

# LRN series

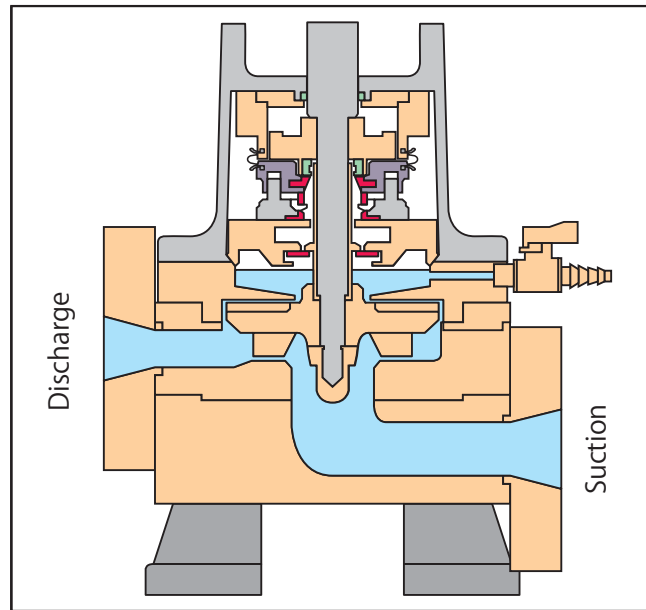
Vertical Linear seal pump SLURRY PUMP



### Features of SLURRY PUMP

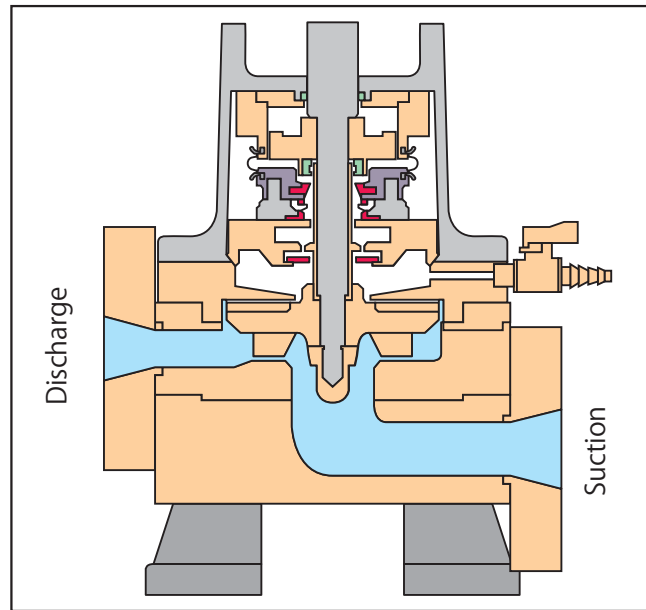
The pump does not have a mechanical seal or a gland packing as a seal. (Not contact)  
 Our original structure seals by liquid balance during operation and at the time of shutdown, a linear seal blocks inside of the pump.

1. There is no sliding parts during operation, so it resists abrasion by slurry, deadhead operation and dry running.
  2. No need cooling water, because of no seal/packing.
  3. There is no consumable parts such as a mechanical seal or a gland packing.
  4. Proximity sensor and PLC protects the linear seal as standard.
- ※ MSagnet valve is also available as the option.



#### At the time of shutdown

Balanced liquid by a back blade is risen by the backflow from the discharge outlet and the suction pressure, but a cut seal reduces the pressure. Moreover, magnets in a rotating disk attracts magnets in a moval seal. The contact between the rotation disk and the moval seal trap air at the surface of the liquid. That is why the liquid does not rise to the seal face.

