



Remote Dispensing Cabinet

902V Series Cabinet Dispenser

Models

FR902R, non-UL, gallon

FR902LR, non-UL, liter

FR902RU, UL, cUL listed, gallon

FR902LRU, UL, cUL listed, liter

Table of Contents

Owners Installation, Operation, and Safety Manual	1
Table of Contents	2
About This Manual	2
Safety Information	3
Pad Locking.....	3
Installation	3
Electrical Installation.....	4
Procedure for Meter Calibration	6
Operating Instructions	6
Maintenance.....	6
Cleaning Instructions.....	6
Storage.....	7
Troubleshooting.....	7
Fluid Compatibility.....	7
Assembly and Disassembly	7
Replacement Parts Information.....	9
Cabinet Exterior Dimensions.....	12
Optional Mounting Platform Dimensions.....	13
Safety Testing Approvals	16
Label Locations*	16


Thank You!


Thank you for your purchase of the Fill-Rite FR902 series Remote Dispenser! Your Fill-Rite product comes with over 80 years of fluid transfer experience behind it, providing you the value that comes with superior performance, user friendly design, long service life, and solid, simple engineering. Experience that gives you peace of mind.


Rest Easy – It’s Tuthill!

About This Manual

From initial concept and design through its final production, your Fill-Rite dispenser is built to give you years of trouble free use. To ensure it provides that service, **it is critical that you read this entire manual prior to attempting to install or operate your new dispenser.** Become familiar with the terms and diagrams, and pay close attention to the highlighted areas with the following labels:

	WARNING! Emphasizes an area in which personal injury or even death could result from failure to follow instructions properly. Mechanical damage may also occur.
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	IMPORTANT! These boxes contain information that illustrates a point that may save time or may be key to proper operation, or clarifies a step.
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	CAUTION! Failure to observe a “Caution” can cause damage to the equipment.
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At Fill-Rite, your satisfaction with our products is paramount to us. If you have questions or need assistance with your product, please contact us at 1-800-634-2695 (M-F 8 AM–5 PM ET).

Safety Information



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!

- 1) **NEVER** smoke near the dispenser, or use the dispenser near open flames when dispensing a flammable liquid! Fire can result!
- 2) A "Fill-Rite" Filter should be used on the dispenser outlet to insure no foreign material is transferred to the fuel tank.
- 3) Threaded pipe joints and connections should be sealed with the appropriate sealant or sealant tape to minimize the possibility of leaks.
- 4) Storage tanks should be securely anchored to prevent shifting or tipping when full or empty.
- 5) To minimize static electricity build up, use only static wire conductive hose when dispensing flammable fluids, and keep the fill nozzle in contact with the container being filled during the filling process.
- 6) **DO NOT** exceed 50 psi/ 3.5 BARS line pressure.
- 7) **DO NOT** install a foot valve or check valve without a pressure relief valve; cracking may result.



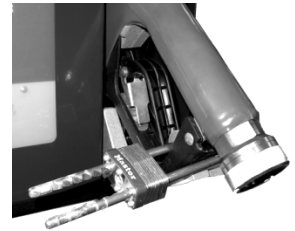
WARNING! This product must not be used to transfer fluids into any type of aircraft.



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

Pad Locking

Your Fill-Rite pump nozzle can be pad locked for added security. With the pump turned off, and the nozzle in the stored position, a pad lock can be inserted through the locking link and the nozzle handle opening. This configuration prevents the nozzle from being removed and the pump being turned on.



Installation

FR902 Series Remote dispensers and tank top pumps must be installed in accordance with local, state, and national electrical code NEC/ANSI/NFPA 70, NFPA 30, NFPA 30A, and NFPA 395, on a fixed, above ground tank not accessible to the public.

In **FR902RU** and **FR902LRU** installations, a UL listed emergency shut-off valve with fusible link must be installed at the dispenser inlet. All piping must be Schedule 40. Use UL classified gasoline and oil resistant pipe compound on all threaded joints. See page 12 for sample plumbing diagram. For use **ONLY** with UL Listed Interchangeable (automatic or manual) Service Station Type Hose Nozzle Valves or Non-Interchangeable Service Station Type Nozzle Valves Model Catlow MAX 1, Husky 3N1-GS, and Husky 1+V111.

Additionally, **FR902RU** and **FR902LRU** Dispensers require a UL listed pressure relief valve be incorporated into the installation, either as part of the pump or separately at the dispenser itself.

