



ECO STYLE  
World Chemical

# DRYFREE-S

Full model change

## Stainless Steel Vertical Sealless Pump

For Desmear machine

For Electroless Nickel Plating

For Black-Oxide treatment machine (liquid)

For high temperature washing machine



5005LON

STAINLESS VERTICAL SEALLESS PUMP

# LON series

Vertical Sealless Pump DRYFREE-S



4001LON



4002 / 4003LON



5003LON

## Product Outline

Vertical sealless pump with non-contact structure, specially designed for Desmear machine and Electroless Nickel plating machine  
 In addition to the sealless non-contact structure that is strong against dry-running operation and slurry liquid, high-grade stainless steel SCS16 (equivalent to SUS316L) is adopted for its main body.  
 The robust pump contributes to the process lines of multi-layered/high-density printed wiring boards.

### Name

DRYFREE-S

### Model

LON model  
 Available both in-tank and out-of-tank methods.  
 Best for circulation.

### Material

SCS16 (equivalent to SUS316L)

## Features

- Adoption of SUS16 (equivalent to SUS316L)**  
 The main body is made of high-grade stainless steel, which is suitable for Desmear machine and Electroless Nickel machine. It has an excellent heat-resistant and anti-corrosive body for the production of printed wiring board.
- Strong against dry running**  
 Its sealless non-contact structure is strong against dry running. It prevents wear & tear and excess heat, enabling long life.
- Maintenance free**  
 Constructed with no consumable parts such as a mechanical seal or gland packing, this pump allows maintenance free operation.
- High accuracy and lightweight body produced by the lost wax casting**  
 The installation dimensions including pipe joint sections are compatible with the former product LO-SUS model.

## Model Designation

# YD-5005LON-SU-NE51

### Pump discharge bore

40 : 40A  
 50 : 50A

### Motor output

01 : 0.75kW 02 : 1.5kW  
 03 : 2.2kW 05 : 3.7kW

### Model / Material

LON-SU : Stainless steel vertical sealless pump  
 Main material : SCS16 (equivalent to SUS316L)

### Seal material

N : Sealless type

### Frequency

5 : 50Hz 6 : 60Hz

### O-ring material

E : EPDM  
 D : FPM  
 P : PTFE

### Limit of S.G.

1 : 1.1

※Please contact us for specific gravities other than the above.

## Standard Specification

50Hz

Model	Bore (mm)		Output		Standard specific point m - L/min	Weight (kg)
	In	Out	HP	kW		
YD-4001LON-SU	50	40	1	0.75	10 - 120	43
YD-4002LON-SU	50	40	2	1.5	13 - 200	44
YD-5003LON-SU	65	50	3	2.2	14 - 350	45
YD-5005LON-SU	65	50	5	3.7	18 - 500	64

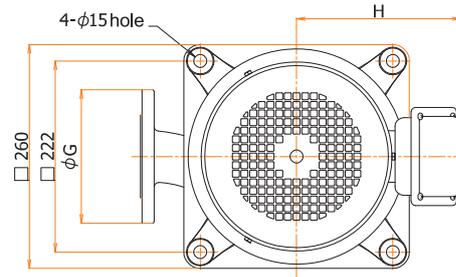
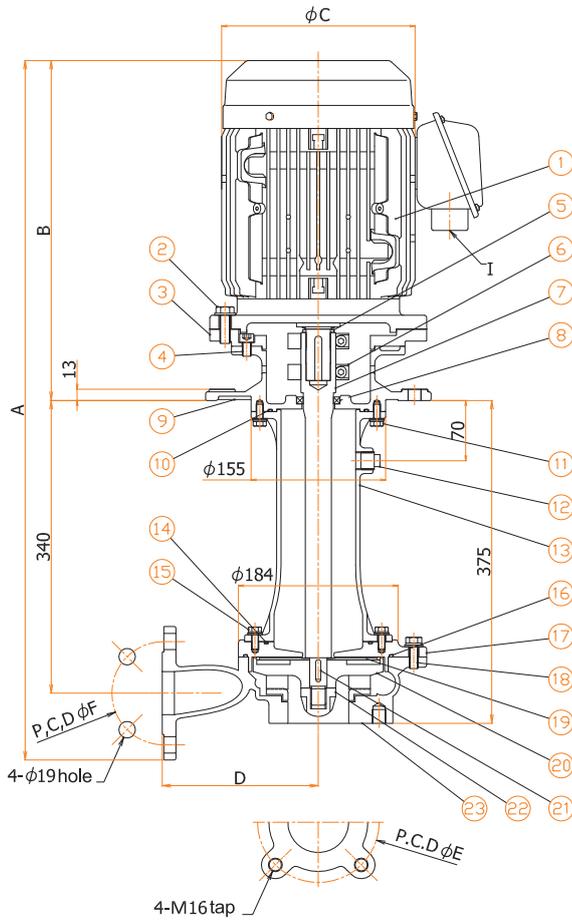
(S.G. 1.1)

