

TSURUMI UNIVERSE

SERIES
NH 60Hz

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 75 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 **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
Discharge Bore	mm	100 – 500	50 • 80	50 • 80	50 – 150
Motor Output	kW	5.5 – 75	0.75 – 11	0.75 – 3.7	1.5 – 7.5
Pole		4 • 6 • 8	2	2	2
Impeller		Channel	Cutter (Channel Impeller with Cutting Edges)	Vortex	Channel
Flange Standard		DIN	JIS	JIS	JIS
Water Jacket		● (4-pole : 55 • 75kW only) (6-pole : 45 • 75kW only)			
Leakage Sensor		● (11 – 75kW only)			
Seal Pressure Relief Ports		● (22 – 75kW only)	● (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



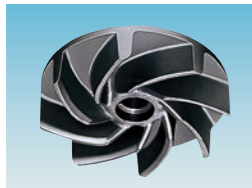
The impeller is shrouded type with one or two vanes. It has a wide channel extending from inlet to exit, which allows the pump to pass the solid matters from inflow to discharge with minimal blockage.

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



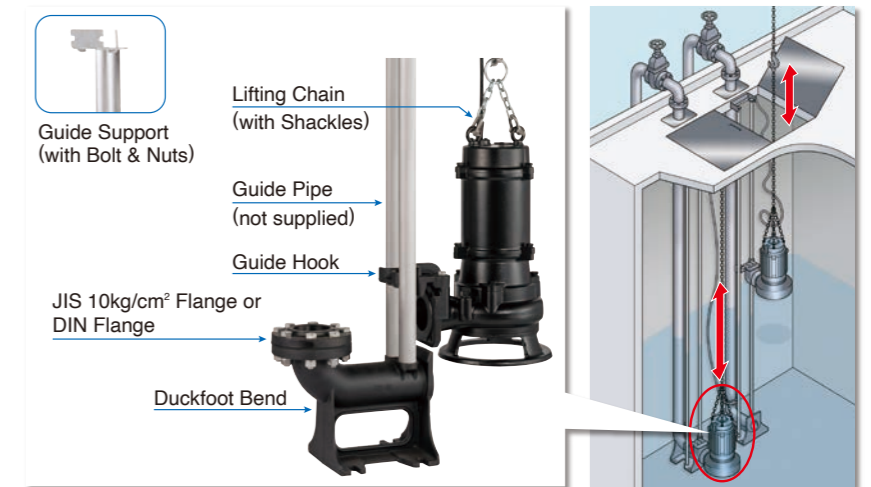
The impeller is a vortex type. The rotation of the impeller produces a whirling, centrifugal action between the impeller and pump casing. Being coupled with a wide pump casing, even large solids and fibrous matters can be pumped out without obstruction.

Guide Rail Fitting System

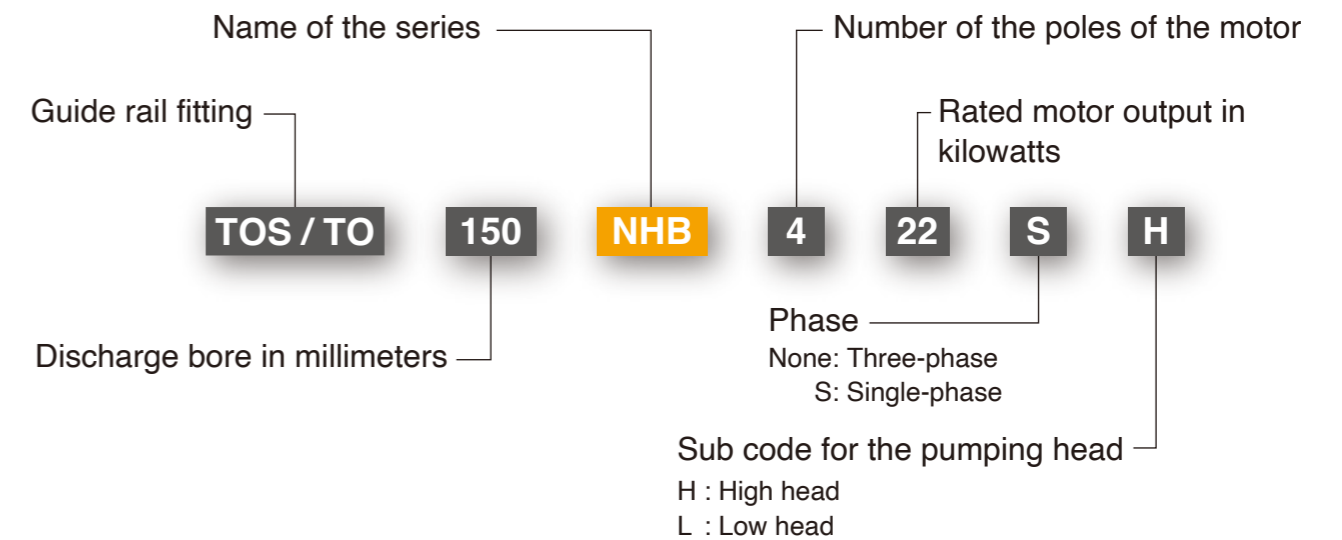
The guide rail fitting system connects the pump to and from the piping easily just by lowering and hoisting the pump, allowing easy maintenance and inspection without the need to enter the sump. The TOS/TO is the guide rail fitting system made of cast iron and is compatible with cast iron pumps.

