



TUFSUB™ SUBMERSIBLE PUMP WITH 100% RECESSED IMPELLER



**Available with
5 Year Wear Warranty**

ESSCO offers a complete line of severe duty submersible 100% recessed impeller vortex pumps. These units are designed with extra heavy wall cross sections and extra thickness in the internal wear areas. Each unit is capable of handling long stringy material, large size solids and are especially suited for handling slurries.

ESSCO TUFSUB™ pumps incorporate the vortex pumping action along with a unique pump design which allows for the greatest solids handling efficiency and construction flexibility in the submersible pump field. These units are manufactured by using "State of the Art" technology to produce higher quality castings for longer wear life.

VOLUTE: Each volute is engineered for maximum life in severe duties. **ESSCO** utilizes a split volute design which allows for lower replacement parts cost. Each volute has extra material in high wear areas. Casing thickness is up to 1" in thinnest wear area.

SUCTION COVER: The **TUFSUB™** design incorporates the use of a separate suction cover. The use of a suction cover will allow for lower replacement parts cost by replacing only the piece which is worn-out (i.e., volute or suction cover). An additional feature is that by simply changing the suction cover the liquid end can be converted into a horizontal or vertical dry pit pump unit. This is especially advantageous when the user wishes to standardize on one type of pump for various services. This allows for a lower number of spare parts to be maintained for emergency situations.

IMPELLER: **ESSCO** pumps are available with various impeller designs to allow for high capacity low head or low capacity high head applications. **ESSCO** utilizes investment cast impellers for higher casting density and thicker vanes and back shrouds which allow for maximum life. By use of the JLI manufacturing techniques **ESSCO** offers trimmed impellers in extremely hard and difficult to handle alloys. By use of this production technique, impellers can be machined to act as a shredder (for solids coming in contact with the eye of the impeller) or machined to handle solids more delicate in nature.

WEAR PLATE: The **ESSCO TUFSUB™** comes standard with a wear plate located behind the impeller. The wear plate is designed to protect the motor bracket and mechanical seal from particle erosion. The wear plate can also act as a barrier for a seal flushing fluid when a simple wear plate is not sufficient protection against wear created by the pumped media. Again **ESSCO** utilizes the JLI production method for manufacturing this pump component to ensure the best possible casting quality and material density.

ESSCO Pumps & Controls

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Distributed By:

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COOL AGIVENT: Each **ESSCO** submersible pump includes a Cool Agivent apparatus which is for venting pump case and cooling external surface of the motor. This patented device will allow a more shallow wet well design, as well as keeping the motor cool when not submerged. All **ESSCO** submersible pumps are capable of running dry continuously (consult factory for specific applications).

MOTOR: **ESSCO** offers both standard duty and U.L. listed explosion proof motors for Class 1, Division 1, group D hazardous locations. Both motor types are manufactured by Reliance Electric Co. and include moisture detection and thermal protection as standard features. Heavy duty bearings and dual mechanical seals are standard for both motor designs and on special request high temperature and energy efficient designs are available.

In addition to the above listed standard items **ESSCO** offers the following options:

MOTOR OPTIONS:

- 316 S.S. motor shaft
- Nitronic 50 acid resistant stainless steel
- Tungsten carbide lower mechanical seal with stainless steel metal components and Buna-N elastomer Silicon carbide lower mechanical seal with stainless steel metal components and Viton elastomers.
- Mechanical seal flush
- 316 S.S. motor mounting bracket
- 2 part epoxy coating
- Steel motor jacket
- 316 S.S. motor jacket
- Motor jacket flush connection (for cooling in hot liquid applications)
- Viton motor "O" rings
- Teflon coated Viton "O" rings

OPTIONAL LIQUID END MATERIALS:

- Ni Hard 550 Brn
- Ni Hard 650+ Brn
- HCl 550 Brn
- HCl 650+ Brn
- CD4MCu
- 316 S.S.
- 304 S.S.
- Hastaloy
- Alloy 20
- Navy Bronze
- Other

ADDITIONAL OPTIONS:

- Certified Performance Test*
- Certified Hydrostatic Test*
- Certified Motor Test
- Standard Slide Rail Assembly
- Agitator
- Explosion-proof Slide Rail Assembly
- U.L. Listed Control Panels

*All tests are conducted as per Hydraulic Institute Standards.

SIZES AVAILABLE: 3x8**, 3x12, 4x12, 4x16, 6x12, 8x6x17

ESSCO maintains a large stock of complete pump units and spare parts for quick shipment. For special alloy parts **ESSCO** has a quick shipment program to ensure customer a minimum of down time.

** Single piece volute not split volute.

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Member of the Hydraulic Institute

Form: Tufsub Brochure

