BRONZE RUBBER IMPELLER PUMP

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

MODEL
501M
501E

FEATURES
- Bronze Construction - Corrosion Resistance
- Reversible Wearplate
- Teflon Barrier Seals Protecting Ball Bearings
- Mechanical Carbon Ring, Ceramic Face Main Pump Seal
- Two Sealed Ball Bearings Spaced for Maximum Load Ability
- Large Vent & Drain Openings Separate Seal & Bearing Areas
- Shaft Slinger for Additional Bearing Protection
- New 368J Impeller Compound
- High Chrome Nickel Stainless Steel Shaft
- O-Ring Seal Between Body and Cover
- Impeller & Cam Easily Replaced

ROTATION
Direction of shaft rotation determines inlet and outlet ports (see line drawing)

MOUNTING
Pump will operate satisfactorily when mounted in any position. DO NOT RUN DRY. Rubber impellers generate high rubbing friction unless lubricated by liquid pumped. Lack of liquid will cause impeller to burn up.

DIMENSIONS

PERFORMANCE

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Water at 60° F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Model</td>
<td>RPM</td>
</tr>
<tr>
<td>501M</td>
<td>800</td>
</tr>
<tr>
<td>HP</td>
<td>3/4</td>
</tr>
<tr>
<td>1150</td>
<td>GPM</td>
</tr>
<tr>
<td>HP</td>
<td>3/4</td>
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<tr>
<td>1750</td>
<td>GPM</td>
</tr>
<tr>
<td>HP</td>
<td>1 1/2</td>
</tr>
</tbody>
</table>

GPM = Gallons per minute
RPM = Revolutions per minute
PSI = Pounds per square in pressure
Feet Hd. = Feet head pressure
HP = Horsepower

DRIVE
Either direct drive with flexible coupling or pulley drive can be used. Make sure both flexible coupling halves are properly aligned. When using pulley, do not overtighten belt.

LIQUIDS AND TEMPERATURE
Liquids compatible with neoprene can be pumped including fresh and salt water solutions and mild chemicals. Do not pump severe solvents or acids. When possible, flush pump with fresh water after each usage.

Extremes of cold and heat will affect impeller life. Limits of 40° to 140° F should be observed. Do not allow liquid in pump to freeze. Drain pump by loosening cover screws. Use methyl alcohol based anti-freeze compounds such as Zerex, Shell Zone, Pyro Permanent, Permargard, Dowgard.

SUCTION LIFT
Suction lift of 15 feet is possible when impeller is wet. Suction lines must be air tight in order for pump to self prime. A foot valve at beginning of suction line is recommended.
BRONZE
RUBBER IMPELLER PUMP

OBERDORFER PUMPS
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EXPLODED VIEW AND PARTS LIST

<table>
<thead>
<tr>
<th>Pump No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
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<tbody>
<tr>
<td></td>
<td>Screw</td>
<td>Cover</td>
<td>O-Ring</td>
<td>Impeller</td>
<td>Body</td>
<td>Set Screw</td>
<td>Lip Seal</td>
<td>Ball Bearing</td>
<td>Ret. Ring</td>
<td>Seal Assy.</td>
<td>Shaft</td>
<td>Key</td>
<td>End Plate</td>
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<tr>
<td>501M-05</td>
<td>5504</td>
<td>6717</td>
<td>8232</td>
<td>7054</td>
<td>9932</td>
<td>6436</td>
<td>6710</td>
<td>6332</td>
<td>6559</td>
<td>32953</td>
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<td>6342</td>
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<td>5504</td>
<td>6717</td>
<td>8232</td>
<td>7593</td>
<td>9932</td>
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<td>6559</td>
<td>32953</td>
<td>9930</td>
<td>6342</td>
<td>6713</td>
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</tbody>
</table>

Repair Kit for 501M-05 is 10706. It contains items 3, 4 & 14.
Repair Kit for 501M-06 is 11672. It contains items 3, 4 & 14.

* Item 4 Clutch Assy. Is items 2 & 3 combined.
** Item 1 is pump listed above with item 20 (End Plate) w/ (3) 5504 screws removed.
E 12 models are 12 Volt D.C., E 32 models are for 32 Volt D.C.
Clutch Kits contain items 2, 3, 5, 6, 7, 8, 9 & 10.

11/00

www.oberdorfer-pumps.com PHONE 800-448-1668; (315) 437-0361 FAX (315) 463-9561
BRONZE PEDESTAL RUBBER IMPELLER PUMP

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

PIPE SIZE 1”

FEATURES
- Bronze Construction - Corrosion Resistance
- Large Suction and Discharge Ports
- Teflon(R)* Barrier Seals Protecting Ball Bearings
- Mechanical Carbon Ring, Ceramic Face Main Pump Seal Standard
- Two Sealed Ball Bearings Spaced for Maximum Load Ability
- Large Vent & Drain Openings Separate Seal & Bearing Areas
- Shaft Slinger for Additional Bearing Protection
- Neoprene Impeller Standard
- Buna N Impeller Optional (Both are Spline Drive)
- High Chrome Nickel Stainless Steel Shaft
- Extra Capacity Ball Bearings plus Rugged Construction for Prolonged Service Life
- Impeller & Cam Easily Replaced
- Buna N O-ring Between Body and Cover Eliminates Gasket Problems

ROTATION
Direction of shaft rotation determines inlet and outlet ports (see line drawing)

MOUNTING
Pump will operate satisfactorily when mounted in any position. **DO NOT RUN DRY.** Rubber impeller pumps generate high rubbing friction unless lubricated by liquid pumped. Lack of liquid will cause impeller to burn up.

DRIVE
Either direct drive with flexible coupling or pulley drive can be used. Make sure both flexible coupling halves are properly aligned. When using pulley, do not overtighten belt.

PERFORMANCE

<table>
<thead>
<tr>
<th>Pump Model</th>
<th>RPM</th>
<th>Feet Hld.</th>
<th>Water at 60°F</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>800</td>
<td>PSI 0</td>
<td>0  20  40  60 80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/3</td>
<td>8.7 17.3 26.0 34.6</td>
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<tr>
<td>401M-02</td>
<td>1750</td>
<td>GPM 12.0</td>
<td>11.0 9.70 7.5 2</td>
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<tr>
<td>401M-03</td>
<td></td>
<td>HP 3/4</td>
<td>1/3 1/2 1/2 3/4</td>
</tr>
<tr>
<td>3000</td>
<td>2500</td>
<td>GPM 32.5</td>
<td>30.5 27.0 24.0 17.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HP 1</td>
<td>1 1 1/2 1 1/2 2</td>
</tr>
<tr>
<td>401M-02</td>
<td>3000</td>
<td>GPM 36.0</td>
<td>34.5 31.0 27.5 21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HP 1/2</td>
<td>1/2 1 1/2 2 2</td>
</tr>
</tbody>
</table>

LIQUIDS AND TEMPERATURE
Liquids compatible with neoprene can be pumped including fresh and salt water solutions and mild chemicals. Do not pump severe solvents or acids. When possible, flush pump with fresh water after each usage. Buna N impellers can handle oil contaminated water and kerosene at reduced impeller service life.

Extremes of cold and heat will affect impeller life. Limits of 40°F to 140°F should be observed. Do not allow liquid in pump to freeze. Drain pump by loosening cover screws. Use methyl alcohol based anti-freeze compounds such as Zerex, Shell Zone, Pyro Permanent, Permagrid, Dowgard.

SUCTION LIFT
Suction lift of 15 feet is possible when impeller is wet. Suction lines must be air tight in order for pump to self prime. A foot valve at beginning of suction line is recommended.

IMPELLER REPLACEMENT
The impeller must be replaced if it is worn out or has been damaged by debris or by running the pump dry. Symptoms of a defective impeller are low pumping pressure and low flow causing overheating of the boat engine. Poor pump performance can also be caused by slippage of V-belts, so belts should be checked for tightness.

To replace the impeller remove screws and cover cover. Pull out the impeller with nose pliers or two screwdrivers. Be careful not to dent the pumping chamber with these tools. When inserting new impeller, line up key slot in impeller with the key in the shaft. Use oil on shaft and avoid forcing the impeller onto the shaft.

The impeller should also be removed for storage periods to prevent the blades from taking a permanent set.

