



VQSV10 Vane Pump SERIES

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(F3) - 2520VQ SV10 17 A 8 S 3 - 297 C C C 22 L

 1 2 3 4 5 6 7 8 9 10 11 12 13 14

1 Special Seals

 Omit - (Standard)
 F3 - Viton Seals

2 Double Pump Series No

 2520VQ 3520VQ 3525VQ
 4525VQ 4535VQ

3 Single Pump Series No

 V10 - (Standard)
 [S - SAE Mounting (Standard)]

4 Shaft End Pump (GPM)

 (@1200 RPM, 100 PSI)
 25**VQ 35**VQ 45**VQ

 12 25 42
 14 30 50
 17 35 60
 21 38

5 Double Pump Port Connection

 A - SAE 4-Bolt Flange (Standard)

6 Center Pump (GPM)

 (@1200 RPM, 100 PSI)
 **20VQ **25VQ **35VQ

 5 12 25
 8 14 30
 11 17 35
 12 21 38
 14

7 Single Pump Port Connection

 S - 3/4-16UNF-2B(Standard)

8 Cover End Pump (GPM)

 (@1200 RPM, 100 PSI)
 V10 - 1, 2, 3, 4, 5, 6, 7

9 Shaft Type

 297 - Splined (Standard)

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)
 All Series Except 4535VQ
 A - 135° CCW From Inlet
 B - 45° CCW From Inlet
 C - 45° CW From Inlet (Standard)
 D - 135° CW From Inlet

Series 4535VQ

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

12 Outlet No 3 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

13 Design Number

 22 - (Standard)
 10 - Design Change

14 Rotation

 (View From Shaft End of Pump)
 Omit - Right Hand Rotation
 (Standard)
 L - Left Hand Rotation



NOTE: See Respective Pump Performance in VQ Pump Performance and V10 Pump Performance for Triple Pump Performance.

MAXIMUM SPEED (DEPENDENT ON V10 PUMP SIZE):

SERIES NO	2520VQSV10			3520VQSV10			3525VQSV10				
V10 PUMP (GPM)	1,2,3,4,5	6	7	1,2,3,4,5	6	7	1,2,3	4	5	6	7
MAX SPEED FOR ALL PUMPS (RPM)	2700	2200* 2500**	1900* 2200**	2500	2200* 2500**	1900* 2200**	2500	2200* 2500**	2200* 2500**	2200* 2400**	2200

SERIES NO	4525VQSV10		4535VQSV10	
V10 PUMP (GPM)	1,2,3,4,5,6	7	1,2,3,4,5,6	7
MAX SPEED FOR ALL PUMPS (RPM)	2200	2000* 2200**	2200	2100* 2200**

