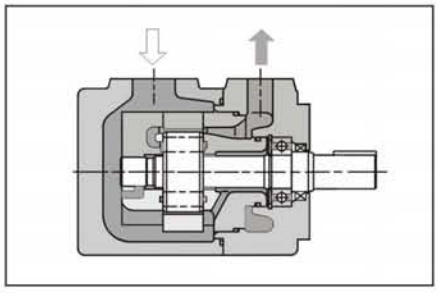
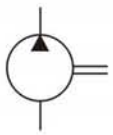
PVL Series Vane Pumps

PVL Series Single Pumps





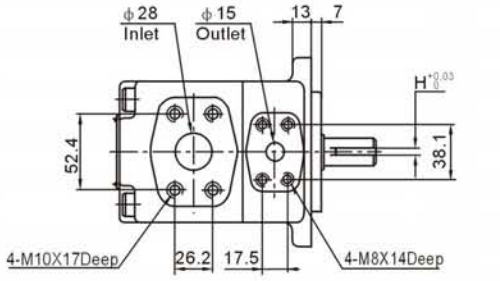
Model Code

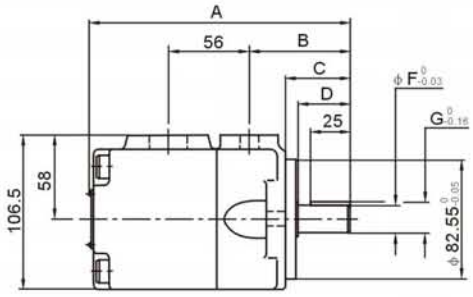
F-	PVL2	-47	-F	F	-1	R	-U	-10
Prefix,fluid compatibility	Series	Geometric displacement	Mounting	Port connections	Shaft	Rotation	Outlet positions	Design
Omit-Using antiwear oil wate glycol fluid F-phosphate ester fluid	PVL1	6,8,10,12,14,17,19,23,25,28,31	F-Flange mounting L-Foot mounting	F-SAE 4-bolt flange S-Thd flange	1-Str.key (standard) 2-Str.key	(Viewed from shaft end) R-Right hand for clockwise L-Left hand for counter clockwise	U-up D-down R-right L-left	10
	PVL2	26,33,41,47,53,59,65,75						
	PVL3	52,60,66,76,85,94,116,125,136,153						

Note:1.For options other than listed above, i.e shafts, ports, displacement, and mountings, please contact us.
2.Inlet port is set to be on the upper side

Installation dimensions

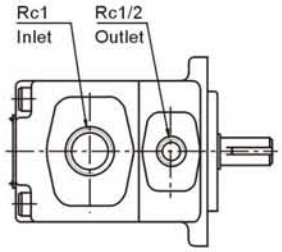
PVL1-※-FF(Flange Mounting)



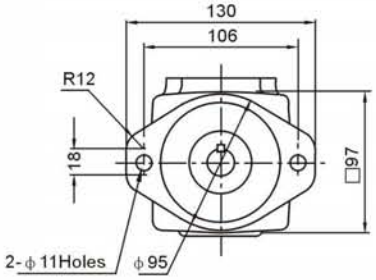


Shaft form	A	B	C	D	F	G	H
1	178.5	69.5	44.5	36	19.05	21.24	4.76
2	184	75	50	41	15.88	17.68	3.97

PVL1-※-FS(Thd Flange)

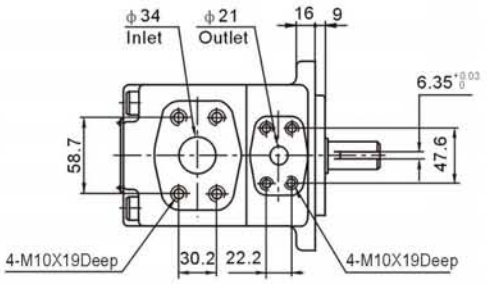


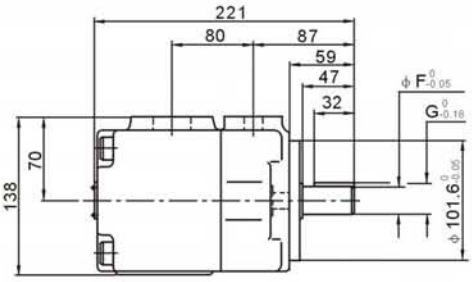
For other dimensions.refer to "flange mounting" type



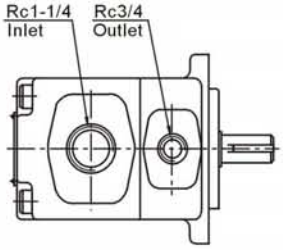
Installation dimensions

PVL2-※-FF(Flange Mounting)

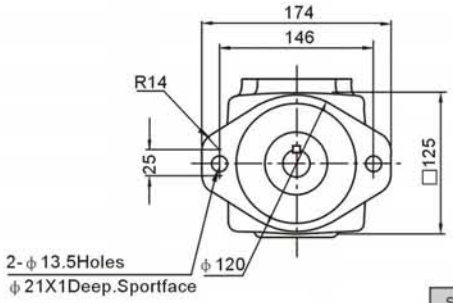




PVL2-※-FS(Thd flange)

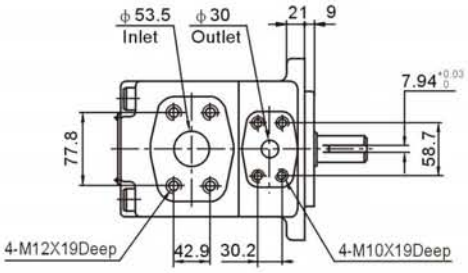


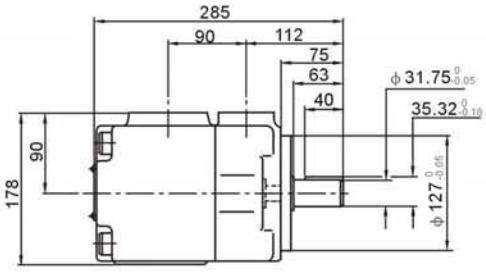
For other dimensions.refer to "flange mouting" type

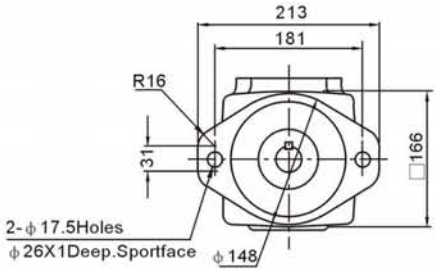


Shaft form	F	G
1	25.4	28.18
2	22.23	25.01

PVL3-※-FF(Flange Mounting)



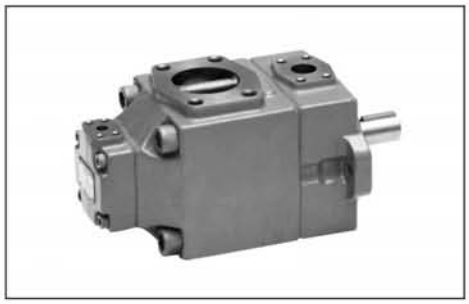


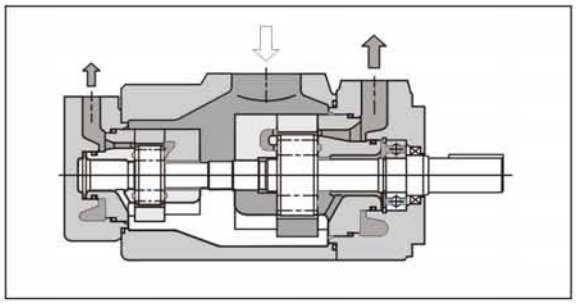


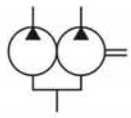
Specifications

Model	Displacement mL/r	Max.pressure.MPa			Flow L/min					Input power kW					Speed r/min		Weight kg
					Discharge pressure MPa					Discharge pressure MPa							
		Special oil	Antiwear oil	Common oil	0.7	7	14	Pn	21	0.7	7	14	Pn	21	Min.	Max.	
PVL1-6	5.8	21	17.5	16	8.4	7.5	6.5	6.0	5.6	0.2	1.5	3.0	3.7	4.4	750	1800	9.0
PVL1-8	8.0				11.7	10.8	9.9	9.4	9.0	0.2	2.0	3.8	4.8	5.2			
PVL1-10	9.4				13.6	12.9	11.9	11.5	10.8	0.2	2.3	4.3	5.3	6.4			
PVL1-12	12.2				18.0	17.0	15.8	15.2	14.8	0.3	2.7	5.2	6.5	7.8			
PVL1-14	13.7				20.2	19.0	17.8	17.2	16.7	0.3	3.0	5.7	7.2	8.5			
PVL1-17	16.6				24.5	23.5	22.2	21.5	21.0	0.4	3.3	6.8	8.5	10.1			
PVL1-19	18.6				27.5	26.5	25.1	24.5	24.0	0.4	3.6	7.7	9.5	11.5			
PVL1-23	22.7				33.2	32.2	31.1	30.5	30.0	0.5	4.6	9.4	12.0	14.0			
PVL1-25	25.3				37.0	36.0	35.0	34.1	33.8	0.5	5.0	10.5	12.7	16.0			
PVL1-28	28.1				41.1	40	38.5	37.8	37.1	0.55	5.4	10.6	13	16.5			
PVL1-31	31.0	16	16		45.8	44.5	43.4	43.0	—	0.6	6.1	12.4	14.4	—			
PVL2-26	26.6	21	17.5	14	39.0	36.5	34.0	32.5	31.2	0.6	6.0	11.0	13.7	16.5	600	1800	19.0
PVL2-33	33.3				49.0	47.0	44.0	42.8	42.0	0.6	7.5	14.0	17.0	20.5			
PVL2-41	41.3				61.0	58.9	56.1	55.0	53.5	0.9	8.2	16.0	20.5	24.5			
PVL2-47	47.2				70.0	67.5	64.6	63.8	62.0	1.0	9.0	18.0	23.5	27			
PVL2-53	52.5				77.0	73.4	71.0	69.0	67.0	1.1	10.0	20.5	26	31			
PVL2-59	58.2				85.0	82.0	79.0	77.0	76.0	1.2	12.0	23.5	29	34			
PVL2-65	64.7				95.0	91.5	88.0	86.0	85.0	1.3	13.0	26	32	38			
PVL2-75	74.6				109	105	101	99.2	98.0	1.5	15.0	30	37	43			
PVL3-52	52.2	21	17.5	14	77.0	71.0	65.0	62.0	58.0	1.1	12.0	21.5	26.5	31.5	600	1800	36.7
PVL3-60	59.6				88.0	82.0	75.0	71.0	68.0	1.2	12.5	23.0	29.0	35.0			
PVL3-66	66.3				98.0	92.0	85.0	81.0	77.5	1.3	13.0	26	32.5	38			
PVL3-76	76.4				112	107	101	97	94.0	1.6	16.0	30	37	44			
PVL3-85	85				125	119	112.5	108	105.4	1.7	14.5	33.0	41.0	48.5			
PVL3-94	93.6				138	132	124	120	117	1.9	19.0	36	45	53			
PVL3-116	115.6	16	16		171	165	157	156	—	2.3	22.0	44	50	—			
PVL3-125	122.2				181	175	166	165	—	2.4	24.0	45	51	—		1200	
PVL3-136	136				202	195	186	184	—	2.7	26.2	50.2	57	—			
PVL3-153	153				228	219	208	207	—	3.0	29.4	56.1	63.6	—			

PVL Series Double Pumps







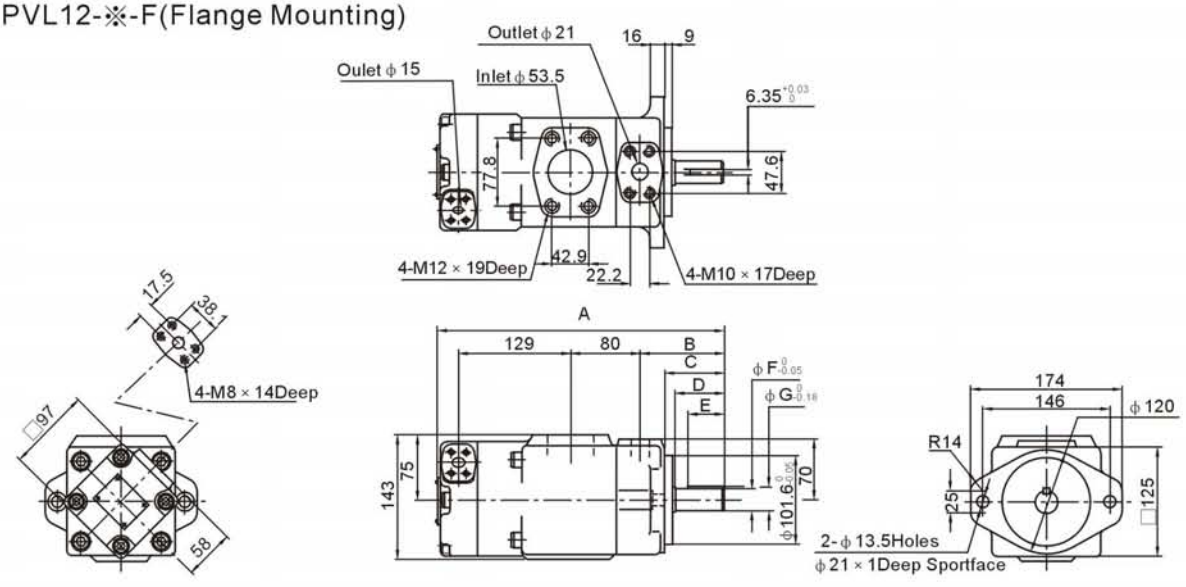
Model Code

F-	PVL13	-6	-76	-F	-1	R	-U	U	-10
Prefix,fluid compatibility	Series	Geometric displacement		Mounting	Shaft	Rotation	Outlet positions		Design
		Cover end pump	Shaft end pump				Cover and pump	Shaft and pump	
Omit-Using antiwear oil water glycol fluid F-phosphate ester fluid	PVL12	6, 8, 10, 12, 14, 17, 19, 23, 25, 28, 31	26, 33, 41, 47, 53, 59, 65,75	F-Flange mounting	1-Str.key (standard)	(Viewed from shaft end) R-Right hand for clockwise	U:Left-up 45° D:Right-down 45° R:Right-up 45° L:Left-down 45°	U:Up D:Down R:Right L:Left	10
	PVL13	6, 8, 10, 12, 14, 17, 19, 23, 25, 28, 31	52,60,66, 76,85,94, 116,125, 136,153				U:Up D:Down R:Right L:Left		
	PVL23	26, 33, 41, 47, 53, 59, 65, 75	52,60,66, 76,85,94, 116,125, 136,153	L-Foot mounting	2-Str.key	L-Left hand for counter clockwise	U:Left-up 45° D:Right-down 45° R:Right-up 45° L:Left-down 45°		

Note:1.For options other than listed above, i.e shafts, ports, displacement, and mountings, please contact us.
2.Inlet port is set to be on the upper side

Installation dimensions

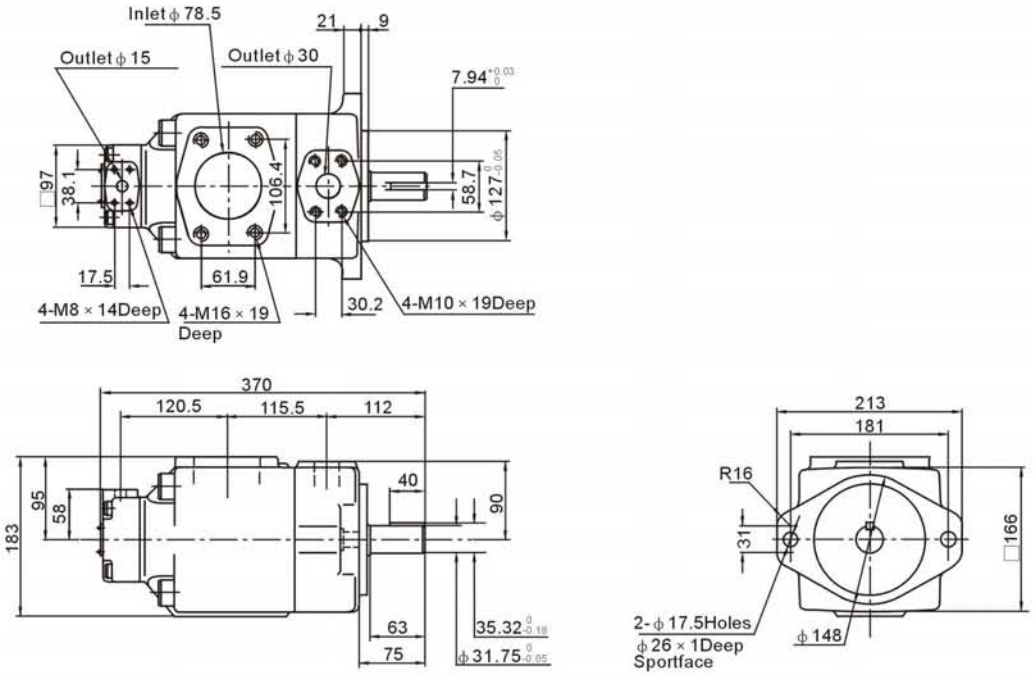
PVL12-※-F(Flange Mounting)



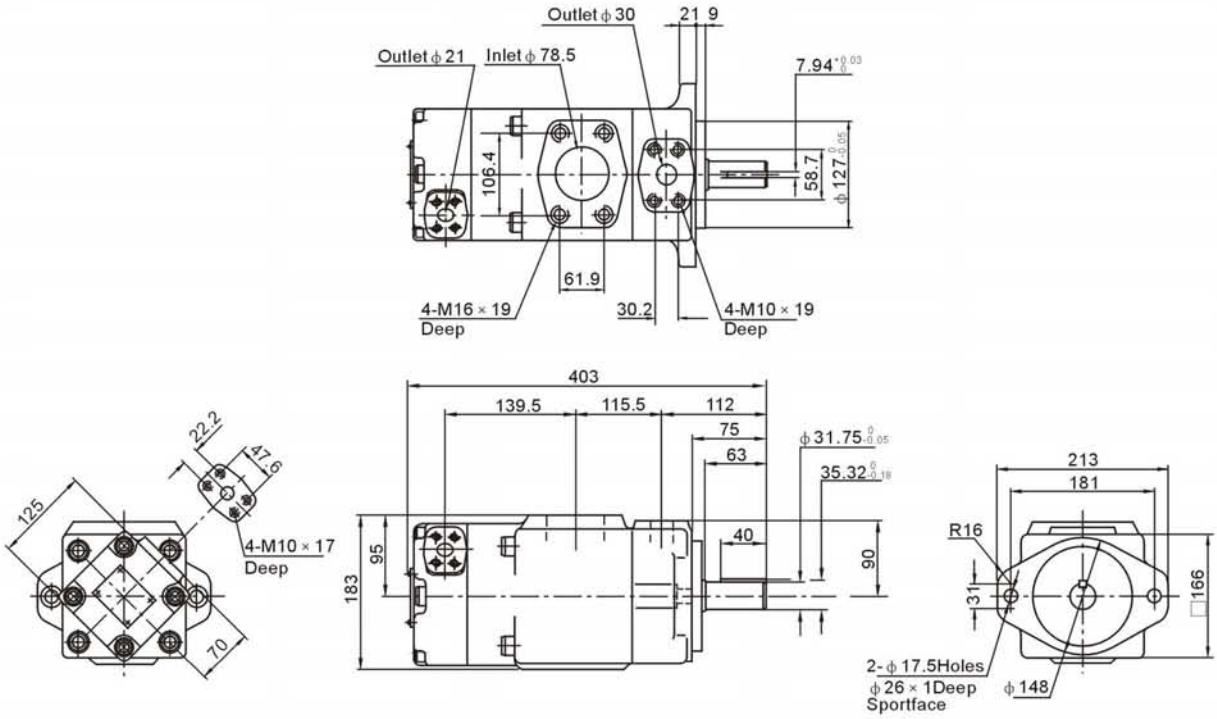
Shaft form	A	B	C	D	E	F	G
1	326	95	67	55	40	25.4	28.18
2	318	87	59	47	32	22.23	25.01

Installation dimensions

PVL13-※-F(Flange Mounting)



PVL23-※-F(Flange Mounting)



Specifications

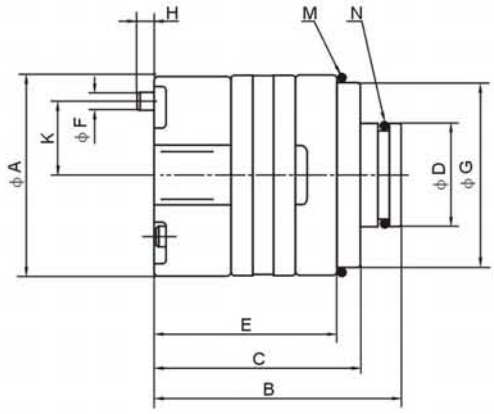
Model	Discharge port	Displ. mL/r	Max. Pressure MPa			Flow L/min					Input power kW					Speed r/min		Weight kg
						Discharge pressure MPa					Discharge pressure MPa							
			Specil oil	Antiwear oil	Common oil	0.7	7	14	Pn	21	0.7	7	14	Pn	21	Min.	Max.	
PVL12	Shaft end pump	26	21	17.5	14	39.0	36.5	34.0	32.5	31.2	0.6	6.0	11.0	13.7	16.5	750	1800	25
		33				49.0	47.0	44.0	42.8	42.0	0.6	7.5	14.0	17.0	20.5			
		41				61.0	58.9	56.1	55.0	53.5	0.9	8.2	16.0	20.5	24.5			
		47				70.0	67.5	64.6	63.8	62.0	1.0	9.0	18.0	23.5	27			
		53				77.0	73.4	71.0	69.0	67.0	1.1	10.0	20.5	26	31			
		59				85.0	82.0	79.0	77.0	76.0	1.2	12.0	23.5	29	34			
		65				95.0	91.5	88.0	86.0	85.0	1.3	13.0	26	32	38			
		75				109	105	101	99.2	98.0	1.5	15.0	30	37	43			
	Cover end pump	6	21	17.5	16	8.4	7.5	6.5	6.0	5.6	0.2	1.5	3.0	3.7	4.4			
		8				11.7	10.8	9.9	9.4	9.0	0.2	2.0	3.8	4.8	5.2			
		10				13.6	12.9	11.9	11.5	10.8	0.2	2.3	4.3	5.3	6.4			
		12				18.0	17.0	15.8	15.2	14.8	0.3	2.7	5.2	6.5	7.8			
		14				20.2	19.0	17.8	17.2	16.7	0.3	3.0	5.7	7.2	8.5			
		17				24.5	23.5	22.2	21.5	21.0	0.4	3.3	6.8	8.5	10.1			
		19				27.5	26.5	25.1	24.5	24.0	0.4	3.6	7.7	9.5	11.5			
		23				33.2	32.2	31.1	30.5	30.0	0.5	4.6	9.4	12.0	14.0			
		25				37.0	36.0	35.0	34.1	33.8	0.5	5.0	10.5	12.7	16.0			
		28				41.1	40	38.5	37.8	37.1	0.55	5.4	10.6	13	16.5			
		31	16	16		45.8	44.5	43.4	43.0	—	0.6	6.1	12.4	14.4	—			
PVL13	Shaft end pump	52	21	17.5	14	77.0	71.0	65.0	62.0	58.0	1.1	12.0	21.5	26.5	31.5	750	1800	45.6
		60				88.0	82.0	75.0	71.0	68.0	1.2	12.5	23.0	29.0	35.0			
		66				98.0	92.0	85.0	81.0	77.5	1.3	13.0	26	32.5	38			
		76				112	107	101	97	94.0	1.6	16.0	30	37	44			
		85				125	119	112.5	108	105.4	1.7	14.5	33.0	41.0	48.5			
		94				138	132	124	120	117	1.9	19.0	36	45	53			
		116	16	16		171	165	157	156	—	2.3	22.0	44	50	—			
		125				181	175	166	165	—	2.4	24.0	45	51	—		1200	
		136				202	195	186	184	—	2.7	26.2	50.2	57	—			
		153				228	219	208	207	—	3.0	29.4	56.1	63.6	—			
	Cover end pump	6	21	17.5	16	8.4	7.5	6.5	6.0	5.6	0.2	1.5	3.0	3.7	4.4			
		8				11.7	10.8	9.9	9.4	9.0	0.2	2.0	3.8	4.8	5.2			
		10				13.6	12.9	11.9	11.5	10.8	0.2	2.3	4.3	5.3	6.4			
		12				18.0	17.0	15.8	15.2	14.8	0.3	2.7	5.2	6.5	7.8			
		14				20.2	19.0	17.8	17.2	16.7	0.3	3.0	5.7	7.2	8.5			
		17				24.5	23.5	22.2	21.5	21.0	0.4	3.3	6.8	8.5	10.1		1800	
		19				27.5	26.5	25.1	24.5	24.0	0.4	3.6	7.7	9.5	11.5			
		23				33.2	32.2	31.1	30.5	30.0	0.5	4.6	9.4	12.0	14.0			
		25				37.0	36.0	35.0	34.1	33.8	0.5	5.0	10.5	12.7	16.0			
		28				41.1	40	38.5	37.8	37.1	0.55	5.4	10.6	13	16.5			
		31	16	16		45.8	44.5	43.4	43.0	—	0.6	6.1	12.4	14.4	—			
PVL23	Shaft end pump	52	21	17.5	14	77.0	71.0	65.0	62.0	58.0	1.1	12.0	21.5	26.5	31.5	600	1800	51
		60				88.0	82.0	75.0	71.0	68.0	1.2	12.5	23.0	29.0	35.0			
		66				98.0	92.0	85.0	81.0	77.5	1.3	13.0	26	32.5	38			
		76				112	107	101	97	94.0	1.6	16.0	30	37	44			
		85				125	119	112.5	108	105.4	1.7	14.5	33.0	41.0	48.5			
		94				138	132	124	120	117	1.9	19.0	36	45	53			
		116	16	16		171	165	157	156	—	2.3	22.0	44	50	—			
		125				181	175	166	165	—	2.4	24.0	45	51	—		1200	
		136				202	195	186	184	—	2.7	26.2	50.2	57	—			
		153				228	219	208	207	—	3.0	29.4	56.1	63.6	—			
	Cover end pump	26	21	17.5	14	39.0	36.5	34.0	32.5	31.2	0.6	6.0	11.0	13.7	16.5			
		33				49.0	47.0	44.0	42.8	42.0	0.6	7.5	14.0	17.0	20.5			
		41				61.0	58.9	56.1	55.0	53.5	0.9	8.2	16.0	20.5	24.5			
		47				70.0	67.5	64.6	63.8	62.0	1.0	9.0	18.0	23.5	27			
		53				77.0	73.4	71.0	69.0	67.0	1.1	10.0	20.5	26	31		1800	
		59				85.0	82.0	79.0	77.0	76.0	1.2	12.0	23.5	29	34			
		65				95.0	91.5	88.0	86.0	85.0	1.3	13.0	26	32	38			
		75				109	105	101	99.2	98.0	1.5	15.0	30	37	43			

