ShinMaywa

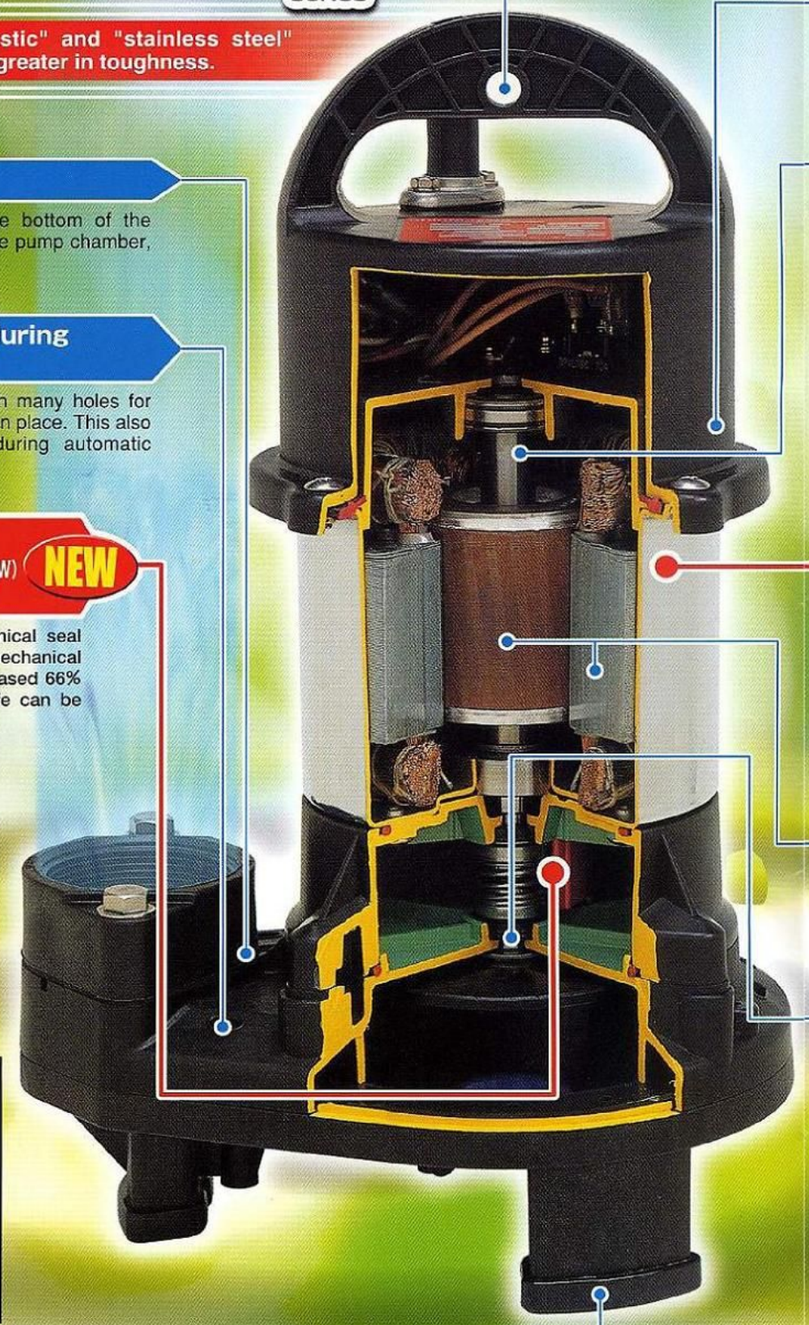
Lightweight Submersible Pumps

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® 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

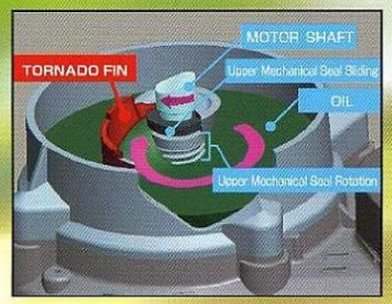
The top of the pump chamber is provided with many holes for releasing air, thereby stably installing the pump in place. This also serves to prevent the leakage of water during automatic connection.

