TRN/BER PLS with Aeration Kit

SUBMERSIBLE AERATORS
Submersible Self-aspirating Aerators

Tsurumi’s submersible aerators are used at water treatment facilities to aerate and agitate industrial wastewater, livestock wastewater and other water that needs treating. More specifically, they provide the primary aeration in reactor tanks and aeration tanks at the heart of the water treatment process, and aeration and agitation in flow regulating tanks. These aerators produce tiny bubbles in the wastewater by furiously mixing in air they draw from above the wastewater’s surface, and discharge the aerated wastewater to the outside. The mixed flow of air and water contains a high amount of dissolved oxygen and makes aeration and agitation very efficient.

Tsurumi offers two kinds of aerators in three series. The TRN-series features Tsurumi’s baseline submersible aerators that produce a high amount of dissolved oxygen and enable efficient aeration and agitation, while the BER-series and the PLS-series with aeration kit are submersible jet aerators that generate a powerful unidirectional flow. All three series are built to draw air themselves while submerged in wastewater, so they can aerate and agitate wastewater without requiring a blower, which greatly reduces both installation space and noise.

The TRN-series is built to draw air on its own by generating negative pressure behind a proprietary semi-open impeller with the flow the impeller creates. The air drawn from above the wastewater’s surface is furiously mixed in with the wastewater under the mechanical force of the impeller and guide vanes, to form tiny bubbles. The aerated flow is equally discharged in all directions and the synergistic effect of the airlift and convection that this mechanism causes produces a high amount of dissolved oxygen and enables efficient aeration and agitation.

The BER and PLS (with aeration kit) series combine a submersible pump and venturi-jet based diffuser. They draw in air from above the wastewater by generating negative pressure around the nozzle with the flow from the pump. The air is mixed into the wastewater by this jet injector mechanism and sprayed underwater by the diffuser, to aerate and agitate the wastewater at the same time. In the process, tiny bubbles form inside the diffuser and increase the amount of dissolved oxygen in the wastewater. The powerful unidirectional jet that results can efficiently agitate long narrow tanks, as well as wider areas when multiple units are used.

Despite their simple structures, Tsurumi submersible aerators are packed with proprietary technologies that have been tested and proven over many years of R&D and market use, such as an anti-wicking cable, dual inside mechanical seals with silicon carbide faces and Oil Lifter. Moreover, they are designed and built for the degree of reliability and durability required for 24 hour-a-day continuous operation. Plus, when it is time for maintenance, it suffices to raise just the pump from the tank; the tank does not need to be drained as is the case of a plate/tube diffuser, so these aerators are economically beneficial in terms of running costs.
**TRN**: Submersible aerators that generate tiny bubbles to produce a high amount of dissolved oxygen and enable efficient aeration and agitation

**BER**: Submersible jet aerators optimized for pre-aeration and prevention of bacterial spoilage

**PLS with Aeration Kit**: Lightweight, compact resin-made submersible jet aerators for shallow water application

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**Selection Table**

<table>
<thead>
<tr>
<th>Submersible Aerators</th>
<th>Submersible Jet Aerators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRN</strong></td>
<td><strong>BER</strong></td>
</tr>
<tr>
<td>Air-inlet Bore mm</td>
<td></td>
</tr>
<tr>
<td>32 - 150</td>
<td>25 - 50</td>
</tr>
<tr>
<td>Motor Output kW</td>
<td></td>
</tr>
<tr>
<td>0.75 - 40</td>
<td>0.75 - 5.5</td>
</tr>
<tr>
<td>Pole</td>
<td></td>
</tr>
<tr>
<td>2 • 4</td>
<td>2 • 4</td>
</tr>
<tr>
<td>Impeller m</td>
<td></td>
</tr>
<tr>
<td>Special Semi-open</td>
<td>Channel</td>
</tr>
<tr>
<td>Max. Water Depth</td>
<td></td>
</tr>
<tr>
<td>3.5 - 6.0</td>
<td>3.5 - 6.0</td>
</tr>
<tr>
<td>No. of Outlets</td>
<td></td>
</tr>
<tr>
<td>6 - 8 (Multiple Directions)</td>
<td>1 (One Direction)</td>
</tr>
</tbody>
</table>

