

**Submersible Air Mixer:**

**Air-inlet Bore:**

**Motor Output / Pole:**

**TAR**

**65·80mm**

**1.5 - 3.7kW / 4-pole**



The TAR-series is a submersible air mixer that combines aeration and mixing to promote wastewater treatment at public and industrial treatment plants. The powerful current discharged from the high-performance axial-flow impeller shears the air supplied by the blower into tiny bubbles, forming a furious flow of mixed air and water that efficiently delivers oxygen throughout the wastewater. Moreover, Tsurumi's original downward 4-directional discharge design spreads that mixed flow outward along the bottom of the tank toward the edges to ensure homogeneity.

When paired with a Tsurumi rotary air blower, the TAR air mixers not only offer effective aerobic agitation but they can also be used for both aerobic and anaerobic processing by simply switching the blower on and off.

**Guide Rail Fitting System**

The guide rail fitting system connects the aerator to and from the piping easily just by lowering or hoisting the aerator, allowing easy maintenance and inspection without the need to enter the tank. The models used in combination with the guide rail fitting system can be identified by the prefix "TOB".

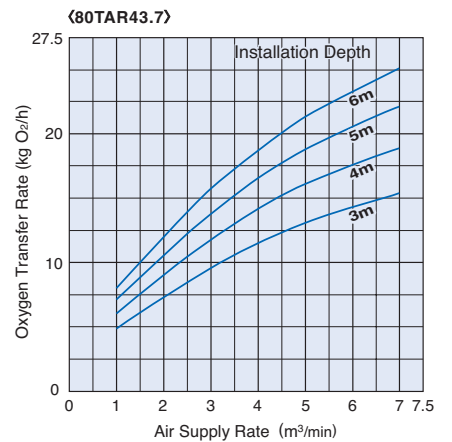
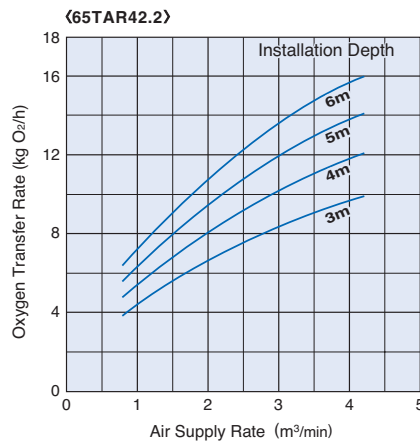
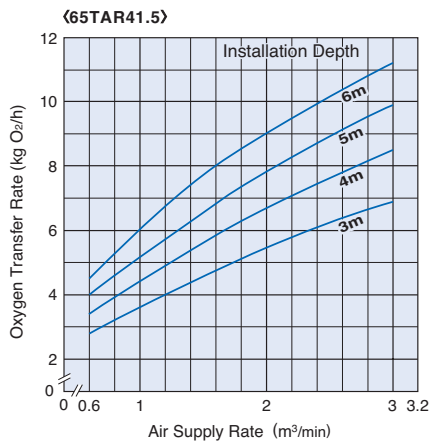
**Selection Table**

Model	Air-inlet Bore mm	Motor Output kW	Pole	Flow Rate m³/min	Air Supply Rate m³/min	Oxygen Transfer Rate kgO₂/h	Mixing Capacity m³	Max Water Depth m	Types of Installation	
									Free Standing	Guide Rail Fitting
65TAR41.5	65	1.5	4	9	0.6 - 3	4 - 9.9	273	10	65TAR41.5	TOB65TAR41.5
65TAR42.2	65	2.2	4	12.5	0.8 - 4.2	5.8 - 14	400	10	65TAR42.2	TOB65TAR42.2
80TAR43.7	80	3.7	4	20	1 - 7	7 - 22	670	10	80TAR43.7	TOB80TAR43.7

- Mixing capacity is based on a maximum vertical to horizontal ratio of 1:1.1. For other applications, contact an authorized dealer.
- Oxygen transfer rate is given for an equipment depth of 5 m.  
Actual results may vary due to water quality, temperature and depth, and tank shape.
- Air supply rate is given for standard conditions. Standard conditions are an air temperature of 20°C and barometric pressure of 1 atm.

