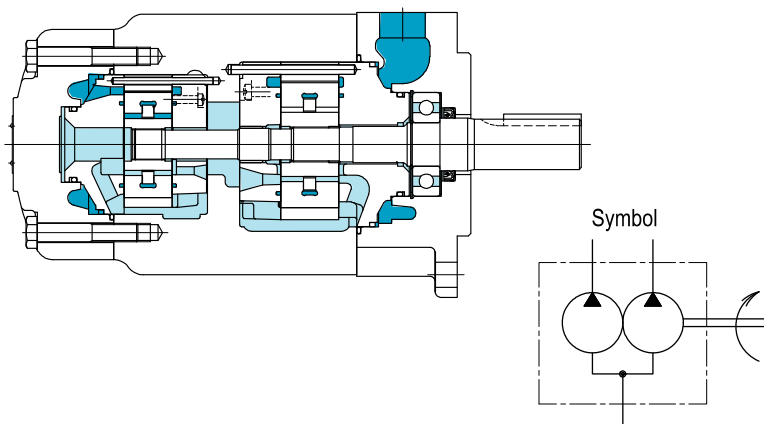


Low noise double fixed displacement vane pumps SQP/SQPS series

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VANE PUMPS



Model Code

(F3) - SQP (S) 32 - 35 - 17 - 86 CD (2) - (LH) - 18

1 2 3 4 5 6 7 8 9 10

- 1 Fluid
Omit for mineral oil
F3: phosphate ester
F11: water glycol
- 2 Low noise fixed displ. double vane pump
SQP(S)21 Series
SQP(S)31,32 Series
SQP(S)41,42,43 Series
- 3 Shaft end pump displacement

Series	Displacement
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 Cover end pump displacement

Series	Displacement
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

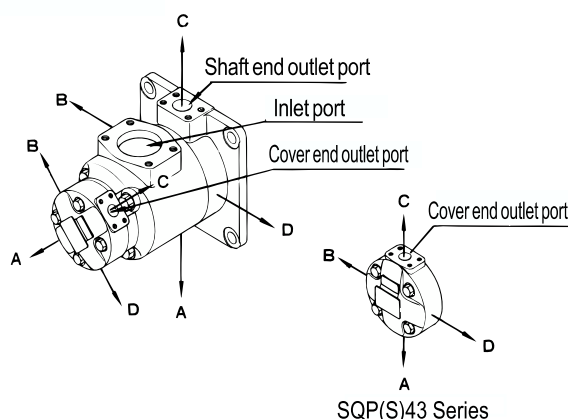
- 5 Shaft
86: parallel sq. key
- 6 Shaft end pump (viewed from cover end)
A: opposite inlet
B: 90° CCW from inlet
C: inline with inlet
D: 90° CW from inlet
- 7 Cover end pump (viewed from cover end)
A: 135° CCW from inlet
B: 45° CCW from inlet
C: 45° CW from inlet
D: 135° CW from inlet
Note: SQP(S) Series indicated in ()
- 8 Pump mounting
Omit for flange mounting
2* : foot mounting

Shaft end outlet position foot mounting surface (see schematics below)

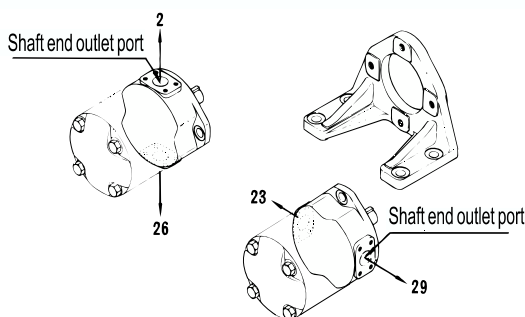
Foot Mount Code	Shaft End Outlet Position to Foot Mount Surface Viewed from Shaft End
2	up (12 o'clock)
23	right (3 o'clock)
26	down (6 o'clock)
29	left (9 o'clock)

- 9 Rotation (viewed from shaft end)
Omit for CW
LH: CCW
- 10 Design no

• Outlet port position



• Foot Mounting Position



Specifications

Model	Shaft End Pump			Cover End Pump			Max. Speed min ⁻¹	Minimum Speed min ⁻¹	
	Displacement	Delivery at 1000 min ⁻¹ 0.7Mpa L/min	Max. Working Press. MPa	Displacement	Delivery at 1000 min ⁻¹ 0.7Mpa L/min	Max. Working Press. MPa			
SQP (S) 21	10	32.5	17.5 * (14)	2	7.5	14 * (14)	1800 ▲ (1200) * (1200)	600	
	12	38.3		3	10.2				
	14	43.3		4	12.8	17.5 * (14)			
	15	46.7		5	16.7				
	17	52.5		6	19.2				
	19	59.2		7	22.9				
	21	65.0		8	26.2				
SQP (S) 31	17	53.3	17.5 * (14)	9	28.3	16 * (14)			
	21	66.7		11	35.0				14 * (14)
	25	79.2		12	37.9				
	30	95.0		14	44.2				
	32	100.0							
	35	109.0							
	38	118.0							
SQP (S) 41	30	96.0	17.5 * (14)						
	35	109.0							
	38	128.0							
	42	134.0							
	50	156.0							
	60	189.0							
SQP (S) 32	17	53.3	17.5 * (14)	10	32.5	17.5 * (14)	1800 ▲ (1200) * (1200)	600	
	21	66.7		12	38.3				
	25	79.2		14	43.3				
	30	95.0		15	46.7				
	32	100.0							
	35	109.0							
	38	118.0							
SQP (S) 42	30	96.0	17.5 * (14)	17	52.5	17.5 * (14)			
	35	109.0		19	59.2				
	38	128.0		21	65.0				
	42	134.0							
	50	156.0							
	60	189.0							
SQP (S) 43	30	96.0	17.5 * (14)	17	53.3	17.5 * (14)			1800 ▲ (1200) * (1200)
	35	109.0		21	66.7				
	38	128.0		25	79.2				
	42	134.0		30	95.0				
	50	156.0		32	100.0				
	60	189.0		35	109.0				
				38	118.0				

*F3-SQP(S)max. working pressure and sped with phosphate ester fluid

▲F11-SQP(S)max. speed with water-glycol fluid

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VANE PUMPS

Weight

Unit : kg

Model	SQP		SQPS	
	Flange Mount	Foot Mount	Flange Mount	Foot Mount
SQP (S) 21	31.5	41.0	41.0	50.5
SQP (S) 31	46.0	55.5	56.0	65.5
SQP (S) 32	48.0	57.5	62.0	71.5
SQP (S) 41	74.0	99.0	83.0	108.0
SQP (S) 42	80.0	105.0	88.0	113.0
SQP (S) 43	88.5	113.0	89.0	123.0