* With V10 Pump Pressure Over 1000 PSI
 ** With V10 Pump Pressure To 1000 PSI

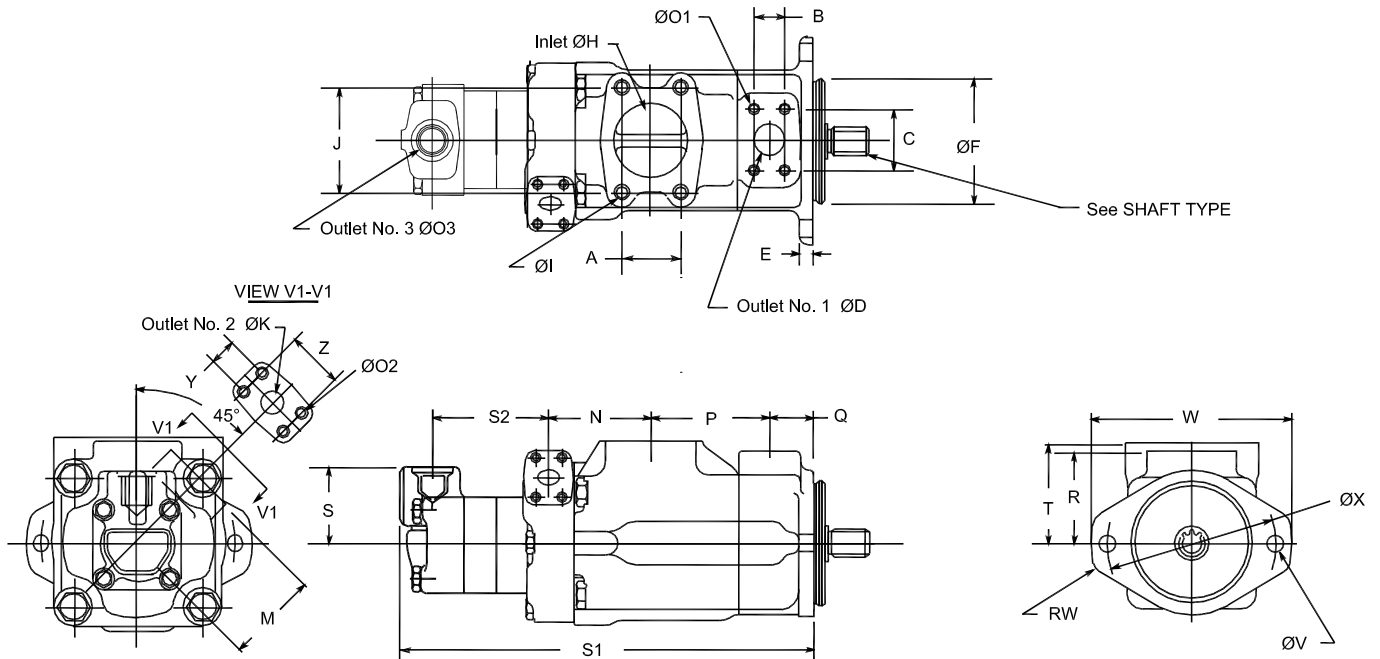
MAXIMUM PRESSURE:

SERIES NO	25**VQSV**	35**VQSV**	45**VQSV**
PUMP (GPM)	12,14,17,21	25,30,35,38	42,50,60
MAX PRESSURE FOR SHAFT END PUMPS (PSI)	3000	3000	2500

SERIES NO	**20VQSV**			**25VQSV**	**35VQSV**
PUMP (GPM)	5,8,11	12	14	12,14,17,21	25,30,35,38
MAX PRESSURE FOR CENTER PUMPS (PSI)	3000	2300	2000	3000	3000

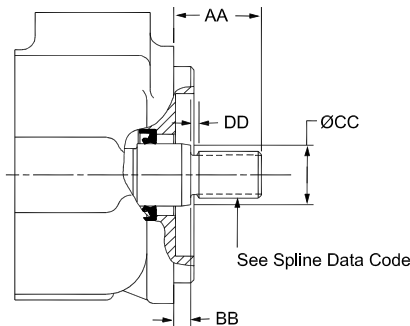
SERIES NO	****VQSV10		
PUMP (GPM)	1,2,3,4,5	6	7
MAX PRESSURE FOR COVER END PUMPS (PSI)	2500	2200	2000

