

8BSE-HADS

30, 40, 50, 60, 75
@ 1150 RPM

100, 125, 200
@ 1750 RPM



IMPORTANT! - Read all instructions in this manual before operating or servicing a pump.

Before installation, read the following instructions carefully. Failure to follow instruction and safety information could cause serious bodily injury, death and/or property damage. Each Barmesa product is carefully inspected to insure proper performance. Closely following these instructions will eliminate potential operating problems, assuring years of trouble-free service.

⚠ DANGER "Danger" indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.

⚠ WARNING "Warning" indicates an imminently hazardous situation which, if not avoided, MAY result in death or serious injury.


⚠ CAUTION "Caution" indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.


IMPORTANT! - Barmesa Pumps is not responsible for losses, injury or death resulting from failure to observe these safety precautions, misuse, abuse or misapplication of pumps or equipment.

ALL RETURNED PRODUCTS MUST BE CLEANED, SANITIZED, OR DECONTAMINATED PRIOR TO SHIPMENT, TO INSURE EMPLOYEES WILL NOT BE EXPOSED TO HEALTH HAZARDS IN HANDLING SAID MATERIAL. ALL APPLICABLE LAWS AND REGULATIONS SHALL APPLY.

⚠ WARNING Installation, wiring, and junction connections must be in accordance with the National Electric Code and all applicable state and local codes. Requirements may vary depending on usage and location.

⚠ WARNING Installation and servicing is to be conducted by qualified personnel only.

 Keep clear of suction and discharge openings. Do not insert fingers in pump with power connected; the rotating cutter and/or impeller can cause serious injury.

 Always wear eye protection when working on pumps. Do not wear loose clothing that may become entangled in moving parts.

⚠ DANGER Pumps build up heat and pressure during operation. Allow time for pumps to cool before handling or servicing the pump or any accessory items associated with or near the pump.

⚠ DANGER This pump is not intended for use in swimming pools or water installations where there is human contact with pumped fluid.

⚠ DANGER Risk of electric shock. To reduce risk of electric shock, always disconnect pump from power source before handling any aspect of the pumping system. **Lock out power and tag.**

⚠ WARNING Do not use these pumps in water over 104° F. Do not exceed manufacturers recommended maximum performance, as this could cause the motor to overheat.

⚠ DANGER Do not lift, carry or hang pump by the electrical cables. Damage to the electrical cables can cause shock, burns or death. **Never** handle connected power cords with wet hands. Use appropriate lifting device.

⚠ WARNING Ground Fault Circuit Interrupter (GFCI) to be used with plug-in type power cord.

⚠ WARNING Sump and sewage pumps often handle materials which could cause illness or disease. Wear adequate protective clothing when working on a used pump or piping. Never enter a basin after it has been used.

⚠ DANGER Failure to permanently ground the pump, motor and controls before connecting to power can cause shock, burns or death.

⚠ DANGER These pumps are not to be installed in locations classified as hazardous in accordance with the National Electric Code, ANSI/NFPA 70.

⚠ WARNING The Uniform Plumbing Code (UPC) states that sewage systems shall have an audio and visual alarm that signals a malfunction of the systems, that are required to reduce the potential for property damage.

IMPORTANT! - Prior to installation, record Model Number, Serial, Amps, Voltage, Phase and HP from pump name plate for the future reference. Also record the Voltage and Current Readings at Startup:

| 1 Phase Models | |
|----------------|-------------|
| Amps: | Volts: |
| 3 Phase Models | |
| Amps L1-2: | Volts L1-2: |
| Amps L2-3: | Volts L2-3: |
| Amps L3-1: | Volts L3-1: |

Model Number: _____

Serial: _____

PHASE: _____ HP: _____

- DISCHARGE:** 8", 125lb, flange horizontal.
- SPHERICAL SLD HNDLG:** 3"
- LIQUID TEMPERATURE:** 104° F (40° C) max.
- VOLUTE:** Cast iron ASTM A-48 class 30.
- WEARING:** Bronze.
- MOTOR HOUSING:** Cast iron ASTM A-48 class 30.
- SEAL PLATE:** Cast iron ASTM A-48 class 30.
- IMPELLER:** 3 vanes , closed, with a bronze wear ring and vanes on back side. Cast iron ASTM A-48 class 30.