PVL Series Cartridge Kits

Model Code

PC-	PVL1	-23	-R
Cartridge kit mark	Series	Geometric Displacement	Rotation
PC-Single pump cartridge kits Double pump shaft end pump cartridge kits PCT-Double pump cover end pump cartridge kits	PVL1	6、8、10、12、14、17、19、23、25、28、31	(Viewed from shaft end) R-Right hand for clockwise L-Left hand for counter clockwise
	PVL2	26、33、41、47、53、59、65、75	
	PVL3	52、60、66、76、85、94、116、125、136、153	

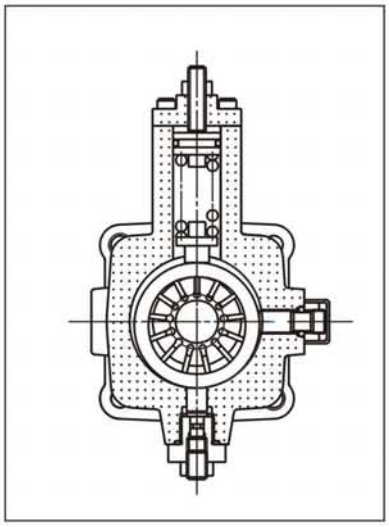
Installation dimensions



Series	A	B	C	D	E	F	G	H	K	M	N
PVL1	68	84	70	35	62	6	62.7	5	R25	59.4×3.1	29.4×3.1
PVL2	90	109	93	52	82	6	84.7	5	R36	84.4×3.1	45.7×3.5
PVL3	120.5	127.5	106	72	94	8	115	8	R48	114.4×3.1	65.0×3.5

Series	Inner splines dentiform parameter of rotor					
	Modulus	No.of teeth	Pressure angle	Major Dia	Minor Dia	Space width
PVL1	0.75	24	45°	19.050	17.550	1.328
PVL2	1.0	24	45°	25.400	23.400	1.771
PVL3	1.0	28	45°	29.400	27.400	1.771

VPV Series
Variable Displacement Vane Pumps



Single Pumps Model Code

M-	VPV1	-12	-55	-1.5	-10
Prefix,fluid compatibility	Series	outlet flow(L/min)	operating pressure range(MPa)	Input power(kW)	Design
M:With motor Omit:Without motor	VPV1	8 12 15 20	2.0 3.5	0.75 1.5	-10
	VPV2	30 40	5.5 7.0	2.25 3.75	-20

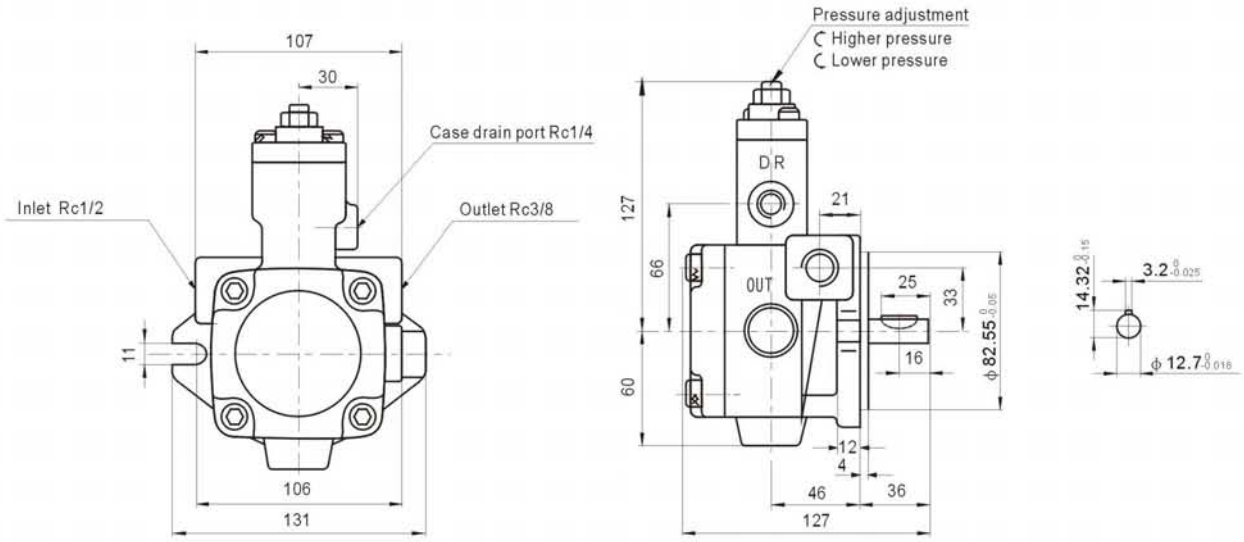
Doule Pumps Model Code

VPV22	-30	-70	/-30	-55	-20
Series	Outlet Flow L/min (shaft end pump)	Operating pressure range MPa (shaft end pump)	Outlet Flow L/min (cover end pump)	Operating pressure range MPa (cover end pump)	Design
VPV11	8 12 15 20	2.0 3.5 5.5 7.0	8 12 15 20	2.0 3.5 5.5 7.0	-20
VPV22	30 40		30 40		-20

Specifications

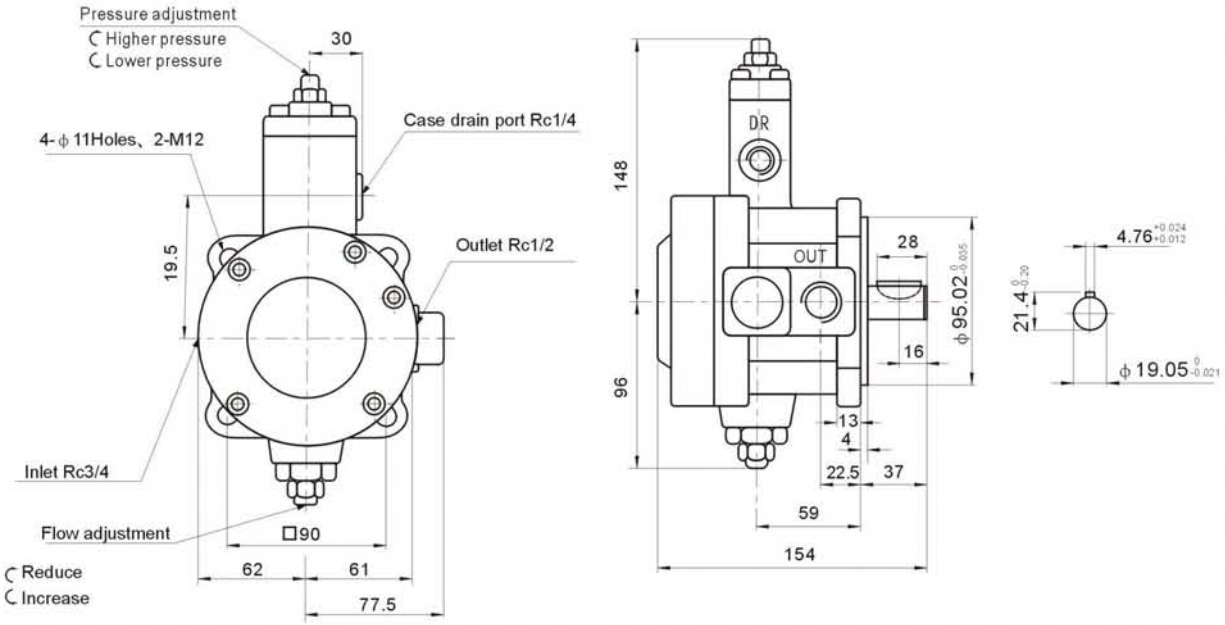
Model	Max. Displacement mL/r	Flow (0MPa 1800r/min) L/min	Operating pressure range MPa	Speed range r/min	Rotation (viewed from shaft end)	Input power kW(HP)	
						1800r/min	1500r/min
VPV1-8-20	5.3	9.5	0.8-2.0	800-1800	Right hand (for clockwise)	0.29(0.5)	0.29(0.5)
VPV1-8-35			1.5-3.5			0.59(1)	0.44(0.5)
VPV1-8-55			3.0-5..5			0.87(1)	0.59(1)
VPV1-8-70			5.0-7.0			1.19(1.5)	1.19(1.5)
VPV1-12-20	6.7	12	0.8-2.0			0.37(0.5)	0.37(0.5)
VPV1-12-35			1.5-3.5			0.75(1)	0.55(1)
VPV1-12-55			3.0-5.5			1.1(1.5)	0.75(1.0)
VPV1-12-70			5.0-7.0			1.5(2)	1.5(2.0)
VPV1-15-20	8.3	15	0.8-2.0			0.5(1)	0.55(1)
VPV1-15-35			1.5-3.5			1.1(1.5)	0.75(1.0)
VPV1-15-55			3.0-5.5			1.5(2)	1.1(2)
VPV1-15-70			5.0-7.0			1.5(2)	1.5(2)
VPV1-20-20	11.1	20	0.8-2.0			0.75(1)	0.55(1)
VPV1-20-35			1.5-3.5			1.1(2)	1.1(2)
VPV1-20-55			3.0-5.5			1.5(2)	1.5(2)
VPV1-20-70			5.0-7.0			2.2(3)	2.2(3)
VPV2-30-20	16.7	30	0.8-2.0			1.1(2)	0.75(1)
VPV2-30-35			1.5-3.5			1.5(2)	1.5(2)
VPV2-30-55			3.0-5.5			2.2(3)	2.2(3)
VPV2-30-70			5.0-7.0			3.75(5)	3.0(5)
VPV2-40-20	22.2	40	0.8-2.0			1.5(2)	1.1(2)
VPV2-40-35			1.5-3.5			2.2(3)	2.0(3)
VPV2-40-55			3.0-5.5			3.75(5)	3.0(5)
VPV2-40-70			5.0-7.0			5.5(7.5)	4.0(5)

VPV1-※-※-10



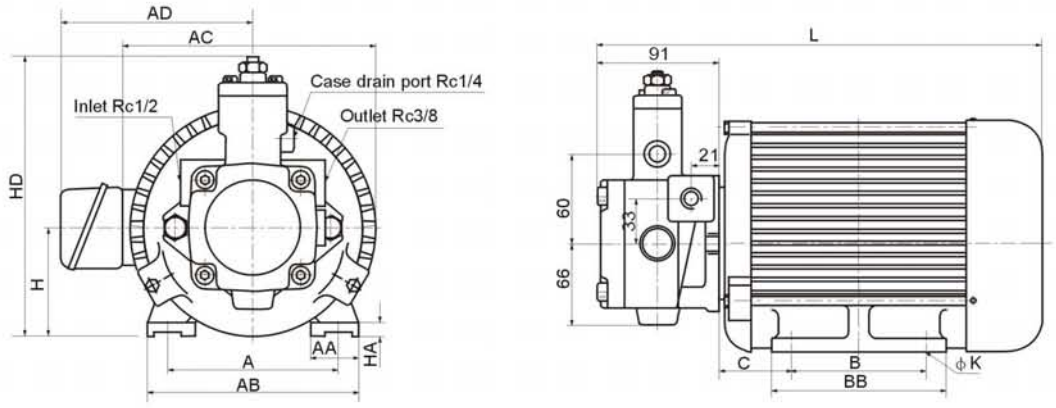
Note:No flow adjustment

VPV2-※-※-20



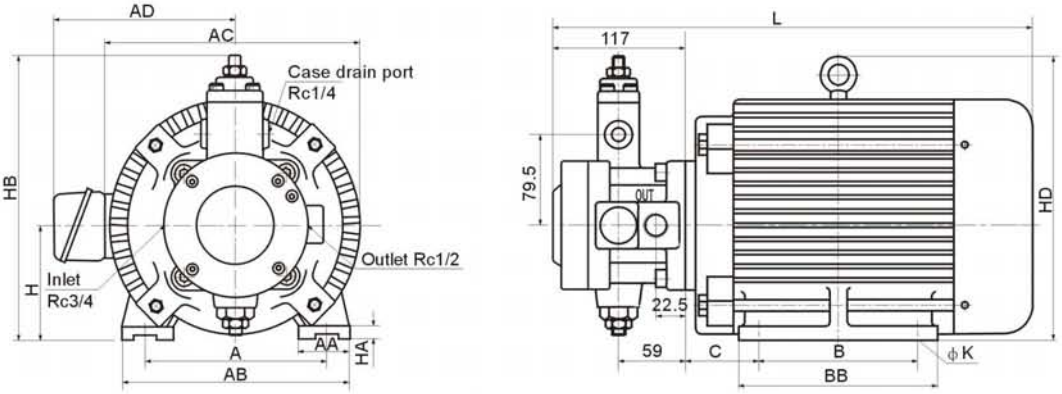
Installation dimensions

M-VPV1-※



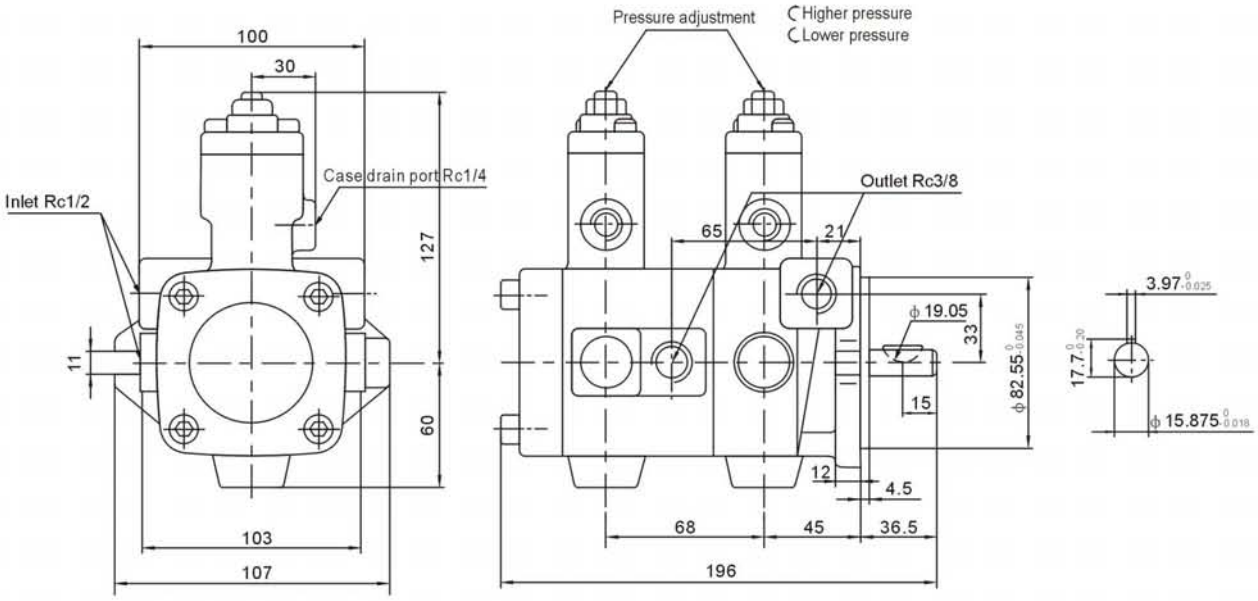
Outlet flow L/min	Pressure MPa	Input power KW	A	AA	AB	AC	AD	B	BB	C	H	HA	HD	K	L
12	3.5	0.75	125	35	155	177	140	100	130	53.5	80	10	207	10	331
	5.5	0.75	125	35	155	177	140	100	130	53.5	80	10	207	10	331
	7.0	1.50	140	35	170	196	160	125	150	57	90	10	227	10	369
15	3.5	0.75	125	35	155	177	140	100	130	53.5	80	10	207	10	331
	5.5	1.50	140	35	170	196	160	125	150	57	90	10	227	10	369
	7.0	1.50	140	35	170	196	160	125	150	57	90	10	227	10	369
20	3.5	0.75	125	35	155	177	140	100	130	53.5	80	10	207	10	331
	5.5	1.50	140	35	170	196	160	125	150	57	90	10	227	10	369
	7.0	1.50	140	35	170	196	160	125	150	57	90	10	227	10	369

M-VPV2-※



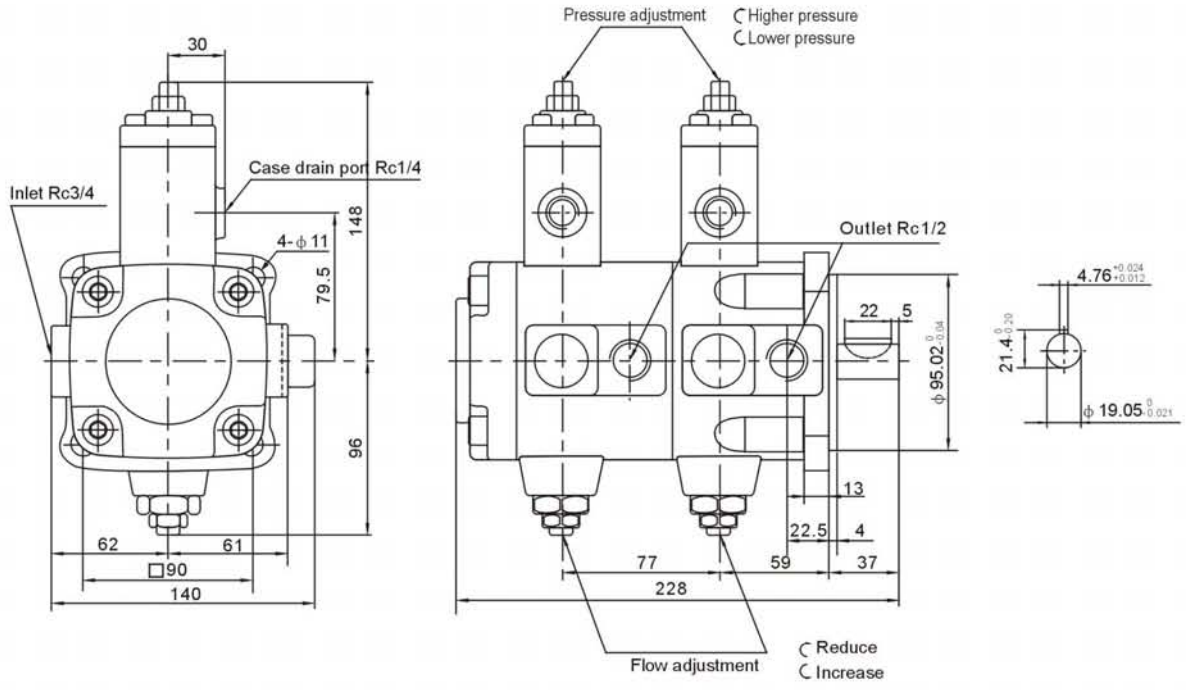
Outlet flow L/min	Pressure MPa	Input power KW	A	AA	AB	AC	AD	B	BB	C	H	HA	HB	HD	K	L
30	3.5	1.5	140	35	170	196	160	125	150	57	90	10	238	-	12	395
	5.5	2.25	160	45	200	225	160	140	175	65	100	12	248	247	12	424
	7.0	3.75	190	45	228	245	180	140	175	73.5	112	12	260	265	12	447
40	3.5	1.5	140	35	170	196	160	125	150	57	90	10	238	-	12	395
	5.5	3.75	190	45	228	245	180	140	175	73.5	112	12	260	265	12	447
	7.0	5.5	216	45	250	270	190	140	175	77	132	16	280	310	12	452

