



V10-V20 Vane Pump SERIES

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(F3) - V10 1 S 5 S - 1 C 22 L

 1 2 3 4 5 6 7 8 9 10

1 Special Seals

Omit - (Standard)
 F3 - Viton Seals

2 Series No

V10 V20

3 Mounting

1 - 2-Bolt Flange (Standard)

4 Inlet Port Connection

S - (Standard)
 1 5/16-12 UN-2B (V10 Only)
 1 5/8-12 UN-2B (V20 Only)
 P - 1" NPT (V10 Only)
 1 1/4" NPT (V20 Only)

5 Pump (GPM)

(@1200 RPM, 100 PSI)

V10 V20

1 6

2 7

3 8

4 9

5 11

6 12

7 13

6 Outlet Port Connection

S - (Standard)
 3/4-16 UNF-2B (V10 Only)
 1 1/16-12 UN-2B (V20 Only)
 P - 1/2" NPT (V10 Only)
 3/4" NPT (V20 Only)

7 Shaft Type

1 - Straight Keyed (Standard)
 11 - Splined
 62 - Splined (V20 Only)

8 Outlet Port Position

(View From Cover End of Pump)

A - Opposite Inlet
 B - 90° CCW From Inlet
 C - Inline With Inlet (Standard)
 D - 90° CW From Inlet

9 Design Number

22 - (Standard)
 10 - Design Change

10 Rotation

(View From Shaft End of Pump)

Omit - Right Hand Rotation
 (Standard)
 L - Left Hand Rotation



SERIES NO	PUMP (GPM)	MAX SPEED (RPM)			MAX PRESSURE (PSI)		
		ANTI-WEAR OIL	WATER GLYCOL	WATER-IN-OIL EMULSION	ANTI-WEAR OIL	WATER GLYCOL	WATER-IN-OIL EMULSION
V10	1	4800	1800	1800	2500	1800	1500
	2	4500					
	3	4000					
	4	3400			2200		
	5	3200					
	6	3000					
	7	2800					
V20	6	3400	2500	1575			
	7	3000					
	8	2800					
	9						
	11	2500	2200		1575	1350	
	12	2400					
13							

(F3) - V2010 1 F 13 S 3 S - 1 C C 22 L

 1 2 3 4 5 6 7 8 9 10 11 12 13

1 Special Seals

Omit - (Standard)
 F3 - Viton Seals

2 Series No

V2010 V2020

3 Mounting

1 - 2-Bolt Flange (Standard)

4 Inlet Port Connection

F - SAE 4-Bolt Flange (Standard)

5 Shaft End Pump (GPM)

(@1200 RPM, 100 PSI)
 V20** - 6, 7, 8, 9, 11, 12, 13

6 Outlet No 1 Port Connection

S - 1 1/16-12 UN-2B (Standard)

7 Cover End Pump (GPM)

(@1200 RPM, 100 PSI)
 V**10 V**20

1 6

2 7

3 8

4 9

5 11

6

7

8 Outlet No 2 Port Connection

S - 3/4-16 UNF-2B (V2010 Only)
 1 1/16-12 UN-2B (V2020 Only)

9 Shaft Type

1 - Straight Keyed (Standard)

11 - Splined

10 Outlet No 1 Port Position

(View From Cover End of Pump)

A - Opposite Inlet

B - 90° CCW From Inlet

C - Inline With Inlet (Standard)

D - 90° CW From Inlet

11 Outlet No 2 Port Position

(View From Cover End of Pump)
 V2010

A - 135° CCW From Inlet

B - 45° CCW From Inlet

C - 45° CW From Inlet (Standard)

D - 135° CW From Inlet

V2020

A - Opposite Inlet

B - 90° CCW From Inlet

C - Inline With Inlet (Standard)

D - 90° CW From Inlet

12 Design Number

22 - (Standard)

10 - Design Change

13 Rotation

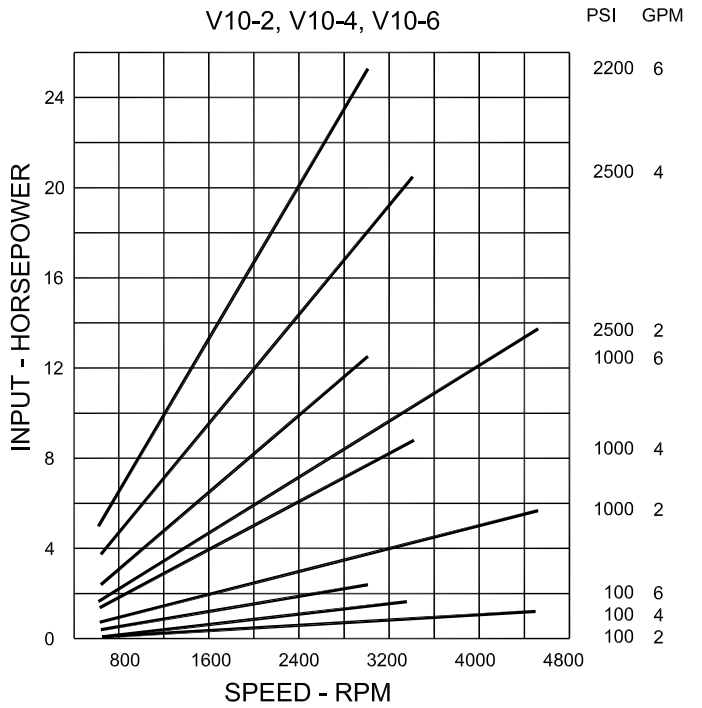
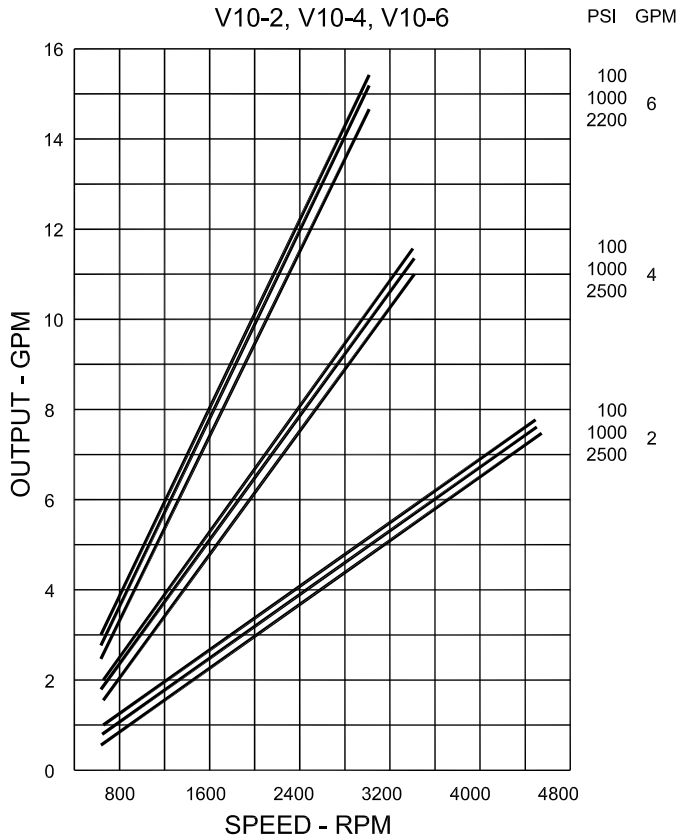
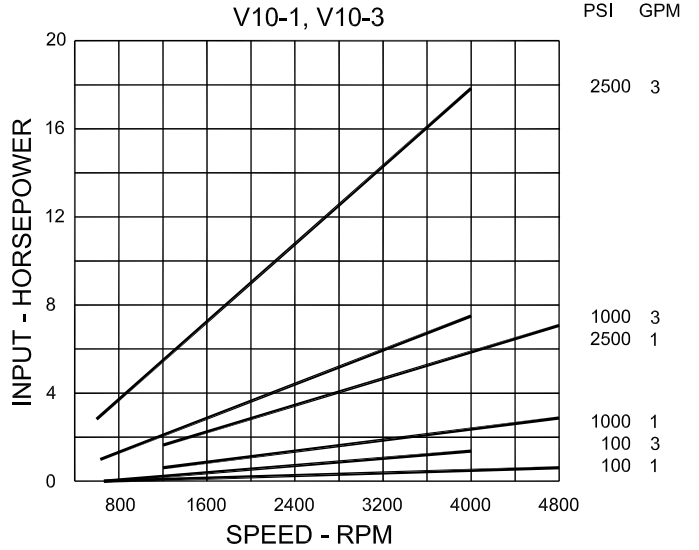
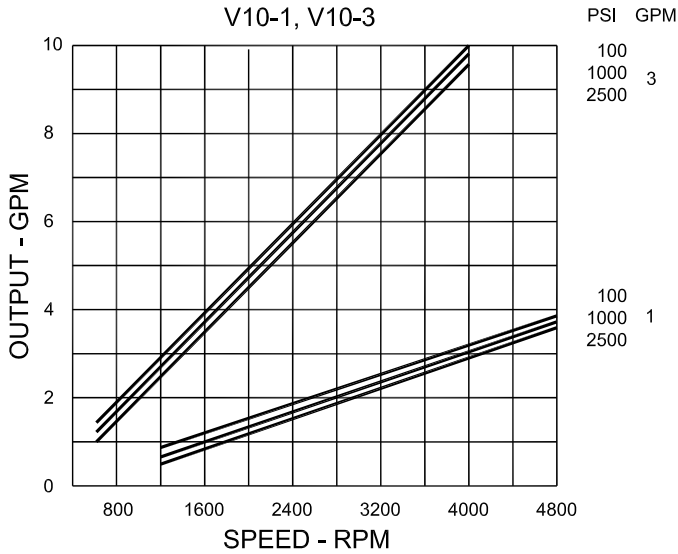
(View From Shaft End of Pump)