**Oxygen Transfer Rate – Air Supply Rate Curves**

- Conditions: Clean water, 20°C, 0 mg/l DO
- Oxygen Transfer Rate may fluctuate about 10% due to water temperature, tank shape, water quality and other factors.  
Select a model that ensures an ample air supply rate for your application.
- The max. water depth of installation is 10 m, but please contact an authorized dealer for the performance at depths of 6 m or more.



SPECIFICATIONS	Model	65TAR41.5							
		TAR-series 1.5kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 65mm, JIS 10kg/cm<sup>2</sup> 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: E (available in F on special request) Degree of Protection: IP68</p> <p>No. of Poles &amp; Speed (Synchronous Speed) 4-pole, 1500/1800min<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 – 4.2A</td> <td>220V – 7.3A</td> </tr> <tr> <td>400V – 4.0A</td> <td>380V – 4.2A</td> </tr> <tr> <td>415V – 3.9A</td> <td>440V – 3.7A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.3mm 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.3mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 345kg Guide Rail Fitting Type: 325kg</p>	50Hz	60Hz	380V – 4.2A	220V – 7.3A	400V – 4.0A	380V – 4.2A	415V – 3.9A	440V – 3.7A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 300min<sup>-1</sup> (50/60Hz)</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Helical Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 2500ml</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: SiC + SiC 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), 3300ml</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> <p><b>Leakage Sensor (Float)</b> A float type leakage sensor. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 4.2A	220V – 7.3A								
400V – 4.0A	380V – 4.2A								
415V – 3.9A	440V – 3.7A								

SPECIFICATIONS	Model	65TAR42.2							
		TAR-series 2.2kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 65mm, JIS 10kg/cm<sup>2</sup> Flange</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: E (available in F on special request) Degree of Protection: IP68</p> <p>No. of Poles &amp; Speed (Synchronous Speed) 4-pole, 1500/1800min<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 – 5.1A</td> <td>220V – 8.8A</td> </tr> <tr> <td>400V – 5.0A</td> <td>380V – 4.9A</td> </tr> <tr> <td>415V – 5.0A</td> <td>440V – 4.4A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.3mm 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.3mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 345kg Guide Rail Fitting Type: 325kg</p>	50Hz	60Hz	380V – 5.1A	220V – 8.8A	400V – 5.0A	380V – 4.9A	415V – 5.0A	440V – 4.4A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 300min<sup>-1</sup> (50/60Hz)</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Helical Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 2500ml</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: SiC + SiC 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), 3300ml</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> <p><b>Leakage Sensor (Float)</b> A float type leakage sensor. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 5.1A	220V – 8.8A								
400V – 5.0A	380V – 4.9A								
415V – 5.0A	440V – 4.4A								

SPECIFICATIONS	Model	80TAR43.7							
		TAR-series 3.7kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 80mm, JIS 10kg/cm<sup>2</sup> Flange</p> <p><b>Motor Output</b> 3.7kW</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: E (available in F on special request) Degree of Protection: IP68</p> <p>No. of Poles &amp; Speed (Synchronous Speed) 4-pole, 1500/1800min<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 – 8.2A</td> <td>220V – 14.2A</td> </tr> <tr> <td>400V – 7.9A</td> <td>380V – 8.0A</td> </tr> <tr> <td>415V – 7.7A</td> <td>440V – 7.1A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 2.0mm<sup>2</sup>, O.D. 12.2mm 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.3mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 420kg Guide Rail Fitting Type: 400kg</p>	50Hz	60Hz	380V – 8.2A	220V – 14.2A	400V – 7.9A	380V – 8.0A	415V – 7.7A	440V – 7.1A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 300min<sup>-1</sup> (50/60Hz)</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Helical Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 2500ml</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: SiC + SiC 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), 3300ml</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> <p><b>Leakage Sensor (Float)</b> A float type leakage sensor. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 8.2A	220V – 14.2A								
400V – 7.9A	380V – 8.0A								
415V – 7.7A	440V – 7.1A								