VPV11

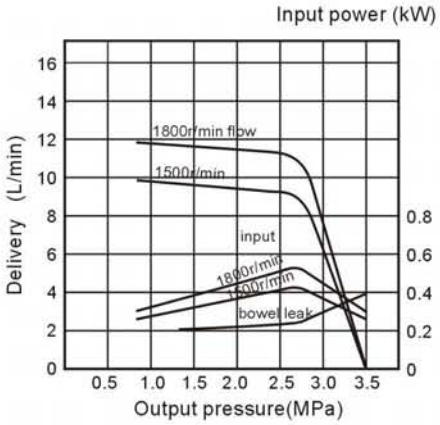


Note:No flow adjustment

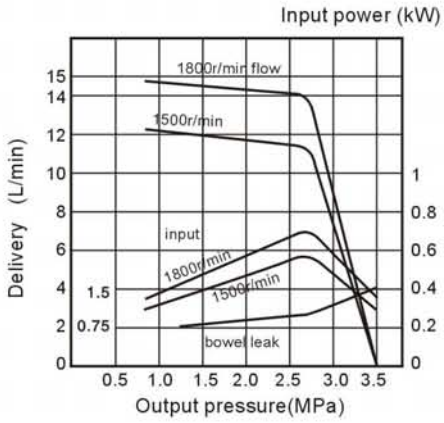
VPV22



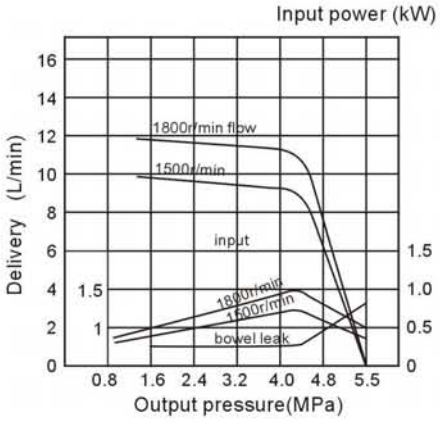
VPV1-12-35



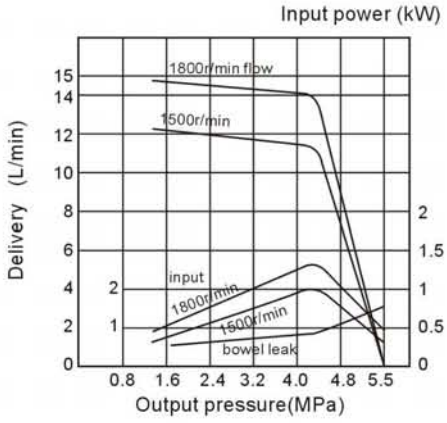
VPV1-15-35



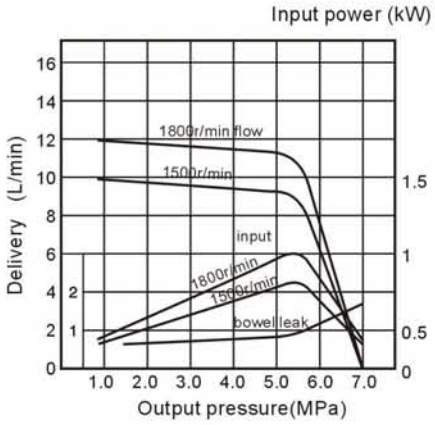
VPV1-12-55



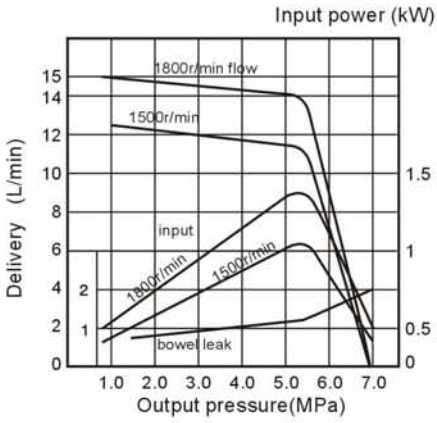
VPV1-15-55



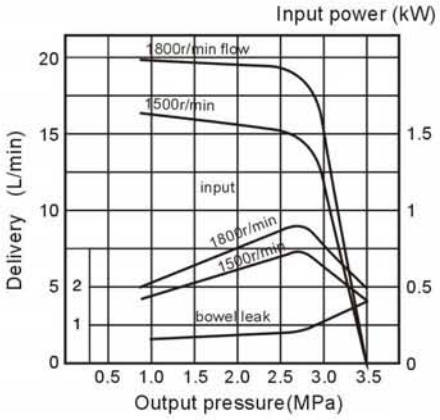
VPV1-12-70



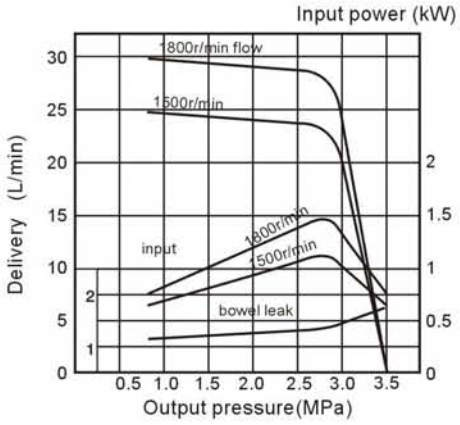
VPV1-15-70



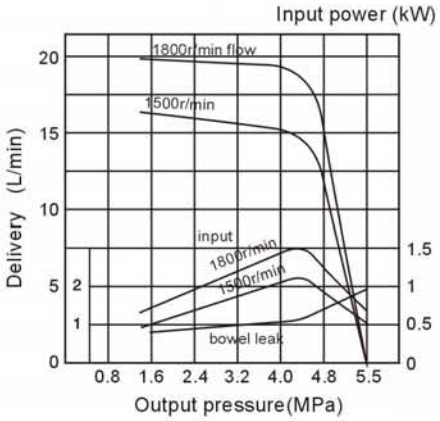
VPV1-20-35



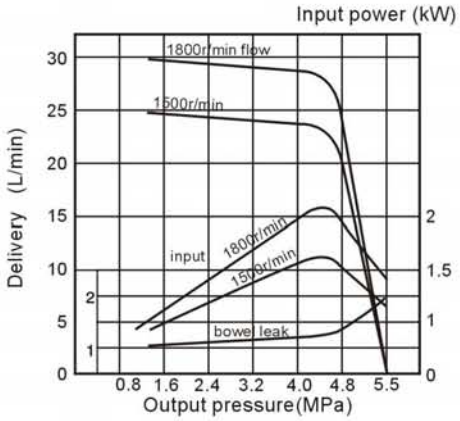
VPV2-30-35



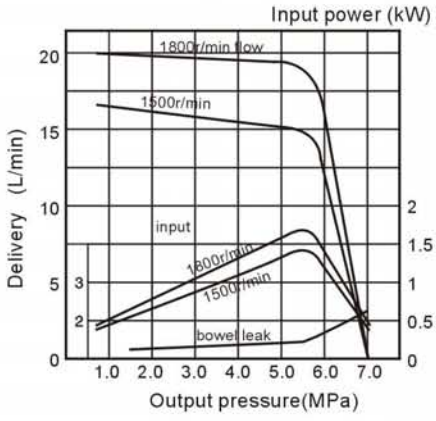
VPV1-20-55



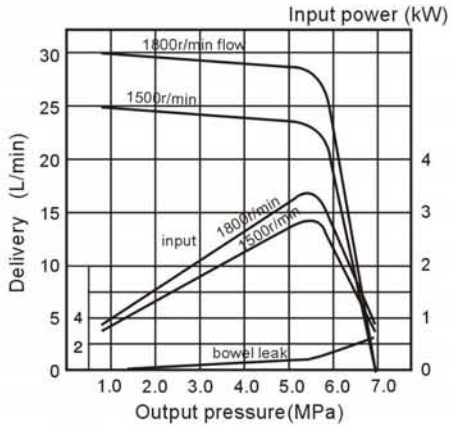
VPV2-30-55



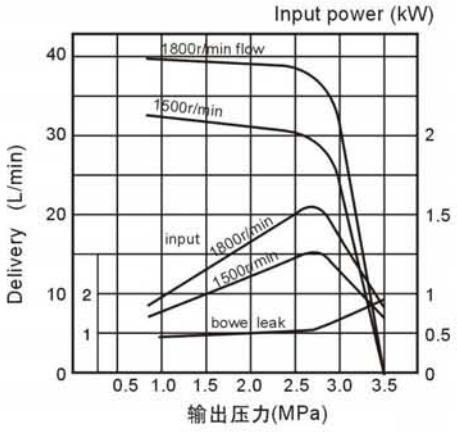
VPV1-20-70



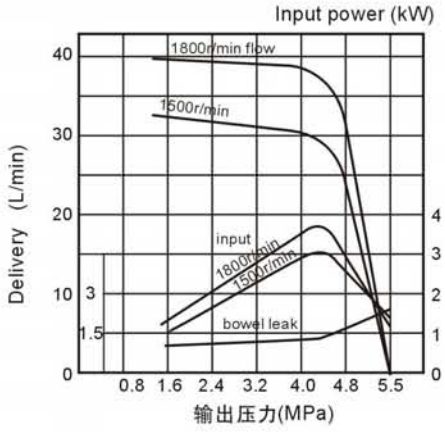
VPV2-30-70



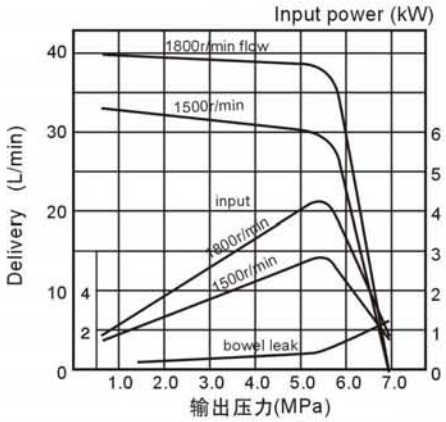
VPV2-40-35



VPV2-40-55



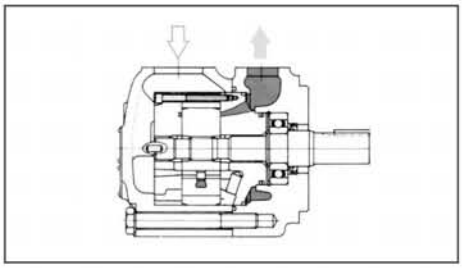
VPV2-40-70

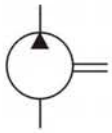


V Series Low Noise Vane Pumps

—High Performance Intravane Pumps For Industrial Applications

V Series Single Pumps





Model Code

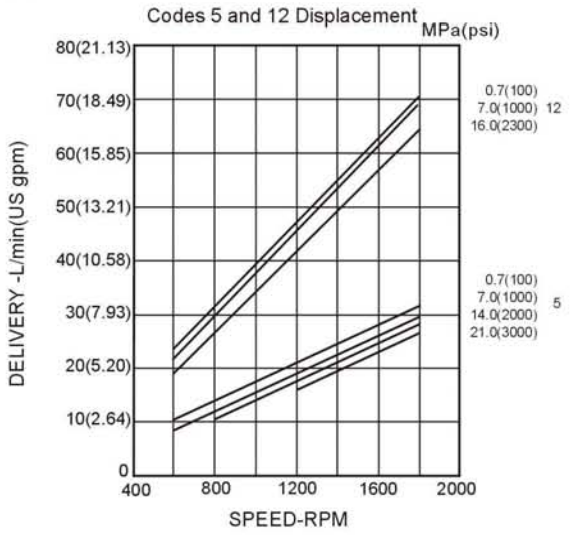
(F3-)	**V	**	A	(F)	-*	*	22	*
Prefix	Series	▲ Code	Port Connections	Mounting	Shafts	Outlet Positions	Design	Rotation
Omit-Using antiwear oil water glycol fluid F3-phosphate ester fluid	20V	2,3,4,5,6,7,8, 9,10,11,12,14	A-SAE 4-bolt flange	Omit- Flange mounting F- Foot mounting	1-Str.Key 151-Spline	(Viewed from cover end of pump) A-Opposite inlet port B-90° CCW from inlet C-In line with inlet D-90° CW from inlet	22	(Viewed from shaft end of pump) L-Left hand for counter clock-wise R-Right hand for clockwise
	25V	10,12,14,15, 17,19,21			1-Str.Key			
	35V	21,25,30,32, 35,38,45			86-HD Str. Key			
	45V	42,45,50,57, 60,66,75			11-Spline			

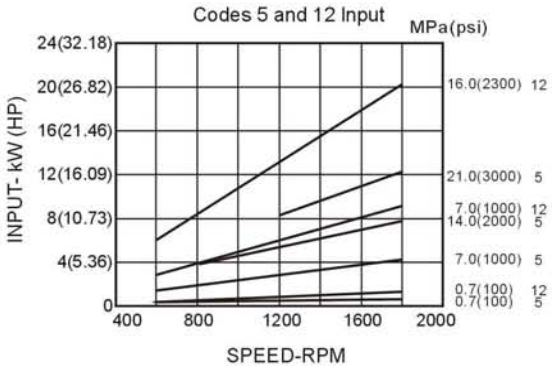
▲Rated capacity(USgpm)at1200 rpm,0.69MPa(100 psi)

Specification

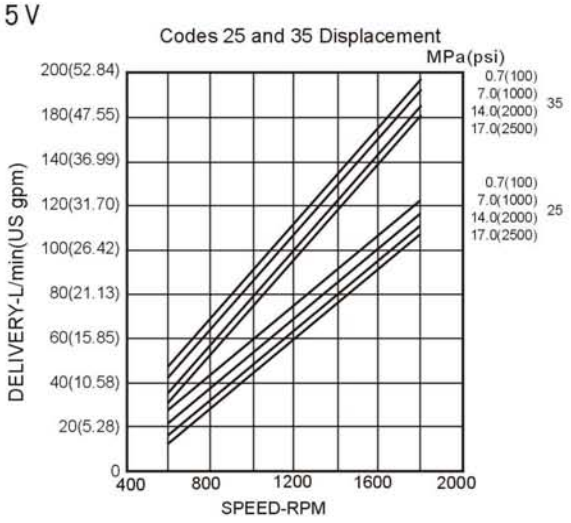
Model	Code	Geometric Displacement mL/r	Using anti-wear oil or phosphate ester fluid		Using water glycol fluid		Using water-in-oil emulsion		Min. Speed r/min
			Max.pressure MPa	Max.Speed r/min	Max.pressure MPa	Max.Speed r/min	Max.pressure MPa	Max.Speed r/min	
20V	2	7.5	13.8	1800	13.8	1500	6.9	1200	600
	3	10							
	4	13							
	5	17	20.7		15.9				
	6	19							
	7	23							
	8	27							
	9	30							
	10	32.5							
	11	36							
	12	40	15.9						
	14	45	13.8		13.8				
25V	10	32.5	17.2	1800	15.9	1500	6.9	1200	600
	12	40							
	14	43							
	15	45							
	17	55							
	19	59							
	21	67							
35V	21	67	17.2	1800	15.9	1500	6.9	1200	600
	25	81							
	30	97							
	32	100							
	35	112							
	38	121							
	45	140							
45V	42	138	17.2	1800	15.9	1500	6.9	1200	600
	45	142							
	50	162							
	57	183							
	60	193							
	66	212							
	75	237	13.8		13.8				

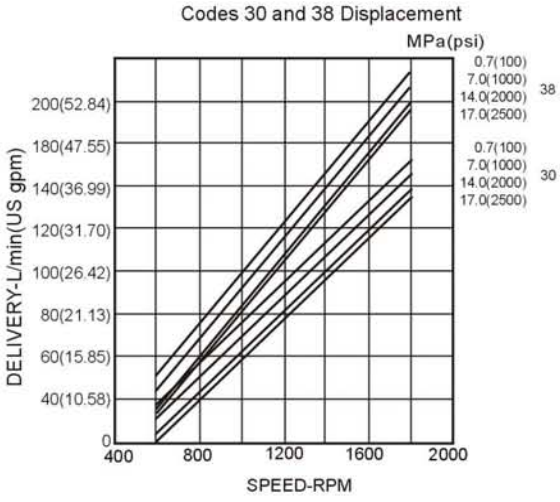
20V

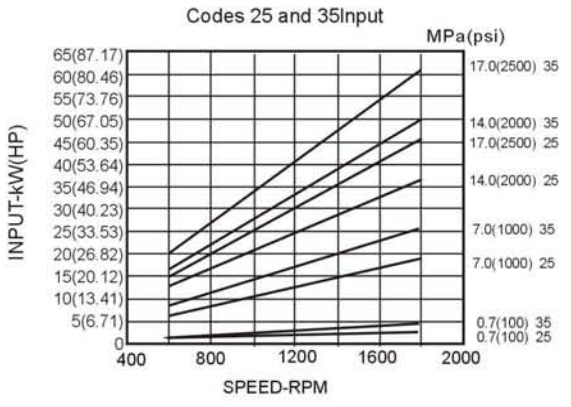

Codes 5 and 12 Displacement
MPa(psi)
DELIVERY -L/min(US gpm)
80(21.13)
70(18.49)
60(15.85)
50(13.21)
40(10.58)
30(7.93)
20(5.20)
10(2.64)
0
400
800
1200
1600
2000
SPEED-RPM
0.7(100)
7.0(1000) 12
16.0(2300)
0.7(100)
7.0(1000) 5
14.0(2000)
21.0(3000)

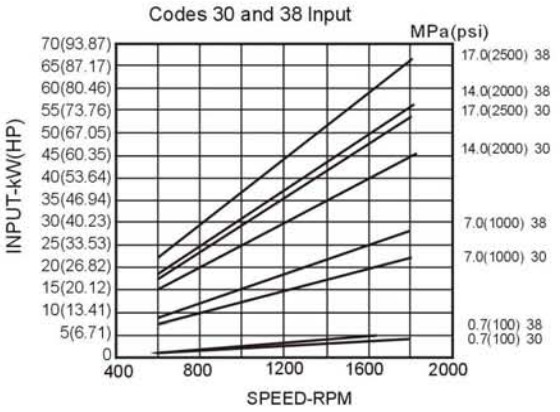

Codes 5 and 12 Input
MPa(psi)
INPUT- kW (HP)
24(32.18)
20(26.82)
16(21.46)
12(16.09)
8(10.73)
4(5.36)
0
400
800
1200
1600
2000
SPEED-RPM
16.0(2300) 12
21.0(3000) 5
7.0(1000) 12
14.0(2000) 5
7.0(1000) 5
0.7(100) 12
0.7(100) 5

35V


Codes 25 and 35 Displacement
MPa(psi)
DELIVERY-L/min(US gpm)
200(52.84)
180(47.55)
140(36.99)
120(31.70)
100(26.42)
80(21.13)
60(15.85)
40(10.58)
20(5.28)
0
400
800
1200
1600
2000
SPEED-RPM
0.7(100)
7.0(1000)
14.0(2000) 35
17.0(2500)
0.7(100)
7.0(1000)
14.0(2000) 25
17.0(2500)

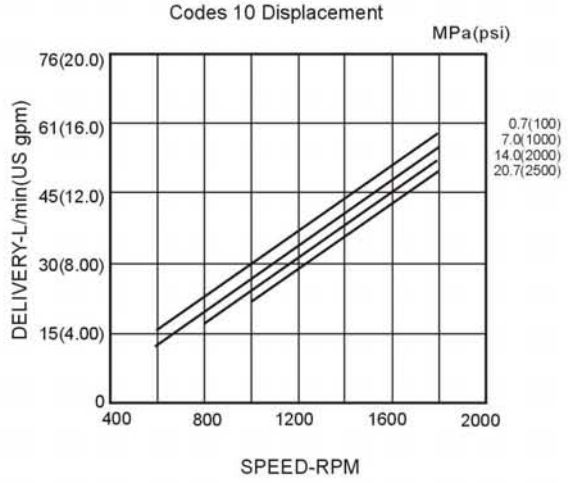

Codes 30 and 38 Displacement
MPa(psi)
DELIVERY-L/min(US gpm)
200(52.84)
180(47.55)
140(36.99)
120(31.70)
100(26.42)
80(21.13)
60(15.85)
40(10.58)
0
400
800
1200
1600
2000
SPEED-RPM
0.7(100)
7.0(1000)
14.0(2000) 38
17.0(2500)
0.7(100)
7.0(1000)
14.0(2000) 30
17.0(2500)


Codes 25 and 35Input
MPa(psi)
INPUT-kW(HP)
65(87.17)
60(80.46)
55(73.76)
50(67.05)
45(60.35)
40(53.64)
35(46.94)
30(40.23)
25(33.53)
20(26.82)
15(20.12)
10(13.41)
5(6.71)
0
400
800
1200
1600
2000
SPEED-RPM
17.0(2500) 35
14.0(2000) 35
17.0(2500) 25
14.0(2000) 25
7.0(1000) 35
7.0(1000) 25
0.7(100) 35
0.7(100) 25

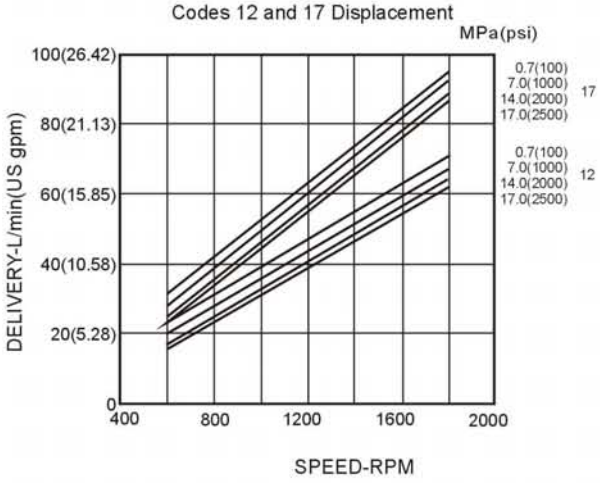

Codes 30 and 38 Input
MPa(psi)
INPUT-kW(HP)
70(93.87)
65(87.17)
60(80.46)
55(73.76)
50(67.05)
45(60.35)
40(53.64)
35(46.94)
30(40.23)
25(33.53)
20(26.82)
15(20.12)
10(13.41)
5(6.71)
0
400
800
1200
1600
2000
SPEED-RPM
17.0(2500) 38
14.0(2000) 38
17.0(2500) 30
14.0(2000) 30
7.0(1000) 38
7.0(1000) 30
0.7(100) 38
0.7(100) 30

25V

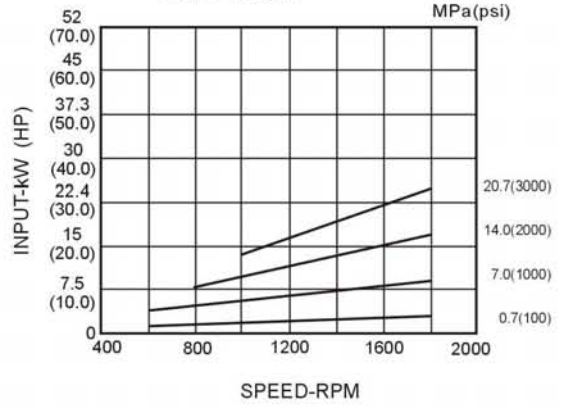
Codes 10 Displacement



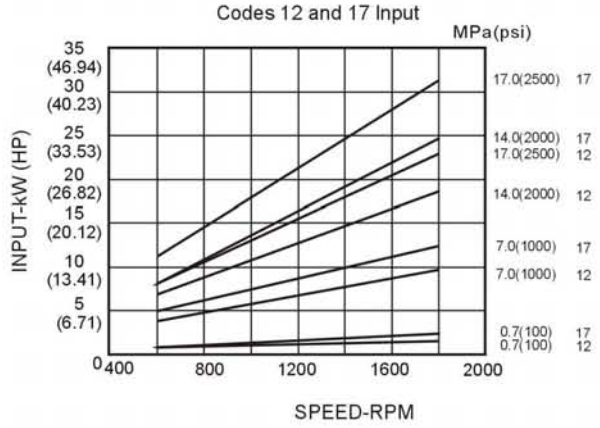
Codes 12 and 17 Displacement



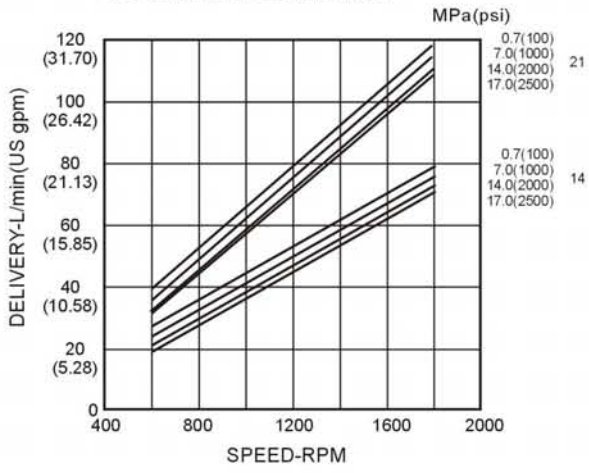
Codes 10 Input



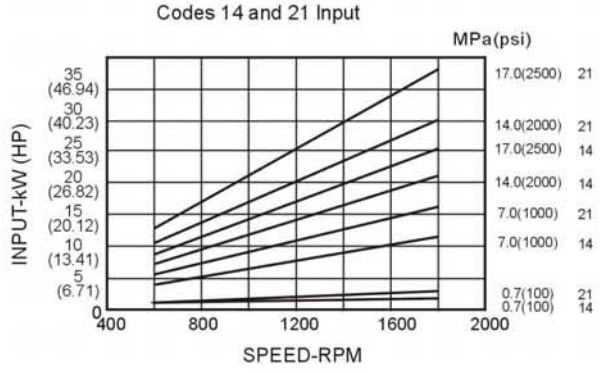
Codes 12 and 17 Input



Codes 14 and 21 Displacement

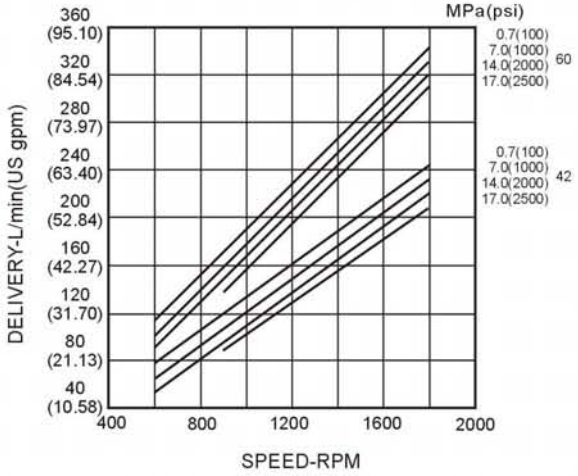


Codes 14 and 21 Input

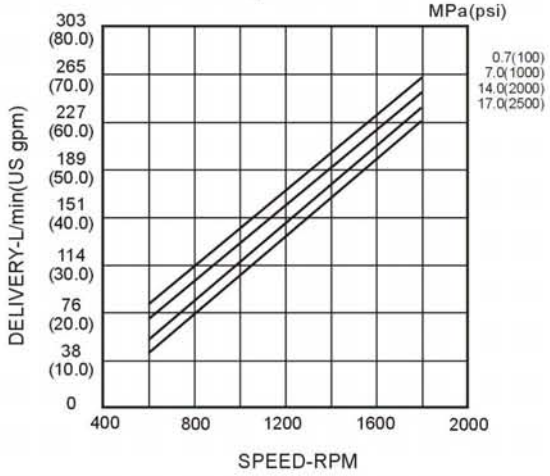


45V

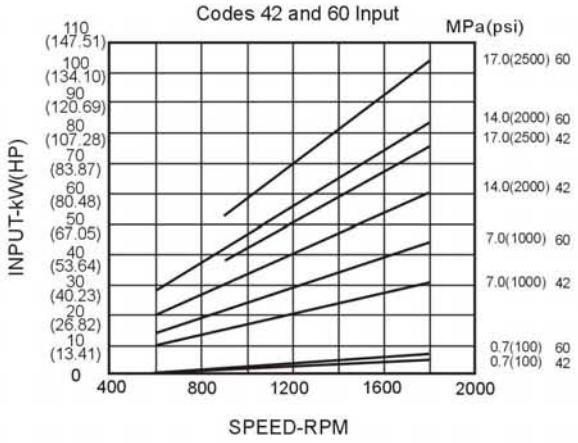
Codes 42 and 60 Displacement



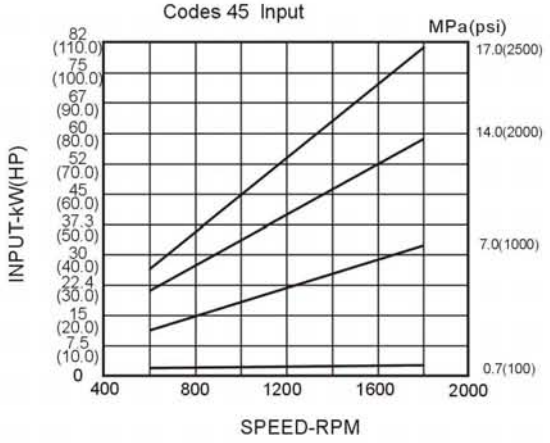
Codes 45 Displacement



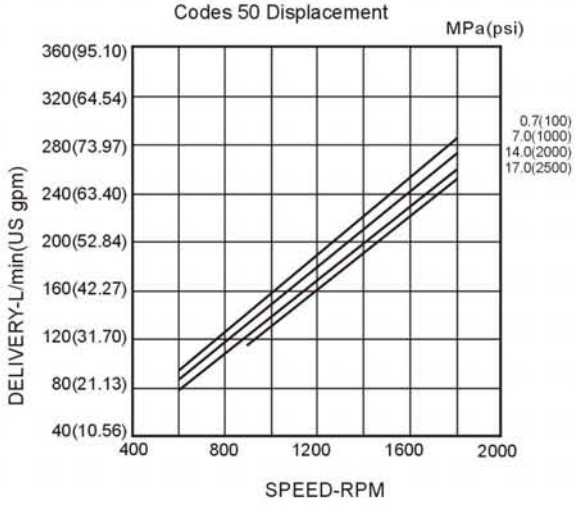
Codes 42 and 60 Input



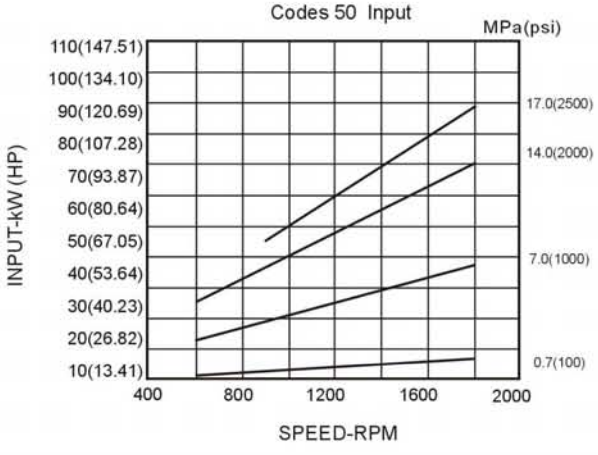
Codes 45 Input



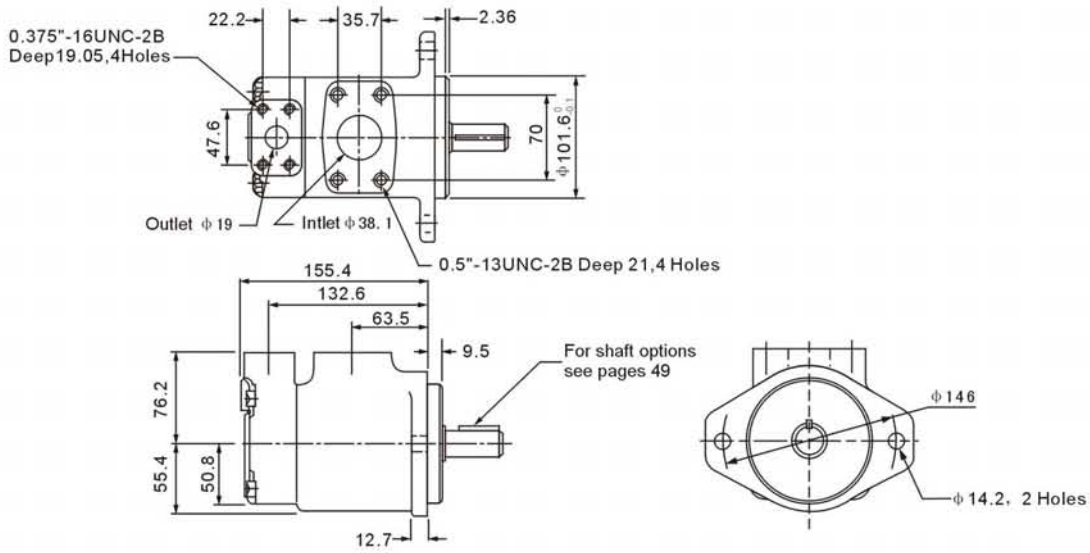
Codes 50 Displacement



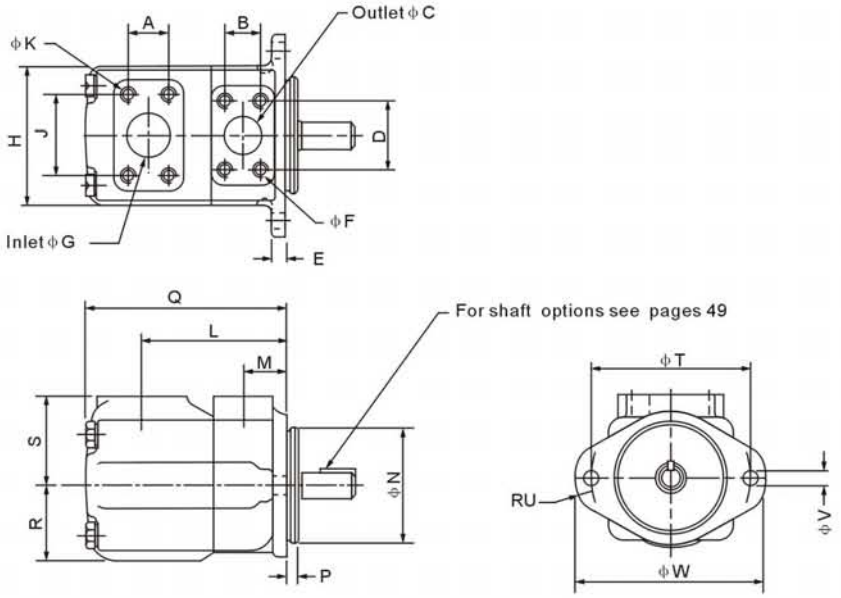
Codes 50 Input



20V



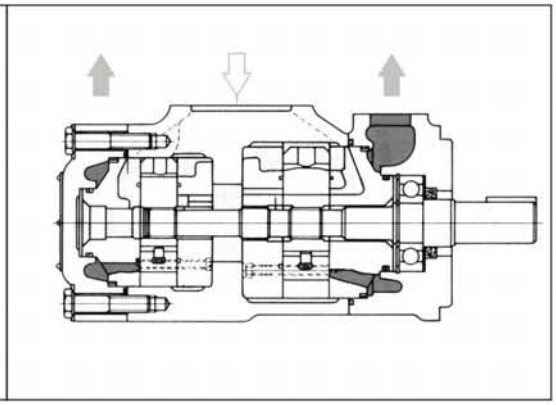
25V,35V,45V



Model	A	B	C	D	E	G	H	J	L	M	N	P	Q	R
25V	35.7	26.2	25.4	52.4	12.7	38.1	118	69.9	121	38.1	101.6/101.5	9.53	162.1	63.5
35V	42.9	30.2	31.8	58.7	16	50.8	140	77.8	125.5	38.1	127.0/126.9	9.53	185	69.9
45V	61.9	35.7	38.1	69.9	16	76.2	159	106.4	153	43	127.0/126.9	12.7	216	82.6

