

V Series Piston Pumps



Features

- **Low noise**
 - Low noise operation over the entire pressure range has been realized in each series.
- **High efficiency**
 - Fluid temperature rise can be reduced due to the smaller power loss. This means that the tank can be designed in a small size.
- **High reliability**
 - High responsiveness, 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 (pressure feedback 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 Applicable fluid code (Refer to Page A-5 for the applicable models and conditions of use)

No designation: Petroleum-based hydraulic fluid
 W: Water-glycol hydraulic fluid
 F: Phosphate ester hydraulic fluid

2 Model No.

V: V series piston pump

3 Pump capacity

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

4 Control method I (Refer to Page A-4 for the applicable models)

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

5 6 Pressure adjustment range (See the pressure adjustment range table)

7 9 Low pressure adjustment range (See the pressure adjustment range table)

8 10 High pressure adjustment range (See the pressure adjustment range table)

11 FC valve differential pressure

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

12 Direction of rotation, when viewed from the shaft end (Refer to Page A-4 for the applicable models)

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

*The direction of rotation (rightward or leftward) cannot be changed.

13 Control method II

H: Pressure feedback method
 J: Solenoid operated method

14 Voltage code for the solenoid valve

A: AC 100 V (50/60 Hz), AC 110 V (60 Hz)
 B: AC 200 V (50/60 Hz), AC 220 V (60 Hz)
 N: DC 12 V
 P: DC 24 V

15 Piping direction (Refer to Page A-4 for the applicable models)

No designation: Axial port
 X: Side port

16 Design No. (The design No. is subject to change) *1

20: Pump model V8, V50
 95: Pump model V15, V38
 30: Pump model V23
 <When control method I is A, CH, or SA>
 35: Pump model V23
 <When control method I is CJ or D>
 60: Pump model V70

Control method III

17 No designation. Without remote control system
 RC: With remote control system

Models and pressure adjustment range table

● Pressure compensator control (4 = A)

5 Pressure adjustment range

Code	Pressure adjustment range MPa (kgf/cm ²)	Without remote control system						With remote control system				
		V8	V15	V23	V38	V50	V70	V15	V23	V38	V50	V70
1	0.8 to 7 { 8 to 70 }	✓	✓	✓	✓	-	-	-	-	-	-	-
1	1.5 to 7 {15 to 70 }	-	-	-	-	✓	✓	-	-	-	-	-
2	1.5 to 14 {15 to 140 }	-	✓	✓	✓	✓	✓	-	-	-	-	-
3	1.5 to 21 {15 to 210 }	-	-	-	-	-	-	✓	-	-	-	-
3	2 to 21 {20 to 210 }	-	-	-	-	-	-	-	-	-	✓	✓
3	3.5 to 21 {35 to 210 }	-	✓	✓	✓	✓	✓	-	-	-	-	-
4	1.5 to 25 {15 to 250 }	-	-	-	-	-	-	-	✓	✓	-	-
4	3.5 to 25 {35 to 250 }	-	-	✓	✓	-	-	-	-	-	-	-

● Combination control [4 = C, 13 = H (self-regulation method) or 13 = J (solenoid operated method)]

7 Low pressure adjustment range

Code	Pressure adjustment range MPa (kgf/cm ²)	Pressure feedback method				Solenoid operated method		
		V15	V23	V38	V70	V15	V23	V38
1	1.5 to 7 {15 to 70 }	-	-	-	✓	✓	✓	✓
1	2.5 to 7 {25 to 70 }	✓	✓	✓	-	-	-	-
2	1.5 to 14 {15 to 140 }	-	-	-	✓	✓	✓	✓
2	2.5 to 14 {25 to 140 }	✓	✓	✓	-	-	-	-

8 High pressure adjustment range

Code	Pressure adjustment range MPa (kgf/cm ²)	Without remote control system						With remote control system							
		Pressure feedback method				Solenoid operated method		Pressure feedback method				Solenoid operated method			
		V15	V23	V38	V70	V15	V23	V38	V15	V23	V38	V70	V15	V23	V38
1	1.5 to 7 {15 to 70 }	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-
1	2.5 to 7 {25 to 70 }	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-
2	1.5 to 14 {15 to 140 }	-	-	-	✓	✓	✓	-	-	-	-	-	-	-	-
2	2.5 to 14 {25 to 140 }	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-
3	2.0 to 21 {20 to 210 }	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
3	2.5 to 21 {25 to 210 }	-	-	-	-	-	-	✓	-	-	✓	-	-	-	-
3	3.5 to 21 {35 to 210 }	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
4	2.0 to 25 {20 to 250 }	-	-	-	-	-	-	-	-	-	-	-	✓	-	✓
4	2.5 to 25 {25 to 250 }	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-
4	3.5 to 25 {35 to 250 }	-	✓	✓	-	-	✓	✓	-	-	-	-	-	-	-

● Dual pressure control (4 = D)

9 Low pressure adjustment range

Code	Pressure adjustment range MPa (kgf/cm ²)	V15	V23	V38
1	1.5 to 7 {15 to 70 }	✓	✓	✓
2	1.5 to 14 {15 to 140 }	✓	✓	✓

Note: If both low and high pressure adjustment ranges are the 1st pattern, the pressure adjustment range becomes 0.8 to 7 MPa (8 to 70 kgf/cm²).

● Power-match control (4 = SA)

6 Pressure adjustment range

Code	Pressure adjustment range MPa (kgf/cm ²)	V15	V23	V38	V50	V70
1	0.8 to 7 { 8 to 70 }	✓	✓	✓	-	-
1	1.5 to 7 {15 to 70 }	-	-	-	✓	✓
2	1.5 to 14 {15 to 140 }	✓	✓	✓	✓	✓
3	3.5 to 21 {35 to 210 }	✓	✓	✓	✓	✓
4	3.5 to 25 {35 to 250 }	-	✓	✓	-	-

10 High pressure adjustment range

Code	Pressure adjustment range MPa (kgf/cm ²)	Without remote control system			With remote control system		
		V15	V23	V38	V15	V23	V38
1	1.5 to 7 {15 to 70 }	✓	✓	✓	-	-	-
2	1.5 to 14 {15 to 140 }	✓	✓	✓	-	-	-
3	2.5 to 21 {25 to 210 }	-	-	-	✓	-	-
3	3.5 to 21 {35 to 210 }	✓	✓	✓	-	-	-
4	2.5 to 25 {25 to 250 }	-	-	-	-	✓	✓
4	3.5 to 25 {35 to 250 }	-	✓	✓	-	-	-

Nomenclature

※ - V ※※ SAJS - ※ ※ X - ※ ※

1 2 3 4 5 6 7 8

1 Applicable fluid code

No designation: Petroleum-based hydraulic fluid
W: Water-glycol hydraulic fluid

2 Model No.

V: V series piston pump

3 Pump capacity

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

4 Control method

SAJS: Power-match control

5 Pressure adjustment range

A: Up to 14 MPa {140 kgf/cm²}
B: Up to 17.5 MPa {175 kgf/cm²}
C: Up to 21 MPa {210 kgf/cm²}
* The minimum adjustment pressure varies depending on the model.

6 Direction of rotation, when viewed from the shaft end (Refer to Page A-4 for the applicable models)

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

7 Piping direction

X: Side port

8 Design number

(The design number is subject to change)

30: Pump model V23
95: Pump model V38
20: Pump model V50
60: Pump model V70

※ - V 15 A 1 R Y - 95

1 2 3 4 5 6 7 8

1 Applicable fluid code

No designation: Petroleum-based hydraulic fluid
W: Water-glycol hydraulic fluid
F: Phosphate ester hydraulic fluid

2 Model No.

V: V series piston pump

3 Pump capacity

15: 14.8 cm³/rev

4 Control method

A: Pressure compensator control

5 Pressure adjustment range

1: 0.8 to 7 MPa {8 to 70 kgf/cm²}

6 Direction of rotation, when viewed from the shaft end

R: Clockwise (rightward)

7 Piping port

Y: Suction port: Flange
Discharge port: Taper pipe threads

8 Design No. (The design No. is subject to change) *1

Note: *1 Refer to Page A-69 for information on forward/backward compatibility.

