ShinMaywa

Submersible Pumps

(Non-Clogging Type) CN/CNH·CNL Series



An Improved Pump Efficiency and Non-clogging Operation

There are MANY ADVANTAGES with ShinMaywa Submersible Pump.

●Features And Construction

Cable outlet with core sealer

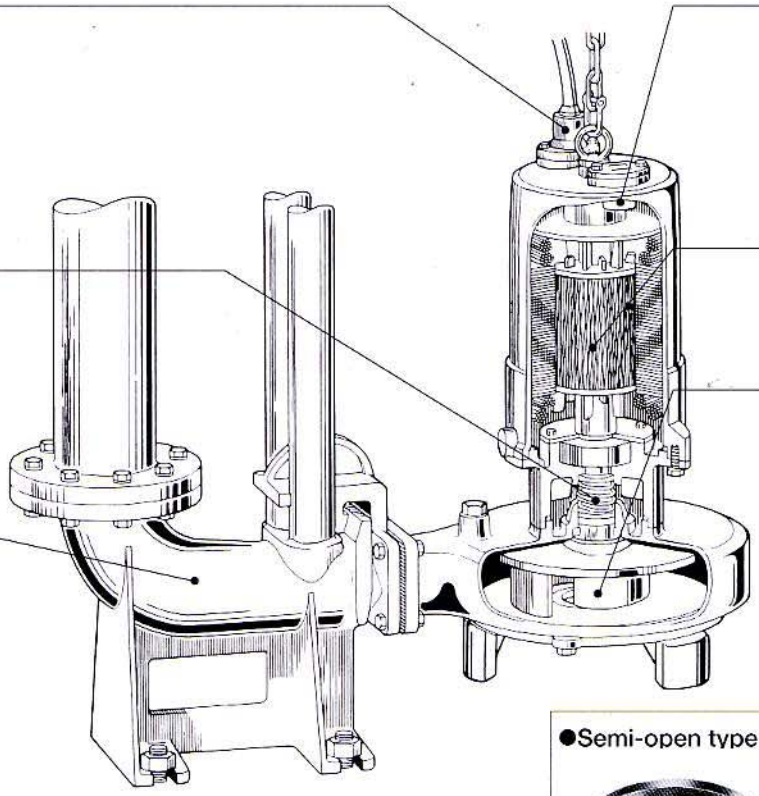
The self-containted core sealer of the cable outlet shuts the water out from penetrating into the motor chamber through the core wires even if the cable tip is immersed in water or the sheath is damaged.

Shaft seal

A highly wear resistant silicon carbide double mechanical seal positively prevents the water from penetrating into the motor chamber. Besides, combined use of an oil seal further extends the service life of the mechanical seal.

Discharge connection

When the automatic connection type srbmersible pump is lowered along with the guide pipe, the pump is automatically connected to the discharge pipe with the Discharge connection.



Motor protector

A built-in automatic-reset type motor protector (automatic cutoff or thermal protector) positively protects the motor from burnout due to overload, impeller clogging and open phase.

Motor

Dry type motor with Class E (or Class F) insulation is employed.

Impeller

Impellers most suitable for respective pump applications are employed.
For example, the non-clogging type impellers are 100% subject to the dynamic and static balance adjustment at factory.

●Semi-open type	●Closed type
	
CN40T · 501(T) · 651 · 80 · 100 CNL Series	CNH100 CN150

Uses

- ●For use in the treatment processes at combined treatment plants
- ●For use in the treatment processes at sewage treatment plants or at night soil treatment plants
- ●For relaying sewage at the junctions in the sewage works
- ●For use in drainage and sanitary equipment of buildings
- ●For discharging rain water or water from roads or the roads under elevated railroads or overpasses
- ●For use in the industrial waste water treatment processes at factories, etc.

