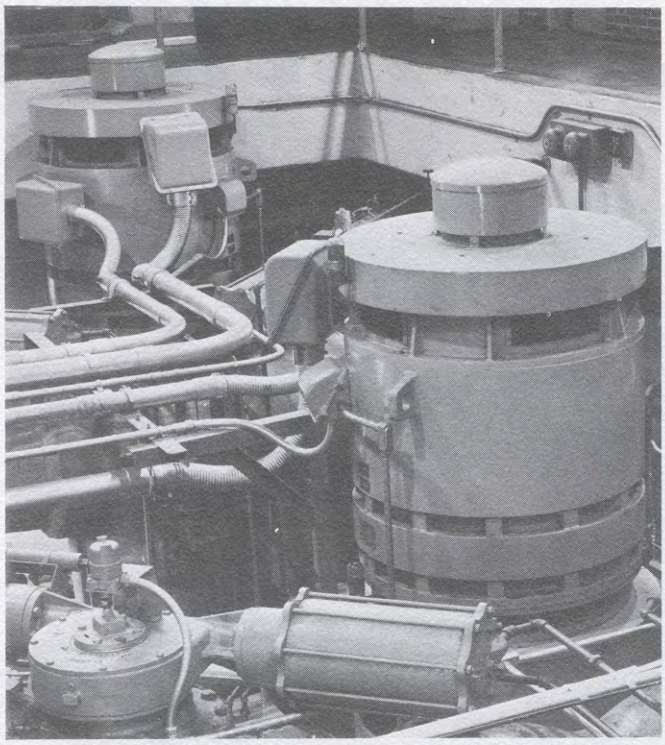
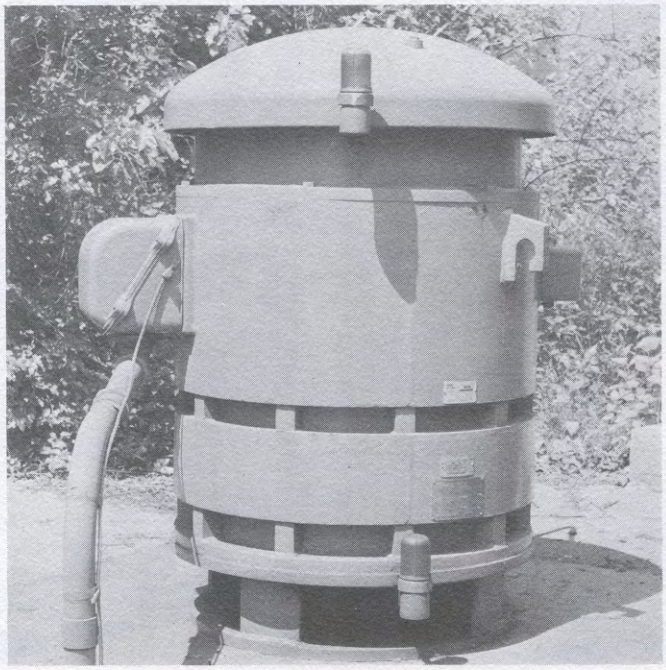
Continental VERTICAL

DRIPPROOF WEATHER P



Continental Vertical Dripproof Motors (600 HP. 2300 volts, 60 cycle, 3 phase, 880 RPM) in an indoor pumping installation in Maryland.

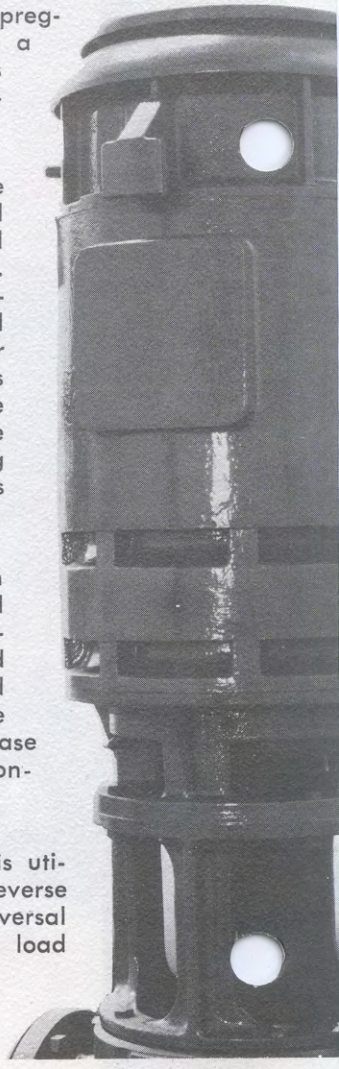


This Weather Protected I Vertical Motor (400 HP, 4160 volts, 1.15 S.F., 3 phase, 60 cycles, 1785 RPM) operates at the New Jersey site of the world's tallest pressure sphere water storage complex. It has withstood the elements without breakdown of any kind since 1967.

