



OBERDORFER PUMPS

by Gardner Denver

CHEMSTEEL™

SM417 Metallic

SEAL-LESS MAGNETIC DRIVE



A full range of accessories are available including:

- close coupled mounting kits
- baseplate/pedestal mounting kits
- line mounted pressure relief valves

GENERAL DESCRIPTION:

Chemsteel™ pumps are designed to handle common and highly corrosive liquids that must be pumped under pressure. Manufactured to extremely precise tolerance, the Chemsteel™ pump line prevents system contamination while maintaining the purity and integrity of the liquid being pumped. Its rugged, three-section, o-ring sealed thru-bolt construction provides ease of servicing and parts replacement. Helical gearing offers noise reduction by as much as 10db, while the tandem pumps double the output flow for a single fluid, or with isolation, handle other fluids in direct ratio to the first. Additionally, Chemsteel™ pumps offer bi-directional operation for applications requiring reversing flow.

LIFE CYCLE/COST OF OWNERSHIP

Pump design and materials selection, together provide the longest life available from a gear pump.

Key attributes include:

- Gear & bearing combinations of metallic and nonmetallic wear surfaces.
- Slotted bearings to lubricate shaft and gear surfaces.
- Hydraulic porting to balance axial thrust and to reduce wear.
- Ample port sizing to reduce the likelihood of cavitation when inlet pressure is marginal.
- Effective housing seals with elastic memory prevent leakage of corrosives.

SPECIFIC SOLUTIONS

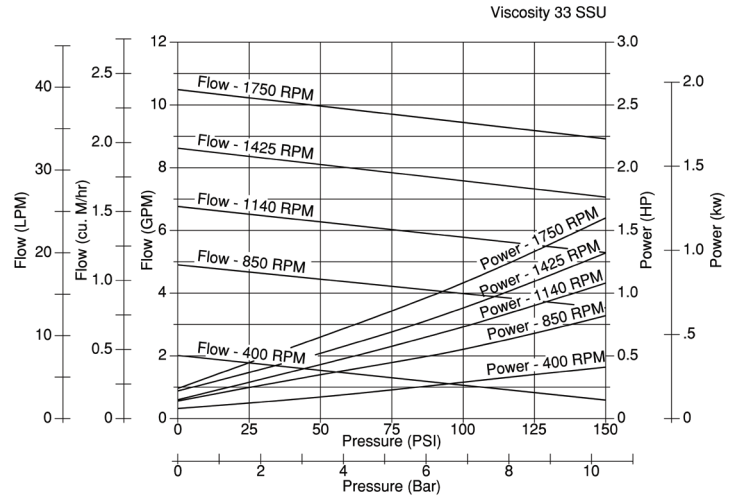
Gear/bearing design allows for “trimming” for optimizing the pump’s maximum flow to reach minimum turndown or to match flow to a specific OEM’s requirement.

Special materials combinations are available for specific liquids:

- Stainless or Alloy C housing construction.
- Gears available in 316 stainless, Alloy C. Also in PTFE White, Polyetheretherketone and Polyphenylenesulfide.
- Shafts are 316 stainless steel or Alloy C.

PERFORMANCE:

CAPACITY WATER AT 70° F / 21.1° C



Notes: For continuous service:

Plastic / Plastic gear combinations are limited to 50 psi or 3.5 bar.

Metal / Plastic gear combinations are limited to 100 psi or 7 bar.

- Bearings available in carbon or PTFE White or PTFE Red.
- Full range of seal options including lip seal, packing and mechanical designs.

