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RP series Rotor Pumps



Features

● Low noise

Substantial reduction of the operation noise, by 10 to 15 db (comparison with Daikin products), and improved sound quality are achieved by adopting noise reduction technology unique to Daikin.

● Downsizing

The integrated structure reduces the total length by approximately 40% in comparison with Daikin conventional models, makes handling simpler, and is leading to downsizing the main machine.

● Low pulsation

Pulsation has also been reduced by approximately 50% in comparison with Daikin conventional models.

● High reliability

The fully enclosed structure with no shaft protruding from the casing eliminates the possibility of oil leakage without an oil seal. In addition, the oil-cooled motor suppresses temperature rise of the coil and enables prolonged continuous overloaded operation.

● CE compliant

These models are best suited to integration into European Safety Standard (CE) compliant equipment since they are equipped with a terminal box that satisfies the IP54 ingress protection grade and complies with international standards such as EN60034-1.

Nomenclature

● Pressure compensator control

RP × × A × - × × × - 30 × × - ×
 1 2 3 4 9 10 11 12 13

● Combination control (pressure feedback method)

RP × × C × × H - × × × - 30
 1 2 3 5 6 7 9 10 11

● Combination control (solenoid operated method)

RP × × C × × J × - × × × - 30
 1 2 3 5 6 7 8 9 10 11

Note: Refer to Page C-6 for possible combinations of pump capacities, control methods, and motor outputs.

1 Model No.

RP: RP series rotor pump

2 Pump capacity

08: 8.0 cm³/rev
 15: 14.8 cm³/rev
 23: 24.4 cm³/rev
 38: 37.7 cm³/rev

3 Control method I

A: Pressure compensator control
 C: Combination control

4 Pressure adjustment range (See the pressure adjustment range table)

5 Low pressure adjustment range

1: 2.5 to 7 MPa {25 to 70 kgf/cm²}
 2: 2.5 to 14 MPa {25 to 140 kgf/cm²}

6 High pressure adjustment range

1: 2.5 to 7 MPa {25 to 70 kgf/cm²}
 2: 2.5 to 14 MPa {25 to 140 kgf/cm²}
 3: 3.5 to 21 MPa {35 to 210 kgf/cm²}

7 Control method II

H: Pressure feedback method
 J: Solenoid operated method

8 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)
 P: DC 24 V

9 Motor output (See the motor specification table)

10 Voltage specifications

No designation: AC 200 V (50/60 Hz), AC 220 V (60 Hz)
 X: AC 230 V (50 Hz)
 Y: AC 380 V (50 Hz), AC 400 V (50/60 Hz)
 AC 415 V (50 Hz), AC 440 V (60 Hz)
 AC 460 V (60 Hz)

11 Design No. (The design No. is subject to change)

12 Control method III

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

13 Pump installation

No designation: Foot support mount
 T: Vertical installation^{*1}

Note: ^{*1} Vertical installation can only be applied to RP08 and RP15. Since the vibration-absorbing rubber pad has no effect in vertical installation, be sure to secure sufficient rigidity on the mounting base and incorporate a structure that absorbs vibration. Insufficient rigidity of the mounting base may cause noise and vibration.

Refer to Page N-8 for NDR series rotor packs, i.e. hydraulic units equipped with an RP series rotor pump.

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Models and pressure adjustment range table

● Pressure compensator control

4 Pressure adjustment range

Code	Pressure adjustment range MPa {kgf/cm ² }	Without remote control system				With remote control system			
		RP08	RP15	RP23	RP38	RP08	RP15	RP23	RP38
1	1.5 to 7 {15 to 70}	✓	✓	✓	✓	–	–	–	–
1	2.0 to 7 {20 to 70}	–	–	–	–	✓	–	–	–
2	1.5 to 14 {15 to 140}	✓	✓	✓	✓	–	–	–	–
2	2.0 to 14 {20 to 140}	–	–	–	–	✓	✓*1	✓*2	✓
3	2.0 to 21 {20 to 210}	–	–	–	–	–	✓*2	✓*3	✓*4
3	3.5 to 21 {35 to 210}	–	✓*2	✓*3	✓*4	–	–	–	–

Note: *1 Applies only to the models with the motor output of 1.5 kW.

*2 Applies only to the models with the motor output of 2.2 kW.

*3 Applies only to the models with the motor output of 3.7 kW.

*4 Applies only to the models with the motor output of 5.5 kW.

● Combination control

5 Low pressure adjustment range

Code	Pressure adjustment range MPa {kgf/cm ² }	Without remote control system							
		Pressure feedback method				Solenoid operated method			
		RP08	RP15	RP23	RP38	RP08	RP15	RP23	RP38
1	2.5 to 7 {25 to 70}	–	✓	✓	✓	–	✓	✓	✓
2	2.5 to 14 {25 to 140}	–	✓	✓	✓	–	✓	✓	✓

6 High pressure adjustment range

Code	Pressure adjustment range MPa {kgf/cm ² }	Without remote control system							
		Pressure feedback method				Solenoid operated method			
		RP08	RP15	RP23	RP38	RP08	RP15	RP23	RP38
1	2.5 to 7 {25 to 70}	–	✓	✓	✓	–	✓	✓	✓
2	2.5 to 14 {25 to 140}	–	✓	✓	✓	–	✓	✓	✓
3	3.5 to 21 {35 to 210}	–	✓	✓	✓	–	✓	✓	✓

9 : Motor output

Code	Output kW (Number of poles: 4P)	Insulation type	Applicable model			
			RP08	RP15	RP23	RP38
07	0.75	Type B	✓	–	–	–
15	1.5		–	✓	–	–
22	2.2		–	✓	✓	–
37	3.7		–	–	✓	✓
55	5.5		–	–	–	✓

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Specifications

Model code	Pump			Motor				Mass kg
	Theoretical discharge rate cm³/rev	Maximum operating pressure MPa {kgf/cm²}	Discharge rate adjustment range 60 Hz L/min	Output kW (Number of poles: 4P)	Rated current A*³			
					200 V (50 Hz)	200 V (60 Hz)	220 V (60 Hz)	
RP08A✖-07-30(RC)	8.0	14 {140}*¹	4.8 to 14.0	0.75	3.8	3.4	3.4	30
RP15A✖-15-30(RC)	14.8	14 {140}	12.0 to 25.0	1.5	6.8	6.0	5.8	45
RP15A✖-22-30(RC)		21 {210}		2.2	9.6	8.8	8.4	
RP15C✖✖H(J)-15-30		21 {210}	High quantity adjustment range 12.0 to 25.0*² Low quantity adjustment range 3.5 to 10.0	1.5	6.8	6.0	5.8	H:50 (J:52)
RP15C✖✖H(J)-22-30				2.2	9.6	8.8	8.4	
RP23A✖-22-30(RC)	24.4	14 {140}	20.0 to 42.0	2.2	10.0	9.2	8.7	67
RP23A✖-37-30(RC)		21 {210}		3.7	15.1	14.7	13.4	73
RP23C✖✖H(J)-22-30		21 {210}	A*²	2.2	10.0	9.2	8.7	H:70 (J:72)
RP23C✖✖H(J)-37-30			B*²	3.7	15.1	14.7	13.4	H:76 (J:78)
RP38A✖-37-30(RC)	37.7	14 {140}	20.0 to 64.0	3.7	15.1	14.7	13.4	73
RP38A✖-55-30(RC)		21 {210}		5.5	22.0	21.2	19.6	87
RP38C✖✖H(J)-37-30		21 {210}	High quantity adjustment range 30.0 to 64.0*² Low quantity adjustment range 5.8 to 25.0	3.7	15.1	14.7	13.4	H:76 (J:78)
RP38C✖✖H(J)-55-30				5.5	22.0	21.2	19.6	H:90 (J:92)

The unit is painted in white (Munsell code N8.5).

Note: ^{*1} Some restrictions apply to the conditions of use when using the product at a pressure in the range 7 to 14 MPa {70 to 140 kgf/cm²}.

○ 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. In such a case, connect a relief valve at the discharge side of the pump.

^{*2} The high quantity adjustment range may be restricted due to the setting for the low quantity range. See the graphs on Page C-9 for details.

A: RP23-22 High quantity adjustment range: 20.0 to 42.0, Low quantity adjustment range: 3.7 to 15.0

B: RP23-37 High quantity adjustment range: 30.0 to 42.0, Low quantity adjustment range: 5.8 to 25.0

^{*3} Refer to Page C-11 for the reference current values for selecting the thermistor capacity.

● Piping flanges are not provided with the pump. Order them separately as required by referring to Page S-4.

