PMP
CORPORATION

PMP FR/W Rapid-Fire™ Pulser
For use on Fill-Rite® and Wayne® Meter-Registers
Installation Instructions
PMP #48505
for 115 VAC

These instructions are to be used when installing the
FR/W Rapid-Fire Pulser in Fill-Rite and Wayne Meter-Registers.

READ THIS GUIDE BEFORE YOU BEGIN

- Dispensers have both electricity and hazardous, flammable and potentially explosive liquid. Failure to follow the precautions below and instructions in this guide may result in serious injury and death. Follow all rules, codes and laws that apply in your area.

- PMP shall not be liable for errors contained herein or for incidental or consequential damages in connection with furnishing, performance or used of this publication.

- PMP reserves the right to change product features or the information contained in this publication.

SAFETY PRECAUTIONS FOR INSTALLATION AND MAINTENANCE

- Only a person with knowledge and experience with gasoline dispensing equipment should perform this work.

- Barricade the work area with your truck and / or other appropriate means.

- Always make sure ALL power to the dispenser is turned OFF before you open the dispenser cabinet for maintenance. Physically lock and tag out the circuit breakers energizing the dispenser following OSHA guidelines.

- Note that more than one disconnect switch may be required to de-energize the dispenser for maintenance and servicing. Use a voltmeter to make sure ALL circuits in the dispenser are de-energized. Failure to do so may result in serious injury.

- Know how and where to turn OFF power to the submersible pumps in case of emergency.

- Observe precautions for handling electrostatic sensitive devices and avoid ESD.

INTRODUCTION The Rapid-Fire Pulser is an intrinsically safe, easy to install pulsing device. The FR/W will work on Fill-Rite 800 and 900 series and the Wayne 700 series meter-registers.

The Rapid-Fire Pulser can interface with any electronic console pulse circuit from 5 to 400 VAC/DC, with a current requirement not exceeding 100 MA.

The FR/W PMP Rapid-Fire Pulser consists of two components: the barrier, which is connected to the dispenser's junction box, and the sensor that mounts on the internal counting mechanism of the register.

Contents

1 – Barrier hardwired to optical sensor
2 – Cable ties
2 – Push nuts
1 – Push nut tool

4 – Wire nuts
1 – FR/W installation instructions

Tools needed

1 – Phillips head screwdriver
1 – Channel lock pliers
1 – Small adjustable wrench
1 – 5/16" Nut driver
1 – Wire-cutters to trim tie wraps

1 – Rat-tail file
1 – Hacksaw
1 – 1/4" Drill bit
1 – 3/8 " Drill

Rapid-Fire Barrier Installation. *(See Figure A)*

1. Turn off all power to the junction box.
2. Remove dispenser junction box cover.
3. Remove a plug from a 3/4" NPT location that will allow clearance for the 6" length of the barrier. If the junction box uses 1/2" threaded connections, use a 3/4" to 1/2" coupling to connect the barrier to the junction box.
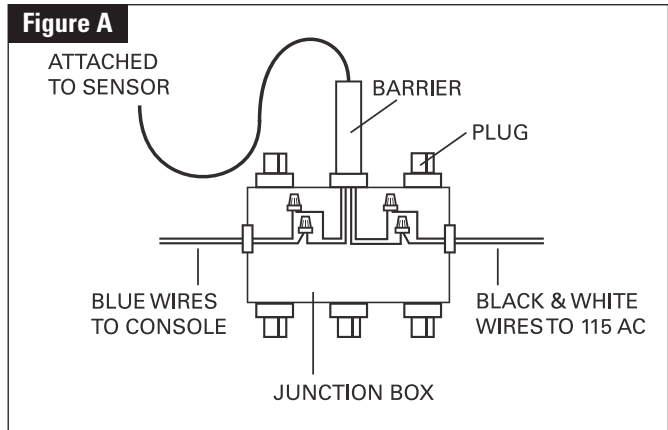4. Install the barrier by screwing it into a 3/4" hole at least five (5) full turns.

NOTE: The Rapid-Fire Pulser is not designed for use with 220V. Connecting to a 220V circuit will render the pulser inoperable and beyond repair.