60Hz

Model	Bore (mm)		Output		Standard specific point m - L/min	Weight (kg)
	In	Out	HP	kW		
YD-4001LON-SU	50	40	1	0.75	8 - 100	43
YD-4002LON-SU	50	40	2	1.5	13 - 200	44
YD-4003LON-SU	50	40	3	2.2	14 - 350	45
YD-5005LON-SU	65	50	5	3.7	18 - 500	64

(S.G. 1.1)

## Part Drawing



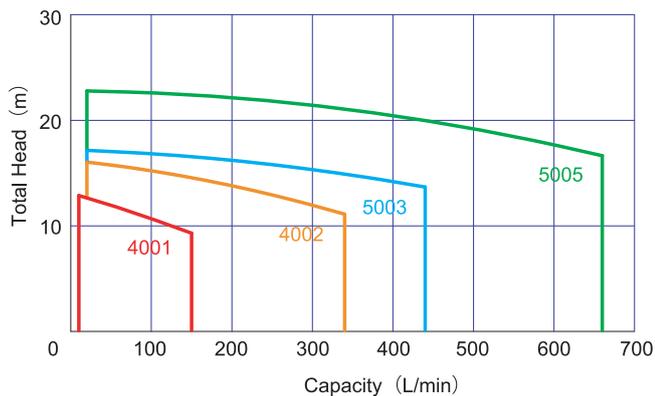
Item No.	Item Name	Q'ty	Material
①	Motor	1	AL etc.
②	Hex. bolt	4	SUS304 (w/ washer)
③	Motor mounting plate	1	FC200 + paint (3.7kW only)
④	Hex. socket head cap screw	4	SUS304 (3.7kW only)
⑤	V-ring	1	NBR
⑥	Slit collar	2	SUS304
⑦	Shaft	1	SUS316L
⑧	Gas seal	1	SUS316 + PTFE
⑨	Pump base	1	SCS13
⑩	O-ring for pump base	1	EPDM / FPM / PTFE
⑪	Hex. bolt	6	SUS304 (w/ W, SW)
⑫	Plug	1	SUS316 (PT1/2)
⑬	Connecting pipe	1	SCS16
⑭	O-ring for back plate	1	EPDM / FPM / PTFE
⑮	Hex. bolt	6	SUS304 (w/ W, SW)
⑯	O-ring for casing	1	EPDM / FPM / PTFE
⑰	Back plate	1	SCS16
⑱	Hex. bolt	6	SUS304 (w/ W, SW)
⑲	Impeller disc	1	SUS316L
⑳	Impeller	1	PTFE
㉑	Key	2	SUS316 (Both ends round)
㉒	Impeller nut	1	SUS316L
㉓	Casing	1	SCS16