**Submersible Air Mixer:**

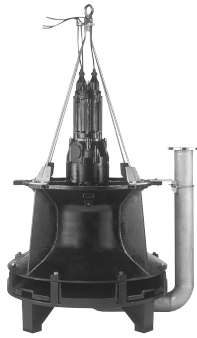
**Air-inlet Bore:**

**Motor Output / Pole:**

**TAR**

**100 - 150mm**

**5.5 - 11kW / 4-pole**



The TAR-series is a submersible air mixer that combines aeration and mixing to promote wastewater treatment at public and industrial treatment plants. The powerful current discharged from the high-performance axial-flow impeller shears the air supplied by the blower into tiny bubbles, forming a furious flow of mixed air and water that efficiently delivers oxygen throughout the wastewater. Moreover, Tsurumi's original downward 4-directional discharge design spreads that mixed flow outward along the bottom of the tank toward the edges to ensure homogeneity. When paired with a Tsurumi rotary air blower, the TAR air mixers not only offer effective aerobic agitation but they can also be used for both aerobic and anaerobic processing by simply switching the blower on and off.

**Guide Rail Fitting System**

The guide rail fitting system connects the aerator to and from the piping easily just by lowering or hoisting the aerator, allowing easy maintenance and inspection without the need to enter the tank. The models used in combination with the guide rail fitting system can be identified by the prefix "TOB".

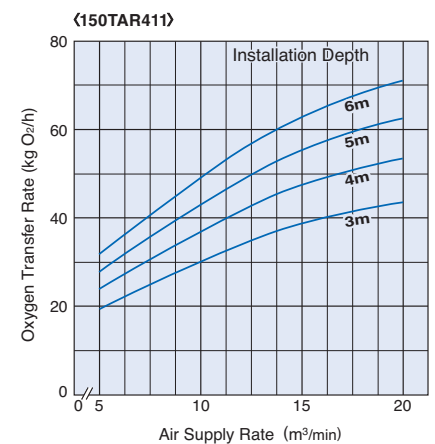
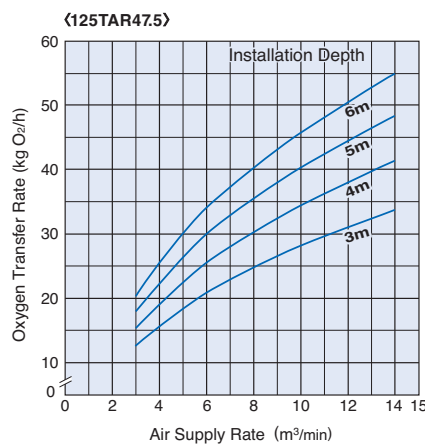
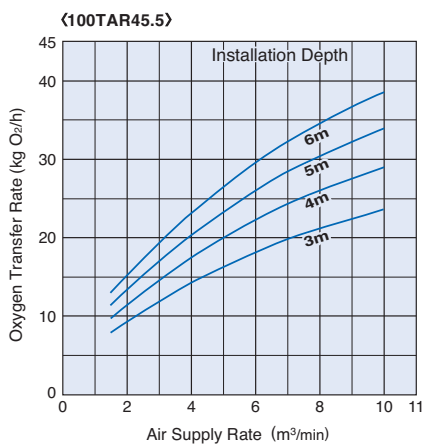
**Selection Table**

Model	Air-inlet Bore mm	Motor Output kW	Pole	Flow Rate m <sup>3</sup> /min	Air Supply Rate m <sup>3</sup> /min	Oxygen Transfer Rate kgO <sub>2</sub> /h	Mixing Capacity m <sup>3</sup>	Max Water Depth m	Types of Installation	
									Free Standing	Guide Rail Fitting
100TAR45.5	100	5.5	4	31	1.5 - 10	12 - 34	1000	10	100TAR45.5	TOB100TAR45.5
125TAR47.5	125	7.5	4	46	3 - 14	18 - 48	1360	10	125TAR47.5	TOB125TAR47.5
150TAR411	150	11	4	65	5 - 20	28 - 63	2000	10	150TAR411	TOB150TAR411

