ShinMaywa

Lightweight Submersible Pumps

NORUS

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

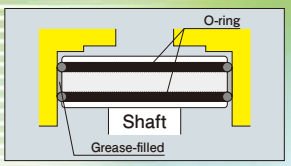


New Generation of Pumps NORUS

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

AC Bearing

The upper bearing is an AC bearing with two O-rings on the outer ring. No bearing damage due to a creep phenomenon even in intermittent operation.



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. (Excluding 0.1-0.15kW)

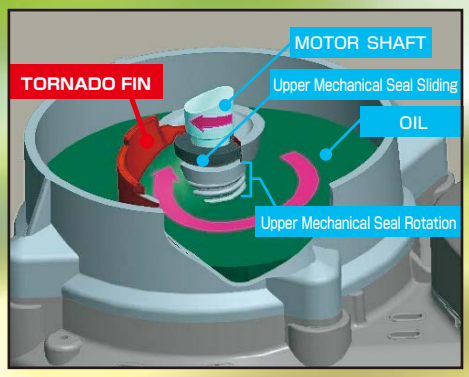
Prevention of water leakage between the pump and the automatic connection

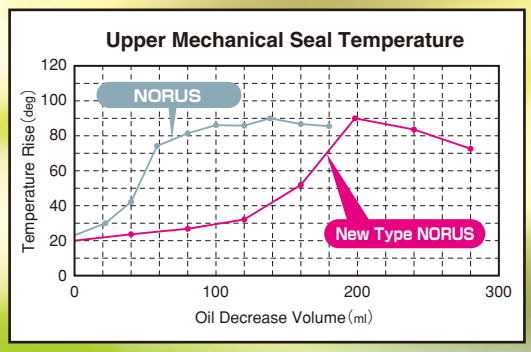
The top of the pump chamber is provided with many holes for releasing air, thereby stably installing the pump in place. This also serves to prevent the leakage of water between the pump and the automatic connection.