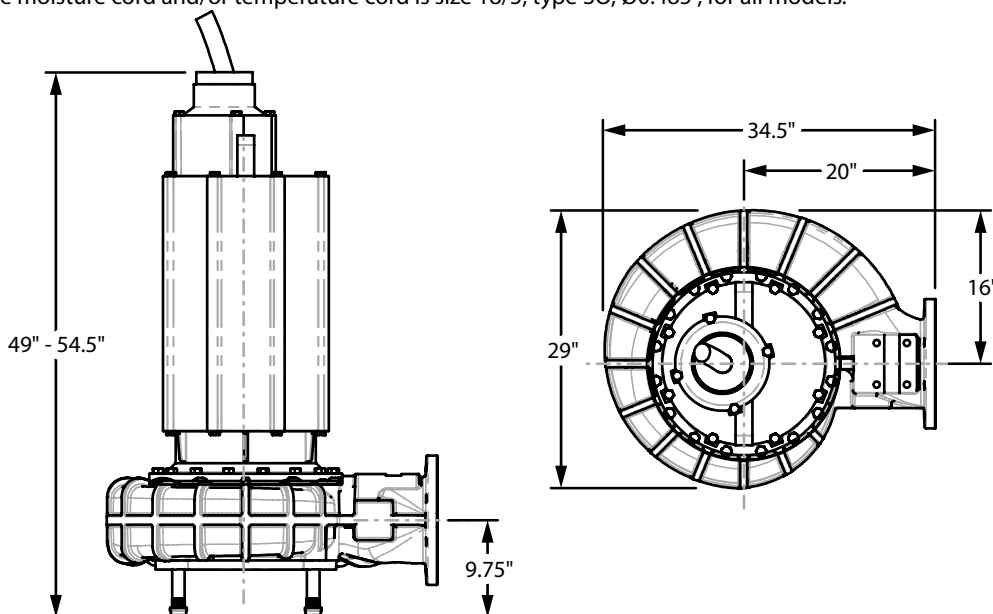
- SHAFT:** 416 series stainless steel.
- SQUARE RINGS:** Buna-N.
- PAINT:** Air dry enamel, water based.
- SEAL:** Double mechanical, oil filled chamber. Ceramic stationary seat, carbon ring and exclusion seal in the rotatory set, Buna-N elastomer and stainless steel hardware.

- DIAPHRAGM:** Buna-N.
- HARDWARE:** 300 series stainless steel.
- CORD ENTRY:** 25 ft of neoprene cord, sealed against moisture.
- UPPER BEARING:** Ball, single row, oil lubricated, for radial load.
- LOWER BEARING:** Ball, single row, oil lubricated, for radial and thrust load.
- MOTOR:** Three phase, NEMA B, air cooled. Explosion Proof, Class 1, Division 1, Group C & D. Requires overload protection to be included in control panel.

- MOISTURE SENSOR:** Normally open (N/O) included.
- TEMPERATURE SENSOR:** Normally closed (N/C) included.
- OPTIONAL EQUIPMENT:** Impeller trimming, additional cord, tungsten carbide seal, slide rail coupling (SRC-8).