Main Specification

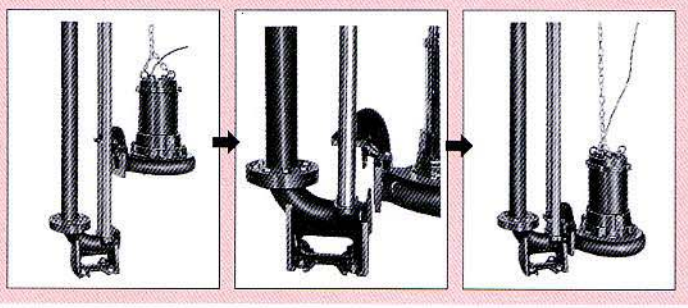
Handling Liquid	Kind of Liquid	Waste Water and Sewage of Water including Sludge
Material	Cable	VCT(Over 11kW:2PNCT)
	Motor Shaft	SUS 420J2
	Pump Casing	Gray Cast Iron
	Impeller	Gray Cast Iron
Electric Motor	Type	Dry-type Submersible Induction Motor
	Insulation Class	Class E(or Class F)
	Enclosure	IP68
	Phase	Three Phase
	Voltage	According to the specifications.

Special Specification

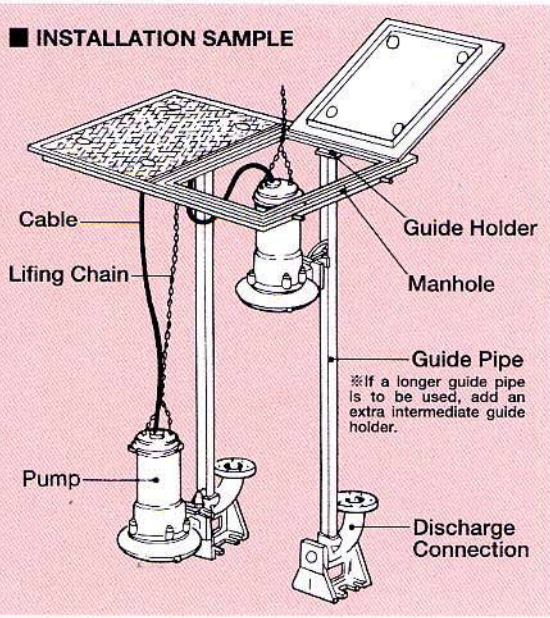
Cable Extension	Length of Cable	15 · 20 · 30m
Material Change	Impeller	stainless steel casting or According to the specifications
	Base Cover	
	Lifting Chain	stainless steel (SUS304)
Motor Protector	Micro-Thermal Protector Leakage Detector	
Starting Method	Star-delta Starting(5.5kW · 7.5kW) (Over 11kW models are standard specifications)	

● AUTOMATIC CONNECTION SIMPLIFIES MAINTENANCE

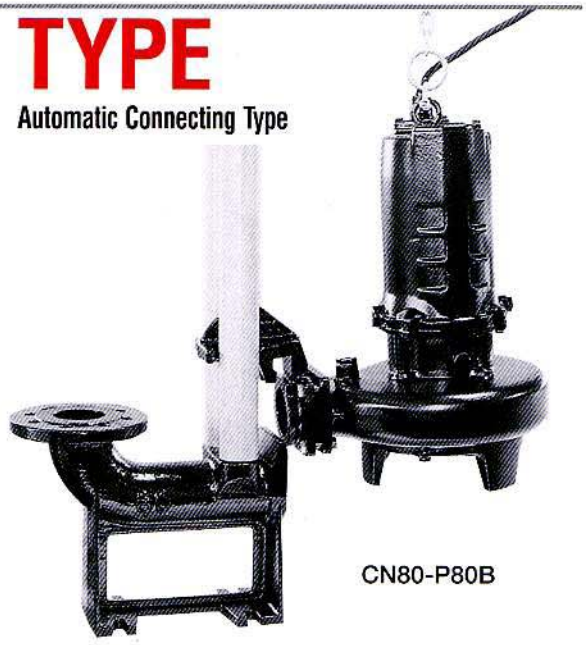
One of the main reason why ShinMaywa submersible pumps are so popular in Japan is because ShinMaywa Industries, Ltd., a pioneer manufacturer of submersible pumps first introduced its original automatic connection type pumps into the country.
When the pump is lowered along with the guide pipe, it is automatically connected to the discharge pipe with disscharge connection,
To remove the pump, simply list it up out of the tank,
No bolt, nut and packing are required for the connection.
The automatic connection system has simplified the maintenance. It is not necessary to enter the tank or evacuate the tank for removing the pump or loosening or tightening the bolts.



