

# KTZE

DRAINAGE PUMP



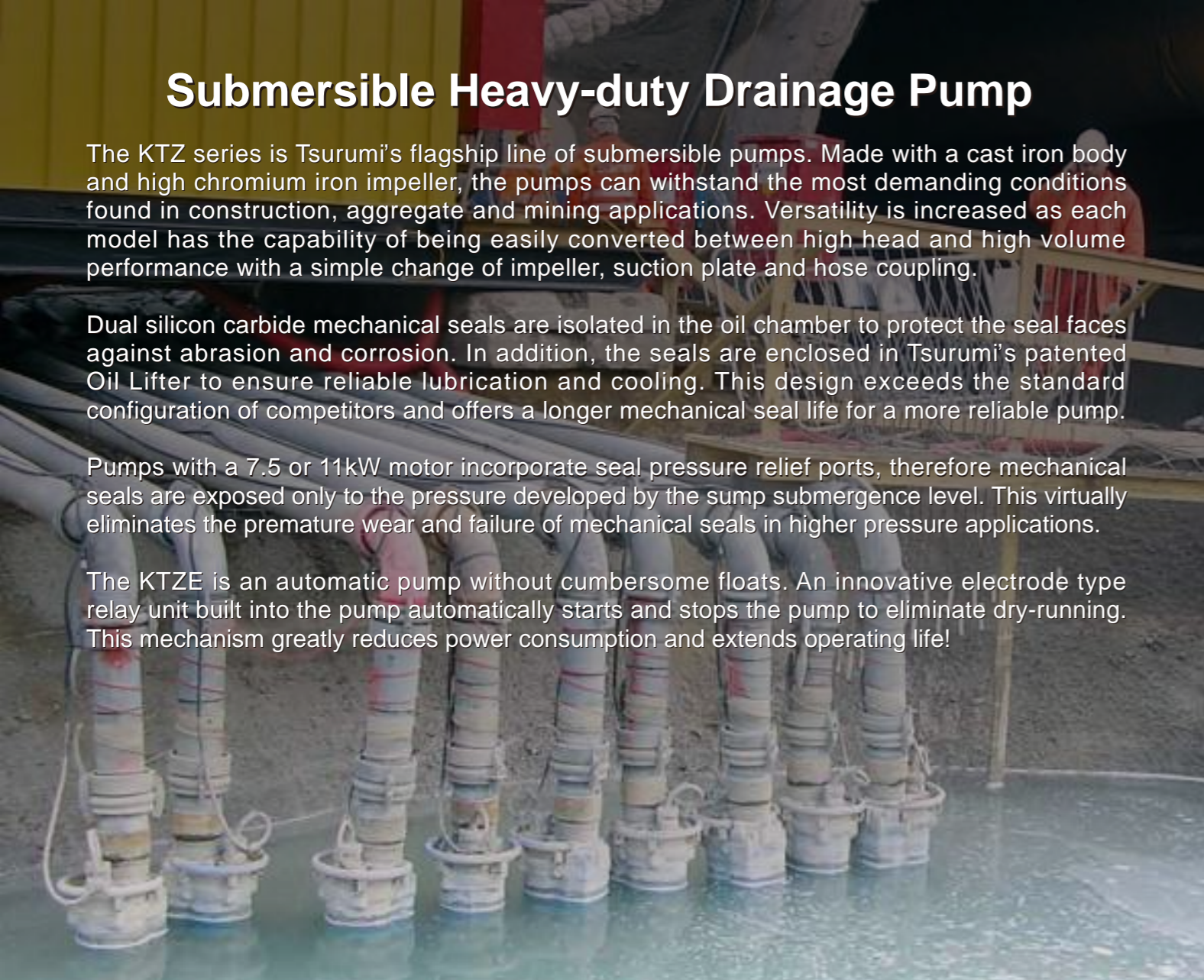
# Submersible Heavy-duty Drainage Pump

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.

Dual silicon carbide mechanical seals are isolated in the oil chamber to protect the seal faces against abrasion and corrosion. In addition, the seals are enclosed in Tsurumi's patented Oil Lifter to ensure reliable lubrication and cooling. This design exceeds the standard configuration of competitors and offers a longer mechanical seal life for a more reliable pump.

Pumps with a 7.5 or 11kW motor incorporate seal pressure relief ports, therefore mechanical seals are exposed only to the pressure developed by the sump submergence level. This virtually eliminates the premature wear and failure of mechanical seals in higher pressure applications.

