



SUBMERSIBLE DEWATERING PUMPS

CONSTRUCTION & MINING

Tsurumi Manufacturing Co., Ltd.

Tsurumi Manufacturing Company, Limited was founded in Osaka in 1924. Since the foundation, Tsurumi has consistently devoted its efforts to the creation and development of advanced water utilization technologies. Tsurumi has also innovated the pump manufacturing technologies in a constant pursuit of new opportunities and new fields that contribute to the advancement of our society and environment. This effort epitomizes its management policy "Dedicated to pursuing close communication between people and water through innovative creation and respect for harmony with nature."

Production Bases

Kyoto Plant production facility boasts industry-leading scale and equipment, including extensive testing and research facilities. Its integrated system encompasses all product stages from development to production and is capable of manufacturing small, large, and special-purpose pumps having the capacity of 1,000,000 unit a year.

Yonago Plant in Tottori Prefecture specializes in development and production of large pumps for pumping stations and liquid-ring vacuum pumps. Tsurumi also operates cutting-edge plants in Taiwan, China and Korea that are capable of mass-producing products with short lead times. All plants work together to form a highly efficient production system.

Global Operations

Tsurumi introduced its overseas strategy in the 1960s. Our technical capabilities gained recognition first Asia in the 1970s and then in the United States and Europe in the 1980s. Following these initial successes, we sought to accelerate the overseas strategy through our International Sales Division. Remarkable successes in fields including construction, civil engineering, mining, power plant, industrial wastewater, domestic wastewater, sewage treatment, flood control, facilities designed to bring people into closer contact with water, and scenery creation have proven Tsurumi's creativity and capability to the world.



Overseas Subsidiaries

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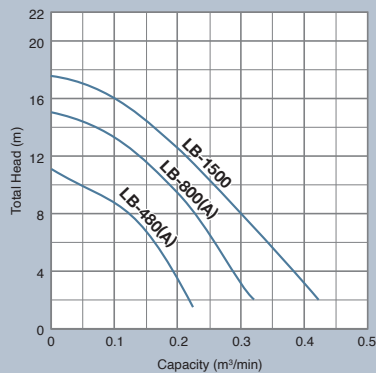


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LB/LB-A*

The LB-series is a submersible single-phase portable drainage pump. The top-discharge, flow-thru design provides maximum motor cooling efficiency allowing continuous operation at low water levels.

The LB-A is an automatic pump without cumbersome floats. An innovative electrode type relay unit built into the pump automatically starts and stops the pump to eliminate dry-running. This mechanism greatly reduces power consumption and extends operating life!



LB



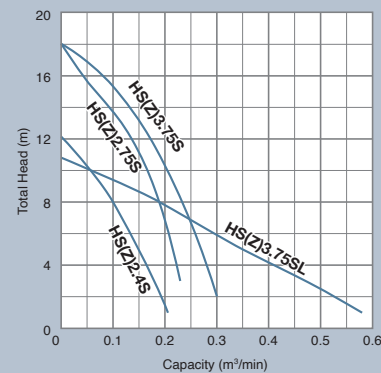
LB-A

HS/HSZ*

03-04

The HS-series is a submersible single-phase portable drainage pump. The side-discharge, spiral design allows smoother passage of the sucked solid matters. The shaft-mounted agitator prevents "Air Lock", and suspends solids to assist in pumping sediments.

The HSZ-series is an automatic pump. An automatic operation, controlled by a single float switch, reduces power consumption and extends operating life.



HS

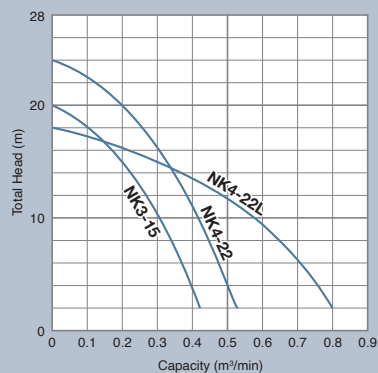


HSZ

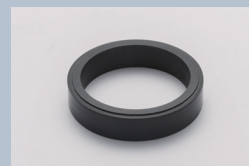
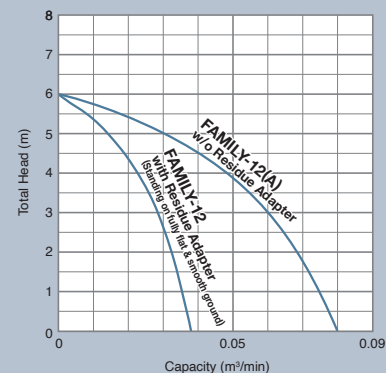
TECHNICAL DATA		LB-480 LB-480A	LB-800 LB-800A	LB-1500
Discharge Bore	mm	50	50(80)	
Motor Output	kW	0.48	0.75	1.5
Phase		Single		
Starting Method		Capacitor Run		Capacitor Start
Motor Protection		Miniature Thermal	Circle Thermal	
Impeller		Semi-vortex made of Urethane Rubber		
Voltage	V	230		
Current	A	2.9	4.5	15.4
Weight	kg	10.4 11	13.1 13.7	33
Cable Length	m	5		10
L x W x H	mm	189 x 187 x 286 223 x 187 x 286	186 x 187 x 341 223 x 187 x 341	187 x 187 x 600

TECHNICAL DATA		HS2.4S HSZ2.4S	HS2.75S HSZ2.75S	HS3.75S HSZ3.75S	HS3.75SL HSZ3.75SL
Discharge Bore	mm	50		80	
Motor Output	kW	0.4	0.75		
Phase		Single			
Starting Method		Capacitor Run			
Motor Protection		Miniature Thermal	Circle Thermal		
Impeller		Semi-vortex made of Urethane Rubber			
Voltage	V	230			
Current	A	2.6	4.8		
Weight	kg	11.3	16.4	16.8	19.6
Cable Length	m	5			
L x W x H	mm	241 x 184 x 328 241 x 340 x 328	285 x 184 x 394 285 x 370 x 394		288 x 184 x 425 288 x 350 x 425

The NK-series is a submersible single-phase portable drainage pump having a larger output motor. Though it is a single-phase unit, the pump has the durability equivalent to three-phase drainage pumps, since the wear parts are made of abrasion-resistant materials. The top-discharge, side-flow design assures efficient motor cooling even when it operates with its motor exposed to air. The slim design allows the pump to be placed in a confined space.



The FAMILY/FAMILY-A series are submersible single-phase portable drainage pumps. In addition to the 25mm hose coupling, it also comes with an easy-to-attach 15mm hose coupling as a standard accessory. The FAMILY-A pump with a cylindrical float switch reduces power consumption and extends operating life. Moreover, it can be used as a residue pump and drain water to 1mm in depth by attaching the optional residue adapter to the pump casing (for FAMILY-12, standard model only).



Residue Adapter



FAMILY

FAMILY-A

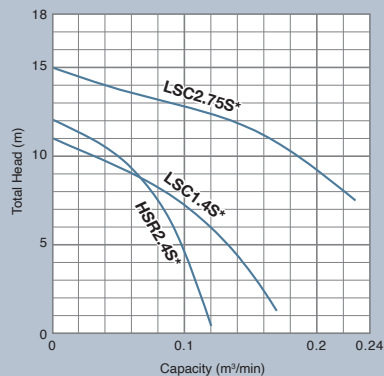
TECHNICAL DATA		NK3-15	NK4-22	NK4-22L
Discharge Bore	mm	50		80
Motor Output	kW	1.5	2.2	
Phase	Single			
Starting Method	Capacitor Start		Capacitor Start + Capacitor Run	
Motor Protection	Circle Thermal			
Impeller	Semi-vortex made of Ductile Iron			Semi-open made of High-chromium Iron
Voltage	V	230		
Current	A	12	14.6	14.6
Weight	kg	29		36
Cable Length	m	10		
L x W x H	mm	243 x 240 x 614		243 x 240 x 639

TECHNICAL DATA	FAMILY-12 FAMILY-12A
Discharge Bore	mm
Motor Output	kW
Phase	Single
Starting Method	Capacitor Run
Motor Protection	Miniature Thermal
Impeller	Semi-vortex made of Glass-fiber Reinforced Resin
Voltage	V
Current	A
Weight	kg
Cable Length	m
L x W x H	mm

HSR·LSC·LSP

The HSR, LSC and LSP are a submersible single-phase portable residue drainage pump. The pump can start pumping if there is water with its level of 5mm or more and can continue pumping. Due to the major components are made of aluminum alloy and synthetic rubber, it is lightweight and easy to carry. The LSC and LSP prevent reverse-flow of the sucked water when the pump stops its operation. The LSP has a suction attachment, supplied as standard, makes the pump drain water down to floor level.