| MODEL | HP | VOLTS | PHASE | RPM (Nominal) | MAX AMPS | LOCKED ROTOR AMPS | NEMA CODE | CORD SIZE | CORD TYPE | CORD O. D. | "A" | WEIGHT (pounds) |
|----------------|-----|-------|-------|---------------|----------|-------------------|-----------|-----------|-----------|------------|-------|-----------------|
| 8BSE30046HADS | 30 | 460 | 3 | 1150 | 38.9 | 173 | E | 8/4 | 50W-A | 0.99" | 49.2" | 1700 |
| 8BSE40046HADS | 40 | 460 | 3 | 1150 | 55 | 210 | D | 6/4 | 50W-A | 1.12" | 49.2" | 1700 |
| 8BSE50046HADS | 50 | 460 | 3 | 1150 | 71.2 | 282 | D | 4/4 | 50W-A | 1.35" | 49.2" | 1706 |
| 8BSE60046HADS | 60 | 460 | 3 | 1150 | 82 | 328 | D | 2/4 | 50W-A | 1.55" | 49.2" | 1711 |
| 8BSE75046HADS | 75 | 460 | 3 | 1150 | 92.5 | 398 | E | 2/4 | 50W-A | 1.55" | 49.2" | 2028 |
| 8BSE100044HADS | 100 | 460 | 3 | 1750 | 124 | 504 | D | 1/0/4 | W | 1.79" | 49.2" | 2050 |
| 8BSE125044HADS | 125 | 460 | 3 | 1750 | 158 | 703 | D | 3/0/4 | W | 2.07" | 54.3" | 2061 |
| 8BSE150044HADS | 150 | 460 | 3 | 1750 | 185 | 865 | E | 3/0/4 | W | 2.26" | 54.3" | 2258 |

The moisture cord and/or temperature cord is size 18/5, type SO, Ø0.485", for all models.



► Receiving inspection

Upon receiving the pump, it should be inspected for damage or shortages. If damage has occurred, file a claim immediately with the company that delivered the pump. If the manual is removed from the packaging, do not lose or misplace.

► Storage

Any product that is stored for a period longer than six (6) months from the date of purchase should be bench tested prior to installation. A bench test consists of, checking the impeller to assure it is free turning and a run test to assure the motor (and switch if provided) operate properly.

► Controls

Manual models require a separate approved pump control device or panel for automatic operation. Be sure the electrical specification of the control selected properly match the electrical specifications of the pump.

► Submergence

The pump should always be operated in the submerged condition. The minimum sump liquid level should never be less than above the pump's volute (See Figure 1).

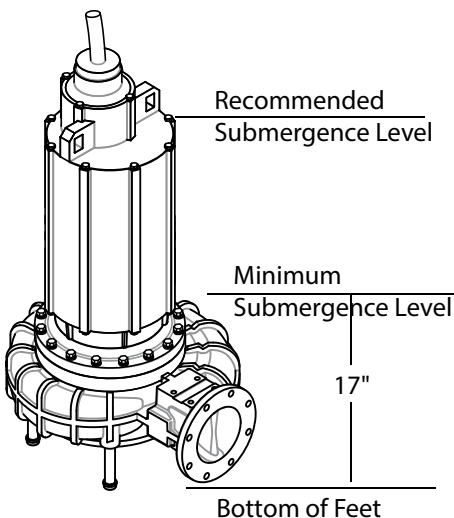


Figure 1

► Installation

These pumps are recommended for use in a sump, basin or lift station. The sump, basin or lift station shall be sealed and vented in accordance with local plumbing codes. **This pump is designed to pump sewage, effluent or wastewater, non-explosive and non-corrosive liquids and shall NOT be installed in locations classified as hazardous in accordance with the National Electrical Code (NEC) ANSI/NFPA 70 or Canadian Electric Code (CEC).** The pump should never be installed in a trench, ditch, or hole with a dirt bottom. The legs will sink into the dirt and the suction will become plugged.

The installation should be at a sufficient depth to ensure that all plumbing is below the frost line. If this is not feasible, remove the check valve and size the basin to accommodate the additional backflow volume.

Pumps are most commonly installed in simplex or duplex stations or basins with a slide rail system (Barmesa SRC), which allows the pump(s) to be installed or removed without requiring personnel to enter the station, or resting on the basin floor.

► Discharge Piping

Discharge piping should be as short as possible and sized no smaller than the pump discharge. **Do not reduce the discharge pipe size below that which is provided on the pump.** Both a check valve and a shut-off valve are recommended for each pump. The check valve is used to prevent backflow into the sump. The shut-of valve is used to manually stop system low during pump servicing.