**Guide Rail Fitting System**

- Built with a proprietary semi-open impeller to draw in air on its own. Can aerate and agitate wastewater without requiring a blower. (Not capable of anaerobic agitation.)
- Discharges mixed flow of air and water radially in multiple directions and generates a powerful agitational force from the synergetic action of the airlift and convective flow.
- Obtains a high level of dissolved oxygen by furiously mixing air and water with the impeller and guide vanes to form tiny bubbles.
- Capable of deep-water aeration in combination with a general-purpose blower. Does not require a high-pressure blower.
- Simple structure consisting of a submersible pump and venturi-jet based diffuser. Can aerate and agitate wastewater without requiring a blower. (Capable of anaerobic agitation.)
- Powerfully ejects a mixed flow of air and water in one direction.
- Obtains a high level of dissolved oxygen because tiny bubbles slowly rise as the air and water mix.
- The pump can be easily lowered and hoisted using guide rail fitting system, so maintenance and inspection can be performed without entering the sump.
- Simple structure consisting of a submersible pump and aeration kit. Can aerate and agitate wastewater without requiring a blower. (Capable of anaerobic agitation.)
- Powerfully ejects a mixed flow of air and water in one direction.
- Made of special resin and stainless steel, thus tough against corrosion.
- Lightweight and compact, thus easy to install and maintain.
- Uses fish-friendly liquid paraffin as lubricating oil, so it can be safely used for fish farms and water features.
- Can be used in water as shallow as 310 mm.

**Applications**

- Aeration, pre-aeration and mixing at wastewater treatment plant
- Oxygen supply at aquariums and fish farms (Requires lubricant change to liquid paraffin.)
- Pre-aeration and mixing at wastewater treatment plant
- Oxygen supply at aquariums and fish farms (Requires lubricant change to liquid paraffin.)
- Pre-aeration and mixing at septic tank/Johkasou
- Oxygen supply at water features and fish pond

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**Guide Rail Fitting System (BER-series only)**

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

**Accessories**

- Silencer & Valve Set
- Lifting Chain 5m (with Shackles)
- Guide Support
- Guide Hook
- Suction Casing
- Screwed Flange
- Diffuser

**Model Number Designation**

**TRN / PLS (with Aeration Kit) series**

Discharge bore in millimeters

<table>
<thead>
<tr>
<th>Model Number Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
</tr>
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</table>

**BER series**

Rated motor output in kilowatts x 1/10

<table>
<thead>
<tr>
<th>Name of the series</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 - BER</td>
</tr>
</tbody>
</table>

- Single-phase
- Three-phase
- Rated motor output in kilowatts
Submersible Aerators: TRN series

- **Start of operation**
  Mixed flow of air-water is discharged in multiple directions.

- **Rising by airlift**
  Tiny bubbles produce a high amount of dissolved oxygen.

- **Agitation by convection**
  The rising bubbles enable efficient aeration and agitation.

Mixed flow of air-water profile during operation

Submersible Jet Aerators: BER / PLS (with Aeration Kit) series

- **Rising by airlift**
  Mixed flow of air-water is jetted in one direction. Tiny bubbles produce a high amount of dissolved oxygen.

- **Agitation by convection**
  The rising bubbles enable efficient aeration and agitation.

Submersible Jet Aerators: BER / PLS (with Aeration Kit) series

In combination with a blower
(Example of installation in a 10 m-deep tank)

- **Blower compartment**
- **Pressure gauge**
- **Check valve**
- **Intake pipe**
- **Wastewater surface**
- **Discharged flow**
- **Intake flow**
- **Depth pressurized by blower**

Self-priming depth of submersible aerator
(Max. water depth)

Optional specifications

- **With stand**
- **With draft tube**

Applicable specifications

- **With stand (0.5 m)**
  Illustration shows the 0.75kW aerator.
  Applicable output: 0.75 - 40kW

- **With draft tube (1.0/1.5 m)**
  Illustration shows the 40kW aerator.
  Applicable output: 2.2 - 40kW

Special Offer for TRN series

How to aerate in tank deeper than max. water depth

Applicable for deep tank aeration below max. water depth. Because it draws air on its own, the aerator works with a general-purpose blower instead of a high-pressure blower.
Submersible Self-aspirating Aerator: TRN series

The aspirated air, mixed with water viciously by mechanical forces inside the impeller and guide vane, transforms into tiny bubbles. Moreover, the mixed flow of air and water is evenly discharged in multiple directions along the circumference.