(continued on back)

*Teflon(R) is a registered trademark of DuPont. Teflon(R) or equivalent PTFE will be used.
SEAL REPLACEMENT (Continued from front)

If water drips from the weep hole of from the area where the shaft exits the pump, the seal is defective and must be replaced. While the Teflon(R)* barrier seal provides a first line of defense, prolonged running of the pump with a leaky seal can destroy the ball bearings resulting in catastrophic pump failure and engine shut-down.

For seal replacement, the pump must be removed from the engine and disassembled in order to gain access to the seal area. Where mechanical seals are used, both components (stationary and rotating member) must be replaced at the same time. Lip seals must be pushed out of their press-fitted position and new seals pressed into place, using a sealant on the outside of the lip seal housing.

Refer to exploded view drawings for seal location and part numbers for ordering purposes.

Specifications are subject to change without notice.
PIPE SIZE: 3/4"

**FEATURES**
- Bronze Construction - Corrosion Resistance
- Large Suction and Discharge Ports
- Teflon(R)* Barrier Seals Protecting Ball Bearings
- Mechanical Carbon Ring, Ceramic Face Main Pump Seal Standard, Optional Buna N Lip Seal
- Two Sealed Ball Bearings Spaced for Maximum Load Ability
- Large Vent & Drain Openings Separate Seal & Bearing Areas
- Shaft Slinger for Additional Bearing Protection
- Neoprene Impeller Standard, Buna N Impeller Optional
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- Extra Capacity Ball Bearings plus Rugged Construction for Prolonged Service Life
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**ROTATION**
Direction of shaft rotation determines inlet and outlet ports (see line drawing)

**MOUNTING**
Pump will operate satisfactorily when mounted in any position. **DO NOT RUN DRY**. Rubber impeller pumps generate high rubbing friction unless lubricated by liquid pumped. Lack of liquid will cause impeller to burn up.

**DRIVE**
Either direct drive with flexible coupling or pulley drive can be used. Make sure both flexible coupling halves are properly aligned. When using pulley, do not overtighten belt.

---

**PERFORMANCE**

<table>
<thead>
<tr>
<th>Pump RPM</th>
<th>Feet Hd.</th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
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</thead>
<tbody>
<tr>
<td>800</td>
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<td>HP</td>
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<td>1/4</td>
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<td>---</td>
</tr>
<tr>
<td>1750</td>
<td>GPM</td>
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<td>10.5</td>
<td>9.2</td>
<td>6.7</td>
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<td>1/3</td>
<td>1/2</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>2500</td>
<td>GPM</td>
<td>16.0</td>
<td>14.5</td>
<td>12.5</td>
<td>9.3</td>
<td>6</td>
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<td>1/2</td>
<td>1/2</td>
<td>3/4</td>
<td>3/4</td>
<td>3/4</td>
</tr>
<tr>
<td>3000</td>
<td>GPM</td>
<td>19.0</td>
<td>17.8</td>
<td>15.5</td>
<td>12.7</td>
<td>9.3</td>
</tr>
<tr>
<td>3450</td>
<td>GPM</td>
<td>20.5</td>
<td>19.5</td>
<td>18.8</td>
<td>17.5</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>3/4</td>
<td>3/4</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

GPM = Gallons Per Minute
RPM = Revolutions Per Minute
PSI = Lbs. Per Square Inch Pressure
Feet Hd = Feet Head Pressure
HP = Horsepower

**LIQUIDS AND TEMPERATURE**
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**SUCTION LIFT**
Suction lift of 15 feet is possible when impeller is wet. Suction lines must be air tight in order for pump to self-prime. A foot valve at beginning of suction line is recommended.

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(continued on back)

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For seal replacement, the pump must be removed from the engine and disassembled in order to gain access to the seal area. Where mechanical seals are used, both components (stationary and rotating member) must be replaced at the same time. Lip seals must be pushed out of their press-fitted position and new seals pressed into place, using a sealant on the outside of the lip seal housing.

Refer to exploded view drawings for seal location and part numbers for ordering purposes.

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**BRONZE PEDESTAL RUBBER IMPELLER PUMP**

**OBERDORFER PUMPS**

A Subsidiary of Thomas Industries Inc.

**PIPE SIZE 1/2”**

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**FEATURES**

- Bronze Construction - Corrosion Resistance
- Large Suction and Discharge Ports
- Teflon(R)* Barrier Seals Protecting Ball Bearings
- Mechanical Carbon Ring, Ceramic Face Main Pump Seal Standard, Optional Buna N Lip Seal
- Two Sealed Ball Bearings Spaced for Maximum Load Ability
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- Shaft Slinger for Additional Bearing Protection
- Neoprene Impeller Standard, Buna N Impeller Optional
- High Chrome Nickel Stainless Steel Shaft
- Extra Capacity Ball Bearings plus Rugged Construction for Prolonged Service Life
- Impeller & Cam Easily Replaced

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**ROTATION**

Direction of shaft rotation determines inlet and outlet ports (see line drawing)

**MOUNTING**

Pump will operate satisfactorily when mounted in any position. **DO NOT RUN DRY.** Rubber impeller pumps generate high rubbing friction unless lubricated by liquid pumped. Lack of liquid will cause impeller to burn up.

**DRIVE**

Either direct drive with flexible coupling or pulley drive can be used. Make sure both flexible coupling halves are properly aligned. When using pulley, do not overtighten belt.

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To replace the impeller remove screws and cover cover. Pull out the impeller with nose pliers or two screwdrivers. Be careful not to dent the pumping chamber with these tools. When inserting new impeller, line up key slot in impeller with the key in the shaft. Use oil on shaft and avoid forcing the impeller onto the shaft.

The impeller should also be removed for storage periods to prevent the blades from taking a permanent set.

(continued on back)

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**PERFORMANCE**

**Capacity Water at 60° F**

<table>
<thead>
<tr>
<th>Pump Model</th>
<th>RPM</th>
<th>Feet Hd.</th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
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<td>800</td>
<td>GPM</td>
<td>2.6</td>
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<td>0.62</td>
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</tr>
<tr>
<td></td>
<td></td>
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<td>1/6</td>
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<td>1/4</td>
<td>1/4</td>
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<td>6.9</td>
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<td>0.2</td>
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<td>1/3</td>
<td>1/3</td>
<td>1/3</td>
<td>1/3</td>
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</tr>
<tr>
<td>201M</td>
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<td>GPM</td>
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<td>HP</td>
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<td>1/3</td>
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<td>GPM</td>
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<td>9.6</td>
<td>6.8</td>
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<td></td>
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<td>1/2</td>
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</tr>
</tbody>
</table>

GPM = Gallons Per Minute
RPM = Revolutions Per Minute
PSI = Lbs. Per Square Inch Pressure
Feet Hd = Feet Head Pressure
HP = Horsepower

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**SEAL REPLACEMENT**

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For seal replacement, the pump must be removed from the engine and disassembled in order to gain access to the seal area.

Where mechanical seals are used, both components (stationary and rotating member) must be replaced at the same time. Lip seals must be pushed out of their press-fitted position and new seals pressed into place, using a sealant on the outside of the lip seal housing.

Refer to exploded view drawings for seal location and part numbers for ordering purposes.

Specifications are subject to change without notification.

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**DIMENSIONS**

Rotation

Discharge

Discharge

1/2" Pipe Thr'd
2 Ports

1/32" Flat

1/2

1/32" Hole Dia

3 1/2

2 3/4

2 1/8

1/4

1/16

2 7/8

3 1/2

11/32" Hole Dia

1/16

1 3/16

3 1/32

4 7/32

5 5/32

1/32 Flat

1/2
FEATURES

• Bronze Corrosion Resistant Castings
• Special Cast Bronze Gears
• Stainless Steel Shafts & Fasteners
• Formed Ring Seal Packing (Lip & Mechanical Seals on Special Order)
• Heavy Duty Carbon Bearings (Self Lubricating)
• Positive Displacement Flow

DRIVE

Either direct drive with flexible coupling or pulley drive can be used. Make sure both flexible coupling halves are properly aligned. When using a pulley, do not overtighten the belt. Also, to absorb belt side thrust at higher pressures and larger size pumps, an external ball bearing support is recommended — consult factory.

LIQUIDS AND TEMPERATURE

Service life will be increased substantially if the liquid pumped is clean and has some degree of lubricity. These positive displacement pumps have tight tolerances. Fine abrasives like sand, silt, or powders in suspension will accelerate pump wear and reduce throughput.