■ INSTALLATION SAMPLE



P TYPE
Automatic Connecting Type



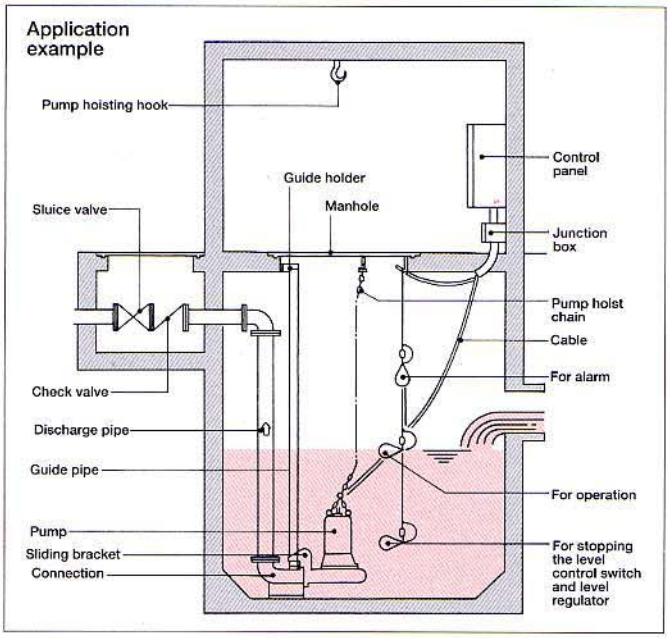
CN80-P80B

F TYPE
Flange Connecting Type

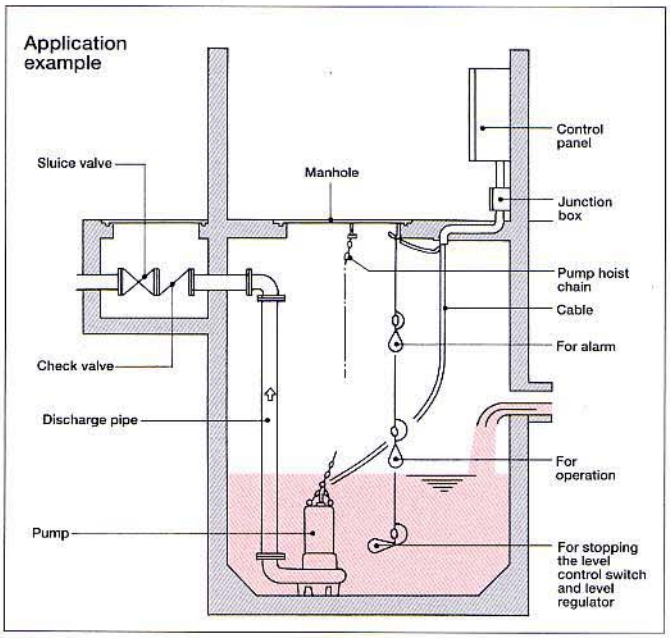


CN80-F80

Application example



Application example



CN/CNH Series

〈Bore〉 40 to 150mm (1 1/2 to 6")
〈Output〉 0.25 to 22kW

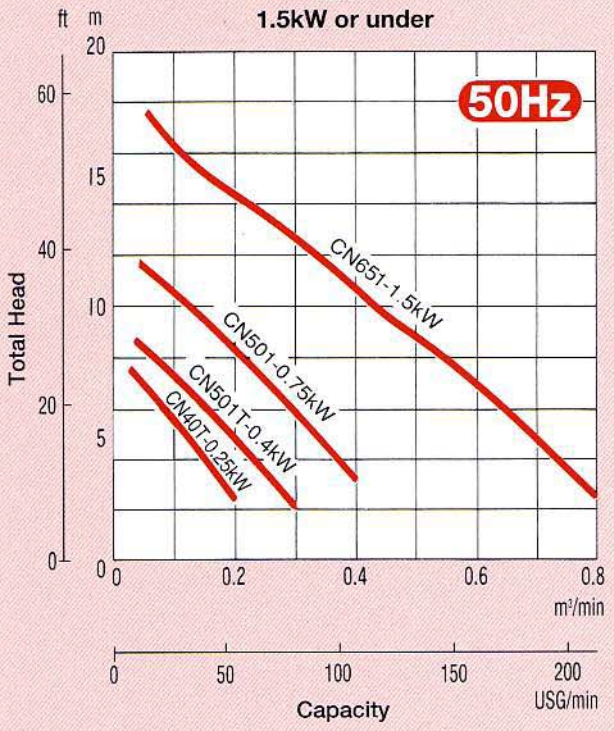
Standard Specifications

Bore mm	Bore (in)	Pump Model	Connection Part No. Automatic Connection	Connection Part No. Flange Connection	Phase	Output kW	Pole	Capacity-Total Head m³/min-m	Impeller Passage Size mm	Weight (Pump Proper) kg
40	1 1/2	CN40T	P40	F40	Three	0.25	2	0.1-5.5	φ23	15.5
50	2	CN501T	P50	F50	Three	0.4	2	0.15-6.0	φ32	17
		CN501				0.75		0.2-8.2		18
65	2 1/2	CN501T	P65B	F65B	Three	0.4	2	0.15-6.0	φ32	17
		CN501				0.75		0.2-8.2		18
		CN651	P65	F65		1.5		0.4-10.6	43×41	29
		CN80				2.2	4	0.8-8.4	54×60	58
						3.7		〔1〕1.0-11.8	53×60	70
								〔3〕0.8-14.4	53×60	