Submersible Self-aspirating Jet Aerators: BER & PLS (with Aeration Kit) series

With the jet injector mechanism, the aspirated air mixes with water and is ejected through the diffuser, simultaneously agitating and aerating the ponded water. The mixed air-water is ejected powerfully in one direction, which effectively agitates the water across a wide area.

1. Anti-wicking Cable Entry
   Prevents water incursion due to capillary action should the cable sheath be damaged or the end of cable submerged. Also prevents moist air from infiltrating the motor housing and condensation from forming inside the housing due to temperature differences between the housing and outside air.

2. Motor Protector
   - Miniature Thermal Protector
     Single-phase: Detects excess heat, therefore, protecting the pump against overheating and dry-running.
     Three-phase: React to excessive heat caused by dry-running. The bimetal strip opens to cause the control panel to shut the power supply.
   - Circle Thermal Protector
     Directly cuts the motor circuit if excessive heat builds up or overcurrent occurs in the motor.

3. Dual Inside Mechanical Seals with Silicon Carbide Face
   Isolated in the oil chamber where a clean, non-corrosive and abrasion-free lubricating environment is maintained. Compared with the water-cooled outside mechanical seal, it reduces the risk of failure caused by dry-heating and adhering matter. The Silicon carbide provides 5 times higher corrosion, wear and heat resistance than the tungsten carbide. Rubber parts are made of NBR or FPM (FKM) which provides higher resistance to heat and chemicals.

4. 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.

5. Oil Seal (excluding PLS)
   Used as a “Dust Seal,” it protects the mechanical seal from abrasive particles.

6. Air Seal Mechanism (TRN)
   Protects the mechanical seals by flooding the air passage with an “air seal” that prevents water from contacting the mechanical seals during operation. This proprietary technology helps to prolong the service-life of the mechanical seals.

7. Special Semi-open Impeller & Suction Cover (TRN)
   Generates a liquid flow that causes negative pressure to form on the backside of the impeller vanes and draw in air from above the water’s surface. Both the impeller and suction cover are highly wear-resistant 410 stainless steel casting.

8. Air Release Valve (BER)
   Fitted on the pump casing to prevent the air lock. When air flows through the valve, the ball stays at the bottom, but when the pumped water starts to flow, the ball closes the outlet because of its buoyancy.

9. Semi-open Channel Impeller (BER)
   Vortex Impeller (PLS)
   Minimizes the possibility of trouble due to clogging by foreign matters.

10. Nozzle Ring (BER)
    Nozzle Flange (PLS)
    Channels the water discharged from the pump into a jet, as part of the jet injector mechanism.

11. Diffuser (BER & PLS)
    Creates a mixed flow of air and water by injecting the aspirated air into the water.
Submersible self-aspiring aerators that generate tiny bubbles to produce a high amount of dissolved oxygen and enable efficient aeration and agitation

The TRN-series is a submersible self-aspiring aerator designed for aeration and mixing of wastewater. The liquid flow generated by Tsurumi’s proprietary semi-open impeller causes negative pressure to form on the backside of the impeller vanes and draw in air from above the water’s surface. The aspirated air, mixed with water viciously by mechanical forces inside the impeller and guide vane, transforms into tiny bubbles. Moreover, the mixed flow of air and water is evenly discharged in multiple directions along the circumference. For good quality aeration and agitation, it is recommended to install a haunch on equipment depth.

Accessory
- Silencer & Valve Set

Air Flow Rate - Water Depth Curves
The air flow rates are expressed at the standard condition, i.e. temperature of 20°C, 1 atm and may vary by up to approximately 5%.

Convection Pattern & Recommended Tank Dimensions
Main Convection
Convection made by rising bubbles. (The minimum distance that must be provided between each aerator)

Sub-convection
The maximum convection that can keep solids suspended to prevent sedimentation of solids.

