

\*\*Data sheet for old style

pumps with 8 cover screws.

**MODEL** 104M

# BRONZE CLOSE COUPLED CENTRIFUGAL PUMP

#### PIPE SIZE: INLET 3/4", OUTLET 1/2"



#### 104M-06F26 Pictured

#### **FEATURES**

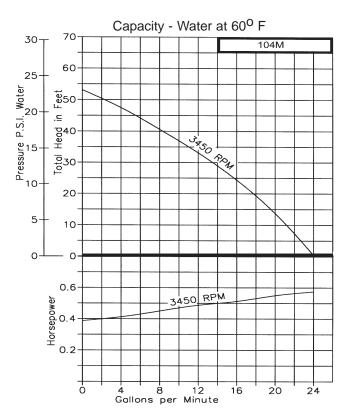
- Rugged bronze construction
- A standard in the marine air conditioning industry
- Extremely quiet operation
- O-ring housing seal eliminates gasket problems
- Teflon barrier seal to protect motor bearings
- Handles contaminated liquids
- Discharge port orientation flexibility 8 positions
- Mechanical seal carbon/ceramic
  - Buna standard
  - Viton (S10) optional
  - Teflon (S11) optional
- Pump heads mount to standard footed NEMA 56J jet pump motors
- Shafts: 416 Stainless, Monel or 316 Passivated Stainless
- Multiple motor options available
- For industrial version see Model 600 series

#### 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  $212^{0}$  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

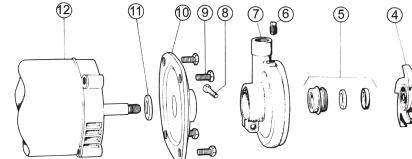
\*\*Data sheet for old style pumps with 8 cover screws.