80	3	CN651	P80	F80	Three	1.5	2	0.4-10.6	43×41	29
		CN80	P80B			2.2	4	0.8-8.4	54×60	58
						3.7		〔1〕1.0-11.8	53×60	70
								〔3〕0.8-14.4	53×60	
		CN100				5.5		〔1〕1.2-12.9	61×60	95
								〔3〕0.9-18.0	54×60	
						7.5		〔1〕1.4-15.2	67×60	108
								〔3〕1.0-21.8	56×60	
100	4	CN80	P100B	F100	Three	2.2	4	0.8-8.4	54×60	58
						3.7		〔1〕1.0-11.8	53×60	70
								〔3〕0.8-14.4	53×60	
		CN100				5.5		〔1〕1.2-12.9	61×60	95
								〔3〕0.9-18.0	54×60	
						7.5		〔1〕1.4-15.2	67×60	108
								〔3〕1.0-21.8	56×60	
		CNH100	P100C	F100B	Three	11		1.57-22	60×54	216
						15		1.9-26	69×54	230
						22		1.8-35	75×55	290
150	6	CN150	P150	F150	Three	5.5	4	2.0-10	70×80	122
						7.5		2.48-12	75×85	134
						11		2.54-16	64×100	215
						15		2.87-19	70×95	228
						22		3.6-22	76×100	326

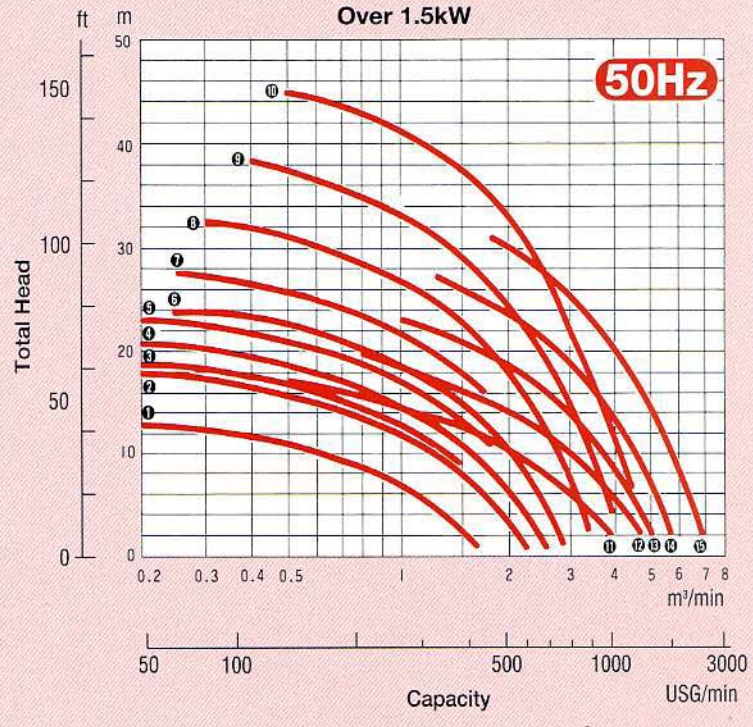
*Starting method is 7.5kW or under : Direct-on-line, 11kW or over Star-delta. (Note) Specify both pump model and connection part No. to contact the dealer.