Omit - Right Hand Rotation
 (Standard)

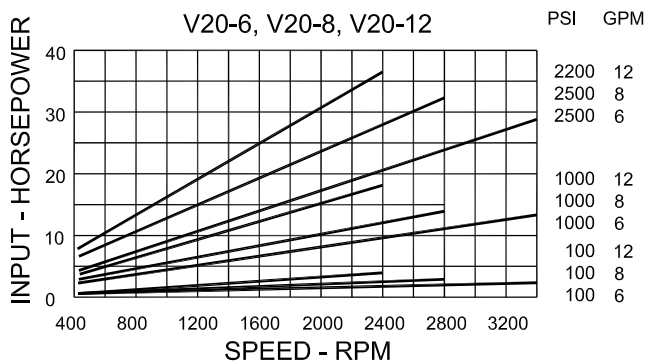
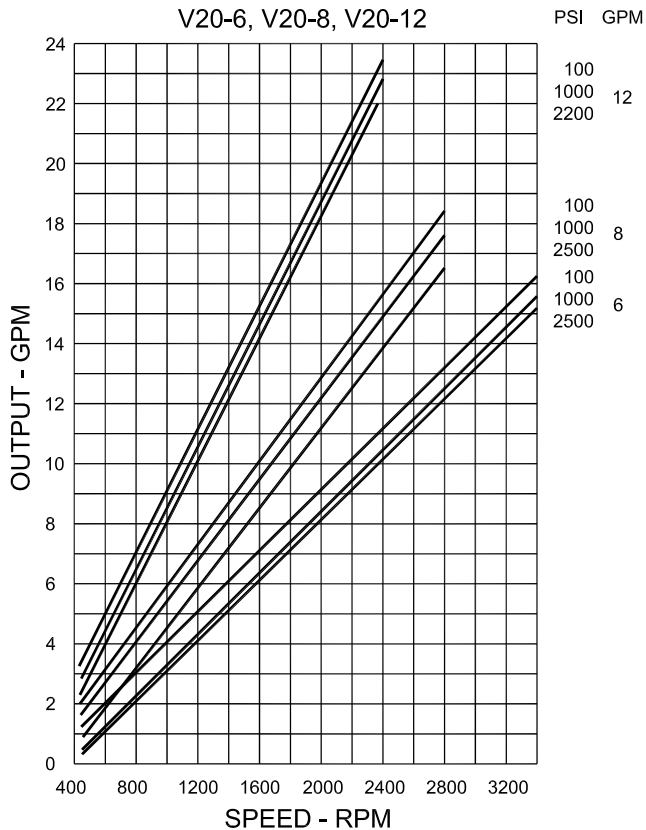
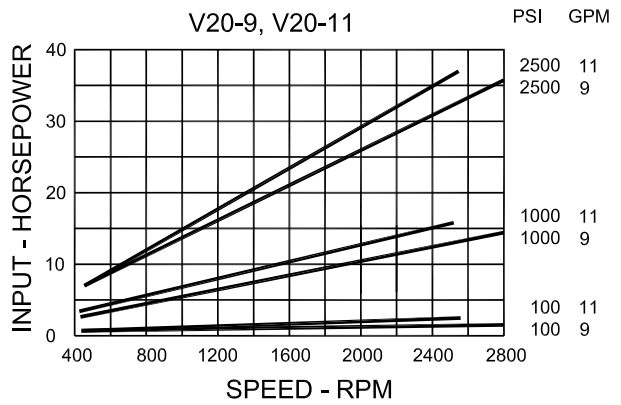
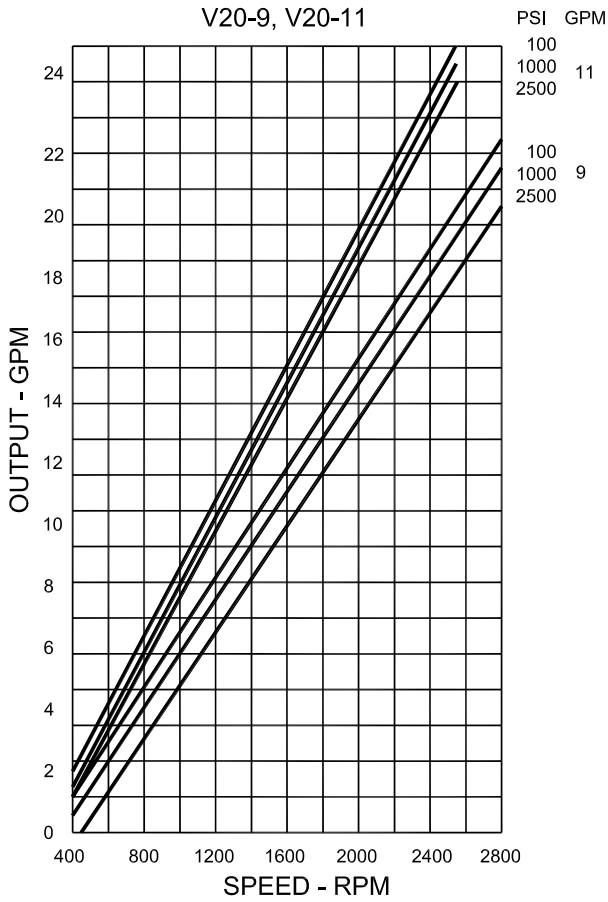
L - Left Hand Rotation