Specifications

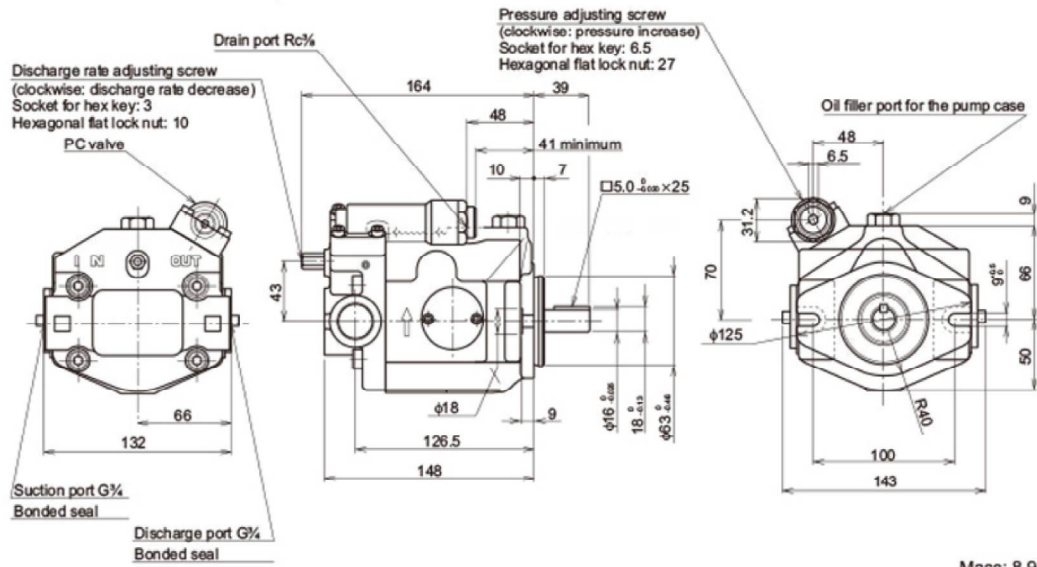
Model No.	Theoretical discharge rate cm ³ /rev	Maximum operating pressure MPa {kgf/cm ² }	Permissible rotational speed min ⁻¹	Discharge rate adjustment range 1800 min ⁻¹ L/min		Mass (Control method A) kg	
				Axial port	Side port	Axial port	Side port
V8	8.0	7 { 70}	500 to 1800	2 to 14.4	-	-	8.9
V15	14.8	21 {210}	500 to 1800	4.5 to 26.6	7.5 to 26.6	12.8	14.5
V15 (Type Y)	14.8	7 { 70}	500 to 1800	4.5 to 26.6		13.5	
V23	23.0	25 {250}	500 to 1800	12 to 41.4	-	18.4	21.5
V38	37.7	25 {250}	500 to 1800	34 to 68	36.5 to 68	24.4	26
V50	51.6	21 {210}	500 to 1800	0 to 93	-	-	50
V70	69.8	21 {210}	500 to 1800	13 to 126	-	-	55

Note: JR-G (T) 02 and JRP-G02 are recommended for the remote control system's relief valve.

If the vent port is blocked, the pressure compensation structure does not work and the pump operates at a fixed pressure.

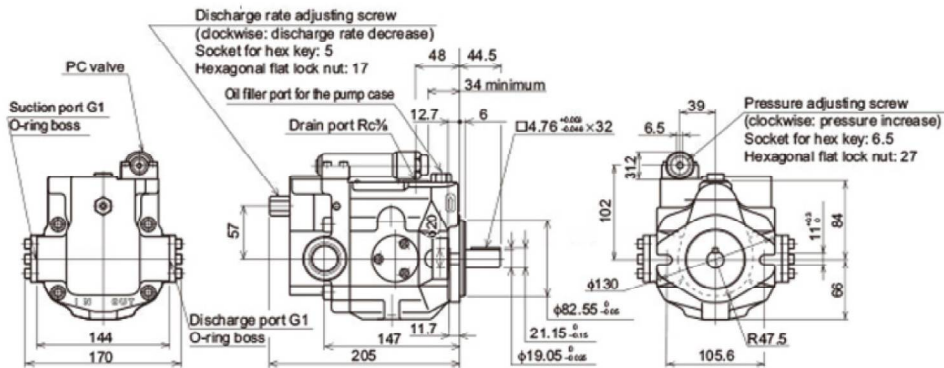
External dimension diagram

V8A1RX-20

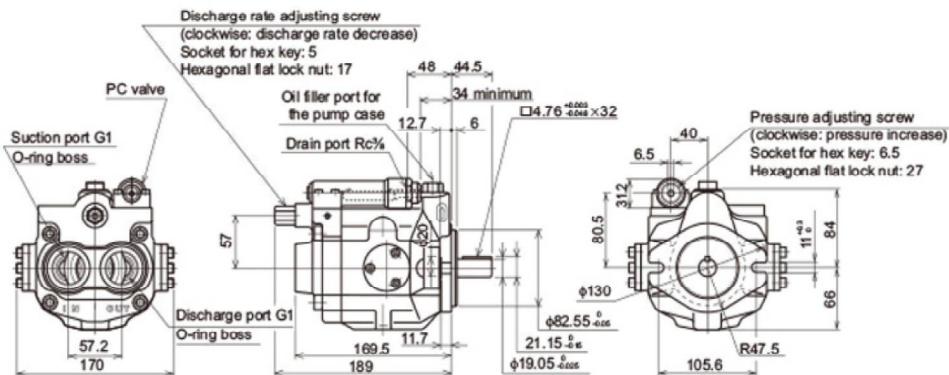


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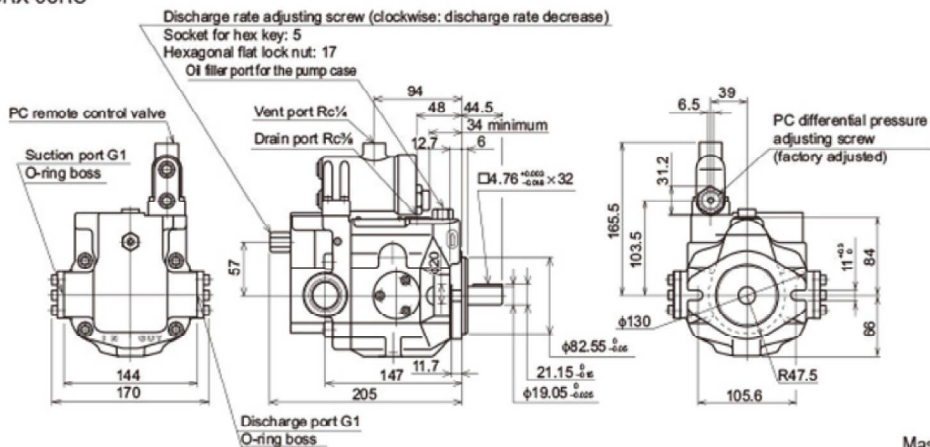
V15A※RX-95