- Mixing capacity is based on a maximum vertical to horizontal ratio of 1:1.1. For other applications, contact an authorized dealer.
- Oxygen transfer rate is given for an equipment depth of 5 m. Actual results may vary due to water quality, temperature and depth, and tank shape.
- Air supply rate is given for standard conditions. Standard conditions are an air temperature of 20°C and barometric pressure of 1 atm.

**Oxygen Transfer Rate – Air Supply Rate Curves**

- Conditions: Clean water, 20°C, 0 mg/l DO
- Oxygen Transfer Rate may fluctuate about 10% due to water temperature, tank shape, water quality and other factors. Select a model that ensures an ample air supply rate for your application.
- The max. water depth of installation is 10 m, but please contact an authorized dealer for the performance at depths of 6 m or more.



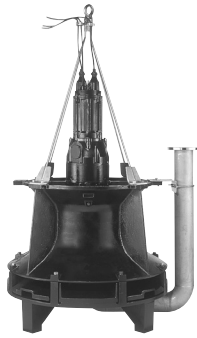
SPECIFICATIONS	Model	100TAR45.5							
		TAR-series 5.5kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 100mm, JIS 10kg/cm<sup>2</sup> Flange</p> <p><b>Motor Output</b> 5.5kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Direct on Line (Star-Delta available on special request)</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) 4-pole, 1500/1800min<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 – 12.4A</td> <td>220V – 21.2A</td> </tr> <tr> <td>400V – 12.1A</td> <td>380V – 11.8A</td> </tr> <tr> <td>415V – 12.1A</td> <td>440V – 10.5A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 3.5mm<sup>2</sup>, O.D. 14.1mm 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.3mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 588kg Guide Rail Fitting Type: 573kg</p>	50Hz	60Hz	380V – 12.4A	220V – 21.2A	400V – 12.1A	380V – 11.8A	415V – 12.1A	440V – 10.5A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 300min<sup>-1</sup> (50/60Hz)</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Planetary Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 3000ml</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: SiC + SiC 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), 3200ml</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> <p><b>Leakage Sensor (Float)</b> A float type leakage sensor. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 12.4A	220V – 21.2A								
400V – 12.1A	380V – 11.8A								
415V – 12.1A	440V – 10.5A								



SPECIFICATIONS	Model	125TAR47.5							
		TAR-series 7.5kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 125mm, JIS 10kg/cm<sup>2</sup> Flange</p> <p><b>Motor Output</b> 7.5kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Direct on Line (Star-Delta available on special request)</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) 4-pole, 1500/1800min<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 – 16.3A</td> <td>220V – 27.6A</td> </tr> <tr> <td>400V – 15.9A</td> <td>380V – 15.6A</td> </tr> <tr> <td>415V – 15.7A</td> <td>440V – 13.7A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 5.5mm<sup>2</sup>, O.D. 16.8mm 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.3mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 1135kg Guide Rail Fitting Type: 1100kg</p>	50Hz	60Hz	380V – 16.3A	220V – 27.6A	400V – 15.9A	380V – 15.6A	415V – 15.7A	440V – 13.7A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 300min<sup>-1</sup> (50/60Hz)</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Planetary Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 6000ml</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: SiC + SiC 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), 5500ml</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> <p><b>Leakage Sensor (Float)</b> A float type leakage sensor. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 16.3A	220V – 27.6A								
400V – 15.9A	380V – 15.6A								
415V – 15.7A	440V – 13.7A								