2520VQSV10 INSTALLATION DIMENSION



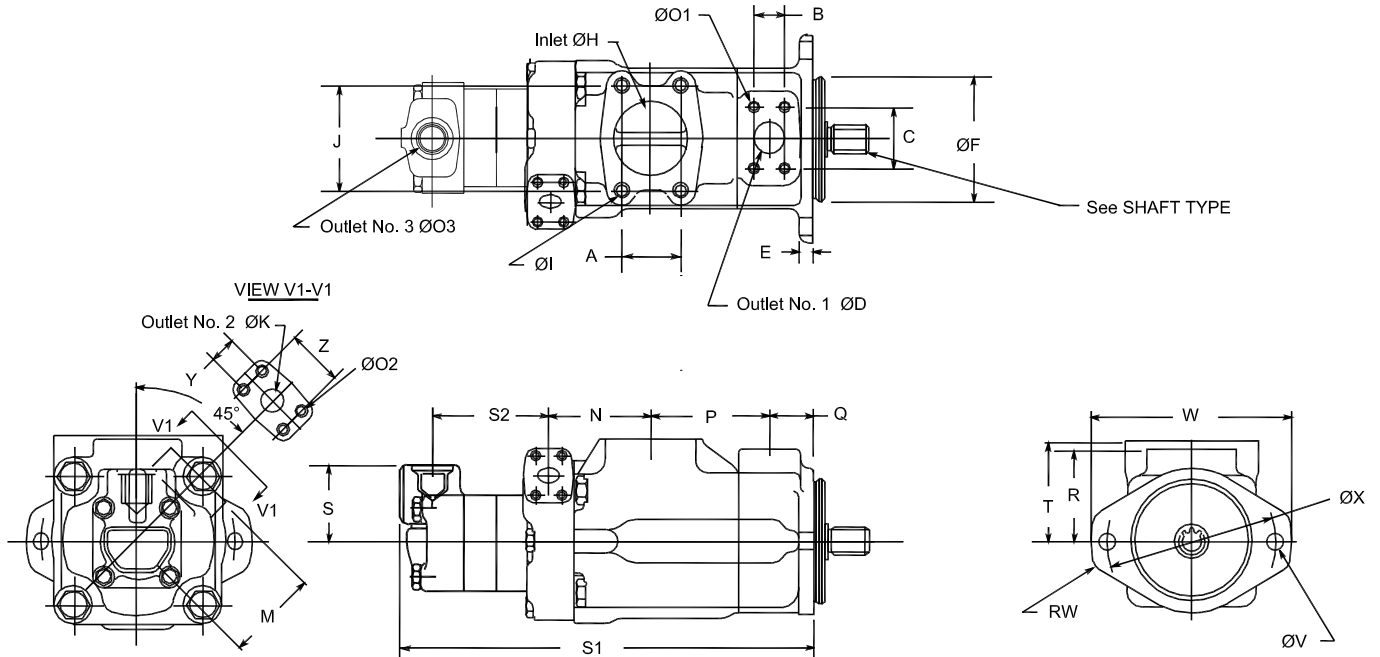
SHAFT TYPE

#297 Splined shaft



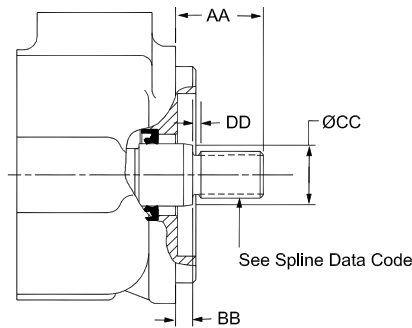
	A	B	C	øD	E	øF	øH	J	øK	M	N	P	Q	R	S	
BODY	2.00	1.03	2.06	1.00	0.50	4.000/3.998	2.50	3.50	0.75	3.00	3.47	4.00	1.50	3.00	2.47	
											V10 (GPM)		1,2,3	4,5	6,7	
	T	øV x 2	RW	W	øX	Y	Z				S1	S2	S1	S2	S1	S2
	3.31	0.56	0.55	6.88	5.75	0.88	1.88				13.78	3.43	14.03	3.68	14.23	3.88
PORT CONN.	øO1 x 4 Holes			øO2 x 4 Holes			Outlet No 3 øO3		øI x 4 Holes		Outlet No 1 Flange		Outlet No 2 Flange		Inlet Flange	
	3/8"-16UNC-2B x 0.75			3/8"-16UNC-2B x 0.75			3/4"-16UNF-2B		1/2"-13UNC-2B x 0.94		F1-8-		F1-6-		F1-20-	
SHAFT TYPE	Shaft Type	AA	BB	øCC	DD	Splines Data Code										
	297	1.62	.31	1.09	.25	C (See Below Chart)										
	Splines Data Code	Number of Teeth	Pitch	Major Diameter	Form Diameter	Minor Diameter	Minor Diameter									
	C	13	16/32	.858/.852	.749	.715	Side fit									

