



# Heavy Duty Bilge Pump

4030, 4060, 4031, 4061

## Installation Instructions

Attwood marine hardware, navigational lighting, bilge pumps, and other marine accessories are specified more than any other brand by America's best-known boat manufacturers as original equipment. Look to Attwood for quality replacement parts and marine accessories.

### SAVE THESE INSTRUCTIONS

Form Number 69317 Rev. C

97/8

### FEATURES

Attwood Heavy Duty Bilge Pumps are the newest development in high output pumps. All models have a removable housing for simple installation and easy cleaning. They connect to 12-volt D.C. systems only. There are two ways to configure your Heavy Duty Bilge Pump – Automatic Operation or Manual Operation. The bilge pump system can be converted to fully-automatic operation by installing the Attwood Automatic Float Switch, Part No. 4201 or 4202.

### AUTOMATIC OPERATION

All boats over 20' (6.1 m) in length which have sleeping accommodations (excluding fold-out cockpit seats) require automatic bilge pump systems. For fully-automatic operation, follow the *AUTOMATIC FLOAT SWITCH INSTALLATION* and *AUTOMATIC OPERATION WIRING* instructions.

### MANUAL OPERATION

For manual operation of your bilge pump system, disregard the references to Automatic Float Switch installation and operation.

Check the chart below to select the proper pump, fuse size, and thru-hull connector for your boat application.

Pump Part Number	Pump Model	Volts	Amp Fuse	Outlet Hose Inside Dia.	Thru-Hull Connector
4030, 4031	HD1700	12VDC	10	1-1/8" (29mm)	3874
4060, 4061	HD2000	12VDC	12	1-1/8" (29mm)	3874

Recommendations are based on amount of gallons exhausted per hour (GPH). GPH measurements are typical of production pumps tested using smooth-bore hoses, at 0' head. "Head" refers to the vertical distance between the pump nozzle and the water discharge location. GPH is reduced as head is increased.

The chart below shows gallons and liters per hour ratings for 0' head and 3' (91.4 cm) head. GPH/LPH may also vary depending on power source, hose type, and other variables.

Part No.	Model	ABYC Specifications 13.6 volts DC (GPH=Gallons Per Hour)		ISO Specifications 12.0 volts DC (LPH=Liters Per Hour)		Amp Draw
		GPH Open Flow	LPH Open Flow	GPH 3' Head	LPH 3' Head	
4030, 4031	HD1700	1,700	6,450	1,300	4,920	6.0
4060, 4061	HD2000	2,000	7,600	1,550	5,867	8.0

The pumps can run dry for limited periods of time; however, doing so could cause pump failure.



### WARNING:

To prevent personal injury, always disconnect the power source when installing or servicing any electrical product. Remove vessel from water when using any 110/120 or 220 Volt AC power tools.

**DO NOT** use pump to remove gasoline, oil or other flammable liquids. Doing so could result in fire, explosion, and serious personal injury.

Always use the fuse amperage rating specified for your pump model. Failure to do so could result in serious personal injury or fire hazards.

Attwood bilge pumps are designed to exhaust standing *WATER ONLY*. They are not intended to prevent rapid accumulation of on-board water due to rough weather, severe storms, hull damage, and/or other unsafe navigational conditions.

Do not allow materials containing acetic acid (vinegar smell) such as silicone rubber sealant to contact the plastic parts of the pump. They may react with the plastic, causing cracks and pump failure.

### Notice:

**Discharge of oil prohibited.** The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste into the contiguous zone. Violators are subject to a penalty of \$5,000.