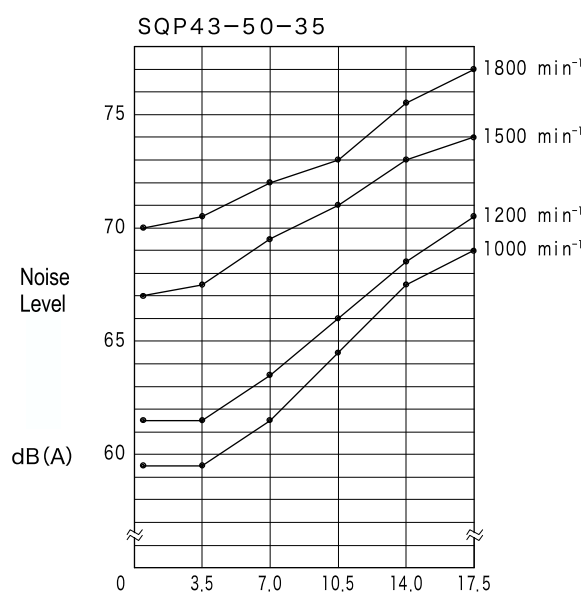
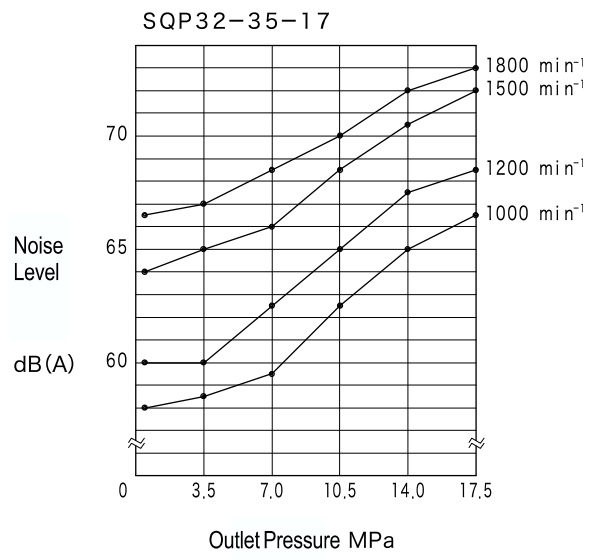
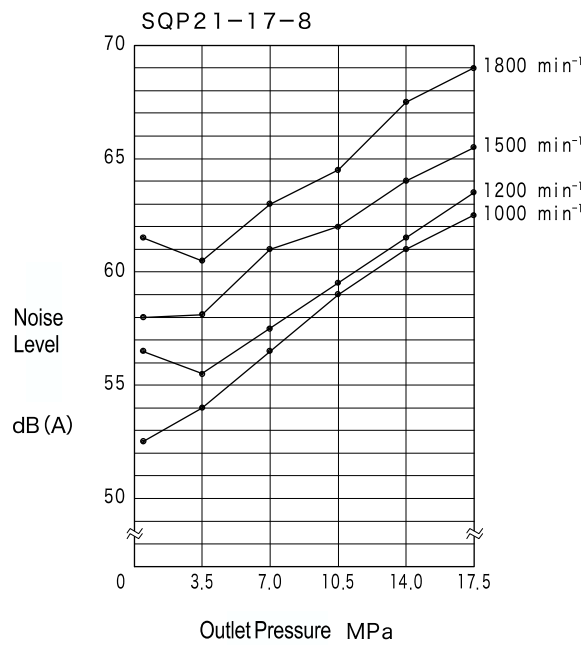
Delivery, Shaft Input Power

Model	Delivery, Shaft Input Power	
	Shaft End Pump	Cover End Pump
SQP (S) 21	Same as SQP (S) 2 Series	Same as SQP (S) 1 Series
SQP (S) 31	Same as SQP (S) 3 Series	
SQP (S) 41	Same as SQP (S) 4 Series	
SQP (S) 32	Same as SQP (S) 3 Series	Same as SQP (S) 2 Series
SQP (S) 42	Same as SQP (S) 4 Series	
SQP (S) 43	Same as SQP (S) 4 Series	Same as SQP (S) 3 Series

※SQP (S) 1～4 delivery, shaft input - see page B10, 11.

Noise Characteristics

Measurement conditions: ISO VG32 oil at 50 degrees C, inlet pressure 0 MPa, and measured 1m from rear of pump cover



Shaft Input (Shaft Torque) Limitation

Shaft torque limitations of double pumps are shown in the table. Please insure that the torque limits shown in the table are not exceeded when the total load of the two pumps are at maximum. Please calculate shaft torque from the operating speed and shaft input.

N: operating speed (min^{-1})

L: shaft input sum (kW)

Shaft torque: $T = (60 \times 1000 / 2\pi N) \times L = (9554 / N) \times L \text{ (N}\cdot\text{m)}$

(Example) SQP43-60-38, operating speed 1800 min^{-1} , first pump 14MPa, second pump 17.5MPa under max. load,

First pump shaft input: from table on page B11, SQP4-60 shaft input is 84.8kW

Second pump shaft input: from table on B11, SQP3-38 shaft input is 66.7kW

Shaft input sum: $L = 84.6 + 66.7 = 151.5 \text{ (kW)}$

Shaft input sum substituted for torque in the table, shaft input torque: $T = 9554 \times 151.5 / 1800 = 804.1 \text{ (N}\cdot\text{m)}$

Thus, the shaft torque of the SQP43 should be below the limitation of 820 N·m.

Please confirm shaft torque using this procedure.

Model	Shaft Torque Limitation N · m
SQP (S) 21	360
SQP (S) 31	610
SQP (S) 32	610
SQP (S) 41	820
SQP (S) 42	820
SQP (S) 43	820

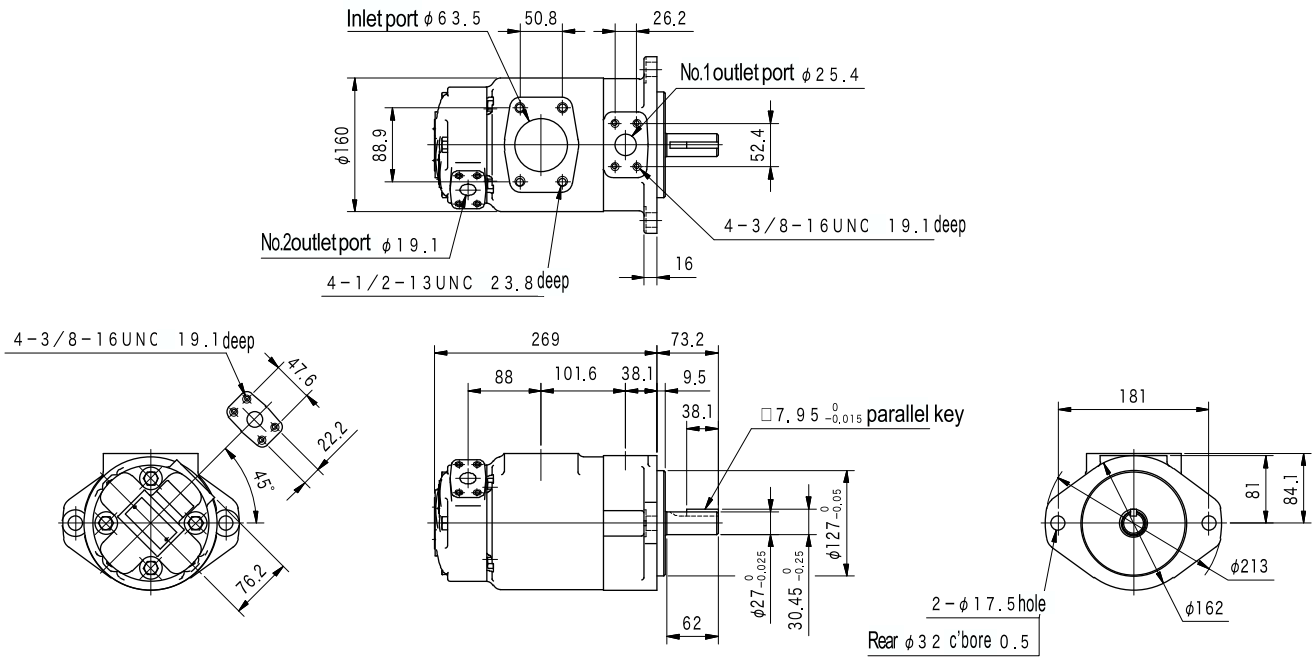
Piping Flange (Conforming to SAE J518c at Standard Pressure]

- Pump flange not included.
- Flanges (incl. hex socket bolts, spring washers, and O-rings) should be ordered separately from the table below.
- See page Q12 for details such as external dimensions, etc.

