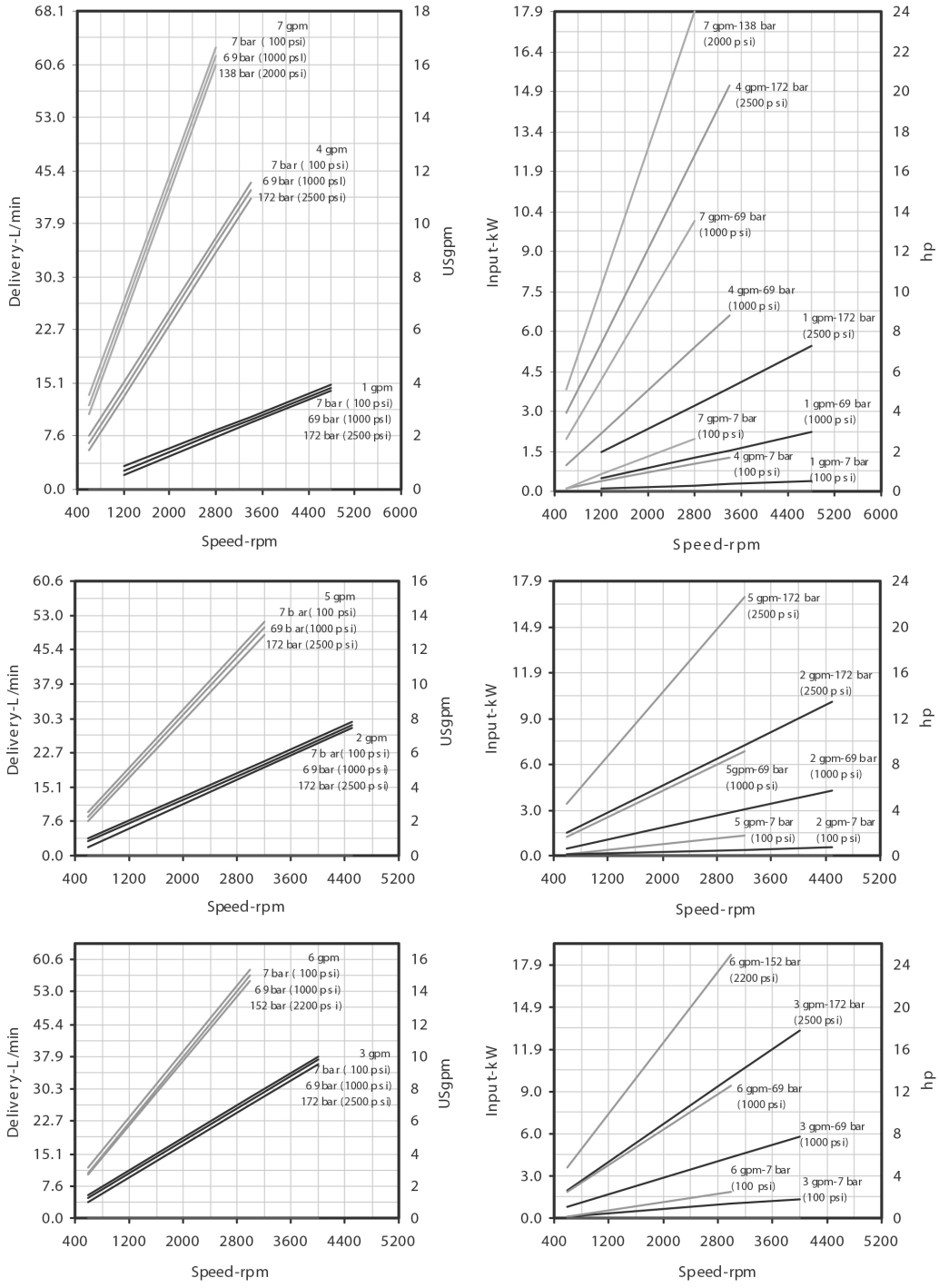
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	130.0 (5.12)	84.8 (3.34)
4, 5	136.4 (5.37)	91.2 (3.59)
6, 7	141.5 (5.57)	96.3 (3.79)

Single Vane Pump
HV10F/HV10NF/HV10P Series

Performance Characteristics

HV10, Cover End of HV2010

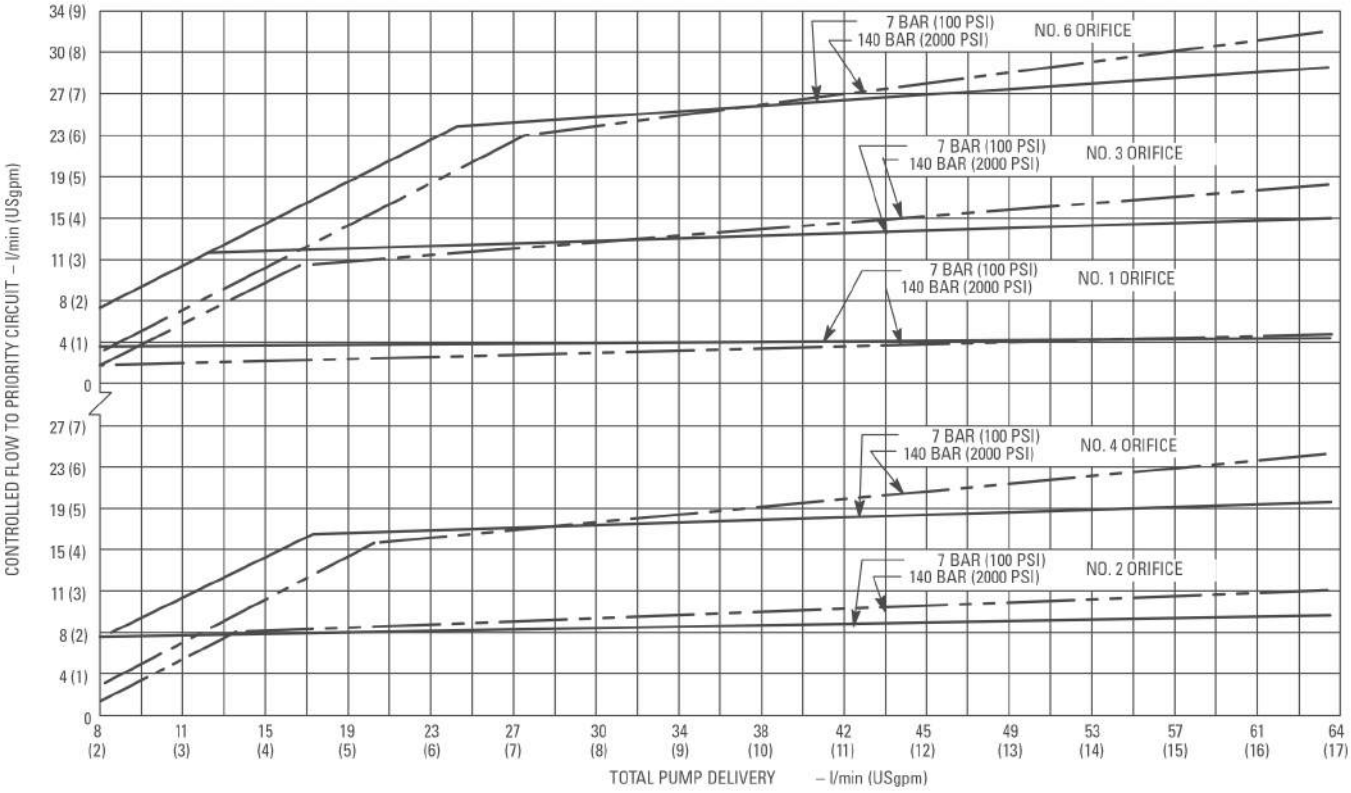
Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