Mechanical Installation

1. Install the pump (not included) securely to the top of the fuel tank per the instructions included with the pump.
2. Install mounting plate to tank (if applicable for your installation). Refer to the mounting plate "Tank Mounting" section of the mounting plate instructions.
3. Remove the dispenser cover to allow inside access to the bottom of the dispenser. Begin by pulling the reset knob off its shaft. The cover is removed by unscrewing the 3 - Phillips head screws located on the sides and back of the cabinet (see diagram on page 9 for screw locations).
4. Place dispenser on mounting plate; using the 4 - 5/16 x 18 screws, nuts, and grommet washers, screw the dispenser securely to the mounting plate through the 4 holes located in the bottom of the dispenser cabinet base (figure 1).
5. In **FR902RU** installations, install an Emergency Shut-Off Valve (not supplied) to the dispenser inlet. Position valve so it can be rigidly mounted to the tank, and is not dependent on the dispenser for support.
6. Carefully measure and install pipe between the pump and Emergency Shut Off Valve. **The pipe is not intended to support the pump or the dispenser in any manner.**

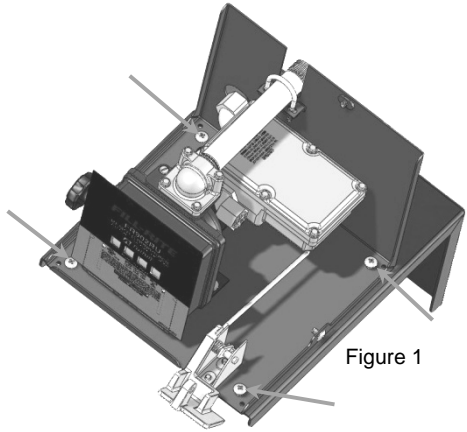


Figure 1

NOTE: Dimensional drawings for installation purposes are located on pages 12 – 16.



CAUTION! Threaded pipe joints and connections should be sealed with the appropriate sealant or sealant tape to minimize the possibility of leaks.

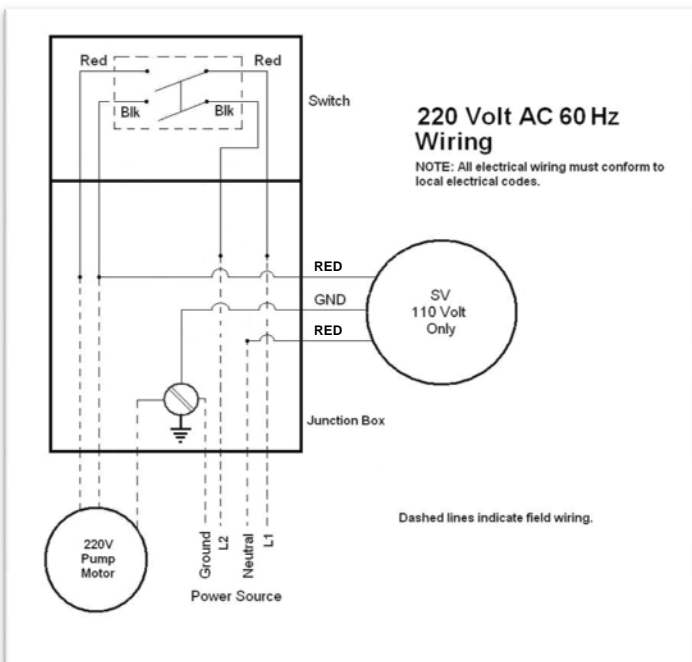
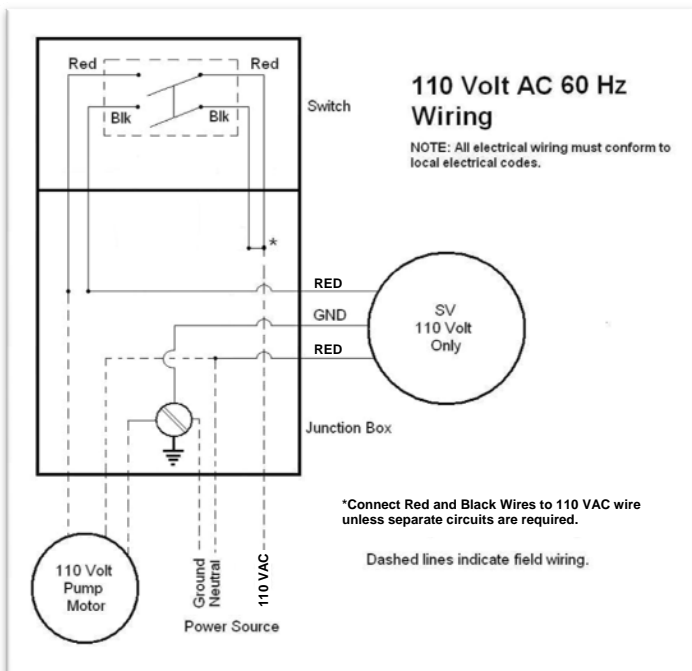
Electrical Installation



WARNING! Overall dispenser installation and electrical wiring should be performed **ONLY** by a licensed electrician and service personnel in compliance with local, state, and national electrical code NEC/ANSI/NFPA 70, NFPA30, NFPA 30A, and NFPA 395 as appropriate to the intended use of the dispenser. Threaded rigid conduit, sealed fittings, and conductor seal should be used. The pump must be properly grounded. Improper installation or use of this dispenser can result in serious bodily injury, or death!



CAUTION! All electrical appliances should operate at the rated nameplate voltage. Power should be supplied to this dispenser from a dedicated 20 amp circuit breaker. No other equipment should be powered by this circuit. Wiring must be of sufficient size to carry the correct current for the pump. Voltage drop will vary with distance to pump and size of wire; refer to the National Electrical Code (NEC), or local codes, for voltage drop compensation to be sure you are using the correct size wire for your application.

