

PRODUCT DESCRIPTION

- The ALS-1 acts as a final defense that protects analyzers from damage and contamination caused by liquids in gas samples.
- Gas flows freely through the ALS-1 Analyzer Liquid Shutoff. But if liquid tries to pass through, the internal floating ball will seal, thereby shutting off all product flow to the analyzer.

SPECIFICATIONS

Products

Gases Compatible With the Materials of Construction

Materials of Construction

316/316L Stainless Steel, Aluminum, Glass, LEXAN™, PTFE, FKM
(Others Available)

Maximum Allowable Inlet Pressure

1000 psig (68.9 barg)

Temperature Range

-20 °F to 100 °F (-28.8 °C to 37.7 °C)
(Others Ranges Available)

Connections

Inlet: 1/8" FNPT (Standard)

Outlet: 1/8" FNPT (Standard)

(Others Available)

Maintenance Schedule

Every 12 Months

Severe Service, Dirty Conditions,
Excessive Usage: More Frequently

Feature

Sight Port

Option

High Capacity

The following procedures have been written for use with standard Welker® parts and equipment. Assemblies that have been modified might have additional requirements and specifications that are not listed in this document.

Maintenance Tip

When installing new seals supplied in spare parts kits, for sample-exposed seals, Welker® recommends non-hydrocarbon-based lubricants, such as Krytox®. For non-sample-exposed seals, Welker® recommends either non-hydrocarbon-based lubricants or silicone-based lubricants such as Molykote® 111. Wipe excess lubricant from the seals, because it might adversely affect analytical instrument results. **DO NOT** lubricate the ball seal O-ring.

If you received a damaged ALS-1 Analyzer Liquid Shutoff, please contact a Welker® representative immediately.

For all product inquiries, please contact our Service Department:
281.207.1887



INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

WELKER® ALS-1 ANALYZER LIQUID SHUTOFF

IOM-304 | REV. 0 | 10/14/2025



The installation, operation, and maintenance liability for this equipment becomes that of the purchaser at the time of receipt. Reading the instructions that comprise IOM-304 prior to installation and operation of this equipment is required for a full understanding of its application and performance prior to use.

ALS-1: INSTALLATION AND OPERATION

Installing and Operating the ALS-1 Analyzer Liquid Shutoff

1. Halt all product flow to the analyzer.
2. Be certain that there is a valve between the ALS-1 and the analyzer and also a valve upstream of the ALS-1.



Upstream and downstream valves are necessary in order to purge the sample line of liquids after installation and in the event liquids reach the ALS-1 and shut off all product flow to the analyzer.



For this manual, the term "purge valve" refers to the valve installed **downstream** of the ALS-1.
For this manual, the term "purge drain valve" refers to the valve installed **upstream** of the ALS-1.

3. Connect the product supply to the inlet port of the ALS-1 (*Figure 1* or *Figure 2*).



- The ALS-1 must be installed vertically with the inlet port pointing down.
- Before installing fittings to both ports, remove the cap. When reassembling, **HAND-TIGHTEN ONLY**.



Welker® recommends installing a Welker® LE-2 Liquid Eliminator upstream of the ALS-1.

4. Connect the outlet of the ALS-1 to the analyzer (*Figure 1* or *Figure 2*).
5. Purge the sample line prior to beginning operation. See *Purging the Sample Line*, below, for instructions.
6. After the sample line has been purged, begin product flow to the ALS-1, thereby putting it into service.
7. One can see through the ALS-1 window when liquids are present because the ball will float up to the ball seal O-ring.
8. When the ALS-1 ball seals with the O-ring, all product flow to the analyzer shuts off and the sample line must be purged.

Purging the Sample Line

1. Be certain that the purge valve and the purge drain valve are both closed.
2. Connect a safe auxiliary pneumatic supply to the purge valve. Welker® recommends using helium as the auxiliary pneumatic supply because helium will purge AND dry the sample line. However, nitrogen or natural gas from the pipeline may also be used.
3. If any sample devices are installed between the ALS-1 and the purge drain valve, make certain that their outlet valves are open. This will allow any liquids present in the ALS-1 to be purged to the drain.
4. Open the outlet valve on the auxiliary pneumatic supply.
5. Open the purge valve. This applies pressure to the ALS-1, and any liquids in the ALS-1 will be forced to the purge drain valve.
6. Open the purge drain valve in order to drain any liquid from the system.
7. When all liquids have been drained from the purge drain valve, close the outlet valve on the pneumatic supply. Then close the purge valve and purge drain valve.
8. Disconnect the auxiliary pneumatic supply from the purge valve.
9. Purging is now complete. The ALS-1 may be returned to operation.

