

V series piston pump



Features

- **Low noise**
 - Realized low noise operation in overall pressure area on each series.
- **High efficiency**
 - Oil temperature rise can be reduced due to the less power-loss. Accordingly, it is possible to design the tank in small size.
- **High reliability**
 - High response, high stability, and long life make it possible to increase the reliability of the main machine.

Nomenclature

● Pressure compensator control

* - **V** ** **A** * * * - ** **

1 2 3 4 5 12 15 16 17

● Combination control (Self pressure method)

* - **V** ** **C** * * **R H X** - ** **

1 2 3 4 7 8 12 13 15 16 17

● Combination control (Solenoid operated method)

* - **V** ** **C** * * **R J X** - ** **

1 2 3 4 7 8 12 13 14 15 16 17

● Dual pressure control

* - **V** ** **D** * * **R X** - ** **

1 2 3 4 9 10 12 14 15 16 17

● Power-match control

* - **V** ** **SA** * * * * - **

1 2 3 4 6 11 12 15 16

(1) Nomenclature of applied fluid (refer to page 1 for the applied models)

No mark : Working oil with petroleum contents
 W : Working oil with water/glycol
 F : Working oil with phosphoric acid ester

(2) Model No.

V : V series piston pump

(3) Displacement volume

8 : 8.0cm³/rev
 15 : 14.8cm³/rev
 23 : 23.0cm³/rev
 38 : 37.7cm³/rev
 50 : 51.6cm³/rev
 70 : 69.8cm³/rev

(4) Control method I (refer to page 1 for the applied models)

A : Pressure compensator control
 C : Combination control
 D : Dual pressure control
 SA : Power match control

(5)(6) Pressure adjusting range

(refer to the pressure adjusting range table)

(7)(9) Low pressure adjusting range

(refer to the pressure adjusting range table)

(8)(10) High pressure adjusting range

(refer to the pressure adjusting table)

(11) FC valve pressure differential

A : 0.7MPa {7kgf/cm²}
 B : 1.4MPa {14kgf/cm²}
 C : 2.1MPa {21kgf/cm²}

(12) Direction of the rotation from the view of the shaft end (refer to page 1 for the applied models)

R : Clockwise (rightward)
 L : Counterclockwise (leftward)

* Impossible to exchange "clockwise" to "counterclockwise".

(13) Control method II

H : Self pressure method
 J : Solenoid operated method

(14) Voltage for the solenoid operated valve

A : AC100V (50/60Hz), AC110V (60Hz)
 B : AC200V (50/60Hz), AC220V (60Hz)
 N : DC12V
 P : DC24V

(15) Piping direction (refer to page 1 for the applied models)

No mark : Axial port
 X : Side port

(16) Design number (the design number is subject to change)

20 : Pump model No. V8, V50
 95 : Pump model No. V15, V38
 30 : Pump model No. V23
 <In case that the control method is A, CH, or SA>
 35 : Pump model No. V23
 <In case that the control method I is CJ or D>
 60 : Pump model No. V70

(17) Control method III

No mark : Without remote control system
 RC : With remote control system

Pressure adjusting range table

● **Pressure compensator control**

(5) **Pressure adjusting range**

Mark	Pressure adjusting range MPa {kgf/cm ² }	Without remote controller system						With remote controller system				
		V8	V15	V23	V38	V50	V70	V15	V23	V38	V50	V70
1	0.8~7 {8~70}	○	○	○	○	—	—	—	—	—	—	—
1	1.5~7 {15~70}	—	—	—	—	○	○	—	—	—	—	—
2	1.5~14 {15~140}	—	○	○	○	○	○	—	—	—	—	—
3	1.5~21 {15~210}	—	—	—	—	—	—	○	○	○	—	—
3	2~21 {20~210}	—	—	—	—	—	—	—	—	—	○	○
3	3.5~21 {35~210}	—	○	○	○	○	○	—	—	—	—	—
4	1.5~25 {15~250}	—	—	—	—	—	—	—	○	○	—	—
4	3.5~25 {35~250}	—	—	○	○	—	—	—	—	—	—	—