► Liquid Level Controls

The level control(s) should be mounted on the discharge piping, a cable rack or float pole. The level control should have adequate clearance so it cannot hang up in it's swing and that the pump is completely submerged when the level control is in the "Off" mode. By adjusting the cord tether the control level can be changed. One cycle of operation should be observed, so that any potential problems can be corrected.

It is recommended that the level control float should be set to insure that the liquid in the sump never drops below the top of the motor housing or a minimum level of 10 inches above the basin floor.

► Electrical Connections

Power cable:

The power cable mounted to the pump must not be modified in any way except for shortening to a specific application. Any splice between the pump and the control panel must be made in accordance with the electric codes. It is recommended that a junction box, if used, be mounted outside the sump or be of at a minimum Nema 4 construction if located within the wet well. **DO NOT USE THE POWER CABLE TO LIFT PUMP.**

Always rely upon a Certified Electrician for installation.

Overload Protection:

Three Phase - The Normally Closed (N/C) thermal sensor is embedded in the motor windings and will detect excessive heat in the event an overload condition occurs. The thermal sensor will trip when the windings become too hot and will automatically reset when the pump motor cools to a safe temperature. It is recommended that the thermal sensor be connected in series to an alarm device to alert the operator of an overload condition, and/or the motor starter coil to stop the pump. In the event of an overload, the source of this condition should be determined and repaired.

⚠ WARNING DO NOT ALLOW THE PUMP TO CYCLE OR RUN IF AN OVERLOAD CONDITION OCCURS.

Moisture Sensors - A normally open (N/O) sensor rated of 1 watt @330K ohms, 500 volt, is installed in the pump seal chamber which will detect any moisture present. It is recommended that this detector be wired in series to an alarm device or motor starter coil to alert the operator that a moisture detect has occurred. In the event of a moisture detect, check the individual moisture sensor probe leads for continuity, (∞ resistance = no moisture) and the junction box/control box for moisture content.

These situations may induce a false signal in the moisture detecting circuit. If none of the above test prove conclusive, the pump(s) should be pulled and the source of the failure repaired. **IF A MOISTURE DETECT HAS OCCURRED MAINTENANCE SHOULD BE PERFORMED AS SOON AS POSSIBLE!**

If current through the temperature sensor exceeds the values listed, an intermediate control circuit relay must be used to reduce the current or the sensor will not work properly.

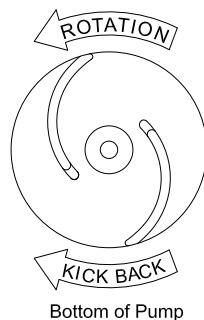
| TEMPERATURE SENSOR ELECTRICAL RATINGS | | |
|---------------------------------------|--------------------|----------------|
| Volts | Continuous Amperes | Inrush Amperes |
| 220-240 | 1.50 | 15.0 |
| 440-480 | 0.75 | 7.5 |

Wire Size:

If longer power cable is required consult a qualified electrician for proper wire size.

► Pre-Operation

- 1. Check Voltage and Phase** - Compare the voltage and phase information stamped on the pump name plate.
- 2. Check Pump Rotation** - Improper motor rotation can result in poor pump performance and can damage the motor and/or pump. Check rotation on three phase units by momentarily applying power and observe the "kickback".



Kickback should always be in a counter-clockwise direction as viewed from motor end or opposite to impeller rotation. Impeller rotation is counter-clockwise as viewed from bottom of pump.

3. Name Plate - Record the information from the pump name plate to drawing in front of manual for future reference.

4. Insulation Test - An insulation (megger) test should be performed on the motor. Before the pump is put into service. The resistance values (ohms) as well as the voltage (volts) and current (amps) should be recorded.

5. Pump-Down Test - Be sure pump has been properly wired, lowered into the basin, sump or lift station, check the system by filling with liquid and allowing the pump to operate through its pumping cycle. The time needed to empty the system, or pump-down time along with the volume of water, should be recorded.

