

**SAVE THESE INSTRUCTIONS**

# M-3120 & M-3120-RDP Series 115 Volt Heavy Duty Fuel Pump

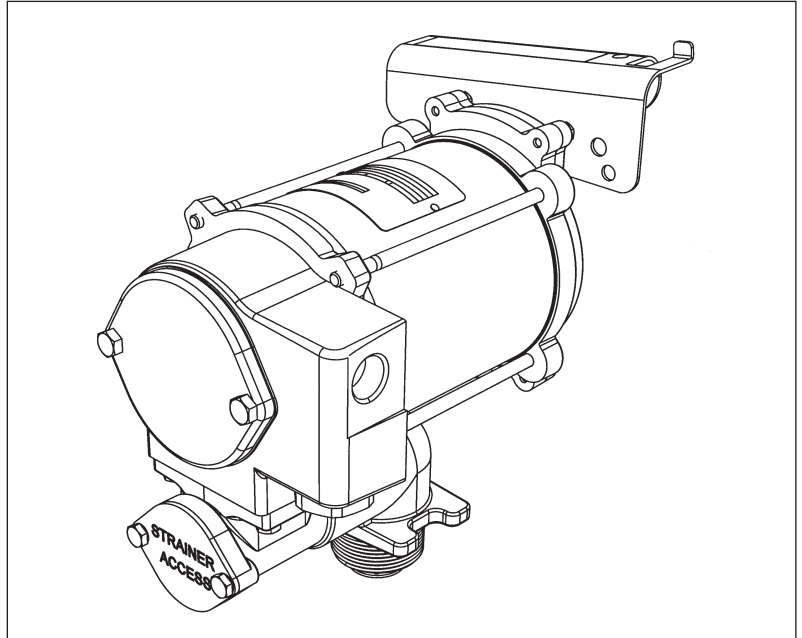
M-3120-ML Manual Nozzle

M-3120-AL Automatic Nozzle

M-3120-PO Pump Only

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## Owner's Manual



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## GENERAL INFORMATION

Your pump is designed for use **only** with thin viscosity petroleum fuels such as gasoline, diesel fuel and kerosene. **Do not** use this pump for dispensing any fluids other than those for which it was designed. Using the pump with other fuels can damage components and void the warranty.

### Model Components

**M-3120-ML:** Includes pump, hose, manual nozzle and components to assemble to unit before use.

**M-3120-AL:** Includes pump, hose, automatic nozzle and components to assemble to unit before use.

**M-3120-PO:** Includes pump only and components to assemble to unit before use.

**M-3120-RDP:** Includes dedicated pump only for remote dispensing systems.

NOTE: Suffixes ML, AL and PO are for ordering purposes only. Constructions described above are covered as alternate constructions under the Part No. M-3120 UL Listing.



The following safety alert symbols are used in this manual. Obey all safety messages that follow this symbol to avoid possible injury or death.

#### DANGER

**DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

#### WARNING

**WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

#### CAUTION

**CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

#### CAUTION

**CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

There are inherent dangers wherever flammable fuel and AC electrical sources are in close proximity.

Static electricity as a source of sparking is always a concern and requires extreme care in the installation and operation of your entire fuel transfer system.

Additional components such as meters, automatic nozzles and filters must be listed for use with fuel transfer systems. The flow of fuel through a hose and nozzle can generate static electrical charges and dangerous sparking can result in fire or explosion. Hoses and nozzles must be electrically conductive and bonded to ground.

#### It is your responsibility to:

- Know and follow applicable national, state and local safety codes pertaining to installing and operating electrical equipment for use with flammable liquids.
- Know and follow all safety precautions when handling petroleum fuels.
- Ensure that all equipment operators have access to adequate instructions concerning safe operating and maintenance procedures.



## WARNING

This product shall not be used for pumping fuel or other liquids into aircraft.

## INSTALLATION

### Mechanical Connections

#### WARNING

Coverplates protect the operator from moving parts. Never operate the pump without coverplates in place. Never apply electric power to the pump without coverplates in place. Always disconnect power before repairing or servicing.

All threaded fuel connections must be sealed with thread tape or a pipe thread sealing compound approved for use with petroleum fuels.

Your pump must be mounted on a vented tank. If the tank is not vented, contact your distributor for the correct vent cap.

This pump has a built-in check valve to keep the pump primed. No additional check valve is required on suction pipes shorter than 15 feet (4.6 meters). Make sure any check valves or foot valves used are equipped with proper pressure relief valves.

