



*Installation, Operation, and  
Maintenance Manual*

*Welker<sup>®</sup> Spot Sample Manifold  
With Welker<sup>®</sup> Fluid Sentinel*

*Model  
SSM1-WFS-3*

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 above. Correct operating and/or installation techniques, however, are the responsibility of the end user. Welker reserves the right to make changes to this and all products in order to improve performance and reliability.

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# SPECIFICATIONS

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## 1. GENERAL

### 1.1 INTRODUCTION

We appreciate your business and your choice of Welker products. The installation, operation, and maintenance liability for this product becomes that of the purchaser at the time of receipt. Reading the applicable *Installation, Operation, and Maintenance (IOM) Manual* 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 1-800-776-7267 in the USA or 1-281-491-2331.

#### Notes, Cautions, and Warnings



**Notes** emphasize information or set it off from the surrounding text.



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



**Warnings** are alerts to a specific procedure or practice that, if not followed correctly, could cause personal injury.

\*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 IMPORTANT INFORMATION

- Never use this product for sampling liquid or refrigerated gas.
- Never transport a cylinder with pressure exceeding D.O.T. regulations (see U.S. Government CFR 49 for D.O.T. regulations). **In cases where the cylinders are exposed to varying temperatures, do not allow the cylinder to exceed the maximum allowable operating pressure of 2,000 PSI.**
- Protect the cylinder at all times and handle with care. It is a precision instrument and may contain a flammable or caustic product as well as a valuable representation of your company's product.
- **Sample probe should not be installed in a header or blow-down stack and should be away from obstructions, elbows or partially closed valves.**
- The WFS-3 was designed to provide protection during natural gas spot sampling procedures by eliminating entrained or created liquid carryover, providing awareness of liquids present, providing a visual observation of sample gas, providing visual assistance in controlling creation of liquids, and providing protection for the sample analyzer.

# SPECIFICATIONS

## 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. However, please note that **\*the specifications may vary depending on the customization of your product.**

Spot Sample Manifold	
<b>Materials of Construction:</b>	316 Stainless Steel
<b>Maximum Allowable Operating Pressure:</b>	1,800 PSI
<b>Inlet Port:</b>	1/4" NPT
<b>Outlet Ports:</b>	1/4" NPT
<b>Products Samples:</b>	Non-toxic natural gas or other gases compatible with the materials of construction.

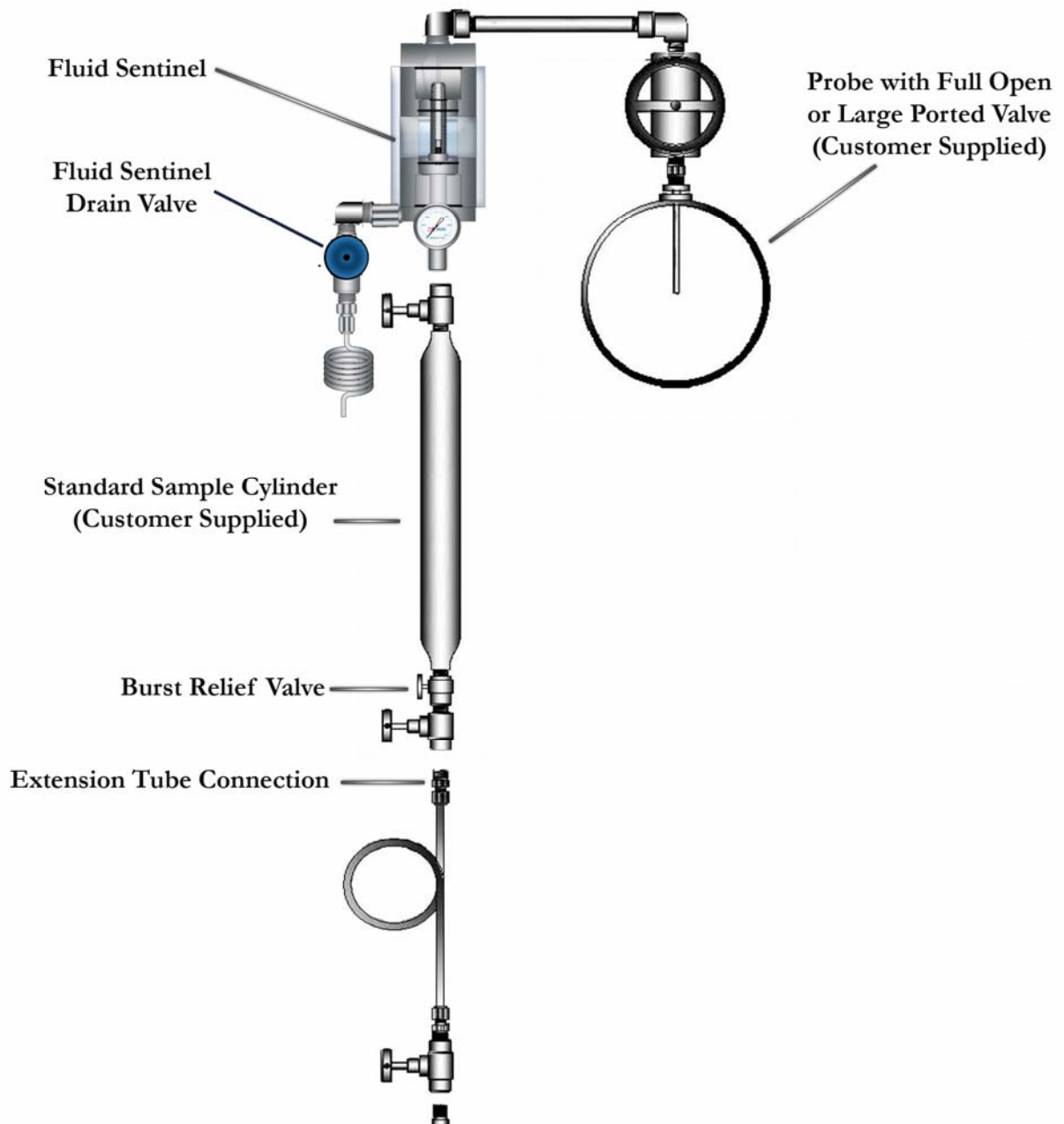
Fluid Sentinel	
<b>Products:</b>	Gases
<b>Materials of Construction:</b>	Plated Carbon Steel, Glass, Viton <sup>®</sup> and PTFE (others available)
<b>Sample Outlet &amp; Inlet Connection:</b>	1/4" NPT Standard
<b>Maximum Allowable Pressure:</b>	1,800 psi

