

Spec.No. KRF110-01E

Orion Trade Name DRY PUMP

Orion Model KRF110-01

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APPD	CKD	DWN
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1. Warranty

1-1. Warranty period

The product shall be warranted for a period of one year from the date of purchase, or for 3000 hours of operation, whichever comes first.

1-2. Items exempted from warranty

Consumable parts and periodic replacement parts.

Fault caused by careless handling or improper use and maintenance. (Operation not following the specifications and the instruction manual. Operation under abnormal environmental conditions.)

Fault caused by fire, flood, lightning stroke, abnormal voltage or unforeseen disasters.

Fault caused by repair or modification not performed by ORION or ORION authorized service contractors.

Change of appearance, such as damage or deterioration caused in general use.

Secondary damages caused by the fault (Incidental damages such as loss, inconvenience, and commercial loss resulting from the failed product).

(Note) In case of a fault or an accident, contact the dealer with the model name and serial number.

2. Consumable parts / Periodic replacement parts

(1) Consumable parts (Parts to be replaced depending on the state at the time of inspection)

Name of Parts	Parts Number	Qty/ unit	Inspection period	Replacement criterion
Liner *	040028390 0	To be decided by actual positioning	Replacement of vane	When damaged.

* The second digit from the right is subject to thickness.

0.2t(white) 1, 0.1t(black) 2, 0.05t(yellow) 3, 0.03t(red) 4

(2) Replacement parts (Parts to be replaced at regular time intervals)

Name of Parts	Parts Number	Qty / unit	Exchange time
			Operation under normal pressure.
Vane	04100653010	6	5,500
Bearing	0A000333000	2	5,500

* When vanes are replaced, replace bearing at the same time. Use ORION specified bearings that are lubricated with special grease.

* The exchange time is a recommended value in the rotational speed 940/1140 rpm(50/60Hz) and vacuum 60kPa driving.

* Use the maintenance kit for replacement parts.

Name of Parts		Maintenance kit 110 Assembly	
Model		KRF110	
Parts number		04101348010	
Kit / unit		1	
Items	Vane	Pcs / kit	6
	Bearing		2
	Liner (white)		2
	Liner (black)		2
	Liner (yellow)		4
	Liner (red)		6

3. Specifications

Model		KRF110-01	
Frequency	Hz	50	60
Designed capacity * 1	L / min	1850	2200
Continuous operative pressure * 2	k P a	Vacuum and pressure in total: 60 or less	
Ultimate vacuum * 3	k P a	90or more	
Necessary power	Phase · output · pole	Three-phase · 3.7 k W · 6 P	
Setting for thermal protection * 4	A	Rated current shown in the name plate of motor	
Mass	kg	54	
Painting color		Gray (Except some parts)	
Installation condition (Suction air)	Installation site	Indoor	
	Permissible ambient temperature	0to40	
	Permissible ambient humidity	65 ± 20% (JIS Z8703)	
	Conditions	Conditions where there is no corrosive and explosive gas exist. Clean air without vapor and dew condensation, and less dirt and dust.	

*1 Designed capacity: It is the theoretical value calculated from capacity. Please use the pressure-flow rate diagram for the actual flow rate. It is a designed capacity at rotational speed 940/1140 rpm(50/60Hz).

*2 Continuous operative pressure: Operative range of pressure. Install the gauge and controller to the pump or the piping, and use the Dry Pump at the continuous operative pressure or less.

*3 Ultimate vacuum: Continuous operation is not possible at maximum ultimate vacuum of the pump. It is used as model selection calculation.

*4 Use the thermal set value as a target since the apparatus and acceptable motor are different individually.

4. Precautions

- (1) Observe precautions, and operate the product within specifications.
- (2) Read the instruction manual prior to installation, operation, maintenance and inspection of the product. Especially pay attention to safety.
- (3) The vanes may get damaged if the residual pressure reverses the rotation when the pump stops. A check valve must be installed within 50 cm from the inlet port or exhaust port for protection.
- (4) Be sure to install the product horizontally on the flat surface.
- (5) Operating the product in an enclosed space may cause malfunction due to heat generated from the pump. Provide good ventilation around the product, so the ambient temperature does not exceed the permissible level.
- (6) Be sure to clean the filters periodically. Failure to do so may cause clogging and result in trouble due to overload.
- (7) Wiring work has to be performed by qualified personnel according to applicable laws and in-house regulations.
- (8) Be sure to install an overload protection such as a thermal relay in the electric circuit.
- (9) Be sure to use the product 1,000m or below above sea level.
- (10) Adjust Alignment (less than 0.3 mm) correctly when install the motor onto the Pump. Under the miss-alignment operation, it may cause abnormal noise with vibration then damaged.
- (11) The permitted rotational speed is 750 ~ 1140 rpm. Please use it in this range.

