



INSTALLATION, OPERATION, AND MAINTENANCE MANUAL  
WELKER® MANUAL LIQUID DUMP

MODEL  
MLD-1

DRAWING NUMBER  
AD058CQ

MANUAL NUMBER  
IOM-160

REVISION  
Rev. B, 08/14/2024

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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® Manual Liquid Dump, MLD-1. 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 Manual Liquid Dump 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 Manual Liquid Dump, 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® *MLD-1* Manual Liquid Dump is designed to protect downstream instrumentation from damage and contamination by separating free liquids from a wet gas stream.

Gas flows freely through the MLD-1, but any aerosols or free liquids are separated from the stream as they pass through the internal coalescer. Gravity causes the separated liquids to fall to the bottom of the MLD-1, where they collect until drained by an operator.

*Welker® may custom design the MLD-1 to suit the particular application and specifications of each customer.*

## 1.3 Specifications

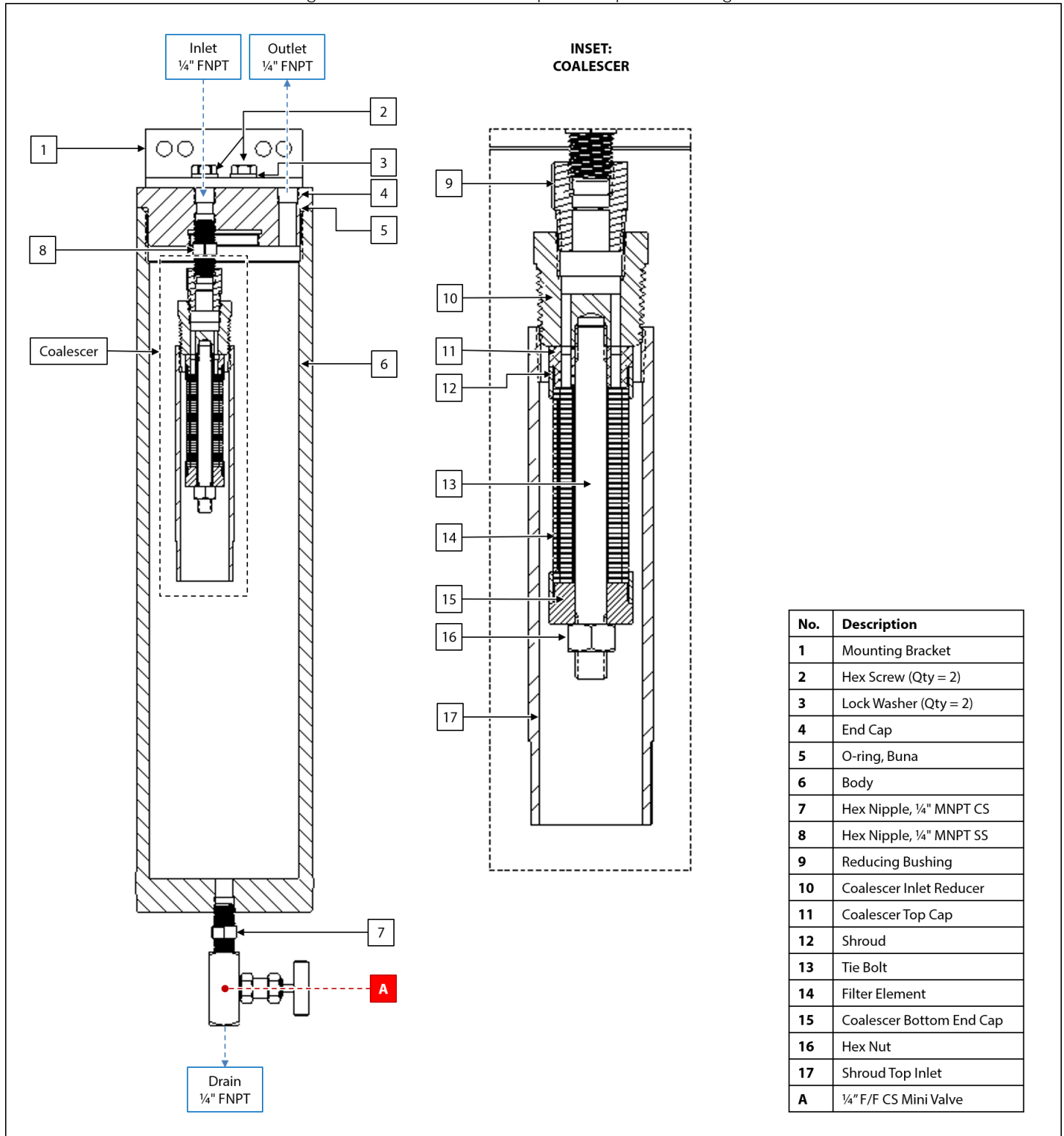


The specifications listed in this section are generalized for this equipment. Welker can modify the equipment according to your company's needs. Please note that the specifications may vary depending on the customization of your equipment.

Table 1: MLD-1 Specifications

Products	Natural Gas or Other Gaseous Fluids Compatible With the Materials of Construction
Materials of Construction	316 Stainless Steel, 316L Stainless Steel, Buna, Carbon Steel, and PTFE
Maximum Allowable Operating Pressure	1500 psig @ -20 °F to 120 °F (103 barg @ -28 °C to 48 °C)
Connections	Drain: ¼" FNPT Inlet: ¼" FNPT Outlet: ¼" FNPT
Filtration	35-Micron
Filter Media	316 Stainless Steel Mesh Screen
Feature	Coalescer

Figure 1: Welker® Manual Liquid Dump MLD-1 Diagrams



## 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 and Operation

1. Mount the MLD-1 in the desired location.



The MLD-1 must be installed vertically with the drain pointing down.