SERIES NO	V20** (FOR V2010 & V2020)			V**10 (FOR V2010)			V**20 (FOR V2020)		
	PUMP CODE	MAX SPEED (RPM)	MAX PRESSURE (PSI)	PUMP CODE	MAX SPEED (RPM)	MAX PRESSURE (PSI)	PUMP CODE	MAX SPEED (RPM)	MAX PRESSURE (PSI)
V2010 V2020	6	3000	2500	1	3000	2500	6	3000	2500
	7			2			7		
	8			3			8		
	9	2800		4			9	2800	
	11	2500		5			11	2500	
	12	2400		6			2200		
	13			7			2800	2000	

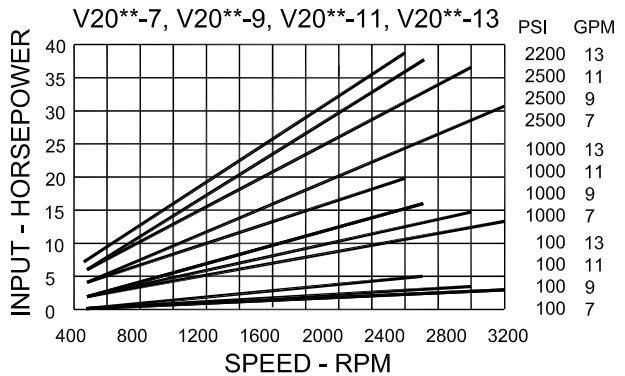
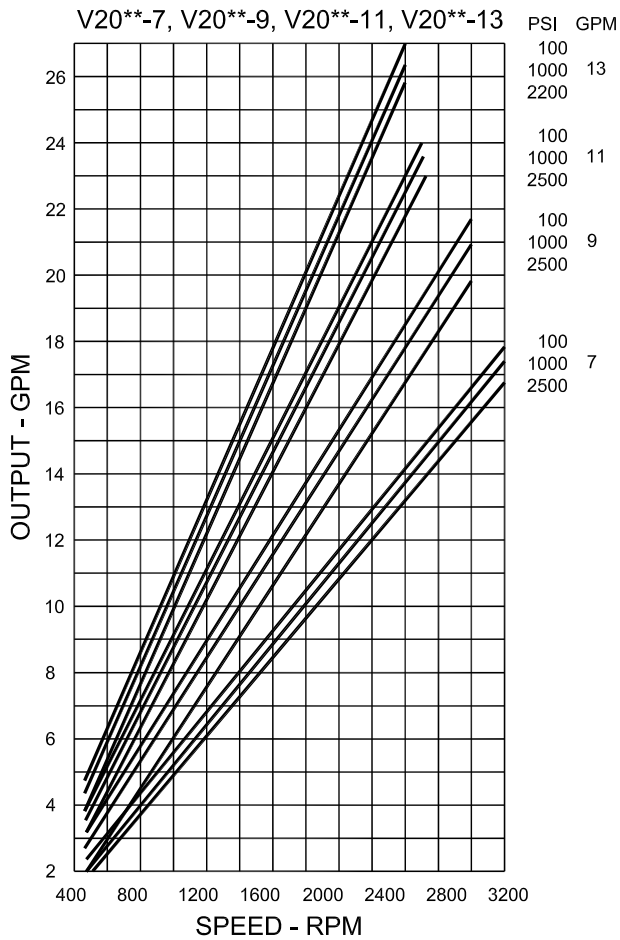
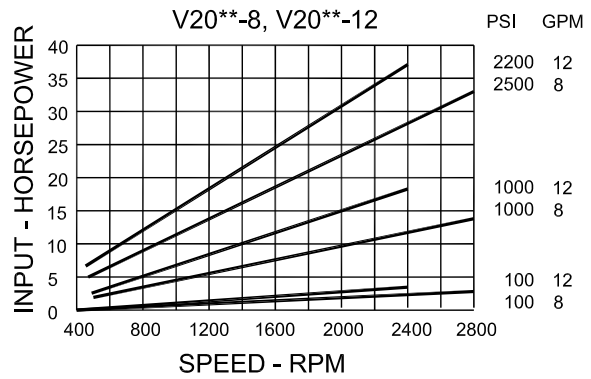
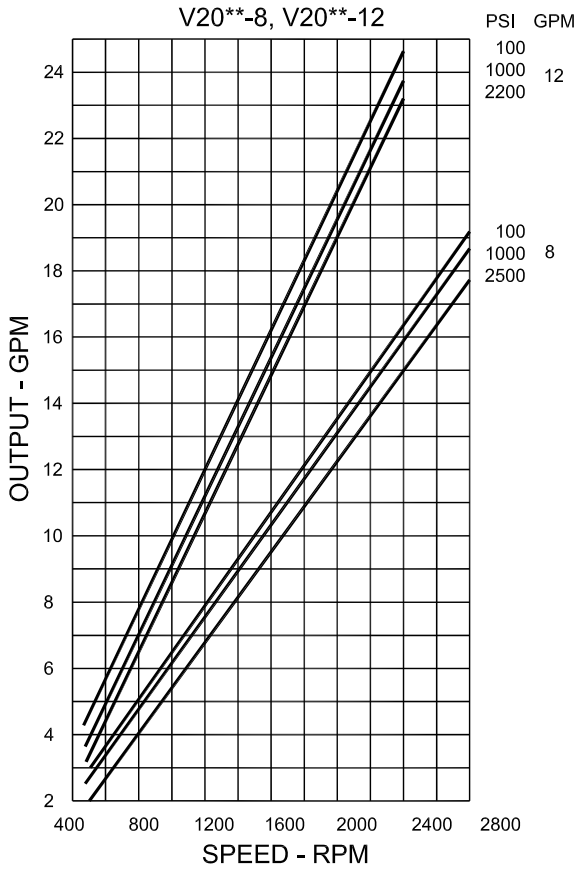


