

PUMP RUNS, BUT NO FUEL IS BEING DISPENSED

Mechanical

1. Is there fuel in the tank?
2. Is the tank vented? If not, it must be vented in order for the pump to operate properly.
3. Check the suction line for obstructions or leaks. Repair as needed.
 - On the LP pump, make sure that the 2" red plug on the pump inlet was removed.
4. Were all the inlet threads sealed with a gas and oil resistant sealant?
5. Ensure that the pump screen is not plugged.
6. Check the bypass valve and make sure that it can move freely and is free of any debris. Also check the pump cavity area where the bypass seats.
7. Check the rotor and vanes for excessive wear. Replace if needed.
8. Make sure that the rotor key is intact. If broken, the motor will run, but the rotor and vanes will not spin.
9. Make sure that the check valve is operating freely.
10. Check the discharge hose and nozzle to make sure there is no blockage or kinks in the hose.

Electrical

1. Make sure the rotor is turning in the proper direction. For the 300 series pumps, the proper direction is counter clockwise. For all other pumps it is clockwise.
 - Check the direction by looking at the rotor from the pump side, not the motor side.
 - If the motor is AC and the pump is turning in the wrong direction, the motor is faulty and the pump needs to be replaced.
 - If the motor is DC, it means that the polarity on the wiring has been reversed. Reverse the wires at the battery supplying power to the pump.
2. If a remote pump and UL listed remote dispenser are being used, make sure that the electrical power is going through the junction box of the dispenser before the pump.
 - Have seen power run through an emergency stop switch direct to a pump. In this case there is no power to turn on the solenoid valve in the UL dispenser.

Application

1. The suction pipe is too long for the pump to lift the fuel.
 - For small pumps, the max vertical suction is 6 feet.
 - For 700V pumps, the max vertical lift is 10 feet for gas and 12 feet for diesel.
 - For 300V pumps, the max vertical lift is 10 feet for gas and 18 feet for diesel.
2. The installation may be at an altitude where there is not enough atmospheric pressure to push the liquid up to the pump.
 - For every 1000 feet you go up in altitude, you will lose approximately 1 foot of lift.
3. If the liquid being dispensed is gasoline and the pump is mounted on the side of the tank, you may have vapor lock.
 - Symptoms for vapor lock; the pump will pump when it is cool outside (morning and evening), and will not pump during the heat of the day.
 - If you cool the suction line and pump down with cold water when the pump isn't pumping and it starts to pump again, you have vapor lock.
 - The pump should be at the top of the tank and a remote dispenser down on the side. If you have vapor lock, you cannot fix it without properly installing a remote system.
4. An automatic nozzle can keep a pump from priming. You can loosen the filter (if installed), or remove the auto nozzle to see if the pump will prime.

- If you have an FR700V or FR300V series pump, you can also install the 700KTH1067 return line kit to resolve this issue.

5. Other valves have could have been added to the installation that may require a vacuum that the pump cannot overcome.

- Check the system for any additional valve such a foot valves, anti-siphon valves, check valves, gate valves, ball valves, or any other device that may have been added.

WHILE PUMPING, THE PUMP JUST SHUTS OFF

Typically, the thermal protector in the pump will cause the motor to shut off because it became to hot.

Mechanical

1. Check the bypass valve to ensure that there is no blockage to prevent it from opening.

2. Check the screen in the pump and make sure it is not clogged.

3. Check the rotor and vanes. Make sure that the vanes are free and there is not excessive wear on either the rotor or vanes.

4. Check the pump cavity for debris. Clean any debris from the pump cavity.

Electrical

1. Check the voltage at the pump while it is running. Low voltage will cause the motor to overheat and thermal protector will shut off the motor.

- For AC pumps using 115 VAC power, the lowest voltage is 108 VAC.

- For AC pumps using 230 VAC power, the lowest voltage is 207 VAC.

- Make sure that the wiring is sized properly to handle the load of the motor and the length from the electrical panel to the pump.

- Make sure that your pump matches the power connected to it. A 230 VAC pump cannot run on 115 VAC.

- Make sure that all electrical connections are tight throughout the entire circuit.

2. Make sure that the breaker on the AC pumps is large enough to handle the load of the pump.

- For 700 series pumps, the recommend breaker size is 20 amps.

- For 300 series pumps, the recommend breaker size is 30 amps.

3. For DC pumps, if a fuse was installed, check the fuse to see if it is still good.

Application

1. The pump is running longer than the 30 minute duty cycle. With the exception of the DEF pump, all Fill-Rite pumps have a 30 minute duty cycle.

2. The pump is pumping a liquid that is to viscous. With the exception of the 400 series and LP series pumps, the maximum viscosity is diesel fuel.

- Pumping a liquid that has a viscosity higher than diesel will cause the pumps thermal protector to shut it off in as soon as just a few minutes.

3. A fuel control system or console.

- There are different timeouts on many of these types of systems. It could be that there is a problem with the control system such as a pulser.