ALS-1: MAINTENANCE

1. Halt product flow to the ALS-1. Then depressurize the ALS-1.
2. Disconnect all tubing from the ALS-1 and remove the ALS-1 from the system.
3. Carefully unscrew the cap from the body (*Figure 1*).
4. Carefully remove the seat, taking care **NOT** to scratch the glass.
5. Replace the ball seal O-ring and the two other O-rings on the seat (*Figure 1*). **DO NOT** lubricate the ball seal O-ring.
6. Carefully remove the glass (*Figure 1*).
7. Carefully remove the guide from the body. Replace the two O-rings on the guide (*Figure 1*).
8. Inspect the ball for scratches or wear. Replace as necessary.
9. Return the ball to the guide. Then install the guide to the body.
10. Carefully install the glass over the guide.
11. Carefully insert the seat into the glass. **DO NOT** scratch the glass.
12. Return the cap to the body. **HAND-TIGHTEN ONLY**.
13. The unit is now ready for reinstallation.

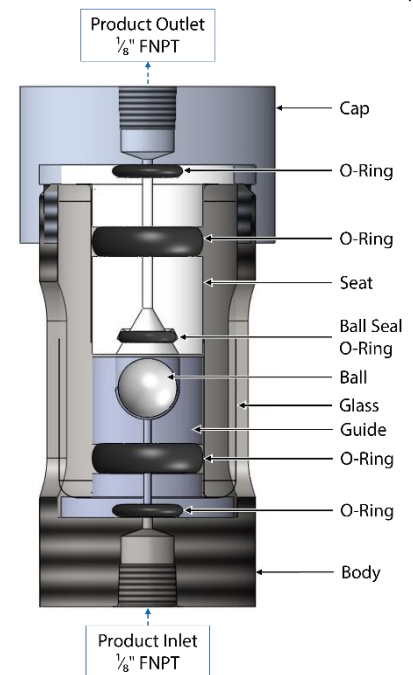


Figure 1: Welker® ALS-1 Analyzer Liquid Shutoff Diagram Interior View

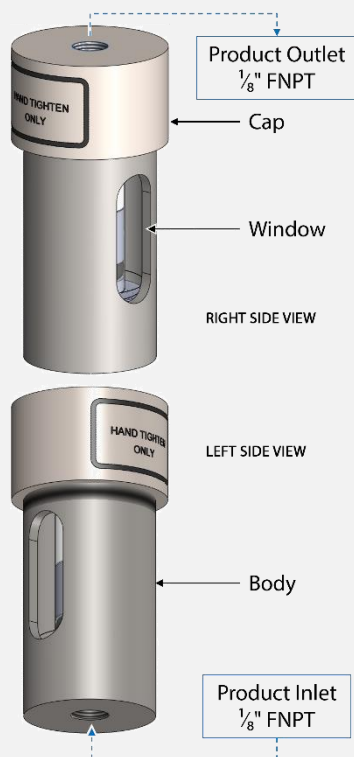
PRODUCT DESCRIPTION

- Acts as a final defense that protects analyzers from damage and contamination caused by liquids in gas samples.
- Gas flows freely through the ALS-1 Analyzer Liquid Shutoff. But if liquid tries to pass through, the internal floating ball will seal, thereby shutting off all product flow to the analyzer.

The installation, operation, and maintenance liability for this equipment becomes that of the purchaser at the time of receipt.

Reading the instructions that comprise IOM-304 prior to installation and operation of this equipment is required for a full understanding of its application and performance prior to use.

**Figure 2:
Welker® ALS-1
Analyzer Liquid Shutoff
Exterior View**



If you received a damaged ALS-1 Analyzer Liquid Shutoff, please contact a Welker® representative immediately.

For all product inquiries, please contact our Service Department:
281.207.1887



IMPORTANT SAFETY INSTRUCTIONS WELKER® ALS-1 ANALYZER LIQUID SHUTOFF IOM-304 | REV. 0 | 10/14/2025

BEFORE YOU BEGIN

Read These Instructions Completely and Carefully



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.

The instructions that comprise IOM-304 are intended to be used as basic setup and installation guidelines for the Welker® Analyzer Liquid Shutoff, Model ALS-1. The information in IOM-304 has been carefully checked for accuracy and is intended to be used as guidelines for the setup and installation of the Welker® equipment described in IOM-304. Correct setup, installation, and operation, however, are the responsibility of the end user. Welker® reserves the right to make changes to IOM-304 and all products in order to improve performance and reliability.

SAVE INSTRUCTIONS

Save these Safety instructions and the instructions that comprise IOM-304 for local inspectors' use.

OBSERVE

Observe all governing codes and ordinances.

NOTE TO INSTALLER

Leave these Safety instructions and the instructions that comprise IOM-304 with the end user.

NOTE TO END USER

Keep these Safety instructions and the instructions that comprise IOM-304 for future reference.

NATURE OF INSTALLATION

Installation of this Analyzer Liquid Shutoff is of a mechanical nature.

INSTALLATION RESPONSIBILITY

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

