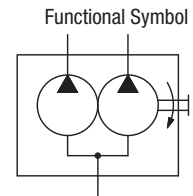
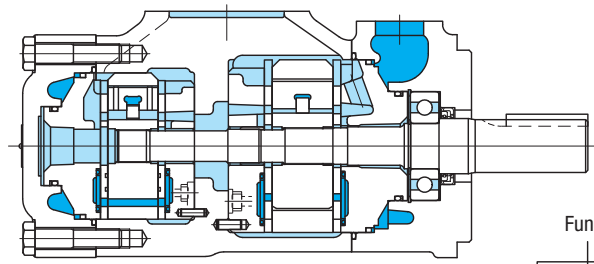
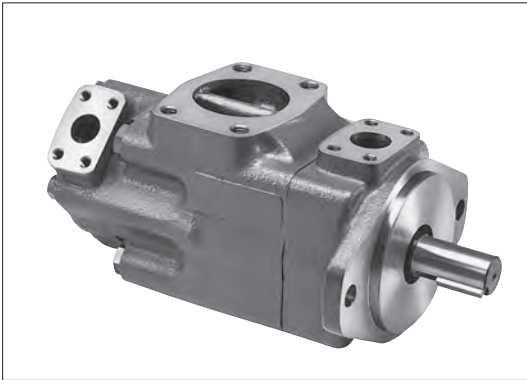


# High performance double fixed displacement vane pumps for mobile applications

## VQ series

B  
6-1

Fixed Displacement Vane Pumps



### Model Code

(F3)-3525VQ38A17(F)-86CC20(L)-JA

1 2 3 4 5 6 7 8 9 10 11

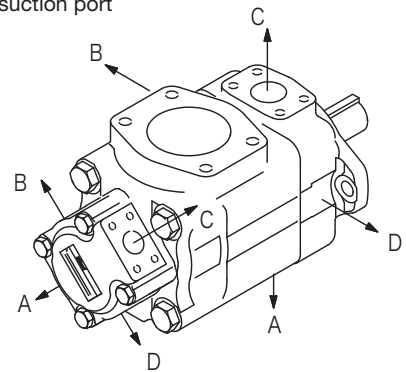
- 1 Hydraulic fluid  
Omit: mineral oil based fluid  
F3: Phosphate ester fluid
- 2 High performance double fixed displacement vane pump for mobile applications  
2520VQ Series  
3520, 3525VQ Series  
4520, 4525, 4535VQ Series
- 3 Shaft end pump displacement

Series	Displacement Code
25**VQ	12, 14, 17, 21
35**VQ	25, 30, 35, 38
45**VQ	42, 50, 60

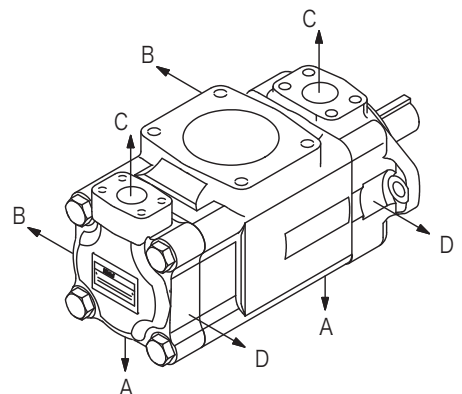
- 4 Port piping connection  
A: SAE 4 bolt flange connection
- 5 Cover end pump displacement
- | Series | Displacement Code |
|--------|-------------------|
| **20VQ | 5, 8, 11, 12, 14  |
| **25VQ | 12, 14, 17, 21    |
| **35VQ | 25, 30, 35, 38    |
- 6 Pump mounting  
Omit: flange mounting  
F: foot mounting
- 7 Shaft end configuration  
1: parallel sq. key (2520VQ)  
86: parallel sq. key  
11: spline shaft
- 8 Shaft end 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

- 9 Cover end delivery port position (viewed from cover end)  
2520, 3520, 3525, 4520, 4525VQ  
A: 135° CCW from suction port  
B: 45° CCW from suction port  
C: 45° CW from suction port  
D: 135° CW from suction port  
4535VQ  
A: opposite suction port  
B: 90° CCW from suction port  
C: inline with suction port  
D: 90° CW from suction port

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



- 4535VQ



- 10 Design no.
- 11 Rotation (viewed from shaft end)  
Omit: CW  
L: left rotation (counter-clockwise)

TOKYO KEIKI INC.

