



Rotary Vacuum Pump Series

Vacuum pumps with special shaped rotor

⚠ Safety instructions for this product

Safety instructions, Common safety instructions for each product category and Detailed safety instructions for each product are in the end of this catalog and our website.

Model Designation (Example)

RPV06	2-60	V200	-	12	-	30	-	6
(1)	(2)	(3)		(4)		(5)		(6)

(1) Rotary Vacuum Pump Series

(2) Cylinder numbers and layout, motor power output

Code	2-60	3-90	4-200	A-60
Combination	Parallel twin, 60 W motor	Parallel triple, 90 W motor	Parallel quad, 200 W motor	In-line twin, 60 W motor
Final vacuum (50Hz/60Hz) (Pa abs)	≤ 3,500 / ≤ 3,000			≤ 350 / ≤ 300
Final vacuum (50Hz/60Hz) (kPa G)	≤ -97.8 / ≤ -98.3			≤ -100.98 / ≤ -101.03

(3) Motor type (○: Available)

Code	U100	U100SW	U110	V200
Type	Single phase 100 VAC induction motor	Single phase 100 VAC induction motor with a built-in power switch	Single phase 110/115 VAC induction motor	3 phase 200/220/230 VAC induction motor
RPV06A-60	○	○	○	○
RPV062-60	○	○	○	○
RPV063-90	—	—	—	○
RPV064-200	—	—	—	○

*1 For U100SW type, an electrical power cable (2m), a 3-prong to 2-prong electrical adapter, and a tubular fuse (5A) are enclosed.

*2 U100SW type is not CE marked.

(4) Vacuum port

Combination		Tube O.D.	ø10 mm (*)		ø12 mm		ø16 mm		ø3/8 (*)		ø1/2		ø5/8		
Code	Push-in fitting (*)	Straight	10		12		16		13/8		11/2		15/8		
		Elbow	20		22		26		23/8		21/2		25/8		
Code	Compression fitting	Straight	A0	B0	A2	B2	A6	B6	—	—	—	—	—	—	
		Tube I.D. (mm)	ø6.5	ø7.5	ø8	ø9	ø11	ø13	—	—	—	—	—	—	
No fitting (**)		No code													

*1 ø10 mm or ø3/8" fitting cannot be selectable for RPV064.

*2 The thread sizes of pump's port are different depending on (2) : the cylinder numbers, layout and motor power output. Please refer to Table- 1.

*3 Push-in fittings permit a leakage. Use compression fittings if there is any usability problem.

(5) Exhaust port

Combination		Tube O.D.	ø10 m (*)		ø12 mm		ø16 mm (*)		ø3/8 (*)		ø1/2		ø5/8 (*)		
Code	Push-in fitting	Straight	30		32		36		33/8		31/2		35/8		
		Elbow	40		42		46		43/8		41/2		45/8		
Code	Compression fitting	Straight	C0	D0	C2	D2	C6	D6	—	—	—	—	—	—	
		Tube I.D. (mm)	ø6.5	ø7.5	ø8	ø9	ø11	ø13	—	—	—	—	—	—	
No fitting (**)		No code													

*1 ø10 mm or ø3/8" fitting cannot be selectable for RPV064.

*2 ø16 mm or ø5/8" fitting cannot be selectable for RPV06A.

*3 The thread sizes of pump's port are different depending on (2) : the cylinder numbers, layout and motor power output. Please refer to Table- 1.

(6) Exhaust cleaner (with fittings)

Combination		Tube O.D.	ø10 mm (*)		ø12 mm		ø16 (*)		ø3/8 (*)		ø1/2		ø5/8 (*)		
Code	Exhaust cleaner only	0													
	Exhaust cleaner & straight fitting	5													
	Exhaust cleaner & elbow fitting	6													
	No exhaust cleaner & fittings	No code													

*1 ø10 mm or ø3/8" fitting cannot be selectable for RPV064.

*2 ø16 mm or ø5/8" fitting cannot be selectable for RPV06A.

*3 When selecting code "5" or "6", the tube O.D. of the fitting is same size as the exhaust port (selected in ⑤).

*4 Connection thread size of exhaust cleaner is Rc1/2.