Performance Curves

CN
1.5kW or under



CN · CNH
Over 1.5kW



❶ CN80 φ65・φ80・φ100-2.2kW
❷ CN80 φ65・φ80・φ100-3.7kW〔1〕
❸ CN80 φ65・φ80・φ100-3.7kW〔3〕
❹ CN100 φ80・φ100-5.5kW〔1〕
❺ CN100 φ80・φ100-5.5kW〔3〕
❻ CN100 φ80・φ100-7.5kW〔1〕
❼ CN100 φ80・φ100-7.5kW〔3〕
❽ CNH100 φ100-11kW
❾ CNH100 φ100-15kW
❿ CNH100 φ100-22kW
⓫ CN150 φ150-5.5kW
⓬ CN150 φ150-7.5kW
⓭ CN150 φ150-15kW
⓮ CN150 φ150-22kW

〔 〕: Number of impeller

Standard Accessories

· Cable (Under 7.5kW)·····1pc.
(Over 11kW)·····3pcs.

6m for under 0.75kW
8m for over 1.5kW

Automatic Connection Set

· Connection
· Guide holder (with bolt and nuts)
· Sliding bracket
· Pump lifting chain (6m)

Bore		Connection Part No.	Set Weight	Connection Weight
mm	in		kg	kg
40	1 1/2	P40	11	4.5
50	2	P50	11	4.5
65	2 1/2	P65B	20	14.5
		P65	24	15
80	3	P80B	31.5	18
100	4	P100B	40.5	27
		P100C	55	37
150	6	P150	60	42

Flange Connection Set

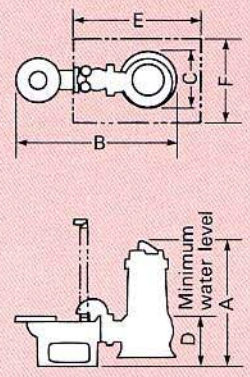
· Discharge side flange
· Companion flange (with bolts, nuts and packing)

Bore		Connection Part No.	Set Weight
mm	in		kg
40	1 1/2	F40	☆
50	2	F50	☆
65	2 1/2	F65B	5.5
		F65	7
80	3	F80	9.5
100	4	F100	11
		F100B	12
150	6	F150	30

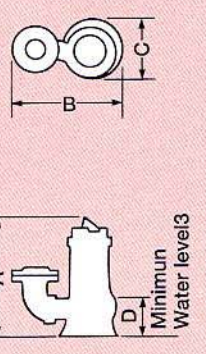
☆Built-in with the pump proper.

Dimensions

Automatic Connection



Flange Connection



Packing Size

Model		Length L	×	Width W	×	Height H
CN40T		285mm	×	205mm	×	475mm
CN501T CN501		280mm	×	195mm	×	460mm
CN651		550mm	×	260mm	×	295mm
CN 80	2.2kW	440mm	×	388mm	×	655mm
	3.7kW	470mm	×	410mm	×	727mm
CN100		545mm	×	455mm	×	788mm

*If you would like to know packing size of CNH100 and CN150, peace contact to our local sales agent.