* The curves show the pump performance while operating in a hanging condition without any restriction to the suction.



HSR



LSC



LSP

TECHNICAL DATA		HSR2.4S	LSC1.4S	LSC2.75S	LSP1.4S
Discharge Bore	mm	50	25	50(25)	25
Motor Output	kW	0.4	0.48	0.75	0.48
Phase		Single			
Starting Method		Capacitor Run			
Motor Protection		Miniature Thermal	Circle Thermal	Miniature Thermal	
Impeller		Semi-vortex made of Urethane Rubber			
Voltage	V	230			
Current	A	2.6	2.9	4.5	2.9
Weight	kg	10.6	12	15.2	16.5
Cable Length	m	5			
L x W x H	mm	227 x 162 x 282	196 x 196 x 316	197 x 196 x 371	300 x 265 x 307
Max. Vacuum	kPa (mmHg)	—			-73.3 (-550)

Single-phase Portable Residue Drainage Pumps

Tsurumi offers a series of pumps for low level standing water, which can suck up and drain a small volume of stagnant or residual water. With a compact and lightweight design, these pumps provide excellent portability. Also, because they run on a single-phase power supply, these pumps are easy to handle. Various types of pumps are available in our product lineup: some models can drain water to a minimum level of 1 mm, while others are equipped with a water reverse-flow preventing mechanism or a suction attachment. These pumps are suitable for draining shallow standing water, for example, draining water on the floor of construction sites, pits, water collection/feed tanks and small puddles, by taking advantage of the characteristics of each model.

Recently, the Zika virus, which threatens to go global, and Dengue fever, which induces a high fever, have been prevalent in tropical and subtropical zones of South East Asia and elsewhere. Tsurumi's residue drainage pumps can smoothly drain standing water where disease-carrying mosquitoes breed. Eliminating standing water is the most significant countermeasure against infection of the above diseases, as it prevents mosquitoes from breeding.



Anti Zika and Dengue Prevent Mosquito Breeding

Drain water to 1mm

HSR



Can pump water as shallow as 5mm from the bottom of the pump and drain water to 1mm in depth.

FAMILY

option

* excluding automatic model



Residue Adapter



Attaching the optional residue adapter to the pump casing allows draining to 1mm in depth.

Drain water to 1mm, prevent reverse-flow

LSC



Can drain water to 1mm in depth. A valve seat and swing check valve prevent suctioned water from backflowing.

Portable suction attachment, prevent reverse-flow

LSP

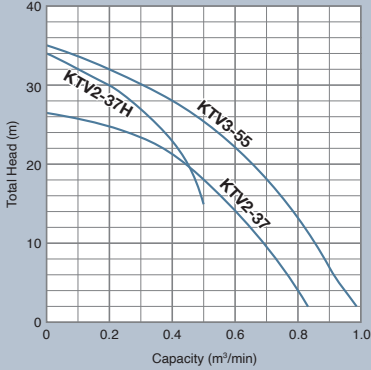
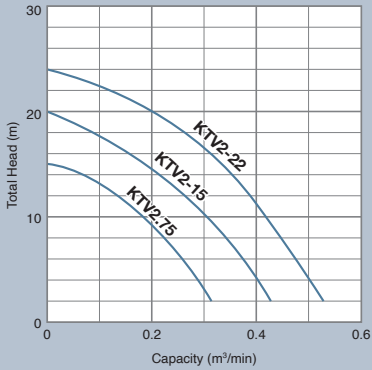


Can pump pooled water from shallow recesses using the suction attachment. A syphon breaker mechanism prevents backflowing and the seal water from draining out.

KTV

09-10

The KTV-series is a submersible three-phase portable drainage pump. The pump body is made of die-casted aluminium alloy, which is extremely advantageous in terms of portability. The sleeves that protect the pump casing, oil casing and water passages are made of synthetic rubber as a consideration against wear. The top discharge, side flow design assures efficient motor cooling even when it operates with its motor exposed in air. The slim design allows the pump to be placed to a confined space.



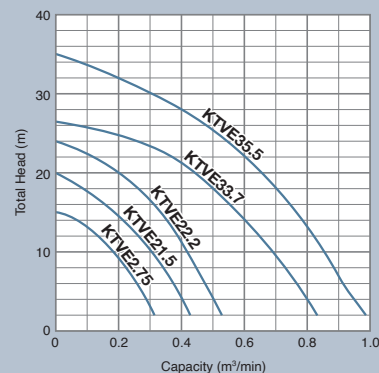
TECHNICAL DATA		KTV2.75	KTV2-15	KTV2-22
Discharge Bore	mm	50	50(80)	
Motor Output	kW	0.75	1.5	2.2
Phase		Three		
Starting Method		Direct on Line		
Motor Protection		Circle Thermal		
Impeller		Semi-vortex made of Urethane Rubber	Semi-vortex made of Ductile Iron	
Voltage	V	400		
Current	A	2.2	3.3	4.3
Weight	kg	12.5	21	23
Cable Length	m	5	8	
L x W x H	mm	200 x 200 x 374	240 x 240 x 395	240 x 240 x 415

TECHNICAL DATA		KTV2-37H	KTV2-37	KTV3-55
Discharge Bore	mm	50	80(100)	
Motor Output	kW	3.7		5.5
Phase		Three		
Starting Method		Direct on Line		
Motor Protection		Circle Thermal		
Impeller		Semi-vortex made of Ductile Iron		
Voltage	V	400		
Current	A	7.4		11
Weight	kg	36		47
Cable Length	m	8		
L x W x H	mm	285 x 285 x 510		300 x 300 x 545

The KTVE-series is a submersible three-phase automatic portable drainage pump. An innovative electrode type relay unit built into the pump automatically starts and stops the pump to eliminate dry-running. This mechanism greatly reduces power consumption and extends operating life. The pump body is made of die-casted aluminium alloy, which is extremely advantageous in terms of portability. The sleeves that protect the pump casing, oil casing and water passages are made of synthetic rubber as a consideration against wear. The top discharge, side flow design assures efficient motor cooling even when it operates with its motor exposed to air. The slim design allows the pump to be placed in a confined space.

Electrode Control Device

Consisting of an electric probe and relay unit, this enables automatic operation, reduces power consumption and extends operating life.



- ▶ No control panel required
- ▶ Dry-running prevention
- ▶ Pump life longer



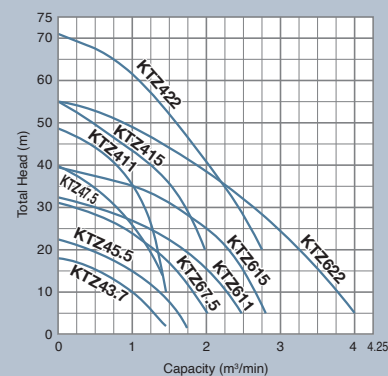
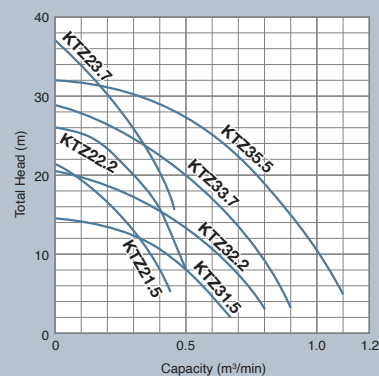
TECHNICAL DATA		KTVE2.75	KTVE21.5	KTVE22.2
Discharge Bore	mm	50	50(80)	
Motor Output	kW	0.75	1.5	2.2
Phase		Three		
Starting Method		Direct on Line		
Motor Protection		Circle Thermal		
Impeller		Semi-vortex made of Urethane Rubber	Semi-vortex made of Ductile Iron	
Voltage	V	400		
Current	A	2.2	3.3	4.3
Weight	kg	13.3	22	25
Cable Length	m	5	8	
L x W x H	mm	200 x 200 x 422	240 x 240 x 462	

TECHNICAL DATA		KTVE33.7	KTVE35.5
Discharge Bore	mm	80(100)	
Motor Output	kW	3.7	5.5
Phase		Three	
Starting Method		Direct on Line	
Motor Protection		Circle Thermal	
Impeller		Semi-vortex made of Ductile Iron	
Voltage	V	400	
Current	A	7.4	11
Weight	kg	40	52
Cable Length	m	8	
L x W x H	mm	285 x 285 x 585	300 x 300 x 620

The KTZ-series is Tsurumi's flagship line of submersible pumps. Made with a cast iron body and high-chromium iron impeller, the pumps can withstand the most demanding conditions found in construction, aggregate and mining applications. Versatility is increased as each model has the capability of being easily converted between high head and high volume performance with a simple change of impeller, suction plate and hose coupling.