●Table-1. Thread size of vacuum & exhaust port (○: Available)

Thread size	Vacuum port											Exhaust port												
	G3/8					G1/2						G1/4					G3/8							
Tube O.D. (mm/in.)	ø10	ø12	ø16	ø3/8	ø1/2	ø5/8	ø10	ø12	ø16	ø3/8	ø1/2	ø5/8	ø10	ø12	ø16	ø3/8	ø1/2	ø5/8	ø10	ø12	ø16	ø3/8	ø1/2	ø5/8
RPV06A	○	○	○	○	○	○	—	—	—	—	—	—	○	○	—	○	○	—	—	—	—	—	—	—
RPV062	—	—	—	—	—	—	○	○	○	○	○	○	—	—	—	—	—	—	○	○	○	○	○	○
RPV063	—	—	—	—	—	—	○	○	○	○	○	○	—	—	—	—	—	—	○	○	○	○	○	○
RPV064	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*1 The pump without a built-in power switch does not come with electrical power cables for motor. Properly connect cables by following the enclosed motor handling instruction manual and detailed safety instructions.

*2 For motor type U 100 (without built-in power switch type), a power supply box with cable, which is designed based on the recommended circuit (See the enclosed motor handling instruction manual.) can be provided. For details, please contact your nearest sales office.

Rotary Vacuum Pump Series

Characteristics

Contribute to energy saving

The top level high efficiency in the industry is realized for the pumping speed per motor power 1(W).
 → 1.0 / 1.2 [pumping speed (ℓ/min) / motor power (W)] (50 / 60 Hz)

Light weight and compact

Space saving is realized by adoption of the special rotor form.

Max weight: about 11.5 kgs. Max. dimension: 125 x 391.6 x 181 mm (width x depth x height) (For 120 L type RPV 064-120 V 200) (Can be installed in narrow space.)

Low heat generation

Low generation of heat is realized by adoption of forced air-cooling system.

No rotating seal structure by magnet coupling minimizes slide section. Thus, there is no heat generation by the seal. The pump can be kept at approx. 20°C lower than equivalent other brand models. (Based on our research.)

Suppressing a rise in room temperature.

Low driving noise and vibration

Low noise operation and low vibration are realized by thorough balancing design for rotary part.

Noise : $\leq 58 / \leq 63$ dB (50/60 Hz) (Same level as air conditioner or quiet car) Vibration is about 1/10 of equivalent other brand models. (Our investigation)

Long life

High durability is realized by adopting of super engineering plastic, which is excellent in self-lubricity and wear resistance, and special surface treatment. With minimum clearance between rotor and cylinder wall, the fundamentally contactless structure and minimization of sliding parts are realized.

Adoption of magnet-coupling, no sliding seal required.

⇒ No maintenance necessary by seal abrasion

⇒ Support to longer operation life of motor by minimizing load to the motor shaft part.

Maintenance free for 3 years. (Based on our operational conditions. Life varies depending on operational conditions, suction air (dust, moisture, etc.) *1 year for RPV06A.

Low generation of dust

Lubrication is unnecessary by adoption of the excellent clean vacuum grease for low dust and low volatile. Low dust generation is realized by minimization of sliding parts.

⇒ Suppress environmental pollution such as abrasion powder created by vane pump.

Suppressing environmental pollution by exhausting cleaner air.

Eco friendly and safe design

RoHS compliance, CE marking corresponding (Single phase 100 VAC type with a built-in power switch does not have CE marking.)

Variety of options.

Not only a pump but also push-in fittings, compression fittings for medium vacuum model, and exhaust cleaners (exhaust mufflers) are prepared as optional.

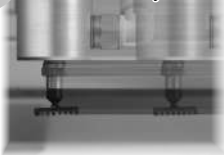
Single phase 100 VAC (Parallel twin / In-line twin) type with a built-in power switch is available.

It can be used immediately by plugging into an outlet.

Single phase 110 / 115 V type and inch size push-in fitting are selectable.

