

SQP/SQPS series Low noise fixed displacement vane pumps

The SQP series are low-noise vane pumps offered in single, double, or triple pumps, with 4 frame sizes, 16 series and 31 models of different discharge displacements.

The wide extent of this range allows users to select the optimum combination of discharge displacements for their circuits, leading to an energy efficient system.

B
0-5

Fixed Displacement Vane Pumps

SQP Series

1. LOWER NOISE

Offers very quiet and soft operational noise levels.

2. GREATER FLEXIBILITY

Multiple pump combinations of different displacements permits simpler circuit design compared to systems using one large displacement pump and provides greater flexibility in circuit design with low noise levels.

3. MAINTENANCE FRIENDLY

Rotating element in cartridge kit form allows simple maintenance.

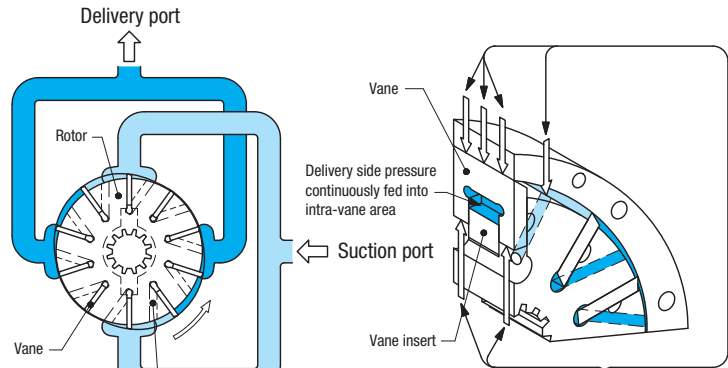


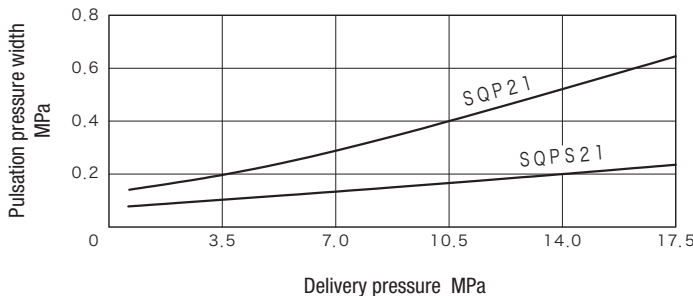
Figure 1 Pressure acts below vanes to push vane tips against the cam ring and provides optimum sealing of vane chambers.

Figure 2 Shaft rotation causes delivery side or suction side pressure to alternately act on bottom of vane.

SQPS Series

The SQPS Series incorporate special pulsation damping chambers which minimize pulsation amplitude from delivery pressure, contributing to a great reduction in overall noise levels.

● Comparison of Pump Pressure Pulsations

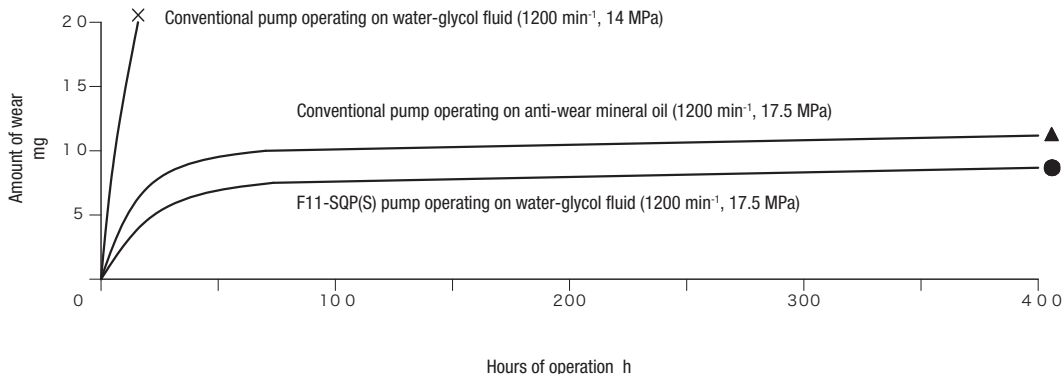


F11-SQP(S) Series

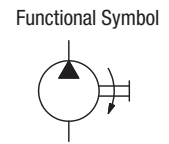
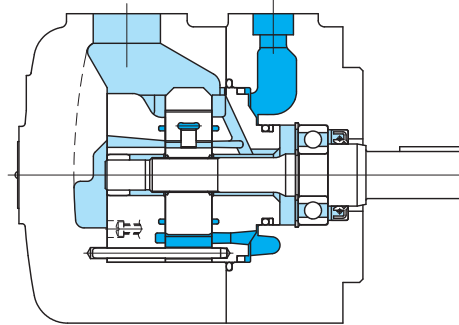
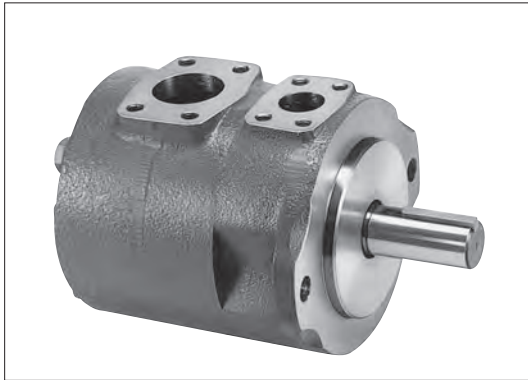
The F11-SQP(S) Series is designed for use with fire-resistant fluids such as water-glycol fluids which consist of 40% water.

The pumps are designed to provide high pressure and long life even when using such fluids with good anti-wear characteristics. The below graphs shows the amount of wear is similar to pumps operating on anti-wear mineral oil.

Vane Wear Comparison (Tokyo Keiki pumps)



Low noise single fixed displacement vane pumps SQP/SQPS series



Model Code

(F3)-SQP(S)3-35-86C(2)-(LH)-18

1 2 3 4 5 6 7 8

1 Hydraulic fluid

Omit: mineral oil based fluid
F3: Phosphate ester fluid
F11: Water glycol fluid

2 Low noise fixed displ. vane pump

SQP(S)1 Series
SQP(S)2 Series
SQP(S)3 Series
SQP(S)4 Series

3 Pump displacement code

Series	Displacement Code
SQP(S)1	2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14
SQP(S)2	10, 12, 14, 15, 17, 19, 21
SQP(S)3	17, 21, 25, 30, 32, 35, 38
SQP(S)4	30, 35, 38, 42, 50, 60

4 Shaft end configuration

1: parallel sq. key

{ SQP(S)1
SQP(S)2 }

86: parallel sq. key

{ SQP(S)3
SQP(S)4 }

5 Delivery port position (viewed from cover end)

A: opposite suction port
B: 90° CCW from suction port
C: inline with suction port
D: 90° CW from suction port

6 Pump mounting

Omit: flange mounting
2*: foot mounting
Delivery port position relative to foot mount surface (see schematic below)

Foot Mounting Code	Position of the Delivery Port as Viewed from the Shaft End
2	Up (12 o'clock)
23	Right (3 o'clock)
26	Down (6 o'clock)
29	Left (9 o'clock)

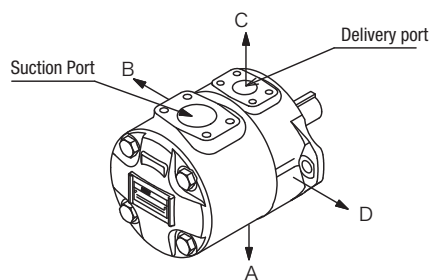
7 Rotation (viewed from shaft end)

Omit: CW
LH: CCW

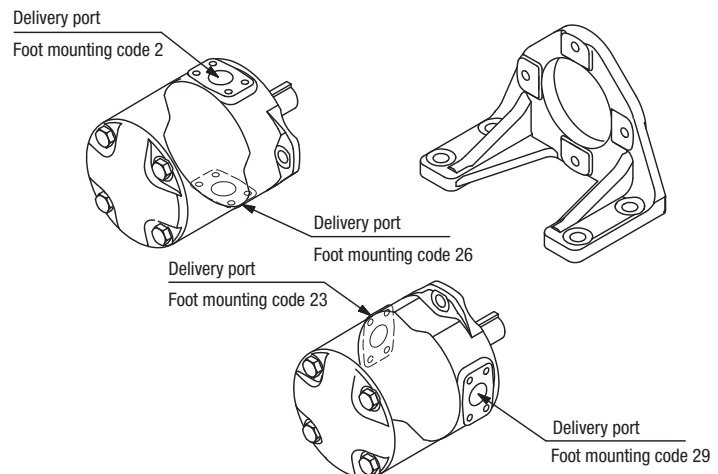
8 Design no.