Registration of Design

Tsurumi has registered the design of the KTZ-series in major countries. Design rights are granted under the laws of each country.



TECHNICAL DATA		KTZ21.5 KTZ31.5	KTZ22.2 KTZ32.2	KTZ23.7 KTZ33.7	KTZ35.5
Discharge Bore	mm	50 80			80
Motor Output	kW	1.5	2.2	3.7	5.5
Phase		Three			
Starting Method		Direct on Line			
Motor Protection		Circle Thermal			
Impeller		Semi-open made of High-chromium Iron			
Voltage	V	400			
Current	A	3.6	5.3	8	11.4
Weight	kg	34 33	35 34	60	74
Cable Length	m	8			
L x W x H	mm	235 x 216 x 548	235 x 216 x 568	283 x 252 x 675	306 x 258 x 719

TECHNICAL DATA		KTZ43.7	KTZ45.5	KTZ47.5 KTZ67.5	KTZ411 KTZ611	KTZ415 KTZ615	KTZ422 KTZ622
Discharge Bore	mm	100		100 150			
Motor Output	kW	3.7	5.5	7.5	11	15	22
Phase		Three					
Starting Method		Direct on Line					
Motor Protection		Circle Thermal					Miniature Thermal
Impeller		Semi-open made of High-chromium Iron					
Voltage	V	400					
Current	A	8	11.4	15.1	22	28.3	37.6
Weight	kg	60	74	101 100	133	146 147	295 296
Cable Length	m	8					10
L x W x H	mm	283 x 252 x 690	306 x 258 x 734	330 x 314 x 812 361 x 314 x 875	374 x 350 x 864 374 x 350 x 884	374 x 350 x 934 374 x 350 x 954	485 x 413 x 1200 485 x 413 x 1220

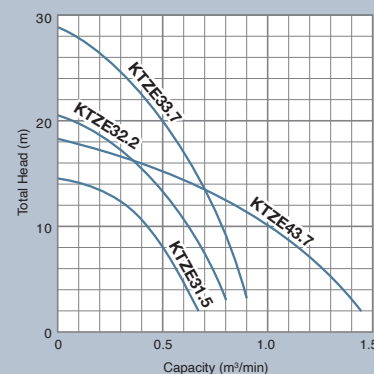
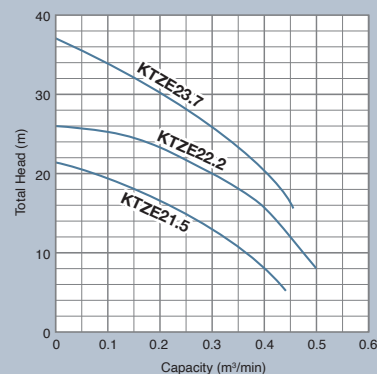
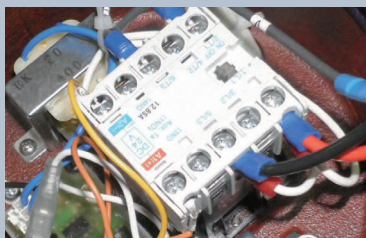
The KTZE-series is an automatic model of the KTZ-series. An innovative electrode type relay unit built into the pump automatically starts and stops the pump to eliminate dry-running. This mechanism greatly reduces power consumption and extends operating life!

Registration of Design

Tsurumi has registered the design of the KTZ-series in major countries. Design rights are granted under the laws of each country.

Electrode Control Device

Consisting of an electric probe and relay unit, this enables automatic operation, reduces power consumption and extends operating life.



- ▶ No control panel required
- ▶ Dry-running prevention
- ▶ Pump life longer



TECHNICAL DATA		KTZE21.5	KTZE22.2	KTZE23.7
Discharge Bore	mm	50		
Motor Output	kW	1.5	2.2	3.7
Phase		Three		
Starting Method		Direct on Line		
Motor Protection		Circle Thermal		
Impeller		Semi-open made of High-chromium Iron		
Voltage	V	400		
Current	A	3.6	5.3	8
Weight	kg	39	41	69
Cable Length	m	8		
L x W x H	mm	235 x 224 x 628	235 x 224 x 648	283 x 252 x 755

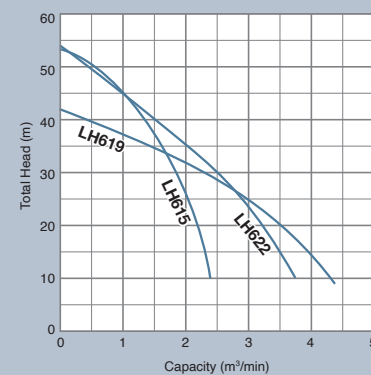
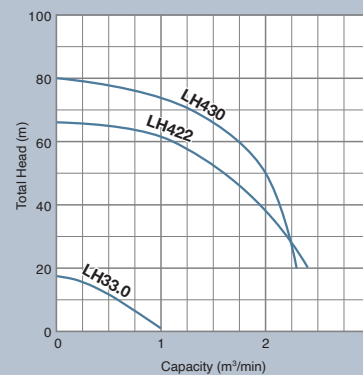
TECHNICAL DATA		KTZE31.5	KTZE32.2	KTZE33.7	KTZE43.7
Discharge Bore	mm	80			100
Motor Output	kW	1.5	2.2	3.7	
Phase		Three			
Starting Method		Direct on Line			
Motor Protection		Circle Thermal			
Impeller		Semi-open made of High-chromium Iron			
Voltage	V	400			
Current	A	3.6	5.3	8	
Weight	kg	38	40	69	
Cable Length	m	8			
L x W x H	mm	235 x 224 x 628	235 x 224 x 648	283 x 252 x 755	283 x 252 x 770

LH 3-30kW

17-18

The LH-series is a submersible three-phase cast iron high head drainage pump. Being the pump cylindrical and slim, it can be installed in a well casing for deep well dewatering. The center flange construction assures a stable installation even if it is fixed by the discharge pipe. The top-discharge, flow-thru design provides maximum motor cooling efficiency allowing continuous operation at low water levels and extended dry-run capability. The pump incorporates seal pressure relief ports that prevent the pumping pressure from applying to the shaft seal.*

* excluding LH33.0



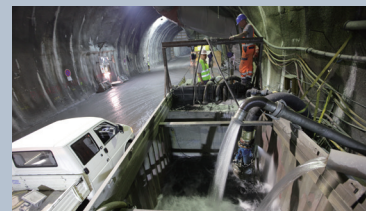
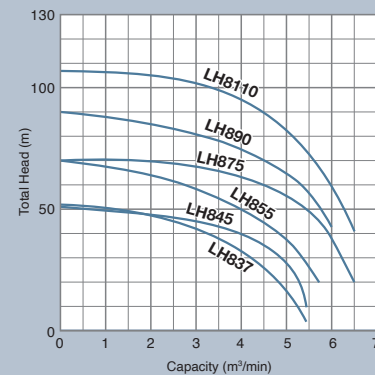
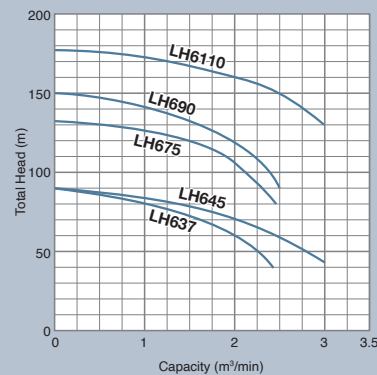
TECHNICAL DATA		LH33.0	LH422	LH430
Discharge Bore	mm	80	100	
Motor Output	kW	3	22	30
Phase	Three			
Starting Method	Direct on Line			Star-Delta
Motor Protection	Circle Thermal			Miniature Thermal
Impeller	Semi-open made of High-chromium Iron		Closed made of High-chromium Iron	
Voltage	V	400		
Current	A	6.5	40.5	55
Weight	kg	45	350	355
Cable Length	m	20	10	
L x H	mm	185 x 745	420 x 1352	

TECHNICAL DATA		LH615	LH619	LH622
Discharge Bore	mm	150		
Motor Output	kW	15	19	22
Phase		Three		
Starting Method		Direct on Line		
Motor Protection		Circle Thermal		
Impeller		Closed made of High-chromium Iron		
Voltage	V	400		
Current	A	27.5	36	40.5
Weight	kg	213	350	360
Cable Length	m	10		
L x H	mm	330 x 1014	420 x 1423	

LH 37-110kW

19-20

The LH-series is a submersible three-phase cast iron high head drainage pump. Being the pump cylindrical and slim, it can be installed in a well casing for deep well dewatering. The center flange construction assures a stable installation even if it is fixed by the discharge pipe. The top-discharge, flow-thru design provides maximum motor cooling efficiency allowing continuous operation at low water levels and extended dry-run capability. The pump incorporates seal pressure relief ports that prevent the pumping pressure from applying to the shaft seal.