Applications

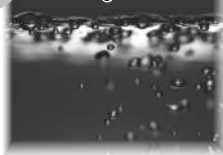
Suction Conveyance



Vacuum packing



Defoaming/Deaeration



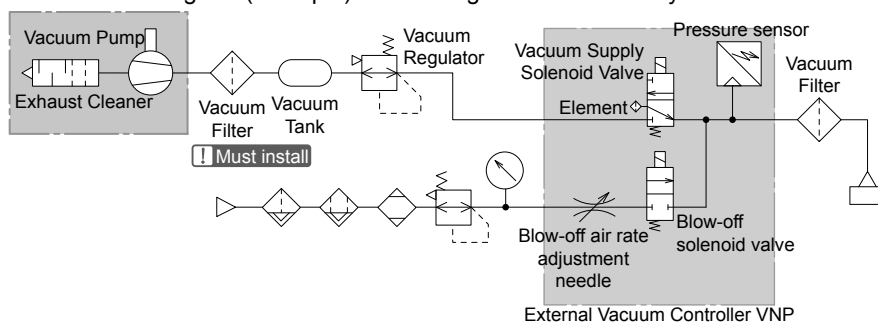
Vacuum forming



Others

Various vacuum system where scattering of oil or abrasion powder to circumference should be avoided.

Schematic diagram (example) when using for suction conveyance



* Compressed air is not necessary for suction conveyance by using the external vacuum controller VNP, which have direct operating valve for vacuum supply and blow-off solenoid valve. (Compressed air is necessary for blow-off.) Therefore, the consumption amount of compressed air can be remarkably reduced.

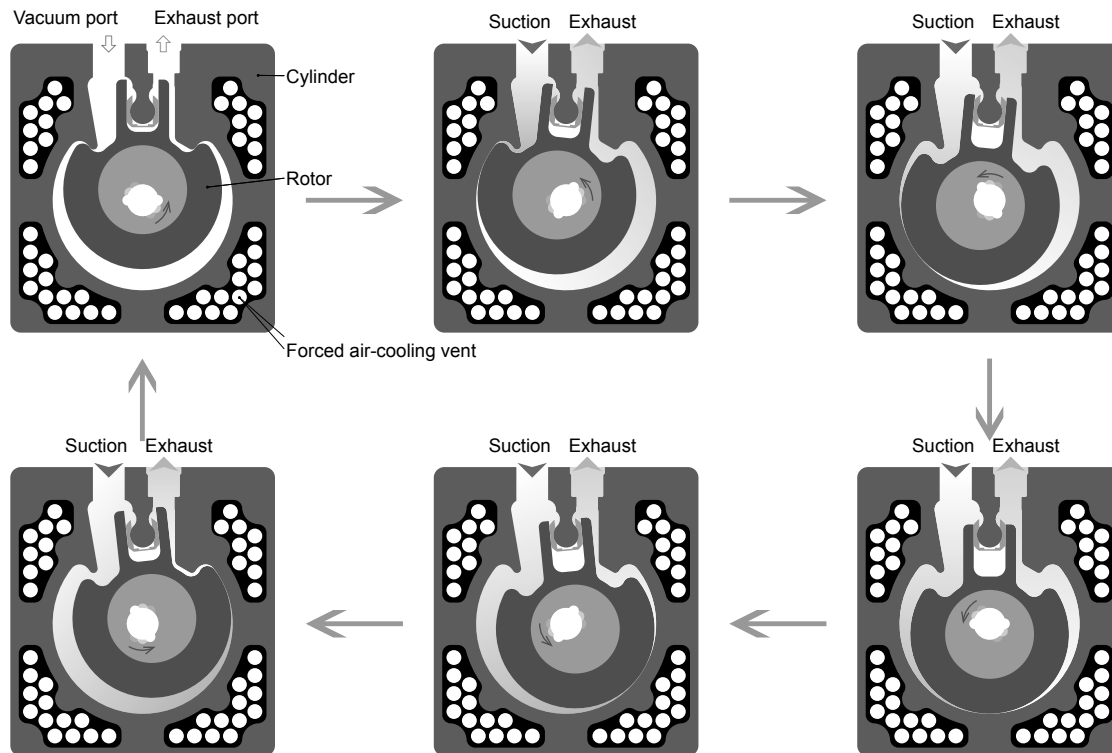
⚠ Since the rotary vacuum pump is the delicate and precision equipment, make sure to install a vacuum filter, which filtration rate is 5 μm or less, on vacuum port in order to prevent water mist, dust or particles entering the pump. It causes deterioration in a lifetime or damage of the pump when they enter.