5. Accessories

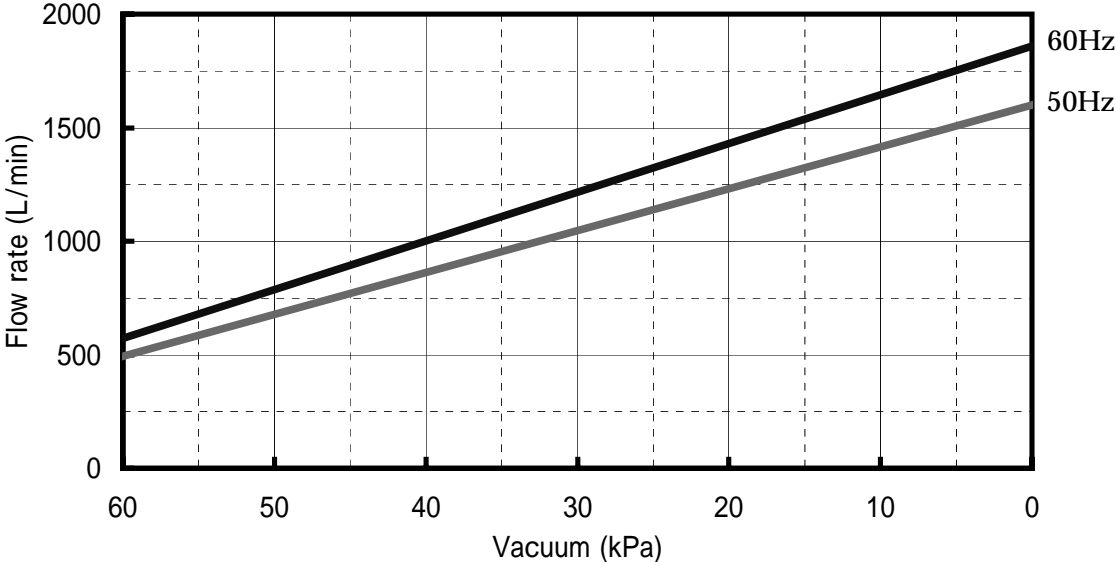
There is no accessory.

6. Pressure-Flow rate diagram

KRF110-01

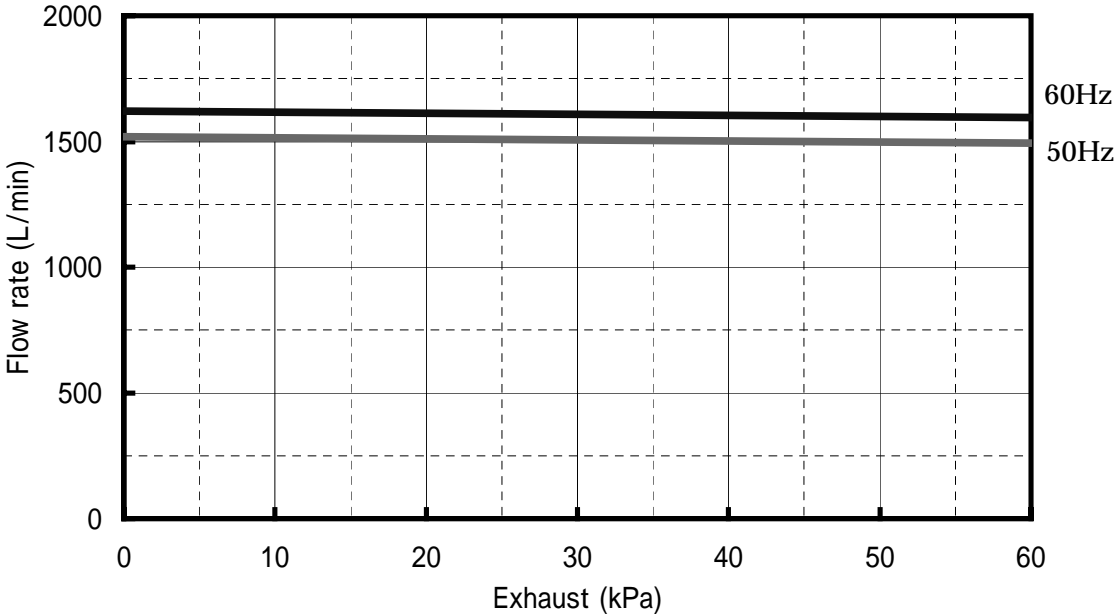
Vacuum Specification

(Note) In case exhaust pressure is 0kPa



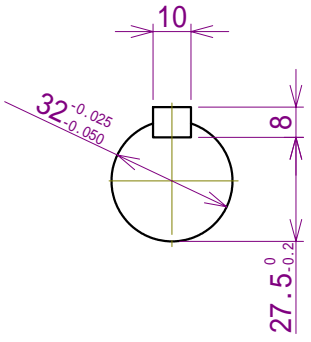
Pressure Specification

(Note) In case vacuum is 0kPa



Conditions: 1 atmospheric pressure

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Detail of shaft shape

