IMPORTANT!
These boxes contain information that illustrates a point that may save time or may be key to proper operation, or clarifies a step.
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 damage to the device and serious bodily injury or death!

1) When using the FRHP32V and FRAP32V with Diesel Exhaust Fluid, maintaining the purity of the DEF / AUS32 (Aqueous Urea Solution 32.5%) is critical; as such, it is imperative once the system is assembled, it must remain sealed to ensure the integrity of the fluid. Breaking the seal on the system can lead to fluid contamination.

2) After dispensing DEF be certain to drain all the fluid from the nozzle, making sure it is pointing downward when stored. DEF remaining in the nozzle tip and exposed to air will crystallize and can plug the nozzle.

3) **DO NOT** lay the dispensing nozzle on the ground or any surface that may contaminate the nozzle tip as this can compromise the purity of the DEF.

4) The base is designed to mount directly to the barrel bung; as such it has 2” NPS threads. Plumbing sealant appropriate for the fluids and chemicals being dispensed is highly recommended; the 2” threaded bung mount does not require sealant.

5) Storage tanks should be securely anchored to prevent shifting or tipping when full or empty.

6) If the pump will see periods of low or no use, flush it regularly when pumping DEF, corrosive materials, or fluids that harden. If the pump is used for DEF, use only DEF or de-ionized water to flush the pump (FRHP32V and FRAP32V applications).

7) **DO NOT** use the pump with fluids intended for human consumption.

8) **WARNING!** This pump is 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.

9) On hand operated pumps, leave the handle in the down position when not in use to prevent accidental dispensing of fluid.

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**FR20V and FRHP32V Hand Operated Pumps**

**Installation**

1) Apply thread sealant tape or compound (appropriate for the fluid to be pumped) to the suction tube threads; screw tube into the pump inlet.

2) Slide suction pipe into tank or barrel.

3) Screw pump into tank or barrel application until the spout faces the desired direction for dispensing.

4) Tighten the lock ring securely onto the tank or barrel.

5) If applicable, attach dispensing hose to spout outlet; clamp securely in place.

---

**FRAP32V Air Operated Pump**

**Installation**

1) Apply thread sealant tape or compound (appropriate for the fluid to be pumped) to the suction tube threads; screw tube into the pump inlet.

2) Adjust length of suction tube to desired level.

3) Screw pump into tank or barrel application until the spout faces the desired direction for dispensing.

4) Tighten the lock ring securely onto the tank or barrel.

5) Attach air supply line to air inlet on pump.

6) Pull up adjusting knob on top of the regulator.

7) Open air inlet valve to begin flow of fluid; discharge into a suitable container.

8) Adjust air pressure by rotating the knob on top of the regulator until a smooth flow is achieved.

9) Push regulator knob down to lock it in place.

10) Close air inlet valve to stop flow.

11) If applicable, attach dispensing hose to spout outlet; clamp securely in place.
**About Diesel Exhaust Fluid (DEF)**

The Fill-Rite DEF pump is designed to pump AUS32 (Aqueous Urea Solution 32.5%), better known as Diesel Exhaust Fluid, or “DEF”.

AUS32 is used by modern diesel engines which are equipped with an SCR (Selective Catalytic Reduction) system. DEF never comes into contact with the fuel; the common misconception is that it is an additive. DEF is carried onboard the vehicle in its own storage tank. It is injected into the exhaust gases as a post combustion process through an SCR where it breaks harmful NOx (Nitrous Oxide) emissions down into mostly Nitrogen and Oxygen.

Because the specific purity of the AUS32 solution is critical to the catalytic reaction, the Fill-Rite DEF pump is designed to maintain the integrity by using components made of materials that will not taint or alter the solutions chemical structure.