C
ROTOR PUMPS

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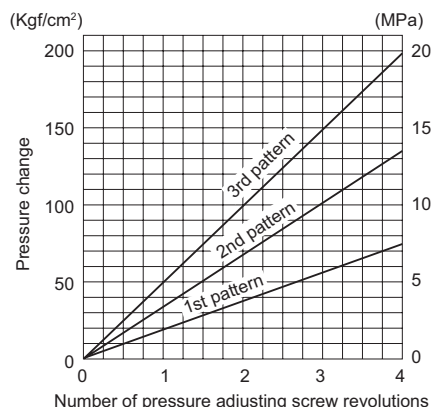
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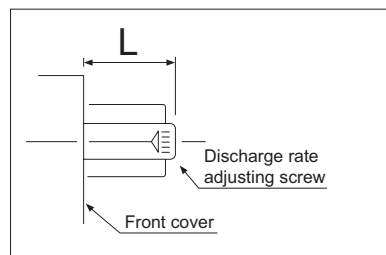
Relationship between number of revolutions of the pressure adjusting screw and variation of discharge pressure



- Although the discharge pressure varies depending on the load conditions, the PC pressure setting that serves as the upper limit for the discharge pressure can be set using the PC valve's pressure adjusting function.
 - Turning the adjusting screw clockwise (tightening direction) increases the PC pressure setting.
 - Turning the adjusting screw counterclockwise (loosening direction) decreases the PC pressure setting.
- Excessive loosening of the pressure adjusting screw may cause oil to leak from the threaded section or parts to spring out. Do not loosen the screw beyond the pressure adjustment range.
- The 1st to 3rd patterns correspond to the pressure adjustment range designation codes 1 to 3.

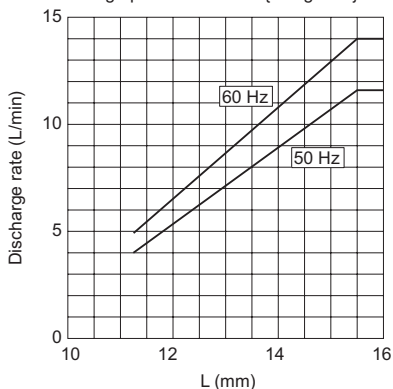
Relationship between the protruding length of the discharge rate adjusting screw and the discharge rate (pressure compensator control)

- The discharge rate can be set to the desired value by turning the discharge rate adjusting screw provided on the front cover.
 - Turning the adjusting screw clockwise (tightening direction) decreases the discharge rate.
 - Turning the adjusting screw counterclockwise (loosening direction) increases the discharge rate.
- The relationship between the discharge rate and the protruding length of the adjusting screw is shown below.
- Set the discharge rate to no lower than two-thirds of the maximum discharge rate, otherwise the suction capacity may be insufficient.
- Overtightening of the discharge rate adjusting screw may cause oil to leak from the threaded section. Do not tighten the screw beyond the adjustment range.



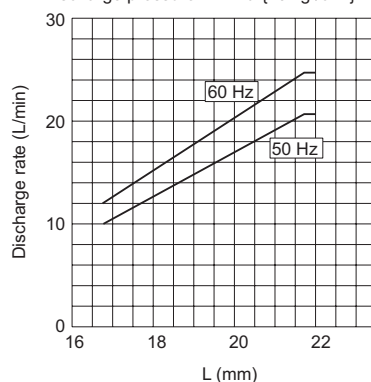
RP08A※

Discharge pressure: 2 MPa {20 kgf/cm²}



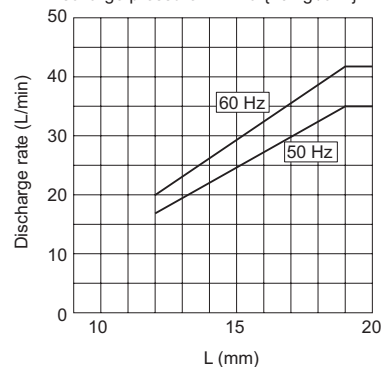
RP15A※

Discharge pressure: 2 MPa {20 kgf/cm²}



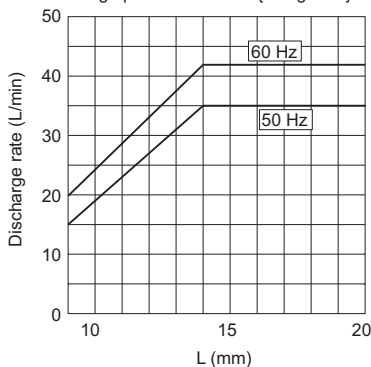
RP23A※-22

Discharge pressure: 2 MPa {20 kgf/cm²}



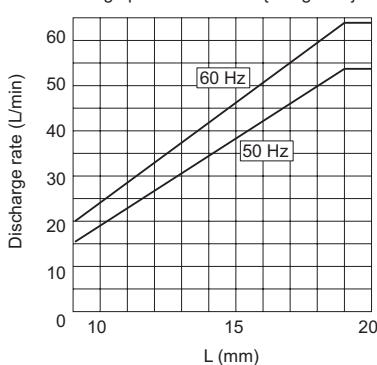
RP23A※-37

Discharge pressure: 2 MPa {20 kgf/cm²}



RP38A※

Discharge pressure: 2 MPa {20 kgf/cm²}



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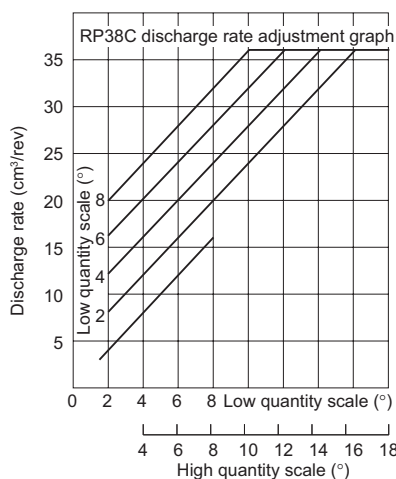
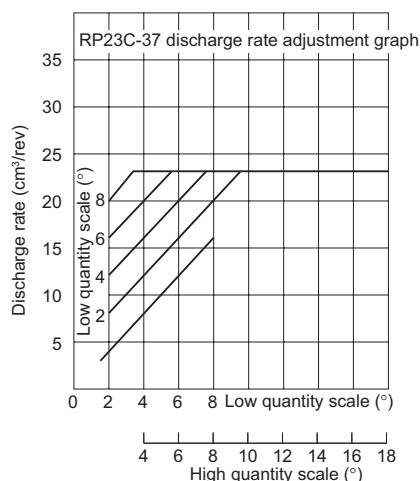
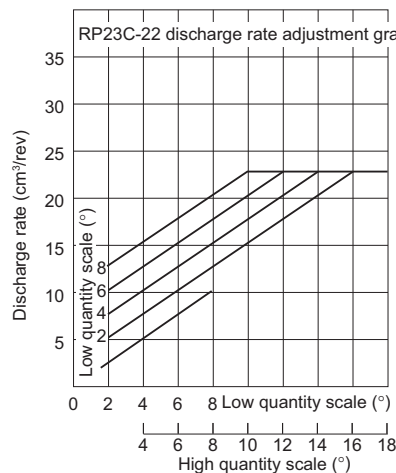
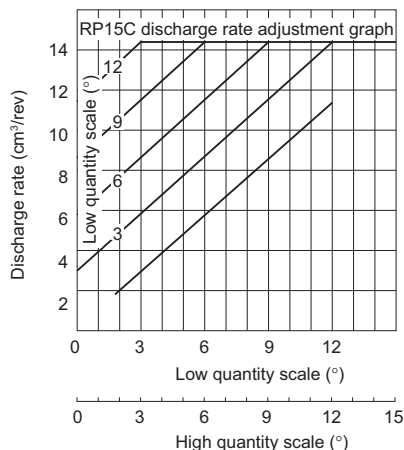
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Relationship between the protruding length of the discharge rate adjusting screw and the discharge rate (combination control)



Note: Refer to Page A-12 for the discharge rate setting procedure.

The discharge rate adjusting screws are provided with scales on the nameplates as shown below.

Pump model	Scale (°)	
	Low quantity adjusting screw	High quantity adjusting screw
RP15	0 to 12	0 to 15
RP23, 38	0 to 8	4 to 18

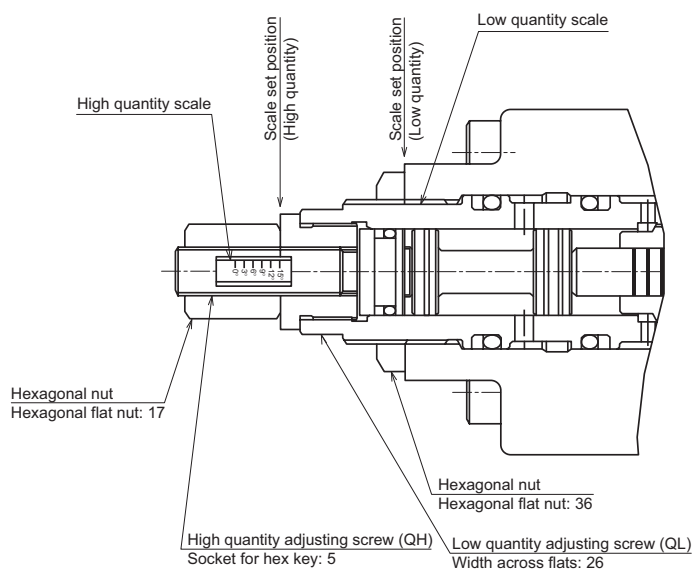
(Scale graduation: 1°)

Factory settings

The discharge rate for the high quantity range is factory adjusted to the maximum discharge rate and the discharge rate for the low quantity range is generally factory adjusted as follows.

