

# TSURUMI UNIVERSE

## SERIES **NH** 50Hz

SUBMERSIBLE  
SEWAGE PUMPS

CHANNEL IMPELLER  
CUTTER IMPELLER  
VORTEX IMPELLER



# TSURUMI UNIVERSE

TSURUMI UNIVERSE is a brand of products from TSURUMI, a leading company in the field of submersible pumps for 100 years. It has been developed to further spread TSURUMI products to markets around the world. Based on years of research and achievements, the brand was developed with the aim of enhancing competitiveness, while providing qualities equivalent to conventional models and TSURUMI's original features and functions. Now, after thorough preparation, we are releasing our NH-series pumps under the brand name of TSURUMI UNIVERSE.



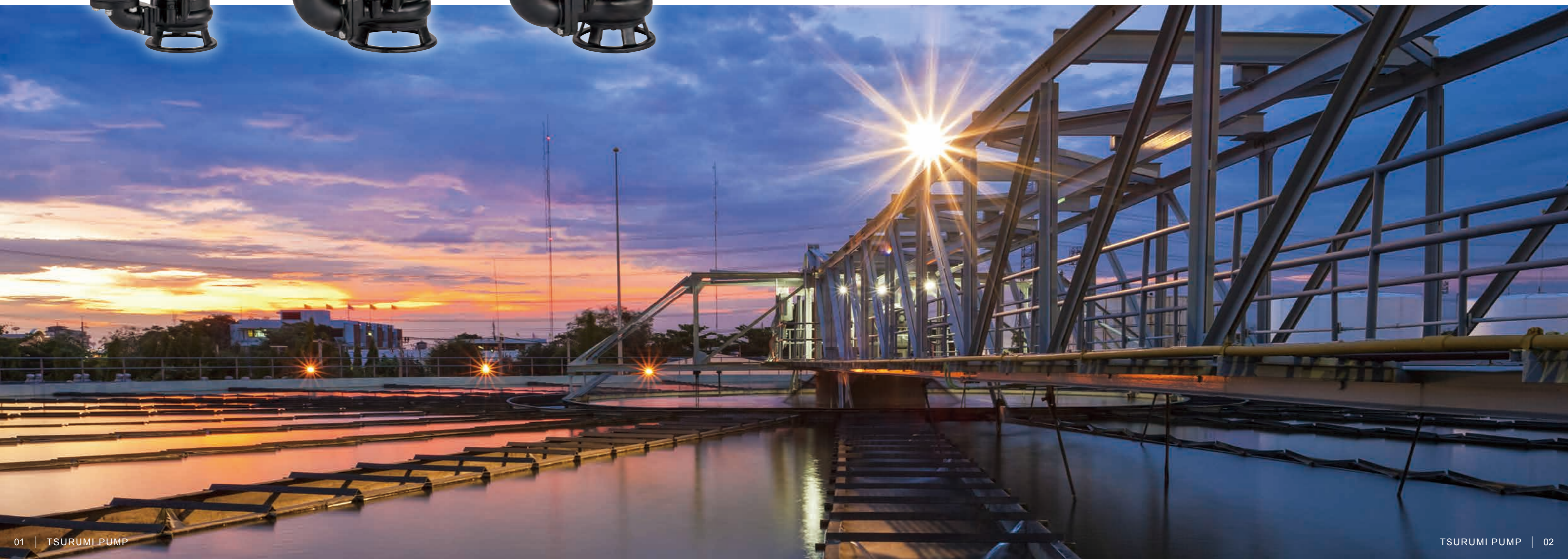
## Submersible Sewage Pumps

The NH-series pumps of the TSURUMI UNIVERSE brand are heavy-duty submersible sewage pumps made of cast iron. In addition to the wide range of specifications featuring 50 to 500 mm discharge bore diameters and 0.75 to 150 kW motor output capacities, the NH-series offers a variety of product lineups with three types of impellers: Channel, Cutter and Vortex types. The guide rail fitting device is applicable to all models, enabling easy installation and maintenance.

Equipped with a channel impeller, the NHB and NH-series are Tsurumi's basic type of pumps and provide excellent solids matter passage. The NHP-series, equipped with a closed impeller, is specifically designed for high head applications. The NHC-series features cutter pumps built with a combination of a channel impeller and a specially structured suction cover, in which a tungsten carbide alloy cutting edge is brazed to the impeller vane, thus enabling solid and fibrous matters to be shredded at the suction port while pumping. The NHU-series provides a semi-vortex structure equipped with a vortex impeller, whereby minimizing potential troubles caused by clogging of solid and fibrous matters.

The NH-series pumps are applicable to a wide spectrum of fields, such as raw water transfer in purifying tanks (Johkasou/septic tanks), wastewater treatment facilities, pumping stations and flood prevention equipment, and reservoirs of recreational facilities, as well as drainage of sewage and wastewater. These pumps integrate original technologies Tsurumi has perfected via years of research and achievements, to note our anti-wicking cable, dual inside mechanical seals with silicon carbide face, and Oil Lifter. In addition, with a design that thoroughly considers pump durability and wear resistance, these pumps enable continuous duty for a long period of time.

Tsurumi products feature a highly reliable design that ensures excellent durability and stable quality, contributes to stable operations of facilities, and results in remarkably reduced maintenance costs.



## Selection Table

		Sewage Pumps				
		NHB	NHC	NHU	NH	NHP
Discharge Bore	mm	50 - 500	50 • 80	50 • 80	50 - 150	65 • 100
Motor Output	kW	0.75 - 150	0.75 - 11	0.75 - 3.7	1.5 - 7.5	22 - 75
Pole		2 • 4 • 6 • 8	2	2	2	2
Impeller		<b>Channel</b>	<b>Cutter</b> (Channel Impeller with Cutting Edges)	<b>Vortex</b>	<b>Channel</b>	<b>Closed</b>
Flange Standard		DIN	JIS	JIS	JIS	DIN
Water Jacket		● (4-pole : 55kW and above 6-pole : 45kW and above)	—	—	—	—
Leakage Sensor		● (11kW and above)	● (11kW only)	—	—	●
Seal Pressure Relief Ports		● (22kW and above)	● (5.5 - 11kW only)	—	● (5.5 • 7.5kW only)	●
Back Pull-out Design		● (4-pole : 11 • 15 • 30 • 37 • 45kW 6-pole : 22 • 30 • 37kW 8-pole : 22kW)	—	● (2.2 • 3.7kW only)	—	—
Guide Rail Fitting System		●	●	●	●	●
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## IMPELLERS

### Channel



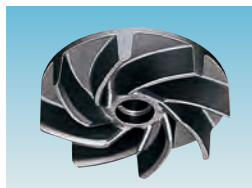
The impeller is shrouded type with one or two vanes. It has a wide channel extending from inlet to exit, which allows the pump to pass the solid matters from inflow to discharge with minimal blockage.

### Cutter



The impeller is a semi-open type with two vanes. Two sintered tungsten carbide alloy edges are brazed on two impeller vanes, and they rotate on a saw-tooth suction port of a suction cover. This mechanism allows to cut up the solid and fibrous matters flowed into the impeller to discharge them.

### Vortex



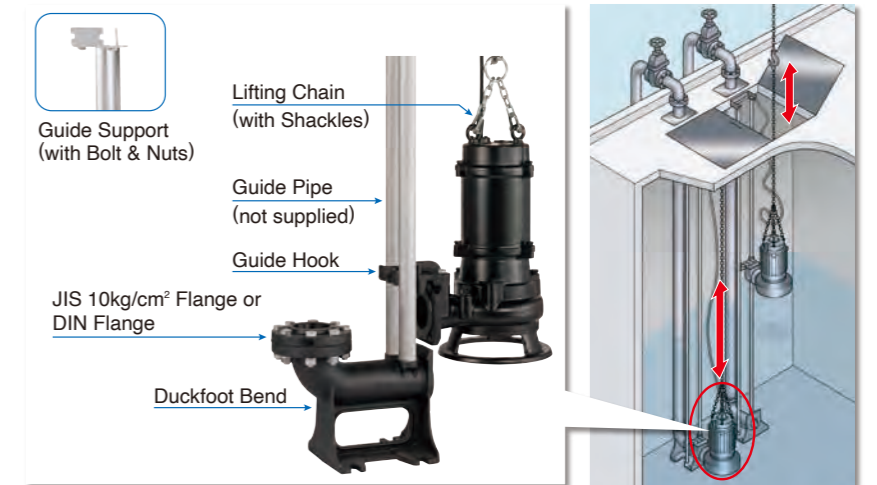
The impeller is a vortex type. The rotation of the impeller produces a whirling, centrifugal action between the impeller and pump casing. Being coupled with a wide pump casing, even large solids and fibrous matters can be pumped out without obstruction.

