

Series:

**U**

Discharge Bore:

**50 · 80mm**

Motor Output / Pole:

**1.5 - 3.7kW / 2-pole**



The U-series is a 2-pole motor, compact type 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 foreign matters to be pumped out with minimum contact to the impeller.  
\*excluding model 80U21.5

**Guide Rail Fitting System**

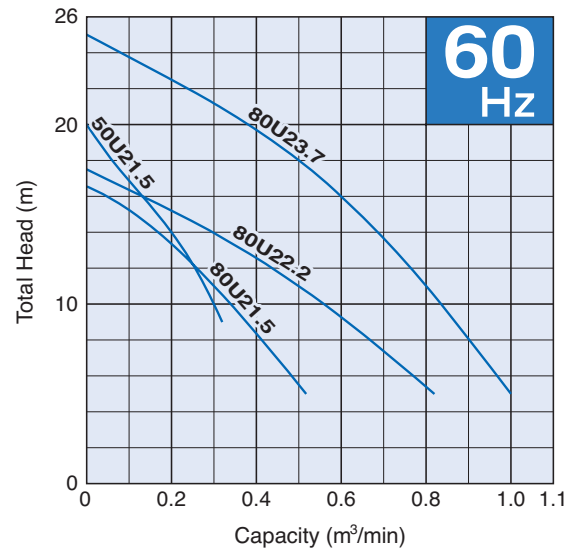
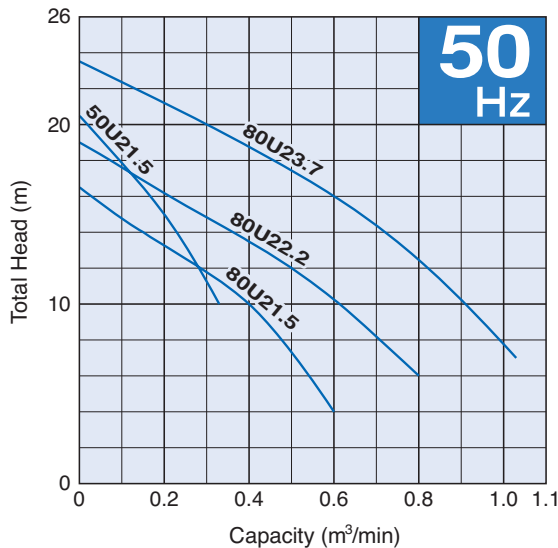
The guide rail fitting system connects the pump to and from the piping easily just by lowering or hoisting the pump, allowing easy maintenance and inspection without the need to enter the sump.

**Selection Table**

Model	Discharge Bore mm	Motor Output kW	Phase	Pole	Optional Accessories for Types of Installation	
					Free Standing	Guide Rail Fitting
					Bend Set	“TOS” Set
50U21.5	50	1.5	3-phase	2	—	TOS5-50
80U21.5	80	1.5	3-phase	2	BEND 80 (oval)	TOS3-65-80
80U22.2	80	2.2	3-phase	2	BEND 80-80F	TOS3-65-80
80U23.7	80	3.7	3-phase	2	BEND 80-80F	TOS3-65-80

● Every model having 80mm discharge bore is supplied without the discharge bend. Select the accessory for the desired type of installation.

