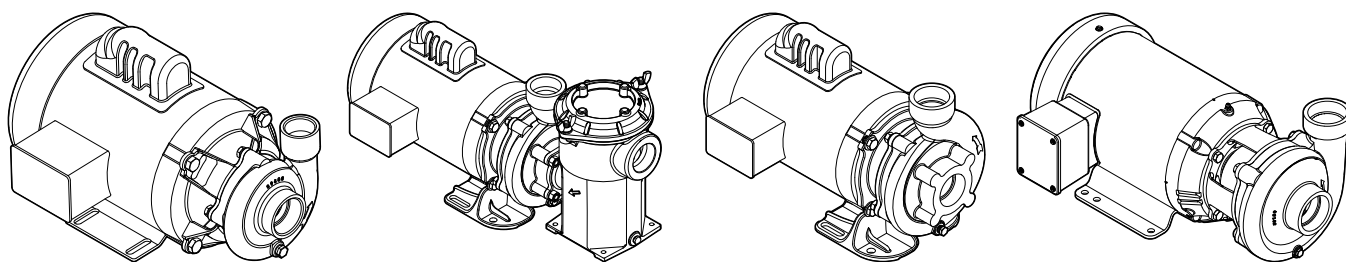


# ↗ DOMETIC

# MARINE

# PUMPS



**P035S, P040S, P055S, P115R, P115S, P230S**

EN

## **Centrifugal Pump**

Installation and Operation Manual

## NORTH AMERICAN ADDRESS INFORMATION

### LIMITED WARRANTY

LIMITED WARRANTY AVAILABLE AT [DOMETIC.COM/WARRANTY](http://DOMETIC.COM/WARRANTY).

IF YOU HAVE QUESTIONS OR TO OBTAIN A COPY OF THE LIMITED WARRANTY FREE OF CHARGE, CONTACT:

### DOMETIC CORPORATION

MARINE CUSTOMER SUPPORT CENTER  
2000 NORTH ANDREWS AVE  
POMPANO BEACH, FL, USA 33069  
+1 800-542-2477

### Service Center & Dealer Locations

Refer to "8 Customer Support" on page 8.

**Read these instructions carefully. These instructions MUST stay with this product.**

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## 1 EXPLANATION OF SYMBOLS AND SAFETY INSTRUCTIONS

This manual has safety information and instructions to help you eliminate or reduce the risk of accidents and injuries.

### 1.1 Recognize safety information



This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### 1.2 Understand signal words

A signal word will identify safety messages and property damage messages, and will indicate the degree or level of hazard seriousness.



indicates a hazardous situation that, if **not** avoided, could result in death or serious injury.



indicates a hazardous situation that, if **not** avoided, could result in minor or moderate injury.

**NOTICE** used to address practices **not** related to physical injury.



indicates additional information that is **not** related to physical injury.

### 1.3 Supplemental directives

**⚠ WARNING** Read and follow all safety information and instructions to avoid possible injury or death. Read and understand these instructions before installation or use of this product. Incorrect installation or use of this product can lead to serious injury. The installation must comply with all applicable local or national codes, including the latest edition of the following standards:

#### U.S.A.

- ANSI/NFPA70, National Electrical Code (NEC)
- ANSI/NFPA 1192, Recreational Vehicles Code
- ABYC Codes and Standards

#### Canada

- CSA C22.1, Parts I & II, Canadian Electrical Code
- CSA Z240 RV Series, Recreational Vehicles

### 1.4 General safety messages

**⚠ WARNING** Failure to obey the following instructions could result in death or serious injury:

- HEALTH HAZARD: Do **not** install or operate the pump in a manner in which it was **not** intended to be used.
- EXPLOSION HAZARD: Do **not** operate pump in areas with a highly explosive environment as pump may create a spark.
- FLOOD / LEAK HAZARD:
  - Do **not** perform service or maintenance when the pumping system is pressurized.
  - Do **not** mount the pump such that high piping loads exist on the pump connections, or in a rigid system that does **not** allow the pipe to expand, causing the pump to be strained.
  - Do **not** operate the pump beyond the pressure or temperature limits.
  - Do **not** allow severe temperature changes to occur in a short time period within the pumping system.
  - Do **not** continue to operate the pumping system when a known leak exists.

**NOTICE** Failure to obey the following instructions could result in damage to the pumping system.

- DAMAGE HAZARD:
  - Do **not** continue to operate the pump when unusual noise or vibration occurs. Failure to obey this instruction could result in property damage.
  - Do **not** continue to operate the pumping system when a known leak exists.

