

Orion Trade Name      DRY PUMP

Orion Model              KRF08A-B-04

Date:                      May 22, 2009

APPD	CKD	DWN
<i>F</i> <i>Yamada</i>	<i>N</i> <i>Takei</i>	<i>S</i> <i>Miyazawa</i>

1. Warranty

1-1. Warranty period

The product shall be warranted for a period of one year from the date of purchase, or for 5000 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
Filter element (Inlet side)	04000028010	1	1 week	When damaged, or dirt cannot be removed by blowing air.
Filter element (exhaust side)	04000028010	1	1 week	When damaged, or dirt cannot be removed by blowing air.
O-ring(65)	35154544040	2	Replacement of element	When damaged or worn.
Gasket (B)	04009579010	1	Removal of SD case	When damaged or worn.
Washer	33000300020	2	Removal of SD case	When damaged or worn.
Gasket	04100818010	4	When the cap or case attachment is removed.	When damaged or worn.
Spring shaft	04100817010	2	Replacement of element	When damaged or worn.
Spring tube	04039359010	1	Replacement of element	When damaged or worn.
Spider	0400139610	1	6 months	When it becomes damaged or crushed.
Liner *1	040000370 0	To be decided by actual positioning	When the blade is replaced.	When it becomes damaged.

\*1 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 No.	Qty / unit	Replacement time	
			Blower 60kPa operation	Blower 70kPa operation
Vane	04101753010	4	12,000	9,500
Bearing	0A000227000	2	12,000	9,500

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

\* Use the maintenance kit for replacement parts.

Name of Parts	Parts number	Items	Pcs / kit
Maintenance kit 08 Assembly	04101221010	Vane	4
		Bearing	2
		Liner (white)	4
		Liner (black)	4
		Liner (yellow)	6
		Liner (red)	8

(3) Motor Maintenance Cycle (An estimated indication of when motor replacement might be necessary. Actual motor lifetime will depend on specific operating conditions.)

Part Name	Part Number	Specifications	Qty	Maintenance Cycle
Motor	0A001958000	Three phase 0.2kW 4P	1	20,000h

\* Indicates the time when the chance of failure due to wear increases. The motor does not necessarily require replacement after this time; the actual replacement time will depend on the operating conditions and environment of the particular installation. Please have the motor replaced when operation becomes abnormal.

(4) Maintenance of plastic parts affecting operational safety

Replace the following plastic parts affecting operational safety promptly upon detection of breakage or deformation. Failure to do so may cause personal injury.

Name of Parts	Parts No.	Qty/unit
Coupling cover (A)	02100771010	1
Coupling cover (B)	02100772010	1
Main cover assembly	03102492010	1

To order a main cover assembly, check the pump model type and manufacturing number shown on the name plate of the pump in use and advise us of these particulars.

## 3. Specifications

Model		KRF08A-B-04	
Frequency		Hz	50      60
Designed capacity *1		L/min	135      155
Continuous operative vacuum	Recommended range *2	kPa	60 or less
	Maximum value *3	kPa	70
Diameter of piping connection			Rc3/4
Motor		Phase / output/ pole	Three-phase / 0.2kW / 4P
		Frame no. / heat resisting class	63M / E
		Frequency / Rated voltage – current	50Hz / 380V – 0.62A 400V – 0.64A 415V – 0.65A 60Hz / 400V – 0.55A 440V – 0.57A 460V – 0.58A
Setting for thermal protection *4		A	50Hz / 380V – 0.68A 400V – 0.70A 415V – 0.72A 60Hz / 400V – 0.61A 440V – 0.63A 460V – 0.64A
Mass		Kg	14
Painting color			Black (except motor)
Installation condition (Suction air)		Installation site	Indoor
		Permissible ambient temperature deg.C	0 to 40
		Permissible ambient humidity %RH	65 ± 20 (JIS Z8703)
		Conditions	Corrosive or explosive gas must not exist in ambient atmosphere. Clean air with less dirt and dust, free of vapor and dew condensation.
Operation noise *5		dB	64      67

\*1 Designed Pumping Capacity: Theoretical value calculated from volume. Refer to Performance Data for actual flow rate.

\*2 Recommended range: Vacuum/pressure range the pump can exert its optimal performance (life, operation noise, etc.). In case high degree of vacuum/pressure is not required, operate at recommended range.

\*3 Maximum value: The maximum degree of vacuum/pressure pump can continuously run. Do not operate pump continuously over this limit. Doing so will shorten pump life and can lead to premature failure or accidents.

\*4 Setting for thermal protection is only as a guide regardless of variations of product performance.

\*5 Operating noise level is only an actually measured value under continuous operational vacuum and continuous operational pressure, and not guaranteed.

EC DECLARATION OF CONFORMITY



**ORION**

ORION MACHINERY CO., LTD.  
Phone +81-26-245-8537 Facsimile +81-26-245-4151  
246 Oaza Kotaka, Suzaka-shi, Nagano-ken, 382-8502 JAPAN


**EC DECLARATION OF CONFORMITY**

We hereby declare that the following our product conform with the essential health and safety requirements of EEC Directives.