## Specifications

Model Code	Shaft End Pump						Cover End Pump				Min. Speed min <sup>-1</sup>	Weight kg		
	Displacement Code	Del. at 1000 min <sup>-1</sup> 0.7 Mpa L/min	Anti-Wear Mineral Oil	Phosphate Ester Fluid		Displacement Code	Del. at 1000 min <sup>-1</sup> 0.7 Mpa L/min	Max. Working Pressure MPa						
			Max. Working Pressure MPa	Max. Speed min <sup>-1</sup>	Max. Working Pressure MPa			Max. Speed min <sup>-1</sup>	Anti-Wear Mineral Oil	Phosphate Ester Fluid				
2520VQ	12	38.3	21	2700	14	1800	5	16.7	21	14	600	20.4		
	14	43.3											2500	1600
	17	52.5		8	26.2									
	21	65.0												
3520VQ	25	79.2	21	2500	14	1600	11	35.0	16	14	600	34.0		
	30	95.0											2400	12
	35	109.0		12	37.9									
	38	118.0												
4520VQ	42	134.0	17.5	2200	14	1500	14	44.2	14	14	600	42.6		
	50	156.0												
	60	189.0												
3525VQ	25	79.2	21	2500	14	1600	12	38.3	21	14	600	34.5		
	30	95.0											2400	14
	35	109.0		14	43.3									
	38	118.0												
4525VQ	42	134.0	17.5	2200	14	1500	17	52.5	21	14	600	45.8		
	50	156.0											21	65.0
	60	189.0												
4535VQ	42	134.0	17.5	2200	14	1500	25	79.0	21	14	600	53.5		
	50	156.0											30	95.0
	50	156.0												
	60	189.0											38	118.0

Note: • As max. working pressure may be limited for general industrial machinery applications, consult Tokyo Keiki.

• Max. speed is based on 0 MPa (gauge pressure) suction pressure.

Max. speed will be limited by negative suction pressure. Consult Tokyo Keiki in this case.

## Delivery, Shaft Input Power

Model Code	Delivery, Shaft Input	
	Shaft End Pump	Cover End Pump
2520VQ	Same as 25VQ Series (B40)	See table on next page.
3520VQ	Same as 35VQ Series (B41)	
4520VQ	Same as 45VQ Series (B42)	
3525VQ	Same as 35VQ Series (B41)	
4525VQ	Same as 45VQ Series (B42)	Same as 25VQ Series (B5-2)
4535VQ	Same as 45VQ Series (B42)	Same as 35VQ Series (B5-3)

## Delivery, Shaft Input Power (at 20 mm<sup>2</sup>/s) (typical examples)

Model Code	Speed min <sup>-1</sup>	Delivery L/min					Shaft Input kW				
		0.7 MPa	7 MPa	14 MPa	17.5 MPa	21 MPa	0.7 MPa	7 MPa	14 MPa	17.5 MPa	21 MPa
20VQ-5	1000	16.7	15.7	14.7	14.2	13.6	0.4	2.9	4.9	6.1	7.3
	1200	20.0	19.0	18.0	17.5	16.9	0.5	3.3	5.9	7.3	8.7
	1500	25.0	24.0	23.0	22.5	21.9	0.6	4.0	7.4	9.2	10.9
	1800	30.0	29.0	28.0	27.5	26.9	0.6	4.3	8.8	10.9	13.0
	2000	33.4	32.4	31.4	30.9	30.3	0.7	4.8	9.6	11.9	14.2
	2200	36.7	35.7	34.7	34.2	33.7	0.7	5.3	10.5	13.0	15.4
	2400	40.1	39.1	38.0	37.5	37.0	0.8	5.7	11.3	14.0	16.6
	2500	41.8	40.7	39.7	39.2	38.7	0.8	6.0	11.7	14.5	17.2
20VQ-8	1000	26.2	24.2	22.6	21.1	20.1	0.5	4.0	6.8	8.5	10.1
	1200	31.5	29.5	27.9	26.4	25.4	0.6	4.6	8.2	10.2	12.1
	1500	39.4	37.4	35.8	34.3	33.3	0.8	5.6	10.2	12.7	15.1
	1800	47.2	45.2	43.6	42.1	41.1	0.8	6.7	12.0	15.1	17.9
	2000	52.4	50.4	48.3	47.3	46.3	0.9	7.4	13.3	16.7	19.9
	2200	57.6	55.6	53.6	52.5	51.5	1.0	8.0	14.6	18.3	21.9
	2400	62.9	60.8	58.8	57.8	56.8	1.0	8.6	15.9	19.9	23.8
	2500	65.5	63.5	61.4	60.4	59.4	1.1	8.8	16.6	20.7	24.8
20VQ-11	1000	35.0	33.0	30.4	29.4	28.3	0.7	5.0	9.4	11.6	13.8
	1200	42.0	40.0	37.4	36.4	35.3	0.8	5.8	11.2	14.0	16.6
	1500	52.5	50.5	47.9	46.9	45.8	1.0	7.0	14.1	17.4	20.7
	1800	63.2	61.0	58.4	57.4	56.2	1.0	8.5	16.5	20.7	24.6
	2000	70.0	67.7	65.4	64.2	63.0	1.1	9.3	18.2	22.8	27.2
	2200	77.0	74.7	72.4	71.2	70.0	1.2	10.2	19.9	24.8	29.7
	2400	84.0	81.8	79.5	78.4	77.3	1.3	11.0	21.5	26.8	32.1
	2500	87.5	85.2	82.9	81.7	80.5	1.4	11.4	22.3	27.8	33.3
20VQ-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	—	—
	2000	75.8	74.0	72.2	—	—	1.2	10.6	20.7	—	—
	2200	83.4	81.6	79.8	—	—	1.3	11.6	22.6	—	—
	2400	91.0	89.2	87.4	—	—	1.4	12.7	24.5	—	—
	2500	94.8	93.0	91.2	—	—	1.5	13.2	25.4	—	—
20VQ-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	—	—
	2000	88.4	86.4	84.3	—	—	1.5	12.9	24.3	—	—
	2200	97.2	95.2	93.2	—	—	1.7	14.1	26.5	—	—
	2400	106.1	104.0	102.0	—	—	1.8	15.3	28.7	—	—
	2500	110.5	108.5	106.4	—	—	1.9	15.9	29.8	—	—
2700	119.3	117.3	115.3	—	—	2.0	17.1	31.9	—	—	