Weights excluding cable
* Star-Delta available upon request
* Max. water depth is the load limit of the motor. The load placed on the motor increase the deeper the submersible aerator is installed, therefore if the aerator is operated below the max. water depth, the overload will trip the motor protection device and stop the aerator from running continuously.
* *Weights excluding cable

\[ \text{Air Flow Rate (m}^3\text{/h)} \]

\[ \text{Water Depth (m)} \]

\[ \text{Main Convection} \]

\[ \text{Sub-convection} \]

\[ \text{Tank dimensions are given at max. water depth. Dimensions will vary according to equipment depth.} \]

\[ \text{For good quality aeration and agitation, it is recommended to install a haunch on the bottom of the tank.} \]
BER: Submersible jet aerators optimized for pre-aeration and prevention of bacterial spoilage

PLS with Aeration Kit: Lightweight, compact resin-made submersible jet aerators for shallow water application

The BER-series and PLS with aeration kit series are a submersible self-aspirating jet aerators combined a submersible pump with a venturi-jet based diffuser. The liquid flow generated by the submerged pump causes negative pressure to form around the nozzle, whereby drawing in air from above the water’s surface. With this jet injector mechanism, the aspirated air mixes with water and is ejected through the diffuser, simultaneously agitating and aerating the ponded water. The mixed air-water is ejected powerfully in one direction, which effectively agitates the water across a wide area. Because the PLS-series uses food-grade liquid paraffin for lubricating oil, this jet aerator is safe and fish-friendly if used for water circulation and aquarium, aquaculture/fish farms.

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### BER-series
- **Silencer & Valve Set**
- **Lifting Chain 5m (with Shackles)**
- **Guide Rail Fitting**
- **Diffuser**
- **D. O. L.**
- **Capacitor Run**

### PLS-series
- **Suction Casing**
- **Screwed Flange**
- **Guide Support**
- **Guide Hook**

### Accessories

<table>
<thead>
<tr>
<th>BER with Aeration Kit</th>
<th>Lifting Chain 5m (with Shackles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-BER</td>
<td>TOS-8BER</td>
</tr>
<tr>
<td>15-BER</td>
<td>TOS-15BER</td>
</tr>
<tr>
<td>22-BER</td>
<td>TOS-22BER</td>
</tr>
<tr>
<td>37-BER</td>
<td>TOS-37BER</td>
</tr>
<tr>
<td>55-BER</td>
<td>TOS-55BER</td>
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</table>

### PLS with Aeration Kit

<table>
<thead>
<tr>
<th>PLS with Aeration Kit</th>
<th>50PLS2.15S</th>
<th>50PLS2.4S</th>
<th>50PLS2.75S</th>
</tr>
</thead>
<tbody>
<tr>
<td>50/60Hz</td>
<td>25 0.15</td>
<td>25 0.32</td>
<td>25 0.55</td>
</tr>
<tr>
<td>S.S. 3600 min-1</td>
<td>38 (10&quot;)</td>
<td>41 (10&quot;)</td>
<td>39 (10&quot;)</td>
</tr>
<tr>
<td>Dry Weight (kg)</td>
<td>7.6</td>
<td>8.5</td>
<td>10.4</td>
</tr>
</tbody>
</table>

### Convection Pattern & Recommended Tank Dimensions (BER-series)

<table>
<thead>
<tr>
<th>Model</th>
<th>Motor Output kW</th>
<th>Max. Water Depth (m)</th>
<th>Max. Tank Dimensions (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-BER</td>
<td>0.75</td>
<td>4 / 3.5</td>
<td>3</td>
</tr>
<tr>
<td>15-BER</td>
<td>1.5</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>22-BER</td>
<td>2.2</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>37-BER</td>
<td>3.7</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>55-BER</td>
<td>5.5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

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### Air Flow Rate - Water Depth Curves

The air flow rates are expressed at the standard condition, i.e., temperature of 20°C, 1 atm and may vary by up to approximately 5%.
## Specifications

