

FILL-RITE®

SERIES 300V 115 and 230 VOLT AC FUEL TRANSFER PUMP Owner's Operation & Safety Manual Models FR300V, FR301V, FR310V & FR311V

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 when pumping flammable fluids. Fire could result.
3. A Fill-Rite filter should be used on pump outlet to ensure that no foreign material is transferred to fuel tank.
4. Use gasoline and oil resistant thread sealant or sealant tape on all threaded joints to protect against leakage.
5. Storage tank should be anchored to prevent tipping in both the full and empty conditions.
6. To minimize static electricity buildup, only use static wire, conductive hose when pumping flammable fluids and keep nozzle in contact with container being filled.
7. The pump motor is equipped with thermal overload protection. If overheated, it will shut off without any damage to the windings. Be sure to turn off the pump power if this occurs. When the motor cools, it will restart without warning if power is on.
8. Take motors needing service to an authorized repair shop to maintain "explosion proof" and "rain proof" integrity.

DANGER

Electrical wiring should be done by a licensed electrician in compliance with local, state and national electric code NEC/ANSI/NFPA 70, NFPA 30, NFPA 30A, as appropriate to the intended use of the pump. Threaded rigid conduit, seal fittings and conductor seal should be used. Pump should be properly grounded. Improper use or installation of this product can cause serious bodily injury or death.

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.

INSTALLATION

GENERAL

Pumps are furnished with a tank adapter for skid tank mounting; pedestals are available for island installations. All tanks must be properly vented. A pressure retaining vent/fill cap can be used to reduce fuel loss due to evaporation but will reduce flow rate.

Fill-Rite filters are recommended when pumping fuels.

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.** Additional check valves will reduce flow rate.

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

SKID TANK MOUNTING

1. Cut a 1-1/4" 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

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 1-1/4" 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.

ISLAND INSTALLATION

1. Install tank and piping per illustration.
2. The threaded 1-1/4" 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

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

1. Install pump. Read and understand all the electrical wiring instructions before proceeding.
 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!** 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.
3. Power to the unit should be supplied from a dedicated 30 amp circuit breaker. No other equipment should be powered from this breaker. Threaded rigid conduit, seal fittings and conductor seal 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.

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.
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, replace nozzle in boot.

TROUBLESHOOTING

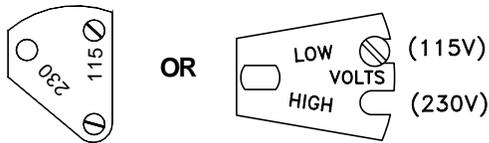
IF PUMP FAILS TO PRIME: Check suction line for leaks or obstructions.

Check bypass valve for dirt. The bypass poppet should slide freely.

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. Also have an electrician check the electrical power to the pump.

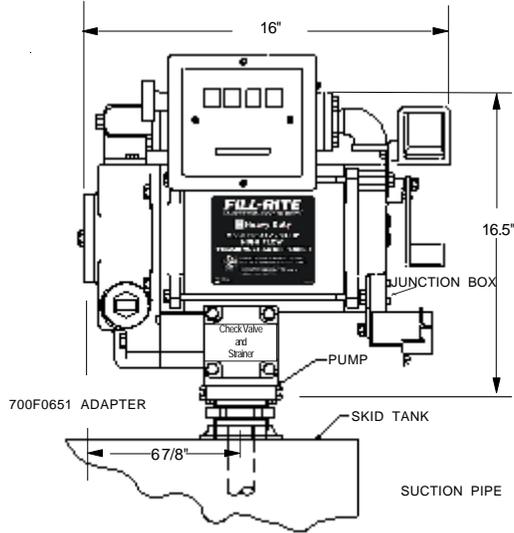
LOW PUMPING CAPACITY: Strainer screen clogged; bypass valve not seated properly; obstruction in suction lines. Make sure all 8 vanes slide easily in the rotor slots.