The KTZE 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!



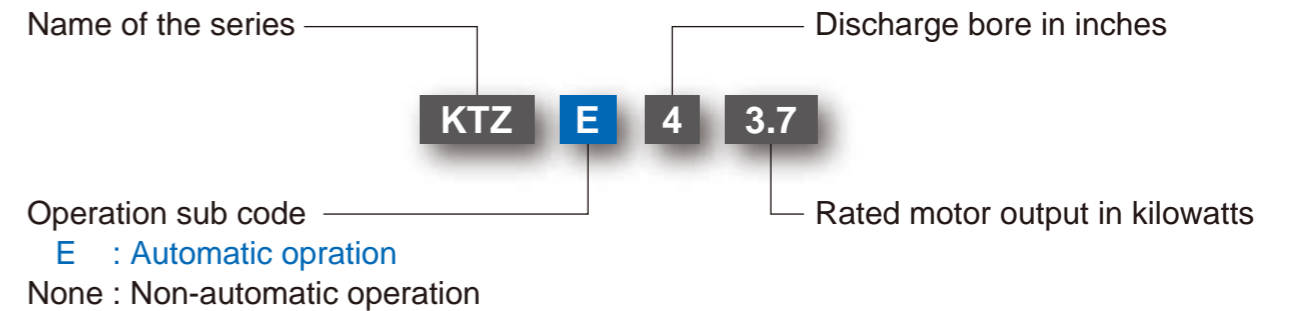
## Registration of Design

Tsurumi has registered the design of the KTZ series around the world.  
Design rights are granted under the laws of each country.

## Selection Table

KTZ	2" 50mm	●	●	●			
	3" 80mm	●	●	●	●		
	4" 100mm			●	●	●	●
	6" 150mm				●	●	
Motor Output		1.5kW	2.2kW	3.7kW	5.5kW	7.5kW	11kW
KTZE	2" 50mm	●	●	●			
	3" 80mm	●	●	●			
	4" 100mm			●			