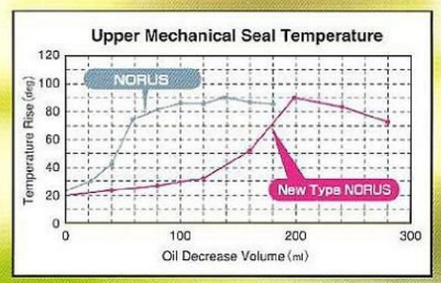
TORNADO FIN

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

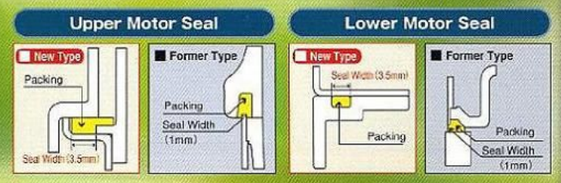
SUS 304 and engineering plastic are also used for the stator casing and wet part, offering better corrosion resistance than the cast iron ones in conventional models. As a result, the "NORUS" of pumps achieves good corrosion resistance even under severer working conditions. In addition, the "NORUS" is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

Seamless Stator Casing Structure

NEW

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%

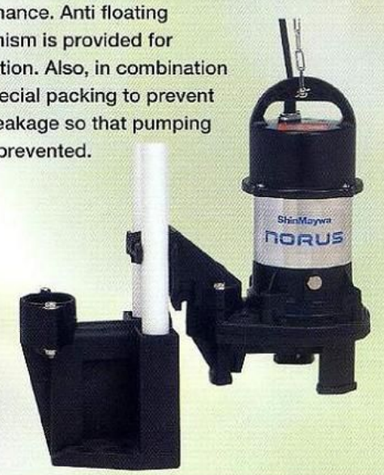
*Test condition:Pump was operated in 600 liters of water containing 120 kg of sand.

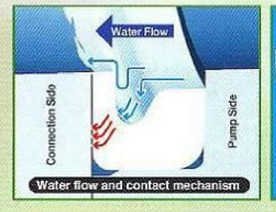
■ Principal Specifications

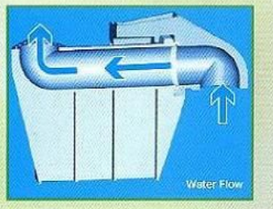
Applicable liquid	Liquid type	Waste water or raw water containing sludge	
	Liquid temperature	0~40℃	
Material	Pump shaft	SUS420J2 or SUS304	
	Stator casing	SUS304	
	Pump casing	Engineering Plastic (reinforced with glass fiber)	
	Impeller		
Structure	Impeller	Vortex:CR,CRS Closed:CRC	
	shaft seal	Double mechanical seal Wet side:SiC x SiC Motor side:Ceramic x Carbon (0.15~0.75kW) 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

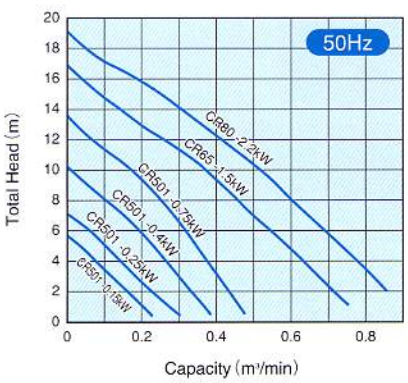
- For treating raw water at water treament plants,stc.
- For controlling liquid flow rate
- For returning sludge

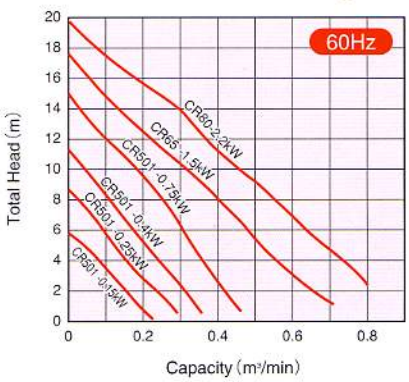
Non-Automatic Operation | With Automatic Float Switch | Automatic Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Type		Phase	Output kW	Capacity—Total Head m³/min—m		Weight (kg)	
	Non-Automatic Operation	With Automatic Float Switch	Automatic Alternate Operation		Automatic Connection	Flange Connection			50Hz	60Hz	CR	CR-D CR-W
			Pair Designation	Pump No.1+Pump No.2								
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	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	—	—	—	P65NR	F65N	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 Accessries