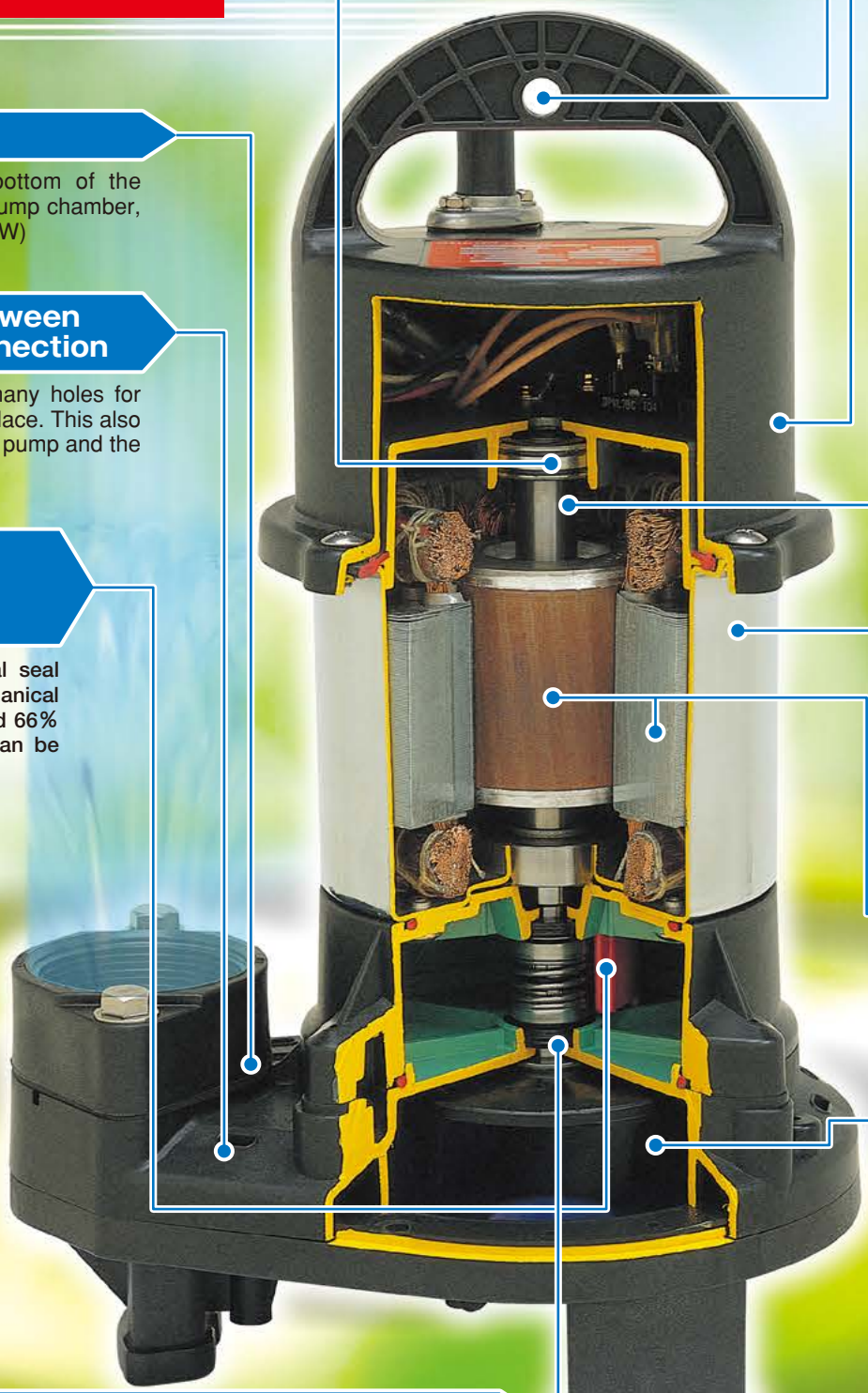
TORNADO FIN

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 standerd

(Applicable:CR&CRS&CRC 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

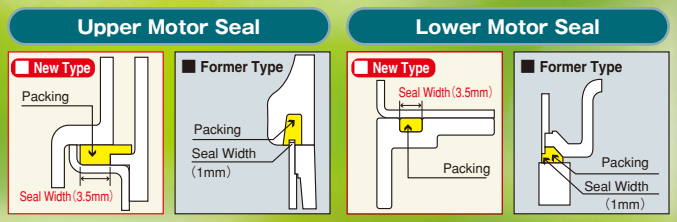
SUS 304 and engineering plastic are also used for the stator casing and wet part, offering better corrosion resistance than the cast iron ones in conventional models. As a result, the "NORUS" of pumps achieves good corrosion resistance even under severer working conditions. In addition, the "NORUS" is 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 & CRC 0.1～0.75kW)

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 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 sand.

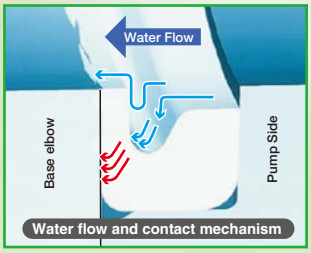
■ Principal Specifications

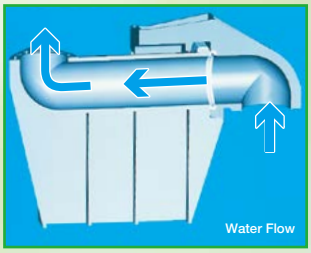
Applicable liquid	Liquid type	Wastewater or raw water containing sludge	
	Liquid temperature	0～40℃	
Material	Pump shaft	CR	0.1～0.15kW:SUS420J2
		CRS	0.25～0.75kW:SUS316
			1.5～2.2kW:SUS304
		CRC	0.4～0.75kW:SUS316
			1.5～2.2kW:SUS304
	Stator casing	SUS304	
	Pump casing	Engineering Plastic (reinforced with 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 Guide Rail Fitting