Design no. is 15 for SQP(S)1 Series only.

• Delivery port position



• Foot mounting position (unrelated to suction port)



● Note that for SQPS1, suction port is on shaft side and delivery port is on cover side.

Specifications

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1-2

Fixed Displacement Vane Pumps

Model Code	Displacement Code	Del. at 1000 min ⁻¹ 0.7 Mpa L/min	Mineral Oil Based Fluid SQP(S)		Water Glycol Based Fluid F11-SQP(S)		Phosphate Ester Fluid F3-SQP(S)		Min. Speed min ⁻¹
			Max. Working Pressure MPa	Max. Speed min ⁻¹	Max. Working Pressure MPa	Max. Speed min ⁻¹	Max. Working Pressure MPa	Maximum Speed min ⁻¹	
SQP(S)1	2	7.5	14	1800	14	1200	14	1200	600
	3	10.2							
	4	12.8							
	5	16.7							
	6	19.2							
	7	22.9	17.5						
	8	26.2							
	9	28.3							
	11	35.0							
	12	37.9	16		16				
14	44.2	14	14						
SQP(S)2	10	32.5	17.5	1800	17.5	1200	14	1200	600
	12	38.3							
	14	43.3							
	15	46.7							
	17	52.5							
	19	59.2							
	21	65.0							
SQP(S)3	17	53.3	17.5	1800	17.5	1200	14	1200	600
	21	66.7							
	25	79.2							
	30	95.0							
	32	100.0							
	35	109.0							
SQP(S)4	30	96.0	17.5	1800	17.5	1200	14	1200	600
	35	109.0							
	38	128.0							
	42	134.0							
	50	156.0							
	60	189.0							

Weight

Unit: kg

Model Code	SQP		SQPS	
	Flange Mount	Foot Mount	Flange Mount	Foot Mount
SQP(S)1	16.0	19.0	18.5	21.5
SQP(S)2	25.0	34.5	29.5	39.0
SQP(S)3	35.0	44.5	43.0	52.5
SQP(S)4	59.5	84.5	71.0	96.0

Piping Flanges (Conforming to SAE J 518c Standard Pressure)

- Flanges sold separately.
- Refer to table below to order flanges (with hex socket bolts, spring washers, and O-rings).
- See page R7-1 for dimensions, etc.

Pump Model	Flange Type					
	Suction Port			Delivery Port		
	Size	Threaded	Welded	Size	Threaded	Welded
SQP 1	1-1/4	FL1-10-10P-10-JA-S4-J	FL1-10-10W-10-JA	3/4	FL1-6-06P-10-JA-S4-J	FL1-6-06W-10-JA
SQP S 1	1-1/2	FL1-12-12P-10-JA-S4-J	FL1-12-12W-10-JA	3/4	FL1-6-06P-10-JA-S4-J	FL1-6-06W-10-JA
SQP(S)2	1-1/2	FL1-12-12P-10-JA-S4-J	FL1-12-12W-10-JA	1	FL1-8-08P-10-JA-S4-J	FL1-8-08W-10-JA
SQP(S)3	2	FL1-16-16P-10-JA-S4-J	FL1-16-16W-10-JA	1-1/4	FL1-10-10P-10-JA-S4-J	FL1-10-10W-10-JA
SQP(S)4	3	FL1-24-24P-10-JA-S4-J	FL1-24-24W-10-JA	1-1/2	FL1-12-12P-10-JA-S4-J	FL1-12-12W-10-JA

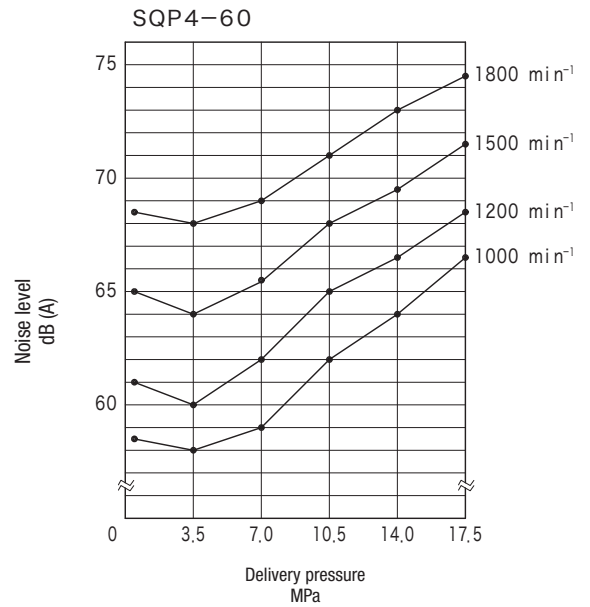
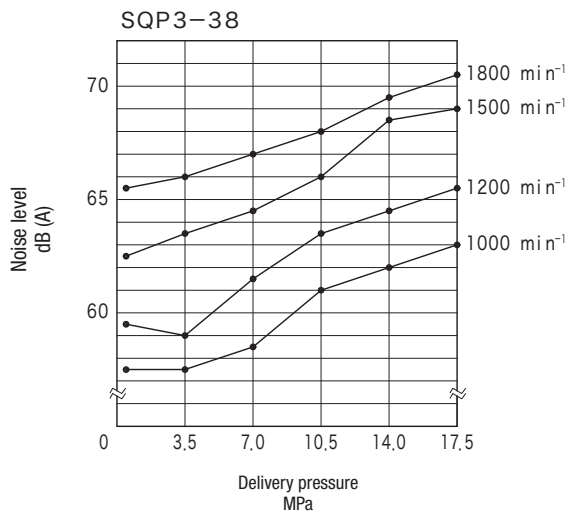
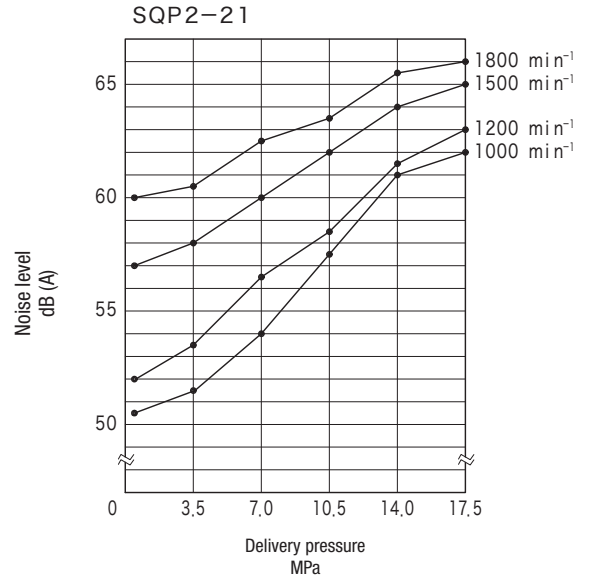
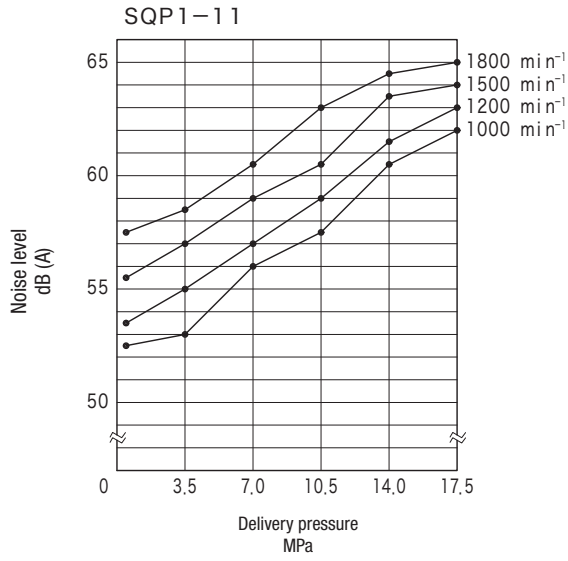
Notes on Operation

- See page B0-4 for Notes on Using Vane Pumps.

TOKYO KEIKI INC.

Noise Characteristics (at 20 mm²/s) (typical examples)

Measurement conditions: at suction pressure 0 MPa, and measured 1 m from rear of pump cover.