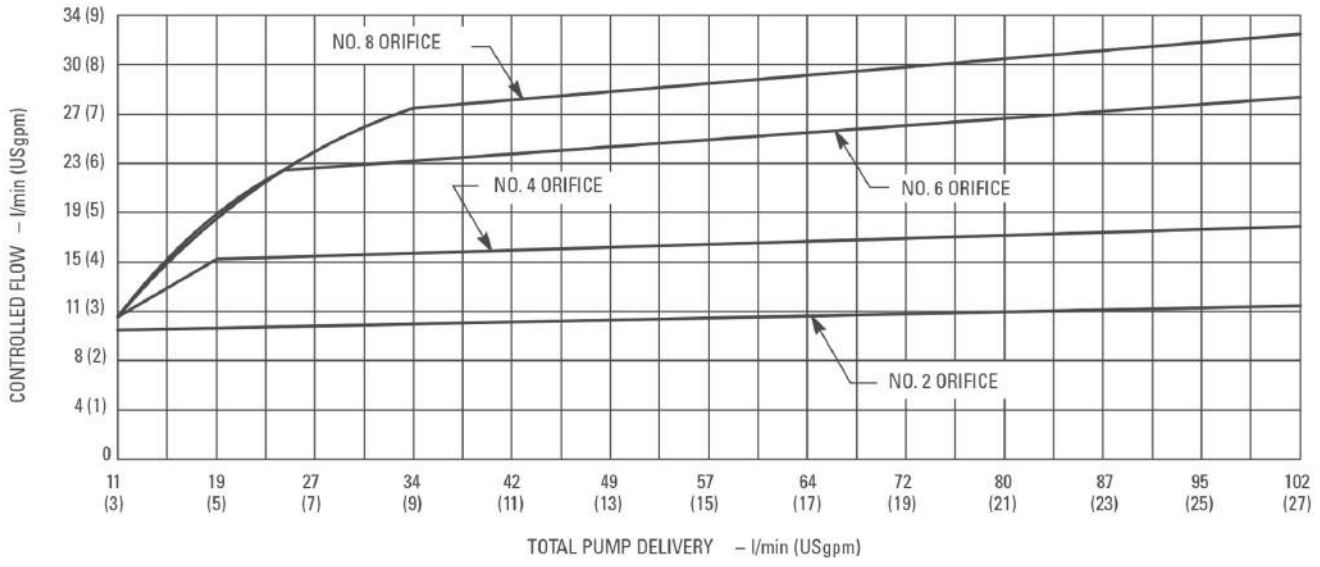
For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

Single Vane Pump
HV10F/HV10P Series

Priority Valve : HV10P



Flow control : HV10F



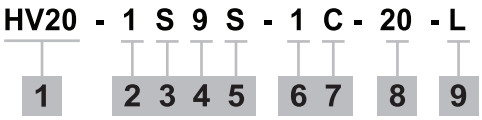
Single Vane Pump
HV20 Series

Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm³/r (in³/r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Maximum Pressure bar (psi)	Maximum Speed rpm	Minimum Speed rpm	Weight kg (lb)
HV 20	5	16.4 (1.00)	23.60 (6.25)	172 (2500)	3400	650	HV20 7.50 - 8.50 (16.50 - 18.70)
	6	19.5 (1.19)	28.39 (7.50)		3400		
	7	22.8 (1.39)	33.11 (8.75)		3000		
	8	26.5 (1.62)	37.85 (10.00)		2800		
	9	29.7 (1.81)	42.57 (11.25)		2800		
	10	34.1 (2.08)	47.30 (12.51)		2500		
	11	36.4 (2.22)	52.04 (13.75)		2500		HV20F, HV20P 9.30 - 10.60 (20.46 - 23.32)
	12	39.0 (2.38)	56.77 (15.00)	152 (2200)	2400		
	13	42.4 (2.59)	61.50 (16.25)		2400		

Single Vane Pump
HV20 Series

Ordering Code : Single Pump



1. Model :
   HV20 - Standard Cover
   SAE A 2 bolts mounting flange J744
2. Mounting
   1 - Bolt Flange

3. Inlet Port Connection
   S - 1" 5/8 - 12 UN(SAE#20)
   P - 1" 1/4 NPT
   B - 1" 1/4 BSP

4. Displacement (at 1200 rpm)
   Volumetric displacement cm³/rev (in³/rev)
   5 - 16.4 (1.00)
   6 - 19.5 (1.19)
   7 - 22.8 (1.39)
   8 - 26.5 (1.62)
   9 - 29.7 (1.81)
   10 - 34.1 (2.08)
   11 - 36.4 (2.22)
   12 - 39.0 (2.38)
   13 - 42.4 (2.59)