Accessories

- Duckfoot Bend
- Guide Support
- Guide Hook
- Lifting Chain 5m (with Shackles)
- JIS 10kg/cm² Flange or DIN Flange (TOS set only)



Model Number Designation



Float Switches

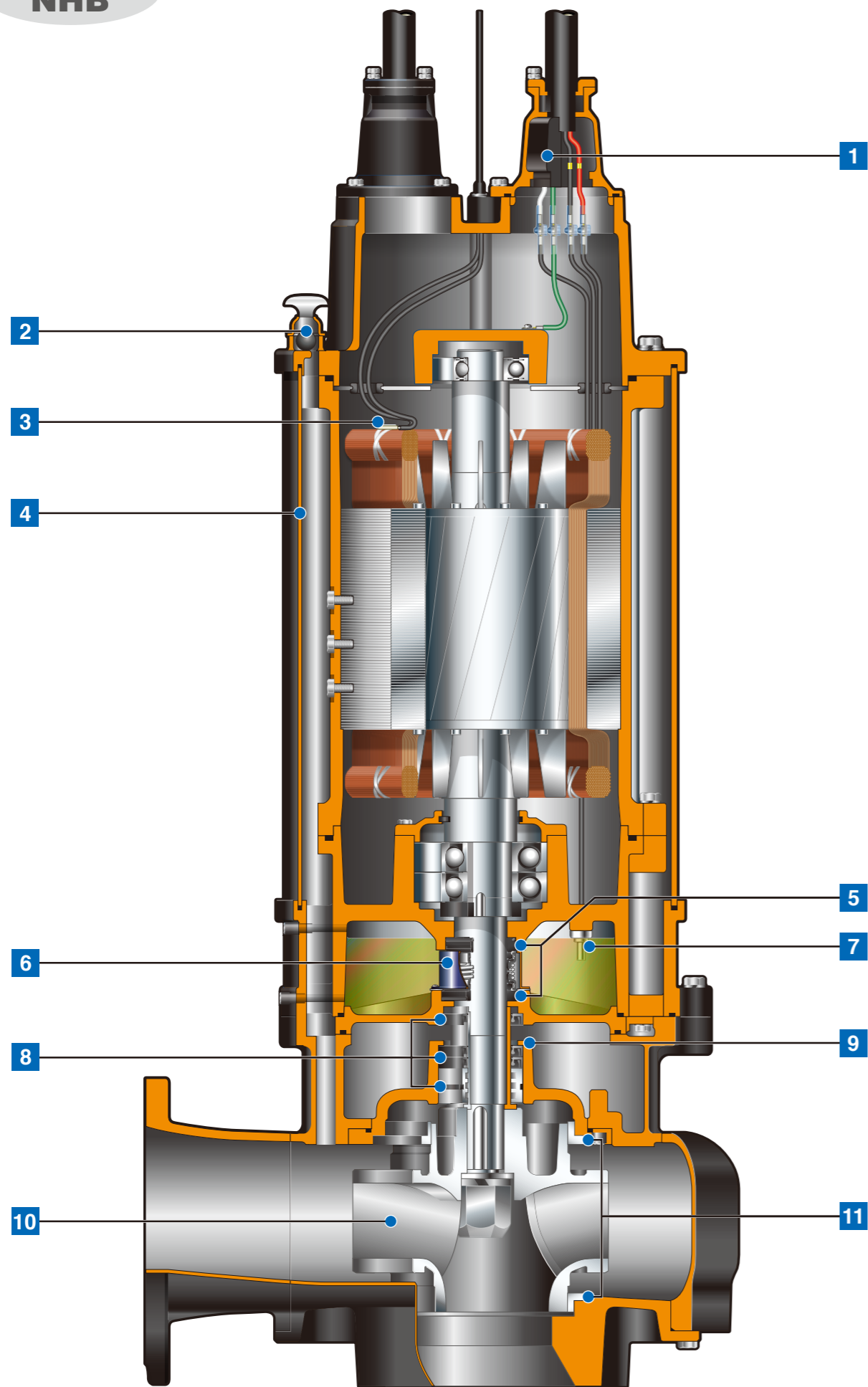
Tsurumi offers different types of float switches (liquid level sensors). A micro-switch is incorporated in all types. For details, refer to the float switches catalog [ID105].

