| Series: | Discharge Bore: | Motor Output / Pole: |
|---|---|---|
| KTZE | 50 - 100mm | 1.5 - 3.7kW / 2-pole |


The KTZE-series is a submersible three-phase automatic cast iron high head heavy-duty 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 cast iron body with high-chromium cast iron impeller enables it to withstand demanding conditions found in construction, aggregate and mining applications. 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 discharge direction is selectable between vertical and inclined, which prevents folding or bending of the discharge hose.

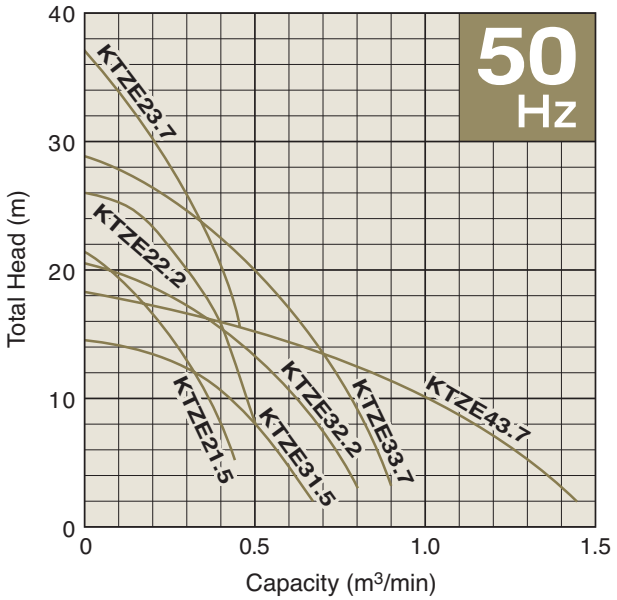
**Registration of Design**

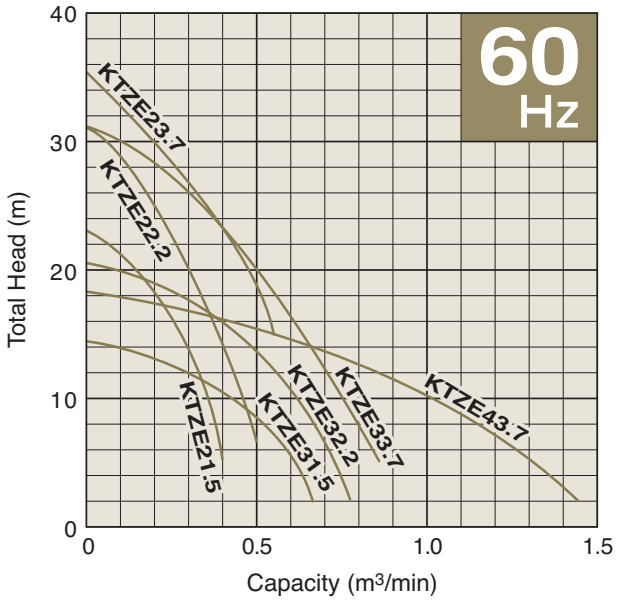
Tsurumi has registered the design of the KTZ-series in major countries. Design rights are granted under the laws of each country.

## Selection Table

| Model | Discharge Bore mm | Motor Output kW | Phase | Starting Method | Pole | Dry Weight kg |
|---|---|---|---|---|---|---|
| KTZE21.5 | 50 | 1.5 | 3-phase | Direct on Line | 2 | 39 |
| KTZE22.2 | 50 | 2.2 | 3-phase | Direct on Line | 2 | 41 |
| KTZE23.7 | 50 | 3.7 | 3-phase | Direct on Line | 2 | 69 |
| KTZE31.5 | 80 | 1.5 | 3-phase | Direct on Line | 2 | 38 |
| KTZE32.2 | 80 | 2.2 | 3-phase | Direct on Line | 2 | 40 |
| KTZE33.7 | 80 | 3.7 | 3-phase | Direct on Line | 2 | 69 |
| KTZE43.7 | 100 | 3.7 | 3-phase | Direct on Line | 2 | 69 |

## Performance Curves




## Electrode Probe Cover (Optional Accessory)

The electrode probe for the water level sensor is a critical component for the automatic operation of the pump. Pumps are occasionally subjected to strong impacts during installation or when moving from place to place in harsh sites such as construction and mining.
Therefore, Tsurumi has prepared a probe cover made of structural steel to protect the electrode probe from strong impacts. This component can be easily installed in the field.

| SPECIFICATIONS | Model | KTZE21.5 | KTZE-series<br>1.5kW, 3-phase |
|---|---|---|---|

**Type of Pump**
Submersible automatic high head drainage pump for construction and foundation works, floodwater drainage, etc.