Delivery, Shaft Input Power (at 20 mm²/s) (typical examples)

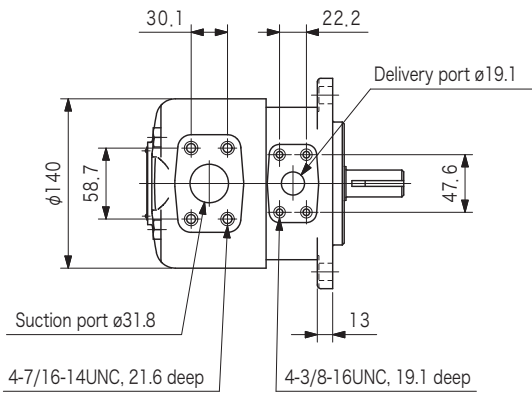
Model Code	Speed min ⁻¹	Delivery L/min				Shaft Input kW			
		0.7 MPa	7 MPa	14 MPa	17.5 MPa	0.7 MPa	7 MPa	14 MPa	17.5 MPa
SQP (S) 1-2	1000	7.5	6.0	4.4	—	0.2	1.2	2.1	—
	1200	9.5	8.5	6.4	—	0.3	1.5	2.5	—
	1500	11.2	9.3	7.4	—	0.3	1.8	3.3	—
	1800	13.5	11.2	8.9	—	0.4	2.2	3.9	—
SQP (S) 1-3	1000	10.2	8.8	7.3	—	0.3	1.5	3.2	—
	1200	12.5	11.0	9.4	—	0.4	1.8	3.8	—
	1500	15.3	13.7	12.0	—	0.5	2.3	4.8	—
	1800	18.4	16.9	15.2	—	0.5	2.8	5.7	—
SQP (S) 1-4	1000	12.8	12.3	10.8	10.0	0.4	1.8	3.8	4.7
	1200	16.0	15.0	13.5	13.0	0.5	2.2	4.5	5.6
	1500	19.2	17.7	16.1	15.7	0.6	2.8	5.7	7.0
	1800	23.1	21.3	19.4	19.0	0.7	3.3	6.8	8.5
SQP (S) 1-5	1000	16.7	15.7	14.7	14.2	0.4	2.9	4.9	6.1
	1200	20.0	19.0	18.0	17.5	0.5	3.3	5.9	7.3
	1500	25.0	24.0	23.0	22.5	0.6	4.0	7.4	9.2
	1800	30.0	29.0	28.0	27.5	0.6	4.3	8.8	10.9
SQP (S) 1-6	1000	19.2	18.2	17.0	16.2	0.4	3.1	5.6	6.7
	1200	23.0	22.0	20.5	20.0	0.5	3.6	6.6	8.1
	1500	28.5	27.5	26.0	25.0	0.6	4.4	8.3	10.0
	1800	34.5	33.5	32.0	31.0	0.7	5.3	9.9	12.0
SQP (S) 1-7	1000	22.9	21.4	19.8	18.9	0.5	3.5	6.3	7.7
	1200	27.5	26.0	24.4	23.5	0.6	4.1	7.5	9.3
	1500	34.4	32.9	31.3	30.4	0.7	5.1	9.4	11.5
	1800	41.3	39.8	38.2	37.3	0.8	6.0	11.2	13.9
SQP (S) 1-8	1000	26.2	24.2	22.6	21.1	0.5	4.0	6.8	8.5
	1200	31.5	29.5	27.9	26.4	0.6	4.6	8.2	10.2
	1500	39.4	37.4	35.8	34.3	0.8	5.6	10.2	12.7
	1800	47.2	45.2	43.6	42.1	0.8	6.7	12.0	15.1
SQP (S) 1-9	1000	28.3	26.6	24.5	23.7	0.6	4.3	7.4	9.2
	1200	34.0	32.0	29.4	28.4	0.7	4.8	9.3	11.5
	1500	42.5	40.0	36.8	35.5	0.8	6.1	11.0	13.8
	1800	51.0	47.9	44.1	42.6	0.9	7.3	13.1	16.3
SQP (S) 1-11	1000	35.0	33.0	30.4	29.4	0.7	5.0	9.4	11.6
	1200	42.0	40.0	37.4	36.4	0.8	5.8	11.2	14.0
	1500	52.5	50.5	47.9	46.9	1.0	7.0	14.1	17.4
	1800	63.2	61.0	58.4	57.4	1.0	8.5	16.5	20.7
SQP (S) 1-12	1000	37.9	36.4	34.3	—	0.7	5.7	10.6	—
	1200	45.5	44.0	41.9	—	0.9	6.6	12.7	—
	1500	56.9	55.4	53.3	—	1.1	8.1	15.9	—
	1800	68.2	66.7	64.6	—	1.1	9.6	18.8	—
SQP (S) 1-14	1000	44.2	42.7	40.6	—	1.0	6.7	12.4	—
	1200	53.0	51.5	49.4	—	1.1	8.0	14.9	—
	1500	66.0	64.0	61.9	—	1.3	9.8	18.6	—
	1800	79.5	77.5	75.4	—	1.4	11.7	22.1	—
SQP (S) 2-10	1000	32.5	29.4	25.9	24.4	0.9	5.0	9.5	11.5
	1200	39.0	35.9	32.4	30.9	1.0	5.9	11.3	13.8
	1500	48.8	45.7	42.2	40.7	1.2	7.3	14.1	17.1
	1800	58.5	55.4	51.9	50.4	1.3	8.7	16.8	20.5
SQP (S) 2-12	1000	38.3	35.9	33.2	31.7	1.0	5.8	11.1	13.7
	1200	46.0	43.6	40.9	39.4	1.1	6.6	13.3	16.3
	1500	57.5	55.1	52.4	50.9	1.3	8.5	16.4	20.3
	1800	69.0	66.6	63.9	62.4	1.4	10.0	19.7	24.3
SQP (S) 2-14	1000	43.3	40.1	36.7	35.7	1.2	6.5	12.4	15.4
	1200	52.0	48.4	45.4	44.4	1.3	7.6	14.8	18.4
	1500	65.0	61.8	58.4	57.4	1.5	9.6	18.4	22.8
	1800	78.0	74.8	71.4	70.4	1.7	11.3	21.9	27.2
SQP (S) 2-15	1000	46.7	43.6	40.6	39.1	1.2	6.9	13.3	16.2
	1200	56.0	52.9	49.9	48.4	1.3	8.2	15.8	19.4
	1500	70.0	66.9	63.9	62.4	1.5	10.1	19.7	24.1
	1800	84.0	80.9	77.9	76.4	1.7	12.0	23.5	28.9
SQP (S) 2-17	1000	52.5	49.6	46.4	44.4	1.4	7.5	14.6	17.9
	1200	63.0	60.6	56.9	54.9	1.5	9.2	17.3	21.4
	1500	78.8	75.9	72.7	70.7	1.7	11.0	21.5	26.6
	1800	94.5	91.6	88.4	86.4	1.9	13.2	25.6	31.8

Delivery, Shaft Input Power (at 20 mm²/s) (typical examples)