SPECIFICATIONS	Model	150TAR411							
		TAR-series 11kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 150mm, JIS 10kg/cm<sup>2</sup> Flange</p> <p><b>Motor Output</b> 11kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Star-Delta</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) 4-pole, 1500/1800min<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 – 24.4A</td> <td>220V – 40.7A</td> </tr> <tr> <td>400V – 23.8A</td> <td>380V – 22.9A</td> </tr> <tr> <td>415V – 23.5A</td> <td>440V – 20.1A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 3.5mm<sup>2</sup>, O.D. 14.1mm 1 × 3 × 3.5mm<sup>2</sup>, O.D. 12.9mm 1 × 4 × 2.0mm<sup>2</sup>, O.D. 13.0mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 1475kg Guide Rail Fitting Type: 1385kg</p>	50Hz	60Hz	380V – 24.4A	220V – 40.7A	400V – 23.8A	380V – 22.9A	415V – 23.5A	440V – 20.1A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 300min<sup>-1</sup> (50/60Hz)</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Planetary Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 8000ml</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: SiC + SiC 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), 6000ml</p> <p><b>Motor Protection Device</b> A miniature thermal protector is embedded in each winding of the motor. Should excessive heat builds up, the bimetal strip opens to cause the control panel to shut the power supply.</p> <p><b>Leakage Sensor (Electrode)</b> Made of 304 stainless steel. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 24.4A	220V – 40.7A								
400V – 23.8A	380V – 22.9A								
415V – 23.5A	440V – 20.1A								



**Submersible Air Mixer:**
**Air-inlet Bore:**
**Motor Output / Pole:**
**TAR**
**150 - 250mm**
**15 - 30kW / 4-pole**


The TAR-series is a submersible air mixer that combines aeration and mixing to promote wastewater treatment at public and industrial treatment plants. The powerful current discharged from the high-performance axial-flow impeller shears the air supplied by the blower into tiny bubbles, forming a furious flow of mixed air and water that efficiently delivers oxygen throughout the wastewater. Moreover, Tsurumi's original downward 4-directional discharge design spreads that mixed flow outward along the bottom of the tank toward the edges to ensure homogeneity.

When paired with a Tsurumi rotary air blower, the TAR air mixers not only offer effective aerobic agitation but they can also be used for both aerobic and anaerobic processing by simply switching the blower on and off.

### Guide Rail Fitting System

The guide rail fitting system connects the aerator to and from the piping easily just by lowering or hoisting the aerator, allowing easy maintenance and inspection without the need to enter the tank. The models used in combination with the guide rail fitting system can be identified by the prefix "TOB".

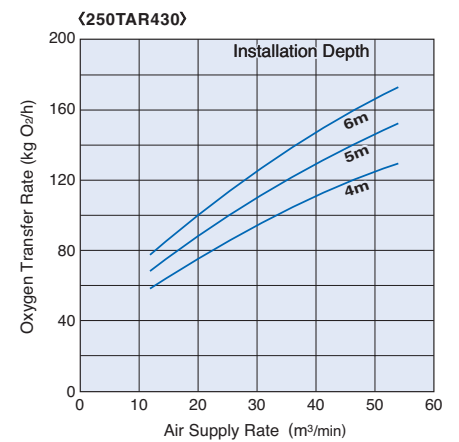
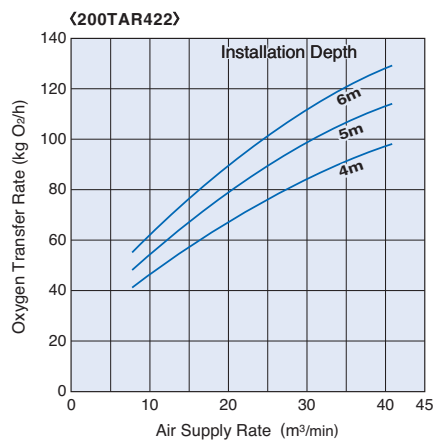
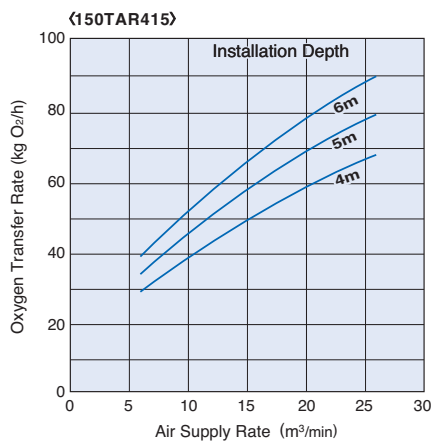
### Selection Table