### REQUIRED FOR INSTALLATION

- Drill and suitable drill bits
- Screwdriver and four #8 stainless steel pan head screws
- Attwood thru-hull connector of appropriate size (if not already installed on boat; see chart)
- Marine sealant
- 1-1/8" (29mm) inside diameter smooth-bore hose of suitable length
- Two appropriate hose clamps
- 16-gauge wire, brown
- 16-gauge wire, black
- Attwood 2-Way Dash-Mounted Control Switch (Part No. 7615), 3-Way Switch (Part No. 7615A)
- Fuse holder and appropriate fuse (see chart)
- Two insulated terminal connectors for 16-gauge wire
- Suitable materials to waterproof electrical connections

### If automatic operation is desired:

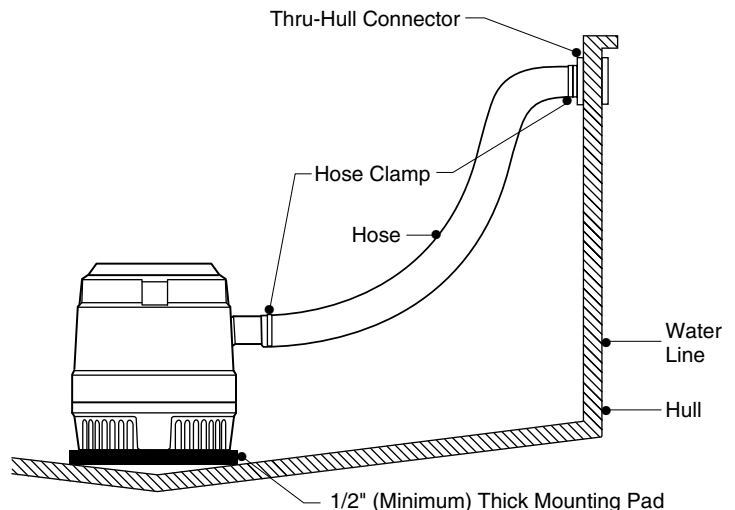
- Attwood Automatic Float Switch, Part No. 4201 (with cover) or 4202 (without cover)
- Shim for float switch mounting
- Three additional #8 round-head stainless steel attaching screws

### The following materials are needed if no pump mounting pad is in place:

- 1/2" (1.27 cm) thick marine plywood block large enough to mount pump (and automatic float switch, if used)
- Hand-held roller
- Fiberglass—18 oz. (.5kg) mat or woven roving
- Polyester resin and catalyst

### MOUNTING PREPARATION

Figure 1



1. Choose a bilge pump mounting location in the lowest accessible part of the bilge. In this location, pump will remove the last 1" (2.54 cm) of standing water. Also, pump should be as close to the thru-hull connector as possible, for short discharge hose length.

**2. To install mounting pad on fiberglass hull:**

Sand gelcoat or paint off the mounting surface to create an area that is 3" (7.6cm) wider than the mounting pad on each side.

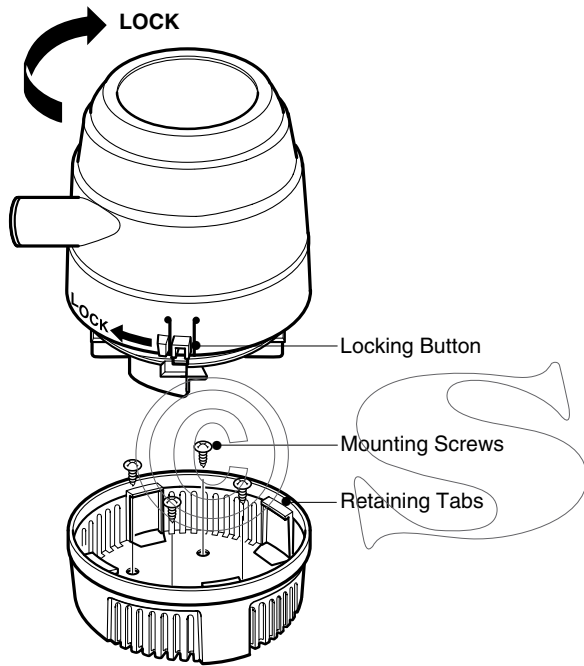
Completely cover the mounting pad with fiberglass. Saturate the fiberglass with resin, and press the fiberglass edges down against the hull to adhere the pad in place. Roll out the fiberglass to remove any uneven surfaces, air bubbles, or excess resin.

