

## Mechanical Proportional Valve Installation Guide – MPV Series

### Performance Certifications for MPV: TÜV 85 A/L – 13.2 and EMC 2010-1

Please refer to Veeder Root MPV Mechanical Proportional Valve Installation and Maintenance manual (P/N 577013-988) and AVRN Vacuum Assist Nozzle Installation and Maintenance Manual (P/N 577013-985) located at [www.veeder.com](http://www.veeder.com).

### Installation of the MPV

1. Turn off the electricity, tag and lockout the electrical power switch to the dispenser. Open the panel/cover to the base of the dispenser and close the dispenser's safety valves.

**WARNING! Electricity must be turned off to the dispenser and safety valves closed prior to service to avoid personal injury or damage to equipment, property, or environment!**

2. The Veeder Root MPV is for vapor recovery applications and has M34x1.5 threads and o-ring seals.

3. Verify that the correct MPV model is being used to meet the A/L ratio allowed by the local government regulation.

4. Before installing the MPV, inspect all of the threads of the fittings in the dispenser discharge casting (splitter), the MPV, the hose and the nozzle. Replace or repair if necessary.

**WARNING! Do not use pipe dope, thread sealant or PTFE tape on the threads!**

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5. Inspect and lubricate all of the o-rings on the MPV and the hose using mineral oil or other suitable lubricant.

6. Orient the MPV so that the arrow on the MPV label is in the direction of fuel flow (to the nozzle) and thread the MPV into the dispenser discharge casting (splitter) and hand tighten.

7. Verify that the adjustment screws on the side of the MPV are accessible. If so, continue to Step 8. If not, remove the MPV and install a clocking ring - this will rotate the location of the adjustment screws 180 degrees when installed. Slide the clocking ring over the large o-ring on the MPV. Be sure to seat the clocking ring on the shelf on the MPV.

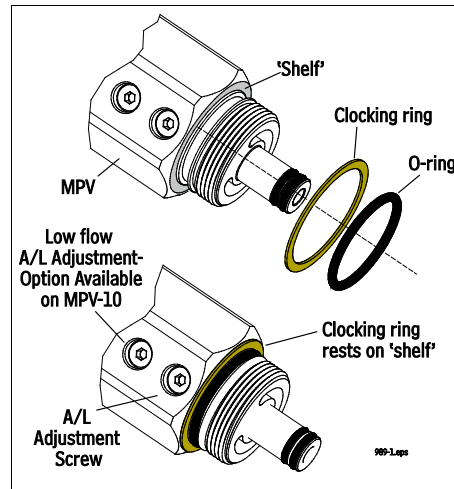


Figure 1. Installing Optional Clocking Ring

8. Tighten the MPV to 50 foot-pounds (68 N•m) with a torque wrench having an open-end attachment. Do not use channel-lock or other pliers.

9. Attach the hose end without the arrow to the MPV internal threads and tighten it to 50 foot-pounds (68 N•m).

10. Attach the other hose end to the nozzle and tighten it to 50 foot-pounds (68 N•m).

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### Checking for Leaks

1. Check the electrical resistance between the dispenser outlet casting (splitter) and the nozzle to confirm continuity of the hanging hardware components.

2. Pressurize the system after restoring electricity and resetting of the safety valves. Inspect along the hose length for liquid leaks.

**WARNING! The approved container must be on the ground or earthed and the nozzle must be in contact with container to discharge any static electricity.**

3. Pump minimum of one gallon (4 liters) of fuel into the container to purge the air out of the system, and then inspect along the hose length for liquid leaks.

4. Verify the nozzle shut-off action by dispensing fuel into an approved container to assure proper automatic operation.

### Calibration of the MPV

1. Verify that the vapor recovery system is using approved components as defined in the TÜV certification and/or MPV Installation and Maintenance manual.

2. Refer to dispenser and vapor recovery pump operation procedures for proper operation of the vapor recovery pump.

3. Configure the fueling point as described in AVRN Vacuum Assist Nozzle Installation and Maintenance Manual.

4. Conduct the Wet A/L test calibration following the procedure described in the AVRN Vacuum Assist Nozzle Installation and Maintenance Manual.

5. If the A/L ratio is within the range allowed by regulation, no adjustments are necessary. If not, use the adjustment screw(s) to achieve an A/L ratio within the acceptable range.

Note – The MPV is assembled with the Low Flow A/L adjustment screw fully closed (if applicable) and the A/L adjustment screw fully open. The adjustment screw(s) are prevented from protruding beyond the surface of the MPV body. **Do not remove the screws or damage will occur.**

A/L adjustments can be made by turning the adjustment screw(s) using a 3mm hex wrench as shown in Figure 2. Turning the screw(s) counterclockwise will decrease vapor collection; clockwise will increase vapor collection.

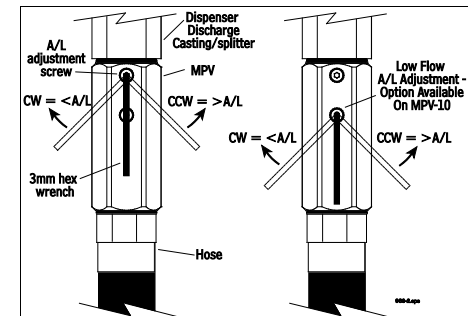


Figure 2. A/L Adjustment of the MPV

6. Use the Low Flow A/L adjustment screw (if equipped) to achieve the A/L target at the lower flow rate (lower nozzle clip setting) prior to achieving the A/L target at higher flow rates (higher nozzle clip setting). The Low Flow A/L adjustment screw impacts the A/L ratio at the higher nozzle clip setting.

