

ShinMaywa

Lightweight Submersible Pumps

NORUS

The combination of "engineering plastic" and "stainless steel" makes the pumps lighter in weight and greater in toughness.



New Generation of Pumps

NORUS

The combination of "engineering plastic" and "stainless steel" makes the pumps lighter in weight and greater in toughness.

Air vent valve

A ball-shaped air vent valve installed at the bottom of the companion flange releases air that resides in the pump chamber, thereby preventing an air lock.

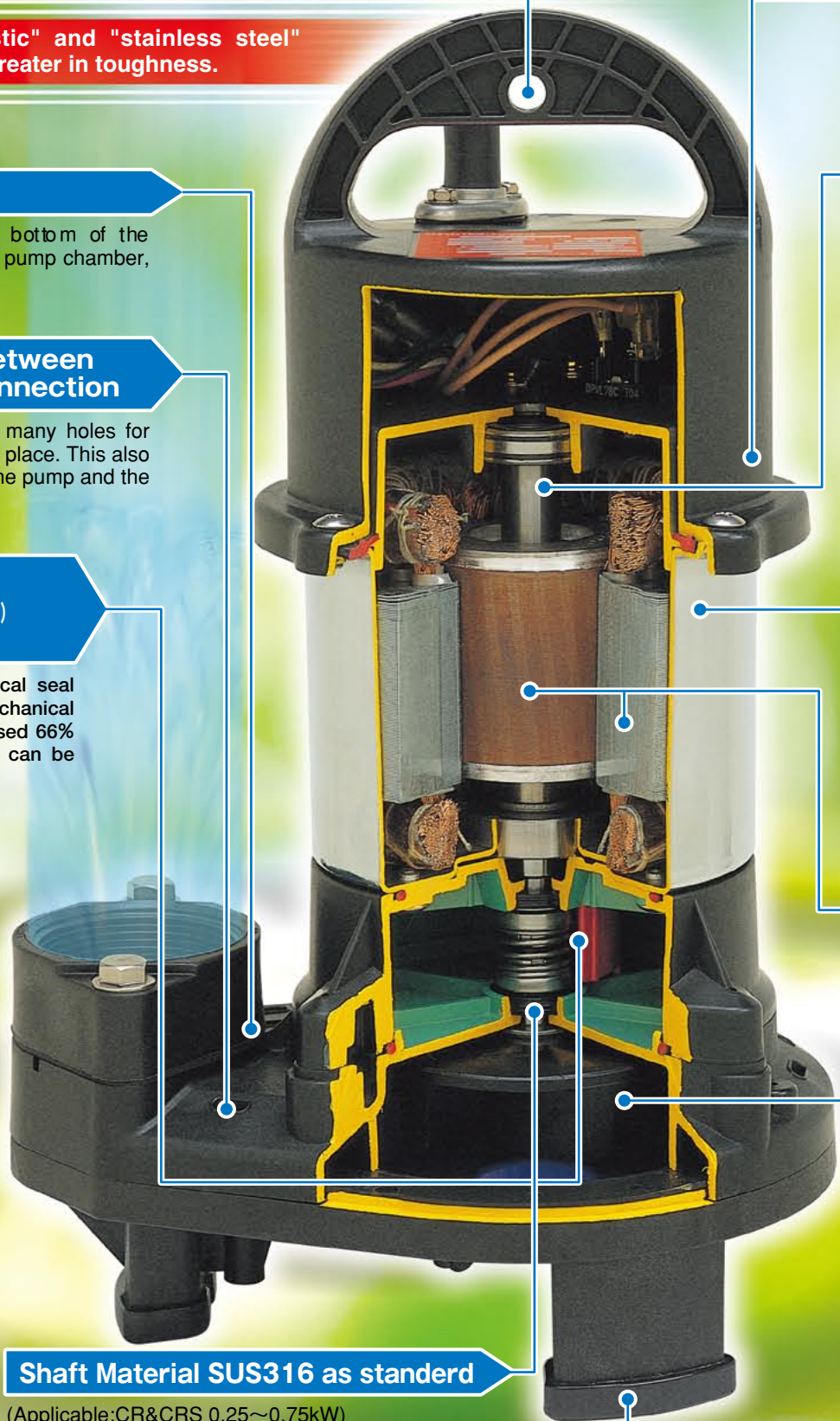
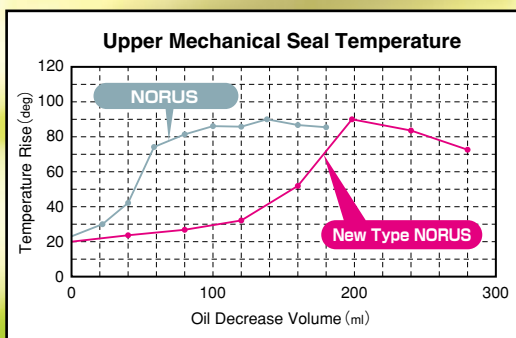
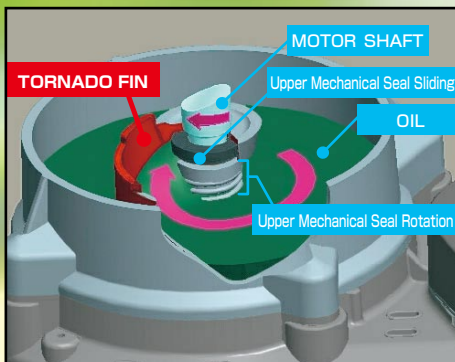
Prevention of water leakage between the pump and the automatic connection