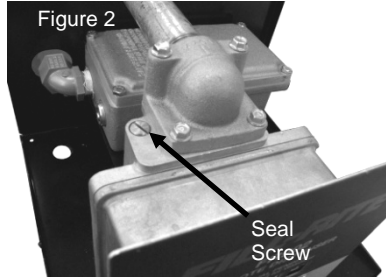


Meter Calibration

Meter calibration is required upon installation, after disassembly, after significant wear, or when dispensing a different viscosity fluid. Your FR902 series dispenser is factory calibrated using mineral spirits. Calibration must be done between 6 and 40 GPM (23 and 151 LPM). Meter calibration can be easily changed by following the calibration procedure. A container of **KNOWN** volume will be needed for the calibration procedure. For the FR902 Series dispenser, a five gallon container or larger, or a 20 liter container or larger should be used.

Procedure for Meter Calibration

1. For the most accurate calibration, install the dispenser as it will be used. Dispense liquid into a container of known volume.
2. If calibration is required, turn off pump and release any pressure in the system. Remove seal screw to access calibration screw (figure 2). If meter reads more than was dispensed, turn calibration screw counter-clockwise. If meter reads less than was dispensed, turn the screw clockwise.
3. Be sure to re-install the seal screw when calibration is complete.



Operating Instructions

For accurate measurement and to prevent dispenser damage, dispenser and piping must always be filled with liquid and be free of air. The meter portion of your dispenser should be calibrated per instructions in this manual prior to its use.

1. Reset register to "0". **DO NOT RESET WHILE IN OPERATION!** Damage will result.
2. Remove nozzle from holder and turn the power on by lifting the switch handle.
3. Dispenser is ready for use. Insert nozzle into container to be filled and start flow of liquid. Do not exceed 50 PSI of line pressure.
4. When desired amount of liquid has been dispensed, stop the flow at the nozzle. Turn the power off by pushing the switch handle down. Return the nozzle to its holder.

Maintenance

Your Fill-Rite FR902 series dispenser should operate virtually maintenance free. Certain liquids, however, can dry out while in the meter housing, causing it to stop or perform poorly. If this happens, dispenser should be thoroughly cleaned.

Cleaning Instructions

For a thorough cleaning, disassemble the dispenser per "ASSEMBLY / DISASSEMBLY" section, "Dispenser Chamber Assembly" subsection. Rinse all components thoroughly. Recalibrate dispenser following calibration instructions above.



IMPORTANT! When returning a dispenser for service, it must be triple rinsed and accompanied by a note stating what chemicals have been pumped through it. Dispensers not adhering to these specifications may be refused for service.

Storage

If your dispenser is to be stored for a period of time, clean it thoroughly. This will help protect the dispenser from possible damage.

Troubleshooting

The following troubleshooting guide is designed to help you with basic diagnostics and repairs if you should encounter abnormal service from your FR902 series dispenser. We recommend you use only genuine Fill-Rite parts. These parts, and additional service information is available through your authorized Fill-Rite dealer.

Further troubleshooting information can be found in your pump manual. If you need additional assistance, please contact us at 1-800-634-2695 (M-F 8 AM–5 PM ET).

Concern	Possible Cause	Recommended Repair
Counter inaccurate.	Dispenser mis-calibrated.	Check calibration and recalibrate as necessary (directions on page 6).
	Air in lines or dispenser chamber.	Check line seals and joints for leakage; seal leaks appropriately.
	Measuring gears or disc are sticking.	Clean or replace internal dispenser components as necessary.
Fluid leak.	Dirty or damaged seal or gasket.	Clean seal or gasket and seat, replace seal or gasket as necessary.
Low flow capacity.	Clogged meter chamber.	Clean meter chamber; clean or replace screens and filters in piping.
	Plugged filter.	Replace filter element.
	Plugged pump.	Inspect and clean pump as necessary.
Meter body cracks.	Excess line pressure.	Install pressure relief valve so high pressure bleeds back to the tank. Replace cracked meter body.
Nutating Disc Broken.	Sudden high pressure fluid hitting disc.	Avoid surge flows by installing a shut-off valve on outlet of dispenser; install dispenser as close to the pump as possible, keep piping full of liquid. Replace meter chamber assembly.

Fluid Compatibility

The FR902 series dispensers are compatible **ONLY** with the following fluids:

- >Diesel Fuel >Gasoline & Gasoline / Alcohol blends (up to 10% ethanol) >Fuel Oil
- >Lubricating Oil (up to 60W lubricating oil; not temperature dependant)



CAUTION! If in doubt about compatibility of a specific fluid, contact supplier of fluid to check for any adverse reactions to the following wetted materials:

Ryton® Aluminum Stainless Steel Fluorocarbon Buna N
Polyester

Assembly and Disassembly

The FR902 Series Dispenser cabinet contains a 900 series meter, internal plumbing, and electrical switch. When referencing “Item Numbers” in each procedure, refer to diagram on page 9 for dispenser item number parts, and the diagram on page 11 for meter item numbers.



WARNING! TURN ALL POWER OFF TO THE DISPENSER AND PUMP AT THE BREAKER PRIOR TO PERFORMING ANY SERVICE. Release any pressure in the piping, hoses, and nozzle prior to performing any service. Failure to comply with these warnings can result in explosion, fire, bodily injury, and possibly death.