3520VQSV10 INSTALLATION DIMENSION



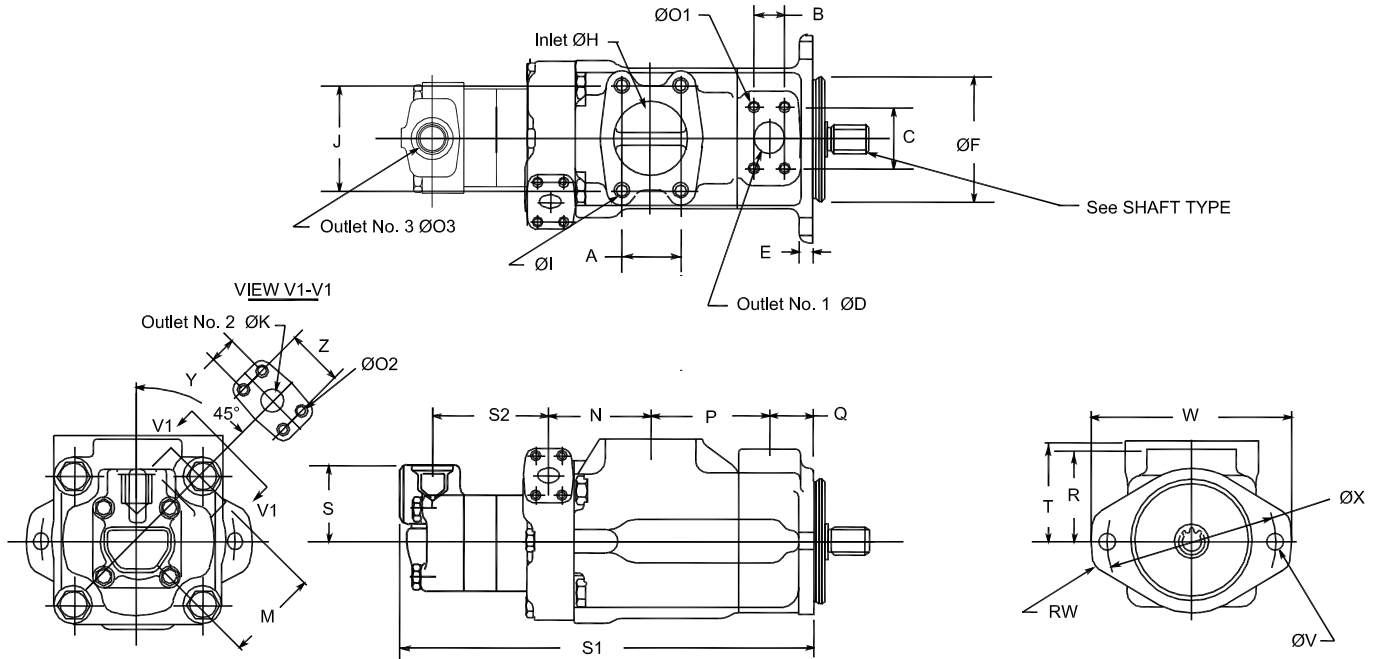
SHAFT TYPE

#297 Splined shaft



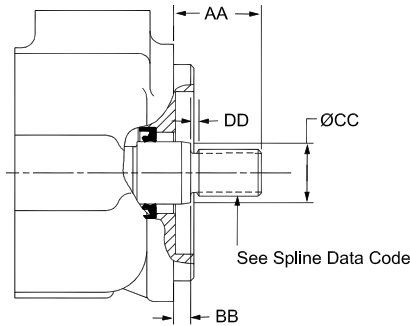
BODY	A	B	C	øD	E	øF	øH	J	øK	M	N	P	Q	R	S	
		2.44	1.19	2.31	1.25	0.62	5.000/4.998	3.00	4.19	0.75	3.00	3.92	4.50	1.50	3.25	2.47
										V10 (GPM)			1,2,3	4,5	6,7	
	T	øV x 2	RW	W	øX	Y	Z				S1	S2	S1	S2	S1	S2
	3.50	0.69	0.63	8.38	7.13	0.88	1.88				14.66	3.43	14.91	3.68	15.11	3.88
PORT CONN.	øO1 x 4 Holes		øO2 x 4 Holes		Outlet No 3 øO3		øI x 4 Holes		Outlet No 1 Flange		Outlet No 2 Flange		Inlet Flange			
	7/16"-14UNC-2B x 0.88		3/8"-16UNC-2B x 0.75		3/4"-16UNF-2B		5/8"-11UNC-2B x 1.125		F1-10-		F1-6-		F1-24-			
SHAFT TYPE	Shaft Type	AA	BB	øCC	DD	Spline Data Code										
	297	2.18	.31	1.38	.21	E (See Below Chart)										
	Spline Data Code	Number of Teeth	Pitch	Major Diameter	Form Diameter	Minor Diameter	Minor Diameter									
E	14	12/24	1.229/1.223	1.08	1.040	Side fit										

