

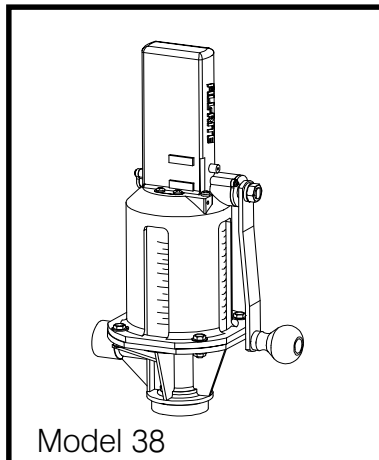
**Pump System Technology**

***FILL-RITE***

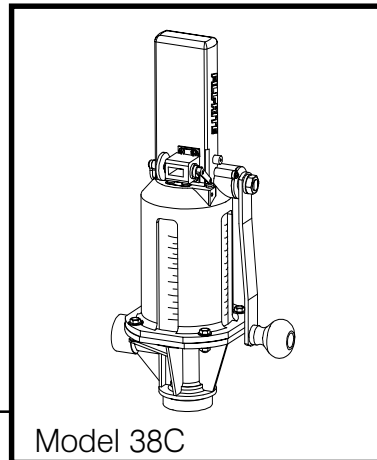
Owner's Operation & Safety Manual

**SERIES 38 VOLUMETRIC  
HAND PUMPS**

For models 38, 38C, 38L, 38CL



Model 38



Model 38C

**OUTSTANDING FEATURES**

- **Visible pumping chamber**
- **Accurately dispense one quart or one liter per full stroke**
- **Adaptable for barrels, storage tanks and drums**
- **Self-priming**
- **Telescopic suction pipe**



**TUTHILL CORPORATION**

**Fill-Rite Division**

8825 Aviation Drive  
Fort Wayne, Indiana USA 46809  
Tel 219 747-7524 Fax 219 747-3159

Dear Fill-Rite Customer,

Thank you for buying a Fill-Rite product. We believe that you have bought the best. This piece of literature contains information about your new equipment and its operating and service requirements. Please take a few minutes to read it carefully.

Fill-Rite's products are distributed around the world and are the result of people at Fill-Rite working together to design, manufacture, sell, ship and service products which meet the needs of each and every customer.

If, for any reason, any of our products do not meet your performance expectations, we would like to hear from you. Our best sales force is you, our customer, and we want you to be satisfied. We appreciate your purchase of a Fill-Rite product and look forward to providing your future equipment needs.

Sincerely,

George P. Jenkins  
President

## SAFETY INSTRUCTIONS

1. Use Teflon tape or thread sealant on all threaded joints to avoid leakage of fluid. The 2" threaded port on pump inlet uses gasket F1312 and does not require a sealant.
2. Leave plunger all the way down when pump is not in use. Store pump out of direct sunlight.

## GENERAL DESCRIPTION

The Fill-Rite Series 38 volumetric hand pump is manufactured from top quality, durable polypropylene and pumps one quart or one liter with every full plunger stroke. The visible pumping chamber allows smaller quantities to be accurately dispensed in ounces or milliliters.

## TECHNICAL INFORMATION

### Design Features

- Self-priming to 6 feet
- 1" NPT inlet and outlet
- 2" NPS bung mounting threads on inlet
- Telescopic suction pipe for drums up to 38"
- Adaptable for barrels, storage tanks and drums
- Accurate to better than 1% (1/3 oz. or 10 ml. per full stroke)
- Pump can vent the tank being pumped from or be sealed to the tank using the F1312 Bung Gasket
- Maximum operating temperature: 120°F

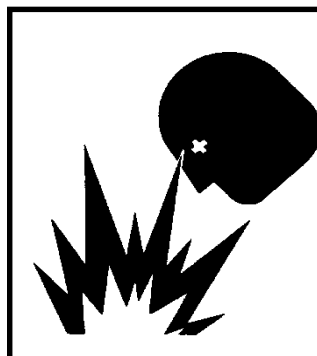
## OPTIONS

- Buna-N hose 1" x 12' w/ 1" NPT threaded end ferrules (F3137)
- Manual Nozzle 1" (F3125)
- Quart or liter graduations
- Buttress adapter (F0615)
- Fill-Guard one way tank fittings
- Counter
- Self lubricating piston o-ring, F1462
- Ball valve nozzle, polypropylene (F6593)
- Ball valve nozzle w/anti-drip spout (F1272)

## Fluid Compatibility

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

Polypropylene Body	Stainless Steel Valve Springs
Fluorocarbon Seals	Barex® Measuring Chamber



## DANGER

Not for use with fluids that have a flash point below 100°F (37.8°C, ie: gasoline, alcohol). Refer to NFPA 325M (Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids) for flash points of common liquids. Static electricity buildup and discharge could result in arc and explosion.