Model	S	T	U	V	W	ΦF×full thread depth,4holes	ΦK×full thread depth,4holes
25V	76.2	146	14	14.2	175	3/8-16UNC-2B×19.1deep	1/2-13UNC-2B×23.8deep
35V	82.6	181	16	17.5	213	7/16-14UNC-2B×22.3deep	1/2-13UNC-2B×22.3deep
45V	93.7	181	16	17.5	213	1/2-13UNC-2B×23.8deep	5/8-11UNC-2B×30deep

V Series Double Pumps



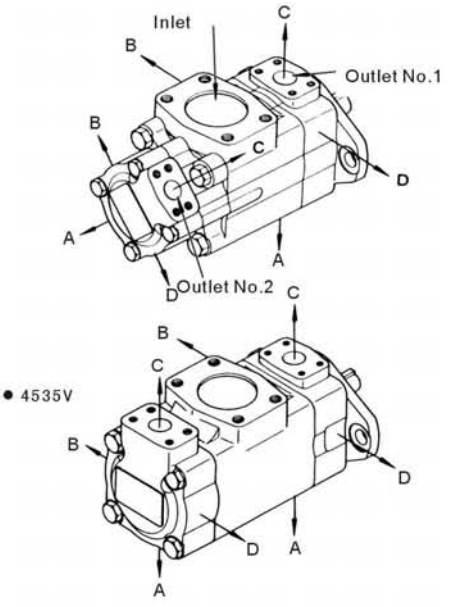
Model Code

(F3-)	****V	**	A	**	(F)	-**	*	22	*
Prefix	Series	▲Code Shaft End Pump	Port Connections	▲Code Cover End Pump	Mounting	Shafts	Port Orientation	Design	Rotation
Omit-Using antiwear oil water glycol fluid F3-Phosphate ester fluid	2520V	10,12,14,15,17, 19,21	A-SAE 4-bolt flange	2,3,4,5,6,7,8,9, 10,11,12,14	Omit-Flange mounting F-Foot mounting	1:str.Key 86:HD Str.Key 11:spline	See below	22	(Viewed from shaft end of pump) L-Left hand for counter clockwise R-Right hand for clockwise
	3520V	21,25,30,32, 35,38,45		2,3,4,5,6,7,8,9, 10,11,12,14					
	3525V	21,25,30,32, 35,38,45		10,12,14,15,17, 19,21					
	4520V	42,45,50,57, 60,66,75		2,3,4,5,6,7,8,9, 10,11,12,14					
	4525V	42,45,50,57, 60,66,75		10,12,14,15,17, 19,21					
	4535V	42,45,50,57, 60,66,75		21,25,30,32,35, 38,45					

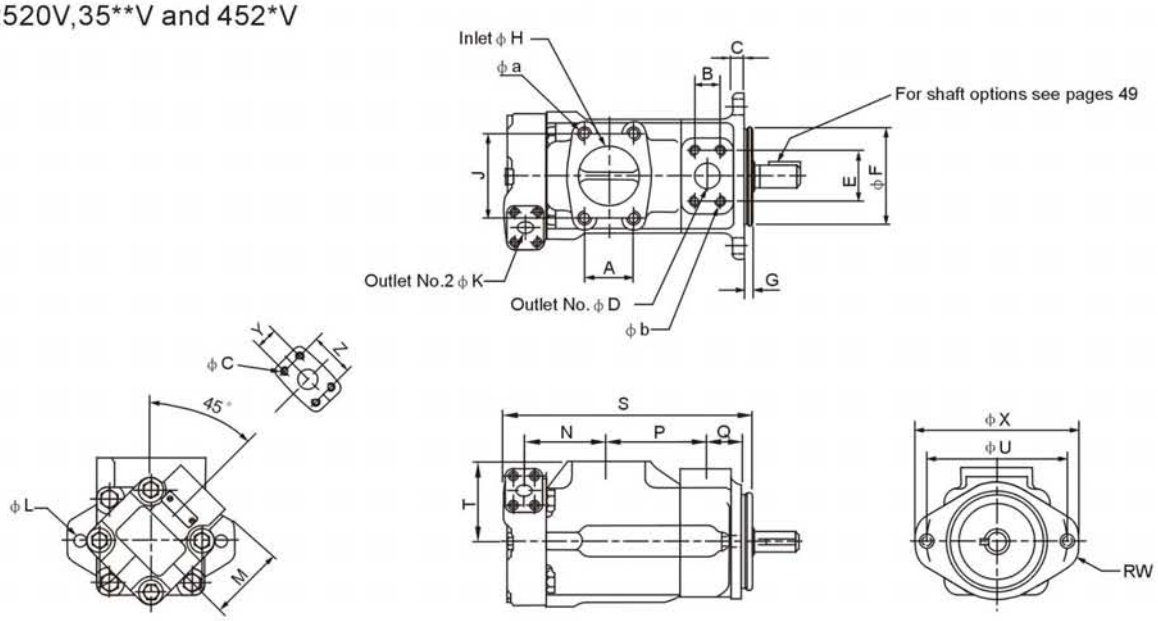
▲Rated capacity(USgpm) at 1200 rpm,0.69 MPa (100psi).

Port Orientation Table (Viewed from cover end of pump)

Port Orientation		All series (except 4535V)	Series 4535V
With No.1 outlet Opposite inlet:	AA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	AB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	AC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	AD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet 90° CCW from inlet:	BA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	BB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	BC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	BD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1outlet inline with inlet:	CA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	CB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	CC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	CD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet 90° CW inlet	DA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	DB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	DC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	DD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet



2520V,35**V and 452*V

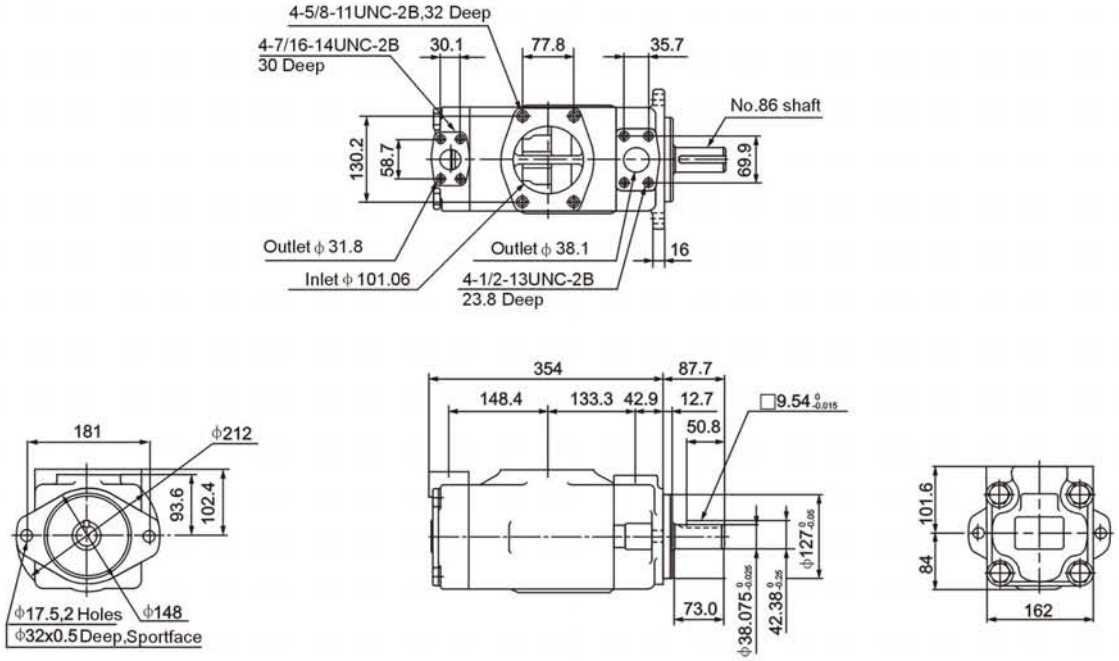


Model	ϕ a×full thread depth,4 holes	ϕ b×full thread depth,4 holes	ϕ c×full thread depth,4 holes
2520V	1/2″ -13UNC-2B×23.8Deep	3/8-16UNC-2B×20.1Deep	3/8-16UNC-2B×20.1Deep
3520V	5/8″ -11UNC-2B×25.4Deep	7/16-14UNC-2B×21.0Deep	3/8-16UNC-2B×20.1Deep
3525V	5/8″ -11UNC-2B×25.4Deep	7/16-14UNC-2B×21.0Deep	3/8-16UNC-2B×20.1Deep
4520V	5/8″ -11UNC-2B×25.4Deep	1/2-13UNC-2B×23.8Deep	3/8-16UNC-2B×20.1Deep
4525V	5/8″ -11UNC-2B×25.4Deep	1/2-13UNC-2B×23.8Deep	3/8-16UNC-2B×20.1Deep

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2520V	50.8	26.2	12.7	25.4	52.4	101.6/101.5	9.53	63.5	88.9	19.1	14.2	76.2	88.1	101.6	38.1
3520V	62	30.1	15.9	31.7	58.7	127/126.9	9.53	76.2	106.3	19.1	17.5	76.2	99.6	114.3	38.1
3525V	62	30.1	15.9	31.7	58.7	127/126.9	9.53	76.2	106.3	25.4	17.5	74.7	109.5	114.3	38.1
4520V	69.9	35.7	15.9	38.1	69.9	127/126.9	12.7	88.9	120.6	19.1	17.5	76.2	120	119.4	42.9
4525V	69.9	35.7	15.9	38.1	69.9	127/126.9	12.7	88.9	120.6	25.4	17.5	74.7	136	119.4	42.9

Model	R	S	T	U	W	X	Y	Z
2520V	76.2	250	85.3	146.1	14	174.7	22.2	47.6
3520V	82.6	273.3	88.9	181	16	213	22.2	47.6
3525V	82.6	287.3	88.9	181	16	213	26.2	52.4
4520V	93.7	303.5	102.4	181	16	213	22.2	47.6
4525V	93.7	325	102.4	181	16	213	26.2	52.4

4535V



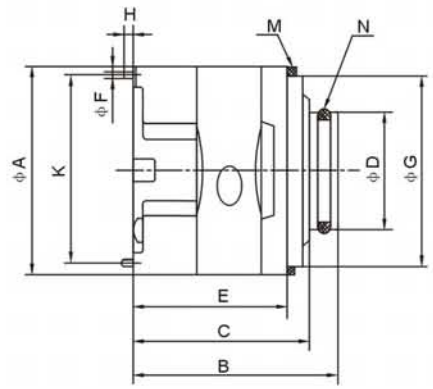
For other shaft dimensions. refet to pages 49

Model Code

(F3-)	PC-	20V	-5	-R	-10
Plefix	Cartridge kits mark	Series	▲ Code	Rotation	Design
Omit-Using antiwear oil water glycol fluid F3-Phosphate ester fluid	PC-Single pump cartridge kits Double pump shaft end pump cartridge kits PCT-Double pump cover end pump cartridge kits	20V	2,3,4,5,6,7,8,9,10, 11,12,14	(Viewed from shaft end of pump) R-Right hand for clockwise L-Left hand for counter clockwise	10
		25V	10,12,14,15,17,19,21		
		35V	21,25,30,32,35,38,45		
		45V	42,45,50,57,60,66,75		

▲ Rated capacity(USgpm) at 1200 rpm,0.69 MPa(100 psi).

Installation dimensions



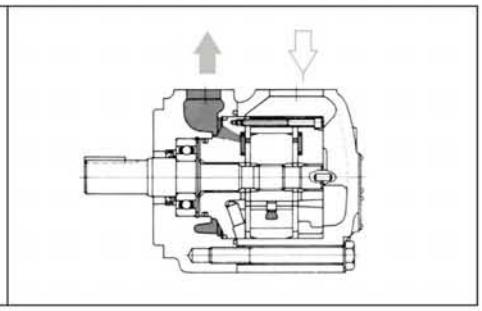
Series	A	B	C	D	E	F	G	H	K	M(Gasket)	N(O-Ring)
20V	82.5	81.5	70.1	47	61.5	4.8	76.2	6	73.6	82.76×76.26×3.5	40×3.5
25V	96.8	98.8	87	52.2	71.2	4.8	90.5	5	88.19	97×91×3.5	44×3.53
35V	114.3	117.7	105	72.2	90.3	6.4	108	6	103.94	114.5×108.5×3.5	63.09×3.53
45V	133.35	141.1	129.6	80.2	105.5	6.4	127	10	133.35	133.6×127.6×3.5	71×3.55

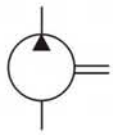
Series	Inner spline dentiform parameter of rotor				
	Pitch	Number of teech	Pressure angle	Major diameter	Minor diameter
20V	48/96	30	45°	16.617	15.56
25V	48/96	40	45°	21.9	20.86
35V	40/80	37	45°	24.38	23.1
45V	12/24	14	30°	32.59	27.60

VQ Series Vane Pumps

—High Performance Intravane Pumps For Mobile Applications

VQ Series Single Pumps





Model Code

(F3-)	25VQ	21	A	(F)	-1	A	20	L
Prefix	Series	▲ Code	Port Connections	Mounting	Shafts	Outlet Position	Design	Rotation
Omit-Using antiwear oil water glycol fluid F3-Phosphate ester fluid	20VQ	2,3,4,5,6,7,8,9, 10,11,12,14	A-SAE 4-bolt flange	Omit-Flange mounting F-Foot mounting	1-Str.key 151-Spline	(Viewed from cover end of pump) A-Opposite inlet port B-90° CCW from inlet C-Inline with inlet D-90° CW from inlet	30	(View from shaft end of pump) L-Left hand for counter clock-wise Omit-Right hand for clock wise
	25VQ	10,12,14,15,17, 19,21			1-Str.key		20	
	35VQ	21,25,30,32,35, 38,45			86-HD str.key			
	45VQ	42,45,50,57,60, 66,75			11-Spline			

▲ Rated capacity (US gpm) at 1200 r/min and 0.7 MPa (100psi).

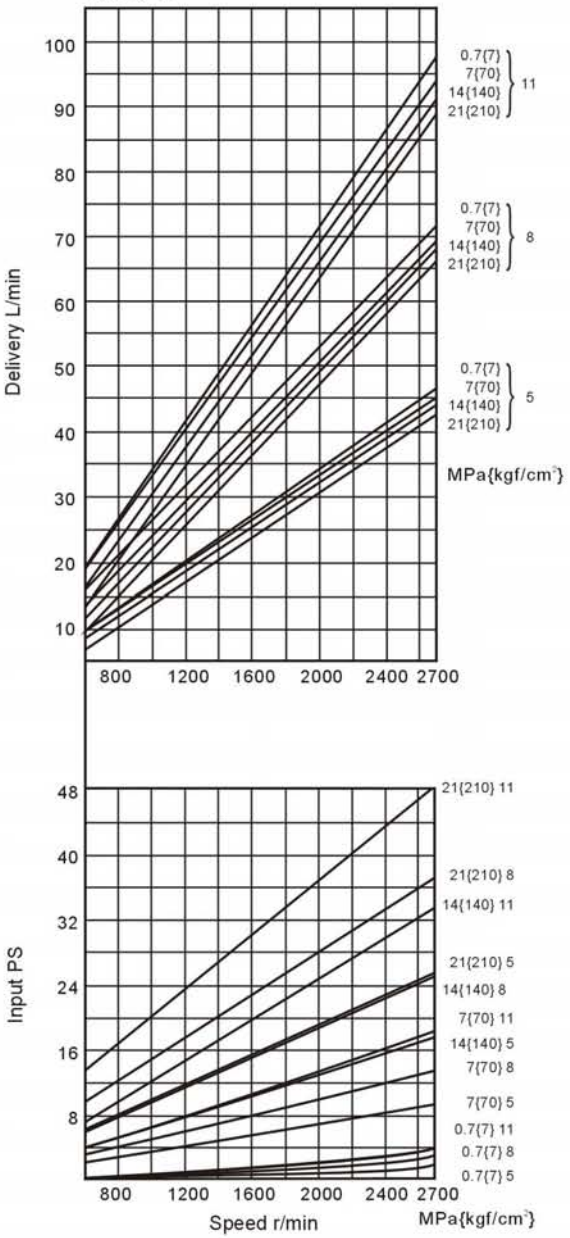
Specification

Model	Code	Displ mL/r	Max.Speed r/min	Max. Pressure MPa	Typical del. L/min ▲max.speed & pressure	Typical input kW ▲max.speed & pressure	Weight kg
20VQ	2	7	2700	21	16.4	7.2	11.8
	3	11.7	2700	21	24.4	10.8	
	4	15	2700	21	32.7	14.4	
	5	18	2700	21	42.3	17.9	
	6	19	2700	21	50.6	21.5	
	7	22	2700	21	58.8	23.7	
	8	27	2700	21	56.4	25.1	
	9	30	2700	21	73.4	26.0	
	10	31.5	2700	21	81.7	26.8	
	11	36	2700	21	88.5	27.7	
	12	40	2700	16	96.5	28.4	
	14	45	2700	14	115.4	29.1	
25VQ	10	32.5	2700	21	81.4	35.2	14.5
	12	38.3	2700	21	88.5	41.0	
	14	43.3	2700	21	103.8	46.6	
	15	47.3	2500	21	109.4	48.1	
	17	52.5	2500	21	119.2	51.8	
	19	60	2500	21	133.5	55.2	
	21	65.0	2500	21	146.2	61.9	
35VQ	21	64.0	2500	21	145.5	63.7	22.7
	25	79.2	2500	21	173.1	75.3	
	30	95.0	2500	21	211.5	87.7	
	32	101	2500	21	220.2	92.2	
	35	109	2400	21	230.8	98.5	
	38	118	2400	21	250	104.4	
	45	140	2400	21	271.2	99.8	
45VQ	42	134	2400	17.5	255.8	91.4	34.1
	45	147	2200	17.5	271.2	99.8	
	50	156	2200	17.5	303.8	105.2	
	57	180	2200	17.5	343.7	120.2	
	60	189	2200	17.5	369.2	126.8	
	66	208	2200	17.5	408.7	142.4	
	75	237	2200	14	460	120.2	

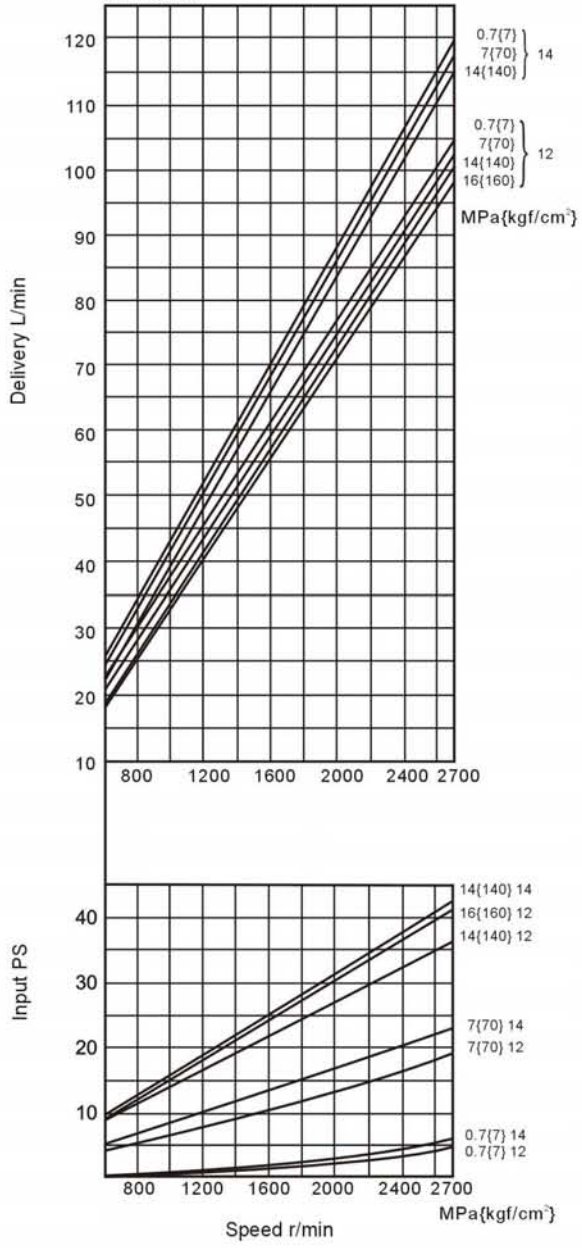
Performance constants:SAE 10W fluid ▲82℃(180°F)，and pump inlet ▲0 PSIG(14.7PSIA)
Note:Outlet pressure must always be higher than inlet pressure.

20VQ Series flow,input power type

20VQ 5 20VQ 8
20VQ 11



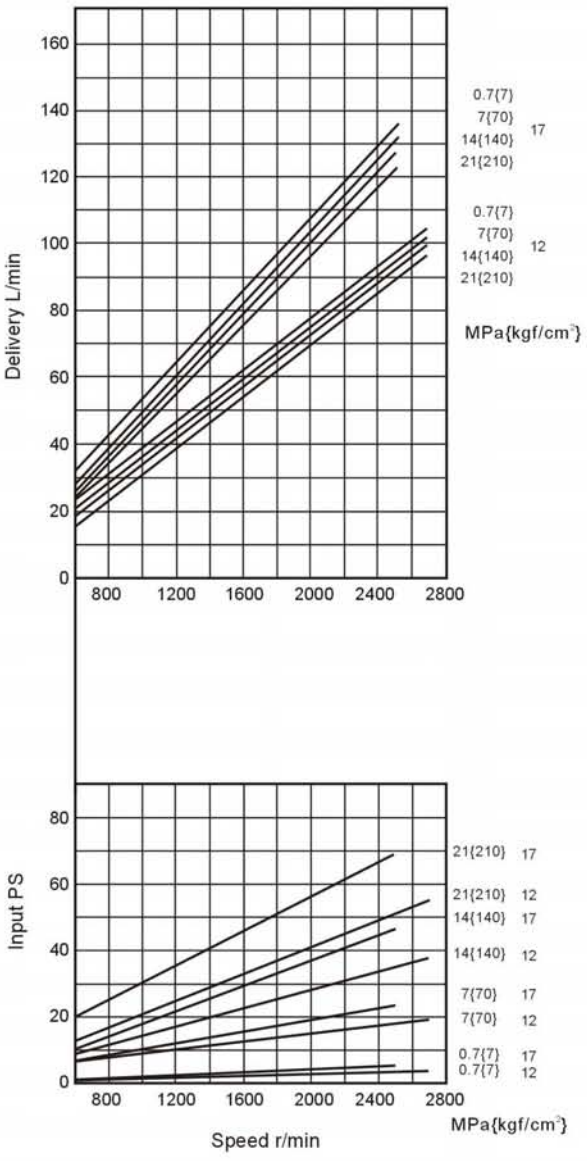
20VQ 12
20VQ 14



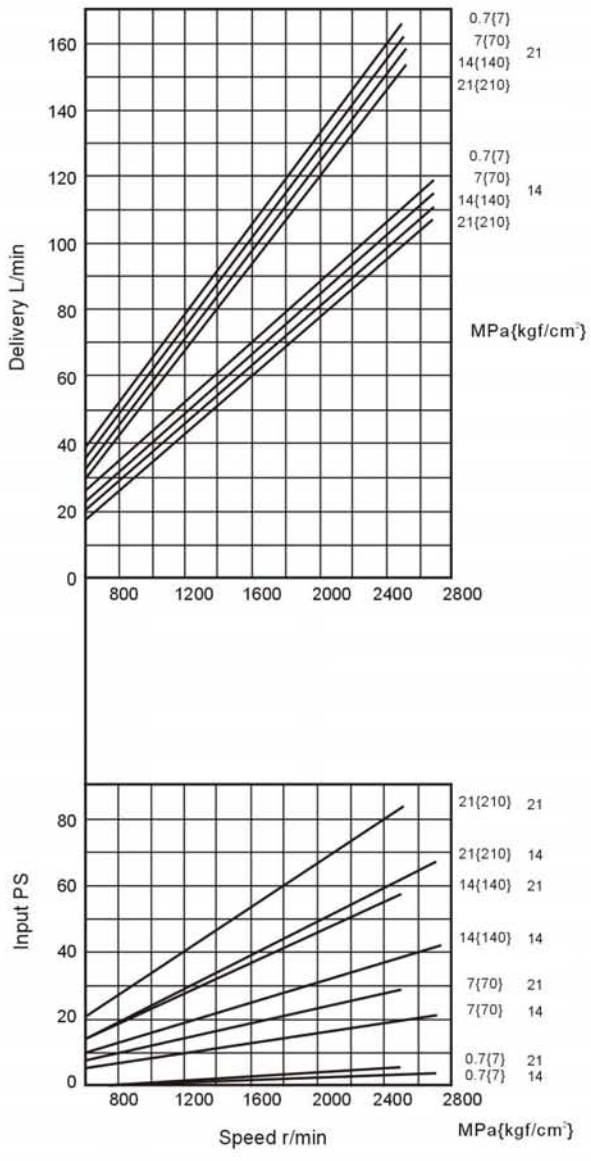
Typical flows at 50℃,10W oil at 26cSt,0MPa inlet at specified speeds.