**To install mounting pad on aluminum hull:**

If your boat is not equipped with a bilge pump mounting pad we recommend that you consult your boat dealer or repair facility for instructions regarding fabrication and installation of a suitable mounting pad.

**PUMP MOUNTING INSTRUCTIONS**

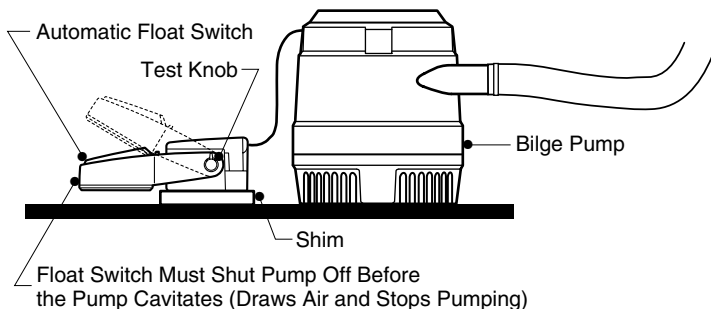
Figure 2



1. Determine which direction you want pump outlet fitting to point after installation. Mark pump base and mounting pad in desired position. *If Automatic Float Switch is to be installed, allow enough room on pad for shim and switch.*
2. Remove pump base from motor housing by depressing lock button and twisting clockwise.
3. Align base with pad at marks, and fasten with four #8 screws.
4. Attach pump to base by aligning four retaining tabs and twisting counter-clockwise until the lock button snaps into place.

**AUTOMATIC FLOAT SWITCH INSTALLATION**

Figure 3



1. Select a location on the pump mounting pad *forward* of the bilge pump. **NOTE:** It is important to locate the switch *forward* of the pump to minimize the possibility of running the pump when there is not enough standing water, causing the pump to draw air and not turn off.
2. Attach shim to mounting pad with a layer of polyester resin.
3. After resin has dried, center automatic float switch on top of shim. If you have an Attwood switch *without* a cover, thread two #8 screws through attachment holes on switch. Fasten securely into mounting pad. If you have an Attwood switch *with* a cover, thread three #8 screws through cover, then switch. Fasten securely to mounting pad.

**HOSE CONNECTION INSTRUCTIONS**

**1. If no thru-hull connector exists:**

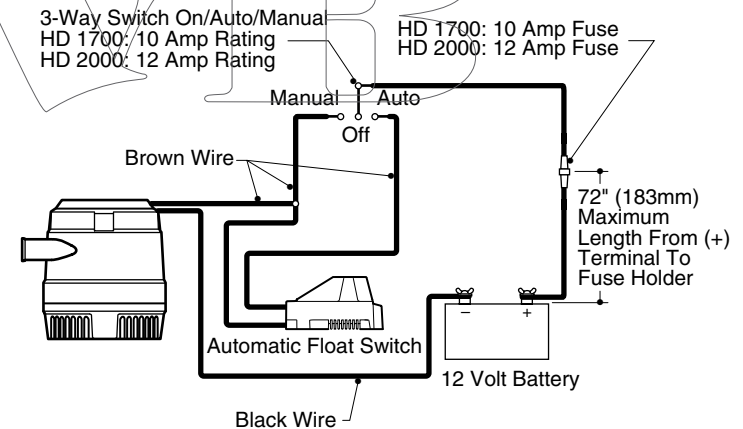
Install connector well above the water line (just under the rub rail is best) on the driver side, where water discharge can be easily monitored. Drill a hole through the hull to clear the connector threads.

Apply marine sealant around inside of nut flange (do not allow sealant to contact pump housing). Fully insert thru-hull connector, and screw nut flange down firmly. Do not over tighten.