## Known Compatible Fluids

Antifreeze (Ethylene Glycol)  
Motor Oil  
Coolant Oil  
Diesel Fuel  
Water  
Hydraulic Oil

## Known Incompatible Fluids

Acetone  
MEK  
Methylene Chloride  
Methanol  
Paint Remover  
Hydrochloric Acid 30%  
Hydrofluoric Acid 25%

Before using with acids or aggressive chemicals, check compatibility or consult the manufacturer.

## INSTALLATION

Use appropriate chemical resistant pipe compound on all threaded joints.

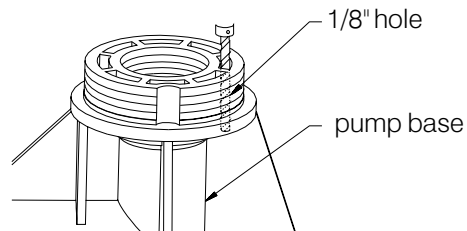
Barex® is a registered trademark of BP Chemical

1. Screw suction pipe into pump body and extend.
2. Slide suction pipe and pump into tank or barrel.
3. Screw pump into tank or barrel.

## TANK VENTING

In most cases, it is desirable to vent the tank being pumped from to prevent the container from collapsing. In some cases, however, special vents are required that do not allow fluid to escape should the tank tip over.

The model 38 pump is self venting when screwed into a typical barrel when the F1312 bung gasket is **not** used. If venting is not sufficient (i.e. the tank begins to collapse) an additional vent hole can be drilled as shown.



Use the F1312 bung gasket when the pump must be sealed to the tank. If using a Fill-Guard fitting, the F1312 gasket will seal the pump to the Fill-Guard.

## TANK QUICK DISCONNECT COUPLERS

The 38 pump is compatible for use with the following quick-disconnect couplers on drums or tanks:

- MICROMATIC® “Macro Valve” used with Stainless Steel drums.
- Scienco® products “Clean Lock”
- Other couplers that are rugged enough to couple a handpump without leaking

### NOTE:

When using the Series 38 volumetric hand pump with the MicroMatic Drum Valve coupler, the pump needs to be held stable to prevent the drum valve coupler from allowing air to leak in. Firmly grasp the top of the pump with one hand while rotating the pump handle to prevent the pump from rocking on coupler.

## USE

1. Prime Pump: Pump must be primed and purged of air to be accurate. This generally takes two strokes. If using a hose, prime the hose as well. The anti-drip spout option will keep the hose primed for best results. (See diagram on page 4.)
2. Grasp the top of the pump with one hand while rotating the crank with the other. Turn the crank clockwise until it stops to get a full quart or liter. Turn the crank counter clockwise to discharge fluid.
3. Measure from the bottom of the plunger (actual fluid level), when dispensing less than a full stroke.
4. Counter, if present, is activated only if a full stroke is made.
5. Leave plunger all the way down when not in use.

## TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump will not prime	<ul style="list-style-type: none"> <li>• Suction line problem</li> <li>• Check valve problem</li> <li>• Plunger O-ring damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Check for leaks in suction line.</li> <li>• Inspect inlet &amp; outlet valves.</li> <li>• Replace O-ring.</li> </ul>
Air in pump chamber	<ul style="list-style-type: none"> <li>• Suction line problem</li> </ul>	<ul style="list-style-type: none"> <li>• Check for leaks in suction line.</li> </ul>
Pump fluid leakage above plunger	<ul style="list-style-type: none"> <li>• Worn plunger seal</li> <li>• Worn /damaged tube</li> </ul>	<ul style="list-style-type: none"> <li>• Replace plunger O-ring.</li> <li>• Replace Tube</li> </ul>