The top of the pump chamber is provided with many holes for releasing air, thereby stably installing the pump in place. This also serves to prevent the leakage of water between the pump and the automatic connection.

TORNADO FIN

Achieved long life of mechanical seal (Over 0.25kW)
(Applicable : CR & CRS 0.25~0.75kW)

Equipped with TORNADO FIN to cool mechanical seal chamber temperature so that deterioration of mechanical seal can be prevented. Also, oil volume is increased 66% (from 240cc to 400cc), therefore, more long life can be achieved.



Shaft Material SUS316 as standard

(Applicable:CR&CRS 0.25~0.75kW)

Rubber protector fitted to important parts

The important parts which are made of a special-grade resin having high impact strength are provided with a rubber protector to further improve against impact resistance.

One-point lifting for easy installation

The pump can be easily hanged up and down using a single hole in the handle.

Screws which hardly become loose

The use of glass fiber and a specially designed screw taking into consideration the pump deformation with the lapse of time and due to heat prevents the leakage of water caused by loose screws.

Excellent corrosion resistance

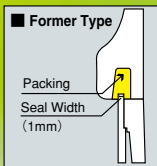
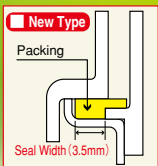
SUS 304 and engineering plastic are also used for the stator casing and wet part, offering better corrosion resistance than the cast iron ones in conventional models. As a result, the "NORUS" of pumps achieves good corrosion resistance even under severer working conditions. In addition, the "NORUS" is hardly damaged by rust. Normally, only maintenance required of the "NORUS" is washing.

Seamless Stator Casing Structure

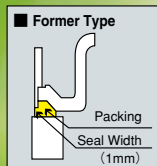
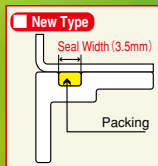
No welded area, improved corrosion resistance by enlarged seal width
(Applicable : CR & CRS 0.15~0.75kW)

Seamless stator casing structure is employed by press process so that no welded area on stator casing to prevent rust from junction.
Also, packing seal width is enlarged to prevent rust between gap.

Upper Motor Seal



Lower Motor Seal



Tough against dry operation

Continuous dry operation for 30 minutes is realized by employing motor with few rises in heat. "NORUS" is designed for longer operating life by suppressing rise in heat of bearing.

