Troubleshooting

Motor stalls/ fuse blows or thermal protector trips repeatedly	1.Bypass valve sticking.	Remove and inspect valve: must move freely & be free of debris.
	2.Low voltage.	Check incoming line voltage while pump is running.
	3.Excessive rotor or vane wear.	Check rotor & vanes for excessive wear or damage.
	4. Debris in pump cavity.	Clean debris from pump cavity.
Motor overheats	1. Pumping high viscosity fluids.	These fluids can only be pumped for short periods of time(less than 30 minutes duty cycle).
	2. Clogged screen.	Remove and clean screen.
	3.Restricted suction pipe.	Remove and clean pipe.
	4.Motor failure.	Return to place of purchase
	5.Pump rotor lock-up.	Clean and check pump rotor and vanes.
Motor Inoperative	1.No power.	Check incoming power.
	2.Switch failure.	Replace switch.
	3.Motor failure.	Return to place of purchase.
	4.Thermal protector failure.	Return to place of purchase.
	5.Incorrect/loose wiring.	Check wiring.
Fluid leakage	1.Bad o-ring gasket.	Check all o-ring gaskets.
	2.Dirty shaft seal.	Clean seal & seal cavity.
	3.Bad shaft seal.	Replace seal.
	4.Incompatible fluid.	Refer wetted parts list to fluid manufacturer.
	5.Loose fasteners.	Tighten fasteners.
Pump hums but will not operate	1.Motor failure.	Return to place of purchase.
	2.Broken rotor key.	Remove all debris & replace key.

ITEM # FPWM
20 GPM FUEL TRANSFER PUMP WITH METER

READ INSTRUCTIONS AND WARNINGS BEFORE USING THIS PRODUCT.
This manual provides important information on proper operation & maintenance. Every effort has been made to ensure the accuracy of this manual. These instructions are not meant to cover every possible condition and situation that may occur. We reserve the right to change this product at any time without prior notice.

IF THERE IS ANY QUESTION ABOUT A CONDITION BEING SAFE OR UNSAFE, DO NOT OPERATE THIS PRODUCT!
If you experience a problem, have questions or need parts for this product, call Customer Service at 636-532-9888, Monday-Friday, 8 AM - 4 PM Central Time. A copy of the sales receipt is required.

FOR CONSUMER USE ONLY – NOT FOR PROFESSIONAL USE. KEEP THIS MANUAL, SALES RECEIPT & APPLICABLE WARRANTY FOR FUTURE REFERENCE.

Safety Information

WARNING! Electrical wiring should be performed ONLY by a licensed electrician in compliance with local, state, and national electrical code NEC/ANSI/ NFPA 70, NFPA 30, and NFPA 30A, as appropriate to the intended use of the pump. Threaded rigid conduit, sealed fittings, and conductor seal should be used where applicable. The pump must be properly grounded. Improper installation or use of this pump can result in serious bodily injury, or death!

WARNING! To ensure safe and proper operation of your equipment,it is critical to read and adhere to all of the following safety warnings and precautions. Improper installation or use of this product can cause serious bodily injury or death!

- NEVER smoke near the pump, or use the pump near open flames when pumping a flammable liquid! Fire can result!
- A filter should be used on the pump outlet to ensure no foreign material is transferred to the fuel tank.
- Threaded pipe joints and connections must be sealed with the appropriate sealant or sealant tape to minimize the possibility of leaks.
- Storage tanks must be securely anchored to prevent shifting or tipping when full or empty.
- To minimize static electricity build up, use only static wire conductive hose when pumping flammable fluids, and keep the fill nozzle in contact with the container being filled during the filling process.
- The pump motor is equipped with thermal overload protection;if overheated, the motor will shut off to prevent damage to the windings.

Electrical Wiring

CAUTION! DC powered pumps are designed to operate on either 12V or 24V DC (depending on model). Where applicable,use the supplied battery cable to supply power to the pump from a 12 or 24V DC battery. A 30 amp fuse (20 amp fuse on 24V DC motors) should be installed on the battery cable to protect the wire in case of electrical short.

CAUTION! Voltage drop in wiring varies depending on the distance from the battery to the pump and the gauge of the wire used.If the distance is greater than 20', refer to national,international,or local electrical codes to ensure the wire is of the correct size for this application.

Wiring Instructions

1. Remove pump's electrical junction box cover and straighten the 3 wires to make the stripped wire ends accessible outside of the junction box.
2. Strip 1 /2 inch of the insulation from the ends of the red and black cable wires. Using the furnished wire nuts, connect these wires to the pump wires matching the colors.Be sure no bare wire is exposed.
3. Fold wires into junction box and replace cover making sure the gasket is in place. Make sure all screws are seated so there is no space between the cover and the junction box.