5. Attach the black and white barrier wires to a "switched" 115 VAC circuit.

   The circuit must be "hot" when the dispenser is in use and "dead" when the operating handle is turned off.

NOTE: This step must be performed properly. The pulser must be connected to a circuit which will turn off between sales to maintain accuracy and ensure reliable operation.

6. Attach the blue barrier wires to the "pulse circuit" from the console. (These wires are interchangeable.)
7. Re-install the junction box cover.

Figure A

ATTACHED TO SENSOR
BARRIER
PLUG
BLUE WIRES TO CONSOLE
BLACK & WHITE WIRES TO 115 AC
JUNCTION BOX

The FR/W Rapid-Fire Pulser was designed for the Fill-Rite 800 and 900 series meter-registers and the Wayne 700 series meter-registers.

NOTE: There are several variations of these meter-registers. Installation may vary slightly depending on the specific model.

1. Remove cover from register.

2. Remove the two screws holding the counter to the housing and remove counter.

3. Locate the hex-nut if present on right side (closet to the slot on frame) and loosen approximately three turns. *(See Figure B)*
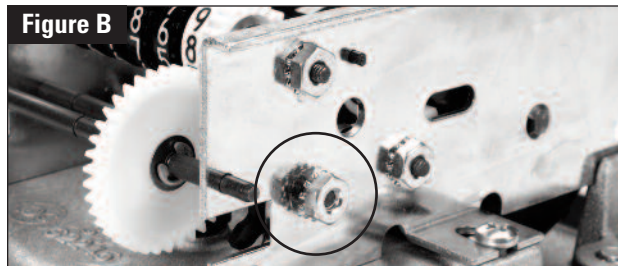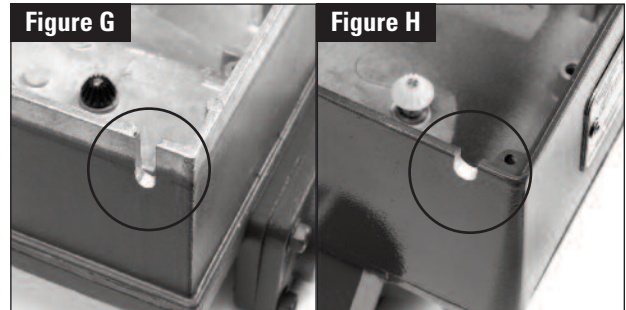

Figure B

4. Slide the bracket along right side of register until the slot in the sensor bracket is captured with the register mounting screw. The tab on the bracket fits under the housing of the register. *(See Figure C)* The optical sensor should fit into the slot on the register's right side. *(See Figures D and E)*
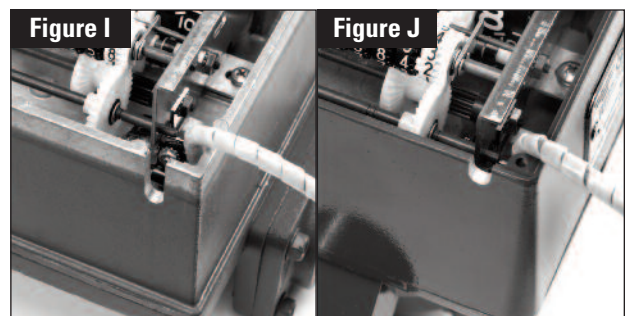

Figure C
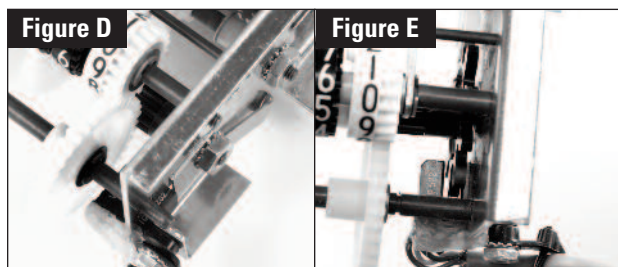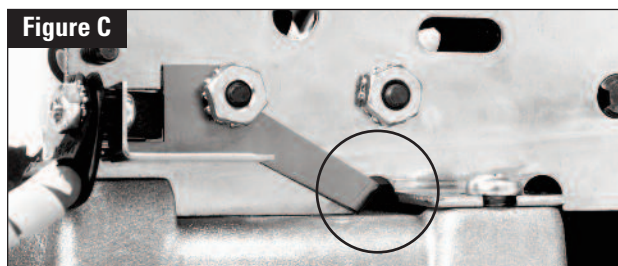
Figure D

