

# ShinMaywa

## Lightweight Submersible Pumps

Output : 0.15~2.2kW **NORUS**  
series

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





# New Generation of Pumps

# NORUS<sup>®</sup>

series

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 during automatic connection

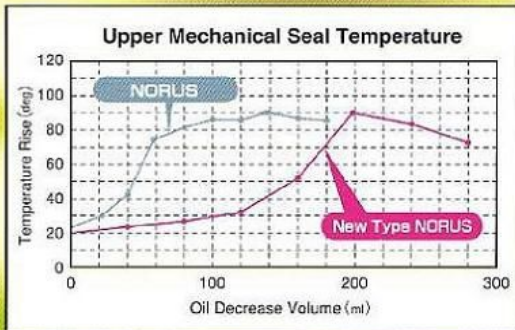
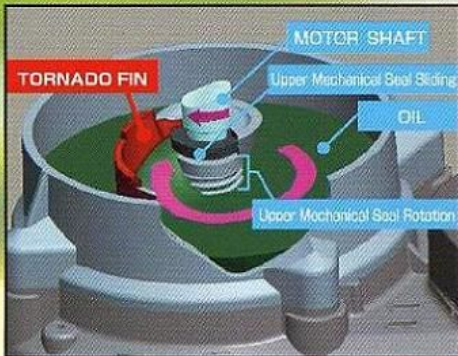
The top of the pump chamber is provided with many holes for releasing air, thereby stably installing the pump in place. This also serves to prevent the leakage of water during automatic connection.

## TORNADO FIN

Achieved long life of mechanical seal (Over 250W) (Applicable : CR & CRS 0.25~0.75kW)

