



***Installation,
Operation,
&
Maintenance
Manual***

Welker® Analyzer Liquid Shutoff

Models

*ALS-1
ALS-1HP
ALS-2
ALS-3
ALS-4HP*

The information in this manual has been carefully checked for accuracy and is intended to be used as a guide to operations. 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 to improve performance and reliability.

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INTRODUCTION

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.

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.

Notes, Warnings, and Cautions



NOTE

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



CAUTION

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



WARNING

Warnings alert users to a specific procedure or practice that, if not followed correctly, could cause personal injury.

1.2 Product description and specifications

The Welker Analyzer Liquid Shutoff is designed to be a final defense against liquid carryover into injection valves, columns of gas chromatographs, and other analytical equipment. If liquids should enter the device, it will push a ball against a seal, shutting off flow to the analyzer. The design of the unit allows only gases to pass through freely.

Table 1

General	
Products	Gases/ Liquids
Materials of Construction	Aluminum, delrin, glass, lexan, PTFE, and stainless steel (others available)
Maximum Line Pressure	ALS-1: 1000 psi @ -20° F to 100° F (69 bar @ -29° C to 37° C) ALS-2: 600 psi @ -20° F to 100° F (41 bar @ -29° C to 37° C) ALS-1HP: 1440 psi @ -20° F to 100° F (99 bar @ -29° C to 37° C) ALS-4HP: 2160 psi @ -20° F to 100° F (149 bar @ -29° C to 37° C)
Inlet Connection	1/8" FNPT
Outlet Connection	1/8" FNPT

INSTALLATION & OPERATION

2 INSTALLATION INSTRUCTIONS

2.1 General

After unpacking the unit, check it for compliance and for any damages that may have occurred during shipment.

N NOTE

Claims for damages caused during shipment must be initiated by the receiver and directed to the shipping carrier. Welker is not responsible for damages caused from mishandling by the shipping .

N NOTE

The ALS must be mounted vertically with the product outlet facing up (see Figure 1). The unit will function properly only in a vertical position.

! CAUTION

To install fittings in the NPT ports, first remove the cap on the device and then install the fittings. Rotating the cap while it is connected to the device can cause damage to the unit. After installation, hand tighten the cap back onto the device. **Do not use a wrench to tighten the cap or body.**

N NOTE

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

2.2 Instructions

2.2.1 Connect the product supply to the inlet port at the bottom of the ALS.

N NOTE

It is recommended to install a Welker LE-2 Liquid Eliminator upstream of the ALS.

2.2.2 Connect the outlet of the ALS to the analytical instrument.

2.2.3 The ALS is now ready to be pressurized and put into service.

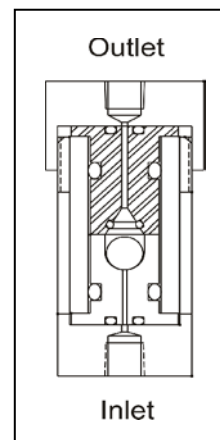


Figure 1

2.3 Back purging

In the event that liquids enter the ALS and shut off the flow, a *back purge* is recommended to remove the unwanted liquids from the sample line (see Figure 2).

INSTALLATION & OPERATION

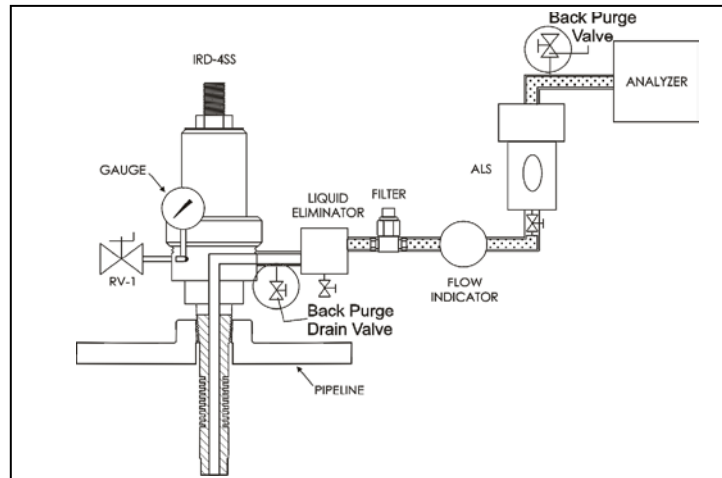


FIGURE 2

Refer to this Figure throughout the following Section.

- 2.3.1 Install a valve both upstream and downstream of the ALS. The system should be purged from the analyzer to the sample point.
- 2.3.2 Close both the *back purge valve* and the *back purge drain valve*.
- 2.3.3 Connect a safe auxiliary gas supply to the back purge valve located between the ALS and the analyzer.

N NOTE

For the back purge to be most effective, helium should be used.

- 2.3.4 Make sure all outlet valves are open on the sample devices.
- 2.3.5 Open the back purge valve between the ALS and the analyzer. This will apply pressure to the ALS, opening up flow. Any liquids and gases in the device will be forced back to the *back purge drain valve*.
- 2.3.6 Open the *back purge drain valve* to drain liquid from the system.