### Maintenance of the MPV

1. Only the o-rings are replaceable items. If the MPV is non-conforming, the entire assembly must be replaced.

900306-201 Vacuum Assist O-Ring Kit  
 900325-001 Bulk Pack - Clocking Rings

## 机械比例阀安装说明 – MPV 系列

### 机械比例阀性能认证:

TÜV 85 A/L – 13.2

EMC 2010-1

请在网站 [www.veeder.com](http://www.veeder.com) 参考维德路特机械比例阀安装维护手册 ( P/N577013-988 ) 和油气回收油枪安装维护手册(P/N 577013-985)

### 机械比例阀的安装

1. 关掉电源，标示并断开加油机电源，打开加油机底部盖板，关掉安全阀

警告：在操作前必须关掉加油机电源和安全阀，以免导致人员伤亡和财产损失

2. 维德路特机械比例阀用于油气回收系统，有 M34x1.5 螺纹和 O 型圈密封

3. 核实机械比例阀型号是否正确

4. 在安装前，检查机械比例阀、加油机、胶管和油枪上的螺纹，若有问题需要维修或更换

警告！不要在螺纹使用管密封胶、螺纹密封胶或 PTFE 密封胶

5. 检查并使用矿物油和其它适合的润滑剂润滑机械比例阀和胶管上的螺纹和 O 型圈

6. 装配机械比例阀到加油机上，确保机械比例阀正确，（箭头方向和油的流向应该一致）

7. 用手将机械比例阀拧紧后，确保调节螺丝在外面能够调节。如果不能，拆下机械阀，先把 O 型圈拿下，然后装上橡胶圈，再把 O 型圈装到机械比例阀上（如下图所示）。确保橡胶圈紧贴机械比例阀端面。

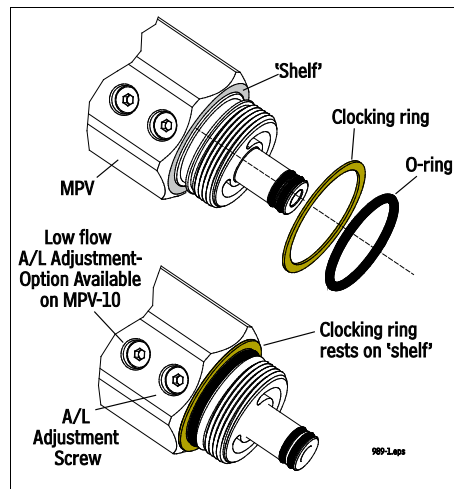


图1. 如何装橡胶圈

8. 用扭矩扳手将机械比例阀拧紧到 50 英尺磅 ( 68 N•m )

9. 将胶管装到机械比例阀上，拧紧到 50 英尺磅 ( 68 N•m )

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10. 将胶管另一端和油枪相连，拧紧到 50 英尺磅 ( 68 N•m )

### 检查泄漏：

1. 检查加油机到油枪出口处电阻值，确认在要求范围内

2. 重新设定安全阀，给系统压力，检查连接处是否有泄漏

警告！校准容器必须接地，油枪必须和容器连接去除静电

3. 至少让油枪排出 1 加仑油到一个容器，确保排空胶管内的空气，检查是否有泄漏

4. 反复几次加油到校准容器内，确保油枪能自动切断

### 机械阀校准

1. 确认油气回收系统的部件都符合 TUV 认证的相关要求和 MPV 的安装维护要求

2. 根据加油机和油气回收系统操作说明正确作业

3. 根据 AVRN 油枪操作维护说明设置加油点

4. 按照 AVRN 真空辅助油枪安装和维护手册里的程序进行湿法气液比校准。

5. 如果气液比在环保局的规定范围内，没有必要调节。否则，用调节螺钉将气液比调到可接受的范围内。

注意 - 机械阀出厂设置是低流量调节螺钉全关，流量调节螺钉全开。调节螺钉不能拧出阀体。不要移出或损坏调节螺钉。

气液比的调节可以通过用一个 3mm 的扳手旋转螺钉来实现，如图 - 2 所示。逆时针旋转螺钉会降低回收的油气，顺时针会增加。

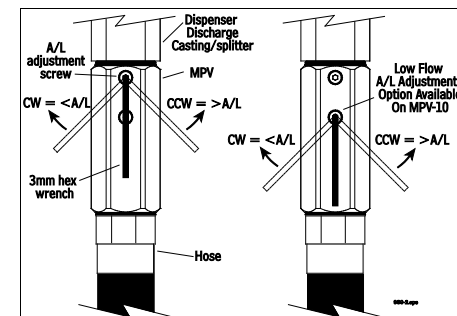


图2. 机械阀气液比调节示意图

6. 先用低流量调节螺钉将低流量（低档）气液比调进目标范围，然后将高流量（高档）气液比调进范围。调节低流量气液比螺钉会影响高流量的气液比。

### 机械比例阀维护

1. 只有 O 型圈是可更换品，如果机械阀不满气液比要求，必须更换整个机械阀

900306-201 O 型圈组件

900325-001 散装定位环