25VQ Series flow,input power type

25VQ 12 25VQ 17

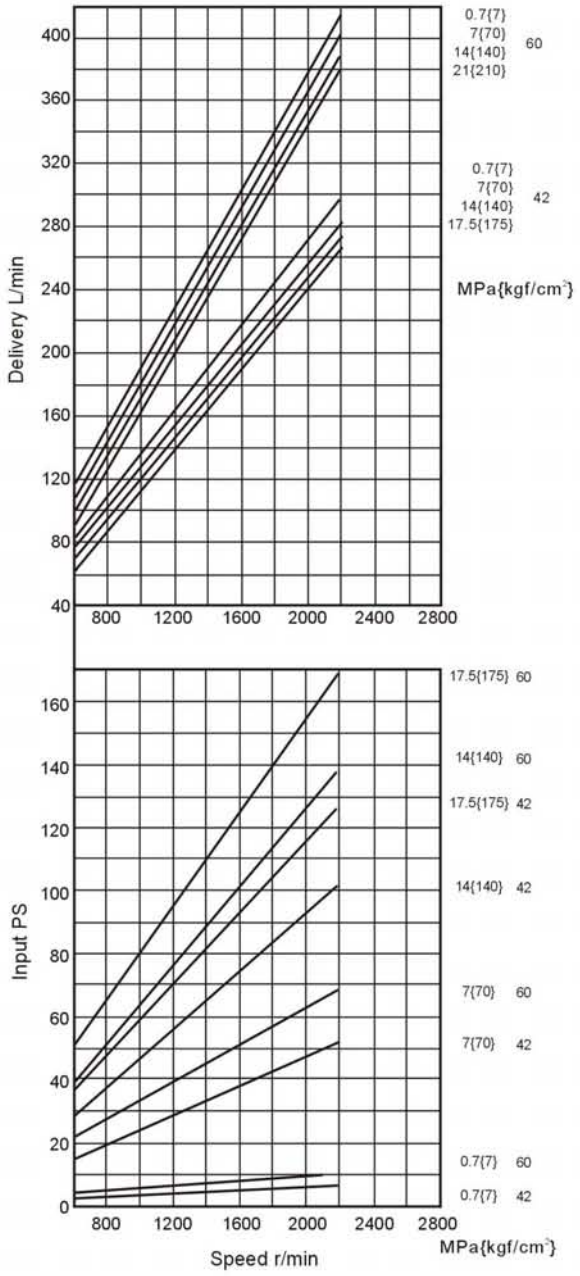


25VQ 14 25VQ 21

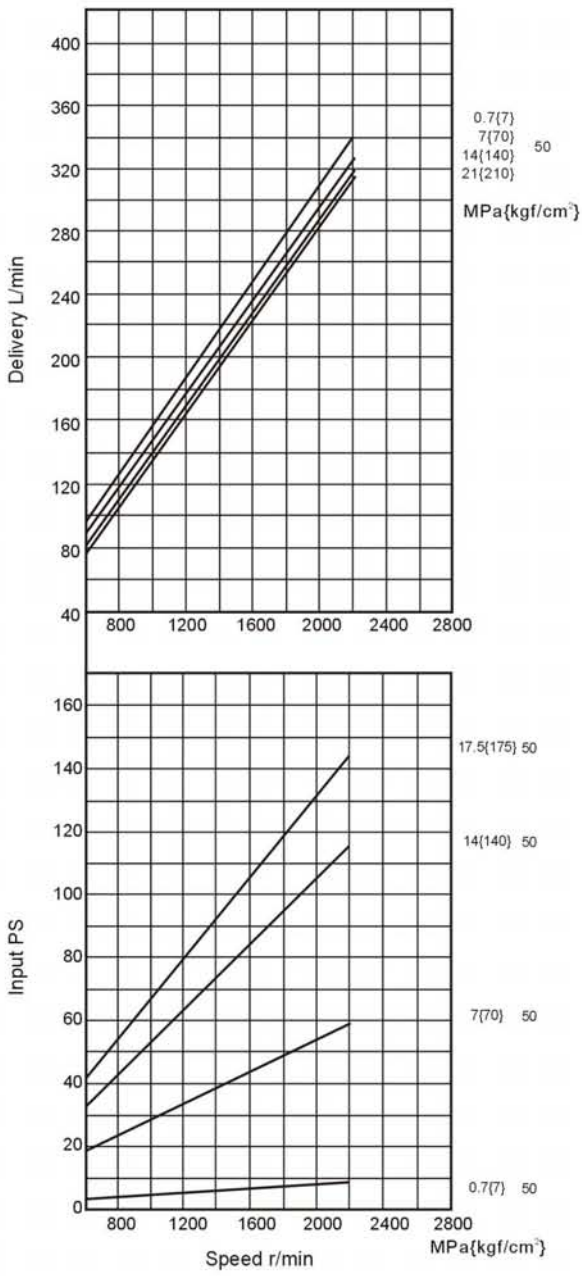


45VQ series flow input power type

45VQ 42 45VQ60



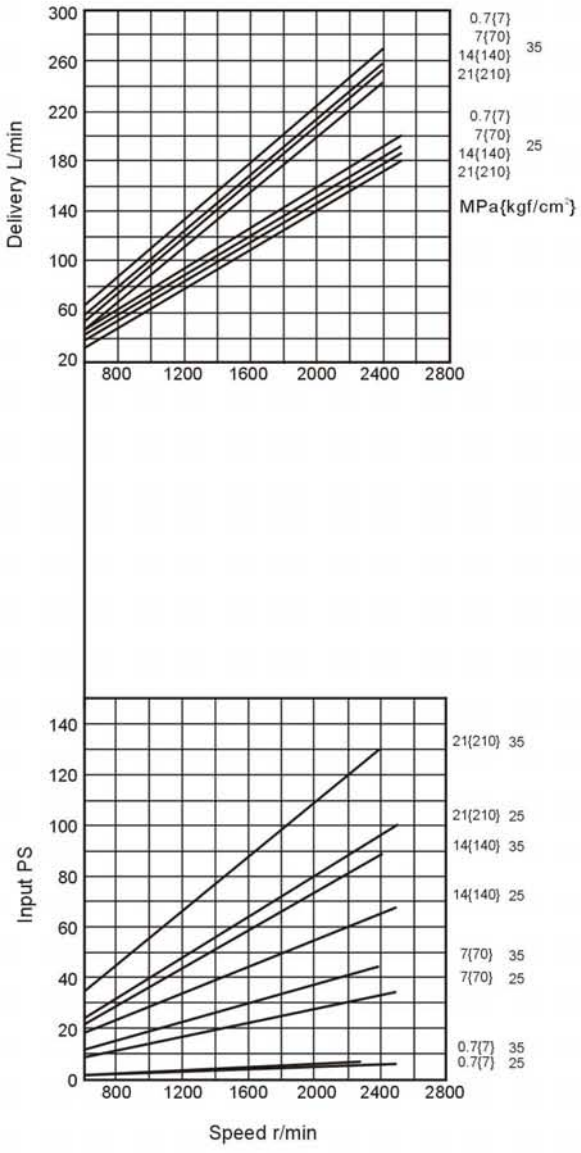
45VQ 50



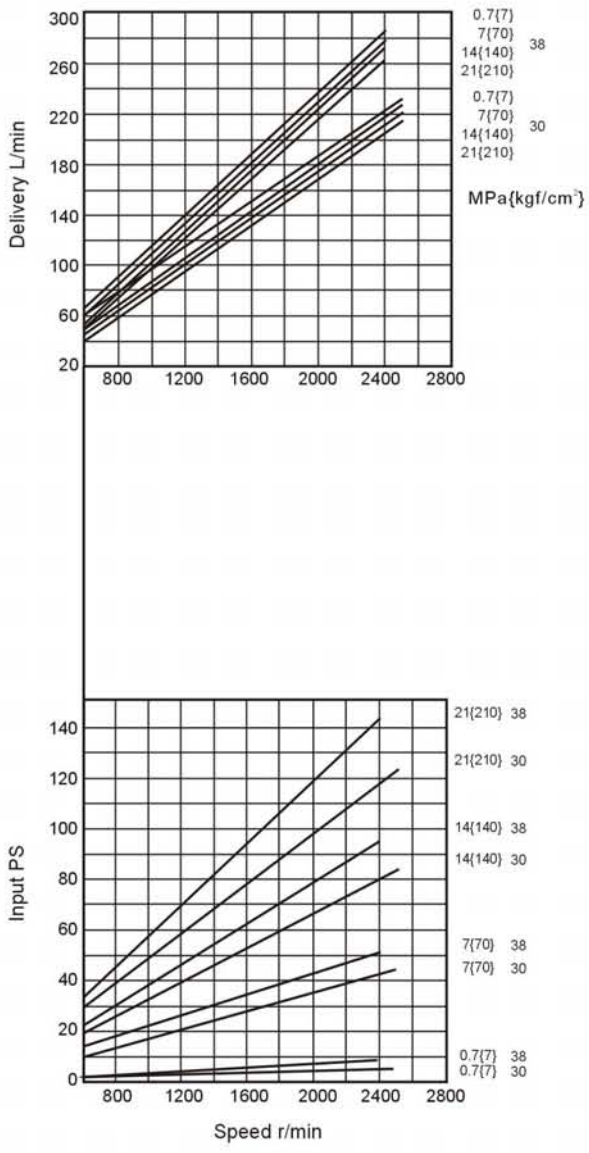
Typical flows at 50℃,10W oil at 26cSt,0MPa inlet at specified speeds.

35VQ series flow input power type

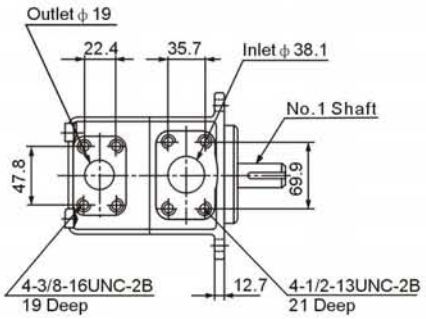
35VQ 25 35VQ35

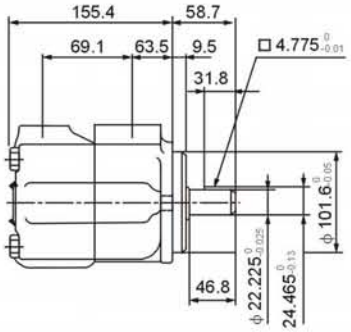


35VQ 30 35VQ38

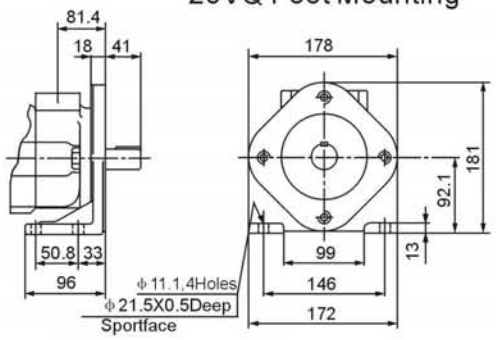


20VQ Flange Mounting

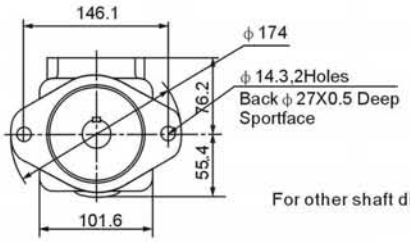




20VQ Foot Mounting

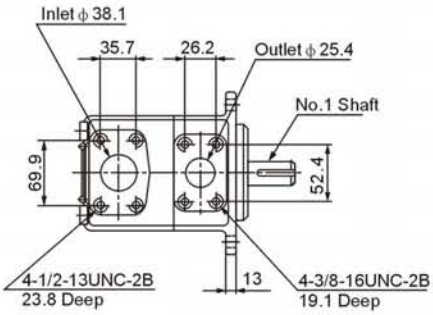


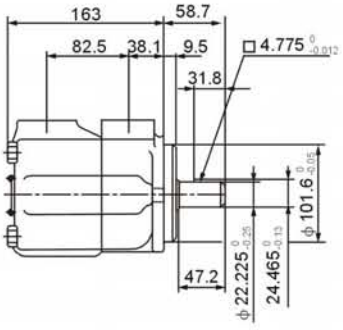
For other dimensions,refer to "Flange Mounting" type.



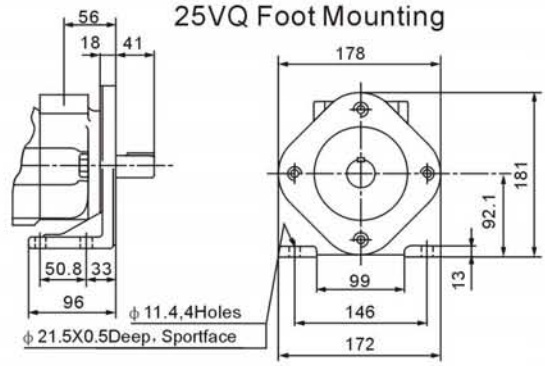
For other shaft dimensions,refer to page 49

25VQ Flange Mounting

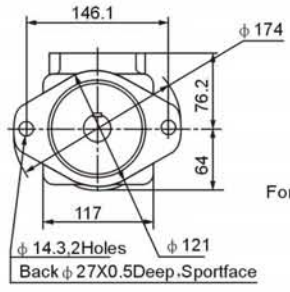




25VQ Foot Mounting

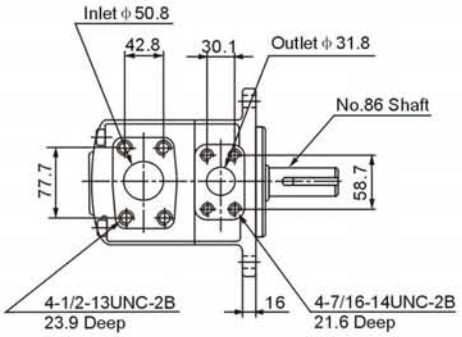


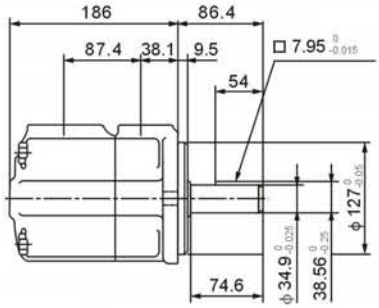
For other dimensions,refer to "Flange Mounting" type.



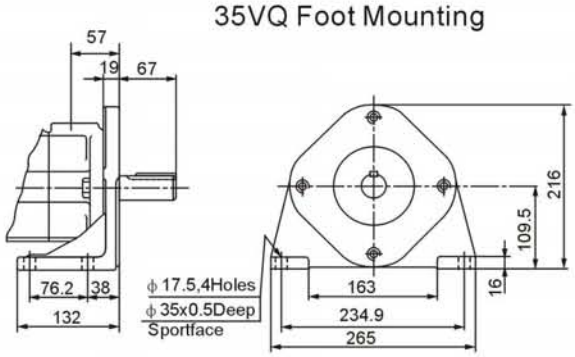
For other shaft dimensions,refer to page 49

35VQ Flange Mounting

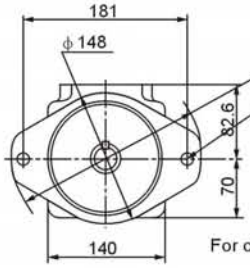




35VQ Foot Mounting

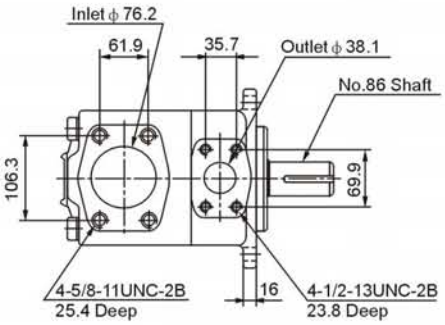


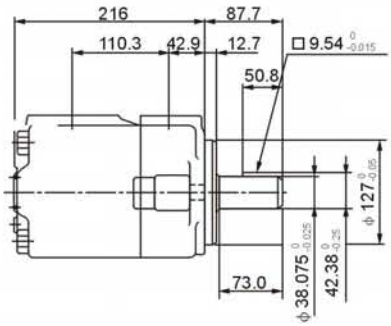
For other dimensions,refer to "Flange Mounting" type.



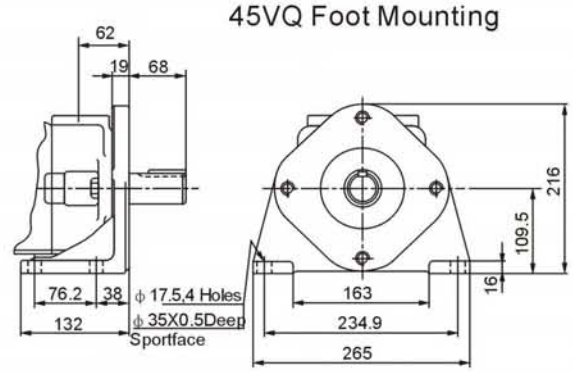
For other shaft dimensions,refer to page 49

45VQ Flange Mounting

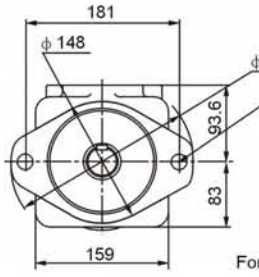




45VQ Foot Mounting

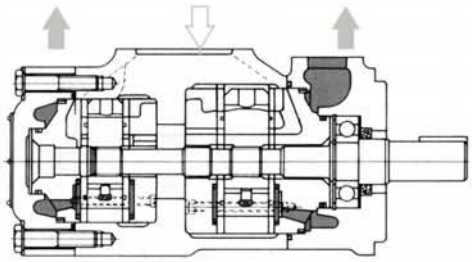


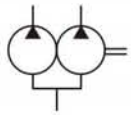
For other dimensions,refer to "Flange Mounting" type.



For other shaft dimensions,refer to page 49

VQSeries Double Pumps





Model Code

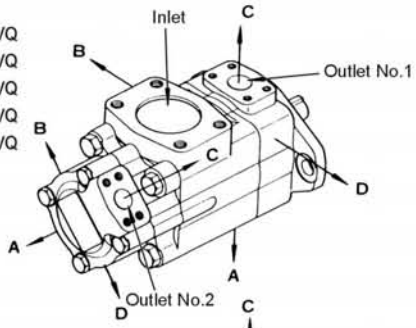
(F3-)	****VQ	**	A	**	(F)	-*	*	20	*
Prefix	Series	▲ Code Shaft End Pump	Port Connections	▲ Code Cover End Pump	Mounting	Shaft	Port Connections	Design	Rotation
Omit-Using antiwear oil water glycol fluid F3-Phosphate ester fluid	2520VQ	10,12,14,15,17, 19,21	A-SAE 4-bolt flange	2,3,4,5,6,7,8,9, 10,11,12,14	Omit-Flang mounting F-Foot mounting	1-Str.key 86-HD Str.key 11-Spline	See below	20	(Viewed from shaft end of pump) Omit- Right hand for clockwise L-Left hand for counter clockwise
	3525VQ	21,25,30,32,35, 38,45		10,12,14,15,17, 19,21					
	4525VQ	42,45,50,57,60, 66,75		10,12,14,15,17, 19,21					
	3520VQ	21,25,30,32,35, 38,45		2,3,4,5,6,7,8,9, 10,11,12,14					
	4520VQ	42,45,50,57,60, 66,75		2,3,4,5,6,7,8,9, 10,11,12,14					
	4535VQ	42,45,50,57,60, 66,75		21,25,30,32,35, 38,45					

▲ Rate capacity(USgpm) at 1200rpm,0.69MPa(100 psi).
Note:For options other than listed in the model code ,i,e,shaft,ports,displacements and mounting,contact us.

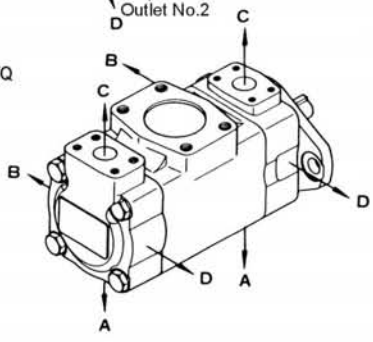
Port Orientation Table (Viewed from cover end of pump)

Port Orienlation		All series (except 4535VQ)	Series 4535VQ
With No.1 outlet Opposite inlet:	AA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	AB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	AC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	AD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet 90° CCW from inlet:	BA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	BB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	BC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	BD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet inline with inlet	CA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	CB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	CC	No,2 outlet 45° CW from inlet	No.2 outlet in line inlet
	CD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet 90° CW inlet:	DA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	DB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	DC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	DD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet

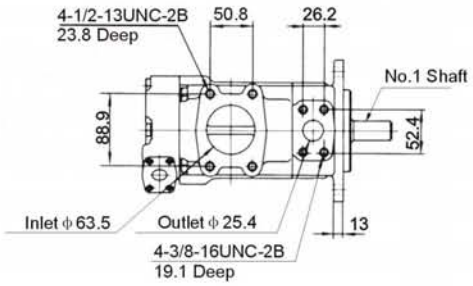
- 2520VQ
- 3520VQ
- 3525VQ
- 4520VQ
- 4525VQ

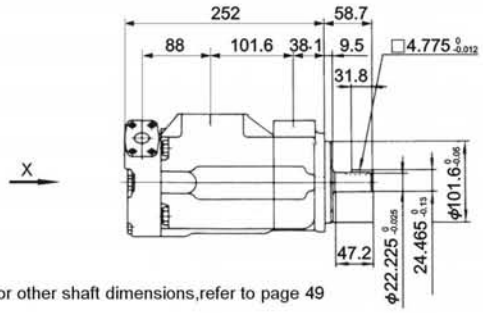


- 4535VQ

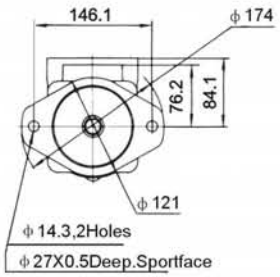


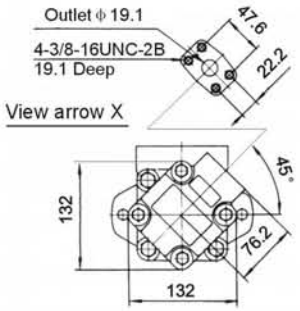
2520VQ Flange Mounting



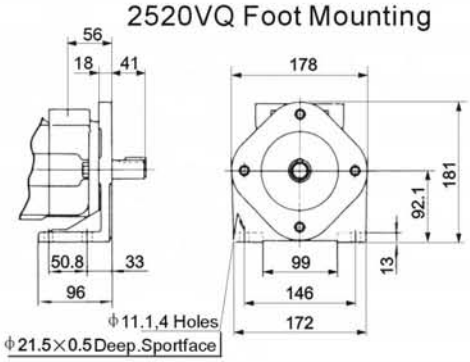


For other shaft dimensions,refer to page 49



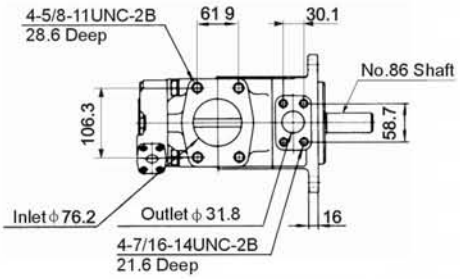


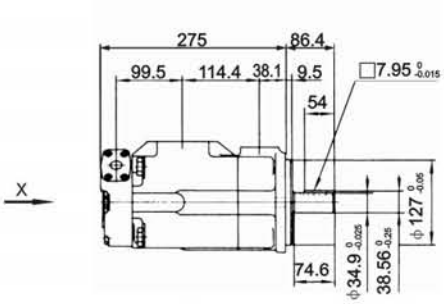
2520VQ Foot Mounting

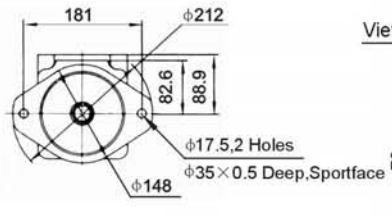


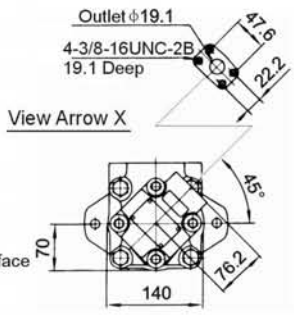
For other dimensions,refer to "Flange Mounting" type.

