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Varian, Inc.  
2700 Mitchell Drive  
Walnut Creek, CA 94598 USA

# 4000 MS Liquid CI Inlet (Single) Installation Instructions

Kit No. 03-930022-93

## Introduction

The enclosed Single Liquid CI Inlet has been designed to provide a safe and reliable flow of vapor from the headspace above liquid CI reagents. For acetonitrile and methanol, use the updated operating conditions found in the *4000 MS Hardware Manual*.

Check the contents carefully to be sure there are no missing parts or evidence of damage. If damage is noted, or if there are missing parts, please notify:

Varian, Inc.  
2700 Mitchell Drive  
Walnut Creek, CA 94598-1675  
Attention: Customer Service  
Phone (925) 939-2400  
or, your local Sales/Service Center

## Included in This Kit

Part Number	Qty	Description
03-930022-01	1	Sub-Assy, Liquid CI
03-930109-04	1	O-ring, Viton®, 2-104
03-930109-07	1	O-ring, Viton®, 2-108
03-930023-01	1	Block, liquid CI inlet
03-930024-01	1	Restrictor, liquid CI
03-930025-01	1	Retainer, liquid CI o-ring
03-930026-01	1	Cover, liquid CI reservoir
03-930027-01	1	L-bracket, liquid CI
03-920270-00	1	Chamber, CAL gas
03-949870-02	1	Cap, polypropylene
12-222006-05	6	Screw, 6-32, 5/16" long
03-930597-01	1	Restrictor, long
12-901186-00	2	Screw, SEMS, m4 x 6 mm
28-693977-00	1	Union, 1/8", SST

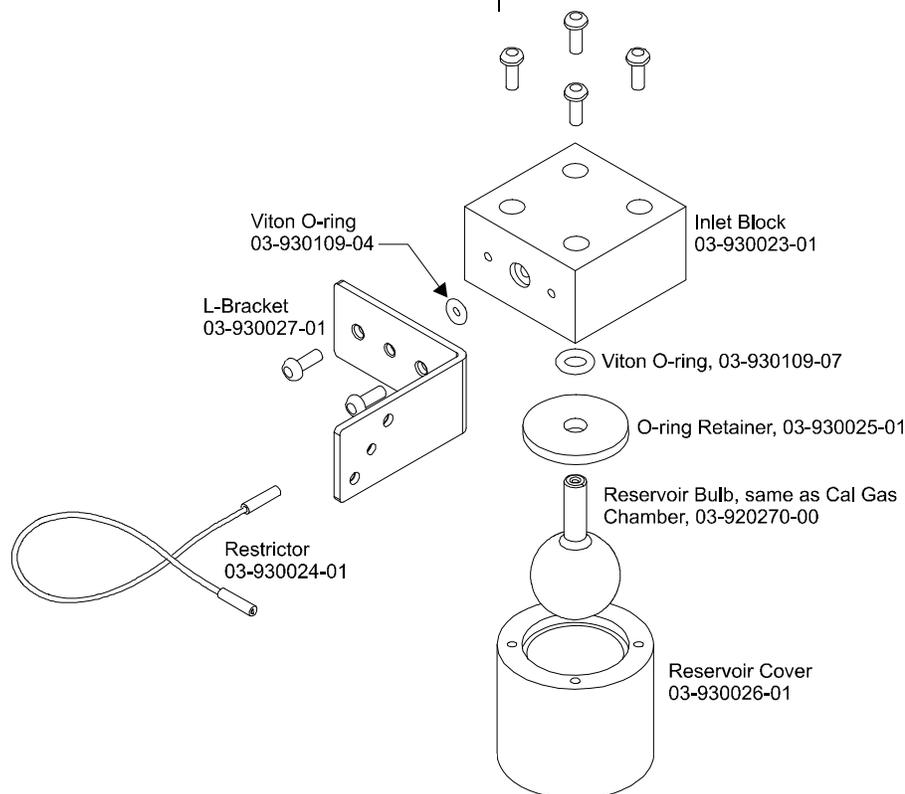


Figure 1

## Installation

This procedure can be performed without breaking vacuum. Refer to Figure 2.

1. Mount the Liquid CI Sub-assembly (03-930022-01) to the rear panel using two m4 x 6mm screws (12-901186-00). Retain the yellow cap.
2. Loosen the two 6-32 x 1-5/8" screws (12-222006-25) on rear panel holding the CI manifold only enough to remove the metal plug (not shown).
3. Insert the free end of the restrictor (03-930024-01) through rear panel into the o-ring of the CI Shutoff Block (not shown) and tighten the screws. The restrictor must be inserted far enough to engage the o-ring in the CI Shutoff Block.