## 2 GENERAL INFORMATION

### Recommended Tools and Supplies

Drill	Screws
Drill bit(s)	Waterproof sealant
Flat-bladed screwdriver	Waterproof electrical tape
Pipe sealant or tape	Wire strippers and crimper
Weatherproof wire nuts	Fasteners
Wrenches	Other hardware sufficient for secure mounting at desired location

### 3 INTENDED USE

Dometic Centrifugal Pumps are marine grade, for use with sea or nonpotable water. Major pump parts are Nickel Aluminum Bronze (NAB) (except P035S models) for superior corrosion resistance. Specifications for each pump are available online at [www.dometic.com](http://www.dometic.com).

Dometic Centrifugal Pumps are designed to encompass a wide range of applications and configurations. The installer determines various installation factors to fit the application, such as:

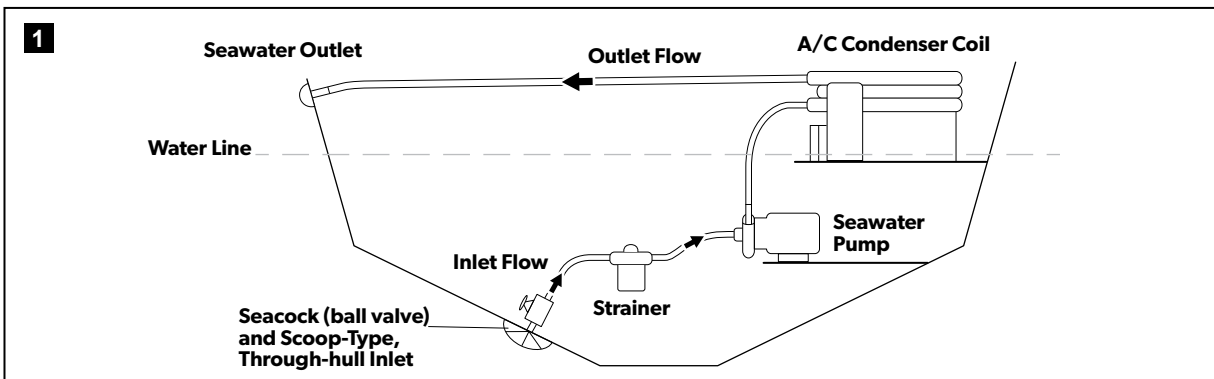
- Pump head orientation (horizontal or vertical).
- Mounting location (directly to floor plates, rails with vibration isolators to reduce noise, platforms, etc).
- Suitable mounting hardware for desired installation or use.
- Suitable piping for desired installation or use (for example: Schedule 80 PVC, CPVC, copper piping, stainless steel, flexible hose, etc.)
- Single-phase or three-phase electrical wiring.

This manual provides all necessary information for proper installation and operation of the Centrifugal Pump. Poor installation and improper operating procedures will result in unsatisfactory performance and possible failure. The manufacturer accepts no liability for damage in the following cases:

- Faulty assembly or connection.
- Damage to the product resulting from mechanical influences and excess voltage.
- Alterations to the product without express permission from the manufacturer.
- Use for purposes other than those described in this manual.

### 4 INSTALLATION

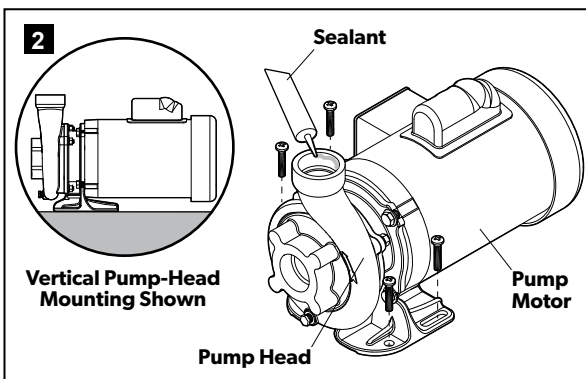
#### 4.1 Placing the pump (seawater application shown)



- For optimum performance and to minimize suction lift, place the pump as close to the liquid as possible.
- The pump should be installed below the water line for seawater applications.

**NOTICE** DAMAGE HAZARD: The motor is splash-resistant, not submersible. It should be located in a dry environment. Failure to do so could result in damage to the pump.

## 4.2 Mounting the pump



- Place the pump motor in the desired location and mark the position of the four mounting hole.
- Drill holes for the four mounting screws and tighten the pump into position.
- Install the pump motor in a level, horizontal position as shown.
- Use an appropriate pipe sealant or tape on the threads and other piping connections.
- Tighten all connections, using appropriate tools for the selected piping materials.