► Maintenance

No lubrication or maintenance is required. Perform the following checks when pump is removed from operation or when pump performance deteriorates:

- Inspect motor chamber for oil level and contamination.
- Inspect impeller and body for excessive build-up or clogging.
- Inspect motor, bearings and shaft seal for wear or leakage.

► Servicing

NOTE: Item numbers in () refer to Figure 3.

► Impeller and Volute

Disassembly - Disconnect power. To clean out the pump body (12), clean out or replace impeller (7), or replace wear ring (13), remove hex nuts (2) and vertically lift motor assembly from the pump body (12), and then lift out back plate (4).

Clean out the pump body, if necessary, examine wear ring (13) and replace if worn. If the wear ring requires replacing, split the wear ring and remove, be careful not to damage the suction cover (16). Clean and examine impeller (7) for pitting or wear, replace if required.

Install impeller and motor assembly onto volute (12). Apply thread locking compound to threads of each cap screw (2). Position lockwasher (2) on cap screws (2) and torque to 24 ft/lbs. Check for free rotation of motor and impeller.

To remove impeller (7), remove screw (10) (or nut), lockwasher (9) and impeller washer (8). The impeller is keyed onto the shaft with a square shaft key and to remove, pull impeller straight off the shaft using a wheel puller if required. Inspect gasket (15) if suction cover (16) has been removed, and replace if cut or damaged. Before reinstallation, check the motor shaft and impeller bore for damage.

Reassembly - To install wear ring (13) first apply retaining compound to the bore of suction cover (16) and then press wear ring (13) into bore of suction cover (16) until seated. Position gasket (15) on volute, and locate suction cover (16) on volute (12), apply thread locking compound to socket head screws (17), and tighten into volute (12).

To install impeller (7), apply a thin film of oil to motor shaft and slide impeller straight onto shaft, keeping keyways lined up. Drive shaft key into keyway.

Locate impeller washer (8) on shaft, apply thread lock primer (such as LOCTITE® Primer T), let set per manufacturer's directions, to screw (10) threads, thread screw (10) into shaft and torque to 35 ft/lbs. Rotate impeller to check for binding.

⚠ WARNING DO NOT disassemble the Reliance motor in any way, except for outer seal, as this will void warranty.

► **Motor, Cables and Inner Shaft Seal**

The Submersible pump motor is manufactured by Reliance® Electric Co. and must be serviced and repaired by Reliance approved service centers only. For lead reconnection information, contact Reliance Electric Co., giving motor serial number.

⚠ WARNING ALL repairs, other than lead reconnects and outer seal replacement, shall be performed by an AUTHORIZED RELIANCE SERVICE FACILITY. Any other repairs performed by the customer or non-reliance service facilities negates the motor warranty.

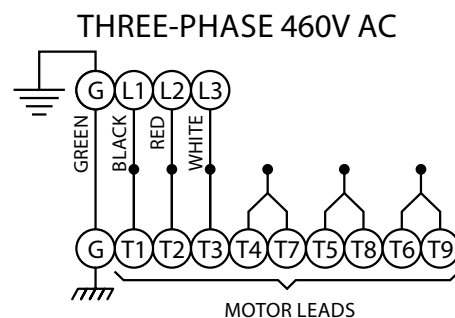


Figure 2

| Cable | Motor Lead Number |
|-------|-------------------|
| Green | Green |
| Black | 1 |
| Red | 2 |
| White | 3 |
| | 4 and 7 together |
| | 5 and 8 together |
| | 6 and 9 together |