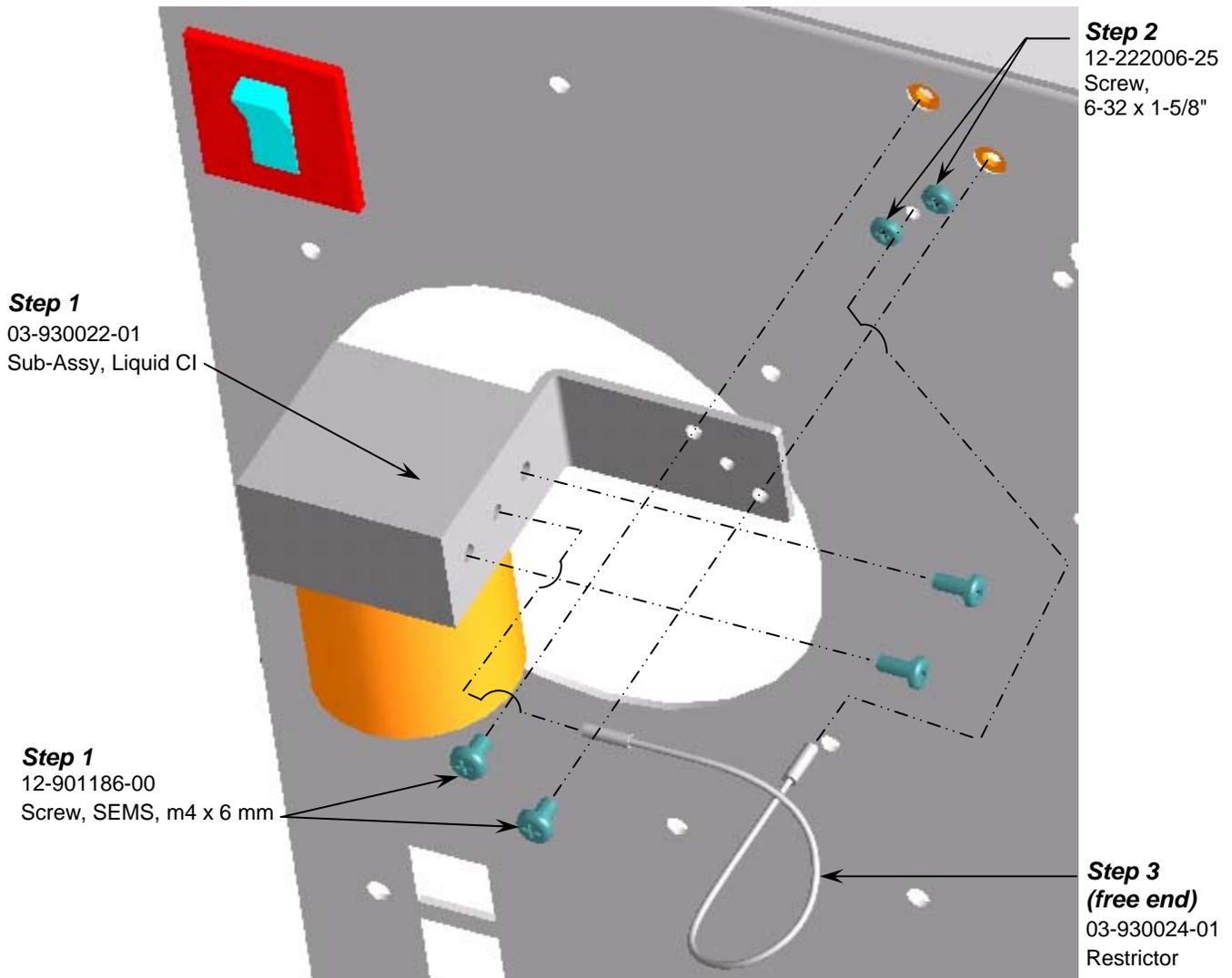


Figure 2

NOTE: Alternative Restrictor for Hybrid Mode (03-931440-01) located in External Option Kit 03-931111-91.

## Filling/Refilling Reservoir Bulb

Refer to Figure 1.

1. Be sure the CI valves are closed. Loosen the four screws that retain the liquid CI reservoir cover. The screws may remain in the block.
2. Remove the reservoir cover.
3. Gently pull the bulb down to remove it from the block. The o-ring and o-ring retainer may stay attached to the bulb.
4. Use the reservoir cover as a stand for filling; place the bulb into the reservoir cover. Place o-ring retainer over the bulb stem. Place the o-ring over the bulb stem.
5. Use a pipette or syringe to fill the bulb halfway with liquid CI reagent. This requires about 3 mL of reagent.
6. Pick up the reservoir cover with the bulb, retainer and o-ring, and insert the bulb stem into the block.
7. Orient the cover so that the four screws can engage the cover. Tighten the four screws, being careful not to strip the threads in the plastic cover.
8. After installing liquid CI, and each time the reservoir bulb is refilled with liquid, always use care when first opening the CI valves. Do not turn on the filament or multiplier for 2-3 minutes after opening the CI valves from the Manual Control Page.

## Returning to Gaseous CI Reagent Operation

To switch from the liquid inlet back to a pressurized CI gas (such as methane), the CI gas line may be re-installed without removing the liquid CI inlet assembly.

1. Loosen the two screws that attach the liquid CI inlet restrictor (03-930024-01) to the back of the instrument. Also, loosen the two screws that attach the L-bracket to the liquid CI inlet block.
2. Remove the end of the liquid CI restrictor (03-930024-01) from the back of the instrument; rotate the restrictor out of the way. Install the yellow cap provided.
3. Install the long CI gas restrictor (03-930597-01) between the gas supply and the CI shutoff block. If required, use the 1/8" stainless steel union (28-693977-00) to attach the gas supply line to the long CI restrictor.
4. Tighten all screws.
5. Adjust CI reagent as described in the User Manual.