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

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 Single/Triple/Quadruple Oil Seals + Labyrinth Ring (NHB 55kW and above for 4-pole)

Used as a "Dust Seal", a number of oil seals from 1 to 4 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 for pumps of 55kW and above for 4-pole.

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

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)

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, 100 - 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 100 to 500mm discharge bores, 5.5 to 75kW.



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	
100	100NHB45.5	TOS100NHB45.5	5.5	D.O.L.*1	689 x 410 x 908	905 x 384 x 906	145	132	6
100	100NHB47.5	TOS100NHB47.5	7.5	D.O.L.*1	689 x 410 x 929	905 x 384 x 927	158	145	6
150	150NHB47.5L	TOS150NHB47.5L	7.5	D.O.L.*1	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

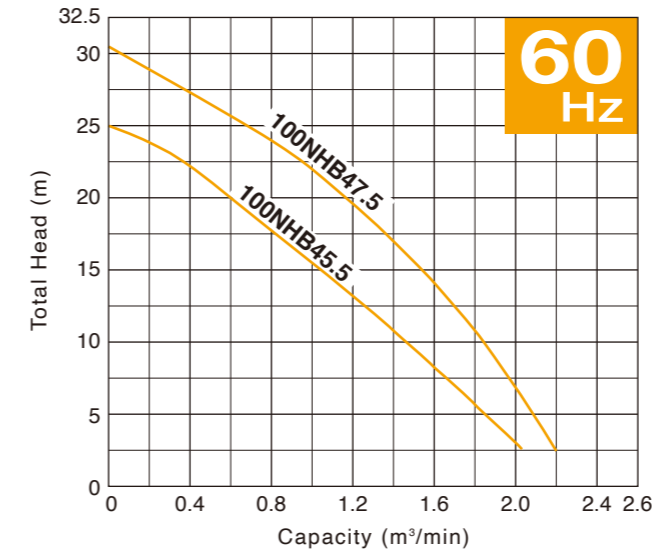
