

INSTALLATION OPERATION

Dresser Wayne 700 Series Small Fleet Pumps





READ THIS MANUAL BEFORE YOU BEGIN

Fuel pumps have both electricity and a hazardous, flammable, and potentially explosive liquid. Failure to follow the below precautions and the Warning and Caution instructions in this manual may result in serious injury or death. Read every tag attached to the pump before commencing installation. Follow all rules, codes, and laws that apply to your area and installation.

SAFETY PRECAUTIONS - INSTALLATION AND MAINTENANCE

Always make sure ALL power to the pump is turned OFF before you open the pump junction box for maintenance. Physically lock, restrict access to, or tag the circuit breakers you turn off when servicing the pump. If applicable, be sure to trip (close) the emergency or safety valve(s) in the pump piping BEFORE beginning maintenance.

Make sure that you know how to turn OFF power to the pump in an emergency. Have all leaks or defects repaired immediately.

USE ONLY GENUINE PARTS

For product liability to be valid, no changes may be made to the equipment without the written consent of Dresser Wayne.

HOW TO CONTACT DRESSER WAYNE

Trouble with the installation and operation of the pump should be referred to your authorized Wayne[®] service personnel or Wayne Technical Support (1-800-926-3737).

INDICATORS AND NOTATIONS

**DANGER**

Danger indicates a hazard or unsafe practice which, if not avoided, will result in severe injury or possibly death.

**WARNING**

Warning indicates a hazard or unsafe practice which, if not avoided, may result in severe injury or possibly death.

**CAUTION**

Caution indicates a hazard or unsafe practice which, if not avoided, may result in minor injury.

NOTE:

Important information to consider, otherwise, improper installation and/or damage to components may occur.

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1. INTRODUCTION

1.1. Equipment Covered

This manual describes the installation and operation of the Wayne 700 Series Small Fleet Pump & Meter.

Any questions concerning the installation and operation of the pump that are not covered in this manual should be referred to your authorized Wayne service personnel or Wayne Technical Support (1-800-926-3737).

1.2. Technical Information

Models	720: Pump and meter/register combination 730: Pump only 700R: Meter/register only
Application:	For dispensing low viscosity petroleum fuels - diesel, including biodiesel blends up to 20%; kerosene; and gasoline with up to 15% ethanol - from aboveground storage tanks. Not for refueling aircraft.
Performance:	Up to 20 GPM (75 LPM) – 60 Hz motor. Up to 62 LPM – 50 Hz motor. Minimum dry vacuum – 15” of mercury. Note: Actual flow rates received will depend upon the installation conditions and the pump accessories such as the meter, hose size and length, nozzle type, etc.
Register:	Model 700R meter/register. Included with model 720. 4-wheel register with manual reset knob. Displays up to 999.9 gallons. 7-digit (with tenths) non-resettable accumulative totalizer. Optional liter measure.
Meter:	Model 700R meter/register. Included with model 720. Phenolic nutating disc measuring chamber in aluminum housing. Accuracy +/- .5% at full flow. Adjustable calibration. Die-cast aluminum housing.
Pumping Unit:	Self-priming, direct-drive rotary vane pumping unit. Cast iron housing. Sintered iron rotor with eight carbon graphite vanes.
Motor & Electrical:	1/3 HP, 1725 RPM, intermittent duty motor with thermal overload protection. 115VAC, 60 Hz.
Junction Box:	Meets UL 87 requirements. Weatherproof o-ring seal. AC auxiliary line for optional solenoid valve control. External motor switch in separate internal compartment. Die-cast aluminum construction.
Strainer Assembly:	Combination strainer and spring-loaded check valve with pressure relief assembly. Cast iron housing.
Anti-Siphon Valve:	Integral vacuum breaker in meter discharge. Duckbill design. Copper tubing returns any drips back to tank through fitting in the strainer base.

Nozzle Holder Assembly:	Zinc-plated steel. Accommodates standard automatic and manual nozzles. Nozzle can be padlocked to prevent unauthorized use.
Mounting Connection:	2" (5 cm) NPT male at base of strainer for tank mounting.
Suction Connection:	1" (2.5 cm) NPT female suction tube inlet.
Discharge Connection:	1" (2.5 cm) NPT female at pump. With meter/register, choice of (2) 1" NPT female outlets – top or back. Plug for unused position.
Finish:	Pump, motor, and strainer assembly painted blue. Meter/register has a black UV-resistant lexan dial face graphic.
Hose, Nozzle, Suction Tube:	Not included.
Pressure:	Working pressure up to 50 psi.
Approvals:	Pending: Underwriter's Laboratories (UL)

1.3. Local, State, and Federal Codes

The Wayne 700 Series models are only part of a fuel dispensing system. A fuel dispensing system typically comprises equipment and safety devices from a variety of manufacturers. It is the responsibility of the pump owner to have a qualified installer ensure that all of the necessary equipment and accessories are included to meet the requirements of the application and all tanks (both underground and aboveground), piping and fittings, check valves, leak detection and corrosion protection devices, wiring, venting systems, safety valves, filtration devices, etc. are installed in accordance with the manufacturer's instructions and in compliance with local and regional building codes and requirements pertaining to private fueling facilities (or other locations where the pump may be installed).