Troubleshooting

Symptom	Cause	Cure
Pump won't prime	1. Suction line problem.	Check for leaks or obstructions in suction line.
	2. Bypass valve open.	Remove and inspect valve;must move freely&be free of debris.
	3.Vanes sticking.	Check vanes and slots for nicks,burrs and wear.
	4.Excessive rotor or vane wear.	Inspect rotor& vanes for excessive wear or damage;replace if necessary.
	5. Vapor Lock.	Reduce vertical and horizontal distance from pump to liquid; remove automatic nozzle.
Low capacity	1. Excessive dirt in screen.	Remove and clean screen.
	2. Suction line problem.	Check suction line for leaks or restrictions;it may be too small,too long or not airtight.
	3. Bypass valve sticking.	Remove and inspect valve;must move freely & be free of debris.
	4. Outlet blocked	Check pump outlet, hose, nozzle & filter for blockage.
	5.Vanes sticking.	Check vanes and slots for wear.
	6. Excessive rotor or vane wear.	Inspect rotor & vanes for excessive wear or damage; replace if necessary.
	7. Hose or nozzle damage.	Replace hose or nozzle.
	8. Plugged filter.	Replace filter.
	9.Low fluid level.	Fill tank.
Pump runs slowly	1. Incorrect voltage.	Check incoming line voltage while pump is running.
	2. Vanes sticking.	Inspect vanes and slots for nicks, burrs and wear.
	3. Wiring problem.	Check for loose connections.
	4.Motor problem.	Return to place of purchase.

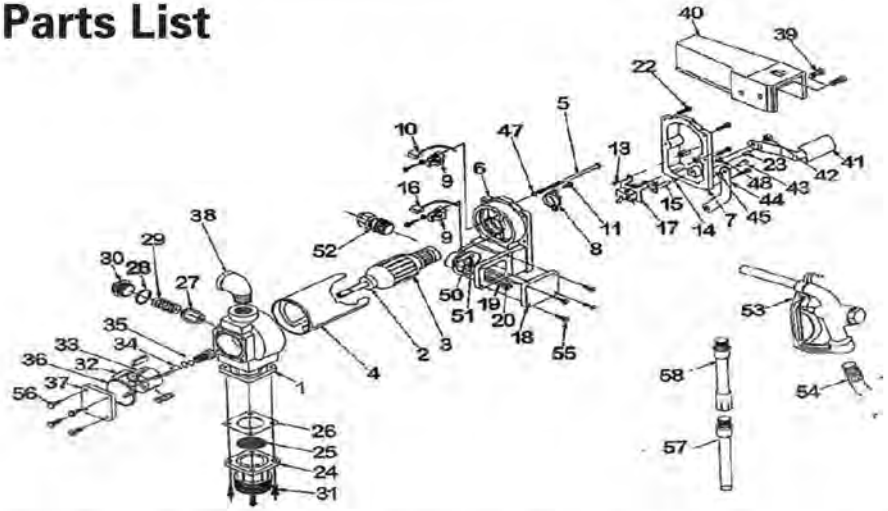
Troubleshooting

The following troubleshooting guide is provided to offer basic diagnostic assistance in the event you encounter abnormal service from your 20 GPM fuel transfer product.

WARNING! DO NOT open or a tempt to repair the motor on your pump. Opening the motor case can compromise the integrity of the Explosion Proof construction and will void any existing warranty and certification.

WARNING! Be certain all power to the pump is disconnected prior to performing any service or maintenance.