## Guide Rail Fitting System

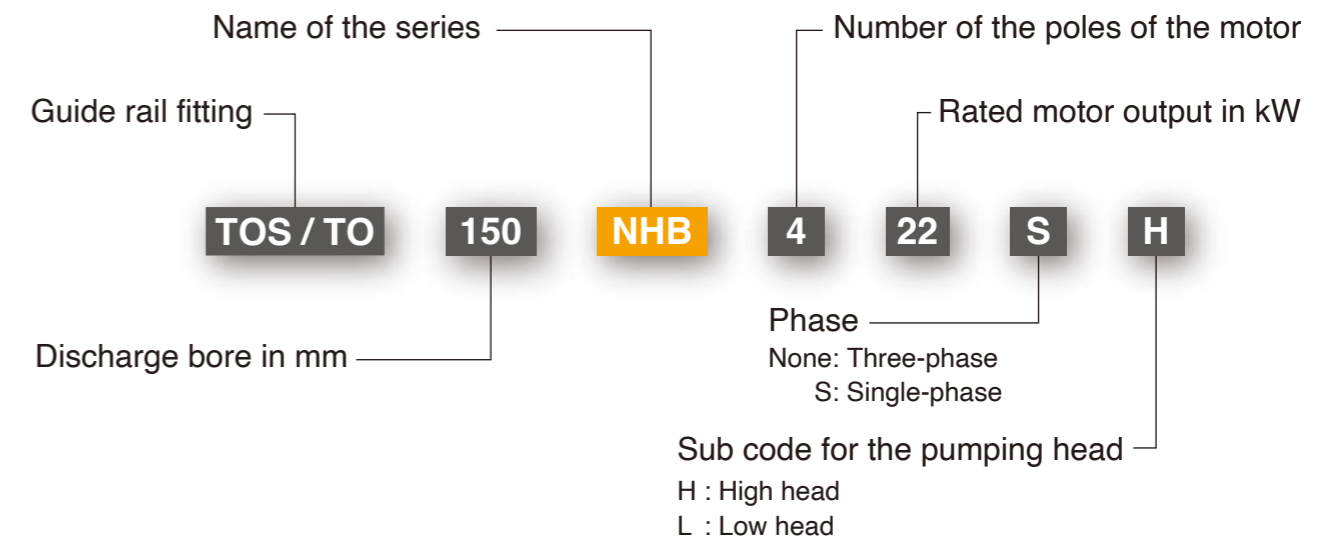
The guide rail fitting system connects the pump to and from the piping easily just by lowering and hoisting the pump, allowing easy maintenance and inspection without the need to enter the sump. The TOS/TO is the guide rail fitting system made of cast iron and is compatible with cast iron pumps.

### Accessories

- Duckfoot Bend
- Guide Support
- Guide Hook
- Lifting Chain 5m (with Shackles)
- JIS 10kg/cm<sup>2</sup> Flange or DIN Flange (TOS set only)



## Model Number Designation



## Float Switches

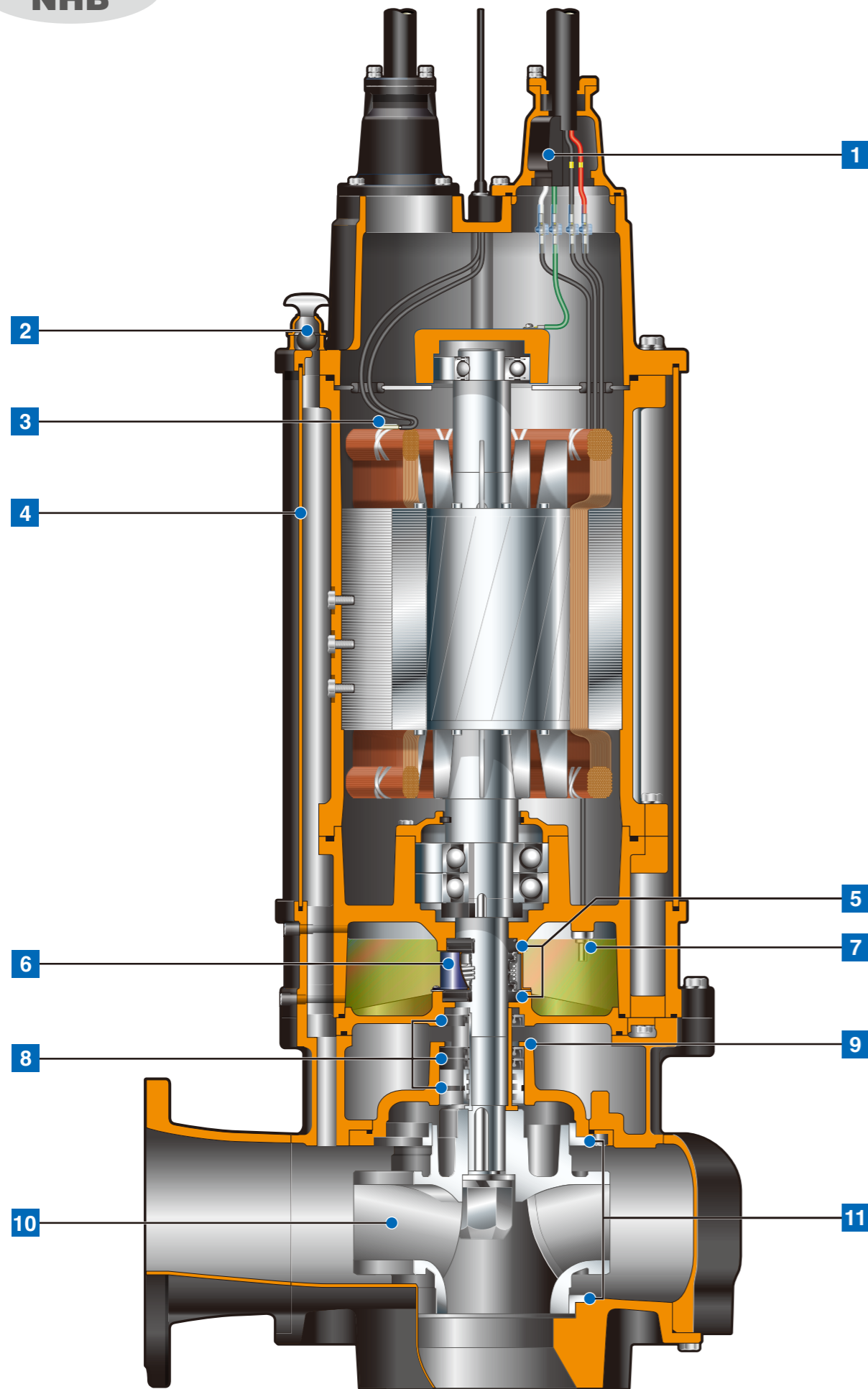
Tsurumi offers different types of float switches (liquid level sensors). A micro-switch is incorporated in all types. For details, refer to the float switches catalog [ID105].

**Model MT-1** is an economy-type float switch. A teardrop body design with an integrated counterweight, MT-1 float switch is an ideal water level sensor for highly dense scum-filled wastewater. Moreover, equipped with the SPDT switch, it can be used as a water level sensor for filling as well as emptying operations.



**Model MC-2** is a heavy-duty type float switch with a shock absorber. Having equipped with a high grade micro switch, the MC-2 assures trouble-free operation in the liquid containing much suspended solids and floating scum. Either of the two contacts, normally-open or normally-close, can be selected as required.





**1 Anti-wicking Cable Entry**

Prevents water incursion due to capillary action should the cable sheath be damaged or the end of cable submerged. Also prevents moist air from infiltrating the motor housing and condensation from forming inside the housing due to temperature differences between the housing and outside air.

**2 Air Release Valve** \*excluding some models

Fitted on/into the water jacket and/or the pump casing to prevent the air lock. When air flows through the valve, the ball stays at the bottom, but when the pumped water starts to flow, the ball closes the outlet because of its buoyancy.

**3 Motor Protector**

**Circle Thermal Protector** (7.5kW and below)

Directly cuts the motor circuit if excessive heat builds up or overcurrent occurs in the motor.

**Miniature Thermal Protectors** (11kW and above)

React to excessive heat caused by dry-running. The bimetal strip opens to cause the control panel to shut the power supply.

**4 Water Jacket** (NHB 55kW and above for 4-pole, 45kW and above for 6-pole)

The pump is equipped with a water jacket, around the motor frame. A portion of the pumped liquid is allowed to flow into the water jacket to cool the motor. This design feature permits the unit to operate at low water levels for extended periods of time.

**5 Dual Inside Mechanical Seals with Silicon Carbide Faces**

Isolated in the oil chamber where a clean, non-corrosive and abrasion-free lubricating environment is maintained. Compared with the water-cooled outside mechanical seal, it reduces the risk of failure caused by dry-heating and adhering matter. The silicon carbide provides 5 times higher corrosion, wear and heat resistance than the tungsten carbide. Rubber parts of the upper and lower fixing rings are made of NBR or FPM (FKM), which provides higher resistance to heat and chemicals.

**6 Oil Lifter** \*excluding NHB 90kW and above

Provides lubrication and cooling of the seal faces down to 1/3 of normal oil level, thus maintaining a stable shaft sealing effect and prolonging seal life longer. The Oil Lifter is Tsurumi original design.

**7 Leakage Sensor** (11kW and above)

Detects flooding into the oil chamber that may occur in a worst case scenario. When flooding is detected, signals are sent to operate the indicator lamps through the external control panel.

**8 Oil Seals + Labyrinth Ring** (NHB 55kW, 75kW for 4-pole and NHP)

Used as a "Dust Seal", a number of oil seals protect the mechanical seal from abrasive particles. The labyrinth ring is equipped to provide a better countermeasure against wear caused by high pressure generated in the casing and improve the maintainability.

**9 Seal Pressure Relief Ports** (NHB 22kW and above, NH 5.5kW and above, NHC 5.5kW and above, and NHP)

Protect the mechanical seal from pump pressure. They also protect the seal face by discharging wear particles.

**10 Cast Iron Channel Impeller** (NHB and NH)

**Cast Iron Cutter Impeller** (NHC)

**Cast Iron Vortex Impeller** (NHU)

**304 Stainless Steel Casting Impeller** (NHP)

Minimizes potential troubles caused by clogging of solids, fibers and other waste material in pumped fluids.