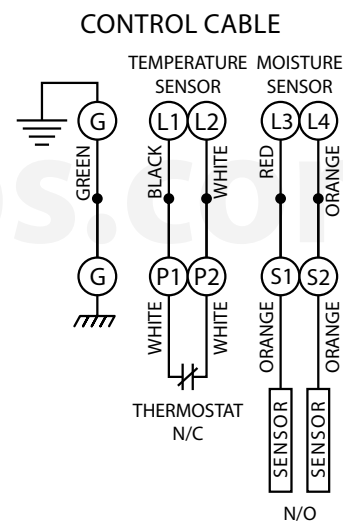
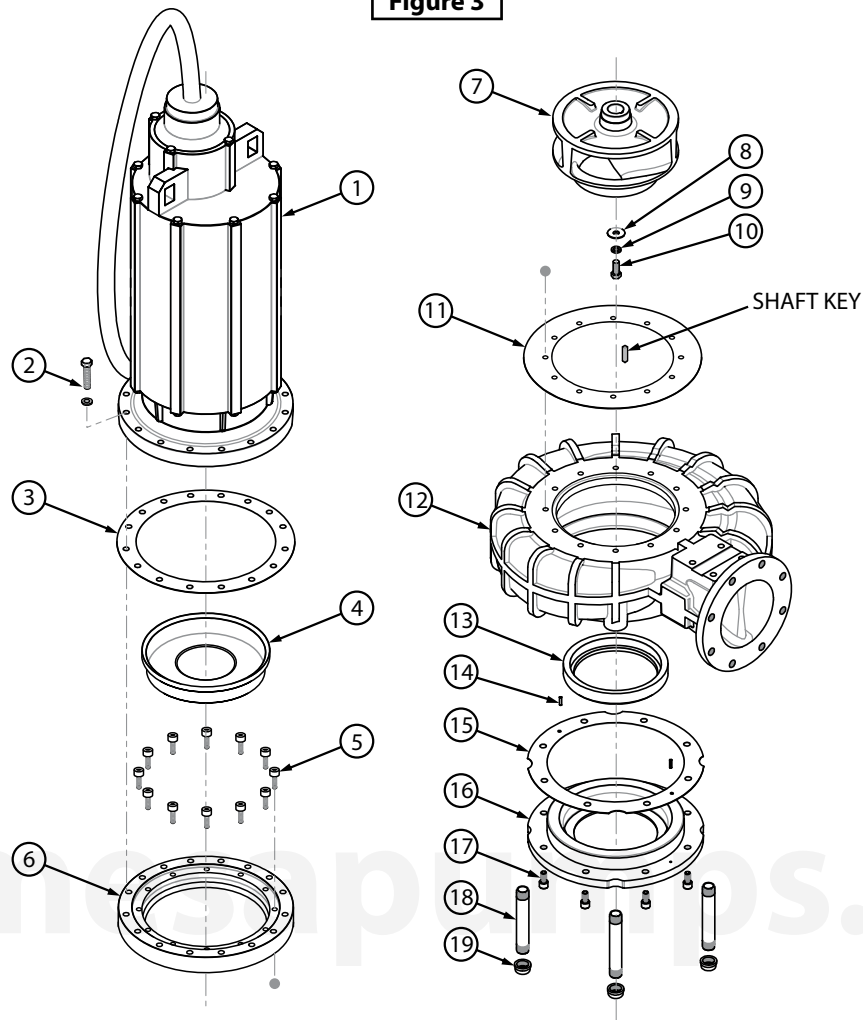


Figure 2

| Control Cable | Lead Number |
|---------------|------------------|
| Black | L1 (Temperature) |
| White | L2 (Temperature) |
| Red | L3 (Moisture) |
| Orange | L4 (Moisture) |
| Green | Ground |

