ShinMaywa®

Stainless Steel
with Poly Amide Fiber Reinforced Resin
make NORUS pumps
Lightweight with Exceptional Durability.

Model CR

Output: 1/5 ~ 3 hp

NORUS® series

ShinMaywa® philosophy:

Addressing and giving shape to customers ideas and needs

ShinMaywa started as Japan's first aircraft manufacturer in 1918. Based on a long history of technology development and experience, the company expanded its manufacturing field to respond to product demands, from Wastewater Treatment Equipment to Special Purpose Trucks, Industrial Machinery Systems, Parking Equipment, and Environmental Systems. The foundation of our business activities is the philosophy and commitment to giving shape to our customers ideas and needs. We regard all processes --- from product development through to production, sales, and after-sales maintenance --- as part of manufacturing. This creates customer satisfaction, with the concerted effort of the ShinMaywa Group.

Corporate Profile

Corporate Name	ShinMaywa Industries, Ltd.	**Number of Employees** *(as of Mar. 31, 2006)*	3,772 (consolidated) 1,956 (non-consolidated)
Office Headquarters	1-1, ShinMeiwa-cho, Takarazuka-shi, Hyogo 665-8550, Japan	**Stock Listed on**	First Section, Tokyo Stock Exchange First Section, Osaka Securities Exchange
Founded	November 5, 1949	**Paid-up Capital** *(as of Mar. 31, 2006)*	JPYen 15,981,967,991

Water Treatment Equipment

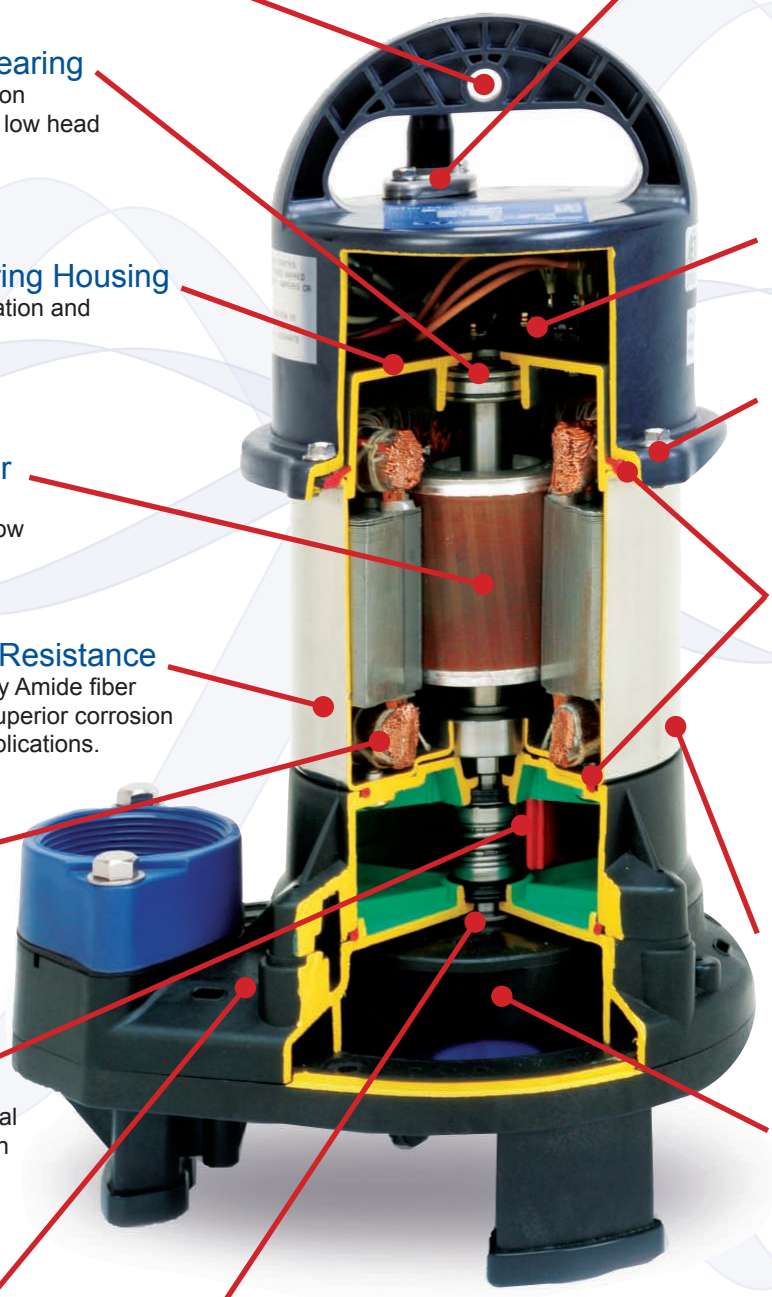
Water treatment facilities and equipment, including pumps and mixers, are essential for the effective use and conservation of water resources. ShinMaywa® has a variety of water treatment-related products, including highly reliable Submersible Mixers for agitation and water flow generation for sewage treatment, as well as Facility and Plant use Submersible Pumps. We pay special attention to the manufacturing process so that our customers can be assured their equipment will provide a long life of service.