Figure E

5. Hold the sensor assembly in place and tighten the mounting nut or install push nut on plain shaft. *(See Figure F)* Check the alignment of the optical sensor. The gear should be centered in the slot of the optical sensor.
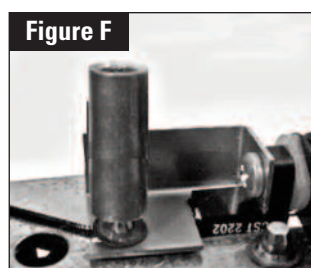

Figure F

6. Use a drill with a 1/4" bit, a hacksaw and/or a rat-tail file to make a notch in the register housing for the sensor wire to pass through. The slot should be just deep enough to allow the cover to fit without pinching the sensor wire. *(See Figure G for Fill-Rite & Figure H for Wayne)*

Figure G

Figure H

7. Reinstall the counter in the register housing and reinstall the two screws holding the counter to the housing. *(See Figure I for Fill-Rite & Figure J for Wayne)*

Figure I

Figure J

8. Route the sensor wire through slot. Position the spiral cable protector to cover the cable as it passes through the new slot in the housing. *(See Figure K for Fill-Rite & Figure L for Wayne)*

Figure K

Figure L
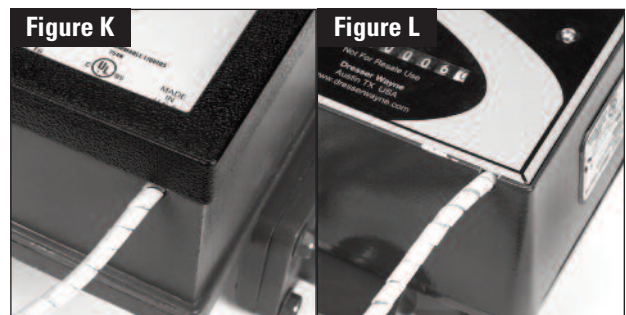
9. Check to ensure the sensor cable is not pinched or interfering with the register mechanism and install register cover.

10. Apply power to the equipment.

11. Test the system by pumping fuel into an approved container.

12. If you have any questions, call 1-800-243-6628.

Troubleshooting Notes:

Problem	Cause	Solution
Incorrect count, erratic count, or missing pulses at the console.	Sensor is out of position so the gear teeth are no longer breaking the sensor beam or only breaking the beam intermittently.	Check for correct position of sensor. Ensure the nut holding sensor bracket is tight.
Sensor is binding and/or chattering.	The Rapid-Fire sensor is not centered over the register gear and the gear is rubbing against the sensor.	Check for correct position of sensor. Reposition sensor with gear in the center. Ensure the nut holding sensor bracket is tight.
Pulser won't count on installation.	Loose or improper wiring connections	Recheck wiring connections.
	Damaged wiring	Repair wires or replace pulser.
	Dirty sensor "eyes"	Used canned compressed air to remove dust/debris blocking sensor beam.
	Broken/cracked sensor	Replace pulser
	Pulser is not compatible with console model	Call PMP for technical assistance. 800-243-6628

Specifications:

Input Voltage Range	Electronic Console Pulse Circuit Range	Operating Temperature	Operating Speed
70 VAC to 130 VAC	5 to 400 VAC/DC	-40°F to +160°F -40°C to +71°C	Exceeds Meter-Register maximum speeds*

*Rapid-Fire Pulser tested to a speed of 600 RPM

Wiring Connections:

Rapid-Fire Pulser #48505	Black Wire	White Wire	Blue Wire	Blue Wire
115 VAC Pulser	115 VAC Hot	Neutral	Pulser Circuit	Pulser Circuit
			These wires are interchangeable.	

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