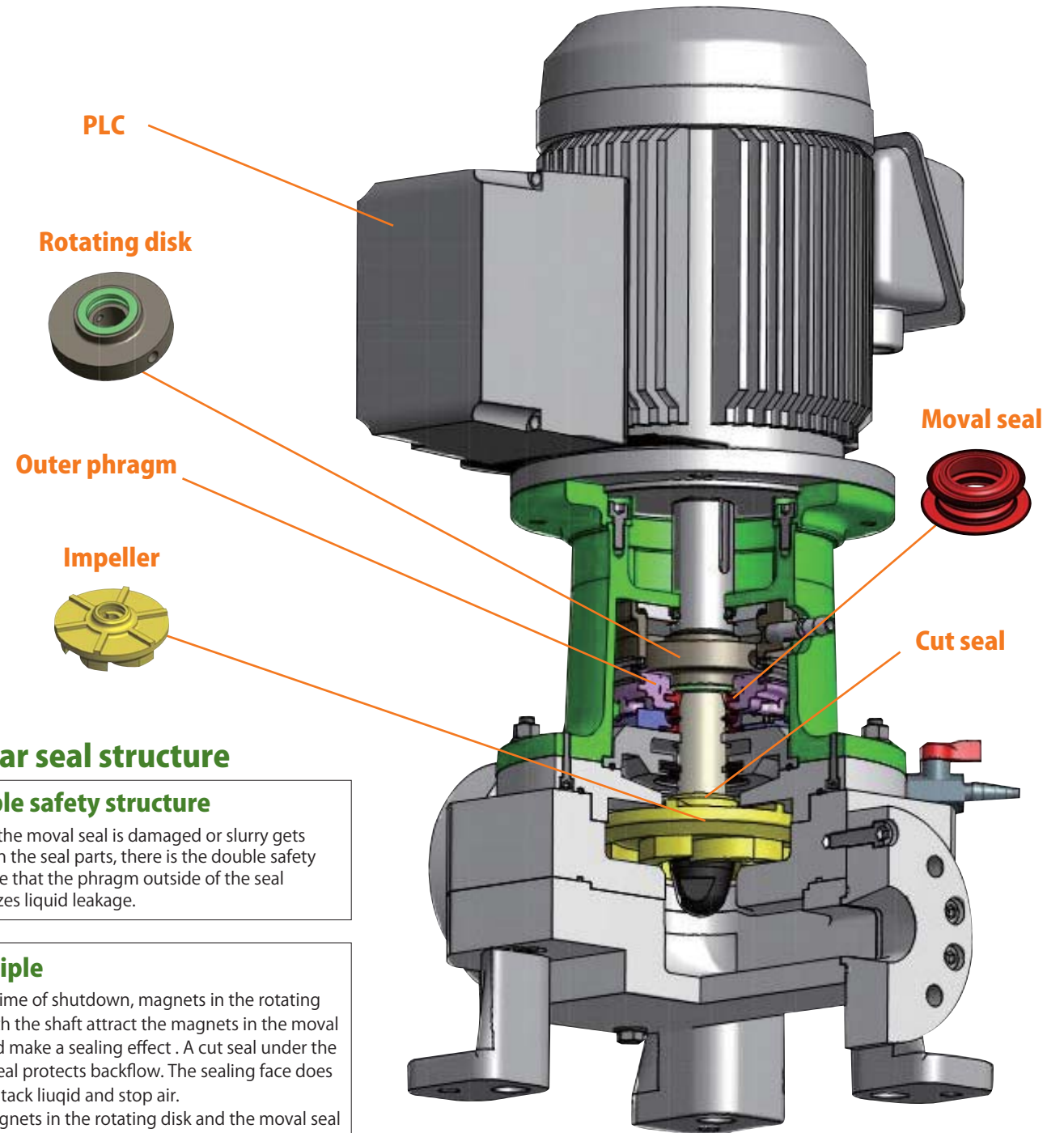
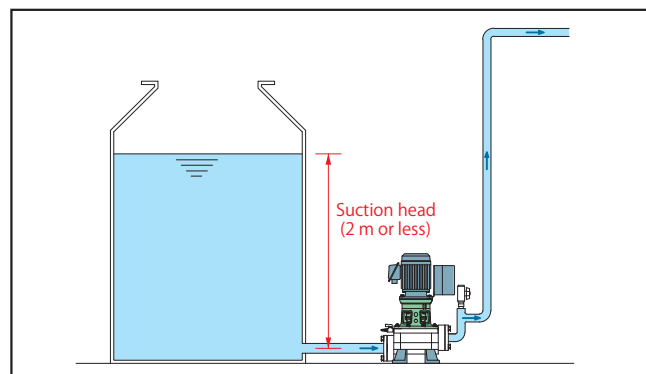