- i** Never install the pump vertically or with the motor below the pump.
- i** For best performance, ensure the pump's piping is sized appropriately for the flow rate.

## 4.3 Making the electrical connections

**⚠ WARNING** SHOCK HAZARD: Before attempting to make any electrical connections, ensure electrical power is OFF and water valves are completely closed. Failure to do so could result in death or serious injury.

**⚠ CAUTION** SHOCK HAZARD: All wire connections **must** be secure and sealed to protect from arcing. Failure to do so could result in minor-to-moderate injury and property damage.

**NOTICE** DAMAGE HAZARD: Failure to follow the practices listed could result in damage to the pump:

- Do **not** use or install the pump if the voltage on the label is different than the supply voltage.
- Protect the motor with a fuse or circuit breaker.
- Use the proper minimum wire sizes per ABYC.
- Match the pump voltage, frequency, and phase to the installation power source.
- Most pumps are dual-voltage and will need to be wired to the specific voltage for your application.
- Follow ABYC and local installation codes.

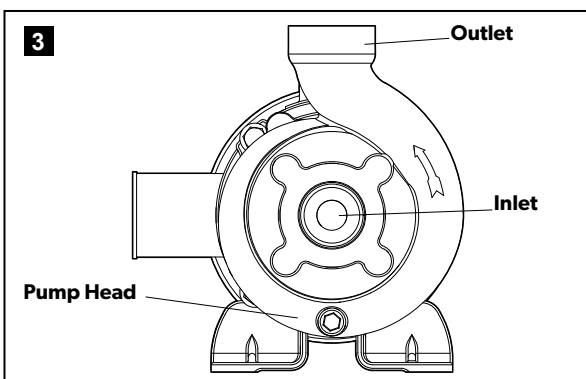
**i** Refer to the wiring diagram on your pump.

## 5 OPERATION

**NOTICE** DAMAGE HAZARD: The pump head **must** be operated with liquid in the pump, to act as a primer. Failure to do so could result in damage to the unit.

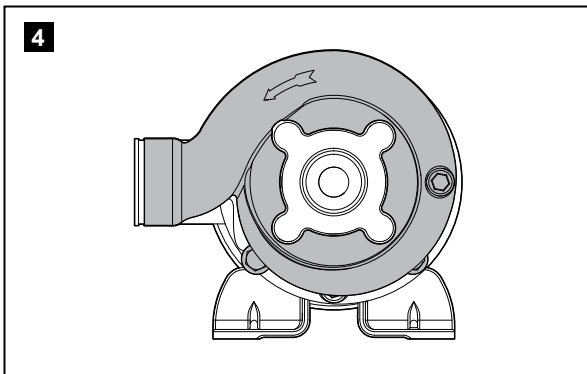
### 5.1 Priming the pump

**i** Mounting the pump below the water line helps prime the pump head. Ensure all valves are open and the pump connections are secure before starting the pump. The pump requires positive suction at the pump head to prevent cavitation.

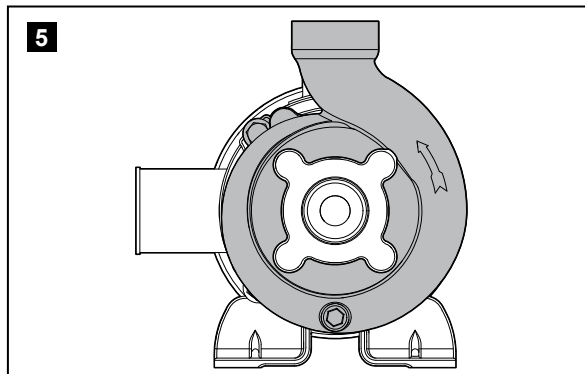


## 5.2 Rotating the pump head

### Horizontal



### Vertical



**i** The pump head can be oriented in either a horizontal or vertical position, depending on the installation.

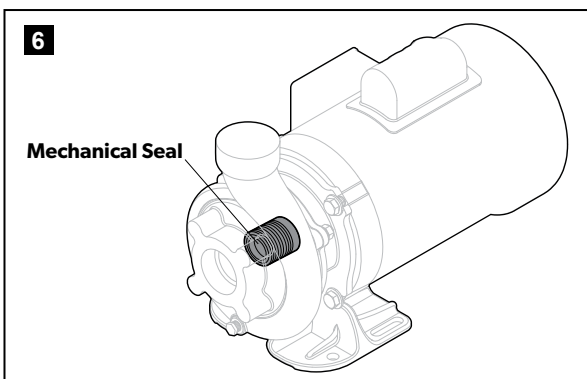
**NOTICE** DAMAGE HAZARD: Failure to follow the instructions below could cause significant damage to the pump:

- Before rotating the pump head, ensure the pump is level and horizontal. The pump outlet must **never** be below the inlet.
- The pump head can only be configured in the positions shown in Figures 4 and 5.