## SERVICE

(Refer to exploded view)

1. Flush pump regularly when pumping corrosive fluids or fluid that will harden. Store pump away from direct sunlight when not in use. Do not allow fluid to freeze in pump.
2. To lubricate the pinion (F1302) and rack (F1295) remove two screws (F1396) from the handle side of pump and pull out the pinion and handle assembly. Apply a liberal coat of thick grease to the pinion. Re-install pinion and tighten screws to snug. **Do Not** over tighten screws.
3. To lubricate or replace plunger O-ring (F1289), the base assembly (F1221) must be removed from the pump to access the plunger. Turn crank until plunger just sticks out of the tube. (Note: To completely remove the plunger and rack, you must first remove the pinion and handle assembly. See #2 above.) Install a new O-ring if needed, being sure it is not twisted when installed. Liberally apply grease to the plunger O-ring. Carefully reinstall the plunger by pulling it in with the crank.
4. To position the handle (F1299) so it is pointing down when plunger is at the bottom of the stroke, remove the pinion and handle assembly as described in #2 above.
5. To replace measuring tube (F1276), remove base assembly (F1221) and move plunger to the top of its stroke. Pierce the tube with a long screwdriver or drill bit just below the plunger. With a screwdriver through both sides of the tube, crank handle so that the plunger pushes the tube out. Stop cranking before screwdriver hits bottom of window and remove screwdriver. Remove tube and plunger. Note the tube stop on the inside of the shroud. Insert new tube, lining up graduation marks with windows on shroud. Install plunger and reassemble pump.
6. Inlet and outlet check valves require special tools to install; thus, they are only available in the base assembly. (F1221)

## MAINTENANCE

### Flushing

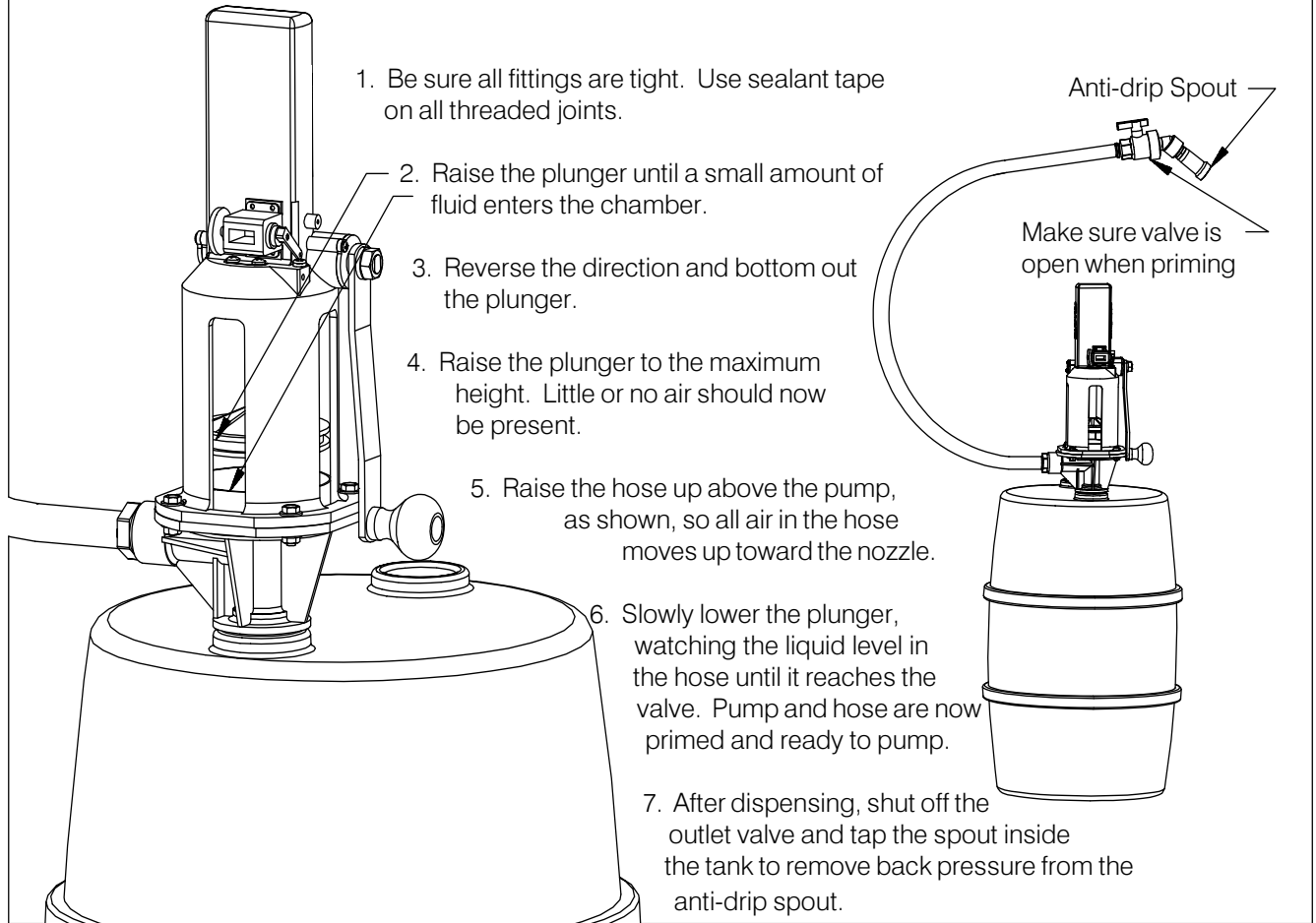
To flush the pump, pump a gallon or two of clean water through the pump and hose, then pump air through the pump to eliminate most of the water. Flush water should be disposed of properly.

