



## VERTICAL DRY PIT CLOSE COUPLED RECESSED IMPELLER PUMPS



**ESSCO** model 4X12 VDPCC vertical close coupled heavy duty pump with 100% recessed vortex impellers.

**ESSCO** has been designing and manufacturing 100% recessed impeller vertical pumps since 1976. **ESSCO** surveyed their valued customers prior to designing this series of pumps to eliminate the problems the customer experienced using other manufacturer's products. Customer suggestions were instrumental in the design of this product. After final assembly of the first units customers were invited to the factory to inspect the units. Their additional suggestions were incorporated into the final design the pump, which proved to be a remarkable contribution to result in a well designed product. **ESSCO** has always had a policy of listening to our customers and implementing product changes when it makes sense to do so. **ESSCO's** 100% recessed style impeller vertical pump is designed to handle grit, sludge, rags and

long stringy material without plugging. These types of solids are commonly found in waste water treatment plants, industrial process plants and other severe duty installations.

**VOLUTE:** Each **ESSCO** back pullout style volute is designed for ease of assembly and maximum life and is manufactured from extremely abrasion resistant materials. Extra material is provided in high wear areas as well as special designs to handle heavy grit slurries and sludge. **ESSCO** has a standard centerline discharge volute which allows it to be self venting and automatically releases air trapped in the pump volute (also known as an air bound pump). Air bound pumps are a common complaint of users who have tangential discharge volutes. The centerline discharge also eliminates the need for a right hand and left hand pump case. A conventional tangential design is available upon request.

**IMPELLER:** **ESSCO** pumps have various impellers available to allow for high capacity and low head capability, or high head and low capacity applications. **ESSCO** also incorporates a special machining technique to shred and break down any solids which might come into contact with the impeller. Standard impeller is ductile iron.

**WEAR PLATE (Optional):** Located behind the impeller and in front of the stuffing box is a heavy duty wear plate. The wear plate is designed as a single monolithic piece to provide maximum protection to the stuffing box or optional mechanical seal housing. The **ESSCO** wear plate is contoured to match the impeller

## ESSCO Pumps & Controls

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back shroud which reduces the possibility of grit and sludge getting between the wear plate and the impeller shroud causing excess wear.

**STUFFING BOX:** The stuffing box is a two piece design, consisting of “stuffing box ring” and a “stuffing box cartridge”. The stuffing box cartridge is bolted to the stuffing box ring which allows for the two pieces to be manufactured from different materials. **ESSCO** has supplied many customers with a cast iron stuffing box ring and an optional stainless or bronze stuffing box cartridge. This eliminates many problems associated with corrosion as experienced with standard cast iron stuffing boxes. The standard packing gland is bronze, but is available in an optional stainless or alloy material.

**PUMP SHAFT:** **ESSCO** supplies a heavy duty 400 series stainless steel pump shaft on all close coupled pumps. Stainless steel pumps are furnished with a 316 Stainless steel shaft.

**SHAFT SLEEVE:** **ESSCO** offers a wide variety of shaft sleeve materials. Standard shaft sleeves are hardened 400 series stainless steel. Each shaft sleeve has an internal O-ring to seal between the shaft and the sleeve which prevents the pumped liquid from damaging the shaft. The standard shaft sleeve is key driven to insure rotational integrity. Typical options for shaft sleeves are 316 SS, Stellite, Hastaloy along with many others.

**PACKING AND MECHANICAL SEALS:** **ESSCO** furnishes graphite impregnated non-asbestos braided packing as a standard. Each packed stuffing box contains (5) five rings of packing and a Teflon lantern ring. The standard packing box

can accommodate double mechanical seals as well as cartridge style mechanical seals.

**PUMP STAND:** **ESSCO** furnishes a variety of styles in pump stands to meet customers needs. A fabricated steel pump base with separate suction elbow is standard. Some pump sizes can be furnished with an optional integrally cast pump stand and suction elbow. In addition the fabricated stands can be furnished in Stainless Steel.

**SUCTION ELBOW:** **ESSCO** furnishes cast iron suction elbows with large clean out ports and covers. Suction elbows have heavy wall cross sections to allow for long service life. The clean out port is furnished with a gasket or O-ring seal and stainless steel fasteners.

### SIZES AVAILABLE:

- 9 3x8
- 9 3x12
- 9 3x14
- 9 493
- 9 4x10
- 9 4x12
- 9 4x16
- 9 6x12
- 9 8x6x17

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### MATERIALS (Optional Liquid Ends):

- 9 Nihard 550 Brinnell
- 9 Nihard 650 Brinnell
- 9 Nihard up to 750 Brinnell
- 9 HCl 550 Brinnell
- 9 HCl 650 Brinnell
- 9 HCl up to 750 Brinnell
- 9 CD4MCu
- 9 316 S.S.
- 9 304 S.S.
- 9 Hastaloy
- 9 Alloy 20
- 9 Navy Bronze
- 9 Other

### ADDITIONAL OPTIONS:

- 9 Viton Seal Elastomers
- 9 Tungsten Carbide Mechanical Seal
- 9 Silicon Carbide Mechanical Seal
- 9 Mechanical Seal Flush
- 9 Certified Performance Test\*
- 9 Certified Hydrostatic Test\*
- 9 Certified Motor Test

- 9 Vertical Dry Pit Submersible Motor
- 9 Submersible Motor with Cooling Jacket
- 9 U.L. Listed Control Panels

\*All tests are conducted as per Hydraulic Institute Standards.

**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.

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