Wear resistant vortex impeller which is hardly clogged with foreign matter

Model CR and CRS employ a vortex type impeller. Since the vortex impeller reduces the tangling of fibrous matter, the CR series is comparable or superior in pumping performance to conventional vortex type pumps. The impeller is made of engineering plastic having excellent wear resistance. It is more than 100 times as strong as impellers made of ordinary ABS resin against the wear caused by sand, detergents, solids, etc. contained in sludge. Therefore, the "NORUS" can be used even in raw water containing considerable amounts of solids.



Impeller made of engineering plastic
After 200 hours of pump operation Loss of impeller weight:3.3%



Impeller made of ordinary ABS resin
After 24 hours of pump operation Loss of impeller weight:46%

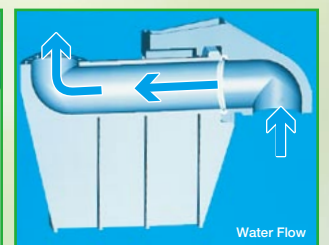
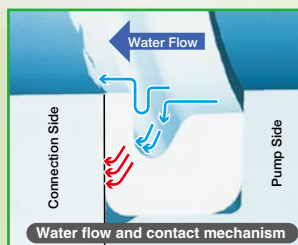
*Test condition:Pump was operated in 600 liters of water containing 120 kg of s

Principal Specifications

Applicable liquid	Liquid type	Waste water or raw water containing sludge	
	Liquid temperature	0~40°C	
Material	Pump shaft	CR	0.1~0.15kW:SUS420J2
		CRS	0.25~0.75kW:SUS316
			1.5~2.2kW:SUS304
	CRC	0.4~2.2kW:SUS304	
Stator casing	SUS304		
Pump casing	Engineering Plastic (reinforced with glass fiber)		
Impeller			
Structure	Impeller	Vortex:CR,CRS Closed:CRC	
	shaft seal	Double mechanical seal Wet side:SiC x SiC Motor side: Ceramic x Carbon (0.1~0.75kW) SiC x SiC (1.5~2.2kW)	
Motor	Type	Air filled-type submersible induction motor	
	Insulation class	Class E	
	Phase	Single phase (0.1~0.4kW)	Three phase (0.15~2.2kW)
	Starting method	Condenser-run	Direct

High Pumping Capability with Automatic Connection

Line up with auto-connecting type for easy installation and maintenance. Anti floating mechanism is provided for connection. Also, in combination with special packing to prevent water leakage so that pumping loss is prevented.



Lightweight Submersible Pump

CR

High passing capability type materialized as a result of giving priority to the smooth passing of foreign matter

Application

- For treating raw water at water treatment plants, etc.
- For controlling liquid flow rate
- For returning sludge



[Actual Size]
Debris Passage Dia

35mm

0.15~0.75kW

[Actual Size]
Debris Passage Dia

46mm

1.5~2.2kW



Non-Auto-Operation



Auto-Operation

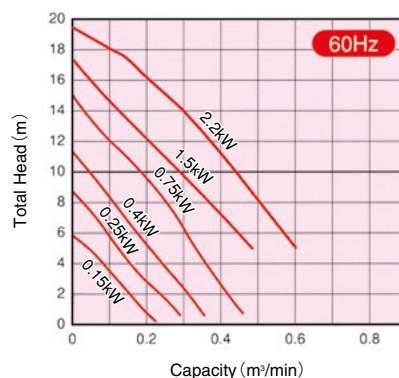
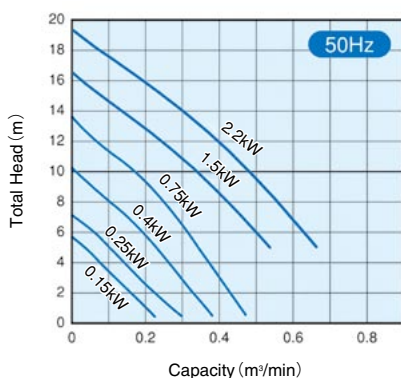