Every Continental motor is the result of careful workmanship, creative and experienced design intelligence and the finest materials available.

Construction — cast iron and rugged fabricated steel frame and brackets are used for rigidity, long life and true concentricity. The entire frame assembly is varnished and baked to prevent oxidation and allow maintenance of a clean surface on motor internals for optimum ventilation and easy maintenance. Motors installed for twenty-plus years retain an as-new appearance.

Windings — of form wound coils are placed in already insulated slots in silicon steel cores. Coils are insulated as dictated by the customer (up to 6600 volts). The coil extensions are individually tied with glass tape to rolled and welded brace rings preventing movement of the coils due to starting currents or line surges.
The entire stator winding is varnish impregnated with Class F insulation and baked after all connections are in place. These impregnation and baking cycles insure a homogeneous bond between coils and frame for long life under starting stresses.



CECO-Seal consists of B Stage epoxy tape to provide a sealed system and is standard in all Weather Protected I and II motors. When cured this tape bonds to itself forming a protective seal against moisture, carbon black or other conducting materials. This results in a stator which can be tested under high potential while immersed in water with a wetting agent. The winding insulation is also abrasion resistant.

Bearings — Continental proven quality bearings have been utilized for over 30 years. Integral oil-lubricated and grease-lubricated bearings are available. Standard designs have common oil or grease lubrication top and bottom for ease of maintenance. There are no contact seals to be replaced.

Non-reverse Ratchet Assembly — is utilized (where required) where reverse rotation due to electrical phase reversal or motorizing of pump or other load would cause damage to line shaft couplings or driven equipment.