Model	Air-inlet Bore mm	Motor Output kW	Pole	Flow Rate m <sup>3</sup> /min	Air Supply Rate m <sup>3</sup> /min	Oxygen Transfer Rate kgO <sub>2</sub> /h	Mixing Capacity m <sup>3</sup>	Max Water Depth m	Types of Installation	
									Free Standing	Guide Rail Fitting
150TAR415	150	15	4	100	6 - 26	34.5 - 79	2700	10	150TAR415	TOB150TAR415
200TAR422	200	22	4	150	8 - 41	49 - 113.5	4000	10	200TAR422	TOB200TAR422
250TAR430	250	30	4	200	12 - 54	68.5 - 151	5500	10	250TAR430	TOB250TAR430

- Mixing capacity is based on a maximum vertical to horizontal ratio of 1:1.1. For other applications, contact an authorized dealer.
- Oxygen transfer rate is given for an equipment depth of 5 m.  
Actual results may vary due to water quality, temperature and depth, and tank shape.
- Air supply rate is given for standard conditions. Standard conditions are an air temperature of 20°C and barometric pressure of 1 atm.

### Oxygen Transfer Rate – Air Supply Rate Curves

- Conditions: Clean water, 20°C, 0 mg/l DO
- Oxygen Transfer Rate may fluctuate about 10% due to water temperature, tank shape, water quality and other factors.  
Select a model that ensures an ample air supply rate for your application.
- The max. water depth of installation is 10 m, but please contact an authorized dealer for the performance at depths of 6 m or more.



SPECIFICATIONS	Model	150TAR415							
		TAR-series 15kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 150mm, JIS 10kg/cm<sup>2</sup> Flange</p> <p><b>Motor Output</b> 15kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Star-Delta</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) 4-pole, 1500/1800min<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 – 32.6A</td> <td>220V – 54.6A</td> </tr> <tr> <td>400V – 31.9A</td> <td>380V – 30.7A</td> </tr> <tr> <td>415V – 31.2A</td> <td>440V – 27.2A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 5.5mm<sup>2</sup>, O.D. 16.8mm 1 × 3 × 5.5mm<sup>2</sup>, O.D. 15.2mm 1 × 4 × 2.0mm<sup>2</sup>, O.D. 13.0mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 1580kg Guide Rail Fitting Type: 1530kg</p>	50Hz	60Hz	380V – 32.6A	220V – 54.6A	400V – 31.9A	380V – 30.7A	415V – 31.2A	440V – 27.2A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 300min<sup>-1</sup> (50/60Hz)</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Planetary Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 8000ml</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: SiC + SiC 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), 6000ml</p> <p><b>Motor Protection Device</b> A miniature thermal protector is embedded in each winding of the motor. Should excessive heat builds up, the bimetal strip opens to cause the control panel to shut the power supply.</p> <p><b>Leakage Sensor (Electrode)</b> Made of 304 stainless steel. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 32.6A	220V – 54.6A								
400V – 31.9A	380V – 30.7A								
415V – 31.2A	440V – 27.2A								