5. Outlet Port Connection
   S - 1" 1/16 - 12 UN(SAE#12)
   P - 3/4" NPT
   B - 3/4" BSP

6. Type of shaft
   1 - Straight Keyed Shaft
   3 - Threaded with woodruff Keyed Shaft
   6 - Woodruff Keyed stub Shaft
   11 - Splined Shaft
   15 - Splined Shaft
   38 - Splined Shaft
   62 - Splined Shaft
   123 - Threaded with woodruff Keyed Shaft

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

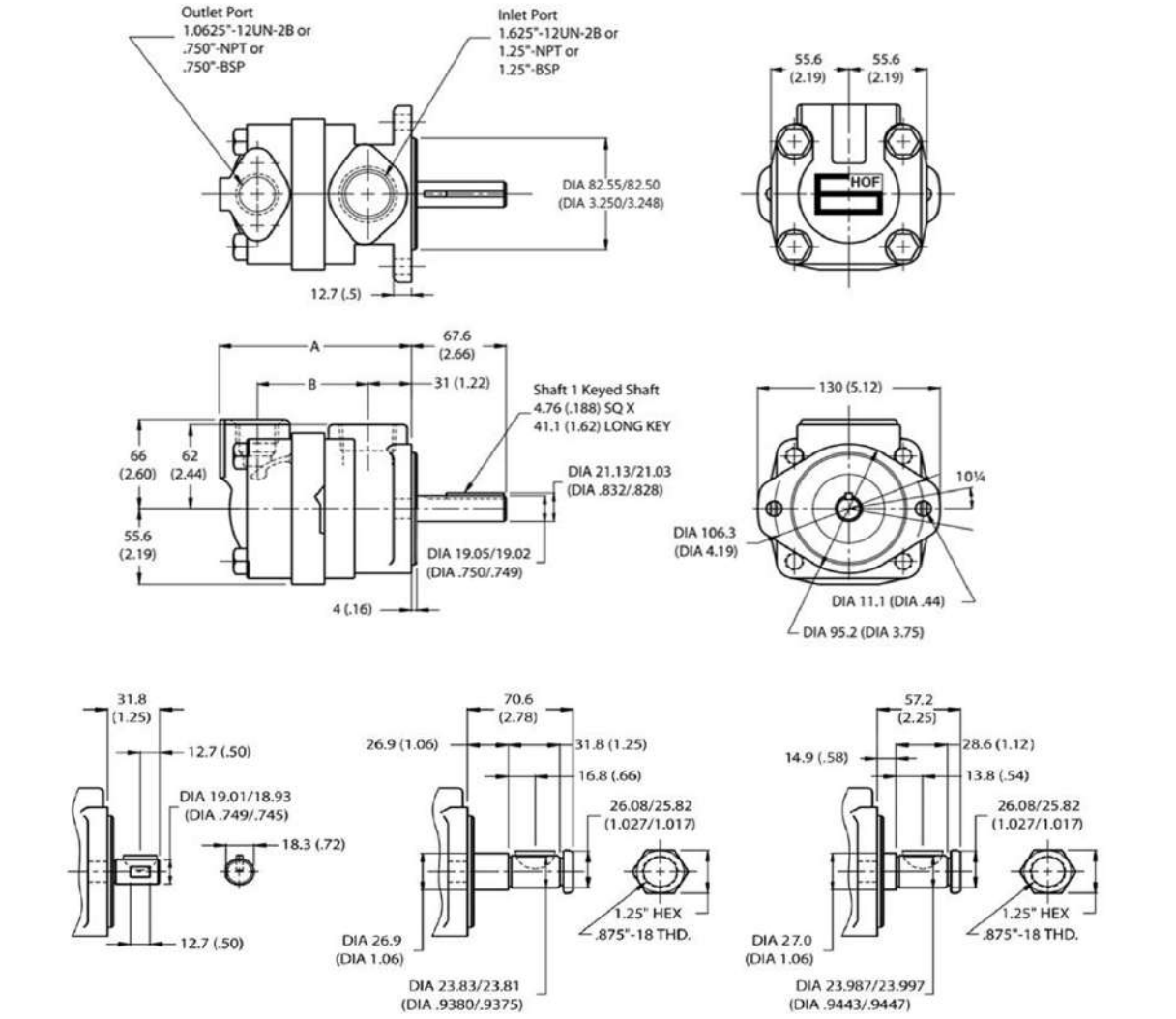
8. Design
   Subject to change. Installation dimension remain the same for designs - 20 through -29

9. Shaft Rotation (viewed from shaft end)
   R - Turn right
   L - Turn left

Single Vane Pump
HV20 Series

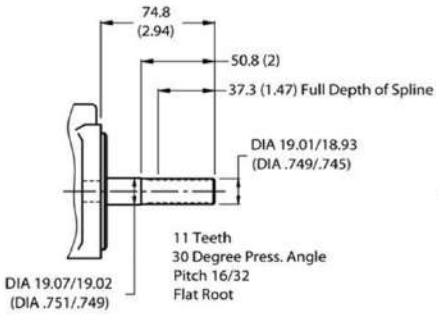
Installation Dimension mm (inch)

HV20

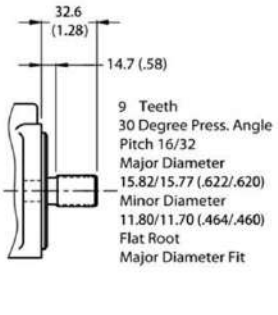


Shaft 6 Straight Stub Keyed Shaft Shaft 3 Threaded with #6 Woodruff Key Shaft 123 Threaded with #13 Woodruff Key