V15A※R-95

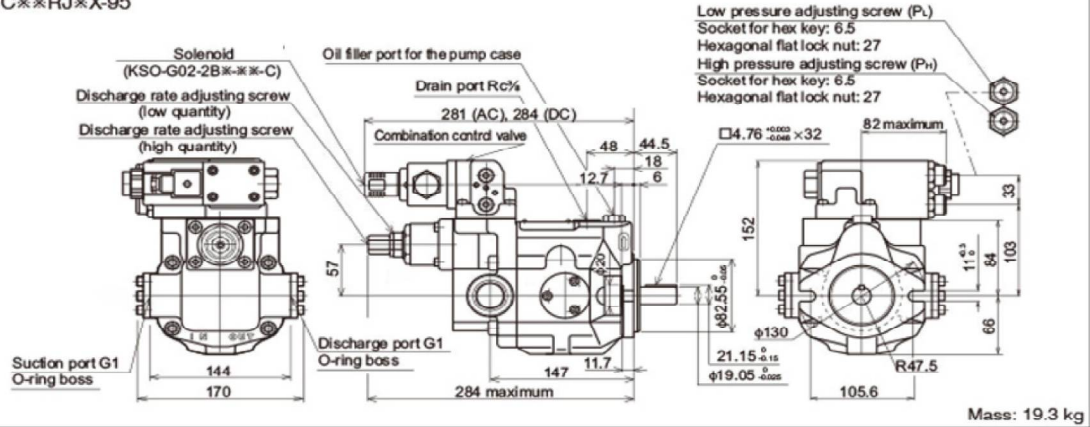


V15A3RX-95RC

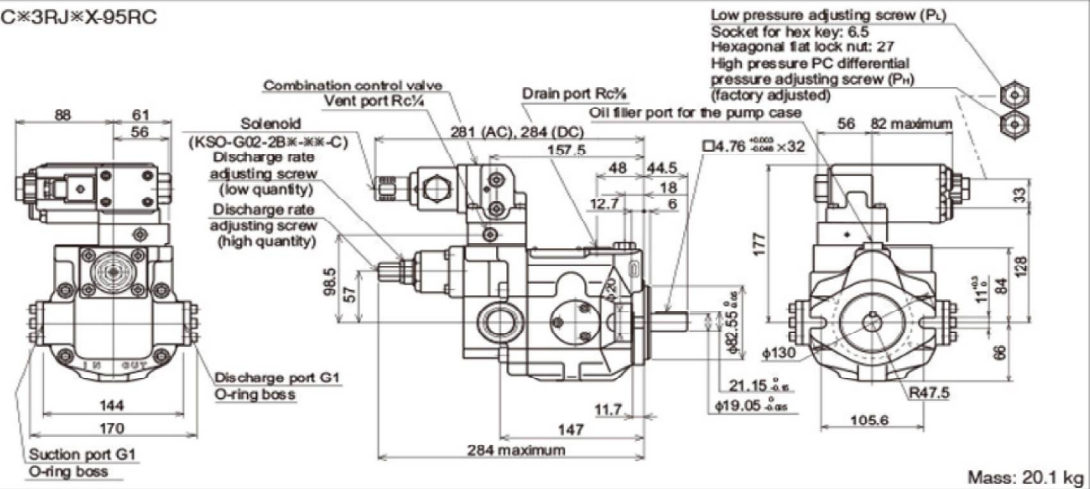


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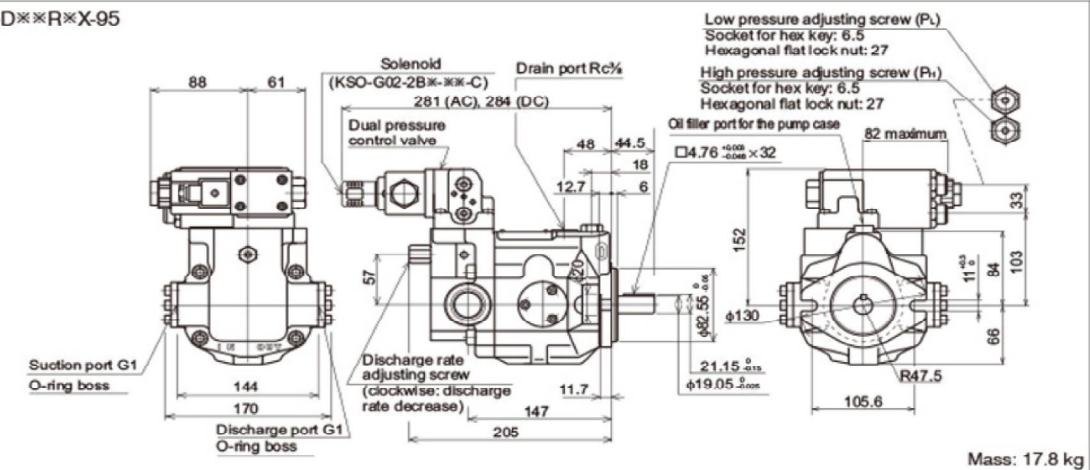
V15C※RJ※X-95



V15C※3RJ※X-95RC

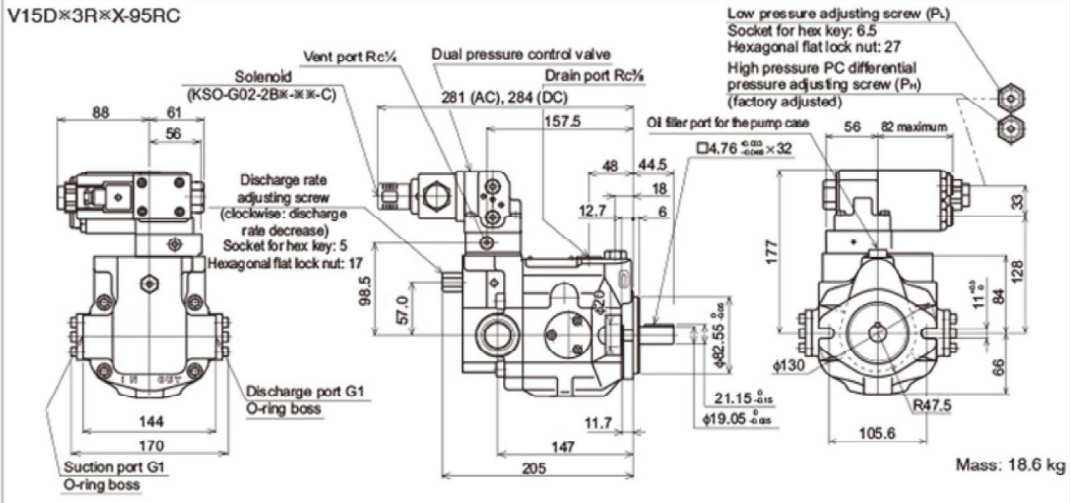


V15D※R※X-95

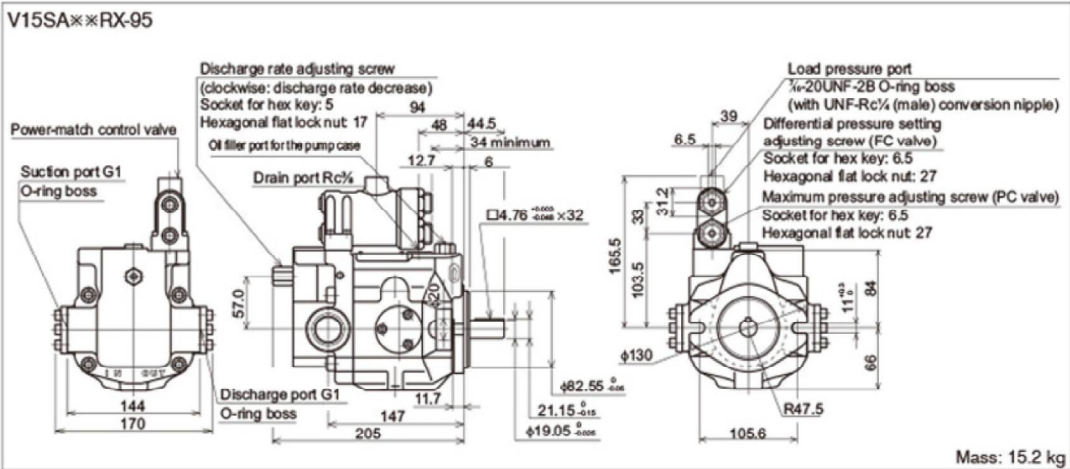


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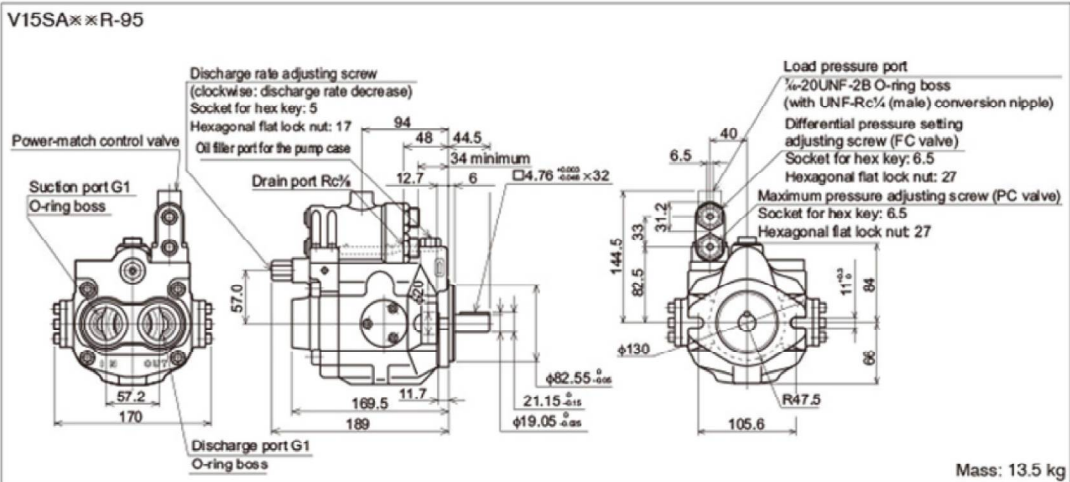
V15D×3R×X-95RC