SPECIFICATIONS	Model	200TAR422							
		TAR-series 22kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 200mm, JIS 10kg/cm<sup>2</sup> Flange</p> <p><b>Motor Output</b> 22kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Star-Delta</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) 4-pole, 1500/1800min<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 – 47A</td> <td>220V – 82A</td> </tr> <tr> <td>400V – 45A</td> <td>380V – 47A</td> </tr> <tr> <td>415V – 43A</td> <td>440V – 41A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 14mm<sup>2</sup>, O.D. 21.7mm 1 × 3 × 14mm<sup>2</sup>, O.D. 19.7mm 1 × 4 × 2.0mm<sup>2</sup>, O.D. 13.0mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 2530kg Guide Rail Fitting Type: 2430kg</p>	50Hz	60Hz	380V – 47A	220V – 82A	400V – 45A	380V – 47A	415V – 43A	440V – 41A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 250min<sup>-1</sup> (50/60Hz)</p> <p><b>Mouth Ring &amp; Wear Ring</b> Prevent wear in the casing, resulting in reduced maintenance costs.</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Planetary Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 17500ml</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: SiC + SiC 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), 12000ml</p> <p><b>Motor Protection Device</b> A miniature thermal protector is embedded in each winding of the motor. Should excessive heat builds up, the bimetal strip opens to cause the control panel to shut the power supply.</p> <p><b>Leakage Sensor (Electrode)</b> Made of 304 stainless steel. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 47A	220V – 82A								
400V – 45A	380V – 47A								
415V – 43A	440V – 41A								

SPECIFICATIONS	Model	250TAR430							
		TAR-series 30kW, 3-phase							
<p><b>Type of Equipment</b> Submersible air mixer with an axial-flow impeller suitable for aeration and mixing in sewage and wastewater treatment</p> <p><b>Type of Fluid</b> Sewage and wastewater</p> <p>Temperature: 0 to 40°C</p> <p><b>Air-inlet Bore &amp; Connection</b> 250mm, JIS 10kg/cm<sup>2</sup> Flange</p> <p><b>Motor Output</b> 30kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Star-Delta</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) 4-pole, 1500/1800min<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 – 60A</td> <td>220V – 106A</td> </tr> <tr> <td>400V – 57A</td> <td>380V – 61A</td> </tr> <tr> <td>415V – 55A</td> <td>440V – 53A</td> </tr> </table> <p><b>Power Cable</b> Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 14mm<sup>2</sup>, O.D. 21.7mm 1 × 3 × 14mm<sup>2</sup>, O.D. 19.7mm 1 × 4 × 2.0mm<sup>2</sup>, O.D. 13.0mm</p> <p><b>Dry Weight (excluding cable)</b> Free Standing Type: 3360kg Guide Rail Fitting Type: 3260kg</p>	50Hz	60Hz	380V – 60A	220V – 106A	400V – 57A	380V – 61A	415V – 55A	440V – 53A	<p><b>Impeller</b> 4-bladed, axial-flow impeller made of 304 stainless steel casting, dynamically balanced</p> <p>Speed (Synchronous Speed) 250min<sup>-1</sup> (50/60Hz)</p> <p><b>Mouth Ring &amp; Wear Ring</b> Prevent wear in the casing, resulting in reduced maintenance costs.</p> <p><b>Cable Clip &amp; Protection Tube</b> Protect the cable and cable connection. The protection tube guards the cable against wear caused by contact with the tank wall, while the clip ensures the cable stays connected under the tension caused by tugging and pulling.</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>Speed Reducer</b> Planetary Gears</p> <p>Type of Lubricating Oil &amp; Volume Gear Oil (ISO VG150), 18000ml</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: SiC + SiC 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), 12000ml</p> <p><b>Motor Protection Device</b> A miniature thermal protector is embedded in each winding of the motor. Should excessive heat builds up, the bimetal strip opens to cause the control panel to shut the power supply.</p> <p><b>Leakage Sensor (Electrode)</b> Made of 304 stainless steel. It can be wired to a control panel to alert operators of water incursion into the oil chamber.</p>
50Hz	60Hz								
380V – 60A	220V – 106A								
400V – 57A	380V – 61A								
415V – 55A	440V – 53A								
<b>TSURUMI MANUFACTURING CO., LTD.</b>									