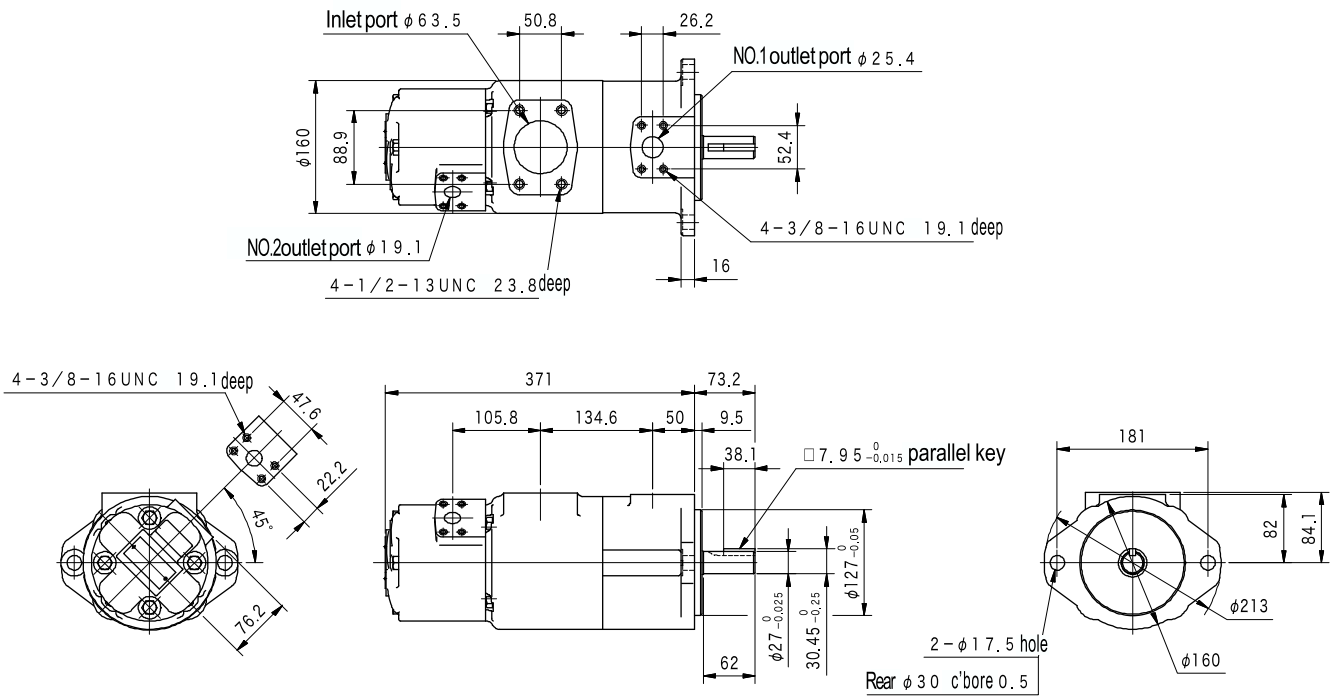
Model	Type	Flange Model					
		Inlet Port		No. 1 Outlet Port (Shaft End)		No. 2 Outlet Port (Shaft End)	
		Code		Code		Code	
SQP (S) 21	Threaded	2-1/2	FL1-20-20P-10-JA-S4-J	1	FL1-8-08P-10-JA-S4-J	3/4	FL1-6-06P-10-JA-S4-J
	Welded		FL1-20-20W-10-JA		FL1-8-08W-10-JA		FL1-6-06W-10-JA
SQP (S) 31	Threaded	3	FL1-24-24P-10-JA-S4-J	1-1/4	FL1-10-10P-10-JA-S4-J	3/4	FL1-6-06P-10-JA-S4-J
	Welded		FL1-24-24W-10-JA		FL1-10-10W-10-JA		FL1-6-06W-10-JA
SQP (S) 32	Threaded	3	FL1-24-24P-10-JA-S4-J	1-1/4	FL1-10-10P-10-JA-S4-J	1	FL1-8-08P-10-JA-S4-J
	Welded		FL1-24-24W-10-JA		FL1-10-10W-10-JA		FL1-8-08W-10-JA
SQP (S) 41	Threaded	3-1/2	FL1-28-28P-10-JA-S4-J	1-1/2	FL1-12-12P-10-JA-S4-J	3/4	FL1-6-06P-10-JA-S4-J
	Welded		FL1-28-28W-10-JA		FL1-12-12W-10-JA		FL1-6-06W-10-JA
SQP (S) 42	Threaded	3-1/2	FL1-28-28P-10-JA-S4-J	1-1/2	FL1-12-12P-10-JA-S4-J	1	FL1-8-08P-10-JA-S4-J
	Welded		FL1-28-28W-10-JA		FL1-12-12W-10-JA		FL1-8-08W-10-JA
SQP (S) 43	Threaded	4	FL1-32-32P-10-JA-S4-J	1-1/2	FL1-12-12P-10-JA-S4-J	1-1/4	FL1-10-10P-10-JA-S4-J
	Welded		FL1-32-32W-10-JA		FL1-12-12W-10-JA		FL1-10-10W-10-JA

Dimensions

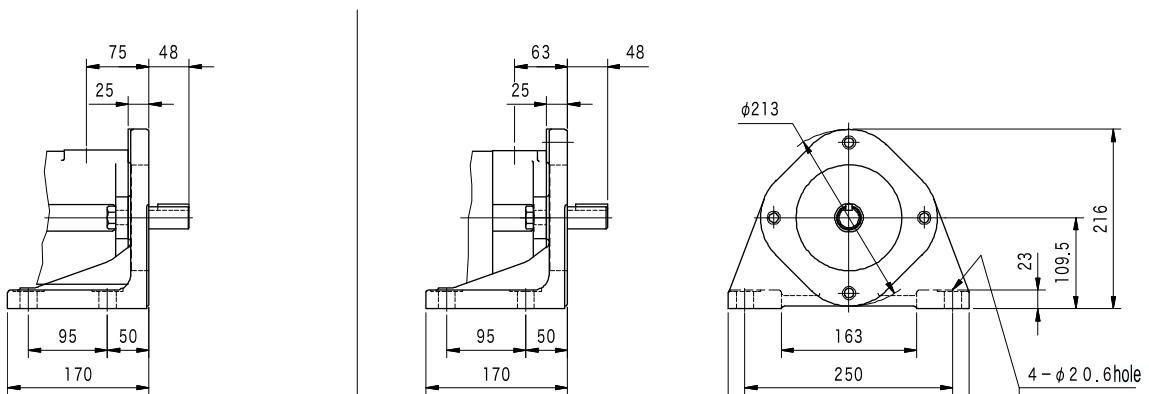
S Q P 2 1 (Flange Mount)



S Q P S 2 1 (Flange Mount)