Your pump is designed to mount directly to a standard 2-inch female tank fitting. For the suction pipe, a 1-inch galvanized steel pipe cut to length and threaded on one end may be used. Suction pipe should extend to within 3 inches of tank bottom. Apply thread tape to the suction pipe thread and securely tighten the suction pipe to the pump inlet port.

#### Install Nozzle Hanger (Not applicable to pumps with -RDP suffix)

**Attention:** The nozzle hanger for your pump was removed before shipping to protect against damage.

To reinstall the nozzle hanger follow the steps below.

1. Remove the two (2) 1/4"-20 x 1/2" bolts from the switch coverplate.
2. Place the nozzle cover on the switch coverplate and align holes.
3. Insert the two (2) 1/4"-20 x 1/2" bolts through the nozzle cover and thread into the switch coverplate. Torque bolts to 45-60 in/lb (Figure 1).

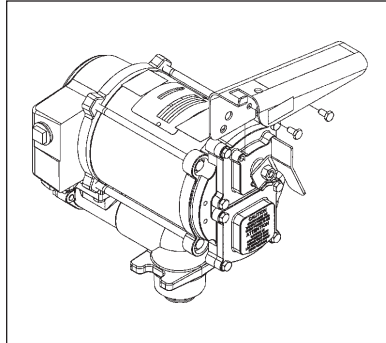


Figure 1

### Switch Locking Lever

Attention: The M-3120-RDP remote dispenser pump incorporates an external switch locking lever that locks the pump switch in the "ON" position. The pump is typically shut off using the remote dispensing device "ON-OFF" mechanism.

### Electrical Connections

#### **⚠ DANGER**

**Pump must be installed by a licensed electrician and conform to National Fire Protection Association (NFPA) codes 30 and 70. You, as the owner, are responsible for seeing that the installation and operation of your pump complies with NFPA codes as well as any applicable state and local codes. Rigid conduit must be used to install wiring.**

**Failure to follow these wiring instructions may result in death or serious injury from shock, fire or explosion.**

**The pump must be properly grounded to avoid personal injury. Operating an ungrounded or improperly grounded pump may result in death due to electrical shock, fire or explosion.**

Electrical wiring and connections must be made only by a licensed electrician in accordance with national, state and local electrical codes regarding Class I, Division 1, Group D locations. Other codes may apply.

Thread for the conduit connection at the pump electrical box is 1/2 inch FNPT.

A standard 15-amp breaker is recommended.

This pump is equipped with an auxiliary AC accessory lead. The third wire (brown) is to be used to energize a control circuit that operates a device such as a signal light or a solenoid operated valve. Maximum amp draw on the control circuit is 1 amp. If you do not need this feature, insure that the wire is insulated and enclosed within the electrical cavity of the pump.

#### **⚠ CAUTION**

**Connect pump to the proper voltage source. M-3120 series pumps are designed to operate on 115 VAC, 60 Hz. Connection to improper voltage will damage pump.**

### Wiring Details

1. Remove electrical coverplate and O-ring (Figure 2). Install conduit and cable from switchbox to pump electrical box. Wiring must be in accordance with Class I, Division 1 requirements in the applicable national electrical code. Note that the lead wires are factory-sealed isolating the motor from the junction box.

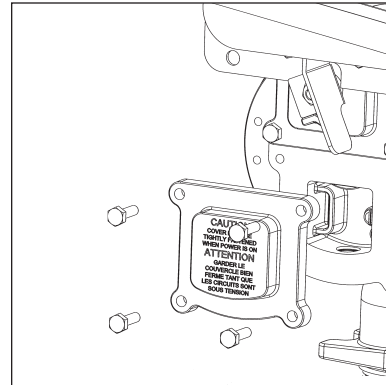


Figure 2

2. Attach ground wire using the green ground screw located inside the electrical box (Figure 3). The external bonding connection is only a supplemental bonding connection where local authorities permit or require such a connection. Connect the power cable to the black and white pump wires and the control circuit (if required) to the brown wire. Secure with wire nuts.

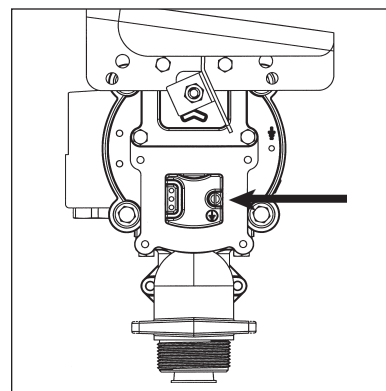


Figure 3

3. Position wires inside the electrical box. Replace O-ring and electrical coverplate. Install all four (4) screws. Torque to 45-60 in. lbs.