Pump type	Low quantity (QL) setting
RP15C-15	Scale position: 2°
RP15C-22	Scale position: 4°
RP23C-22	Scale position: 2°
RP23C-37	Scale position: 3°
RP38C-37	Scale position: 3°
RP38C-55	Scale position: 5°

Discharge rate adjusting section



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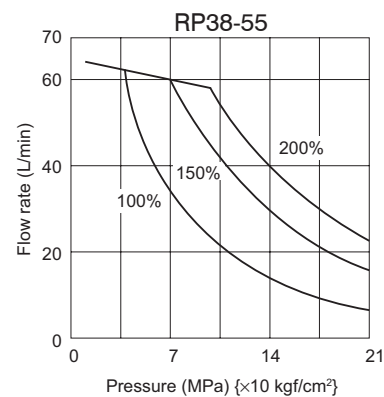
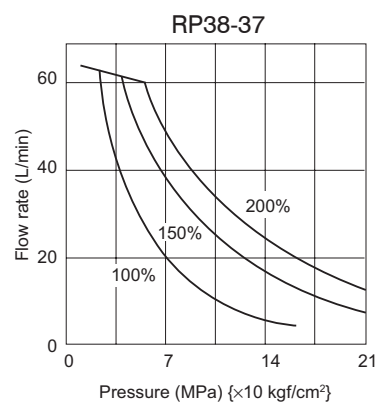
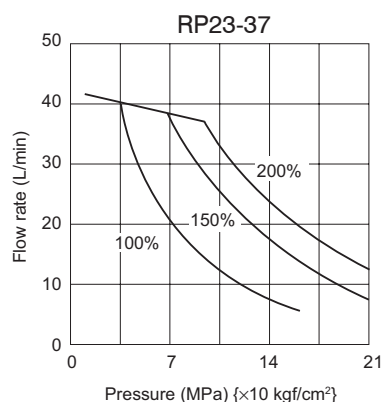
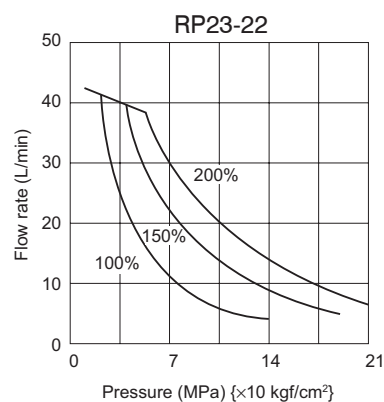
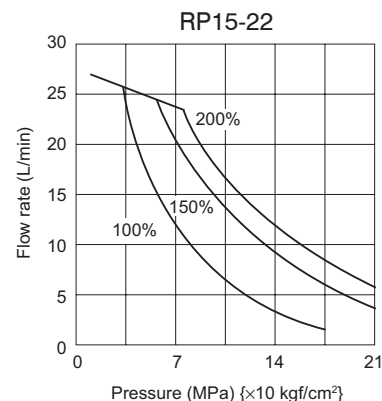
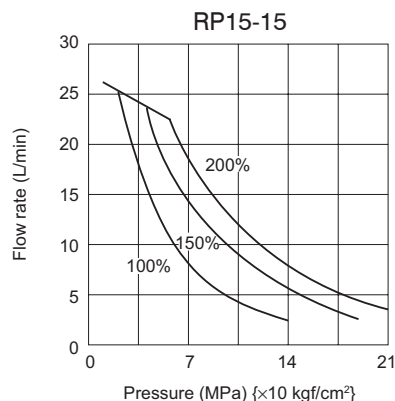
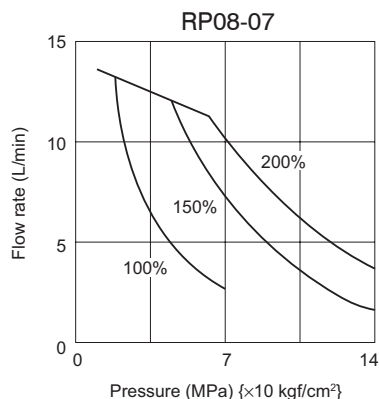
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Pressure - Flow Rate characteristics

● 220 V (60 Hz)

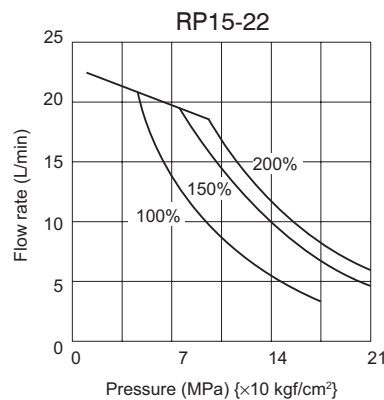
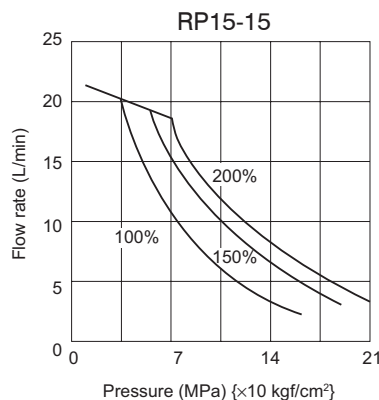
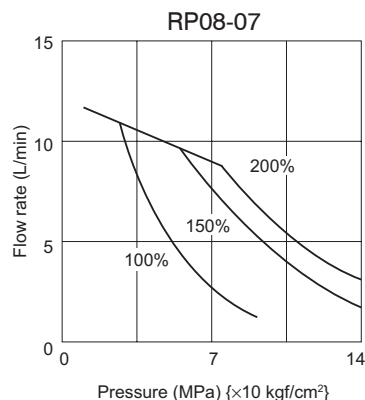


Note: The diagrams show the pressure - flow rate characteristics under the following conditions.

- 100%: Output at the rated current
- 150%: Output at 150% of the rated current (continuous operation possible)
- 200%: Output at 200% of the rated current (momentary operation possible)

* Refer to the next page for the thermistor capacities of rotor pumps.

● 200 V (50 Hz)



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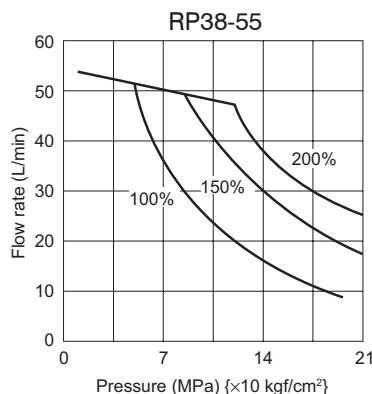
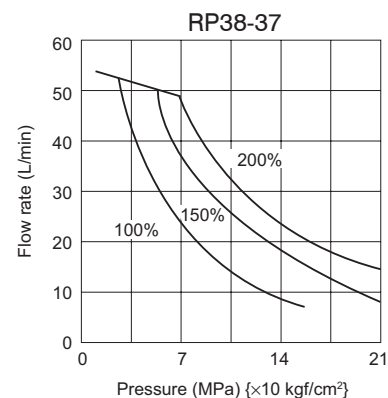
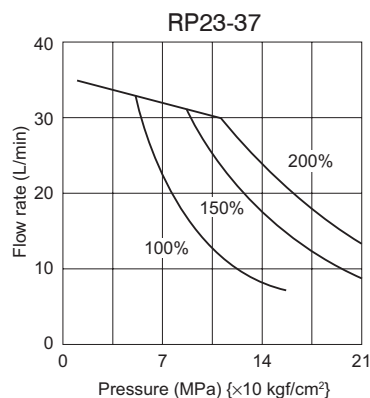
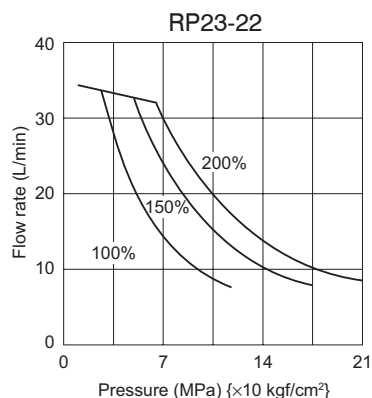
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Pressure - Flow Rate characteristics



ROTOR PUMPS

* The reference current values for selecting the thermistor capacity are given below for each of the rotor pump models and operation conditions.

Model	RP08-07		
Input power	200 V (50 Hz)	200 V (60 Hz)	220 V (60 Hz)
Input current = 100% (A)	3.8	3.4	3.4
Input current = 150% (A)	5.7	5.1	5.1
Input current = 200% (A)	7.6	6.8	6.8

Note: When taking the power supply voltage fluctuation of 10% into account, it is recommended to use the thermistor current setting obtained by multiplying the current value at the 150% load in the tables to the left by 1.1.