Related Products



Rotary Vacuum Pump Series
 ▶ P.326 to

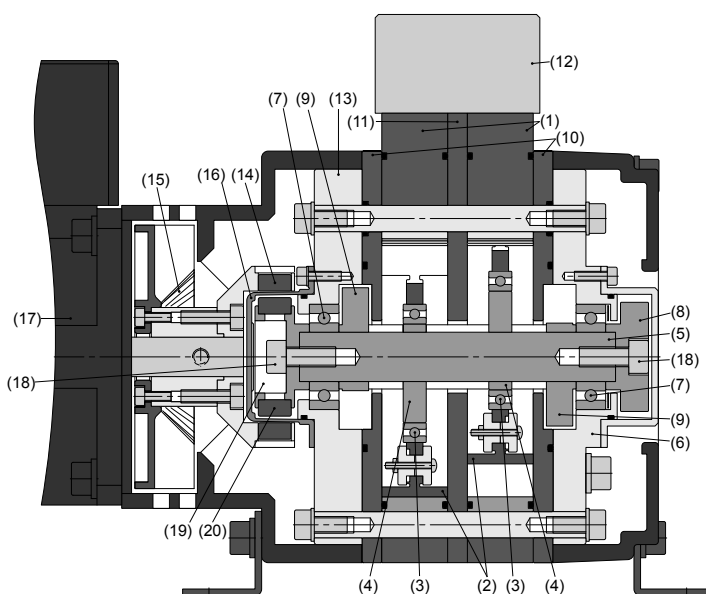
Operating principle



1. The eccentric rotor is placed in the space formed by the cylinder and plates which sandwich the cylinder.
2. When the rotor carries out eccentric rotations, air is inhaled by the pressure difference to atmospheric pressure with increasing capacity of the space formed between the rotor of vacuum port side and cylinder. At the same time, air is discharged with decreasing capacity of the space formed between the rotor of exhaust port side and cylinder.
3. By performing this operation continuously, the air transfer from the vacuum port to the exhaust port is realized.

Sectional drawing

Parallel twin, 60W motor type : RPV062-60




No.	Parts	Material
(1)	Cylinder	aluminum alloy
(2)	Rotor	PPS resin
(3)	Bearing	Stainless steel
(4)	Crank plate	Stainless steel
(5)	Main shaft	Stainless steel
(6)	Side block E	aluminum alloy
(7)	Bearing	Stainless steel
(8)	Balancer E	Stainless steel
(9)	Balancer R	Stainless steel
(10)	Side plate	aluminum alloy
(11)	Center plate	aluminum alloy
(12)	Manifold	aluminum alloy
(13)	Side block M	aluminum alloy
(14)	Magnet	Neodymium magnet
(15)	Cooling fan	PPS resin
(16)	Sealing cup	PPS resin
(17)	Motor	aluminum alloy, etc.
(18)	Cap screw	Stainless steel
(19)	Inner coupling	Stainless steel
(20)	Magnet	Neodymium magnet

* All seal rubber material is FKM.