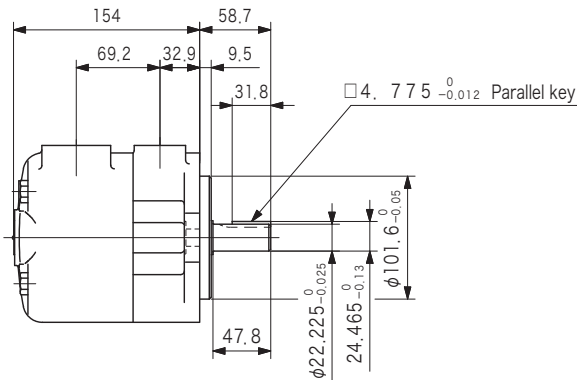
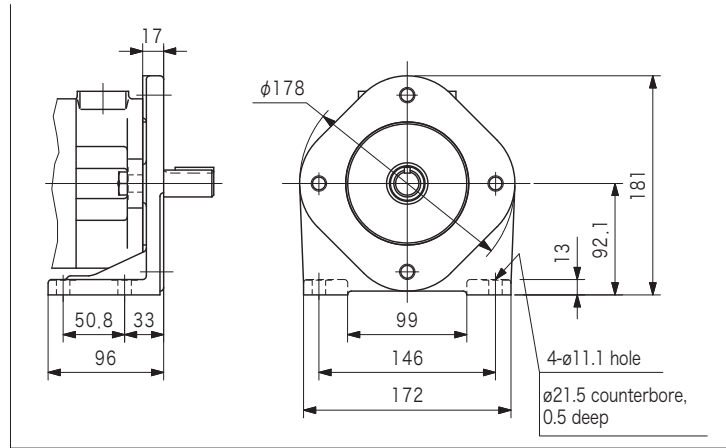
Model Code	Speed min ⁻¹	Delivery L/min				Shaft Input kW			
		0.7 MPa	7 MPa	14 MPa	17.5 MPa	0.7 MPa	7 MPa	14 MPa	17.5 MPa
SQP (S) 2-19	1000	59.2	56.1	53.1	50.1	1.5	8.7	16.3	20.5
	1200	71.0	67.9	64.9	61.9	1.7	10.2	19.4	24.5
	1500	88.7	85.6	82.6	79.6	1.9	12.5	24.6	30.4
	1800	106.5	103.6	100.6	97.6	2.2	15.0	28.8	36.4
SQP (S) 2-21	1000	65.0	62.1	58.9	56.9	1.6	9.4	17.9	22.2
	1200	78.0	74.9	71.9	69.9	1.8	11.2	21.4	26.5
	1500	97.5	94.6	91.4	89.4	2.1	13.7	26.6	32.9
	1800	117.0	113.9	110.9	108.9	2.3	16.3	31.7	39.4
SQP (S) 3-17	1000	53.3	47.2	41.1	38.1	1.4	6.9	12.8	15.8
	1200	64.0	57.9	51.8	48.8	1.5	8.2	15.3	18.9
	1500	80.0	73.9	67.8	64.8	1.7	10.0	19.0	23.4
	1800	96.0	89.9	83.8	80.8	1.9	11.8	22.5	27.9
SQP (S) 3-21	1000	66.7	60.6	54.5	51.5	1.6	9.1	17.1	21.0
	1200	80.0	73.9	67.8	64.8	1.8	10.7	20.4	25.0
	1500	100.0	93.9	87.8	84.8	2.0	13.2	25.3	31.0
	1800	120.0	113.9	107.8	104.8	2.3	15.7	31.1	37.1
SQP (S) 3-25	1000	79.2	73.4	67.0	64.0	1.8	10.9	20.9	25.6
	1200	95.0	88.9	82.8	79.8	2.0	12.7	25.0	30.6
	1500	119.0	112.9	106.8	103.8	2.3	16.0	31.0	38.0
	1800	142.0	135.9	129.8	126.8	2.6	19.1	37.1	45.5
SQP (S) 3-30	1000	95.0	88.3	80.7	77.8	1.8	12.8	25.2	31.1
	1200	114.0	106.9	99.7	96.8	2.0	15.3	30.1	37.2
	1500	142.0	135.9	127.7	124.8	2.4	19.0	37.4	46.4
	1800	171.0	163.9	156.7	153.8	2.7	22.6	44.9	55.6
SQP (S) 3-32	1000	100.0	91.8	84.7	81.8	2.1	13.8	26.5	32.8
	1200	120.0	111.8	104.7	101.8	2.3	16.3	31.6	39.3
	1500	150.0	141.8	134.7	131.8	2.7	20.2	39.4	48.8
	1800	180.0	171.8	164.7	161.8	3.1	24.1	47.0	58.5
SQP (S) 3-35	1000	109.0	102.9	94.9	92.0	2.2	14.5	28.1	35.0
	1200	131.0	123.9	116.7	113.8	2.5	17.3	33.7	41.8
	1500	164.0	156.9	149.7	146.8	2.9	21.3	41.8	52.0
	1800	196.0	188.9	181.7	178.8	3.3	25.4	51.4	62.3
SQP (S) 3-38	1000	118.0	110.9	101.7	99.1	2.7	15.8	30.4	37.6
	1200	142.0	133.8	125.7	122.8	3.0	18.9	36.2	44.9
	1500	177.0	169.9	160.7	157.8	3.4	23.1	44.9	55.8
	1800	213.0	204.8	196.7	193.8	3.9	27.5	53.6	66.7
SQP (S) 4-30	1000	96.0	86.8	76.6	71.7	1.6	13.7	25.6	31.5
	1200	115.0	105.8	95.6	90.7	2.0	15.3	30.6	37.7
	1500	144.0	134.8	124.6	119.7	2.4	19.0	38.1	47.0
	1800	172.5	163.3	153.1	148.2	2.8	22.7	45.6	56.3
SQP (S) 4-35	1000	109.0	99.8	89.6	84.7	1.7	14.5	29.0	35.8
	1200	131.0	121.8	111.6	106.7	2.0	17.3	34.7	42.8
	1500	164.0	156.9	144.6	139.7	2.4	21.6	43.2	53.4
	1800	196.5	187.3	177.1	171.7	2.9	25.9	51.9	64.1
SQP (S) 4-38	1000	128.0	118.8	108.6	103.7	2.7	17.1	34.2	41.8
	1200	154.0	144.8	134.6	129.7	3.0	20.4	40.8	50.0
	1500	192.5	183.3	173.1	168.2	3.5	25.3	50.8	62.2
	1800	231.0	221.8	211.6	206.7	4.0	30.1	60.7	74.4
SQP (S) 4-42	1000	134.0	124.8	114.6	109.7	2.7	18.0	35.9	44.4
	1200	161.0	151.8	141.6	136.7	3.0	21.4	42.8	53.0
	1500	201.0	191.8	181.6	176.7	3.5	26.5	53.3	66.0
	1800	241.0	231.8	221.6	216.7	4.0	31.6	63.7	79.0
SQP (S) 4-50	1000	156.0	146.8	136.6	131.7	3.1	20.6	40.2	50.3
	1200	187.0	177.8	167.6	162.7	3.5	24.5	47.9	60.2
	1500	234.0	224.8	214.6	209.7	4.0	30.3	59.7	74.8
	1800	280.0	270.8	260.6	255.7	4.7	36.1	71.3	89.6
SQP (S) 4-60	1000	189.0	177.8	165.5	159.6	4.0	24.9	47.8	59.8
	1200	227.0	215.8	203.5	197.6	4.5	29.6	57.1	71.4
	1500	284.0	272.8	260.5	254.6	5.2	36.5	71.0	88.8
	1800	340.0	328.8	316.5	310.6	5.9	43.5	84.8	106.1

Dimensions

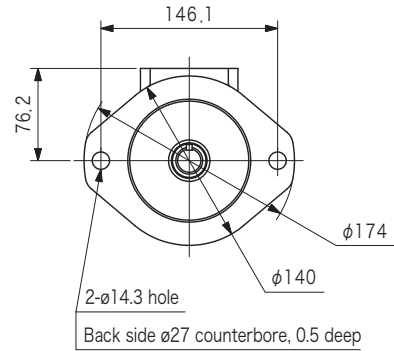
SQP1 (Flange mounting)



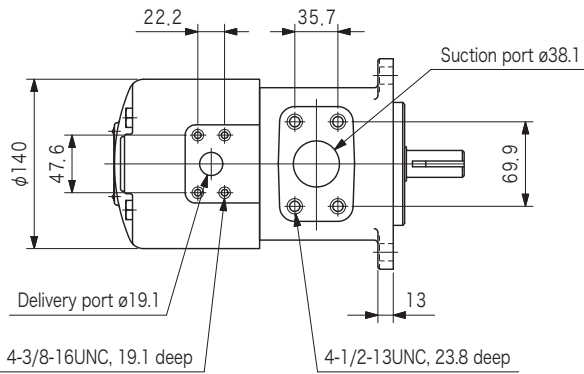
(Foot mounting)



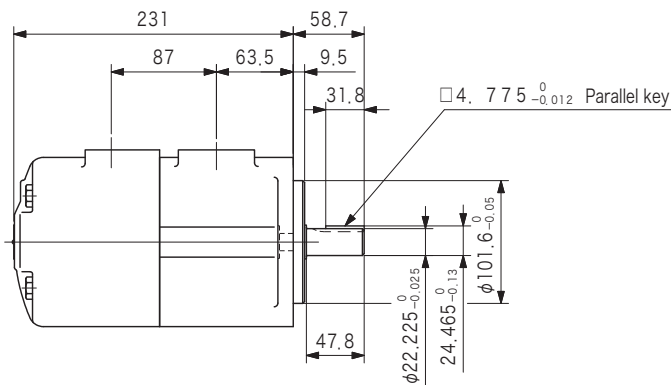
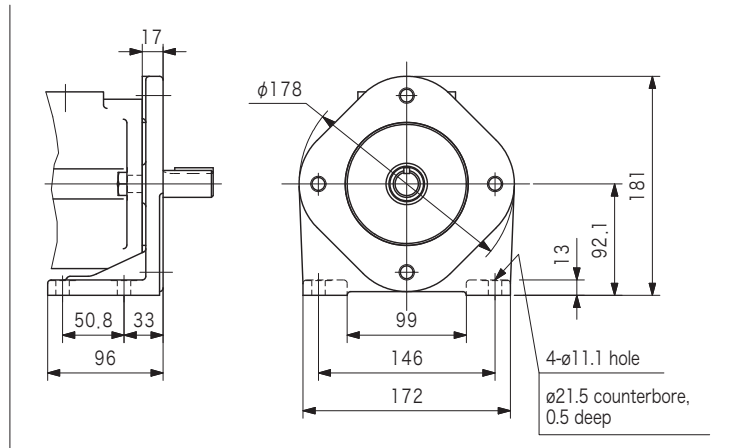
Note: The shaft shown in the figure is a type 1.