Model	RP15-15			RP15-22		
Input power	200 V (50 Hz)	200 V (60 Hz)	220 V (60 Hz)	200 V (50 Hz)	200 V (60 Hz)	220 V (60 Hz)
Input current = 100% (A)	6.8	6.0	5.8	9.6	8.8	8.4
Input current = 150% (A)	10.2	9.0	8.7	14.4	13.2	12.6
Input current = 200% (A)	13.6	12.0	11.6	19.2	17.6	16.8

Model	RP23-22			RP23-37		
Input power	200 V (50 Hz)	200 V (60 Hz)	220 V (60 Hz)	200 V (50 Hz)	200 V (60 Hz)	220 V (60 Hz)
Input current = 100% (A)	10.0	9.2	8.7	15.1	14.7	13.4
Input current = 150% (A)	15.0	13.8	13.1	22.7	22.1	20.1
Input current = 200% (A)	20.0	18.4	17.4	30.2	29.4	26.8

Model	RP38-37			RP38-55		
Input power	200 V (50 Hz)	200 V (60 Hz)	220 V (60 Hz)	200 V (50 Hz)	200 V (60 Hz)	220 V (60 Hz)
Input current = 100% (A)	15.1	14.7	13.4	22.0	21.2	19.6
Input current = 150% (A)	22.7	22.1	20.1	33.0	31.8	29.4
Input current = 200% (A)	30.2	29.4	26.8	44.0	42.4	39.2

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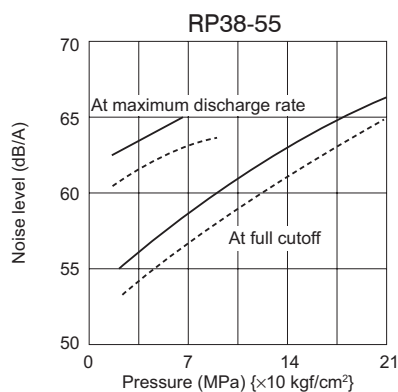
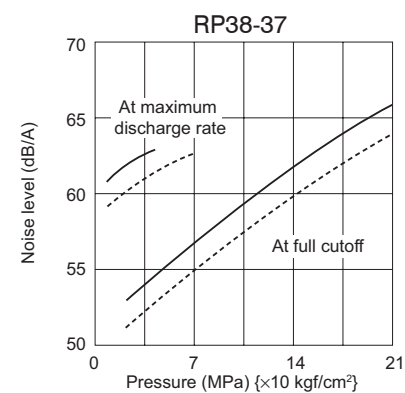
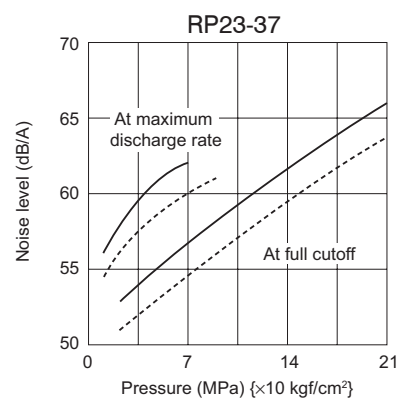
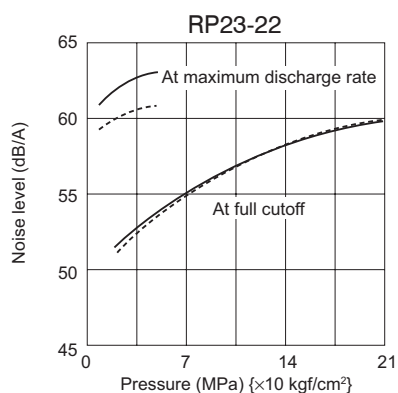
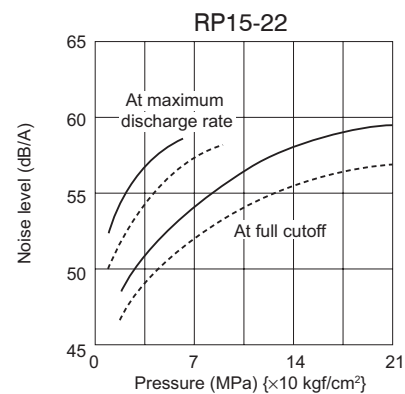
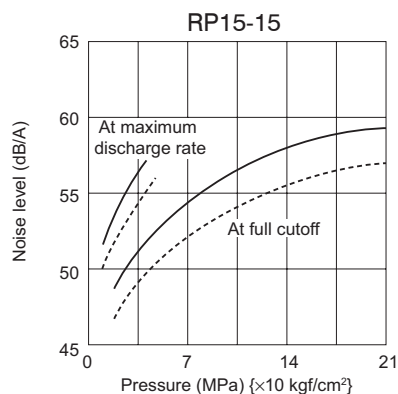
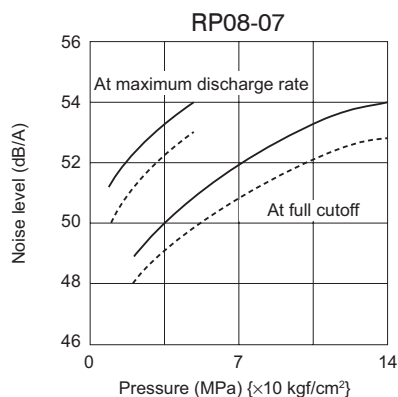
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Noise characteristics (measuring position: 1 m from pump front)



— Solid line: 220 V (60 Hz)
 Dashed line: 200 V (50 Hz)

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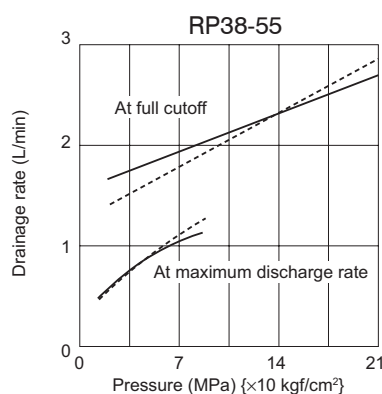
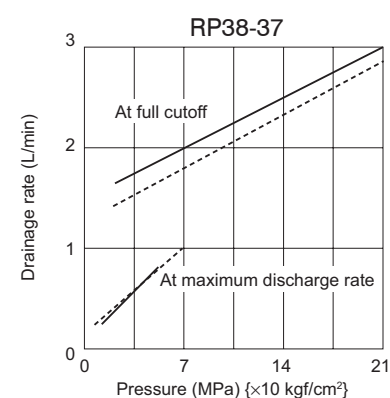
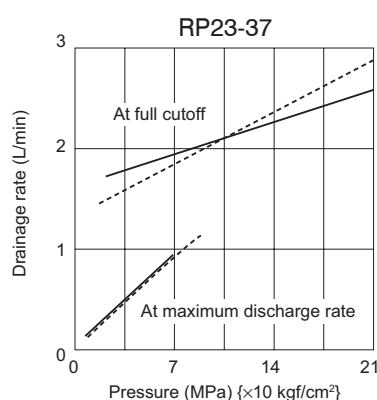
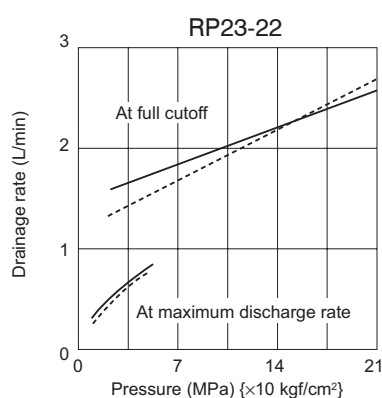
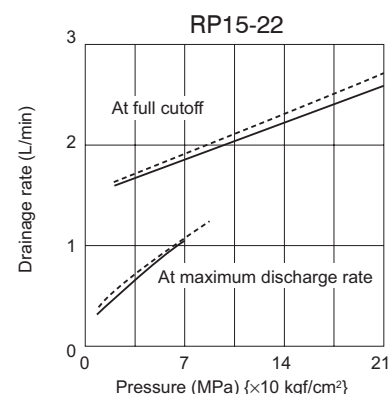
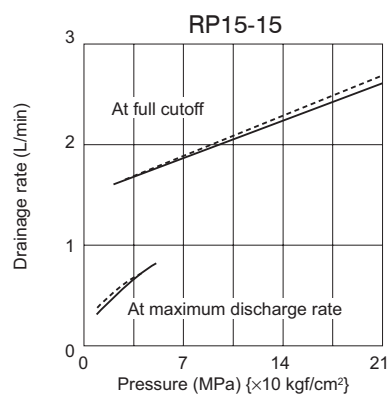
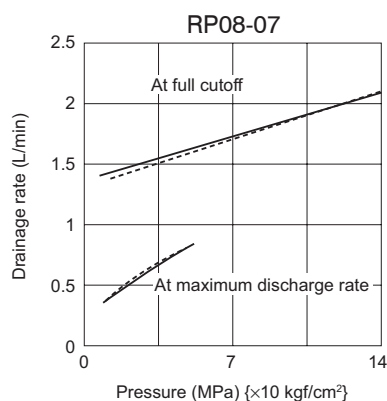
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Internet