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Specifications

Type		Medium vacuum· 30 ℓ		
Model code		RPV06A-60V200	RPV06A-60U100 (U100SW ^{*2})	RPV06A-60U110
Numbers of cylinder		Twin (2) 		
Cylinder layout		Parallel layout		
Pumping speed (ℓ/min)	50 Hz	30		
	60 Hz	36		
Final vacuum (Pa abs)	50 Hz	≤350		
	60 Hz	≤300		
Final vacuum (kPa G)	50 Hz	≤-100.98		
	60 Hz	≤-101.03		
Max. suction pressure		Atmospheric pressure		
Ambient temperature (indoor) (°C)		5 to 40		
Ambient humidity (indoor)		Max. 85%RH (no dew condensation)		
Gas (inhaled gas)		No corrosive or exposable gas		
Vibration of installation site		Max. 4.9 m/s ² (10 to 60 Hz)		
Altitude of installation site		1000 m ASL or less		
Install orientation		Motor axis to be horizontal		
Output (W)		60		
Type		3-phase motor, Built-in thermal protector Heat proof class: 130 (B)	Single-phase capacitor type induction motor Built-in thermal protector, Heat proof class: 130 (B)	
Motor	Voltage (V) ^{*3}		200 / 220 / 230	100 / 115
	Rated current (A)	50 Hz	0.50 / — / —	1.2 / —
		60 Hz	0.43 / 0.45 / 0.46	1.19 / 1.09 / 1.1
	Rated rotation speed (min ⁻¹)	50 Hz	1,300 / — / —	1,200 / —
		60 Hz	1,550 / 1,600 / 1,600	1,450 / 1,450
	Striking current (A)	50 Hz	1.51 / — / —	2.66 / —
60 Hz		1.37 / 1.51 / 1.52	2.55 / 2.74 / 2.79	
Operation noise (dB (A)) ^{*1}	50 Hz	≤58		—
	60 Hz	≤63		—
Vacuum port size		G 3/8		
Exhaust port size		G 1/4		
Dimensions (width x depth x height) (mm)		125 × 299.6 × 166.5 (U 100 SW ^{*2} : 125 × 299.6 × 180.8)		
Weight (kg)		7.0	7.2 (U100SW ^{*2} : 7.5 (including accessories))	
Cooling system		Forced air cooling		

*1. Operating noise is an actually measured value excluding suction and exhaust noises, and is not a guaranteed value. Operating noise varies depending on operating condition.

*2. Power switch built-in type. Not CE marking product

*3. Temporary fluctuation range of voltage is within ±10% of rated voltage. In case of continuous fluctuation, ±3% of rated voltage is allowable.

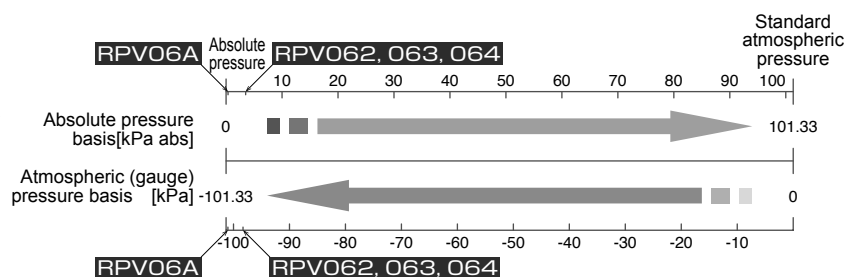
*4. The final vacuum and the pumping speed described in the specification are confirmed at the time of delivery inspection according to our standard. The performance after normal operation for a certain running period of time will be the following table possibly.

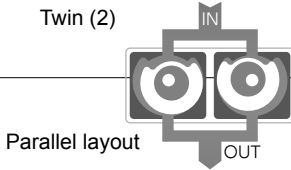
Type	Operation period	Final vacuum		Pumping speed
RPV06A	1 year	50 Hz	1.2 kPa abs -100.1 Kpa G	-20% compared with spec. value
		60 Hz	1.0 kPa abs -100.3 Kpa G	

*The values are based on our operating conditions. The product life varies depending on the operation conditions and the inhaled gas (moisture or dust), etc.

About vacuum pressure indication

■ Absolute pressure (kPa abs or Pa abs) and gauge pressure (kPa G) are used in Pisco's vacuum pump catalogue. Please be careful not to make a mistake in a unit when selecting a pump. For other Vacuum equipment in this catalog, Gauge pressure (-kPa) is used.