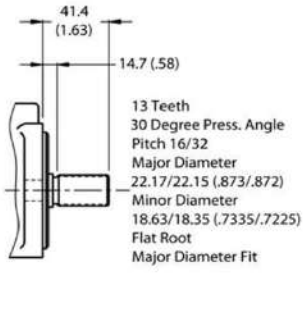
Single Vane Pump
HV20 Series



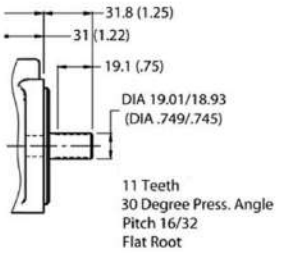
Shaft 11 Splined Shaft 11 Teeth



Shaft 62 Splined Shaft 9 Teeth



Shaft 15 Splined Shaft 13 Teeth



Shaft 38 Splined Shaft 11 Teeth

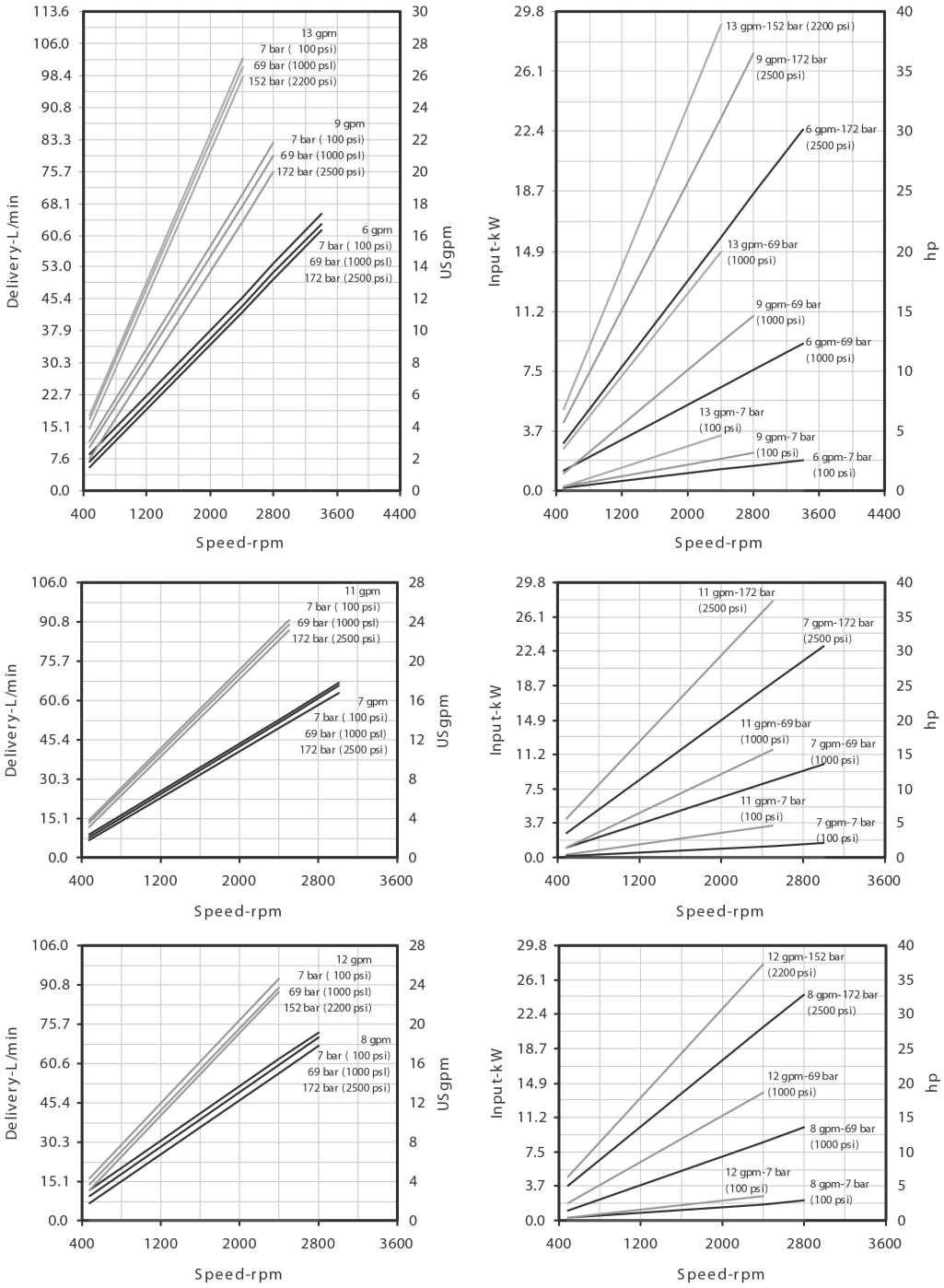
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
5, 6	125.2 (4.93)	71.1 (2.80)
7, 8, 9	131.6 (5.18)	77.5 (3.05)
10, 11	136.7 (5.38)	82.6 (3.25)
12, 13	140.2 (5.52)	86.1 (3.39)

Single Vane Pump
HV20 Series

Performance Characteristics

HV20, Shaft End of HV20, Cover End of HV2020

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

Single Vane Pump
HV20F NF/HV20P Series

Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm^3/r (in^3/r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Maximum Pressure bar (psi)	Maximum Speed rpm	Minimum Speed rpm	Weight kg (lb)
HV 20 F NF & HV 20 P	5	16.4 (1.00)	23.60 (6.25)	172 (2500)	3400	650	HV20 7.50 - 8.50 (16.50 - 18.70)
	6	19.5 (1.19)	28.39 (7.50)		3400		
	7	22.8 (1.39)	33.11 (8.75)		3000		
	8	26.5 (1.62)	37.85 (10.00)		2800		
	9	29.7 (1.81)	42.57 (11.25)		2800		
	10	34.1 (2.08)	47.30 (12.51)		2500		
	11	36.4 (2.22)	52.04 (13.75)		2500		HV20F, HV20P 9.30 - 10.60 (20.46 - 23.32)
	12	39.0 (2.38)	56.77 (15.00)	152 (2200)	2400		
	13	42.4 (2.59)	61.50 (16.25)		2400		

Single Vane Pump
HV20F NF/HV20P Series

Ordering Code : Single Pump HV20F NF

HV20F	-	1	S	9	S	-	1	C	8	-	H	20	-	L
1		2	3	4	5		6	7	8		9	10		11

1. Model :
   - HV20F - Flow Control Cover
   - HV20NF - Flow Control Cover & Internal Drain SAE A 2 bolts mounting flange J744