ShinMaywa® has over 50 years experience as a pump manufacturer. ShinMaywa produces over 50,000 **NORUS®** pumps per year, with an outstanding reputation for high quality.

New Generation of Pumps

NORUS®

series



One Point Lifting Eye
Provides balanced easy lifting in and out of sumps.

Anti-Creeping Top Bearing
Provides increased protection against bearing creeping in low head applications.

Cast Aluminum Bearing Housing
Provides better heat dissipation and structural integrity.

High Efficiency Motor
Industry leading Class E insulation for long life and low operating cost.

Excellent Corrosion Resistance
304 stainless steel and Poly Amide fiber reinforced resin provides superior corrosion resistance even in hard applications.

Air Filled Motor
Motor is environmentally safe and provides lower average operating temperature.

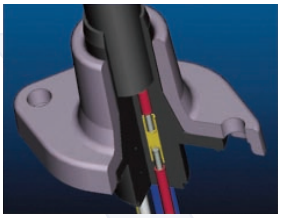
NEW

Seal Extender
Proprietary design cools seal surface more efficiently than standard seal designs.

Air Release Valve
Releases air in the pump chamber preventing air lock.

Impeller To Shaft Connection
A stainless steel shaft and 304 S.S. impeller boss provides a solid reliable connection.

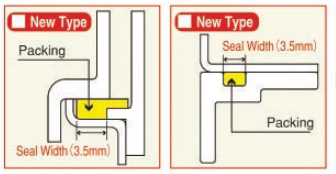
Cable Entry
Anti-wicking design prevents water from entering the motor housing should the cable get damaged.



Thermal Overload
Prevents motor from overheating due to locked rotor or under voltage.

Unique Hardware Design
Implementation of fiberglass with stainless screws provides excellent resistance to vibration and corrosion.

Stator O-Rings
Our new stator o-rings design provides 250% more sealing surface.



NEW

Seamless Stator Casing
Seamless design provides less chance for corrosion.

Vortex Impeller Design
Superior solids handling characteristics, especially with fibrous and stringy materials.

Poly Amide Fiber reinforced resin
After 200 hours operation

Ordinary ABS resin
After 200 hours operation

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

NORUS Model Number Composition

Example

50 CR 2 . 4 D S – 1

Model Type
CR: Submersible Vortex Sewage Pump

Operation Type
Blank: Manual Operation Type
D: Automatic Operation Type

Bore
50: 2” (50mm)
80: 3” (80mm)

Poles
2 : 2 Poles

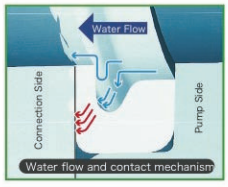
Output
.15: 1/5 hp
.25: 1/3 hp
.4: 1/2 hp
.75: 1 hp
1.5: 2 hp
2.2: 3 hp

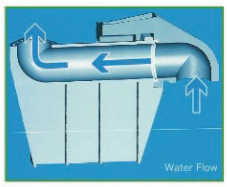
Phase
S: Single Phase
T: Three Phase

Voltage
1: 115V
2: 230V
3: 460V

High Pumping Capability With Guide Rail System

NORUS® guide rail system provides for easy removal and maintenance.
Anti-flotation design aids in installation.





The base connection utilizes a unique sealing design that minimizes leakage.

