**BRONZE RUBBER IMPELLER PUMP**

**PIPE SIZE 1 1/4 I.D. HOSE SLIP ON**

**CAPACITY**

<table>
<thead>
<tr>
<th>Pump</th>
<th>RPM</th>
<th>Feet Hd.</th>
<th>PSI</th>
<th>GPM</th>
<th>HP</th>
<th>Feet Hd.</th>
<th>PSI</th>
<th>GPM</th>
<th>HP</th>
<th>Feet Hd.</th>
<th>PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>800</td>
<td>12.0</td>
<td>0</td>
<td>20</td>
<td>1.0</td>
<td>11.0</td>
<td>8.7</td>
<td>40</td>
<td>1.0</td>
<td>9.7</td>
<td>17.3</td>
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<tr>
<td>402M</td>
<td>25.0</td>
<td>20.0</td>
<td>1.0</td>
<td>60</td>
<td>1.0</td>
<td>22.0</td>
<td>17.3</td>
<td>80</td>
<td>1.0</td>
<td>7.5</td>
<td>26.0</td>
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<tr>
<td>402M-03</td>
<td>32.5</td>
<td>30.5</td>
<td>1.0</td>
<td>120</td>
<td>1.0</td>
<td>27.0</td>
<td>24.0</td>
<td>120</td>
<td>1.0</td>
<td>24.0</td>
<td>15.0</td>
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<tr>
<td>3000</td>
<td>36.0</td>
<td>34.5</td>
<td>1.0</td>
<td>180</td>
<td>1.0</td>
<td>31.0</td>
<td>27.5</td>
<td>180</td>
<td>1.0</td>
<td>27.5</td>
<td>21.0</td>
</tr>
</tbody>
</table>

**DO NOT RUN DRY**

Rubber impellers generate high rubbing friction unless lubricated by liquid pumped. Lack of liquid will cause impeller to burn up.

**DRIVE**

Select proper belt size to match pulley groove as shown on dimension drawing on back. Belt must run sufficiently tight to prevent slippage. Do not overtighten.

**LIQUIDS AND TEMPERATURE**

Liquids compatible with neoprene can be pumped including fresh and slat water solution 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°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, Permagard, 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.

**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.

*Teflon® is a registered trademark of DuPont. Teflon® or equivalent PTFE will be used.
SECTION VIEW AND PARTS LIST

PULLEY

The pulley is normally installed at the factory. If field service requires pulley removal and reinstallation, proceed as follows:

Pulley Removal: Loosen and remove the three (3) cap screws in the tapered steel bushing. Thread the 3 cap screws in the tapped removal holes, and progressively tighten each one until the aluminum pulley is loose on the tapered steel bushing. If the steel bushing won’t slip off the pump shaft, wedge screwdriver blade in saw cut to expand and overcome tightness.

Pulley Installation: Align the pulley groove with the belt centerline. Tighten the 3 bushing cap screws drawing the tapered steel bushing into the aluminum pulley and thereby tightening the steel bushing onto the pump shaft. Tighten the screws evenly and progressively. This insures an even draw down to eliminate pulley wobble. DO NOT tighten each screw independently. The ultimate maximum recommended torque is 75 inch-lbs.

(diminished from front)

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.

Note: For 2 groove pulley, see 402M-06 (7562) - consult factory

Specifications are subject to change without notice.