



**Installation,
Operation,
and
Maintenance
Manual**

Welker[®] Automatic Liquid Dump

Models

ALD-1, ALD-3, ALD-5, ALD-19

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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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

The Welker Automatic Liquid Dump is designed for use in systems where it is necessary to filter entrained liquids from a process gas. A steady pressure is maintained from the supply source to the instrumentation connected to the unit. As product enters the device, any free liquids are dropped to a float at the bottom of the dump. A *downcomer* is installed inside the float, and as liquids fill the device, the downcomer itself will begin to float. The downcomer is connected to the dump port, and eventually, the buoyancy of the float will cause the downcomer to lift. When the downcomer lifts, it will open the dump port, allowing the liquids to be drained.

The ALD-1 incorporates a coalescing device for product supply that is high in aerosols. The device will coalesce the aerosols into liquid droplets, which will then drop around the float.

SPECIFICATIONS

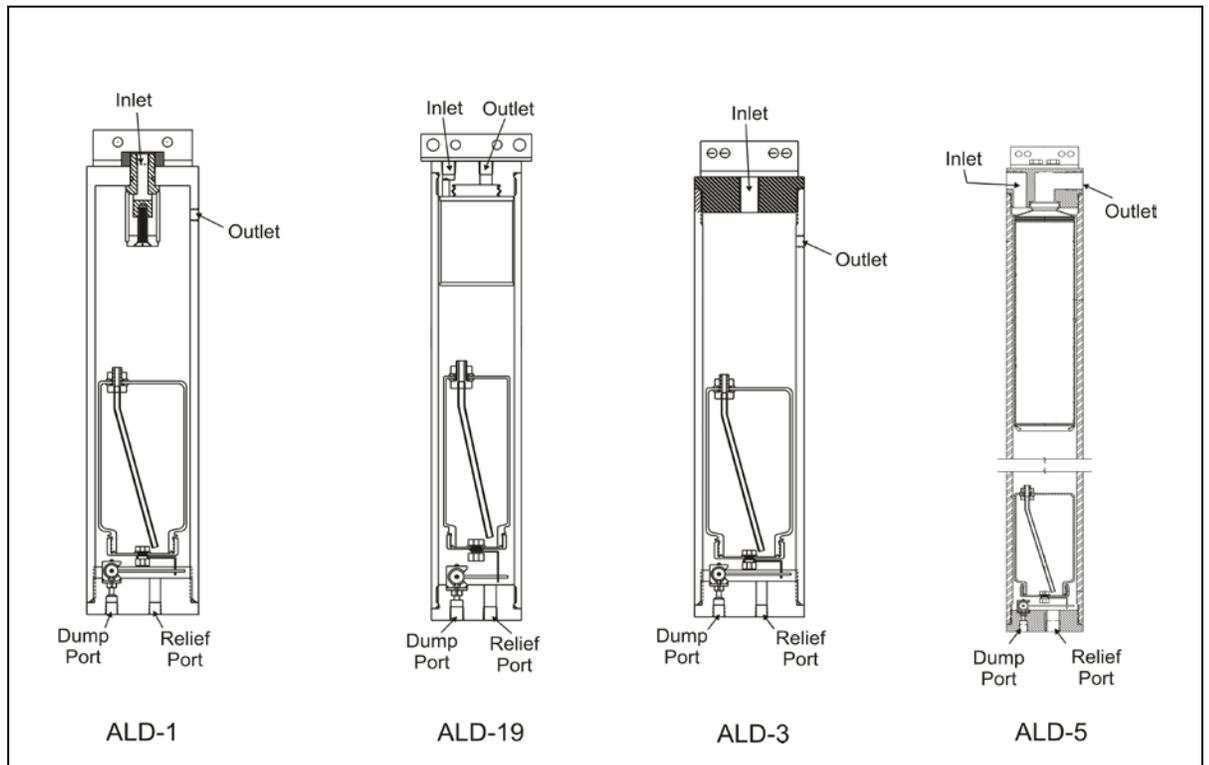


Figure 1

SPECIFICATIONS

N NOTE

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.**

Table 1

General	
Products	Gases/ Liquids
Materials of Construction	Carbon Steel and Buna-N, PTFE (others available)
Outlet Connection	1/4" FNPT (ALD-5: 1" FNPT)
Inlet Connection	1/4" FNPT (ALD-5: 1" FNPT)
Auxiliary Connections	1/4" FNPT
Capacity	15 gallons per hour at atmospheric pressure. 25 gallons per hour dumping at 500 psi (34 bar) to atmospheric pressure.
Maximum Allowable Pressure*	<p><u>ALD-1, ALD-3, & ALD-5:</u> 1,500 psi @ -20° F to 100° F (103 bar @ -29° C to 37° C)</p> <p><u>ALD-19:</u> 25 psi @ -20° F to 100° F (1.72 bar @ -29° C to 37° C)</p>

*Maximum allowable pressures and temperatures may vary depending on pipeline connection device.

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 company.

