



INSTALLATION, OPERATION, AND MAINTENANCE MANUAL  
WELKER FARM TAP ODORIZER



**MODEL**  
FTO

**DRAWING NUMBERS**  
AD056CI  
AD056CO  
AD730BD.4  
AD730BJ

**MANUAL NUMBER**  
IOM-093

**REVISION**  
Rev. D, 10/31/2017

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# IMPORTANT SAFETY INFORMATION

## READ ALL INSTRUCTIONS



Notes emphasize information and/or provide additional information to assist the user.



Caution messages appear before procedures that could result in damage to equipment if not observed.



Warning messages appear before procedures that could result in personal injury if not observed.

*This manual is intended to be used as a basic installation and operation guide for the Welker OdorEyes Farm Tap Odorizer, FTO. For comprehensive instructions, please refer to the IOM Manuals for each individual component. A list of relevant component IOM Manuals is provided in Appendix A of this manual.*

*The information in this manual has been carefully checked for accuracy and is intended to be used as a guide for the installation, operation, and maintenance of the Welker OdorEyes equipment described in this manual. Correct installation and operation, however, are the responsibility of the end user. Welker reserves the right to make changes to this manual and all products in order to improve performance and reliability.*

### BEFORE YOU BEGIN

Read these instructions completely and carefully.

**IMPORTANT** – Save these instructions for local inspector’s use.

**IMPORTANT** – Observe all governing codes and ordinances.

**Note to Installer** – Leave these instructions with the end user.

**Note to End User** – Keep these instructions for future reference.

Installation of this Farm Tap Odorizer is of a mechanical nature.

Proper installation is the responsibility of the installer. Product failure due to improper installation is not covered under the warranty.

If you received a damaged Farm Tap Odorizer, please contact a Welker representative immediately.

**Phone:** 281.491.2331

**Address:** 13839 West Bellfort Street  
Sugar Land, TX 77498

## SECTION 1: PRODUCT INFORMATION

### 1.1 Introduction

We appreciate your business and your choice of Welker products. The installation, operation, and maintenance liability for this equipment becomes that of the purchaser at the time of receipt. Reading the applicable *Installation, Operation, and Maintenance (IOM) Manuals* prior to installation and operation of this equipment is required for a full understanding of its application and performance prior to use.\*

If you have any questions, please call Welker at 1-281-491-2331.

*\*The following procedures have been written for use with standard Welker OdorEyes parts and equipment. Assemblies that have been modified may have additional requirements and specifications that are not listed in this manual.*

### 1.2 Product Description

The Welker OdorEyes FTO Farm Tap Odorizer is a wick-style odorizer designed to safely and effectively odorize natural gas in low flow applications.

In the odorant supply tank, the wick becomes saturated by the liquid odorant. Odorant travels up the wick by capillary action and is then vaporized in the natural gas stream, resulting in the odorization of the downstream gas. If desired, an armored sight glass can be added to the odorant supply tank to monitor tank level. The optional bypass allows gas flow to continue while the odorant supply tank is refilled.

*Welker may custom design the FTO to suit the particular application and specifications of each customer.*

### 1.3 Safety Warning

Wherever hazardous gases or vapor-producing liquids are used, transported, or stored, the potential for an accidental leak exists. Continuous monitoring of these hazards is essential to ensure personnel safety.