These requirements may include references to the National Electrical Code (NFPA 70); Automotive and Marine Service Station Code (NFPA 30A); Flammable and Combustible Liquids Code (NFPA 30); Standard for the Storage of Flammable and Combustible Liquids at Farms and Isolated Sites (NFPA 395); Code of Federal Regulations, Title 40, Section 280 (40 CFR 280); United States Environmental Protection Agency (U.S. EPA) Technical Regulations of 9-23-88 and U.S. EPA Financial Responsibility Regulations of 10-26-1988.

Where local requirements do not specify applicable codes, Wayne recommends using the codes listed above. These codes are comprehensive and detailed, often requiring interpretation to cover unusual situations, and, therefore, the associated handbooks (where applicable) should also be consulted. (The handbooks are also available from the same sources.)

Due to the variety of locations encountered, further information on installation cannot be dealt with in this document except as the codes relate directly to the installation of the pump. Therefore, it is strongly recommended that **a qualified engineer or contractor familiar with local regulations and practices be consulted before starting installation.**

Pertinent information and codes are available from the following sources:

Association for Composite Tanks (ACT)
North State Street
Suite 720
Chicago, IL 60602
(301) 355-1307 (for information requests)

American Petroleum Institute (API)
1220 L Street, N.W.
Washington, DC 20005
(202) 682-8000

Fiberglass Petroleum Tank and Pipe Institute
One SeaGate, Suite 1001
Toledo, OH 43604
(419) 247-5412

National Assoc. Corrosion Engineers
(NACE)
Box 218340
Houston, TX 77218
(713) 492-0535

National Fire Protection Association (NFPA)
One Batterymarch Park

Quincy, MA 02269-9101
(617) 770-3000

National Leak Prevention Association
(NLPA)
685 Fields Ertel Road
Cincinnati, OH 45241
(513) 489-9844 or 1-(800) 543-1838

Petroleum Equipment Institute (PEI)
Box 2380
Tulsa, OK 74101
(918) 494-9696

Steel Tank Institute
P. O. Box 4020
Northbrook, IL 60065
(312) 498-1980

Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, IL 60062
(312) 272-8800

Underwriters Laboratories of Canada
7 Crouse Road
Scarborough, Ontario, Canada N1R3A9
(416) 757-3611

Western Fire Chiefs Association
5360 South Workman Mill Road
Whittier, CA 90601
(213) 699-0541

United States Environmental Protection Agency
Office of Underground Storage Tanks
401 M St., SW (05-400WF)
Washington, DC 20640
(703) 308-8850 (Underground Storage Tanks)

U. S. Department of Labor,
Occupational Safety and Health Administration
(OSHA) Washington, DC 20402
• Call OSHA at (202) 523-8148 to determine specific needs; OSHA rules are covered by Title 29 of the Code of Federal Regulations (29 CFR.)
• Order OSHA publications from:
Government Printing Office (GPO)
Washington, DC 22304
(202) 783-3238

NOTE: Other regulatory codes may apply. Consult your local and regional code requirements to determine which codes are applicable for your location.

1.4. Safety Precautions

NFPA 30A states that:

“When maintenance to Class I dispensing devices becomes necessary and such maintenance may allow the accidental release or ignition of liquid, the following precautions shall be taken before such maintenance is begun:

- Only persons knowledgeable in performing the required maintenance shall perform the work.
- All electrical power to the dispensing device and pump serving the dispenser shall be shut off at the main electrical disconnect panel.
- The emergency shut-off valve at the pump, if installed, shall be closed.
- All vehicle traffic and unauthorized persons shall be prevented from coming within 20 ft.(6 m) of the dispensing device¹.”



WARNING

Electric shock hazard! More than one disconnect switch may be required to de-energize the pump for maintenance and servicing. Use a voltmeter to make sure ALL circuits in the pump are de-energized. Failure to do so may result in serious injury.

Lockout/Tagout requirements of the U. S. Dept. of Labor, Occupational Safety and Health Administration (OSHA) may also apply. Refer to Title 29, Part 1910 of the Code of Federal Regulations (29CFR1910), *Control of Hazardous Energy Source (Lockout/Tagout)*.

1. Reprinted with permission from NFPA 30A-90, *Automotive and Marine Service Station Codes*, Copyright ©1990, National Fire Protection Association, Quincy MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association on the referenced subject, which is represented only by the standard in its entirety.