Auto-Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Part No.		Phase	Output kW	Capacity - Total Head		Weight (kg)			
	Non-Auto-Operation	Auto-Operation	Auto-Alternate Operation		Auto-Connecting	Free Standing			m³/m in-m		CR	CR-D CR-W		
			Pair Designation	Pump No. 1+Pump No. 2					50Hz	60Hz				
50	CR501S	CR501DS	CR501DWS	CR501WS+CR501DS	P50RL	F50	1	0.15	0.1 - 3.5	0.1 - 3.5	5.5	6.0		
								0.25	0.13 - 4.5	0.13 - 4.8	7.0	7.5		
								0.4	0.16 - 6.8	0.16 - 6.4	8.2	8.7		
	CR501T	CR501DT	-	-				3	3	0.15	0.1 - 3.5	0.1 - 3.5	4.9	5.4
										0.25	0.13 - 4.5	0.13 - 4.8	6.3	6.8
										0.4	0.16 - 6.8	0.16 - 6.4	7.4	7.9
CR501	CR501D	-	-	0.75	0.22 - 8.8	0.22 - 8.9	8.8			9.3				
65	CR65	-	-	-	P65N R	F65N	3			1.5	0.35 - 9.8	0.30 - 9.7	16	-
	CR80	-	-	-	2.2	0.35 - 13.0	0.35 - 12.6			19	-			
80	CR65	-	-	-	P80N R	F80N	3	1.5	0.35 - 9.8	0.30 - 9.7	16	-		
	CR80	-	-	-				2.2	0.35 - 13.0	0.35 - 12.6	19	-		

Performance Curves



Standard Accessories

- Cable (5m) 0.15~0.75kW ... 1
- Cable (8m) 1.5~2.2kW ... 1
- Screw coupling ... 1
- Spare nameplate ... 1
- Float switch ... 1 (for type D/W)

Auto-connection set

- Connection
- Guide holder (with bolts & nuts)
- Sliding bracket
- Lifting chain
- Shackle

※ 0.15~0.75kW Performance Curves show Free Standing type.

Lightweight Submersible Pump

CRS

Universal type with improved passing capability and pumping performance available

● Application

- For treating raw water at water treatment plants, etc.
- For controlling liquid flow rate
- For returning sludge



[Actual Size] Debris Passage Dia
20mm

0.1~0.25kW

[Actual Size] Debris Passage Dia
25mm

0.4~0.75kW

[Actual Size] Debris Passage Dia
30mm

1.5~2.2kW



Non-Auto-Operation



Auto-Operation

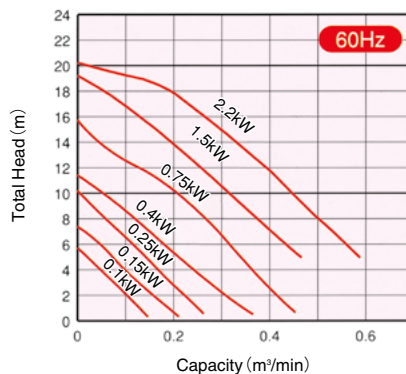
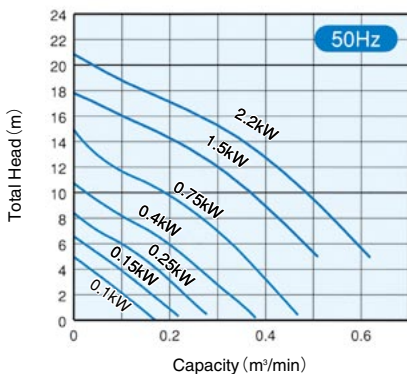


