**WARNING**

This product should not be used for fluid transfer into aircraft. This product is not suited for use with fluids for human consumption or fluids containing water.

**GENERAL DESCRIPTION**

The Fill-Rite Series BD310 products are positive displacement, rotary vane pumps. Their rugged motors are explosion-proof and rain-proof to ensure a long life of dependability.

**MECHANICAL INSTALLATION INSTRUCTIONS**

Pump has a built-in check valve with pressure relief to prevent fluid thermal expansion from causing unsafe system pressures.

Do **NOT** use additional check valves or foot valves unless they have a proper pressure relief valve built into them.

Pumps are furnished with a tank adapter for tank mounting; pedestals are available for island installations. All tanks must be properly vented. Biodiesel compatible filters are recommended when dispensing into vehicles.

Use oil resistant pipe sealant on all pipe threads to protect against leaks.

**SKID TANK MOUNTING (See figure 1)**

1. Cut a 1-1/2" pipe that will extend to at least 3" above bottom of tank when screwed into tank adapter and tank adapter is screwed into tank flange.
2. Screw pipe into tank adapter, then screw tank adapter into tank flange.
3. Mount pump on tank adapter.

**DIRECT MOUNTING TO UNDERGROUND TANK (see figure 2)**

1. Cut and thread both ends of a 2" pipe that will extend about 31" above the ground when installed in tank flange.
2. Install this pipe in tank flange. Screw 2" standard pipe coupling onto top of pipe.
3. Cut a 1-1/2" pipe that will extend to at least 3" above bottom of tank when screwed into tank adapter and tank adapter is screwed into 2" coupling.
4. Screw this pipe into tank adapter, then screw tank adapter into 2" coupling.
5. Mount pump on tank adapter.

**SAFETY INSTRUCTIONS**

To ensure safe and efficient operation, it is essential to read and follow each of these warnings and precautions.

1. Improper use or installation of this product can cause serious bodily injury or death.
2. **Do NOT** smoke near pump or use pump near an open flame. Fire could result.
3. Disconnect power to pump before servicing pump.
4. Take motors needing service to an authorized repair shop to maintain "explosion-proof" and "rain-proof" integrity.
5. A biodiesel compatible filter should be used on pump outlet to ensure that no foreign material is transferred to fuel tank.
6. The pump motor is equipped with thermal overload protection. If overheated, it will shut itself off without any damage to the windings. Turn off the pump power if this occurs. When the motor cools, it will restart without warning if power is on.
7. Storage tank should be anchored to prevent tipping in both the full and empty conditions.
8. To minimize static electricity build-up, keep nozzle in contact with container being filled while filling container.

**DANGER**

Electrical wiring should be done by a licensed electrician in compliance with local, state and national electrical code, ANSI/NFPA 70, 30, 30A as appropriate. Rigid conduit should be used and a proper ground must be provided to avoid the possibility of electrical shock. Failure to comply with this warning could result in serious injury and/or loss of property. Use only static wire, conductive hose when pumping flammable fluids.
ISLAND INSTALLATION (see figure 3)
1. Install tank and piping per illustration.
2. The threaded 1-1/2" suction pipe is to extend 32-1/2" above island.
3. Remove coupler from pedestal pipe by loosening set screws.
4. Slip pedestal pipe/pump base assembly over suction pipe.
5. Loosen screws in pump base to allow pedestal pipe to slide down exposing end of suction pipe.
6. Screw coupler onto suction pipe.
7. Slide pedestal pipe into coupler, tighten set screws. Tighten screws in pump base.
8. Mount pump on coupler.

ELECTRICAL INSTALLATION INSTRUCTIONS
1. Install pump as described in Mechanical Installation Instructions. Read and understand all the electrical wiring instructions before proceeding.

Pump motor voltage is factory set at 115 VAC. See figure 4 to change voltage setting.

2. Remove pump's electrical junction box cover and straighten the wires to make the stripped wire ends accessible outside of the junction box.

WARNING: AUX. WIRE IS LIVE WIRE (see figure 4). The AUX. lead wire (brown) is insulated and enclosed when shipped. Do not connect this wire without first verifying the 'ON' line voltage of the wire for compatibility to the equipment to be installed. Maximum amperage on wire is 1 ampere. The wire must be insulated and enclosed in the junction box if not used.

3. Power to the unit should be supplied from a dedicated 20 amp circuit breaker. No other equipment should be powered from this breaker. Threaded rigid conduit, seal fittings and conductor seal

*WARNING: AUX. WIRE IS LIVE WIRE!
The AUX. lead wire is insulated and enclosed when shipped. Do not connect this wire without first verifying the 'ON' line voltage of the wire for compatibility to the equipment to be installed. Maximum amperage on wire is 1 ampere. The wire must be insulated and enclosed in the junction box if not used.