2. INSTALLATION

2.1. Equipment Inspection

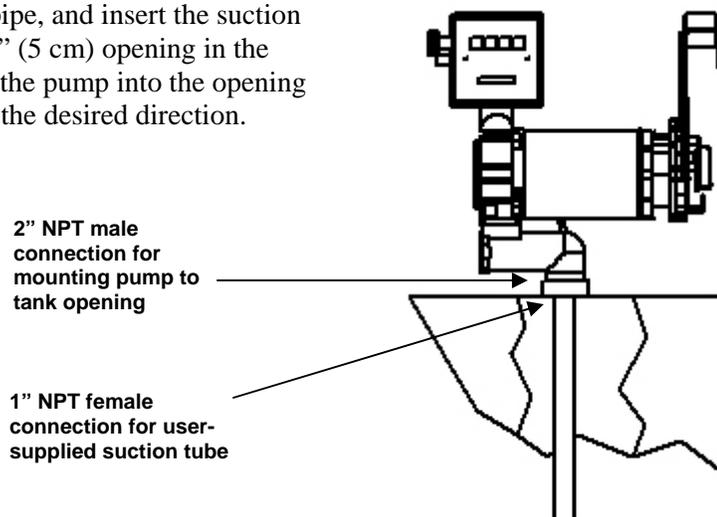
- If the pump is shipped directly to the site, examine the shipment immediately upon arrival to make certain there has been no damage or loss in transit. Make sure that all the component parts, including any optional equipment, are accounted for.
- Check and save the Packing Slip, Bill of Lading, Invoice, and all other documents included in the shipment.
- Damaged or lost equipment must be reported to the carrier. Any damage or loss that may occur in transit is not covered under the Dresser Wayne Warranty.

2.2. Pump Installation

- The Wayne 700 Series is designed for use with aboveground storage tanks. The pump may be mounted directly into a fitting on the top of the tank or on a shelf on the side of the tank.
- The installer should make sure that the tank is equipped with the necessary safety devices according to the federal, state, and local codes, including, but not limited to, a pressure/vacuum vent, emergency vent, and vented fill cap.
- The suction pipe should terminate at a minimum of 3" (7.6 cm) from the bottom of the tank.
- The pump has an integral check valve to maintain prime. In suction lines less than 15 feet (4.6 m), no additional check valves are required. In longer installations, make sure that any check valves or foot valves include pressure relief mechanisms.

2.2.1. Direct Installation on Aboveground Storage Tank

- Measure and cut a 1" (2.5 cm) galvanized pipe for the suction pipe. The pipe needs to be threaded on one end, and should be a length that provides a minimum of 3" (7.6 cm) clearance from the bottom of the tank.
- Apply a U.L. Listed gasoline-resistant pipe joint sealing compound to the threads of the galvanized pipe, and securely screw the threads into the pump inlet.
- Lift the pump and suction pipe, and insert the suction pipe through the standard 2" (5 cm) opening in the aboveground tank. Thread the pump into the opening until it is secure and facing the desired direction.



2.2.2. Shelf Installation on Aboveground Storage Tank

- The Wayne 700 Series may be mounted on a shelf on the side of the tank to make the user controls more accessible with larger tanks.
- The installer must provide the necessary mounting hardware, piping, and safety valves according to the federal, state, and local codes.
- If the pump is mounted below the product level, it is necessary to install an emergency gate valve in the piping immediately after it exits the tank followed by a solenoid valve controlled by the pump's auxiliary AC control lead (see Section 2.3.4). A pressure regulator valve with shear section, or equivalent valve, must be installed beneath the pump. All valves must be equipped with a pressure relief mechanism. Pressure in the pump cannot exceed 50 psi.

2.3. Electrical Wiring

2.3.1. General

- Wayne recommends employing a qualified electrician for all wiring.
- A hazardous liquid is being handled, so it is important to ensure that all wiring and conduit is in accordance with all federal, state and local regulations, including, but not limited to, the National Electrical Code (NFPA 70), NFPA 30, NFPA 30A, and NFPA 395.

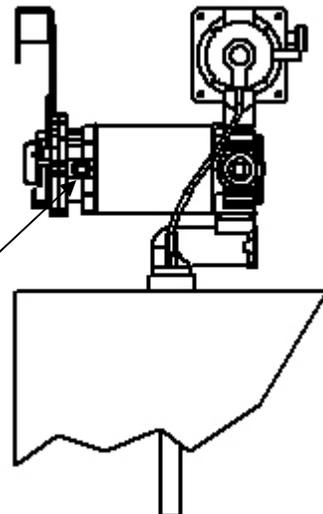
2.3.2. Circuit Breakers & Cutoff Switch

- Wire the pump to a dedicated 15 AMP circuit breaker.
- Two pumps may be wired to the same circuit breaker.
- In addition to the circuit breaker requirements, an emergency power cutoff should be installed that provides a single control to simultaneously turn off all AC power to all of the site dispensing equipment. The switch should be located within a convenient distance of the fueling equipment.

2.3.3. Conduit:

- Use ½" threaded, rigid, metal conduit and properly sealed connectors.
- All threaded connections must be drawn up tight and have a minimum of five threads engaged.
- Do not use flexible conduit or knockout boxes.