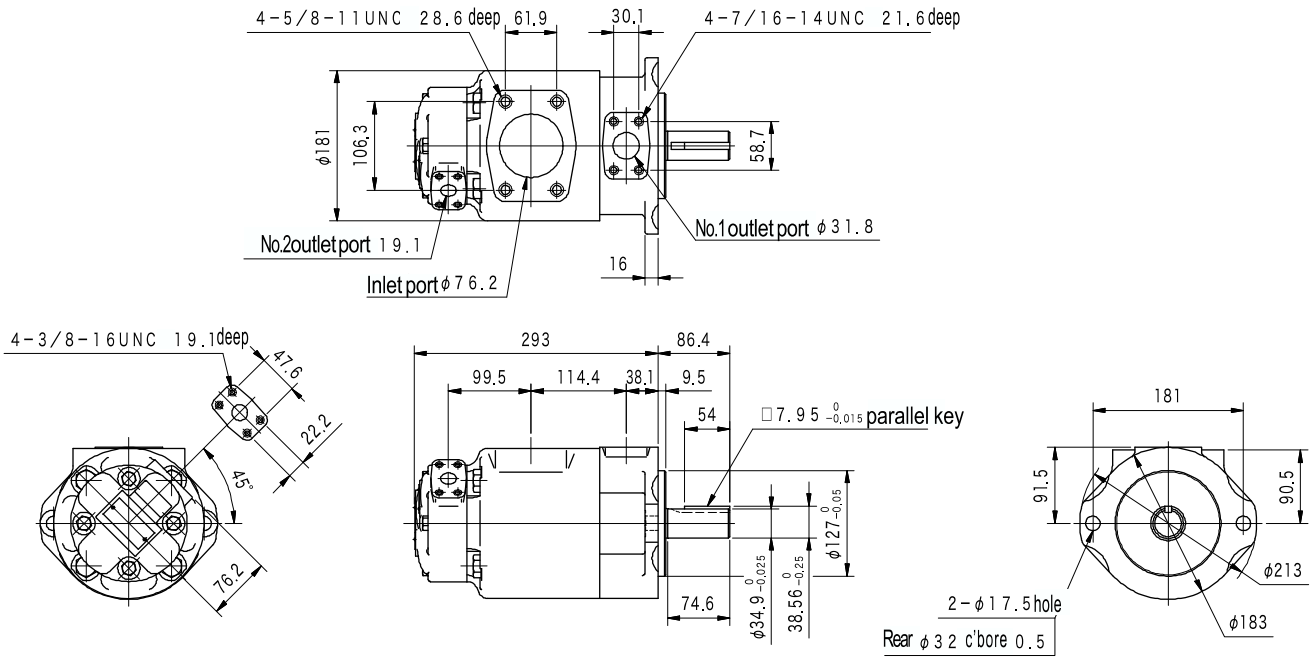


Foot Mount

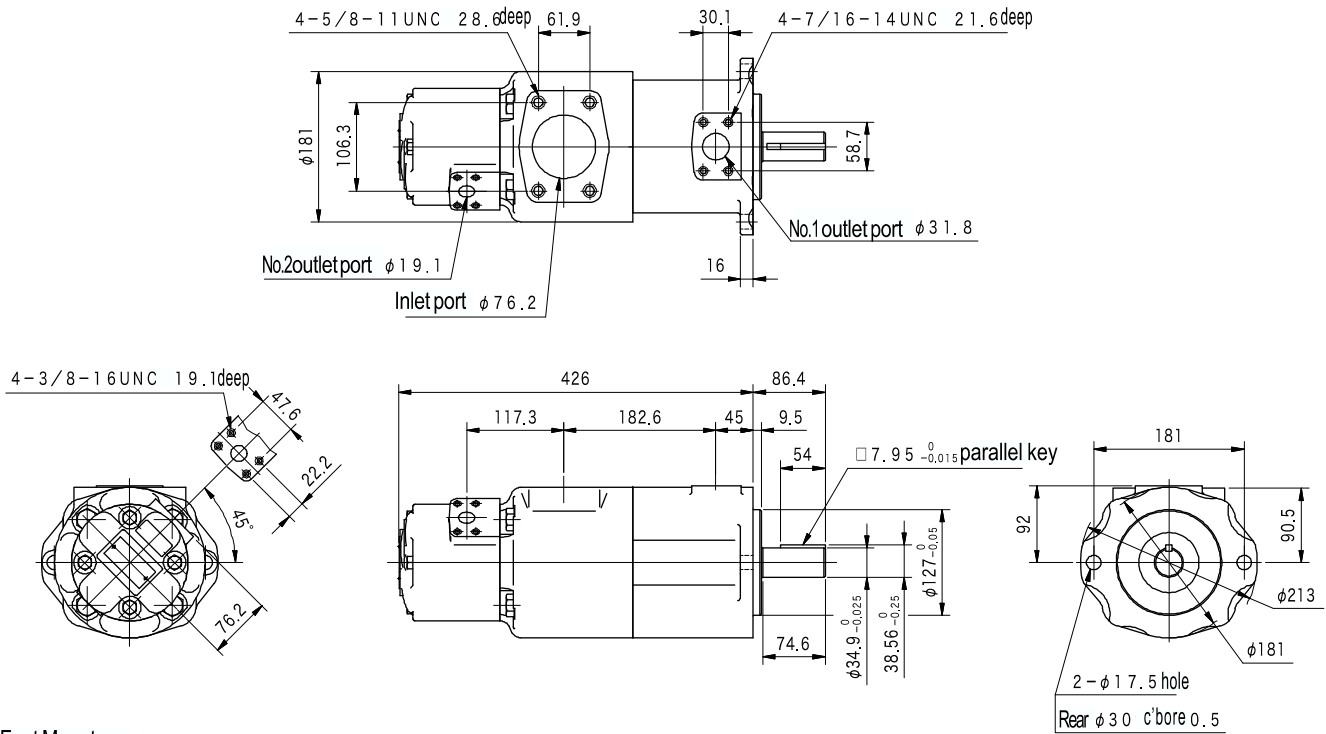


Dimensions

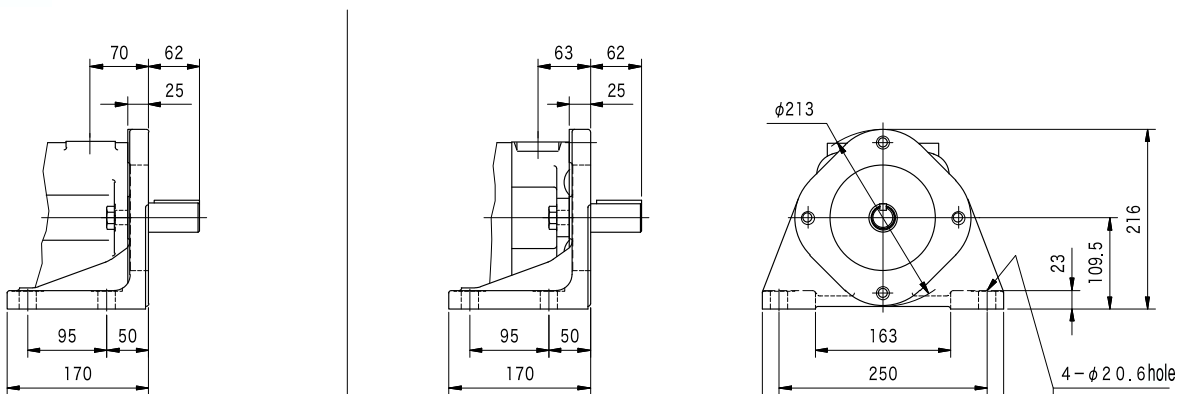
S Q P 3 1 (Flange Mount)



S Q P S 3 1 (Flange Mount)