Liquids compatible with bronze and stainless steel can be pumped providing proper seal has been specified (see chemical compatibility or check factory). When possible, flush the pump after each usage.

Temperature extremes are detrimental to service life and should be avoided. Basic metals of construction allow a temperature range of -40 to 400°F. Some lip and mechanical seal elastomers have a limit of 212°F. (see engineering data or check factory). Allowing a liquid to freeze in the pump can cause damage.

SUCTION LIFT

Close tolerances and the positive pumping action make the rotary gear pump capable of lifting water on the suction side as high as 20 feet. Though gear pumps are self priming, a foot valve is recommended. If possible, wet the gears with liquid to be pumped for the first dry start. Liquid retained in the system and gear chambers serves to “wet” the pump on subsequent starts.

CAPACITY - WATER 70°F

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<thead>
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<th>R.P.M.</th>
<th>FT. HD</th>
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<th>92</th>
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<th>184</th>
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</tr>
<tr>
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<td>---</td>
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</tr>
</tbody>
</table>

H.P. = Actual Horsepower  G.P.M. = Gallons per Minute  P.S.I. = Lbs. Per Square Inch Pressure  R.P.M. = Revolutions per Min.  Ft. Hd. = Equiv. Press. in Ft of Water

*For pressures over 100 psi, the above selections are suitable for pumping fluids with lubricity (e.g. oils, polymers). Service life will decrease for fluids without lubricity (e.g. water, solvents).
BY-PASS AND ROTATION

The pump by-pass is not intended to be a metering or flow control device. Its main purpose is to function as a pressure relief when the desired set point is exceeded, overheating can occur within 5 - 10 minutes if the discharge line is completely shut off for extended periods.

Reversing rotation reverses the “IN” and “OUT” ports and the location of the by-pass ports have to be reversed.

The by-pass valve is factory set at 50 p.s.i. To increase the setpoint, turn the by-pass valve adjusting screw in a clockwise direction.

DIMENSIONS

All Repair Kits contain items 2, 4, 5, 6 and 7

Relief Valves: N1000R, N1000RS3, N1000RS5, N1000RS16, N1000RS17, N1000RS8

* Viton® or equivalent FKM will be used. Viton® is a registered trademark of DuPont Dow Elastomers.

Teflon® or equivalent PTFE will be used. Teflon® is a registered trademark of DuPont.

Specifications are subject to change without notice.
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 100 PSI for water and non-lubricants, 150 PSI for oil and other lubricants. The maximum shaft speed is 1750 RPM.

SHAFT SEALS

Close coupled gear pumps are normally supplied with a Buna N lip seal. A lip seal made of Viton® is available as an option. For a Viton® Seal, add S5 to the pump model number.

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.

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 20 feet 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 3 feet) 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 50 PSIG. To increase pressure, turn the relief valve adjusting screw in a clockwise direction.
EXPLODED VIEW AND PARTS LIST

VARIATIONS

<table>
<thead>
<tr>
<th>Pump No.</th>
<th>9” Lip Seal</th>
<th>Repair Kit</th>
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</thead>
<tbody>
<tr>
<td>N992S5</td>
<td>7580</td>
<td>11351</td>
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<tr>
<td>N992RS5</td>
<td>7580</td>
<td>11351</td>
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</tbody>
</table>

Specifications are subject to change without notice.

*Viton® or equivalent FKM will be used. Viton® is a registered trademark of DuPont Dow Elastomers.
Teflon® or equivalent PTFE will be used. *Teflon® is a registered trademark of DuPont.
BRONZE CLOSE COUPLED ROTARY GEAR PUMPS

MODEL N991 SERIES

MODEL N991 - 1/4” NPT PORTS STANDARD

<table>
<thead>
<tr>
<th>Pump</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>N991</td>
<td>Standard pump with 1/4” ports</td>
</tr>
<tr>
<td>N991S5</td>
<td>Pump with Viton(R)* lip seal</td>
</tr>
<tr>
<td>N991R</td>
<td>Pump with 1/4” ports &amp; relief valve</td>
</tr>
<tr>
<td>N991RS5</td>
<td>Pump with Viton(R)* lip seal &amp; relief valve</td>
</tr>
</tbody>
</table>

PERFORMANCE

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 32°F to 140°F 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 20 feet 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 3 feet) 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 50 PSIG. To increase pressure, turn the relief valve adjusting screw in a clockwise direction.

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FEATURÉS

- Compact design eases installation and use in limited space areas.
- Construction is bronze and stainless steel wetted components.
- Close tolerance design allows for consistent performance.
- Helical gears for quiet operation.

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 100 PSI for water and non-lubricants, 150 PSI for oil and other lubricants. The maximum shaft speed is 1750 RPM.

SHAFT SEALS

Close coupled gear pumps are normally supplied with a Buna N lip seal. A lip seal made of Viton(R)* is available as an option. For a Viton(R)* Seal, add S5 to the pump model number.

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.)
### VARIATIONS

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1Seal # 5007 is Standard Buna N, # 7580 is Viton®-Teflon®.*  
2Repair Kit contains items 3, 5, 6, 7 & 9. Repair Kit for N991(R) is #10640.

### DIMENSIONS

#### BRONZE CLOSE COUPLED ROTARY GEAR PUMPS

- Specifications are subject to change without notice.

*Viton® or equivalent FKM will be used. Viton® is a registered trademark of DuPont Dow Elastomers.

*Teflon® or equivalent PTFE will be used. Teflon® is a registered trademark of DuPont.
BRONZE CLOSE COUPLED RUBBER IMPELLER PUMP

MODEL 201D

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

PIPE SIZE 3/8”

FEATURES
- Compact Size
- Bronze Construction - Corrosion Resistance
- Buna Seal
- Large Vent Openings Separate Pump & Motor
- Stainless Steel Motor Shaft
- Motor Shaft Slinger Protects Motor Bearings
- Rubber Motor Grommets for Noise Isolation
- Impeller and Cam Easily Replaced
- Garden Hose Threads (External) & Pipe Threads (Internal) for Port Connections
- Available with 12, 24 and 32 volt D.C. Motor Drive

MOUNTING
Horizontal motor mountings - including sidewall mountings - are recommended. The pump can be mounted in any of 4 positions 90° apart. Two screws attach pump to motor.

DRIVE AND ROTATION
Motor drive is clockwise facing pump end. Liquid flow direction is right to left facing pump end. Correct D.C. voltage must be supplied to motor - 12, 24 or 32 volts as specified on motor name plate.

DO NOT RUN DRY
Rubber impellers generate high rubbing friction unless lubricated by the liquid pumped. Lack of liquid will cause impeller to burn up.

LIQUID AND TEMPERATURE
 Liquids compatible with neoprene can be pumped including fresh and salt water solutions and mild chemicals. Do not pump severe solvents or acids. When possible, flush pump with fresh water after each usage.

CAPACITY

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<th>PSI</th>
<th>GPM</th>
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<tr>
<td>20</td>
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</table>

Water at 60°F

Extremes of cold and heat will affect impeller life. Limits of 40° to 140° F should be observed. Do not allow liquid in pump to freeze. Drain pump by loosening cover screws. Use methyl alcohol based anti-freeze compounds such as Zerex, Shell Zone, Pyro Permanent, Permagan, Dowgard.

SUCTION LIFT
Suction lift of 3 ft. is possible when impeller is wet. Suction lines must be air tight in order for pump to self prime. A foot valve at the beginning of suction line is recommended.

IMPELLER REPLACEMENT
The impeller must be replaced if it is worn out or has been damaged by debris or by running the pump dry. Symptoms of a defective impeller are low pumping pressure and low flow causing overheating of the boat engine. Poor pump performance can also be caused by slippage of V-belts, so belts should be checked for tightness.

To replace the impeller remove screws and cover. Pull out the impeller with nose pliers or two screwdrivers. Be careful not to dent the pumping chamber with these tools. When inserting new impeller, line up key slot in impeller with the key in the shaft. Use oil on shaft and avoid forcing the impeller onto the shaft.

The impeller should also be removed for storage periods to prevent the blades from taking a permanent set.