½" female NPT
conduit connection
for AC wiring



2.3.4. Wiring

- All wiring should be UL-Listed, gasoline- and oil-resistant wire rated at least 90°C, 600V, Gas & Oil Resistant.
- All AC wire terminations should be made in the motor junction box. Make sure all wire connections are tightly spliced and secured with a wire nut. Use electrical tape to close the open end of the wire nut. After completing the wiring terminations, securely fasten the junction box cover using all of the supplied bolts.
- The AC wire size will depend upon the distance from the pump to the circuit breaker panel. Reference the recommended sizes in the following chart.

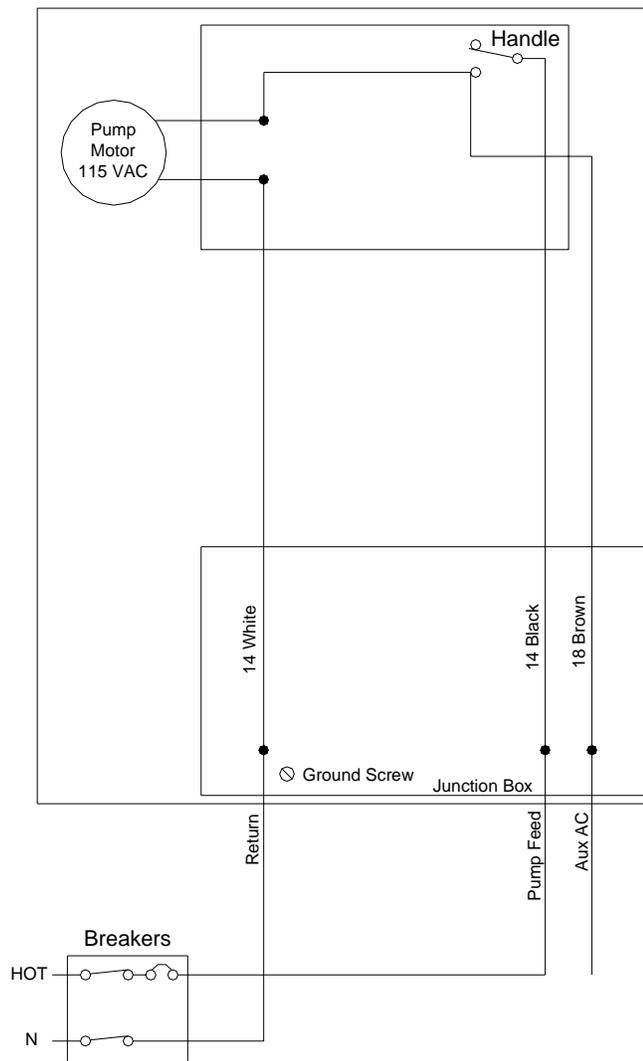
RECOMMENDED WIRE GAUGE SIZES		
Distance		Wire Gauge
Feet	Meters	
25'	7 m	14
50'	15 m	14
100'	30 m	12
150'	46 m	10
200'	61 m	8
250'	76m	8
300'	91m	8

- If two pumps are wired from the same circuit breaker, increase the wire size to handle the additional load.
- **Auxiliary AC Control Lead**
 - An auxiliary AC Control Lead wire (brown) is provided in the motor junction box. This line is hot when the pump is turned on and may be used to provide a switch detect to a fuel management system, open a solenoid valve in the supply line for positive head pressure applications, or power a signal light.
 - Maximum load is one amp.
 - Check the “on” voltage of the auxiliary lead and make sure it is compatible with any equipment being connected.
 - The wire size for the auxiliary AC Control lead should be 14-gauge.
 - If the auxiliary lead is not used, make sure the wire is capped with a wire nut and the open end of the wire nut is covered with electrical tape.

2.3.5. Grounding

- All pumps and electrical connection boxes must be grounded per NFPA 70.
- Connect a ground wire between the motor junction box ground lug and the main electrical service panel.
- Make sure a ground rod is properly installed and wired to the ground bus strip of the main electrical service panel in accordance with the National Electrical Code. Unless prohibited by local regulations, it is recommended that the neutral and ground bus strips be tied together.

2.3.6. Wiring Diagram



Notes:

1. All equipment to be installed in accordance with all applicable local, state, and federal codes, including, but not limited to, the National Electrical Code (NFPA 70), NFPA 30, the Automotive and Marine Service Station Code (NFPA 30A), and the Standard for Storage of Flammable and Combustible Liquids at Farms & Isolated Sites (NFPA 395).
2. For wiring connections, use wires rated at least 90°C, 600V, Gas & Oil Resistant.
3. See the wire size chart for proper gauge of the wires.
4. Aux AC – The Auxiliary AC Control Lead (brown) is hot when the pump is turned on and can be used to provide a switch detect to a fuel management system, open a solenoid valve in the supply line for positive head pressure applications, or power a signal light. Maximum load is 1 amp. Cap the wire if not used.
5. For full details on the electrical wiring, see entire Section 2.3.