## Model Number Designation

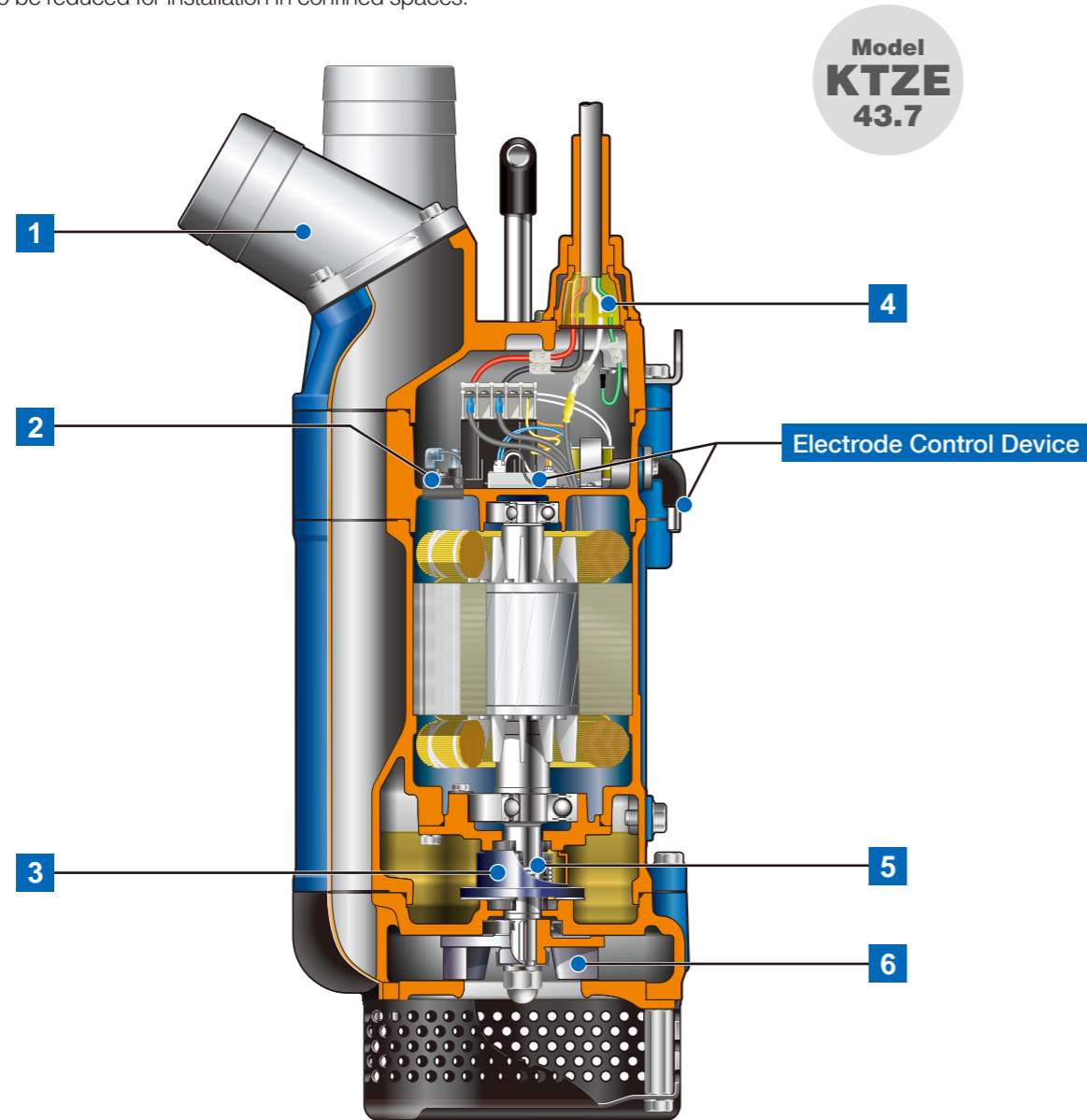


## Options

- Seawater-resistant version;
- High temperature liquid version;
- High voltage version;
- Corrosion-resistant version;
- Galvanic anode & Special impeller
- Max. 90°C
- Max. 1000V
- 304 or 316 S.S.

## Top-discharge, Side-flow Design

This design assures efficient motor cooling even if the pump runs with its motor exposed to air, and also allows the overall diameter of the pump to be reduced for installation in confined spaces.



Model  
**KTZE**  
43.7

Electrode Control Device

### Electrode Control Device

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

#### 1 Multi-directional Hose Coupling

Can be configured for inclined or vertical discharge, allowing for smoother installation.

#### 2 Circle Thermal Protector

Detects both excess heat and excess amperage draw, therefore, protecting the pump against overheating, overcurrent and dry-running.

#### 3 Oil Lifter (Patented)

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.

#### 4 Anti-wicking Cable Entry

Prevents water incursion due to capillary wicking should the power cable be damaged or the end submerged.

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

Eliminates problems like spring failure and ensures a long service life. Isolated in the oil chamber where a clean, non-corrosive and abrasion-free lubricating environment is maintained.

#### 6 High Chromium Iron Semi-open Impeller

Resists wear caused by abrasive particles and enables the pump to maintain its original performance for an extended period of time.