V15SA×RX-95

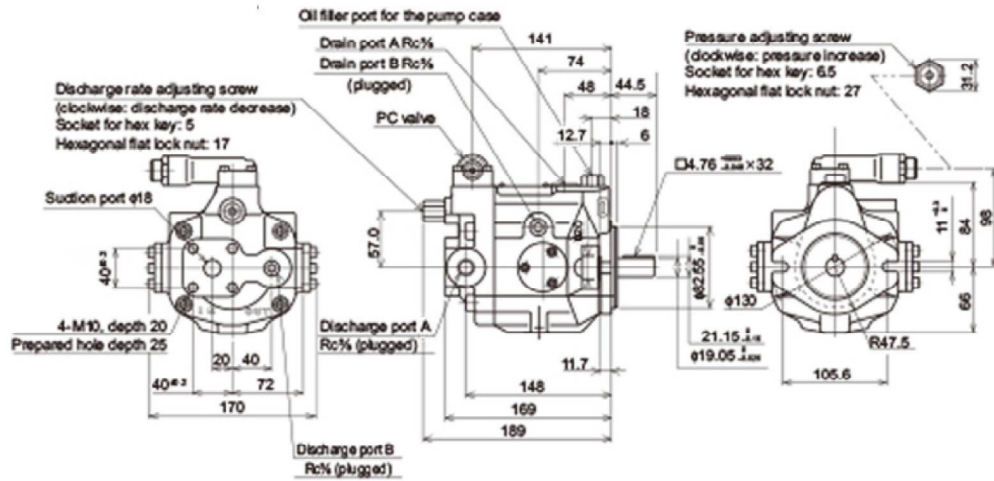


V15SA×R-95



External dimension diagram

V15A1RY-95

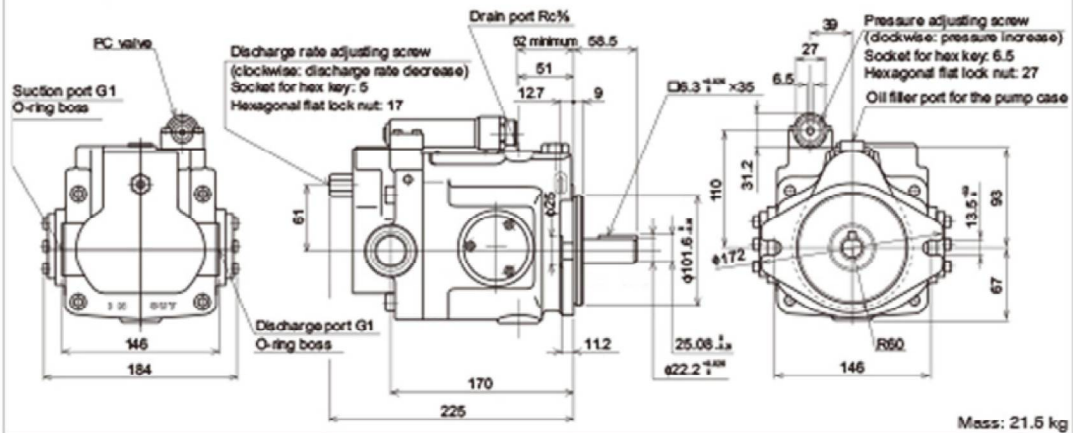


Mass: 13.5 kg

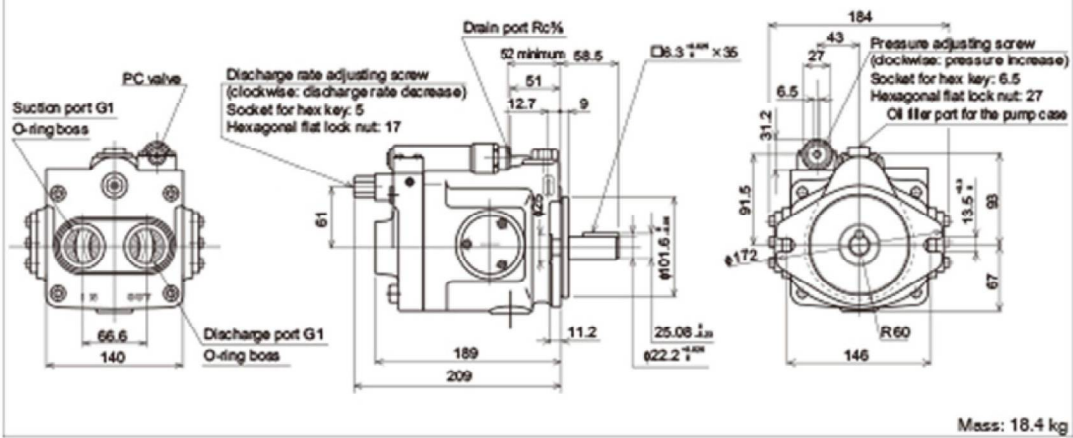
* Use SHA15 or SSA20 pipe flange (JIS B 2291) or equivalent at the suction side.

External dimension diagram

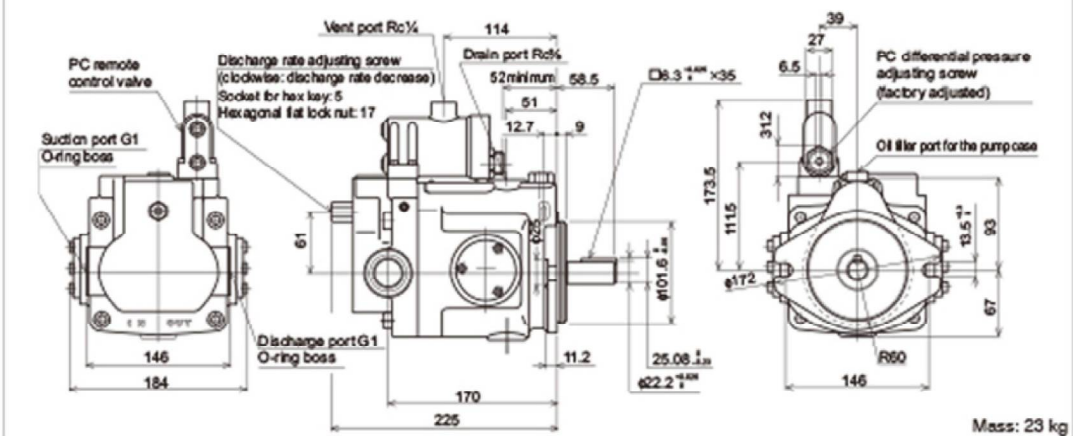
V23A※RX-30



V23A※R-30

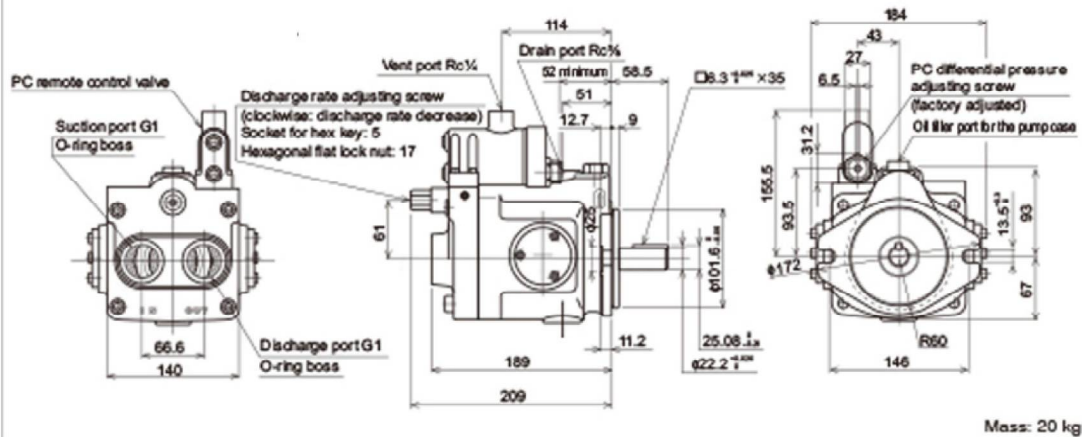


V23A4RX-30RC

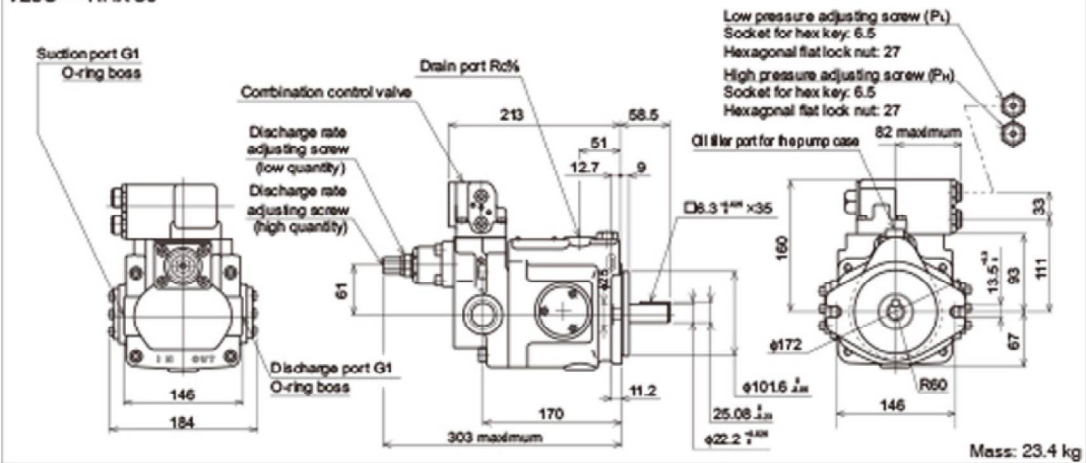


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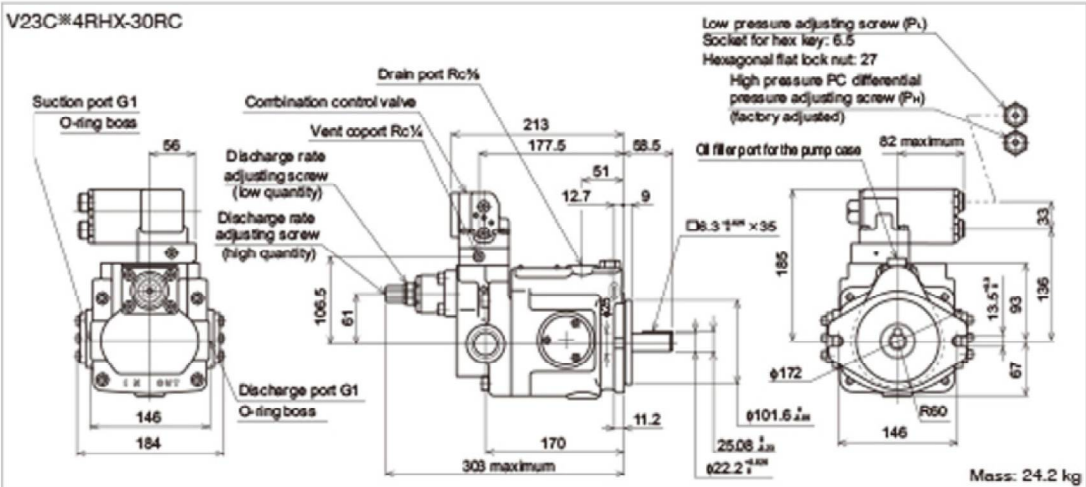
V23A4R-30RC