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Drainage volume characteristics



— Solid line: 220 V (60 Hz)
 Dashed line: 200 V (50 Hz)

ROTOR PUMPS

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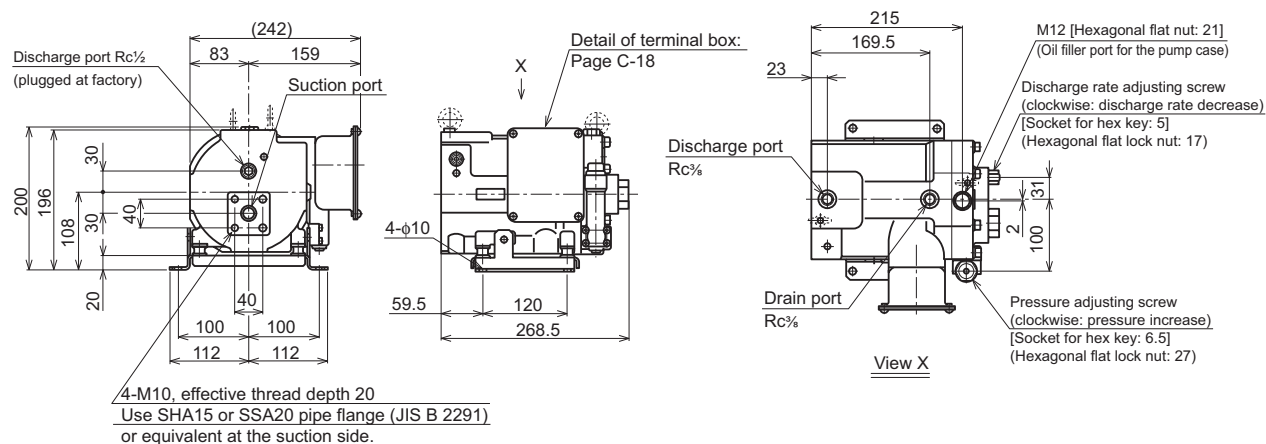
Internet

<http://www.daikinpmc.com/en/>

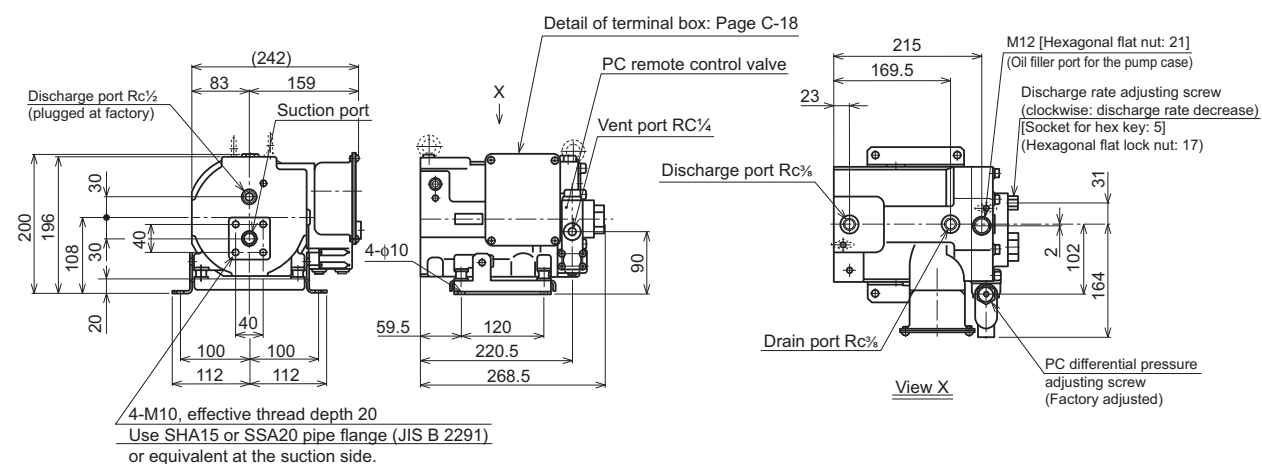
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External dimension diagram