### PUMP

<table>
<thead>
<tr>
<th>TRN</th>
<th>BER</th>
<th>PLS with Aeration Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>32TRN2.75</td>
<td>50PLS2.155</td>
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</tr>
<tr>
<td>32TRN21.5</td>
<td>50PLS2.45</td>
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<tr>
<td>50TRN43.7</td>
<td>50PLS2.755</td>
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<td>50TRN45.5</td>
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<td>50TRN424</td>
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<tr>
<td>80TRN432</td>
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<td>80TRN412</td>
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<td>80TRN417</td>
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</tr>
<tr>
<td>100TRN424</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100TRN440</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Air-inlet Bore (mm)**
  - TRN: 32, 50, 80, 100, 150
  - BER: 25, 32, 50
  - PLS with Aeration Kit: 25
- **Air-inlet Connection**
  - TRN: Threaded Oval Flange
  - BER: Structure Steel + Nylon Coated
  - PLS with Aeration Kit: 304 Stainless Steel
- **Diffuser**
  - TRN: Special Semi-open
  - BER: Channel
  - PLS with Aeration Kit: Vortex
- **Solids Passage (mm)**
  - TRN: 10, 12, 15, 22, 25
  - BER: 20, 35
  - PLS with Aeration Kit: 38 (10)x, 24 (10)x, 24 (10)x
- **Impeller**
  - TRN: 410 Stainless Steel Casting
  - BER: Gray Cast Iron
  - PLS with Aeration Kit: Glass-fiber Reinforced Resin (PPO-GF20)
- **Suction Cover**
  - TRN: 410 Stainless Steel Casting
  - BER: Gray Cast Iron
  - PLS with Aeration Kit: Glass-fiber Reinforced Resin (PPO-GF20)
- **Middle Plate**
  - TRN: 410 Stainless Steel
  - BER: 410 Stainless Steel Casting
  - PLS with Aeration Kit: —
- **Oil Seal**
  - TRN: Nitrile Butadiene Rubber
  - BER: Nitrile Butadiene Rubber
  - PLS with Aeration Kit: —
- **Air Passage & Guide Vane / Casing**
  - TRN: Dual Inside Mechanical Seals (with Oil Lifter)
  - BER: Dual Inside Mechanical Seals (with Oil Lifter)
  - PLS with Aeration Kit: Dual Inside Mechanical Seals (with Oil Lifter)
- **Shaft Seal**
  - TRN: Silicon Carbide
  - BER: Silicon Carbide
- **Type**
  - TRN: Continuous-duty Rated, Dry-type Induction Motor
  - BER: Continuous-duty Rated, Dry-type Induction Motor
  - PLS with Aeration Kit: Continuous-duty Rated, Dry-type Induction Motor
- **Output (kW)**
  - TRN: 0.75, 1.5, 2.2, 3.7, 5.5, 7.5, 12, 17, 24, 40
  - BER: 0.75, 1.5, 2.2, 3.7, 5.5, 10, 15, 20, 25
  - PLS with Aeration Kit: 50
- **Phase**
  - TRN: Three
  - BER: Three
  - PLS with Aeration Kit: Single
- **Pole**
  - TRN: 2
  - BER: 2
  - PLS with Aeration Kit: 4
- **Speed (5.5/60Hz mm)**
  - TRN: 3000/3600, 1500/1800
  - BER: 3000/3600, 1500/1800
  - PLS with Aeration Kit: 3000/3600
- **Insulation**
  - TRN: F
  - BER: E
  - PLS with Aeration Kit: E
- **Starting Method**
  - BER: D.O.L., Capacitor Run
- **Motor Protector (built-in)**
  - TRN: CTP, MTP
  - BER: CTP, MTP
  - PLS with Aeration Kit: CTP
- **Lubricant (ml)**
  - TRN: Turbine Oil (ISO VG32)
  - BER: Turbine Oil (ISO VG32)
  - PLS with Aeration Kit: Liquid Paraffin (ISO VG32)
- **Frame**
  - TRN: Gray Cast Iron
  - BER: Gray Cast Iron
  - PLS with Aeration Kit: Gray Cast Iron
- **Shaft**
  - TRN: 420 Stainless Steel
  - BER: 420 Stainless Steel
  - PLS with Aeration Kit: 304 Stainless Steel
- **Power Cable (m)**
  - TRN: PVC, Chloroprene Rubber
  - BER: PVC, Chloroprene Rubber
  - PLS with Aeration Kit: PVC, Chloroprene Rubber
- **Max. Water Depth 50/60Hz (m)**
  - TRN: 3.5, 3.6, 4.0, 4.5, 6.0
  - BER: 4.0 / 3.5, 4.0, 4.5, 5.0, 6.0
  - PLS with Aeration Kit: 1.2
- **No. of Outlets**
  - TRN: 6 (Multiple Directions), 8 (Multiple Directions)
  - BER: 8 (Multiple Directions)
  - PLS with Aeration Kit: 1 (One Direction)
- **Dry Weight**
  - TRN: 55, 140, 150, 175, 192, 213, 435, 583
  - BER: 28, 43, 75, 91, 142, 7.6, 8.5, 10.4
  - PLS with Aeration Kit: 23, 34, 73, 87, 126

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*Figures in ( ) shows the solids passage of the pump with a strainer.