3525VQSV10 INSTALLATION DIMENSION



SHAFT TYPE

#297 Splined shaft

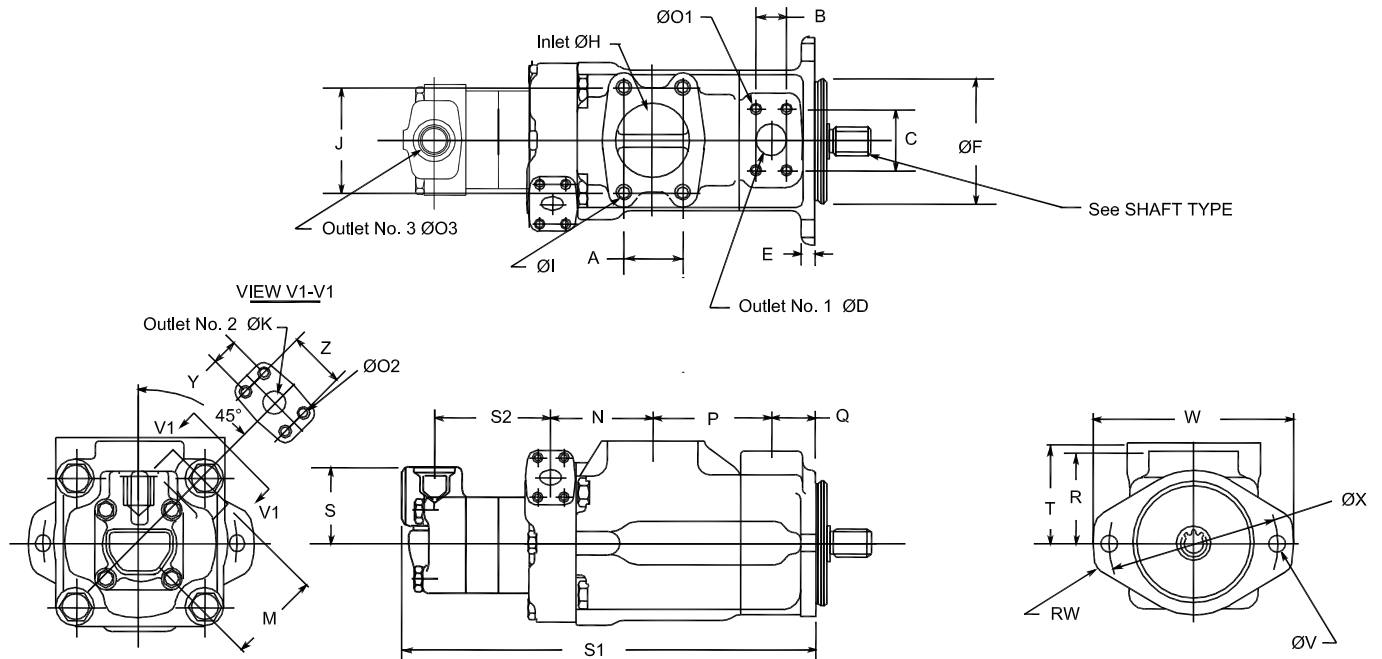


BODY	A	B	C	øD	E	øF	øH	J	øK	M	N	P	Q	R	S	
		2.44	1.19	2.31	1.25	0.62	5.000/4.998	3.00	4.19	1.00	2.94	4.31	4.50	1.50	3.25	2.47
											V10 (GPM)		1,2,3	4,5	6,7	
	T	øV x 2	RW	W	øX	Y	Z				S1	S2	S1	S2	S1	S2
	3.50	0.69	0.63	8.38	7.13	1.03	2.06				15.00	3.40	15.25	3.65	15.45	3.85

PORT CONN.	ØO1 x 4 Holes	ØO2 x 4 Holes	Outlet No 3 ØO3	Ø I x 4 Holes	Outlet No 1 Flange	Outlet No 2 Flange	Inlet Flange
		7/16"-14UNC-2B x 0.88	3/8"-16UNC-2B x 0.66	3/4"-16UNF-2B	5/8"-11UNC-2B x 1.125	F1-10-	F1-8-