2. Mounting
   - 1 - Bolt Flange

3. Inlet Port Connection
   - S - 1" 5/8 - 12 UN(SAE#20)
   - P - 1" NPT
   - B - 1" BSP

4. Displacement (at 1200 rpm)
   Volumetric displacement cm³/rev (in³/rev)
   - 5 - 16.4 (1.00)
   - 6 - 19.5 (1.19)
   - 7 - 22.8 (1.39)
   - 8 - 26.5 (1.62)
   - 9 - 29.7 (1.81)
   - 10 - 34.1 (2.08)
   - 11 - 36.4 (2.22)
   - 12 - 39.0 (2.38)
   - 13 - 42.4 (2.59)

5. Outlet Port Connection

   HV20F
   - S - 3/4" - 16 UNF (SAE#8) for outlet and 1" 1/16 - 12 UN(SAE#12) for tank port
   - P - 3/4" - 16 UNF(SAE#8) for outlet and 1/2" NPT for tank port
   - T - 3/4" - 16 UNF(SAE#8) for outlet and tank port

   HV20NF
   - S - 3/4" - 16 UNF(SAE#8) for outlet

6. Type of shaft
   - 1 - Straight Keyed Shaft
   - 3 - Threaded with woodruff Keyed Shaft
   - 6 - Woodruff Keyed stub Shaft
   - 11 - Splined Shaft
   - 15 - Splined Shaft
   - 38 - Splined Shaft
   - 62 - Splined Shaft
   - 123 - Threaded with woodruff Keyed Shaft

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

8. Flow rate Setting L/min (USgpm)
   - 2 - 7.6 (2)
   - 3 - 11.4 (3)
   - 4 - 15.2 (4)
   - 5 - 19.0 (5)
   - 6 - 22.7 (6)
   - 7 - 26.5 (7)
   - 8 - 30.3 (8)

9. Pressure Setting bar (psi)
   - A - 17 (250)
   - B - 34 (500)
   - C - 52 (750)
   - D - 69 (1000)
   - E - 86 (1250)
   - F - 103 (1500)
   - G - 121 (1750)
   - H - 138 (2000)
   - J - 150 (2250)
   - K - 172 (2500)

10. Design
    Subject to change. Installation dimension remain the same for designs - 20 through -29

11. Shaft Rotation (viewed from shaft end)
    - R - Turn right
    - L - Turn left

Single Vane Pump
HV20F NF/HV20P Series

Ordering Code : Single Pump HV20P

HV20P	-	1	S	9	T	-	1	C	8	-	H	20	-	L
1		2	3	4	5		6	7	8		9	10		11

1. Model :
   HV20P - Priority Valve Cover
   SAE A 2 bolts mounting flange J744

2. Mounting
   1 - Bolt Flange

3. Inlet Port Connection
   S - 1" 5/8 - 12 UN(SAE#20)
   P - 1" 1/4 NPT
   B - 1" 1/4 BSP

4. Displacement (at 1200 rpm)
   Volumetric displacement cm³/rev (in³/rev)
   5 - 16.4 (1.00)
   6 - 19.5 (1.19)
   7 - 22.8 (1.39)
   8 - 26.5 (1.62)
   9 - 29.7 (1.81)
   10 - 34.1 (2.08)
   11 - 36.4 (2.22)
   12 - 39.0 (2.38)
   13 - 42.4 (2.59)

5. Outlet Port Connection
   T - 3/4" - 16 UNF (SAE#8) for primary outlet and tank port and 7/8" - 14 UN(SAE#10) for secondary outlet

6. Type of shaft
   1 - Straight Keyed Shaft
   3 - Threaded with woodruff Keyed Shaft
   6 - Woodruff Keyed stub Shaft
   11 - Splined Shaft
   15 - Splined Shaft
   38 - Splined Shaft
   62 - Splined Shaft
   123 - Threaded with woodruff Keyed Shaft

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

8. Flow rate Setting L/min (USgpm)
   2 - 7.6 (2)
   3 - 11.4 (3)
   4 - 15.2 (4)
   5 - 19.0 (5)
   6 - 22.7 (6)
   7 - 26.5 (7)
   8 - 30.3 (8)

9. Pressure Setting bar (psi)
   A - 17 (250)
   B - 34 (500)
   C - 52 (750)
   D - 69 (1000)
   E - 86 (1250)
   F - 103 (1500)
   G - 121 (1750)
   H - 138 (2000)
   J - 150 (2250)
   K - 172 (2500)

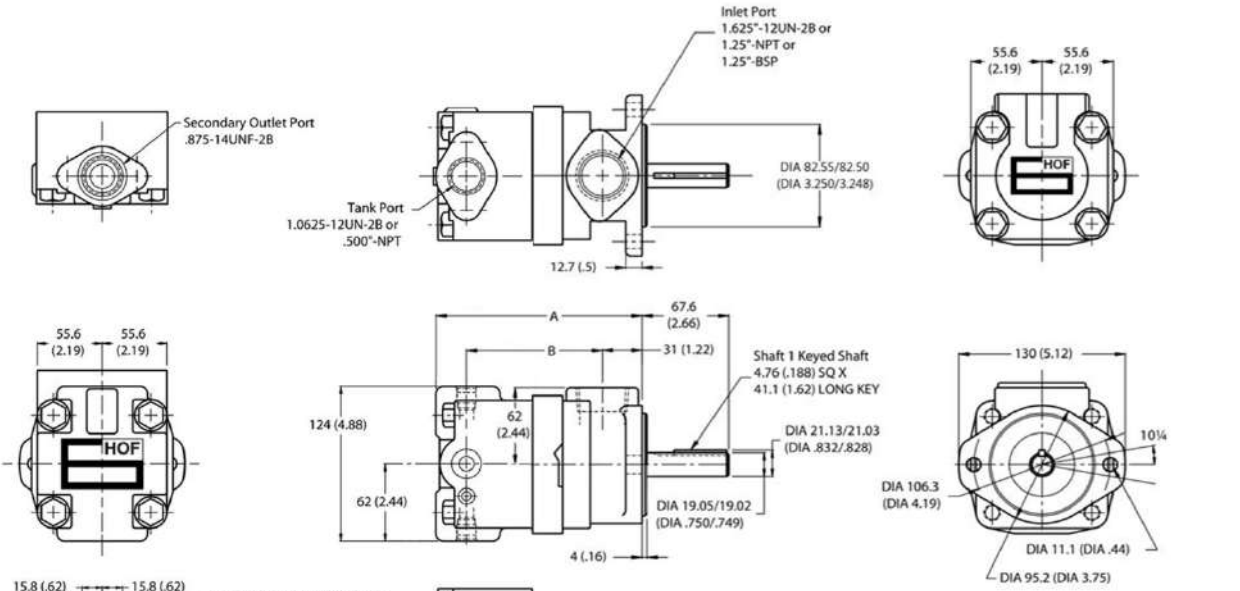
10. Design
    Subject to change. Installation dimension remain the same for designs - 20 through -29