3520VQ Flange Mounting

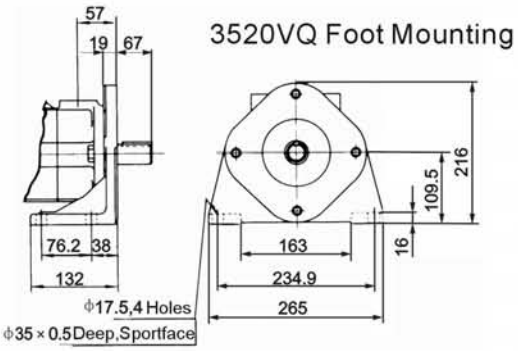








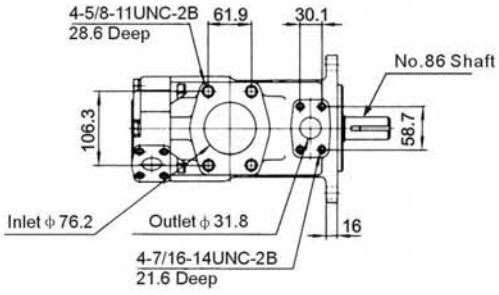
3520VQ Foot Mounting

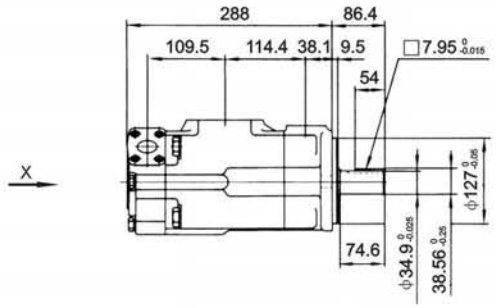


For other dimensions,refer to "Flange Mounting" type.

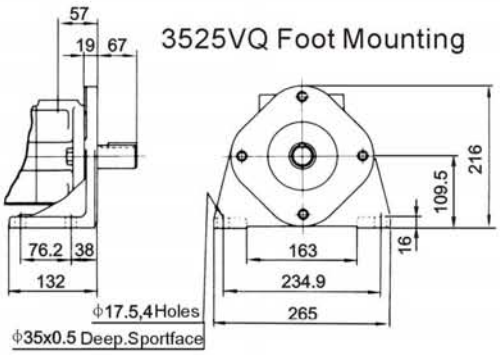
For other shaft dimensions,refer to page 49

3525VQ Flange Mounting

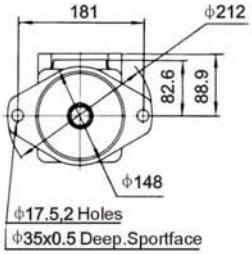


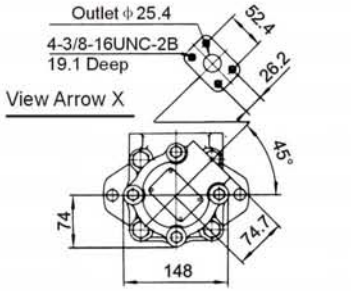


3525VQ Foot Mounting



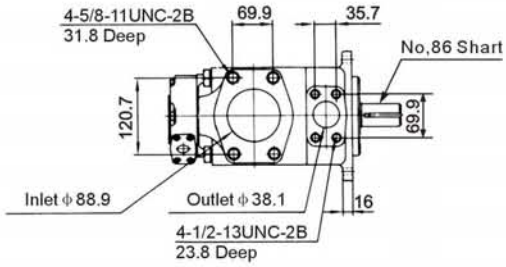
For other dimensions,refer to "Flange Mounting" type.

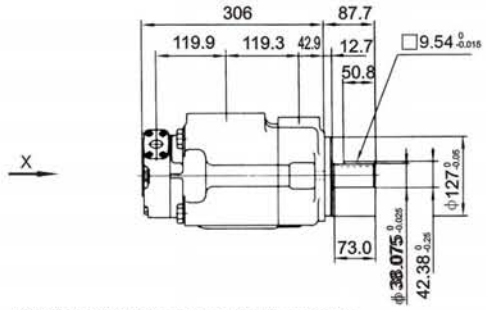




For other shaft dimensions,refer to page 49

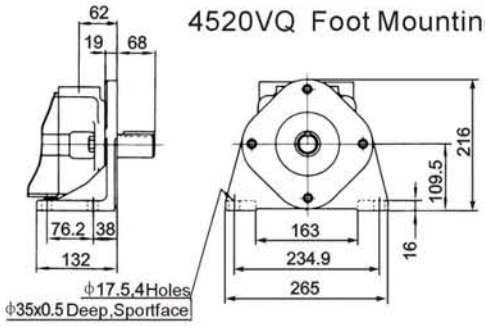
4520VQ Flange Mounting



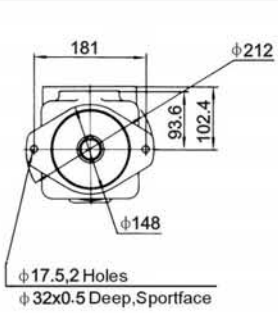


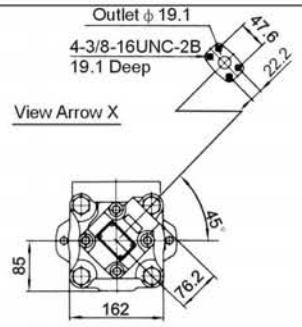
For other shaft dimensions,refer to page 49

4520VQ Foot Mounting

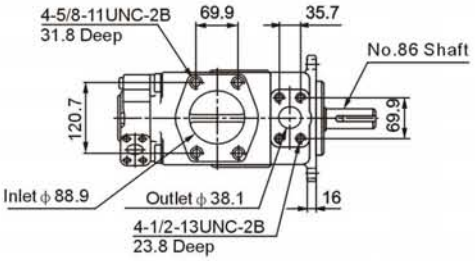


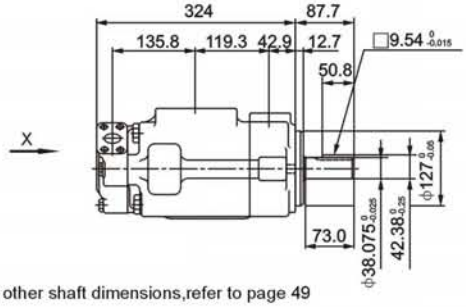
For other dimensions,refer to "Flange Mounting" type.





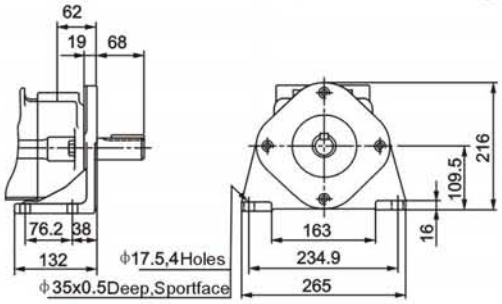
4525VQ Flange Mounting



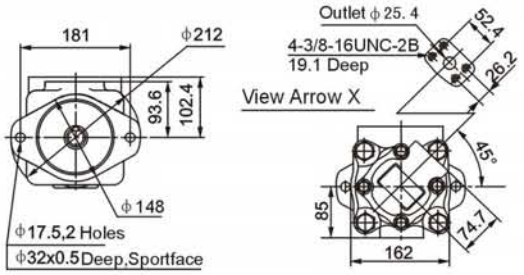


For other shaft dimensions,refer to page 49

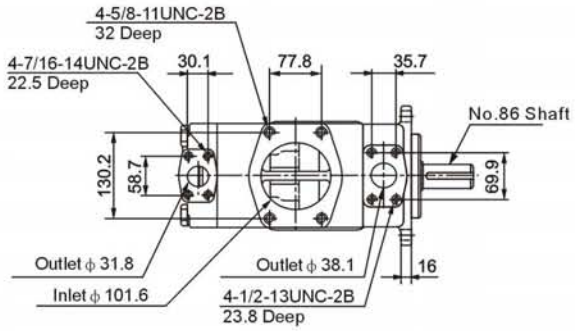
4525VQ Foot Mounting

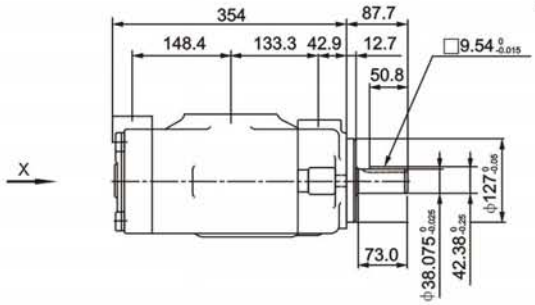


For other dimensions,refer to "Flange Mounting" type.

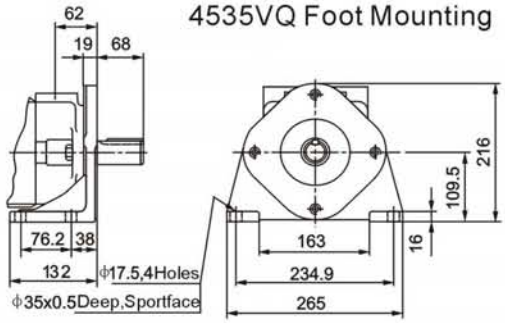


4535VQ Flange Mounting

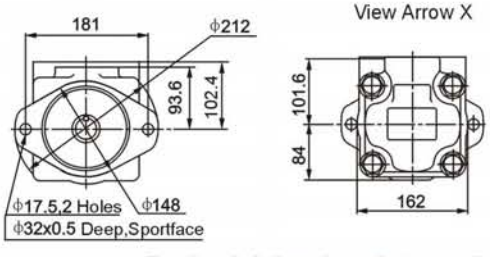




4535VQ Foot Mounting



For other dimensions,refer to "Flange Mounting" type.



For other shaft dimensions,refer to page 49

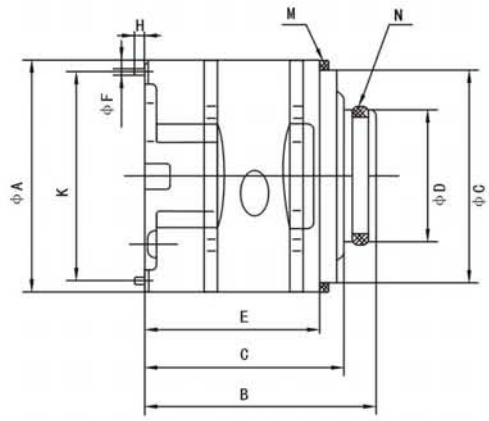
VQ Series Cartridge Kits

Model Code

(F3-)	PC-	20VQ	-5	-R	-10
Prefix	Cartridge kits mark	Series	▲ Code	Rotation	Design
Omit-Using antiwear oil water glycol fluid F3-Phosphated ester fluid	PC-Single pump cartridge kits Double pump shaft end pump cartridge kits PCT-Double pump cover end pump cartidge kits	20VQ	2,3,4,5,6,7,8,9,10, 11,12,14	(Viewed from shaft end of pump) R-Right hand for clockwise L-Left hand for counter clockwise	10
		25VQ	10,12,14,15,17,19, 21		
		35VQ	21,25,30,32,35,38,45		
		45VQ	42,45,50,57,60,66,75		

▲ Rated capacity(USgpm)at 1200 rpm,0.69 MPa (100 psi).

Installation dimensions



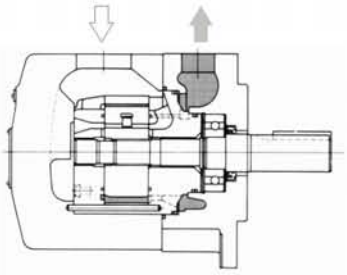
Series	A	B	C	D	E	F	G	H	K	M (Gasket)	N (O-Ring)
20VQ	82.5	81.5	70.1	47	61.5	4.8	76.2	7	73.6	82.76×76.26×3.5	40×3.5
25VQ	96.8	98.8	87	52.2	71.2	4.8	90.5	7	88.19	97×91×3.5	44×3.53
35VQ	114.3	117.7	105	72.2	90.3	6.4	108	7	103.94	114.5×108.5×3.5	63.09×3.53
45VQ	133.35	141.1	129.6	80.2	105.5	6.4	127	11	133.35	133.6×127.6×3.5	71×3.55

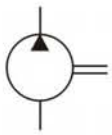
Series	Inner spline dentiform parameter of rotor				
	Pitch	Number of teeth	Pressure angle	Major diameter	Minor diameter
20VQ	48/96	30	45°	16.617	15.56
25VQ	48/96	40	45°	21.9	20.86
35VQ	40/80	37	45°	24.38	23.1
45VQ	12/24	14	30°	32.59	27.60

SQP Series Vane Pumps

—Lower Noise Intravane pumps For Industrial Application

SQP Series Single Pumps





Model Code

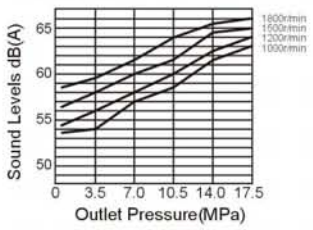
(F3-)	SQP2	-21	-86	C	(F)	-(LH)	-18
Prefix,fluid compatibility	Frame size	▲Code	Shafts	Outlet positions	Mounting	Rotation	Design
Omit-NBR seals F3-FKM seals	SQP1	2,3,4,5,6,7,8,9, 10,11,12,14	1:Str.Key 86:Str.Key	(Viewed from cover end of pump) A-Opposite inlet port B-90° CCW from inlet C-Inline with inlet D-90° CW from inlet	Omit-Flange mounting L-Foot mounting	(Viewed from shaft end of pump) Omit- Right hand for clockwise LH - Left hand for counter clockwise	15
	SQP2	10,12,14,15,17, 19,21					18
	SQP3	21,25,30,32,35, 38,45					
	SQP4	42,45,50,57,60, 66,75					

▲ Rated capacity in Us gpm at 1200r/min and 0.69 MPa.

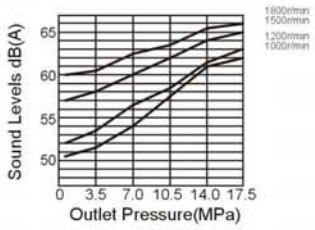
Sound.Data

[Conditions：ISO VG32.(50℃) inlet distance=1m]

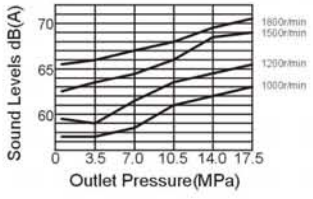
SQP1-11



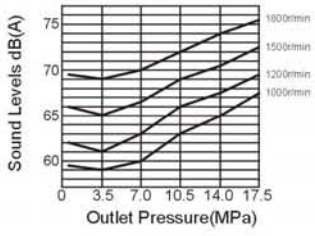
SQP2-21



SQP3-38



SQP4-60



Mainly Specification

Typical flows at 50℃， 10W oil at 20cSt,0 MPa inlet at specified speeds.

Frame size	Code	Geometric Displacement mL/r	Max.pressure MPa	Max.Speed r/min	Min.Speed r/min
SQP1	2	7.5	13.8	1800	600
	3	10.2			
	4	12.8	17.2		
	5	16.7			
	6	19.2			
	7	22.9			
	8	26.2			
	9	28.8			
	10	31.0			
	11	35.0			
	12	37.9	15.7		
	14	44.2	13.8		
SQP2	10	32.5	17.2	1800	600
	12	38.3			
	14	43.3			
	15	46.7			
	17	52.5			
	19	59.2			
	21	65.0			
SQP3	21	66.7	17.2	1800	600
	25	79.2			
	30	95.0			
	32	100			
	35	109			
	38	118			
	45	156			
SQP4	42	134	17.2	1800	600
	45	140			
	50	156			
	57	178			
	60	189			
	66	207			
	75	237			

● Rated capacity in US gpm at 1200 r/min and 0.69MPa(100psi).

▲A transient (peak) pressure10% over the max.continuous pressure rating for 0.5 seconds or less duration is allowed

Specification

Typical flows at 50℃，10W oil at 20cSt,0 MPa inlet at specified speeds.

Frame size	Speed r/min	Output flow L/min				Input power kw			
		0.69MPa	6.9MPa	13.8MPa	17.2MPa	0.69MPa	6.9MPa	13.8MPa	17.2MPa
SQP1-2	1000	7.5	6.0	4.5		0.2	1.2	2.1	
	1200	9.5	8.5	6.5		0.3	1.5	2.5	
	1500	11.2	9.3	7.5		0.3	1.8	3.2	
	1800	13.5	11.2	9.0		0.4	2.2	3.8	
SQP1-3	1000	10.2	8.8	7.4		0.3	1.5	3.1	
	1200	12.5	11.0	9.5		0.4	1.8	3.7	
	1500	15.3	13.7	12.1		0.5	2.3	4.7	
	1800	18.4	16.9	15.3		0.5	2.7	5.6	
SQP1-4	1000	12.8	12.3	10.8	10.0	0.4	1.8	3.7	4.6
	1200	16.0	15.0	13.5	13.0	0.5	2.2	4.4	5.5
	1500	19.2	17.7	16.2	15.7	0.6	2.7	5.6	6.9
	1800	23.1	21.3	19.5	19.0	0.7	3.2	6.7	8.3
SQP1-5	1000	16.7	15.7	14.7	14.2	0.4	2.8	4.8	6.0
	1200	20.0	19.0	18.0	17.5	0.5	3.2	5.8	7.2
	1500	25.0	24.0	23.0	22.5	0.6	3.9	7.3	9.0
	1800	30.0	29.0	28.0	27.5	0.6	4.2	8.6	10.7
SQP1-6	1000	19.2	18.2	17.0	16.2	0.4	3.0	5.5	6.6
	1200	23.0	22.0	20.5	20.0	0.5	3.5	6.5	7.9
	1500	28.5	27.5	26.0	25.0	0.6	4.3	8.1	9.8
	1800	34.5	33.5	32.0	31.0	0.7	5.2	9.7	11.8
SQP1-7	1000	22.9	21.4	19.9	18.9	0.5	3.4	6.2	7.6
	1200	27.5	26.0	24.5	23.5	0.6	4.0	7.4	9.1
	1500	34.4	32.9	31.4	30.4	0.7	5.0	9.2	11.3
	1800	41.3	39.8	38.3	37.3	0.8	5.9	11.0	13.6
SQP1-8	1000	26.2	24.2	22.7	21.2	0.5	3.9	6.7	8.3
	1200	31.5	29.5	28.0	26.5	0.6	4.5	8.0	10.0
	1500	39.4	37.4	35.9	34.4	0.8	5.5	10.0	12.5
	1800	47.2	45.2	43.7	42.2	0.8	6.6	11.8	14.8
SQP1-9	1000	28.8	26.8	25.3	23.8	0.5	4.2	7.0	8.6
	1200	34.5	32.5	31.5	30.0	0.6	5.0	8.5	10.5
	1500	43.2	41.2	39.7	38.2	0.8	5.9	10.4	12.9
	1800	51.8	49.8	48.3	46.8	0.9	7.1	12.3	15.3
SQP1-10	1000	31	29	26.5	25.5	0.6	4.8	9.1	11.3
	1200	37.2	35.2	32.7	31.7	0.8	5.7	11.0	13.7
	1500	46.5	44.5	42.0	41.0	0.9	6.8	13.7	17
	1800	55.8	53.6	51.1	50.1	1.0	8.3	16.2	20.3
SQP1-11	1000	35.0	33.0	30.5	29.5	0.7	4.9	9.2	11.4
	1200	42.0	40.0	37.5	36.5	0.8	5.7	11.0	13.7
	1500	52.5	50.5	48.0	47.0	1.0	6.9	13.8	17.1
	1800	63.2	61.0	58.5	57.5	1.0	8.3	16.2	20.3
SQP1-12	1000	37.9	36.4	34.4		0.7	5.6	10.4	
	1200	45.5	44.0	42.0		0.9	6.5	12.5	
	1500	56.9	55.4	53.4		1.1	7.9	15.6	
	1800	68.2	66.7	64.7		1.1	9.4	18.4	
SQP1-14	1000	44.2	42.7	40.7		1.0	6.6	12.2	
	1200	53.0	51.5	49.5		1.1	7.8	14.6	
	1500	66.0	64.0	62.0		1.3	9.6	18.2	
	1800	79.5	77.5	75.5		1.4	11.5	21.7	
SQP2-10	1000	32.5	29.5	26.0	24.5	0.9	4.9	9.3	11.3
	1200	39.0	36.0	32.5	31.0	1.0	5.8	11.1	13.5
	1500	48.8	45.8	42.3	40.8	1.2	7.2	13.8	16.8
	1800	58.5	55.5	52.0	50.5	1.3	8.5	16.5	20.1
SQP2-12	1000	38.3	35.9	33.3	31.8	1.0	5.7	10.9	13.4
	1200	46.0	43.6	41.0	39.5	1.1	6.5	13.0	16.0
	1500	57.5	55.1	52.5	51.0	1.3	8.3	16.1	19.9
	1800	69.0	66.6	64.0	62.5	1.4	9.8	19.3	23.8
SQP2-14	1000	43.3	40.2	36.8	35.8	1.2	6.4	12.2	15.1
	1200	52.0	48.5	45.5	44.5	1.3	7.5	14.5	18.0
	1500	65.0	61.9	58.5	57.5	1.5	9.4	18.0	22.4
	1800	78.0	74.9	71.5	70.5	1.7	11.1	21.5	26.7
SQP2-15	1000	46.7	43.7	40.7	39.2	1.2	6.8	13.0	15.9
	1200	56.0	53.0	50.0	48.5	1.3	8.0	15.5	19.0
	1500	70.0	67.0	64.0	62.5	1.5	9.9	19.3	23.6
	1800	84.0	81.0	78.0	76.5	1.7	11.8	23.0	28.3

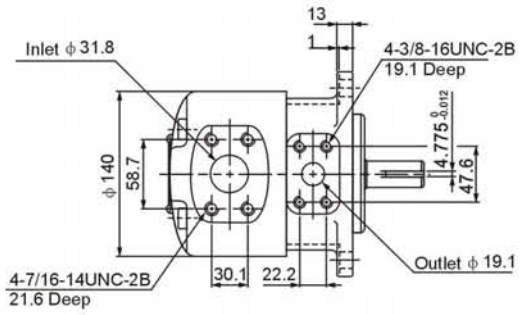
Mainly Specification

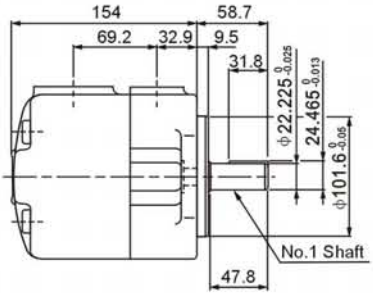
Typical flows at 50℃， 10W oil at 20cSt,0 MPa inlet at specified speeds.

Frame size	Speed r/min	Output flow L/min				Input power kw			
		0.69MPa	6.9MPa	13.8MPa	17.2MPa	0.69MPa	6.9MPa	13.8MPa	17.2MPa
SQP2-17	1000	52.5	49.7	46.5	44.5	1.4	7.4	14.3	17.6
	1200	63.0	60.6	57.0	55.0	1.5	9.0	17.0	21.0
	1500	78.8	76.0	72.8	70.8	1.7	10.8	21.1	26.1
	1800	94.5	91.7	88.5	86.5	1.9	12.9	25.1	31.2
SQP2-19	1000	59.2	56.2	53.2	50.2	1.5	8.5	16.0	20.1
	1200	71.0	68.0	65.0	62.0	1.7	10.0	19.0	24.0
	1500	88.7	85.7	82.7	79.7	1.9	12.3	24.1	29.8
	1800	106.5	103.7	100.7	97.7	2.2	14.7	28.2	35.7
SQP2-21	1000	65.0	62.2	59.0	57.0	1.6	9.2	17.6	21.8
	1200	78.0	75.0	72.0	70.0	1.8	11.0	21.0	26.0
	1500	97.5	94.7	91.5	89.5	2.1	13.4	26.1	32.3
	1800	117	114	111	109	2.3	16.0	31.1	38.6
SQP3-21	1000	66.7	60.7	54.7	51.7	1.6	8.9	16.8	20.6
	1200	80.0	74.0	68.0	65.0	1.8	10.5	20.0	24.5
	1500	100	94.0	88.0	85.0	2.0	12.9	24.8	30.4
	1800	120	114	108.0	105.0	2.3	15.4	30.5	36.4
SQP3-25	1000	79.2	73.5	67.2	64.2	1.8	10.7	20.5	25.1
	1200	95.0	89.0	83.0	80.0	2.0	12.5	24.5	30.0
	1500	119	113	107.0	104.0	2.3	15.7	30.4	37.3
	1800	142	136	130.0	127.0	2.6	18.7	36.4	44.6
SQP3-30	1000	95.0	88.4	81.0	78.0	1.8	12.6	24.7	30.5
	1200	114	107	100	97.0	2.0	15.0	29.5	36.5
	1500	142	136	128	125	2.4	18.6	36.7	45.5
	1800	171	164	157	154	2.7	22.2	44.0	54.5
SQP3-32	1000	100	92.0	85.0	82.0	2.1	13.5	26.0	32.2
	1200	120	112	105	102	2.3	16.0	31.0	38.5
	1500	150	142	135	132	2.7	19.8	38.6	47.9
	1800	180	172	165	162	3.1	23.6	46.1	57.4
SQP3-35	1000	109	103	95.2	92.2	2.2	14.2	27.6	34.3
	1200	131	124	117	114	2.5	17.0	33.0	41.0
	1500	164	157	150	147	2.9	20.9	41.0	51.0
	1800	196	189	182	179	3.3	24.9	50.4	61.1
SQP3-38	1000	118	111	102	99.3	2.7	15.5	29.8	36.9
	1200	142	134	126	123	3.0	18.5	35.5	44.0
	1500	177	170	161	158	3.4	22.7	44.0	54.7
	1800	213	205	197	194	3.9	27.0	52.6	65.4
SQP3-45	1000	140	131	121	116	2.9	17.9	35.4	43.7
	1200	168	159	149	144	3.2	21.2	42.2	52.2
	1500	210	201	190	185	3.7	26.2	53.5	64.9
	1800	252	243	233	228	4.2	31.2	62.7	77.7
SQP4-42	1000	134	125	115	110	2.7	17.7	35.2	43.5
	1200	161	152	142	137	3.0	21.0	42.0	52.0
	1500	201	192	182	177	3.5	26.0	52.3	64.7
	1800	241	232	222	217	4.0	31.0	62.5	77.5
SQP4-45	1000	140	131	121	116	2.9	17.9	35.4	43.7
	1200	168	159	149	144	3.2	21.2	42.2	52.2
	1500	210	201	190	185	3.7	26.2	53.5	64.9
	1800	252	243	233	228	4.2	31.2	62.7	77.7
SQP4-50	1000	156	147	137	132	3.1	20.2	39.4	49.3
	1200	187	178	168	163	3.5	24.0	47.0	59.0
	1500	234	225	215	210	4.0	29.7	58.5	73.4
	1800	280	271	261	256	4.7	35.4	69.9	87.9
SQP4-57	1000	178	168	157	151	3.8	22.9	45.1	53.7
	1200	213	203	192	186	4.3	27.3	55.2	65.8
	1500	269	259	248	242	5.0	3.6	66.3	82.5
	1800	320	10	299	292	5.7	39.3	75.5	97.3
SQP4-60	1000	189	178	166	160	4.0	24.4	46.9	58.6
	1200	227	216	204	198	4.5	29.0	56.0	70.0
	1500	284	273	261	255	5.2	35.8	69.6	87.1
	1800	340	329	317	311	5.9	42.7	83.2	104
SQP4-66	1000	207	195	182	174	4.4	26.7	51.4	62.9
	1200	248	236	223	215	4.9	31.6	61.2	76.0
	1500	310	298	285	277	5.6	39.0	76.0	94.6
	1800	372	60	347	339	6.4	46.7	91.0	113.3
SQP4-75	1000	237	223	208	200	5.0	30.5	58.7	73.2
	1200	284	269	255	247	5.6	36.1	70.0	87.3
	1500	355	340	326	318	6.5	44.5	86.9	108.0
	1800	426	411	397	389	7.3	53.5	104.1	130.0

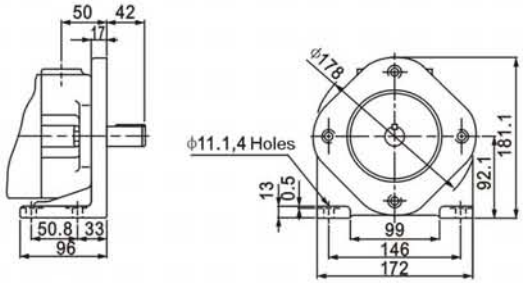
Typical flows at 50℃， 10W oil at 20cSt,0 MPa inlet at specified speeds.