Data Based on Oil Temperature @ 120°F and Pump Inlet @ 0 PSIG (14.7 PSIA)

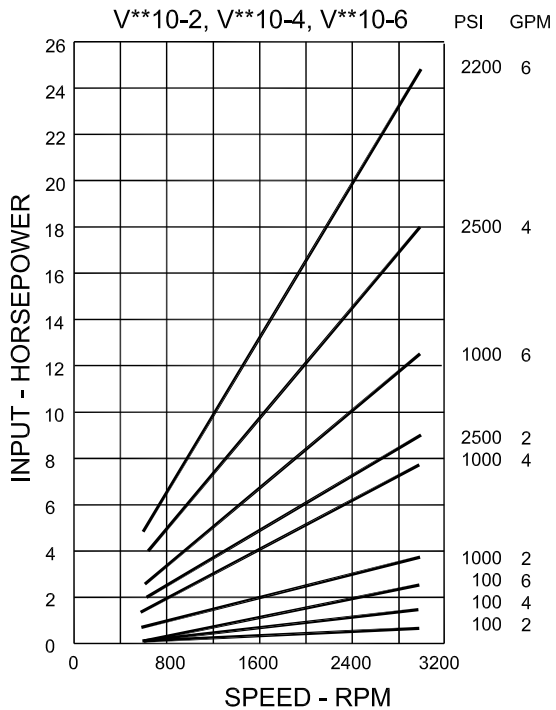
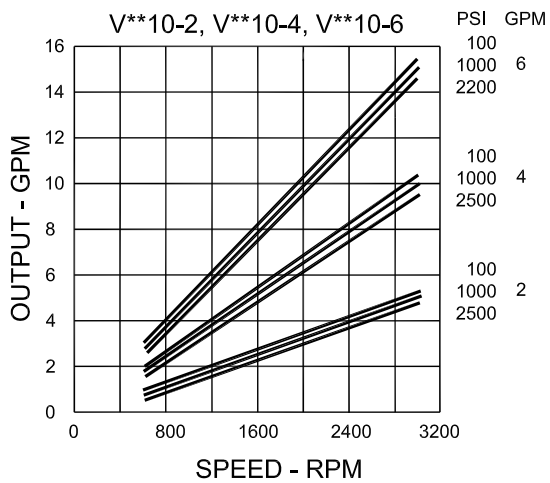
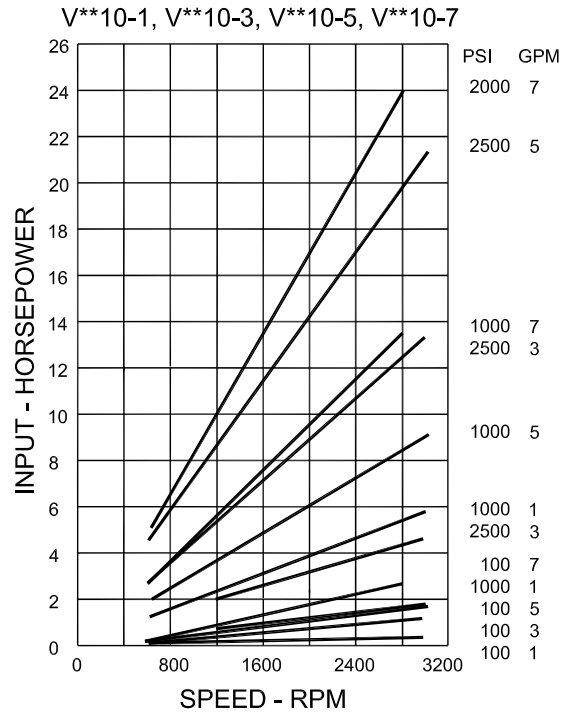
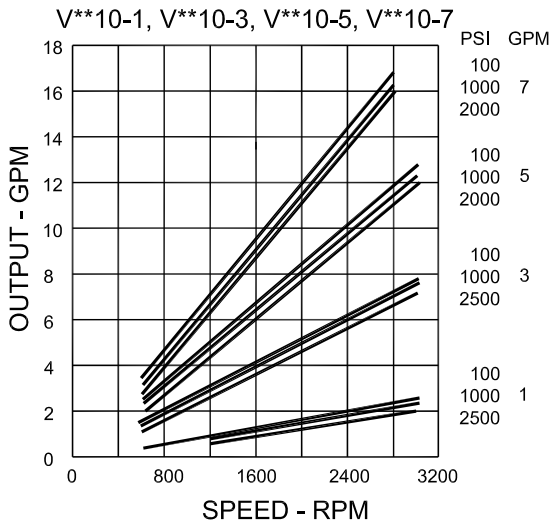