**DIMENSIONS**

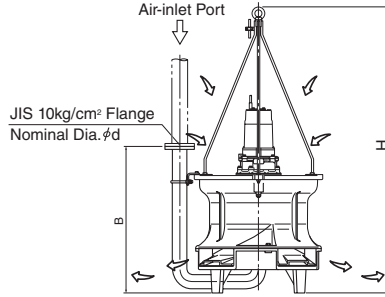
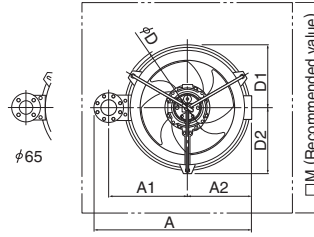
**Model 65TAR41.5 to 250TAR430**

**TAR-series**

**65 - 250mm**

**Free Standing Type**

- Unless otherwise stated, the nominal diameter in drawings is  $\phi 80$  mm.



Unit: mm

Model	d	A	A1	A2	D	D1	D2	B	H	M
65TAR41.5	65	893	440	365	760	355	380	870	1600	1200
65TAR42.2	65	893	440	365	760	355	380	870	1600	1200
80TAR43.7	80	983	490	400	820	390	410	913	1720	1300
100TAR45.5	100	1105	560	440	930	430	465	960	2140	1450
125TAR47.5	125	1400	700	575	1150	—	—	1180	2270	1750
150TAR411	150	1635	820	675	1350	—	—	1430	2620	2050
150TAR415	150	1750	870	740	1480	—	—	1500	2722	2150
200TAR422	200	1885	920	800	1600	—	—	1650	3131	2300
250TAR430	250	2250	1100	950	1900	—	—	1740	3351	2700

- $\phi D$  is the maximum diameter excluding the air supply pipe.

**DIMENSIONS**

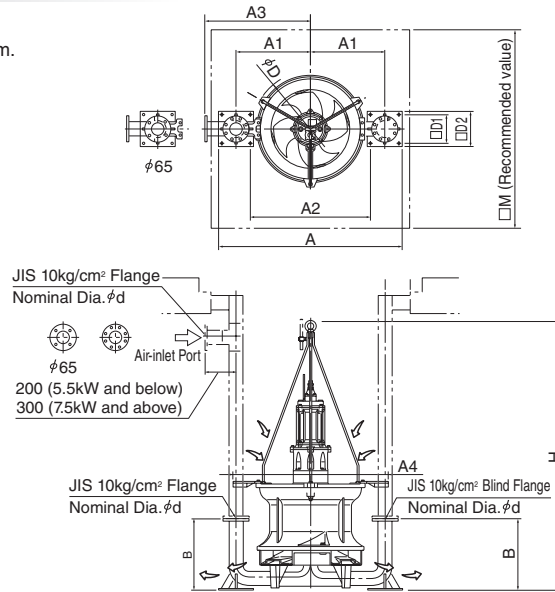
Model **TOB65TAR41.5 to TOB250TAR430**

**TAR-series**

**65 - 250mm**

**Guide Rail Fitting Type: TOB Set**

● Unless otherwise stated, the nominal diameter in drawings is  $\phi 80$  mm.



Unit: mm

Model	d	A	A1	A2	A3	A4	D	D1	D2	B	H	M
TOB 65TAR41.5	65	1140	470	780	670	980	760	160	200	350	1600	1200
TOB 65TAR42.2	65	1140	470	780	670	980	760	160	200	350	1600	1200
TOB 80TAR43.7	80	1290	520	830	720	1080	820	210	250	350	1720	1300
TOB100TAR45.5	100	1480	600	970	800	1250	930	230	280	550	2140	1500
TOB125TAR47.5	125	1860	760	1280	1060	1580	1150	240	340	700	2270	2000
TOB150TAR411	150	2090	870	1490	1170	1800	1350	250	350	800	2620	2300
TOB150TAR415	150	2270	945	1610	1245	1950	1480	280	380	800	2722	2450
TOB200TAR422	200	2600	1100	1900	1400	2300	1600	300	400	900	3131	3000
TOB250TAR430	250	2960	1250	2140	1550	2640	1900	360	460	1000	3351	3400

●  $\phi D$  is the maximum diameter excluding the guide hook.