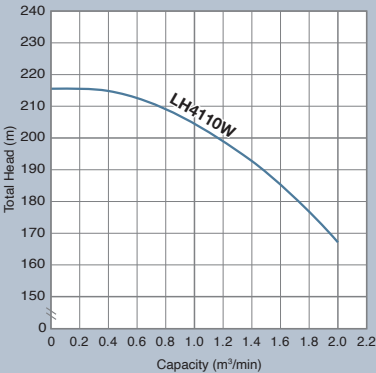
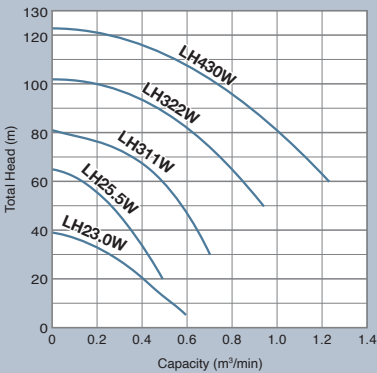
TECHNICAL DATA		LH637	LH645	LH675	LH690	LH6110
Discharge Bore	mm	150				
Motor Output	kW	37	45	75	90	110
Phase		Three				
Starting Method		Star-Delta				
Motor Protection		Miniature Thermal				
Impeller		Closed made of High-chromium Iron				
Voltage	V	400				
Current	A	67	81	130	166	209
Weight	kg	495	510	865	1100	1200
Cable Length	m	10			20	
L x H	mm	530 x 1448		563 x 1676		592 x 1787

TECHNICAL DATA		LH837	LH845	LH855	LH875	LH890	LH8110
Discharge Bore	mm	200					
Motor Output	kW	37	45	55	75	90	110
Phase		Three					
Starting Method		Star-Delta					
Motor Protection		Miniature Thermal					
Impeller		Closed made of High-chromium Iron					
Voltage	V	400					
Current	A	67	81	100	130	166	209
Weight	kg	495	510	820	865	1150	1250
Cable Length	m	10				20	
L x H	mm	530 x 1488		563 x 1716		592 x 1787	

LH-W

The LH-W-series is a submersible three-phase cast iron extra high head drainage pump having dual impellers. Being the pump cylindrical and slim, it can be installed in a well casing for deep well dewatering. The center flange construction assures a stable installation even if it is fixed by the discharge pipe. The pump incorporates seal pressure relief ports that prevent the pumping pressure from applying to the shaft seal.*

* excluding LH23.0W

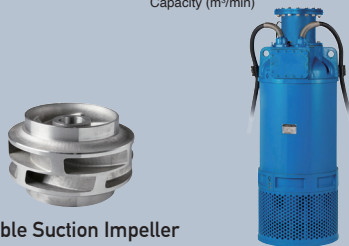
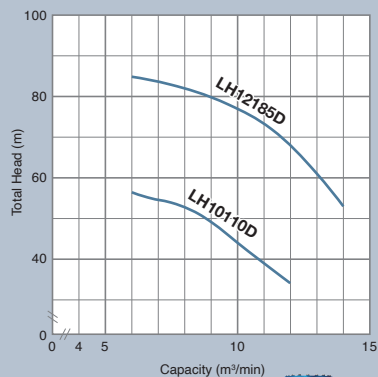


TECHNICAL DATA		LH23.0W	LH25.5W	LH311W	LH322W
Discharge Bore	mm	50		80	
Motor Output	kW	3	5.5	11	22
Phase		Three			
Starting Method		Direct on Line			
Motor Protection		Circle Thermal			
Impeller		Dual semi-open made of High-chromium Iron	Dual Closed made of High-chromium Iron		
Voltage	V	400			
Current	A	6.5	11	22	39
Weight	kg	49	80	130	304
Cable Length	m	20			
L x H	mm	185 x 770	254 x 750	270 x 1024	330 x 1235

TECHNICAL DATA		LH430W	LH4110W
Discharge Bore	mm	100	
Motor Output	kW	30	110
Phase		Three	
Starting Method		Star-Delta	
Motor Protection		Miniature Thermal	
Impeller		Dual Closed made of High-chromium Iron	Dual Back-to-back Closed made of High-chromium Iron
Voltage	V	400	
Current	A	53	209
Weight	kg	324	1270
Cable Length	m	20	
L x H	mm	330 x 1375	616 x 1825

LH-D

The LH-D-series are submersible pumps with 2-pole 110/185 kW motors, on which a double suction impeller is mounted to deliver assured performance in high volume, high head applications. These pumps were developed based on Tsurumi's LH-series that has built a long-standing name and reputation as a quality line of submersible high head drainage pumps in the mining and construction fields. With a max. capacity of 14 m³/min and max. head of 92 m, the LH10110D and LH12185D meet the needs of open-pit/underground mining, heap leaching and large-scale tunneling work.



Double Suction Impeller

TECHNICAL DATA		LH10110D	LH12185D
Discharge Bore	mm	250	300
Motor Output	kW	110	185
Phase		Three	
Starting Method		Star-Delta	
Motor Protection		Miniature Thermal	
Impeller		Double Suction made of High-chromium Iron	
Voltage	V	400	
Current	A	53	209
Weight	kg	1450	1950
Cable Length	m	20	
L x W x H	mm	701 x 693 x 1853	773 x 743 x 2008

Extreme circumstances reveal true value.

With over 100 years of history, the Tsurumi Pump Brand continues to receive worldwide support with its superior quality, exceptional durability and solid reliability.

CONSTRUCTION / TUNNEL



MINING



Tandem Operation -LH·LH-W-

25-26

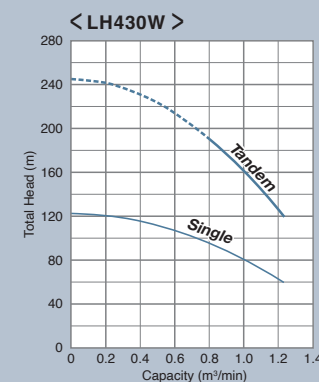
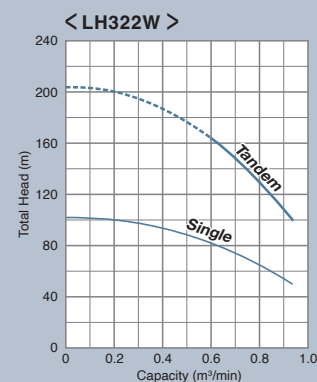
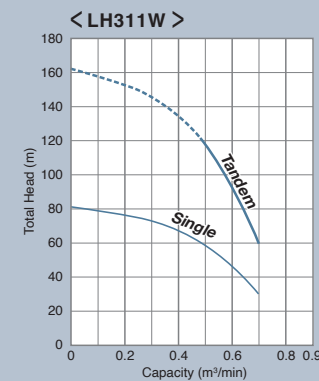
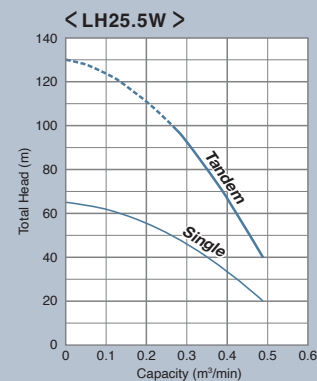
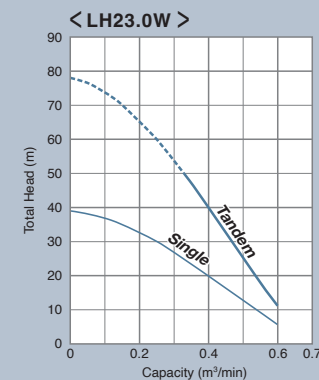
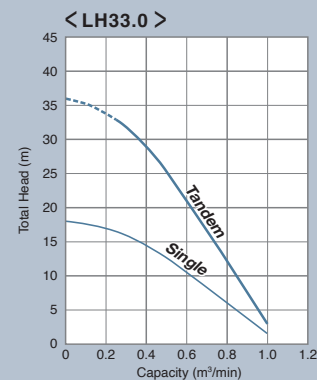
"Tandem operation" is an operation method that connects two pumps of the same model in series. This provides double pump head at the same flow rate in comparison with that of a single pump. The principle of tandem operation is the same as that with multistage pumps. The LH and LH-W series pumps adopt the center flange construction to align the discharge pipe with the cylindrical pump center axis.*1 Connecting the pumps in series with the tandem connector can provide higher pump head without affecting the advantage of the slim design. At construction sites, there are many cases where a higher pump head is required as construction work progresses. In such cases, the addition of a tandem pump may meet the required pump head, instead of using a new pump.