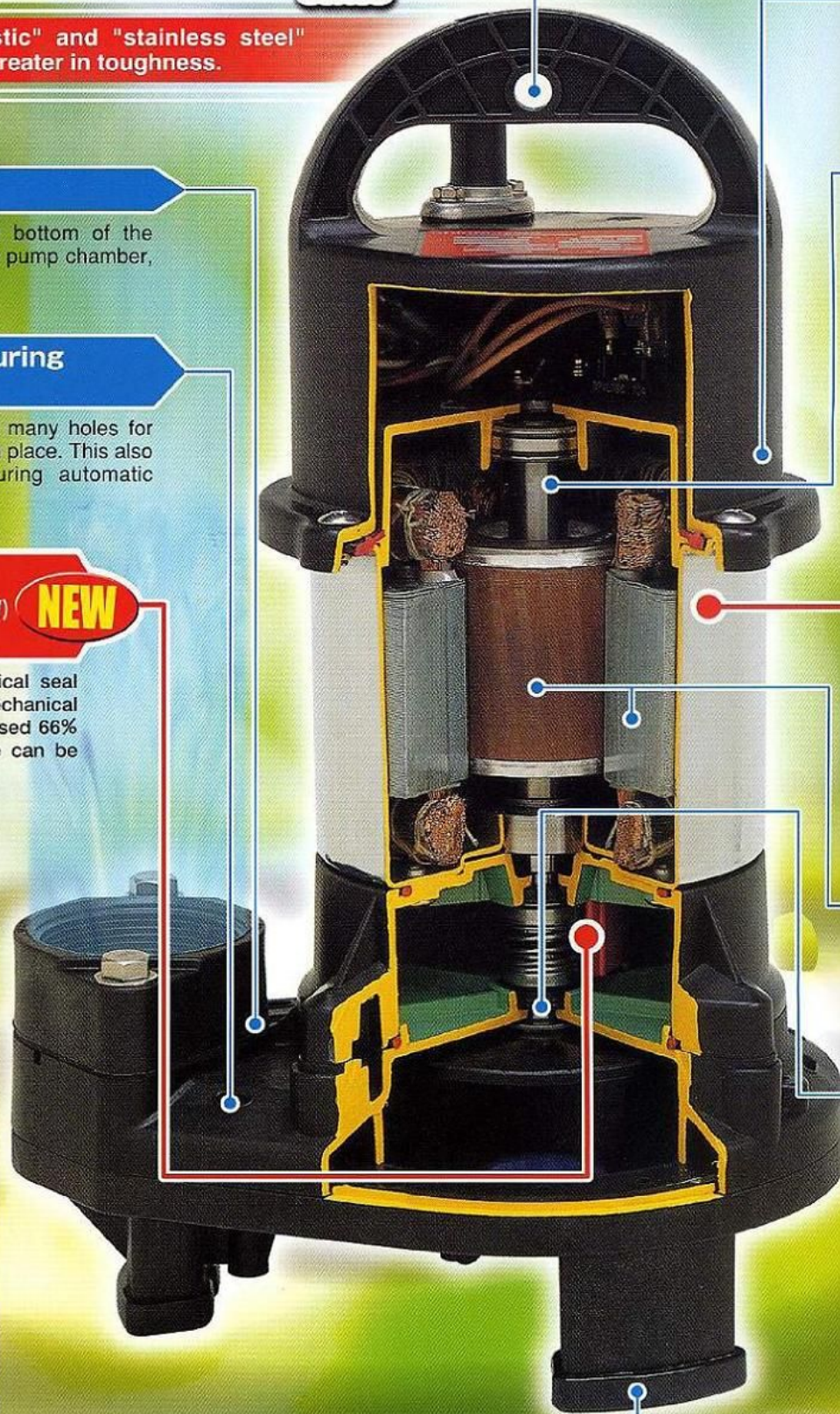
**NEW**

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.



## 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

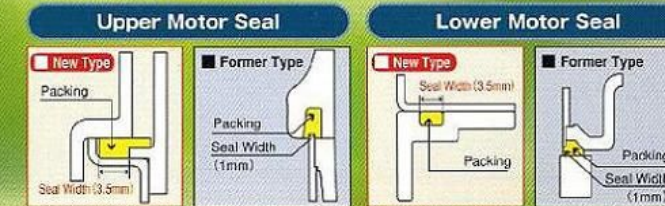
SUS 304 and engineering plastic are also used for the stator casing and wet part, offering better corrosion resistance than the cast iron ones in conventional models. As a result, the "NORUS" of pumps achieves good corrosion resistance even under severer working conditions. In addition, the "NORUS" is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

**NEW**

## 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.



## Tough for in the air operation

Low temperature rise motor achieves 30 minutes continuous in the air operation at low water level. Low exothermic of motor and low bearing temperature rise.

## 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%

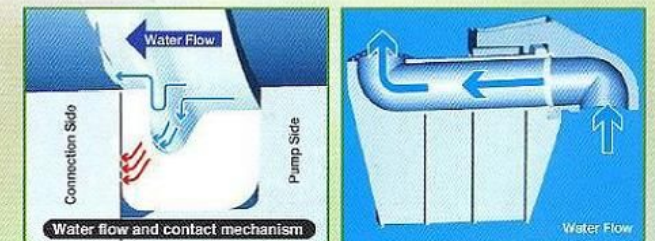
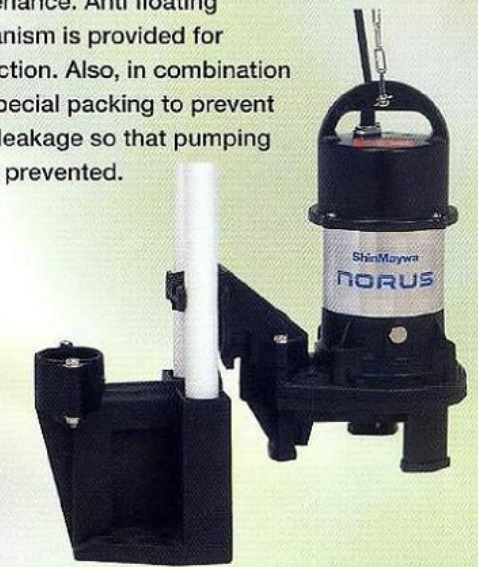
\*Test condition: Pump was operated in 600 liters of water containing 120 kg of sand.