## OPERATION

### **⚠ DANGER**

To prevent physical injury, observe precautions against fire or explosion when dispensing fuel. Do not operate the dispenser in the presence of any source of ignition including running or hot engines, lighted cigarettes, or gas or electric heaters.

### **⚠ WARNING**

Observe precautions against electrical shock when operating the system. Serious or fatal shock can result from operating electrical equipment in damp or wet locations.

### **⚠ CAUTION**

Avoid prolonged skin contact with petroleum fuels. Use protective goggles, gloves, and aprons in case of splashing or spills. Change saturated clothing and wash skin promptly with soap and water.

#### To dispense fuel (for pumps with nozzle hanger):

1. Remove the nozzle from the holder. Turn the pump on by pulling the switch lever down.
2. Insert the nozzle into the receiving tank and squeeze the handle to dispense fuel.
3. After dispensing fuel, push the switch lever up to turn the pump off and return the nozzle to the holder. The nozzle may be locked in place to prevent unauthorized use.



### **CAUTION**

Nozzle valve must be stored properly in nozzle holder (as shown) when not in use.



The pump contains an automatic bypass valve to prevent pressure buildup when the pump is on but the nozzle is closed. Do not leave the pump on for more than 10 minutes with the nozzle closed.

Never leave the pump running without fluid. Dry running can damage the pump components.

The pump has a duty cycle of 30 minutes ON and 30 minutes OFF. Do not overheat. Allow the motor to cool the same length of time it was in operation.

The fuel strainer and check valve assembly should be cleaned on a regular basis or if low flow rate is noticed.

If the pump becomes too hot, an internal temperature-limiting device will automatically shut the motor off and prevent operation until it cools.