Cabinet Assembly (refer to page 9 for item # diagram)

Access to the internal components of the 902 Series Dispenser is gained by removing the metal cabinet cover (item 3). To do this, pull the reset knob (item 16) out by grasping it and pulling it firmly away from the cabinet. Next, remove the 3 large Phillips head screws from the sides and back of the cabinet assembly (item *). The metal cabinet cover can now be removed from the cabinet base (item 1). Use caution when lifting the metal cabinet off the base plate to minimize the possibility of scratching the clear plastic window.

Counter Assembly (refer to page 11 for item # diagram)

For access to the counter assembly:

- 1) Remove the two screws (item 19) to extract the counter mechanism.
- 2) Reassemble by reversing this procedure.

Meter Chamber Assembly (refer to page 11 for item # diagram)

The Meter Chamber Assembly consists of upper and lower chambers, a nutating disc, and four screws.

- 1) To expose the meter chamber assembly, gear train and seal remove 4 screws (item 23).
- 2) The meter chamber can be dislodged by removing 4 screws (item 21).

Reassemble by reversing this procedure.



IMPORTANT! If replacing any components of the meter chamber, the complete assembly must be replaced due to its precision method of construction. This will assure a proper fit, and correct operation of the chamber.

Gear Train and Seal (refer to page 11 for item # diagram)

To disassemble the gear train and seal:

- 1) Remove two screws (item 20) and gear frame (item 8).
- 2) Remove the gear cluster (item 16), washer (item 17), and shaft (item 15).
- 3) Remove the drive gear (item 14) and washers (item 12) by rotating and pulling the drive gear.
- 4) Remove the O-ring seal (item 13).



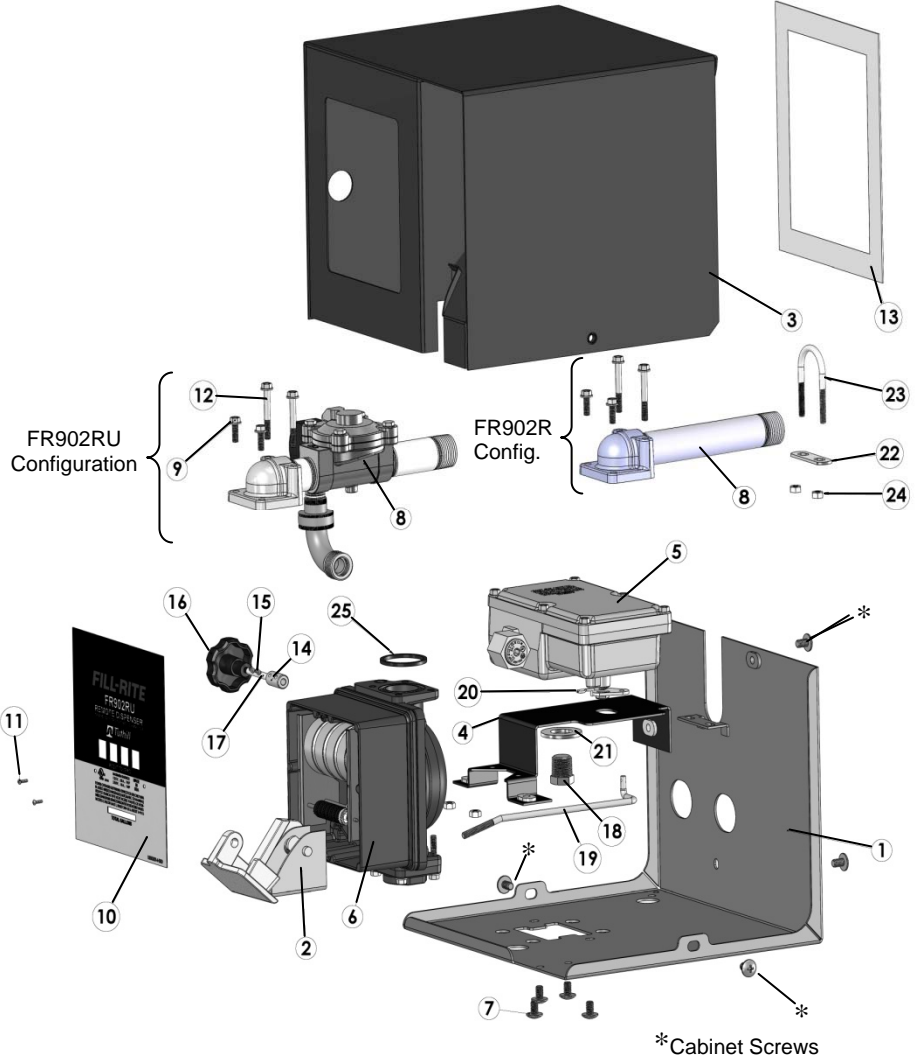
IMPORTANT! When reassembling seal, lubricate O-ring with oil or petroleum jelly and replace in cover. Place washer on drive gear shaft. Carefully rotate and push shaft through O-ring and cover to prevent damage to O-ring. Shaft must also be guided into pinion bevel (item 18) if counter has not been removed. Replace remaining parts to complete assembly by reversing disassembly procedure.