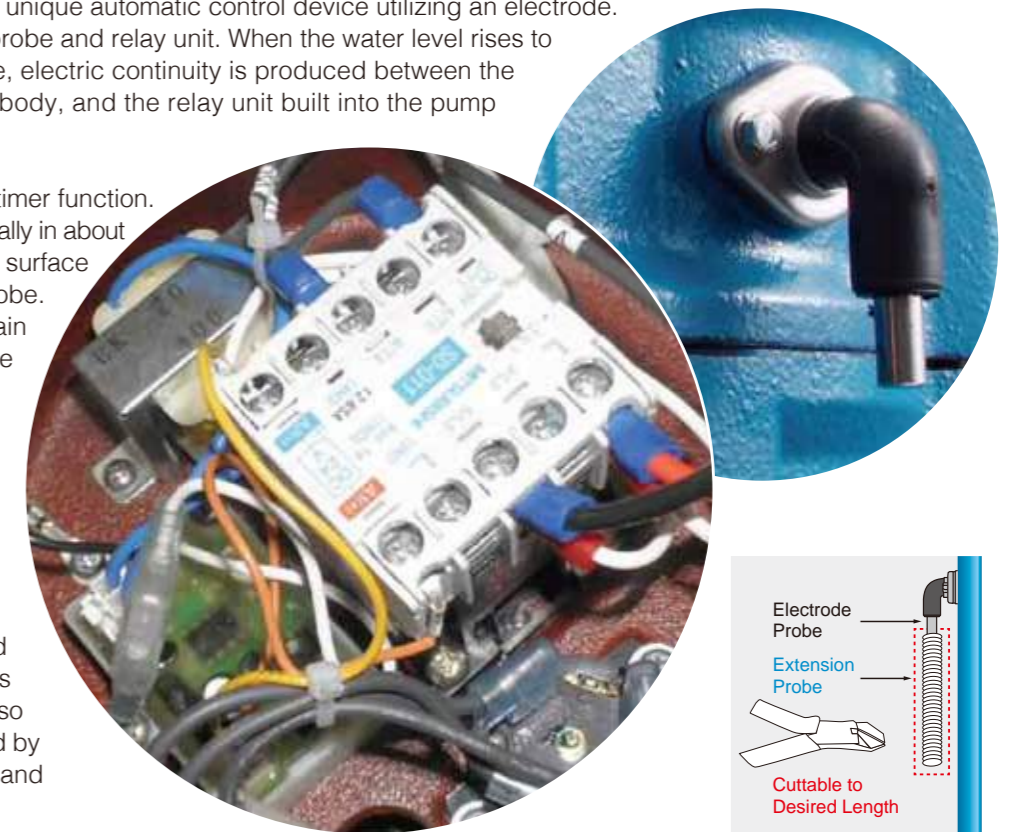
# 40 % Reduction in Power Consumption

## Electrode Control Device

Tsurumi has developed a unique automatic control device utilizing an electrode. It consists of an electric probe and relay unit. When the water level rises to contact the electric probe, electric continuity is produced between the electrode and the pump body, and the relay unit built into the pump turns on the pump.

The relay unit includes a timer function. The pump stops automatically in about one minute after the water surface falls below the electric probe. If the water level rises again to contact the electric probe within the run time, the pump continues to run for one more minute.

Since this mechanism eliminates dry-running, the pump can reduce power consumption by up to 40 percent compared with non-automatic pumps (Tsurumi comparison). It also prevents chattering caused by a turbulent water surface and extends operating life.

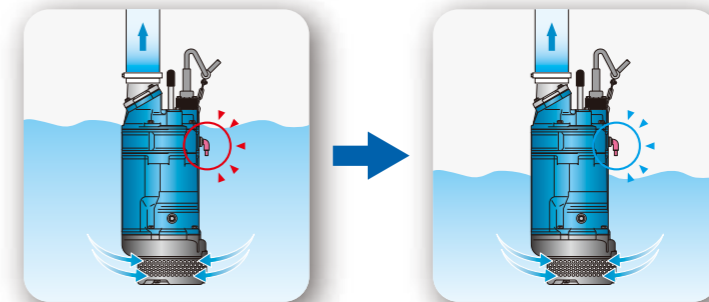


It is possible to set a lower starting water level by using an extension probe (optional accessory). The starting water level is adjustable because the extension probe can be cut to the desired length as it is made of coil spring.

## Automatic Operation

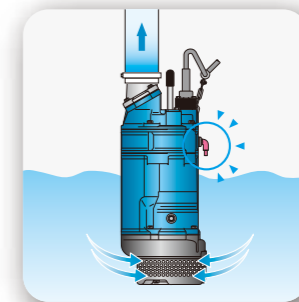
I

Pump continues to run while the electric probe remains submerged.



II

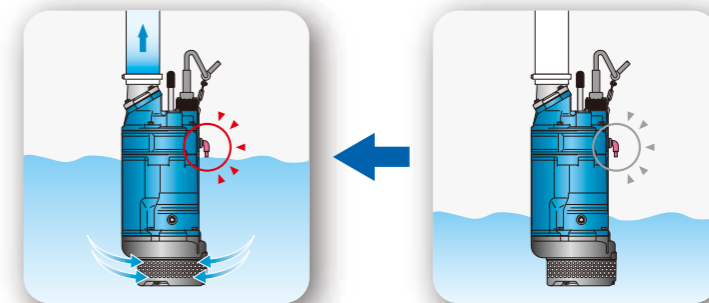
When the water surface falls below the electric probe, timer starts to count about one minute.



The process is repeated.

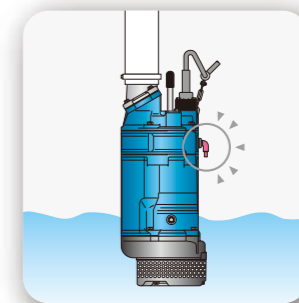
IV

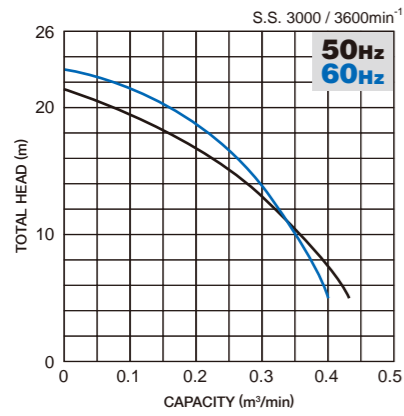
When the water level rises to contact the electric probe, pump starts operating again.