**Performance Curves**



SPECIFICATIONS	Model	50U21.5							
		U-series 1.5kW, 3-phase							
<p><b>Type of Pump</b> Submersible cast iron vortex pump suitable for pumping sewage, wastewater, storm water, etc.</p> <p><b>Type of Fluid</b> Sewage, wastewater, and water carrying solid matters</p> <p>Temperature: 0 to 40°C</p> <p><b>Discharge Bore &amp; Connection</b> 50mm, Threaded Oval Flange</p> <p><b>Motor Output</b> 1.5kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Direct on Line</p> <p><b>Motor</b> Continuous-duty rated, dry-type induction motor</p> <p>Insulation Class: F Degree of Protection: IP68</p> <p>No. of Poles &amp; Speed (Synchronous Speed) 2-pole, 3000/3600min<sup>-1</sup> (50/60Hz)</p> <p>Power Supply Voltages &amp; Rated Currents</p> <table border="0"> <tr> <td>50Hz</td> <td>60Hz</td> </tr> <tr> <td>380V – 3.5A</td> <td>220V – 6.0A</td> </tr> <tr> <td>400V – 3.5A</td> <td>380V – 3.4A</td> </tr> <tr> <td>415V – 3.5A</td> <td>440V – 3.2A</td> </tr> </table> <p><b>Power Cable</b> Sheath: PVC Standard Length: 6m 200 to 600V supply: 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.1mm</p> <p><b>Dry Weight</b> (excluding cable) Free Standing Type: 30kg Guide Rail Fitting Type: 35kg</p>	50Hz	60Hz	380V – 3.5A	220V – 6.0A	400V – 3.5A	380V – 3.4A	415V – 3.5A	440V – 3.2A	<p><b>Impeller</b> Vortex impeller, dynamically balanced</p> <p>Solids Passage 50Hz – ϕ35mm 60Hz – ϕ35mm</p> <p><b>Cable Entry with Anti-Wicking Block</b> 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.</p> <p><b>Bearing</b> Permanently lubricated, deep-groove, double-shielded C3 ball bearings</p> <p><b>Shaft</b> 420 stainless steel</p> <p><b>Shaft Seal (Mechanical Seal)</b> Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.</p> <p>Upper Seal Face: Ceramic + Carbon Lower Seal Face: SiC + SiC</p> <p><b>Oil Seal (Lip Seal)</b> Used as a “Dust Seal”; it protects the mechanical seal from abrasive particles.</p> <p><b>OIL LIFTER</b> 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.</p> <p>Type of Lubricating Oil &amp; Volume Turbine Oil (ISO VG32), 840ml</p> <p><b>Motor Protection Device</b> 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.</p>
50Hz	60Hz								
380V – 3.5A	220V – 6.0A								
400V – 3.5A	380V – 3.4A								
415V – 3.5A	440V – 3.2A								
<p><b>Optional Accessories</b></p> <p><b>TOS Set</b> (Guide Rail Fitting Type)</p> <ul style="list-style-type: none"> <li>• Duckfoot Bend</li> <li>• Guide Support</li> <li>• Guide Hook</li> <li>• Lifting Chain 5m (with Shackles)</li> <li>• Threaded JIS 10kg/cm<sup>2</sup> Flange</li> </ul> <p><b>External Leakage Sensor</b> (Electrode)</p>	<p><b>Special Specifications</b></p> <p><b>High Temperature Liquids Version (60-80°C)</b></p>								
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SPECIFICATIONS	Model	80U21.5	
		U-series 1.5kW, 3-phase	