Line up with guide rail installation type for easy installation and maintenance. Anti floating mechanism is provided for base elbow. 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] Max Solid Passage Dia **35mm**

0.15～0.75kW

[Actual Size] Max Solid 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



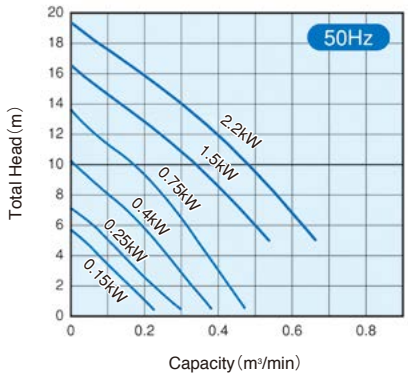


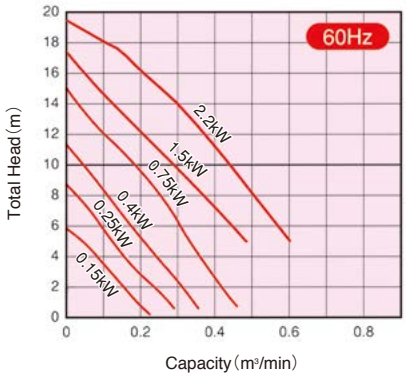
Non-Auto-Operation | Auto-Operation | Auto-Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Part Code		Phase	Output kW	Capacity—Total Head m³/min—m		Weight (kg)	
	Non-Auto-Operation	Auto-Operation	Auto-Alternate Operation		Guide Rail Fitting	Free Standing			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	0.35 — 9.8	0.30 — 9.7	16.0	—
	CR80	—	—	—				2.2	0.35 — 13.0	0.35 — 12.6	19.0	—
80	CR65	—	—	—	P80NR	F80N	3	1.5	0.35 — 9.8	0.30 — 9.7	16.0	—
	CR80	—	—	—				2.2	0.35 — 13.0	0.35 — 12.6	19.0	—

Performance Curves





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

Standard Accessories

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

Guide Rail Installation Kit

- Base elbow
- Guide rail bracket (with bolts & nuts)
- Sliding bracket
- Lifting chain
- Shackle

Lightweight Submersible Pump

CRS

Universal type with improverd passing capability and pumping performance available

[Actual Size] Max Solid Passage Dia **20mm** — 0.1～0.25kW

[Actual Size] Max Solid Passage Dia **25mm** — 0.4・0.75kW

[Actual Size] Max Solid Passage Dia **30mm** — 1.5・2.2kW

Application

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



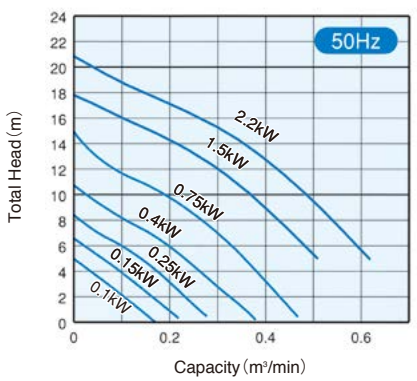


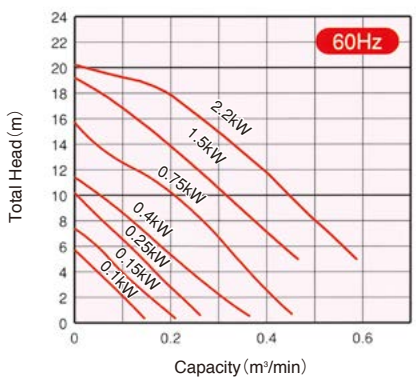
Non-Auto-Operation | Auto-Operation | Auto-Alternate Operation