Type	Low vacuum· 60 ℓ			
Model code	RPV062-60V200	RPV062-60U100 (U100SW ^{*2})	RPV062-60U110	
Numbers of cylinder	Twin (2)			
Cylinder layout				
Pumping speed (ℓ/min)	50 Hz	60		
	60 Hz	72		
Final vacuum (Pa abs)	50 Hz	≤ 3,500		
	60 Hz	≤ 3,000		
Final vacuum (kPa G)	50 Hz	≤ -97.8		
	60 Hz	≤ -98.3		
Max. suction pressure	Atmospheric pressure			
Ambient temperature (indoor) (°C)	5 to 40			
Ambient humidity (indoor)	Max. 85%RH (no dew condensation)			
Gas (inhaled gas)	No corrosive or exposable gas			
Vibration of installation site	Max. 4.9 m/s ² (10 to 60 Hz)			
Altitude of installation site	1000 m ASL or less			
Install orientation	Motor axis to be horizontal			
Motor	Output (W)	60		
	Type	3-phase motor, Built-in thermal protector Heat proof class: 130 (B)	Single-phase capacitor type induction motor Built-in thermal protector, Heat proof class: 130 (B)	
	Voltage (V) ^{*3}	200 / 220 / 230	100 / 115	
	Rated current (A)	50 Hz	0.50 / — / —	1.2 / —
		60 Hz	0.43 / 0.45 / 0.46	1.09 / 1.1
	Rated rotation speed (min ⁻¹)	50 Hz	1,300 / — / —	1,200 / —
		60 Hz	1,550 / 1,600 / 1,600	1,450 / 1,450
	Striking current (A)	50 Hz	1.51 / — / —	2.66 / —
		60 Hz	1.37 / 1.51 / 1.52	2.55 / 2.74 / 2.79
	Operation noise (dB (A)) ^{*1}	50 Hz	≤ 58	
	60 Hz	≤ 63		
Vacuum port size	G1/2			
Exhaust port size	G3/8			
Dimensions (width × depth × height) (mm)	125 × 299.6 × 176 (U100SW ^{*2} : 125 × 299.6 × 180.8)			
Weight (kg)	7.2 (U100SW ^{*2} : 7.6 (including accessories))			
Cooling system	Forced air cooling			

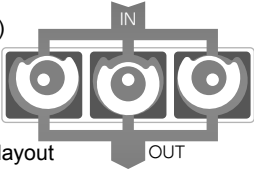
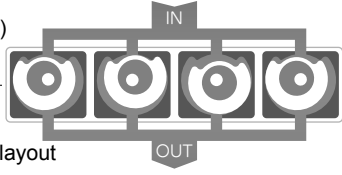
*1. Operating noise is an actually measured value excluding suction and exhaust noises, and is not a guaranteed value. Operating noise varies depending on operating condition.
 *2. Power switch built-in type. Not CE marking product
 *3. Temporary fluctuation range of voltage is within ±10% of rated voltage. In case of continuous fluctuation, ±3% of rated voltage is allowable.
 *4. The final vacuum and the pumping speed described in the specification are confirmed at the time of delivery inspection according to our standard. The performance after normal operation for a certain running period of time will be the following table possibly.

■ Table. Final vacuum and pumping speed based on the running period

Type	Operation period	Final vacuum	Pumping speed
RPV062	3 years	50 Hz	12 kPa abs
			-89.3 Kpa G
		60 Hz	10 kPa abs
			-91.3 Kpa G

*The values are based on our operating conditions. The product life varies depending on the operation conditions and the inhaled gas (moisture or dust), etc.