VOLTAGE SELECTION SWITCH

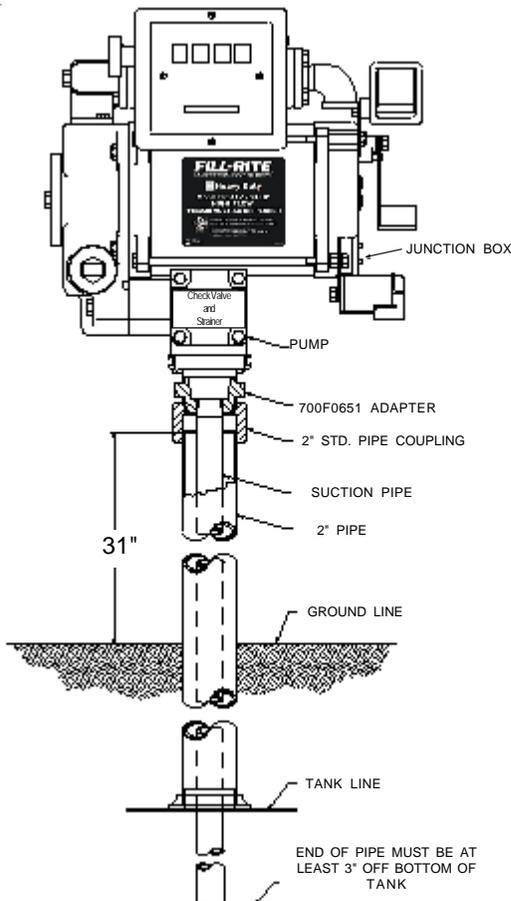


Voltage select screw should be placed next to correct voltage setting (115 VAC shown)

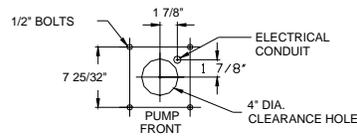
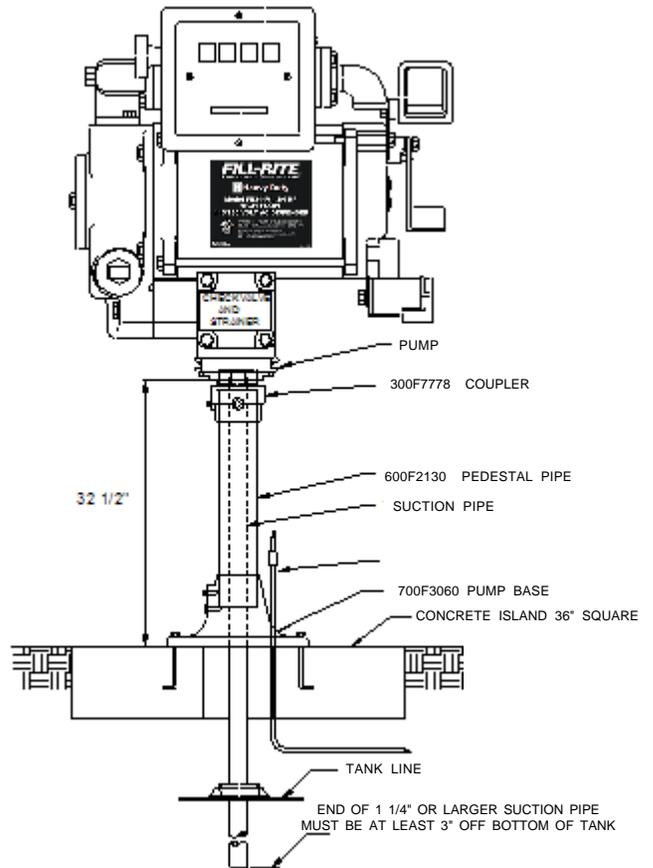
SKID TANK INSTALLATION