mm

	Pump Model	Connection Parts No.	Output kW	A	B	C	D	E	F
Automatic Connection	CN40T	P40	0.25	431	431	164	180	550	350
	CN501T CN501	P50	0.4·0.75	460	447	170	180	550	350
		P65B			520				
	CN651	P65	1.5	530	663	192	215	550	350
		P80		570	739		255		
	CN80	P65	2.2	580	754	292	220	600	500
		P80B		620	830		260		
		P100B			843				
		P65	3.7	642	773	331	220		
		P80B		682	849		260	700	600
		P100B			862				
	CN100	P80B	5.5	710	907	335	260	700	600
		P100B			920				
		P80B	7.5	745	922	387			
		P100B			935				
	CNH100	P100C	11	861	1110	486	335	900	700
			15						
			22	955	1132	529			
	CN150	P150	5.5	779	1094	400	327	900	700
			7.5	814					
			11·15	871	1148	450	345		
			22	967	1188	489	347		

mm

	Pump Model	Connection Parts No.	Output kW	A	B	C	D
Flange Connection	CN40T	F40	0.25	377	233	164	125
	CN50T CN50	F50	0.4·0.75	414	249	170	135
		F65B			344		
	CN651	F65	1.5	454	418	192	140
		F80			433		
	CN80	F65	2.2	550	509	292	190
		F80			524		
		F100			541		
		F65	3.7	612	528	331	
		F80			543		
		F100			560		
	CN100	F80	5.5	640	601	355	190
		F100			618		
		F80	7.5	675	616	387	
		F100			633		
	CNH100	F100B	11	782	848	486	256
			15				
			22	876	870	529	
	CN150	F150	5.5	712	836	400	260
			7.5	747			
			11·15	804	890	450	278
			22	914	930	489	294

CNL Series

〈Bore〉 50 to 80mm (2" to 3")
〈Output〉 0.25 to 1.5kW

Built-in Chopper
4 Pole type

Standard Specifications

Bore		Pump Model	Connection Part No.		Phase	Output	Pole	Capacity-Total Head	Impeller Passage Size	Weight (Pump Proper)
mm	(in)		Automatic Connection	Flange Connection		kW		m³/min-m	mm × mm	kg
50	2	CNL501	P50	F50	Three	0.25	4	0.17–4	34×30	19
						0.4		0.25–4.5	35×35	26
						0.75		0.34–6.5	44×40	27
65	2 1/2	CNL501	P65B	F65B	Three	0.4	4	0.25–4.5	35×35	26
						0.75		0.34–6.5	44×40	27
		CNL651	P65	F65	Three	1.5		0.6–7.4	51×48	45
80	3	CNL651	P80	F80	Three	1.5	4	0.6–7.4	51×48	45

Performance Curves



Standard Accessories

- Cable·····1pc.
  6m for under 0.75kW
  8m for 1.5kW

Automatic Connection Set

- Connection
- Guide holder (with bolt and nuts)
- Sliding bracket
- Pump lifting chain (6m)

Bore		Connection Part No.	Set Weight	Connection Weight
mm	in		kg	kg
50	2	P50	11	4.5
65	2 1/2	P65B	20	14.5
		P65	24	15
80	3	P80	31.5	20.5

Flange Connection Set

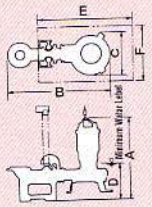
- Discharge side flange
- Companion flange (with bolts, nuts and packing)

Bore		Connection Part No.	Set Weight
mm	in		kg
50	2	F50	☆
65	2 1/2	F65B	5.5
		F65	7
80	3	F80	9.5

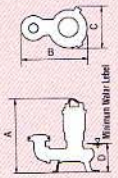
☆Built-in with the pump proper.

