



INSTALLATION, OPERATION, AND MAINTENANCE MANUAL
WELKER® FLUID SENTINEL

MODEL
WFS-3

DRAWING NUMBER
AD037AL

MANUAL NUMBER
IOM-171

REVISION
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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® Fluid Sentinel, Model WFS-3. 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 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 Fluid Sentinel 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 Fluid Sentinel, please contact a Welker® representative immediately.

Phone: 281.491.2331

Address: 13839 West Bellfort Street
Sugar Land, TX 77498

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 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 WFS-3 Fluid Sentinel is a Welker® patented product designed to separate liquids during gas sampling.

The inner centrifugal design separates free liquids from gas, reducing liquid carryover. The incorporated sight glass allows for visual observation of the sample gas and verification of any liquid present. By separating free liquids from the natural gas being analyzed, the WFS-3 protects connected analyzers.

Welker may custom design the WFS-3 to suit the particular application and specifications of each customer.

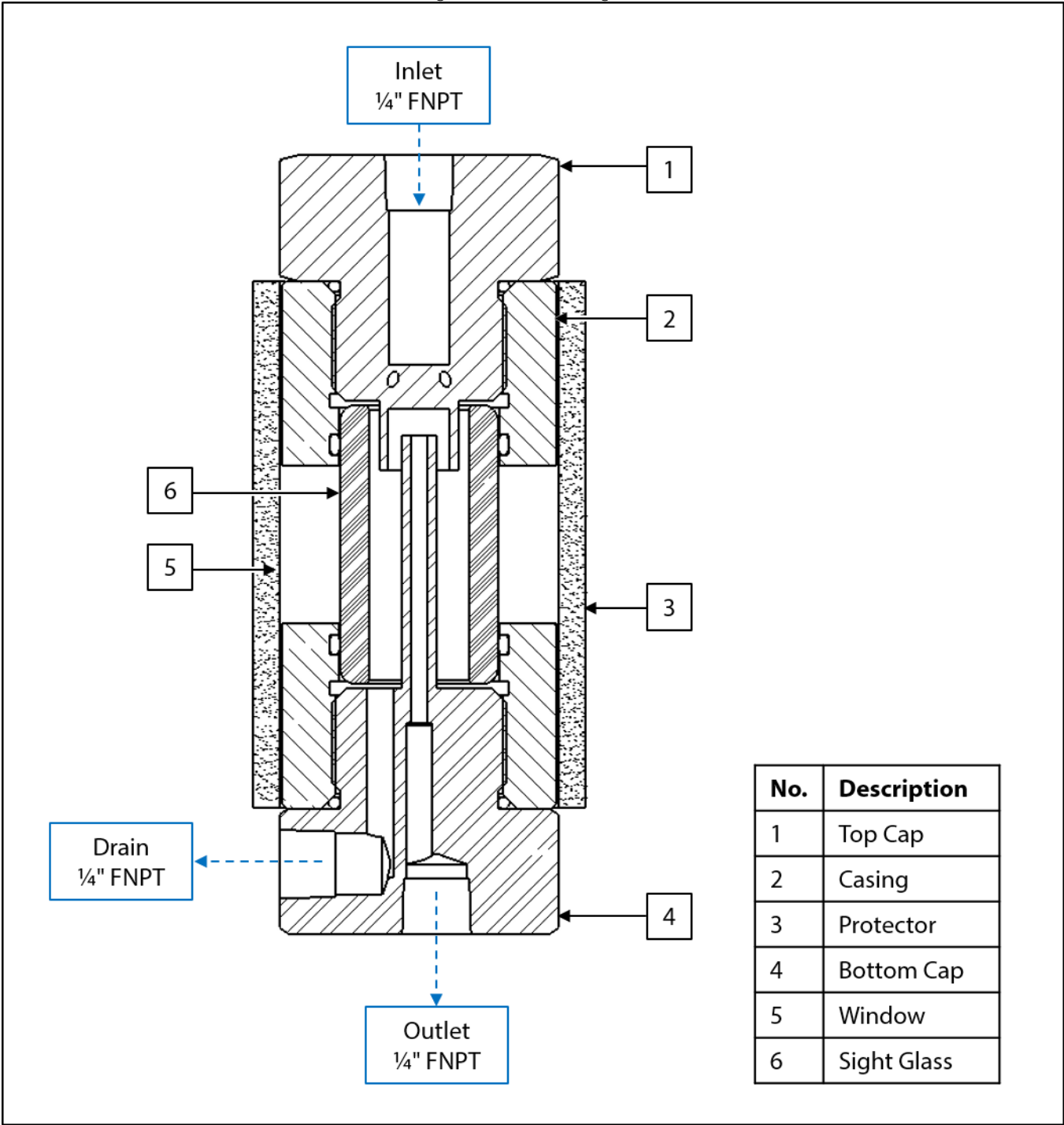
1.3 Specifications



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: WFS-3 Welker® Fluid Sentinel Specifications	
Product(s) (Sampled)	Natural Gas
Materials of Construction	316 / 316L Stainless Steel, Glass, Plexiglas, PTFE, Viton® Others Available
Maximum Allowable Operating Pressure	1500 psig @ -20°F to 100°F (103 barg @ -28° C to 37°C)
Connections	¼" NPT Standard Others Available
Weight	Approx. 4 lb
Dimensions	5 ½" x 2 ¾" x 2 ¾" (Length x Width x Height)
Features	Sight Glass
Patent	US Patent 8,127,625