**11 Mouth Ring & Wear Ring** (NHB 22kW and above, excluding 150NHB422H and 150NHB422)

Prevent wear in the pump casing and suction cover, resulting in reduced maintenance costs.

# NHB -Channel Impeller, 50 - 250mm-

The NHB-series is a submersible channel impeller pump designed for handling raw sewage, wastewater and heavy-duty industrial applications, where the pump is subject to complete submersion and requires maximum reliability. A shrouded channel impeller practically prevents internal clogging and enables the pump to efficiently transfer sewage and wastewater containing solid matters. It is available as an extended line-up from 50 to 500mm discharge bores, 0.75 to 150kW.



100NHB45.5

200NHB475

TOS100NHB45.5

Discharge Bore mm	Model		Motor Output kW	Starting Method	Dimensions L x W x H mm		Dry Weight* <sup>2</sup> kg		Cable Length m
	Free Standing	Guide Rail Fitting			Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting	
50	50NHB2.75	TOS50NHB2.75	0.75	D.O.L.	380 x 216 x 414	596 x 216 x 486	26	24	6
80	80NHB21.5	TOS80NHB21.5	1.5	D.O.L.	442 x 242 x 480	629 x 242 x 545	39	36	6
100	100NHB42.2	TOS100NHB42.2	2.2	D.O.L.	596 x 324 x 643	754 x 324 x 658	76	63	6
100	100NHB43.7	TOS100NHB43.7	3.7	D.O.L.	601 x 333 x 717	759 x 333 x 727	86	73	6
100	100NHB43.7H	TOS100NHB43.7H	3.7	D.O.L.	603 x 344 x 693	761 x 344 x 708	88	75	6
100	100NHB45.5	TOS100NHB45.5	5.5	D.O.L.* <sup>1</sup>	689 x 410 x 908	905 x 384 x 906	145	132	6
100	100NHB47.5	TOS100NHB47.5	7.5	D.O.L.* <sup>1</sup>	689 x 410 x 929	905 x 384 x 927	158	145	6
150	150NHB47.5L	TOS150NHB47.5L	7.5	D.O.L.* <sup>1</sup>	858 x 486 x 1085	1065 x 459 x 1030	221	192	6
150	150NHB411	TOS150NHB411	11	Star-Delta	882 x 490 x 1097	1089 x 465 x 1052	243	213	8
150	150NHB415	TOS150NHB415	15	Star-Delta	882 x 490 x 1167	1089 x 465 x 1122	259	234	8
150	150NHB422H	TOS150NHB422H	22	Star-Delta	884 x 492 x 1281	1092 x 470 x 1241	347	317	8
150	150NHB422	TOS150NHB422	22	Star-Delta	884 x 492 x 1282	1092 x 470 x 1241	347	317	8
150	150NHB437	TO150NHB437	37	Star-Delta	1072 x 724 x 1567	1305 x 612 x 1399	547	486	8
150	150NHB455	TO150NHB455	55	Star-Delta	1120 x 726 x 1663	1391 x 686 x 1557	877	838	8
200	200NHB411	TO200NHB411	11	Star-Delta	947 x 485 x 1113	1257 x 458 x 1078	262	257	8
200	200NHB415	TO200NHB415	15	Star-Delta	925 x 472 x 1184	1235 x 440 x 1144	287	282	8
200	200NHB437	TO200NHB437	37	Star-Delta	1191 x 724 x 1590	1432 x 611 x 1477	562	503	8
200	200NHB455	TO200NHB455	55	Star-Delta	1189 x 726 x 1663	1470 x 686 x 1577	912	875	8
200	200NHB475	TO200NHB475	75	Star-Delta	1189 x 726 x 1663	1470 x 686 x 1577	992	955	8
250	250NHB622	TO250NHB622	22	Star-Delta	1314 x 760 x 1654	1587 x 675 x 1593	789	698	8
250	250NHB430	TO250NHB430	30	Star-Delta	1296 x 724 x 1517	1567 x 637 x 1450	551	473	8
250	250NHB437	TO250NHB437	37	Star-Delta	1296 x 724 x 1594	1567 x 637 x 1527	611	533	8
250	250NHB445	TO250NHB445	45	Star-Delta	1314 x 760 x 1556	1581 x 668 x 1497	711	620	8
250	250NHB475	TO250NHB475	75	Star-Delta	1384 x 750 x 1663	1702 x 725 x 1606	1050	995	8

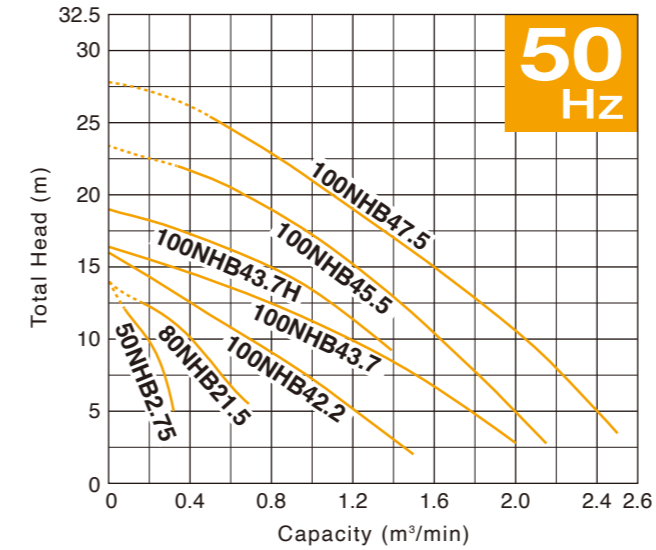
\*1 Star-Delta available upon request

\*2 All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend

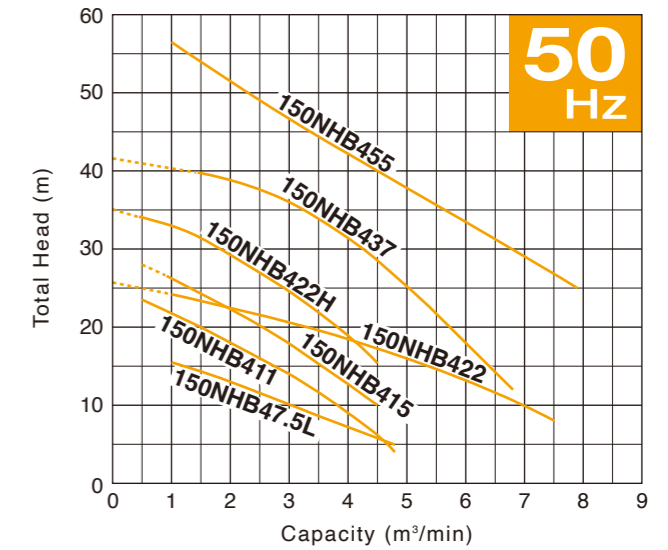
## Performance Curves

It is not recommended to operate the unit continuously along the dashed curve.

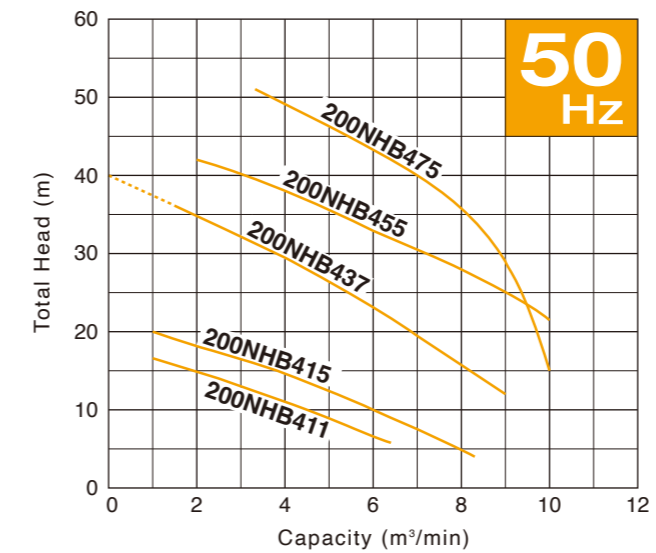
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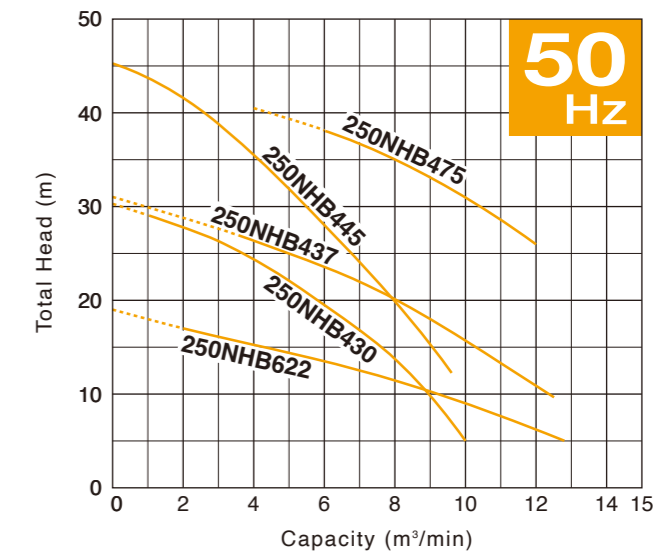
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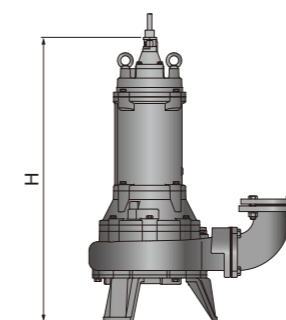
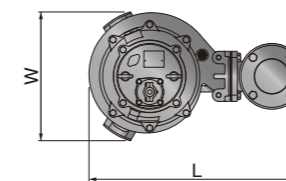