Standard Specifications

Bore mm	Pump Model				Connection Part Code		Phase	Output kW	Capacity—Total Head m³/min—m		Weight (kg)	
	Non-Auto-Operation	Auto-Operation	Auto-Alternate Operation		Guide Rail Fitting	Free Standing			50Hz	60Hz	CRS	CRS-D CRS-W
			Pair Designation	Pump No.1+Pump No.2								
32	CRS321S	CRS321DS	CRS321DWS	CRS321WS+CRS321DS	—	F32	1	0.1	0.08 — 2.9	0.08 — 3.2	4.5	5.0
					P32RL			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	0.35 — 10.5	0.30 — 10.5	16.0	16.5
65	CRS65	CRS65D	CRS65DW	CRS65W+CRS65D	P65NR	F65N	3	1.5	0.35 — 10.5	0.30 — 10.5	16.0	16.5
	CRS80	CRS80D	CRS80DW	CRS80W+CRS80D				2.2	0.35 — 14.1	0.35 — 13.4	19.0	19.5
80	CRS65	CRS65D	CRS65DW	CRS65W+CRS65D	P80NR	F80N	3	1.5	0.35 — 10.5	0.30 — 10.5	16.0	16.5
	CRS80	CRS80D	CRS80DW	CRS80W+CRS80D				2.2	0.35 — 14.1	0.35 — 13.4	19.0	19.5

Performance Curves





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

Standard Accessories

- Cable(5m) 0.1～0.75kW ・・・・1
  (8m) 1.5・2.2kW ・・・1
- Screw coupling ・・・・・・・・・1
- Spare nameplate ・・・・・・・1
- Float switch ・・・・・・・・・・・・・・1 (for type D/W)

Guide Rail Installation Kit

- Base elbow
- Guide rail bracket (with bolts & nuts)
- Sliding bracket
- Lifting chain
- Shackle

Lightweight Submersible Pump

CRC

High pump head with closed impeller

[Actual Size]



Max Solid Passage Dia

7mm

0.4・0.75kW

[Actual Size]



Max Solid Passage Dia

12mm

1.5・2.2kW

Application

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



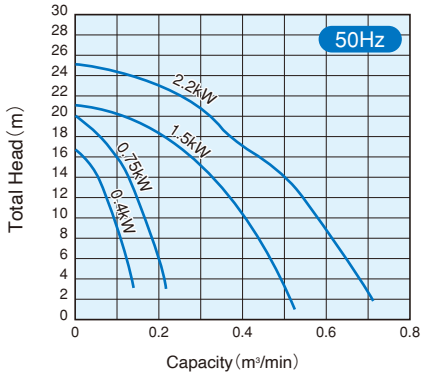


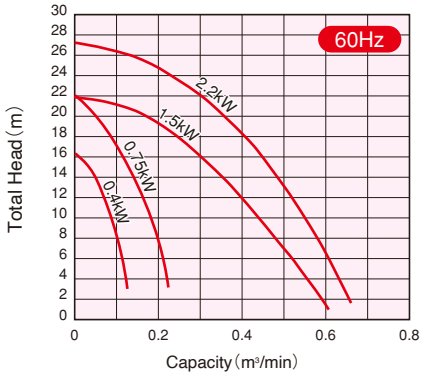
Non-Auto-Operation | Auto-Operation | Auto-Alternate Operation