### Notes on Operation

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

### Shaft Input (Shaft Torque) Limitation

VQ double pumps have max. shaft torque limitations. Please ensure that the total of the maximum load of the two pumps do not exceed the torque limit shown in the table. Please refer to limitations of SQP double pumps shaft input (shaft torque) on page B2-4.

Series	Shaft Torque Limitation N·m	Series	Shaft Torque Limitation N·m
2520VQ	320	4520VQ	820
3520VQ	610	4525VQ	820
3525VQ	610	4535VQ	820

## 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	Type	Flange Type					
		Suction Port		No.1 Delivery Port (Shaft End)		No.2 Delivery Port (Cover End)	
		Size		Size		Size	
2520VQ	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
3520VQ	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
3525VQ	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
4520VQ	Threaded	3-1/2		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
4525VQ	Threaded	3-1/2		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
4535VQ	Threaded	4		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

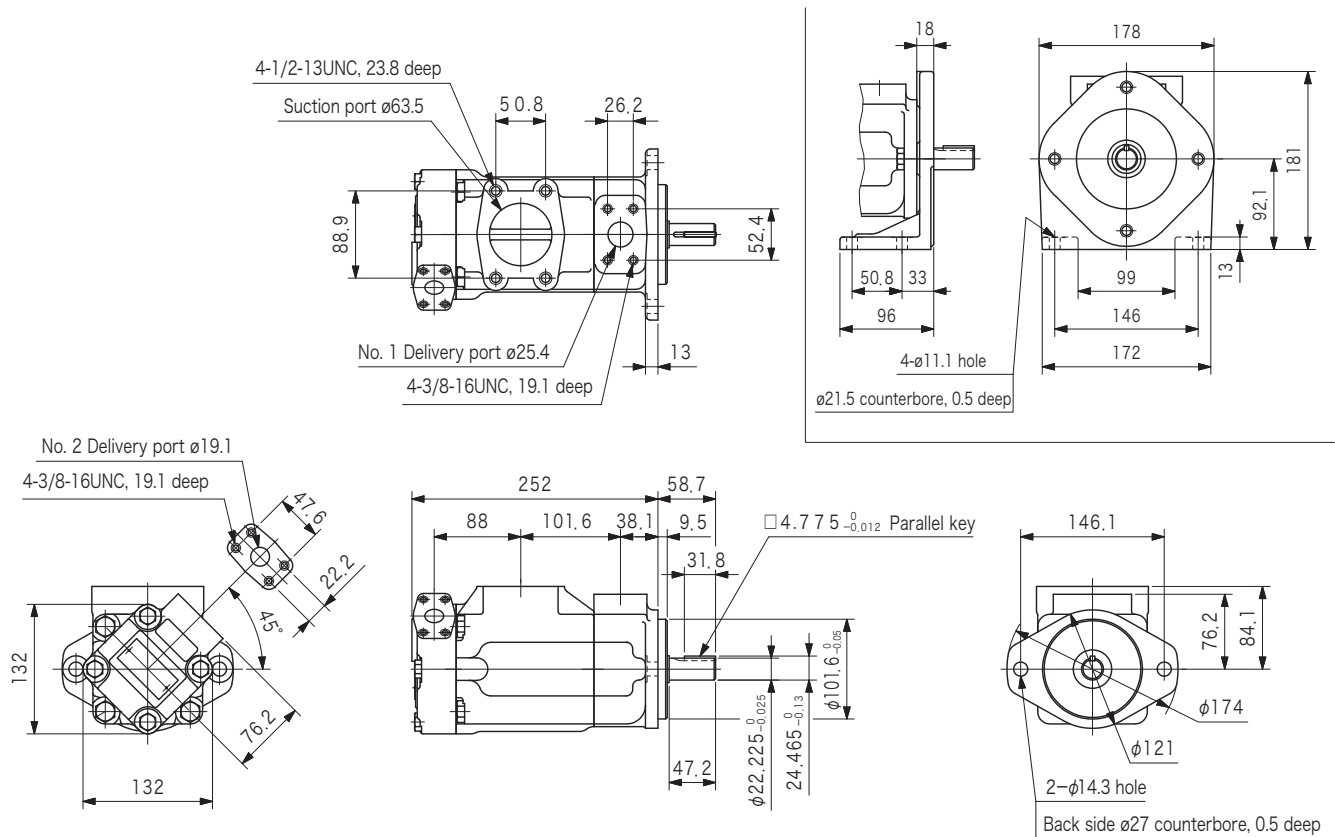
## Dimensions

- Refer to the below table for the No. 11 spline shaft end configuration.

Model Code	Shaft End Shape
2520VQ	Same as 25VQ Series (B5-5)
3520VQ	Same as 35VQ Series (B5-5)
3525VQ	
4520VQ	Same as 45VQ Series (B5-6)
4525VQ	
4535VQ	

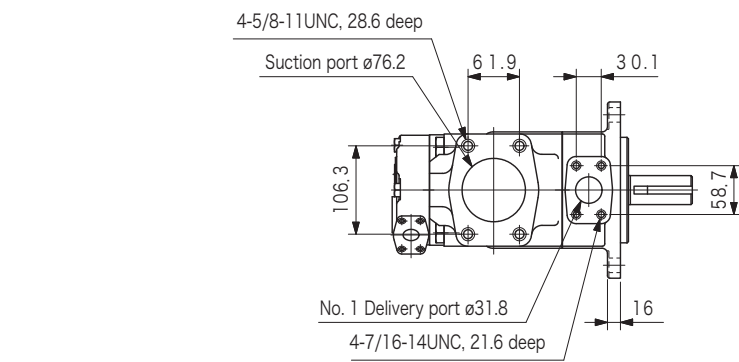
2520VQ (Flange mounting)

(Foot mounting)

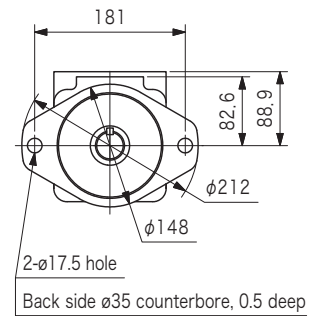
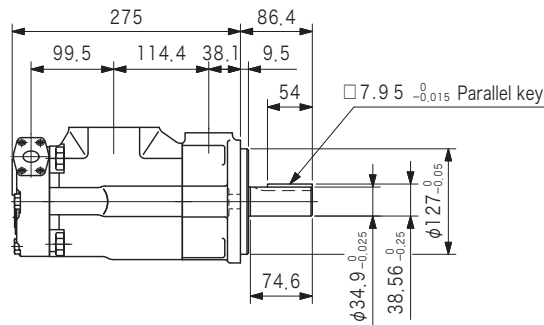
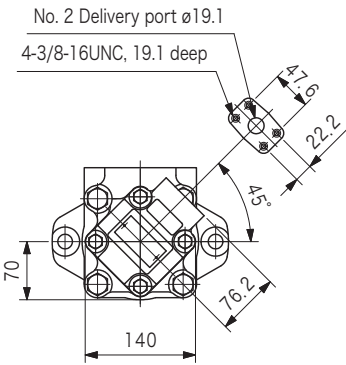
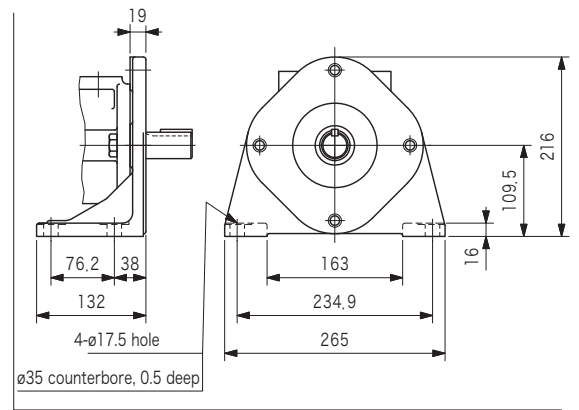