#### During operation

Magnets in the rotating disk changes the pole at the same time as the rotation. They repel magnets in the moval seal and the seal part opens. The back blade of the rotating impeller makes the liquid balance seal and there is only air above the back blade. It makes parts no contact and no sliding.

#### Suction flooded

The pump's suction head is 2 m as standard. However, the higher head may be available depending on the condition. Please ask us.



#### Linear seal structure

##### Double safety structure

Even if the moval seal is damaged or slurry gets stuck on the seal parts, there is the double safety measure that the phragm outside of the seal minimizes liquid leakage.

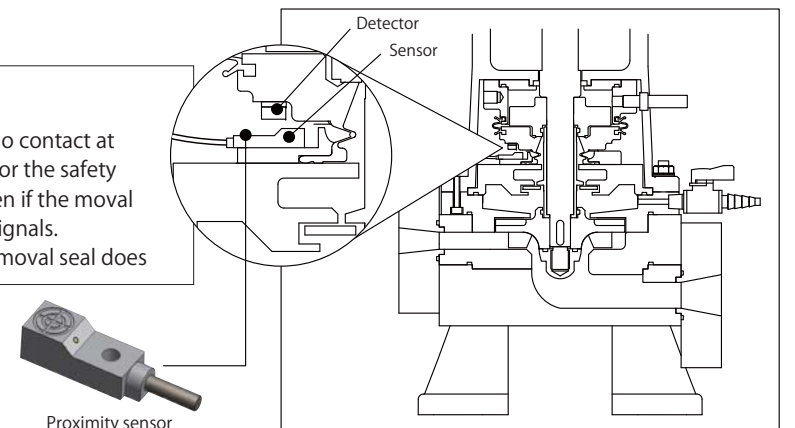
##### Principle

At the time of shutdown, magnets in the rotating disk with the shaft attract the magnets in the moval seal and make a sealing effect. A cut seal under the linear seal protects backflow. The sealing face does not contact liquid and stop air. The magnets in the rotating disk and the moval seal repel and separate at the same time as the pump start. It comes into no contact and no sliding.

#### Proximity sensor

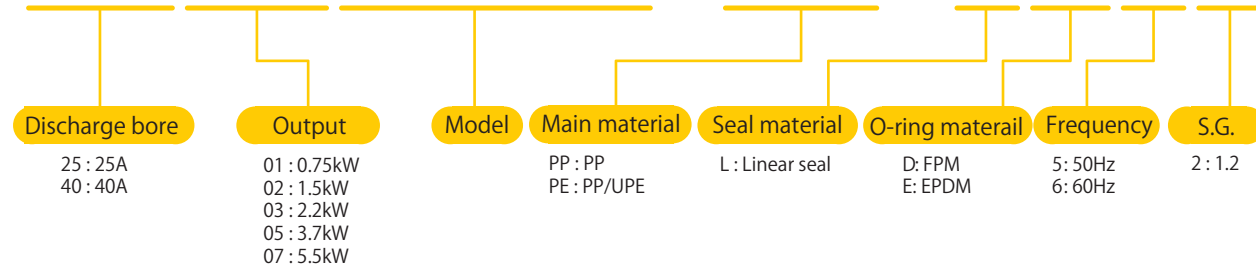
The linear seal opens at the time of startup and comes into no contact at the normal operation. The proximity sensor is incorporated for the safety measure as standard and monitors the seal's open/close. Even if the moval seal does not open (at the state of no contact), it sends out signals.  
 < It starts to detect 2 minutes after starting operation. If the moval seal does not open at the time (at the state of no contact), it sends out signals.>

- ※1 Install the pump automatic stop device by using the signals.
- ※2 The proximity sensor and PLC have already connected.