2. Run hose from pump nozzle up to thru-hull connector, through the most direct and unobstructed path possible.
3. Before connecting hoses, cut any extra length from hose that causes downward dips or kinks in discharge line (dips can trap water and airlock the pump). Be sure the hose tension on the pump outlet is minimized to reduce stress on the pump components.
4. Place hose clamps onto hose ends. Connect ends to pump nozzle and thru-hull connector, ensuring that hose ends fit tightly over barbs.
5. Secure both connections with hose clamps.

**WIRING INSTRUCTIONS FOR AUTOMATIC OPERATION**

Figure 4



**NOTE:** The selected float switch must have an amp rating equal to or greater than the recommended fuse.

Make all wire connections above the highest possible water level, using marine grade wire connectors only. Waterproof all connections with suitable materials. **NOTE:** Failure to make waterproof connections and fuse pump properly will void the product warranty.

1. Splice suitable lengths of brown and black 16-gauge wire to existing pump wiring, enough to reach ON/OFF/AUTO switch, automatic float switch, and battery.
2. Using insulated terminal connectors: Connect positive lead (brown) to the ON/OFF/AUTO switch. Connect negative lead (black) to negative (-) battery terminal. In a location easily accessible for changing fuses, splice fuse holder into positive lead (brown). The fuse holder must be installed within 72" (183 cm) of the positive (+) battery terminal. Connect remaining lead from fuse holder to positive (+) terminal of the three-way switch.
3. Splice the remaining positive lead (brown) from the automatic float switch into the positive lead (brown) from the pump.

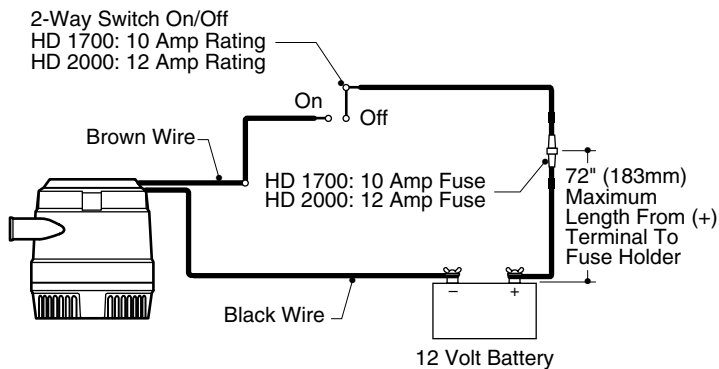
4. Connect the spliced leads to the "Manual" terminal of the three-way switch.

**Important:**

Although the switch is submersible, the lead wires must terminate in a waterproof connection. Mount wires above the highest possible water mark to prevent electrolysis damage to the boat.

5. With three-way switch on AUTO, test **float switch** by gently raising the float. Pump should activate with float up, and deactivate with float down. See figure 4
6. Test **pump** by ensuring that pump turns on when water level is above float switch, and shuts off when water level is pumped below float switch. Cycle the pump with water in the bilge several times to ensure that the system is functioning properly.