The MLD-1 should be located in a straight section of inlet piping upstream of and below the instrumentation to be supplied with the filtered gas.

2. Using ¼" customer-supplied tubing, connect from the pipeline to the inlet of the MLD-1 (*Figure 1*).



Welker recommends connecting the MLD-1 to a probe that is installed in the top of the pipe and is inserted into the center one-third ( $\frac{1}{3}$ ) of the pipeline. **The probe should be located in the least turbulent area of the flowing stream available (i.e., not in a header or blow-down stack and away from obstruction elbows and partially closed valves).**

3. Using ¼" customer-supplied tubing, connect from the outlet of the MLD-1 to the inlet port of the instrument to be supplied with the filtered gas (*Figure 1*).
4. Using ¼" customer-supplied tubing, connect from the drain to an enduser-approved appropriate collection location (*Figure 1*).



In order to drain the MLD-1 by gravity, the MLD-1 must be installed higher than the enduser-approved collection location.



The drain may be connected to a return port in the pipeline if the pipeline pressure is below the pressure of the product entering the MLD-1.

5. Slowly open the pipeline isolation valve to begin supplying flow to the MLD-1.
6. Check for leaks and repair as necessary.
7. The MLD-1 is now operational.
8. Determine how quickly free liquids accumulate in the MLD-1 by frequently opening drain valve A (*Figure 1*).

## 3.1 Before You Begin

1. Welker recommends that the unit have standard yearly maintenance. Based on the operating conditions and/or site requirements, adjustments to the maintenance schedule may be necessary.
2. 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 should be lightly lubricated before being installed to ease the installation of the seals and reduce the risk of damage when positioning them on parts. Wipe excess lubricant from the seals, as it may adversely affect analytical instrument results.



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.