11. Shaft Rotation (viewed from shaft end)
    R - Turn right
    L - Turn left

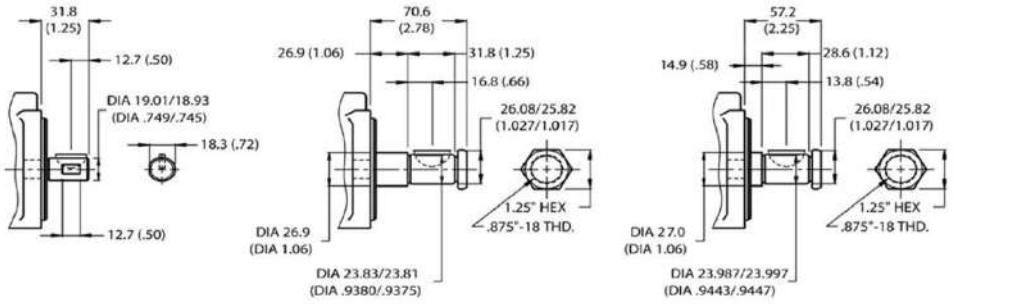
Single Vane Pump
HV20F NF/HV20P Series

Installation Dimension mm (inch)

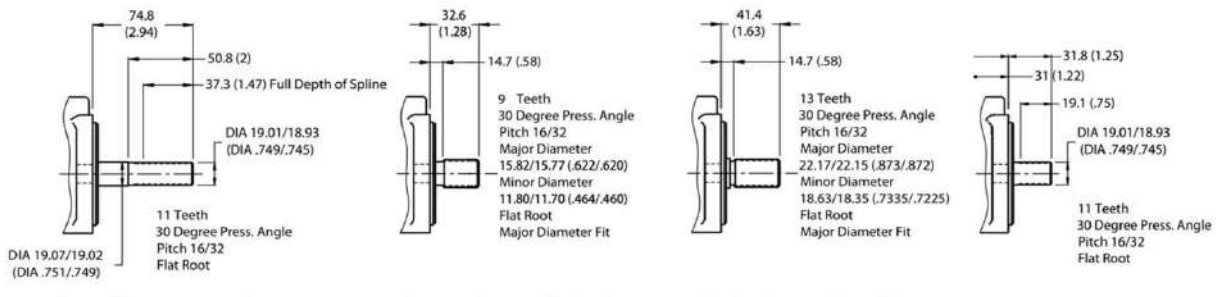
Single Pump HV20F and HV20P



Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
5, 6	149.6 (5.89)	94.7 (3.73)
7, 8, 9	156.0 (6.14)	101.1 (3.98)
10, 11	161.0 (6.34)	105.9 (4.17)
12, 13	164.3 (6.47)	109.5 (4.31)



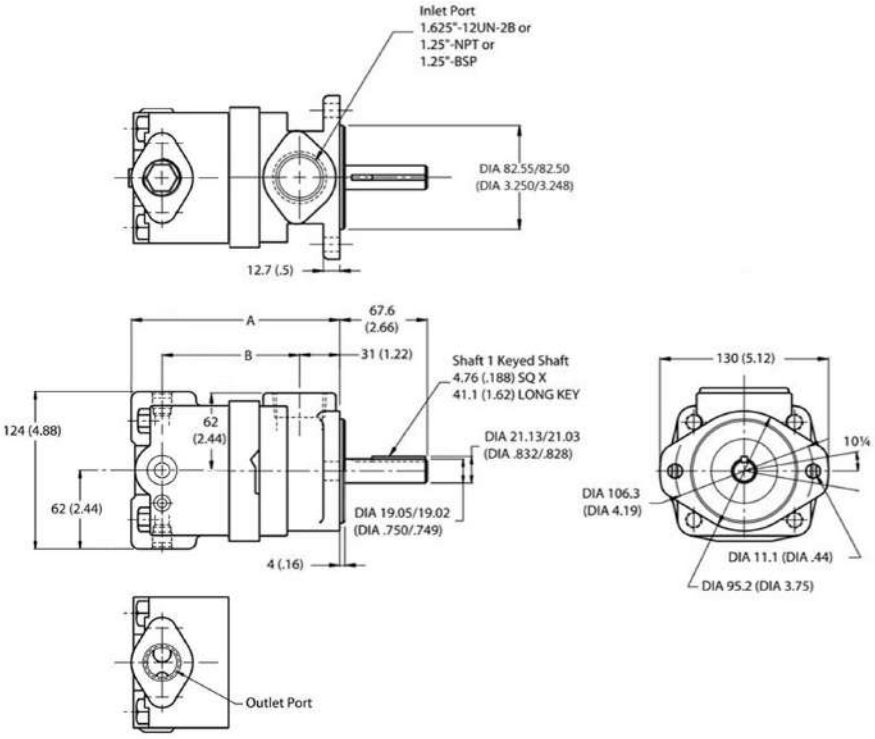
Shaft 6 Straight Stub Keyed Shaft Shaft 3 Threaded with #6 Woodruff Key Shaft 123 Threaded with #13 Woodruff Key

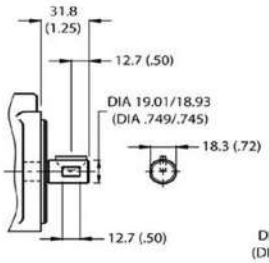


Shaft 11 Splined Shaft 11 Teeth Shaft 62 Splined Shaft 9 Teeth Shaft 15 Splined Shaft 13 Teeth Shaft 38 Splined Shaft 11 Teeth