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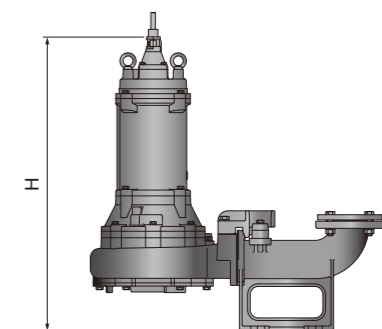
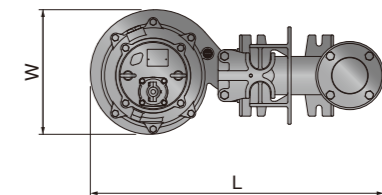


## Dimensions

Free Standing



Guide Rail Fitting



# NHB -Channel Impeller, 300 - 500mm-

The NHB-series is a submersible channel impeller pump designed for handling raw sewage, wastewater and heavy-duty industrial applications, where the pump is subject to complete submersion and requires maximum reliability. A shrouded channel impeller practically prevents internal clogging and enables the pump to efficiently transfer sewage and wastewater containing solid matters. It is available as an extended line-up from 100 to 500mm discharge bores, 5.5 to 150kW.



300NHB645

500NHB6150

Discharge Bore mm	Model		Motor Output kW	Starting Method	Dimensions L x W x H*1 mm		Dry Weight**2 kg		Cable Length m
	Free Standing	Guide Rail Fitting			Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting	
300	300NHB622	TO300NHB622	22	Star-Delta	1367 x 760 x 1663	1690 x 654 x 1616	818	724	8
300	300NHB630	TO300NHB630	30	Star-Delta	1367 x 760 x 1663	1690 x 654 x 1616	860	766	8
300	300NHB637	TO300NHB637	37	Star-Delta	1367 x 760 x 1663	1690 x 654 x 1616	889	795	8
300	300NHB445	TO300NHB445	45	Star-Delta	1349 x 724 x 1605	1672 x 654 x 1536	775	695	8
300	300NHB645	TO300NHB645	45	Star-Delta	1415 x 830 x 1772	1783 x 654 x 1755	1260	1110	8
300	300NHB655	TO300NHB655	55	Star-Delta	1415 x 830 x 1772	1783 x 654 x 1755	1310	1160	8
350	350NHB822	TO350NHB822	22	Star-Delta	1495 x 790 x 1703	1846 x 731 x 1718	923	832	8
350	350NHB630	TO350NHB630	30	Star-Delta	1495 x 790 x 1703	1846 x 731 x 1718	914	823	8
350	350NHB637	TO350NHB637	37	Star-Delta	1495 x 790 x 1703	1846 x 731 x 1718	941	850	8
350	350NHB490	TO350NHB490	90	Star-Delta	1591 x 881 x 2745	1926 x 877 x 2750	2390	2240	8
350	350NHB4110	TO350NHB4110	110	Star-Delta	1591 x 881 x 2745	1926 x 877 x 2750	2520	2370	8
350	350NHB4132	TO350NHB4132	132	Star-Delta	1616 x 906 x 2755	1950 x 898 x 2760	2590	2430	8
350	350NHB4150	TO350NHB4150	150	Star-Delta	1616 x 906 x 2755	1950 x 898 x 2760	2760	2600	8
400	400NHB645	TO400NHB645	45	Star-Delta	1590 x 792 x 1817	2143 x 792 x 1895	1300	1250	8
400	400NHB655	TO400NHB655	55	Star-Delta	1590 x 792 x 1817	2143 x 792 x 1895	1330	1280	8
400	400NHB675	TO400NHB675	75	Star-Delta	1590 x 784 x 1817	2143 x 784 x 1895	1470	1410	8
400	400NHB690	TO400NHB690	90	Star-Delta	1832 x 1058 x 2851	2368 x 1039 x 2875	2950	2850	8
400	400NHB6110	TO400NHB6110	110	Star-Delta	1832 x 1058 x 2851	2368 x 1039 x 2875	2970	2860	8
400	400NHB6132	TO400NHB6132	132	Star-Delta	1832 x 1087 x 2856	2368 x 1071 x 2880	3110	3010	8
400	400NHB6150	TO400NHB6150	150	Star-Delta	1832 x 1087 x 2856	2368 x 1071 x 2880	3240	3140	8
500	500NHB675	TO500NHB675	75	Star-Delta	2229 x 1188 x 1926	2815 x 1188 x 2091	1960	1820	8
500	500NHB690	TO500NHB690	90	Star-Delta	2229 x 1216 x 2916	2815 x 1216 x 2978	2960	2890	8
500	500NHB6110	TO500NHB6110	110	Star-Delta	2229 x 1216 x 2916	2815 x 1216 x 2978	2980	2900	8
500	500NHB6132	TO500NHB6132	132	Star-Delta	2324 x 1269 x 2955	2911 x 1269 x 2978	3230	3140	8
500	500NHB6150	TO500NHB6150	150	Star-Delta	2324 x 1269 x 2955	2911 x 1269 x 2978	3370	3270	8

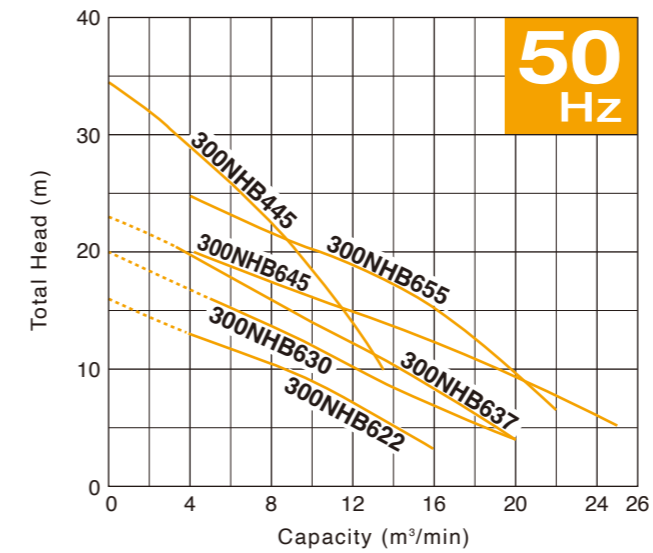
\*1 Refer to page 8 for dimension symbol positions.

\*\*2 All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend

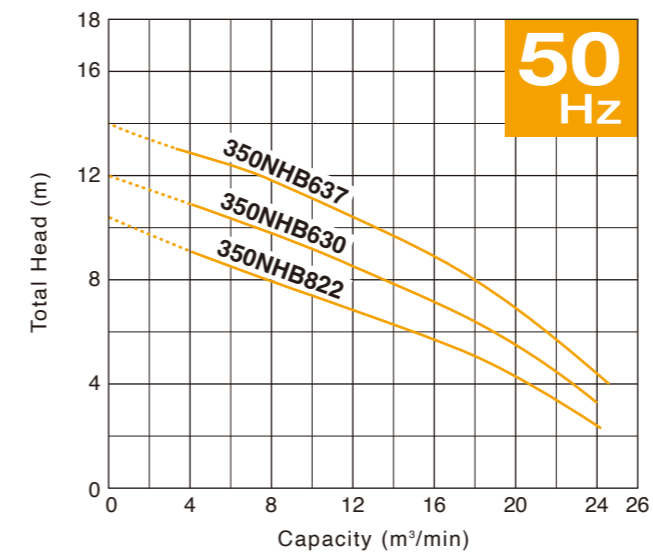
## Performance Curves

It is not recommended to operate the unit continuously along the dashed curve.