● **Combination control**

(7) **Low pressure adjusting range**

Mark	Pressure adjusting range MPa {kgf/cm ² }	Self pressure method				Solenoid operated valve method		
		V15	V23	V38	V70	V15	V23	V38
1	1.5~7 {15~70}	—	—	—	○	○	○	○
1	2.5~7 {25~70}	○	○	○	—	—	—	—
2	1.5~14 {15~140}	—	—	—	○	○	○	○
2	2.5~14 {25~140}	○	○	○	—	—	—	—

(8) **High pressure adjusting range**

Mark	Pressure adjusting range MPa {kgf/cm ² }	Self pressure method				Solenoid operated valve method		
		V15	V23	V38	V70	V15	V23	V38
1	1.5~7 {15~70}	—	—	—	○	○	○	○
1	2.5~7 {25~70}	○	○	○	—	—	—	—
2	1.5~14 {15~140}	—	—	—	○	○	○	○
2	2.5~14 {25~140}	○	○	○	—	—	—	—
3	3.5~21 {35~210}	○	○	○	○	○	○	○
4	3.5~25 {35~250}	—	○	○	—	—	○	○

● **Dual pressure control**

(9) **Low pressure adjusting range**

Mark	Pressure adjusting range MPa {kgf/cm ² }	V15	V23	V38
1	1.5~7 {15~70}	○	○	○
2	1.5~14 {15~140}	○	○	○

Note) If both low and high pressure adjusting range are the pattern 1, the adjusting pressure range becomes 0.8~7MPa {8~70kgf/cm²}.

(10) **High pressure adjusting range**

Mark	Pressure adjusting range MPa {kgf/cm ² }	V15	V23	V38
1	1.5~7 {15~70}	○	○	○
2	1.5~14 {15~140}	○	○	○
3	3.5~21 {35~210}	○	○	○
4	3.5~25 {35~250}	—	○	○

● **Power match control**

(6) **Pressure adjusting range**

Mark	Pressure adjusting range MPa {kgf/cm ² }	V15	V23	V38	V50	V70
1	0.8~7 {8~70}	○	○	○	—	—
1	1.5~7 {15~70}	—	—	—	○	○
2	1.5~14 {15~140}	○	○	○	○	○
3	3.5~21 {35~210}	○	○	○	○	○
4	3.5~25 {35~250}	—	○	○	—	—

Nomenclature

* - V ** SAJS - * * X - **
 1 2 3 4 5 6 7 8

(1) Fluid mark applied

No mark : Working oil with petroleum contents
 W : Working oil with water/glycol

(2) Model No.

V : V series piston pump

(3) Displacement volume

23 : 23.0cm³/rev
 38 : 37.7cm³/rev
 50 : 51.6cm³/rev
 70 : 69.8cm³/rev

(4) Control method

SAJS : Power match control

(5) Pressure adjusting range

A : *~14 MPa {140kgf/cm²}
 B : *~17.5 MPa {175kgf/cm²}
 C : *~21 MPa {210kgf/cm²}

* The lowest adjusting pressure is different from model by model.

(6) Direction of the rotation from the view of the shaft end (refer to page 1 for the applied models)

R : Clockwise (rightward)
 L : Counterclockwise (leftward)

(7) Piping direction

X : Side port

(8) Design number (the design number is subject to change)

30 : Model No. V23
 95 : Model No. V38
 20 : Model No. V50
 60 : Model No. V70

* - V 15 A 1 R Y - 95
 1 2 3 4 5 6 7 8

(1) Nomenclature of applied fluid (refer to page 1 for the models applied)

No mark : Working oil with petroleum contents
 W : Working oil with water/glycol
 F : Working oil with phosphoric acid ester

(2) Model No.