FIT

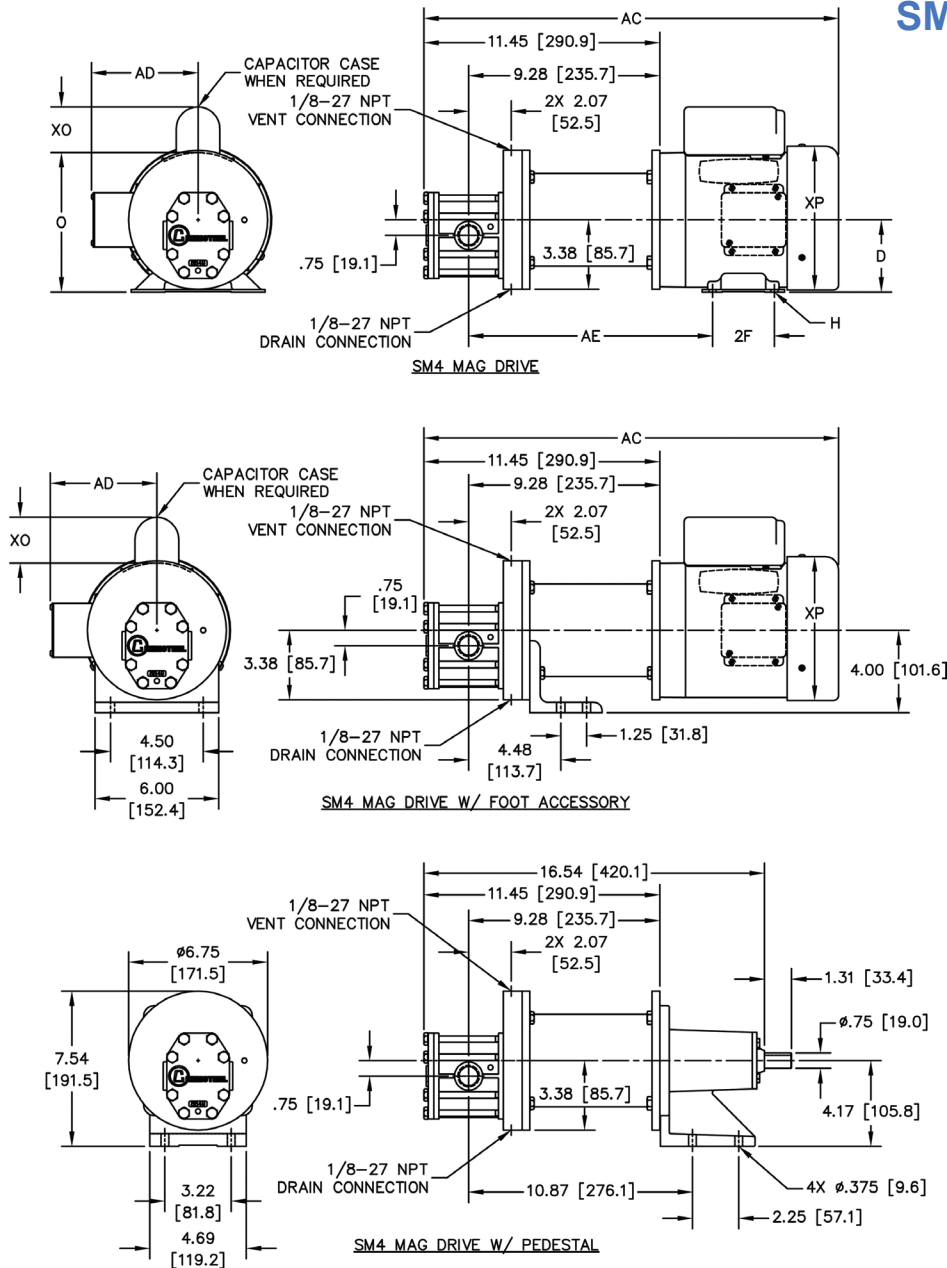
Connections are 3/4" female NPT or BSPT, pump hardware is metric and close couple adapters mount to both NEMA and IEC standard motor frame sizes for world wide acceptance. “Near” dimensional interchangeability offers easy upgrade to Chemsteel™ pump. The port size is the same as competitive pumps.