2.4. Hose and Accessories Installation

- Hose assemblies should be U.L. Listed and installed in accordance with the manufacturer's instructions.
- Install the hose assembly after the pump is installed.
 - To ensure a proper joint, wash all cutting oil off the threads and use a U.L. Listed gasoline-resistant pipe joint sealing compound.
 - Place the compound on male threads only; be careful not to get any excess compound on the inside of the fittings.
 - Install the fixed end of the hose to the dispenser outlet; secure according to the instructions of the sealing compound and hose manufacturer.
 - Install the nozzle, and other hose accessories – swivels, breakaways, etc. – on the hose according to the manufacturer's instructions.

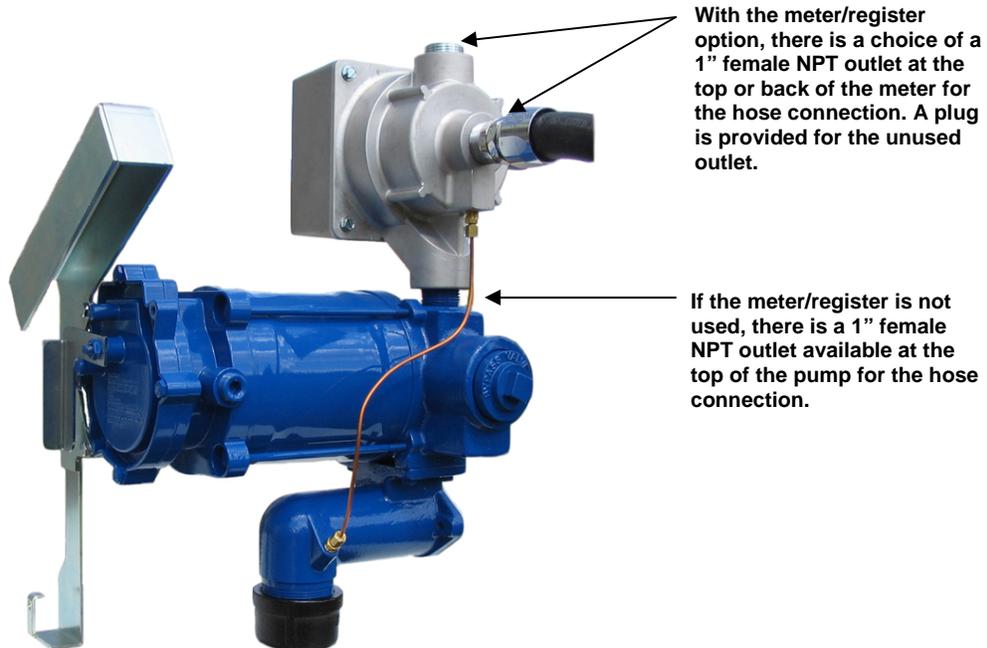
NOTE: Do not use the joint sealant compound on balanced vapor recovery accessories. Reference the manufacturer's instructions.

- For additional safety, breakaway connectors on the hose are recommended for all installations. Refer to your state and local codes for breakaway device requirements that apply to your installation.



WARNING

Use only UL Listed hoses and nozzles. Continuity must be present between the dispenser outlet and nozzle spout to prevent static discharge while fueling. Continuity must be checked for the outlet/hose assembly to insure that the nozzle is grounded. Failure to do so may result in a hazardous condition that could cause serious injury or death.



3. START-UP

3.1. Initial Checkout

Verify the following items have been correctly completed and the installation meets the necessary federal, state, and local regulations as specified in Section 1.3.

- The pump is securely fastened to the tank or shelf.
- All conduit is rigid metal and is securely fastened. Do not seal the conduit until the wiring has been verified through proper operation.
- All wires are appropriately terminated and the pump is properly grounded.
- The motor junction box cover is securely fastened with all of the supplied bolts.
- The hose and hose accessories are securely connected to the pump and have been checked for continuity.
- All water has been removed from the tank and the tank has a sufficient amount of fuel for testing (above bottom of suction line).

NOTE: Do not use the Model 700 Series to remove water from the tank. It will harm the pump.

3.2. Start-up

3.2.1. Operation Test

After verifying the above items have been completed, operation of the pump can be checked.

1. Turn on the circuit breaker for the pump.
2. Remove the nozzle from the nozzle holder, and lift the on/off lever at the bottom of the nozzle holder to turn on the pump.
3. If the pump is equipped with a register, turn the reset knob to zero the display.
4. Insert the nozzle into a fill tank and press the nozzle lever to dispense fuel. Visually verify fuel is being dispensed, check the register display if applicable, and inspect all hose and piping connections for leaks.
5. Turn the pump off by pushing the on/off lever back down.
6. Repeat steps 2 – 5 several times to verify everything is working satisfactorily.

3.2.2. Voltage Test

- While the pump is turned off, verify the incoming voltage to the pump is within $\pm 10\%$ of the motor nameplate voltage. If the voltage is not within the acceptable range, take the appropriate corrective measures before using the pump.
- Turn the pump on and record the voltage readings while the nozzle is open (dispensing) and then closed (bypass). Any voltage drops in excess of 10% need to be corrected.