Repair

Dispensers needing repairs should be taken to an authorized repair facility. Dispenser **MUST** be triple rinsed before returning for repairs.

Replacement Parts Information

For repairs or routine maintenance, Fill-Rite offers the parts you need. The following parts diagram and list covers all applicable parts for your Fill-Rite product. These parts can be obtained through any authorized Fill-Rite dealer.



FR902 Repair Kits

Kit #	Description	Contents
KIT902HA	Switch Handle Assembly Kit	#2 Switch Handle Assembly
		#7 Fasteners
		#19 Rod
KIT902LS	Line Switch Kit	#2 Switch
		#7 Fasteners
KIT902SV	Solenoid Valve Kit	#8 Solenoid Valve Assembly
		# Gasket (not shown)
		# Fasteners (not shown)
KIT902RFP	Faceplate kit for FR902R	#10 Faceplate
		#11 Fasteners
		#13 Clear Cover
KIT902LRFP	Faceplate kit for FR902LR	#10 Faceplate
		#11 Fasteners
		#13 Clear Cover
KIT902RUFPP	Faceplate kit for FR902RU	#10 Faceplate
		#11 Fasteners
		#13 Clear Cover
KIT902LRUFPP	Faceplate kit for FR902LRU	#10 Faceplate
		#11 Fasteners
		#13 Clear Cover
KIT902MB	Mounting Bracket Kit	Mounting Bracket (not shown)
		Fasteners (not shown)
KIT902CC	Clear Cover	#13 Clear cover for faceplate
900KT	Repair kit for 900 Series Meter	Chamber and gear train components



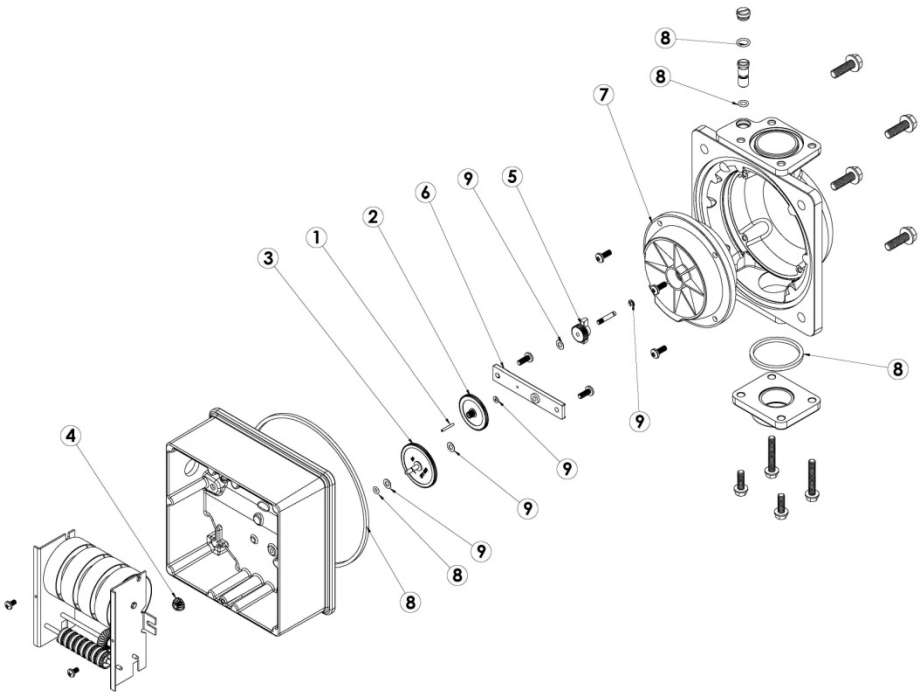
IMPORTANT! Repair kits include all necessary parts to perform the specific repair or replacement listed. Individual parts are not available. For additional information, please contact your Fill-Rite representative at 1-800-634-2695.



CAUTION! Threaded pipe joints and connections should be sealed with the appropriate sealant or sealant tape to minimize the possibility of leaks.