RP08A※-07-30

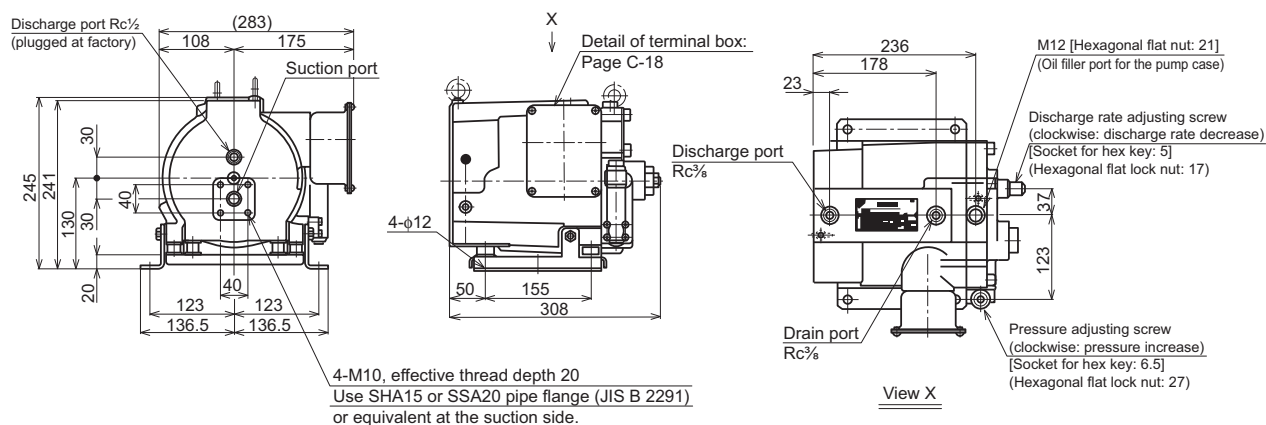


RP08A2-07-30RC



RP15A※-15-30

RP15A※-22-30



Contact Details

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Internet

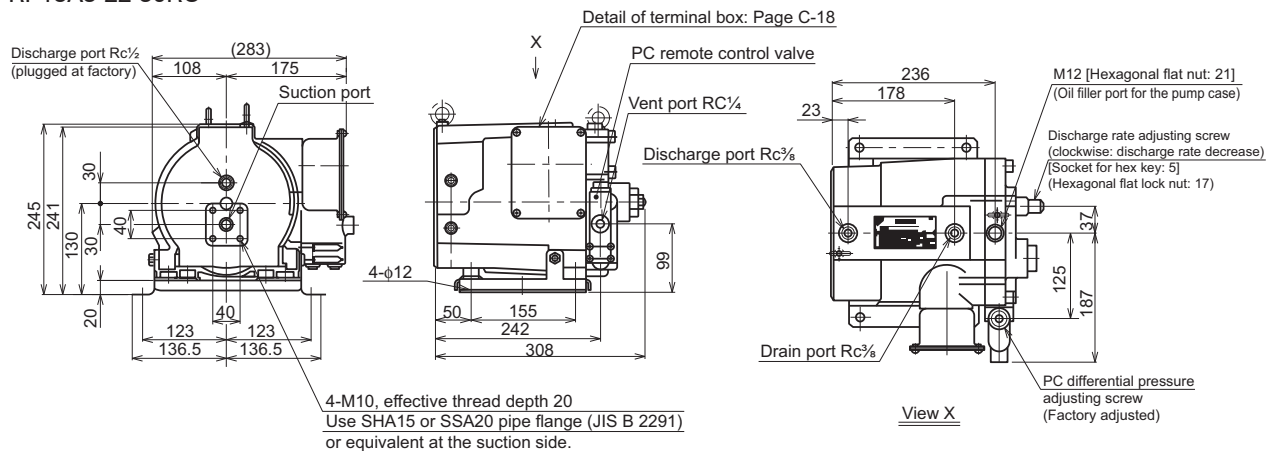
<http://www.daikinpmc.com/en/>

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External dimension diagram

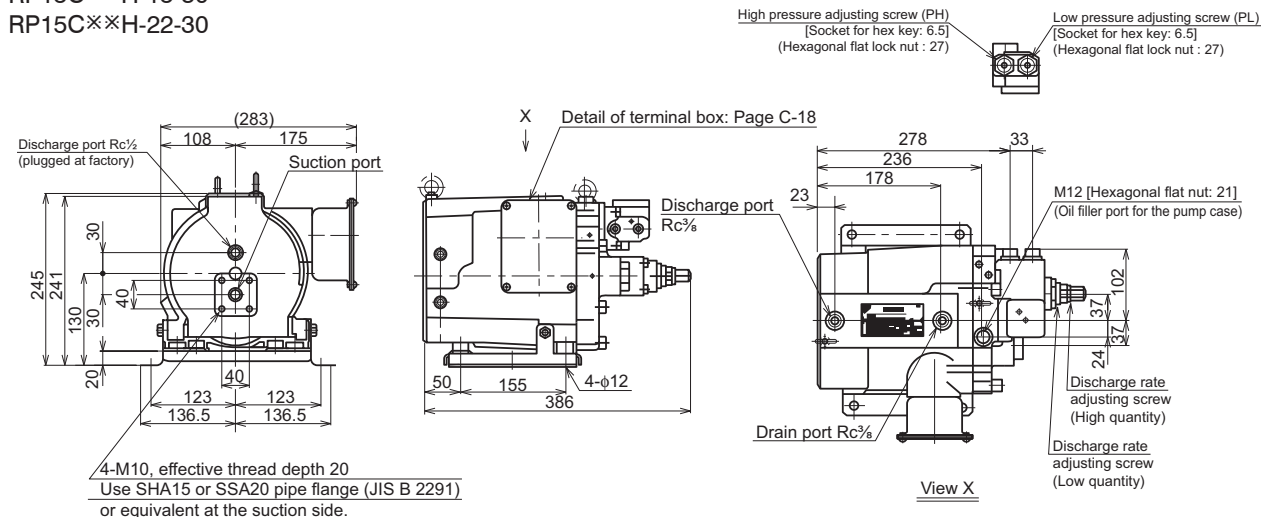
RP15A2-15-30RC

RP15A3-22-30RC



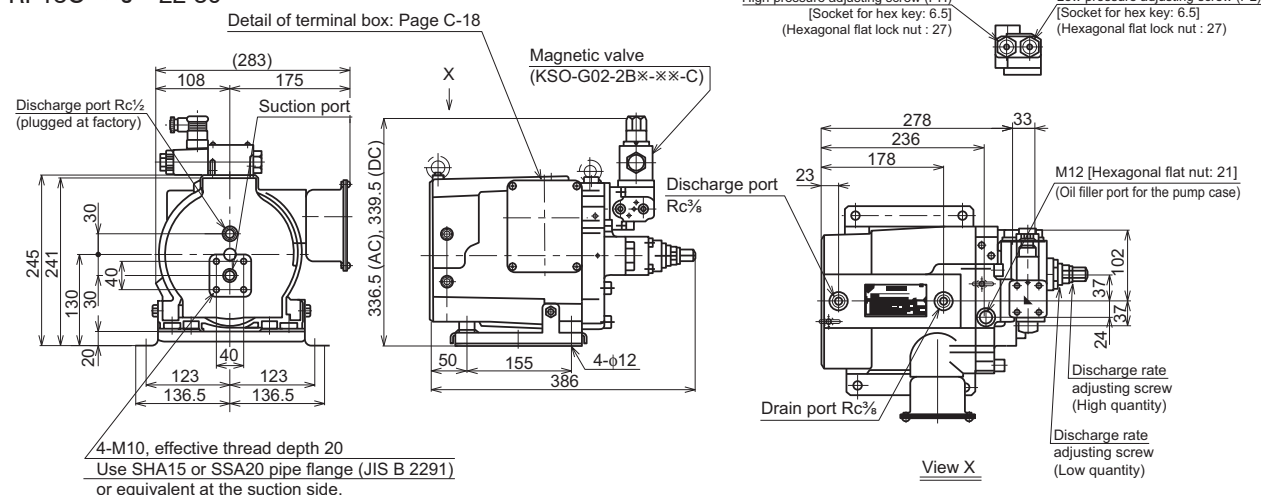
RP15C**H-15-30

RP15C**H-22-30



RP15C**J*-15-30

RP15C**J*-22-30



Contact Details

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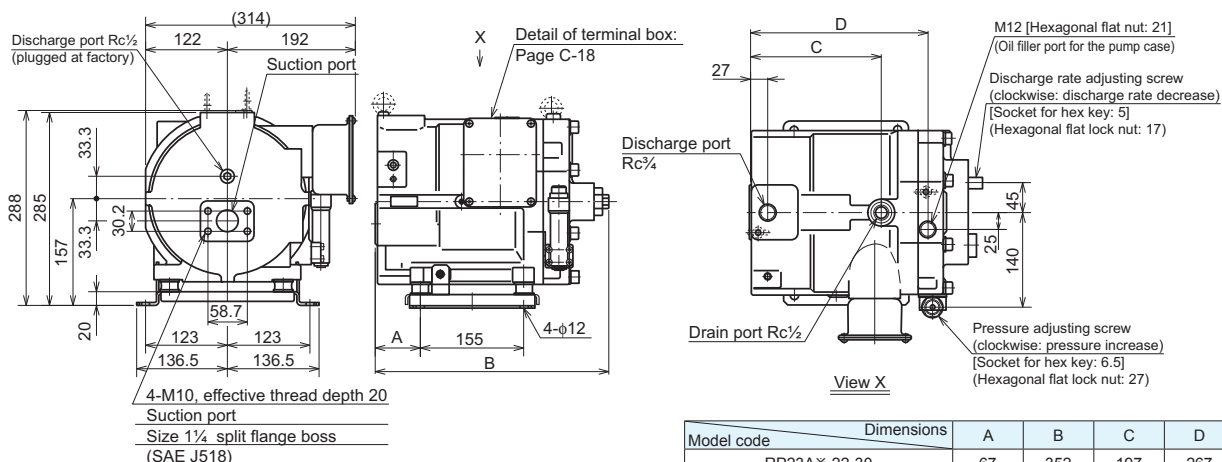
<http://www.daikinpmc.com/en/>