Dimensions

Automatic Connection



Flange Connection



mm (in)

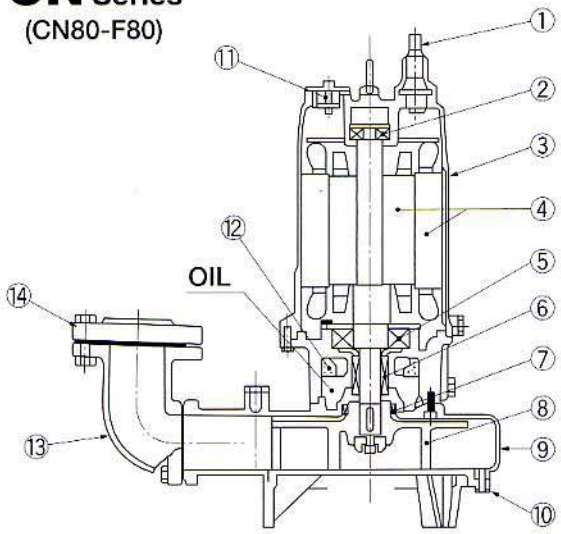
	Pump Model	Connection Parts No.	Output kW	A	B	C	D	E	F
Automatic Connection	CNL501	P50	0.25	418	465	220	160	550	350
			0.4·0.75	469	506	246	165		
		P65B			579				
	CNL651	P65	1.5	564	725	302	215	550	350
		P80		604	801		255	600	500
Flange Connection	CNL501	F50	0.25	378	267	220	120	—	—
			0.4·0.75	445	308	246	140	—	—
		F65B			403				
	CNL651	F65	1.5	529	480	302	180	—	—
		F80			495				

Packing Size

Model		Length L	×	Width W	×	Height H
CNL 501	0.25kW	310mm	×	280mm	×	450mm
	0.4·0.75kW	350mm	×	305mm	×	510mm
CNL651		350mm	×	320mm	×	580mm

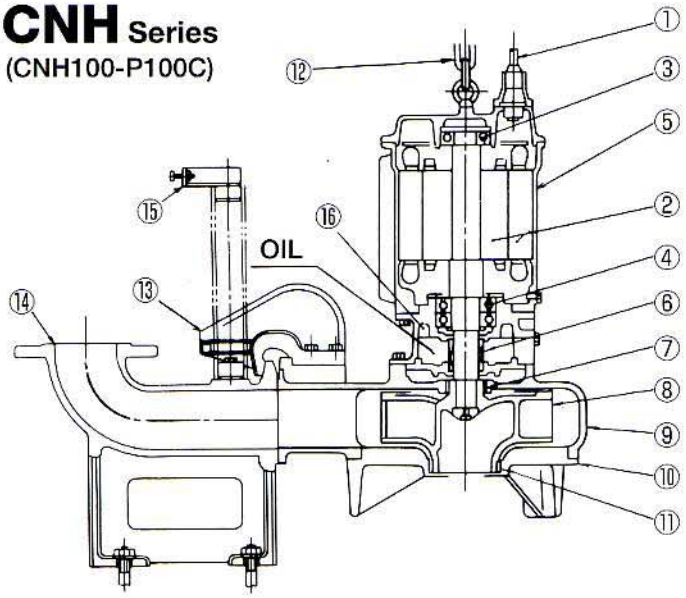
Sectional View

CN Series
(CN80-F80)



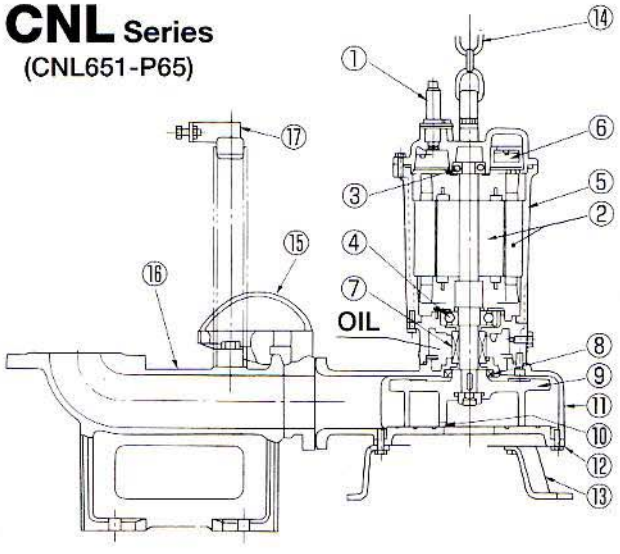
No.	Part Name	Material
1	Cable	VCT
2	Ball Bearing(Upper)	———
3	Stator Casing	FC200
4	Motor	Shaft=SUS420J2
5	Ball Bearing(Lower)	———
6	Mechanical Seal	———
7	Oil Seal	N.B.R.
8	Impeller	FC200
9	Pump Casing	FC200
10	Base Cover	FC200
11	Auto Cut	———
12	Equalizer	N.B.R
13	Dischange Side Flange	FC200
14	Companion Flange	FC200