*1 Star-Delta available upon request

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

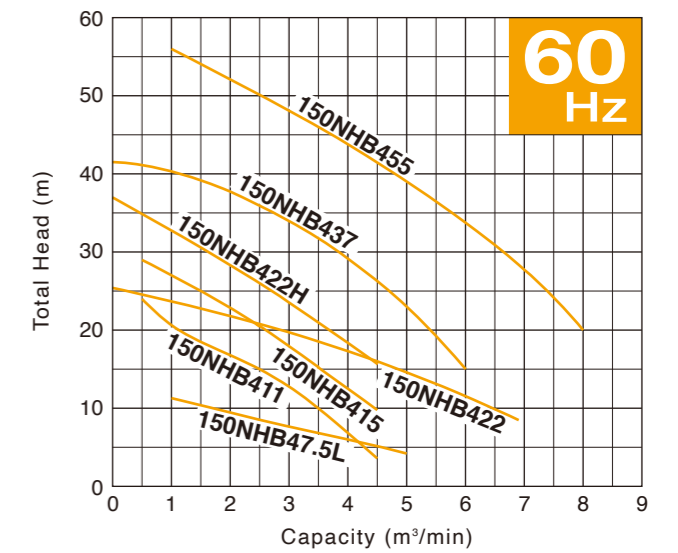
Performance Curves

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

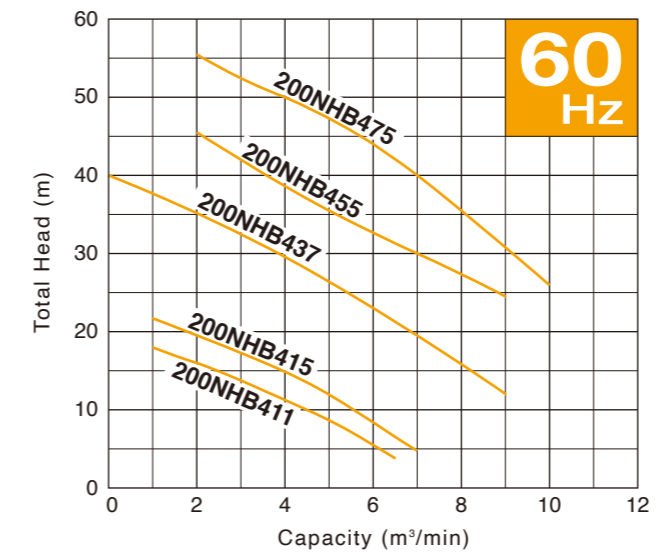
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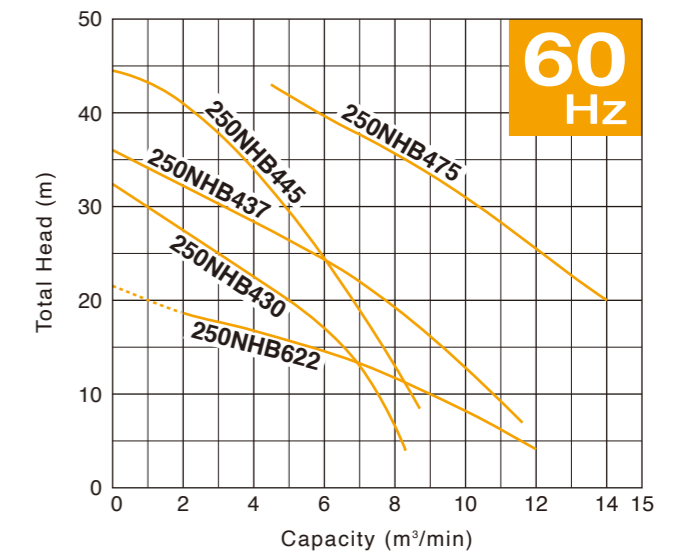
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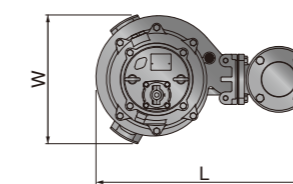


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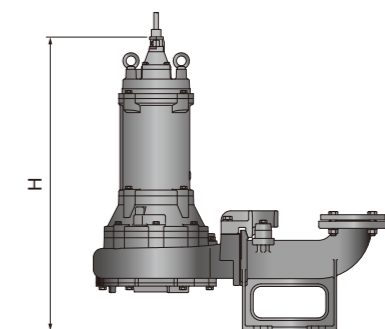
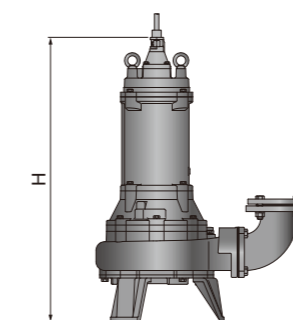
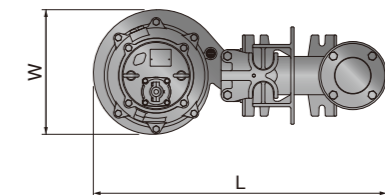


Dimensions

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 75kW.



300NHB645

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
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
500	500NHB675	TO500NHB675	75	Star-Delta	2229 x 1188 x 1926	2815 x 1188 x 2091	1960	1820	8

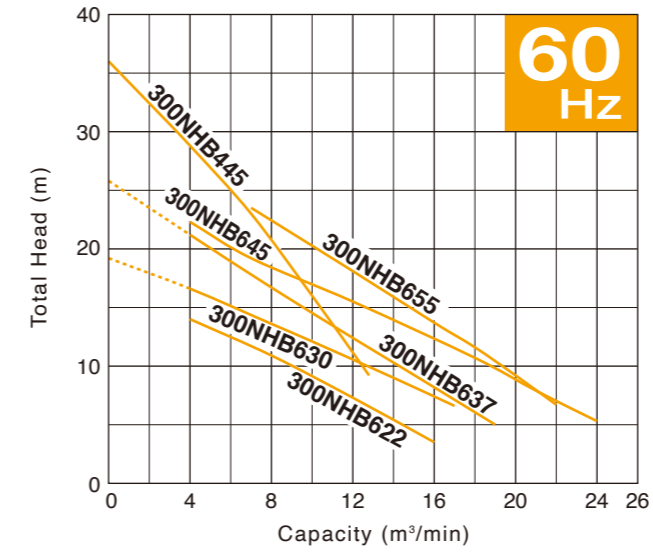
*1 Refer to page 8 for dimension symbol positions.