MOTORS

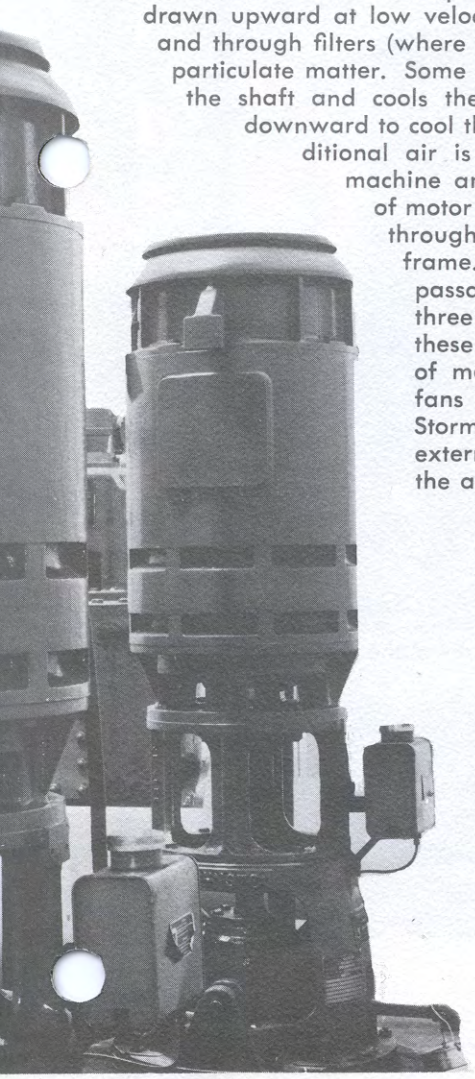
ROTECTED I

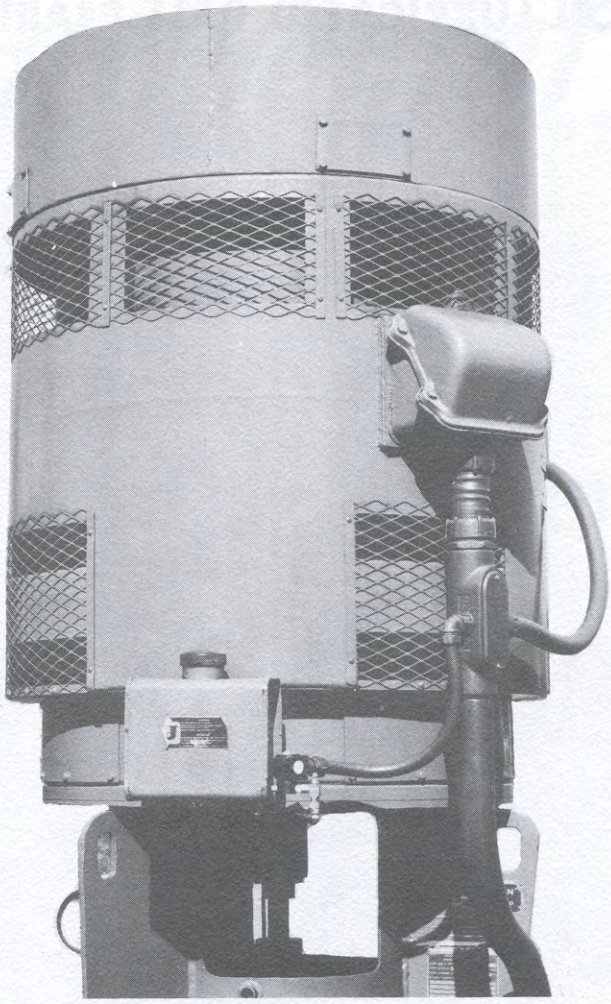
WEATHER PROTECTED II

DRIPPROOF motors feature open construction with ventilation openings permitting external cooling air to pass directly around the windings. The openings are so constructed that liquid drops of solid particles falling from an angle of 0 to 15 degrees from the vertical will not interfere with successful operation of the motor.

WEATHER PROTECTED I motors have the same features as dripproof but with the ventilating openings screened (¾" diameter maximum opening) to prevent the passage of rodents, snakes or air-borne particles and minimizing the entrance of rain or snow. The external and internal parts of the motor are treated for corrosion resistance and insulated with the moisture resistant CECO-Seal insulation system.

WEATHER PROTECTED II motors, developed from improved ventilation and insulating and sealing systems, are now widely used in exposures which previously required totally enclosed, fan cooled motors. Continental improves the industry standard by utilizing the CECO-Seal sealed insulation system in WPII motors. Ambient air is drawn into the machine through a circumferential screened opening in the frame and then is drawn upward at low velocity (600 feet/minute maximum) and through filters (where specified) which clean the air of particulate matter. Some of the air passes inward toward the shaft and cools the thrust bearing before turning downward to cool the top half of motor proper. Additional air is directed to the bottom of the machine and serves to cool the lower half of motor proper. Heated air is discharged through baffled openings on the lower frame. Thus the air is carried through passageways which have no less than three abrupt changes in direction. All these features minimize the possibility of moisture or dirt carrying into the fans and electric parts of the motor. Storm winds are blown through the external air passages without entering the active area of the motor.





A pump application of a medium thrust Weather Protected II Motor operating since 1971. Space heaters inhibit condensation while the motor is idle.

Continental Vertical Dripproof and Weather Protected Motors have been successfully applied at refineries, water and sewage treatment plants, paper mills, metal foundries, chemical plants, antenna drives, cooling tower applications, office and residential buildings, airport service, and other applications where reliability is important. These motors have operated well in Gulf Coast conditions for over 30 years.