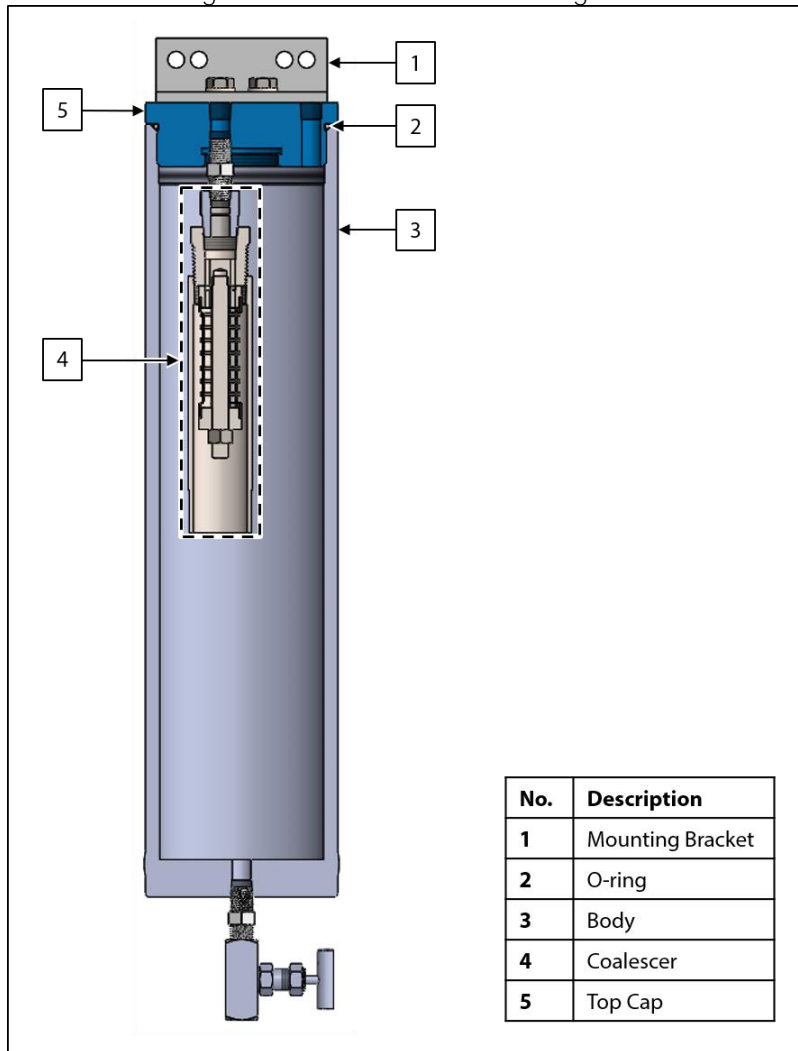
After the seals are installed, the outer diameter of shafts and inner diameter of cylinders may be lubricated to allow smooth transition of parts.

3. All maintenance and cleaning of the unit should be performed on a smooth, clean surface.
4. Welker recommends having the following tools available for maintenance. Please note that the exact tools required may vary by model.
  - a. 6" Adjustable Wrench
  - b. 12" Adjustable Wrench
  - c. Hex Key Set
  - d. Strap Wrench

### 3.2 Maintenance

1. Close the pipeline isolation valve to shut off flow to the MLD-1.
2. Open drain valve A to drain any remaining liquids from the MLD-1 (*Figure 1*).
3. Disconnect the customer-supplied tubing, fittings, or instrument attached to the MLD-1.
4. Unscrew the top cap from the body (*Figure 2*). The coalescer will be attached to the top cap.