V : V series piston pump

(3) Displacement volume

15 : 14.8cm³/rev

(4) Control method

A : Pressure compensation control

(5) Pressure adjusting range

1 : 0.8~7MPa {8~70kgf/cm²}

(6) Direction of the rotation (from the view of the shaft end)

R : Clockwise (rightward)

(7) Piping connection

Y : Suction connection : Flange
 Discharge connection : Taper screw for tube use

(8) Design number (the design number is subject to change)

Specifications

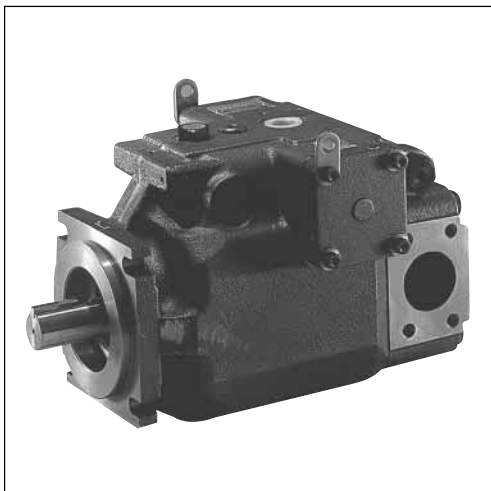
Model No.	Theoretical displacement cm ³ /rev	Operating pressure MPa {kgf/cm ² }		Permissible rotation speed min ⁻¹	Displacement adjusting range 1800min ⁻¹ L/min	Weight (with control method A) kg	
		Max.	Rating			Axial port	Side port
V8	8.0	7 {70}	7 {70}	500~1800	4~14.4	—	8.9
V15	14.8	21 {210}	14 {140}	500~1800	5.6~26.6	12.8	14.5
V15 (Y type)	14.8	7 {70}	7 {70}	500~1800	5.6~26.6	13.5	
V23	23.0	25 {250}	17.5 {175}	500~1800	11~41.4	18.4	21.5
V38	37.7	25 {250}	17.5 {175}	500~1800	28~68	24.4	26
V50	51.6	21 {210}	14 {140}	500~1800	0~93	—	50
V70	69.8	21 {210}	14 {140}	500~1800	20~126	—	55

Note) JR-G(T)02 and JRP-G02 are recommended for the relief valve of the remote control system.

When the vent port is blocked, the pressure compensation structure doesn't work, and it comes to be a fixed pump state.

● Since foot is not attached to the pump, you might order it separately in at your use.

VZ series piston pump



Features

- **High density of displacement**
The adoption of a cradle swash plate makes it possible to cope with both compactness and high pressure. Accordingly, the output per an unit weight has been increased.
- **Low operation noise**
The increased stiffness of the swash structure and the housing shape, which has been developed by the latest measurement and analysis technologies, make the operation noise reduce extremely.
- **High efficiency**
The spherical valve plate and the suitable oil pressure balance enable it to keep a steady state under the broad range of the operative conditions, resulting in high efficiency.
- **Long life**
The adoption of the spherical valve plate with a superior abrasion resistance makes it possible to strengthen anti-contaminant characteristics.

Nomenclature

● Pressure compensator control

VZ *** A * R X - 10 **

1 2 3 4 7 10 11 12

● Combination control

VZ *** C * * R * * X — 10

1 2 3 5 6 7 8 9 10 11

(1) Model No.

