

## Manually Operated Flush-mounted Bilge Pump

- Compact, manually operated Bilge Pump with integrated handle in the pump cover
- Self-priming
- 3 m (9.8ft) lift/head
- Polypropylene body, metal fittings of stainless steel, nitrile rubber diaphragm and valves
- Positionable elbow connectors, 2 x 25 mm and 2 x 38 mm (1" and 1.5")
- Complies with ISO 15083

### Bilge Pumping system (see Fig. 1)

- For the installation of a manually operated bilge pumping system, you will need the following:
  - A bilge pump situated where it can be readily accessed while operating the boat; such as in the cockpit, wheelhouse or on deck
  - A strainer located in the bottom of the boat (not included)
  - A draining, thru-hull fitting for the discharge, located above the waterline
  - Flexible hoses (not included)
  - 2 x stainless steel hose clamps for each hose connection (not included)
  - The hose lengths should be kept as short as possible, with no substantial curves or kinks. The difference in height between the lowest and highest point of the hose must be less than 3 m (9.8ft).

### Installation:

Albinus's Manual Bilge Pump must be placed on a flat surface, where the pump is readily accessible and easy to operate. Be sure that there is enough space behind the bulkhead to position the pump and for the running of hoses to the rear of the pump. NOTE! Also make sure that the pump does not interfere in the operation of any equipment near it.

1. Cut out a hole of 140 mm diameter (5½") in the bulkhead where the pump is to be placed.
2. Remove the inlet and outlet elbow connectors from the pump by squeezing the holding clips together until the elbow connectors can be pulled out.
3. Place the base of the pump into the hole in the bulkhead, mark and then drill holes for the four retaining screws.
4. Install a strainer (not included) in the lowest part of the bilge and attach a hose for the inlet, with double stainless steel hose clamps. Run the hose to the pump, keeping hose lengths as short as possible, with no substantial curves or kinks.
5. Position thru-hull fittings (not included) at least 12" above the water line to prevent water from coming back into the hull. On sailboats, mount the thru-hull high enough on the center of the transom to be above the water line at all times.
6. Place fitting, if possible, on the same side as the steering wheel so the driver can see discharge of water when the pump is working properly.
7. Drill hole to match outside diameter of the thru-hull connector thread.
8. Place a small bead of suitable marine sealant around inside of the thru-hull connector flange. WARNING: Do not allow sealants containing acetic acid (vinegar smell), such as silicone rubber sealant, to contact the plastic pump housing or thru-hull connector. Such sealants can attack the plastic, causing the pump housing to crack, resulting in pump failure.
9. Insert thru-hull connector through the hole and tighten to hold the thru-hull connector firmly in place. CAUTION: Do not overtighten the nut.
10. Route discharge hose on an upward incline from the pump to the thru-hull connector. See Fig. 1. Avoid dips in hose that can trap water and airlock the pump. Avoid putting excess tension on hose, which can damage the pump outlet. Attach the discharge hose to the thru-hull fitting with double stainless steel hose clamps.
11. Attach the hoses to the elbow connectors, that you have removed above, with double stainless steel hose clamps. You may switch the position of the connectors on the pump, but YOU MUST also switch the position of the valves. The flat, inlet flap-valve fits into the connector with a narrower throat, where it fits into the pumphousing. The pointed, tricuspid-valve fits into the connector with a wider throat, where it fits into the pumphousing.
12. Carefully check that the valves are properly seated by rotating them slightly. Squeeze together the holding clips and re-insert the elbow connectors into the pumphousing until you hear an audible "click". The connectors should be able to freely rotate.
13. Fill the groove on the underside of the pump base with a marine sealant that does NOT contain acetic acid (vinegar smell).

14. Fix the base of the pump to the bulkhead with four retaining screws and immediately wipe away any surplus sealant. To access all four screws, you may have to un hinge the pump cover by pushing the cover hinge knuckle off of the body hinge pin.
15. The marine sealant must dry completely before replacing the cover and operating the pump.
16. Re-attach the cover by pressing the cover hinge knuckle onto the body hinge pin.

### Maintenance

The Albinus Flush-mounted Manual Bilge Pump does normally not require any specific maintenance. However, two situations could occur:

1. Blockage of the valves, where you feel an unusual amount of resistance while operating the pump
2. Damage to the diaphragm, where you immediately notice water leaking from the diaphragm while operating the pump.

### Valve maintenance

1. Unhinge/unpin the pump cover.
2. Unscrew and remove the pump from the bulkhead/deck.
3. Remove the elbow connectors, clean and replace if necessary the valves.
4. Reassemble the Connectors, making sure that the correct valve is matched with the correct connector: i.e. the flat, flap-valve is for the inlet connector.
5. Clean and renew the marine sealant. Screw the pump back into the bulkhead and re-hinge/repin the pump cover.