## 1.4 Specifications



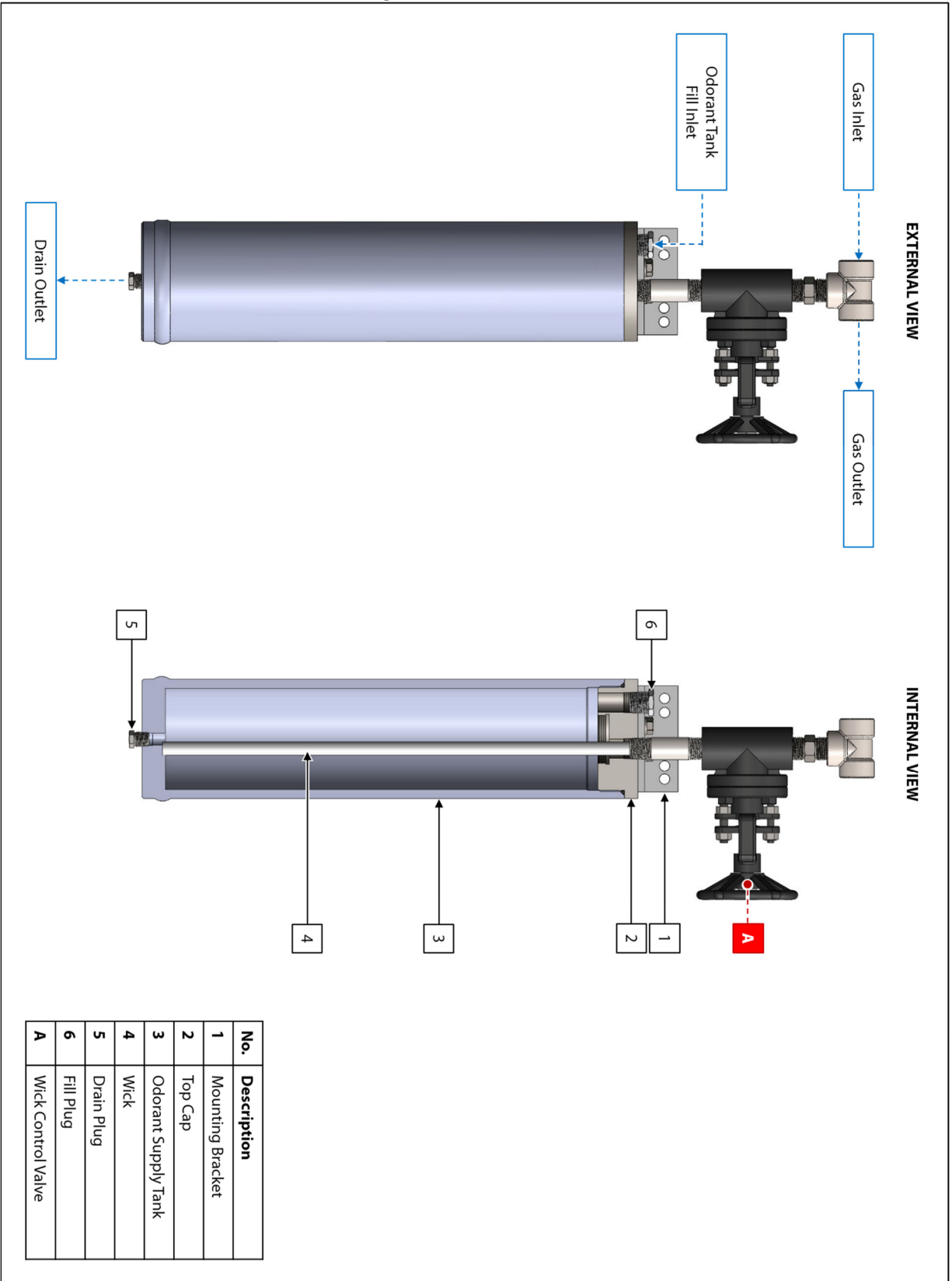
The specifications listed in this section are generalized for this equipment. Welker can modify the equipment according to your company's needs. **Please note that the specifications may vary depending on the customization of your equipment.**