VZ : VZ series piston pump

(2) Displacement volume

50 : 50.2cm³/rev

63 : 63.0cm³/rev

80 : 79.6cm³/rev

100 : 104.6cm³/rev

130 : 135.9cm³/rev

(3) Control method I (refer to page 1 for the models applied)

A : Pressure compensator control

C : Combination control

(4) Pressure adjusting range

1 : 1.5~7MPa {15~70kgf/cm²}

2 : 1.5~14MPa {15~140kgf/cm²}

3 : 3.5~21MPa {35~210kgf/cm²}

4 : 3.5~28MPa {35~280kgf/cm²} ★1

(5) Low pressure adjusting range

1 : 1.5~7MPa {15~70kgf/cm²}

2 : 1.5~14MPa {15~140kgf/cm²}

3 : 3.5~21MPa {35~210kgf/cm²}

4 : 3.5~28MPa {35~280kgf/cm²} ★1

(6) High pressure adjusting range

1 : 1.5~7MPa {15~70kgf/cm²}

2 : 1.5~14MPa {15~140kgf/cm²}

3 : 3.5~21MPa {35~210kgf/cm²}

4 : 3.5~28MPa {35~280kgf/cm²} ★1

(7) Direction of the rotation (from the view of the shaft end)

R : Clockwise (rightward)

(8) Control method II

H : Self pressure method

J : Solenoid operated valve method

(9) Voltage mark for the solenoid operated valve

< Only be applied for the case that the control method II is J >

A : AC100V (50/60Hz), AC110V (60Hz)

B : AC200V (50/60Hz), AC220V (60Hz)

P : DC24V

(10) Piping direction X : Side port

(11) Design number (design number is subject to change)

(12) Control method III

No mark : Without remote control system

RC : With remote control system ★2

<Only be applied for the case that the control method I is A>

Note) ★1 The 4th pattern of the pressure adjusting range (3.5~28MPa {35~280kg/cm²}) is only applied for VZ50, 63, 80, 100.

★2 The pressure adjusting range with remote control system is the 4th pattern only (but 3rd pattern for VZ130).

Specifications

Model No.	Theoretical displacement cm ³ /rev	Operating pressure MPa {kgf/cm ² }		Permissible rotation speed min ⁻¹	Displacement adjusting range 1800min ⁻¹ L/min	Weight (control method : A) kg
		Max.	Rated			
VZ50	50.2	28 {280}	25 {250}	500~1800	0~90	40
VZ63	63.0	28 {280}	25 {250}	500~1800	0~113	47
VZ80	79.6	28 {280}	25 {250}	500~1800	0~143	55
VZ100	104.6	28 {280}	25 {250}	500~1800	0~188	75
VZ130	135.9	21 {210}	17.5 {175}	500~1800	0~244	105

Motor pumps

Whole models

Model No.	Piping direction	Control method								
		A	A-RC	CH	CH-RC	CJ	CJ-RC	D	D-RC	SA
M8	Side port	○	—	—	—	—	—	—	—	—
M15	Side port	○	○	○	○	○	○	○	○	○
	Axial port	○	○	—	—	—	—	—	—	○
M23	Side port	○	○	○	○	○	○	○	○	○
	Axial port	○	○	—	—	—	—	—	—	○
M38	Side port	○	○	○	○	○	○	○	○	○
	Axial port	○	○	—	—	—	—	—	—	○

Models applied for incombustible working oil

Model No.	Working oil	Control method								
		A	A-RC	CH	CH-RC	CJ	CJ-RC	D	D-RC	SA
M8	Working oil with water/glycol (W)	—	—	—	—	—	—	—	—	—
	Working oil with phosphoric acid ester (F)	—	—	—	—	—	—	—	—	—
M15	Working oil with water/glycol (W)	○	○	○	○	○	○	○	○	○
	Working oil with phosphoric acid ester (F)	○	○	○	○	○	○	○	○	○
M23	Working oil with water/glycol (W)	○	○	○	○	○	○	○	○	○
	Working oil with phosphoric acid ester (F)	○	○	○	○	○	○	○	○	○
M38	Working oil with water/glycol (W)	○	○	○	○	○	○	○	○	○
	Working oil with phosphoric acid ester (F)	○	○	○	○	○	○	○	○	○

Note) Contact us for the applied conditions.