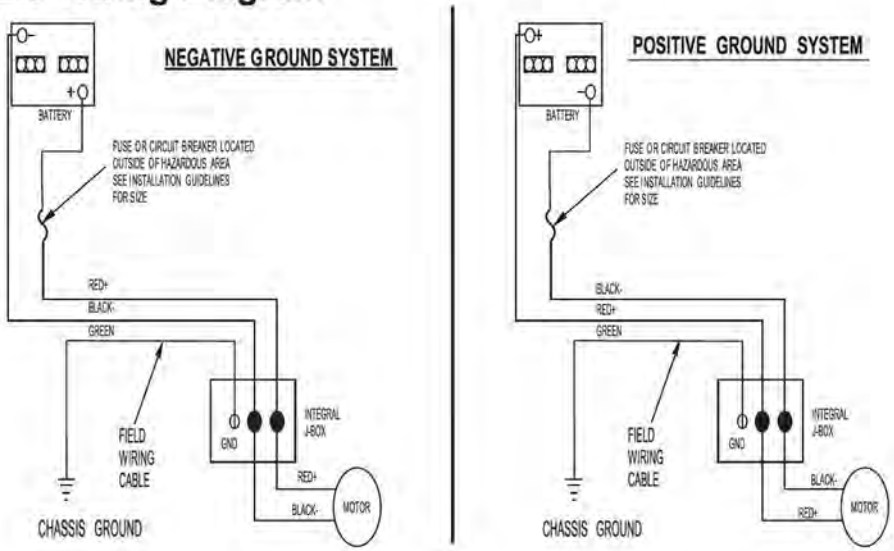
Parts List



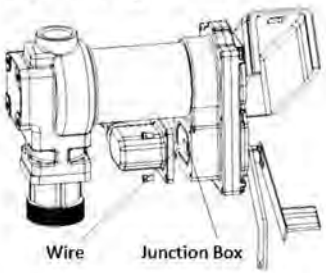
REF #	DESCRIPTION	QTY.
1	PUMP HOUSING	1
2	BALL BEARING	2
3	ARMATURE ASSEMBLY	1
4	MOTOR FRAME/MAGNET ASSEMBLY	1
5	1/4-2X5 THRU-BOLT	2
6	MOTOR CASTING ASSEMBLY	1
7	SWITCH PLATE WITH BUS HING	1
8	THERMAL PROTECTOR	1
9	BRUSH HOLDER ASSEMBLY	2
10	NEGATIVE BRUSH ASSEMBLY	1
11	#8-32X1/2 TORX	1
13	#8-32X3/8 TORX	2
14	5/16 SPRING WASHER	1
15	SWITCH SHAFT ASSEMBLY	1
16	POSITIVE BRUSH ASSEMBLY	1
17	LINE SWITCH	1
18	JUNCTION BOX COVER	1
19	NEGATIVE WIRE LEAD	1
20	POSITIVE WIRE LEAD	1
22	10-24X3/4 TORX	6
23	5/32X1/2 PIN	1
24	INLET FLANGE	1
25	SCREEN	1
26	INLET GASKET	1
27	BYPASS VALVE	1
28	BYASS VALVE GASKET	1
29	BYPASS SPRING	1
30	BYPASS CAP	1

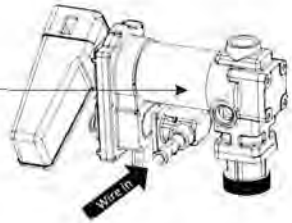
REF #	DESCRIPTION	QTY.
31	1/4-20X3/4 HHCS	1
32	VANE	4
33	ROTOR	5
34	ROTOR KEY	1
35	ROTOR COVER	1
36	ROTOR COVER GASKET	1
37	SEALASSEMBLY	1
38	STEEL ELBOW	1
39	5/16-18X3/4 HHCS	1
40	NOZZLE COVER	2
41	SWITCH LEVER	1
42	5X15X.18LOVKNUT	1
23	#14XS/8 DRVE SCREW	1
44	LOCKING LINK	1
45	1/4 SPRING WASHER	1
46	1/4 ECT LOCK WASHER	1
48	5/16 RE TAINING RING	2
49	GROUND WIRE	1
51	#8 32X3/8 GROUND SCREW	1
52	CABLE CONNECTOR	1
53	NOZZLE	1
54	HOSE	1
55	10-24X.50TORX	4
56	1/4-20X .5 HHCS	4
57	SUCTION PIPE	1
58	SUCTION PIPE-EXTENSION	1
1-52,55,56	PUMP BODY COMPLETE	1

DC Wiring Diagram



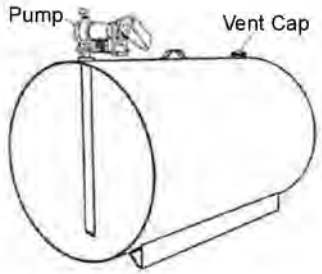
DC Wiring

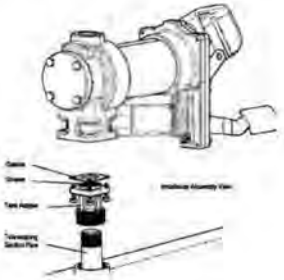




Typical Skid Tank Installation

The pump mounts to the bung of a skid tank by way of the inlet flange. The suction tube threads into the bottom of the inlet flange and must extend to a length that positions it at least 3" from the bottom of the tank. The skid tank should be equipped with a vent cap.