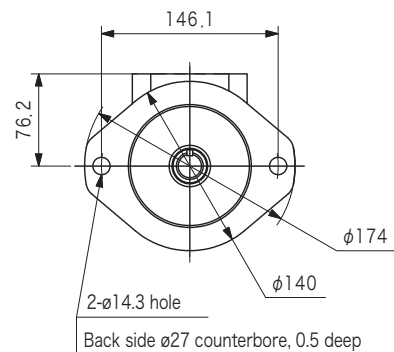
SQPS1 (Flange mounting)



(Foot mounting)

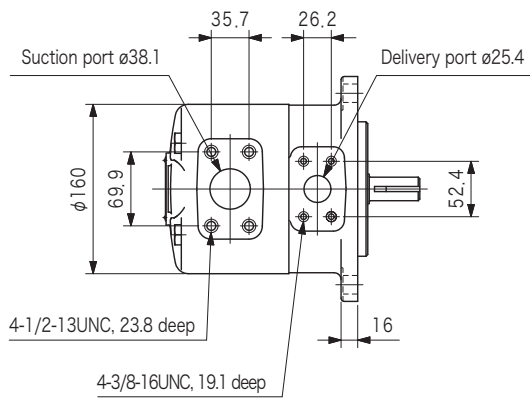


Note: The shaft shown in the figure is a type 1.

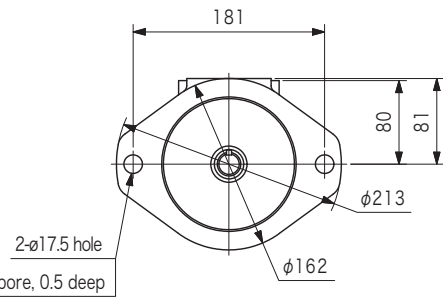
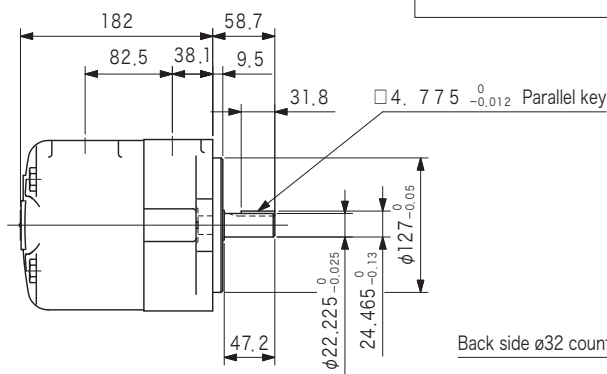
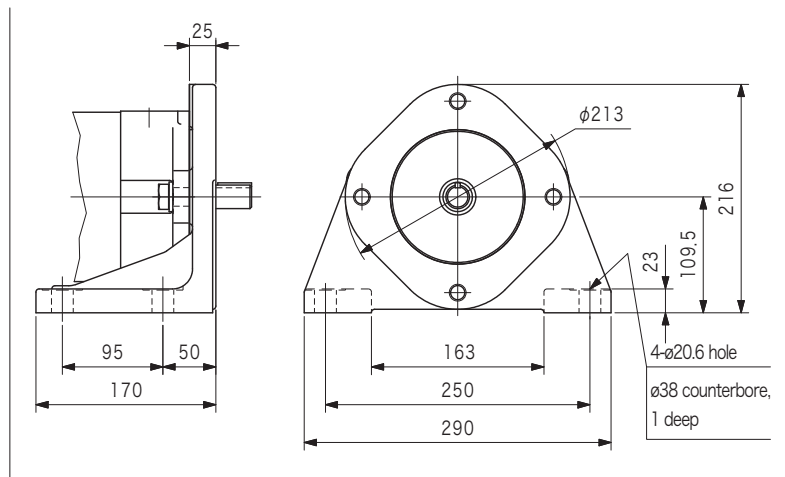


Dimensions

SQP2 (Flange mounting)

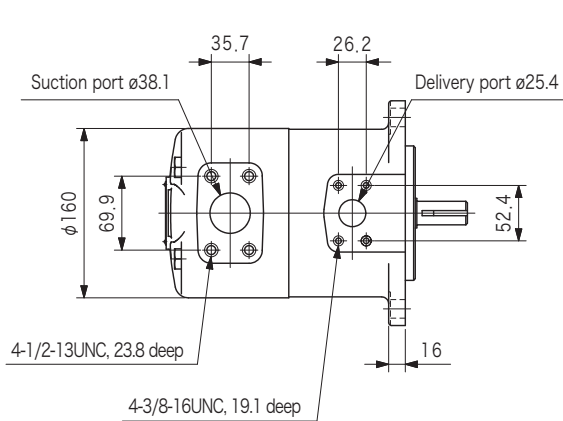


(Foot mounting)

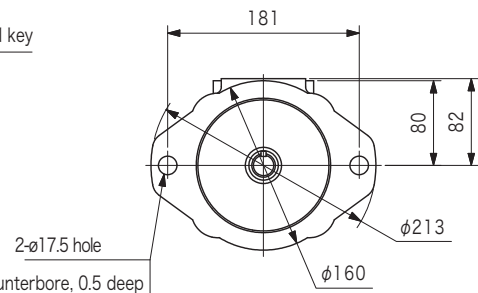
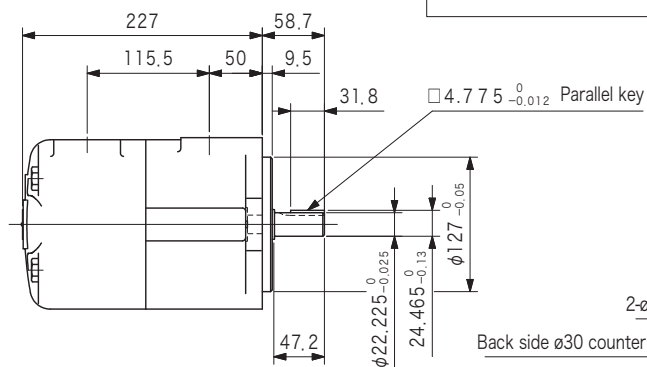
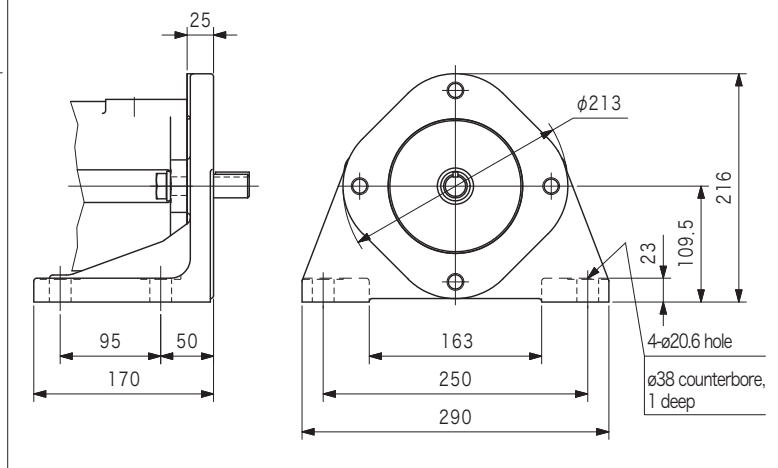


Note: The shaft shown in the figure is a type 1.