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External dimension diagram

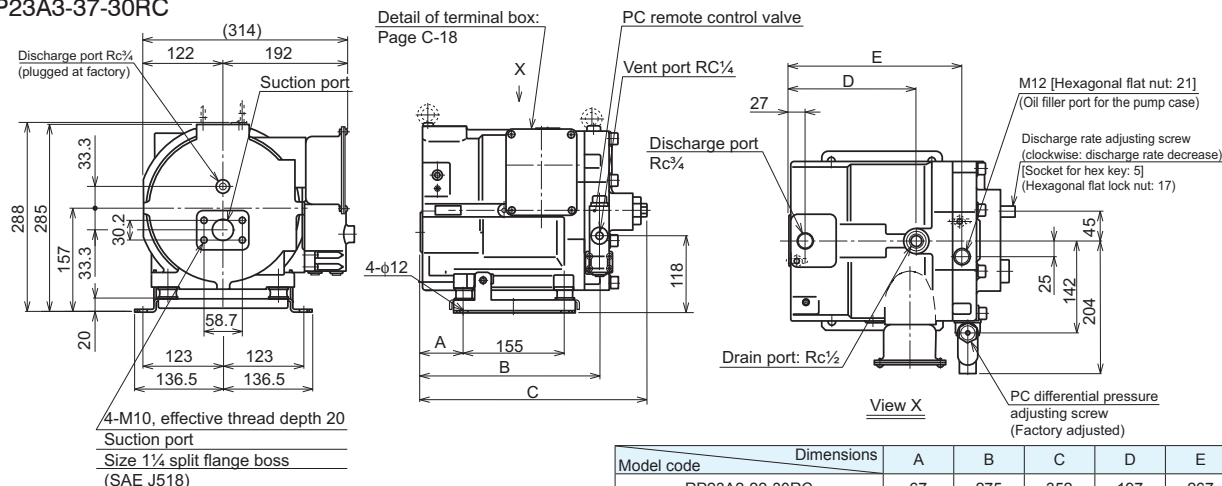
RP23A※-22-30

RP23A※-37-30



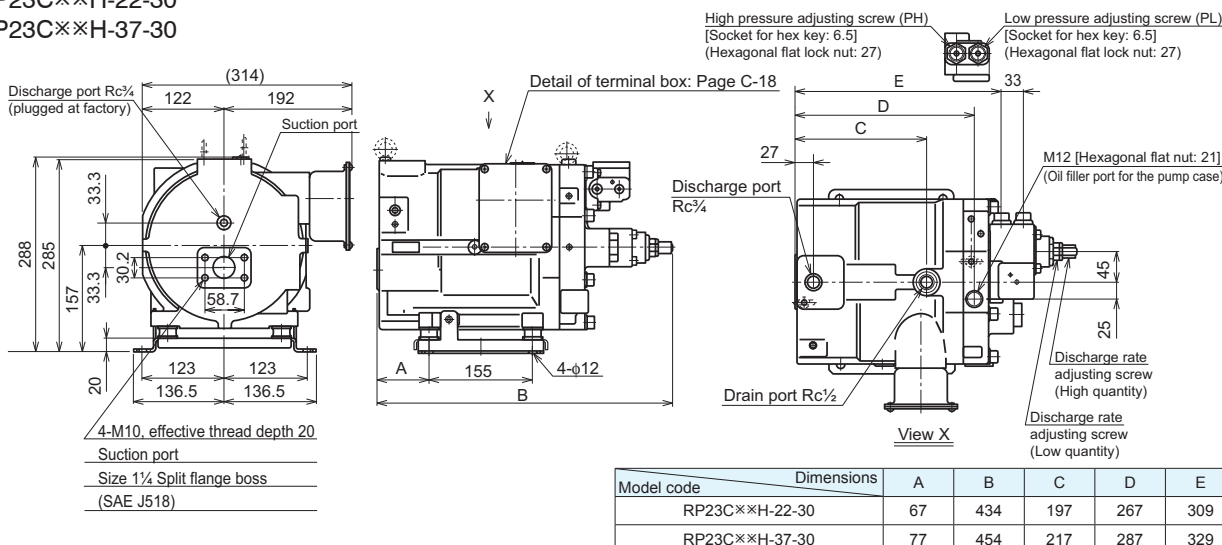
RP23A2-22-30RC

RP23A3-37-30RC



RP23C※※H-22-30

RP23C※※H-37-30



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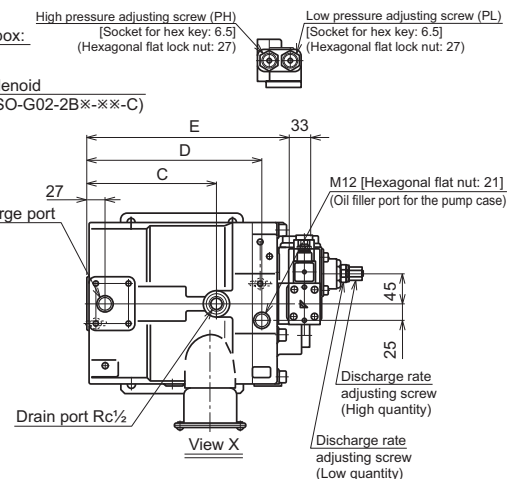
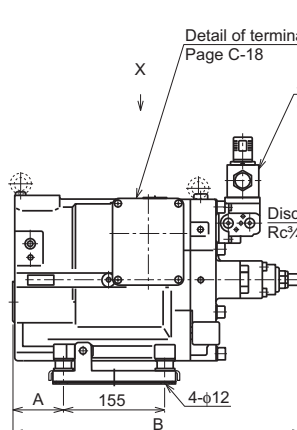
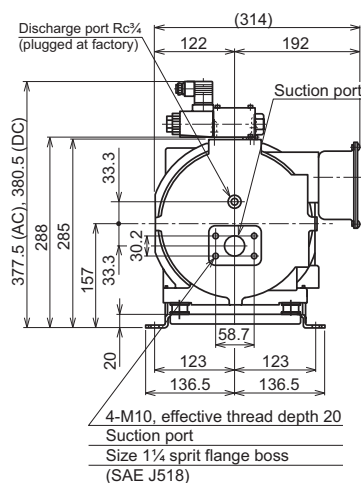
<http://www.daikinpmc.com/en/>

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External dimension diagram

RP23C××J×-22-30

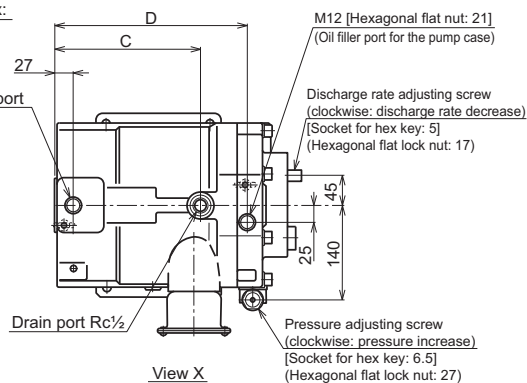
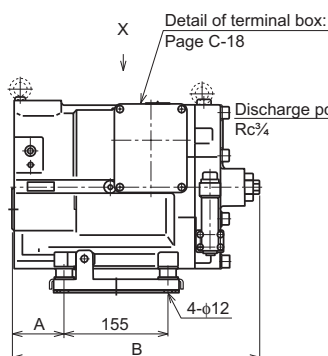
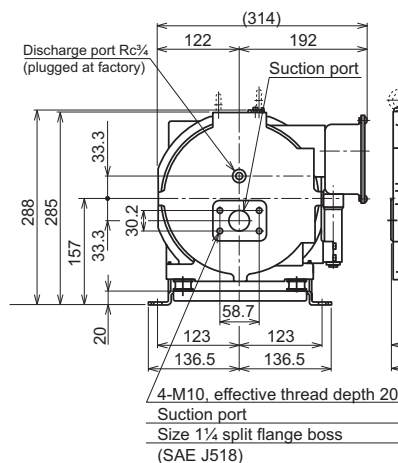
RP23C××J×-37-30



Model code	Dimensions	A	B	C	D	E
RP23C××J×-22-30		67	434	197	267	309
RP23C××J×-37-30		77	454	217	287	329

RP38A×-37-30

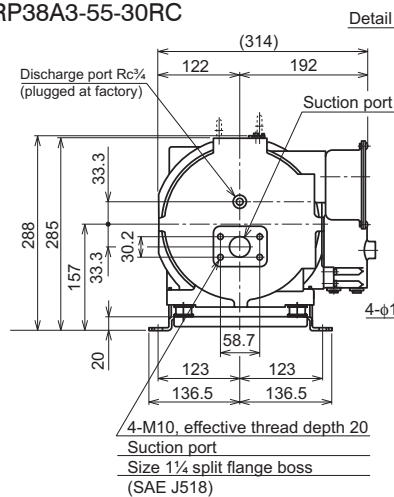
RP38A×-55-30



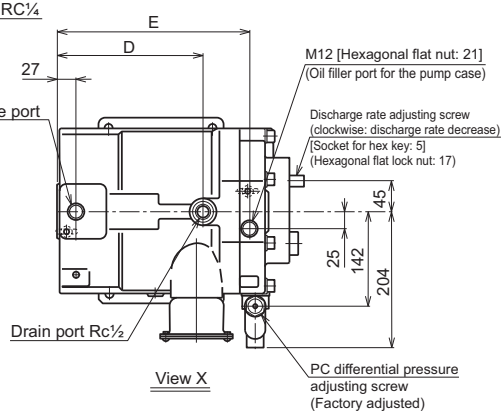
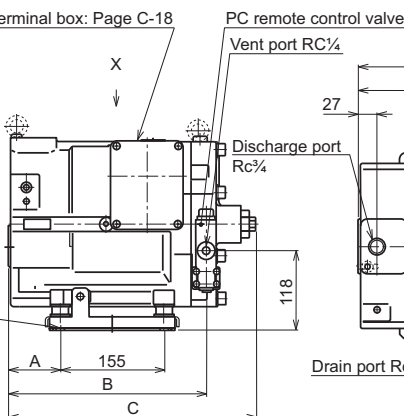
Model code	Dimensions	A	B	C	D
RP38A×-37-30		77	372	217	287
RP38A×-55-30		96	410	255	325

RP38A2-37-30RC

RP38A3-55-30RC



Detail of terminal box: Page C-18



Model code	Dimensions	A	B	C	D	E
RP38A2-37-30RC		77	295	372	217	287
RP38A3-55-30RC		96	333	410	255	325