CR - Sewage Pumps

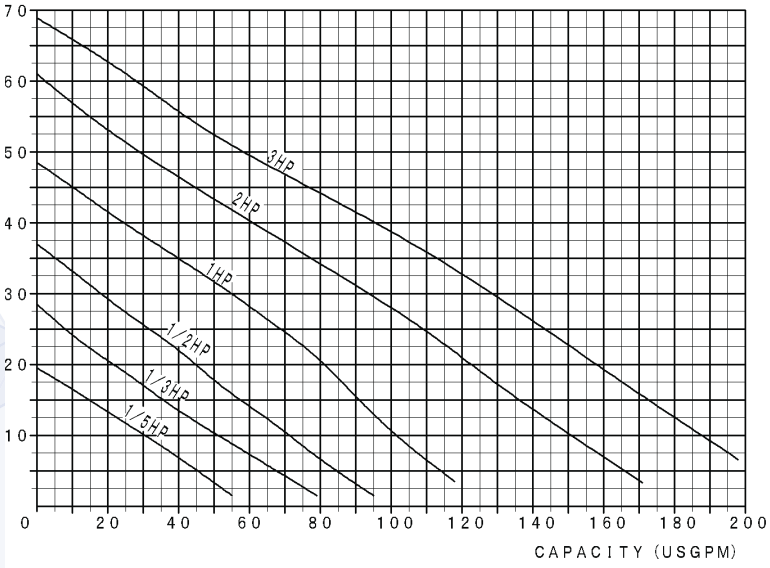
Lightweight Submersible Pump

APPLICATIONS

1. Commercial and Residential Raw Sewage.
2. Decorative Water Falls and Water Gardens.
3. Continuous Duty Drainage and Dewatering.
4. Septic, Effluent Sump Applications.
5. Water Transfer.

(Single/115V 1hp >)
(Three/230V 1hp >)

60Hz



Standard Specifications

Applicable Liquid	Liquid Type	Sewage and Wastewater or Water Containing Sludge	
	Liquid Temperature	0 ~ 104°F. (40°C)	
Motor	Type	Dry-Type Submersible Induction Motor (3,600rpm/60Hz)	
	Insulation Class	Class E	
	Phase/Voltage	Single/115V or 230V (1/5 ~ 1hp)	Three/230V or 460V (1/5 ~ 3hp)
	Starting Method	Condenser-Run	Direct-on-Line
Construction	Discharge Size	2" NPT (50mm)	2" NPT (50mm) for 1/5 ~1hp 3" NPT (80mm) for 2 ~ 3hp
	Impeller	Vortex	
	Solid Passage Diameter	1 1/4" (35mm)	1 1/4" (35mm) for 1/5 ~ 1hp 1 4/5" (46mm) for 2 ~ 3hp
	Shaft Seal	Double Mechanical Seal	
		Wet side: Silicon Carbide (SiC) x Silicon Carbide (SiC)	
		Motor side: Ceramic x Carbon (1/5 ~ 1hp)	SiC x SiC (2 ~ 3hp)
	Power Cable	20ft for 1/5hp 32ft for 1/3 ~ 1hp	20ft for 1/5hp 32ft for 1/3 ~ 3hp
Material	Pump Shaft	420J2 S.S.	420J2 S.S. for 1/5 ~ 1hp 304 S.S. for 2 ~ 3hp
	Stator Casing	304 S.S.	
	Pump Casing	Poly Amide Fiber Reinforced Resin	
	Bearing	Upper: Anti-creeping Pre-lubricated Double Shielded	
		Lower: Pre-lubricated Double Shielded	
	Impeller	Poly Amide Fiber Reinforced Resin	
Optional	Guide Rail	Connection, Lifting Chain, Sliding Bracket, Guide Holder, Shackle.	

NORUS® Model : CR Dimensions

NPT Dimensions (single phase/115V, three phase/230V)