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

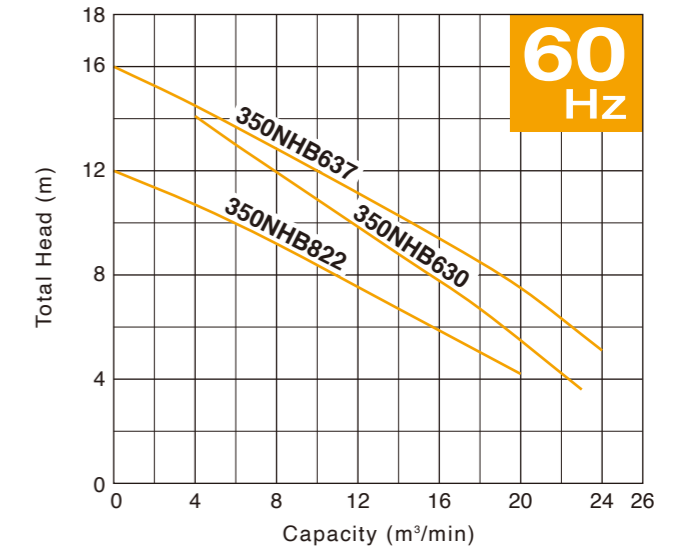
Performance Curves

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

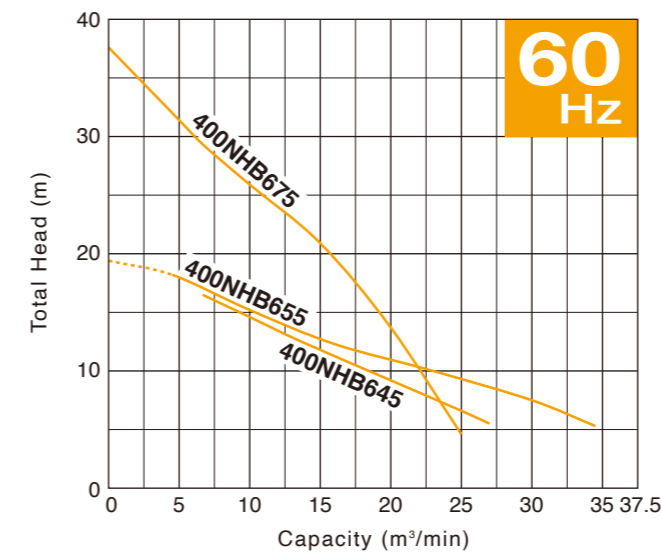
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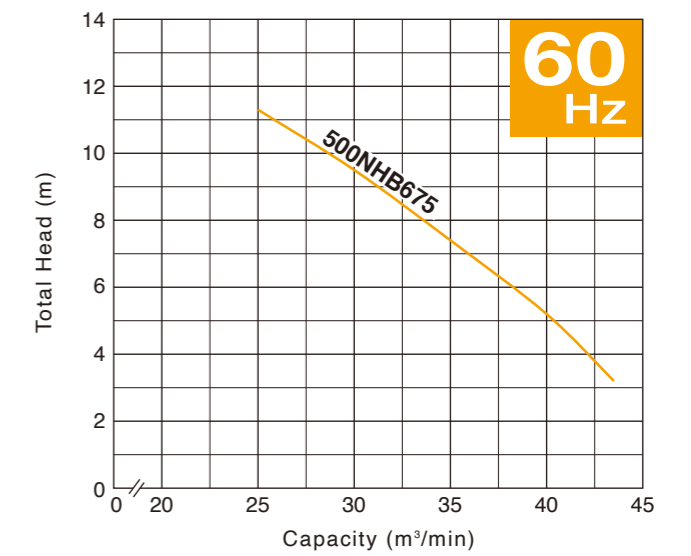
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< 400mm >