Recommended Tools

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

- 10" adjustable wrench
- Tubing
- Tubing cutters
- Permanent marker

N NOTE

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

2.2 Instructions

- 2.2.1 Install a valve on the relief port at the bottom of the dump (see Figure 1).
- 2.2.2 Make sure the relief port valve is closed.
- 2.2.3 Use tubing to connect the dump port to an atmospheric container or sump location.

N NOTE

It is possible to connect the dump port to a portion of the pipeline, but the pipeline pressure must be below the pressure entering the ALD.

N NOTE

In cases where the ALD will be placed in temperatures at which the liquids may freeze, pour a light oil into the outlet port of the unit until the oil begins to fall through the dump port. The excess oil will gather at the bottom of the device, and any liquid that collects will almost immediately fall through the oil and out of the dump port.

- 2.2.4 Connect the appropriate instrumentation to the unit's outlet port.
- 2.2.5 Use tubing to connect the product supply to the unit's inlet.
- 2.2.6 **Slowly** open the product supply valve to pressurize the unit.
- 2.2.7 The unit is now in operation.

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 encountering unexpected wear or faulty seals. All maintenance and cleaning of the unit should be done on a smooth, clean surface.

N NOTE

We recommend 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.

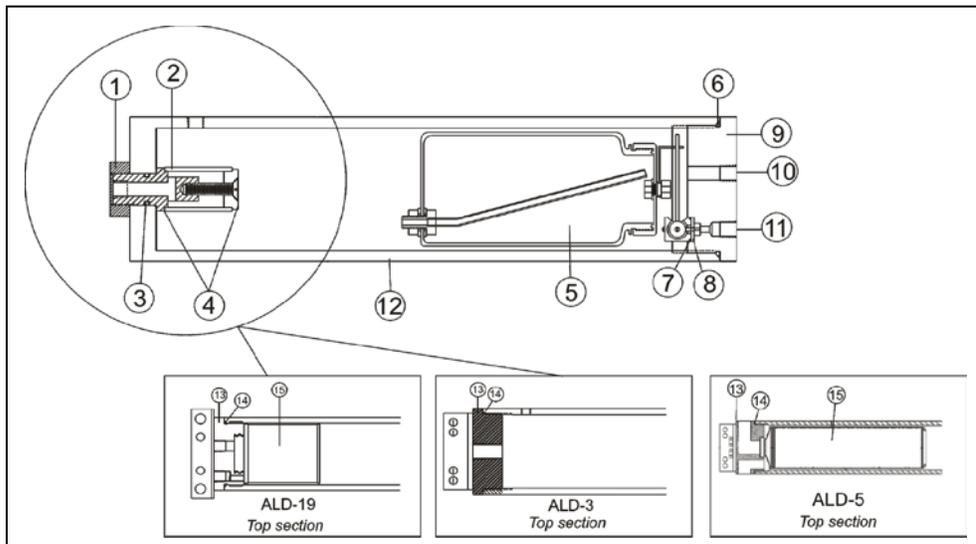


Figure 2

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.

- Small hex key set
- 6" adjustable wrench
- 10" adjustable wrench
- Socket wrench with extension

MAINTENANCE

3.2 Disassembly instructions

- 3.2.1 Turn off the product supply.
- 3.2.2 Open the relief valve (Part 10) to relieve pressure inside the unit.
- 3.2.3 Disconnect and remove the product supply from the inlet of the outlet port of the device.
- 3.2.4 Disconnect and remove instrumentation connected to the device.
- 3.2.5 Remove tubing connected to the dump port (Part 11).
- 3.2.6 Unscrew the base cap (Part 9) and remove it from the body (Part 12). The float assembly (Part 5) is attached to the base.
- 3.2.7 **If you have the ALD-3, ALD-5, or ALD-19 model**, unscrew the top cap (Part 13) from the cylinder. The ALD-5 and ALD-19 model will have a filter cartridge (Part 15) attached to the top cap.
- 3.2.8 **If you have the ALD-1 model** loosen and remove the jam nut (Part 1) from the top of the unit. With the ALD lying horizontally, gently push out the coalescing device (Part 4) from the inlet port. It will fall out of the port. Remove it from the cylinder.

3.3 Maintenance instructions

- 3.3.1 **If you have the ALD-1 model**, replace the O-ring (Part 3) around the coalescing device and replace the coalescer (Part 2).
- 3.3.2 **If you have the ALD-3, ALD-5, or ALD-19 model**, replace the O-ring (Part 14) around the top cap (Part 13).
- 3.3.3 **If you have the ALD-5 or ALD-19 model**, replace the filter cartridge (Part 15) and reattach to the top cap.
- 3.3.4 Replace the O-ring (Part 6) on the base cap.
- 3.3.5 Replace the gasket (Part 8) on the pivot valve assembly.
- 3.3.6 Replace the O-ring (Part 7) on the pivot valve assembly.
- 3.3.7 **If you have the ALD-1 model**, use a socket wrench with an extension to reinsert the coalescing device (Part 4) into the inlet port.
- 3.3.8 **If you have the ALD-3, ALD-5, or ALD-19 model**, reattach the top cap.
- 3.3.9 Reattach the bottom cap.
- 3.3.10 Maintenance is now complete.



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