*1 Available as an option for separately purchased LH33.0 and LH23.0W.



TECHNICAL DATA	LH33.0	LH23.0W	LH25.5W	LH311W	LH322W	LH430W
Discharge Bore mm	80	50		80		100
Motor Output kW	3		5.5	11	22	30
Phase	Three					
Starting Method	Direct on Line					Star-Delta
Motor Protection	Circle Thermal					Miniature Thermal
Impeller	Semi-open made of High-chromium Iron	Dual Semi-open made of High-chromium Iron	Dual Closed made of High-chromium Iron			
Max. Head in Tandem m	36	78	130	162	204	246
Max. Head w/o Intermediate Connection Pipe m	33	50	97.5	121.5	162	190.5
Voltage V	400					
Current A	6.5		11	22	39	53
Weight kg	54	59	96	135	310	389
Allowable Load on Eyebolts kg	150	150	220	450	950	
Cable Length m	20					
L x H mm	185 x 731	185 x 759	254 x 808	270 x 1067	330 x 1283	365 x 1423

The intermediate connection pipe is not required in the range indicated as a bold line on curves. If the required total head exceeds the maximum head of the pump without an intermediate connection pipe (indicated as dashed line), an intermediate connection pipe of a length corresponding to the excess amount or more is required.

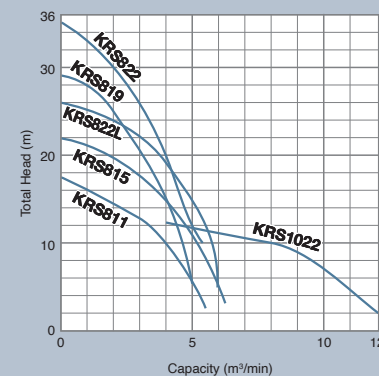
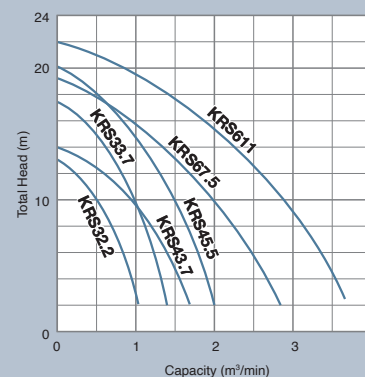


The KRS-series is a submersible three-phase cast iron drainage pump driven by a 4-pole motor. The cast iron body, combined with the low speed motor, presents high durability for use in the most demanding conditions. The top-discharge, side-flow design assures efficient motor cooling even if the pump runs with its motor exposed to air.*

* Model KRS1022 is a top-discharge, flow-thru design. It provides maximum motor cooling efficiency allowing continuous operation at low water levels and extended dry-run capability.



KRS1022

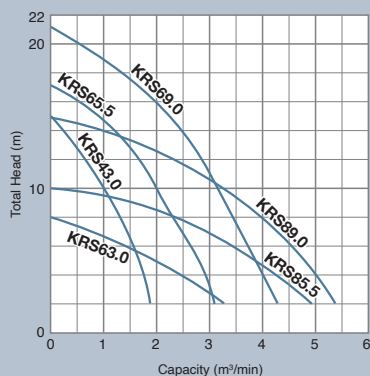


TECHNICAL DATA		KRS32.2	KRS33.7	KRS43.7	KRS45.5	KRS67.5	KRS611
Discharge Bore	mm	80		100		150	
Motor Output	kW	2.2	3.7		5.5	7.5	11
Phase		Three					
Starting Method		Direct on Line					
Motor Protection		Circle Thermal					
Impeller		Semi-open made of Ductile Iron					
Voltage	V	400					
Current	A	5.5	8.6		12.1	15	22.5
Weight	kg	72	91	88	100	141	163
Cable Length	m	8					
L x W x H	mm	340 x 311 x 622	362 x 346 x 707	349 x 320 x 722	364 x 346 x 747	418 x 379 x 866	436 x 407 x 875

TECHNICAL DATA		KRS811	KRS815	KRS819	KRS822	KRS822L	KRS1022
Discharge Bore	mm	200					250
Motor Output	kW	11	15	18.5	22		
Phase		Three					
Starting Method		Direct on Line					
Motor Protection		Circle Thermal					
Impeller		Semi-open made of Ductile Iron					Closed made of Ductile Iron
Voltage	V	400					
Current	A	22.5	31.9	38	44.6		45.7
Weight	kg	179	240	360	380		390
Cable Length	m	8			10		
L x W x H	mm	473 x 409 x 993	481 x 440 x 1069	576 x 530 x 1241			525 x 524 x 1419

KRS (Energy-saving)

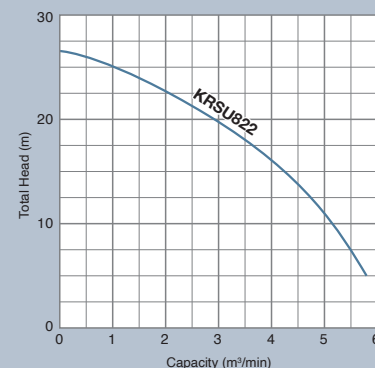
The KRS-series of energy-saving type is a submersible three-phase cast iron high volume heavy-duty drainage pump. It consumes less energy than the standard KRS-series at lower head applications. The cast iron body, combined with the low speed motor, presents extra durability for use in the most demanding conditions. The top discharge, side flow design assures efficient motor cooling even when it operates with its motor exposed to air.



KRSU

29-30

The KRSU822 pump of submersible three-phase cast iron heavy-duty pump is designed and built specifically for temporarily bypassing drainage in sewer construction work. With a maximum head of 26.5 m, maximum capacity of 5.7 m³/min, and space-saving design of 546 mm in diameter, this pump plays an active role in drainage in the deep confined space of a manhole. Also, with its semi-vortex structure, this pump provides a large solids passage of 56 mm in diameter, which prevents any clogging of solids matter. The top discharge, side flow design assures efficient motor cooling even when operating with the motor exposed to air.



TECHNICAL DATA		KRS43.0	KRS63.0	KRS65.5	KRS69.0	KRS85.5	KRS89.0
Discharge Bore	mm	100	150			200	
Motor Output	kW	3		5.5	9	5.5	9
Phase		Three					
Starting Method		Direct on Line					
Motor Protection		Circle Thermal					
Impeller		Semi-open made of Ductile Iron					
Voltage	V	400					
Current	A	6.7		12.1	19.5	12.1	19.5
Weight	kg	95	101	123	173	135	177
Cable Length	m	8					
L x W x H	mm	380 x 347 x 746	384 x 365 x 889	428 x 370 x 825	490 x 424 x 872	449 x 413 x 976	473 x 408 x 993

TECHNICAL DATA		KRSU822
Discharge Bore	mm	200
Motor Output	kW	22
Phase		Three
Starting Method		Direct on Line
Motor Protection		Circle Thermal
Impeller		Semi-vortex made of Gray Iron
Solids Passage	mm	56
Voltage	V	400
Current	A	44.6
Weight	kg	430
Cable Length	m	10
L x W x H	mm	546 x 500 x 1486

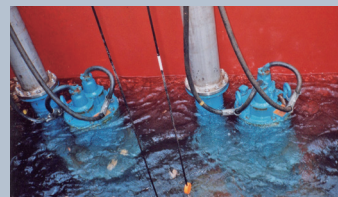
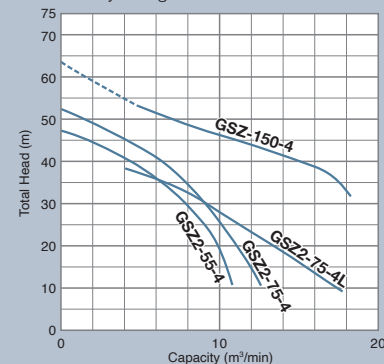
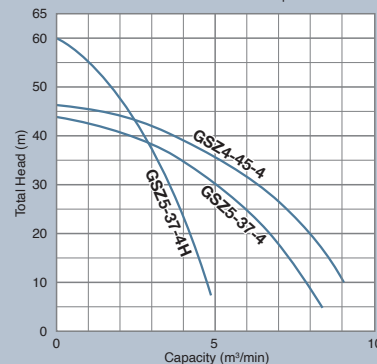
GSZ-4

31-32

The GSZ-4-series is a submersible three-phase cast iron high volume drainage pump driven by a 4-pole motor. The side-discharge, spiral design allows smoother passage of the sucked solid matters. The motor is cooled by a water jacket allows the pump to operate at low water levels for extended period of time without the fear of overheating. The pump incorporates seal pressure relief ports that prevent the pumping pressure from applying to the shaft seal.