Auto-Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Part No.		Phase	Output kW	Capacity - Total Head		Weight (kg)	
	Non-Auto-Operation	Auto-Operation	Auto-Alternate Operation		Auto-Connecting	Free Standing			m ³ /min - m		CRS	CRS-D CRS-W
			Pair Designation	Pump No.1+Pump No.2					50Hz	60Hz		
32	CRS321 S	CRS321 DS	CRS321 DWS	CRS321 WS + CRS321 DS	P32RL	F32	1	0.1	0.08 - 2.9	0.08 - 3.2	4.5	5.0
								0.15	0.1 - 3.9	0.1 - 3.9	5.4	5.9
40	CRS401 S	CRS401 DS	CRS401 DWS	CRS401 WS + CRS401 DS	P40RL	F40	1	0.15	0.1 - 3.9	0.1 - 3.9	5.4	5.9
								0.25	0.13 - 5.3	0.13 - 5.4	6.9	7.4
	3	0.15	0.1 - 3.9	0.1 - 3.9			4.8	5.3				
		0.25	0.13 - 5.3	0.13 - 5.4			6.2	6.7				
50	CRS501 S	CRS501 DS	CRS501 DWS	CRS501 WS + CRS501 DS	P50RL	F50	1	0.4	0.16 - 7.2	0.16 - 6.8	8.1	8.6
								0.75	0.16 - 7.2	0.16 - 6.8	7.3	7.8
	3	0.4	0.16 - 7.2	0.16 - 6.8			8.7	9.2				
		0.75	0.22 - 9.2	0.22 - 9.4			8.7	9.2				
65	CRS65	CRS65D	CRS65D W	CRS65W + CRS65D	P65NR	F50N	3	1.5	0.4 - 9.9	0.4 - 7.8	16	16.5
								1.5	0.35 - 10.5	0.30 - 10.5	16	16.5
80	CRS80	CRS80D	CRS80D W	CRS80W + CRS80D	P80NR	F65N	3	2.2	0.35 - 14.1	0.35 - 13.4	19	19.5
								2.2	0.35 - 14.1	0.35 - 13.4	19	19.5

Performance Curves



Standard Accessories

- Cable (5m) 0.1~0.75kW1
- Cable (8m) 1.5~2.2kW1
- Screw coupling1
- Spare nameplate1
- Float switch1 (for type D/W)

Auto-connection set

- Connection
- Guide holder (with bolts & nuts)
- Sliding bracket
- Lifting chain
- Shackle

* 0.1~0.75kW Performance Curves show Free Standing type.

Lightweight Submersible Pump

CRC

High pump head with closed impeller

[Actual Size]



Debris Passage Dia

7mm

0.4·0.75kW

[Actual Size]



Debris Passage Dia

12mm

1.5·2.2kW

Application

- For use at water treatment facilities, etc. to suppress foaming or to discharge treated waste water
- For use to discharge rain water or spring water from underground passages, etc.
- For use to drain buildings, factories, basements, etc.



Non-Auto-Operation



Auto-Operation

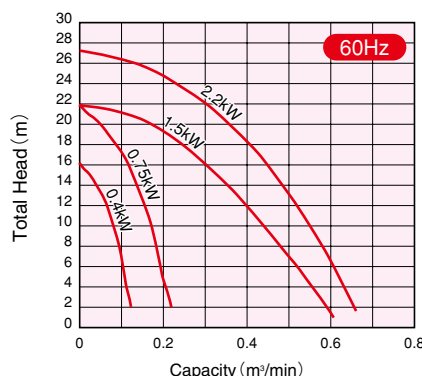
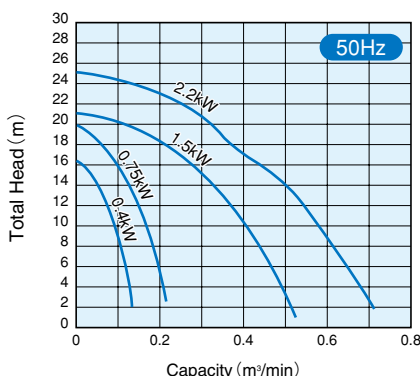