- Cable (5m) 0.15～0.75kW ・・・1
  [8m1.5・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 improverd passing capability and pumping performance available

[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

Application

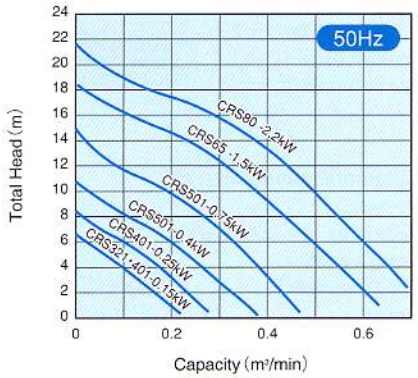
- For treating raw water at water treament plants,stc.
- For controlling liquid flow rate
- For returning sludge

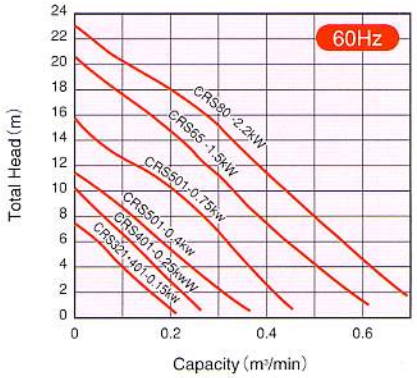
Non-Automatic Operation | With Automatic Float Switch | Automatic Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Type		Phase	Output kW	Capacity—Total Head m³/min—m		Weight (kg)	
	Non-Automatic Operation	With Automatic Float Switch	Automatic Alternate Operation		Automatic Connection	Flange Connection			50Hz	60Hz	CRS	CRS-D CRS-W
			Pair Designation	Pump No.1+Pump No.2								
32	CRS321S	CRS321DS	CRS321DWS	CRS321WS+CRS321DS	P32RL	F32	1	0.15	0.1 — 3.9	0.1 — 3.9	5.4	5.9
40	CRS401S	CRS401DS	CRS401DWS	CRS401WS+CRS401DS	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
	CRS401T	CRS401DT	CRS401DWT	CRS401WT+CRS401DT			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	CRS501S	CRS501DS	CRS501DWS	CRS501WS+CRS501DS	P50RL	F50	1	0.4	0.16 — 7.2	0.16 — 6.8	8.1	8.6
	CRS501T	CRS501DT	CRS501DWT	CRS501WT+CRS501DT			3	0.4	0.16 — 7.2	0.16 — 6.8	7.3	7.8
	CRS501	CRS501D	CRS501DW	CRS501W+CRS501D				0.75	0.22 — 9.2	0.22 — 9.4	8.7	9.2
	CRS65	CRS65D	CRS65DW	CRS65W+CRS65D	P50NR	F50N	3	1.5	0.4 — 9.9	0.4 — 7.8	16	16.5
65	CRS65	CRS65D	CRS65DW	CRS65W+CRS65D	P65NR	F65N	3	1.5	0.4 — 9.9	0.4 — 7.8	16	16.5
	CRS80	CRS80D	CRS80DW	CRS80W+CRS80D				2.2	0.4 — 13.4	0.4 — 11.8	19	19.5
80	CRS65	CRS65D	CRS65DW	CRS65W+CRS65D	P80NR	F80N	3	1.5	0.4 — 9.9	0.4 — 7.8	16	16.5
	CRS80	CRS80D	CRS80DW	CRS80W+CRS80D				2.2	0.4 — 13.4	0.4 — 11.8	19	19.5

Performance Curves





Standard Accessries

- Cable (5m) 0.15~0.75kW ···1
  [8m1.5·2.2kW] ···1
- Companion flange ·····1
- Spare nameplate ·····1
- Float switch ·····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

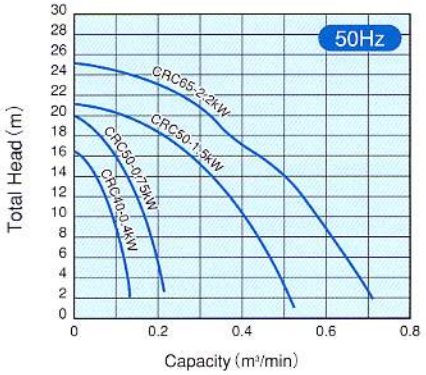
- For use at water treatment facilities, etc, to suppress foaming or to discharge treated waste water
- For use to discharge rain water or spring water from underground passages, etc.
- For use to drain buildings, factories, basements, etc.