# Dimensions

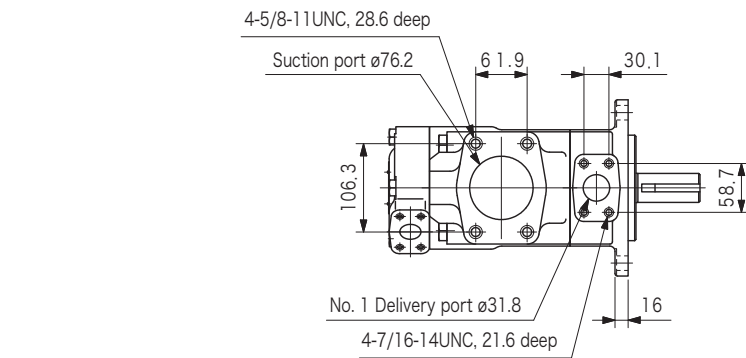
3520VQ (Flange mounting)



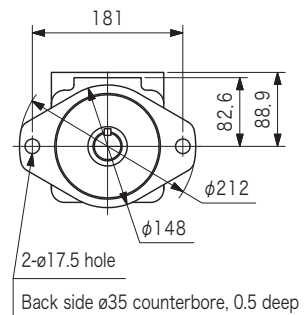
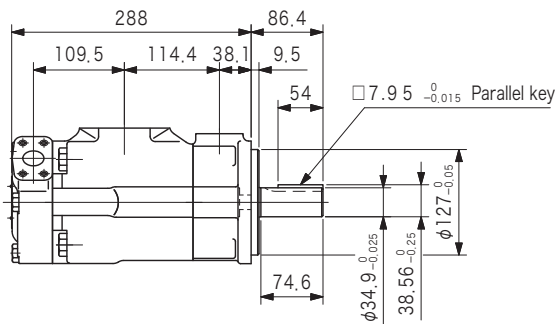
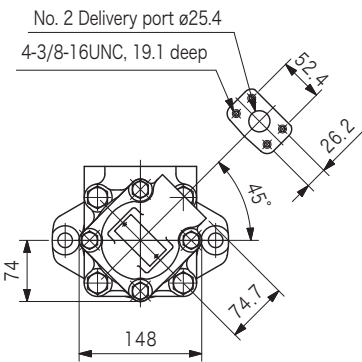
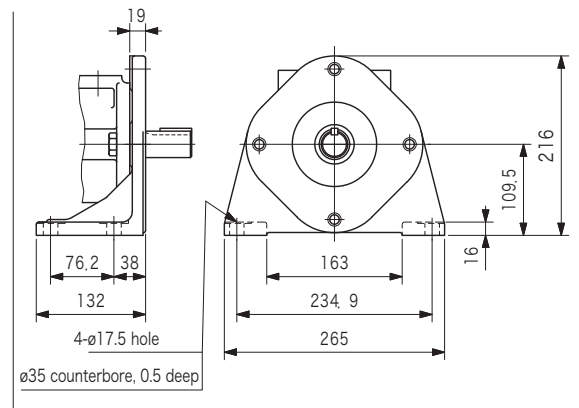
(Foot mounting)



3525VQ (Flange mounting)



(Foot mounting)