		Pump Model	Con. Type	Bore (inch)	Phase	Output (hp)	Running Amps/Watts	Cap.-Head @ B.E.P. (gpm-ft)	Dimensions (inch)					Weight (lbs.)
									A	B	C	D	E	
Manual	CR	50CR2.15S-1	F50	2	1	1/5	3.0/328	26.42-11.48	14.96	8.11	5.67	5.91	12.99	12.2
		50CR2.25S-1	F50	2	1	1/3	4.4/414	34.34-15.75	15.51	9.45	6.89	5.91	12.99	15.5
		50CR2.4S-1	F50	2	1	1/2	5.5/567	42.27-21.0	15.67	9.45	6.89	6.10	13.19	18.1
		50CR2.75S-1	F50	2	1	1	10.0/1088	58.12-29.20	15.67	9.45	6.89	6.10	13.19	21.0
		50CR2.15T-2	F50	2	3	1/5	1.1/281	26.42-11.48	14.96	8.11	5.67	5.91	12.99	10.9
		50CR2.25T-2	F50	2	3	1/3	1.4/379	34.34-15.75	15.51	9.45	6.89	5.91	12.99	13.9
		50CR2.4T-2	F50	2	3	1/2	2.0/578	42.27-21.0	15.67	9.45	6.89	6.10	13.19	16.4
		50CR2.75T-2	F50	2	3	1	3.3/1045	58.12-29.20	15.67	9.45	6.89	6.10	13.19	19.5
		80CR21.5T-2	F80N	3	3	2	5.9/2041	105.67-25.92	20.35	11.61	7.99	7.09	17.72	35.9
		80CR22.2T-2	F80N	3	3	3	8.1/2771	105.67-37.07	21.34	11.61	7.99	7.09	18.50	41.9
Automatic		50CR2.15DS-1	F50	2	1	1/5	3.0/328	26.42-11.48	14.96	8.11	6.73	5.91	20.08	13.2
		50CR2.25DS-1	F50	2	1	1/3	4.4/414	34.34-15.75	15.51	9.45	7.95	5.91	20.28	16.5
		50CR2.4DS-1	F50	2	1	1/2	5.5/567	42.27-21.0	15.67	9.45	7.95	6.10	20.47	19.2
		50CR2.15DT-2	F50	2	3	1/5	1.1/281	26.42-11.48	14.96	8.11	6.73	5.91	20.08	11.9
		50CR2.25DT-2	F50	2	3	1/3	1.4/379	34.34-15.75	15.51	9.45	7.95	5.91	20.28	15.0
		50CR2.4DT-2	F50	2	3	1/2	2.0/578	42.27-21.0	15.67	9.45	7.95	6.10	20.47	17.4
		50CR2.75DT-2	F50	2	3	1	3.3/1045	58.12-29.20	15.67	9.45	7.95	6.10	20.47	20.5

Guide Rail Dimensionis (single phase/115V, three phase/230V)

		Pump Model	Con. Type	Bore (inch)	Phase	Output (hp)	Running Amps/Watts	Cap.-Head @ B.E.P. (gpm-ft)	Dimensions (inch)					Weight (lbs.)
									A	B	C	D	E	
Manual	CR	50CR2.15S-1	P50RL	2	1	1/5	3.0/328	26.42-10.82	15.55	17.16	5.67	6.50	13.58	12.2
		50CR2.25S-1	P50RL	2	1	1/3	4.4/414	34.34-14.11	16.10	18.50	6.89	6.50	13.58	15.5
		50CR2.4S-1	P50RL	2	1	1/2	5.5/567	42.27-19.68	16.10	18.50	6.89	6.50	13.58	18.1
		50CR2.75S-1	P50RL	2	1	1	10.0/1088	58.12-26.90	16.10	18.50	6.89	6.50	13.58	21.0
		50CR2.15T-2	P50RL	2	3	1/5	1.1/281	26.42-10.82	15.55	17.16	5.67	6.50	13.58	10.9
		50CR2.25T-2	P50RL	2	3	1/3	1.4/379	34.34-14.11	16.10	18.50	6.89	6.50	13.58	13.9
		50CR2.4T-2	P50RL	2	3	1/2	2.0/578	42.27-19.68	16.10	18.50	6.89	6.50	13.58	16.4
		50CR2.75T-2	P50RL	2	3	1	3.3/1045	58.12-26.90	16.10	18.50	6.89	6.50	13.58	19.5
		80CR21.5T-2	P80NR	3	3	2	5.9/2041	105.67-25.92	21.10	24.45	7.99	7.88	18.50	35.9
		80CR22.2T-2	P80NR	3	3	3	8.1/2771	105.67-37.07	22.09	24.45	7.99	7.88	19.29	41.9
Automatic		50CR2.15DS-1	P50RL	2	1	1/5	3.0/328	26.42-10.82	15.55	17.16	6.73	6.50	20.87	13.2
		50CR2.25DS-1	P50RL	2	1	1/3	4.4/414	34.34-14.11	16.10	18.50	7.95	6.50	20.87	16.5
		50CR2.4DS-1	P50RL	2	1	1/2	5.5/567	42.27-19.68	16.10	18.50	7.95	6.50	20.87	19.2
		50CR2.15DT-2	P50RL	2	3	1/5	1.1/281	26.42-10.82	15.55	17.16	6.73	6.50	20.87	11.9
		50CR2.25DT-2	P50RL	2	3	1/3	1.4/379	34.34-14.11	16.10	18.50	7.95	6.50	20.87	15.0
		50CR2.4DT-2	P50RL	2	3	1/2	2.0/578	42.27-19.68	16.10	18.50	7.95	6.50	20.87	17.4
		50CR2.75DT-2	P50RL	2	3	1	3.3/1045	58.12-26.90	16.10	18.50	7.95	6.50	20.87	20.5