MY MOTOR IS HUMMING

Mechanical

1. Check rotor and vanes for wear. It could be that a vane has flipped out of the rotor slot and is locking up the motor.
2. Check the rotor key to make sure it is intact. If the key is broken, the motor may be running, and it will not sound loud as the rotor and vanes are not turning.
3. Check the pump cavity for debris. There may be enough debris in the pump cavity that would cause the rotor to lock up.

Electrical

1. Check the voltage at the pump when it is turned on to ensure that there is enough voltage to run the pump.
 - For AC pumps using 115 VAC power, the lowest voltage is 108 VAC.
 - For AC pumps using 230 VAC power, the lowest voltage is 207 VAC.
 - Make sure that the wiring is sized properly to handle the load of the motor and the length from the electrical panel to the pump.
 - Make sure that your pump matches the power connected to it. A 230 VAC pump cannot run on 115 VAC.
 - Make sure that all electrical connections are tight throughout the entire circuit.
2. Remove the rotor and vanes and see if the motor will start. If not, there is a motor issue.
 - With the rotor and vanes removed, can the motor shaft be turned easily? Does it feel like the motor bearings are turning ok?

Application

1. Pumping alcohol, such as E-85, and not running the pump often enough will cause the pump to rust and lock up.
2. Pumping a viscous product. The motor may not have enough starting capacity to run. Temperature may be a factor in this.
 - Remember, with the exception of the 400 and LP series pumps, the maximum viscosity for Fill-Rite pumps is diesel fuel.

MY MOTOR IS SURGING WHEN I TURN ON MY PUMP

Mechanical

1. Check rotor and vanes for wear. It could be that a vane has flipped out of the rotor slot and is locking up the motor.
2. Check the rotor key to make sure it is intact. If the key is broken, the motor may be running, and it will not sound loud as the rotor and vanes are not turning.
3. Check the pump cavity for debris. There may be enough debris in the pump cavity that would cause the rotor to lock up.

Electrical

1. Check the voltage at the pump when it is turned on to ensure that there is enough voltage to run the pump.
 - For AC pumps using 115 VAC power, the lowest voltage is 108 VAC.
 - For AC pumps using 230 VAC power, the lowest voltage is 207 VAC.

- Make sure that the wiring is sized properly to handle the load of the motor and the length from the electrical panel to the pump.
 - Make sure that your pump matches the power connected to it. A 230 VAC pump cannot run on 115 VAC.
 - Make sure that all electrical connections are tight throughout the entire circuit.
2. Remove the rotor and vanes and see if the motor will start. If not, there is a motor issue.
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Application

1. Pumping alcohol, such as E-85, and not running the pump often enough will cause the pump to rust and lock up.
2. Pumping a viscous product. The motor may not have enough starting capacity to run. Temperature may be a factor in this.
 - Remember, with the exception of the 400 and LP series pumps, the maximum viscosity for Fill-Rite pumps is diesel fuel.

MY PUMP FLOW RATE IS LOW

Mechanical

1. Is the tank vented? If not, it must be vented in order for the pump to operate properly.
2. Check the suction line for obstructions. Repair as needed.
3. Ensure that the pump screen is not plugged.
4. Check the bypass valve and make sure that it can move freely and is free of any debris. Also check the pump cavity area where the bypass seats.
5. Check the rotor and vanes for excessive wear. Replace if needed.
6. Make sure that the check valve is operating freely.
7. Check the discharge hose and nozzle to make sure there is no blockage or kinks in the hose.

Electrical

1. For DC pumps, make sure that the voltage at the pump is at 12 or 24 VDC while the pump is running.
 - Low voltage will cause the RPMs of the motor to be less, which decreases flow rate.
 - Make sure that the length of wire used is large enough so there is no voltage drop across it.
 - Make sure that the electrical connections are tight.
2. For AC pumps, if you are using 50 Hz instead of 60 Hz, the flow rate will be approximately 15% lower, as the RPM's at 50 Hz are lower.
3. Make sure that the voltage supplied to the pump is the voltage the pump is rated for.

Application

1. Adding any accessory items to the inlet or discharge of the pump will cause the flow rate to decrease.
 - Examples of items added to the inlet would be foot valves, check valves, and anti-siphon valves.
 - Examples of items added to the discharge would be meters, additional length of hose, filters, automatic nozzles, swivels, and breakaways.
 - A plugged external filter. When was the last time the filter was changed?
 - Automatic nozzles are generally the largest cause of flow rate reduction.
2. Vapor recovery system.
 - When using vapor recovery, the 1/2 HP 300V series pump should be used.

3. Installing the wrong meter on a pump.

- Adding a Fill-Rite 800 series meter to the FR4210D pump will cause the flow rate to drop to 6 - 7 GPM.

4. Pumping a liquid with a high viscosity.

- With the exception of the 400 and LP series pumps, diesel fuel is the most viscous liquid you can pump.

- Pumping a higher viscosity liquid with the 400 series pump will also reduce its flow rate, yet it will not cause any damage in the pump.

MY AUTOMATIC NOZZLE IS NOT SHUTTING OFF.

1. The nozzle needs a minimum of 5 gallons per minute (19 liters per minute) to trip off. If the flow rate is less than this, the nozzle may not turn off.

- Gravity flow applications are not recommended for automatic nozzles.