## 6 MAINTENANCE

**⚠ WARNING** SHOCK HAZARD: Before attempting any maintenance or repairs, ensure electrical power is OFF and water valves are completely closed. Failure to do so could result in death or serious injury.

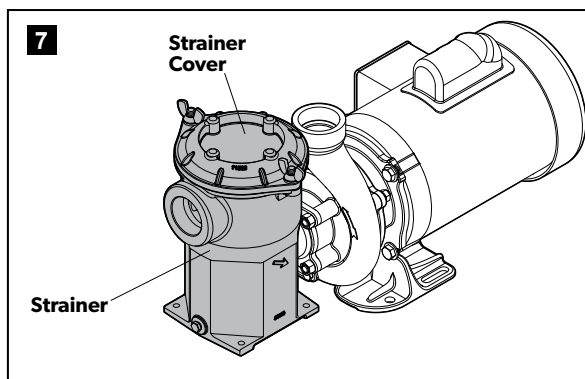
### 6.1 Replacing the mechanical seal



**NOTICE** DAMAGE HAZARD: When replacing mechanical pump seals, keep the seal surfaces clean. Do **not** touch seals or related surfaces with bare hands to prevent oil from transferring to the surfaces. Failure to follow this instruction could lead to excess leakage and cause property damage.

**i** Mechanical pump seals require an initial wear-in period. It is normal during this period for a small amount of leakage from the seal to occur. The leakage rate diminishes as the pump accumulates run-time.

### 6.2 Cleaning the strainer basket (model P115R only)

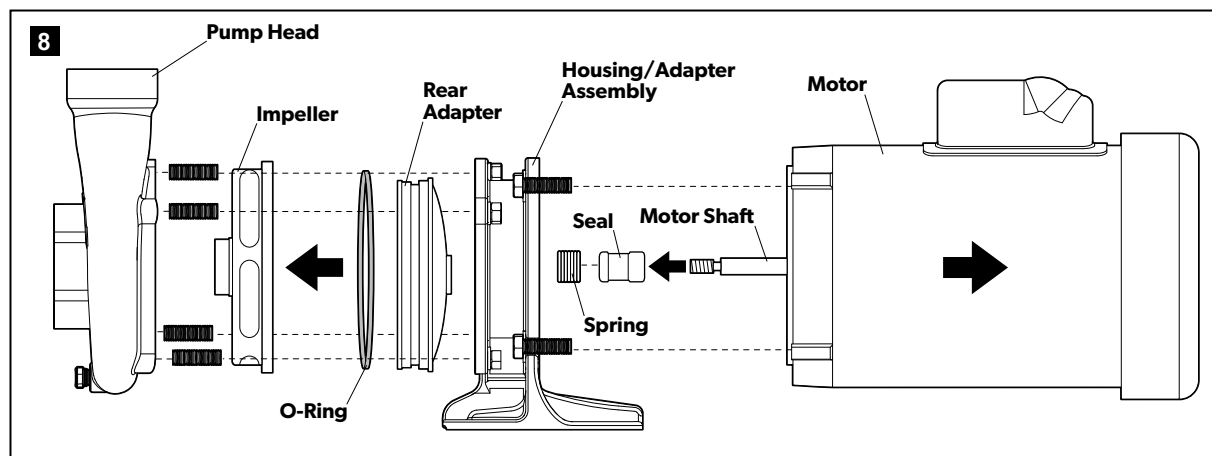


The strainer basket on the P115R needs to be cleaned periodically to ensure the proper flow rate to attached water-cooled equipment, and to reduce stress on the pump:

- Remove the two wing nuts holding the cover onto the strainer.
- Rotate the strainer basket counter-clockwise until the detents in the lip line up with the extrusions in the strainer assembly.
- Lift out the strainer basket vertically, and remove any accumulated debris.
- Re-assembly is the reverse of disassembly.

**NOTICE** DAMAGE HAZARD: Do **not** run the pump while the strainer is removed, not even for a very short time. If the pump sucks up a shell or other debris, it can lodge in the condenser and possibly cause it to fail.