Materials

1" telescoping suction pipe extended to a length that will extend to within 3" of the bottom of the tank when screwed into the tank adapter with the tank adapter screwed into the tank flange (see SKID TANK INSTALLATION diagram).

Threaded pipe joint sealant appropriate for application.

Installation

20 GPM fuel transfer pump is designed to be mounted on a skid tank using the threaded inlet flange supplied with the pump.Your pump features an integral bypass valve to recirculate the fluid when the pump is operating with the nozzle closed.

CAUTION! Do not use additional check valves or foot valves unless they have a proper pressure relief valve built into them. Note that additional check valves will reduce rate of flow.

WARNING! 20 GPM fuel transfer pumps are designed for use with stationary and mobile tank applications. While DC powered units are excellent choice for mobile applications,anchring the tank to which the pump is mounted is paramount to ensure no movement in transit. Failure to secure the tank to the vehicle can cause uncontrolled movement,resulting in damage,injury and potential fire.

Installation Procedure:

1. Thread the 1" pipe into the tank adapter. Seal threads liquid tight with appropriate sealant. (Figure 1)

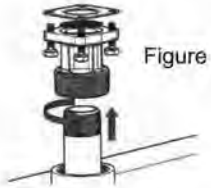


Figure 1

2. Screw the inlet flange (with suction pipe) into the tank bung; seal threads liquid tight with appropriate thread sealant. (Figure 2)

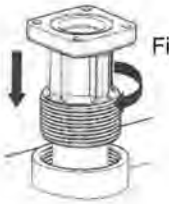


Figure 2

3. Mount the pump on the adapter;making sure the seal and screen are installed as shown. (Figure 3)

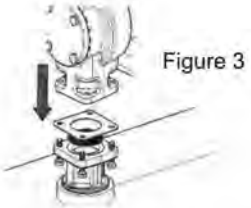


Figure 3

Instructions Before Proceeding With DC Wiring

The pump needs to be electrically bonded to supply tank or vehicle frame. To electrically bond pump, remove green bonding screw located next to junction box cover. Insert this screw through eyelet of furnished green bonding wire assembly and refasten it securely to the pump The other end of the wire is to be stripped of insulation and the bare wire securely bonded to the vehicle / trailer frame or skid tank.

WARNING ! Do not connect the positive or negative power to the green screw or wire as this could cause a fire.

Operating Installation

WARNING! Always keep the nozzle in contact with the container being filled during the filling process to minimize the possibility of static electricity build up.

WARNING! This product shall not be used to transfer fluids into any type of aircraft.

WARNING! This product is not suited for use with fluids intended for human consumption or fluids containing water.

1. If so equipped, reset meter to "0"(do not reset while in use as this will cause damage to the meter).
2. Remove dispensing nozzle from nozzle boot.
3. Move the switch lever to the "ON" position to power the pump (Figure 1).
4. Insert the dispensing nozzle into the container to be filled.
5. Operate the nozzle to dispense fluid; release nozzle when the desired amount of fluid has been dispensed.
6. Move switch lever to the "OFF" position (Figure 2) to turn off the pump.

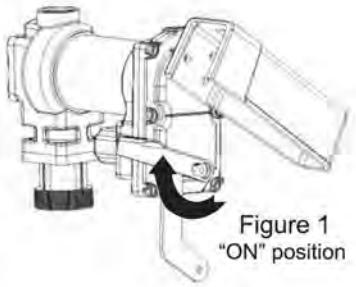


Figure 1
"ON" position

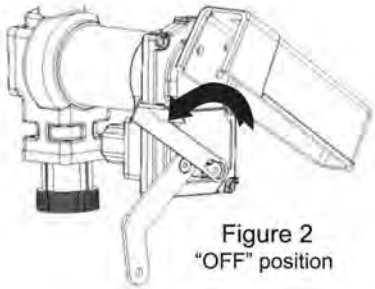


Figure 2
"OFF" position

Padlocking

Your pump nozzle can be padlocked to the pump for added security.With the pump turned off, and the nozzle in the stored position, a padlock can be inserted through the locking link and the nozzle handle.

The locking link is located on the nozzle side of the pump, and can be pivoted into position to work with a variety of nozzles (Figure 3).

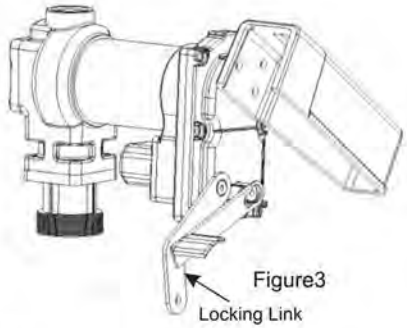


Figure3