SEAL REPLACEMENT
If water drips from the weep hole or from the area where the shaft exits the pump, the seal is defective and must be replaced. While the Teflon®* barrier seal provides a first line of defense, prolonged running of the pump with a leaky seal can destroy the ball bearings resulting in catastrophic pump failure and engine shut-down.

For seal replacement, the pump must be removed from the engine and disassembled in order to gain access to the seal area. Where mechanical seals are used, both components (stationary and rotating member) must be replaced at the same time. Lip seals must be pushed out of their press-fitted position and new seals pressed into place, using a sealant on the outside of the lip seal housing.

Refer to exploded view drawings for seal location and part numbers for ordering purposes.

* Teflon(R) is a registered trademark of DuPont. Teflon(R) or equivalent PTFE will be used.

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FAX (315) 463-9561
### EXPLODE VIEW AND PARTS LIST

<table>
<thead>
<tr>
<th>Pump No.</th>
<th>1</th>
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<th>7</th>
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<td>5656</td>
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¹ Repair kit contains items 3, 4 & 5. ¹¹ Not shown.

### PUMP & MOTOR OPTIONS

Note: These are the most frequently used pump and motor combinations. If you have other needs, our sales reps can recommend a pump and motor for your application.

<table>
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<tr>
<th>Motor</th>
<th>Specification</th>
<th>Part No.</th>
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<tbody>
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<td>A89</td>
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<td>A90</td>
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### DIMENSIONS

Specifications are subject to change without notice.
BRONZE CLOSE COUPLED RUBBER IMPELLER PUMP

PIPE SIZE: 3/8" ID AND 3/4" OD GARDEN HOSE

CAPACITY Water at 60°F

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<tr>
<td>G.P.M.</td>
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<td>5 1/2</td>
<td>4 3/4</td>
<td>4</td>
<td>2 3/4</td>
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</table>

Extremes of cold and heat will affect impeller life. Limits of 40°F to 140°F should be observed. Do not allow liquid in pump to freeze. Drain pump by loosening cover screws. Use methyl alcohol based anti-freeze compounds such as Zerex, Shell Zone, Pyro Permanent, Permaguard, Dowgard.

SUCTION LIFT

Suction lift to 15 ft. for model 211D is possible when impeller is wet. Suction lines must be air tight in order for pump to self prime. Always use foot valve at beginning of suction line to keep suction line full and impeller wet.

IMPELLER REPLACEMENT

The impeller must be replaced if it is worn out or has been damaged by debris or by running the pump dry. Symptoms of a defective impeller are low pumping pressure and low flow.

To replace the impeller remove screws and cover. Pull out the impeller with nose pliers or two screwdrivers. Be careful not to dent the pumping chamber with these tools. When inserting new impeller, line up key slot in impeller with the key in the shaft. Use oil on shaft and avoid forcing the impeller onto the shaft.

The impeller should also be removed for storage periods to prevent the blades from taking a permanent set.

SEAL REPLACEMENT

If water drips from the area where the shaft exits the pump, the seal is defective and must be replaced. While the shaft slinger barrier seal provides a first line of defense, prolonged running of the pump with a leaky seal can destroy the ball bearings of the electric motor.

For seal replacement, the pump must be removed from the motor and disassembled in order to gain access to the seal area. The Buna seal must be pushed out of the press-fitted position and a new lip seal pressed into place, using a sealant on the outside of the lip seal housing.

Refer to exploded view drawings for seal location and part numbers for ordering purposes.

FEATURES

• Bronze construction - corrosion resistant
• Garden hose threads (external) & pipe threads (internal) port connections
• Impeller & cam easily replaced
• Large vent openings separate pump & motor
• Motor shafts are stainless steel
• Shaft slinger protects motor bearings
• Convenient carrying handle
• Sealed and grounded 3-conductor plug-in cord
• Meets U.S. Coast Guard Ignition Protection Requirements, 33CFR 183.410(a)

DRIVE AND ROTATION

Motor drive is clockwise facing pump end. Liquid flow direction is right to left facing pump end - see dimension drawing on reverse side. Motor is 1/6 HP, 1725 RPM, 115VAC. O.D.P.

DO NOT RUN DRY

Rubber impellers generate high rubbing friction unless lubricated by liquid pumped. Lack of liquid will cause impeller to burn up. Standard impeller in Neoprene (04), optional Buna impeller (05) available.

LIQUIDS AND TEMPERATURE

Liquids compatible with neoprene can be pumped including fresh and salt water solutions. Do not pump severe solvents or acids. When possible, flush pump with fresh water after each usage.
| Pump No.  | 1  | 2  | 3\(^1\) | 4\(^1\) | 5\(^1\) | 6  | 7  | 8  | 9  | 10 | 11 | 12\(^2\) | 13 | 14 | Repair Kit
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1 Repair Kit contains items 3, 4 & 5. 2 Item 12 (lockwashers) not shown in illustration.

### DIMENSIONS

211 D-05, Denotes Buna Impeller P/N 8514
Specifications are subject to change without notice. All motor dimensions are subject to variations among motor manufacturers.

3/2002
BRONZE CLOSE COUPLED RUBBER IMPELLER PUMP

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

PIPE SIZE 3/4” SHOWN W/OUT MOTOR

CAPACITY - Gallons of Water Per Minute at 60°F

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<td>7.3</td>
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*D Maximum Pressure Recommended - Higher pressures will overload motor. A 25 amp slow-blow fuse is recommended.

Reversing supply leads to motor terminals reverses motor rotation. “In” and “Out” pump ports are also reversed. See diagram on reverse side.

LIQUIDS AND TEMPERATURE

 Liquids compatible with neoprene can be pumped including fresh and salt water solutions and mild chemicals. Do not pump severe solvents or acids. When possible flush pump with fresh water after each use.

 Extremes of cold and heat will affect impeller life. Limits of 40°F to 140°F should be observed. Do not allow liquid in pump to freeze. Drain pump by loosening cover screws. Use methyl alcohol based anti-freeze compounds such as Zerex, Shell Zone, Pyro Permargad, Dowgard.

SUCTION LIFT

 Suction lift of 15 ft. is possible when impeller is wet. Suction lines must be air tight in order for pump to self prime. A foot valve at beginning of suction line is recommended.

IMPELLER REPLACEMENT

 The impeller must be replaced if it is worn out or has been damaged by debris or by running the pump dry. Symptoms of a defective impeller are low pumping pressure and low flow causing overheating of the boat engine. Poor pump performance can also be caused by slippage of V-belts, so belts should be checked for tightness.

 To replace the impeller remove screws and cover. Pull out the impeller with nose pliers or two screwdrivers. Be careful not to dent the pumping chamber with these tools. When inserting new impeller, line up key slot in impeller with the key in the shaft. Use oil on shaft and avoid forcing the impeller onto the shaft.

 The impeller should also be removed for storage periods to prevent the blades from taking a permanent set.

SEAL REPLACEMENT

 If water drips from the weep hole or from the area where the shaft exits the pump, the seal is defective and must be replaced. While the Teflon(R)* barrier seal provides a first line of defense, prolonged running of the pump with a leaky seal can destroy the ball bearings resulting in catastrophic pump failure and engine shutdown.

 For seal replacement, the pump must be removed from the engine and disassembled in order to gain access to the seal area.

(continued on back)

* Teflon(R) is a registered trademark of DuPont. Teflon(R) or equivalent PTFE will be used.
EXPLODED VIEW AND PARTS LIST

<table>
<thead>
<tr>
<th>Pump No.</th>
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STANDARD ROTATION
Motor Wired - Term. No.1(-); No. 2(+)
Reversal of (+) & (-) leads reverses rotation and ports in/out orientation.

SEAL REPLACEMENT
(continued from front)
Where mechanical seals are used, both components (stationary and rotating member) must be replaced at the same time. Lip seals must be pushed out of their press-fitted position and new seals pressed into place, using a sealant on the outside of the lip seal housing.

Refer to exploded view drawings for seal location and part numbers for ordering purposes.
RUBBER IMPELLER PUMP
BRONZE CLOSE COUPLED

MODEL
406M

FEATURES
• All Bronze Construction
• Stainless Steel Shafts
• Portable
• Compact
• Easy Impeller Replacement
• Macerator Easily Replaced
• Reversible Wear Plate
• Vacuum Switch Shut-off Optional

GENERAL DESCRIPTION
Close coupled Rubber Impeller Pumps are made of high quality bronze for maximum corrosion resistance. The rubber impeller is either directly attached to the stainless steel motor shaft or the impeller is mounted on a separate stainless steel shaft which is counterbored on the outer end in order to slide over the carbon steel motor shaft. Ball or sleeve bearings in the motor support the shaft. Model 406M has a mechanical seal. Impellers are made of Neoprene rubber, Buna N impellers are available on request.

