

4" Double Diaphragm Pump 4D-DHST-EOV-1B30

Diaphragm pumps are ideally suited for construction, municipal and industrial applications. The 4D-DHST-EOV-1B30 is perfect for pumping muddy water, sludge or any liquid with a high percentage of solids. One of its best features is the ability to run dry indefinitely without damage.

Features

- Standard engine – Hatz 1B30
Also available with electric motor.
- Quick dry prime from 20 feet
- Self-priming, positive displacement
- Solids handling to 2"; Maximum flows to 140 gpm;
Moderate heads to 50 feet
- 66 hours @ 2,900 rpm
132 hours @ 1,400 rpm
- High resistance to abrasive and corrosive liquids
- Wear parts are easily replaced
- Rotating parts do not come in contact with the pumping liquid
- Optional spring-loaded connecting rod to protect against pump casing damage

Working Principle

(Fig. 1) As the connecting rod moves upward, the diaphragm creates a vacuum inside the pump casing that causes the suction valve to open and the discharge to close.

(Fig. 2) Fluid begins to fill the pump casing until the connecting rod reaches the top of the stroke.

(Fig. 3) Once the pump casing is full, the connecting rod begins to travel downward.

(Fig. 4) As the diaphragm a travel downward, the discharge valve is forced open while the suction valve is closed, preventing fluid from re-entering the suction.

The fluid in the pump casing is then directed out of the discharge of the pump. An oversized solids channel in the bottom of the pump casing allows large solids and high amounts of sediment to pass through the pump without harming the components.

Shock reducing chamber to reduce pulsation in the suction line

Optional self-lubricating bearing allows continuous operation without service for 5,000 hours

Wetted parts available in aluminum, cast iron or 316 stainless steel

Pump casing with rock channel

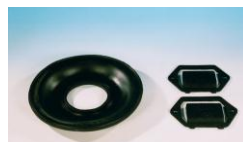
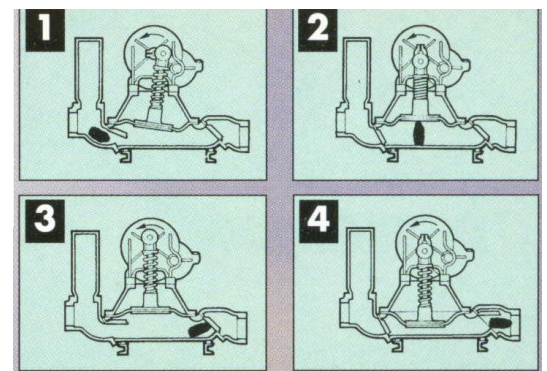
Long lasting neoprene diaphragm and valves. Hypalon, nitrile, atoxic rubber, dutral and viton rubber diaphragms and valves are also available

* Some features not available on all models

Oil bath gear box with speed reducer and hardened steel gears

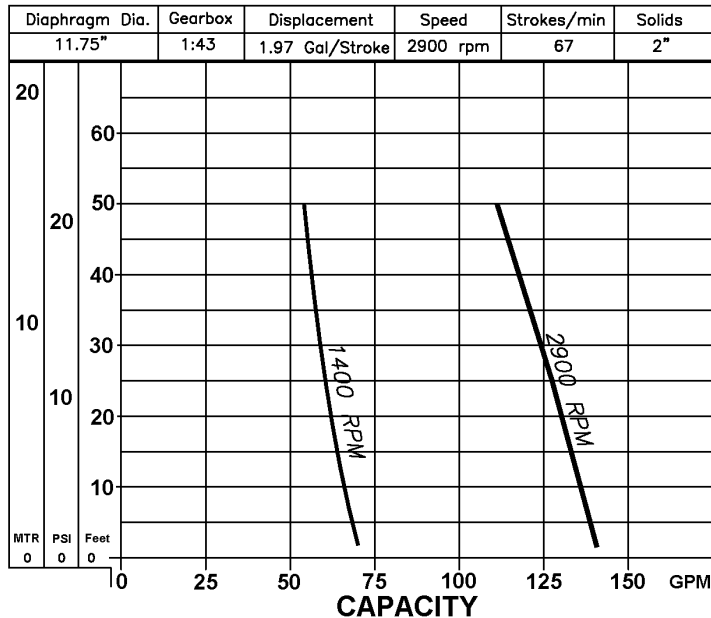
Universal mounting flange adapts to a variety of engines and electric motors

Optional connecting rod with spring to protect against damage due to solids or sedimentation in the pump casing



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4D-DHST-EOV-1B30 Performance Curve



Materials of Construction

Pump Casing: Rugged, heavy-duty class 30 cast iron with integral solids channel and drain valve

Top Housing: ASTM A-36 steel

Diaphragm: Dry running, neoprene with nylon cloth insert, field replaceable

Connecting Rod: Constructed of rigid type cast aluminum, available with spring loaded connecting rods, with self lubricating bearings

Connecting Rod Bottom Plate: Cast aluminum

Eccentric Crank: Class 30 cast iron

Eccentric Bearing: Needle roller type

Clappets: Dry running, non-clogging flapper style, neoprene with class 30 cast iron weighted insert, field replaceable

Suction & Delivery Branch: Cast aluminum

Suction/Delivery Manifold: Class 30 cast iron

Surge Suppression Chamber: ASTM A-36 threaded to suction for water hammer and shock protection

Gaskets: Neoprene

Eccentric Guard: ASTM A-36 steel

Engine Specifications

Engine: Hatz, 1B30, 7.0 hp @ 3,200 rpm

Battery: 12-volt, 270 CCA, 160A reserve capacity

Type: 1-cylinder, 4-cycle, air-fan cooled diesel with fuel lift pump, and force feed lubrication.

Standard Equipment: Electric Start, Recoil starter, fuel lift pump, and instrument panel

Displacement: 21.16 cubic inches

Fuel Economy: .421 lb/hp-hr @ 3,200 rpm

Safety Shutdowns: Low oil pressure

Unit Specifications

Fuel Tank Capacity: 21 US gallons

Fuel Consumption: 0.317 gph @ 2,900 rpm

Maximum Operating Speed: 68 strokes/min

Maximum Operating Temperature: 212°F

Maximum Operating Pressure: 21 psi

Maximum Suction Lift: 20 feet

Maximum Casing Pressure: 32 psi

In the interest of product improvement, Thompson Pump & Manufacturing (ISO 9001:2008) reserves the right to change specifications without incurring any obligation for equipment previously or subsequently sold. Capacity, Head and Pump Curve are for comparative purposes. We certify that this product meets or exceeds any applicable design or performance standards prescribed by the Contractors Pump Bureau. This product has been tested in accordance with the procedures defined by the Hydraulic Institute. Fuel consumption may vary depending on particular engine configuration. Consult engineering data for exact capabilities.

4620 City Center Drive, Port Orange, FL, 32129, USA (800) 767-7310 * Fax (386) 761-0362

Email: sales@thompsonpump.com * www.thompsonpump.com