

**Thrust Bearing (Not Shown)**  
Sized to withstand the total hydraulic thrust as well as the rotor weight. Located in the motor (NEMA) or pump (IEC)

**Seal Chamber** is designed to accommodate cartridge type mechanical seal. Plan 13 provides continuous venting

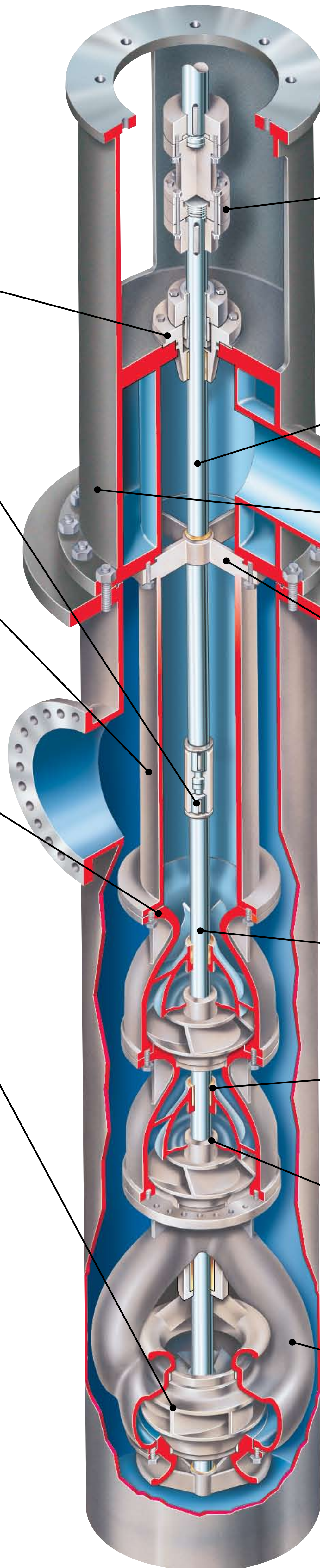
**Keyed Lineshaft Couplings** positively lock sections of lineshaft together

**Flanged Column Assembly** utilizes precision rabbet fits to ensure proper alignment of each section. Provides transition from bowl assembly to discharge

**O-Rings** in intermediate stages seal against interstage leakage, prevent premature failure of flange surface due to "wire drawing"

**Double-Suction First-Stage Impeller** reduces NPSH and meets Hydraulic Institute standards for suction-specific speed, thereby reducing the possibility of cavitation over a wide operating range

**Suction Can Drain (Optional, Not Shown)**  
Allows the suction can to be drained of pumping fluid prior to removing the pump



**Solid Shaft Motor**  
Shaft extension allows motor to be coupled to pump

**Rigid, Adjustable Flanged Coupling** provides the proper impeller clearance adjustment. A spacer coupling allows access to the mechanical seal without removing the motor

**Shaft** is precision machined for trueness, to minimize shaft vibration and maximize bearing life

**Discharge Head** is designed so that the combined natural frequency of the pump and motor are safely removed from the operating speed range of the pump

**Bearing Retainers** provide shaft support in column assembly. Retainers are spaced between column sections

**Open Lineshaft Construction** allows the lineshaft bearings to be lubricated by the pumped fluid

**Large Shafts**, with low shaft stress levels, mean less shaft whip, longer bearing and ring life

**Bearings** available in carbon or bronze throughout, have inherent self-lubricating properties, last longer and are more durable in two-phase liquid operations

**Keyed Impellers** with lock collars provide method of fastening impeller to shaft with a positive locking design

**Twin Volute** design minimizes radial loads, extending radial bearing life