### 6.3 Disassembling the pump



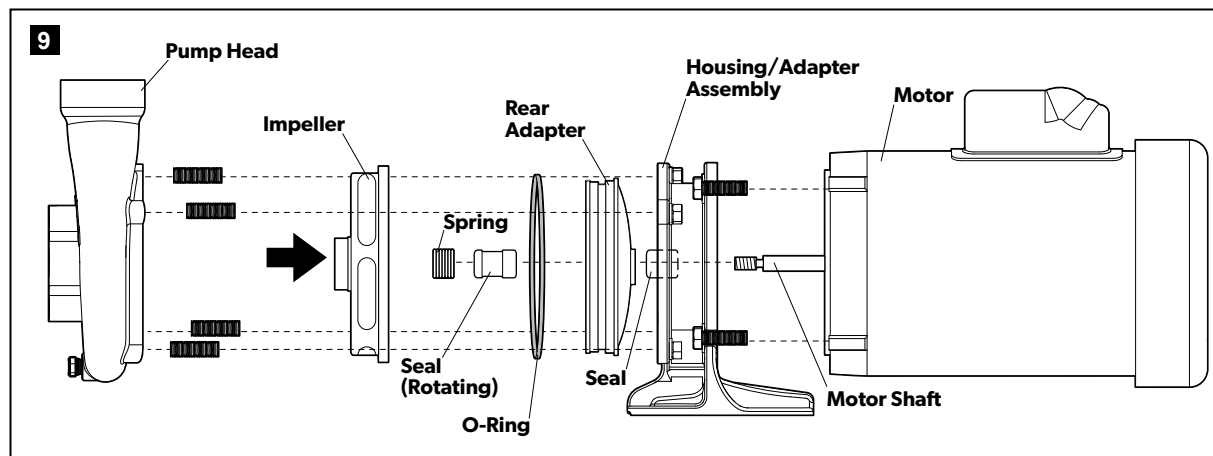
- Remove the four nuts, the lock-washers, and the pump head. Discard the O-ring.
- Place a flat-bladed screwdriver into the slot at the back end of the motor shaft to secure it in place.
- Remove the impeller by rotating it counter-clockwise. For keyed pumps, remove the impeller nut at the shaft end.
- Remove the spring, and rotating portion of the seal by pulling them off manually. A screwdriver may be used to pry the seal loose if it sticks.
- Remove the bolts that hold the housing/adapter assembly onto the motor.
- Use a screwdriver to remove the housing/adapter assembly and push the seal seat out from the back side of the rear adapter.

**i** Nuts may become bonded to the studs over time. Tightening the nuts before removal ensures the studs do not back out of the pump head.

### 6.4 Inspecting the pump

- Always replace the mechanical seal. Check the old seal for dry-run wear or damage.
- Check the impeller running surface between the impeller and the pump head. If the surfaces are worn or irregular, replace them.
- Clean the parts that are to be reused using a solvent or a mild cleanser. Remove any abrasive material.
- Check the motor shaft for wear at the secondary sealing surface from the mechanical seal. If it shows signs of wear, replace the pump.
- Check the motor bearings by rotating the motor manually. If the shaft rotation is not smooth or has radial/axial end-play, replace the pump.

## 6.5 Reassembling the pump



- Press the new mechanical seal into the pump housing. Use a light, oil-free lubricant to aid with the assembly.
- Install the pump housing/adapter assembly onto the motor and fasten with the four cap screws.
- Install the rotating portion of the mechanical seal by sliding the seal over the motor shaft.
- Place the impeller onto the shaft, taking care to guide the spring onto the shoulder at the back of the impeller.
- Thread the impeller onto the motor shaft until it bottoms out on the shaft. If it is a keyed impeller, thread the impeller nut securely against the impeller by applying a torque value of 10 – 12 ft.-lbs. Use thread-locking-grade compound to secure the nut.
- Place the O-ring in the groove and apply an oil-free lubricant.
- Install the pump head onto the housing and fasten the four nuts and lock-washers to the pump head studs.

## 7 DISPOSAL



Place the packaging material in the appropriate recycling waste bins, whenever possible. Consult a local recycling center or specialist dealer for details about how to dispose of the product in accordance with all applicable national and local regulations.

## 8 CUSTOMER SUPPORT

Use the following information to contact Dometic Marine Customer and Technical Support.

Telephone: +1 954-973-2477

Fax: +1 954-979-4414

email: MarineSales@dometic.com

Marine Division

Florida

### 24/7 Technical Support

Telephone: +1 800-542-2477

8:00 AM to 5:00 PM Eastern Time

+1 888-440-4494

After hours and weekends

U.S.A. and Canada

Email: MarineServiceUS@dometic.com

### International Sales and Service

Telephone: +44 (0) 870-330-6101

For all other areas, visit our website to find your nearest distributor at [www.dometic.com](http://www.dometic.com).



When contacting Dometic, be sure to have the model number and serial number available. The model number and the serial number may be found on the data-plate label.