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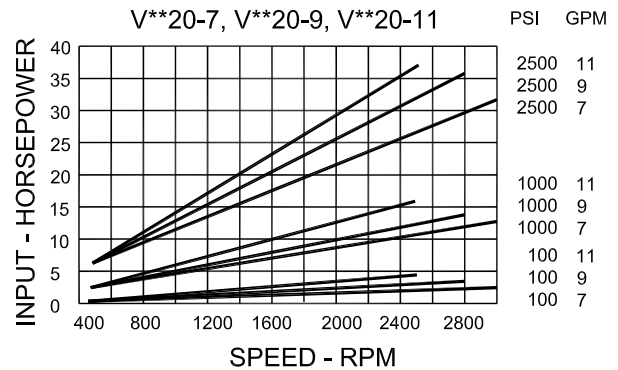
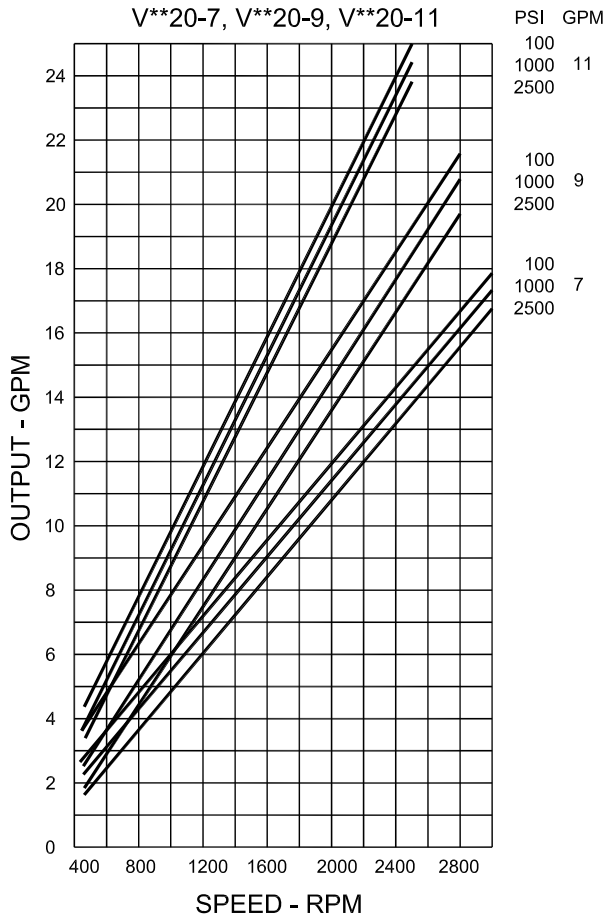
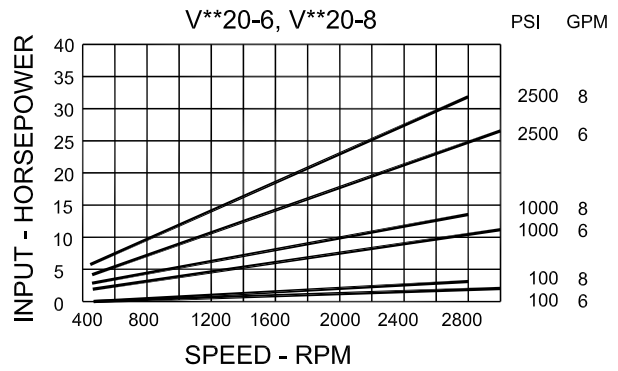
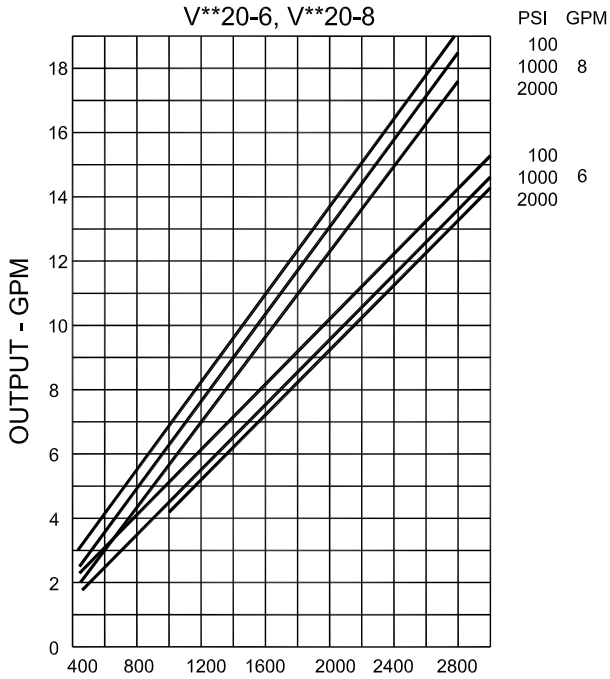
Data Based on Oil Temperature @ 120°F and Pump Inlet @ 0 PSIG (14.7 PSIA)



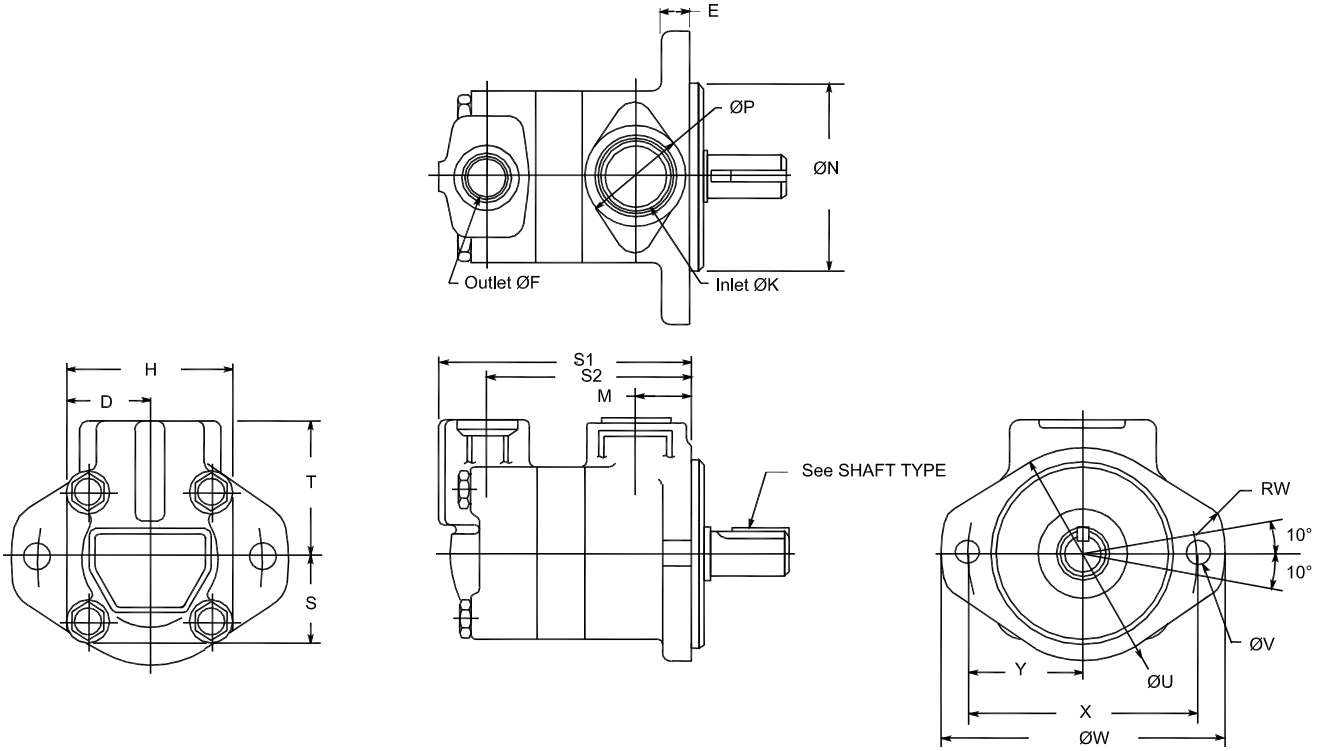
Data Based on Oil Temperature @ 120°F and Pump Inlet @ 0 PSIG (14.7 PSIA)



Data Based on Oil Temperature @ 120°F and Pump Inlet @ 0 PSIG (14.7 PSIA)