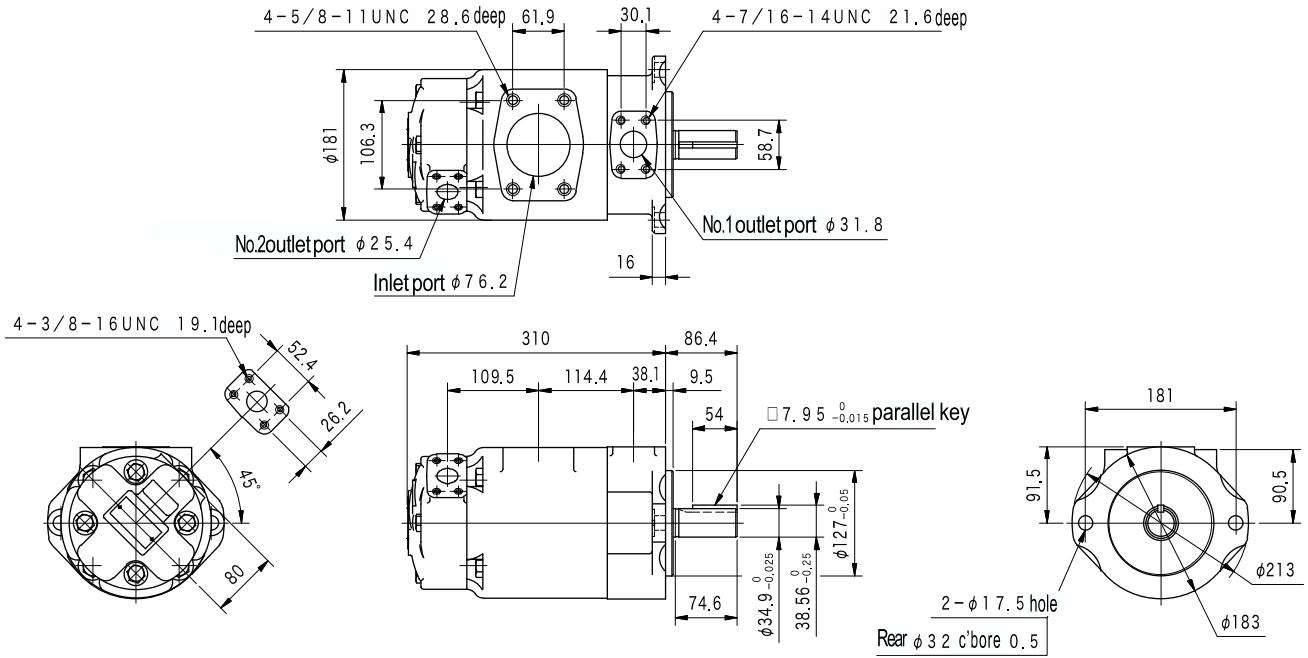


Foot Mount

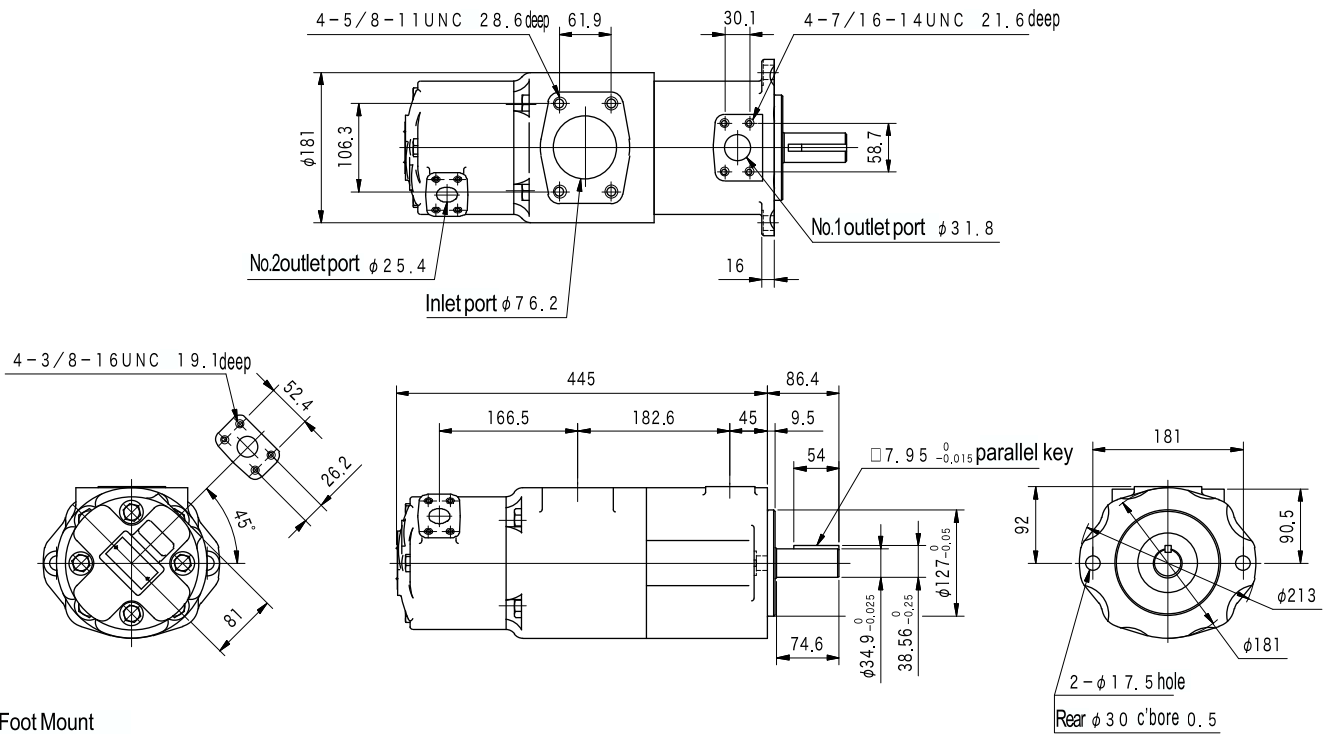


Dimensions

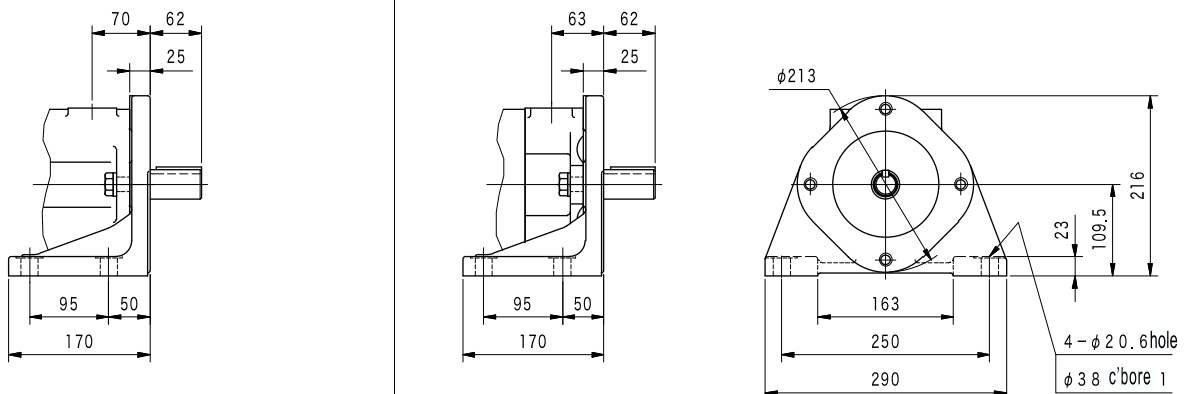
S Q P 3 2 (Flange Mount)



S Q P S 3 2 (Flange Mount)