**Table 1: FTO Specifications**

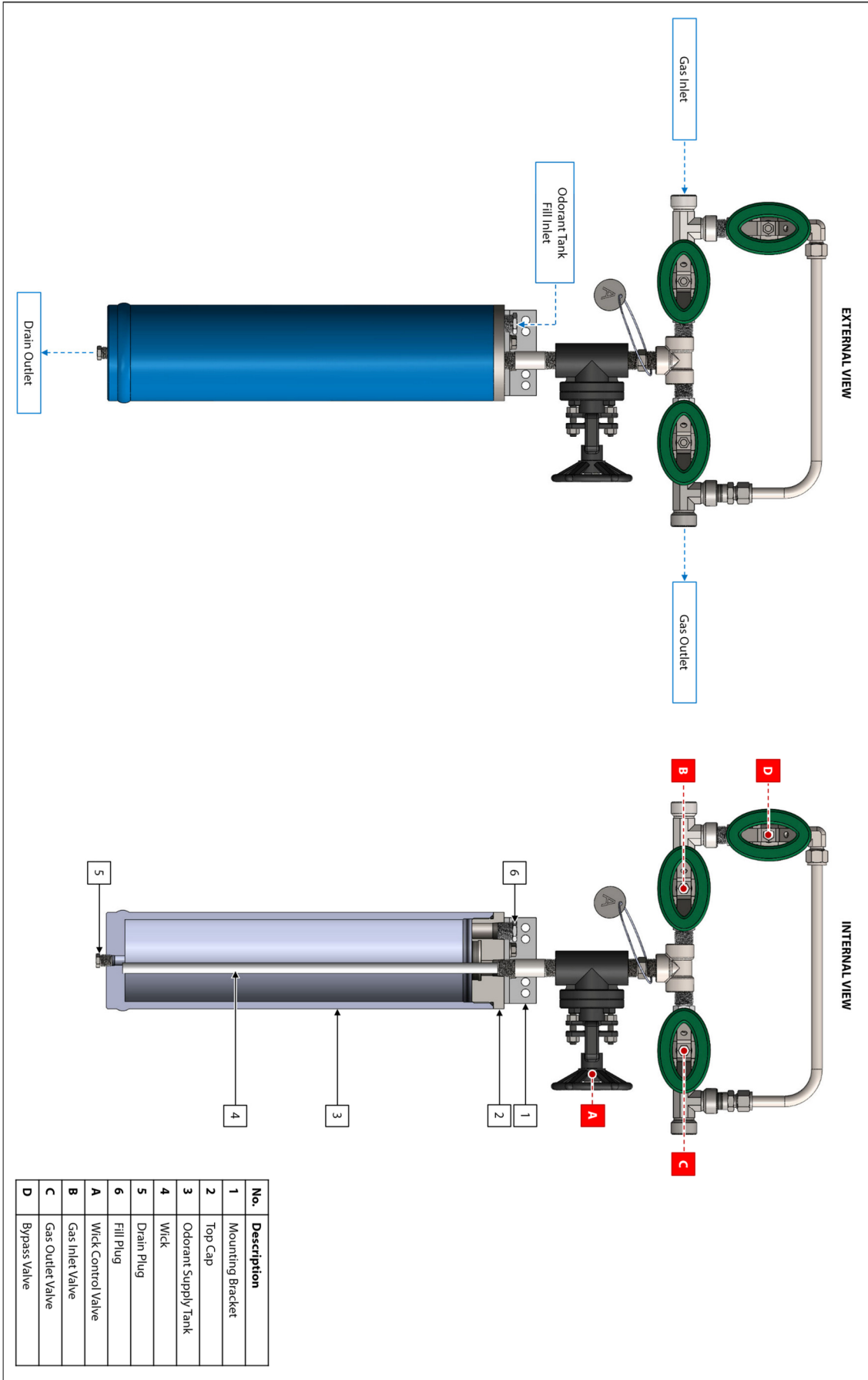
<b>Application</b>	Vaporized Odorant Infusion
<b>Materials of Construction</b>	Painted Carbon Steel, PTFE, and Viton® Others Available
<b>Maximum Allowable Operating Pressure</b>	<b>0.8 US Gallons:</b> 1500 psig @ -20 °F to 120 °F (103 barg @ -28 °C to 48 °C) <b>1 US Gallon:</b> 1800 psig @ -20 °F to 120 °F (124 barg @ -28 °C to 48 °C) <b>5 US Gallons:</b> 1200 psig @ -20 °F to 120 °F (82 barg @ -28 °C to 48 °C)
<b>Connections</b>	½" FNPT (Standard) Others Available
<b>Odorant Supply Tank Volume</b>	0.8 US Gallons 1 US Gallon 5 US Gallons
<b>Feature</b>	Gate Valve for Wick Saturation Control
<b>Options</b>	Armored Sight Glass Bypass NEMA 4X Enclosure Pipe Mount