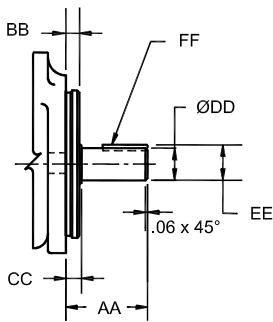


V10 INSTALLATION DIMENSION

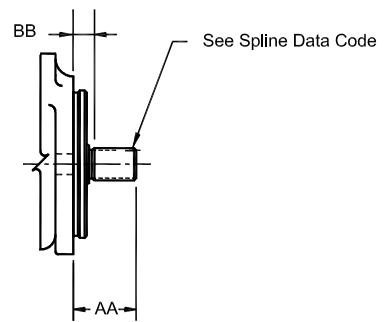


SHAFT TYPE

#1 Straight Shaft



#11 Splined Shaft

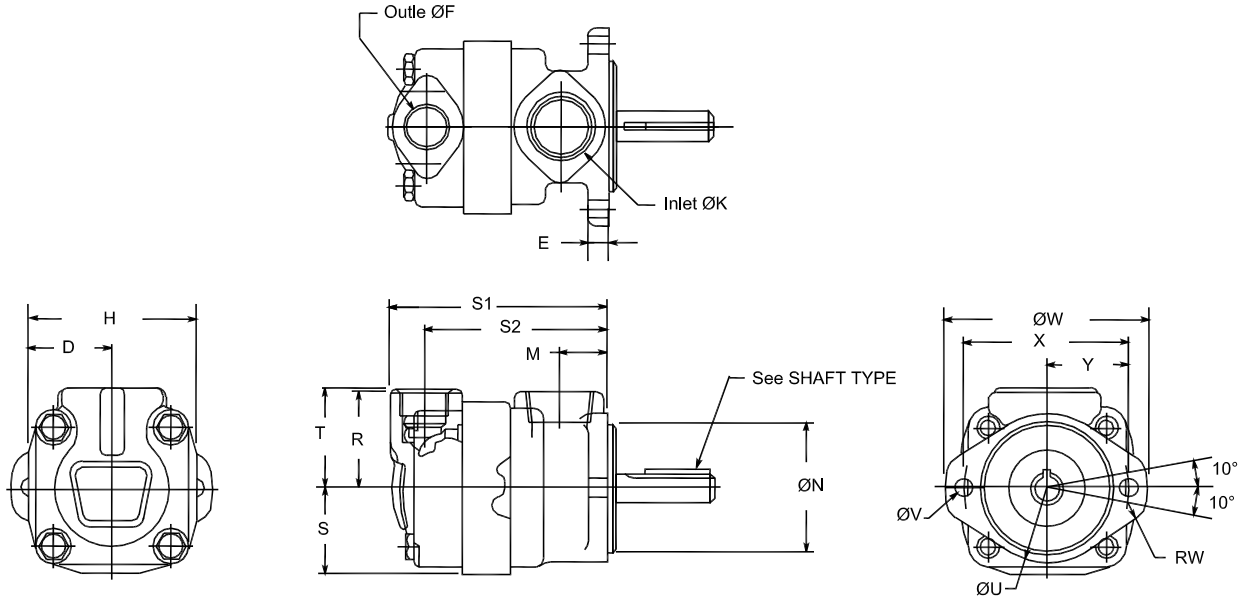


	D	E	H	M	ØN	ØP	T	S	RW	ØU	ØV x 2	ØW	X	Y			
BODY	1.50	0.50	3.00	0.97	3.250/3.248	1.81	2.47	1.50	0.47	3.75	0.437	5.12	4.19	2.09			
										V10 (GPM)		1,2,3		4,5		6,7	
										S1		S2		S1		S2	
										4.55		3.62		4.80		3.87	
										5.00		4.07					

	Outlet ØF	Inlet Øk
PORT CONN.	3/4"-16UNF-2B or 1/2" NPT	1 5/16"-12UNF-2B or 1" NPT

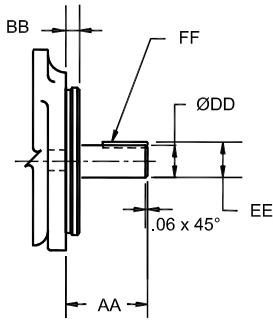
	Shaft Type	AA	BB	CC	ØDD	EE	FF Key Width x Length
SHAFT TYPE	1	1.75	.250/.240	.31	.750/.749	.832/.827	.187x1.00
	11	1.25	.58				G (See Below Chart)
	Spline Data Code	Number of Teeth	Pitch	Major Diameter	Pitch Diameter	Minor Diameter	Minor Diameter
	G	9	16/32	.623/.622	.5625	.4835/.4725	Major dia. fit

V20 INSTALLATION DIMENSION

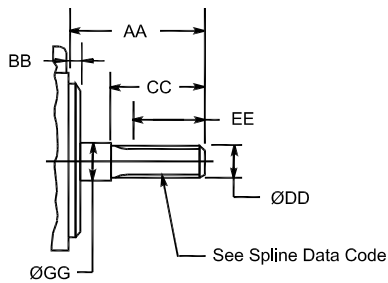


SHAFT TYPE

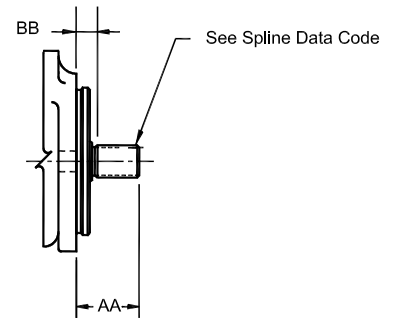
#1 Straight Shaft



#11 Splined Shaft



#62 Splined Shaft



BODY

D	E	H	M	øN	S	T	R	RW	øU	øV x 2	øW	X	Y	
2.19	0.50	4.38	1.22	3.250/3.248	2.19	2.60	2.44	0.47	3.75	0.437	5.12	4.19	2.09	
					V20 (GPM)		6	7,8,9	11	12,13				
							S1	S2	S1	S2	S1	S2	S1	S2
							4.93	4.02	5.18	4.27	5.38	4.47	5.52	4.61

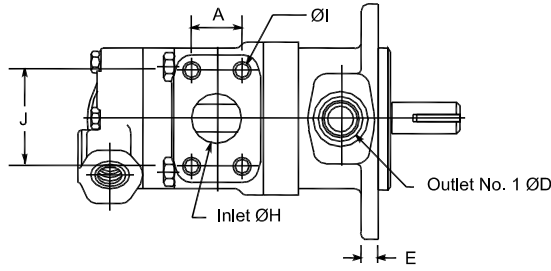
PORT
CONN.

Outlet ØF	Inlet øk
1 1/16"-12 UN-2B or 3/4" NPT	1 5/8"-12UN-2B or 1 1/4" NPT

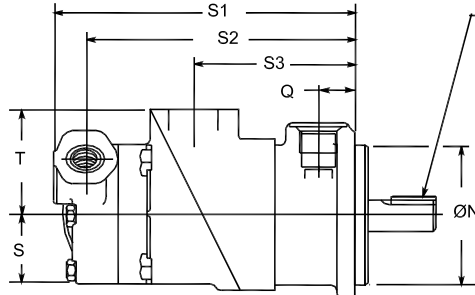
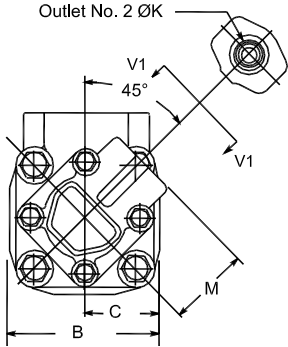
SHAFT
TYPE