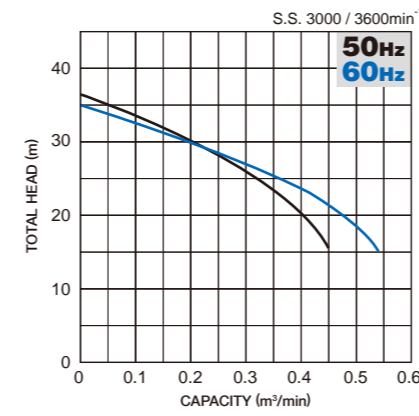
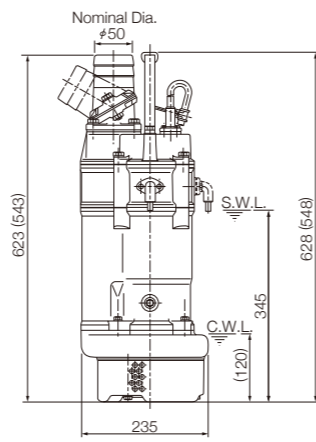
III

Pump stops in about one minute after the water level falls.

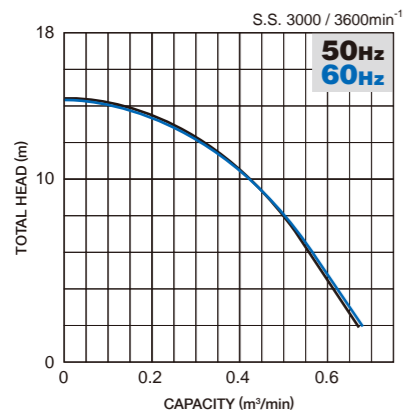
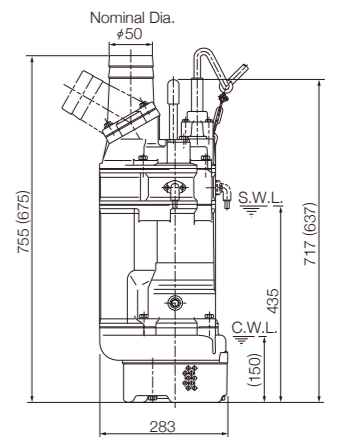




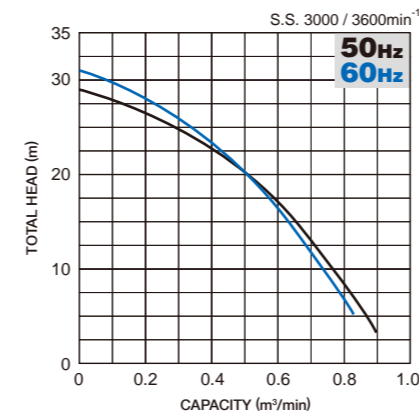
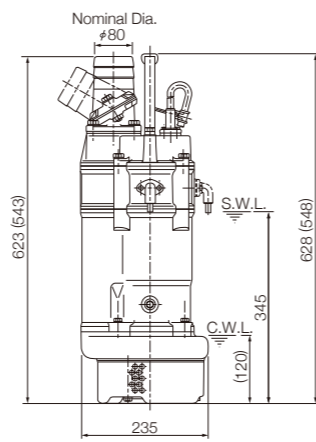
<b>KTZ21.5</b>	<b>KTZE21.5</b>
Motor Output	1.5 kW [Three-phase]
Dis. Bore	50 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	34 · 39 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



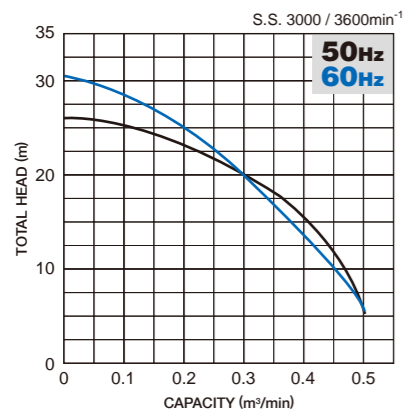
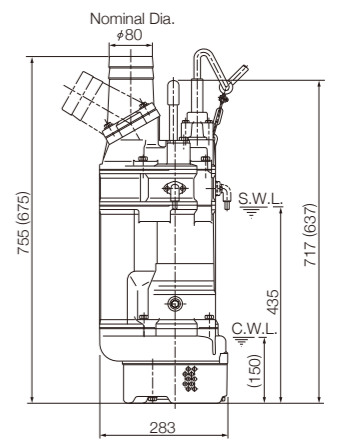
<b>KTZ23.7</b>	<b>KTZE23.7</b>
Motor Output	3.7 kW [Three-phase]
Dis. Bore	50 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	60 · 69 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