A Gardner Denver Product

# BRONZE CLOSE COUPLED CENTRIFUGAL PUMP

# **EXPLODED VIEW AND PARTS LIST**



## \*These parts are only for the old style pump with 8 cover screws.\*\*

| 1      | 2                              | 31  | 41   | 51  | 6  | 7  | 8   | 9  | 10   | 111  | 12   | 131*  |  |
|--------|--------------------------------|---|--|---|--|--|---|--|--|--|--|---|--|
| Screw  | Cover                          | O-Ring  | Impeller   | Seal  | Plug   | Body   | Screw   | Screw  | Adapter  | Lip Seal   | Motor  | Set   | Repair   |
|        |                                |   |  | Assy.   |  |  |   |  |  |  |  | Screw   | Kit  |
| 8 Reqd | 1 Reqd                         | 1 Reqd  | 1 Reqd   | 1 Reqd  | 2 Reqd   | 1 Reqd   | 1 Reqd  | 4 Reqd   | 1 Reqd   | 1 Reqd   | 1 Reqd   | 1 Reqd  | 1 Reqd   |
| 5385   | 5168                           | 9797-042  | 6033   | 32155   | 7687   | 7515   | 5595  | 5411   | 6699   | 6683   |  |   | 10720 (Single Phase)   |
| 5385   | 5168                           | 9797-042  | 6033   | 32155   | 7687   | 9738   | 5595  | 5411   | 6699   | 6683   |  |   | 10720 (Single Phase)   |
| 5385   | 5168                           | 9797-042  | 7432   | 32155   | 5395   | 7515   | 5595  | 5411   | 6699   | 6683   |  | 9849  | 12173 (Three Phase)  |
| 8      | 8 Reqd<br>5385<br>5385<br>5385 | 8 Reqd 1 Reqd   5385 5168   5385 5168   5385 5168   5385 5168 | Screw Cover O-Ring   8 Reqd 1 Reqd 1 Reqd   5385 5168 9797-042   5385 5168 9797-042   5385 5168 9797-042 | Screw Cover O-Ring Impeller   8 Reqd 1 Reqd 1 Reqd 1 Reqd   5385 5168 9797-042 6033   5385 5168 9797-042 6033 | Screw Cover O-Ring Impeller Seal<br>Assy.   8 Reqd 1 Reqd 1 Reqd 1 Reqd 1 Reqd   5385 5168 9797-042 6033 32155   5385 5168 9797-042 6033 32155   5385 5168 9797-042 7432 32155 | Screw Cover O-Ring Impeller Seal<br>Assy. Plug<br>Assy.   8 Reqd 1 Reqd 1 Reqd 1 Reqd 1 Reqd 2 Reqd   5385 5168 9797-042 6033 32155 7687   5385 5168 9797-042 6033 32155 7687   5385 5168 9797-042 7432 32155 5395 | Screw Cover O-Ring Impeller Seal Plug Body   8 Reqd 1 Reqd 1 Reqd 1 Reqd 1 Reqd 2 Reqd 1 Reqd   5385 5168 9797-042 6033 32155 7687 7515   5385 5168 9797-042 6033 32155 7687 9738   5385 5168 9797-042 7432 32155 5395 7515 | Screw Cover O-Ring Impeller Seal Plug Body Screw   8 Reqd 1 Reqd | Screw Cover O-Ring Impeller Seal Plug Body Screw Screw   8 Reqd 1 Reqd 4 Reqd   5385 5168 9797-042 6033 32155 7687 7515 5595 5411   5385 5168 9797-042 6033 32155 7687 9738 5595 5411   5385 5168 9797-042 7432 32155 5395 7515 5595 5411 | Screw Cover O-Ring Impeller Seal Plug Body Screw Screw Adapter   8 Reqd 1 Reqd | Screw Cover O-Ring Impeller Seal Plug Body Screw Screw Adapter Lip Seal   8 Reqd 1 Reqd | Screw Cover O-Ring Impeller Seal Plug Body Screw Screw Adapter Lip Seal Motor   8 Reqd 1 Reqd 1 Reqd 1 Reqd 1 Reqd 2 Reqd 1 Reqd | ScrewCoverO-RingImpellerSealPlugBodyScrewScrewAdapterLip SealMotorScrew8 Reqd1 Reqd1 Reqd1 Reqd1 Reqd2 Reqd1 R |

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

Not shown - Impeller set screw for Three Phase motors only.

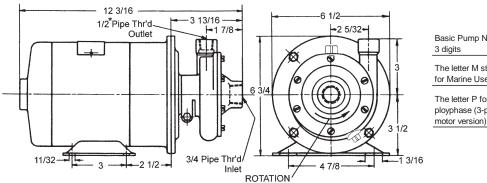
# PUMP & MOTOR OPTIONS

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.

| Pump No.    | HP  | SF   | Enclosure | Phase  | Voltage       | Shaft<br>Construction | Motor<br>Item 12 |
|-------------|-----|------|-----------|--------|---------------|-----------------------|------------------|
| 104M-F13    | 1/3 | 1.75 | ODP       | single | 115           | 416                   | 5859             |
| 104M-06F13  | 1/3 | 1.75 | ODP       | single | 115           | 416                   | 5859             |
| 104M-01F26  | 1/3 | 1.75 | ODP       | single | 115 / 230     | monel                 | 32273            |
| 104M-06F26  | 1/3 | 1.75 | ODP       | single | 115 / 230     | monel                 | 32273            |
| 104M-F17    | 1/3 | 1.75 | ODP       | single | 115 / 230     | 316 passivated        | 3032             |
| 104M-06F17  | 1/3 | 1.75 | ODP       | single | 115 / 230     | 316 passivated        | 3032             |
| 104M-F21    | 1/3 | 1.75 | XP        | single | 115 / 230     | 416                   | 8214             |
| 104MP01-F65 | 1/3 | 1.75 | ODP       | three  | 208 230 / 460 | monel                 | 32355            |
| 104MP-F57   | 1/3 | 1.75 | ODP       | three  | 208 230 / 460 | 416                   | 6996             |
| 104M-J19    | 1/2 | 1.65 | ODP       | single | 115 / 230     | 416                   | 5860             |
| 104M-J20    | 1/2 | 1.65 | TEFC      | single | 115 / 230     | 416                   | 7976             |
| 104MP01-J58 | 1/2 | 1.00 | TEFC      | three  | 208 230 / 460 | monel                 | 33035            |
| 104MP-J57   | 1/2 | 1.60 | ODP       | three  | 230 / 460     | 416                   | 6998             |
| 104M-01J26  | 1/2 | 1.65 | ODP       | single | 115 / 230     | monel                 | 32332            |
| 104M-J24    | 1/2 | 1.65 | ODP       | single | 115 / 230     | 316 passivated        | 3031             |
| 104M-J89    | 1/2 | 1.00 | TENV      | DC     | 12V           | 416                   | 2386             |
| 104MP-M58   | 3/4 | 1.15 | TEFC      | three  | 230 / 460     | 416                   | 7967             |