## Principal Specifications

Applicable liquid	Liquid type	Waste water or raw water containing sludge	
	Liquid temperature	0~40°C	
Material	Pump shaft	SUS420J <sub>2</sub> or SUS304	
	Stator casing	SUS304	
	Pump casing	Engineering Plastic (reinforced with glass fiber)	
Structure	Impeller	Vortex:CR, CRS Closed:CRS	
	shaft seal	Double mechanical seal Wet side:SiC x SiC Motor side: Ceramic x Carbon (0.15~0.75kW) SiC x SiC (1.5~2.2kW)	
Motor	Type	Dry-type submersible induction motor	
	Insulation class	Class E	
	Phase	Single phase (0.15~0.4kW)	Three phase (0.15~2.2kW)
	Starting method	Condenser-run	Direct-on-line

## High Pumping Capability with Automatic Connection

Line up with automatic connection 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

[Actual Size]  
Debris Passage Dia  
**35mm**

0.15~0.75kW

[Actual Size]  
Debris Passage Dia  
**46mm**

1.5~2.2kW

## Application

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



Non-Automatic Operation



With Automatic Float Switch

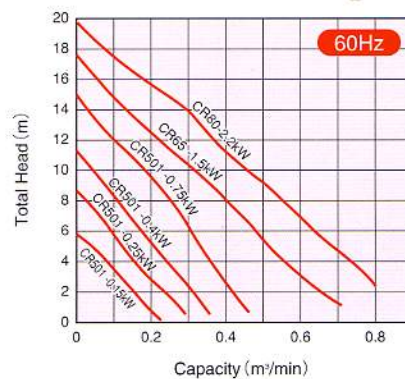
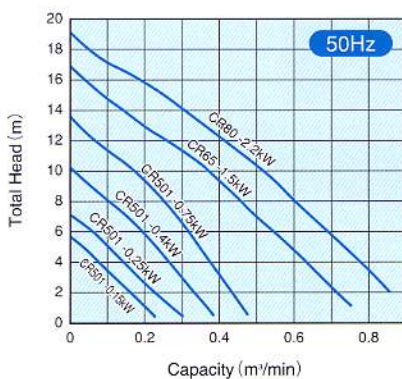


Automatic Alternate Operation

## Standard Specifications

Bore mm	Pump Model				Connection Type		Phase	Output kW	Capacity—Total Head		Weight (kg)				
	Non-Automatic Operation	With Automatic Float Switch	Automatic Alternate Operation		Automatic Connection	Flange Connection			m <sup>3</sup> /min—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	—	—				P65NR	F65N	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
				0.75	0.22 — 8.8	0.22 — 8.9	8.8				9.3				
CR501	CR501D	—	—	P80NR	F80N	3	1.5				0.4 — 9.3	0.4 — 7.9	16	—	
							2.2				0.4 — 12.3	0.4 — 11.3	19	—	
65	CR65	—	—	—	P80NR	F80N	3	1.5	0.4 — 9.3	0.4 — 7.9	16	—			
	CR80	—	—	—				2.2	0.4 — 12.3	0.4 — 11.3	19	—			
80	CR65	—	—	—	P80NR	F80N	3	1.5	0.4 — 9.3	0.4 — 7.9	16	—			
	CR80	—	—	—				2.2	0.4 — 12.3	0.4 — 11.3	19	—			

## Performance Curves



## Standard Accessories

- Cable (5m) 0.15~0.75kW ... 1 [8m 1.5~2.2kW] ... 1
- Companion flange ... 1
- Spare nameplate ... 1
- Float switch ... 1
- with Automatic Float switch for Automatic Alternate Operation (CR-D/CR-W Type)

## Automatic connection set

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



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**

0.15 · 0.25kW

[Actual Size]  
Debris Passage Dia  
**25mm**

0.4 · 0.75kW

[Actual Size]  
Debris Passage Dia  
**30mm**

1.5 · 2.2kW



Non-Automatic Operation



With Automatic Float Switch

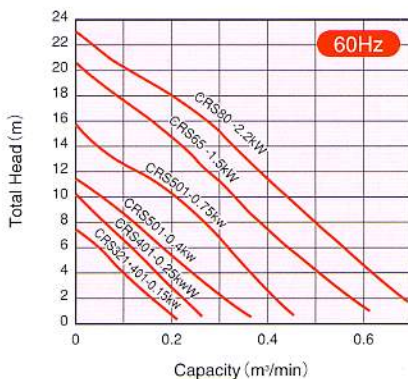
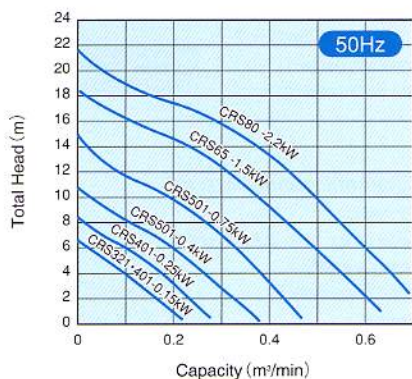