Product : DRY PUMP  
Model No. : KRF Series  
(KRF04A, KRF08A, KRF15, KRF25, KRF40)  
Manufacturer : ORION MACHINERY CO., LTD.  
246 Oaza Kotaka, Suzaka-shi, Nagano-ken,  
382-8502 JAPAN  
Directives : Machinery Directive, 98/37/EC  
Low Voltage Directive, 2006/95/EC

The above product has been evaluated for conformity with above directives using the following European standards. The technical construction file (TCF) for this product is retained at the above manufacturer's location.

Machinery Directive / Low Voltage Directive:  
EN 12100-1:2003, EN 12100-2:2003, EN ISO 14121-1:2007, EN 1012-2:1996,  
EN 60204-1:1997, EN ISO 13732-1:2006, EN 983:1996, others

Signature :   
Date : 2008.09.17  
Name/Title : Toru Kaneko/General Manager

Being the responsible person appointed and employed by the manufacturer.

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) Allowable intermittent power supply voltage fluctuation range is  $\pm 10\%$  of the specified voltage; allowable sustained supply voltage fluctuation range is  $\pm 5\%$  of the specified voltage.
- (10) Be sure to use the product 1,000m or below above sea level.

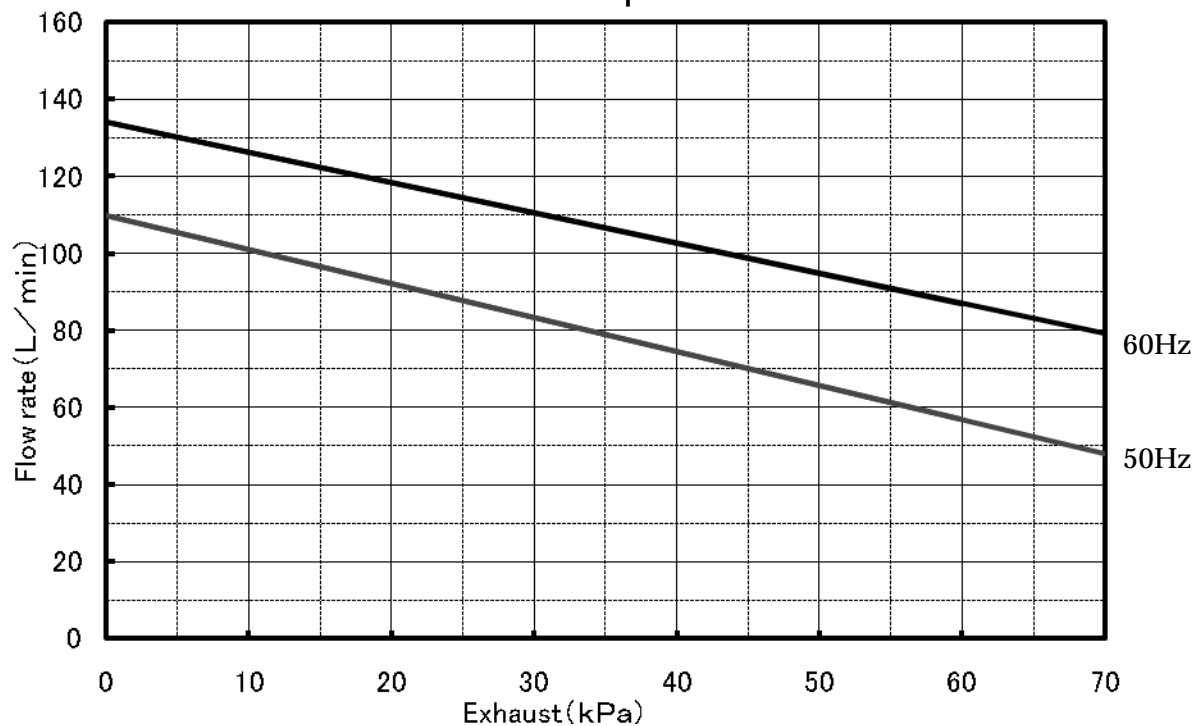
5. Accessories

D type compound gauge	60	1 piece
Pressure controller	PC32	1 piece
Bushing	3/4 × 3/8	1 piece

6. Pressure-Flow rate diagram

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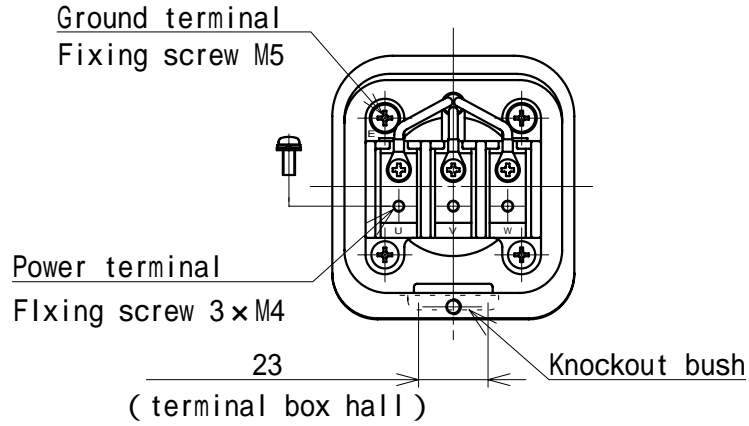
Pressure Specification



Condition: under 1 atmospheric pressure  
20 deg.C



The pressure controller can be attached to A,B,C and D. However, the outlet port can only be attached to A and C.



Detail of terminal box