### Storage

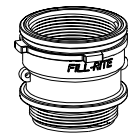
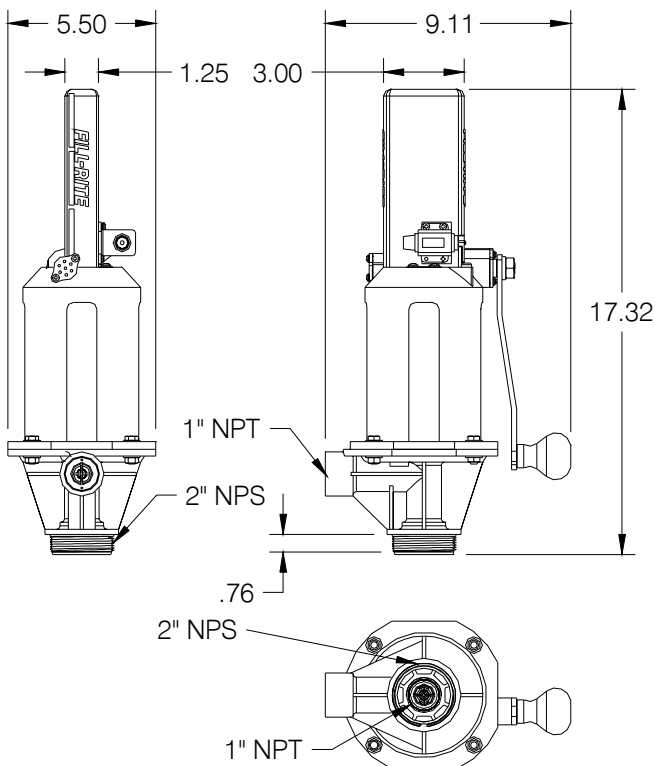
Pump should be flushed, purged of liquid, and stored out of direct sunlight. Fluid should not be allowed to freeze in pump.