**Automatic Control Device**
Electrode

**Type of Fluid**
Stormwater, groundwater, wash water, and sand-carrying water

Temperature: 0 to 40°C

**Discharge Bore & Connection**
50mm, Multi-directional Hose Coupling

**Motor Output**
1.5kW

**Power Supply**
Three-phase

**Starting Method**
Direct on Line

**Motor**
Continuous-duty rated, dry-type induction motor

Insulation Class: F
Degree of Protection: IP68

No. of Poles & Speed (Synchronous Speed)
2-pole, 3000/3600min$^{-1}$ (50/60Hz)

Power Supply Voltages & Rated Currents

| 50Hz | 60Hz |
|---|---|
| 380V – 3.6A | 220V – 6.2A |
| 400V – 3.6A | 380V – 3.4A |
| 415V – 3.6A | 440V – 3.2A |

**Power Cable**
Sheath: PVC
Standard Length: 8m
200 to 600V supply:
1 x 4 x 1.25mm$^2$, O.D. 11.1mm

**Dry Weight** (excluding cable)
39kg

**Impeller**
Semi-open impeller made of high-chromium cast iron

Solids Passage
50Hz – ϕ8.5mm
60Hz – ϕ8.5mm

**Cable Entry with Anti-Wicking Block**
Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.

**Bearing**
Permanently lubricated, deep-groove, double-shielded C3 ball bearings

**Shaft**
420 stainless steel

**Shaft Seal** (Mechanical Seal)
Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.

Upper Seal Face: SiC + SiC
Lower Seal Face: SiC + SiC

**Oil Seal** (Lip Seal)
Used as a "Dust Seal", it protects the mechanical seal from abrasive particles.

**OIL LIFTER**
Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.

Type of Lubricating Oil & Volume
Turbine Oil (ISO VG32), 740ml

**Motor Protection Device**
A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.

## Optional Accessories

**Multi-directional Male Threaded Coupling**
**Extension Probe**
**Electrode Probe Cover**

| SPECIFICATIONS | Model | KTZE22.2 | KTZE-series 2.2kW, 3-phase |
|---|---|---|---|

**Type of Pump**
Submersible automatic high head drainage pump for construction and foundation works, floodwater drainage, etc.

**Automatic Control Device**
Electrode

**Type of Fluid**
Stormwater, groundwater, wash water, and sand-carrying water

Temperature: 0 to 40°C

**Discharge Bore & Connection**
50mm, Multi-directional Hose Coupling

**Motor Output**
2.2kW

**Power Supply**
Three-phase

**Starting Method**
Direct on Line

**Motor**
Continuous-duty rated, dry-type induction motor

Insulation Class: F
Degree of Protection: IP68

No. of Poles & Speed (Synchronous Speed)
2-pole, 3000/3600min$^{-1}$ (50/60Hz)

Power Supply Voltages & Rated Currents

| 50Hz | 60Hz |
|---|---|
| 380V – 5.3A | 220V – 9.8A |
| 400V – 5.3A | 380V – 5.3A |
| 415V – 5.3A | 440V – 4.8A |

**Power Cable**
Sheath: PVC
Standard Length: 8m
200 to 600V supply:
1 x 4 x 1.25mm$^2$, O.D. 11.1mm

**Dry Weight** (excluding cable)
41kg

**Impeller**
Semi-open impeller made of high-chromium cast iron

Solids Passage
50Hz – ϕ8.5mm
60Hz – ϕ8.5mm

**Cable Entry with Anti-Wicking Block**
Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.

**Bearing**
Permanently lubricated, deep-groove, double-shielded C3 ball bearings

**Shaft**
420 stainless steel

**Shaft Seal** (Mechanical Seal)
Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.

Upper Seal Face: SiC + SiC
Lower Seal Face: SiC + SiC

**Oil Seal** (Lip Seal)
Used as a "Dust Seal", it protects the mechanical seal from abrasive particles.

**OIL LIFTER**
Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.

Type of Lubricating Oil & Volume
Turbine Oil (ISO VG32), 740ml

**Motor Protection Device**
A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.

## Optional Accessories

**Multi-directional Male Threaded Coupling**
**Extension Probe**
**Electrode Probe Cover**

| SPECIFICATIONS | Model | KTZE23.7 | KTZE-series 3.7kW, 3-phase |
|---|---|---|---|

**Type of Pump**
Submersible automatic high head drainage pump for construction and foundation works, floodwater drainage, etc.