CNH Series
(CNH100-P100C)



No.	Part Name	Material
1	Cable	2RNCT
2	Motor	Shaft=SUS420J2
3	Ball Bearing(Upper)	———
4	Ball Bearing(Lower)	———
5	Stator Casing	FC200
6	Mechanical Seal	———
7	Oil Seal	N.B.R.
8	Impeller	FC200
9	Pump Casing	FC200
10	Suction Cover	FC200
11	Wearing	CAC406
12	Lifting Chain	SS400
13	Sliding Bracket	FC200
14	Connection	FC200
15	Guide Holder	SS400
16	Equalizer	N.B.R.

CNL Series
(CNL651-P65)



No.	Part Name	Material
1	Cable	VCT
2	Motor	Shaft=SUS420J2
3	Ball Bearing(Upper)	———
4	Ball Bearing(Lower)	———
5	Stator Casing	FC200
6	Auto Cut	———
7	Mechanical Seal	———
8	Oil Seal	N.B.R.
9	Impeller	FC200
10	Cutting Chip	WC
11	Pump Casing	FC200
12	Base Cover	FC200
13	Stand	SS400
14	Lifting Chain	SS400
15	Sliding Bracket	FC200
16	Connection	FC200
17	Guide Holder	SS400

*Note VCT : Polyvinyl-chloride sheathed cabtyre cable
SUS : Stainless steel SS : Mild steel FC : Gray iron casting
WC : Tungsten carbide N.B.R. : Nitryl Rubber

Special Accessories

LC "LEVEL SWITCH" Liquid Level Regulator

The "LEVEL SWITCH" [LC12] is a liquid level regulator that is most suitably used for detecting the liquid levels of the fresh water, sewage and waste water containing a few debris.
Most part of the "LEVEL SWITCH" directly exposed to the liquid is made of polypropylene. In addition, stainless steel is partly used. As a result, the "LEVEL SWITCH" is hardly affected by corrosion or rust even if it is immersed in a corrosive liquid for a long time.
As illustrated in the drawing below, various beneficial design concepts are fully incorporated into the simple construction of the "LEVEL SWITCH".



Model	LC12
Specific gravity of liquid handled	0.95~1.15
Temperature	0℃~60℃
Voltage	AC/DC30V or under
Current	5A or under
Cable length	6m, 13m, 20m (further cable extension at an interval of 10m)
Cable type	Flat type, 3 cores x 0.75mm²
Weight(including cable)	6m : 1.2kg 13m : 1.6kg 20m : 2.0kg
Case	PP(polypropylene)resin
Cable	VCTFK
Chain	SUS304

FV "OVAL FLOAT" Liquid Level Regulator

"OVAL FLOAT" is a liquid level regulator that is most suitably used for detecting the liquid levels of the fresh water as well as waste water not containing debris. A single "OVAL FLOAT" is able to control both the upper and lower liquid levels. The range between those two levels can be set easily on site. Combined use the "RELAY UNIT" EL is highly recommended.



MS "MINI SWITCH" Liquid Level Regulator

"MINI SWITCH" is a liquid level regulator equipped with a lead switch and a contact.
It is most suitably used for detecting the liquid levels of the sewage. The "MINI SWITCH" which moves up and down being supported at one end by the sinker or cable tying band is made on or off electrically whenever the float inclination reaches the preset upper or lower angle limits.
The "MINI SWITCH" is available in two types, MS11(single float) and MS21 (double floats). The MS11 is used to detect one liquid level while the MS21 is used to detect two liquid levels. If three or more levels are to be detected, the combined use of the MS11 and MS21 are recommended.



Specifications and dimensions are subject to change without notice.

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ShinMaywa ONO PLANT
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