V23C※RHX-30

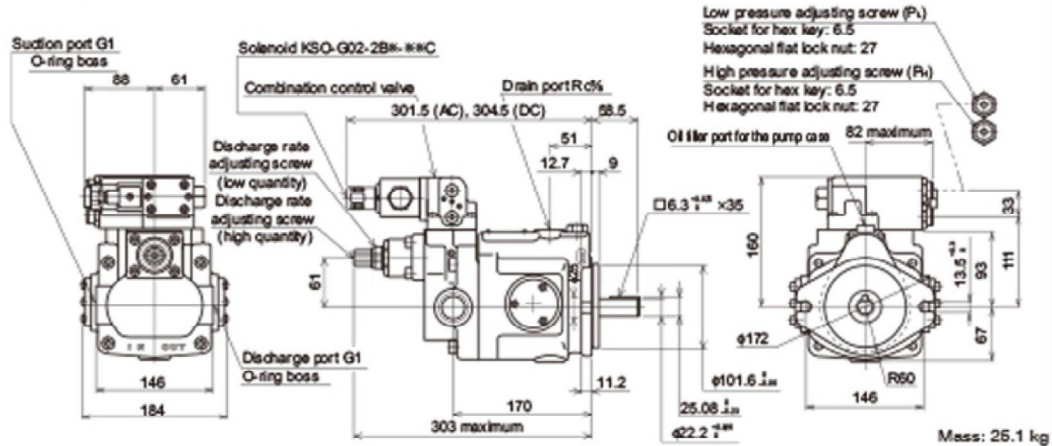


V23C※4RHX-30RC

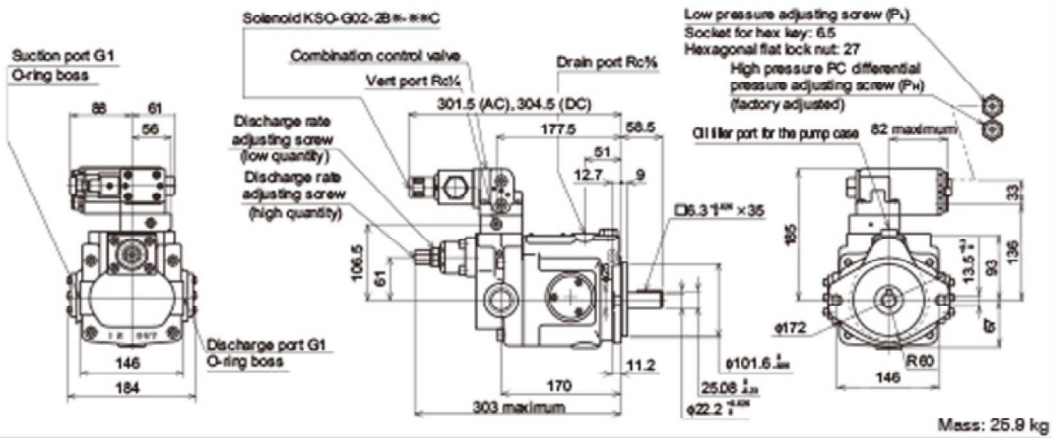


External dimension diagram

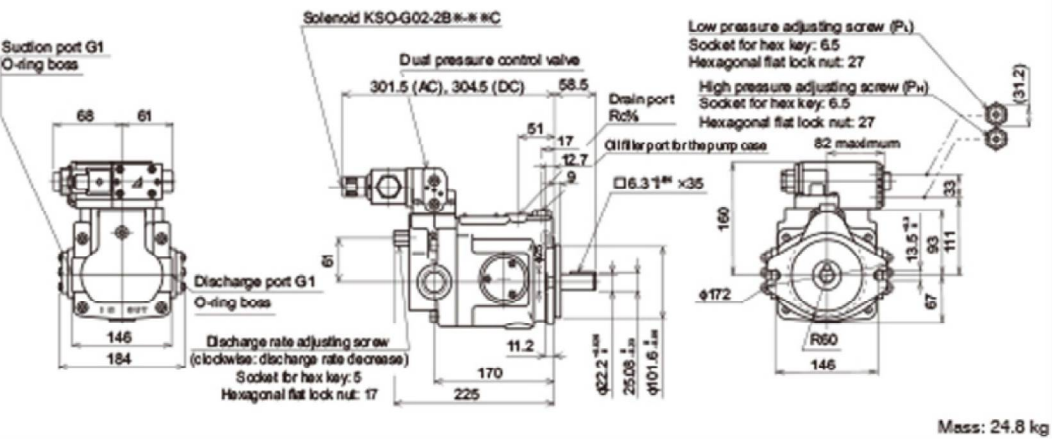
V23C※RJ※X-35



V23C※4RJ※X-35RC

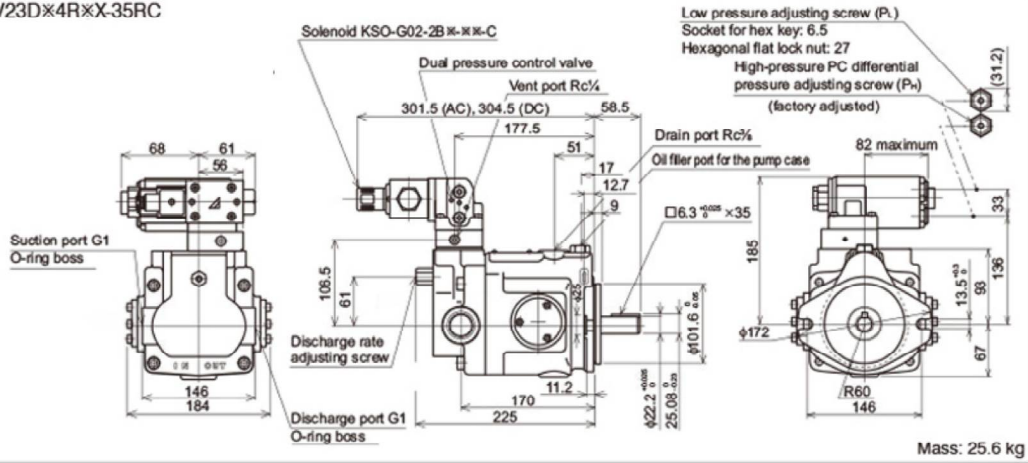


V23D※R※X-35

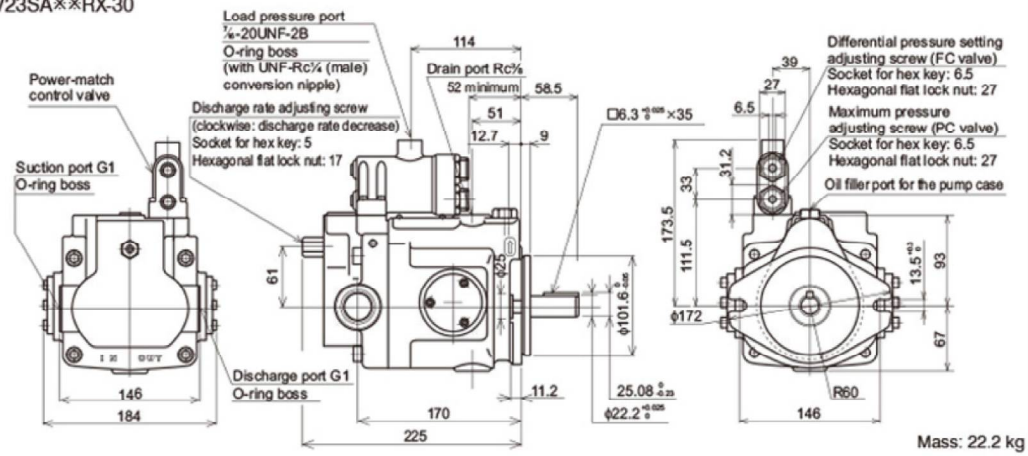


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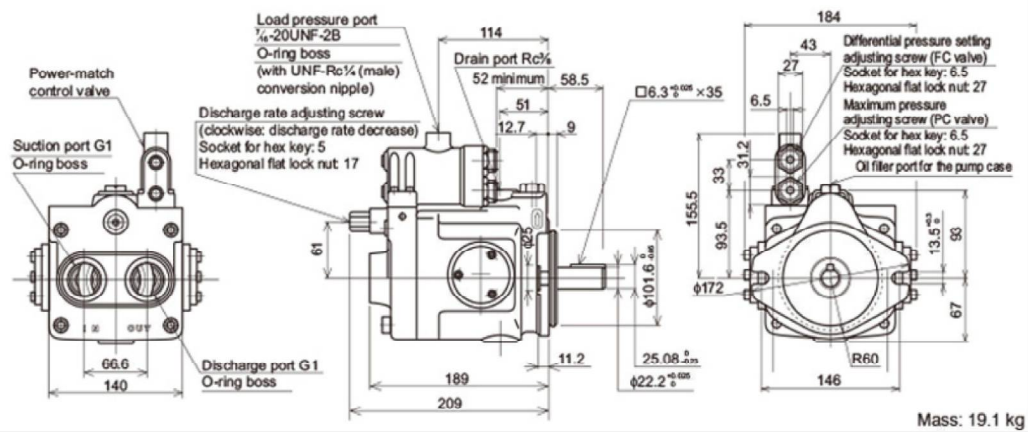
V23D×4R×X-35RC