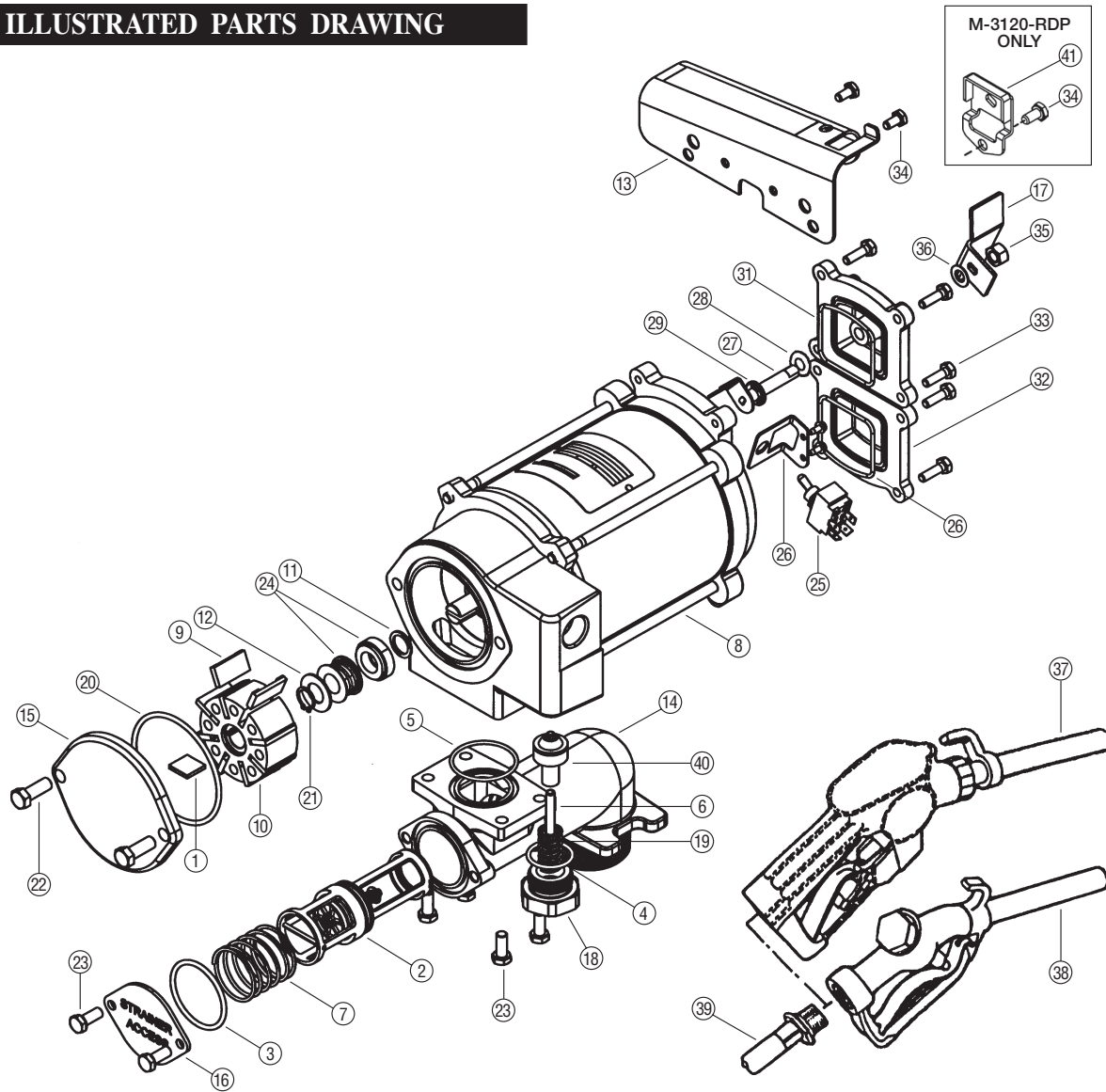
### **⚠ CAUTION**

Always turn the pump off if the temperature-limiting device trips. The Remote Dispenser pump (M-3120-RDP) turns off at the dispensing device. If left on, the pump will automatically reset when cool and start pumping.

## TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
A. MOTOR DOES NOT RUN	<ol style="list-style-type: none"> <li>1. No electrical power to pump</li> <li>2. Temperature-limiting device tripped</li> <li>3. Rotor or vanes jammed</li> </ol>	<p>Check breaker, switchbox and wiring.</p> <p>Allow motor to cool. Temperature-limiting device will automatically reset.</p> <p>Remove coverplate and check for damage or obstruction.</p>
B. MOTOR RUNS, BUT NO FLOW	<ol style="list-style-type: none"> <li>1. Tank level low</li> <li>2. Clogged filter assembly</li> <li>3. Clogged or broken suction pipe</li> <li>4. Broken shaft key</li> </ol>	<p>Add fuel to tank.</p> <p>Remove and clean filter assembly.</p> <p>Remove pump and clear suction pipe, replace as needed.</p> <p>Replace shaft key. Check rotor or vanes for obstruction.</p>
C. PUMP FAILS TO PRIME	<ol style="list-style-type: none"> <li>1. Air leak in system</li> <li>2. Bypass valve stuck open</li> <li>3. Check valve stuck open</li> <li>4. Rotor or vanes worn</li> </ol>	<p>Check for air leaks at all joints.</p> <p>Remove bypass valve and clean or replace as needed.</p> <p>Remove check valve and clean or replace as needed.</p> <p>Check rotor and vanes for excessive wear.</p>
D. LOW FLOWRATE	<ol style="list-style-type: none"> <li>1. Low voltage</li> <li>2. Clogged filter assembly</li> <li>3. Air leak in system</li> <li>4. Bypass valve stuck open</li> <li>5. Rotor or vanes worn</li> <li>6. Outlet is blocked</li> <li>7. Clogged or broken suction pipe</li> </ol>	<p>Check incoming line voltage.</p> <p>Clean filter assembly.</p> <p>Check for air leaks at all joints.</p> <p>Remove bypass valve and clean or replace as needed.</p> <p>Check rotor and vanes for excessive wear.</p> <p>Check all accessories for blockage.</p> <p>Remove pump and clear suction pipe, replace as needed.</p>
E. MOTOR STALLS WHEN NOZZLE IS CLOSED	<ol style="list-style-type: none"> <li>1. Bypass valve stuck closed</li> <li>2. Rotor or vanes worn</li> <li>3. Low voltage</li> </ol>	<p>Remove bypass valve and clean or replace as needed.</p> <p>Check rotor and vanes for excessive wear.</p> <p>Check incoming line voltage.</p>
F. FUEL LEAKAGE	<ol style="list-style-type: none"> <li>1. Threaded joint loose</li> <li>2. Insufficient bolt torque</li> <li>3. Lost or damaged O-rings</li> <li>4. Shaft seal worn or damaged</li> </ol>	<p>Check and reseal threaded joint.</p> <p>Retighten bolts.</p> <p>Check O-rings for damage. Replace as needed.</p> <p>Fuel leaking from drain hole indicates shaft seal needs to be replaced.</p>
G. MOTOR OVERHEATS	<ol style="list-style-type: none"> <li>1. Pumping high viscosity fluids</li> <li>2. Clogged filter assembly</li> <li>3. Clogged or broken suction pipe</li> </ol>	<p>Pump only low viscosity fluids.</p> <p>Clean filter assembly.</p> <p>Remove pump and clear suction pipe, replace as needed.</p>