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**All weights excluding cable
Weights of guide rail fitting excluding duckfoot bend
Star-Delta available upon request
Figure in ( ) shows the solids passage of the pump with a strainer.**
Dimensions

**Dimensions**

**TRN**

**Silencer & Valve Set**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>G</th>
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<tbody>
<tr>
<td>20 mm</td>
<td>168</td>
<td>148</td>
<td>194</td>
<td>95</td>
<td>80</td>
<td>60</td>
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<tr>
<td>30 mm</td>
<td>203</td>
<td>183</td>
<td>239</td>
<td>134</td>
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<tr>
<td>40 mm</td>
<td>238</td>
<td>218</td>
<td>274</td>
<td>175</td>
<td>161</td>
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<tr>
<td>50 mm</td>
<td>273</td>
<td>253</td>
<td>310</td>
<td>216</td>
<td>202</td>
<td>182</td>
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<tr>
<td>60 mm</td>
<td>308</td>
<td>288</td>
<td>345</td>
<td>246</td>
<td>232</td>
<td>212</td>
</tr>
</tbody>
</table>

Pipe Bond: A, B, C, D, E, G

**Material of Silencer**: PVC, SHAW and Steel

**Roller Steel 140kW only**

**PLS with Aeration Kit**

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

<table>
<thead>
<tr>
<th>Model</th>
<th>d</th>
<th>h</th>
<th>A</th>
<th>A1</th>
<th>A2</th>
<th>B</th>
<th>B1</th>
<th>l</th>
<th>H</th>
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<tr>
<td>32TRN2.75</td>
<td>32</td>
<td>148</td>
<td>251</td>
<td>184</td>
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<td>146</td>
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Pipe Bond: A, B, C, D, E, G

**Material of Silencer**: PVC (24kW and below)

**Pipe Bore A B C D E**

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**Unit: mm**

**BER**

**Free Standing**

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**Guide Rail Fitting**

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**Figure in ( ) shows the dimensions of model TOS-8BER. Figure in ( ) shows the dimensions of model TOS-15BER.**

**Silencer & Valve Set**

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**Material of Silencer**: PVC

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

**Free Standing**

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**Guide Rail Fitting**

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**Silencer & Valve Set**

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**Material of Silencer**: PVC

**C.W.L.: Continuous Running Water Level**
Tsurumi can supply pumps and water treatment equipment as a total package.

**Submersible Sewage Pumps / Channel Impeller**
- **SFQ**
  - Discharge Bore: 50 - 800 mm
  - Motor Output: 0.4 - 110 kW
  - Total Head: 9 - 70 m
  - Max. Capacity: 110 m³/min

**Submersible Cutter Pumps / Cutter Impeller**
- **Discharge Bore**: 50 - 200 mm
- **Motor Output**: 0.75 - 37 kW
- **Total Head**: 11.4 - 70 m
- **Max. Capacity**: 7.1 m³/min

**Submersible Resin Made Pumps**
- **“VANCS”**: corrosion-resistant pumps made of special resin
- **PU / PN / PSF / OM**
  - Discharge Bore: 32 - 80 mm
  - Motor Output: 0.15 - 3.7 kW
  - Total Head: 3.9 - 34 m
  - Max. Capacity: 0.95 m³/min

**Submersible Stainless Steel Casting Pumps**
- **Discharge Bore**: 50 - 80 mm
- **Motor Output**: 0.4 - 11 kW
- **Total Head**: 11.1 - 44 m
- **Max. Capacity**: 2.08 m³/min

**Submersible Mixers**
- **MR**
  - Motor Output: 0.25 - 4 kW
  - Flow Rate: 1.4 - 19 m³/h

**Floating Scum Skimmers**
- **Discharge Bore**: 50 mm
- **Motor Output**: 0.4 - 0.75 kW

**Floating Decanters**
- **Discharge Bore**: 40 - 80 mm
- **Motor Output**: 0.25 - 1.5 kW

**Multi-disc Dehydrators**
- **Discharge Bore**: 50 - 350 mm
- **Air Volume**: 0.72 - 246.8 m³/min

**Rotary Air Blowers**
- **Discharge Bore**: 50 - 350 mm
- **Air Volume**: 0.72 - 246.8 m³/min

**Bar Screens**
- **KE / KS / KM / KW**
  - Bar Spacing: 1 - 50 mm
  - Motor Output: 0.09 - 0.1 kW
  - Max. Capacity: 223 m³/h