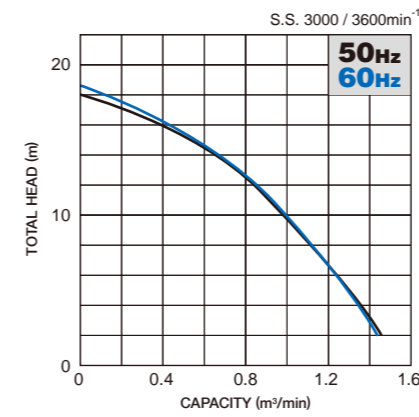
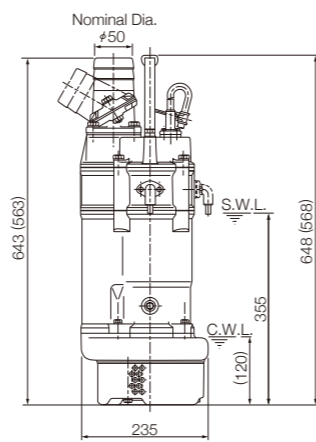
<b>KTZ31.5</b>	<b>KTZE31.5</b>
Motor Output	1.5 kW [Three-phase]
Dis. Bore	80 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	33 · 38 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



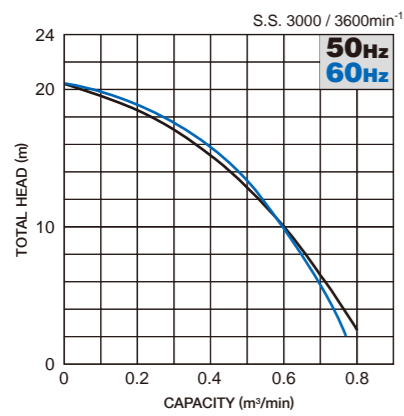
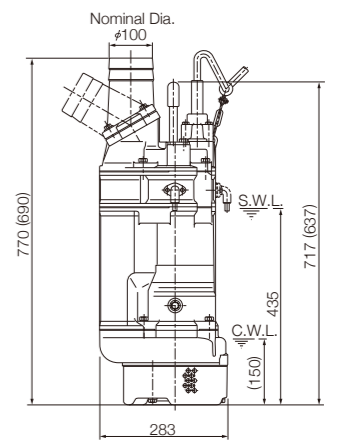
<b>KTZ33.7</b>	<b>KTZE33.7</b>
Motor Output	3.7 kW [Three-phase]
Dis. Bore	80 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	60 · 69 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



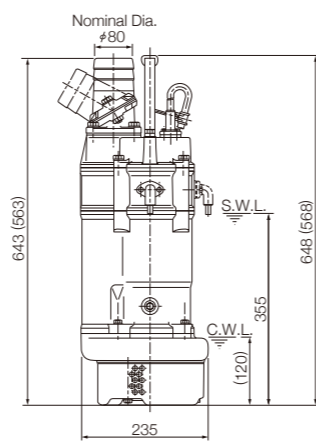
<b>KTZ22.2</b>	<b>KTZE22.2</b>
Motor Output	2.2 kW [Three-phase]
Dis. Bore	50 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	35 · 41 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



<b>KTZ43.7</b>	<b>KTZE43.7</b>
Motor Output	3.7 kW [Three-phase]
Dis. Bore	100 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	60 · 69 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line

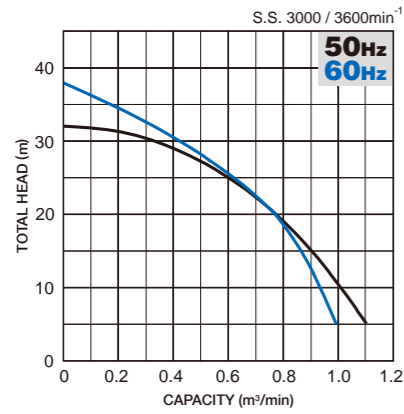


<b>KTZ32.2</b>	<b>KTZE32.2</b>
Motor Output	2.2 kW [Three-phase]
Dis. Bore	80 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	34 · 40 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