SQP1 Flange Mounting

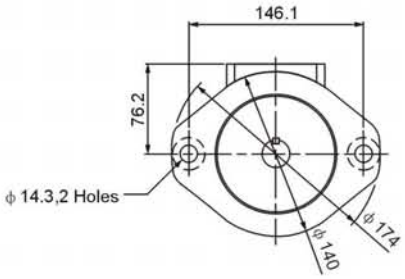




SQP1 Foot Mounting

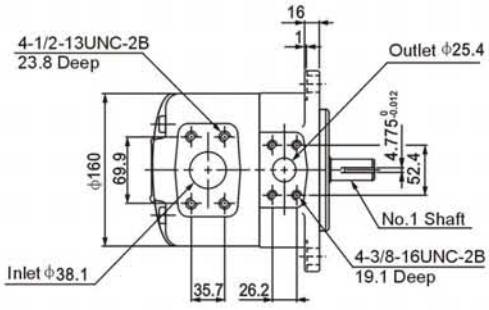


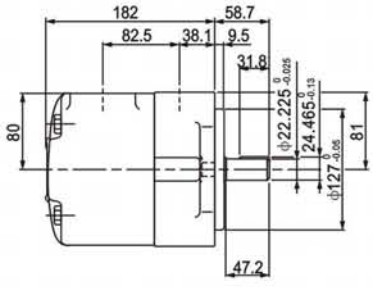
For other dimensions,refer to "Flange Mounting" type



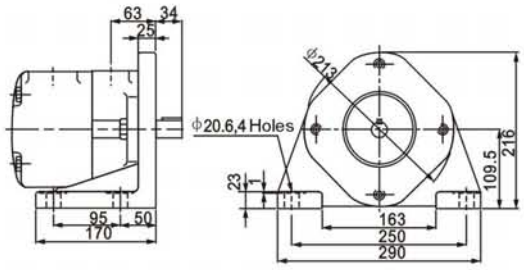
For other shaft dimensions,refer to page 49

SQP2 Flange Mounting

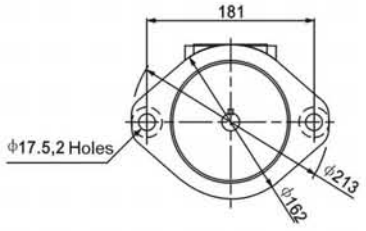




SQP2 Foot Mounting

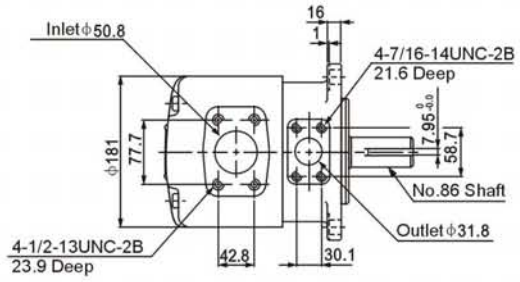


For other dimensions,refer to "Flange Mounting" type

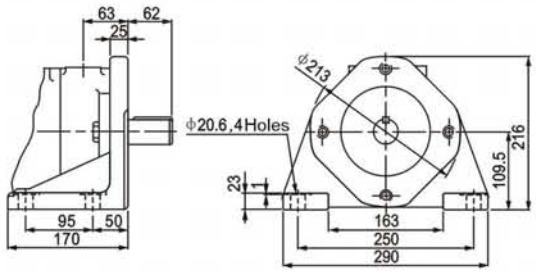


For other shaft dimensions,refer to page 49

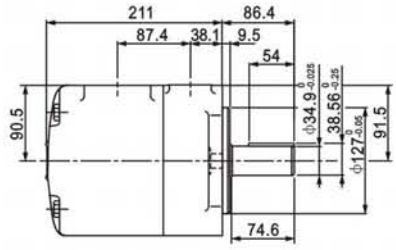
SQP3 Flange Mounting

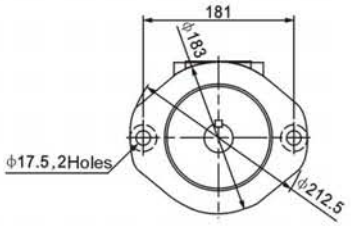


SQP3 Foot Mounting



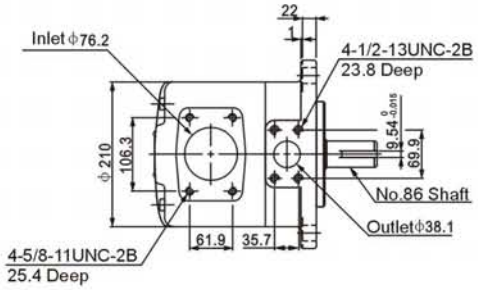
For other dimensions,refer to "Flange Mounting" type



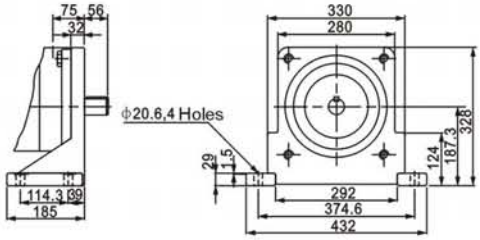


For other shaft dimensions,refer to page 49

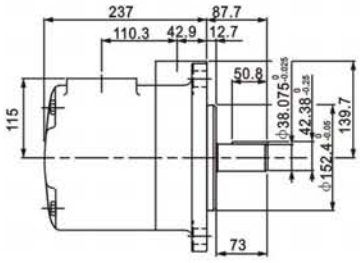
SQP4 Flange Mounting

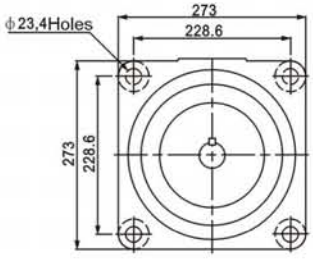


SQP4 Foot Mounting

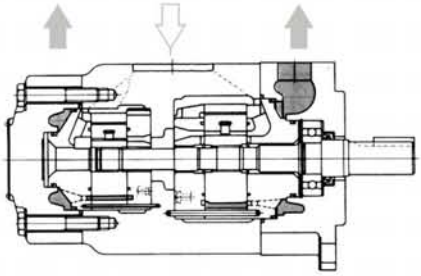


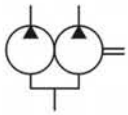
For other dimensions,refer to "Flange Mounting" type





For other shaft dimensions,refer to page 49





Model Code

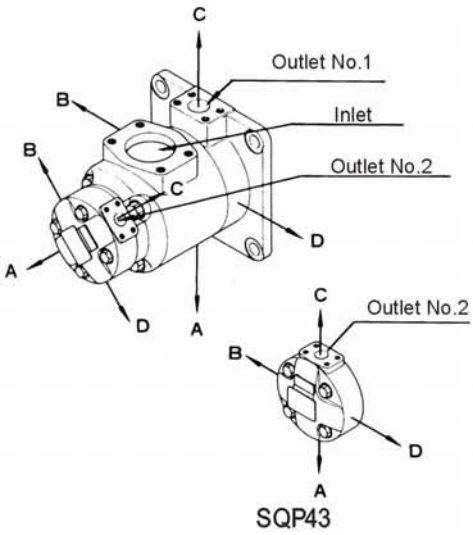
(F3-)	SQP32	-35	-17	-86	CD	(F)	-(LH)	-18
Prefix.fluid compatibility	Frame size	▲ Code Shaft End Pump	▲ Code Cover End Pump	Shafts	Port connection	Mounting form	Rotation	Design
Omit-NBR seals F3-FKM seals	SQP21	10,12,14,15,17, 19,21	2,3,4,5,6,7,8,9, 10,11,12,14	1-Str.Key 86-Str.Key	See below	Omit-Flange mounting F-Foot mounting	(Viewed from shaft end of pump Omit- Right hand for clockiwise LH- Left hand for counter clockwise	18
	SQP31	21,25,30,32,35, 38,45	2,3,4,5,6,7,8,9, 10,11,12,14					
	SQP32	21,25,30,32,35, 38,45	10,12,14,15,17, 19,21					
	SQP41	42,45,50,57,60, 66,75	2,3,4,5,6,7,8,9, 10,11,12,14					
	SQP42	42,45,50,57,60, 66,75	10,12,14,15,17, 19,21					
	SQP43	42,45,50,57,60, 66,75	21,25,30,32, 35,38,45					

▲Rated capacity in US gpm at 1200r/min and 0.69 MPa

Port Orientation Table (Viewed from cover end of pump)

Port Orientation		All series (except SQP43)	Series SQP43
With No.1 outlet Opposite inlet:	AA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	AB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	AC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	AD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1outlet 90° CCW from inlet:	BA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	BB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	BC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	BD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet inline with inlet:	CA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	CB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	CC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	CD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet 90° CW inlet:	DA	No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	DB	No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	DC	No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	DD	No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet

Port Connection



SQP43

Mainly Specification

Frame size	Shaft end pump(No.1 outlet)			Cover end pump(No.2 outlet)			Max speed r/min	Min. Speed r/min
	▲Code	Geometric Displacement mL/r	Max.pressure MPa	▲Code	Geometric Displacement mL/r	Max.pressure MPa		
SQP21	10	32.5	17.2	2	7.5	13.8	1800	600
	12	38.3						
	14	43.3		3	10.2			
	15	46.7						
	17	52.5		4	12.8	17.2		
	19	59.2		5	16.7	20.7		
	21	65.0						
SQP31	21	66.7	17.2	6	19.2			
	25	79.2						
	30	95.0		7	22.9			
	32	100						
	35	109		8	26.2			
	38	118						
	45	140		9	28.8			
SQP41	42	134	17.2	10	31.0			
	45	140						
	50	156		11	35.0			
	57	178						
	60	189		12	37.9	15.7		
	66	207						
	75	237		14	44.2	13.8		
SQP32	21	66.7	17.2	10	32.5	17.2	1800	600
	25	79.2						
	30	95.0		12	38.3			
	32	100						
	35	109		14	43.3			
	38	118						
	45	140		15	46.7			
SQP42	42	134	17.2					
	45	140		17	52.5			
	50	156						
	57	178		19	59.2			
	60	189						
	66	207		21	65.0			
	75	237						
SQP43	42	134	17.2	21	66.7	17.2	1800	600
	45	140		25	79.2			
	50	156		30	95.0			
	57	178		32	100			
	60	189		35	109			
	66	207		38	118			
	75	237		45	140			

● Rated capacity in US gpm at 1200 r/min and 0.69 MPa (100psi).

▲ A transient (peak) pressure 10% over the max.continuous pressure rating for 0.5 seconds or less duration is allowed

Specification

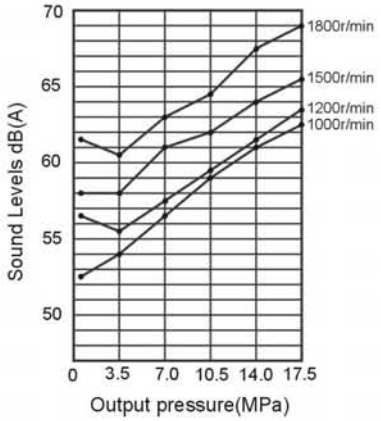
Typical flows at 50℃，10W oil at 20cSt,0 MPa inlet at specified speeds.

Frame Size	Performance Characteristics		Weight kg
	Shart end pump(No.1 outlet)	Cover end pump(No.2 outlet)	
SQP21	Data same as SQP2 Series	Data same as SQP1 Series	31.5
SQP31	Data same as SQP3 Series		46
SQP32	Data same as SQP3 Series	Data same as SQP2 Series	48
SQP41	Data same as SQP4 Series	Data same as SQP1 Series	74
SQP42		Data same as SQP2 Series	80
SQP43		Data same as SQP3 Series	88.5

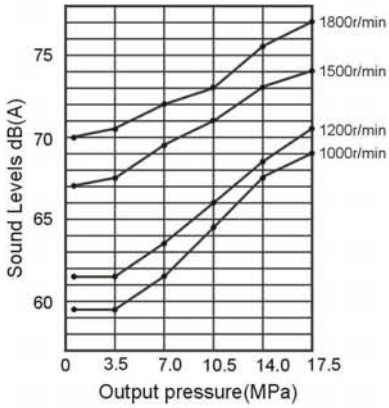
Sound Data

[Conditions:ISO VG32（50℃),0MPa inlet,distance:1m]

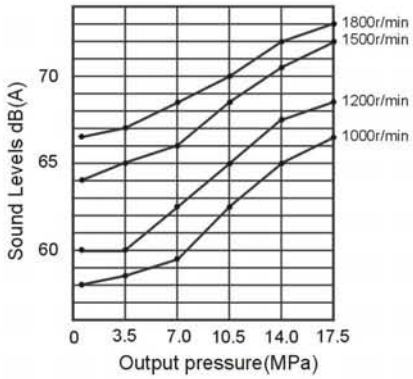
SQP21-17-8



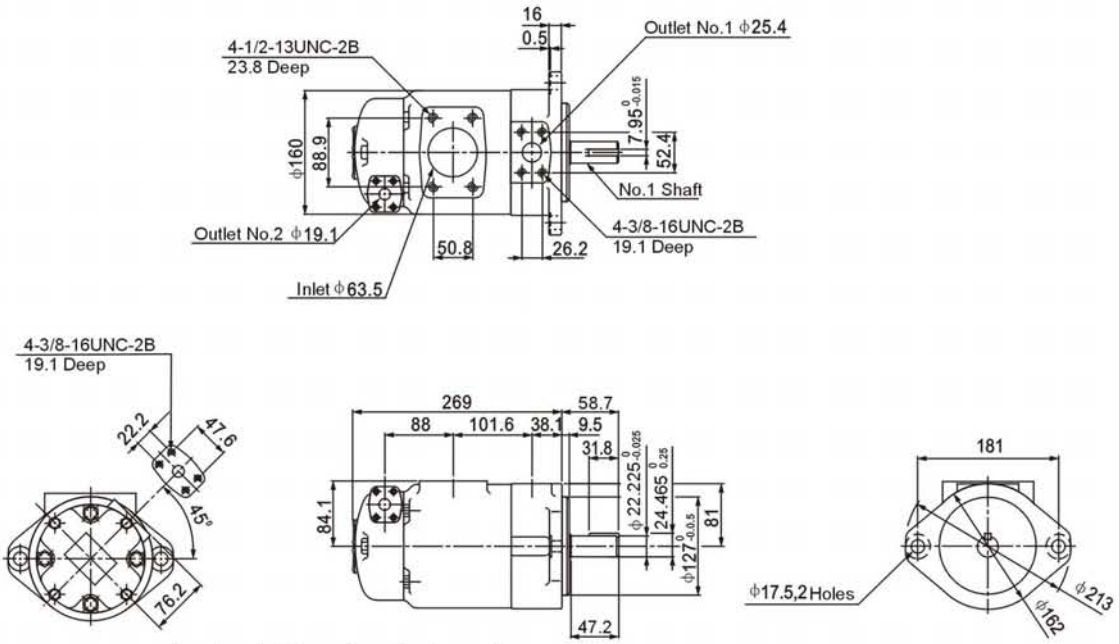
SQP43-50-35



SQP32-35-17

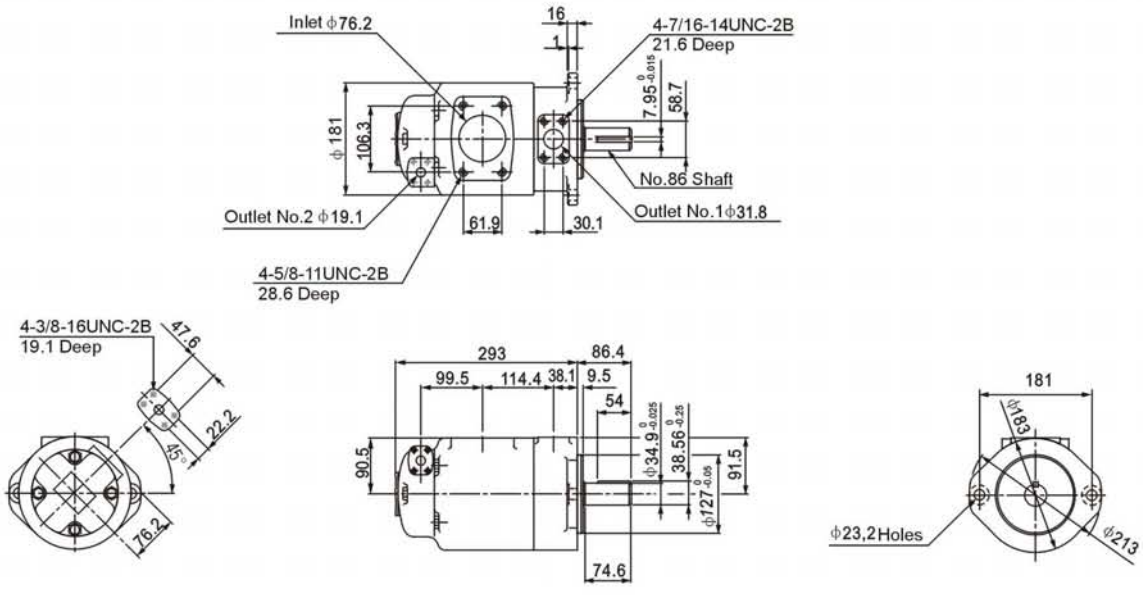


SQP21 Flange Mounting



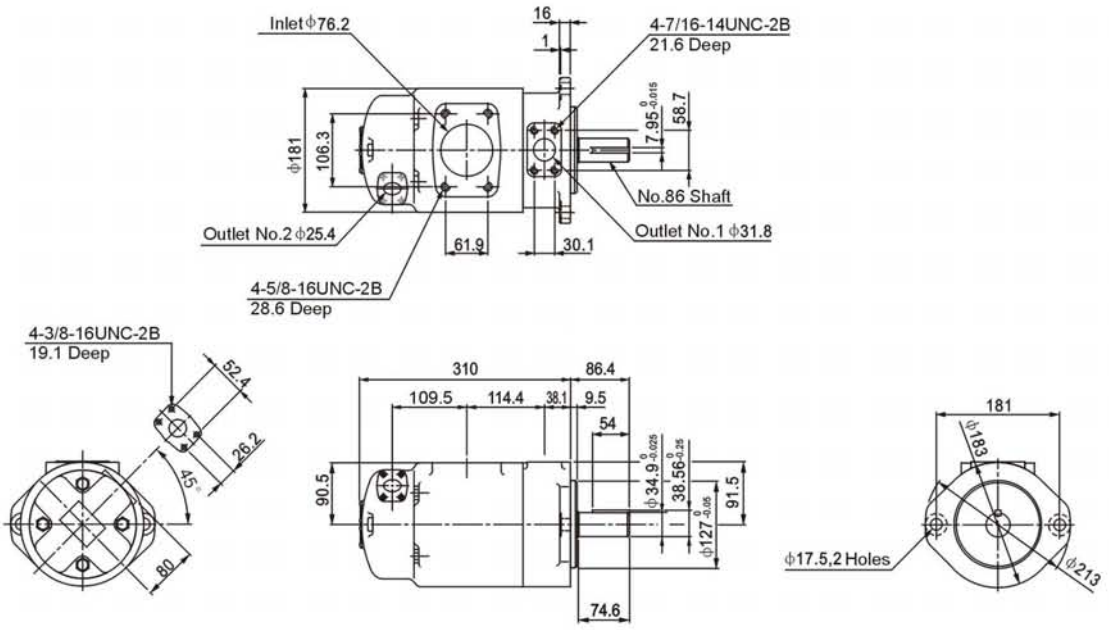
For other shaft dimensions,refer to page 49

SQP31 Flange Mounting



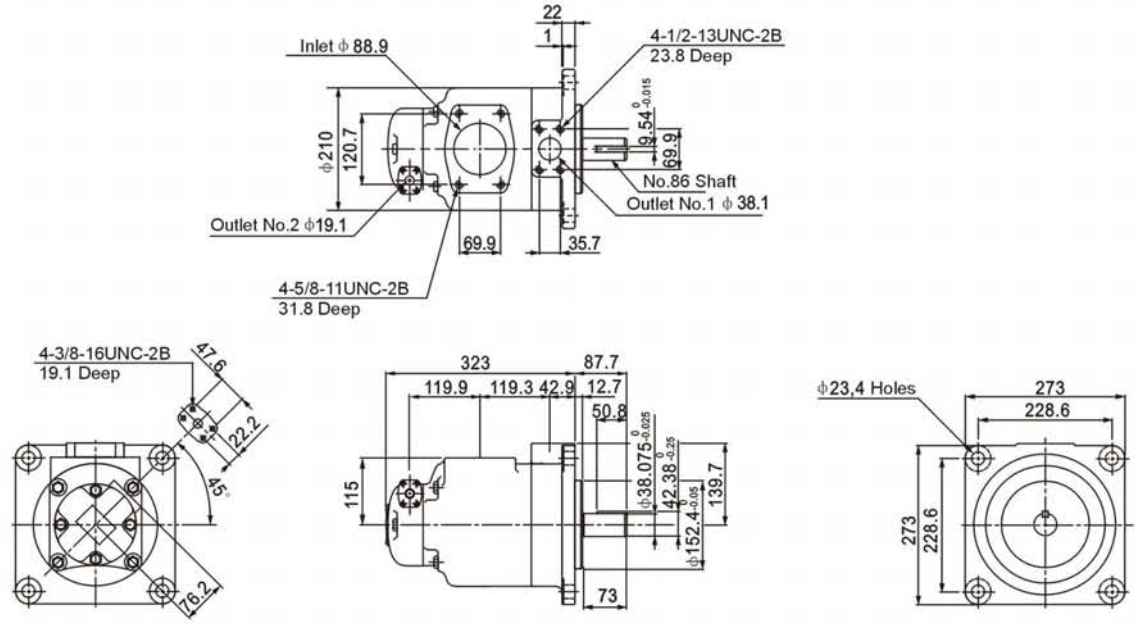
For other shaft dimensions,refer to page 49

SQP32 Flange Mounting



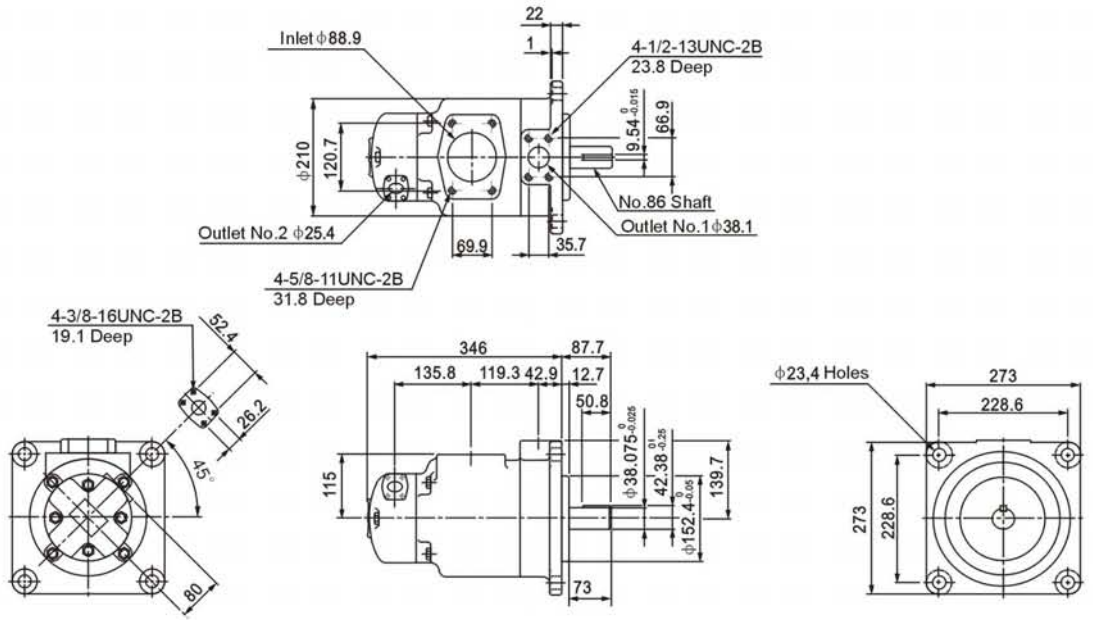
For other shaft dimensions,refer to page 49