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



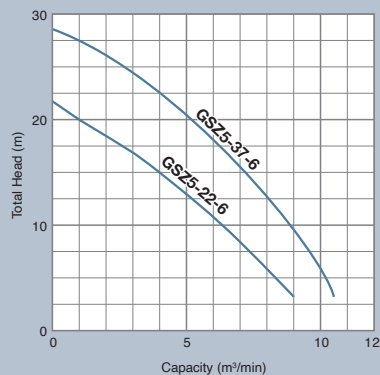
TECHNICAL DATA		GSZ5-37-4H	GSZ5-37-4	GSZ4-45-4
Discharge Bore	mm	150	200	
Motor Output	kW	37		45
Phase		Three		
Starting Method		Star-Delta		
Motor Protection		Miniature Thermal		
Impeller		Closed made of 304 Stainless Steel Casting	Closed made of High-chromium Iron	
Voltage	V	400		
Current	A	74		87
Weight	kg	595	566	583
Cable Length	m	10		
L x W x H	mm	900 x 700 x 1553	915 x 660 x 1583	915 x 660 x 1591

TECHNICAL DATA		GSZ2-55-4	GSZ2-75-4	GSZ2-75-4L	GSZ-150-4
Discharge Bore	mm	250			
Motor Output	kW	55	75		150
Phase		Three			
Starting Method		Star-Delta			
Motor Protection		Miniature Thermal			
Impeller		Closed made of High-chromium Iron	*	Closed made of High-chromium Iron	
Voltage	V	400			
Current	A	123	146		292
Weight	kg	1091	1141	1200	2330
Cable Length	m	10			
L x W x H	mm	1050 x 708 x 1927		1050 x 739 x 1972	1218 x 846 x 2420

* Closed made of 304 Stainless Steel Casting (50Hz) / Closed made of High-chromium Iron (60Hz)

GSZ-6

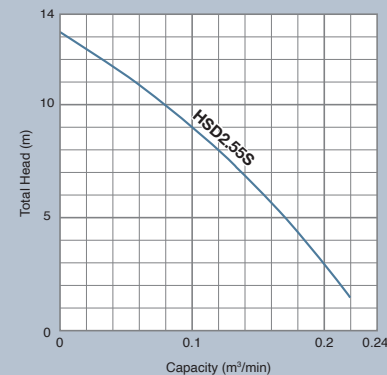
The GSZ-6-series is a submersible three-phase high power drainage pump driven by a 6-pole motor. In combination with abrasion-resistant wear parts, the very low speed motor ensures extremely long wear life. The side-discharge, spiral design allows smoother passage of the sucked solid matters. The motor is cooled by a water jacket allows the pump to operate at low water levels for extended period of time without the fear of overheating. The pump incorporates seal pressure relief ports that prevent the pumping pressure from applying to the shaft seal.



HSD

33-34

The HSD pump is a submersible single-phase portable slurry pump. It is equipped with a high-chromium cast iron agitator that assists smooth suction of the settled matters. Though the pump is a single-phase unit, it has the durability equivalent to three-phase slurry pumps, since the wear parts are made of abrasion-resistant materials. The pump adopts the side discharge, spiral design.



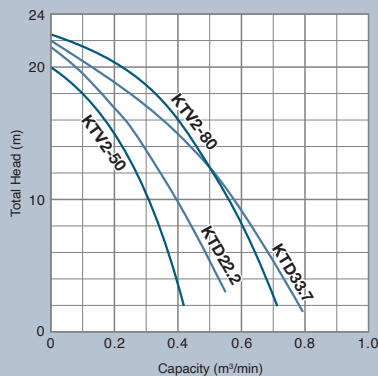
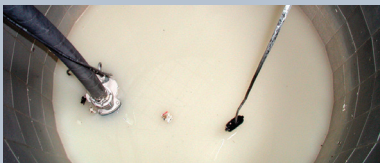
TECHNICAL DATA		GSZ5-22-6	GSZ5-37-6
Discharge Bore	mm	200	
Motor Output	kW	22	37
Phase		Three	
Starting Method		Direct on Line	Star-Delta
Motor Protection		Miniature Thermal	
Impeller		Semi-open made of High-chromium Iron	
Voltage	V	400	
Current	A	47	74
Weight	kg	685	796
Cable Length	m	10	
L x W x H	mm	965 x 720 x 1360	1047 x 804 x 1421

TECHNICAL DATA		HSD2.55S
Discharge Bore	mm	50
Motor Output	kW	0.55
Phase		Single
Starting Method		Capacitor Run
Motor Protection		Circle Thermal
Impeller		Semi-vortex made of High-chromium Iron
Voltage	V	230
Current	A	3.4
Weight	kg	14
Cable Length	m	5
L x W x H	mm	241 x 186 x 391

KTV (Slurry) · KTD

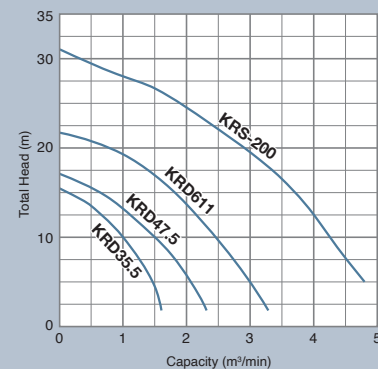
The KTV-series of slurry-handling type is a submersible three-phase portable slurry pump. Though the pump is a three-phase unit, it is designed to weigh lighter for portability, yet it can be used for pumping slurry. The top-discharge, side-flow design assures efficient motor cooling even if the pump runs with its motor exposed to air.

The KTD-series is a submersible three-phase cast iron heavy-duty slurry pump. It is equipped with an agitator that suspends solids to assist in pumping sediments. The pump parts such as the impeller and the suction cover are made of wear-resistant materials.



KRD/KRS (Slurry) 35-36

The KRD-series of slurry-handling type is a submersible three-phase cast iron heavy-duty slurry pump driven by a 4-pole motor. It is equipped with a high-chromium iron agitator that suspends solids to assist in pumping sediments. The other wear parts such as the impeller and the suction plate are also made of high-chromium cast iron for extra durability. The top-discharge, side-flow design assures efficient motor cooling even if the pump runs with its motor exposed to air.



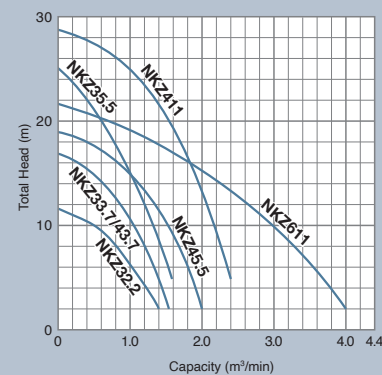
TECHNICAL DATA		KTV2-50	KTV2-80	KTD22.2	KTD33.7
Discharge Bore	mm	50(80)	80(100)	50	80
Motor Output	kW	2	3	2.2	3.7
Phase	Three				
Starting Method	Direct on Line				
Motor Protection	Circle Thermal				
Impeller	Semi-vortex made of High-chromium Iron			Semi-open made of High-chromium Iron	
Voltage	V	400			
Current	A	3.8	6.1	5.3	8
Weight	kg	25	38	38	65
Cable Length	m	8			
L x W x H	mm	250 x 250 x 453	295 x 295 x 550	235 x 221 x 550	297 x 266 x 654

TECHNICAL DATA		KRD35.5	KRD47.5	KRD611	KRS-200
Discharge Bore	mm	80	100	150	200
Motor Output	kW	5.5	7.5	11	18
Phase	Three				
Starting Method	Direct on Line				
Motor Protection	Circle Thermal				
Impeller	Semi-open made of High-chromium Iron				
Voltage	V	400			
Current	A	12.1	15	22.5	35
Weight	kg	107	154	175	395
Cable Length	m	8			10
L x W x H	mm	351 x 326 x 838	418 x 379 x 936	436 x 407 x 961	576 x 530 x 1140

NKZ

37-38

The NKZ-series is a submersible three-phase cast iron slurry pump driven by a 4-pole motor. It is equipped with an agitator that assists smooth suction of settled matters. The side-discharge, spiral design allows smoother passage of the sucked solid matters. The motor is cooled by a water jacket that assures efficient motor cooling even when it operates with its motor exposed to air.