■Standard Specifications

Bore mm	Pump Model				Connection Part Code		Phase	Output kW	Capacity—Total Head m³/min—m		Weight (kg)	
	Non-Auto-Operation	Auto-Operation	Auto-Alternate Operation		Guide Rail Fitting	Free Standing			50Hz	60Hz	CRC	CRC-D CRC-W
			Pair Designation	Pump No.1+Pump No.2								
40	CRC401S	CRC401DS	—	—	P40RH	F40	1	0.4	0.05 — 14.2	0.05 — 14.0	8.6	9.1
	CRC401T	CRC401DT	—	—			3		0.05 — 14.2	0.05 — 14.0	7.7	8.2
50	CRC501	CRC501D	—	—	P50RH	F50	3	0.75	0.10 — 16.0	0.10 — 17.0	9.1	9.6
	CRC50	CRC50D	CRC50DW	CRC50W+CRC50D	P50NR	F50N		1.5	0.2 — 18.2	0.2 — 18.4	16.0	16.5
65	CRC50	CRC50D	CRC50DW	CRC50W+CRC50D	P65NR	F65N	3	1.5	0.2 — 18.2	0.2 — 18.4	16.0	16.5
	CRC65	CRC65D	CRC65DW	CRC65W+CRC65D				2.2	0.3 — 20.6	0.3 — 21.3	19.0	19.5
80	CRC65	CRC65D	CRC65DW	CRC65W+CRC65D	P80NR	F80N	3	2.2	0.3 — 20.6	0.3 — 21.3	19.0	19.5

■Performance Curves





■Standard Accessories

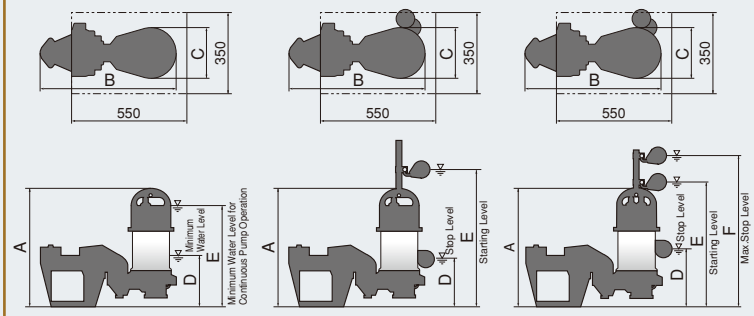
- Cable (5m) 0.4・0.75kW ・・・1
  (8m) 1.5・2.2kW ・・・1
- Screw coupling ・・・・・・・・・1
- Spare nameplate ・・・・・・・1
- Float switch ・・・・・・・・・・・・・1 (for type D/W)

●Guide Rail Installation Kit

- Base elbow
- Guide rail bracket (with bolts & nuts)
- Sliding bracket
- Lifting chain
- Shackle