## 1.5 Equipment Diagrams

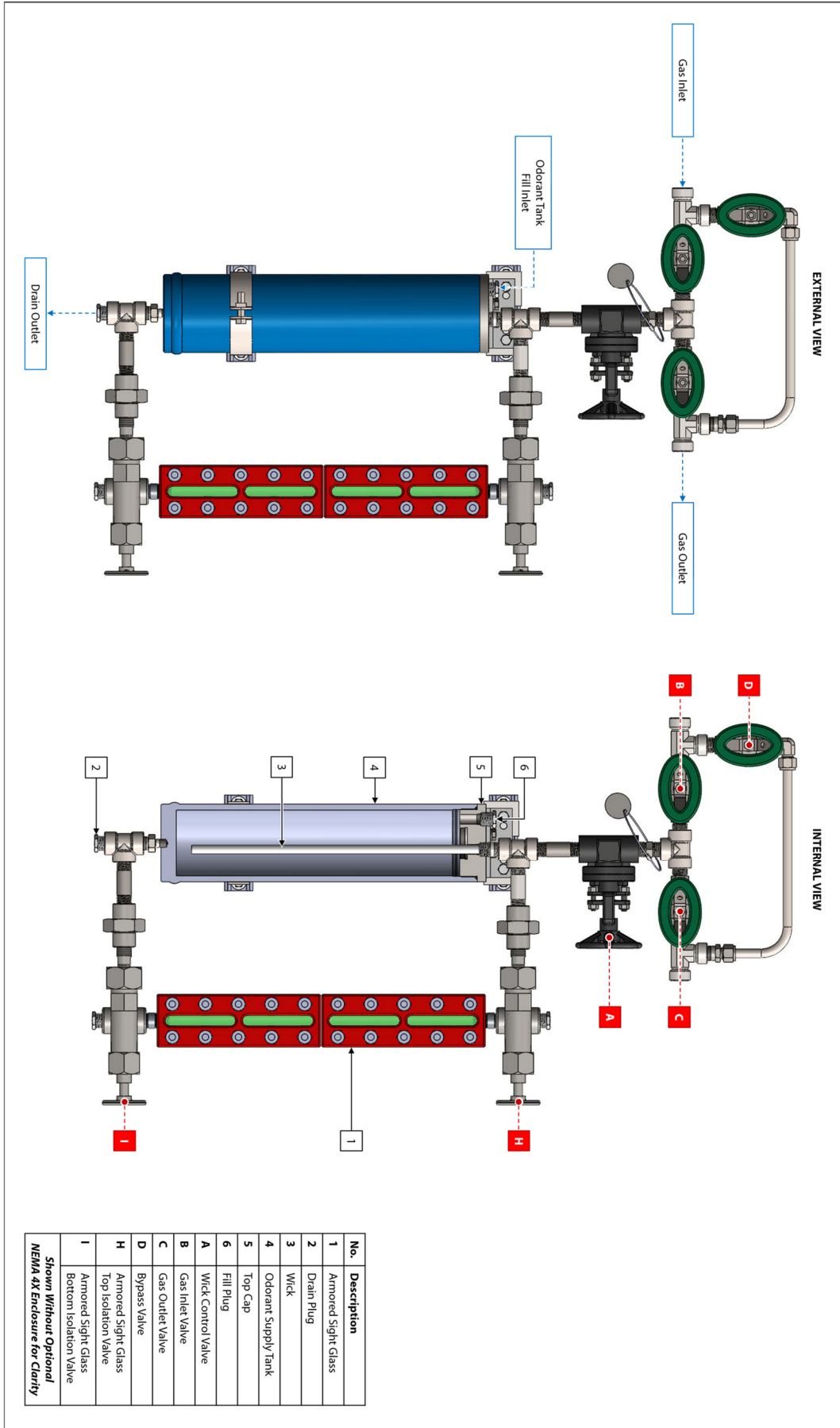
Figure 1: 0.8-Gallon FTO



**Figure 2: 0.8-Gallon FTO With Optional Bypass**

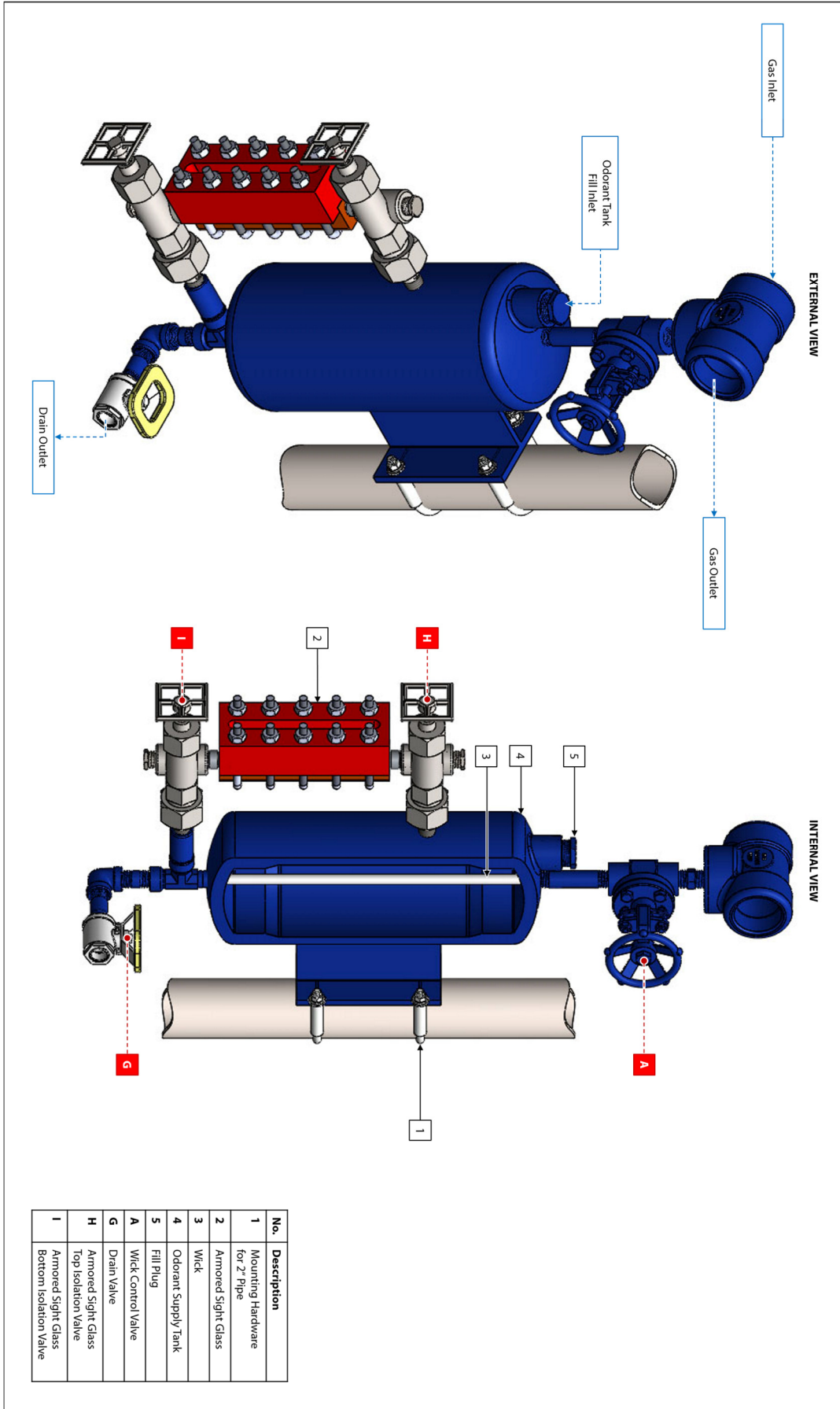


**Figure 3: 0.8-Gallon FTO With Optional Bypass and Armored Sight Glass**

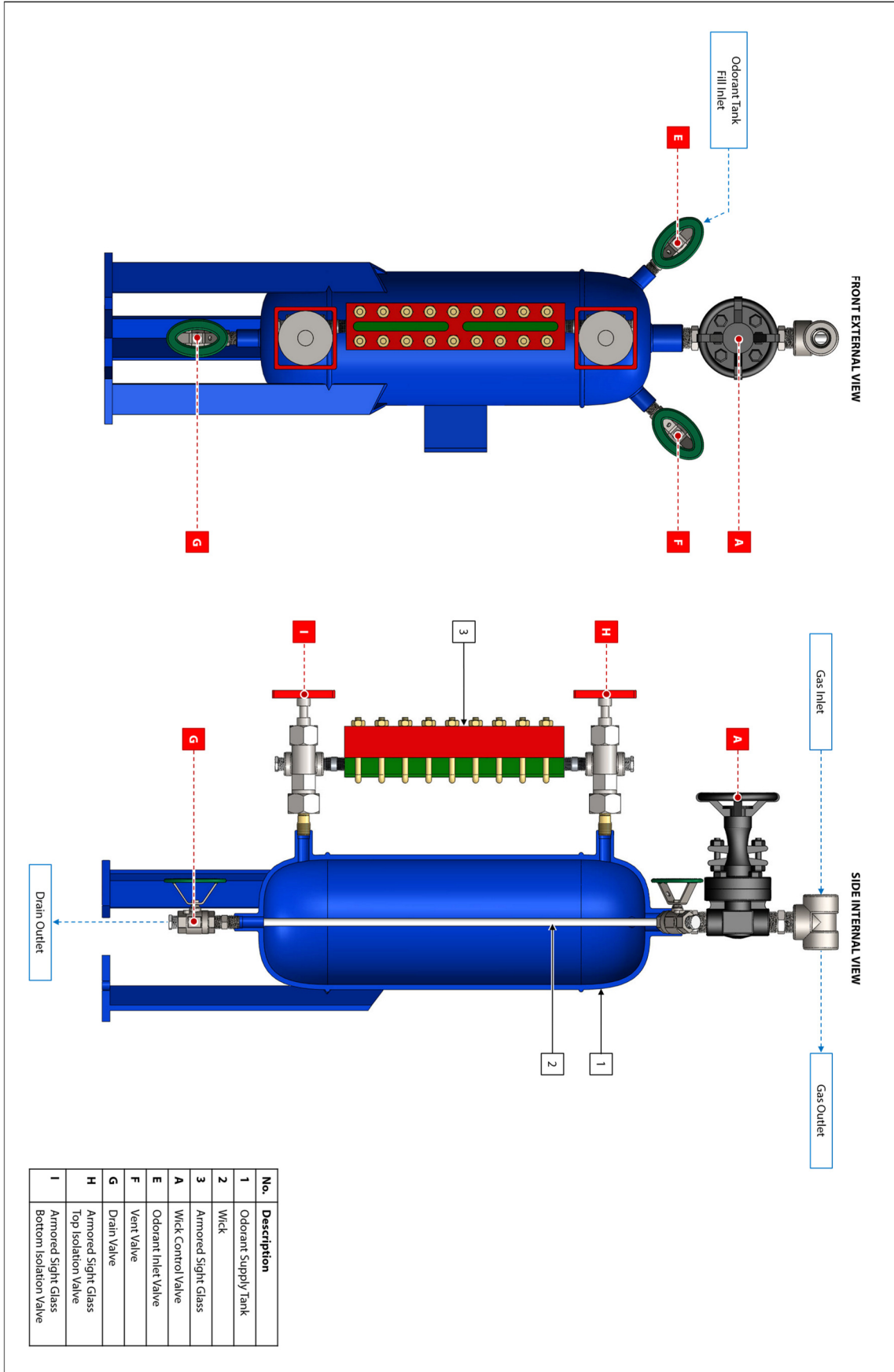




**Figure 4: 1-Gallon FTO With Optional Armored Sight Glass**



**Figure 5: 5-Gallon FTO With Optional Armored Sight Glass**



### 2.1 Before You Begin



After unpacking the unit, check the equipment for compliance and any damage that may have occurred during shipment. Immediately contact a Welker representative if you received damaged equipment.



When sealing fittings with PTFE tape, refer to the proper sealing instructions for the brand used.