Shaft Type	AA	BB	ØDD	EE	FF Key Width x Length		
1	2.66	.156	.750/.749	.832/.827	.1875x1.62		
Shaft Type	AA	BB	CC	ØDD	EE	GØG	Spline Data Code
11	2.94	.156	2.00	.751/.749	1.47	.751/.749	F (See Below Chart)
62	1.25	.58					G (See Below Chart)
Spline Data Code	Number of Teeth	Pitch	Major Diameter	Pitch Diameter	Minor Diameter	Minor Diameter	Pressure Angle
F	11	16/32					30°
G	9	16/32	.623/.622	.5625	.4835/.4725	Major dia. fit	

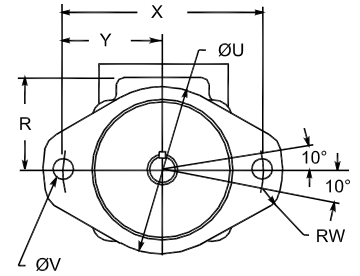
V2010 INSTALLATION DIMENSION



VIEW V1-V1

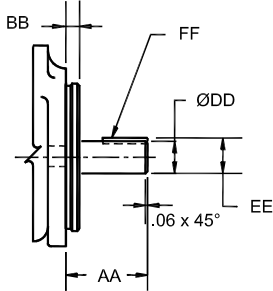


See SHAFT TYPE

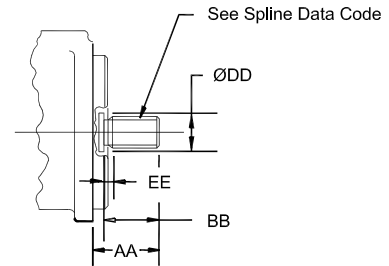


SHAFT TYPE

#1 Straight Shaft



#11 Splined Shaft

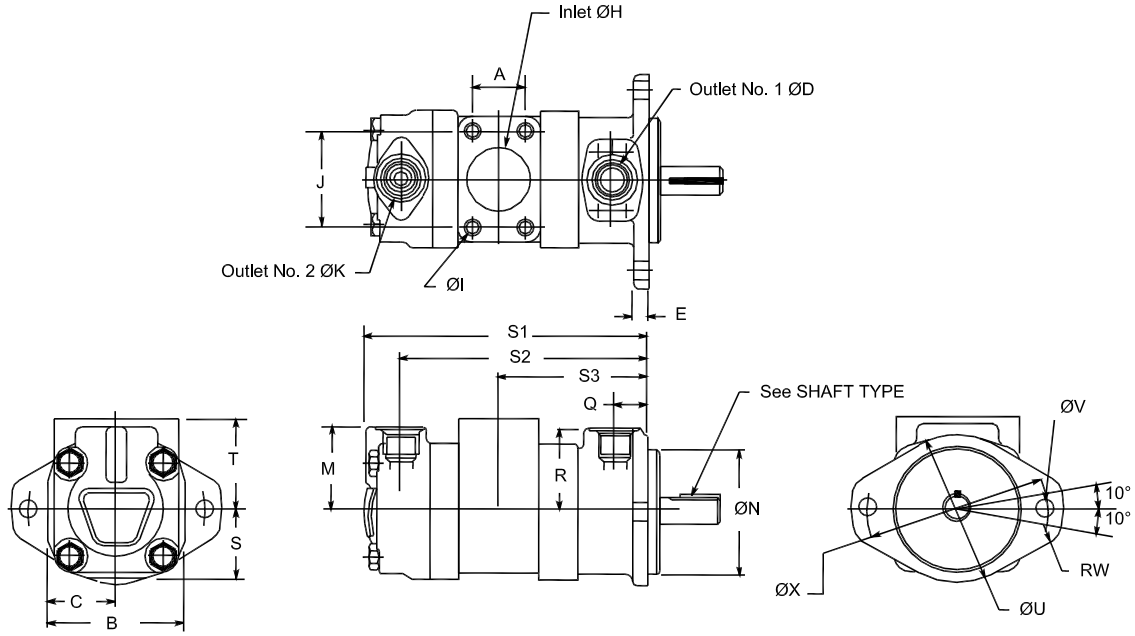


		A	B	C	E	ØH	J	M	ØN	Q	S	T	R	RW	ØU																				
		2.00	4.38	2.19	0.50	1.50	3.50	2.38	4.000/3.998	1.06	2.00	3.00	2.62	0.56	4.75																				
						V20** (GPM)		V**10 (GPM)		V20** (GPM)		V**10 (GPM)		V20** (GPM)		V**10 (GPM)																			
						7,8,9		1,2,3		7,8,9		4,5		7,8,9		6,7		11		1,2,3															
						S1		S2		S3		S1		S2		S3		S1		S2		S3													
BODY	ØV x 2	X	Y			8.39		7.45		4.46		8.64		7.70		4.46		8.84		7.90		4.46		8.59		7.65		4.65							
						V20** (GPM)		V**10 (GPM)		V20** (GPM)		V**10 (GPM)		V20** (GPM)		V**10 (GPM)		V20** (GPM)		V**10 (GPM)		V20** (GPM)		V**10 (GPM)											
						11		4,5		11		6,7		12,13		1,2,3		12,13		4,5		12,13		6,7											
						S1		S2		S3		S1		S2		S3		S1		S2		S3		S1		S2		S3							
						8.84		7.90		4.65		9.04		8.10		4.79		8.73		7.79		4.79		8.97		8.03		4.79		9.17		8.23		4.79	

PORT CONN.		Outlet No 1 ØD	Outlet No 2 ØK	ØI x 4 Holes	Inlet Flange
		1 1/16"-12 UN-2B	3/4"-16 UNF-2B	1/2"-13 UNC-2B x 0.88	F1-12-

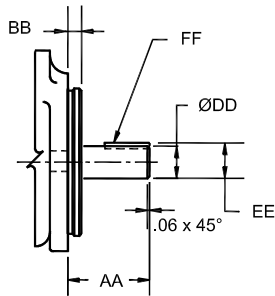
SHAFT TYPE		Shaft Type	AA	BB	ØDD	EE	FF Key Width x Length	
		1	2.32	.375	.875/.874	.996/.961	.1875x1.25	
		Shaft Type	AA	BB	ØDD	EE	Spline Data Code	
		11	1.62	1.31	1.15	.16	A (See Below Chart)	
		Spline Data Code	Number of Teeth	Pitch	Major Diameter	Form Diameter	Minor Diameter	Minor Diameter
		A	13	16/32	.873/.872	.749	.734/.723	Major dia. fit