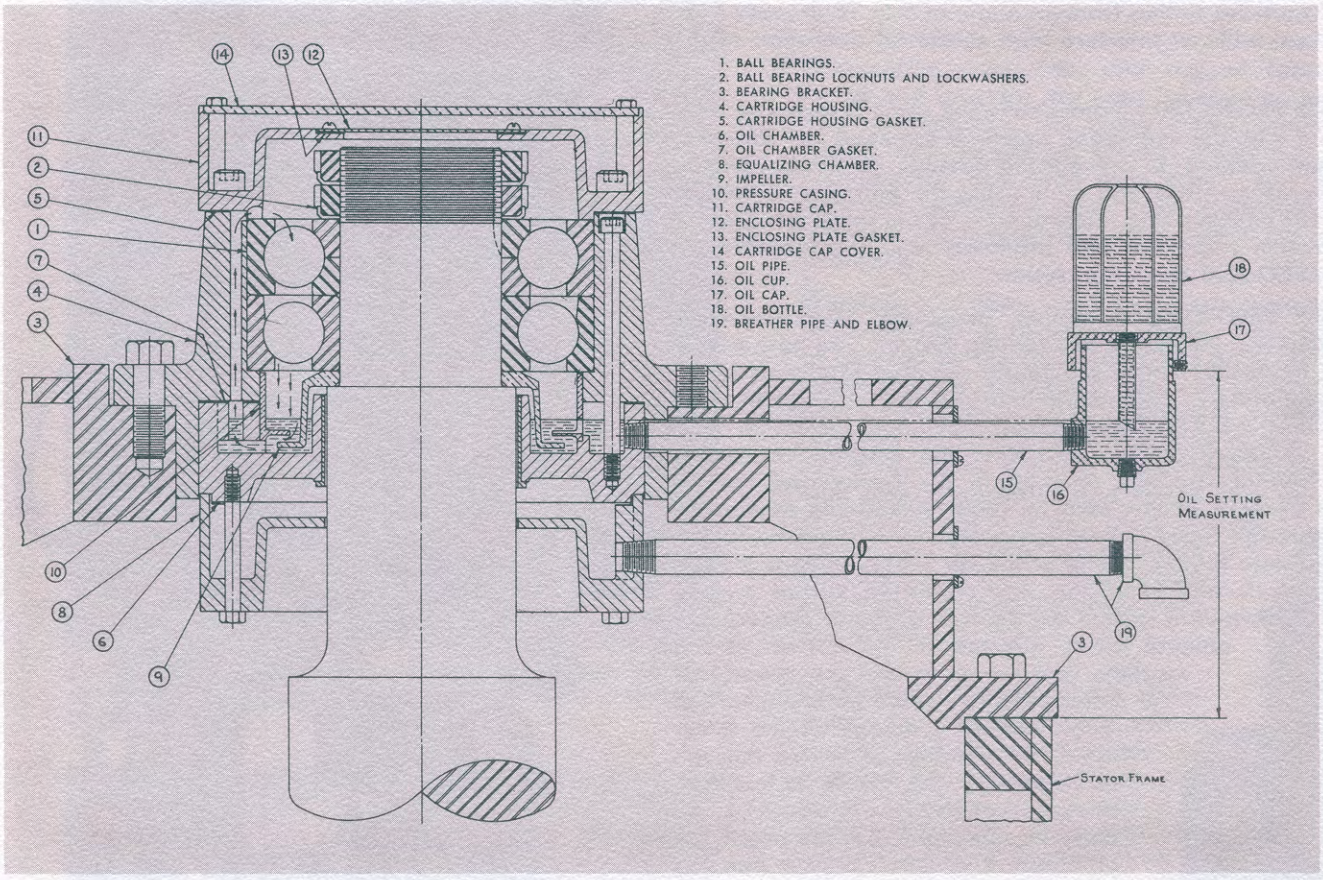
While most applications are constant speed, Continental also offers variable speed motors such as wound rotor and modified NEMA D high slip variable voltage/variable speed motors. The sturdy construction and careful balancing techniques utilized by Continental help reduce vibration over the speed range. Continental variable speed motors have been applied at the World Trade Center, Newark and Tampa Airports, The White House, and many industrial water plant and military applications.

Optional accessories include heavy-duty explosion proof oil-lubricated (liquid and mist) bearing cartridge assembles, audio noise dampening kits, space heaters, thermal detectors for winding and bearings and vibration detectors.

A sewage treatment plant in Virginia demonstrates the success of a Continental Dripproof Vertical Motor. These high slip variable speed motors contain high thrust ball bearings.

Recommended . . .

OIL-LUBRICATED BALL BEARINGS FOR VERTICAL MOTORS



FOR RELIABILITY AND EASE OF MAINTENANCE

All parts are interchangeable with any rating using the same size bearings.

Continental's oil-lubricated ball bearing assemblies are specially designed for vertical mountings so that the oil properly lubricates the entire assembly from top to bottom.

Thrust bearings can be changed at the job site with no special tools required. Jack screws and tapped holes permit removal of entire cartridge and bearings at one time.

Rotation is possible in both directions without changing any parts.