**To Prime The Pump And Hose Kit:**

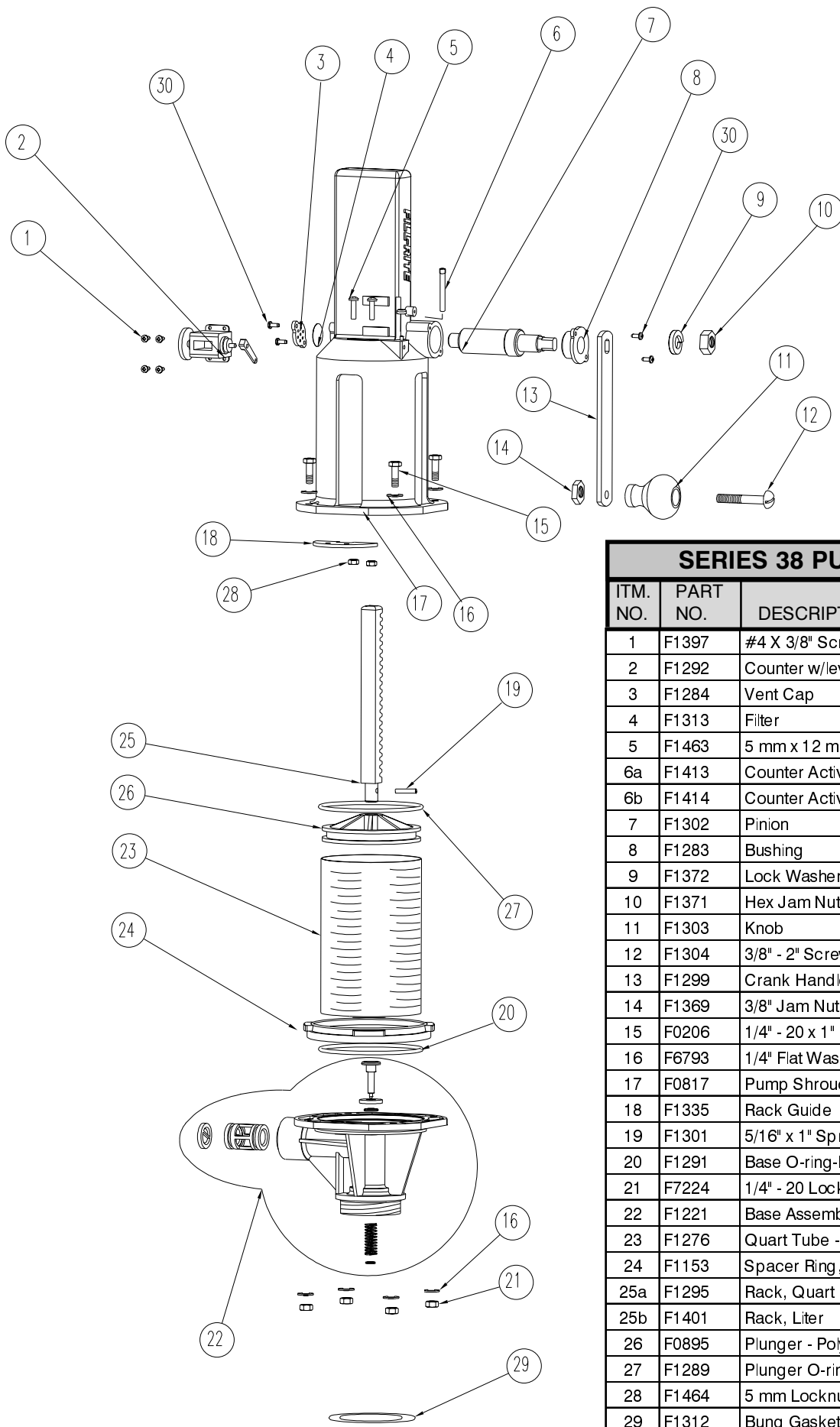
The following simple procedure for priming the Series 38 when used in conjunction with the F1385 hose kit will help you maximize volumetric accuracy.



**DIMENSIONS & RISER ADAPTER**



F0151 optional 2" riser for Bonar 55 L (14.5 gal.) rectangular keg, or other tank that has tall sides that prevent the pump from being threaded in.