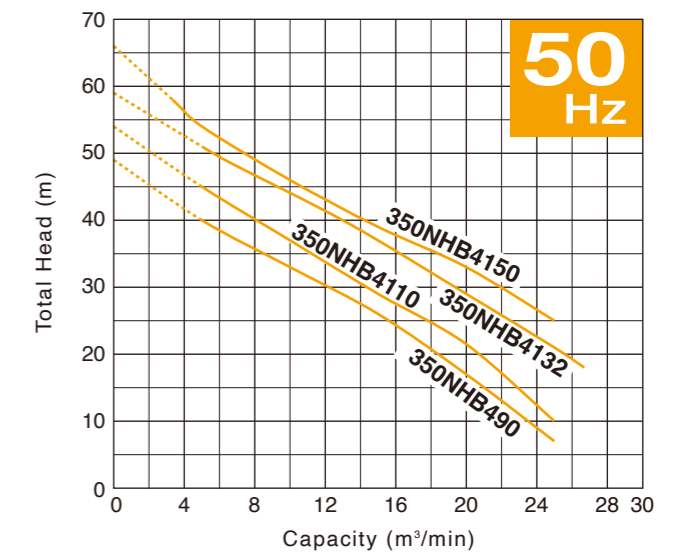
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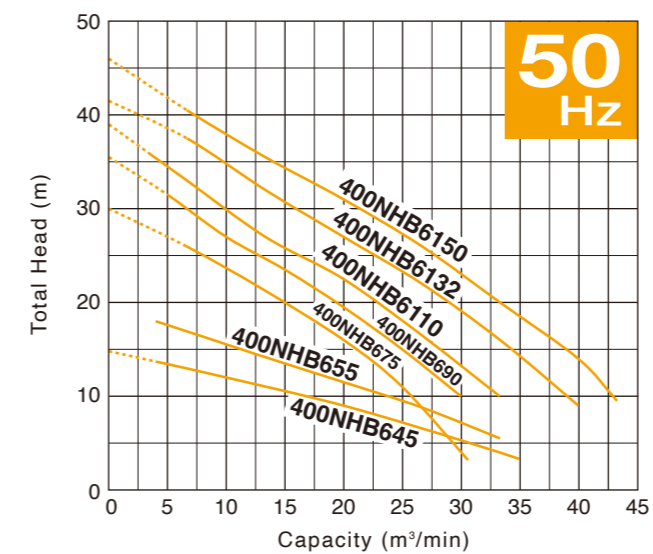
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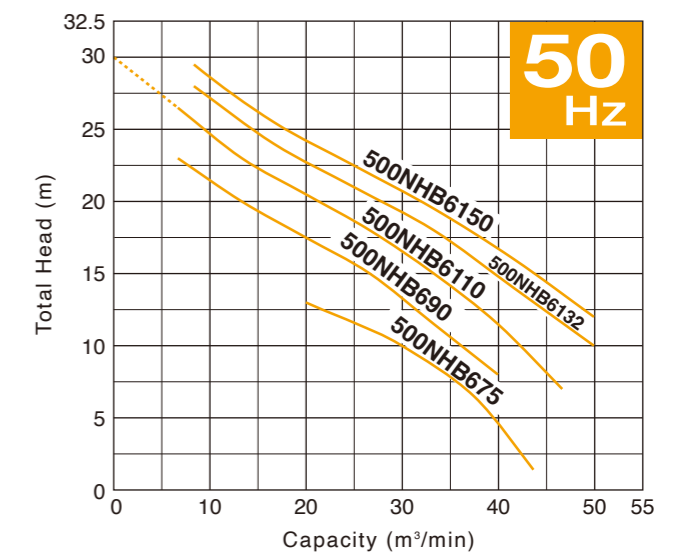
< 350mm, 90 - 150kW >



< 400mm >



< 500mm >



# NHC –Cutter Impeller, 2-pole–

The NHC-series is a submersible cutter pump designed for handling raw sewage, wastewater, and heavy-duty industrial applications, where the pump is subject to clogging from oversize material. Two tungsten carbide alloy edges blazed on the impeller vane on the serrated suction cover. This mechanism cuts incoming fibrous material into pieces, permitting smooth passage of fibrous material.



80NHC23.7

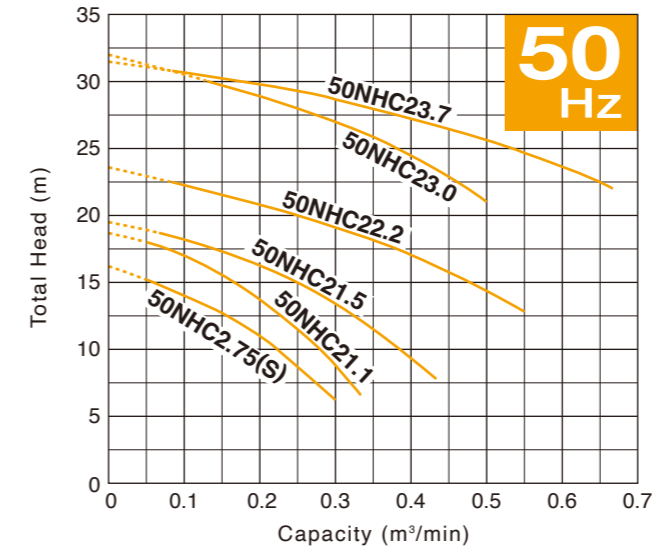
80NHC25.5

TOS80NHC23.7

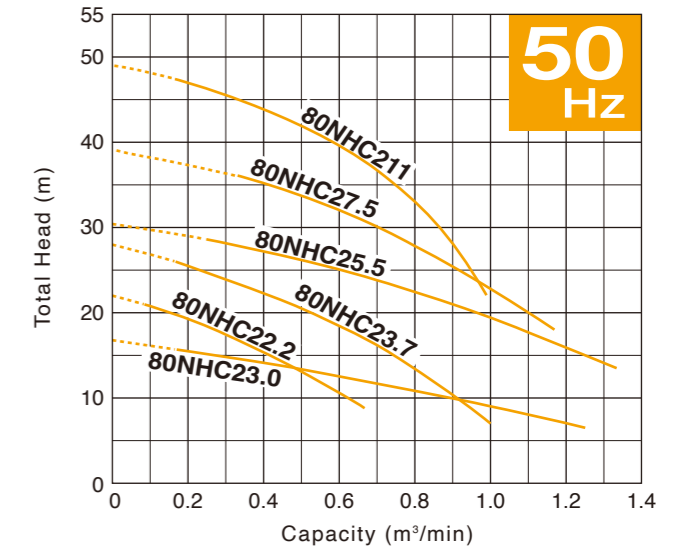
## Performance Curves

It is not recommended to operate the unit continuously along the dashed curve.

< 50mm >



< 80mm >



## Cutting Mechanism: Impeller & Suction Cover

Two sintered tungsten carbide alloy edges are brazed onto the impeller vane, and they rotate on the serrated part of the suction cover. Incoming fibrous materials are cut up by this mechanism, and this prevents clogging in the pump discharge pipes or valves.



Cutter Pump Operation

Discharge Bore mm	Model		Motor Output kW	Starting Method	Dimensions L x W x H*1 mm		Dry Weight**2 kg		Cable Length m
	Free Standing	Guide Rail Fitting			Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting	
50	50NHC2.75S	TOS50NHC2.75S	0.75	Capacitor Start + Capacitor Run	380 x 216 x 486	596 x 216 x 558	28	26	6
50	50NHC2.75	TOS50NHC2.75	0.75	D.O.L.	380 x 216 x 414	596 x 216 x 486	26	23	6
50	50NHC21.1	TOS50NHC21.1	1.1	D.O.L.	380 x 216 x 414	596 x 216 x 486	26	23	6
50	50NHC21.5	TOS50NHC21.5	1.5	D.O.L.	451 x 238 x 468	633 x 238 x 534	41	37	6
50	50NHC22.2	TOS50NHC22.2	2.2	D.O.L.	454 x 238 x 510	637 x 238 x 569	44	39	6
50	50NHC23.0	TOS50NHC23.0	3.0	D.O.L.	469 x 256 x 540	652 x 256 x 597	51	47	6
50	50NHC23.7	TOS50NHC23.7	3.7	D.O.L.	513 x 278 x 557	695 x 278 x 611	56	52	6
80	80NHC22.2	TOS80NHC22.2	2.2	D.O.L.	517 x 259 x 577	691 x 259 x 604	55	48	6
80	80NHC23.0	TOS80NHC23.0	3.0	D.O.L.	515 x 272 x 585	688 x 272 x 627	55	48	6
80	80NHC23.7	TOS80NHC23.7	3.7	D.O.L.	517 x 259 x 610	691 x 259 x 637	67	60	6
80	80NHC25.5	TOS80NHC25.5	5.5	D.O.L.	615 x 346 x 879	788 x 320 x 877	115	102	6
80	80NHC27.5	TOS80NHC27.5	7.5	D.O.L.	615 x 346 x 879	788 x 320 x 877	128	115	6
80	80NHC211	TOS80NHC211	11	Star-Delta	615 x 346 x 927	788 x 320 x 925	154	141	8

\*1 Refer to page 8 for dimension symbol positions.

\*\*2 All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend



# NHU –Vortex Impeller, 2-pole–

The NHU-series is a heavy-duty submersible pump equipped with a vortex impeller for pumping sewage and wastewater. The semi-vortex design provides a solids passage that is 70% or more\* of the discharge bore, thus reducing troubles caused by the clogging of fibrous solids to a minimum. Rotation of the impeller produces vortex flow in the pump casing, which allows those solid matters to be pumped out with minimum contact to the impeller.

\* excluding model 80NHU21.5



50NHU2.75

80NHU22.2

Discharge Bore mm	Model		Motor Output kW	Starting Method	Solids Passage mm	Dimensions L x W x H* mm		Dry Weight* <sup>2</sup> kg		Cable Length m
	Free Standing	Guide Rail Fitting				Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting	
50	50NHU2.75	TOS50NHU2.75	0.75	D.O.L.	35	364 x 168 x 430	580 x 168 x 518	23	21	6
50	50NHU21.5	TOS50NHU21.5	1.5	D.O.L.	35	406 x 202 x 466	622 x 202 x 549	31	30	6
80	80NHU21.5	TOS80NHU21.5	1.5	D.O.L.	46	420 x 202 x 489	607 x 202 x 577	36	33	6
80	80NHU22.2	TOS80NHU22.2	2.2	D.O.L.	56	502 x 234 x 539	641 x 234 x 624	50	42	6
80	80NHU23.7	TOS80NHU23.7	3.7	D.O.L.	56	502 x 234 x 572	641 x 234 x 657	58	50	6

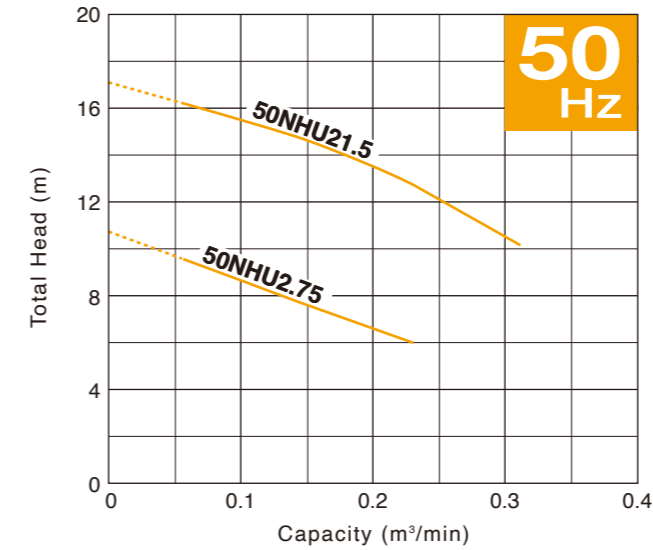
\*1 Refer to page 8 for dimension symbol positions.

