3/8” BSPT Ports Standard

FEATURES:
- Rugged corrosion resistant bronze construction
- Compact close-coupled design
- Stainless steel shafts
- Durable bronze helical gears provide quiet operation
- Process lubricated carbon graphite bearings
- O-ring cover seal for maximum leak protection
- Lip Seal or Mechanical Seal
- Easy field assembly to a variety of motor frames
  - For compact AC motor pump units see Close-Coupled Bronze Adapterless Rotary Gear Pumps
  - For Danfoss hydraulic motor driven pump units see adapter 9960
- For bronze pedestal pumps see model N3000E
- For close-coupled ductile iron pumps see model C993

GENERAL DESCRIPTION:
Pump housings and gears are made of top quality bronze, shafts are 303 stainless steel. Bearings are designed of high performance carbon-graphite material selected for wear resistance and long service life.

Gear pumps are positive displacement pumps. Each shaft revolution displaces a definite amount of liquid relatively unaffected by the back pressure in the discharge line. Shaft speed and flow are directly proportional. Recommended pressure limits are 7 bar for water and non-lubricants, 10.3 bar for oil and other lubricants. The maximum shaft speed is 1750 RPM.

SHAFT SEALS:
Close coupled gear pumps are normally supplied with a NBR lip seal. For a FKM Seal, add S5 to the pump model number. For NBR mechanical add S16. For FKM mechanical add S17. For PTFE mechanical add S18. For EPDM mechanical add S8.

LIQUIDS AND TEMPERATURE:
These pumps are suitable for all liquids that are compatible with bronze. Most common liquids are water, oil, and mild chemicals in the pH range of 4 to 11. Viscous liquids require reduced shaft speeds of 1150 RPM or lower. (Consult factory.)

Liquids containing solids, abrasives, powders, or paint pigments are definitely not recommended for gear pumps. If abrasives are unavoidable, use a very low shaft speed.

The recommended liquid temperature range is from 0° C to 60° C for best pump life. If more extreme temperature conditions exist, factory should be consulted. Freezing of water-filled pumps can cause damage and must be avoided. Oils at low temperatures are very viscous requiring a lower speed or extra power.

SUCTION LIFT:
As a general rule, the suction lift should be kept at an absolute minimum by placing the pump as close to the liquid source as possible. A gear pump in new condition can lift 6 meters of water in the suction line. A foot valve (preferably with built-in strainer) is recommended at the beginning of the suction line. For a first start-up, the pump should be primed to avoid dry running. Minimum size of the suction pipe is the size of the pump inlet port. For longer suction lines (over 1 meter) or for viscous liquids, the pipe should be at least one size or two sizes larger than the pump inlet port.

ROTATION AND RELIEF VALVE:
If the discharge line contains any throttling devices such as a shut-off valve, a spray nozzle or other restrictive device, it is necessary to have a relief valve in the system which returns the liquid to the suction side or to the tank. The relief valve is also available as part of the pump itself (R-model pumps). However, built-in relief valves are only good for intermittent service. If used continuously, the pump will overheat. A built-in relief valve is strictly a safety device against overpressure. It will not work successfully as a pressure or flow control device. For this purpose a separate relief valve in the pressure line must be used.

Unless otherwise specified, the pump motor unit is supplied by the factory for shaft rotation counterclockwise from shaft end. Reversing motor will reverse “in and out” ports and also requires changing relief valve location. The relief valve is always on the inlet side of this pump series. The factory pressure setting is 3.5 bar. To increase pressure, turn the relief valve adjusting screw in a clockwise direction.
Bronze Close Coupled Rotary Gear Pumps
Model N993E Series

Exploded View

Visit www.oberdorfer-pumps.com to find in-depth descriptions of the world’s leading high-quality, dependable pumps.

Due to ongoing product improvements, data shown here is subject to change without notice. Contact Oberdorfer Pumps for latest specifications.

Repair Kits contain items 3, 4, 5, 7, 12, 14, 15, 24

NBR = Acrylonitrile-Butadiene    PTFE = Polytetrafluoroethylene    FKM = Fluoroelastomer

N993E & N993ES5
N993ES16, N993ES17, N993ES18 & N993ES8