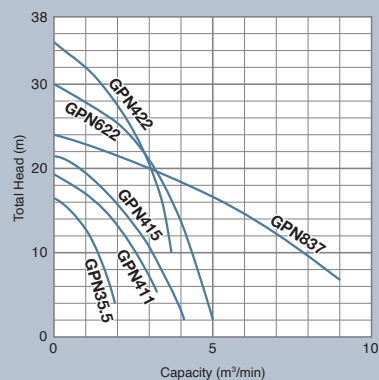


TECHNICAL DATA		NKZ32.2	NKZ33.7	NKZ35.5
Discharge Bore	mm	80		
Motor Output	kW	2.2	3.7	5.5
Phase		Three		
Starting Method		Direct on Line		
Motor Protection		Circle Thermal		
Impeller		Semi-open made of Ductile Iron		Semi-open made of High-chromium Iron
Voltage	V	400		
Current	A	5.5	8.6	12.1
Weight	kg	102	107	146
Cable Length	m	8		
L x W x H	mm	466 x 368 x 719		491 x 400 x 798

TECHNICAL DATA		NKZ43.7	NKZ45.5	NKZ411	NKZ611
Discharge Bore	mm	100			150
Motor Output	kW	3.7	5.5	11	
Phase		Three			
Starting Method		Direct on Line			
Motor Protection		Circle Thermal			
Impeller		Semi-open made of Ductile Iron		Semi-open made of High-chromium Iron	Semi-open made of Ductile Iron
Voltage	V	400			
Current	A	8.6	12.1	22.5	
Weight	kg	104	129	217	210
Cable Length	m	8			
L x W x H	mm	466 x 368 x 719	482 x 382 x 759	546 x 413 x 885	618 x 449 x 842

GPN

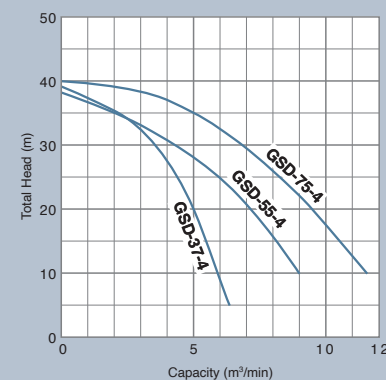
The GPN-series is a submersible three-phase, heavy-duty slurry pump incorporating an agitator to suspend solids enabling the pump to handle high concentration slurries. Being equipped with high-chromium cast iron wear parts, the pump delivers outstanding durability. The side-discharge, spiral design allows smoother passage of the sucked solid matters. The motor is cooled by a water jacket allows the pump to operate at low water levels for extended period of time without the fear of overheating.



GSD

39-40

The GSD-series is a submersible three-phase high volume slurry pump incorporating an agitator to suspend solids enabling the pump to handle high concentration slurries. Being equipped with high-chromium cast iron wear parts, the pump delivers outstanding durability. The side-discharge, spiral design allows smoother passage of the sucked solid matters. The motor is cooled by a water jacket allows the pump to operate at low water levels for extended period of time without the fear of overheating. The pump incorporates seal pressure relief ports that prevent the pumping pressure from applying to the shaft seal.

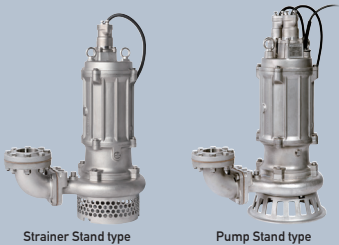
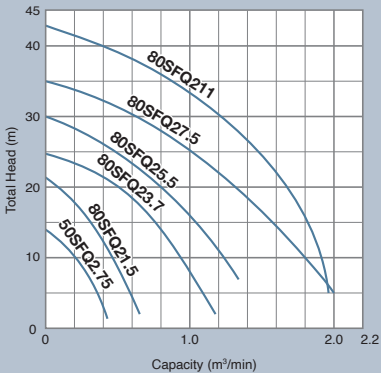


TECHNICAL DATA		GPN35.5	GPN411	GPN415	GPN422	GPN622	GPN837
Discharge Bore	mm	80	100			150	200
Motor Output	kW	5.5	11	15	22		37
Phase	Three						
Starting Method	Direct on Line						Star-Delta
Motor Protection	Circle Thermal				Miniature Thermal		
Impeller	Semi-open made of High-chromium Iron						
Voltage	V	400					
Current	A	12.1	22.5	27	42.5		74
Weight	kg	160	239	242	410	415	815
Cable Length	m	8		10			
L x W x H	mm	487 x 390 x 841	617 x 452 x 924		725 x 572 x 1102		1015 x 749 x 1606

TECHNICAL DATA		GSD-37-4	GSD-55-4	GSD-75-4
Discharge Bore	mm	200	250	
Motor Output	kW	37	55	75
Phase		Three		
Starting Method		Star-Delta		
Motor Protection		Miniature Thermal		
Impeller		Closed made of High-chromium Iron		
Voltage	V	400		
Current	A	74	123	146
Weight	kg	685	1220	
Cable Length	m	10		
L x W x H	mm	915 x 660 x 1553	1050 x 708 x 1927	

SFQ

The SFQ-series is a submersible cast stainless steel high head corrosion-resistant pump designed for handling aggressive and corrosive liquid. The all wetted parts are made of 316 stainless steel, the pumps can withstand the most demanding conditions found in construction, aggregate and mining applications. The side-discharge, spiral design allows smoother passage of the sucked solid matters. The pump with 5.5kW and above motor incorporates seal pressure relief ports that prevent the pumping pressure from applying to the shaft seal.



TECHNICAL DATA		50SFQ2.75	80SFQ21.5	80SFQ23.7	80SFQ25.5 ^{*1}	80SFQ27.5 ^{*1}	80SFQ211 ^{*1}
Discharge Bore	mm	50	80				
Motor Output	kW	0.75	1.5	3.7	5.5	7.5	11
Phase		Three					
Starting Method		Direct on Line					Direct on Line / Star-Delta ^{*2}
Motor Protection		Circle Thermal					Miniature Thermal
Impeller		Semi-open made of 316 Stainless Steel Casting					
Voltage	V	400					
Current	A	2	4.1	6.8	11.3	14.3	21
Weight	kg	22	36	52	124	128	148
Cable Length	m	6			8		
L x W x H	mm	251 x 196 x 398	329 x 221 x 484	359 x 257 x 542	635 x 360 x 844		635 x 360 x 892

^{*1} The SFQ 5.5-11kW models are selectable from the strainer stand type or the pump stand type.
^{*2} D.O.L. with miniature thermal protectors for the strainer stand type. Star-Delta for the pump stand type.

Submersible All Stainless Steel Dewatering Pumps

Tsurumi's submersible dewatering pumps can be fabricated with all fluid-contacting parts made of 316 stainless steel, including the impeller, pump casing, motor frame, outer cover, strainer stand, and flange.

Over the past few years, mining pollution caused by contaminated water (mine water and wastewater) from mines and quarries has become a social problem in many countries. Because of this problem, demand for drainage pumps for treating such contaminated water has been increasing year by year.

When acids (hydrochloric acid, sulfuric acid, etc.) are dissolved in water, they are ionized to form hydrogen ions (H+) that acidify the water. Meanwhile, when alkalis (calcium hydroxides, carbonates, etc.) are dissolved in water, hydroxide ions (OH-) that intensify the alkalinity of the water are generated.

Tsurumi is actively developing all stainless steel pumps using 316 stainless steel to cope with the problem of drainage from mines.

All stainless steel pumps can handle chemical fluids of low pH value (e.g., corrosive acidic fluid), as well as drain fluids that include abrasive materials.

They withstand operation in severe environments that cause aluminum or cast iron pumps to break down in several days or weeks.

The pumps are applicable to not only mines and quarries but also various other fields such as chemical plants and wastewater treatment plants.

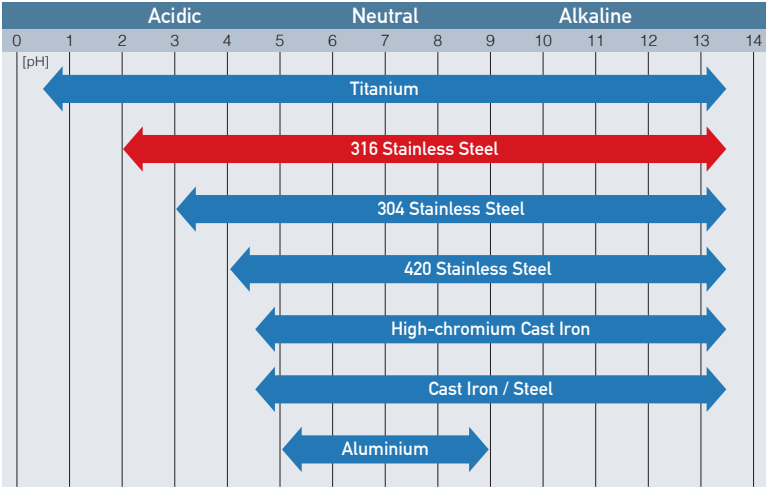


SFQ



LH-14

pH Values and Corrosion Resistance of Each Material



The above date is a rough indication for sulfuric acid (H₂SO₄) and sodium hydroxide (NaOH). The acceptable pH of the whole pump is affected by the type of acid/alkali, seal material, painting, and abrasive environment.