\*2 All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend

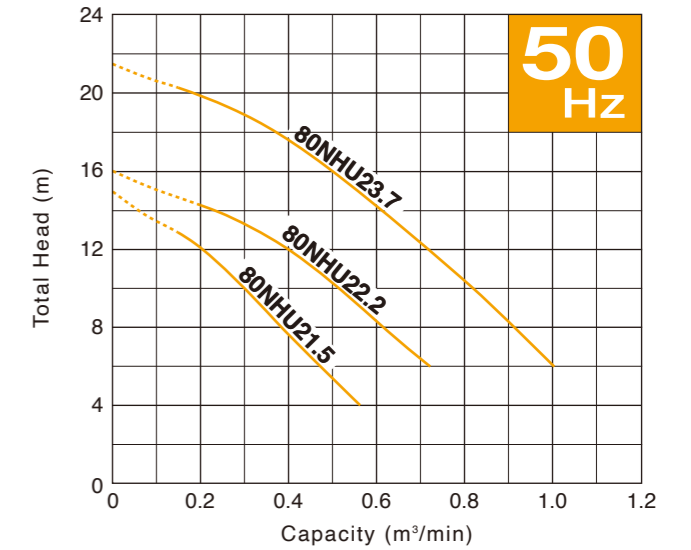
## Performance Curves

It is not recommended to operate the unit continuously along the dashed curve.

< 50mm >



< 80mm >



## Semi-vortex Structure for Passing Solids (Vortex Impeller)

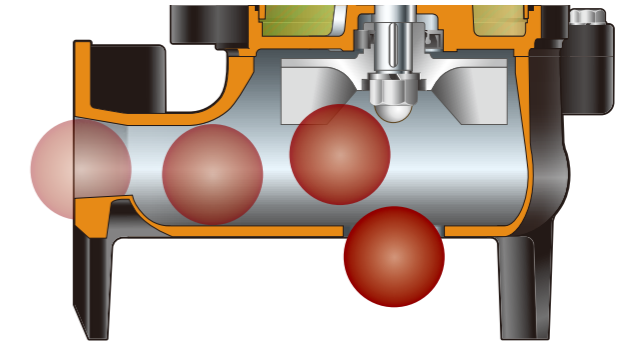
– Solids upwards of 70%\* of discharge bore passed through the pump –

As the NHU-series pump's impeller rotates, centrifugal forces create a vortex between the impeller and pump casing, causing fluid to flow through the pump. The wide casing and semi-vortex structure combine to minimize trouble due to clogging of solids and fibrous material.

\* excluding model 80NHU21.5



Vortex Impeller



# NH –Channel Impeller, 2-pole–

The NH-series is a cast iron made, submersible sewage pump utilizing 2-pole motor. This impeller is a shrouded two-channel impeller. Each channel is designed to have a larger area and it enables the pump to be suitable for pumping wastewater containing a certain size of solids. The pumps are available in six motor sizes ranging from 1.5 to 7.5kW and available in either High Head or High Volume Type.



50NH21.5



100NH25.5

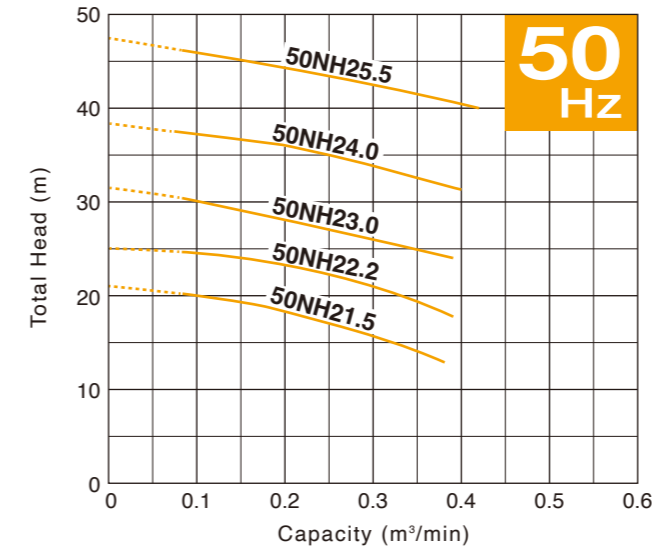


TOS80NH24.0

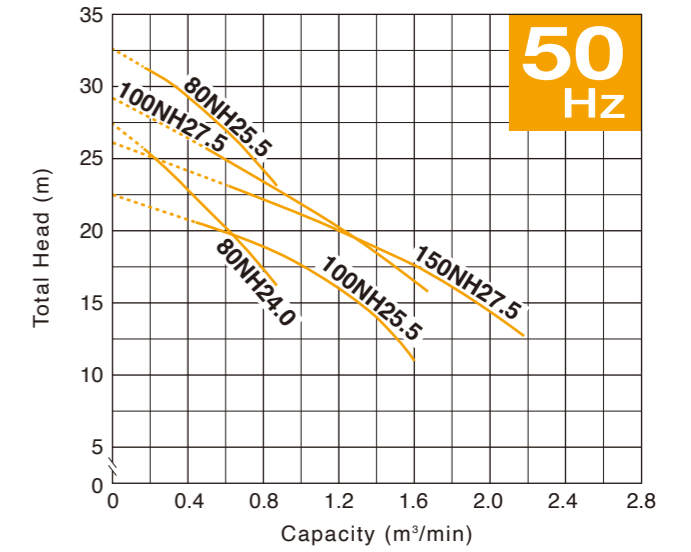
## Performance Curves

It is not recommended to operate the unit continuously along the dashed curve.

< High Head Type >



< High Volume Type >



Discharge Bore mm	Model		Motor Output kW	Starting Method	Dimensions L x W x H*1 mm		Dry Weight*2 kg		Cable Length m
	Free Standing	Guide Rail Fitting			Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting	
50	50NH21.5	TOS50NH21.5	1.5	D.O.L.	452 x 240 x 475	634 x 240 x 534	40	36	6
50	50NH22.2	TOS50NH22.2	2.2	D.O.L.	454 x 242 x 510	637 x 242 x 568	44	40	6
50	50NH23.0	TOS50NH23.0	3.0	D.O.L.	474 x 266 x 540	657 x 266 x 597	51	47	6
50	50NH24.0	TOS50NH24.0	4.0	D.O.L.	515 x 284 x 557	698 x 284 x 611	57	52	6
50	50NH25.5	TOS50NH25.5	5.5	D.O.L.	540 x 320 x 798	723 x 320 x 841	93	88	6
80	80NH24.0	TOS80NH24.0	4.0	D.O.L.	538 x 278 x 563	712 x 278 x 631	63	55	6
80	80NH25.5	TOS80NH25.5	5.5	D.O.L.	544 x 290 x 804	718 x 290 x 857	99	91	6
100	100NH25.5	TOS100NH25.5	5.5	D.O.L.	585 x 288 x 835	804 x 288 x 910	107	97	6
100	100NH27.5	TOS100NH27.5	7.5	D.O.L.	622 x 310 x 832	841 x 310 x 905	117	107	6
150	150NH27.5	TOS150NH27.5	7.5	D.O.L.	727 x 328 x 850	921 x 328 x 972	146	120	6

\*1 Refer to page 8 for dimension symbol positions.

\*2 All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend



# NHP –Closed Impeller, 2-pole–

The NHP-series is a submersible pump with a shrouded closed impeller, designed for high head applications such as pumping rainwater and river-sourced water, as well as spring water from underground or draining treated water at wastewater treatment plants. Equipped with a strainer, the pumps are suitable for water intake from rivers and for rainwater drainage at simplified pumping stations.