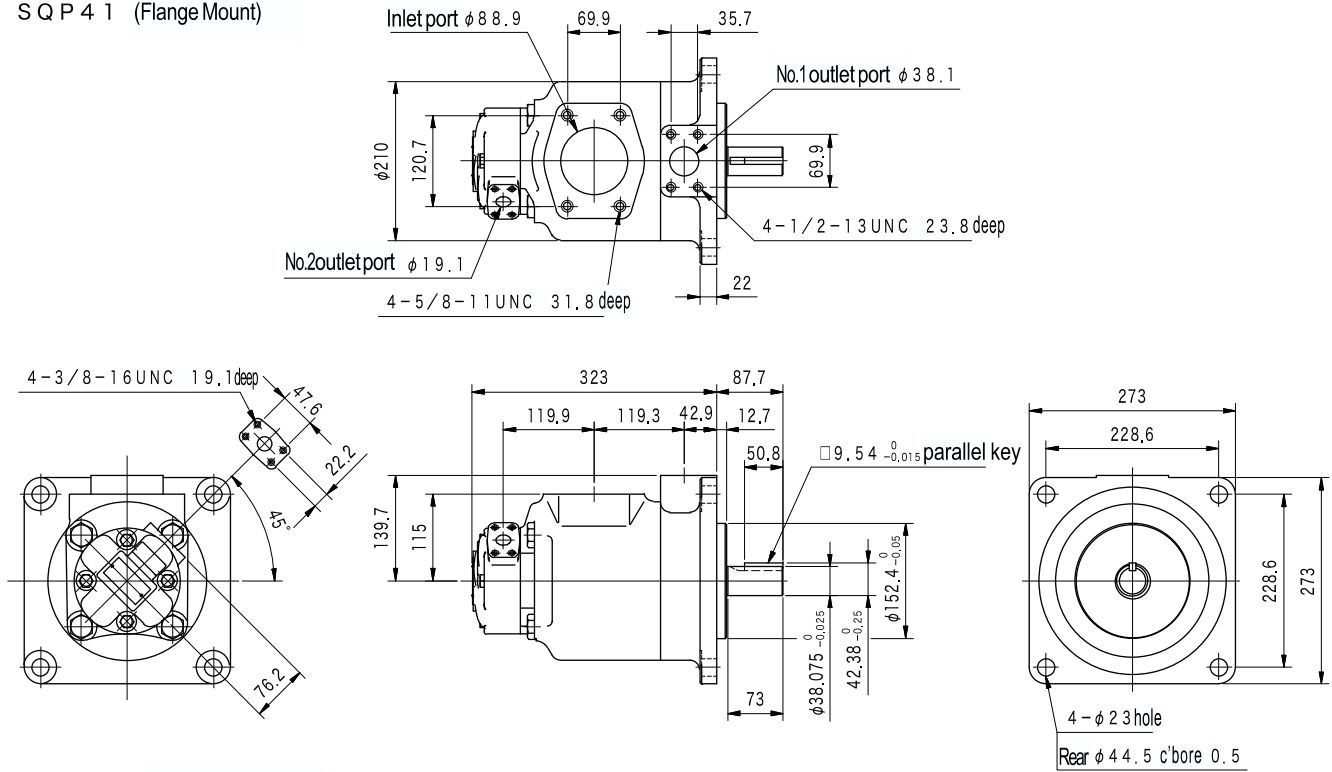


Foot Mount

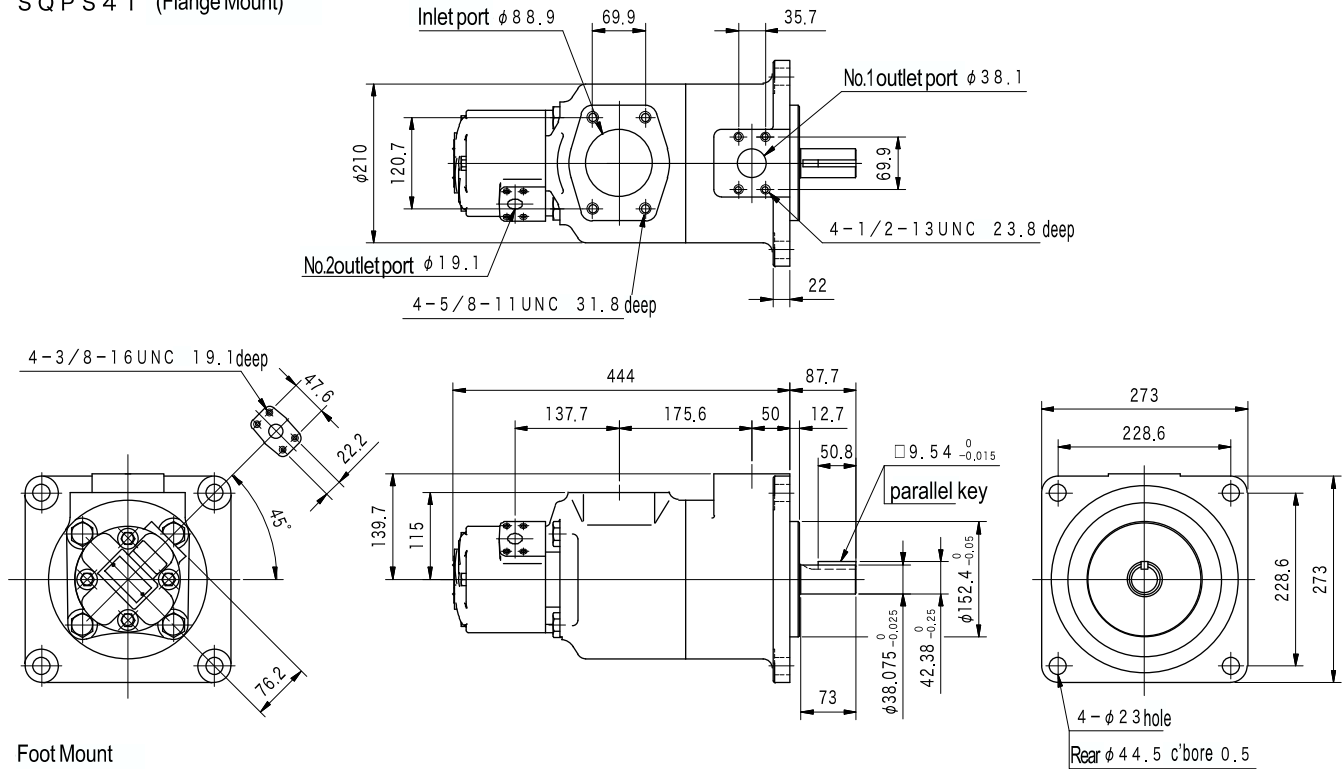


Dimensions

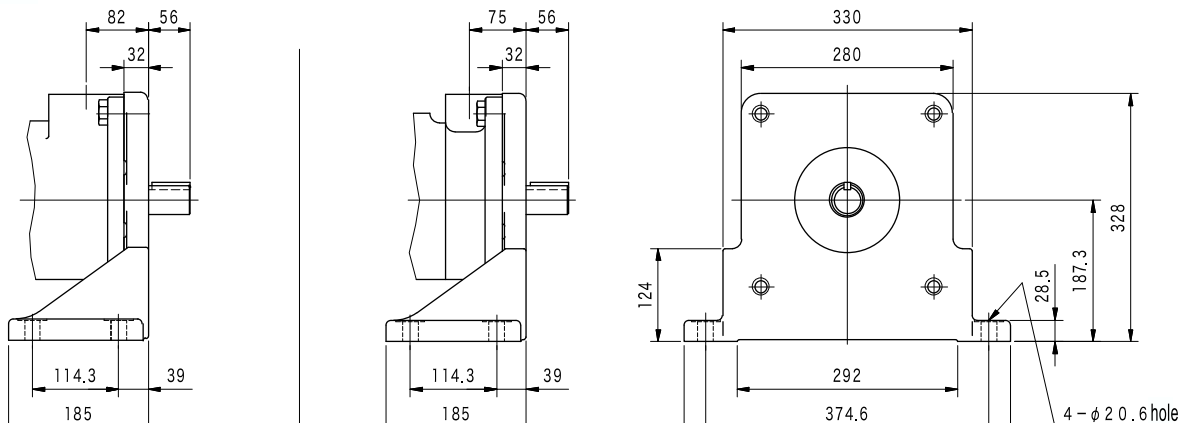
S Q P 4 1 (Flange Mount)



S Q P S 4 1 (Flange Mount)