< 500mm >



NHC –Cutter Impeller, 2-pole–

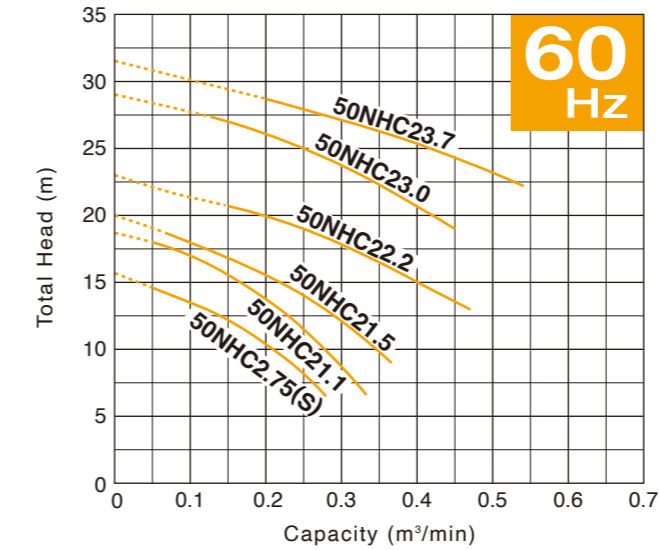
The NHC-series is a submersible cutter pump designed for handling raw sewage, wastewater, and heavy-duty industrial applications, where the pump is subject to clogging from oversize material. Two tungsten carbide alloy edges blazed on the impeller vane on the serrated suction cover. This mechanism cuts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



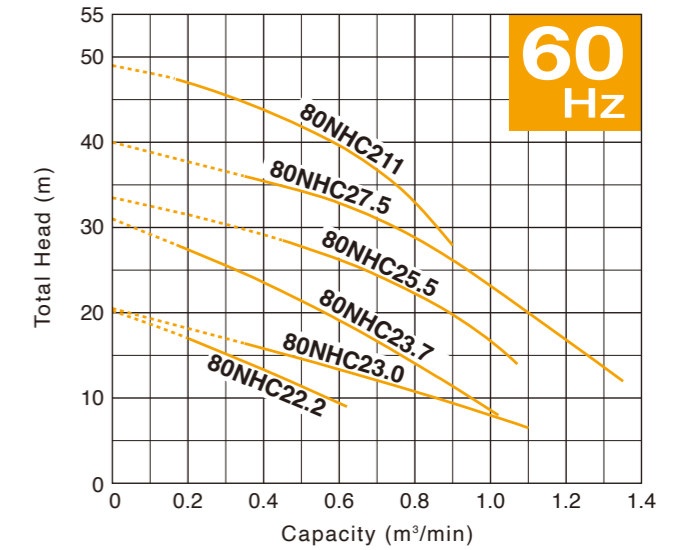
Performance Curves

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.



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	
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.