MAINTENANCE

3 MAINTENANCE INSTRUCTIONS

3.1 General

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

N NOTE

We recommend that the unit have annual maintenance under normal operating conditions. In the case of severe service, dirty conditions, excessive cycling usage, or other unique applications that may subject the equipment to unpredictable circumstances, a more frequent maintenance schedule may be appropriate.

N NOTE

New seals supplied in spare Parts kits are not lubricated. They should be lightly coated with lubrication grease (Dow Corning 111 [DC 111] or equivalent lubricant) before they are installed into the equipment. This helps with the installation of the seals while reducing the risk of damage when positioning them on the parts.

N NOTE

The cap and body of the device should be hand tightened only.

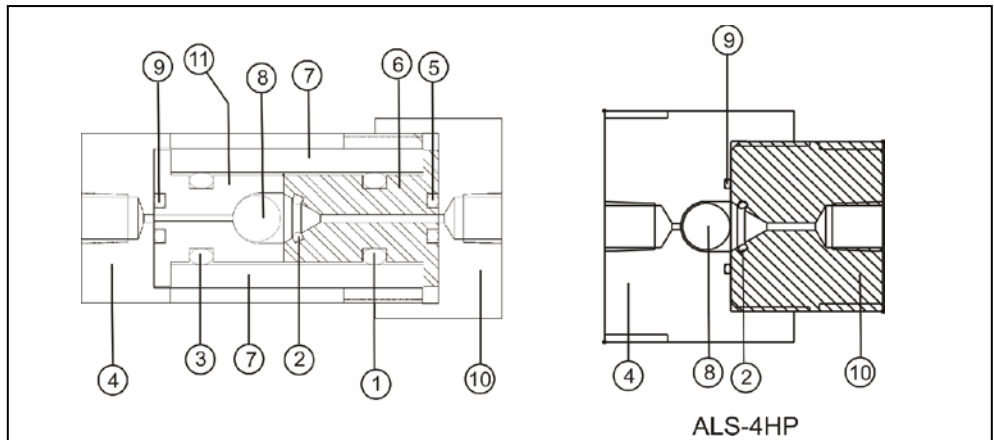


FIGURE 3

Refer to this Figure throughout the entire maintenance process.

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.

- 6" Crescent wrench (2)
- Small screwdriver

MAINTENANCE

3.2 Instructions

- 3.2.1 Depressurize the ALS.
- 3.2.2 Disconnect all tubing from the ALS.
- 3.2.3 Remove the liquid shutoff glass assembly (Parts 6, 7, and 11) from its body (Part 10). **If you have the ALS-4HP model**, simply remove the body (Part 10) from the cap (Part 4).
- 3.2.4 Replace all applicable seals (Parts 5, 1, 2, 3, and 9) in the device (also see Figure 4).

N NOTE

Do not lubricate Part 2.

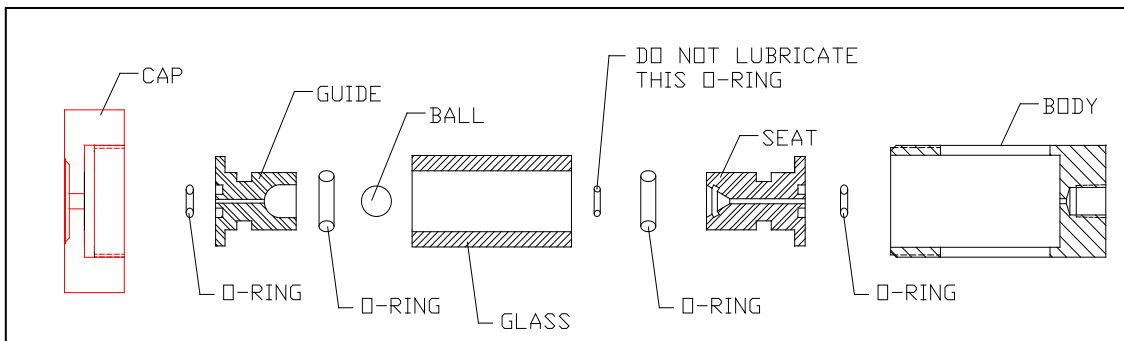


Figure 4

Not applicable for the ALS-4HP model.

- 3.2.5 Remove the ball (Part 8) and examine it for scratches and wear. If deep scratches or excessive wear exist, the ball will need to be replaced.
- 3.2.6 Reinsert the ball into the guide (Part 11). **For the ALS-4HP model**, reinsert the ball into the cap (Part 4).
- 3.2.7 Reinstall the glass assembly inside the cap (Part 4). *Not applicable for the ALS-4HP.*
- 3.2.8 Hand tighten the cap (Part 4) to the body (Part 10).
- 3.2.9 Maintenance is complete. The unit is now ready for reinstallation.

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