Rotary Vacuum Pump Series

Type		Low vacuum· 90 ℓ			Low vacuum· 120 ℓ			
Model code		RPV063-90V200			RPV064-200V200			
Numbers of cylinder		Triple (3)			Quad (4)			
Cylinder layout								
Pumping speed (ℓ/min)	50 Hz	90			120			
	60 Hz	108			144			
Final vacuum (Pa abs)	50 Hz	≦3,500						
	60 Hz	≦3,000						
Final vacuum (kPa G)	50 Hz	≦-97.8						
	60 Hz	≦-98.3						
Max. suction pressure		Atmospheric pressure						
Ambient temperature (indoor) (°C)		5 to 40						
Ambient humidity (indoor)		Max. 85%RH (no dew condensation)						
Gas (inhaled gas)		No corrosive or exposable gas						
Vibration of installation site		Max. 4.9 m/s ² (10 to 60 Hz)						
Altitude of installation site		1000 m ASL or less						
Install orientation		Motor axis to be horizontal						
Motor	Output (W)	90			200			
	Type	3-phase motor, Built-in thermal protector Heat proof class: 130 (B)						
	Voltage (V) *3	200	/	220	/	230	200 / 220 / 230	
	Rated current (A)	50 Hz	0.64	/	—	/	—	1.1 / — / —
		60 Hz	0.59	/	0.6	/	0.61	1.1 / 0.95 / 0.95
	Rated rotation speed (min ⁻¹)	50 Hz	1,300	/	—	/	—	1,250 / — / —
		60 Hz	1,550	/	1,600	/	1,600	1,500 / 1,550 / 1,600
	Striking current (A)	50 Hz	2.01	/	—	/	—	3.60 / — / —
60 Hz		1.86	/	2.00	/	2.05	3.27 / 3.54 / 3.63	
Operation noise (dB (A)) *1	50 Hz	≦58						
	60 Hz	≦63						
Vacuum port size		G1/2						
Exhaust port size		G3/8						
Dimensions (width × depth × height) (mm)		125 × 340.6 × 181			125 × 391.6 × 181			
Weight (kg)		8.8 *2			11.5 *2			
Cooling system		Forced air cooling						

*1. Operating noise is an actually measured value excluding suction and exhaust noises, and is not a guaranteed value. Operating noise varies depending on operating condition.

*2. Weight includes attached 2 plugs.

*3. Temporary fluctuation range of voltage is within ±10% of rated voltage. In case of continuous fluctuation, ±3% of rated voltage is allowable.

*4. The final vacuum and the pumping speed described in the specification are confirmed at the time of delivery inspection according to our standard. The performance after normal operation for a certain running period of time will be the following table possibly.





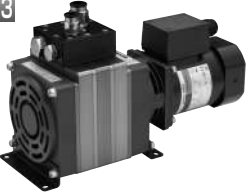
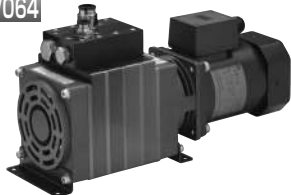
■ Table. Final vacuum and pumping speed based on the running period

Type	Operation period	Final vacuum		Pumping speed
RPV063 RPV064	3 years	50 Hz	12 kPa abs	-20% compared withspec. value
			-89.3 Kpa G	
		60 Hz	10 kPa abs	
			-91.3 Kpa G	

*The values are based on our operating conditions. The product life varies depending on the operation conditions and the inhaled gas (moisture or dust), etc.

RoHS2 (2011/65/EU+EU2015/863) compliant



In-line/Twin		Parallel/Twin	
Type	Model code	Type	Model code
Medium vacuum, 30 ℓ RPV06A 	RPV06A-60V200- 4 - 5 - 6 RPV06A-60U100- 4 - 5 - 6 RPV06A-60U110- 4 - 5 - 6	Low vacuum·60 ℓ RPV062 	RPV062-60V200- 4 - 5 - 6 RPV062-60U100- 4 - 5 - 6 RPV062-60U110- 4 - 5 - 6
Type	Model code	Type	Model code
Medium vacuum, 30 ℓ (Single-phase motor & Built-in power switch type) RPV06A 	RPV06A-60U100SW- 4 - 5 - 6	Low vacuum, 60 ℓ (Built-in power switch type) RPV062 	RPV062-60U100SW- 4 - 5 - 6
Parallel/Triple		Parallel/Quad	
Type	Model code	Type	Model code
Low vacuum·90 ℓ RPV063 	RPV063-90V200- 4 - 5 - 6	Low vacuum·120 ℓ RPV064 	RPV064-200V200- 4 - 5 - 6



Notes

- *1. For **4** in model code, please select a vacuum port size. For **5**, select an exhaust port size and for **6**, select a code for exhaust cleaner (and fitting).
- *2. U100SW type is not CE marked.






CAD data is available at PISCO website.