Auto-Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Part No.		Phase	Output kW	Capacity—Total Head		Weight (kg)	
	Non-Auto-Operation	Auto-Operation	Auto-Alternate Operation		Auto-Connecting	Free Standing			m ³ /min—m		CRC	CRC-D CRC-W
			Pair Designation	Pump No.1+Pump No.2					50Hz	60Hz		
40	CRC40S	CRC40DS	—	—	P40RH	F40	1	0.4	0.05 — 14.2	0.05 — 14.0	8.9	9.4
	CRC40T	CRC40DT	—	—					3	0.05 — 14.2		
50	CRC50	CRC50D	—	—	P50RH	F50	3	0.75	0.10 — 16.0	0.10 — 17.0	10.2	10.7
			CRC50DW	CRC50W+CRC50D					P50NR	F50N		
65	CRC50	CRC50D	CRC50DW	CRC50W+CRC50D	P65NR	F65N	3	1.5	0.2 — 18.2	0.2 — 18.4	16	16.5
	CRC65	CRC65D	CRC65DW	CRC65W+CRC65D					2.2	0.3 — 20.6		
80	CRC65	CRC65D	CRC65DW	CRC65W+CRC65D	P80NR	F80N	3	2.2	0.3 — 20.6	0.3 — 21.3	19	19.5

Performance Curves



Standard Accessories

- Cable (5m) 0.4·0.75kW ...1
- Cable (8m) 1.5·2.2kW ...1
- Screw coupling ...1
- Spare nameplate ...1
- Float switch ...1 (for type D/W)

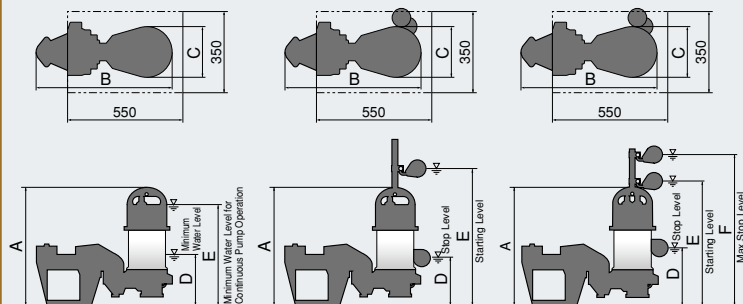
Auto-connection set

- Connection
- Guide holder (with bolts & nuts)
- Sliding bracket
- Lifting chain
- Shackle