# ILLUSTRATED PARTS DRAWING



Item No.	Part No.	Description	No. Req'd.
1	121010-1	Shaft Key .....	1
2	121013-1	Check Valve Assembly .....	1
3	901001-90	O-Ring or (Kit <b>A</b> ) .....	1
4	901002-50	O-Ring or (Kit <b>A</b> ) .....	1
5	901002-89	O-Ring or (Kit <b>A</b> ) .....	1
6	906004-50	Spring Pin .....	1
7	121019-1	Spring .....	1
8	133520-01	1/3 HP Motor Assembly, 115 volt .....	1
9	133020-1	Vanes .....	8
10	133022-1	Rotor .....	1
11	133026-1	Slinger Washer .....	1
12	133027-1	Spacer Washer .....	1
13	13380801	Nozzle Cover .....	1
14	133052-01	Base Assembly with Check Valve .....	1
15	133032-02	Coverplate .....	1
16	133033-1	Base End Plate .....	1

Item No.	Part No.	Description	No. Req'd.
17	133829-01	Switch Lever .....	1
18	133059-02	Poppet Plug .....	1
19	133062-1	Poppet Spring .....	1
20	901003-15	O-Ring or (Kit <b>A</b> ) .....	1
21	904006-33	Retaining Ring .....	1
22	904006-38	Hex Head Screw 3/8 - 16 x 1 .....	2
23	904001-37	Hex Head Screw 5/16 - 18 x 3/4 .....	6
24	906006-53	Shaft Seal .....	1
25	133865-01	Switch .....	1
26	133848-01	Switch Bracket .....	1
27	133845-01	Switch Acuator Assembly .....	1
28	904006-63	Spring Washer .....	1
29	904004-97	Retaining Ring .....	1
30	110026-6	O-Ring or (Kit <b>A</b> ) .....	2
31	133801-01	Switch Cover .....	1
32	133881-01	Cover .....	1
33	904005-39	Hex Head Screw 1/4-20 x 7/8 .....	8
34	904003-33	Hex Head Screw 1/4-20 x 1/2 .....	2
35	904006-62	Hex Nut, 3/8-16 .....	1
36	904006-16	Nylon Washer .....	1
37	906004-98	3/4" NPT Auto Leaded Nozzle .....	1
38	906001-6	3/4" NPT Manual Leaded Nozzle .....	1
39	110049-2	Hose Assembly .....	1
40	133505-01	Poppet Assembly Kit .....	1
41	133419-01	Switch Locking Lever (M-3120-RDP only) .....	1

## Kits and Accessories

- 133501-1 Vane Kit
- 133503-1 Shaft Seal Kit
- A** 133504-1 Seal Kit

## SPECIFICATIONS

The M-3120 fuel pump is designed to safely transfer low viscosity petroleum fuels such as gasoline, kerosene and diesel fuel. The pump is designed for permanent mounting on vented storage tanks, either in-ground or above-ground. *RAINPROOF* for outdoor use. def

### Performance

Pump Rate: Up to 20 GPM (76 LPM)  
Duty Cycle: 30 minutes ON, 30 minutes OFF  
Dry Prime: 15 ft. (4.6m) maximum  
Discharge Lift: 10 ft. (3m) maximum

### Electrical

Input: 115 volt AC, 60 Hz  
Conduit: 1/2 inch FNPT  
Current Draw: 4.9 amps at full load  
Motor: 1/3 HP, 1725 RPM induction type provided with an internal temperature-limiting device

### Mechanical Connections

Bung: 2 inch MNPT  
Inlet: 1 inch FNPT  
Outlet: 3/4 inch FNPT

### Accessories

Hose: 3/4 in. x 12 ft. (3.7m) Buna-N electrically conductive  
Nozzle: 3/4 in. manual or 3/4 in. automatic, leaded spout  
Security: Nozzle can be padlocked

**Ship Weight** 55.5 pounds (25.2 kg)

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