There are no contact seals to wear out or leak.

Large oilers with visible oil reservoirs make lubricating inspection easy.

Oil-lubricated ball bearing assemblies can be furnished for thrust and guide bearings in frames 324 and larger, 40 to 1500 HP.

Bearings assemblies adaptable for oil mist lubrication.

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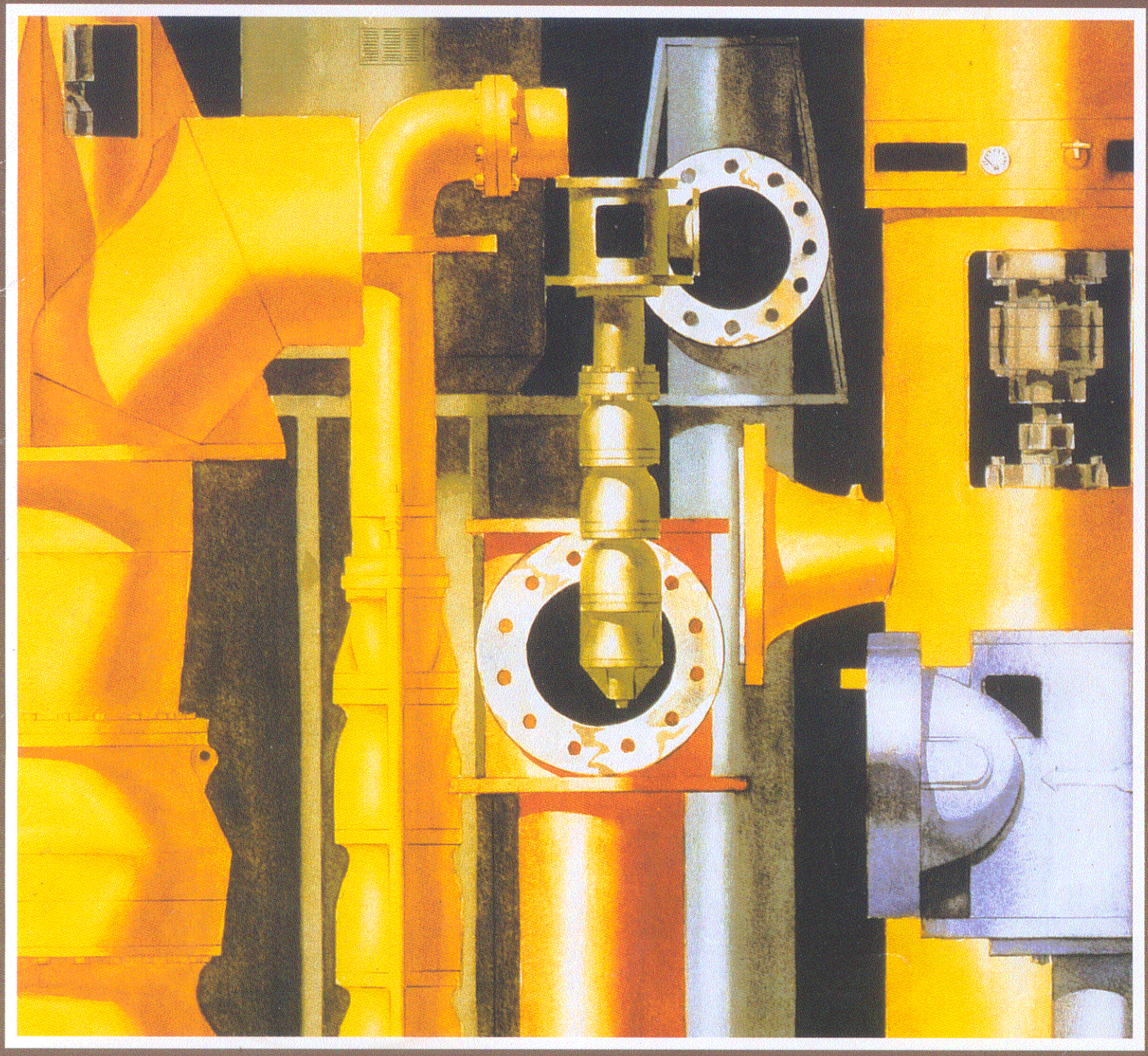
Vertical Pump Troubleshooting Guide



Johnston Pump Company