V23SA×RX-30

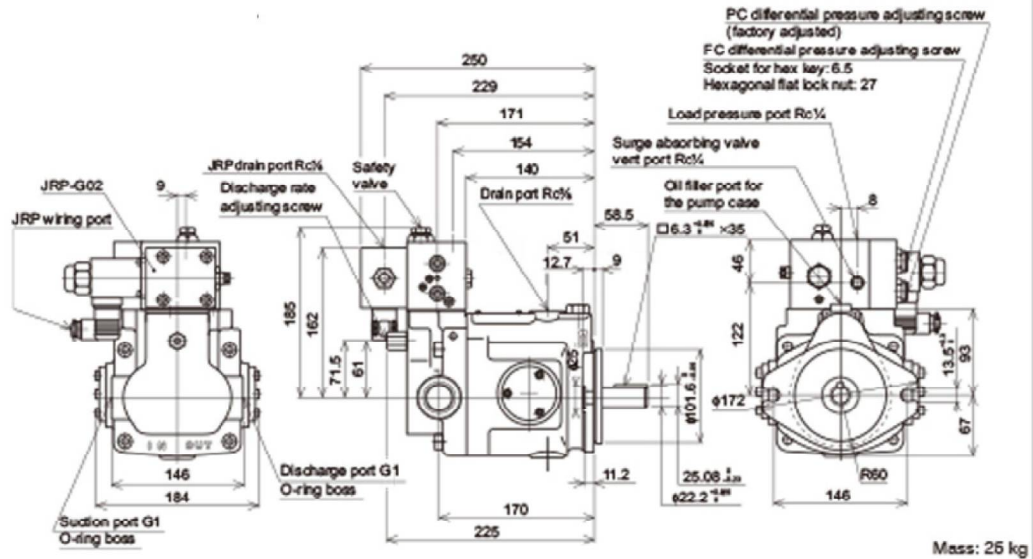


V23SA×R-30



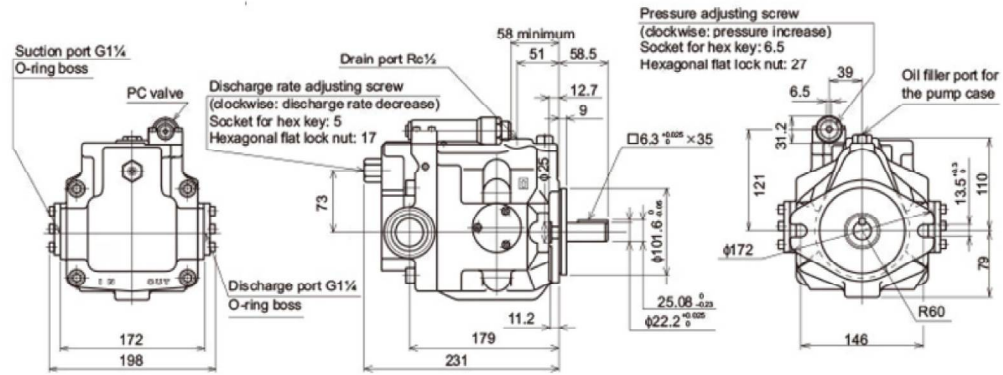
External dimension diagram

V23SAJS-※RX-30



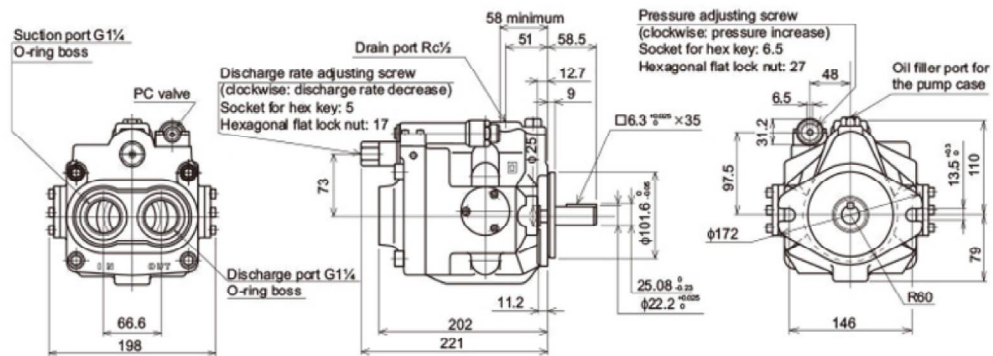
External dimension diagram

V38A×RX-95



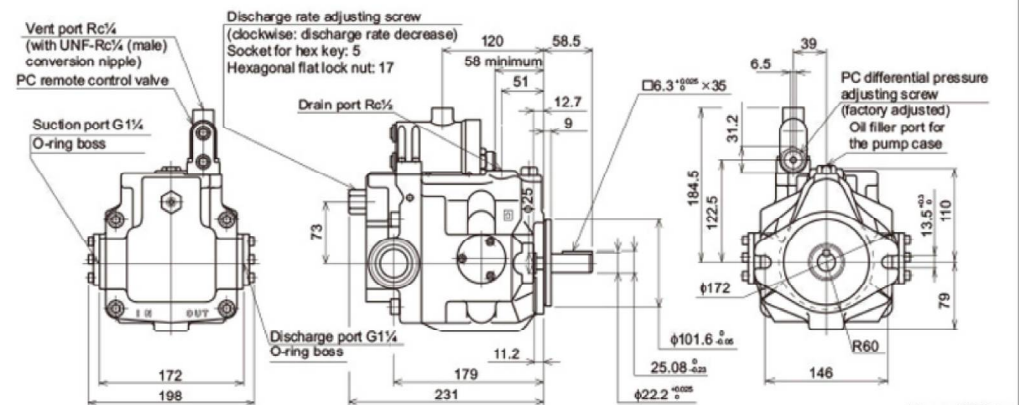
Mass: 26 kg

V38A×R-95



Mass: 24.4 kg

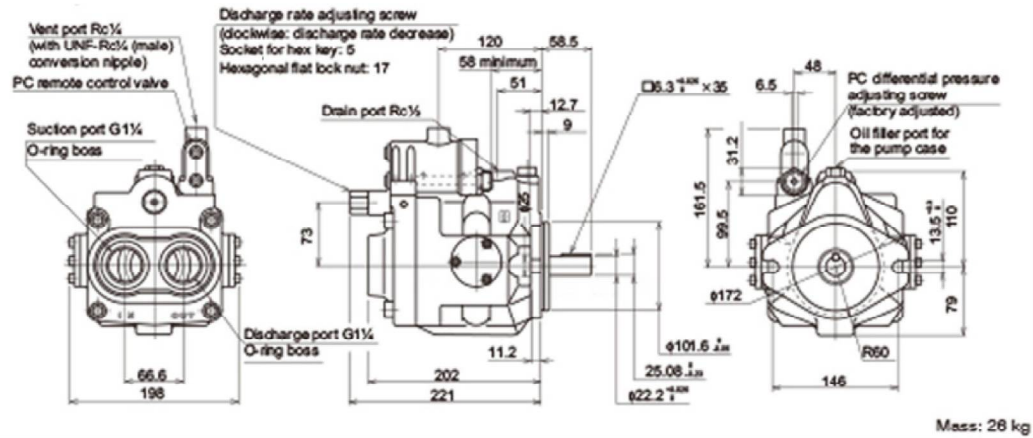
V38A4RX-95RC



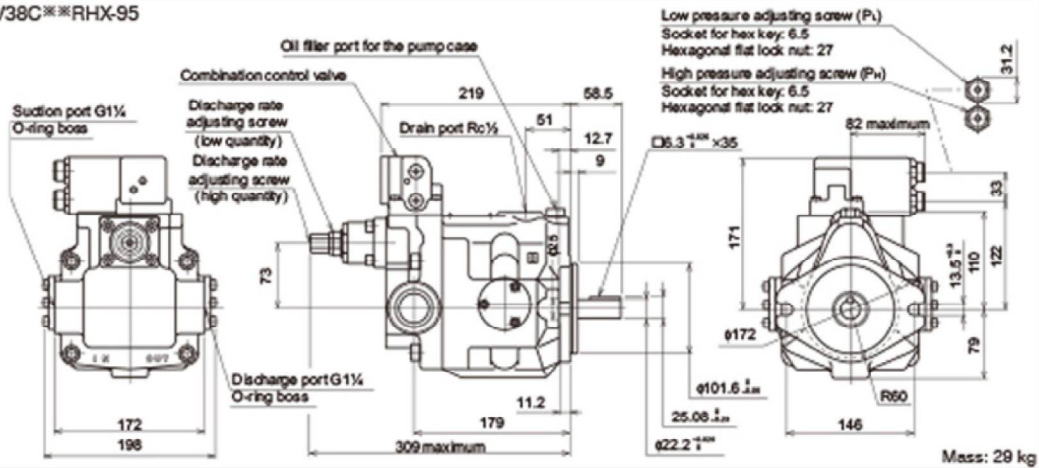