Figure 3



| PART LIST | | | |
|-----------|----------|---|------|
| ITEM | PART No. | DESCRIPTION | QTY. |
| 1 | - | RELIANCE MOTOR | 1 |
| 2 | 91010015 | LOCKWASHER 5/8" STAINLESS | 8-16 |
| | 91010355 | CAP SCREW 5/8" x 2" STAINLESS | |
| 3 | - | MOTOR GASKET | 1 |
| 4 | 03020022 | ADAPTER | 1 |
| 5 | 91010396 | SOCKET HD SCREW 5/8" x 1 1/2" STAINLESS | 12 |
| 6 | 30400105 | MOTOR ADAPTER | 1 |
| 7 | 03140107 | IMPELLER | 1 |
| 8 | 30400415 | IMPELLER WASHER | 1 |
| 9 | 91010064 | LOCKWASHER 3/4" STAINLESS | 1 |
| 10 | 91010359 | HEX HD SCREW 3/4" x 2" STAINLESS | 1 |
| 11 | 92010170 | VOLUTE GASKET | 2 |
| 12 | 03090062 | VOLUTE | 1 |
| 13 | 30400301 | WEAR RING | 1 |
| 14 | 91010181 | BOLT 1/4" x 1" STAINLESS | 2 |
| 15 | 92010169 | SUCTION FLANGE GASKET | 1 |
| 16 | 03050013 | SUCTION FLANGE | 1 |
| 17 | 91010396 | SOCKET HD SCREW 5/8" x 1 1/2" STAINLESS | 8 |
| 18 | 93010061 | PIPE 1" x 8" | 4 |
| 19 | 93010124 | PIPE PLUG 1" | 4 |

For Repair Part Please supply: Model Number and Serial as shown on Name Plate, and Part Description and Part Number as shown on Parts List.



Risk of electric shock. Always disconnect the pump from the power source before handling inspections or repairs.

| Symptom | Possible Cause(s) | Corrective Action |
|--|---|---|
| Pump will not run | <ol style="list-style-type: none"> 1. Poor electrical connection, blown fuse, tripped breaker or other interruption of power; improper power supply 2. Motor or switch inoperative (go to manual operation) <ol style="list-style-type: none"> 2a. Float movement restricted 2b. Switch will not activate pump or is defective 2c. Defective motor 3. Insufficient liquid level | <ol style="list-style-type: none"> 1. Check all electrical connections for security. Have electrician measure current in motor leads, if current is within $\pm 20\%$ of locked rotor Amps, impeller is probably locked. If current is 0, overload may be tripped. Remove power, allow pump to cool, then re-check current. 2a. Reposition pump or clean basin as required to provide adequate clearance for float 2b. Disconnect level control. Set ohmmeter for a low range, such as 100 ohms full scale and connect to level control leads. Actuate level control manually and check to see that ohmmeter shows zero ohms for closed switch and full scale for open switch. (Float Switch) 2c. Check winding insulation (Megger Test) and winding resistance. If check is outside of range, dry and re-check. If still defective, replace per service instructions. |
| Pump will not turn off | <ol style="list-style-type: none"> 2a. Float movement restricted 2b. Switch will not activate pump or is defective 4. Excessive inflow or pump not properly sized for application 9. Pump may be air locked causing pump not to flow 14. H-O-A switch on panel is in "HAND" position | <ol style="list-style-type: none"> 3. Make sure liquid level is above the pump 4. Re-check all sizing calculations to determine proper pump size. 5. Check discharge line for restrictions, including ice if line passes through or into cold areas. 6. Remove and examine check valve for proper installation and freedom of operation 7. Open valve 8. Check impeller for freedom of operation, security and condition. Clean impeller cavity and inlet of any obstruction 9. Loosen union slightly to allow trapped air to escape. Verify that turn-off level of switch is set so that the suction is always flooded. Clean vent hole |
| Pump hums but doesn't run | <ol style="list-style-type: none"> 1. Incorrect low voltage 8. Impeller jammed or loose on shaft, or inlet plugged | <ol style="list-style-type: none"> 10. Check rotation. If power supply is three phase, reverse any two of three power supply leads to ensure proper impeller rotation 11. Repair fixtures as required to eliminate leakage 12. Check pump temperature limits and fluid temperature 13. Replace portion of discharge pipe with flexible connector or tighten existing piping. |
| Pump delivers insufficient capacity | <ol style="list-style-type: none"> 1. Incorrect low voltage 4. Excessive inflow or pump not properly sized for application 5. Discharge restricted 6. Check valve partially closed or installed backwards 7. Shut-off valve closed 8. Impeller jammed or loose on shaft, or inlet plugged 9. Pump may be air locked causing pump not to flow 10. Piping fixtures leaking or discharge before the nozzle | <ol style="list-style-type: none"> 14. Turn to automatic position 15. Check for leaks around basin inlet and outlets |
| Pump cycles too frequently or runs periodically when fixtures are not in use | <ol style="list-style-type: none"> 6. Check valve partially closed or installed backwards 11. Fixtures are leaking 15. Ground water entering basin | |
| Pump shuts off and turns on independent of switch, (trips thermal overload protector). CAUTION! Pump may start unexpectedly. Disconnect power supply. | <ol style="list-style-type: none"> 1. Incorrect low voltage 4. Excessive inflow or pump not properly sized for application 8. Impeller jammed or loose on shaft, or inlet plugged 12. Excessive water temperature (internal protection only) | |
| Pump operates noisily or vibrates excessively | <ol style="list-style-type: none"> 2c. Worn bearings, motor shaft bent 5. Debris in impeller cavity or broken impeller 10. Pump running backwards 13. Piping attachments to building structure too loose or rigid | |