DIRECT MOUNTING INSTALLATION



TYPICAL ISLAND INSTALLATION



LAYOUT FOR
BASE ANCHOR BOLTS

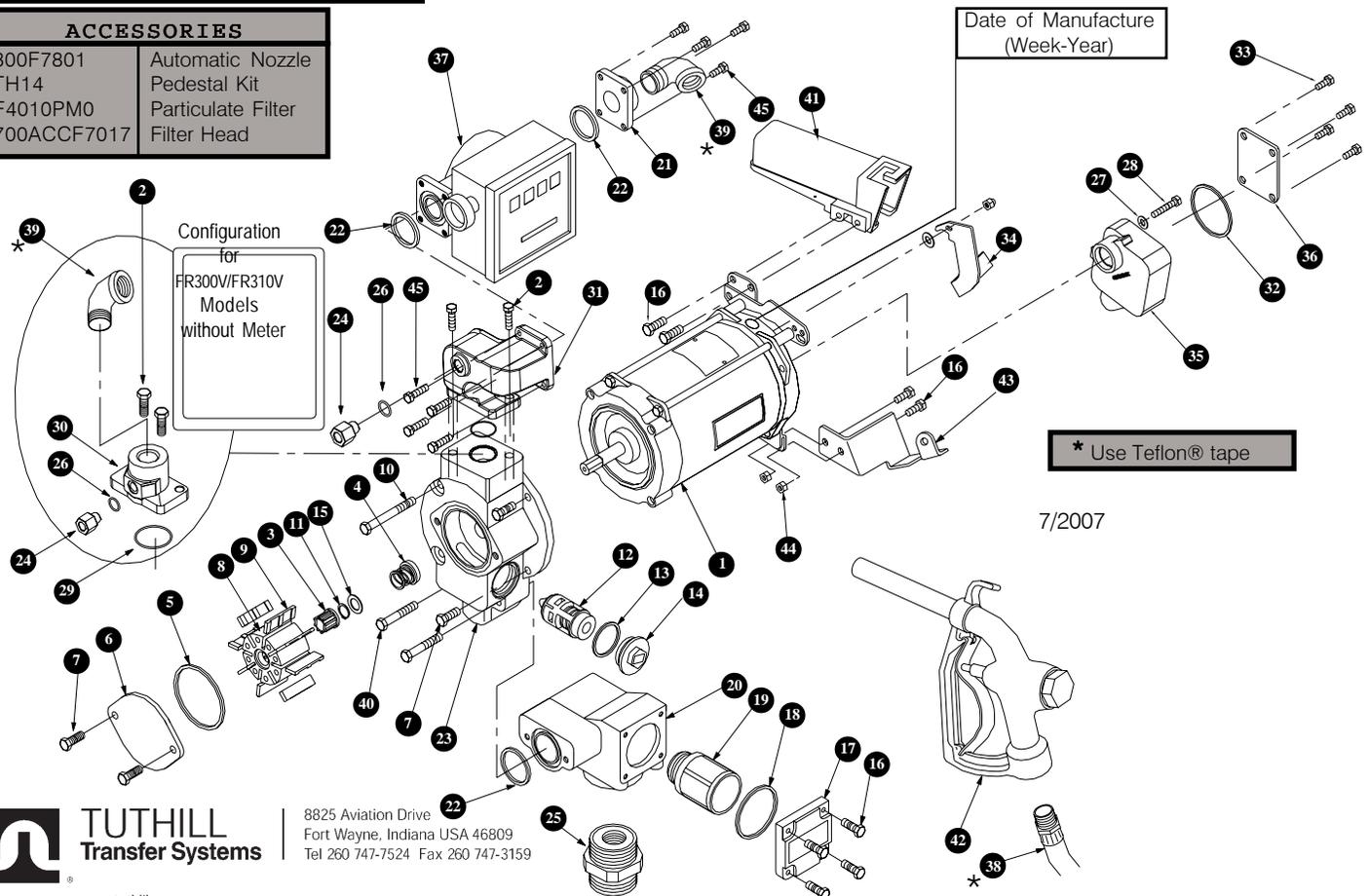
FR300V SERIES PUMP PARTS LIST

ITM. NO.	PART NO.	DESCRIPTION	QTY.	ITM. NO.	PART NO.	DESCRIPTION	QTY.
1	300G7376	Motor - 3/4 HP 115/230 VAC, 50/60 Hz (Models FR310V, FR311V) UL/CSA	1	23	300H0757	Pump Housing (Models FR310V & FR311V)	1
	300G7375	Motor - 1/2 HP 115/230 VAC, 50/60 Hz (Models FR300V, FR301V) UL/CSA	1	24	700H0928	Anti-siphon Device	1
	300G7638	Motor - 3/4 HP 115/230 VAC, 50 Hz (Model FR310VE, FR311VE) AUS	1	25	700F0651	2" x 1 1/4" Tank Adapter	1
	300G8368	Motor - 0.55KW 230 VAC, 50/60 Hz (Models FR310VE, FR311VE) ATEX,DEMCO,CE	1	26	1200F6576	Gasket for Antisiphon Device	1
2	704F3700	3/8-16 x .1.00 HHCS	2	27	300G9432	Washer 1/4" Split lock	1
3	300F7787	Rotor Insert	1	28	300G9273	10-32NC-2B X 1.50 SHCS	1
4	300KTH0034	Seal Assembly Kit(Includes Items 11&15)	1	29	700H0676	O-ring for flange	1
5	300F7743	O-Ring Gasket Buna (-236)	1	30	300H0129	Flange	1
6	700G7063	Rotor Cover	1	31	300H0133	Meter Flange	1
7	300G7296	3/8-16 x 3/4 HHCS	4	32	300G9129	O-ring 2-146	1
8	300G8379	Rotor	1	33	304F7904	1/4-20 1/2 HWHMS	4
9	300H0532	Vanes	8	34	300F7761	Switch Lever	1
10	300F7746	3/8-16 x 3 HHCS	2	35	300G8967	Junction Box	1
11	700F2688	Retaining Ring (Included w/Item 4)	1	36	300G8971	Junction Box Cover	1
12	300F7723	Bypass Valve Assembly	1	37	901MK300V	901 Meter (Models FR301V & FR 311V)	1
13	800F4380	O-Ring Buna (2-131)	1	38	300F7773	1" x 12' Hose	1
14	300F7731	Bypass Cap	1	39	800F4400	1" Street Elbow	1
15	30F4660	Seal Washer (Included w/Item 4)	1	40	300F7745	3/8-16 x 2 HHCS	2
16	700F2810	5/16-18 x 7/8 HHCS	8	41	300F7765	Nozzle Cover	1
17	300F7739	Check Valve Cover	1	42	700F3125	1" Manual Nozzle	1
18	300F7742	O-Ring Gasket Buna (-231)	1	43	300F7759	Nozzle Retainer	1
19	300F7735	Check Valve Assembly	1	44	700F2950	5/16 Lock Nut	2
20	300G8621	Lower Housing	1	45	100G8800	1/4-20 x 3/4 HWHTHS (FR301V & FR 311V)	8
21	900F8076	1" Meter Fitting	1	300KTG9180 BIODIESEL and E85 Kit (Includes items 2, 5, 11, 15, 4, 13, 14, 17, 21 & 22)			
22	300F7744	Inlet Gasket Buna (-224)	3				