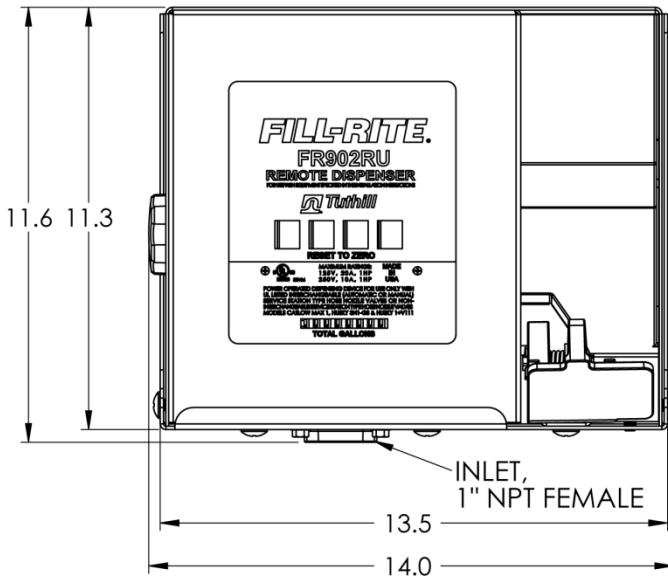
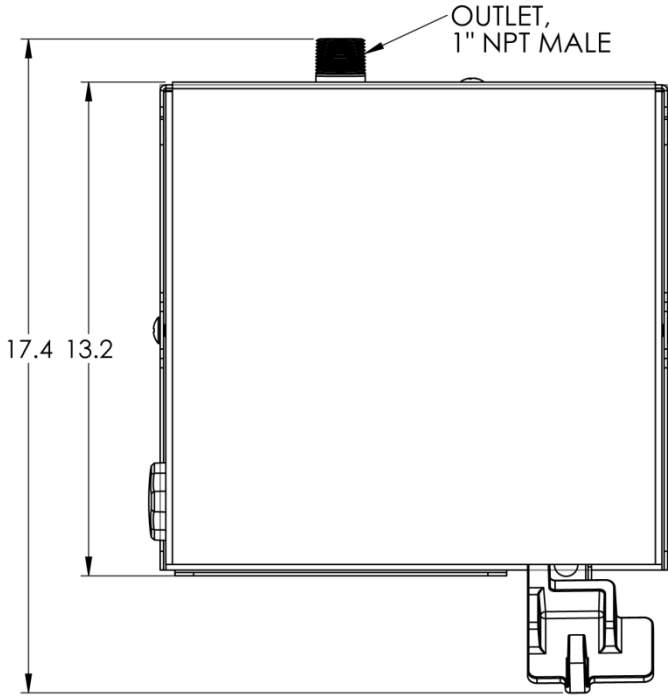
To assure proper operation on a solid mounting surface, Fill-Rite recommends installing the FR902 Cabinet Dispenser on the **KIT902MB Mounting Bracket kit**. This mounting bracket is designed specifically for use with the FR902 series Cabinet Dispenser, and features pre-drilled openings located for plumbing, wiring, and fastening. It also includes the necessary hardware to fasten the cabinet correctly and securely to the bracket. See your Fill-Rite Distributor for more information on the KIT902MB Mounting Bracket kit.

900 Series Meter Sub-Assembly Parts

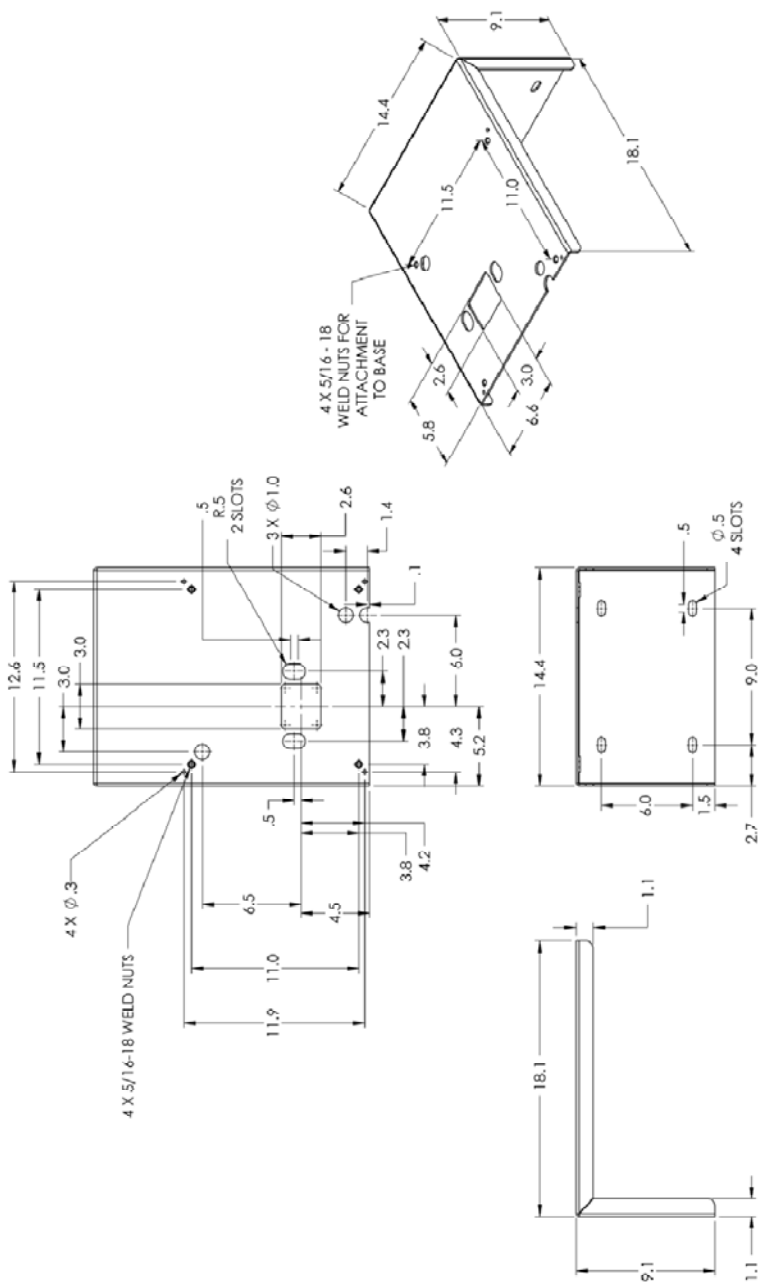


Kit #	Description	Contents
900KT	900 Series Meter Repair Kit	#1 Pin Gear
		#2 Cluster Gear, Liter or Gallon
		#3 Drive Gear, Liter or Gallon
		#4 Bevel Pin
		#5 Driver pin gear
		#6 Gear Frame
		#7 Chamber Assembly
		#8 Required O-rings
		#9 Required Fasteners