Automatic Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Type		Phase	Output kW	Capacity—Total Head		Weight (kg)				
	Non-Automatic Operation	With Automatic Float Switch	Automatic Alternate Operation		Automatic Connection	Flange Connection			m <sup>3</sup> /min—m		CRS	CRS-D CRS-W			
			Pair Designation	Pump No.1+Pump No.2					50Hz	60Hz					
32	CRS321S	CRS321DS	CRS321DWS	CRS321WS+CRS321DS	P32RL	F32	1	0.15	0.1 — 3.9	0.1 — 3.9	5.4	5.9			
								0.15	0.1 — 3.9	0.1 — 3.9	5.4	5.9			
40	CRS401S	CRS401DS	CRS401DWS	CRS401WS+CRS401DS	P40RL	F40	1	0.25	0.13 — 5.3	0.13 — 5.4	6.9	7.4			
								0.15	0.1 — 3.9	0.1 — 3.9	4.8	5.3			
	CRS401T	CRS401DT	CRS401DWT	CRS401WT+CRS401DT			3			0.25	0.13 — 5.3	0.13 — 5.4	6.2	6.7	
											0.4	0.16 — 7.2	0.16 — 6.8	8.1	8.6
50	CRS501S	CRS501DS	CRS501DWS	CRS501WS+CRS501DS	P50RL	F50	1	0.4	0.16 — 7.2	0.16 — 6.8	7.3	7.8			
	CRS501T	CRS501DT	CRS501DWT	CRS501WT+CRS501DT				3			0.75	0.22 — 9.2	0.22 — 9.4	8.7	9.2
	CRS501	CRS501D	CRS501DW	CRS501W+CRS501D			3				1.5	0.4 — 9.9	0.4 — 7.8	16	16.5
	CRS65	CRS65D	CRS65DW	CRS65W+CRS65D				P50NR	F50N		1.5	0.4 — 9.9	0.4 — 7.8	16	16.5
65	CRS65	CRS65D	CRS65DW	CRS65W+CRS65D	P65NR	F65N	3	2.2	0.4 — 13.4	0.4 — 11.8	19	19.5			
	CRS80	CRS80D	CRS80DW	CRS80W+CRS80D							1.5	0.4 — 9.9	0.4 — 7.8	16	16.5
	CRS65	CRS65D	CRS65DW	CRS65W+CRS65D				P80NR	F80N	3	2.2	0.4 — 13.4	0.4 — 11.8	19	19.5
CRS80	CRS80D	CRS80DW	CRS80W+CRS80D				2.2				0.4 — 13.4	0.4 — 11.8	19	19.5	

Performance Curves



Standard Accessories

- Cable (5m) 0.15~0.75kW .....1 (• Float switch .....1)
- [8m 1.5~2.2kW] .....1
- Companion flange .....1
- Spare nameplate .....1
- (with Automatic Float switch for Automatic Alternate Operation (CRS-D/CRS-W Type))

Automatic connection set

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



## 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-Automatic Operation



With Automatic Float Switch

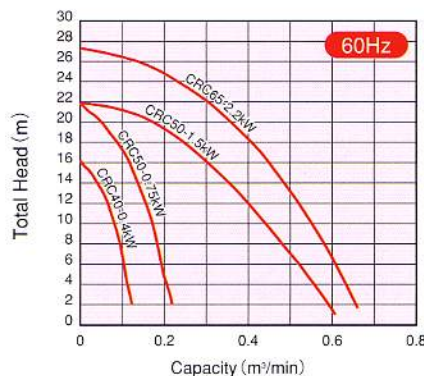
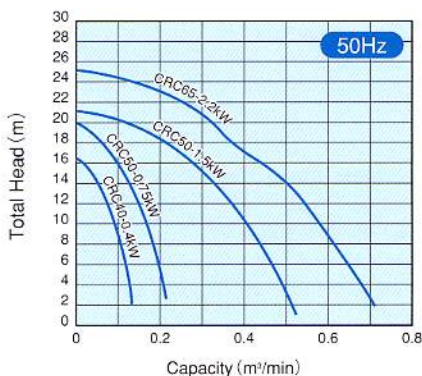