65NHP222



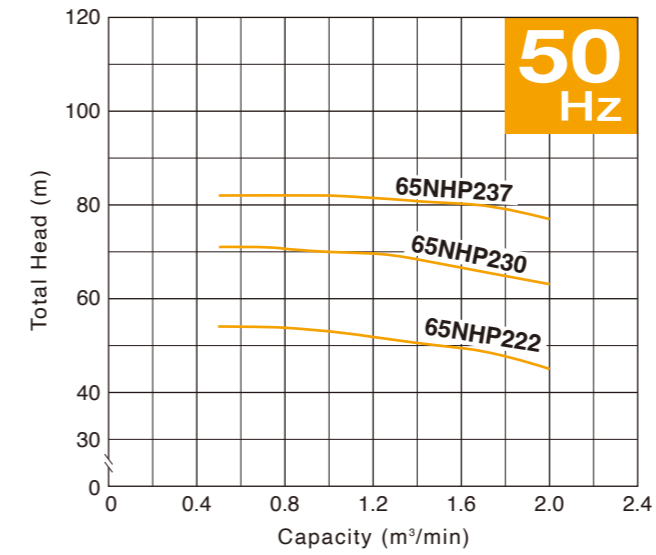
TOS65NHP222

Discharge Bore mm	Model		Motor Output kW	Starting Method	Dimensions L x W x H mm		Dry Weight* kg		Cable Length m
	Free Standing	Guide Rail Fitting			Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting	
65	65NHP222	TOS65NHP222	22	Star-Delta	692 x 402 x 1227	856 x 402 x 1357	300	290	8
65	65NHP230	TOS65NHP230	30	Star-Delta	692 x 402 x 1227	856 x 402 x 1357	320	310	8
65	65NHP237	TOS65NHP237	37	Star-Delta	692 x 402 x 1227	856 x 402 x 1357	340	330	8
100	100NHP245	TOS100NHP245	45	Star-Delta	806 x 434 x 1439	985 x 434 x 1569	440	440	8
100	100NHP255	TOS100NHP255	55	Star-Delta	806 x 434 x 1439	985 x 434 x 1569	470	470	8
100	100NHP275	TOS100NHP275	75	Star-Delta	806 x 434 x 1504	985 x 434 x 1634	540	540	8

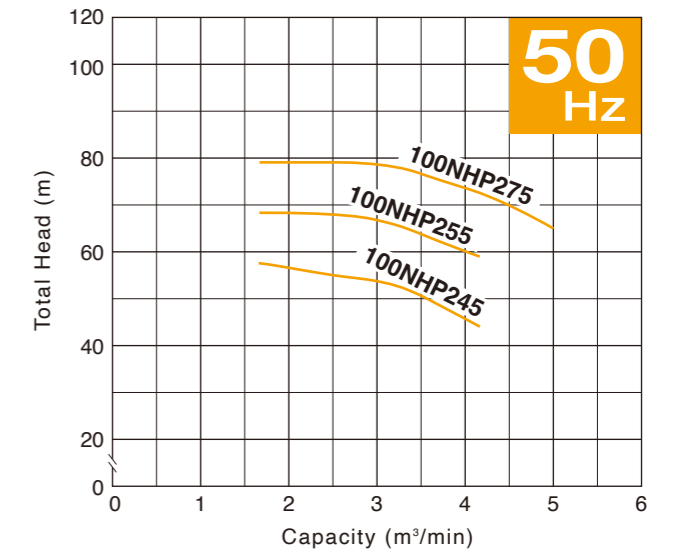
\* All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend

## Performance Curves

< 65mm >

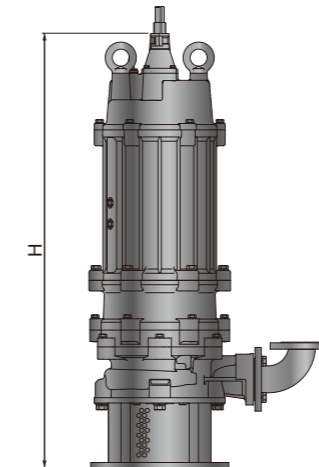
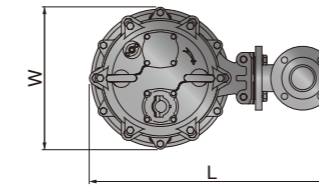


< 100mm >

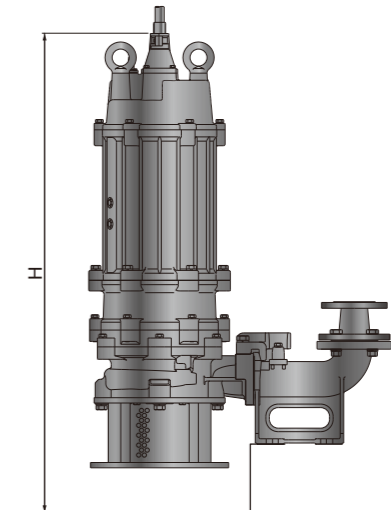
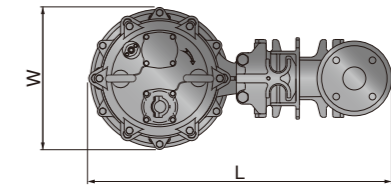


## Dimensions

Free Standing



Guide Rail Fitting



# Specifications 50Hz

		NHB										NHB																
		50NHB 2.75	80NHB 21.5	100NHB 42.2	100NHB 43.7	100NHB 43.7H	100NHB 45.5	100NHB 47.5	150NHB 47.5L	150NHB 411	150NHB 415	150NHB 422H	150NHB 422	150NHB 437	150NHB 455	200NHB 411	200NHB 415	200NHB 437	200NHB 455	200NHB 475	250NHB 622	250NHB 430	250NHB 437	250NHB 445	250NHB 475			
PUMP	Discharge Bore mm	50	80	100					150			150					200					250						
	Discharge Connection	Threaded Oval Flange*2		Threaded JIS 10kg/cm <sup>2</sup> Flange			DIN PN6 Flange (come with Threaded Companion Flange)					DIN PN6 Flange (come with Threaded Companion Flange)					DIN PN6 Flange											
	Impeller	Shrouded Two-channel		Semi-open Single-channel		Semi-open Two-channel	Shrouded Single-channel		Shrouded Two-channel	Shrouded Single-channel		Shrouded Single-channel	Shrouded Two-channel															
		Radial Gap		Axial Gap			Radial Gap		Axial Gap			Axial Gap		Radial Gap		Axial Gap		Radial Gap										
			Gray Cast Iron										Gray Cast Iron															
	Suction Cover	Ductile Cast Iron		Gray Cast Iron										Gray Cast Iron														
	Mouth Ring & Wear Ring	—										—	Gray Cast Iron		—	Gray Cast Iron												
	Oil Seal	Nitrile Butadiene Rubber										Nitrile Butadiene Rubber																
	Labyrinth Ring	—										—	304 Stainless Steel		—	304 Stainless Steel		—	304 Stainless Steel									
	Casing	Ductile Cast Iron					Gray Cast Iron					Gray Cast Iron																
Shaft Seal	Dual Inside Mechanical Seals (with Oil Lifter)										Dual Inside Mechanical Seals (with Oil Lifter)																	
	Silicon Carbide										Silicon Carbide																	
Shaft Sleeve	—										—	410 Stainless Steel		—	410 Stainless Steel													
MOTOR	Type	Continuous-duty Rated, Dry-type Induction Motor										Continuous-duty Rated, Dry-type Induction Motor																
	Output kW	0.75	1.5	2.2	3.7		5.5	7.5	11	15	22					37	55	11	15	37	55	75	22	30	37	45	75	
	Phase	Three										Three																
	Pole	2			4							4					6		4									
	Speed (S.S.) min <sup>-1</sup>	3000			1500							1500					1000		1500									
	Insulation	H										H																
	Starting Method	D.O.L.					D.O.L.*3			Star-Delta		Star-Delta																
	Motor Protector (built-in)	CTP					MTP			MTP																		
	Leakage Sensor (built-in)	—					Electrode			Electrode																		
	Lubricant ml	500	940	1300	1200		4200	4600	5200	5100	4600					9100	9600	5200	5100	9100	9600	9100	8600	9100	9600			
		Turbine Oil (ISO VG32)										Turbine Oil (ISO VG32)																
	Frame	Gray Cast Iron										Gray Cast Iron																
	Outer Cover	—										—	Rolled Steel		—	Rolled Steel		—	Rolled Steel									
	Shaft	420 Stainless Steel										420 Stainless Steel																
Power Cable m	6					8					8																	
	Chloroprene Rubber										Chloroprene Rubber																	
Dry Weight*1 kg	Free Standing	26	39	76	86	88	145	158	221	243	259	347	547	877	262	287	562	912	992	789	551	611	711	1050				
	Guide Rail Fitting	24	36	63	73	73	132	145	192	213	234	317	486	838	257	282	503	875	955	698	473	533	620	995				

\*1 All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend

\*3 Star-Delta available upon request

\*2 Discharge connection for guide rail fitting is a threaded JIS 10kg/cm<sup>2</sup> flange.