NOTE: Barmesa Pumps assumes no responsibility for damage or injury due to disassembly in the field. Disassembly of the pumps or supplied accessories other than at Barmesa Pumps or its authorized service centers, automatically voids warranty.

BARMESA PUMPS FACTORY WARRANTY

Barmesa Pumps warrants that products of our manufacture will be free of defects in material and workmanship under normal use and service for 18 months from date of manufacture or 12 months from installation date whichever occurs first. This warranty gives you specific legal rights, which vary from state to state.

This warranty is a limited warranty, and no warranty related claims of any nature whatsoever shall be made against Barmesa Pumps, until the ultimate consumer or his/her successor notifies us in writing of the defect and delivers the product and/or defective part(s) freight prepaid to our factory or nearest authorized service station as instructed by Barmesa Pumps. THERE SHALL BE NO FURTHER LIABILITY, WHETHER BASED ON WARRANTY, NEGLIGENCE OR OTHERWISE. PRODUCT SHALL BE EITHER REPLACED OR REPAIRED AT THE ELECTION OF BARMESA PUMPS. Guarantees relating to performance specifications provided in addition to the foregoing material and workmanship warranties on a product manufactured by Barmesa Pumps, if any, are subject to possible factory testing. Any additional guarantees, in the nature of certified performance specifications or time frame must be in writing and such writing must be signed by our authorized factory manager at time of order placement and/or at time of quotation. Due to inaccuracies in field testing and should a conflict arises between the results of field testing conducted by or for the user, Barmesa Pumps reserves the right to have the product returned to our factory for additional testing.

This warranty shall not apply when damage is caused by (1) improper installation, (2) improper voltage, (3) lightning, (4) excessive sand or other abrasive material, (5) corrosion build-up due to excessive chemical content or (6) uncontrollable acts of god. Any modification of the original equipment will also void the warranty. We will not be responsible for loss, damage or labor cost due to interruption of service caused by defective pumps, parts or systems. Barmesa Pumps will not accept charges incurred by others without our prior written approval.

This warranty is void if our inspection reveals the product was used in a manner inconsistent with normal industry practice and/or our specific recommendations. The purchaser is responsible for communication of all necessary information regarding the application and use of the product. UNDER NO CIRCUMSTANCES WILL WE BE RESPONSIBLE FOR ANY OTHER DIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO TRAVEL EXPENSES, CONTRACTOR FEES, UNAUTHORIZED REPAIR SHOP EXPENSES, LOST PROFITS, LOST INCOME, LABOR CHARGES, DELAYS IN PRODUCTION, IDLE PRODUCTION, WHICH DAMAGES ARE CAUSED BY ANY DEFECTS IN MATERIAL AND/OR WORKMANSHIP AND/OR DAMAGE OR DELAYS IN SHIPMENT. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTY. No rights extended under this warranty shall be assigned to any other person, whether by operation of law or otherwise, without our prior written approval.

IMPORTANT!

If you have a claim under the provision of the warranty, contact Barmesa Pumps or your authorized Barmesa Pumps Distributor:
warranty@barmesapumps.com
www.barmesapumps.com



Barmesa®
Pumps