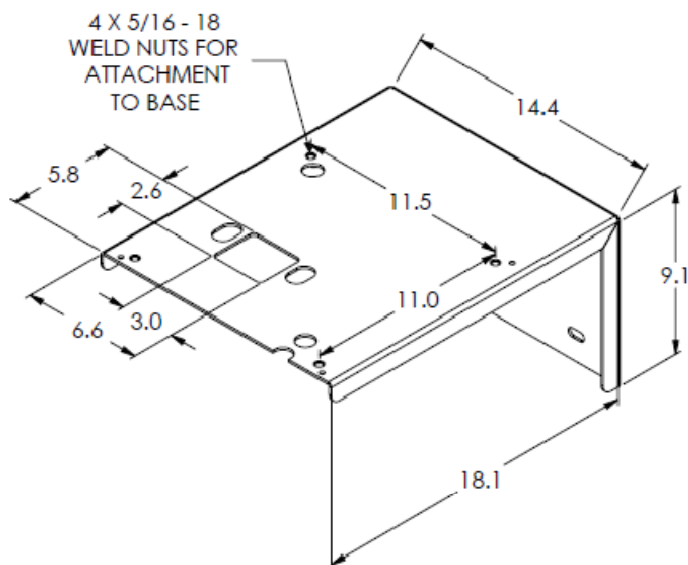
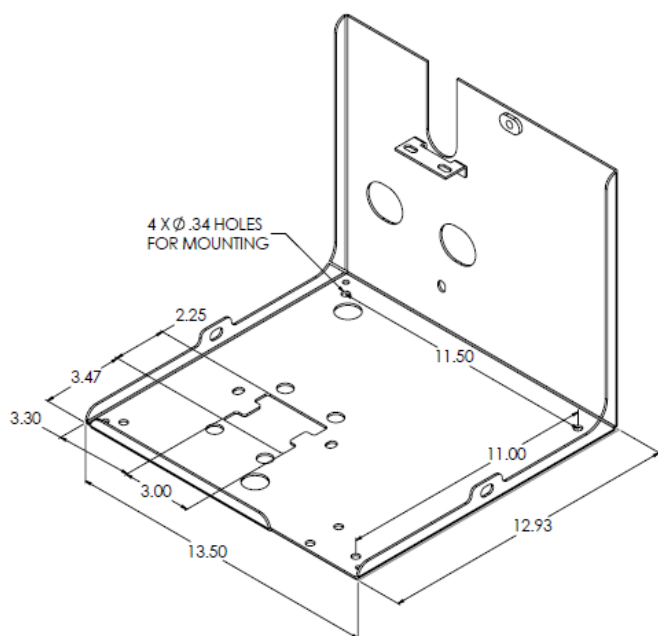
Cabinet Exterior Dimensions