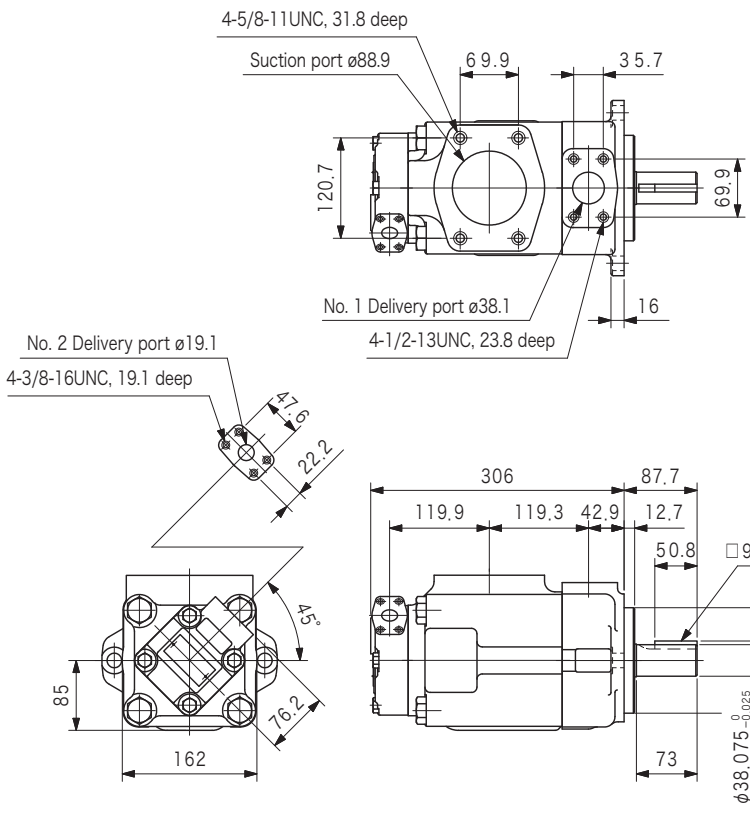


# Dimensions

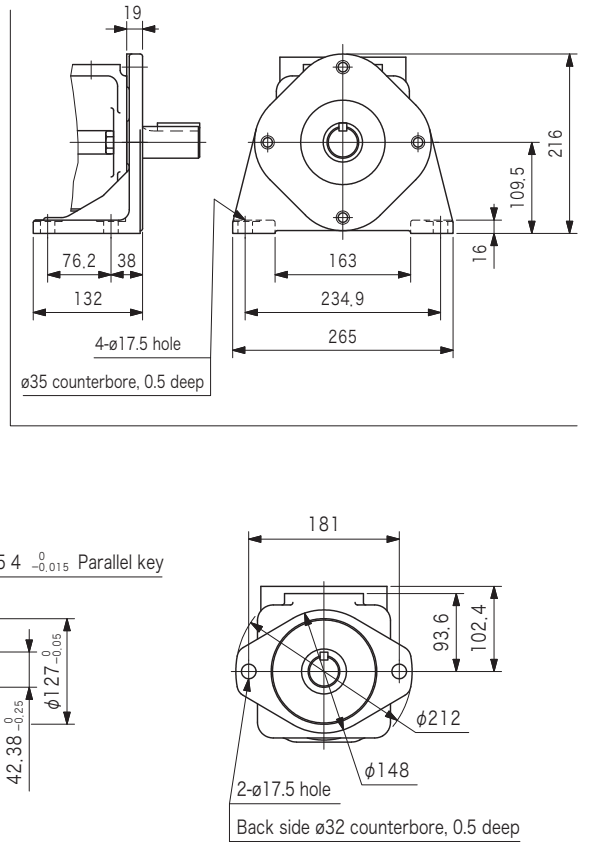
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Fixed Displacement Vane Pumps

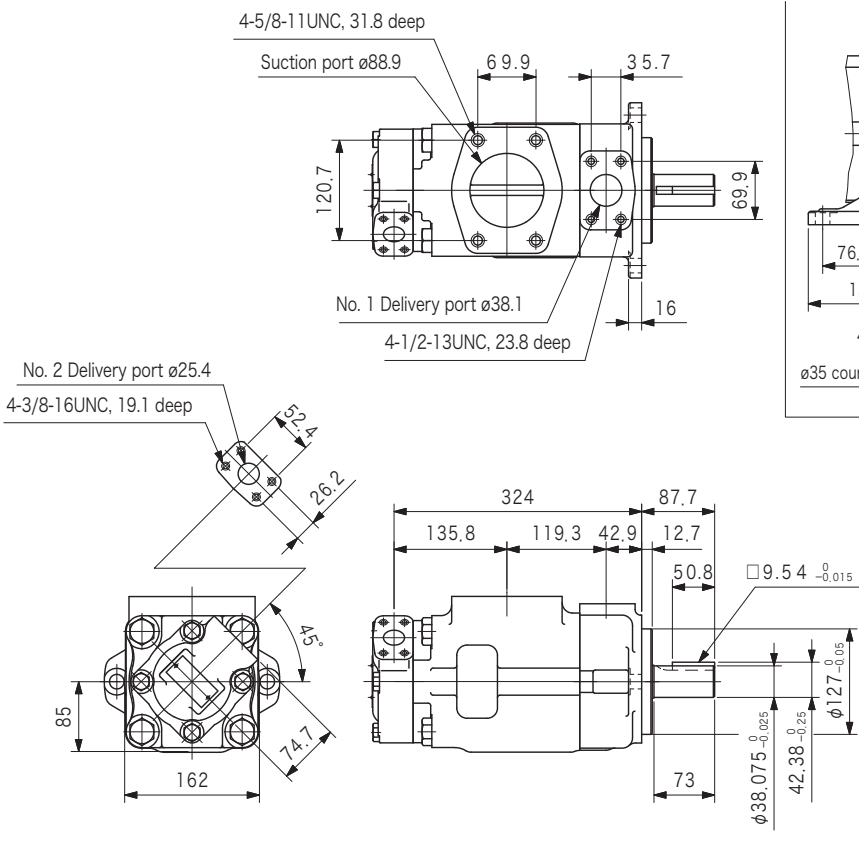
4520VQ (Flange mounting)