MAINTENANCE

A three-part housing provides easy disassembly and service. Full size bearings match the gear diameter, and eliminate the need for separate wear plates. TFE encapsulating silicone o-ring pump housing seals provide elastic memory to assure an effective long lasting seal and thus avoiding the re-torquing required of pumps using pure TFE.

| MODEL | SM417 | |
|-------------------------------|--------------------|------------|
| Maximum flow @1750 rpm | 10 GPM | 37.9 LPM |
| Theoretical displacement | 27.0 cc/revolution | |
| Maximum differential pressure | 110 psig | 7.6 bar |
| Maximum system pressure | 225 psig | 15.5 bar |
| Maximum speed | 1800 RPM | |
| Maximum fluid temperature | 450° F | 232° C |
| Minimum fluid temperature | -50° F | -46° C |
| NPSHR @ 1750 RPM | 6 feet | 1.8 meters |
| Standard port size | 3/4" FNPT | 3/4" BSPT |
| Weight (lbs) | 35 lbs | 15.9 kg |

DIMENSIONS



| Mag Chemsteel Option Suffix | Power Kit Part No. | Motor Frame | | *AC | D | 2F | H | AE | AD | *O | *XO | *XP |
|-----------------------------|--------------------|-------------------------|-------------|-------|------|-----------|----------|-------|-----------|-----------|------|-------|
| M1 | MC4H56 | 56C | inches | 20.21 | 3.50 | 3.00 | .34 Slot | 11.84 | 5.31 | 6.81 | 2.25 | 7.16 |
| | | | millimeters | 513.3 | 88.9 | 76.2 | 8.6 Slot | 300.7 | 134.9 | 173 | 57.2 | 181.9 |
| M2 | MC4J45T | 143TC/145TC | inches | 23.59 | 3.50 | 4.00/5.00 | 0.34 | 12.16 | 5.31 | 6.81 | 2.25 | 7.16 |
| | | | millimeters | 599.2 | 88.9 | 101.6/127 | 8.6 | 308.9 | 134.9 | 173 | 57.2 | 181.9 |
| M3 | MC4F71E | IEC 71C, B14 Face | inches | 19.73 | 2.80 | 3.54 | .28 Slot | 10.46 | 4.00 | 5.14 | n/a | 4.13 |
| | | | millimeters | 501.1 | 71 | 89.9 | 7.1 Slot | 265.7 | 101.6 | 130.6 | n/a | 104.9 |
| M4 | MC4T80E | IEC 80C, B14 Face | inches | 21.38 | 3.15 | 3.94 | .39 Slot | 11.64 | 4.51 | 6.00 | n/a | 4.72 |
| | | | millimeters | 543.1 | 80 | 100.1 | 9.9 Slot | 295.7 | 114.6 | 152.4 | n/a | 119.9 |
| M5 | MC4U90E | IEC 90SC/90LC, B14 Face | inches | 22.48 | 3.54 | 3.94/4.92 | .39 Slot | 11.88 | 5.12/4.25 | 6.81/6.53 | n/a | 5.51 |
| | | | millimeters | 571 | 90 | 100.1/125 | 9.9 Slot | 301.8 | 130/108 | 173/165.9 | n/a | 140 |
| M6 | MC4K84T | 182TC/184TC | inches | 24.30 | 4.50 | 4.50 | 0.41 | 13.37 | 6.38 | 8.75 | 2.25 | 9.09 |
| | | | millimeters | 617 | 114 | 114.3 | 10.4 | 339.6 | 162.1 | 222.3 | 57.2 | 231 |

*Dimensions AC, O, XO and XP may vary depending on HP, Enclosure, Speed and Manufacturer.

To order a CHEMkit™, simply add a "K" to the end of the model number. A repair kit contains the following parts: bearings, gears, o-rings, shafts, keys, and retaining ring.



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Visit www.oberdorferpumps.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.