SQPS2 (Flange mounting)



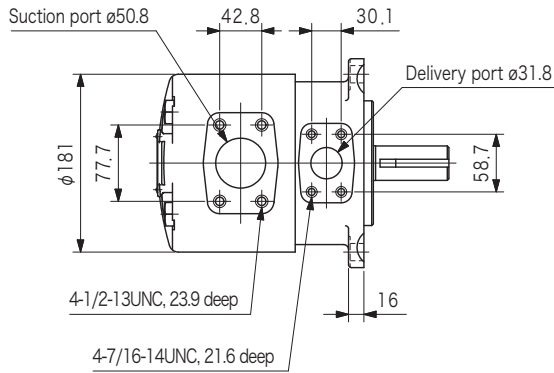
(Foot mounting)



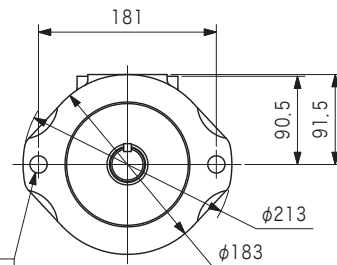
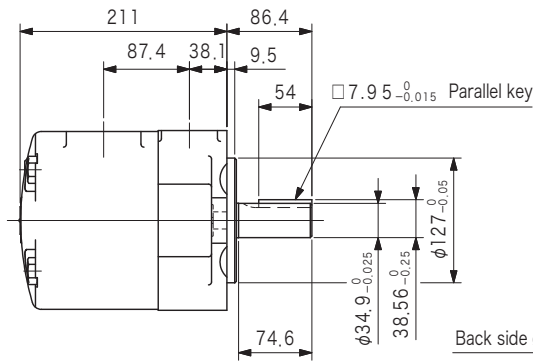
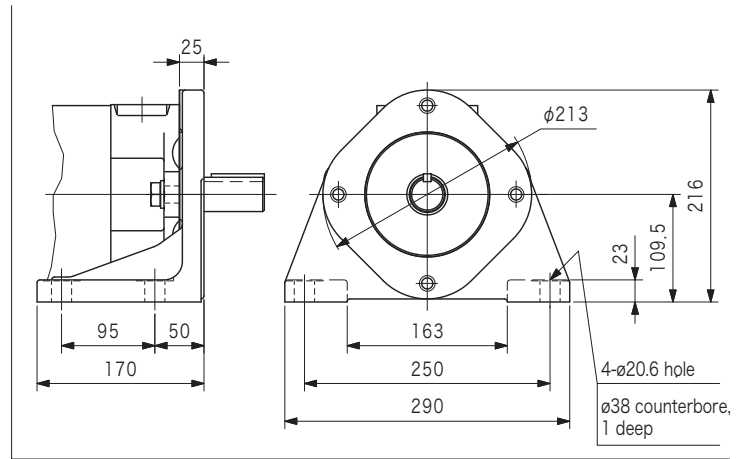
Note: The shaft shown in the figure is a type 1.

Dimensions

SQP3 (Flange mounting)

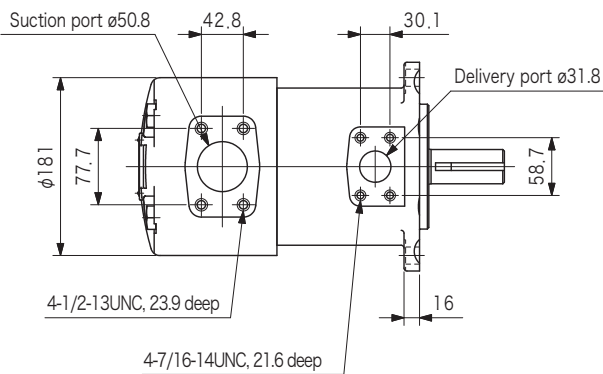


(Foot mounting)

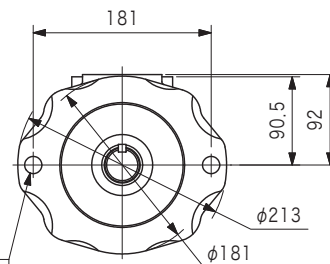
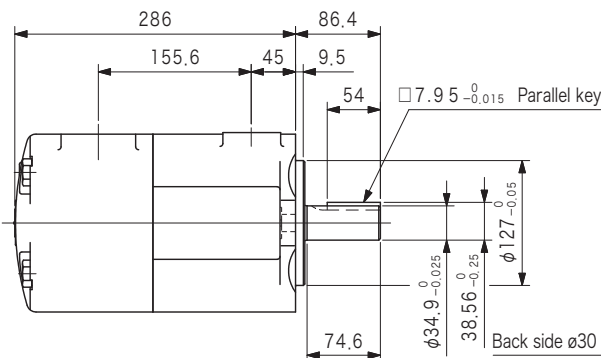
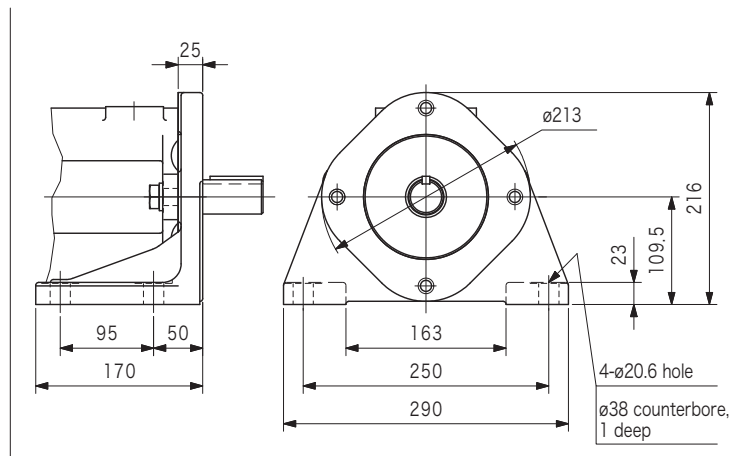


Note: The shaft shown in the figure is a type 86.

SQPS3 (Flange mounting)



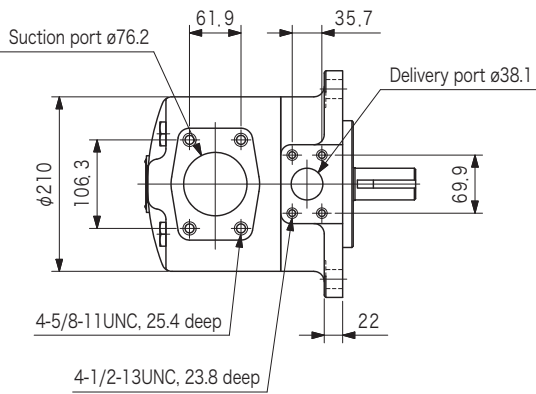
(Foot mounting)



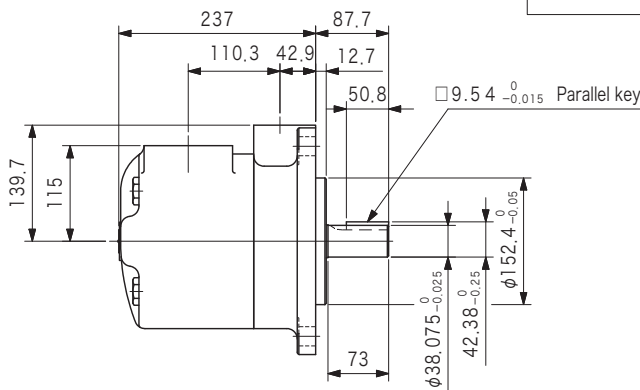
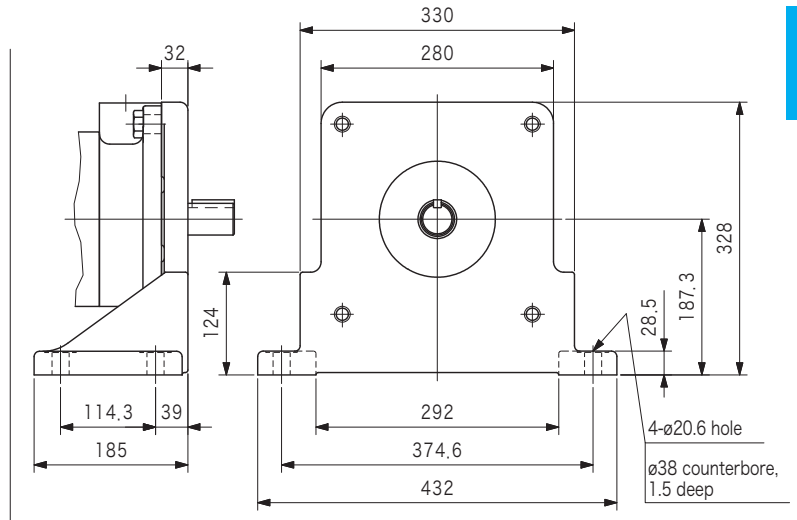
Note: The shaft shown in the figure is a type 86.