**Trouble Shooting**

### FR20V & FRHP32V Hand Pumps

<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.</td>
</tr>
<tr>
<td></td>
<td>• Jammed check valve</td>
<td>• Inspect inlet and piston valves.</td>
</tr>
<tr>
<td></td>
<td>• Fluid incompatibility</td>
<td>• Consult fluid mfg. for compatibility with wetted materials.</td>
</tr>
<tr>
<td>Low pump capacity</td>
<td>• Excessive dirt in nozzle screen</td>
<td>• Remove and clean screen.</td>
</tr>
<tr>
<td></td>
<td>• Suction line problem</td>
<td>• Check for leaks in suction line.</td>
</tr>
<tr>
<td>Pump fluid leakage</td>
<td>• Dirty seal</td>
<td>• Clean O-ring and seat area.</td>
</tr>
<tr>
<td></td>
<td>• Bad seal</td>
<td>• Replace seal.</td>
</tr>
<tr>
<td></td>
<td>• Gasket leakage</td>
<td>• Tighten covers and joints.</td>
</tr>
<tr>
<td></td>
<td>• Fluid incompatibility</td>
<td>• Consult fluid mfg. for compatibility with wetted materials.</td>
</tr>
</tbody>
</table>

### FRAP32V Air Operated Pump

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump air piston does not operate</td>
<td>• Air pressure is too low; minimum recommended air pressure is 30 psi (2 bar)</td>
<td>• Increase air supply pressure to between 30 psi and 100 psi (2 bar to 6 bar).</td>
</tr>
<tr>
<td></td>
<td>• Piston frozen in place (frost on air cylinder)*</td>
<td>• Close air inlet valve and allow piston &amp; cylinder to thaw (see * note below).</td>
</tr>
<tr>
<td>Air piston stalls</td>
<td>• Low air pressure, or pressure has dropped below 30 psi (2 bar)</td>
<td>• Close &amp; re-open air inlet valve.</td>
</tr>
<tr>
<td></td>
<td>• Piston frozen (see above)</td>
<td>• If stalling occurs regularly, adjust the regulator to increase the air pressure.</td>
</tr>
</tbody>
</table>

*After periods of extensive use, usually with a hose kit, the air piston on the FRAP32V air pump may freeze because of excess moisture in the air supply line. If this condition persists, install a filter, filter / lubricator, or a water separator to reduce moisture content in the air supply to the pump.
Technical Information and Specifications

**FR20V & FRHP32V**

**Technical Data**

Output: 11 oz per stroke (33 ml)

**Fluid Compatibility** (FR20V, FRHP32V, FRAP32V)

- Engine oils
- Diesel
- Antifreeze
- Paraffin
- Gear oils
- Hydraulic oils
- Mild acids*
- Degreasers

**DEF Compatibility** (FRHP32V & FRAP32V)

- AUS32 (Aqueous Urea Solution 32.5%) Diesel Exhaust Fluid

**Wetted Materials** (all pumps)

- Polypropylene (body and valves)
- Stainless Steel (inlet screen)
- Fluorocarbon (O-rings)

* Before using with acids or aggressive chemicals, check compatibility of wetted materials with the chemical mfg.

**FRAP32V**

**Technical Data**

- Ratio: 1:1
- Air Pressure Regulator: 100 psi
- Air Inlet: 1/4" BSP
- Maximum Air Pressure: 100 psi
- Minimum Air Pressure: 30 psi
- Air Consumption: 30 gal/min
- Exhaust: Double Baffled
- Maximum Sound Level @ 1m (3') : 74 db

**Output Data** (approximately 8.5 oz/stroke when fully primed)

- Hydraulic Oils (ISO 32): 0 - 5 GPM
- Lubrication Oils (ISO 68): 0 - 4 GPM
- Gear Oils (ISO 220): 0 - 2.5 GPM
- Diesel Exhaust Fluid (AUS32): 0 - 6.5 GPM

**Minimum Operating Temperature**

- It is recommended that the pump is not used below 36 F because ice formation may cause the regulator to malfunction.

**Accessories**

The following accessories are available to help you tailor your pump to your specific needs.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>FR20V</th>
<th>FRHP32V</th>
<th>FRAP32V</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITHA32V</td>
<td>6' Hose and Ball Valve Kit</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>KITHA32VMN</td>
<td>6' Hose and Manual Nozzle Kit</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>KITFR55DU</td>
<td>Drum / Barrel Tote Kit (wheeled platform for drum mobility)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Fill-Rite offers a wide variety of DEF & chemical dispensing pumps, meters, and accessories. Contact your Fill-Rite distributor for additional information on this equipment.

**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 (FR20V, FRHP32V, FRAP32V)
- Cabinet Pumps, 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 foregoing 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.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>UPC Bar Code</th>
<th>Manufacture Date</th>
<th>Serial Number</th>
</tr>
</thead>
</table>

Tuthill Transfer Systems recommends you retain your receipt as proof of purchase date should warranty service be required.