SERIES 38 PUMP PARTS LIST			
ITM. NO.	PART NO.	DESCRIPTION	QTY.
1	F1397	#4 X 3/8" Screw, 4 required	Opt.
2	F1292	Counter w/lever arm	Opt.
3	F1284	Vent Cap	1
4	F1313	Filter	1
5	F1463	5 mm x 12 mm Screw	2
6a	F1413	Counter Activator, Quart	Opt.
6b	F1414	Counter Activator, Litre	Opt.
7	F1302	Pinion	1
8	F1283	Bushing	1
9	F1372	Lock Washer - 1/2"	1
10	F1371	Hex Jam Nut - 1/2"	1
11	F1303	Knob	1
12	F1304	3/8" - 2" Screw	1
13	F1299	Crank Handle	1
14	F1369	3/8" Jam Nut	1
15	F0206	1/4" - 20 x 1" Bolt	4
16	F6793	1/4" Flat Washer	8
17	F0817	Pump Shroud - Polypropylene, Green	1
18	F1335	Rack Guide	1
19	F1301	5/16" x 1" Spring Pin	1
20	F1291	Base O-ring-Fluorocarbon, 4 x 98mm	1
21	F7224	1/4" - 20 Lock Nut	4
22	F1221	Base Assembly, Red	1
23	F1276	Quart Tube - Barex	1
24	F1153	Spacer Ring, Polypropylene	1
25a	F1295	Rack, Quart	1
25b	F1401	Rack, Liter	1
26	F0895	Plunger - Polypropylene	1
27	F1289	Plunger O-ring - Fluorocarbon - 341	1
28	F1464	5 mm Locknut	2
29	F1312	Bung Gasket - EPDM	1
30	F1396	#8 x 1/2" Screw	4

## Fill-Rite: A Worldwide Reputation for Reliability.

For over 40 years, people all over the world who have needed tough, dependable pumps have insisted on Fill-Rite products. For them, Fill-Rite has been "the reliable pump" that keeps on working even under the toughest of conditions. We're proud of the reputation our hand pumps, DC and AC pumps and meters have earned. Today they're only a part of the rapidly expanding Fill-Rite line.

## Applying the Science of Fluid Transfer.

An active research and development program is the centerpiece of our ongoing commitment to respond to new fluid transfer opportunities. This has led to new products, new technologies, and new facilities to produce these products.

To bring this advanced technology to market, we have invested in precision engineering and testing equipment. This improves our ability to produce fluid handling equipment that meets market demands for quality, performance and price.

## A Hard Working Support Network.

Just as important as these capabilities are the people behind them - our design and production personnel. They give you the ability to specify systems that meet the most challenging of applications. With them, you can be assured of prompt, intelligent answers to your fluid transfer questions.

To service customers in the field, we've put together a select, well-monitored team of distributors. Throughout the world, they are ready to help you with technical advice, ordering and delivery.

Fill-Rite will always stand for reliable pumps and fluid handling equipment. We'll continue to develop new products and production techniques to keep pace with ever changing technologies. Each of our products will always be made with the same care and quality that made our pumps famous.

Fill-Rite Division of Tuthill Corporation ("Manufacturer") warrants to each buyer of its products (the "Buyer") for a period of 12 months from date of installation but in no event more than 18 months from date of manufacture that goods of its manufacture ("Goods") will be free from defects of material and workmanship. Specific to Series 10, 12, 20, and 22, Warranty is understood not to exceed 6 months and is specific to all related items. Manufacturer's sole obligation under the foregoing warranties will be limited to either, at Manufacturer's option, replacing or repairing defective Goods (subject to limitations hereinafter provided) or refunding the purchase price for such Goods theretofore paid by the Buyer, and Buyer's exclusive remedy for breach of any such warranties will be enforcement of such obligations of Manufacturer. If Manufacturer so requests the return of the Goods, the Goods will be redelivered to Manufacturer in accordance with Manufacturer's instructions F.O.B. Factory. IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR CONSEQUENTIAL DAMAGES, NOR

# PRODUCT WARRANTY

SHALL MANUFACTURER'S LIABILITY ON ANY CLAIM FOR DAMAGES ARISING OUT OF THE MANUFACTURE, SALE, DELIVERY OR USE OF THE GOODS EXCEED THE PURCHASE PRICE OF THE GOODS.

The foregoing warranties will not extend to Goods subjected to misuse, neglect, accident or improper installation or maintenance, or which have been altered or repaired by anyone other than Manufacturer or its authorized representative. THE FOREGOING WARRANTIES ARE EXCLUSIVE

AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE AND OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED.

No person may vary the foregoing warranties and remedies except in writing signed by a duly authorized officer of Manufacturer. Warranties or remedies that differ from the foregoing shall not otherwise be binding on Manufacturer. The Buyer's acceptance of delivery of the Goods constitutes acceptance of the foregoing warranties and remedies, and all conditions and limitations thereof.

# FILL-RITE

8825 Aviation Drive  
Fort Wayne, Indiana USA 46809  
Tel 219 747-7524 Fax 219 747-3159