Flexible blades on the periphery of the impeller provide the pumping action. While the impeller rotates, the liquid between the blades is continuously squeezed out into the discharge port by a cam located inside the pumping chamber. The flow may be throttled or shut off for a short period without the need of a relief valve.

DRIVE ARRANGEMENT
Close coupled Rubber Impeller Pumps are mounted directly onto the electric motor without the use of a shaft coupling. This pump is coupled to a standard motors with Nema C flange. It uses a bronze adapter plate to accommodate the pump.

LIQUIDS AND TEMPERATURE
Liquids handled by Rubber Impeller Pumps with standard Neoprene impellers are primarily fresh or salt water and water solutions. Rubber Impeller Pumps are not suitable for pumping gasoline or solvents. Buna N impellers can handle oil contaminated water and kerosene at reduced impeller service life.

Liquid temperature range is from 40°F to 140°F. If freezing conditions are expected, the pump should be drained by loosening the cover screws and the pump chamber should be filled with antifreeze. Viscous liquids and oils can not be pumped with Rubber Impeller Pumps.

SUCTION LIFT
On initial start-up Rubber Impeller Pumps must be primed to prevent dry-running of the impeller. Suction lifts of 15 ft. are possible when pump is fully primed. A foot valve with built-in strainer at the beginning of the suction line is recommended. Suction lines should be as short as possible.
### EXPLODED VIEW & PARTS LIST

<table>
<thead>
<tr>
<th>Part No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<td></td>
<td>Pick Cord Terminal Spade Wire Nut Washer (Handle) Screw (Handle) Repair Kits*</td>
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*Repair Kits contain items 11, 18 & 19. Vacuum Switch Repair Kit is p/n 10798. Kit contains items 14, 15, 29 & 34.

1 Five Required.

### DIMENSIONS

[Diagram of dimensions]

www.oberdorfer-pumps.com  PHONE 800-448-1668; (315) 437-0361  FAX (315) 463-9561
**BRONZE CLOSE COUPLED CENTRIFUGAL PUMP**

**OBERDORFER PUMPS**  
A Subsidiary of Thomas Industries Inc.

**FEATURES**

- All Bronze
- Stainless Steel or Monel Shaft for Marine Use
- Teflon(R)* Barrier Seal to Protect Motor Bearings
- Carbon Face Mechanical Pump Seals
- Will handle difficult solutions with proper seals - Viton(R)* (S10) or Teflon(R)* (S11).
- Explosion Proof Motors Available
- Will Handle Contaminated Liquids
- Extremely Quiet
- A Standard in the Marine Air Conditioning Industry

**LIQUIDS**

The special pump alloys used provide corrosion resistance to many liquids including water, water solutions, and a wide range of commercial chemicals. Questions as to the chemical compatibility of special liquids should be referred to the factory.

Viscous liquids with a maximum viscosity of 2000 Saybolt Seconds Universal can be pumped. However, when pumping viscous liquids as compared with water, a reduction in flow and pressure occurs and the required horsepower rate increases.

Liquids heavier than water require additional horsepower in direct proportion to the increase in specific gravity. Liquids contaminated with small solids or abrasives can be handled, but a reduction in mechanical seal life must be expected.

**CHARACTERISTICS**

This close-coupled pump uses a standard NEMA C-Flange Jet Pump Motor with weld-on base and threaded shaft end to accept the pump impeller. Single phase motors are non-reversible and are wired for the proper pump rotation which is counter-clockwise looking at inlet end of pump. See the dimensional drawing on back. Three phase motors must be checked out for proper rotation when pump is installed. Interchanging of any 2 wires in a 3-phase system will reverse motor rotation.

The pump uses a mechanical type shaft seal with a Buna rubber element. It is suitable for water, oils, and some mild solvents and it is limited to 212 °F. Viton® seals and Teflon® seals (Chemlon) are available for severe solvents, difficult chemicals, and elevated temperatures.

These centrifugal pumps are not self-priming. They must be installed below the liquid level so that the liquid flows to the pump by gravity (flooded suction). However, if a foot valve is used at the beginning of the suction line, and all air is bled from the pump by manual priming, the pump will lift on the suction side up to 15 feet. Such a system relies entirely on the non-leaking foot valve for starting capability.

The flow of a centrifugal pump can be conveniently controlled by a throttling valve in the discharge line without the need for a relief valve. In centrifugal pumps, the horsepower demand will decrease as the pressure increases. Maximum horsepower occurs with a wide open discharge.

* Viton® is a registered trademark of DuPont Dow Elastomers. Viton® or equivalent FKM will be used.

Teflon® is a registered trademark of DuPont. Teflon® or equivalent PTFE will be used.
**BRONZE CLOSE COUPLED CENTRIFUGAL PUMPS**

**(A Subsidiary of Thomas Industries Inc.)**

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**EXPLODED VIEW AND PARTS LIST**

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<td>9849</td>
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*Repair Kit contains items 3, 4, 5, 11 & 13.

---

**PUMP & MOTOR OPTIONS**

*Note: These are the most frequently used pump and motor combinations. If you have other needs, our sales reps can recommend a pump and motor for your application.*

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*Motor horsepower are not indicative of pump horsepower required. Motors listed are standard, economical, and commercially available. See HP curve for actual horsepower required.*

---

**NUMBERING**

Basic Pump No. first 3 digits
The letter M stands for Marine Use
The letter P for polyphase (3-phase motor version)

Motor Code No. last three digits
Dash number indicates a modification such as monel shaft

---

**DIMENSIONS**

Specifications are subject to change without notice. All motor dimensions are subject to variations among motor manufacturers.

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www.oberdorfer-pumps.com  PHONE 800-448-1668; (315) 437-0361  FAX (315) 463-9561
BRONZE CLOSE COUPLED CENTRIFUGAL PUMP

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

PIPE SIZE: INLET 3/4”, OUTLET 1/2”

104M-06F26 Pictured

FEATURES
• All Bronze
• Stainless Steel or Monel Shaft for Marine Use
• Teflon® Barrier Seal to Protect Motor Bearings
• Carbon Face Mechanical Pump Seals
• Viton® (S10) or Teflon® (S11) Pump Seals
• Available for Solvent Transfer
• Explosion Proof Motors Available
• Will Handle Contaminated Liquids
• Extremely Quiet
• A Standard in the Marine Air Conditioning Industry

LIQUIDS
The special pump alloys used provide corrosion resistance to many liquids including water, water solutions, and a wide range of commercial chemicals. Questions as to the chemical compatibility of special liquids should be referred to the factory.

Viscous liquids with a maximum viscosity of 2000 Saybolt Seconds Universal can be pumped. However, when pumping viscous liquids as compared with water, a reduction in flow and pressure occurs and the required horsepower rate increases.

Liquids heavier than water require additional horsepower in direct proportion to the increase in specific gravity. Liquids contaminated with small solids or abrasives can be handled, but a reduction in mechanical seal life must be expected.

CHARACTERISTICS
This close-coupled pump uses a standard NEMA C-Flange Jet Pump Motor with weld-on base and threaded shaft end to accept the pump impeller. Single phase motors are non-reversible and are wired for the proper pump rotation which is counter-clockwise looking at inlet end of pump. See the dimensional drawing on back. Three phase motors must be checked out for proper rotation when pump is installed. Interchanging of any 2 wires in a 3-phase system will reverse motor rotation.

The pump uses a mechanical type shaft seal with a Buna rubber element. It is suitable for water, oils, and some mild solvents and it is limited to 212°F. Viton® seals and Teflon® seals are available for severe solvents, difficult chemicals, and elevated temperatures.

These centrifugal pumps are not self-priming. They must be installed below the liquid level so that the liquid flows to the pump by gravity (flooded suction). However, if a foot valve is used at the beginning of the suction line, and all air is bled from the pump by manual priming, the pump will lift on the suction side up to 15 feet. Such a system relies entirely on the non-leaking foot valve for starting capability.