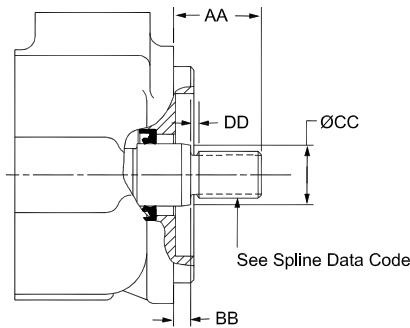
SHAFT TYPE	Shaft Type	AA	BB	øCC	DD	Splines Data Code	
		297	2.18	.31	1.38	.21	E (See Below Chart)
	Splines Data Code	Number of Teeth	Pitch	Major Diameter	Form Diameter	Minor Diameter	Minor Diameter
	E	14	12/24	1.229/1.223	1.08	1.040	Side fit

4525VQSV10 INSTALLATION DIMENSION



SHAFT TYPE

#297 Splined shaft

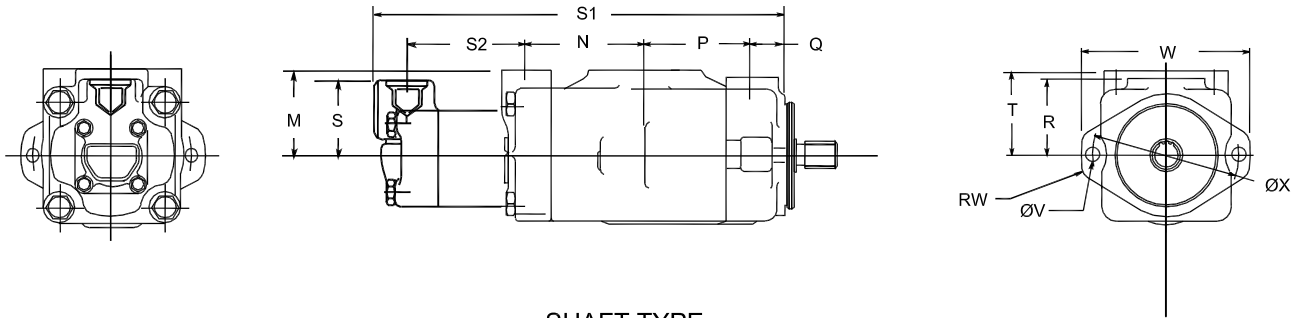
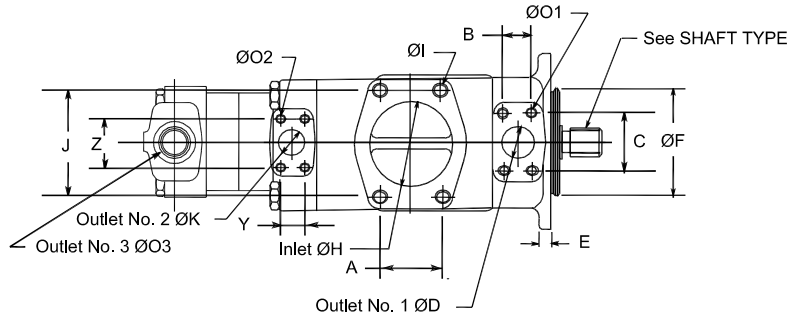


BODY	A	B	C	øD	E	øF	øH	J	øK	M	N	P	Q	R	S	
	2.75	1.41	2.75	1.50	0.62	5.000/4.998	3.50	4.75	1.00	2.94	5.35	4.70	1.69	3.69	2.47	
											V10 (GPM)		1,2,3	4,5	6,7	
	T	øV x 2	RW	W	øX	Y	Z				S1	S2	S1	S2	S1	S2
	4.03	0.69	0.63	8.38	7.13	1.03	2.06				16.53	3.40	16.78	3.65	16.98	3.85

PORT CONN.	øO1 x 4 Holes	øO2 x 4 Holes	Outlet No 3 øO3	øI x 4 Holes	Outlet No 1 Flange	Outlet No 2 Flange	Inlet Flange
		1/2"-13UNC-2B x 0.94	3/8"-16UNC-2B x 0.66	3/4"-16UNF-2B	5/8"-11UNC-2B x 1.25	F1-12-	F1-8-