Dimensions

Auto Connecting Type



Non-Auto-Operation

Auto-Operation

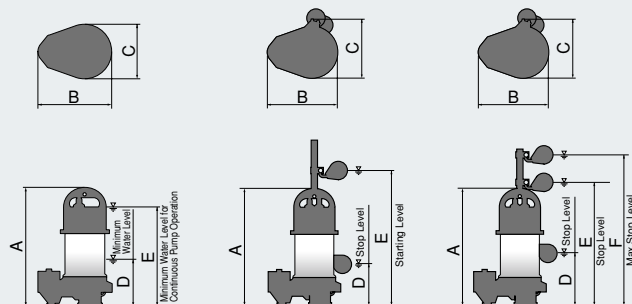
Auto-Alternate Operation

Unit:mm

Auto-Connecting Type

	Pump Model	Connection Part No.	Output (kW)	A	B	C	D	E	F					
Non-Auto-Operation	CR	CR501S/T P50RL	0.15	395	436	144	165	345	-					
			0.25	409	470	175								
			0.4											
		CR501	0.75	536	621	203	200	470						
		CR65	1.5											
	CR80	2.2	561	490										
	CRS	CRS321S P32RL	0.15*1	395	436	144	165	345	-					
				(409)	(470)	(175)								
		CRS401S/T P40RL	0.25	409	470	175								
							CRS501S/T P50RL	0.4		409	470	175		
		CRS501	0.75	536	621	203							200	470
		CRS80	2.2	561	490									
	CRC	CRC40S/T P40RH	0.4	417	452	177	160	360	-					
										CRC50	P50RH	0.75	436	380
CRC65		P50NR/65NR	1.5	536	470									
						P65NR/80NR	2.2	561		490				
Auto-Operation	CR-D	CR501DS/T P50RL	0.15	395	436	171	165	530	-					
			0.25	409	470	202								
			0.4											
		CR501D	0.75	536	621	203	205	765						
	CRS321DS	P32RL	0.15*1						395	436	171	165	530	
	CRS401DS/T	P40RL	0.25	409	470	202								
							CRS501DS/T	P50RL	0.4	409	470	202		
	CRS501D	0.75	536	621	203	205							765	
														CRS65D
	CRS80D	P65NR/80NR	2.2	561	790									
	CRC-D	CRC40DS/T	P40RH	0.4	417	452	195	170	570	-				
											CRC50D	P50RH	0.75	436
		CRC65D	P50NR/65NR	1.5	536	790								
							P65NR/80NR	2.2	561					
	Auto-Alternate Operation	CR-W	CR501WS P50RL	0.15	395	436	171	200	480	610				
0.25				409	470	202								
0.4														
CRS-W		CRS321WS P32RL	0.15*1	395	436	171	200	480	610					
										CRS401WS/T	P40RL	0.25	409	470
		CRS501WS/T	P50RL	0.4	409	470	202							
								CRS501W	0.75	536	621	203	240	695
		CRS65W	P50NR/65NR/80NR	1.5										
		CRS80W	P65NR/80NR	2.2	561	720	800							
CRC-W		CRC50W	P50NR/65NR	1.5	536	621	203	240	695	775				
											CRC65W	P65NR/80NR	2.2	561

Free Standing Type



Non-Auto-Operation

Auto-Operation

Auto-Alternate Operation

Unit:mm

Free Standing Type

	Pump Model	Connection Part No.	Output (kW)	A	B	C	D	E	F							
CR	CR501S/T	F50	0.15	380	206	144	150	330	-							
			0.25	394	240	175										
			0.4	398						155	335					
	CR501	0.75	517	295	203	180	450									
	CR65	1.5														
	CR80	2.2	542	470												
CRS	CRS321S	F32	0.1	352	206	144	105	305	-							
			0.15*1							(366)	(240)	(175)	125			
	CRS401S/T	F40	0.25	366	240	175	135	315								
										CRS501S/T	F50	0.4	379	295	203	150
	CRS501	0.75	485	295	203	150	440									
								CRS65								
	CRS80	F65N/80N	2.2	510	440											
	CRC	CRC40S/T	F40	0.4	389	245	177	130		350	-					
CRC50									F50			0.75	408	295	203	150
		CRC65	F50N/65N	1.5	485	300	203	155		715						
F65N/80N									2.2			510	740			
CR-D	CR501DS/T	F50	0.15	380	206	171	150	510	-							
			0.25	394	240	202										
			0.4	398						155	520					
	CR501D	0.75	536	621	203	205	765									
CRS321DS	F32	0.1						352	206	171	125	480				
CRS401DS/T	F40	0.15*1	(366)	(240)	(202)											
						CRS501DS/T	F50	0.25	366	240	202					
CRS501D	0.4	379	295	203	155							715				
													CRS65D	F50N/65N/80N	1.5	
CRS80D	F65N/80N	2.2	510	740												
CRC-D	CRC40DS/T	F40	0.4	389	245	195	140	540	-							
										CRC50D	F50	0.75	408	300	203	155
	CRC65D	F50N/65N	1.5	485	300	203	190	670								
										F65N/80N	2.2	510	740			
CR-W	CR501WS	F50	0.15	380	206	171	185	460	590							
			0.25	394	240	202										
			0.4	398						190	470	600				
CRS-W	CRS321WS	F32	0.1	352	206	171	140	430	560							
										CRS401WS/T	F40	0.15*1	(366)	(240)	(202)	
	CRS501WS/T	F50	0.25	366	240	202										
							CRS501W	0.4	379	295	203	170	450	580		
	CRS65W	F50N/65N/80N	1.5	485	300	203	190	645	725							
	CRS80W	F65N/80N	2.2	510	670	750										
CRC-W	CRC50W	F50N/65N	1.5	485	300	203	190	645	725							
										CRC65W	F65N/80N	2.2	510	670	750	