**Automatic Control Device**
Electrode

**Type of Fluid**
Stormwater, groundwater, wash water, and sand-carrying water

Temperature: 0 to 40°C

**Discharge Bore & Connection**
50mm, Multi-directional Hose Coupling

**Motor Output**
3.7kW

**Power Supply**
Three-phase

**Starting Method**
Direct on Line

**Motor**
Continuous-duty rated, dry-type induction motor

Insulation Class: F
Degree of Protection: IP68

No. of Poles & Speed (Synchronous Speed)
2-pole, 3000/3600min$^{-1}$ (50/60Hz)

Power Supply Voltages & Rated Currents

| 50Hz | 60Hz |
|---|---|
| 380V – 8.4A | 220V – 14.8A |
| 400V – 8.0A | 380V – 8.4A |
| 415V – 7.7A | 440V – 7.6A |

**Power Cable**
Sheath: Chloroprene rubber
Standard Length: 8m
200 to 600V supply:
1 x 4 x 2.0mm$^2$, O.D. 14.4mm

**Dry Weight** (excluding cable)
69kg

**Impeller**
Semi-open impeller made of high-chromium cast iron

Solids Passage
50Hz – ϕ8.5mm
60Hz – ϕ8.5mm

**Cable Entry with Anti-Wicking Block**
Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.

**Bearing**
Permanently lubricated, deep-groove, double-shielded C3 ball bearings

**Shaft**
420 stainless steel

**Shaft Seal** (Mechanical Seal)
Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.

Upper Seal Face: SiC + SiC
Lower Seal Face: SiC + SiC

**Oil Seal** (Lip Seal)
Used as a "Dust Seal", it protects the mechanical seal from abrasive particles.

**OIL LIFTER**
Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.

Type of Lubricating Oil & Volume
Turbine Oil (ISO VG32), 1250ml

**Motor Protection Device**
A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.

## Optional Accessories

**Multi-directional Male Threaded Coupling**
**Extension Probe**
**Electrode Probe Cover**

| SPECIFICATIONS | Model | KTZE31.5 | KTZE-series<br>1.5kW, 3-phase |
|---|---|---|---|

**Type of Pump**
Submersible automatic high head drainage pump for construction and foundation works, floodwater drainage, etc.

**Automatic Control Device**
Electrode

**Type of Fluid**
Stormwater, groundwater, wash water, and sand-carrying water

Temperature: 0 to 40°C

**Discharge Bore & Connection**
80mm, Multi-directional Hose Coupling

**Motor Output**
1.5kW

**Power Supply**
Three-phase

**Starting Method**
Direct on Line

**Motor**
Continuous-duty rated, dry-type induction motor

Insulation Class: F
Degree of Protection: IP68

No. of Poles & Speed (Synchronous Speed)
2-pole, 3000/3600min$^{-1}$ (50/60Hz)

Power Supply Voltages & Rated Currents

| 50Hz | 60Hz |
|---|---|
| 380V – 3.6A | 220V – 6.2A |
| 400V – 3.6A | 380V – 3.4A |
| 415V – 3.6A | 440V – 3.2A |

**Power Cable**
Sheath: PVC
Standard Length: 8m
200 to 600V supply:
1 x 4 x 1.25mm$^2$, O.D. 11.1mm

**Dry Weight** (excluding cable)
38kg

**Impeller**
Semi-open impeller made of high-chromium cast iron

Solids Passage
50Hz – ϕ8.5mm
60Hz – ϕ8.5mm

**Cable Entry with Anti-Wicking Block**
Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.

**Bearing**
Permanently lubricated, deep-groove, double-shielded C3 ball bearings

**Shaft**
420 stainless steel

**Shaft Seal** (Mechanical Seal)
Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.

Upper Seal Face: SiC + SiC
Lower Seal Face: SiC + SiC

**Oil Seal** (Lip Seal)
Used as a "Dust Seal", it protects the mechanical seal from abrasive particles.

**OIL LIFTER**
Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.

Type of Lubricating Oil & Volume
Turbine Oil (ISO VG32), 740ml

**Motor Protection Device**
A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.

## Optional Accessories

**Multi-directional Male Threaded Coupling**
**Extension Probe**
**Electrode Probe Cover**

| SPECIFICATIONS | Model | KTZE32.2 | KTZE-series 2.2kW, 3-phase |
|---|---|---|---|

**Type of Pump**
Submersible automatic high head drainage pump for construction and foundation works, floodwater drainage, etc.