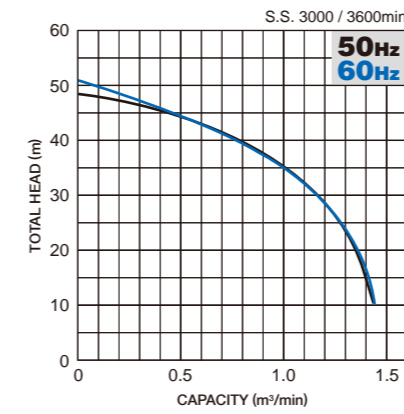
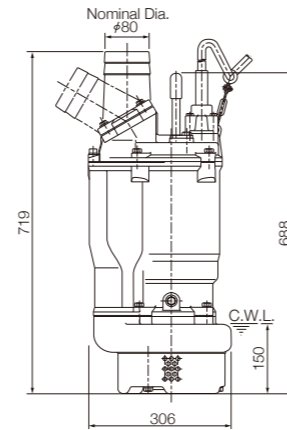
\* All the figures in parentheses show the dimensions of the KTZ.

\* S.W.L. : Starting Water Level  
C.W.L. : Continuous Running Water Level



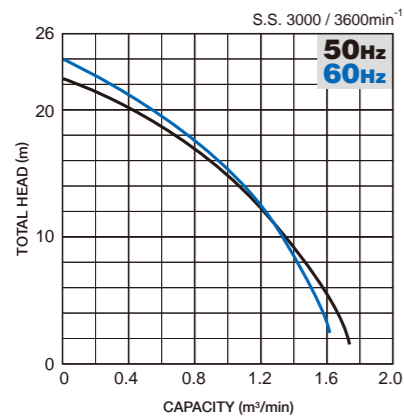
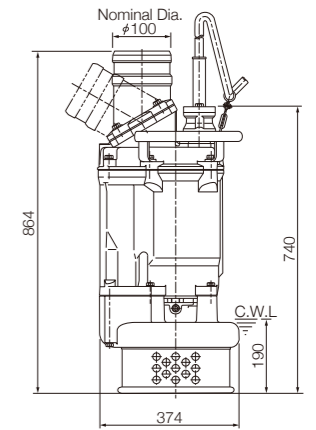
### KTZ35.5

Motor Output	5.5 kW [Three-phase]
Dis. Bore	80 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	74 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



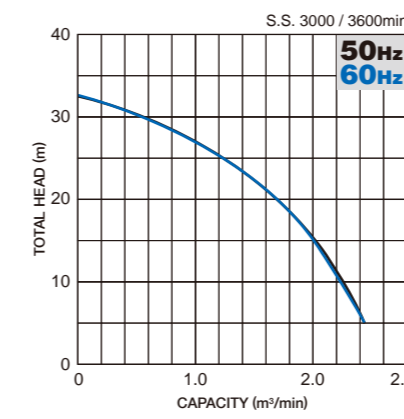
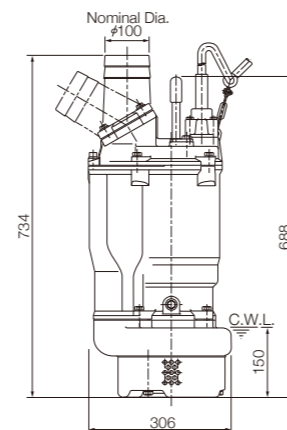
### KTZ411

Motor Output	11 kW [Three-phase]
Dis. Bore	100 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	130 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Seal Protection	Seal Pressure Relief Port
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



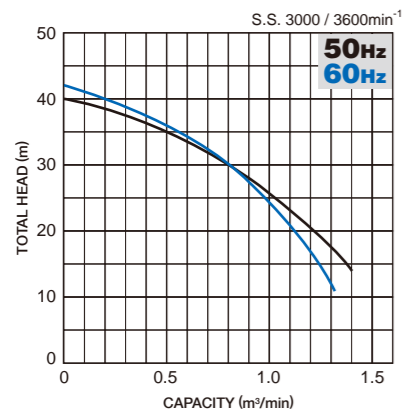
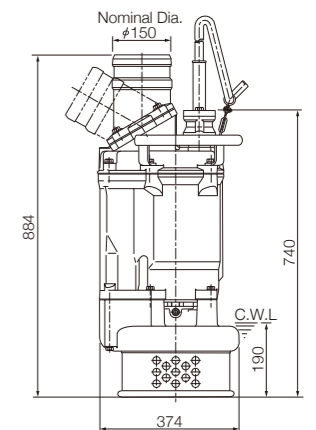
### KTZ45.5