Automatic Alternate Operation

## Standard Specifications

Bore mm	Pump Model				Connection Type		Phase	Output kW	Capacity—Total Head		Weight (kg)	
	Non-Automatic Operation	With Automatic Float Switch	Automatic Alternate Operation		Automatic Connection	Flange Connection			m <sup>3</sup> /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	—	—					0.05 — 14.2	0.05 — 14.0		
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) 0.15~0.75kW ···1
  - Companion flange ·····1
  - Spare nameplate ·····1
  - Float switch ·····1
- [8m 1.5·2.2kW] ···1
- with Automatic Float switch for Automatic Alternate Operation (CRC-D/CRC-W Type)

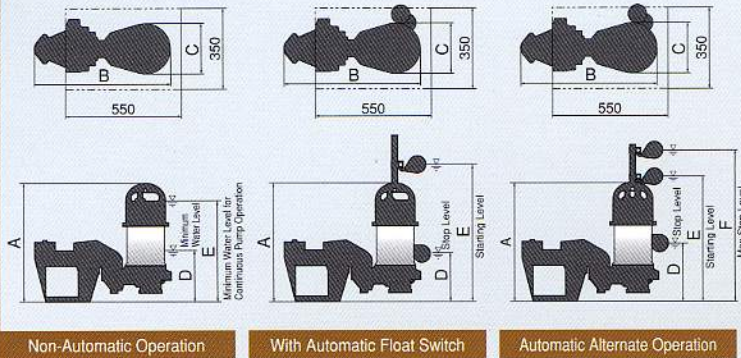
## Automatic connection set

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

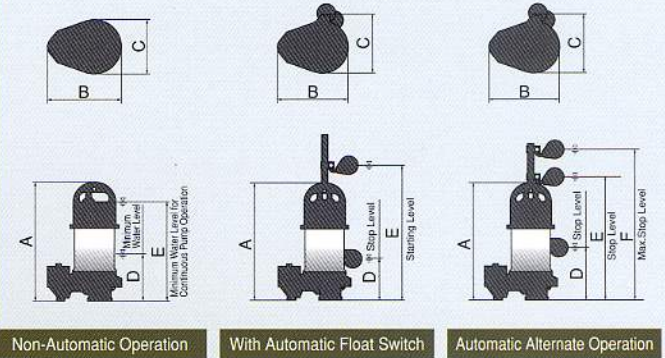


# Dimensions

## Automatic Connection



## Flange Connection



### Automatic Connection

		Pump Model	Connection Type	Output (kW)	A	B	C	D	E	F
Non-Automatic Operation	CR	CR501S/T	P50RL	0.15	395	436	144	165	345	-
				0.25	409	470	175			
				0.4						
				0.75						
		CR65	P65NR/80NR	1.5	536	621	203	200	470	
	CR80	P65NR/80NR	2.2	561			490			
	CRS	CRS321S	P32RL	0.15	395	436	144	165	345	-
				0.25						
		CRS401S/T	P40RL	0.4	409	470	175			
				0.75						
		CRS501S/T	P50RL	0.4	409	470	175	470		
		CRS501		0.75				490		
CRS65		P65NR/80NR	1.5	536	621	203	200	470		
CRS80	P65NR/80NR	2.2	561			490				
CRC	CRC40S/T	P40RH	0.4	417	452	177	160	360	-	
			0.75	436			380			
	CRC50	P50RH	1.5	536	621	203	200	470		
			2.2	561			490			
With Automatic Float Switch	CR-D	CR501DS/T	P50RL	0.15	395	436	171	165	530	-
				0.25	409	470	202			
				0.4						
				0.75						
	CRS-D	CRS321DS	P32RL	0.15	395	436	171	165	530	
				0.25						
		CRS401DS/T	P40RL	0.4	409	470	202			
				0.75						
		CRS501DS/T	P50RL	0.4	409	470	202	500		
		CRS501D		0.75				680		
	CRS65D	P65NR/80NR	1.5	536	626	203	205	680		
	CRS80D	P65NR/80NR	2.2	561			680			
CRC-D	CRC40DS/T	P40RH	0.4	417	452	195	170	570	-	
			0.75	436			680			
	CRC50D	P50RH	1.5	536	621	203	205	680		
			2.2	561			680			
Automatic Alternate Operation	CR-W	CR501WS	P50RL	0.15	395	436	171	200	480	610
				0.25						
				0.4						
	CRS-W	CRS321WS	P32RL	0.15	395	436	171	200	480	610
				0.25						
		CRS401WS/T	P40RL	0.4	409	470	202	200	480	610
				0.75						
		CRS501WS/T	P50RL	0.4	409	470	202	480		
		CRS501W		0.75				610		
	CRS65W	P65NR/80NR	1.5	536	626	203	240	630	760	
	CRS80W	P65NR/80NR	2.2	561			760			
	CRC-W	CRC50W	P50NR/65NR	1.5	536	626	203	240	630	760
2.2				561			760			