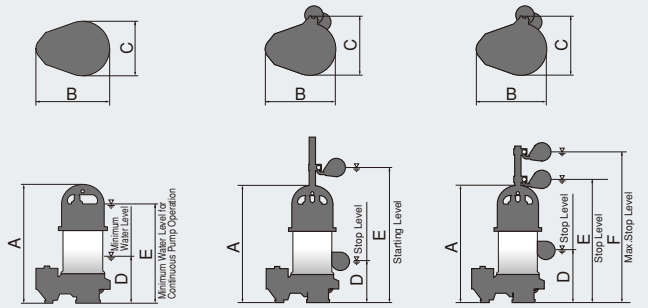
Dimensions

Guide Rail Installation Type



Non-Auto-Operation | Auto-Operation | Auto-Alternate Operation

Free Standing Type



Non-Auto-Operation | Auto-Operation | Auto-Alternate Operation

Unit:mm

Guide Rail Installation Type

	Pump Model	Connection Part Code	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						
		CR65	P65NR／80NR	1.5	536	621	203	200	470	
		CR80	P65NR／80NR	2.2	561				490	
	CRS	CRS321S	P32RL	0.15※1	395 (409)	436 (470)	144 (175)	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	CRC401S／T	P40RH	0.4	411	452	177	160	350	—
		CRC501	P50RH	0.75	411				350	
		CRC50	P50NR／65NR	1.5	536	621	203	200	470	
		CRC65	P65NR／80NR	2.2	561				490	
Auto-Operation	CR-D	CR501DS／DT	P50RL	0.15	395	436	171	165	530	—
				0.25	409	470	202			
				0.4						
		CR501D		0.75						
	CRS-D	CRS321DS	P32RL	0.15※1	395 (409)	436 (470)	171 (202)	165	530	—
		CRS401DS／DT	P40RL							
				0.25	409	470	202			
		CRS501DS／DT	P50RL	0.4						
		CRS501D		0.75						
		CRS65D	P50NR／65NR／80NR	1.5	536	621	203	205	765	
		CRS80D	P65NR／80NR	2.2	561				790	
	CRC-D	CRC401DS／DT	P40RH	0.4	411	452	204	165	565	—
		CRC501D	P50RH	0.75	411					
		CRC50D	P50NR／65NR	1.5	536	621	203	205	765	
		CRC65D	P65NR／80NR	2.2	561				790	
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 (409)	436 (470)	171 (202)	200	480	610
		CRS401WS／WT	P40RL							
				0.25	409	470	202			
		CRS501WS／WT	P50RL	0.4				200	480	610
		CRS501W		0.75						
		CRS65W	P50NR／65NR／80NR	1.5	536	621	203	240	695	775
		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				720	800

Unit:mm

Free Standing Type

	Pump Model	Connection Part Code	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	0.1	352 (366)	206 (240)	144 (175)	105	305	—
			0.15※1				125		
	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	CRC401S／T	F40	0.4	383	245	177	130	320	—
	CRC501	F50	0.75	383				320	
	CRC50	F50N／65N	1.5	485	295	203	150	420	
	CRC65	F65N／80N	2.2	510				440	
CR-D	CR501DS／DT	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	0.1	352 (366)	206 (240)	171 (202)	105	480	—
			0.15※1				125		
	CRS401DS／DT	F40	0.25	366	240	202		490	
	CRS501DS／DT	F50	0.4	379			135	500	
	CRS501D		0.75						
	CRS65D	F50N／65N／80N	1.5	485	300	203	155	715	
	CRS80D	F65N／80N	2.2	510				740	
CRC-D	CRC401DS／DT	F40	0.4	383	245	204	140	540	—
	CRC501D	F50	0.75	383					
	CRC50D	F50N／65N	1.5	485	300	203	155	715	
	CRC65D	F65N／80N	2.2	510				740	
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	0.1	352 (366)	206 (240)	171 (202)	140	430	560
			0.15※1				160		
	CRS401WS／WT	F40	0.25	366	240	202		440	570
	CRS501WS／WT	F50	0.4	379			170	450	580
	CRS501W		0.75						
	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 of an environmentally-friendly no-mercury structure.

LC "Level Switch"



MS "Mini Switch"



FV "Oval Float"



Features

LC Useful for potable water, wastewater and sewage containing suspended solids.
Strong for corrosion or rust even when immersed in a corrosive liquid.

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

FV Useful for fresh water as well as wastewater not containing suspended solids.
A single FV can control both the upper and lower liquid levels.

Specifications

Model		LC12	MS11, MS21	FV11
Switch		Micro switch	Reed switch	Reed switch
Specific gravity of liquid		0.95~1.15	0.95~1.10	0.95~1.10
Liquid temperature		0~60˚C		
Voltage		AC/DC30V or under		
Max operable current		5A	0.5A	0.6A
Cable length		6m, 13m, 20m (with cable extensions in 10m increments) MAX. length 100m		
Cable type		0.75mm²×3 cores, Flat type	0.2mm²×2 cores×O.D.4.7mm	0.5mm²×2 cores×O.D.5.8mm
Weight (including cable)		6m:1.2kg, 13m:1.6kg, 20m:2.0kg	0.6kg (MS11, 6m cable)	1.0kg (6m cable)
Material	Case	Polypropylene resin	ABS resin	Polypropylene resin
	Cable	PVC		
	Others	Chain: 304 stainless steel	Sinker:PVC Resin coating is applied to FC 150	Sinker:The FC200 is coated

Specifications and dimensions are subject to change without notice.

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