Options	1/8" Pigtail and Valve 1/8" Pigtail and Valve With Bleed Plug Mounting and Drain Hardware Sulfinert®-Treated Sample Exposed Parts

Figure 1: WFS-3 Diagram



SECTION 2: INSTALLATION & OPERATION

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



The WFS can be used in conjunction with existing samplers and sample containers. Refer to the *Installation, Operation, and Maintenance (IOM) Manual* of the sampling system and company standards for proper equipment arrangement.



The WFS should be installed vertically in line with the sample point and the sample container.

1. Using ¼" tubing, connect the sampler outlet to the product inlet on the WFS.
2. Using ¼" tubing, connect the sample container inlet to the product outlet on the WFS.
3. Install a drain valve to the WFS if one is not present.

2.3 Operation

1. Ensure that the drain valve on the WFS is closed.
2. Begin sampling. Refer to the *Installation, Operation, and Maintenance (IOM) Manual* of the sampling system and company standards for proper sampling instructions.
3. During sampling, visually check the sight glass of the WFS for the presence of liquids. If the sight glass is clear, no liquids are present. If there are droplets in the sight glass or if the sight glass is foggy, liquids are present. Record any findings according to company policy.
4. If liquids are present, maintenance is required. Refer to *Section 3.2, Maintenance*, for maintenance procedures.

SECTION 3: MAINTENANCE

3.1 Before You Begin

1. Maintenance is necessary when liquids are present to prevent cross-contamination between samples.
2. If no liquids are present, Welker® recommends that the unit have regular yearly maintenance.
3. Prior to maintenance or disassembly of the unit, it is advisable to have a repair kit available for repairs of the system in case of unexpected wear or faulty seals.