Packaging specifications
1 pc. /box




Rotary Vacuum Pump Series

RoHS2 (2011/65/EU+EU2015/863) compliant

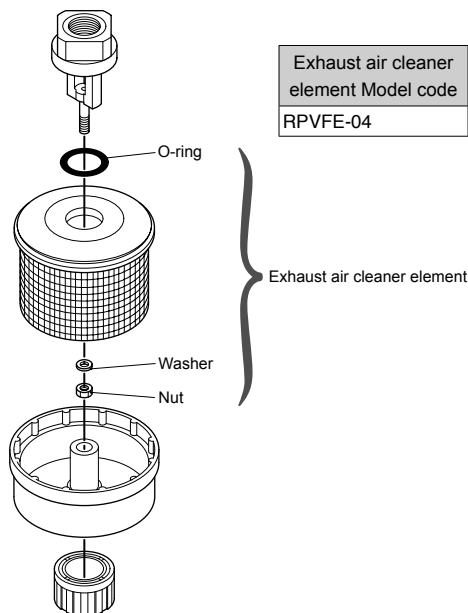
Optional parts					
For vacuum port					
Type	Model code PC ϕ D-G	Type	Model code PL ϕ D-G	Type	Model code NBC ϕ D-G
Push-in fitting Straight PC 	PC10-G3	Push-in fitting Elbow PL 	PL10-G3	Compression fitting Straight NBC 	NBC1065-G3
	PC10-G4		PL10-G4		NBC1065-G4
	PC12-G3		PL12-G3		NBC1075-G3
	PC12-G4		PL12-G4		NBC1075-G4
	PC16-G3		PL16-G3		NBC1280-G3
	PC16-G4		PL16-G4		NBC1280-G4
	PC $\frac{3}{8}$ -G3		PL $\frac{3}{8}$ -G3		NBC1290-G3
	PC $\frac{3}{8}$ -G4		PL $\frac{3}{8}$ -G4		NBC1290-G4
	PC $\frac{1}{2}$ -G3		PL $\frac{1}{2}$ -G3		NBC1611-G3
	PC $\frac{1}{2}$ -G4		PL $\frac{1}{2}$ -G4		NBC1611-G4
	PC $\frac{5}{8}$ -G3		PL $\frac{5}{8}$ -G3		NBC1613-G3
	PC $\frac{5}{8}$ -G4		PL $\frac{5}{8}$ -G4		NBC1613-G4


For exhaust port					
Type	Model code PC ϕ D-G	Type	Model code PL ϕ D-G	Type	Model code NBC ϕ D-G
Push-in fitting Straight PC 	PC10-G2	Push-in fitting Elbow PL 	PL10-G2	Compression fitting Straight NBC 	NBC1065-G2
	PC10-G3		PL10-G3		NBC1065-G3
	PC12-G2		PL12-G2		NBC1075-G2
	PC12-G3		PL12-G3		NBC1075-G3
	PC16-G3		PL16-G3		NBC1280-G2
	PC $\frac{3}{8}$ -G2		PL $\frac{3}{8}$ -G2		NBC1280-G3
	PC $\frac{3}{8}$ -G3		PL $\frac{3}{8}$ -G3		NBC1290-G2
	PC $\frac{1}{2}$ -G2		PL $\frac{1}{2}$ -G2		NBC1290-G3
	PC $\frac{1}{2}$ -G3		PL $\frac{1}{2}$ -G3		NBC1611-G3
	PC $\frac{5}{8}$ -G3		PL $\frac{5}{8}$ -G3		NBC1613-G3


Exhaust air cleaner

Type	Model code
Exhaust air cleaner RPVF-04 	RPVF-04
Type	Model code PC ϕ D-R
Push-in fitting Straight for Exhaust air cleaner PC 	PC10-04
	PC12-04
	PC16-04
	PC $\frac{3}{8}$ -04
	PC $\frac{1}{2}$ -04
PC $\frac{5}{8}$ -04	
Type	Model code PL ϕ D-R
Push-in fitting Elbow for Exhaust air cleaner PL 	PL10-04
	PL12-04
	PL16-04
	PL $\frac{3}{8}$ -04
	PL $\frac{1}{2}$ -04
PL $\frac{5}{8}$ -04	

Replacement element



 CAD data is available at PISCO website.

 Packaging specifications
 1 pc. /box: Exhaust air cleaner, Exhaust air cleaner element
 10 pcs. /bag: Straight/Elbow fitting for vacuum/exhaust port or for exhaust air cleaner