The flow of a centrifugal pump can be conveniently controlled by a throttling valve in the discharge line without the need for a relief valve. In centrifugal pumps, the horsepower demand will decrease as the pressure increases. Maximum horsepower occurs with a wide open discharge.

* Viton® is a registered trademark of DuPont Dow Elastomers. Viton® or equivalent FKM will be used.
Teflon® is a registered trademark of DuPont. Teflon® or equivalent PTFE will be used.
**MODEL 104M**

**BRONZE CLOSE COUPLED CENTRIFUGAL PUMPS**

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

**EXPLODED VIEW AND PARTS LIST**

<table>
<thead>
<tr>
<th>Pump No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>Repair Kit</th>
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<tr>
<td></td>
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<td>Gasket</td>
<td>Impeller</td>
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<td>Body</td>
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<td>Adapter</td>
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<td>Motor</td>
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<td>1 Req'd</td>
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</tbody>
</table>

*Repair kit contains items 3, 4, 5, 11 & 13.*

**PUMP & MOTOR OPTIONS**

Note: These are the most frequently used pump and motor combinations. If you have other needs, our sales reps can recommend a pump and motor for your application.

<table>
<thead>
<tr>
<th>Pump No.</th>
<th>Electric Motor</th>
<th>Motor Shaft</th>
<th>Part #</th>
</tr>
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<tbody>
<tr>
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<td>104M-J17</td>
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<td>104M-J20</td>
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<td>104M01F26</td>
<td>1/3 HP, 3450 RPM, 115 v, single phase, ODP</td>
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</table>

**DIMENSIONS**

*3/4” External Thread also available (104M-06)*

**NUMBERING**

Basic Pump No. first 3 digits

The letter M stands for Marine Use

The letter P for polyphase (3-phase motor version)

Motor Code No. last three digits

Modification such as monel shaft

Specifications are subject to change without notice. All motor dimensions are subject to variations among motor manufacturers.

www.oberdorfer-pumps.com  PHONE 800-448-1668; (315) 437-0361  FAX (315) 463-9561
CLOSE COUPLED BRONZE CENTRIFUGAL PUMP

FEATURES
- All Bronze
- Stainless Steel or Monel Shaft for Marine Use
- Teflon® Barrier Seal to Protect Motor Bearings
- Carbon Face Mechanical Pump Seals
- Viton(R)* or Teflon(R)* Pump Seals Available for Solvent Transfer
- Explosion Proof Motors Available
- Will Handle Contaminated Liquids
- Extremely Quiet
- A Standard in the Marine Air Conditioning Industry

LIQUIDS
The special pump alloys used provide corrosion resistance to many liquids including water, water solutions, and a wide range of commercial chemicals. Questions as to the chemical compatibility of special liquids should be referred to the factory.

Viscous liquids with a maximum viscosity of 2000 Saybolt Seconds Universal can be pumped. However, when pumping viscous liquids as compared with water, a reduction in flow and pressure occurs and the required horsepower rate increases.

Liquids heavier than water require additional horsepower in direct proportion to the increase in specific gravity. Liquids contaminated with small solids or abrasives can be handled, but a reduction in mechanical seal life must be expected.

*Viton® is a registered trademark of DuPont Dow Elastomers. Viton® or equivalent FKM will be used.
Teflon® is a registered trademark of DuPont. Teflon® or equivalent PTFE will be used.

PERFORMANCE

CHARACTERISTICS
This close-coupled pump uses a standard NEMA C-Flange Jet Pump Motor with weld-on base and threaded shaft end to accept the pump impeller. Single phase motors are non-reversible and are wired for the proper pump rotation which is counter-clockwise looking at the inlet end of the pump. (See the dimensional drawing on back.) Three phase motors must be checked out for proper rotation when the pump is installed. Interchanging of any 2 wires in a 3-phase system will reverse motor rotation.

The pump uses a mechanical type shaft seal with a Buna N rubber element. It is suitable for water, oils, and some mild solvents and it is limited to 212°F and 75 P.S.I. Viton(R)* seals and Teflon(R)* seals are available for severe solvents and difficult chemicals.

These centrifugal pumps are not self-priming. They must be installed below the liquid level so that the liquid flows to the pump by gravity (flooded suction). However, if a foot valve is used at the beginning of the suction line and all air is bled from

(continued on back)
CLOSE COUPLED BRONZE
CENTRIFUGAL PUMP

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

EXPLODED VIEW & PARTS LIST

<table>
<thead>
<tr>
<th>Pump No.</th>
<th>1</th>
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Set Screw for Polyphase motor only (not shown)

Repair Kits contain items 5,6,7,8,9,14 & 15.

Seal components 7,8, and 9 sold only as seal assy. p/n 32155.

DIMENSIONS

(continued from front)

the pump by manual priming, the pump will lift on the suction side up to 15 feet. Such a system relies entirely on a non-leaking foot valve for starting capability.

The flow of a centrifugal pump can be conveniently controlled by a throttling valve in the discharge line without the need for a relief valve. In centrifugal pumps, the horsepower demand will decrease as the pressure increases. Maximum horsepower occurs with a wide open discharge.
**BRONZE CLOSE COUPLED CENTRIFUGAL PUMP**

**MODEL 172B**

**OBERDORFER PUMPS**
A Subsidiary of Thomas Industries Inc.

**PIPE SIZE:** INLET 3/4”, OUTLET 3/4”

---

**FEATURES**

- Bronze Casting is resistant to sea water
- Stainless Steel Shaft for Marine Use
- Motor is totally enclosed with 9" long vinyl plastic insulated leads
- Compact
- Lightweight
- Mechanical Seal
- Ideal for:
  - Marine Air Conditioning
  - Engine Block Temperature Control
  - Radiator and Heat Exchanger Circulation
  - Baitwell Circulation

**SEAL**

The pump uses a mechanical type shaft seal with a Buna rubber element. It is suitable for water, oils, and some mild solvents and is limited to 212°F. Viton® is available for up to 400°F (172B-08).

**LIQUIDS**

One of the outstanding features of this pump and motor unit is its compact D.C. motor size. Although small in size, adequate motor power is available for pumping water, water solutions, and a wide range of commercial chemicals. Questions as to the chemical compatibility of special liquids should be referred to the factory.

Viscous liquids with a maximum viscosity of 2000 Saybolt Seconds Universal can be pumped. However, when pumping viscous liquids as compared with water, a reduction in flow and pressure occurs and the required horsepower rate increases.

 Liquids heavier than water require additional horsepower in direct proportion to the increase in specific gravity.

---

**CHARACTERISTICS**

Oberdorfer centrifugal pumps have a single rotating impeller. Liquid enters at the center and is thrown outward radially by centrifugal force. The impeller is not in contact with other pump parts resulting in quiet, efficient pumping action. The flow produced is not positive which permits the discharge line to be shut off completely without danger of overloading motors or bursting lines. Consequently, a relief valve is not required.

These centrifugal pumps are not self-priming. They must be installed below the liquid level so that the liquid flows to the pump by gravity (flooded suction). However, if a foot valve is used at the beginning of the suction line, and all air is bled from the pump by manual priming, the pump will lift on the suction side up to 15 feet. Such a system relies entirely on the non-leaking foot valve for starting capability.

The flow of a centrifugal pump can be conveniently controlled by a throttling valve in the discharge line without the need for a relief valve. In centrifugal pumps, the horsepower demand will decrease as the pressure increases. Maximum horsepower occurs with a wide open discharge.

*Viton® is a registered trademark of DuPont Dow Elastomers. Viton® or equivalent FKM will be used.*
BRONZE CLOSE COUPLED
CENTRIFUGAL PUMP
OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

EXPLODED VIEW AND PARTS LIST

### Pump & Motor Options*

*Note: These are the most frequently used pump and motor combinations. If you have other needs, our sales reps can recommend a pump and motor for your application.

<table>
<thead>
<tr>
<th>Pump No.</th>
<th>Electric Motor</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>172B-A81</td>
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<td>172B-B27</td>
<td>1/8 HP, 3450 RPM, 220v, Single Phase, TEFC</td>
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</tr>
</tbody>
</table>

### Dimensions

Specifications are subject to change without notice. All motor dimensions are subject to variations among motor manufacturers.
BRONZE OR ALUMINUM  
SELF-PRIMING CENTRIFUGAL PUMP

A Subsidiary of Thomas Industries Inc.