Foot Mount

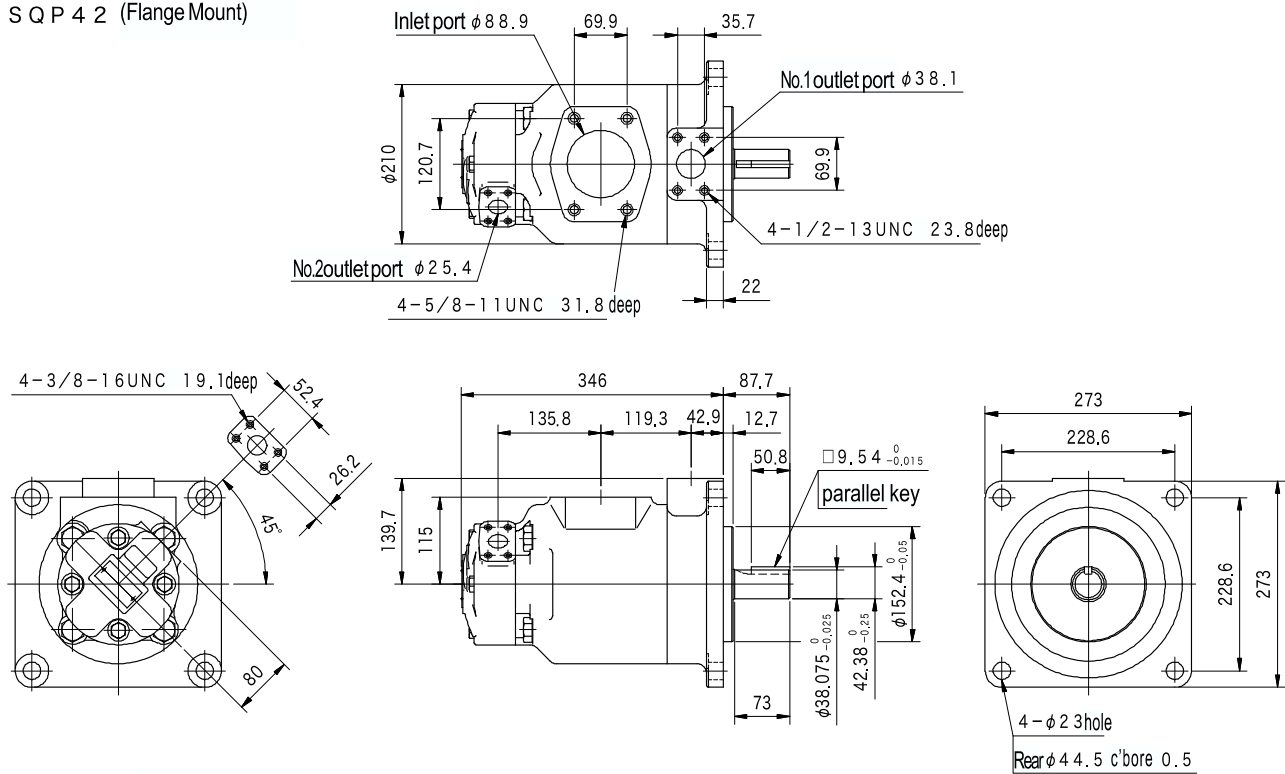


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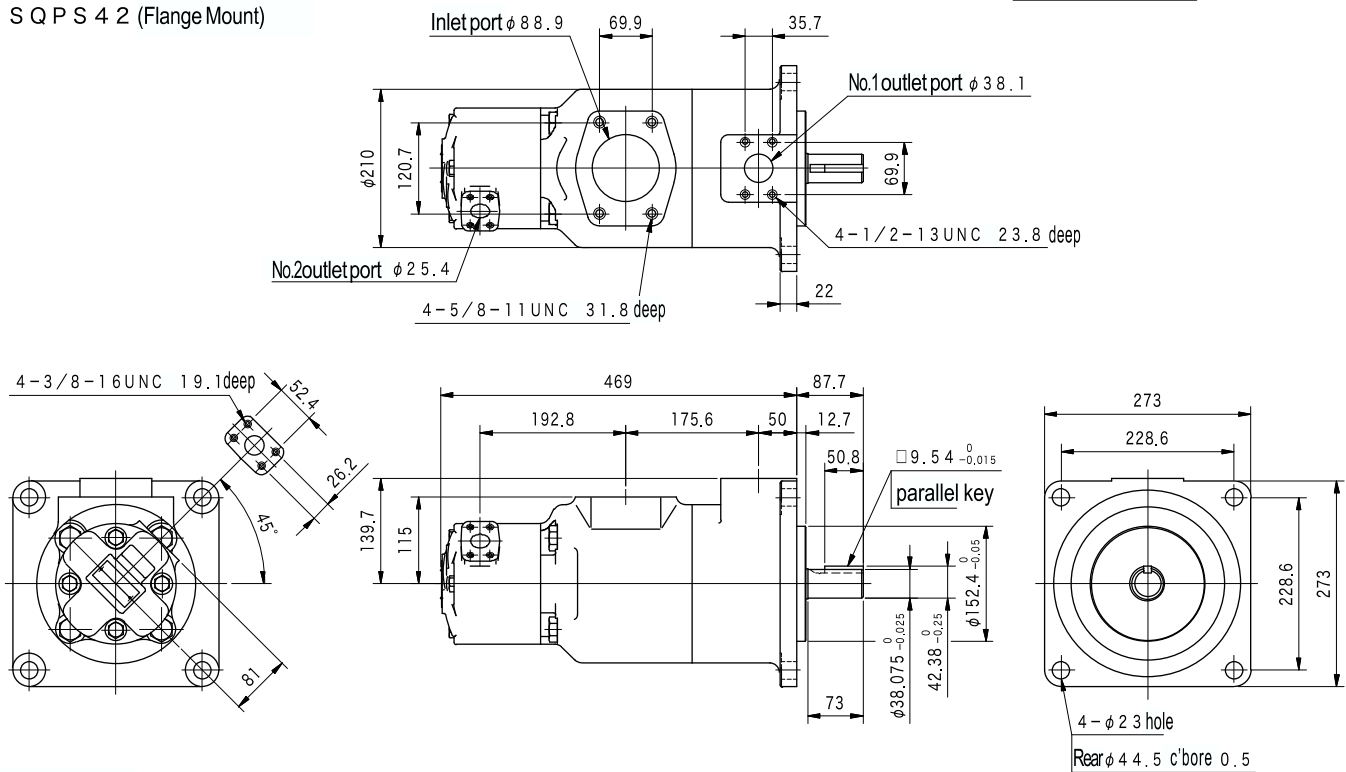
VANE PUMPS

Dimensions

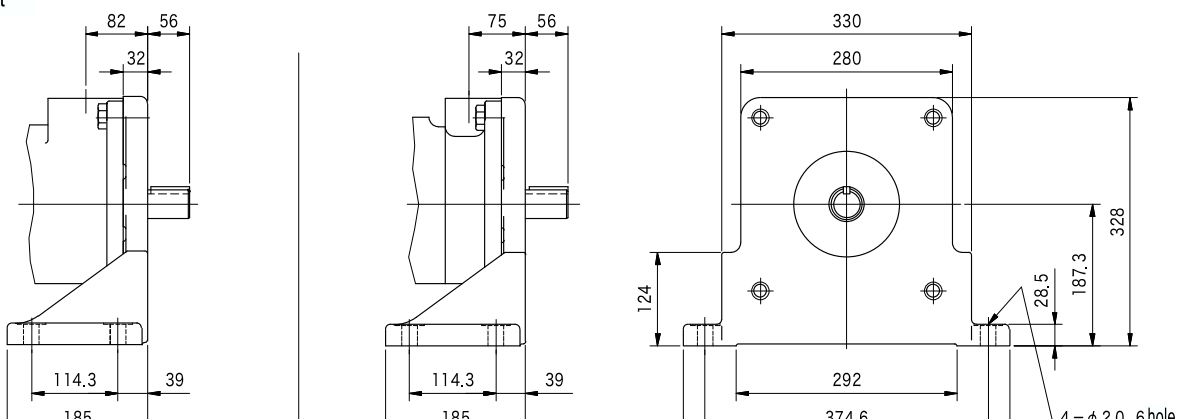
S Q P 4 2 (Flange Mount)



S Q P S 4 2 (Flange Mount)

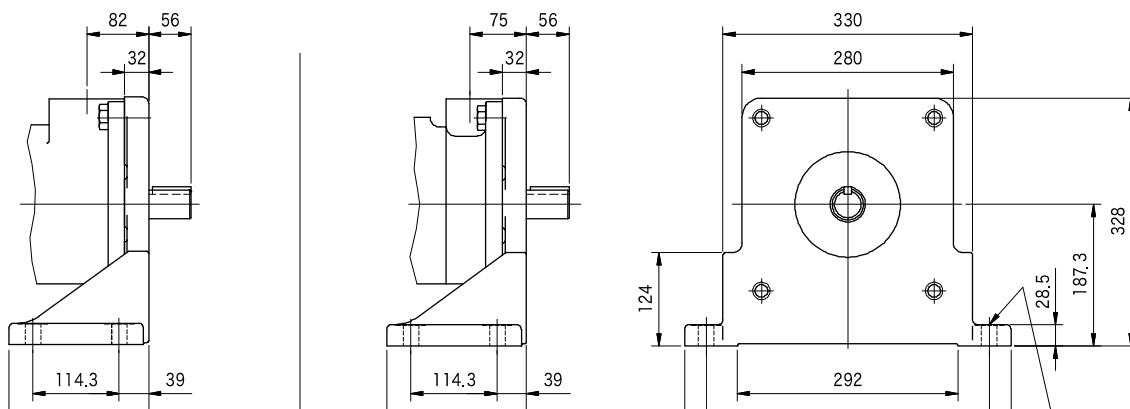
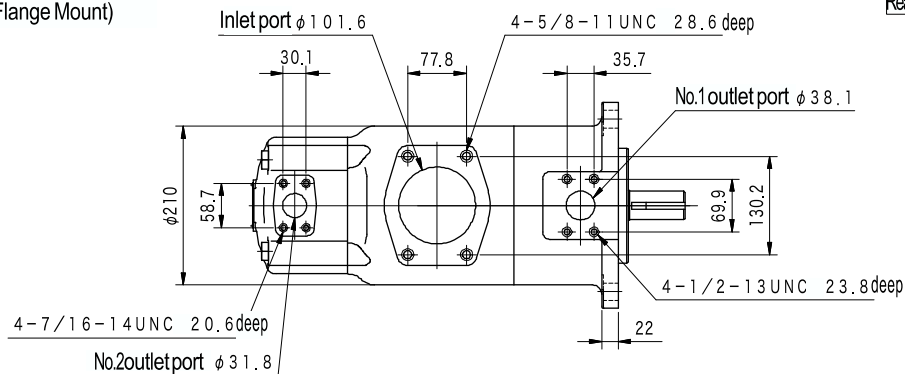