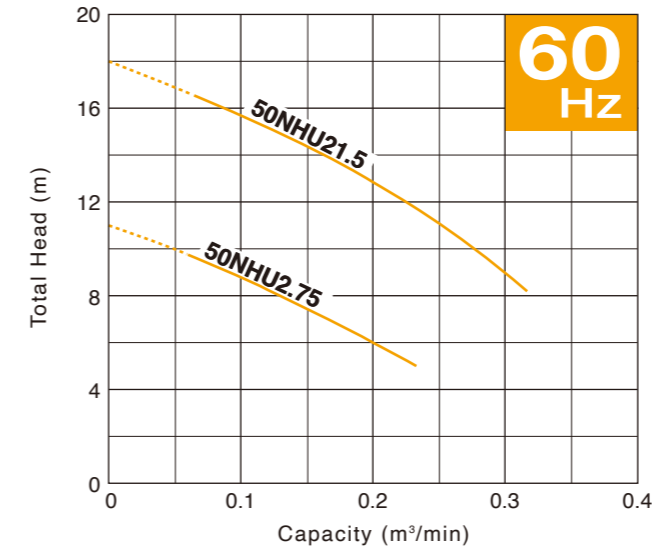
* excluding model 80NHU21.5



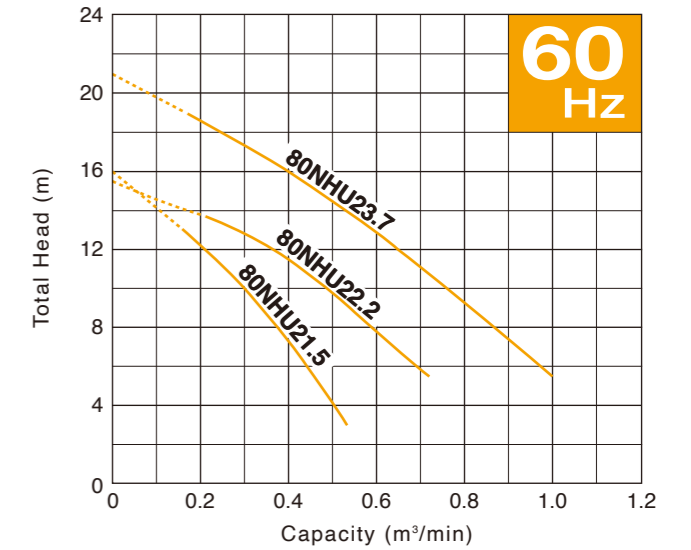
Performance Curves

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

< 50mm >



< 80mm >

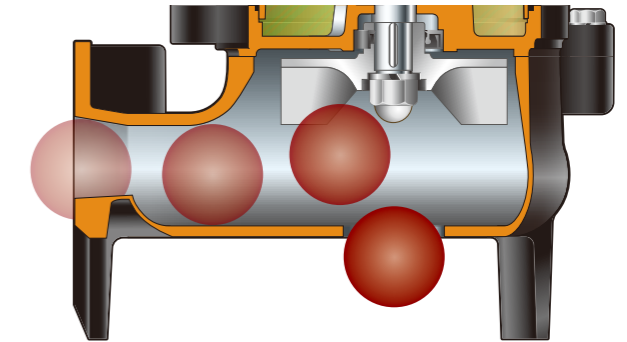
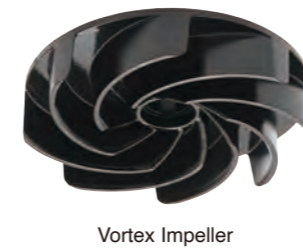


Semi-vortex Structure for Passing Solids (Vortex Impeller)

– 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



Discharge Bore mm	Model		Motor Output kW	Starting Method	Solids Passage mm	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	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



NH –Channel Impeller, 2-pole–

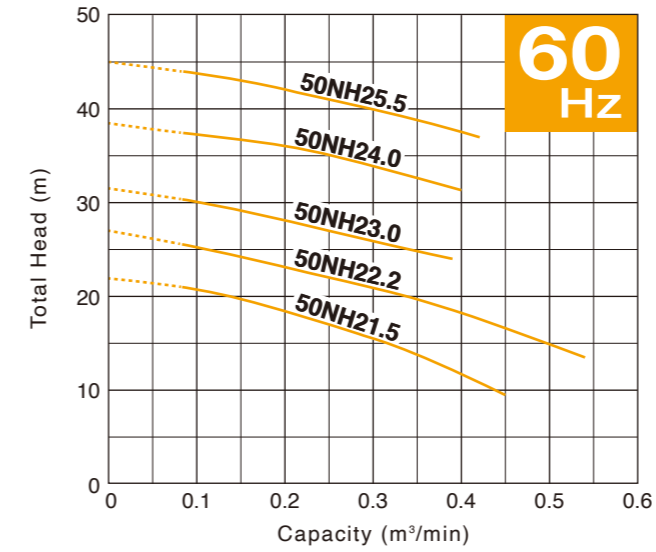
The NH-series is a cast iron made, submersible sewage pump utilizing 2-pole motor. This impeller is a shrouded two-channel impeller. Each channel is designed to have a larger area and it enables the pump to be suitable for pumping wastewater containing a certain size of solids. The pumps are available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



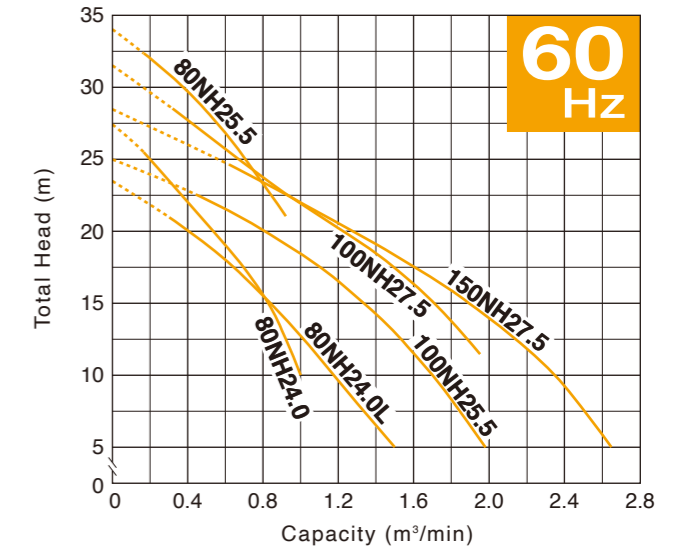
Performance Curves

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* mm		Dry Weight** 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	80NH24.0L	TOS80NH24.0L	4.0	D.O.L.	500 x 248 x 577	674 x 248 x 639	62	54	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