3.2.3. Leak Test

- Re-check the pump and all piping and hose connections to make sure there are not any signs of leaks.

3.2.4. Meter Check (Calibration) - For Units Equipped with a Meter/Register

All meters are tested and calibrated for gasoline at the factory before shipping. As part of the start-up procedure, the meter accuracy should be verified based on the actual product dispensed, added accessories, installation conditions, or any changes that could have occurred during rough transit..

Step 1 Dispense product in a certified 5 gallon or 20 liter calibration container to wet the container and then empty it back into the tank, allowing it to drain for 10 seconds.

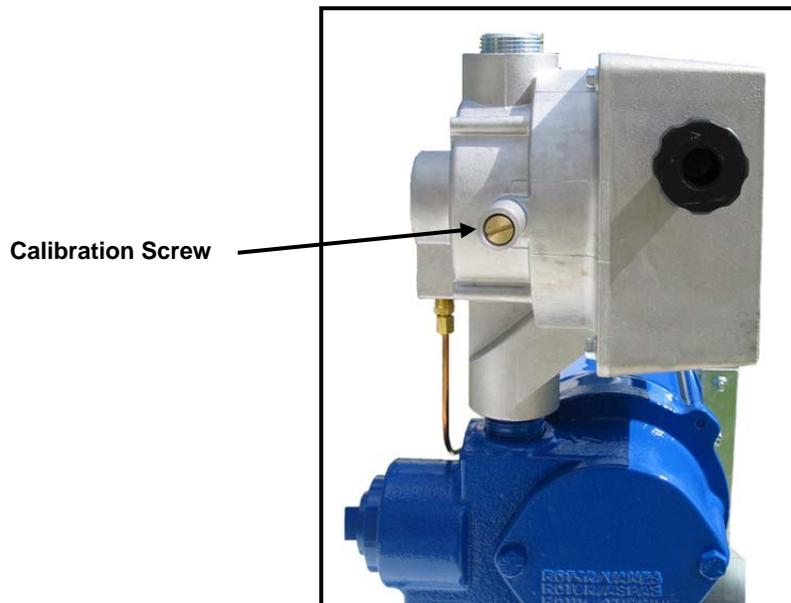
Step 2 Dispense product into the container until exactly 5 gallons (20 liters) are shown on the register display.

Note: When verifying the accuracy, dispense at a flow rate that will be typical of the flow rate normally used. Changing the flow rate during or between verification tests may cause your results to vary.

Step 3 Compare the reading on the container's sight glass to the register value. If you desire to get the measurement closer to zero on the test container, follow step 4.

Step 4 The meter is adjusted by turning the calibration screw on the left side of the register. Turn the screw clockwise to correct a plus cubic inches reading on the test container sight glass, and turn the screw counterclockwise to correct a minus cubic inches reading.

Note: Track the direction of the turns and the number of full and fractional turns made with each adjustment in case additional corrections must be made after re-verifying the accuracy.



Step 5 Repeat Steps 1-4 until the desired level of accuracy is reached.

3.2.5. Complete Installation

- After all tests have been completed successfully, and a proper installation and operation are verified, the conduit openings should be appropriately sealed.
- The installer should make sure all documentation and manuals are left with the pump owner.

4. OPERATION

4.1. Safety Items You Should Know

- Know how to turn OFF power to the pump in an emergency.
- Use the pump for appropriate applications. Use only low viscosity petroleum fuels – diesel, including biodiesel blends up to 20%; kerosene; and gasoline with up to 15% ethanol. Do not use the pump for pumping water or water-based liquids. Do not use the pump for dispensing fuel into aircraft.
- Make sure the dispenser is equipped with the proper accessories for the application and the product dispensed.
- Inspect regularly, all external fuel carrying components such as, hoses, nozzles, breakaways, etc., for damage or leaks.
- Inspect regularly, the pump housing parts for damage or leaks.
- Have all leaks or defects repaired immediately.
- If a pressure regulator valve is used, test the shear section of the valve, by opening and closing several times, at least once per year.
- Care should be taken to prevent fuel spillage. If spillage occurs, clean-up immediately.
- Use of automatic safety nozzles prevents overfilling fuel tanks and avoids spilling fuel.
- Avoid tipping the nozzle downward spilling excess fuel.
- Sufficient lighting must be provided to allow safe use of the pump.
- Stow hoses to prevent tripping.
- Know the Hazardous Zone area around the pump.
- Do not operate the pump in the presence of any source of ignition including lighted cigarettes, electrical equipment, and running/hot engines.
- Always keep an operating nozzle attended and do not re-enter the vehicle after beginning the fueling sequence. Static buildup can be created from sliding in and out of the vehicle seat. Static discharge by subsequently touching an operating nozzle can create a hazardous situation.
- Portable tanks (containers) of 12 gallons (45 liters) or less shall not be filled while they are in or on a motor vehicle. See Warning information about this subject on the following pages.
- Wear safety goggles and protective clothes when dispensing any liquid that may be potentially harmful or hazardous. Change saturated clothing and wash skin promptly with soap and water.