### 2.2 Installation and Operation

#### Installing the FTO

1. Mount the FTO to the desired location
2. Ensure that all valves on the FTO are closed.
3. Using appropriately sized customer-supplied tubing, create a bypass loop by connecting from the pipeline to the gas inlet on the FTO and from the gas outlet on the FTO back to the pipeline.



Welker recommends installing the FTO downstream of the customer flow meter.

#### Filling the Odorant Supply Tank

4. If the FTO is equipped with the optional armored sight glass, open top isolation valve H and bottom isolation valve I (*Figure 3, Figure 4, or Figure 5*).
5. Remove the plug from the odorant tank fill inlet.
6. If applicable, open odorant inlet valve E (*Figure 5*).
7. Fill the odorant supply tank in accordance with company policy and procedure, taking care not to exceed 80% of the total volume of the supply tank.



Never fill the odorant supply tank above 80% of its capacity. Allow at least 20%, should the tank be exposed to increased temperatures.

8. If applicable, close odorant inlet valve E (*Figure 5*).
9. Return the plug to the odorant tank fill inlet.
10. Check the odorant supply tank for leaks and repair as necessary.

## **Start-Up Procedures**

11. Open wick control valve A. This will release tension on the wick and allow the wick to be saturated with liquid odorant.



Take care not to loosen wick control valve A too much, as the wick may fall into the odorant supply tank.

12. If the FTO is equipped with the optional bypass, open gas inlet valve B and gas outlet valve C (*Figure 2 or Figure 3*).
13. Slowly open the inlet and return valves on the customer bypass loop to begin natural gas flow through the FTO. This will allow odorant from the saturated wick to evaporate into the gas stream.
14. As necessary, adjust wick control valve A to control the rate of saturation.



Tighten wick control valve A to lower the saturation rate and reduce odorization.  
Loosen wick control valve A to increase the saturation rate and increase odorization.



Take care not to loosen wick control valve A too much, as the wick may fall into the odorant supply tank.

15. The FTO is now operational.
16. During operation, periodically check the armored sight glass, if applicable, to monitor the level of odorant in the odorant supply tank. As necessary, add odorant to the odorant supply tank. See *Section 2.3, Refilling the Odorant Supply Tank*, for instructions.