Specifications 60Hz

		NHB								NHB										
		100NHB45.5	100NHB47.5	150NHB47.5L	150NHB411	150NHB415	150NHB422H	150NHB422	150NHB437	150NHB455	200NHB411	200NHB415	200NHB437	200NHB455	200NHB475	250NHB622	250NHB430	250NHB437	250NHB445	250NHB475
PUMP	Discharge Bore mm	100			150					200					250					
	Discharge Connection	DIN PN6 Flange (come with Threaded Companion Flange)								DIN PN6 Flange										
	Impeller	Shrouded Single-channel	Shrouded Two-channel	Shrouded Single-channel			Shrouded Two-channel			Shrouded Two-channel										
		Radial Gap	Axial Gap				Radial Gap		Axial 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 Q'ty	Single				Triple				Single			Triple							
		Nitrile Butadiene Rubber								Nitrile Butadiene Rubber										
	Labyrinth Ring	—						304 Stainless Steel		—			304 Stainless Steel		—			304 Stainless Steel		
Casing	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								
Type	Continuous-duty Rated, Dry-type Induction Motor								Continuous-duty Rated, Dry-type Induction Motor											
Output kW	5.5	7.5	11	15	22	37	55	11			15	37	55	75	22	30	37	45	75	
Phase	Three								Three											
Pole	4				4				4			6	4							
Speed (S.S.) min ⁻¹	1800				1800				1800			1200	1800							
Insulation	F / H (Option)								F / H (Option)											
Starting Method	D.O.L.*2			Star-Delta					Star-Delta											
Motor Protector (built-in)	CTP			MTP					MTP											
Leakage Sensor (built-in)	—			Electrode					Electrode											
Lubricant ml	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	Free Standing kg	145	158	221	243	259	347	547	877	262	287	562	912	992	789	551	611	711	1050	
	Guide Rail Fitting kg	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

*2 Star-Delta available upon request

Specifications 60Hz

		NHB						NHB							
		300NHB622	300NHB630	300NHB637	300NHB445	300NHB645	300NHB655	350NHB822	350NHB630	350NHB637	400NHB645	400NHB655	400NHB675	500NHB675	
PUMP	Discharge Bore mm	300						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	Q'ty	Triple			Quadruple			Triple			Quadruple			
			Nitrile Butadiene Rubber						Nitrile Butadiene Rubber						
	Casing	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	22	30	37	45	55	22	30	37	45	55	75			
	Phase	Three						Three							
	Pole	6			4	6			8	6					
	Speed (S.S.) min ⁻¹	1200			1800	1200			900	1200					
	Insulation	F / H (Option)						F / H (Option)							
	Starting Method	Star-Delta						Star-Delta							
	Motor Protector (built-in)	MTP						MTP							
	Leakage Sensor (built-in)	Electrode						Electrode							
	Lubricant	ml	9100			14000			9100			14000			
			Turbine Oil (ISO VG32)						Turbine Oil (ISO VG32)						
	Frame	Gray Cast Iron						Gray Cast Iron							
	Outer Cover	—			Rolled Steel			—			Rolled Steel				
	Shaft	420 Stainless Steel						420 Stainless Steel							
	Power Cable	m	8						8						
Chloroprene Rubber						Chloroprene Rubber									
Dry Weight*	Free Standing kg	818	860	889	775	1260	1310	923	914	941	1300	1330	1470	1960	
	Guide Rail Fitting kg	724	766	795	695	1110	1160	832	823	850	1250	1280	1410	1820	

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

Specifications 60Hz

		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 80NH24.0L	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/cm² Flange													Threaded Oval Flange*2		Threaded JIS 10kg/cm² 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	Q'ty	Single													Single															
			Nitrile Butadiene Rubber													Nitrile Butadiene Rubber															
	Casing	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							—		—															
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													2																
	Speed (S.S.) min ⁻¹	3600													3600																
	Insulation	F / H (Option)													F / H (Option)																
	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													Gray Cast Iron																	
Shaft	420 Stainless Steel													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 62	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 54	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/cm² flange.



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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