## 1.4 SYSTEM COMPONENTS

<ul style="list-style-type: none"> <li>• GPA Bleed Plug</li> <li>• Extension Tube</li> <li>• Burst Relief Valve</li> <li>• Cylinder (Customer Supplied)</li> </ul>	<ul style="list-style-type: none"> <li>• Fluid Sentinel</li> <li>• Sample Probe (Customer Supplied)</li> <li>• Large Ported Valve to Probe</li> <li>• All Associated Tubing, Fittings, Etc.</li> </ul>
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# SPECIFICATIONS

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# INSTALLATION & OPERATION

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## 2. INSTALLATION & OPERATION INSTRUCTIONS


### 2.1 GENERAL

- After unpacking the unit, check it for compliance and for any damages that may have occurred during shipment.
- Claims for damages caused during shipping must be initiated by the receiver and directed to the shipping carrier. Welker is not responsible for any damages caused from mishandling by the shipping company.
- When sealing fittings with PTFE tape, refer to the proper sealing instructions for the tape used.
- A sample probe should be located in the least turbulent area available of the flowing stream; i.e., not in a header or blow-down stack and away from obstructions, elbows or partially closed valves. The sample probe should be installed reaching approximately into the center one-third of the pipeline.
- The sample cylinder should be located as close to the sample point as possible.

### 2.2 INSTALLATION INSTRUCTIONS (REFER TO DIAGRAM ON PAGE 5)

1. Make sure all valves are closed.
2. If necessary, install sample probe according to manufacturer's installation instructions.
3. Open the sample probe valve slowly, and allow gas to blow out any residual residue, then shut valve.
4. Connect the system as shown in diagram on page 5.
5. Close all valves.

### 2.3 SAMPLING PROCEDURES

 Welker recommends using this system in conjunction with the appropriate sampling procedures as outlined in the GPA Standard 2166, 2005 edition.

1. Commence sampling procedures.
2. View the sight glass during sampling. If there are droplets on the sight glass, or the sight glass is foggy, that is an indication that liquids are present. If the sight glass remains clear, that is an indication no liquids are present. Record any findings according to your company procedures. (See Figures 1 & 2).
3. Open valve as necessary to drain liquids.
4. When liquids are present, it will be necessary to perform the maintenance procedures in Section 3.1.

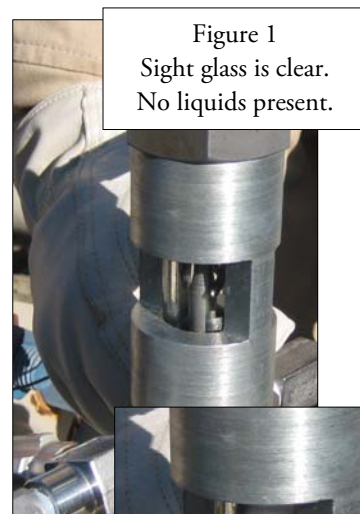


Figure 1  
Sight glass is clear.  
No liquids present.

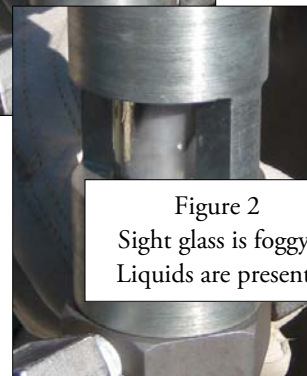


Figure 2  
Sight glass is foggy.  
Liquids are present.