Contact Details

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Internet

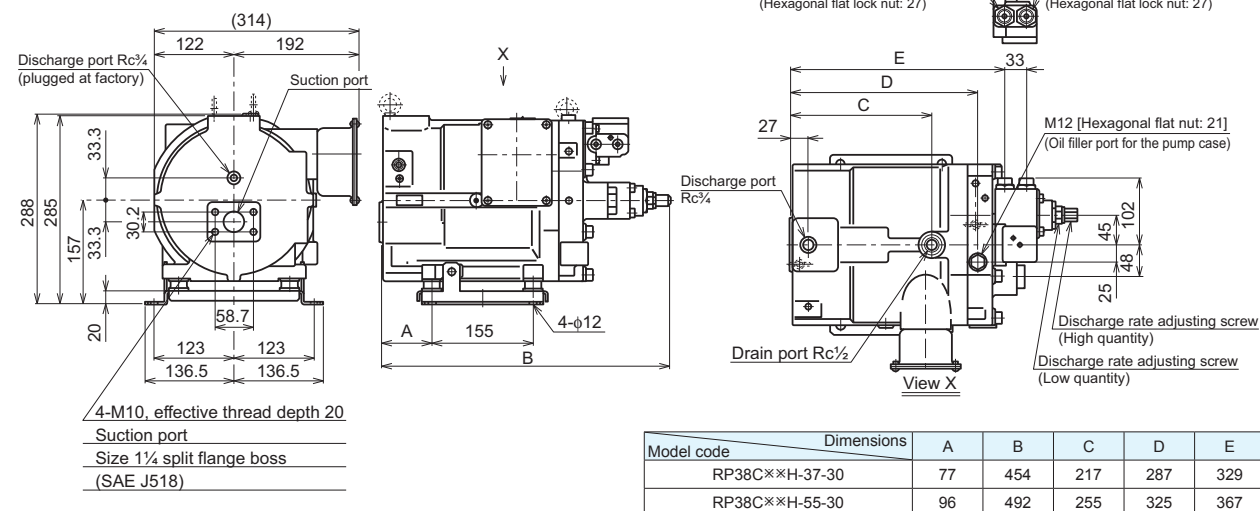
<http://www.daikinpmc.com/en/>

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External dimension diagram

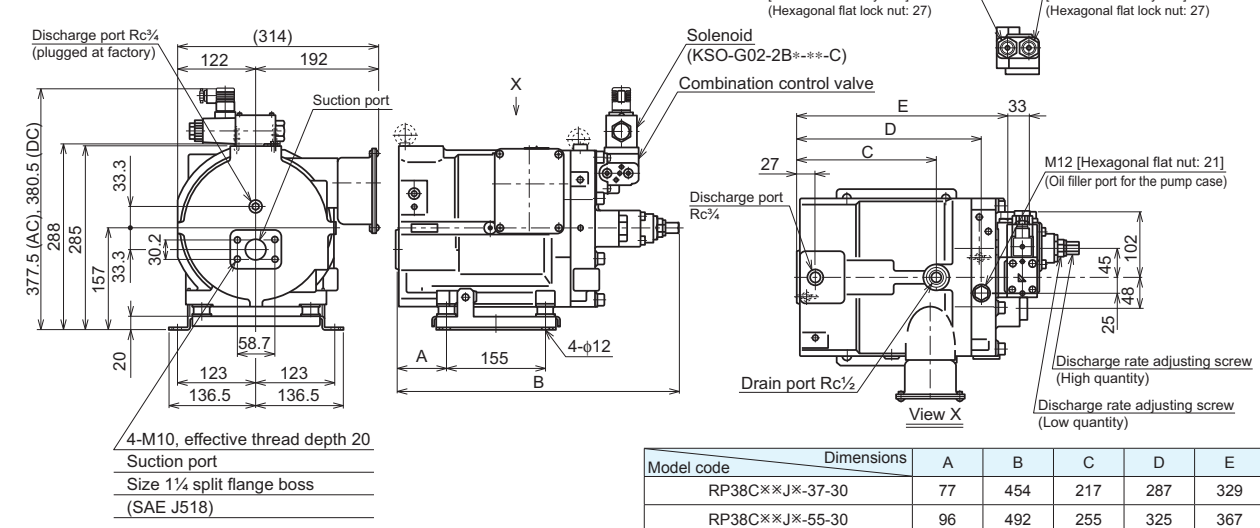
RP38C**H-37-30

RP38C**H-55-30

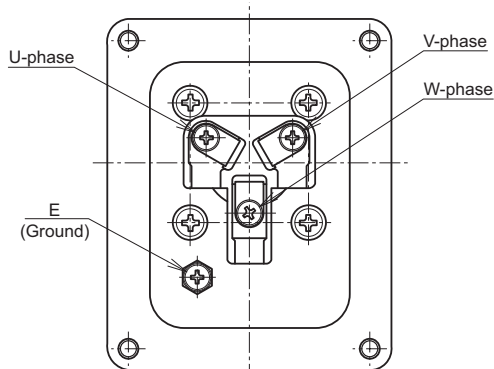


RP38C**J-37-30

RP38C**J-55-30

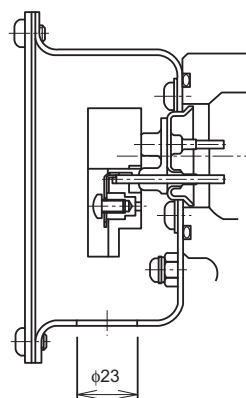


Detail of terminal box

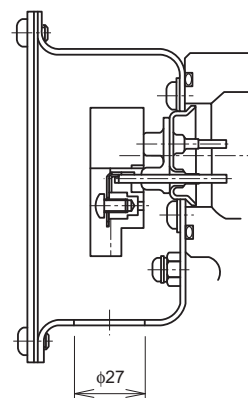


Terminal block wiring diagram

(Connecting screw size, fastening torque: M5 x 4 pcs., 3 N·m max.)



Motor capacity: 3.7 kW maximum



Motor capacity: 5.5 kW

Contact Details

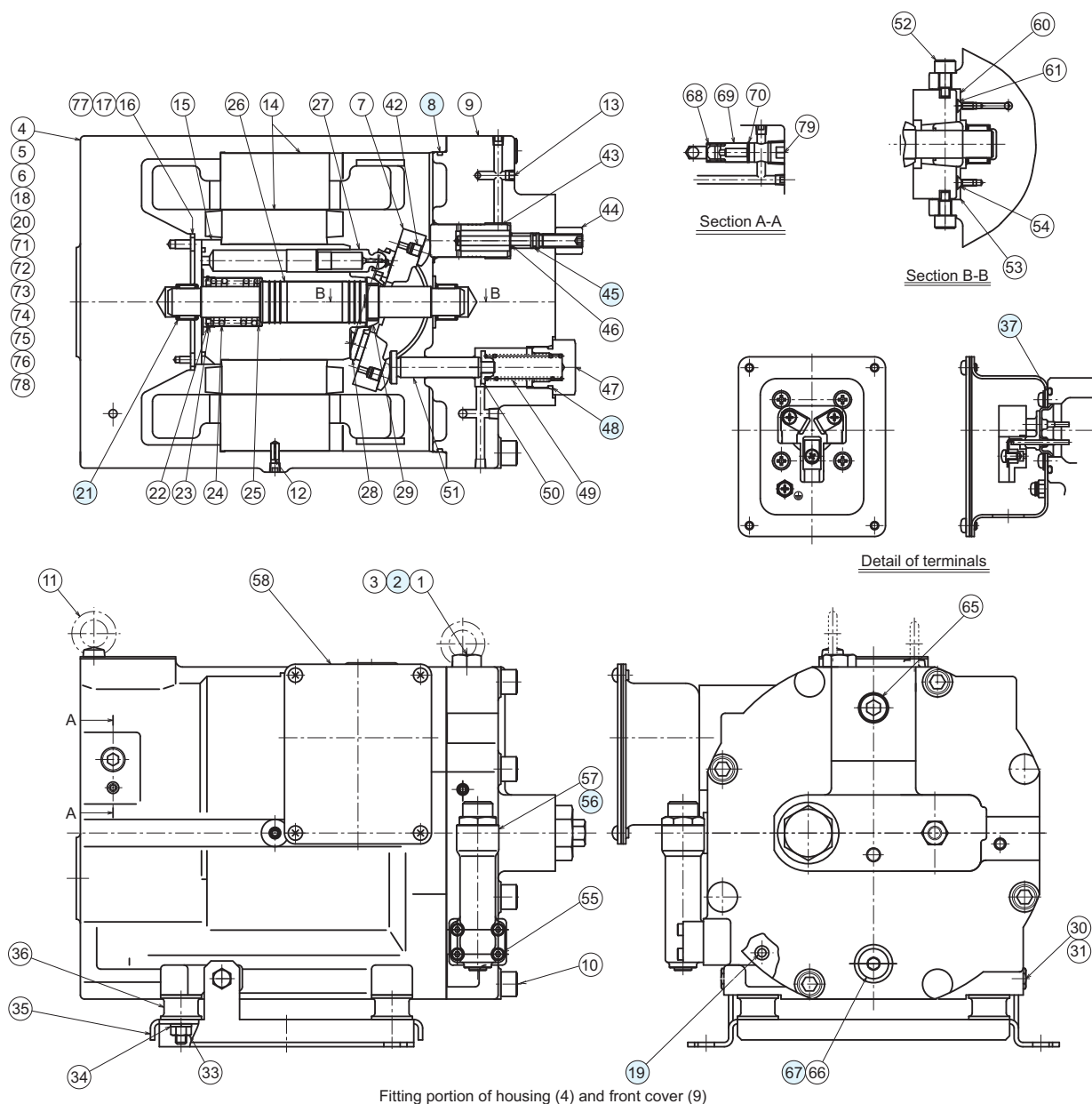
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Sectional structural diagram



ROTOR PUMPS

Seal/bearing table

Part No.	Product name	Quantity	Part specifications			Material
			RP08	RP15	RP23, RP38	
2	Sealing washer	1	WF12192			NBR
8	O-ring	1	AS568-160 (HS90)	AS568-167 (HS90)	AS568-172 (HS90)	NBR
19	O-ring	1	JIS B 2401 1B-P7			NBR
21	Needle bearing	2	HK1210	HMK1715	F2016	
37	O-ring	1	JIS B 2401 1B-G45			NBR
45	O-ring	1	JIS B 2401 1A-P8			NBR
48	O-ring	1	AS568-914 (HS90)			NBR
56	Gasket	1	1740698 (special part)			
67	O-ring	1	JIS B 2401 1B-P14			NBR