4.1.1. Portable Tanks and Containers

Portable containers of 12 gallons (45 liters) or less shall not be filled while they are in or on a motor vehicle. Filling portable containers, especially when they are sitting on a non-conductive surface such as a floor mat or a plastic bedliner in the back of a pick-up truck, can present a possible safety hazard and should be avoided as so stated in the following WARNING:



WARNING

FIRE HAZARD!

The flow of gasoline through the pump nozzle can produce static electricity, which can cause a fire if gasoline is pumped into an ungrounded gasoline container. To avoid static buildup and the possible resulting serious injury:

- Place approved container on the ground. Do not fill the container in the vehicle or truck bed.
- Keep the nozzle in contact with the can or container while filling. Do not use an automatic pump handle (latch-open) device.

4.1.2. Health Note

Be advised that petroleum fuel and fuel vapors can damage your health.

4.2. Pump Operation

To Dispense Fuel:

- Remove the nozzle from the nozzle holder.
- Lift the on/off lever at the bottom of the nozzle holder to turn the pump on.
- If the pump is equipped with the optional register, turn the reset knob to zero the register.
- Insert the nozzle into the fill tank and squeeze the nozzle handle to dispense fuel.
- After fueling is complete, push the on/off lever down to turn off the pump, and re-insert the nozzle into the holder.

NOTE: To prevent unauthorized usage, the nozzle may be locked into the nozzle holder.



CAUTION

The pump motor is equipped with thermal overload protection. If the motor overheats, the motor will automatically shutoff, and prevent pump operation until it cools. Make sure you always turn the pump off if the thermal overload protector trips. If the power is not turned off, after the motor cools, it will automatically reset and product could be dispensed.

5. MAINTENANCE

5.1. Preventive Maintenance

The safety precautions described in Section 1.3 apply to the following preventive maintenance procedures. A correctly installed pump, given proper preventive maintenance attention, will seldom require emergency service. Perform the following checks on a regular basis:

- Check the pump housing parts for leaks regularly. Check nozzles, swivels, hoses, filters, and joints for leaks and wear. Have all defects repaired immediately.
- Do not abuse the hose by trying to stretch it to reach a vehicle. This will cause early failure at the couplings.
- Keep the pump clean at all times. Use only mild soap and water with a soft cloth. Do not use gasoline or other petroleum-based products to clean the pump. Do not use abrasive cleaners on any part of the pump. If it is necessary to just wipe off the pump, use a damp cloth. Periodic waxing (3 times per year) of the pump surfaces with an automotive wax or polish is essential to maintain the original finish and inhibit corrosion.

NOTE: Do not spray the pump with water.

- Test the tank for water regularly. Water in petroleum is not only a source of engine trouble, but will also cause damage to the pump.
- Check the nozzle holder switch operation. If this does not operate easily, too much force may be applied on the switch mechanisms, causing premature failure.

5.2. Strainer

A dirty strainer screen will slow down the delivery of product. If the tank and piping installation is new, it may be necessary clean the strainer screen two or three times during the first few days of operation to remove installation debris and pipe sealant. After this, strainer cleaning should be performed periodically.



WARNING

Before removing the strainer, turn off the power to the pump. Failure to do so may result in a hazardous condition that can result in serious injury. Make sure safety goggles are worn. Loosen the strainer cover and allow the product to drain into a plastic container until pressure is relieved. Return the product to the appropriate tank.

To remove the strainer:

- Remove the two bolts and strainer cover. Place a container under the opening to catch the petroleum and sediment.
- Pull out the strainer and wash the screen in gasoline. Use compressed air to dislodge lint and other foreign particles.
- Install the clean strainer. Turn the electrical power ON and check for leaks.



5.3. How to Get Service on Your Pump

Trouble with the operation of the dispenser should be referred to your local Wayne authorized service personnel or call the Wayne Help Desk at **1-800-289-2963**.



CAUTION

Any modification, repair, or service to the dispenser, not in accordance with the original design, may invalidate compliance with the equipment certifications such as UL, CSA, CE Marking, etc. Consult manufacturer as necessary.