SQP41 Flange Mounting



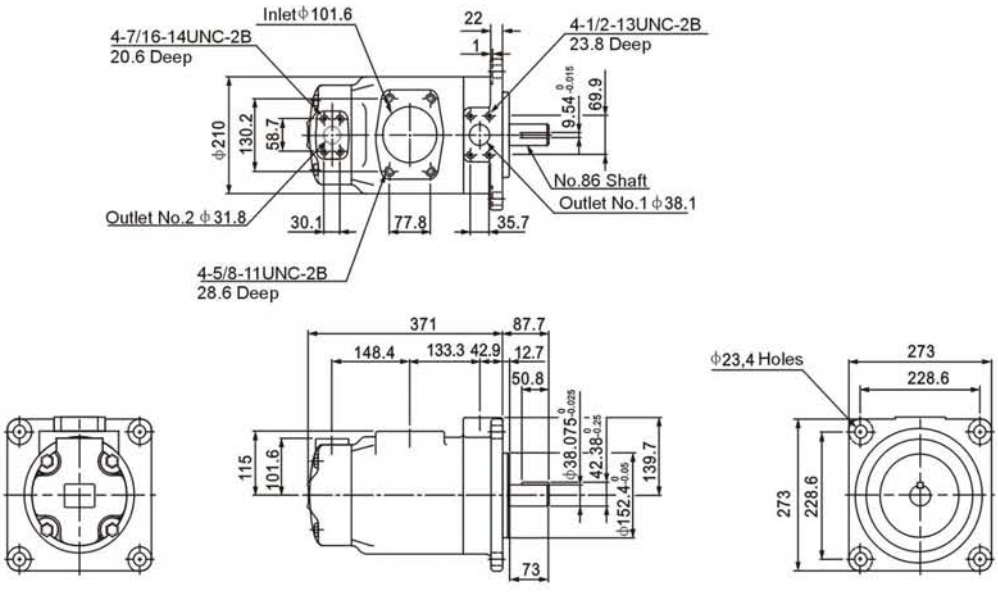
For other shaft dimensions,refer to page 49

SQP42 Flange Mounting



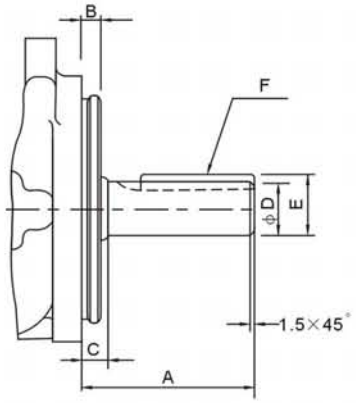
For other shaft dimensions,refer to page 49

SQP43 Flange Mounting

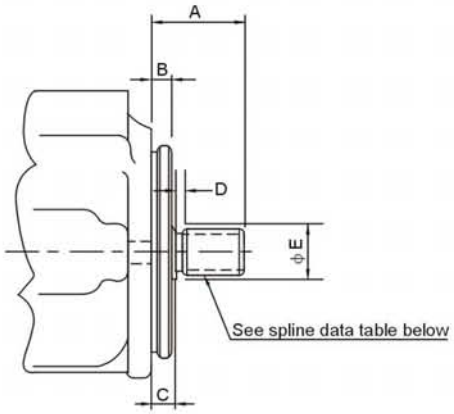


For other shaft dimensions,refer to page 49

Straight Key Shafts



Splined Shafts



Straight Key Shafts

Model			Shaft Code	A	B	C	D	E	F Key width ×Length
V	VQ	SQP							
20V	20VQ	SQP1	1	59	9.53	12.1	22.23/22.20	24.5/24.4	4.76×32
25V	25VQ	SQP2	1	59	9.53	11.1	22.23/22.20	24.5/24.4	4.76×32
2520V	2520VQ	SQP21	86	78	9.53	11.1	25.37/25.35	28.3/28.1	6.36×50.8
35V	35VQ	SQP3	1	73.2	9.53	11.1	31.75/31.70	35.36/34.10	7.94×38.1
352*V	352*VQ	SQP3*	86	86	9.53	11.1	34.90/34.87	38.6/38.3	7.94×54
45V	45VQ	SQP4	1	62	12.7	14.22	31.75/31.70	35.36/34.10	7.94×28.5
45**V	45**VQ	SQP4*	86	87.4	12.7	14.22	38.07/38.05	42.4/42.1	9.54×50.8

Splined Shafts

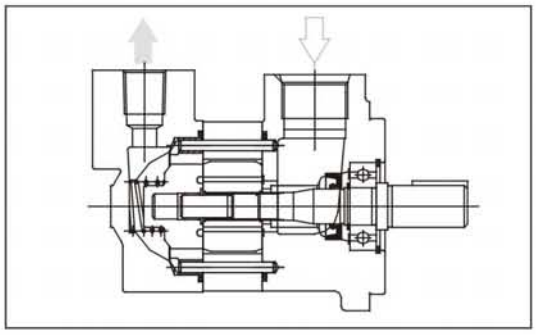
Model		Shaft Code	A	B	C	D	E	Spline Data (See below)
V	VQ							
20V	20VQ	151	41.1	9.53	11.1	3.9	27.8	A
25V	25VQ	11	44.5	9.53	11.1	3.9	27.8	A
2520V	2520VQ							
35V	35VQ	11	58.7	9.53	11.1	6.35	35.1	C
352*V	352*VQ							
45V	45VQ	11	61.9	12.7	14.3	9.7	39.6	C
45**V	45**VQ							

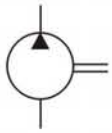
Spline Data Table (Involute splines from above chart)

Spline Data Reference	Number of Teeth	Pitch	Major Diameter	Form Diameter	Minor Diameter	Minor Diameter
A	13	16/32	22.17 22.15	19.03	18.63 18.35	Major dia.fit
C	14	12/24	31.7 31.67	27.2	26.99 26.64	Major dia. fit

V10、V20 Series Vane Pumps

—For Industrial Equipment





Model Code

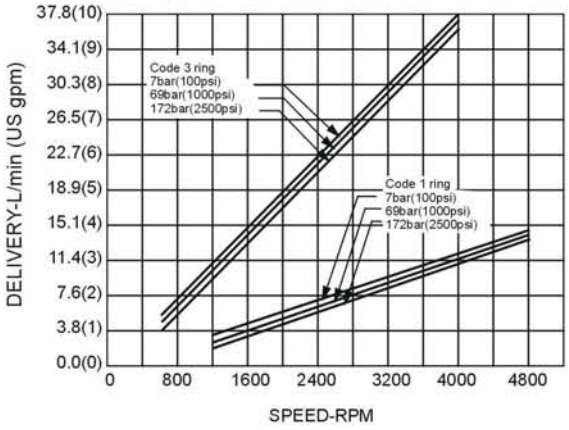
(F3-)	V10	-P	7	S	-1	C	20	-L
Prefix	Series	Inlet port connections	Code	Outlet port connections	Shafts	Outlet Positions	Design	Rotation
Omit-Usting antiwear oil water glycol fluid	V10	P-1″ NPT thread S-1.3125-12 straight thread B-G1″ thread	1,2,3,4, 5,6,7	P-1/2″ NPT thread S-0.750-16 straight thread B-G1/2″ thread	1-Str,Key 11-Spline 38-11tooth -3/4" OD. 62-spline (V20 only)	(Viewed from cover end of pump) A-Opposite inlet port B-90°CCW from inlet C-In line with in inlet D-90° CW from inlet	20	(Viewed from shaft end of pump) L-Left hand for counter clock-wise R-Right hand for clockwise
F3-Phosphate ester fluid	V20	P-1-1/4 "NPT thread S-1.625-12 straight B-G1-1/4 " thread	6,7,8,9, 10,11,12, 13,14	P-3/4″ NPT thread S-1.1875-12 straight thread B-G3/4″ thread			10	

Specification

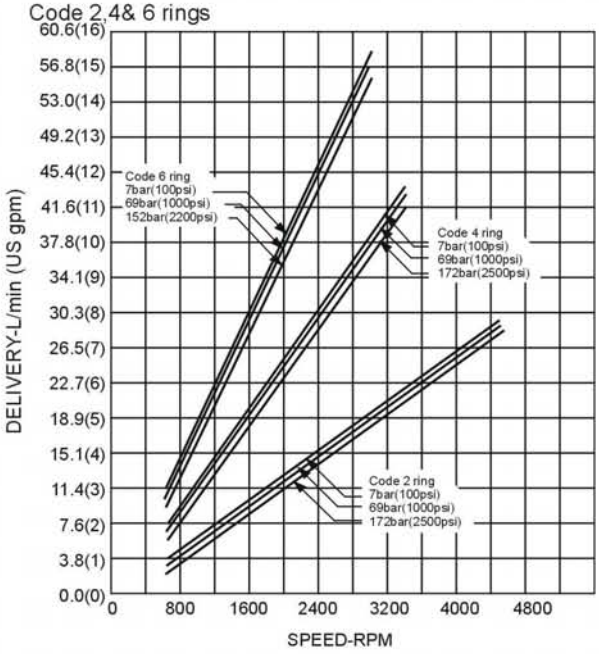
Model	Code	Geometric Displacement mL/r	Using anti-wear oil or phosphate ester fluid		Using water glycol fluid		Using water-in-oil emulsion	
			Max.pressure MPa	Max.Speed r/min	Max.pressure MPa	Max.Speed r/min	Max.pressure MPa	Max.Speed r/min
V10	1	3.3	17.2	4800	12.4	1800	10.3	1800
	2	6.6		4500				
	3	9.8		4000				
	4	13.1		3400				
	5	16.4		3200				
	6	19.5	15.2	3000			10.9	
	7	22.8	13.8	2800				
V20	6	19.5	17.2	3400	12.4	1800	10.9	1800
	7	22.8		3000				
	8	26.5		2800				
	9	29.7						
	10	30.0						
	11	36.4		2500	10.9		9.3	
	12	39	15.2	2400				
	13	42.4						
	14	45						

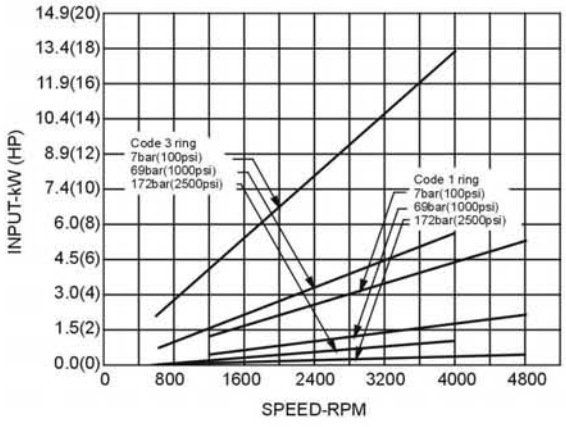
V10

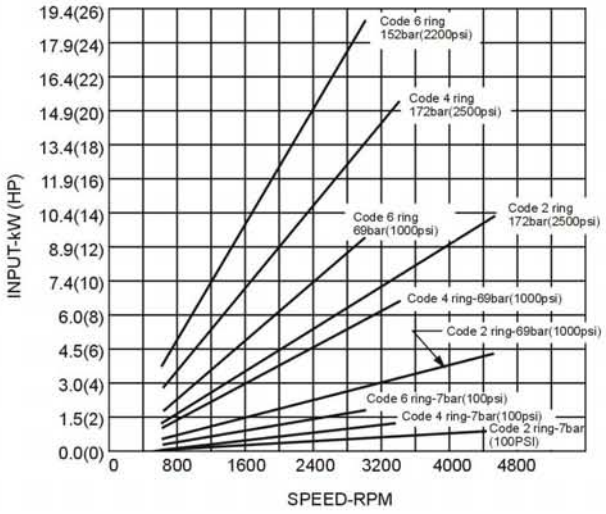
Code 1& 3 rings



Code 2,4& 6 rings

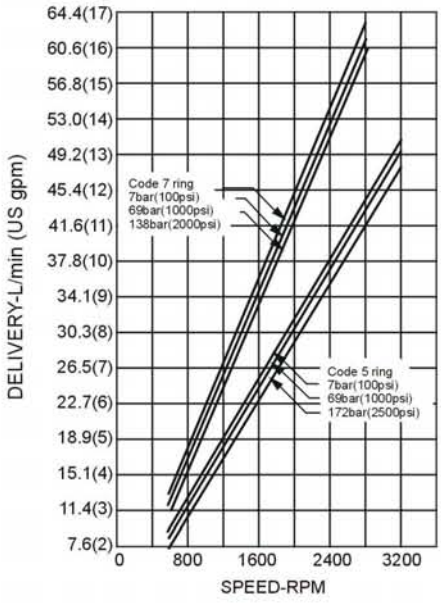


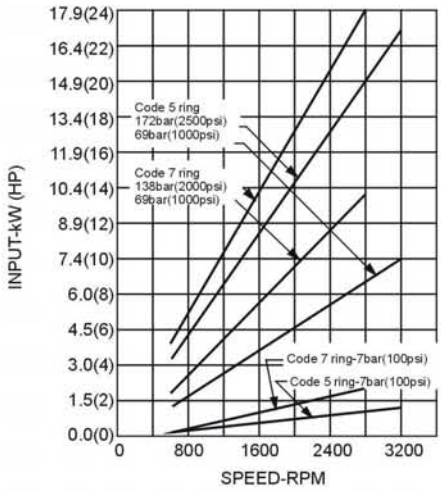




V10

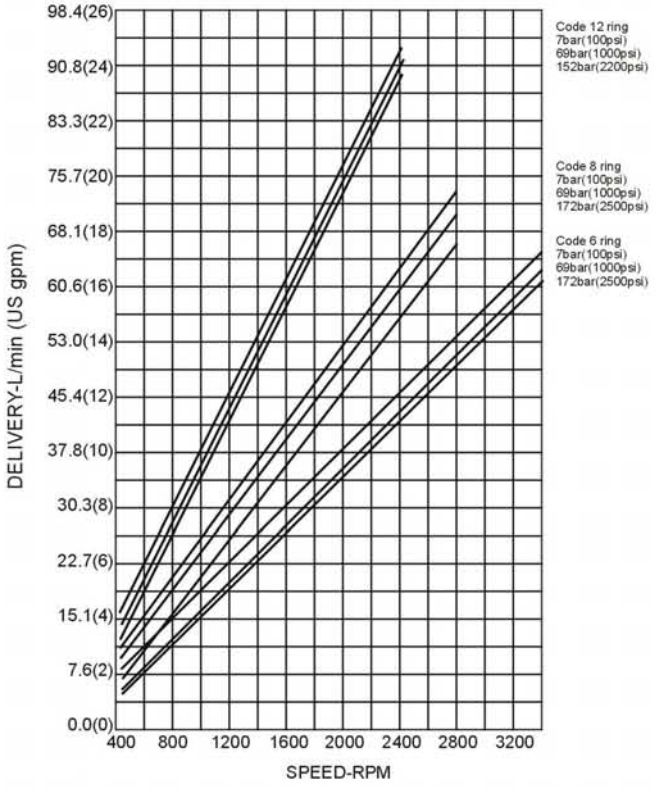
Code 5 & 7 rings

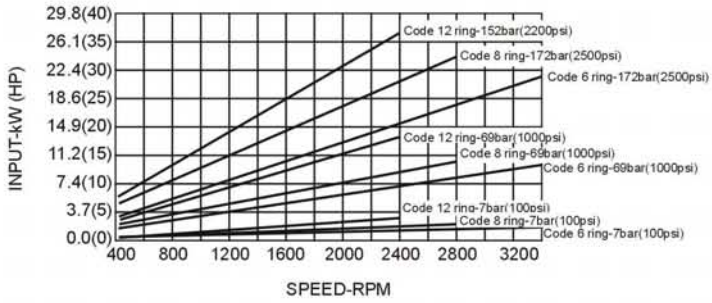




V20

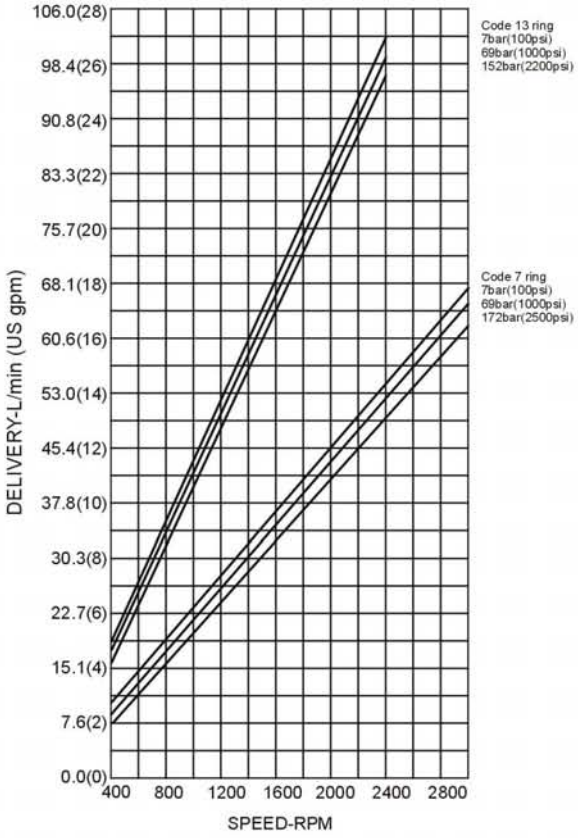
Code 6,8 &12 rings

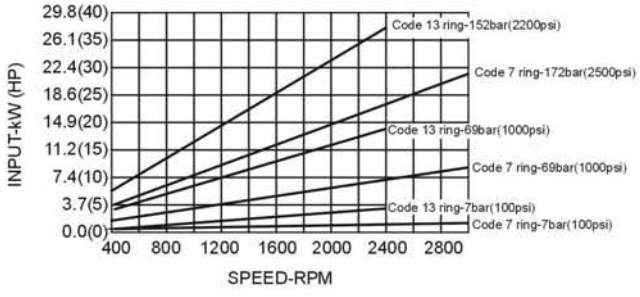




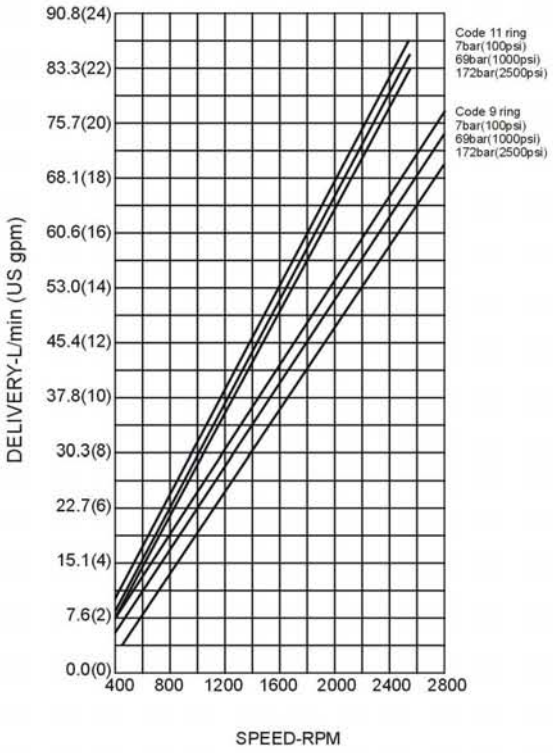
V20

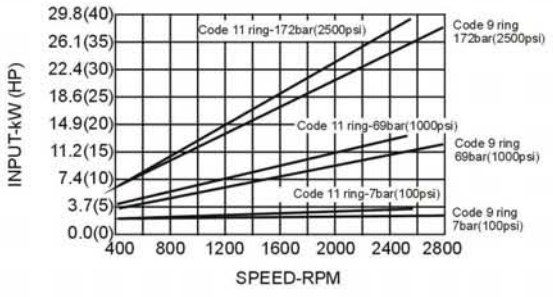
Code 7 &13 rings



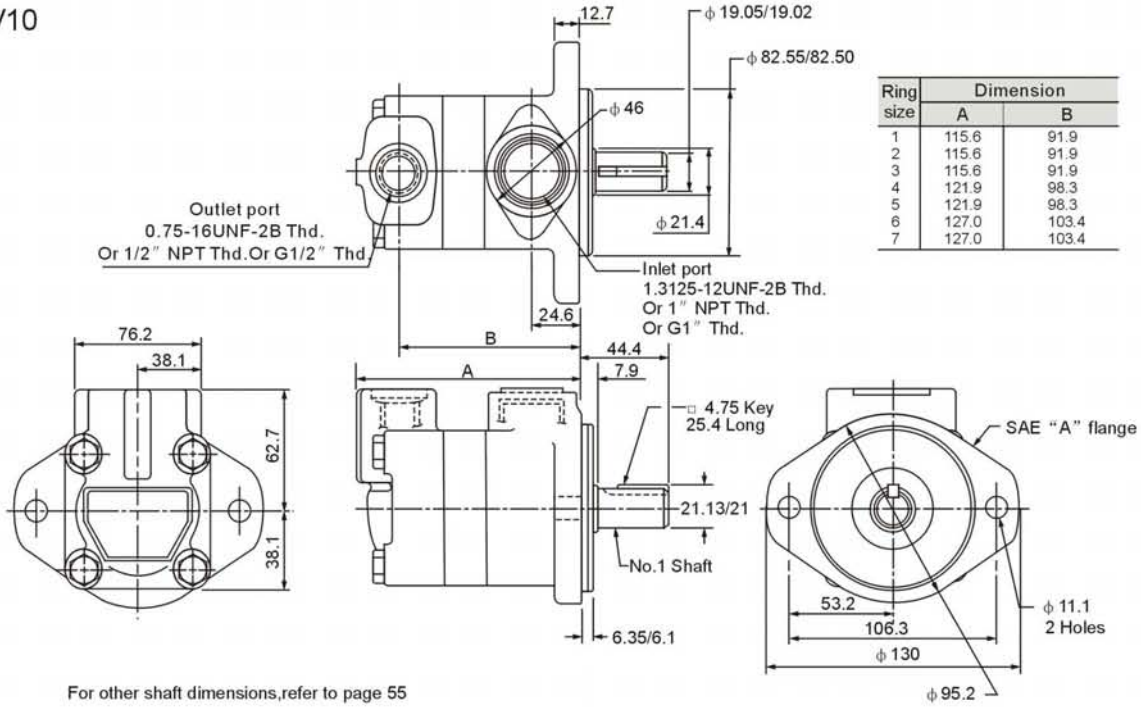


Code 9 &11 rings





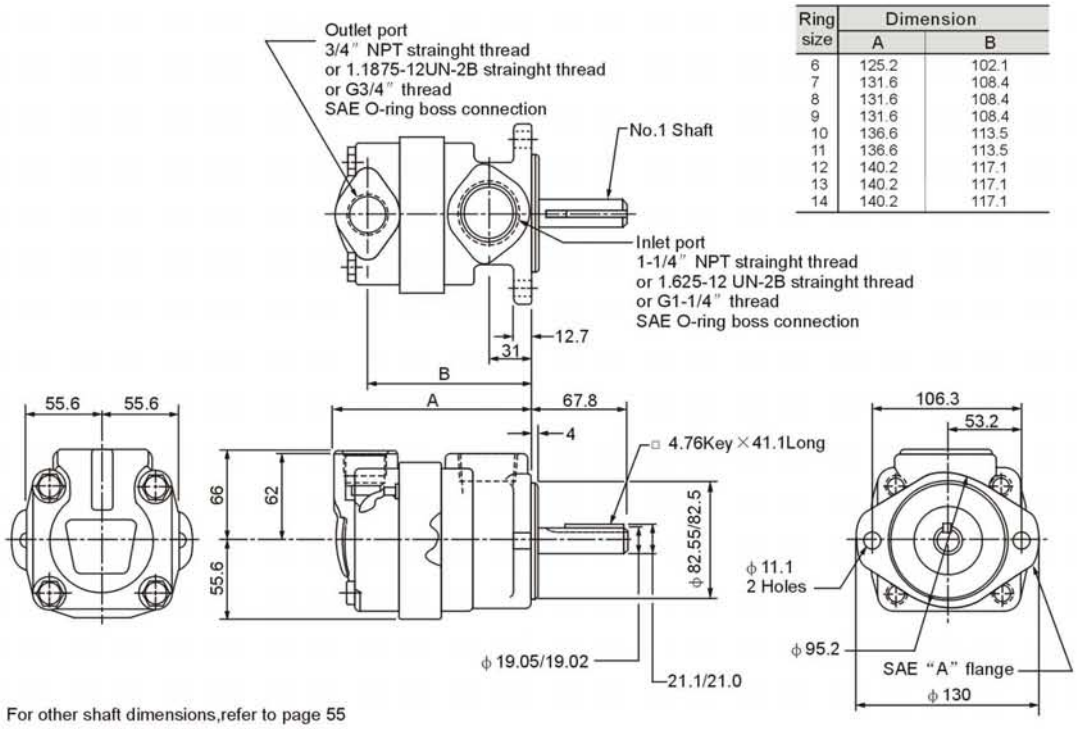
V10



Ring size	Dimension A	Dimension B
1	115.6	91.9
2	115.6	91.9
3	115.6	91.9
4	121.9	98.3
5	121.9	98.3
6	127.0	103.4
7	127.0	103.4

For other shaft dimensions,refer to page 55

V20

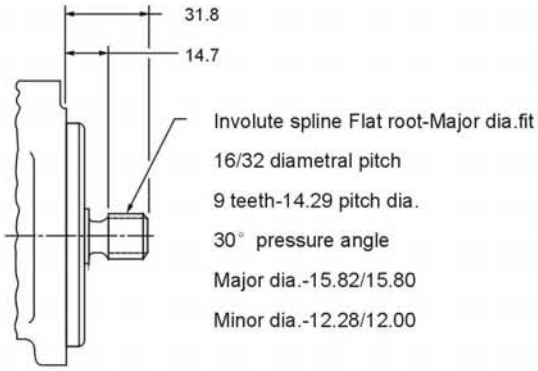


Ring size	Dimension A	Dimension B
6	125.2	102.1
7	131.6	108.4
8	131.6	108.4
9	131.6	108.4
10	136.6	113.5
11	136.6	113.5
12	140.2	117.1
13	140.2	117.1
14	140.2	117.1

For other shaft dimensions,refer to page 55

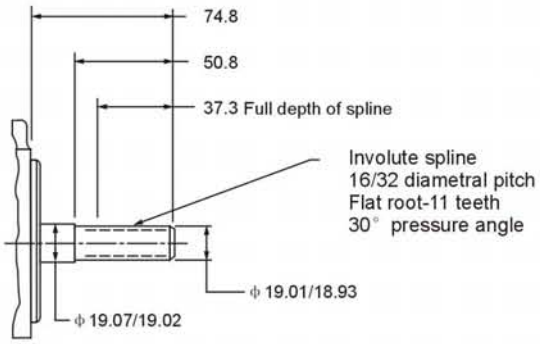
V10 Series Splined Shafts

No.11 Splined Shafts



V20 Series Splined Shafts

No.11 Splined Shafts



No.62 Splined Shafts