<Model>

# YD-4005LRN3-PP-LD52

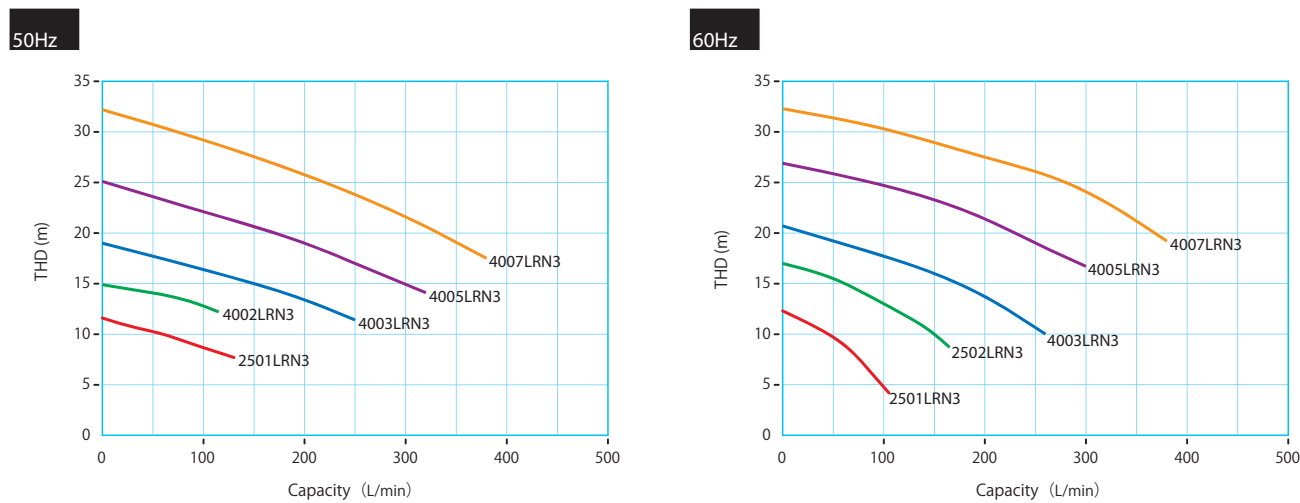


<Standard performance>

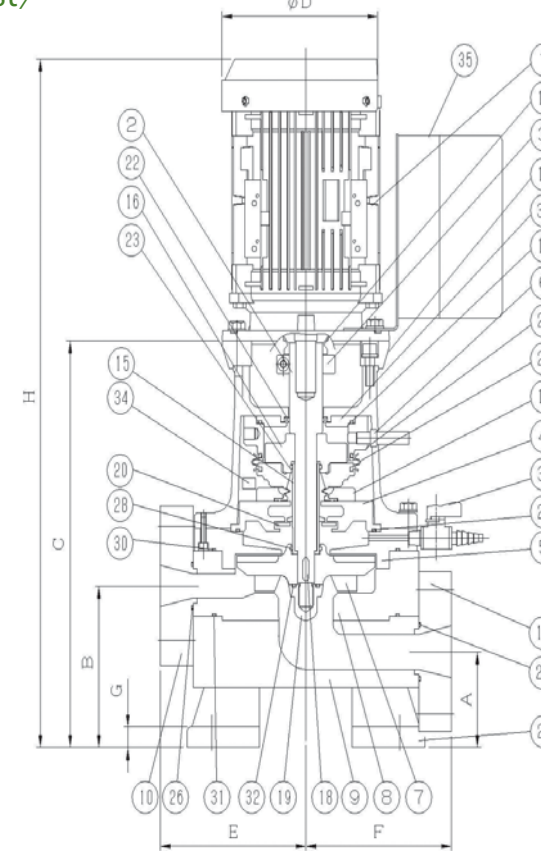
[S.G.1.2]