#### **DIMENSIONS**

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

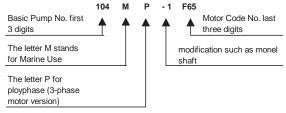


## NUMBERING

3

(2)

(1)



5/06

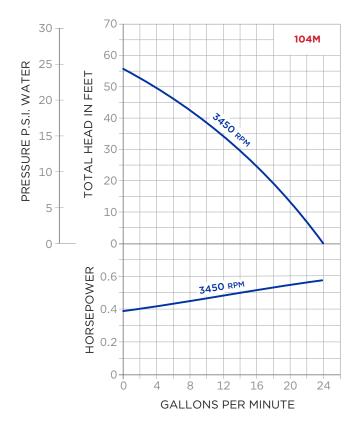
Specifications are subject to change without notice. All motor dimensions are subject to variations among motor manufacturers.

# \*\*Data sheet for new style pumps with 4 cover screws.\*\*

BRONZE CLOSE-COUPLED CENTRIFUGAL PUMP INLET 3/4" NPT, OUTLET 1/2" NPT

# Model 104M

#### PERFORMANCE CAPACITY, WATER 70°F





- Rugged bronze construction
- A standard in the marine air conditioning industry
- Extremely quiet operation
- O-ring housing seal eliminates gasket problems
- Teflon barrier seal to protect motor bearings
- Handles contaminated liquids
- Discharge port orientation flexibility
- Mechanical seal carbon/ceramic NBR options
- Pump heads mount to standard footed NEMA 56J jet pump motors
- 300 Series Stainless Steel standard also optional Monel
- Multiple motor options available
- For industrial version, see Model 600 Series

## 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.

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# 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 NBR rubber element. It is suitable for water, oils, and some mild solvents and it is limited to 212°F. FKM seals and PTFE seals are available for severe solvents, difficult chemicals, and elevated temperatures.

# \*\*Data sheet for new style pumps with 4 cover screws.\*\*

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.