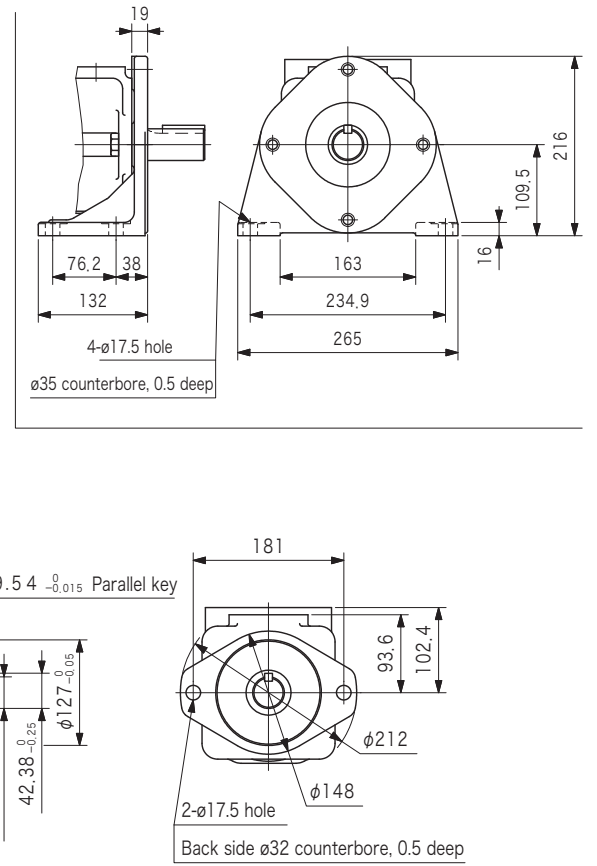
(Foot mounting)



4525VQ (Flange mounting)

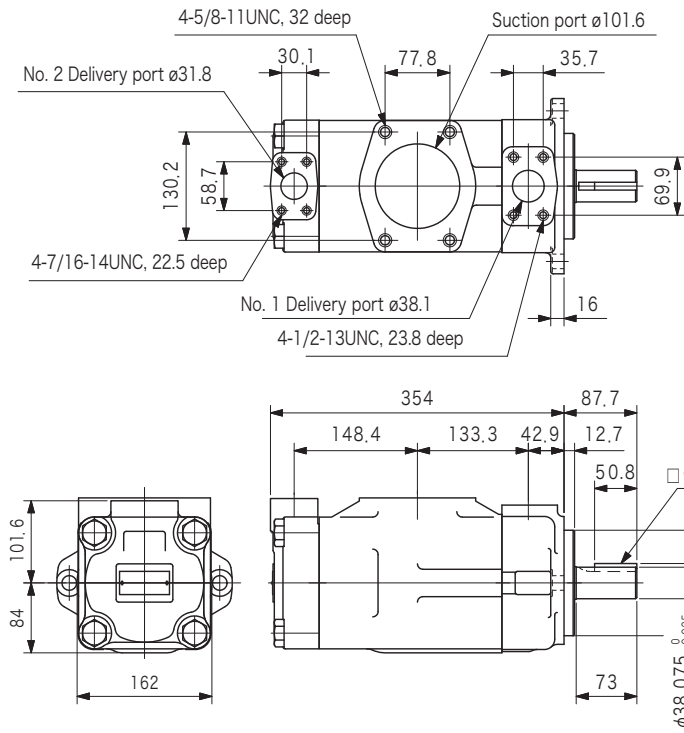


(Foot mounting)