Motor Output	5.5 kW [Three-phase]
Dis. Bore	100 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	74 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



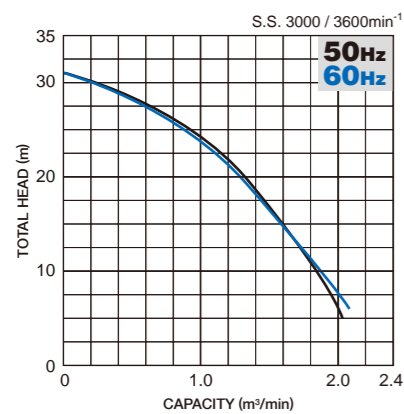
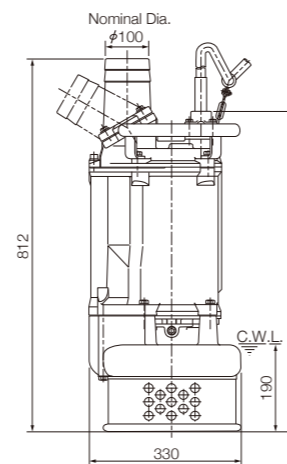
### KTZ611

Motor Output	11 kW [Three-phase]
Dis. Bore	150 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	131 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Seal Protection	Seal Pressure Relief Port
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



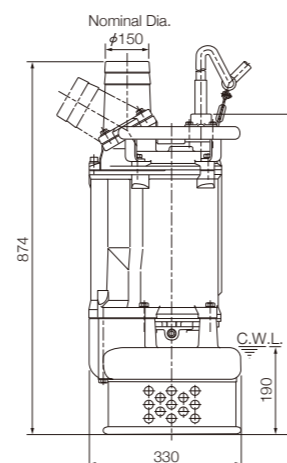
### KTZ47.5

Motor Output	7.5 kW [Three-phase]
Dis. Bore	100 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	101 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Seal Protection	Seal Pressure Relief Port
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



### KTZ67.5

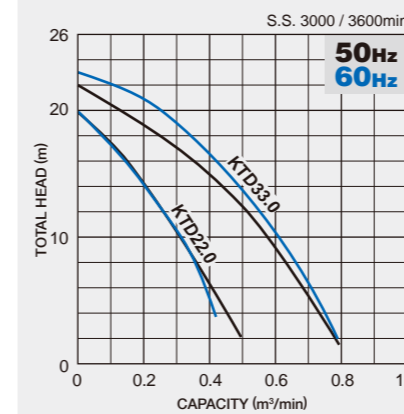
Motor Output	7.5 kW [Three-phase]
Dis. Bore	150 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	100 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Seal Protection	Seal Pressure Relief Port
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



## Submersible Slurry Pump with Agitator

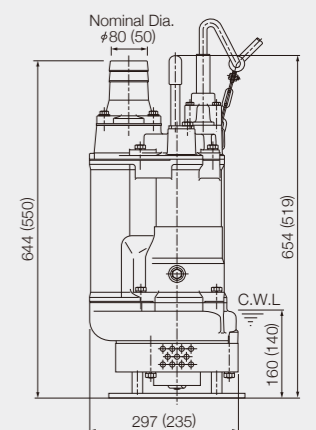
## Slurry use

The KTD is a submersible heavy-duty slurry pump utilizing the KTZ series as the base. It is designed to have more motor shaft power allowance than the KTZ to handle muddy water with higher specific gravities. An agitator suspends solids to assist in pumping sediments in combination with a dedicated strainer. This pump is suitable for transferring or draining bentonite slurry.



### KTD22.0 · KTD33.0

Motor Output	2.0 · 3.0 kW [Three-phase]
Dis. Bore	50 · 80 mm
Dis. Connection	Hose Coupling
Weight [excl. Cable]	38 · 65 kg
Cable Length	8 m
Shaft Seal	Double Mechanical Seal with Oil Lifter
Motor Protector	Circle Thermal Protector
Starting Method	Direct on Line



\* The figure in parentheses shows the dimensions of the model KTD22.0.



We reserve the right to change the specifications and designs for improvement without prior notice.

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