| MODEL       | HP  | SF   | ENCLOSURE | PHASE  | VOLTAGE     | SHAFT<br>CONSTRUCTION | MOTOR<br>ITEM 12 |
|-------------|-----|------|-----------|--------|-------------|-----------------------|------------------|
| 104M-F13    | 1/3 | 1.75 | ODP       | single | 115         | 416                   | 5859             |
| 104M-06F13  | 1/3 | 1.75 | ODP       | single | 155         | 416                   | 5859             |
| 104M-01F26  | 1/3 | 1.75 | ODP       | single | 115/230     | Monel                 | 32273            |
| 104M-06F26  | 1/3 | 1.75 | ODP       | single | 115/230     | Monel                 | 32273            |
| 104MP-F57   | 1/3 | 1.75 | ODP       | three  | 208 230/460 | 416                   | 6996             |
| 104M-J19    | 1⁄2 | 1.65 | ODP       | single | 115/230     | 146                   | 5860             |
| 104M-J20    | 1⁄2 | 1.65 | TEFC      | single | 115/230     | 416                   | 7976             |
| 104MP01-J58 | 1⁄2 | 1.00 | TEFC      | three  | 208 230/460 | Monel                 | 33035            |
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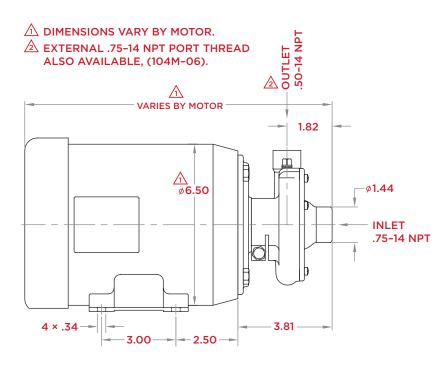


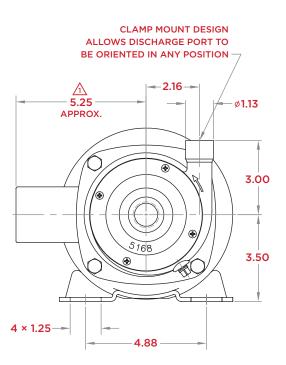
This picture is the old style 104M-06 pump with 8 cover screws. This old style pump is no longer available. The parts list on the page below is only for the new style pump with 4 cover screws. \*\*These parts are only for the new style pump with 4 cover screws.\*\* PARTS LIST - MODEL 104M

| ITEM | DESCRIPTION                 | C         | OMPONENT N | D.        | QTY. | REPAIR KIT     |             |  |
|------|-----------------------------|-----------|------------|-----------|------|----------------|-------------|--|
| NO.  | DESCRIPTION                 | 104M      | 104MP      | 104M-06   |      | 104M           | 10720       |  |
| 1    | Screw                       | 5385      | 5385       | 5385      | 4    | 104MP          | 12173       |  |
| 2    | Cover                       | 5168-2    | 5168-2     | 5168-2    | 1    | 104M-06        | 10720       |  |
| 3    | O-Ring                      | 9797-043  | 9797-043   | 9797-043  | 2    | Itoma Included | 3, 4, 5A,   |  |
| 4    | Impeller                    | 6033      | 7432       | 6033      | 1    | Items Included | 5B, 11 & 13 |  |
| 5A*  | Seal Head                   | 2913      | 2913       | 2913      | 1    |                |             |  |
| 5B*  | Seal Wearface/<br>Seal Seat | 601801    | 601801     | 601801    | 1    |                |             |  |
| 6    | Plug                        | 7687      | 5395       | 7687      | 2    |                |             |  |
| 7    | Body                        | 7515-2    | 7515-2     | 9738-2    | 1    |                |             |  |
| 8    | Screw                       | 5595      | 5595       | 5595      | 1    |                |             |  |
| 9    | Screw                       | 5411      | 5411       | 5411      | 4    |                |             |  |
| 10   | Adapter                     | 6699      | 6699       | 6699      | 1    |                |             |  |
| 11   | Set Screw                   | NA        | 9849       | NA        | 1    |                |             |  |
| 12   | Motor                       | See Chart | See Chart  | See Chart | 1    |                | •           |  |
| 13   | Lip Seal                    | 6683      | 6683       | 6683      | 1    |                | 1 🖉         |  |
| 14   | Name Plate                  | 7736      | 7736       | 7736      | 1    | 14             |             |  |

\*\*Data sheet for new style pumps with 4 cover screws.\*\* \*\*Data sheet for new style pumps with 4 cover screws.\*\*

### DIMENSIONS







#### Gardner Denver, Inc.

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NBR = Acrylonitrile-Butadiene, PTFE = Polytetrafluorethylene, FKM = Fluoroelastomer

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