6. TROUBLESHOOTING

6.1. Troubleshooting Tips

SYMPTOM	DIAGNOSIS & CORRECTIVE ACTION
Motor does not start or make any noise.	<ul style="list-style-type: none"> • No electrical power to the pump. <ul style="list-style-type: none"> ○ Check that the breaker is turned on. ○ Test for adequate voltage in the motor junction box (within 10% of nameplate voltage). ○ Check all wiring terminations. Verify that the auxiliary AC lead is either capped or connected to an outside device. • Motor has overheated and the thermal overload protector has tripped. <ul style="list-style-type: none"> ○ Allow the motor to cool and then re-try. • Motor switch is defective. <ul style="list-style-type: none"> ○ Turn off breaker, remove motor switch from motor junction box, and check for continuity.
Motor does not start, but makes humming noise.	<ul style="list-style-type: none"> • Inadequate voltage. <ul style="list-style-type: none"> ○ Test for adequate voltage in the motor junction box (within 10% of nameplate voltage). • Vanes or rotor are jammed. <ul style="list-style-type: none"> ○ Remove rotor/vanes cover plate. Check for any damage or obstructions. Remove rotor and vanes and check that motor shaft turns freely by hand.
Motor runs, but no flow.	<ul style="list-style-type: none"> • Tank inventory is low. <ul style="list-style-type: none"> ○ Make sure product level is above the bottom of the suction pipe. • Air leak in system and pump will not prime. <ul style="list-style-type: none"> ○ Check for air leak at suction connection and check that all cover plates are flat and securely fastened. • Supply line is blocked. <ul style="list-style-type: none"> ○ Remove pump and check suction line for damage or obstructions. • Outlet is blocked <ul style="list-style-type: none"> ○ Check the hose accessories for obstructions or faulty equipment. Test without the accessory to verify. ○ Note: Under certain installation conditions, a nozzle with an anti-drain valve may become blocked with air that the pump cannot overcome. • Rotor fiber shaft key is broken, or rotor or vanes are worn. <ul style="list-style-type: none"> ○ Remove rotor/vanes cover plate. Check that the fiber key holds the rotor securely in place on the shaft. Remove the rotor and vanes and check for excessive wear. Replace parts as necessary. • Bypass valve is stuck in the open position. <ul style="list-style-type: none"> ○ Unscrew the bypass valve cover. Remove the bypass valve and clean or replace as necessary. • Check valve is stuck in the open position. <ul style="list-style-type: none"> ○ Un-bolt the strainer cover plate. Remove the strainer and check valve. Check for a clean seat.

SYMPTOM	DIAGNOSIS & CORRECTIVE ACTION
Motor stalls when nozzle is closed.	<ul style="list-style-type: none"> • Bypass valve is stuck in closed position. <ul style="list-style-type: none"> ○ Unscrew the bypass valve cover. Remove the bypass valve and clean or replace as necessary. • Low voltage. <ul style="list-style-type: none"> ○ Test for adequate voltage in the motor junction box (within 10% of nameplate voltage).
Slow flow rate.	<ul style="list-style-type: none"> • Clogged filter. <ul style="list-style-type: none"> ○ If an optional filter is used, install a new filter element. • Dirty strainer. <ul style="list-style-type: none"> ○ Un-bolt the strainer cover plate. Remove and clean the strainer. • Air leak in system. <ul style="list-style-type: none"> ○ Check for air leak at suction connection and check that all cover plates are flat and securely fastened. • Low voltage. <ul style="list-style-type: none"> ○ Test for adequate voltage in the motor junction box (within 10% of nameplate voltage). • Hose accessories are obstructed or too restrictive. <ul style="list-style-type: none"> ○ Remove the suspected accessory and test the flow. ○ When using an automatic nozzle, a farm-type automatic nozzle will provide the best flow. • Supply line is blocked. <ul style="list-style-type: none"> ○ Remove pump and check suction line for damage or obstructions. • Rotor or vanes are worn. <ul style="list-style-type: none"> ○ Remove rotor/vanes cover plate. Remove the rotor and vanes and check for excessive wear. Replace parts as necessary. • Bypass valve is stuck in open position. <ul style="list-style-type: none"> ○ Unscrew the bypass valve cover. Remove the bypass valve and clean or replace as necessary.
Motor overheats.	<ul style="list-style-type: none"> • Low voltage. <ul style="list-style-type: none"> ○ Test for adequate voltage in the motor junction box (within 10% of nameplate voltage). • Clogged filter. <ul style="list-style-type: none"> ○ If an optional filter is used, install a new filter element. • Viscosity of fluid is too high. <ul style="list-style-type: none"> ○ Verify fluid is a low viscosity petroleum fuel such as gasoline, kerosene, or diesel. • Supply line is blocked. <ul style="list-style-type: none"> ○ Remove pump and check suction line for damage or obstructions.

SYMPTOM	DIAGNOSIS & CORRECTIVE ACTION
<p>Pump dispenses product when not turned on.</p>	<ul style="list-style-type: none"> • Installation has positive head pressure and proper valves are not installed <ul style="list-style-type: none"> ○ If the product level is above the pump, verify that a solenoid valve is installed at the top of the tank and a pressure regulator valve is installed underneath the pump (see Section 2.2.2). • Vacuum breaker is defective (only available on Model 720). <ul style="list-style-type: none"> ○ Disconnect vapor return line and with a plastic container available to catch any product, determine if product is coming out the vent. If so, clean or replace the vacuum breaker. ○ Note: On other 700 Series models without the vacuum breaker, it is possible to siphon product through the pump.

INSTALLATION & OPERATION MANUAL

700 Series Small Fleet Pumps

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Wayne Division, Dresser, Inc.
Part No. 891817 Rev A

3814 Jarrett Way, Austin, TX 78728
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(512) 388-8311
February/07