



Smith & Loveless Inc.

Above All Others.™

**Smith & Loveless
Non-Clog Wastewater Pumps**

Easy Maintenance

Full access to the volute and suction elbow is possible by merely removing the capscrews and raising the entire rotating assembly. This design eliminates the necessity for cleanout ports in the volute and suction elbow. Hand cleanouts are normally not large enough to remove most objects that would clog a pump and in addition can cause raw sewage spillage or flooding.

Unique Volute Design

All Smith & Loveless pumps come standard with either a hybrid dual-curve volute design or a double-volute design to reduce the radial thrust loads produced inside a centrifugal pump. These designs, coupled with the Smith & Loveless pump's exclusive minimum shaft overhang, reduce shaft deflection. The resultant increased mechanical seal and bearing life and decreased shaft loadings will greatly reduce maintenance and repair costs.



Four Smith & Loveless Flooded Suction Non-Clog Pumps dutifully work, day-in and day-out in this **CAPSULAR®** Pump Station.

Features

Oversized Shaft - The oversized shaft minimizes shaft deflection, thus extending mechanical seal and bearing life.

Oversized Bearings - Because of the oversized shaft, oversized bearings are applied. Typically, bearings in the Smith & Loveless pump have a B10 bearing life of 30 years.

Bottom Thrust Bearing - The locked thrust bearing located at the bottom of the shaft prevents shaft expansion and increased clearances through the wet end of the pump.

Minimum Shaft Overhang - Minimizing the cantilevered portion of the shaft reduces pump height and provides the rigid construction necessary to prevent vibration and deflection from reducing seal life. Measurement from the lower bearing to the top of the impeller hub is less than 6" (150 mm) on all Smith & Loveless pumps.

Seal Lubrication - The Smith & Loveless pump draws cooling and lubrication water from the back head. This low pressure area prevents exposing the seal to pump shutoff pressure during start-up, which can prevent proper lubrication of the seal and cause the seal elements to slip on the shaft.

Impellers Trimmed Inside Shrouds - Impellers are designed for maximum efficiency. By trimming the impellers inside the shrouds, the Smith & Loveless pump leaves the back shroud full diameter to prevent stringy material from winding around the shaft.

Minimum Height - A minimum height pump provides a compact design that reduces vibration, extending seal and bearing life, and the vertical design provides more free floor area for maintenance than horizontal pump alternatives.

Solid Stainless Steel Shaft - Stainless steel shaft through the mechanical seal eliminates abrasive rust particles that can shorten seal life as well as eliminating corrosion that can weaken the shaft.

Close Impeller/Front Head Tolerance - To prevent recirculation of the pumped liquid, minimum clearance between impeller and front head must be maintained. The Smith & Loveless pump has 0.015" (0.38 mm) clearance which eliminates the need for shims to maintain minimum clearance between impeller and front head.

Shaft Movement - Shaft endplay is limited to bearing shake. Shaft runout is limited to 0.003" (.008 mm). These close tolerances are in all cases tighter than NEMA specifications and significantly increase both pump efficiency and mechanical seal life.

Bronze Seal Housing - The heavy bronze seal housing provides the best heat dissipation as well as preventing the formation of abrasive rust particles in the seal.

Class "F" Motor Insulation - Although Smith & Loveless limits motor temperature rise to a maximum of 80° C, all motors use Class F insulation which is suitable for a temperature rise of 105° C. This conservative design criteria translates directly into extended motor life.

Tapered Impeller Fit - The shaft and impeller bore are tapered allowing easy removal of the impeller. A nontapered shaft and impeller requires a wheel puller for removal, often resulting in broken impeller shrouds.

One Piece Back Head/Motor Adapter - The one piece back head and motor adapter provides more rigid construction, reduces the number of registered fits required, and minimizes the possibility of unbalancing the motor rotor in relation to the impeller and mechanical seal. By reducing the amount of vibration, the seal and bearing life are increased.

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