Mass: 28.7 kg

External dimension diagram

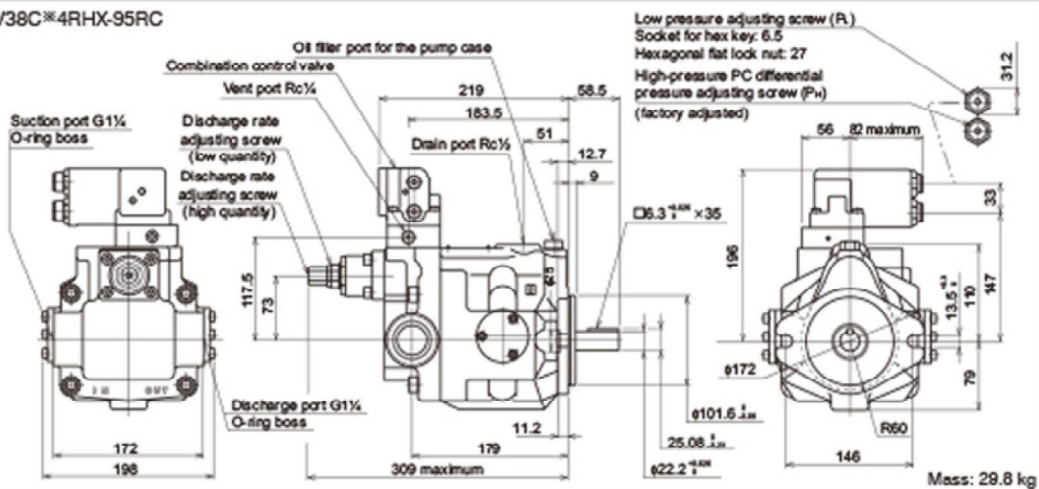
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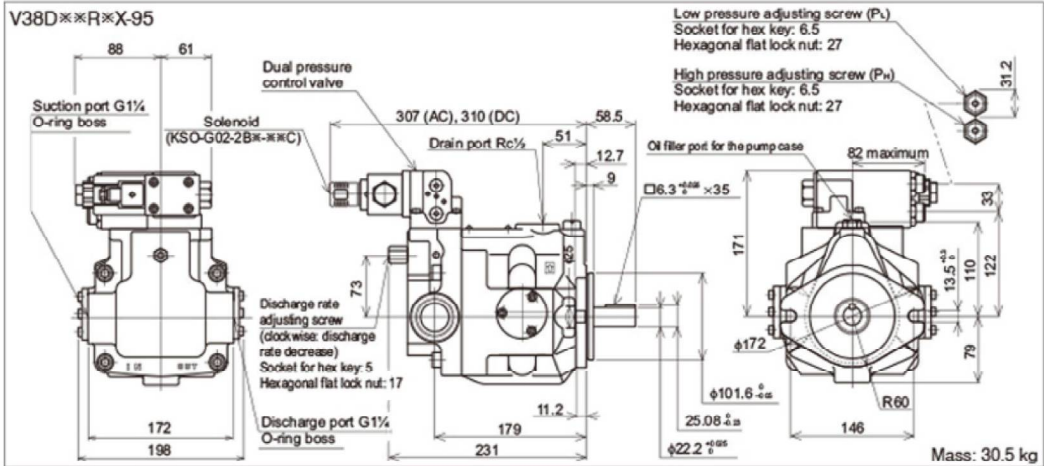
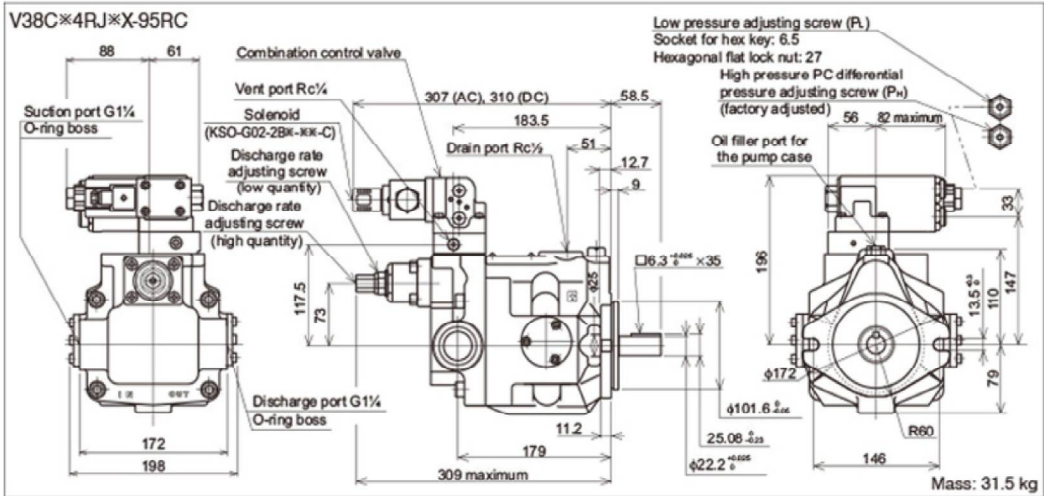
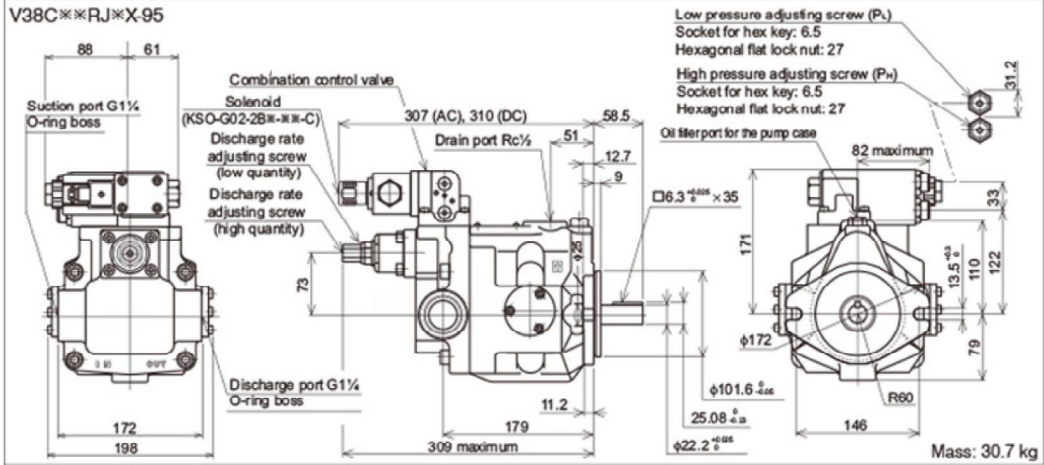
V38C**RHX-95



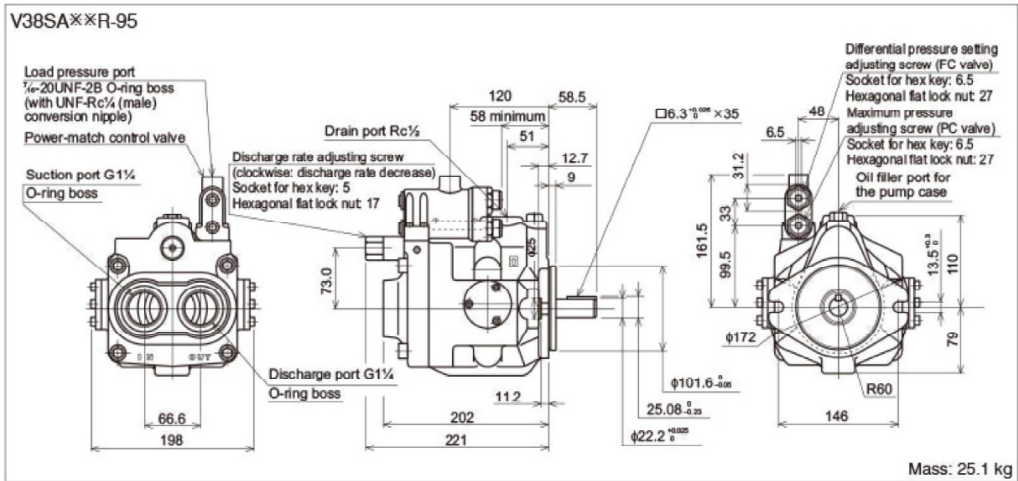
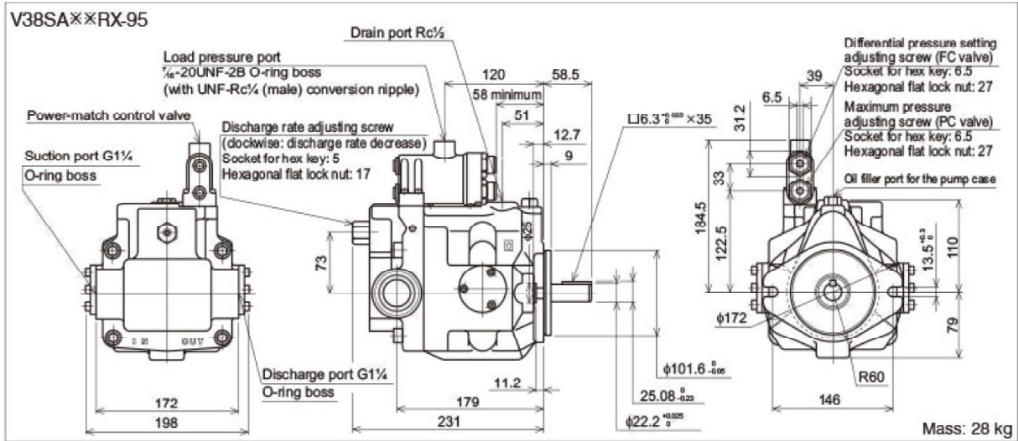
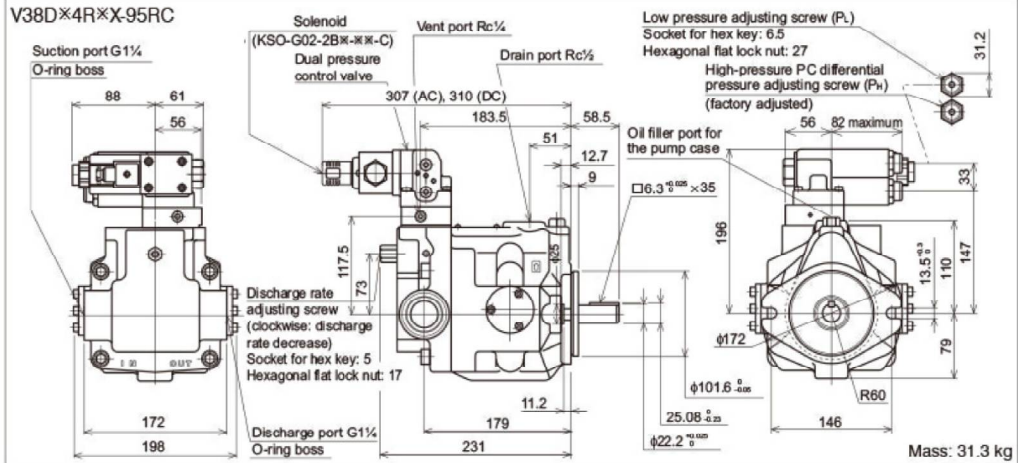
V38C**4RHX-95RC