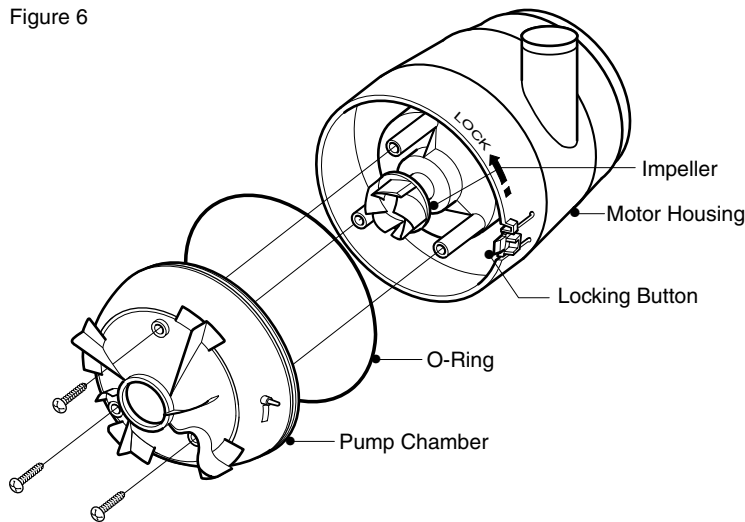
Figure 5



**WIRING INSTRUCTIONS FOR MANUAL OPERATION**

1. Splice suitable lengths of brown and black 16-gauge wire to existing pump wiring, enough to reach ON/OFF/ switch and battery.
2. Using insulated terminal connectors, connect positive lead (brown) to the ON/OFF switch. Connect negative lead (black) to ground.
3. In a location easily accessible for changing fuses, splice fuse holder into positive lead (brown). The fuse holder must be installed within 72" (183 cm) of the positive (+) battery terminal.
4. To check system, feed water into the pump. If flow appears to be too low, make sure wires have been connected properly: brown-to-positive (switch), and black-to-negative.

Figure 6



**CLEANING INSTRUCTIONS**

1. To remove the motor housing from base: Depress the locking button and twist motor housing counter-clockwise.
2. Remove three retaining screws that attach pump chamber to motor housing. Remove chamber.

3. Inspect impeller chamber and motor shaft behind impeller. Remove any foreign objects.
4. Inspect "O" ring on lower chamber for nicks, cuts or other damage. Apply a light coat of petroleum jelly to "O" ring surface.
5. Assemble chamber into motor housing. Ensure "O" ring is in retaining groove and alignment pin is in pin receptacle next to locking button.
6. Install and tighten retaining screws.
7. Attach motor housing to pump base by aligning four retaining tabs and twisting clockwise until lock button snaps into place.

**ATTWOOD HEAVY DUTY BILGE PUMP LIMITED WARRANTY:**

ATTWOOD CORPORATION, 1016 North Monroe, Lowell, Michigan 49331, ('Attwood') warrants to the original consumer purchaser that this Attwood Bilge Pump will be free from defects in materials and workmanship under normal use and service for:

**Recreational/Pleasure Boats** — A period of three (3) years from the date of original consumer purchase.

**Commercial Boats** — A period of one (1) year from the date of original consumer purchase.

This warranty does not extend to any batteries or fuses used with the pump. This limited warranty is not applicable if the bilge pump has been damaged by accident, improper installation, unreasonable use, lack of proper maintenance, unauthorized repairs or modifications, or other causes not arising out of defects in materials or workmanship. Attwood's obligations under this warranty are limited to repair of the product at Attwood's plant or replacement of the product at Attwood's option and at Attwood's expense. Any expenses involved in the removal, reinstallation, or transportation of the product are not covered by this warranty. The product must be returned to Attwood's plant at the address indicated above postage prepaid, with proof of original purchase including date. If Attwood is unable to replace the bilge pump and repair is not commercially practicable or cannot be timely made, or if the original consumer purchaser is willing to accept a refund in lieu of repair or replacement, Attwood may refund the purchase price, less an amount for depreciation. The acceptance by Attwood of any product returned or any refund provided by Attwood shall not be deemed an admission that the product is defective or in violation of any warranty.

**THIS WARRANTY IS ATTWOOD'S ONLY EXPRESS WARRANTY OF THIS PRODUCT. NO IMPLIED WARRANTY SHALL EXTEND BEYOND ONE (1) YEAR FROM THE DATE OF ORIGINAL CONSUMER PURCHASE. ATTWOOD SHALL NOT BE LIABLE FOR ANY DAMAGES FOR LOSS OF USE OF THIS PRODUCT, NOR FOR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES, COSTS OR EXPENSES.**

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may have other rights which may vary from state to state.