Model	Bore (mm)		Standard performance (L/min. - m)		Output (kW)
	Suction	Discharge	50Hz	60Hz	
YD-2501LRN3	40	25	60-10	60-9	0.75
YD-2502LRN3	40	25	-	100-13	1.5
YD-4002LRN3	50	40	100-13	-	1.5
YD-4003LRN3	50	40	150-15	150-16	2.2
YD-4005LRN3	50	40	250-17	250-19	3.7
YD-4007LRN3	50	40	220-25	280-25	5.5

<Performance curve>



< Part list >



Part name	Material	Qty
1 Motor		1
2 Shaft	SUS304	1
3 Slit collar	S45C	1
4 Linear seal flange	HT.PVC	1
5 Back casing	PP·UPE	1
6 Hose joint	PP	1
7 Impeller	PP·UPE	1
8 Discharge casing	PP	1
9 Suction casing	PP	1
10 Discharge flange	PP	1
11 Suction flange	PP	1
12 O-ring	EPDM·FPM	1
13 Dry seal	FPM	1
14 Connecting pipe	FC / AL	1
15 Shaft sleeve	HT.PVC	1
16 Rotating disk	CFRPP/ Ceramics	1
17 Moval seal	CFRPP/ FPM	1
18 Impeller key	Titanium	2
19 Impeller nut	PP·UPE	1
20 Cut seal	FPM	1
21 Outer phragm base	CFRPP	1
22 Oil seal	NBR	1
23 O-ring	EPDM·FPM	1
24 Outer phragm	FPM	1
25 O-ring	EPDM·FPM	1
26 O-ring	EPDM·FPM	1
27 Leg	PET	4
28 O-ring	EPDM·FPM	1
29 O-ring	EPDM·FPM	1
30 O-ring	EPDM·FPM	1
31 O-ring	EPDM·FPM	1
32 O-ring	EPDM·FPM	1
33 Locking oil seal	PP	1
34 Safety sensor		1
35 Control box	PC	1
36 Lab cock	PVC/EPDM	1

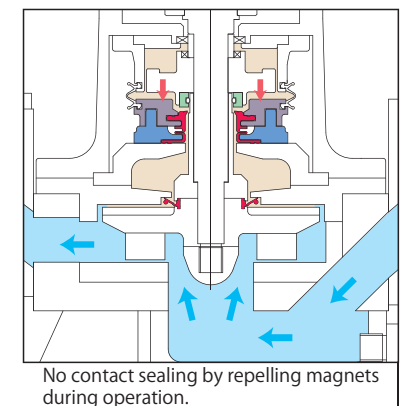
< Dimension >

50Hz [S.G.1.2]

Model	A	B	C	D	E	F	G	H
YD-2501LRN3	115.5	168	397	φ170	156	156	20	632.5
YD-2502LRN3	115.5	168	397	φ202	156	156	20	670
YD-4002LRN3	92.5	156	393.5	φ202	174	174	20	666.5
YD-4003LRN3	92.5	156	393.5	φ202	174	174	20	695.5
YD-4005LRN3	92.5	156	393.5	φ243	174	174	20	719.5
YD-4007LRN3	92.5	156	393.5	φ285	174	174	20	814



- With crystallized slurry & Dead head operation is OK.
- Suitable for CSP slurry.
- No consumerable parts.
- Energy-saving circulation.





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Challenging the Liquid Transfer Technology,

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〈Chemmy〉

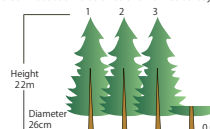
#### ■ Note



This is printed by using a reused aluminum board  
(4.22 kg) and saves electric power, 66.77 kW.  
(CO<sub>2</sub> emission 43.09 kg)



The CO<sub>2</sub> reduction is certified and verified strictly and fair by Japan Smart Energy Co., Ltd.



CO<sub>2</sub> reduction (43.09 kg)  
means  
it is CO<sub>2</sub> absorbed by 3.09  
Japanese cedars (Height 22 m,  
26 cm diameter) which is 50  
years old in a year.  
(By Forest and Forestry)

World Chemical Co., Ltd. joins a forest regeneration project (plant 3,000 trees) in Bali, Indonesia through printing by MCP.