Dimensions

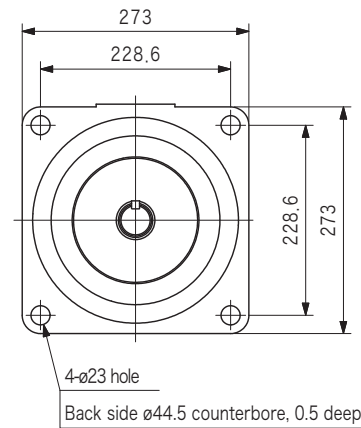
SQP4 (Flange mounting)



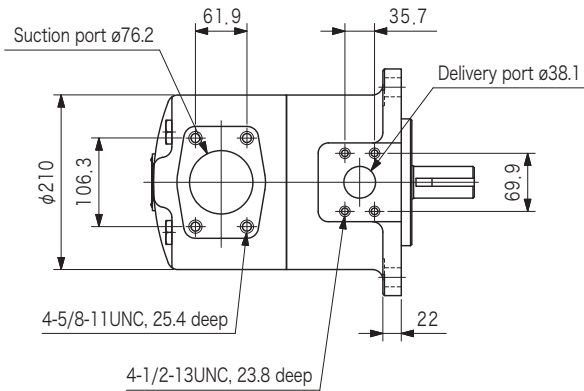
(Foot mounting)



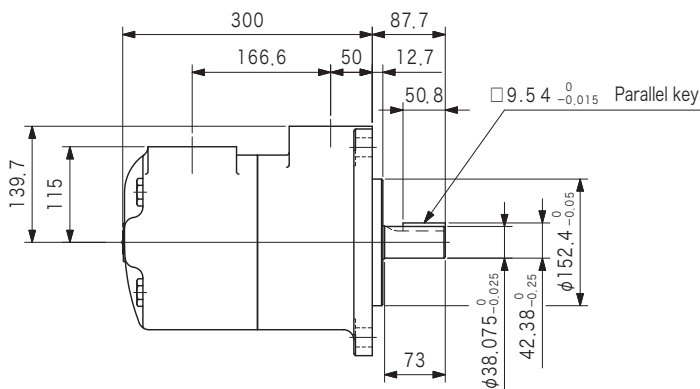
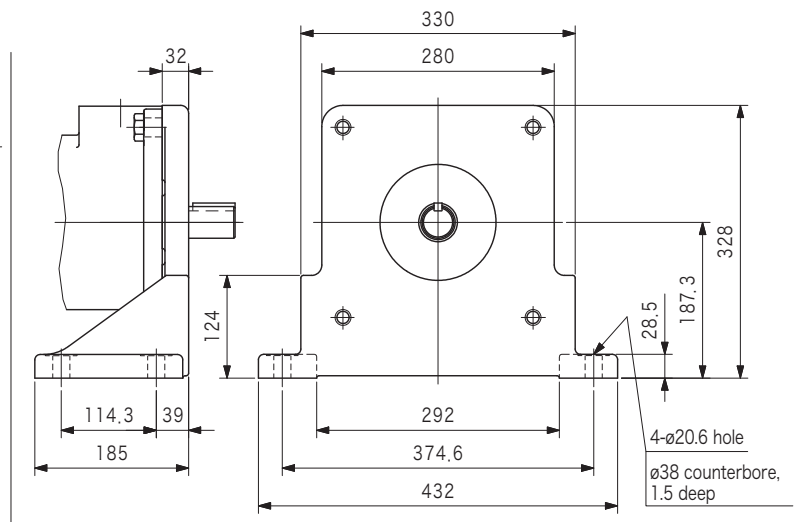
Note: The shaft shown in the figure is a type 86.



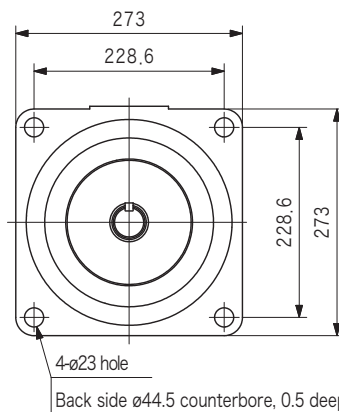
SQPS4 (Flange mounting)



(Foot mounting)



Note: The shaft shown in the figure is a type 86.