# Specifications 50Hz

		NHB										NHB														
		300NHB622	300NHB630	300NHB637	300NHB445	300NHB645	300NHB655	350NHB822	350NHB630	350NHB637	350NHB490	350NHB4110	350NHB4132	350NHB4150	400NHB645	400NHB655	400NHB675	400NHB690	400NHB6110	400NHB6132	400NHB6150	500NHB675	500NHB690	500NHB6110	500NHB6132	500NHB6150
PUMP	Discharge Bore mm	300					350					350					400					500				
	Discharge Connection	DIN PN6 Flange										DIN PN6 Flange					DIN PN10 Flange									
	Impeller	Shrouded Two-channel										Shrouded Two-channel														
		Radial Gap										Radial Gap														
		Gray Cast Iron										Gray Cast Iron														
	Suction Cover	Gray Cast Iron										Gray Cast Iron														
	Mouth Ring & Wear Ring	Gray Cast Iron										Gray Cast Iron														
	Oil Seal	Nitrile Butadiene Rubber										Nitrile Butadiene Rubber														
	Casing	Gray Cast Iron										Gray Cast Iron														
	Shaft Seal	Dual Inside Mechanical Seals (with Oil Lifter)* <sup>2</sup>										Dual Inside Mechanical Seals (with Oil Lifter)* <sup>2</sup>														
Silicon Carbide										Silicon Carbide																
Shaft Sleeve	410 Stainless Steel										410 Stainless Steel															
MOTOR	Type	Continuous-duty Rated, Dry-type Induction Motor										Continuous-duty Rated, Dry-type Induction Motor														
	Output kW	22	30	37	45	55	22	30	37	90	110	132	150	45	55	75	90	110	132	150	75	90	110	132	150	
	Phase	Three										Three														
	Pole	6		4	6	8	6	4		4					6											
	Speed (S.S.) min <sup>-1</sup>	1000		1500	1000	750	1000	1500		1500					1000											
	Insulation	H					F					F					H		F			H		F		
	Starting Method	Star-Delta										Star-Delta														
	Motor Protector (built-in)	MTP										MTP														
	Leakage Sensor (built-in)	Electrode										Electrode														
	Lubricant ml	9100				14000	9100			25000			25000		9100	14000		25000			14000	25000				
		Turbine Oil (ISO VG32)										Turbine Oil (ISO VG32)														
	Frame	Gray Cast Iron										Gray Cast Iron														
	Outer Cover	—			Rolled Steel		—			Rolled Steel		Rolled Steel														
	Shaft	420 Stainless Steel										420 Stainless Steel														
	Power Cable m	8										8														
Chloroprene Rubber										Chloroprene Rubber																
Dry Weight* <sup>1</sup>	Free Standing kg	818	860	889	775	1260	1310	923	914	941	2390	2520	2590	2760	1300	1330	1470	2950	2970	3110	3240	1960	2960	2980	3230	3370
	Guide Rail Fitting kg	724	766	795	695	1110	1160	832	823	850	2240	2370	2430	2600	1250	1280	1410	2850	2860	3010	3140	1820	2890	2900	3140	3270

\*<sup>1</sup> All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend

\*<sup>2</sup> Excluding NHB 90kW, 110kW, 132kW, 150kW models

# Specifications 50Hz

		NHC												NHU					NH																							
		50NHC 2.75S	50NHC 2.75	50NHC 21.1	50NHC 21.5	50NHC 22.2	50NHC 23.0	50NHC 23.7	80NHC 22.2	80NHC 23.0	80NHC 23.7	80NHC 25.5	80NHC 27.5	80NHC 211	50NHU2.75	50NHU21.5	80NHU21.5	80NHU22.2	80NHU23.7	50NH21.5	50NH22.2	50NH23.0	50NH24.0	50NH25.5	80NH24.0	80NH25.5	100NH25.5	100NH27.5	150NH27.5													
PUMP	Discharge Bore mm	50						80											50		80			50				80		100		150										
	Discharge Connection	Threaded Oval Flange *2		Threaded JIS 10kg/cm <sup>2</sup> Flange																	Threaded Oval Flange *2		Threaded JIS 10kg/cm <sup>2</sup> Flange																			
	Impeller	Cutter (Semi-open Two-channel Impeller with Two Cutting Edges)													Vortex					Shrouded Two-channel																						
		Gray Cast Iron with Tungsten Carbide Alloy													Gray Cast Iron																											
	Suction Cover	Ductile Cast Iron												Gray Cast Iron					Gray Cast Iron																							
	Oil Seal	Nitrile Butadiene Rubber																																								
	Casing	Gray Cast Iron																																								
	Shaft Seal	Dual Inside Mechanical Seals (with Oil Lifter)																																								
		Silicon Carbide																																								
Shaft Sleeve	—									410 Stainless Steel		—	—																													
MOTOR	Type	Continuous-duty Rated, Dry-type Induction Motor												Continuous-duty Rated, Dry-type Induction Motor																												
	Output kW	0.75		1.1	1.5	2.2	3.0	3.7	2.2	3.0	3.7	5.5	7.5	11	0.75	1.5		2.2	3.7	1.5	2.2	3.0	4.0	5.5	4.0	5.5	7.5															
	Phase	Single		Three										Three																												
	Pole	2																																								
	Speed (S.S.) min <sup>-1</sup>	3000																																								
	Insulation	F		H										H																												
	Starting Method	Capacitor Start + Capacitor Run		D.O.L.										Star-Delta		D.O.L.																										
	Motor Protector (built-in)	CTP										MTP		CTP																												
	Leakage Sensor (built-in)	—										Electrode		—																												
	Lubricant ml	500		940	1160	1100	1300	1160	1100	1300	2140	2000																	500	940	1160	1300	940	1160	1100	1300	2140	1300	2140	2000		
		Turbine Oil (ISO VG32)															Turbine Oil (ISO VG32)																									
	Frame	Gray Cast Iron																																								
	Shaft	420 Stainless Steel																																								
Power Cable m	6										8		6																													
	Chloroprene Rubber															Chloroprene Rubber																										
Dry Weight*1	Free Standing kg	28	26	41	44	51	56	55	67	115	128	154																23	31	36	50	58	40	44	51	57	93	63	99	107	117	146
	Guide Rail Fitting kg	26	23	37	39	47	52	48	60	102	115	141																21	30	33	42	50	36	40	47	52	88	55	91	97	107	120

\*1 All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend

\*2 Discharge connection for guide rail fitting is a threaded JIS 10kg/cm<sup>2</sup> flange.

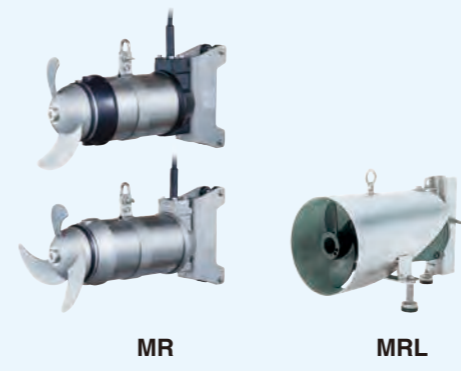
# Specifications 50Hz

		NHP					
		65NHP222	65NHP230	65NHP237	100NHP245	100NHP255	100NHP275
PUMP	Discharge Bore mm	65			100		
	Discharge Connection	DIN PN10 Flange					
	Impeller	Closed					
		Radial Gap					
		304 Stainless Steel Casting					
	Suction Cover	Ductile Cast Iron					
	Mouth Ring & Wear Ring	—					
	Oil Seal	Nitrile Butadiene Rubber					
	Casing	Ductile Cast Iron					
	Shaft Seal	Dual Inside Mechanical Seals (with Oil Lifter)					
Silicon Carbide							
Shaft Sleeve	420 Stainless Steel						
MOTOR	Type	Continuous-duty Rated, Dry-type Induction Motor					
	Output kW	22	30	37	45	55	75
	Phase	Three					
	Pole	2					
	Speed (S.S.) min <sup>-1</sup>	3000					
	Insulation	H					
	Starting Method	Star-Delta					
	Motor Protector (built-in)	MTP					
	Leakage Sensor (built-in)	Electrode					
	Lubricant ml	4800			8300		
		Turbine Oil (ISO VG32)					
	Frame	Gray Cast Iron					
	Outer Cover	—					
	Shaft	420 Stainless Steel					
Power Cable m	8						
	Chloroprene Rubber						
Dry Weight*1 kg	Free Standing	300	320	340	440	470	540
	Guide Rail Fitting	290	310	330	440	470	540

\*1 All weights excluding cable  
Weights of guide rail fitting excluding duckfoot bend

# Wastewater Treatment Equipment

Tsurumi can supply wastewater treatment equipment as a total package.



MR

MRL

### Submersible Mixers

- Generate powerful jet of water using a propeller
- Low water level type designed to operate in water as shallow as 500 mm [MRL]
- Available in wide variations, including cast iron or stainless steel casting construction

Flow Rate: 1.32 - 42 m<sup>3</sup>/min  
Motor Output: 0.25 - 7.5 kW



FSP

### Floating Scum Skimmers

- Collection of floating scum in the wastewater treatment
- Water, air and scum are drawn simultaneously by jet-injector mechanism
- Keep suction mouth relative position with the water surface

Discharge Bore: 50 mm  
Motor Output: 0.4 - 0.75 kW



MDQ / MDC

JD

### Multi-disc Dehydrators

- Wide product lineup; treating capacity in a range of 3 to 216 kgDS/h
- Utilize both gravity filtration and screw displacement compression systems [MDQ / MDC]
- Utilize both gravity filtration and compression dehydration systems [JD]
- Major parts made of stainless steel

Treating Capacity: 3 - 216 kgDS/h  
Total Motor Output: 0.6 - 3.15 kW

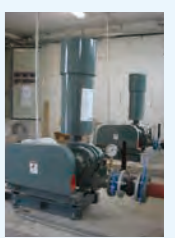


TSR

### Rotary Air Blowers

- Precisely machined, well-balanced 3-lobe rotor reduces the pulsating noise and vibration.
- Double-sided oil chamber design effectively maintains lower temperatures during high-pressure and high-speed operations in comparison to traditional models.

Discharge Bore: 50 - 300 mm  
Air Volume: 0.90 - 120.66 m<sup>3</sup>/min



KE / KS / KM / KW

### Bar Screens

- Screening wastewater
- Available in front screen type or rear screen type
- Major parts made of stainless steel

Bar Spacing: 1 - 50 mm  
Motor Output: 0.09 - 0.1 kW  
Max. Capacity: 223 m<sup>3</sup>/h





We reserve the right to change the specifications and designs without prior notice. The OO series and model OO are indicated with our series/model codes in this catalog.

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