300KTF7794	Repair Kit (Includes items 3, 4, 5, 6, 8, 9, 12, 13, 18 & 22)
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**For more information go to www.fillrite.com

ACCESSORIES	
300F7801	Automatic Nozzle Pedestal Kit
TH14	Particulate Filter
F4010PM0	Filter Head
700ACCF7017	

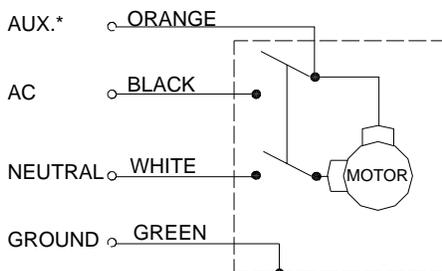


TROUBLESHOOTING		
PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump w on't prime	1. Suction line problem 2. Bypass valve open 3. Vanes sticking 4. Gasket leakage 5. Excessive rotor or vane wear 6. Outlet blocked 7. Vapor Lock	Check for leaks in suction line Remove and inspect valve; must move freely & be free of debris Check vanes and slots for nicks, burrs and wear Tighten covers and joints Check rotor & vanes for excessive wear or damage Check pump outlet, hose, nozzle & filter for blockage Reduce vertical and horizontal distance from pump to liquid; Remove automatic nozzle
Pump hums but will not operate	1. Dirt in pump cavity 2. Motor failure 3. Broken key	Clean out pump cavity Return to place of purchase Remove all debris & replace key
Low capacity	1. Excessive dirt in screen 2. Suction line problem 3. Bypass valve sticking 4. Vanes sticking 5. Excessive rotor or vane wear 6. Hose or nozzle damage 7. Plugged filter 8. Low fluid level	Remove and clean screen Check suction line for leaks or restrictions; it may be too small, too long or not airtight Remove and inspect valve; must move freely & be free of debris Check vanes and slots for wear Check rotor & vanes for excessive wear or damage Replace hose or nozzle Replace filter Fill tank
Pump runs slowly	1. Incorrect voltage 2. Vanes sticking 3. Wiring problem 4. Motor problem	Check incoming line voltage while pump is running Check vanes and slots for nicks, burrs and wear Check for loose connections Return to place of purchase
Motor stalls	1. Bypass valve sticking 2. Low voltage 3. Excessive rotor or vane wear 4. Debris in pump cavity	Remove and inspect valve; must move freely & be free of debris Check incoming line voltage while pump is running Check rotor & vanes for excessive wear or damage Clean pump cavity
Motor overheats	1. Pumping high viscosity fluids 2. Clogged screen 3. Restricted suction pipe 4. Motor failure 5. Pump rotor lock-up	These fluids can only be pumped for short periods of time (less than 30 minutes duty cycle) Remove and clean screen Remove and clean pipe Return to place of purchase Clean and check pump rotor and vanes
Motor will not turn on	1. No power 2. Switch failure 3. Motor failure 4. Thermal protector failure 5. Incorrect/loose wiring	Check incoming power Return to place of purchase Return to place of purchase Return to place of purchase Check wiring
Fluid leakage	1. Bad o-ring gasket 2. Dirty shaft seal 3. Bad shaft seal 4. Incompatible fluid 5. Loose fasteners	Check all o-ring gaskets Clean seal & seal cavity Replace seal Refer wetted parts list to fluid manufacturer Tighten fasteners

Figure 4. WIRE DIAGRAM
Series FR300V,FR301V,FR310V,FR311V

***WARNING: AUX. WIRE (orange) IS A 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.

115 VOLT WIRE DIAGRAM



230 VOLT WIRE DIAGRAM