External dimension diagram

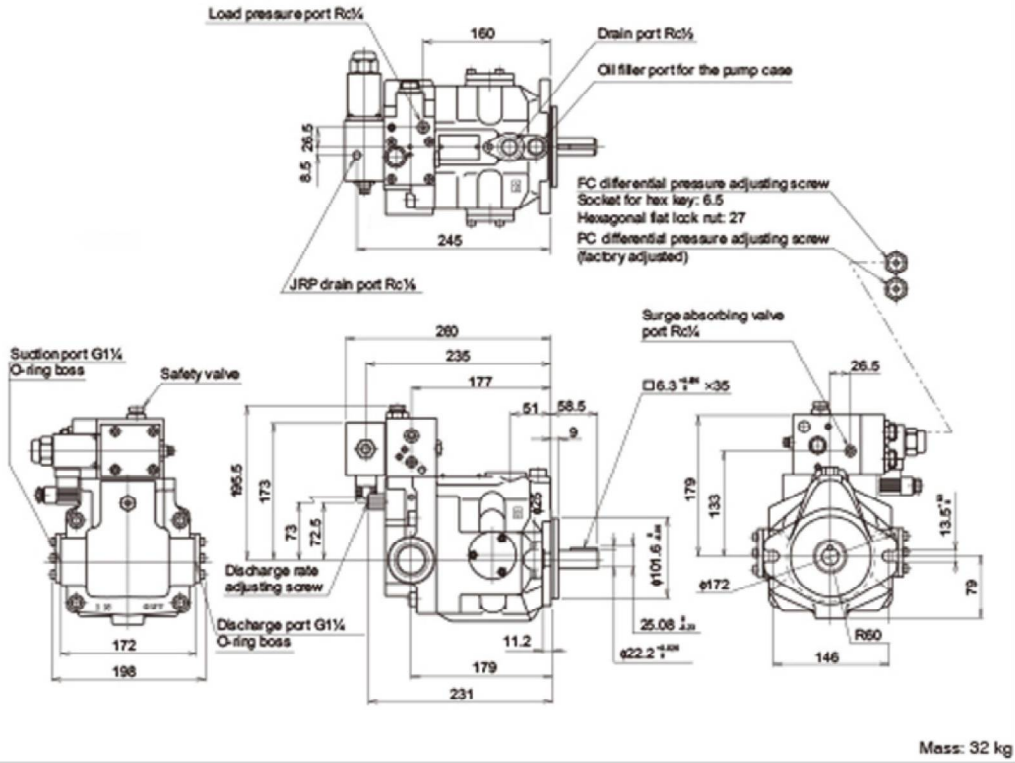


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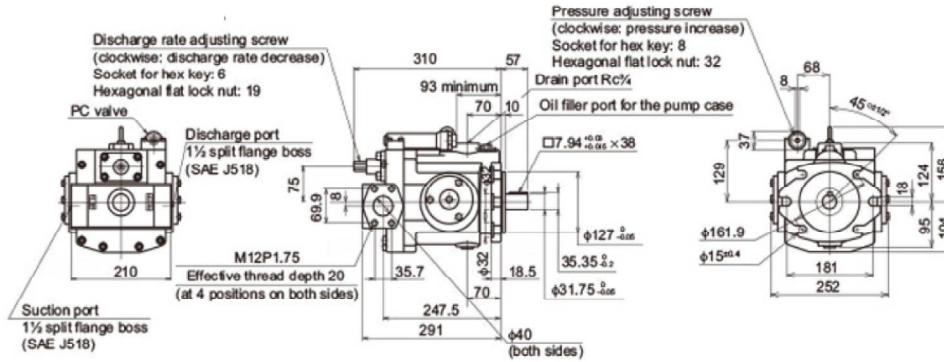
External dimension diagram

V38SAJS-※RX-95

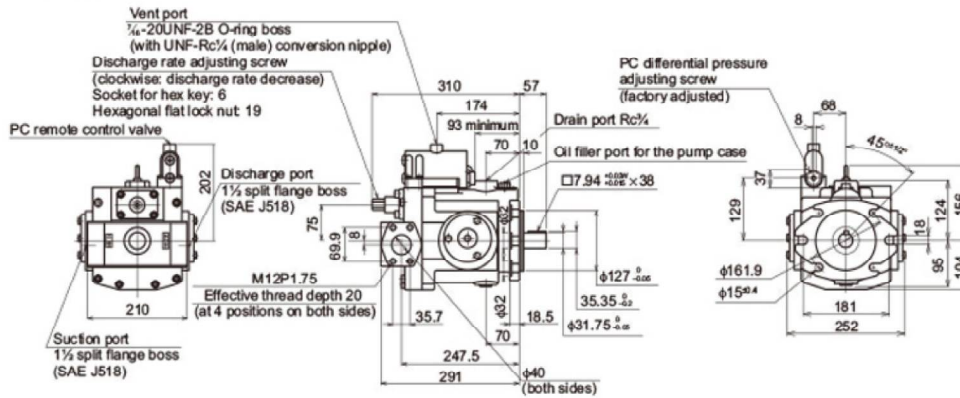


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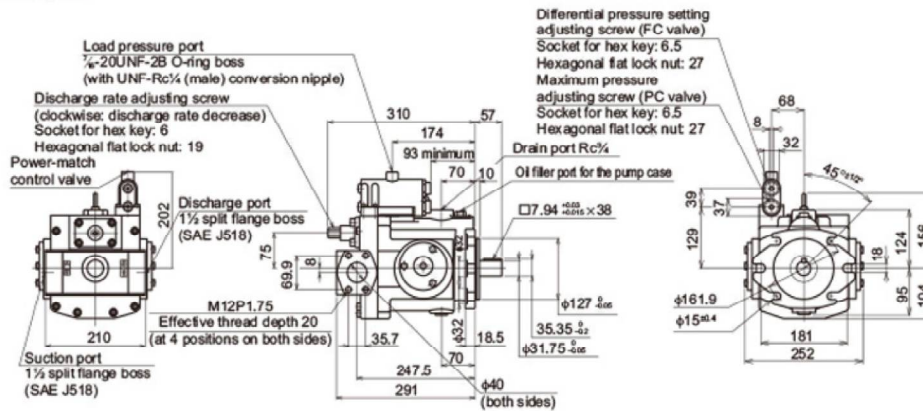
V50A※RX-20



V50A3RX-20RC

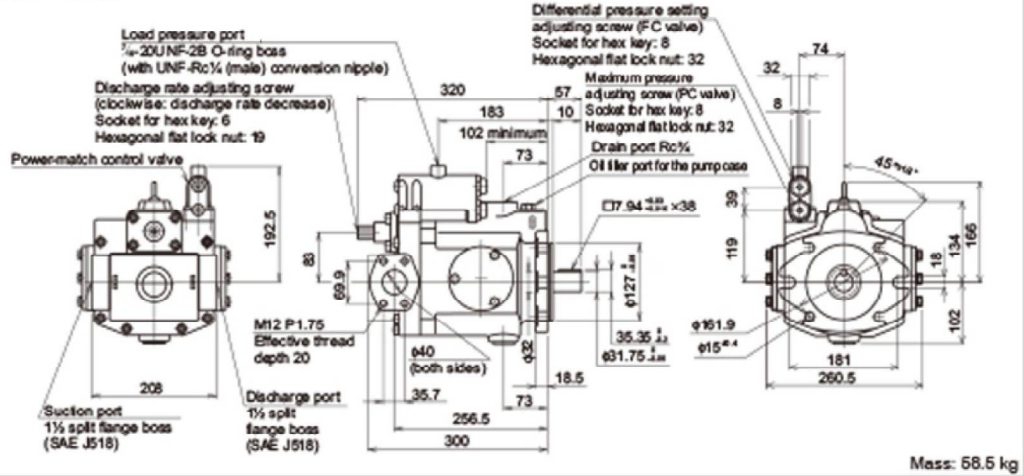


V50SA※RX-20



External dimension diagram

V70SA※※RX-60



V70SAJS-※RX-60