LH-14·LH-W-14*

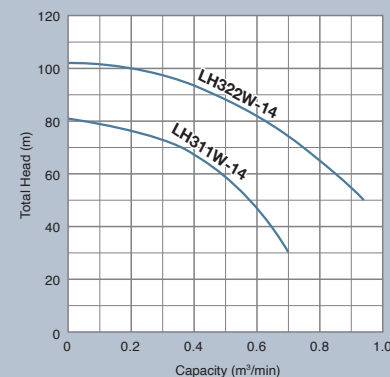
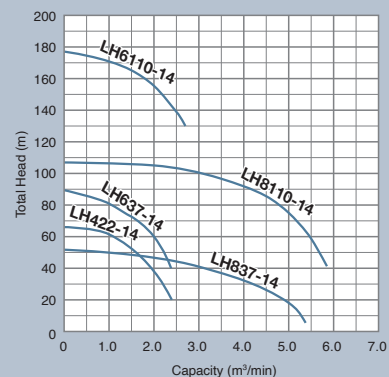
43-44

The LH/LH-W-14 series is a submersible stainless steel casting high head corrosion-resistant pump designed for handling aggressive and corrosive liquids. The all wetted parts are made of 316 stainless steel, enables it to withstand demanding conditions found in construction, aggregate and mining applications. Being the pump cylindrical and slim, it can be installed in a well casing for deep well dewatering. The center flange construction assures a stable installation even if it is fixed by the discharge pipe. The pump incorporates seal pressure relief ports that prevent the pumping pressure from applying to the shaft seal.



LH-14

LH-W-14



TECHNICAL DATA		LH422-14	LH637-14	LH6110-14
Discharge Bore	mm	100	150	
Motor Output	kW	22	37	110
Phase		Three		
Starting Method		Direct on Line	Star-Delta	
Motor Protection		Miniature Thermal		
Impeller		Closed made of 316 Stainless Steel Casting		
Weight	kg	370	540	1350
Cable Length	m	10		20
L x H	mm	420 x 1352	530 x 1448	592 x 1887

TECHNICAL DATA		LH837-14	LH8110-14	LH311W-14	LH322W-14
Discharge Bore	mm	200		80	
Motor Output	kW	37	110	11	22
Phase		Three			
Starting Method		Star-Delta		Direct on Line	
Motor Protection		Miniature Thermal			
Impeller		Closed made of 316 Stainless Steel Casting		Dual Closed made of 316 Stainless Steel Casting	
Weight	kg	540	1400	320	340
Cable Length	m	10	20		
L x H	mm	530 x 1488	592 x 1887	330 x 1184	330 x 1275

Options

Seawater-resistant version

Pumps can be combined with a seawater-resistant kit that adds a "galvanic anode" and "seawater-resistant special cast iron impeller," and enables about two years of service*.

* The service period depends on operating conditions.

High temperature liquids version

Pumps are applicable to high temperature liquids of up to 80°C. Pumps of the standard specification can discharge liquids of up to 40°C.

Corrosion-resistant version

Pumps can be fabricated with all fluid-contacting parts made of 316 stainless steel, including the impeller, pump casing, motor frame, outer cover, strainer stand, and flange/hose coupling.

High voltage version

Pumps can be manufactured to between 380-1000V ratings that are often required for mining applications. The pumps meet mining safety standards as they come with screened cables and motors with built-in diodes for ground-fault checks.

For applicable models and details, contact your dealer.

Recommended Generator Sizes

Single-phase							
Model	Motor Output (kW)	50Hz	60Hz	Model	Motor Output (kW)	50Hz	60Hz
		230V	220V			230V	220V
		AC Max. Output at starting (kVA)					
LB-480(A)	0.48	1.6	1.5	HS(Z)2.4S	0.4	1.6	1.5
LB-800(A)	0.75	2.4	2.8	HS(Z)2.75S / 3.75S / 3.75SL	0.75	3.4	4.0
LB-1500	1.5	12	9.1	HSD2.55S	0.55	2.5	2.6
NK3-15	1.5	10	11	HSR2.4S	0.4	1.6	1.5
NK4-22	2.2	12	11	LSC1.4S / LSP1.4S	0.48	1.6	1.5
NK4-22L	2.2	12	11	LSC2.75S	0.75	2.4	2.8
				FAMILY-12(A)	0.1	0.53	0.39

Three-phase							
Model	Motor Output (kW)	50Hz	60Hz	Model	Motor Output (kW)	50Hz	60Hz
		400V	440V			400V	440V
		AC Max. Output at starting (kVA)				AC Max. Output at starting (kVA)	
KTV2.75, KTVE2.75	0.75	3.2	3.8	KRS43.0 / 63.0	3	17	18
KTV2-15, KTVE21.5	1.5	6.6	5.9	KRS65.5 / 85.5	5.5	23	25
KTV2-22, KTVE22.2	2.2	10	9.5	KRS69.0 / 89.0	9	56	57
KTV2-37(H), KTVE33.7	3.7	17	16	KRSU822	22	109	107
KTV3-55, KTVE35.5	5.5	23	21	GSZ5-37-4(H)	37	*177	*183
KTZ(E)21.5 / 31.5	1.5	7.3	8.0	GSZ4-45-4	45	*215	*218
KTZ(E)22.2 / 32.2	2.2	12	13	GSZ2-55-4	55	*381	*398
KTZ(E)23.7 / 33.7 / 43.7	3.7	19	21	GSZ2-75-4(L)	75	*381	*398
KTZ35.5 / 45.5	5.5	29	30	GSZ-150-4	150	*795	*748
KTZ47.5 / 67.5	7.5	41	42	GSZ5-22-6	22	111	111
KTZ411 / 611	11	53	54	GSZ5-37-6	37	*170	*172
KTZ415 / 615	15	59	53	KTV2-50	2	10	9.5
KTZ422 / 622	22	97	104	KTV2-80	3	17	16
LH33.0	3	16	18	KTD22.2	2.2	12	13
LH615	15	59	63	KTD33.7	3.7	19	21
LH619	19	87	95	KRD35.5	5.5	25	25
LH422 / 622	22	100	88	KRD47.5	7.5	34	35
LH430	30	135	141	KRD611	11	53	52
LH637 / 837	37	*159	*160	KRS-200	18	109	107
LH645 / 845	45	*208	*217	NKZ32.2	2.2	9	10
LH855	55	*272	*272	NKZ33.7 / 43.7	3.7	17	18
LH675 / 875	75	*350	*352	NKZ35.5 / 45.5	5.5	23	25
LH690 / 890	90	*381	*381	NKZ411 / 611	11	56	57
LH6110 / 8110	110	*473	*467	GPN35.5	5.5	23	25
LH23.0W	3	16	18	GPN411	11	56	57
LH25.5W	5.5	23	21	GPN415	15	56	57
LH311W	11	47	42	GPN422 / 622	22	100	105
LH322W	22	100	88	GPN837	37	*170	*172
LH430W	30	135	141	GSD-37-4	37	*177	*183
LH4110W	110	*473	*467	GSD-55-4	55	*381	*398
LH10110D	110	*464	*484	GSD-75-4	75	*381	*398
LH12185D	185	*1066	*1102	50SFQ2.75	0.75	4.0	4.2
KRS32.2	2.2	12	13	80SFQ21.5	1.5	11	13
KRS33.7 / 43.7	3.7	23	24	80SFQ23.7	3.7	18	20
KRS45.5	5.5	30	34	80SFQ25.5	5.5	29	30
KRS67.5	7.5	44	47	80SFQ27.5	7.5	41	42
KRS611 / 811	11	75	76	80SFQ211	11	*55	*58
KRS815	15	72	76	LH311W-14	11	60	64
KRS819	18.5	86	86	LH322W-14 / 422-14	22	133	118
KRS822(L)	22	109	107	LH637-14 / 837-14	37	*185	*191
KRS1022	22	89	93	LH6110-14 / 8110-14	110	*448	*449

*In the case of Star-Delta starting, divide them by 1.5.

Available in New Zealand from:
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