**Automatic Control Device**
Electrode

**Type of Fluid**
Stormwater, groundwater, wash water, and sand-carrying water

Temperature: 0 to 40°C

**Discharge Bore & Connection**
80mm, Multi-directional Hose Coupling

**Motor Output**
2.2kW

**Power Supply**
Three-phase

**Starting Method**
Direct on Line

**Motor**
Continuous-duty rated, dry-type induction motor

Insulation Class: F
Degree of Protection: IP68

No. of Poles & Speed (Synchronous Speed)
2-pole, 3000/3600min$^{-1}$ (50/60Hz)

Power Supply Voltages & Rated Currents

| 50Hz | 60Hz |
|---|---|
| 380V – 5.3A | 220V – 9.8A |
| 400V – 5.3A | 380V – 5.3A |
| 415V – 5.3A | 440V – 4.8A |

**Power Cable**
Sheath: PVC
Standard Length: 8m
200 to 600V supply:
1 x 4 x 1.25mm$^2$, O.D. 11.1mm

**Dry Weight** (excluding cable)
40kg

**Impeller**
Semi-open impeller made of high-chromium cast iron

Solids Passage
50Hz – ϕ8.5mm
60Hz – ϕ8.5mm

**Cable Entry with Anti-Wicking Block**
Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.

**Bearing**
Permanently lubricated, deep-groove, double-shielded C3 ball bearings

**Shaft**
420 stainless steel

**Shaft Seal** (Mechanical Seal)
Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.

Upper Seal Face: SiC + SiC
Lower Seal Face: SiC + SiC

**Oil Seal** (Lip Seal)
Used as a "Dust Seal", it protects the mechanical seal from abrasive particles.

**OIL LIFTER**
Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.

Type of Lubricating Oil & Volume
Turbine Oil (ISO VG32), 740ml

**Motor Protection Device**
A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.

## Optional Accessories

**Multi-directional Male Threaded Coupling**
**Extension Probe**
**Electrode Probe Cover**

| SPECIFICATIONS | Model | KTZE33.7 | KTZE-series 3.7kW, 3-phase |
|---|---|---|---|

**Type of Pump**
Submersible automatic high head drainage pump for construction and foundation works, floodwater drainage, etc.

**Automatic Control Device**
Electrode

**Type of Fluid**
Stormwater, groundwater, wash water, and sand-carrying water

Temperature: 0 to 40°C

**Discharge Bore & Connection**
80mm, Multi-directional Hose Coupling

**Motor Output**
3.7kW

**Power Supply**
Three-phase

**Starting Method**
Direct on Line

**Motor**
Continuous-duty rated, dry-type induction motor

Insulation Class: F
Degree of Protection: IP68

No. of Poles & Speed (Synchronous Speed)
2-pole, 3000/3600min$^{-1}$ (50/60Hz)

Power Supply Voltages & Rated Currents

| 50Hz | 60Hz |
|---|---|
| 380V – 8.4A | 220V – 14.8A |
| 400V – 8.0A | 380V – 8.4A |
| 415V – 7.7A | 440V – 7.6A |

**Power Cable**
Sheath: Chloroprene rubber
Standard Length: 8m
200 to 600V supply:
1 x 4 x 2.0mm$^2$, O.D. 14.4mm

**Dry Weight** (excluding cable)
69kg

**Impeller**
Semi-open impeller made of high-chromium cast iron

Solids Passage
50Hz – ϕ8.5mm
60Hz – ϕ8.5mm

**Cable Entry with Anti-Wicking Block**
Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.

**Bearing**
Permanently lubricated, deep-groove, double-shielded C3 ball bearings

**Shaft**
420 stainless steel

**Shaft Seal** (Mechanical Seal)
Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.

Upper Seal Face: SiC + SiC
Lower Seal Face: SiC + SiC

**Oil Seal** (Lip Seal)
Used as a "Dust Seal", it protects the mechanical seal from abrasive particles.

**OIL LIFTER**
Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.

Type of Lubricating Oil & Volume
Turbine Oil (ISO VG32), 1250ml

**Motor Protection Device**
A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.

## Optional Accessories

**Multi-directional Male Threaded Coupling**
**Extension Probe**
**Electrode Probe Cover**

| SPECIFICATIONS | Model | KTZE43.7 | KTZE-series 3.7kW, 3-phase |
|---|---|---|---|

**Type of Pump**
Submersible automatic high head drainage pump for construction and foundation works, floodwater drainage, etc.