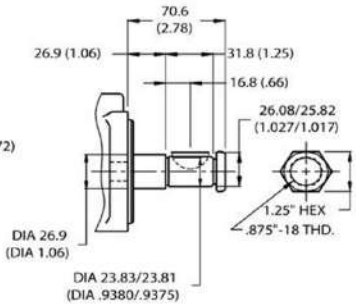
Single Vane Pump
HV20F NF/HV20P Series

Single Pump HV20NF

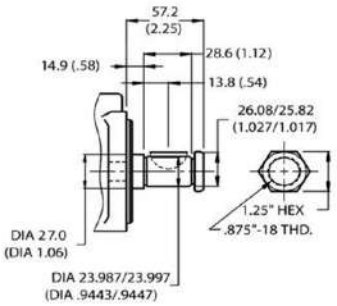




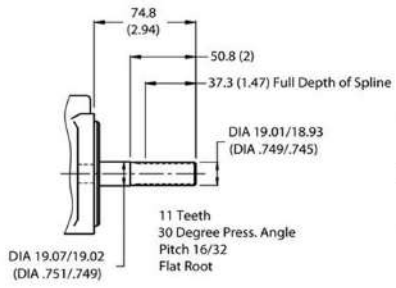
Shaft 6 Straight Stub Keyed Shaft



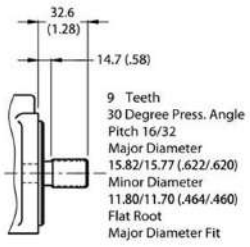
Shaft 3 Threaded with #6 Woodruff Key



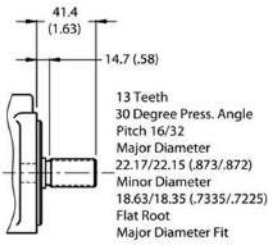
Shaft 123 Threaded with #13 Woodruff Key



