

PRODUCT DESCRIPTION

- Designed to protect analyzers from damage and contamination by removing liquids from gas samples.
- As gas enters the LE-5, any free liquids present are separated from the sample stream by centripetal force and a replaceable cartridge assembly. The separated free liquids drain from the LE-5, which allows the dry gas stream to flow to the analyzer.

SPECIFICATIONS

Application

Liquid Removal

Products

Gases Compatible With the Materials of Construction

Materials of Construction

316/316L Stainless Steel, PEEK, and PTFE (Others Available)

Maximum Allowable Operating Pressure

3600 psig @ -20 °F to 300 °F (248.21 barg @ -28 °C to 148 °C)

Maximum Allowable Outlet Flow Rate

4200 cc per Minute @ 25 psig (1 barg)
Inlet (Resulting in Approximately 2 psid on Filter Cartridge Assembly)
11000 cc per Minute @ 740 psig (51 barg)
Inlet (Resulting in Approximately 2 psid on Filter Cartridge Assembly)

Connections

Inlet: 1/8" FNPT

Outlet: 1/8" FNPT

Drain: 1/8" FNPT

Filter Media

25-Micron Copolymer Filter Cartridge Assembly

304 Stainless Steel Mesh Screens

Recommended Maintenance Schedule

Standard—every 6 months AND anytime liquid is present at the disposable filter cartridge or the product outlet

Approximate Dimensions

2 3/4" x 3 1/4" x 3 3/8" L x W x H)

Approximate Weight

3.5 lb

Features

Mounting Bracket
NACE Compliance
Replaceable Cartridge Assembly
Threaded Housing Cap

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.

If you received a damaged LE-5 Liquid Eliminator, please contact a Welker® representative immediately.

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



INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

WELKER® LE-5 LIQUID ELIMINATOR

IOM-301 | REV. 0 | 10/09/2025



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-301 prior to installation and operation of this equipment is required for a full understanding of its application and performance prior to use.



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

LE-5 LIQUID ELIMINATOR: INSTALLATION AND OPERATION

- Ensure that the cap is tightened. See **Caution Note** below: HAND-TIGHTEN ONLY.
- Securely mount the LE-5 as close to the sample point as possible.



- The LE-5 must be installed such that the liquid drain / gas bypass is pointing downward (*Figure 2*).
- When adding and removing the cap from the separator body (*Figure 1*), HAND-TIGHTEN ONLY. Using a vice could result in damage to the separator body and cause the LE-5 to malfunction.



Welker® recommends installing a regulator and heater between the sample point and the inlet of the LE-5 and the downstream instrumentation. This is to ensure the gas sample stream is provided at the temperature and pressure required for the instrumentation. A heater is recommended to recover heat lost during regulation. Applying heat helps maintain the gas phase of the sample stream.



DO NOT exceed the maximum allowable flow rate through the replaceable filter cartridge assembly.

- Using 1/8" – 1/4" tubing, connect from the outlet on the customer sample probe to the inlet port of the LE-5 (*Figure 2*).
- Using 1/8" tubing, connect from the outlet port of the LE-5 (*Figure 2*) to the analyzer.
- Using 1/8" tubing, connect a valve to the liquid drain / gas bypass port of the LE-5 (*Figure 2*) to continuously vent and drain any liquids separated from the sample stream.



Welker® can install a rotameter with valve to the liquid drain / gas bypass port if requested at the time of the order. Welker® recommends installing a Welker® Bypass Recovery System to the liquid drain / gas bypass port.

- Put the LE-5 into service by beginning product flow.
- Slightly open the drain valve to allow separated liquids to drain and ensure fresh gas is presented to the analyzer. If liquids are present at the cartridge assembly or at the product outlet, the cartridge assembly must be replaced. See *Maintenance*.



To prevent liquid backup inside the LE-5, fluids MUST drain at a minimum of 22 cc per minute. The liquid drain / gas bypass flow rate will vary by application. A minimum of 500 cc per minute is required for proper drainage.