## Dimensions

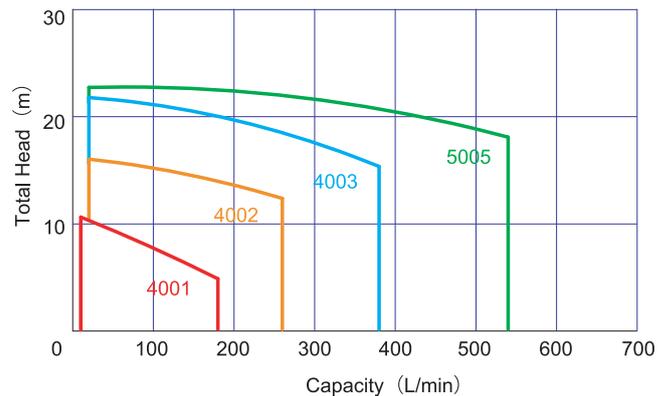
Model	Bore (mm)		Output kW	A	B	φ C	D	φ E	φ F	φ G	H	I	Frequency
	In	Out											Hz
YD - 4001LON - SU	50	40	0.75	716	306	163	160	120	105	140	161	PF3/4	50/60
YD - 4002LON - SU	50	40	1.5	747	337	180	160	120	105	140	168	PF3/4	50/60
YD - 4003LON - SU	50	40	2.2	747	337	180	160	120	105	140	168	PF3/4	60
YD - 5003LON - SU	65	50	2.2	755	337	180	180	140	120	155	168	PF3/4	50
YD - 5005LON - SU	65	50	3.7	813	395	223	180	140	120	155	190	PF1	50/60

## Performance curves

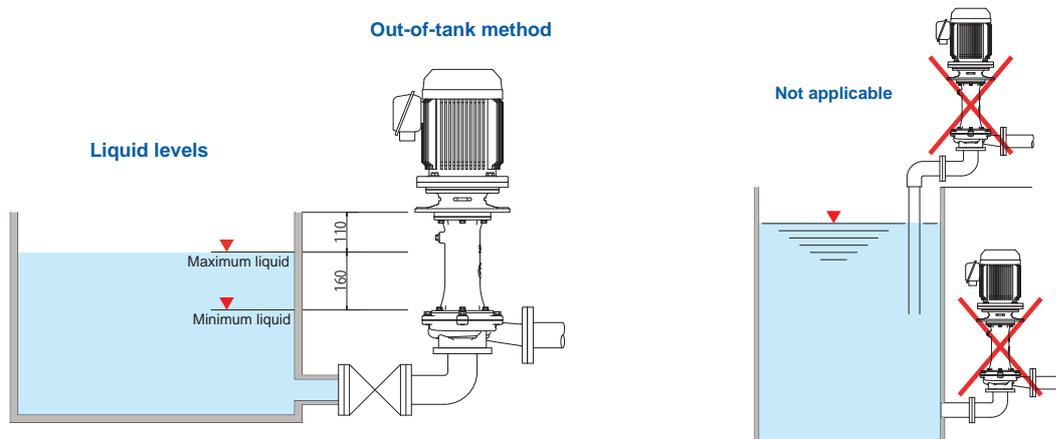
**50Hz** (S.G. 1.1)



**60Hz** (S.G. 1.1)



## ■ Cautions when installing



- (1) LON-SU pump does not need a mechanical seal or gland packing to prevent liquid leak. The pump should be installed so that the liquid level in the tank is between the maximum liquid level and the minimum liquid level for the pump. If the liquid level is set at higher than the maximum liquid level, liquid will leak from the upper part of the pump. Refer to the above illustration and instruction manual for reference to determine the pump's proper installation position.
- (2) Do not allow areas such as projections where air may be trapped in the suction piping to avoid air lock. It could cause insufficient flow.
- (3) Use M16 bolts for suction/discharge flanges and tighten them evenly with an appropriate torque wrench.
- (4) The suction pipe should employ the flooded suction method. The shortest pipe possible, with the minimum number of bends, should be designed. Arrange a proper support on the suction pipe so that the load and the thermal stress of the pipe are not applied to the pump.
- (5) When transferring high-temperature liquid, use pipes with one size larger diameter, or use the shortest pipes possible with as few pipe bends as possible to prevent a decrease in suction performance caused by high vapor pressure and to prevent cavitation.
- (6) If a screen such as a strainer is installed at the inlet, clean the screen periodically. The pump's performance and function are greatly affected by a clogged screen.
- (7) Verify that the bolt material (SUS304) is suitable for the actual liquid, in case of using the pump as in-tank method.



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