PIPE SIZE 1”

CLOSE COUPLED TO ELECTRIC MOTOR

3450 RPM, 8’ cord and feed thru switch optional, 1/3 H.P., 115 volt, 60 Hz, A.C. NEMA C flange jet pump motor with threaded shaft of stainless steel or monel. Explosion proof motors available on special order.

Pump No. | Material
---|---
300 | Aluminum with stainless steel shaft, Single Phase
300B | Bronze with stainless steel shaft, Single Phase
300B-01 | Bronze with Monel shaft, Single Phase
300P | Aluminum with stainless steel shaft, Three Phase

FEATURES

- Self-Priming to 20 Feet Suction Lift
- Available in Bronze or Corrosion Resistant Aluminum
- Bronze Models with Monel Shaft Sleeve - Ideal for marine service (air conditioning, bilge, and sea water recirculating).
- Can handle most difficult solvents with proper seal arrangement, Viton® (S10) or Teflon® (S11) available.

Up to 22 gallons per minute water flow and suction lift of 15 feet without a foot or check valve (25 foot suction lift using a foot or check valve and a filled inlet line). A 1/2” pipe plug on the tank top is for initial filling of priming chamber and inlet line--pump priming is automatic thereafter. Pump seal is mechanical carbon face type mated to ceramic wear face for maximum durability. Other seal components are made of Buna N with low swell characteristics for compatibility with a wide range of liquids including many chemicals and solvents. These pump models are widely used for the pumping of Perchloroethylene. Must be operated in the horizontal position. (As shown in picture)

SEAL OPTIONS

(Note: Seal and shaft modifications below are not physically interchangeable. Consult factory for modification data.)

Viton® A Solvent Mechanical Seal: Mechanical seal for oils, fuels, lubricants, most mineral acids, and many solvents that attack other rubbers such as Carbon Tetrachloride, toluene, benzene, and xylene.

Teflon® Mechanical Seal: For virtually all industrial chemicals, corrosives and solvents - as limited by compatibility of basic pump metal of construction.

* Viton® is a trademark of DuPont Dow Elastomers. Viton® or equivalent FKM will be used.
Teflon® is a trademark of DuPont. Teflon or equivalent PTFE will be used.
BRONZE OR ALUMINUM
SELF-PRIMING CENTRIFUGAL PUMP

PARTS LIST AND EXPLODED VIEW

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<tr>
<th>Pump Number</th>
<th>Body</th>
<th>Adapter</th>
<th>Diffuser</th>
<th>Impeller</th>
<th>Seal Assy.</th>
<th>Gasket Flange</th>
<th>Screw</th>
<th>Plug</th>
<th>Plug</th>
<th>Shim</th>
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Item #13 is not shown.

PUMP & MOTOR OPTIONS

These are the most frequently used pump and motor combinations. If you have other needs, our sales reps can recommend a pump and motor for your application.

<table>
<thead>
<tr>
<th>Pump No.</th>
<th>Motor</th>
<th>Part #</th>
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<td>300-J17</td>
<td>1/2 HP, 3450 RPM, 110/220v, Single Phase, TEFC</td>
<td>8772</td>
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<tr>
<td>300-J20</td>
<td>1/2 HP, 3450 RPM, 110/230v, Single Phase, XP</td>
<td>7976</td>
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<td>300B-01J26</td>
<td>1/3 HP, 345- RPM, 115v, Single Phase, ODP</td>
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DIMENSIONS

Specifications are subject to change without notification. All motor dimensions are subject to variations due to differences in motor makes.
FEATURES
• Bronze Corrosion Resistant Castings
• Stainless Steel Shafts & Fasteners
• Self-Lubricating Carbon Bearings
• Packing (Braided Acrylic yarn with special lubricant and Graphite)
• For Mechanical Seals, see Models N11HDM

DRIVE
Either direct drive with flexible coupling or pulley drive can be used. For pulley driven pumps a pillow block bearing must be used at the drive shaft end to absorb the belt forces. The drive shaft is sufficiently long enough to accommodate a pillow block in addition to the pulley.
Correct alignment is absolutely essential for satisfactory pump life. Recheck alignment after the piping has been connected to the pump.

LIQUIDS AND TEMPERATURE
Service life will be increased substantially if the liquid pumped is clean and has a lubricity value. These pumps have extremely close tolerances. Fine abrasives like sand, silt, or powders in suspension will destroy pumping ability.

Liquids compatible with bronze, stainless steel and the acrylic graphite packing can be pumped. Solvent resistant packings and Teflon(R)* packings are also available. See a chemical compatibility table or check factory. When possible, flush the pump with water after using.
Temperature extremes are detrimental to service life and should be avoided. Basic metals of construction allow temperature range of -400F to 4000F. The acrylic graphite packing is rated to 5000F. Freezing liquid in the pump can deform or damage the pump.
Viscous liquids such as molasses or oils require a lower pumping speed, in extreme cases as low as 200 R.P.M. Consult factory for recommended speeds and increased horsepower requirements.

SUCTION LIFT
A rotary gear pump is capable of lifting water on the suction side as high as 20 feet. Though gear pumps are self-priming, a foot valve is recommended. For pumping water directly from streams or ponds, a wire mesh strainer must be used at the beginning of the suction line to prevent stones from entering the pump. Strainer and foot valve are commercially available as combination units.

ROTATION
N11510-21

Note: Dotted lines(---) recommended for intermittent duty only due to accelerated wear at higher speeds and pressures.
Large suction lines are required to prevent cavitation which can cause pump destruction.
Liquids with specific gravities heavier than water such as dry cleaning fluids require an increase in motor horsepower directly proportional to the increase in specific gravity over water.

* Teflon(R) is a registered trademark of DuPont. Teflon(R) or equivalent PTFE will be used.
## MODELS
N11500-21
N11510-21

## BRONZE PEDESTAL
ROTARY GEAR PUMPS

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

## EXPLODED VIEW AND PARTS LIST

![Explosion View]

### Dimensions

![Dimension Diagram]

### Table: Parts List

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<thead>
<tr>
<th>Pump No.</th>
<th>1</th>
<th>2</th>
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*Repair Kits contain items 3,4,5,6,7,8,9,12 and 18.*
BRONZE PEDESTAL ROTARY GEAR PUMPS

FEATURES
- Bronze Corrosion Resistant Castings
- Stainless Steel Shafts & Fasteners
- Self-Lubricating Carbon Bearings
- Packing (Braided Acrylic yarn with special lubricant and Graphite)
- For Mechanical Seals, see Models N13HDM

DRIVE
Either direct drive with flexible coupling or pulley drive can be used. For pulley driven pumps a pillow block bearing must be used at the drive shaft end to absorb the belt forces. The drive shaft is sufficiently long enough to accommodate a pillow block in addition to the pulley.

Correct alignment is absolutely essential for satisfactory pump life. Recheck alignment after the piping has been connected to the pump.

LIQUIDS AND TEMPERATURE
Service life will be increased substantially if the liquid pumped is clean and has a lubricity value. These pumps have extremely close tolerances. Fine abrasives like sand, silt, or powders in suspension will destroy pumping ability.

Liquids compatible with bronze, stainless steel and the acrylic graphite packing can be pumped. Solvent resistant packings and Teflon® packings are also available. See a chemical compatibility table or check factory. When possible, flush the pump with water after using.

Temperature extremes are detrimental to service life and should be avoided. Basic metals of construction allow temperature range of -40°F to 400°F. The acrylic graphite packing is rated to 500 °F. Freezing liquid in the pump can deform or damage the pump.

Viscous liquids such as molasses or oils require a lower pumping speed, in extreme cases as low as 200 R.P.M. Consult factory for recommended speeds and increased horsepower requirements.

SUCTION LIFT
A rotary gear pump is capable of lifting water on the suction side as high as 20 feet. Though gear pumps are self-priming, a foot valve is recommended. For pumping water directly from streams or ponds, a wire mesh strainer must be used at the beginning of the suction line to prevent stones from entering the pump. Strainer and foot valve are commercially available as combination units.

Note: Dotted lines(---) recommended for intermittent duty only due to accelerated wear at higher speeds and pressures.

Large suction lines are required to prevent cavitation which can cause pump destruction.

