Owner's Operation & Safety Manual

SERIES 38 VOLUMETRIC HAND PUMPS

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

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

PATENT NO. 5713723
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.

<table>
<thead>
<tr>
<th>Polypropylene Body</th>
<th>Stainless Steel Valve Springs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorocarbon Seals</td>
<td>Barex® Measuring Chamber</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump will not prime</td>
<td>Suction line problem</td>
<td>Check for leaks in suction line. Inspect inlet &amp; outlet valves. Replace O-ring</td>
</tr>
<tr>
<td>Air in pump chamber</td>
<td>Suction line problem</td>
<td>Check for leaks in suction line</td>
</tr>
<tr>
<td>Pump fluid leakage above plunger</td>
<td>Worn plunger seal</td>
<td>Replace plunger O-ring.</td>
</tr>
<tr>
<td></td>
<td>Worn /damaged tube</td>
<td>Replace Tube</td>
</tr>
</tbody>
</table>

### 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.

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.**

**USE**

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.

Scienco® is a registered trademark of Ingersol-Dresser Pump Company.
**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.

1. Be sure all fittings are tight. Use sealant tape on all threaded joints.
2. Raise the plunger until a small amount of fluid enters the chamber.
3. Reverse the direction and bottom out the plunger.
4. Raise the plunger to the maximum height. Little or no air should now be present.
5. Raise the hose up above the pump, as shown, so all air in the hose moves up toward the nozzle.
6. Slowly lower the plunger, watching the liquid level in the hose until it reaches the valve. Pump and hose are now primed and ready to pump.
7. After dispensing, shut off the outlet valve and tap the spout inside the tank to remove back pressure from the anti-drip spout.

**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

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F1397</td>
<td>#4 X 3/8&quot; Screw, 4 required</td>
<td>Opt.</td>
</tr>
<tr>
<td>2</td>
<td>F1292</td>
<td>Counter w/lever arm</td>
<td>Opt.</td>
</tr>
<tr>
<td>3</td>
<td>F1284</td>
<td>Vent Cap</td>
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</tr>
<tr>
<td>4</td>
<td>F1313</td>
<td>Filter</td>
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<tr>
<td>5</td>
<td>F1463</td>
<td>5 mm x 12 mm Screw</td>
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<tr>
<td>6a</td>
<td>F1413</td>
<td>Counter Activator, Quart</td>
<td>Opt.</td>
</tr>
<tr>
<td>6b</td>
<td>F1414</td>
<td>Counter Activator, Litre</td>
<td>Opt.</td>
</tr>
<tr>
<td>7</td>
<td>F1302</td>
<td>Pinion</td>
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<td>8</td>
<td>F1283</td>
<td>Bushing</td>
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<tr>
<td>9</td>
<td>F1372</td>
<td>Lock Washer - 1/2&quot;</td>
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<tr>
<td>10</td>
<td>F1371</td>
<td>Hex Jam Nut - 1/2&quot;</td>
<td>1</td>
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<tr>
<td>11</td>
<td>F1303</td>
<td>Knob</td>
<td>1</td>
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<td>12</td>
<td>F1304</td>
<td>3/8&quot; - 2&quot; Screw</td>
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<td>13</td>
<td>F1299</td>
<td>Crank Handle</td>
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<tr>
<td>14</td>
<td>F1399</td>
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<td>15</td>
<td>F0206</td>
<td>1/4&quot; - 20 x 1&quot; Bolt</td>
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<td>16</td>
<td>F0733</td>
<td>1/4&quot; Flat Washer</td>
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<td>17</td>
<td>F0817</td>
<td>Pump Shroud - Polypropylene, Green</td>
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<td>18</td>
<td>F1335</td>
<td>Rack Guide</td>
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<tr>
<td>19</td>
<td>F1301</td>
<td>5/16&quot; x 1&quot; Spring Pin</td>
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<td>F1291</td>
<td>Base O-ring-Fluorocarbon, 4 x 96mm</td>
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<td>21</td>
<td>F7224</td>
<td>1/4&quot; - 20 Lock Nut</td>
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<td>22</td>
<td>F1221</td>
<td>Base Assembly, Red</td>
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<td>23</td>
<td>F1276</td>
<td>Quart Tube - Barex</td>
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<td>24</td>
<td>F1153</td>
<td>Spacer Ring, Polypropylene</td>
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<tr>
<td>25a</td>
<td>F1296</td>
<td>Rack, Quart</td>
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<td>25b</td>
<td>F1401</td>
<td>Rack, Liter</td>
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<td>26</td>
<td>F0895</td>
<td>Plunger - Polypropylene</td>
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<td>27</td>
<td>F1289</td>
<td>Plunger O-ring - Fluorocarbon - 341</td>
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<td>28</td>
<td>F1464</td>
<td>5 mm Locknut</td>
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<td>29</td>
<td>F1312</td>
<td>Bung Gasket - EPDM</td>
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<tr>
<td>30</td>
<td>F1396</td>
<td>#8 x 1/2&quot; Screw</td>
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</tr>
</tbody>
</table>
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.

PRODUCT WARRANTY
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 therefore 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 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.
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FILL-RITE
8825 Aviation Drive
Fort Wayne, Indiana USA 46809
Tel 219 747-7524 Fax 219 747-3159

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