Foot Mount



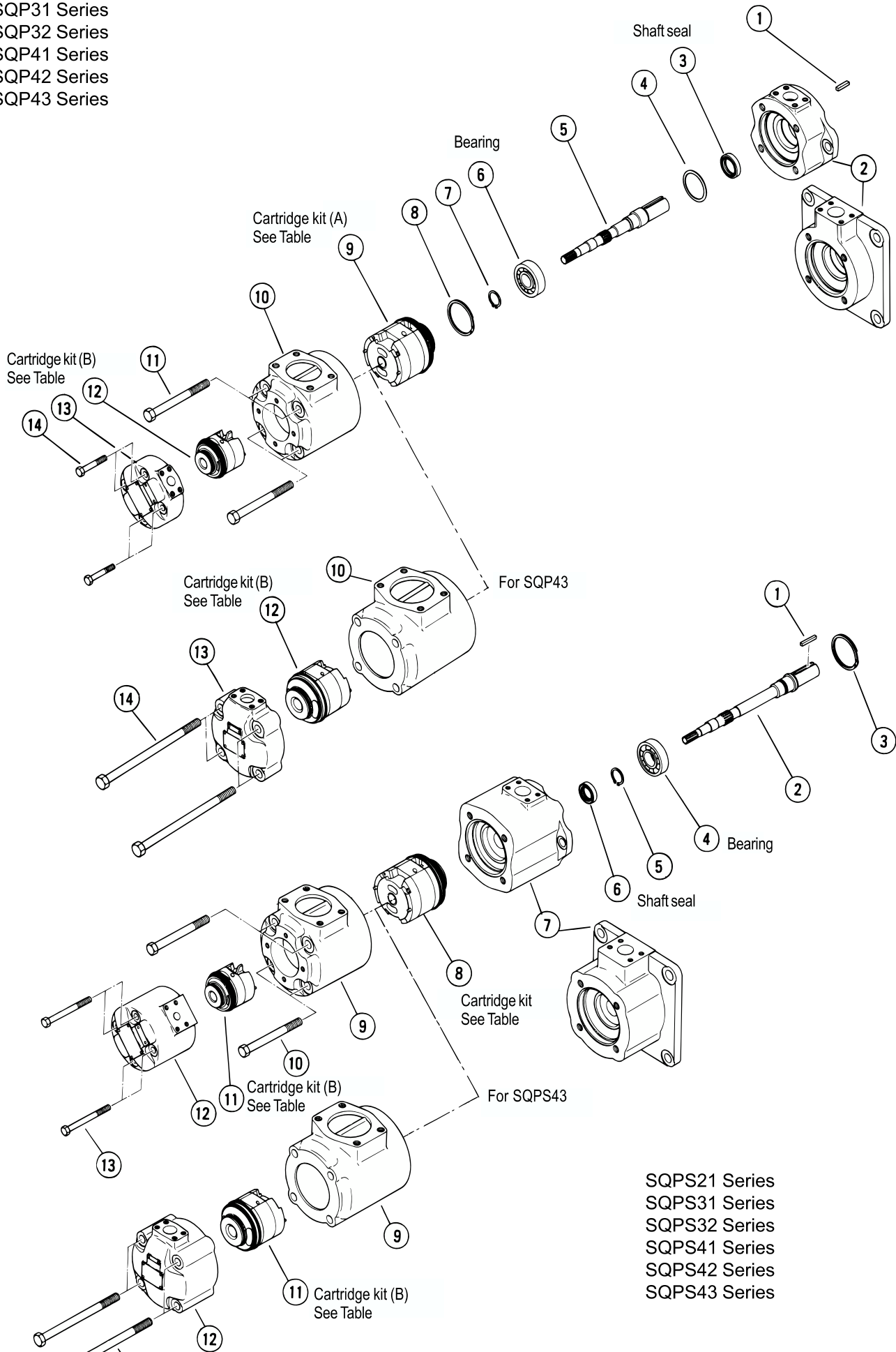
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VANE PUMPS

Technical drawing of the front view of a 4-way valve. The drawing shows a central body with four ports. The left side has a "No.2 outlet port" with a diameter of 31.8 and a thread of 4-7/16-14 UNC, 20.6 deep. The right side has a "No.1 outlet port" with a diameter of 38.1 and a thread of 4-1/2-13 UNC, 23.8 deep. The top has an "Inlet port" with a diameter of 101.6 and a thread of 4-5/8-11 UNC, 28.6 deep. Dimensions include a total width of 210, a central port diameter of 77.8, and various mounting and flange dimensions like 30.1, 58.7, 35.7, 69.9, 130.2, and 22.



Construction

SQP21 Series
SQP31 Series
SQP32 Series
SQP41 Series
SQP42 Series
SQP43 Series



SQPS21 Series
SQPS31 Series
SQPS32 Series
SQPS41 Series
SQPS42 Series
SQPS43 Series

Seals, Bearing Table

Series	Seal Kit P/N	Shaft Seal P/N	Bearing P/N
(F11) -SQP21	40038623 (40038632)	VP191668 (40015857)	0070 62051
(F11) -SQP31	40038624 (40038633)	VP193428 (40015856)	0070 63061
(F11) -SQP32	40038625 (40038634)	VP193428 (40015856)	0070 63061
(F11) -SQP41	40038626 (40038635)	VP195287 (40015858)	0070 63071
(F11) -SQP42	40038627 (40038636)	VP195287 (40015858)	0070 63071
(F11) -SQP43	40038628 (40038637)	VP195287 (40015858)	0070 63071
(F11) -SQPS21	VA9176A (40028883)	VP229236 (40016564)	0072 62051
(F11) -SQPS31	VA9177A (40028884)	VP191668 (40015857)	0072 63061
(F11) -SQPS32	VA9178A (40028885)	VP191668 (40015857)	0072 63061
(F11) -SQPS41	VA9179A (40028886)	VP232855 (40016565)	0072 63071
(F11) -SQPS42	VA9180A (40028887)	VP232855 (40016565)	0072 63071
(F11) -SQPS43	VA9181A (40028888)	VP232855 (40016565)	0072 63071

Note: • Shaft seal included in seal kit.

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

• Seal kit P/N and shaft seal P/N - () refers to F11.

• Cartridge Kit Table

For Mineral Oil

Series	Shaft End Displ.Code	Cartridge Kit A (Shaft End)	CoverEnd Displ.Code	Cartridge Kit B (Cover End)
SQP (S) 21	10	VA12087A	2	VA9267A
	12	VA12088A		
	14	VA12089A	3	VA9268A
	15	VA12090A		
	17	VA12091A	4	VA9269A
	19	VA12273A		
	21	VA12092A	5	VA9031A
SQP (S) 31	17	VA12260A	6	VA11996A
	21	VA12118A		
	25	VA12058A	7	VA11997A
	30	VA12059A		
	32	VA12119A	8	VA9032A
	35	VA12060A		
	38	VA12061A	9	40018787
SQP (S) 41	30	VA11211A	11	VA9033A
	35	VA12122A		
	38	VA11212A	12	VA9034A
	42	VA11213A		
	50	VA11214A	14	VA9932A
	60	VA11215A		
SQP (S) 32	17	VA12260A	10	VA12094A
	21	VA12118A		
	25	VA12058A	12	VA12095A
	30	VA12059A		
	32	VA12119A	14	VA12096A
	35	VA12060A		
	38	VA12061A	15	VA12097A
SQP (S) 42	30	VA11211A	17	VA12098A
	35	VA12122A		
	38	VA11212A	19	VA12274A
	42	VA11213A		
	50	VA11214A	21	VA12099A
	60	VA11215A		
SQP (S) 43	30	VA11211A	17	VA12261A
	35	VA12122A	21	VA12120A
	38	VA11212A	25	VA11208A
	42	VA11213A	30	VA11209A
	50	VA11214A	32	VA12121A
	60	VA11215A	35	VA11876A
			38	VA11210A

For Water-Glycol

Series	Shaft End Displ.Code	Cartridge Kit A (Shaft End)	CoverEnd Displ.Code	Cartridge Kit B (Cover End)
F11-SQP (S) 21	10	VA12553A	2	VA12573A
	12	VA12554A		
	14	VA12555A	3	VA12574A
	15	VA12556A		
	17	VA12557A	4	VA12575A
	19	VA12558A		
	21	VA12559A	5	VA12576A
F11-SQP (S) 31	17	VA12560A	6	VA12577A
	21	VA12561A		
	25	VA12562A	7	VA12578A
	30	VA12563A		
	32	VA12564A	8	VA12579A
	35	VA12565A		
	38	VA12566A	9	40018791
F11-SQP (S) 41	30	VA12567A	11	VA12580A
	35	VA12568A		
	38	VA12569A	12	VA12581A
	42	VA12570A		
	50	VA12571A	14	VA12582A
	60	VA12572A		
F11-SQP (S) 32	17	VA12560A	10	VA12583A
	21	VA12561A		
	25	VA12562A	12	VA12584A
	30	VA12563A		
	32	VA12564A	14	VA12585A
	35	VA12565A		
	38	VA12566A	15	VA12586A
F11-SQP (S) 42	30	VA12567A	17	VA12587A
	35	VA12568A		
	38	VA12569A	19	VA12588A
	42	VA12570A		
	50	VA12571A	21	VA12589A
	60	VA12572A		
F11-SQP (S) 43	30	VA12567A	17	VA12590A
	35	VA12568A	21	VA12591A
	38	VA12569A	25	VA12592A
	42	VA12570A	30	VA12593A
	50	VA12571A	32	VA12594A
	60	VA12572A	35	VA12595A
			38	VA12596A

Note: • "L" is added as suffix to cartridge kit P/N for left hand rotation cartridge kit