**Automatic Control Device**
Electrode

**Type of Fluid**
Stormwater, groundwater, wash water, and sand-carrying water

Temperature: 0 to 40°C

**Discharge Bore & Connection**
100mm, Multi-directional Hose Coupling

**Motor Output**
3.7kW

**Power Supply**
Three-phase

**Starting Method**
Direct on Line

**Motor**
Continuous-duty rated, dry-type induction motor

Insulation Class: F
Degree of Protection: IP68

No. of Poles & Speed (Synchronous Speed)
2-pole, 3000/3600min$^{-1}$ (50/60Hz)

Power Supply Voltages & Rated Currents

| 50Hz | 60Hz |
|---|---|
| 380V – 8.4A | 220V – 14.8A |
| 400V – 8.0A | 380V – 8.4A |
| 415V – 7.7A | 440V – 7.6A |

**Power Cable**
Sheath: Chloroprene rubber
Standard Length: 8m
200 to 600V supply:
1 x 4 x 2.0mm$^2$, O.D. 14.4mm

**Dry Weight** (excluding cable)
69kg

**Impeller**
Semi-open impeller made of high-chromium cast iron

Solids Passage
50Hz – ϕ8.5mm
60Hz – ϕ8.5mm

**Cable Entry with Anti-Wicking Block**
Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.

**Bearing**
Permanently lubricated, deep-groove, double-shielded C3 ball bearings

**Shaft**
420 stainless steel

**Shaft Seal** (Mechanical Seal)
Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.

Upper Seal Face: SiC + SiC
Lower Seal Face: SiC + SiC

**Oil Seal** (Lip Seal)
Used as a "Dust Seal", it protects the mechanical seal from abrasive particles.

**OIL LIFTER**
Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.

Type of Lubricating Oil & Volume
Turbine Oil (ISO VG32), 1250ml

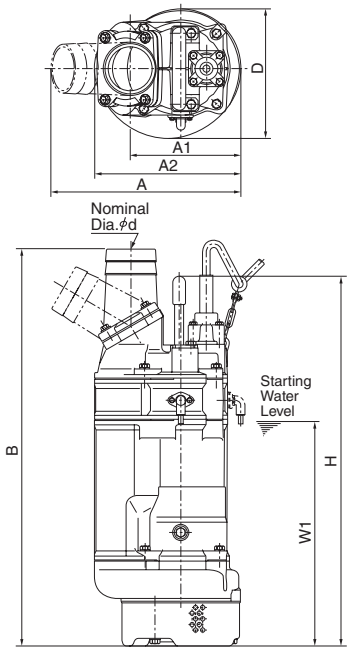
**Motor Protection Device**
A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.

## Optional Accessories

**Multi-directional Male Threaded Coupling**
**Extension Probe**
**Electrode Probe Cover**

# DIMENSIONS | Model KTZE21.5 to KTZE43.7

KTZE-series
50 - 100mm




Unit: mm

| Model | d | A | A1 | A2 | B | D | H | W1 |
|---|---|---|---|---|---|---|---|---|
| KTZE21.5 | 50 | 270 | 173 | 235 | 623 | 216 | 628 | 345 |
| KTZE22.2 | 50 | 270 | 173 | 235 | 643 | 216 | 648 | 355 |
| KTZE23.7 | 50 | 342 | 213 | 283 | 755 | 252 | 717 | 435 |
| KTZE31.5 | 80 | 276 | 173 | 235 | 623 | 216 | 628 | 345 |
| KTZE32.2 | 80 | 276 | 173 | 235 | 643 | 216 | 648 | 355 |
| KTZE33.7 | 80 | 347 | 213 | 283 | 755 | 252 | 717 | 435 |
| KTZE43.7 | 100 | 367 | 213 | 283 | 770 | 252 | 717 | 435 |