VOLTAGE SELECTION SWITCH

Voltage select screw should be placed next to correct voltage setting (115 VAC shown)
## 300 SERIES PUMP PARTS LIST

<table>
<thead>
<tr>
<th>ITM. NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>QTY.</th>
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<tbody>
<tr>
<td>1</td>
<td>300G7376</td>
<td>Motor - 3/4 HP 115/230 VAC, 50/60 Hz (Models FR310, FR311)</td>
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<td>300G7375</td>
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<td>300G8368</td>
<td>Motor - 0.55KW 230 VAC, 50/60 Hz (Models FR311E, FR310J, FR311J)</td>
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<td>3</td>
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<td>Rotor Insert</td>
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<td>300KTH0034</td>
<td>Seal Assembly Kit (Includes Items 11 &amp; 15)</td>
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<td>5</td>
<td>300G9285</td>
<td>O-Ring Gasket Fluorocarbon (-236)</td>
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<td>700G7063</td>
<td>Rotor Cover</td>
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<td>3/8-16 x 3/4 HHCS</td>
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<td>8</td>
<td>300G8379</td>
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<td>300H0532</td>
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<td>700F2688</td>
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<td>Bypass Cap</td>
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<td>15</td>
<td>30F6660</td>
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<td>5/16-18 x 7/8 HHCS</td>
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<td>17</td>
<td>300F7739</td>
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<td>18</td>
<td>400F0191</td>
<td>O-Ring Gasket Fluorocarbon (-231)</td>
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**ACCESSORIES**

| TH14 | Pedestal Kit |
| BD901MK | Meter Kit |

**BD300KTH0712** Repair Kit (Includes items 3, 4, 5, 6, 8, 9, 12, 13, 18 & 22)

*Use Teflon® tape*

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**Date of Manufacture (Week-Year)**

8825 Aviation Drive
Fort Wayne, Indiana USA 46809
Tel 260 747-7524 Fax 260 747-3159

BD300H0654 REV. 0

3
**Electrical Installation Instructions (continued)**

should be used. Provisions must be made to break both legs of any AC circuit. Connect like colored pump wires to supply wires. Ground wire must be connected.

4. Fold wires into junction box and replace cover making sure that gasket is in place. Make sure screws are seated so there is no space between the cover and the junction box.

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**OPERATING INSTRUCTIONS**

1. Reset meter to 0 (if applicable).
2. Remove nozzle from nozzle boot and move switch lever up. This will turn the pump on.
3. Insert nozzle into container to be filled. To minimize static electricity buildup, keep nozzle in contact with container while dispensing fluid.
4. Operate nozzle lever to dispense fluid.
5. When desired amount of fluid has been dispensed, release nozzle lever, remove nozzle from container, move switch lever to down position to turn off pump, and replace nozzle in boot.

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**TROUBLESHOOTING**

**IF PUMP FAILS TO PRIME:**
- Check suction line for leaks or obstructions.
- Check bypass valve for dirt. The bypass poppet should slide freely.
- Open nozzle to allow air to escape from system

**PUMP WILL NOT START:**
- If motor hums but will not start, a probable cause is a stuck rotor. Remove rotor cover; check rotor and vanes for dirt.
- Have an electrician check the electrical power to the pump.

**LOW PumpING CAPACITY:**
- Strainer screen clogged
- Bypass valve not seated properly
- Obstruction in suction lines.
- Make sure all 8 vanes slide easily in the rotor slots.

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**PRODUCT WARRANTY**

Tuthill Transfer Systems ("Manufacturer") warrants to each consumer buyer of its Fill-Rite products (the "Buyer"), from the date of invoice or sales receipt, that goods of its manufacture ("Goods") will be free from defects of material and workmanship. Duration of this warranty is as follows:
- Heavy Duty Products - Two years
- Standard Duty Products – One year
- Economy Duty Products – One year
- Cabinet pumps, Parts, and Accessories - One year

Manufacturer’s sole obligation under the foregoing warranties will be limited to either, at Manufacturers’ option, replacing or repairing defective Goods (subject to limitations hereinafter provided) or refunding the purchase price for such Goods theretofore paid by the Buyer, and Buyer’s exclusive remedy for breach of any such warranties will be enforcement of such obligations of Manufacturer.

If Manufacturer so requests the return of the Goods, the Goods will be re-delivered to Manufacturer in accordance with Manufacturer’s instructions F.O.B. Factory. The remedies contained herein shall constitute the sole recourse of the Buyer against Manufacturer for breach of warranty. IN NO EVENT SHALL MANUFACTURER’S LIABILITY ON ANY CLAIM FOR DAMAGES ARISING OUT OF THE MANUFACTURE, SALE, DELIVERY, OR USE OF THE GOODS EXCEED THE PURCHASE PRICE OF THE GOODS. The foregoing warranties will not extend to Goods subjected to misuse, neglect, accident or improper installation or maintenance, or which have been altered or repaired by anyone other than Manufacturer or its authorized representative. THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED. No person may vary the foregoing warranties and remedies except in writing signed by a duly authorized officer of Manufacturer. Warranties or remedies that differ from the foregoing shall not otherwise be binding on Manufacturer. The Buyer’s acceptance of delivery of the Goods constitutes acceptance of the foregoing warranties and remedies, and all conditions and limitations thereof.