<p><b>Type of Pump</b> Submersible cast iron vortex pump suitable for pumping sewage, wastewater, storm water, etc.</p> <p><b>Type of Fluid</b> Sewage, wastewater, and water carrying solid matters</p> <p>Temperature: 0 to 40°C</p> <p><b>Discharge Bore</b> 80mm</p> <p><b>Motor Output</b> 1.5kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Direct on Line</p> <p><b>Motor</b> Continuous-duty rated, dry-type induction motor</p> <p>Insulation Class: F Degree of Protection: IP68</p> <p>No. of Poles &amp; Speed (Synchronous Speed) 2-pole, 3000/3600min<sup>-1</sup> (50/60Hz)</p> <p>Power Supply Voltages &amp; Rated Currents</p> <table border="0"> <tr> <td>50Hz</td> <td>60Hz</td> </tr> <tr> <td>380V – 3.5A</td> <td>220V – 6.0A</td> </tr> <tr> <td>400V – 3.5A</td> <td>380V – 3.4A</td> </tr> <tr> <td>415V – 3.5A</td> <td>440V – 3.2A</td> </tr> </table> <p><b>Power Cable</b> Sheath: PVC Standard Length: 6m 200 to 600V supply: 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.1mm</p> <p><b>Dry Weight</b> (excluding cable) Free Standing Type: 40kg Guide Rail Fitting Type: 36kg</p>	50Hz	60Hz	380V – 3.5A	220V – 6.0A	400V – 3.5A	380V – 3.4A	415V – 3.5A	440V – 3.2A	<p><b>Impeller</b> Vortex impeller, dynamically balanced</p> <p>Solids Passage 50Hz – φ46mm 60Hz – φ46mm</p> <p><b>Cable Entry with Anti-Wicking Block</b> 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.</p> <p><b>Bearing</b> Permanently lubricated, deep-groove, double-shielded C3 ball bearings</p> <p><b>Shaft</b> 420 stainless steel</p> <p><b>Shaft Seal (Mechanical Seal)</b> Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.</p> <p>Upper Seal Face: Ceramic + Carbon Lower Seal Face: SiC + SiC</p> <p><b>Oil Seal (Lip Seal)</b> Used as a “Dust Seal”; it protects the mechanical seal from abrasive particles.</p> <p><b>OIL LIFTER</b> 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.</p> <p>Type of Lubricating Oil &amp; Volume Turbine Oil (ISO VG32), 840ml</p> <p><b>Motor Protection Device</b> 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.</p>
50Hz	60Hz								
380V – 3.5A	220V – 6.0A								
400V – 3.5A	380V – 3.4A								
415V – 3.5A	440V – 3.2A								