### Diaphragm replacement

1. Open the pump with the diaphragm extended.
2. Unhinge/unpin the pump cover.
3. Unscrew and remove the pump from the bulkhead/deck.
4. Remove the elbow connectors
5. Remove the hinge pin linking the diaphragm and the pump cover/handle. There is a lock washer in place. Remember the position and orientation of the lock washer. The pin can only be removed by pushing the pin in the direction of the outward bulge on the lock washer. Put the pin and lock washer in a safe place.
6. Remove the pumphousing from the base by twisting the bayonet fitting. You may have to apply soapy water around the rim where the diaphragm is in contact with the base.
7. Remove the diaphragm from the pumphousing. NOTE! There may be water between the diaphragm and the bottom of the pumphousing. At the same time, check and clean the bottom of the pumphousing and replace the valves if necessary.
8. Insert a new diaphragm, applying soapy water where the diaphragm is in contact with the base.
9. Assemble the pumphousing/diaphragm and base by twisting to engage the bayonet fitting.
10. Attach the elbow connectors in the correct position. The flat, inlet flap-valve fits into the connector with a narrower throat, where it fits into the pumphousing. The pointed, tricuspid-valve fits into the connector with a wider throat, where it fits into the pumphousing.
11. Attach the diaphragm and pump cover together with their pin and locking washer. The pin can only be inserted by pushing the pin in the direction of the outward bulge on the lock washer.
12. Clean and renew the marine sealant. Screw the pump back into the bulkhead and re-hinge/repin the pump cover.

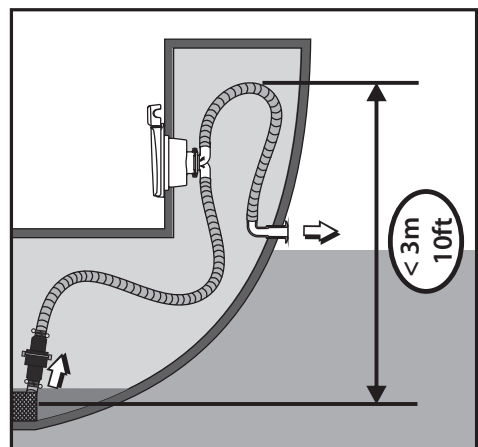


fig. 1

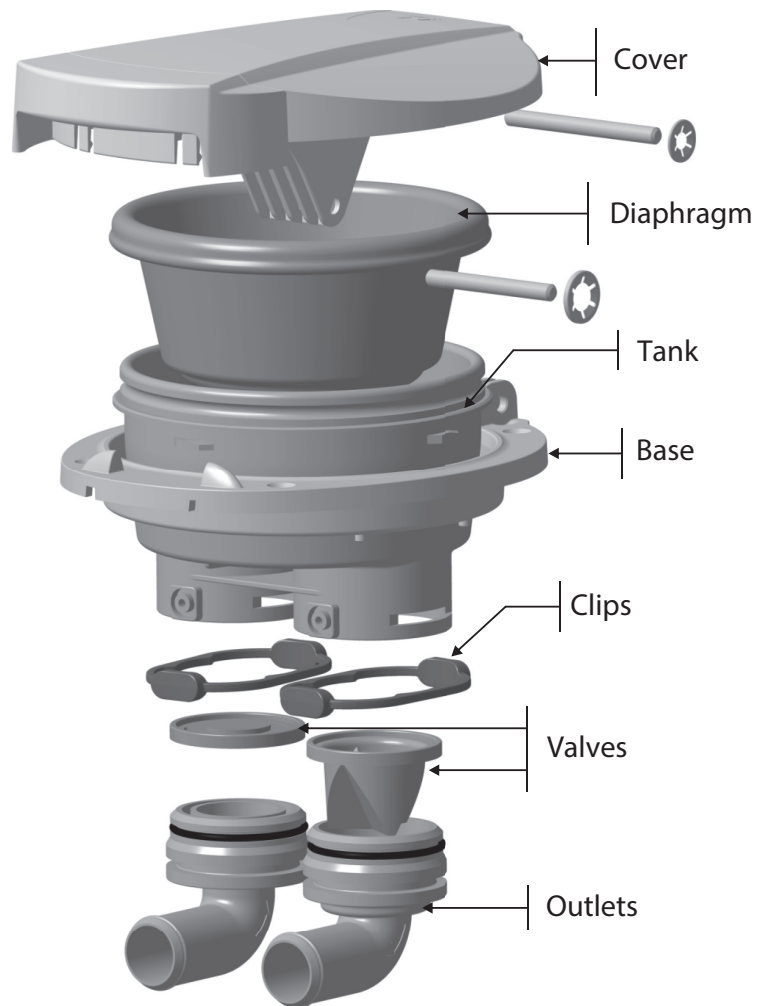


fig. 2

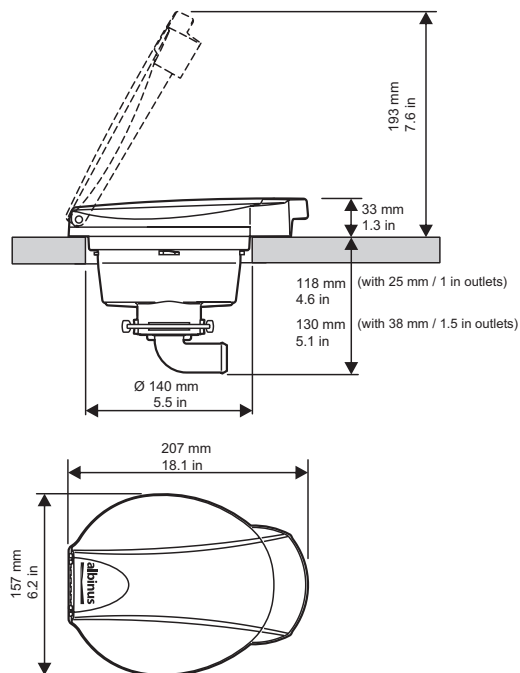


fig. 3

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**Albin Group AB**  
Kämpevägen 17  
55302 Jönköping, Sweden

info@albin.group  
www.albin.group