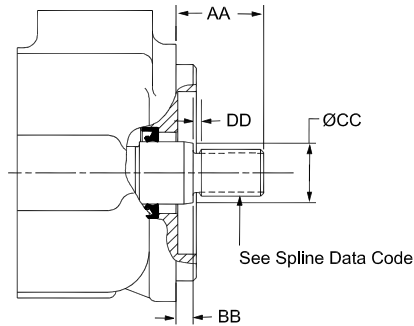
SHAFT TYPE	Shaft Type	AA	BB	øCC	DD	Splines Data Code	
	297	2.18	.31	1.56	.25	E (See Below Chart)	
	Splines Data Code	Number of Teeth	Pitch	Major Diameter	Form Diameter	Minor Diameter	Minor Diameter
E	14	12/24	1.229/1.223	1.08	1.040	Side fit	

4535VQSV10 INSTALLATION DIMENSION



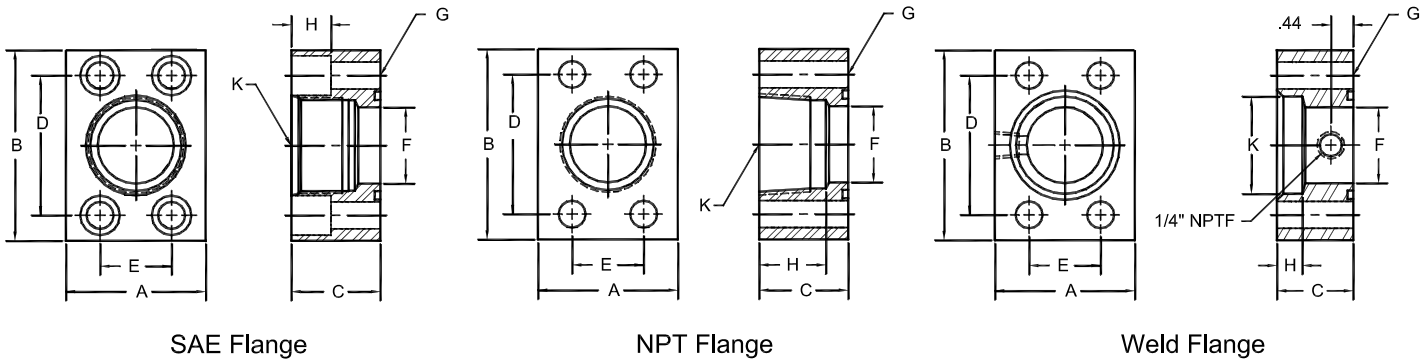
SHAFT TYPE

#297 Splined shaft



	A	B	C	øD	E	øF	øH	J	øK	M	N	P	Q	R	S		
BODY	3.06	1.41	2.75	1.50	0.62	5.000/4.998	4.00	5.13	1.25	4.00	5.84	5.25	1.69	3.69	2.47		
										V10 (GPM)		1,2,3		4,5		6,7	
	T	øV x 2	RW	W	øX	Y	Z			S1	S2	S1	S2	S1	S2		
	4.03	0.69	0.63	8.38	7.13	1.19	2.31			17.50	3.31	17.75	3.56	17.95	3.76		
PORT CONN.	ØO1 x 4 Holes			ØO2 x 4 Holes			Outlet No 3 ØO3		Ø I x 4 Holes		Outlet No 1 Flange		Outlet No 2 Flange		Inlet Flange		
	1/2"-13UNC-2B x 0.94			7/16"-14UNC-2B x 0.88			3/4"-16UNF-2B		5/8"-11UNC-2B x 1.25		F1-12-		F1-10-		F1-32-		
SHAFT TYPE	Shaft Type	AA	BB	øCC	DD	Spline Data Code											
	297	2.18	.31	1.56	.25	E (See Below Chart)											
	Spline Data Code	Number of Teeth	Pitch	Major Diameter	Form Diameter	Minor Diameter	Minor Diameter										
	E	14	12/24	1.229/1.223	1.08	1.040	Side 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