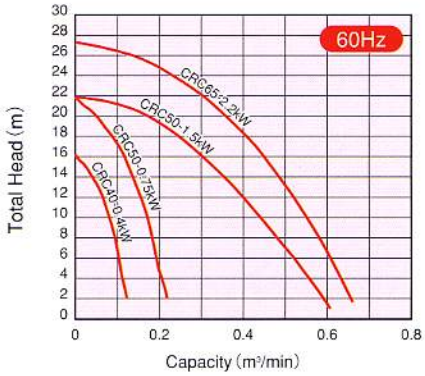
Non-Automatic Operation | With Automatic Float Switch | Automatic Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Type		Phase	Output kW	Capacity—Total Head m³/min—m		Weight (kg)	
	Non-Automatic Operation	With Automatic Float Switch	Automatic Alternate Operation		Automatic Connection	Flange Connection			50Hz	60Hz	CRC	CRC-D CRC-W
			Pair Designation	Pump No.1+Pump No.2								
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	0.05 — 14.0	8.8	9.3
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		1.5	0.2 — 18.2	0.2 — 18.4	16	16.5
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	0.3 — 21.3	19	19.5
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 Accessries

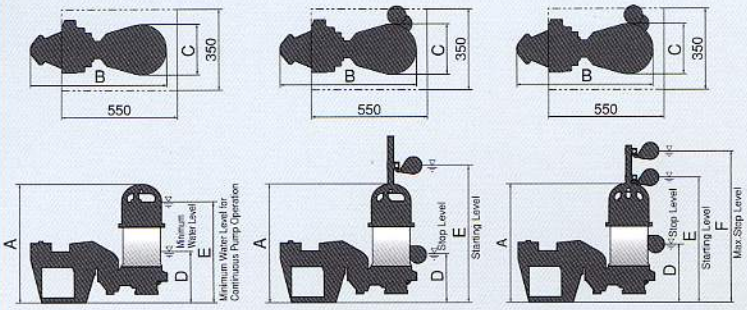
- Cable (5m) 0.15~0.75kW ···1
  [8m1.5·2.2kW] ···1
- Companion flange ·····1
- Spare nameplate ·····1
- Float switch ·····1 (with Automatic Float switch for Automatic Alternate Operation (CRC-D/CRC-W Type))

Automatic connection set

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

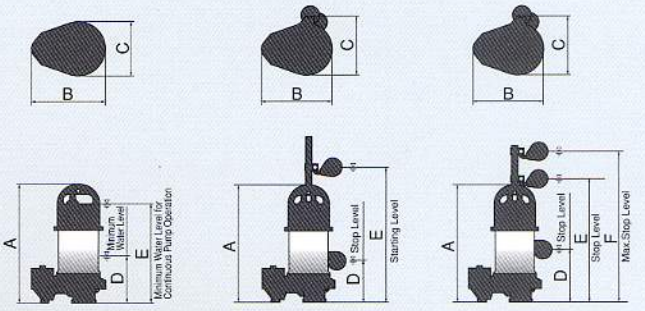
Dimensions

Automatic Connection



Non-Automatic Operation | With Automatic Float Switch | Automatic Alternate Operation

Flange Connection



Non-Automatic Operation | With Automatic Float Switch | Automatic Alternate Operation