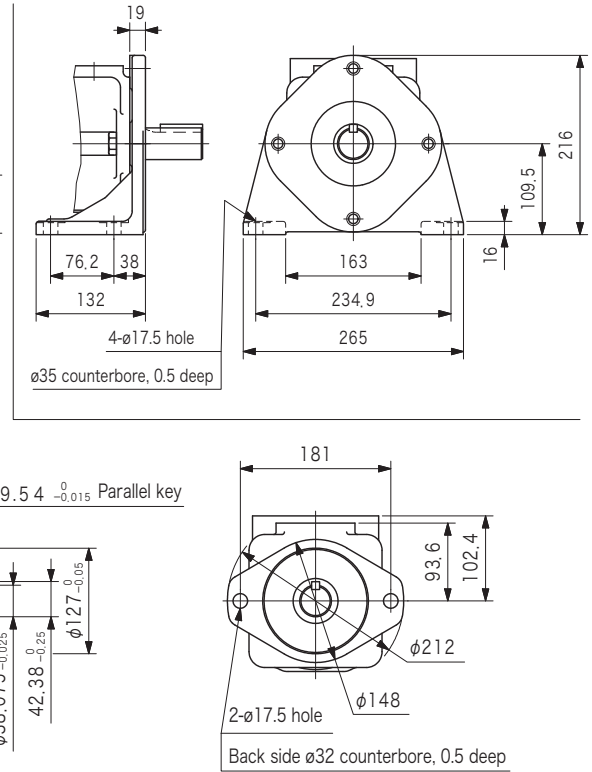


## Dimensions

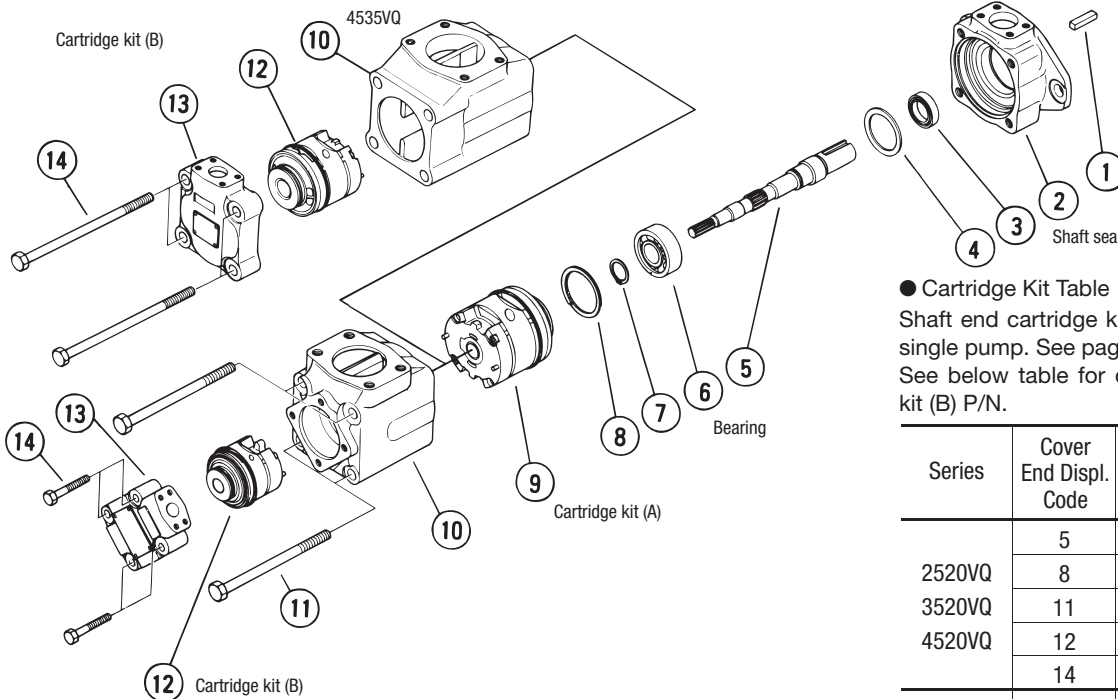
### 4535VQ (Flange mounting)



### (Foot mounting)



## Construction



### ● Cartridge Kit Table

Shaft end cartridge kit (A) is same as for single pump. See page B5-6.

See below table for cover end cartridge kit (B) P/N.

Series	Cover End Displ. Code	Cartridge Kit (B) P/N (Cover End)
2520VQ	5	VP417053A
	8	VP417054A
	11	VP416427A
	12	VP416428A
3520VQ	14	VP416429A
	12	VP421244A
3525VQ	14	VP421235A
	17	VP421236A
4525VQ	21	VP421238A
	25	VP421240A
4535VQ	30	VP421241A
	35	VP421242A
	38	VP421243A

### ● Seals, Bearing Table

Series	Seal Kit P/N	Shaft Seal P/N	Bearing P/N
2520VQ	VP920040A	VP191668	0070 <b>62051</b>
3520VQ	VP920048A	VP193428	0070 <b>63061</b>
3525VQ	VP920056A	VP193428	0070 <b>63061</b>
4520VQ	VP920060A	VP195287	0070 <b>63071</b>
4525VQ	VP920068A	VP195287	0070 <b>63071</b>
4535VQ	VP920072A	VP195287	0070 <b>63071</b>

Note: ● Shaft seal included in seal kit.  
● Bearing P/N - bold characters refer to JIS B 1521 nominal number.  
0070 indicates without shield.

Note: ● Cartridge kit includes seals excluding shaft seal.  
● "L" suffix at end of P/N denotes left hand rotation.