Figure 2: MLD-1 Maintenance Diagram

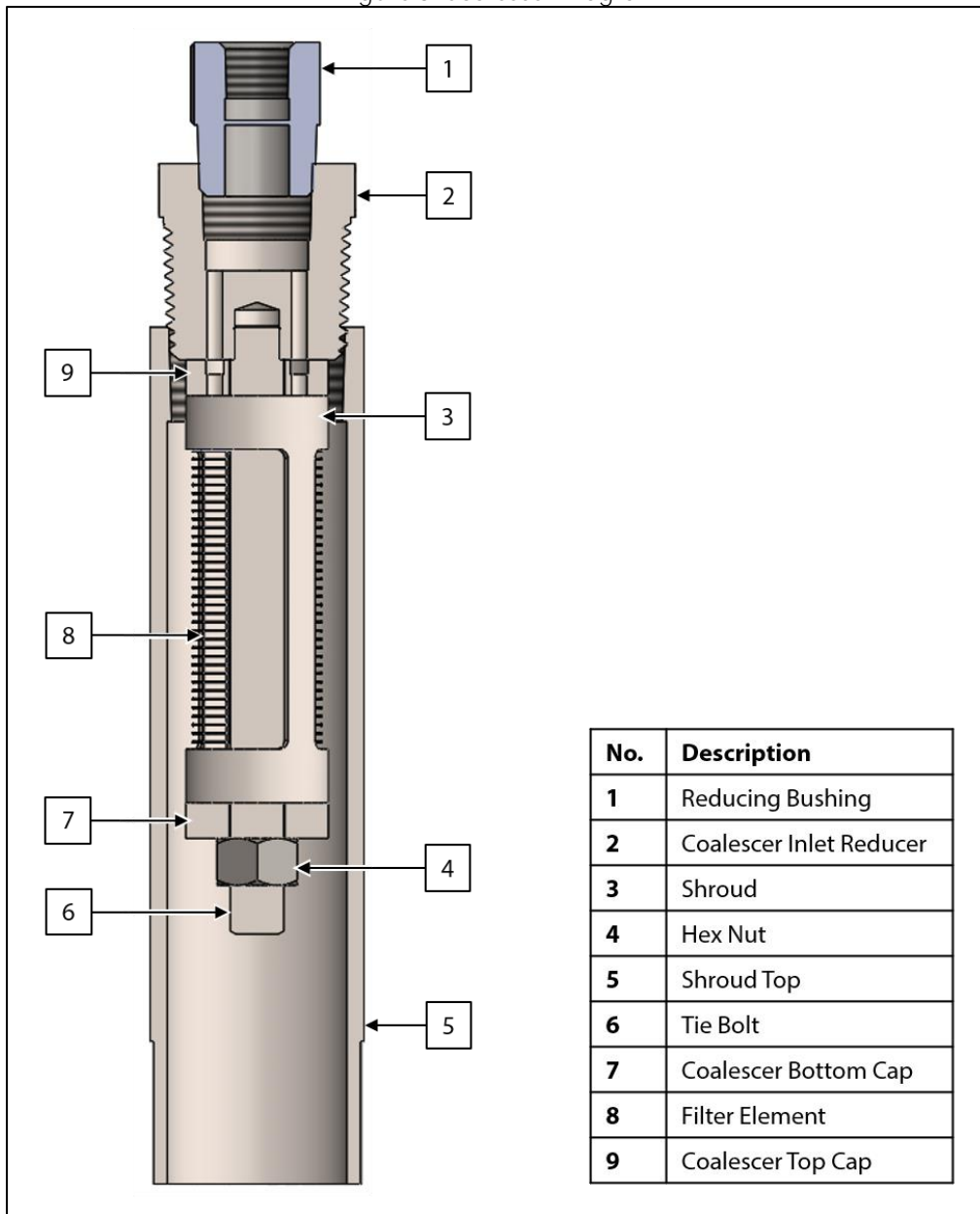


5. Replace the O-ring on the top cap (*Figure 2*).



6. With one wrench on the flats of the coalescer inlet reducer, use a second wrench to unscrew the shroud top from the coalescer inlet reducer (*Figure 1 Inset* and *Figure 3*).

Figure 3: Coalescer Diagram



7. With one wrench on the flats of the coalescer inlet reducer, use a second wrench to unscrew the hex nut from the coalescer tie bolt (*Figure 1 Inset* and *Figure 3*).
8. Remove the coalescer bottom cap, and then slide the shroud off the tie bolt to expose the filter element (*Figure 1 Inset* and *Figure 3*).
9. As necessary, clean or replace the filter element.
10. Fit the shroud onto the coalescer top cap (*Figure 1 Inset* and *Figure 3*).
11. Install the filter element to the inside of the shroud (*Figure 1 Inset* and *Figure 3*).
12. Fit the coalescer bottom cap into the shroud (*Figure 1 Inset* and *Figure 3*).
13. Tighten the hex nut to secure the assembly (*Figure 1 Inset* and *Figure 3*).
14. Screw the shroud top onto the coalescer inlet reducer (*Figure 1 Inset* and *Figure 3*).
15. Screw the top cap and the attached coalescer into the body (*Figure 2*).
16. Reinstall customer-supplied tubing or fittings to the MLD-1.
17. Slowly open the pipeline isolation valve to begin supplying flow to the MLD-1. The MLD-1 is now operational.

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:

- Anderson Greenwood Mini Valves – H5 (Welker IOM-V225)

Welker® drawings and schematics suggested for use with this unit:

- Assembly Drawing: AD058CQ