# MAINTENANCE

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## 3. MAINTENANCE

### 3.1 SPOT SAMPLE MANIFOLD

The Spot Sample Manifold does not need regular maintenance. Welker recommends that the end user follow manufacturer's recommended maintenance procedures for sample probe and sample cylinder. Should the Manifold become clogged, remove the GPA Sample Separator and flush clean. Periodically check tubing and fittings for leaks and replace if necessary.

### 3.2 WELKER FLUID SENTINEL

Maintenance will be necessary when liquids are present in order to prevent cross contamination between sampling. Prior to maintenance or disassembly of the unit, it is advisable to have a repair kit handy for the system in case of unexpected wear or faulty seals.

#### Recommended Tools

It would be advisable to have the following tools available for maintenance of the unit; however, tools used will vary depending on model.

- Large adjustable wrench
- PTFE tape

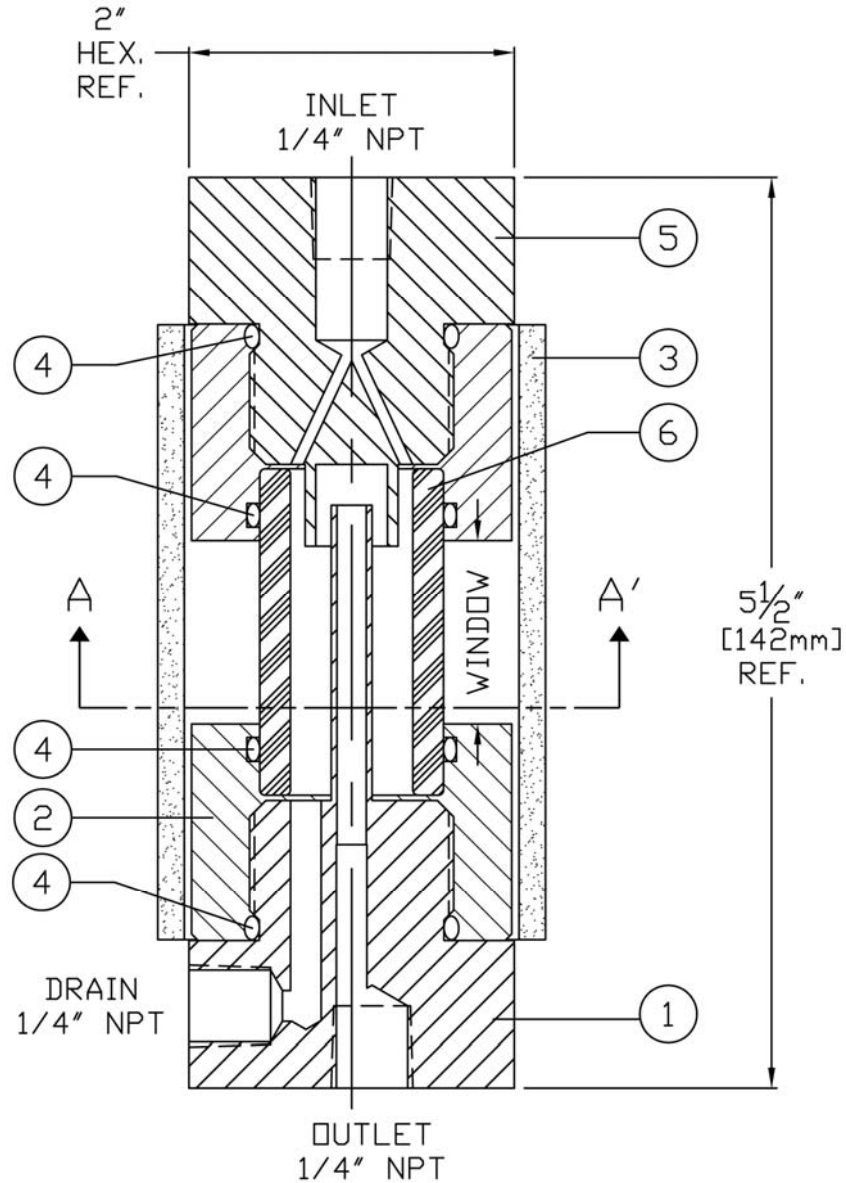


*Note* When sealing fittings with PTFE tape, refer to the proper sealing instructions for the tape used.

Refer to diagram on page 8.

1. Close the pipeline isolation valve and suspend all sampling.
2. Remove the fluid sentinel from the spot sampling manifold.
3. Remove the top cap of the fluid sentinel. Be careful not to break the sight glass.
4. Clean all parts with a solvent or cleaning agent.
5. Remove and replace the o-ring seals when necessary.
6. Replace the top cap carefully.
7. The unit is now ready for reinstallation onto the Spot Sample Manifold.

# MAINTENANCE



## Fluid Sentinel

- |                      |                  |
|----------------------|------------------|
| 1. Bottom/Outlet Cap | 4. O-Rings       |
| 2. Casing            | 5. Top/Inlet Cap |
| 3. Protector         | 6. Sight Glass   |





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