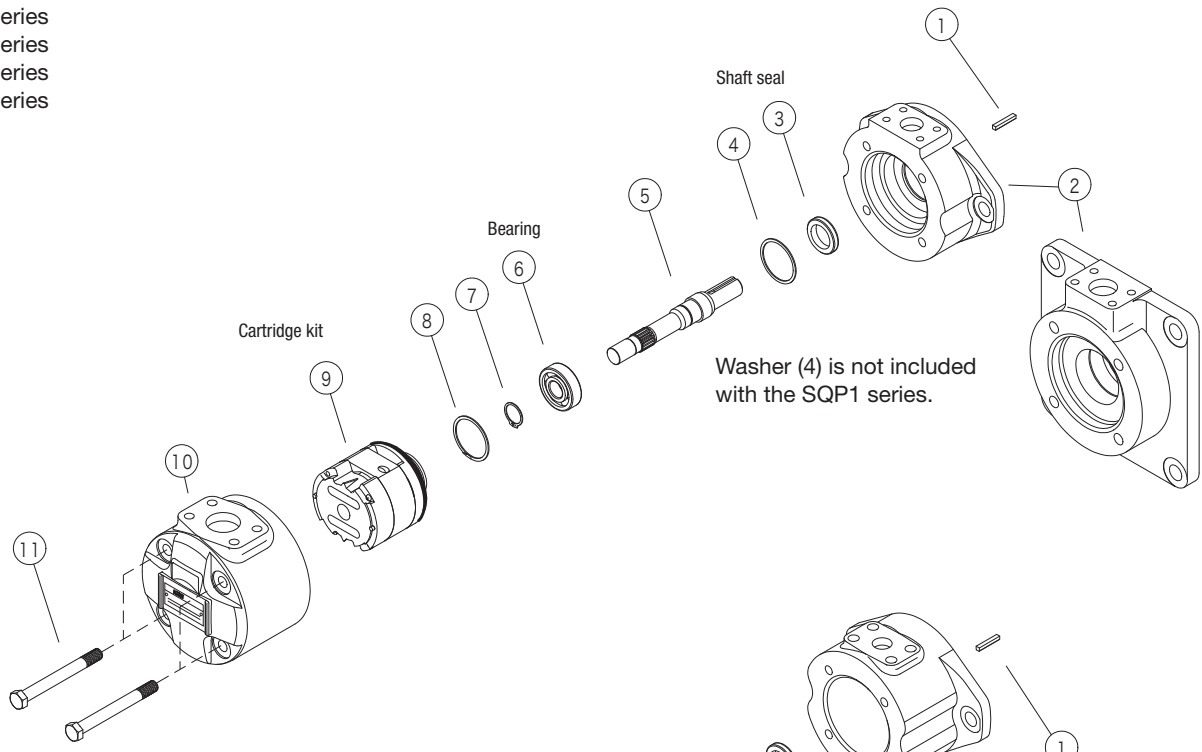


Construction

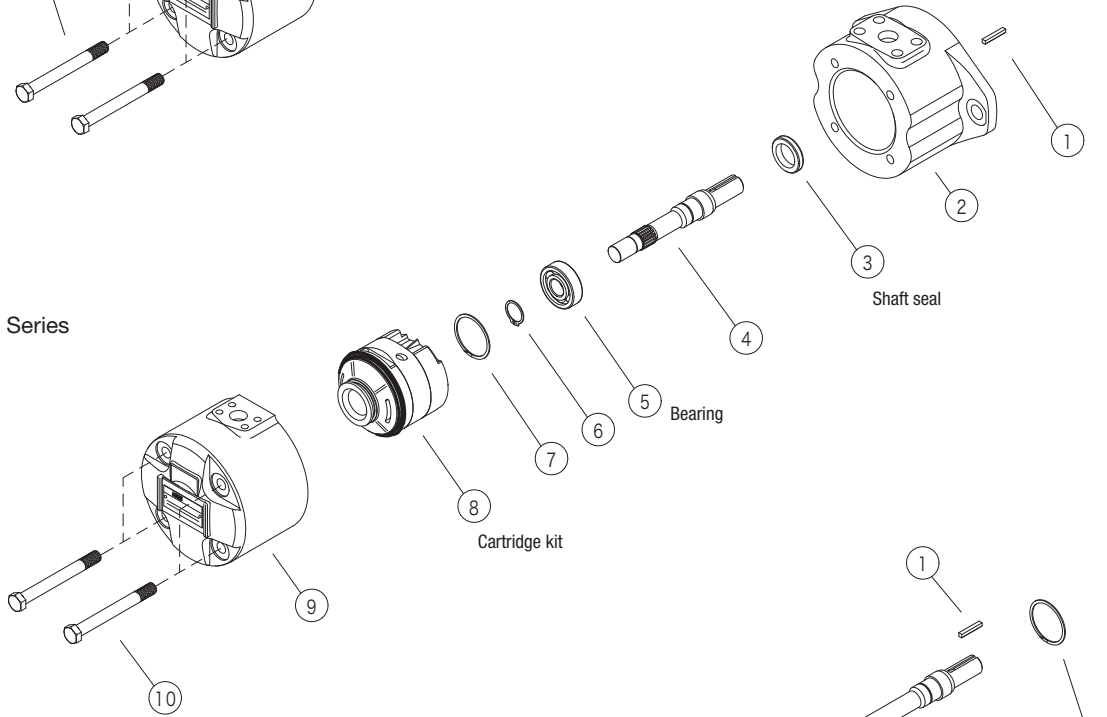
SQP1 Series
 SQP2 Series
 SQP3 Series
 SQP4 Series

B
 1-10

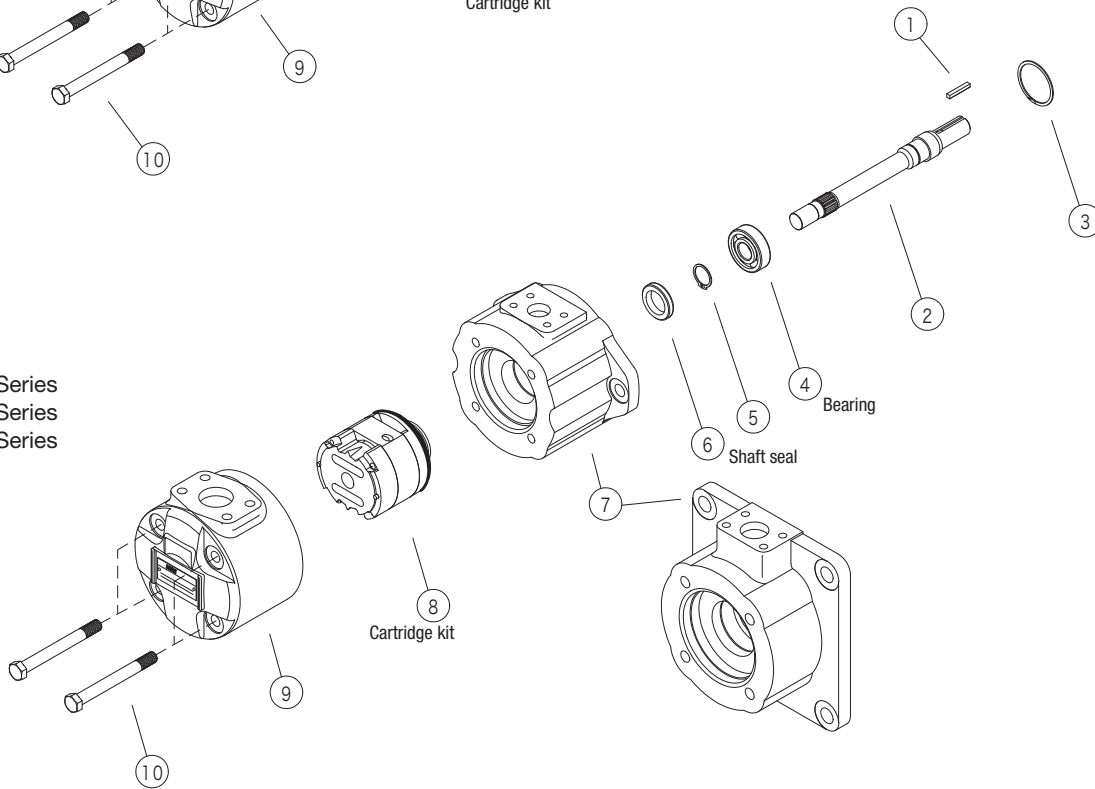
Fixed Displacement Vane Pumps



SQPS1 Series



SQPS2 Series
 SQPS3 Series
 SQPS4 Series



Construction

● Seal, Bearing Table

Series	Seal Kit P/N	Shaft Seal P/N	Bearing P/N
(F11)-SQP1	VA10852A(40028520)	VP191668(40015857)	0070 62041
(F11)-SQP2	40038620(40038629)	VP191668(40015857)	0070 62051
(F11)-SQP3	40038621(40038630)	VP193428(40015856)	0070 63061
(F11)-SQP4	40038622(40038631)	VP195287(40015858)	0070 63071
(F11)-SQPS1	VA10852A(40028520)	VP191668(40015857)	0070 62041
(F11)-SQPS2	VA9173A(40028880)	VP229236(40016564)	0072 62051
(F11)-SQPS3	VA9174A(40028881)	VP191668(40015857)	0072 63061
(F11)-SQPS4	VA9175A(40028882)	VP232855(40016565)	0072 63071

Note: • Shaft seal included in seal kit.
• Seal kit P/N and shaft seal P/N - () refers to F11.

• Bearing P/N - bold characters refer to JIS B 1521 nominal number.
0070 indicates no shield, 0072 indicates both shields.

● Cartridge Kit Table

For Mineral oil based fluid

Series	Displacement Code	Cartridge Kit P/N	
SQP1	2	VA10842A	
	3	VA10843A	
	4	VA10844A	
	5	VA10845A	
	6	VA11078A	
	7	VA11104A	
	8	VA10846A	
	9	40018786	
	11	VA10847A	
	12	VA10848A	
	14	VA11199A	
	SQPS1	2	VA11079A
		3	VA11080A
		4	VA11081A
5		VA11082A	
6		VA11083A	
7		VA11084A	
8		VA11085A	
9		40028850	
11		VA11086A	
12		VA11087A	
SQP (S) 2	10	VA12087A	
	12	VA12088A	
	14	VA12089A	
	15	VA12090A	
	17	VA12091A	
	19	VA12273A	
SQP (S) 3	21	VA12092A	
	17	VA12260A	
	21	VA12118A	
	25	VA12058A	
	30	VA12059A	
	32	VA12119A	
SQP (S) 4	35	VA12060A	
	38	VA12061A	
	30	VA11211A	
	35	VA12122A	
	38	VA11212A	
	42	VA11213A	
SQP (S) 4	50	VA11214A	
	60	VA11215A	

For Water glycol based fluid

Series	Displacement Code	Cartridge Kit P/N	
F11-SQP1	2	VA12543A	
	3	VA12544A	
	4	VA12545A	
	5	VA12546A	
	6	VA12547A	
	7	VA12548A	
	8	VA12549A	
	9	40018790	
	11	VA12550A	
	12	VA12551A	
	14	VA12552A	
	F11-SQPS1	2	VA14305A
		3	VA14306A
		4	VA14307A
5		VA14308A	
6		VA14309A	
7		VA14310A	
8		VA14311A	
11		VA14312A	
12		VA14313A	
14		VA14314A	
F11-SQP (S) 2		10	VA12553A
		12	VA12554A
		14	VA12555A
		15	VA12556A
	17	VA12557A	
	19	VA12558A	
	21	VA12559A	
F11-SQP (S) 3	17	VA12560A	
	21	VA12561A	
	25	VA12562A	
	30	VA12563A	
	32	VA12564A	
	35	VA12565A	
	38	VA12566A	
F11-SQP (S) 4	30	VA12567A	
	35	VA12568A	
	38	VA12569A	
	42	VA12570A	
	50	VA12571A	
	60	VA12572A	

Note: • "L" is added as suffix to cartridge kit P/N for left hand rotation cartridge kit.
• Cartridge kit includes seals (O-rings, backup ring, etc.) but excluding shaft seal.