### Optional Accessories

**Bend Set** (Free Standing Type)

- Discharge Bend
- Threaded Oval Flange

**TOS Set** (Guide Rail Fitting Type)

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

**External Leakage Sensor** (Electrode)

### Special Specifications

**High Temperature Liquids Version (60-80°C)**

SPECIFICATIONS	Model	U-series							
	80U22.2	2.2kW, 3-phase							
<p><b>Type of Pump</b> Submersible cast iron vortex pump suitable for pumping sewage, wastewater, storm water, etc.</p> <p><b>Type of Fluid</b> Sewage, wastewater, and water carrying solid matters</p> <p>Temperature: 0 to 40°C</p> <p><b>Discharge Bore</b> 80mm</p> <p><b>Motor Output</b> 2.2kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Direct on Line</p> <p><b>Motor</b> Continuous-duty rated, dry-type induction motor</p> <p>Insulation Class: F Degree of Protection: IP68</p> <p>No. of Poles &amp; Speed (Synchronous Speed) 2-pole, 3000/3600min<sup>-1</sup> (50/60Hz)</p> <p>Power Supply Voltages &amp; Rated Currents</p> <table border="0"> <tr> <td>50Hz</td> <td>60Hz</td> </tr> <tr> <td>380V – 5.0A</td> <td>220V – 9.0A</td> </tr> <tr> <td>400V – 4.9A</td> <td>380V – 5.0A</td> </tr> <tr> <td>415V – 4.8A</td> <td>440V – 4.5A</td> </tr> </table> <p><b>Power Cable</b> Sheath: PVC Standard Length: 6m 380 to 600V supply: 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.1mm 200 to 240V supply: 1 × 4 × 2.0mm<sup>2</sup>, O.D. 11.8mm</p> <p><b>Dry Weight</b> (excluding cable) Free Standing Type: 55kg Guide Rail Fitting Type: 51kg</p>	50Hz	60Hz	380V – 5.0A	220V – 9.0A	400V – 4.9A	380V – 5.0A	415V – 4.8A	440V – 4.5A	<p><b>Impeller</b> Vortex impeller, dynamically balanced</p> <p>Solids Passage 50Hz – <math>\phi</math>56mm 60Hz – <math>\phi</math>56mm</p> <p><b>Cable Entry with Anti-Wicking Block</b> 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.</p> <p><b>Bearing</b> Permanently lubricated, deep-groove, double-shielded C3 ball bearings</p> <p><b>Shaft</b> 420 stainless steel</p> <p><b>Shaft Seal (Mechanical Seal)</b> Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.</p> <p>Upper Seal Face: Ceramic + Carbon Lower Seal Face: SiC + SiC</p> <p><b>Oil Seal (Lip Seal)</b> Used as a “Dust Seal”; it protects the mechanical seal from abrasive particles.</p> <p><b>OIL LIFTER</b> 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.</p> <p>Type of Lubricating Oil &amp; Volume Turbine Oil (ISO VG32), 1080ml</p> <p><b>Motor Protection Device</b> 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.</p>
50Hz	60Hz								
380V – 5.0A	220V – 9.0A								
400V – 4.9A	380V – 5.0A								
415V – 4.8A	440V – 4.5A								
<p><b>Optional Accessories</b></p> <p><b>Bend Set</b> (Free Standing Type)</p> <ul style="list-style-type: none"> <li>• Discharge Bend</li> <li>• Threaded JIS 10kg/cm<sup>2</sup> Flange</li> </ul> <p><b>TOS Set</b> (Guide Rail Fitting Type)</p> <ul style="list-style-type: none"> <li>• Duckfoot Bend</li> <li>• Guide Support</li> <li>• Guide Hook</li> <li>• Lifting Chain 5m (with Shackles)</li> <li>• Threaded JIS 10kg/cm<sup>2</sup> Flange</li> </ul> <p><b>External Leakage Sensor</b> (Electrode)</p> <p><b>Special Specifications</b></p> <p><b>High Temperature Liquids Version (60-80°C)</b></p>									
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SPECIFICATIONS	Model	80U23.7	
		U-series 3.7kW, 3-phase	

**Type of Pump**

Submersible cast iron vortex pump suitable for pumping sewage, wastewater, storm water, etc.

**Type of Fluid**

Sewage, wastewater, and water carrying solid matters

Temperature: 0 to 40°C

**Discharge Bore**

80mm

**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<sup>-1</sup> (50/60Hz)

**Power Supply Voltages & Rated Currents**

50Hz	60Hz
380V – 8.0A	220V – 13.8A
400V – 7.7A	380V – 7.9A
415V – 7.5A	440V – 6.9A

**Power Cable**

Sheath: PVC

Standard Length: 6m

380 to 600V supply:

1 × 4 × 2.0mm<sup>2</sup>, O.D. 11.8mm

200 to 240V supply:

1 × 4 × 3.5mm<sup>2</sup>, O.D. 13.9mm

**Dry Weight (excluding cable)**

Free Standing Type: 62kg

Guide Rail Fitting Type: 58kg

**Impeller**

Vortex impeller, dynamically balanced

Solids Passage

50Hz –  $\phi$ 56mm

60Hz –  $\phi$ 56mm

**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: Ceramic + Carbon

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), 1320ml

**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**
**Bend Set (Free Standing Type)**

- Discharge Bend
- Threaded JIS 10kg/cm<sup>2</sup> Flange

**TOS Set (Guide Rail Fitting Type)**

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

**External Leakage Sensor (Electrode)**
**Special Specifications**
**High Temperature Liquids Version (60-80°C)**

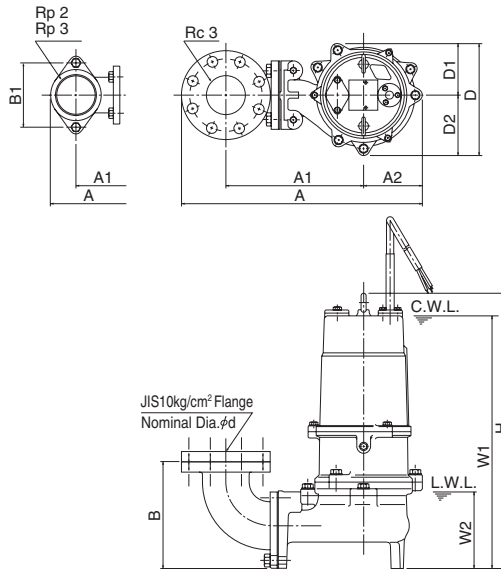
**DIMENSIONS**

**Model (TOS)50U21.5 to (TOS)80U23.7**

**U-series**

**50·80mm**

**Free Standing Type**



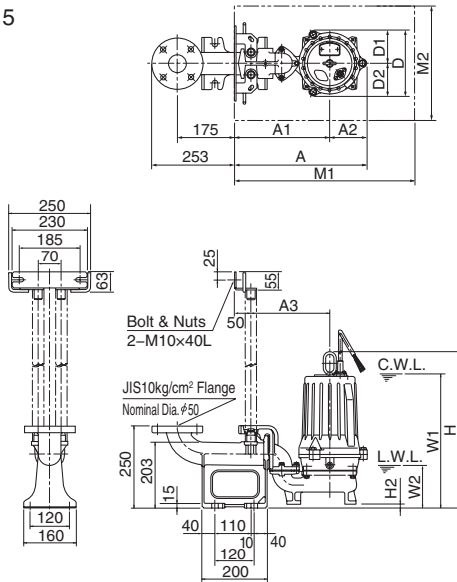
C. W. L. : Continuous Running Water Level  
L. W. L. : Lowest Running Water Level

Unit: mm

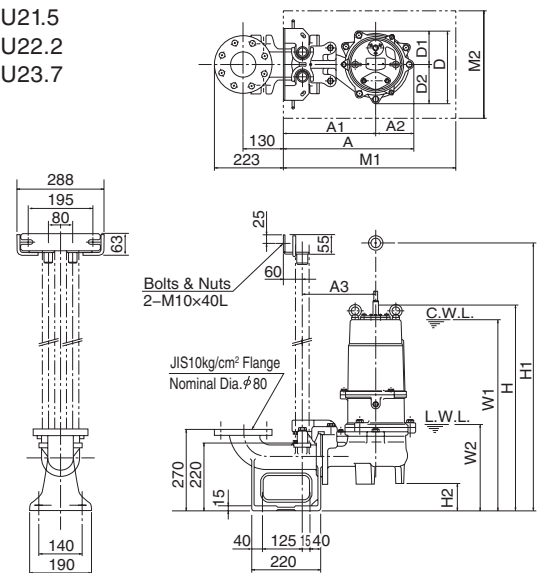
Model	d	A	A1	A2	B	B1	D	D1	D2	W1	W2	H
50U21.5	50	297	147	114	101	90	202	101	101	395	105	466
80U21.5	80	420	252	114	173	140	202	101	101	430	135	499
80U22.2	80	502	287	123	225	—	240	114	126	490	160	562
80U23.7	80	502	287	123	226	—	234	108	126	520	160	562

**Guide Rail Fitting Type: TOS Set**

TOS50U21.5



TOS80U21.5  
TOS80U22.2  
TOS80U23.7



C. W. L. : Continuous Running Water Level  
L. W. L. : Lowest Running Water Level

Unit: mm

Model	A	A1	A2	A3	D	D1	D2	W1	W2	H	H1	H2	M1	M2
TOS50U21.5	405	291	114	241	202	101	101	410	130	478	—	12	550	350
TOS80U21.5	384	270	114	210	202	101	101	530	235	601	—	102	550	350
TOS80U22.2	418	295	123	235	240	114	126	575	245	647	—	85	550	350
TOS80U23.7	418	295	123	235	234	108	126	610	245	650	895	85	550	350