Optional Mounting Platform Dimensions



Cabinet to Platform Orientation

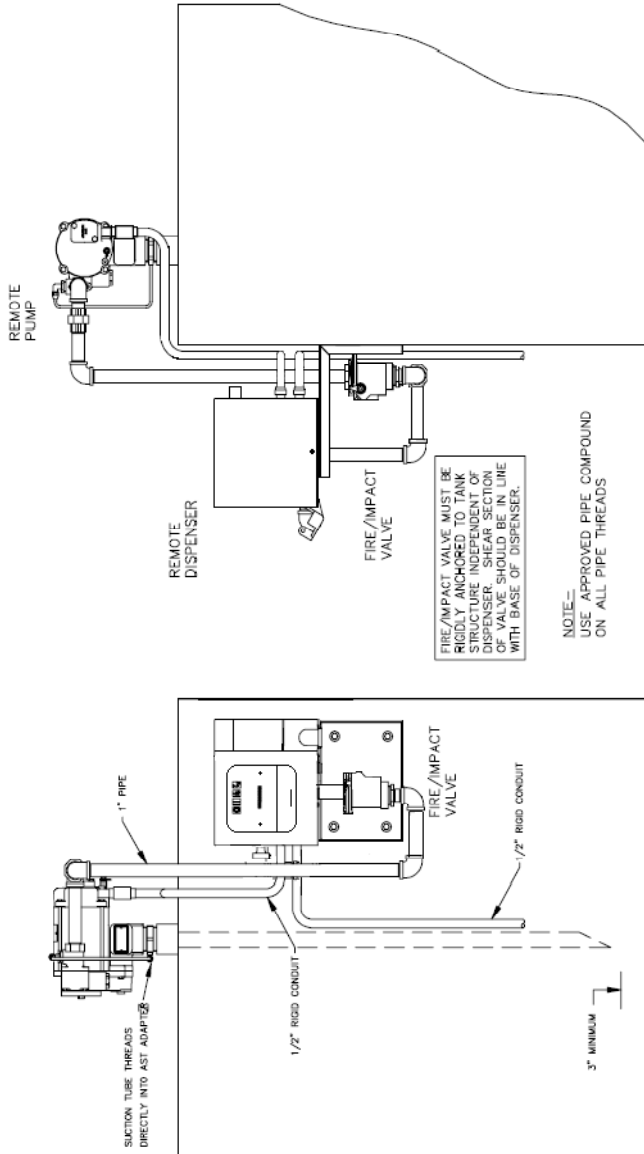


Typical Above Ground Tank Installation

ABOVEGROUND TANK INSTALLATION

ELECTRICAL NOTE:

ELECTRICAL WIRING SHOULD BE DONE IN ACCORDANCE WITH APPROVED LOCAL ELECTRICAL CODES AND BY A LICENSED ELECTRICIAN. THE PUMP SHOULD BE PROPERLY GROUNDED, AND RIGID CONDUIT SHOULD BE USED WHEN INSTALLING ELECTRICAL WIRING. **WARNING:** FAILURE TO FOLLOW THESE WIRING INSTRUCTIONS MAY RESULT IN SERIOUS INJURY FROM ELECTRICAL SHOCK.



Tuthill Product Warranty

Tuthill Transfer Systems ("Manufacturer") warrants each consumer buyer of its Fill-Rite products ("Buyer") from the date of invoice or sales receipt, that goods of its manufacture ("Goods") shall be free from defects of materials and workmanship. Duration of the warranty is as follows:

- Heavy Duty Products – Two Years
- Standard Duty Products – One Year
- Economy Duty Products – One Year
- Cabinet Dispensers, Parts, and Accessories – One Year

Manufacturers sole obligation under the foregoing warranties will be limited to either – at Manufacturers option – repairing or replacing defective goods (subject to limitations hereinafter provided) or refunding the purchase price for such Goods theretofore paid by the buyer, and Buyers exclusive remedy for breach of any such warranties will be enforcement of such obligations of the Manufacturer. If the Manufacturer so requests the return of such Goods, the Goods will be redelivered to the manufacturer in accordance with Manufacturers instructions FOB Factory. The remedies contained herein shall constitute the sole recourse of the Buyer against the Manufacturer for breach of warranty. **IN NO EVENT SHALL THE MANUFACTURER'S LIABILITY FOR ANY CLAIM FOR DAMAGES ARISING OUT OF THE MANUFACTURE, SALE, DELIVERY, OR USE OF THE GOODS EXCEED THE PURCHASE PRICE.** The foregoing warranties will not extend to goods subject to misuse, neglect, accident, improper installation or maintenance, or have been repaired by anyone other than the Manufacturer or its authorized representative. **THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE OF ANY OTHER TYPE, WHETHER EXPRESSED OR IMPLIED.** No person may vary the forgoing warranties or remedies, except in writing signed by a duly authorized officer of the Manufacturer. The Buyer's acceptance of delivery of the Goods constitutes acceptance of the foregoing warranties and remedies, and all conditions and limitations thereof.

Tuthill Corporation recommends you retain your sales receipt as proof of purchase.

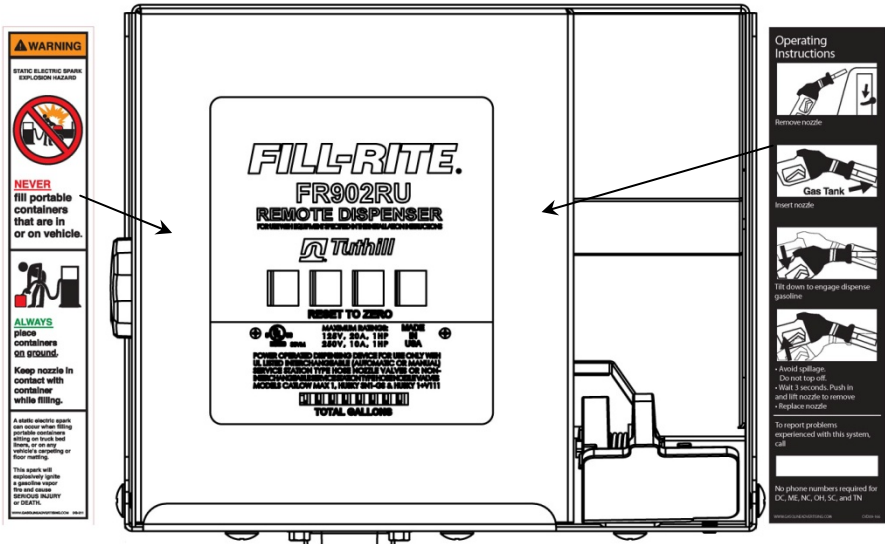
Model Number		UPC Bar Code	
Manufacture Date		Serial Number	

Safety Testing Approvals

The *Fill-Rite* line of dispensers have been safety tested for compliance to the standards set forth by UL Laboratories.



Label Locations*



*Labels not included: may be purchased at www.gasolineadvertising.com if needed.