*1 () : CRS401S 1Phase - 200V or Over
CRS401T 3Phase - 380V or Over



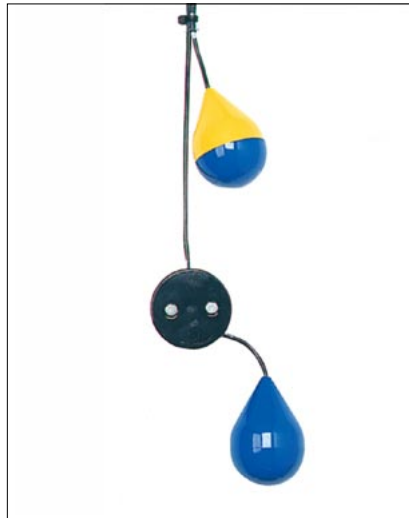
Special Accessories

Liquid Level Regulators - All models are non-mercury structure for earth environment.

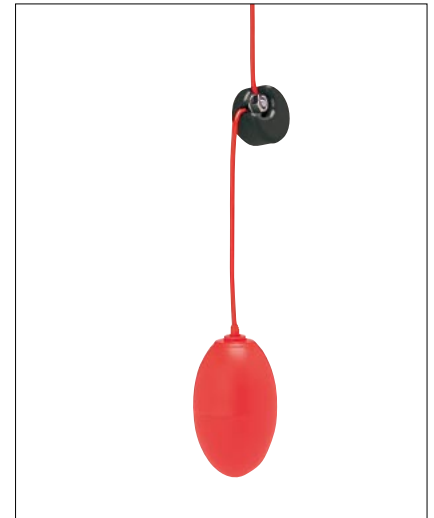
LC "Level Switch"



MS "Mini Switch"



FV "Oval Float"



Features

LC Useful for drinking water, waste water and sewage containing the suspended solids. Hardly affected by corrosion or rust even if it is immersed in a corrosive liquid for a long time.

MS Useful for waste water and sewage containing a few suspended solids. The MS is available in two types, MS11 (single float) and MS21 (double float).

FV Useful for the fresh water as well as waste water not containing suspended solids. A single FV is able to control both the upper and lower liquid levels.

Specifications

Model	LC12	MS11, MS21	FV11
Switch	Micro Switch	Lead Switch	Lead Switch
Specific gravity of liquid	0.95~1.15	0.95~1.10	0.95~1.10
Liquid Temp	0~60°C	0~40°C	0~60°C
Voltage	AC/DC30V or under		
Current	5A or under	0.5A or under	0.6A
Cable Length	6m, 13m, 20m, 30m, 40m, 50m (further cable extension at interval of 10m)		
Cable Type	0.75mm ² ×3 cores, Flat Type	0.2mm ² ×2 cores×φ 4.7mm	0.5mm ² ×2 cores×φ 5.8mm
Weight (including cable)	1.2kg (6m cable)	0.6kg (MS11, 6m cable)	1.0kg (6m cable)
Material	Case	Polypropylene resin	ABS resin
	Cable	VCTFK	PVC resin (soft type)
	Others	Chain: SUS304	Sinker: Cast iron with PVC resin coating

Specifications and dimensions are subject to change without notice.

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ShinMaywa ONO PLANT

ISO 9001(No.956445)/ISO 14001(No.771888)