LE-5 LIQUID ELIMINATOR: MAINTENANCE

- Halt product flow to the LE-5.
- Depressurize the LE-5.
- Disconnect all tubing from the LE-5.
- Unscrew the cap and remove the cap from the separator body.
- Remove and replace the O-rings.
- Remove the cartridge assembly.
- Remove the thread insert cap.
- Using a solvent—such as rubbing alcohol, that does not leave a film and will not affect analytical results—and clean rags, carefully clean the inside of the separator body and porting.
- Install and tighten the thread insert cap.
- Install a replacement cartridge assembly to the separator body (*Figure 1*). Ensure that the screen faces up to the outlet (*Figure 2*).
- Align the cap with the separator body. Then screw in the cap. Remember: When adding and removing the cap from the separator body, HAND-TIGHTEN ONLY.
- The LE-5 is now ready for reinstallation.

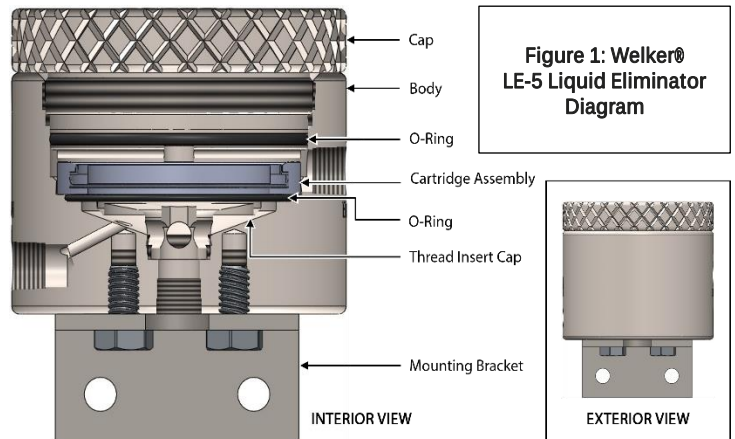


Figure 1: Welker® LE-5 Liquid Eliminator Diagram

Table 1: LE-5 Liquid Eliminator Troubleshooting Guidelines		
Issue	Possible Cause	Solution
There is restrictive flow through the LE-5 with the drain valve open.	The filter element is dirty, saturated, and flooded by liquids.	Replace the cartridge assembly. Do not exceed the maximum flow rate through the filter element.
There is overflow through the LE-5 with the drain valve open.	The filter element burst.	Replace the cartridge assembly. Do not exceed the maximum flow rate through the filter element.
Liquids are reaching the downstream analyzer.	The LE-5 is dirty, saturated, or was flooded by liquids.	Replace the cartridge assembly. Do not exceed the maximum flow rate through the filter element.
Liquids are reaching the downstream analyzer.	The maximum allowable outlet flow rate has been exceeded.	See <i>Specifications</i> to determine the proper outlet flow rate for the LE-5.

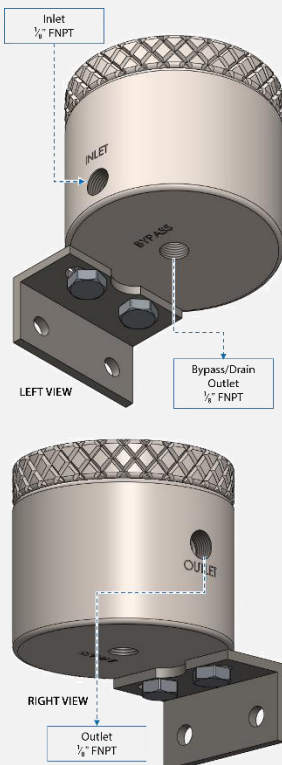
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Figure 2:
Welker® LE-5 Liquid Eliminator
Diagram – External View



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IMPORTANT SAFETY INSTRUCTIONS WELKER® LE-5 LIQUID ELIMINATOR IOM-301 | REV. 0 | 10/09/2025

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-301 are intended to be used as basic setup and installation guidelines for the Welker® LE-5 Liquid Eliminator. The information in IOM-301 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-301. Correct setup, installation, and operation, however, are the responsibility of the end user.

Welker® reserves the right to make changes to IOM-301 and all products in order to improve performance and reliability.

SAVE INSTRUCTIONS

Save these Safety instructions and the instructions that comprise IOM-301 for local inspectors' use.

OBSERVE

Observe all governing codes and ordinances.

NOTE TO INSTALLER

Leave these Safety instructions and the instructions that comprise IOM-301 with the end user.

NOTE TO END USER

Keep these Safety instructions and the instructions that comprise IOM-301 for future reference.

NATURE OF INSTALLATION

Installation of this LE-5 Liquid Eliminator 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.



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