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						
		CR501		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	—
		CRS401S/T	P40RL							
				0.25	409	470	175			
		CRS501S/T	P50RL	0.4						
		CRS501		0.75						
		CRS65	P50NR/65NR/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	—
		CRC50	P50RH	0.75	436				380	
			P50NR/65NR	1.5	536	621	203	200	470	
		CRC65	P65NR/80NR	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						
		CR501D		0.75						
	CRS-D	CRS321DS	P32RL	0.15	395	436	171	165	530	—
		CRS401DS/T	P40RL							
				0.25	409	470	202			
		CRS501DS/T	P50RL	0.4						
		CRS501D		0.75						
		CRS65D	P50NR/65NR/80NR	1.5	536	626	203	205	680	
		CRS80D	P65NR/80NR	2.2	561					
	CRC-D	CRC40DS/T	P40RH	0.4	417	452	195	170	570	—
		CRC50D	P50RH	0.75	436					
			P50NR/65NR	1.5	536	621	203	205	680	
		CRC65D	P65NR/80NR	2.2	561					
Automatic 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	395	436	171	200	480	610
		CRS401WS/T	P40RL							
				0.25	409	470	202			
		CRS501WS/T	P50RL	0.4						
		CRS501W		0.75						
		CRS65W	P50NR/65NR/80NR	1.5	536	626	203	240	630	760
		CRS80W	P65NR/80NR	2.2	561					
	CRC-W	CRC50W	P50NR/65NR	1.5	536	626	203	240	630	760
		CRC65W	P65NR/80NR	2.2	561					

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	398			155	335	
	CR501		0.75						
	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	—
	CRS401S/T	F40							
			0.25	366	240	175			
	CRS501S/T	F50	0.4	379			135	315	
	CRS501		0.75						
	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	—
	CRC50	F50	0.75	408				350	
		F50N/65N	1.5	485	295	203	150	420	
	CRC65	F65N/80N	2.2	510				440	
CR-D	CR501DS/T	F50	0.15	380	206	171	150	510	—
			0.25	394	240	202		515	
			0.4	398			155	520	
	CR501D		0.75						
CRS-D	CRS321DS	F32	0.15	352	206	171	125	480	—
	CRS401DS/T	F40							
			0.25	366	240	202		490	
	CRS501DS/T	F50	0.4	379			135	500	
	CRS501D		0.75						
	CRS65D	F50N/65N/80N	1.5	485	300	203	155	630	
	CRS80D	F65N/80N	2.2	510					
CRC-D	CRC40DS/T	F40	0.4	389	245	195	140	540	—
	CRC50D	F50	0.75	408					
		F50N/65N	1.5	485	300	203	155	630	
	CRC65D	F65N/80N	2.2	510					
CR-W	CR501WS	F50	0.15	380	206	171	185	460	590
			0.25	394	240	202		465	595
			0.4	398			190	470	600
CRS-W	CRS321WS	F32	0.15	352	206	171	160	430	560
	CRS401WS/T	F40							
			0.25	366	240	202		440	570
	CRS501WS/T	F50	0.4	379			170	450	580
	CRS501W		0.75						
	CRS65W	F50N/65N/80N	1.5	485	300	203	190	580	710
	CRS80W	F65N/80N	2.2	510					
CRC-W	CRC50W	F50N/65N	1.5	485	300	203	190	580	710
	CRC65W	F65N/80N	2.2	510					

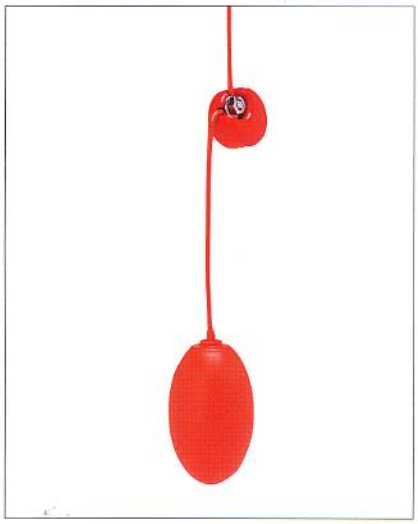
Special Accessories

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℃	0～40℃	0～60℃
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	Polypropylene resin
	Cable	VCTFK	PVC resin (soft type)	PVC resin (soft type)
	Others	Chain : SUS304	Sinker : Cast iron with PVC resin coating	Sinker : Cast iron

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

ShinMaywa (Malaysia) Sdn. Bhd.
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

http://www.shinmaywa.co.jp

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