Liquids with specific gravities heavier than water such as dry cleaning fluids require an increase in motor horsepower directly proportional to the increase in specific gravity over water.

ROTATION
N13510-21

*Teflon® is a registered trademark of DuPont. Teflon(R) or equivalent PTFE will be used.
MODELS
N13500-21
N13510-21

BRONZE PEDESTAL
ROTARY GEAR PUMPS

OBERDORFER PUMPS
A Subsidiary of Thomas Industries Inc.

EXPLODED VIEW AND PARTS LIST

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Repair Kits contain items 3, 4, 5, 6, 7, 8, 9, 12 and 18.

DIMENSIONS

*Shaft height for Model N13510-21.

Specifications are subject to change without notice.
MODEL 900

APPLICATIONS

INDUSTRIAL - CHEMICAL - AGRICULTURE
MARINE - CONTRACTOR - UTILITY

- General Water Supply
- Emergency Stand-by
- Lawn Sprinkling
- Pumping from Underground Tanks
- Industrial Sump Drainage
- Recirculation of Process Liquids
- Dewatering of Ditches, Cellars, Ponds
- Washing Down Barns or Equipment
- Irrigation - Flood Furrow or Sprinkler
- Pumping Cess Pools

TEMPERATURE RANGE: -20°F to 130°F

SPECIAL MODEL DESIGNATIONS

- To specify seal made of Viton & rubber parts of Viton, add -10 to basic pump numbers. (Example 90P-10). Typical applications include solvents and chemicals.
- To specify seal made of Viton & rubber parts of EPDM, add -12 to basic pump numbers. (Example 90P-12). Typical applications include agricultural chemicals.
- To specify rubber Volute liner, add -13 to basic pump numbers (Example 90P-13). Typical applications include dirty liquids.

FEATURES

- Mechanical Seals - Ceramic Wearface Mating with Lapped Carbon
- Seal Elastomer Standard is Buna - Also available in Viton and Ethylene Propylene (EPDM)
- Rubber Volute Liner available for dirty liquids
- Built-in Check Valve prevents backflow when pump is shut down
- Self Priming, quiet, efficient, long life
- Tough, Lightweight Thermoplastic Polyester Housings & Impellers for Chemical and Wear Resistance.
- Excellent corrosion resistance to water, acids, & most organic solvents - liquids normally requiring expensive pump liners or stainless steel construction

Note: Viton® is a registered trademark of DuPont Dow Elastomers.
### Repair Kit Parts List

<table>
<thead>
<tr>
<th>Repair Kit No.</th>
<th>Pump No.</th>
<th>Hex Nut</th>
<th>O-ring</th>
<th>Bracket</th>
<th>Seal Assy.</th>
<th>O-Ring</th>
<th>Screw</th>
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<th>Segment</th>
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<th>Key</th>
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### Dimensions

![Dimensions Diagram]

Specifications are subject to change without notice.
**MODELS**

900G 930G
910G 940G

**GAS ENGINE DRIVE**

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<td>940G-UGG</td>
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**APPLICATIONS**

- INDUSTRIAL - CHEMICAL - AGRICULTURE
- MARINE - CONTRACTOR - UTILITY
  - General Water Supply
  - Emergency Stand-by
  - Lawn Sprinkling
  - Pumping from Underground Tanks
  - Industrial Sump Drainage
  - Recirculation of Process Liquids
  - Dewatering of Ditches, Cellars, Ponds
  - Washing Down Barns or Equipment
  - Irrigation - Flood Furrow or Sprinkler
  - Pumping Cess Pools

**TEMPERATURE RANGE**: -20°F to 130°F

Note: Vitont is a registered trademark of DuPont Dow Elastomers.

**SPECIAL MODEL DESIGNATIONS**

- To specify seal made of Vitont & rubber parts of Vitont, add -10 to basic pump numbers. (Example 900G-10 UGY). Typical applications include solvents and chemicals.
- To specify seal made of Vitont & rubber parts of Ethylene Propylene (EPDM), add -12 to basic pump numbers. (Example 900G-12 UGY). Typical applications include agricultural chemicals.
- To specify rubber Volute liner, add -13 to basic pump numbers. (Example 900G-13 UGY). Typical applications include dirty liquids.

**FEATURES**

- Tough, lightweight, thermoplastic polyester housings and impellers for chemical and wear resistance.
- Excellent corrosion resistance to water, acids and most organic solvents - liquids normally requiring expensive pump liners or stainless steel construction.
- Quiet, efficient, long life.
- Self priming to 25 feet suction lift in approximately 1 minute depending on pump R.P.M. and altitude.
- Stainless steel fasteners.
- Mechanical seals with ceramic wearface mating with lapped carbon.
- Standard seal elastomer material is Buna - also available in Vitont - also available in EPDM.
- Rubber Volute liner is available for dirty liquids.
- Built in check valve prevents back flow when pump is shut down.
MODELS
900G 930G
910G 940G

THERMOPLASTIC SELF PRIMING CENTRIFUGAL PUMPS

EXPLODED VIEW AND PARTS LIST

<table>
<thead>
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<th>Repair Kit No.*</th>
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<th>3</th>
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<td>O-Ring Screw</td>
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<td>O-Ring Bracket</td>
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<td>Rubber Washer</td>
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*Repair Kit includes 3,5,7,9,11,12,13,14,16,22,23,25 & 26

DIMENSIONS

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<tr>
<th>Model</th>
<th>Horsepower</th>
<th>Suction &amp; Discharge</th>
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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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7/00 Specifications are subject to change without notice.

www.oberdorfer-pumps.com PHONE 800-448-1668; (315) 437-0361 FAX (315) 463-9561
FEATUERS
• Bronze Body & Gears, Stainless Shaft
• Self-lubricating Internal Carbon Bearings
• External Ball Bearing for Heavy Duty Belt Drive
• N994-38 has 1/2" NPT Ports
  N970-38 has 3/4" NPT Ports
  N990-38 has 1" NPT Ports

GENERAL DESCRIPTION
Pump housings are made of top quality bronze, shafts are stainless steel 303. Bearings are made of high performance carbon-graphite material selected for wear resistance and long service life. Viton(R)* lip seal is suitable for fuel oils and the external ball bearings are for heavy belt drive loads.

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.

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 32° to 140°F for longest pump life. If more extreme temperature conditions exist, our 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 as possible. A gear pump in new condition can lift 20 feet of water in the suction line. A foot valve (preferably with a 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 3 feet), or for viscous liquids, the pipe size should be at least one size or two sizes larger than the pump inlet port.

*Viton(R) is a registered trademark of DuPont Dow Elastomers. Viton(R) or equivalent FKM will be used.
Teflon(R) is a registered trademark of DuPont. Teflon(R) or equivalent PTFE will be used.
PERFORMANCE (continued from front)

ROTATION AND RELIEF VALVE

The relief valve is not intended to be a metering or flow control device. Its main purpose is to function as a discharge pressure relief when the spring tension is exceeded by the discharge pressure. Overheating can occur within 5-10 minutes if the discharge line is completely shut off for extended periods.

Unless otherwise specified, the clutch driven pump is supplied by the factory for shaft rotation clockwise from shaft end. Reversing the rotation will reverse the “in” and “out” ports and also requires changing the relief valve location. The relief valve is always on the discharge side in this pump series. The factory pressure setting is 50 PSIG. To increase pressure, turn the relief valve adjusting screw in a clockwise direction.

Model | DIM. A | DIM. B | DIM. C | DIM. D | DIM. E (PORT SIZE)
---|---|---|---|---|---
N994-38 2.94 | 1.75 | 4.63 | 6.75 | .50-14 NPT (.50-14 BSPT, .75-14 NPT & .75-14 BSPT) ALSO AVAILABLE.
N994R-38 3.00 | 1.75 | 4.63 | 6.75 | ALSO AVAILABLE.
N970-38 3.75 | 2.00 | 4.69 | 6.81 | .75-14 NPT (.75-14 BSPT)
N970R-38 3.78 | 2.00 | 4.69 | 6.81 | ALSO AVAILABLE
N990-38 3.75 | 2.00 | 4.75 | 7.06 | 1.00-11.5 NPT (1.00-11.5 BSPT) ALSO AVAILABLE
N990R-38 3.78 | 2.00 | 4.75 | 7.06 | ALSO AVAILABLE

11/00