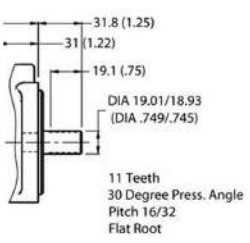
Shaft 11 Splined Shaft 11 Teeth



Shaft 62 Splined Shaft 9 Teeth



Shaft 15 Splined Shaft 13 Teeth

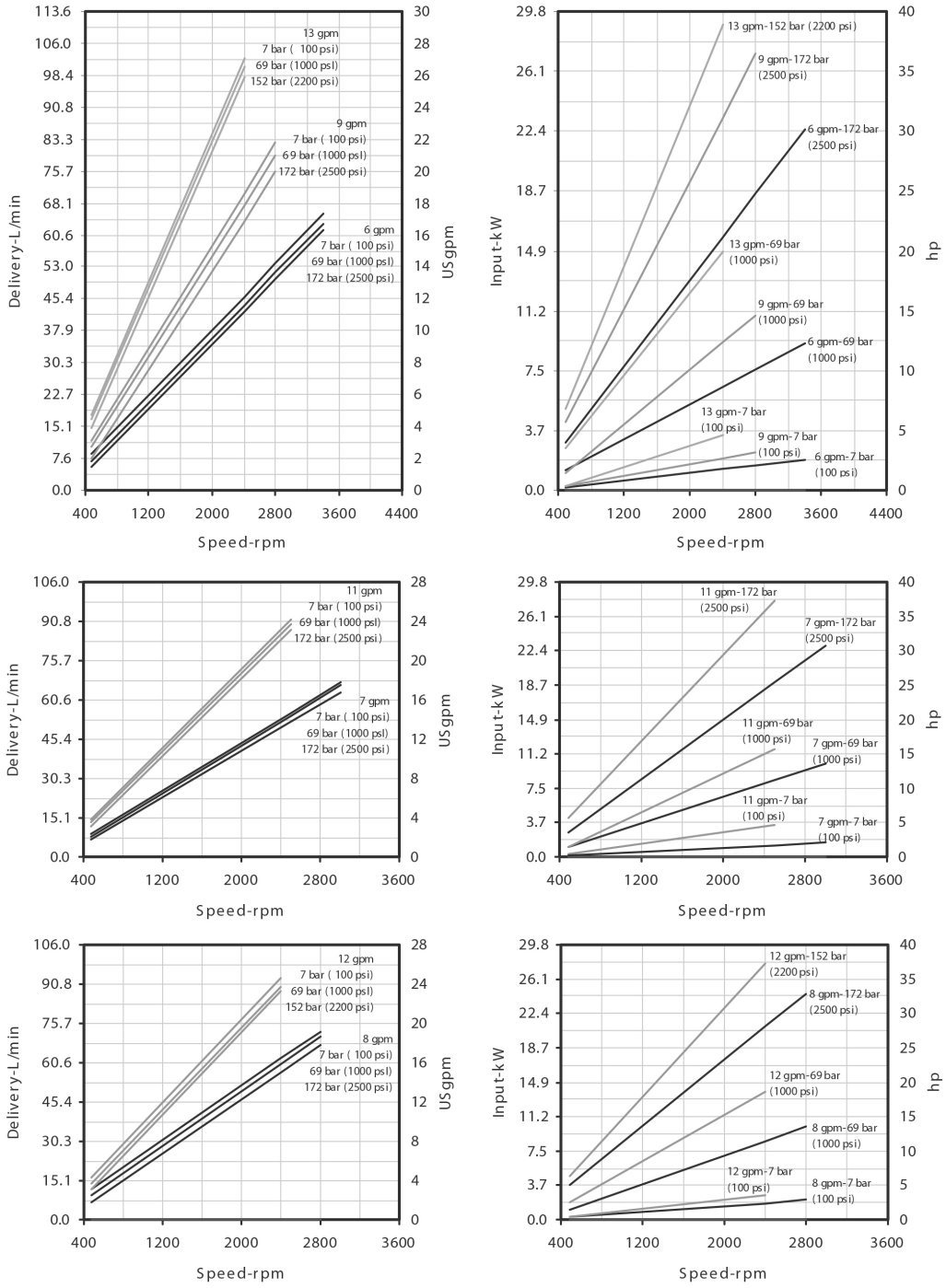


Shaft 38 Splined Shaft 11 Teeth

Single Vane Pump
HV20F NF/HV20P Series

HV20, Shaft End of HV20, Cover End of HV2020

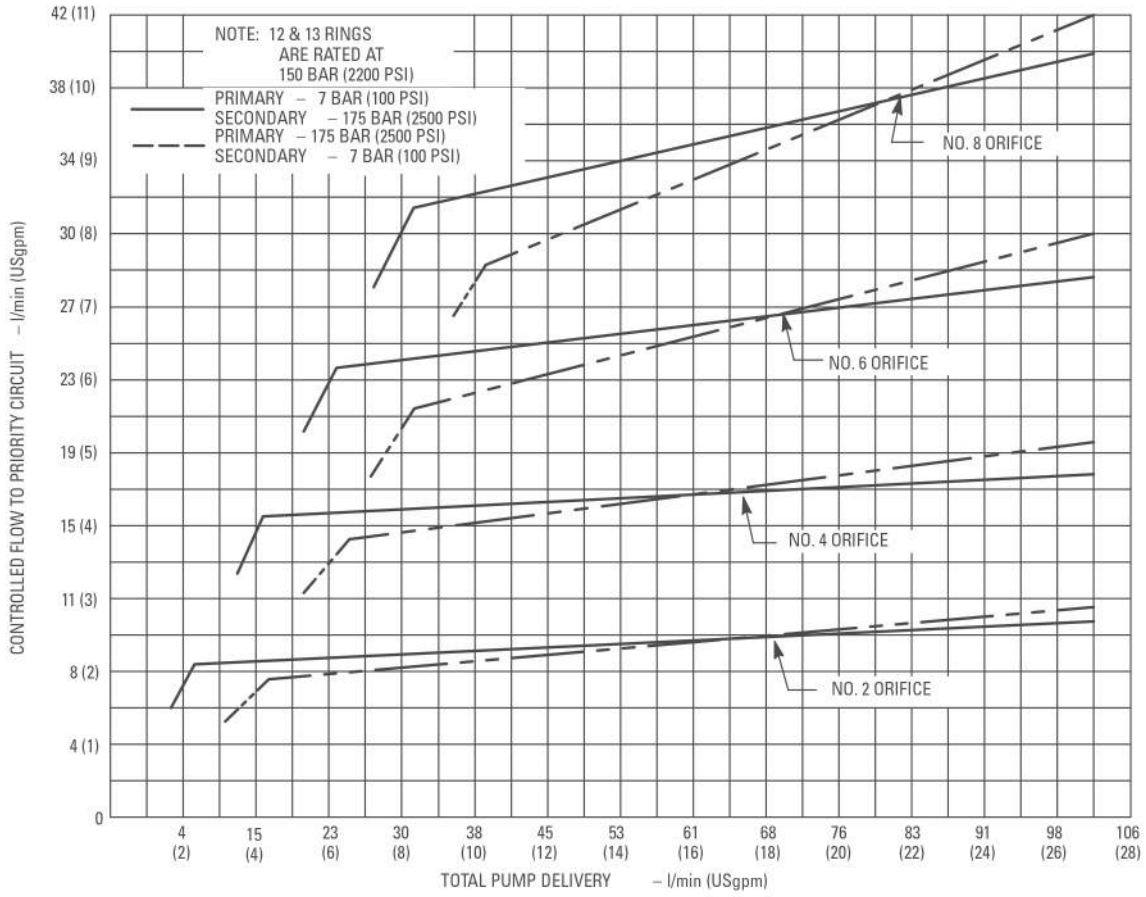
Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

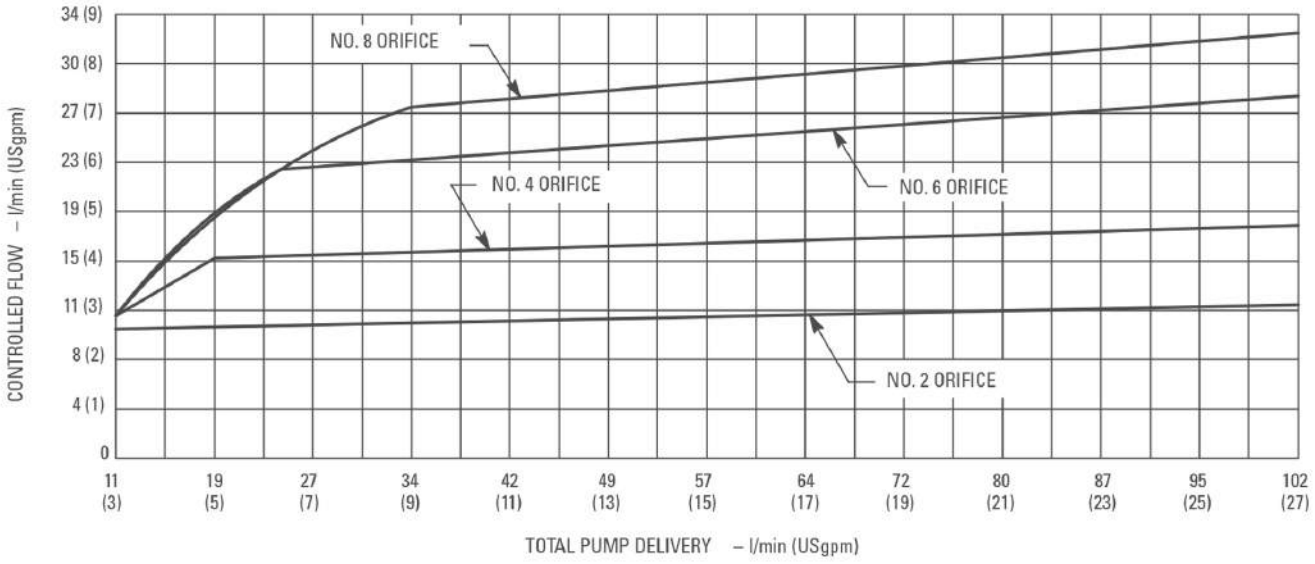
Single Vane Pump
HV20F NF/HV20P Series

Priority Valve : HV20P



Single Vane Pump
HV20F NF/HV20P Series

Flow control : HV20F NF



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