## **2.3 Refilling the Odorant Supply Tank**

1. Halt the flow of natural gas to the FTO. If the FTO is not equipped with the optional bypass, close the inlet and return valves on the customer bypass loop. If the FTO is equipped with the optional bypass, open bypass valve D, and then close gas inlet valve B and gas outlet valve C (*Figure 2 or Figure 3*).
2. If the FTO is equipped with the optional armored sight glass, ensure top isolation valve H and bottom isolation valve I are open (*Figure 3, Figure 4, or Figure 5*).
3. Remove the plug from the odorant tank fill inlet.
4. If applicable, open odorant tank fill valve E (*Figure 5*).
5. Fill the odorant supply tank in accordance with company policy and procedure, taking care not to exceed 80% of the total volume of the supply tank.



Never fill the odorant supply tank above 80% of its capacity. Allow at least 20%, should the tank be exposed to increased temperatures.

6. If applicable, close odorant inlet valve E (*Figure 5*).
7. Return the plug to the odorant tank fill inlet.
8. Check the odorant supply tank for leaks and repair as necessary.
9. Restore the flow of natural gas to the FTO. If the FTO is not equipped with the optional bypass, open the inlet and return valves on the customer bypass loop. If the FTO is equipped with the optional bypass, open gas inlet valve B and gas outlet valve C, and then close bypass valve D (*Figure 2 or Figure 3*).

## 2.4 Troubleshooting

**Table 2: FTO Troubleshooting**

Issues	Possible Causes	Solutions
<p><b>There are free liquids in the customer pipeline downstream of the FTO.</b></p>	<p>Liquids and/or sediment have built up in bottom of the odorant supply tank.</p>	<p>Halt the supply of natural gas to the FTO. If the FTO is not equipped with the optional bypass, close the inlet and return valves on the customer bypass loop. If the FTO is equipped with the optional bypass, open bypass valve D, and then close gas inlet valve B and gas outlet valve C (<i>Figure 2 or Figure 3</i>). Remove the drain plug or open drain valve G to drain the odorant supply tank and remove liquids and/or sediment. Once the odorant supply tank has been drained, fill the odorant supply tank according to the instructions in <i>Section 2.3, Refilling the Odorant Supply Tank</i>, and then return the FTO to service.</p>
<p><b>The odorant reading is low.</b></p>	<p>Wick control valve A may be too tight on the wick.</p> <p>The top of the wick is worn.</p>	<p>Loosen wick control valve A to increase the saturation rate and increase odorization.</p> <p>Halt the flow of natural gas to the FTO by closing the inlet and return valves on the customer bypass loop. Disconnect the tubing from the pipe tee above wick control valve A. Loosen wick control valve A slightly, and then carefully pull the wick up into the pipe tee so that a clean area of the wick will be exposed to the natural gas stream. Return the tubing to the pipe tee, and then return the FTO to service.</p>
<p><b>The odorant reading is high.</b></p>	<p>Wick control valve A may be too loose on the wick.</p>	<p>Tighten wick control valve A to lower the saturation rate and reduce odorization.</p>

## APPENDIX A: REFERENCED OR ATTACHED DOCUMENTS

Welker *Installation, Operation, and Maintenance (IOM) Manuals* suggested for use with this unit:

- None

Other *Installation, Operation, and Maintenance (IOM) Manuals* suggested for use with this unit:

- Apollo Valves 73A-100 Series Carbon Steel Ball Valve (Welker IOM-V151)
- Flowserve Corporation Vogt Forged Steel Gate, Globe and Check Valves (Welker IOM-V054)
- Inferno Manufacturing Corporation Inferno Liquid Level Flat Gages (Welker IOM-V385)
- Inline Industries, Inc. 201F Ball Valve (Welker IOM-V222)

Welker drawings and schematics suggested for use with this unit:

- Assembly Drawing: AD056CI (0.8-Gallon FTO With Optional Bypass, Armored Sight Glass, and NEMA 4X Enclosure)
- Assembly Drawing: AD056CO (0.8-Gallon FTO)
- Assembly Drawing: AD730BD.4 (1-Gallon FTO With Optional Armored Sight Glass and Pipe Mount)
- Assembly Drawing: AD730BJ (5-Gallon FTO With Optional Armored Sight Glass)