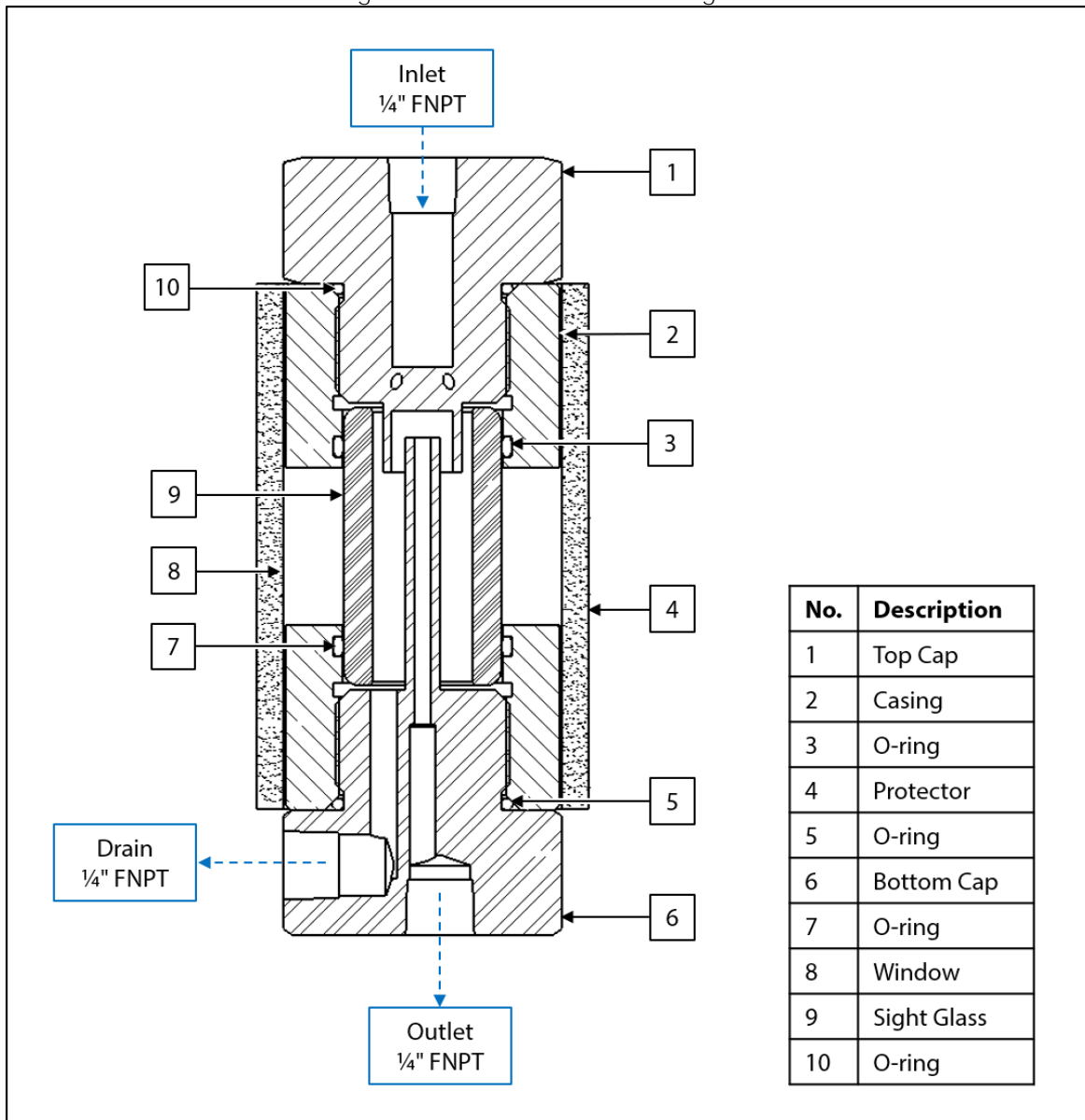


New seals supplied in spare parts kits are not lubricated. They should be lightly lubricated before installation. Welker® recommends Dow Corning® 111 (DC 111) or an equivalent lubricant for use with this unit.

4. All maintenance and cleaning of the unit should be performed on a smooth, clean surface.

3.2 Maintenance

Figure 2: WFS-3 Maintenance Diagram



1. Halt all sampling and close the pipeline isolation valve.
2. Open the drain valve on the WFS to drain any liquid present.
3. Disconnect attached tubing from the WFS and remove the WFS from the system.
4. Carefully unscrew the top and bottom caps from the casing, taking care to not break the sight glass.
5. Carefully push the sight glass out of the casing.
6. Remove the O-rings.
7. Clean the end caps, casing, protector, and sight glass with a solvent or cleaning agent, and then thoroughly dry them with a clean, dry cloth.
8. Replace the O-rings.
9. Carefully slide the sight glass back into the casing, taking care to not scratch the glass.
10. Carefully screw the top and bottom caps into the casing.
11. Carefully slide the protector on over the top cap.
12. The unit is now ready for reinstallation. Refer to section 2.2, *Installation*, for instructions on installing the WFS to the system.

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:

- None

Welker drawings and schematics suggested for use with this unit:

- Assembly Drawing: AD037AL (Welker® Fluid Sentinel Drawing)

NOTES



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