### Flange Connection

		Pump Model	Connection Type	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							
			0.75							
	CR501		0.75	398	155	335				
CR65	F65N/80N	1.5	517	295	203	180	450			
CR80		2.2	542			470				
CRS	CRS321S	F32	0.15	352	206	144	125	305	-	
			0.25	366						
	CRS401S/T	F40	0.4	379	240	175	135	315		
			0.75							
	CRS501S/T	F50	0.4	379	240	175	135	315		
	CRS501		0.75				315			
	CRS65	F50N/65N/80N	1.5	485	295	203	150	420		
CRS80	F65N/80N	2.2	510			440				
CRC	CRC40S/T	F40	0.4	389	245	177	130	330	-	
			0.75	408			350			
	CRC50	F50	1.5	485	295	203	150	420		
			2.2	510			440			
CRC65	F65N/80N	1.5	485	295	203	150	420			
		2.2	510			440				
	CR-D	CR501DS/T	F50	0.15	380	206	171	150	510	-
				0.25	394	240	202			
0.4										
0.75										
CR501D		0.75	398	155	520					
CRS-D	CRS321DS	F32	0.15	352	206	171	125	480		
			0.25	366					490	
	CRS401DS/T	F40	0.4	379	240	202	135	500		
			0.75							
	CRS501DS/T	F50	0.4	379	240	202	135	500		
	CRS501D		0.75				630			
CRS65D	F50N/65N/80N	1.5	485	300	203	155	630			
CRS80D	F65N/80N	2.2	510			630				
CRC-D	CRC40DS/T	F40	0.4	389	245	195	140	540	-	
			0.75	408			630			
	CRC50D	F50	1.5	485	300	203	155	630		
			2.2	510			630			
CRC65D	F65N/80N	1.5	485	300	203	155	630			
		2.2	510			630				
		2.2	510			630				
CR-W	CR501WS	F50	0.15	380	206	171	185	460	590	
			0.25	394	240	202				
			0.4	398						190
CRS-W	CRS321WS	F32	0.15	352	206	171	160	430	560	
			0.25	366						440
	CRS401WS/T	F40	0.4	379	240	202	170	450	580	
			0.75							
	CRS501WS/T	F50	0.4	379	240	202	170	450	580	
	CRS501W		0.75				580			
CRS65W	F50N/65N/80N	1.5	485	300	203	190	580	710		
CRS80W	F65N/80N	2.2	510			710				
CRC-W	CRC50W	F50N/65N	1.5	485	300	203	190	580	710	
			2.2	510			710			
CR65W	F65N/80N	2.2	510			710				



## 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 <sup>2</sup> ×3 cores, Flat Type	0.2mm <sup>2</sup> ×2 cores × φ 4.7mm	0.5mm <sup>2</sup> ×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.

### ShinMaywa Industries, Ltd.

Overseas Operations Department 2-43, Shitte 3-chome, Tsurumi-ku, Yokohama 230-0003, Japan  
Telephone : +81-45-584-1321 Facsimile : +81-45-584-1320  
e-mail : overseas@sb.shinmaywa.co.jp

### ShinMaywa (America), Ltd. ShinMaywa (Malaysia) Sdn. Bhd.

10737 Gateway West, Suite 112  
El Paso, Texas 79935, U.S.A.  
Telephone : +1-915-594-9862  
Facsimile : +1-915-594-9866  
e-mail : salelpass@aol.com

Suite 7.3, 7th Floor Menara Aik Hua, Changkat  
Raja Chulan, 50200 Kuala Lumpur, Malaysia  
Telephone : +60-3-2026-2388  
Facsimile : +60-3-2026-2399  
e-mail : smmsb@tm.net.my

### ShinMaywa (Asia) Pte. Ltd.

51 Goldhill Plaza #14-01  
Singapore 308900  
Telephone : +65-6224-0728  
Facsimile : +65-6224-9678  
e-mail : Asia.ad@shinmaywa.com.sg

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