V2020 INSTALLATION DIMENSION

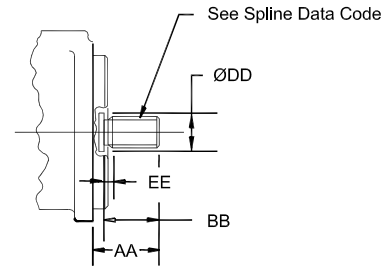


SHAFT TYPE

#1 Straight Shaft



#11 Splined Shaft



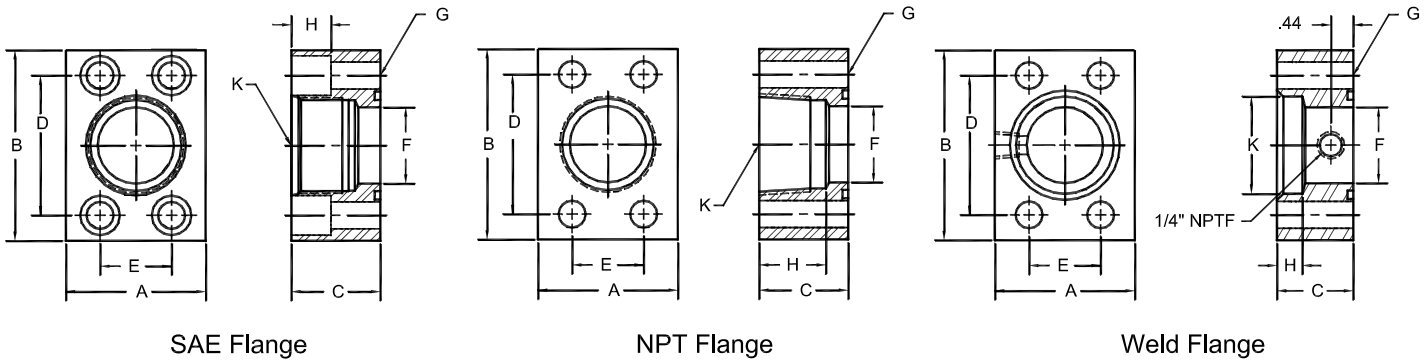
	A	B	C	E	ØH	J	M	ØN	Q	S	T	R	RW	ØU		
	1.69	4.38	2.19	0.50	1.94/2.00	3.06	2.75	4.000/3.998	1.06	2.19	2.94	2.62	0.56	4.75		
BODY					V20** (GPM)		V**20 (GPM)		V20** (GPM)		V**20 (GPM)		V20** (GPM)		V**20 (GPM)	
					7,8,9		6		7,8,9		7,8,9		11		6	
	ØV x 2 ØX				S1 S2 S3		S1 S2 S3		S1 S2 S3		S1 S2 S3		S1 S2 S3		S1 S2 S3	
	0.56 5.75				8.41 7.39 4.49		8.66 7.64 4.49		8.61 7.59 4.69		8.86 7.84 4.69					
				V20** (GPM)		V**20 (GPM)		V20** (GPM)		V**20 (GPM)		V20** (GPM)		V**20 (GPM)		
				11		11		12,13		6		12,13		7,8,9		
				S1 S2 S3		S1 S2 S3		S1 S2 S3		S1 S2 S3		S1 S2 S3		S1 S2 S3		
				9.05 8.03 4.69		8.75 7.73 4.82		8.99 7.97 4.82		9.19 8.17 4.82						

PORT CONN.	Outlet No 1 ØD	Outlet No 2 ØK	ØI x 4 Holes	Inlet Flange
	1 1/16"-12 UN-2B	1 1/16"-12 UN-2B	1/2"-13 UNC-2B x 0.94	F1-16-

SHAFT TYPE	Shaft Type	AA	BB	ØDD	EE	FF Key Width x Length
	1	2.32	.37	.875/.874	.996/.961	.1875x1.25

SHAFT TYPE	Shaft Type	AA	BB	ØDD	EE	Spline Data Code	
	11	1.62	1.31	1.15	.16	A (See Below Chart)	
Spline Data Code		Number of Teeth	Pitch	Major Diameter	Form Diameter	Minor Diameter	Minor Diameter
A		13	16/32	.873/.872	.749	.734/.723	Major dia. fit

SAE 4-Bolt Flange



SAE Straight Threaded	Flange Size	A	B	C	D	E	F	G	H	K	BOLT SIZE ①
F1-6-S	3/4	1.75	2.62	1.5	1.875	0.875	0.75	0.41	0.59	1 1/16-12	3/8-16 x 1 1/2
F1-8-S	1	2	2.82	1.5	2.062	1.031	1	0.41	0.59	1 5/16-12	3/8-16 x 1 1/2
F1-10-S	1 1/4	2.5	3.19	1.5	2.312	1.188	1.25	0.47	0.71	1 5/8-12	7/16-14 x 1 1/2
F1-12-S	1 1/2	2.75	3.75	1.75	2.75	1.406	1.5	0.53	0.78	1 7/8-12	1/2-13 x 1 3/4

NPTF Pipe Threaded	Flange Size	A	B	C	D	E	F	G	H	K (NPTF)	BOLT SIZE ①
F1-6-P	3/4	1.75	2.62	1.25	1.88	0.88	0.75	0.41	1.06	3/4	3/8-16 x 2
F1-8-P	1	2.00	2.82	1.50	2.06	1.03	1.00	0.41	1.25	1	3/8-16 x 2 1/4
F1-10-P	1 1/4	2.50	3.19	1.50	2.31	1.19	1.25	0.47	1.31	1 1/4	7/16-14 x 2 1/4
F1-12-P	1 1/2	2.75	3.75	1.75	2.75	1.41	1.50	0.53	1.31	1 1/2	1/2-13 x 2 1/2
F1-16-P	2	3.25	4.00	1.75	3.06	1.69	1.94	0.53	1.31	2	1/2-13 x 2 1/2
F1-20-P ②	2 1/2	4.00	4.50	2.00	3.50	2.00	2.44	0.53	1.75	2 1/2	1/2-13 x 2 3/4
F1-24-P ③	3	4.50	5.50	2.25	4.19	2.44	2.94	0.66	2.00	3	5/8-11 x 3 1/2

Pipe Welded	Flange Size	A	B	C	D	E	F	G	H	K	BOLT SIZE ①
F1-8-W	1	2.00	2.82	1.25	2.062	1.031	1.00	0.41	0.50	1.335	3/8-16 x 2
F1-10-W	1 1/4	2.50	3.19	1.25	2.312	1.188	1.25	0.47	0.50	1.680	7/16-14 x 2
F1-12-W	1 1/2	2.75	3.75	1.25	2.750	1.406	1.50	0.53	0.50	1.920	1/2-13 x 2
F1-16-W	2	3.25	4.00	1.50	3.062	1.688	1.94	0.53	0.62	2.411	1/2-13 x 2 1/4
F1-20-W ②	2 1/2	4.00	4.50	1.75	3.500	2.000	2.44	0.53	0.75	2.911	1/2-13 x 2 1/2
F1-24-W ③	3	4.50	5.31	2.00	4.188	2.438	2.94	0.66	0.75	3.540	5/8-11 x 3
F1-28-W ④	3 1/2	5.00	6.00	1.50	4.750	2.750	3.44	0.66	0.75	4.045	5/8-11 x 2 1/2
F1-32-W ④	4	5.50	6.38	1.50	5.125	3.062	3.94	0.66	0.75	4.550	5/8-11 x 2 1/2

- ① Order Separately
- ② 2500 PSI Max
- ③ 2000 PSI Max
- ④ 500 PSI Max