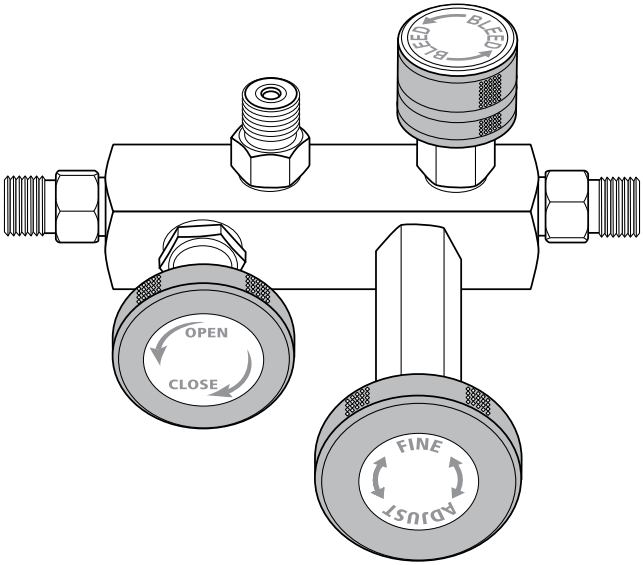
EN

Ralston

Ralston Pressure Calibration Manifold
(QTCM, QSCM) Operation Manual



For all models of the Ralston QTCM & QSCM Pressure Calibration Manifolds

Table of Contents

Specifications

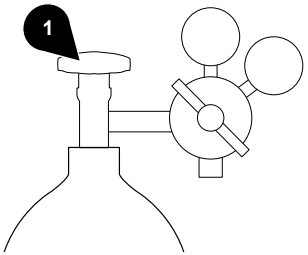
QTCM

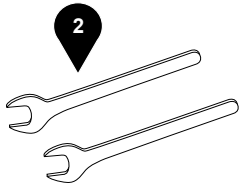
Pressure Range	0 to 3,000 psi (0 to 210 bar)
Temperature Range	0 to 130 °F (-18 to 54 °C)
Construction	Brass, anodized aluminum
Seal Materials	Buna-N, Delrin, Teflon
Weight	1.46 lb (0.7 kg)
Dimensions	W: 5.16 in (13.11 cm) H: 3.78 in (9.60 cm) D: 2.63 in (6.68 cm)

QSCM

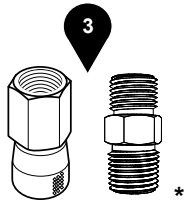
Pressure Range	0 to 5,000 psi (0 to 345 bar)
Temperature Range	0 to 130 °F (-18 to 54 °C)
Construction	Stainless steel, anodized aluminum
Seal Materials	Buna-N, Delrin, Teflon
Weight	1.4 lb (0.6 kg)
Dimensions	W: 5.16 in (13.11 cm) H: 3.78 in (9.60 cm) D: 2.63 in (6.68 cm)

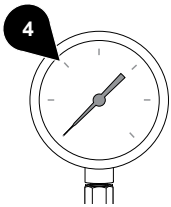
Requirements

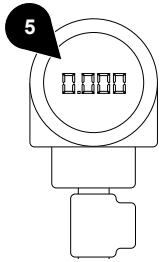


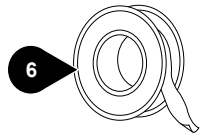


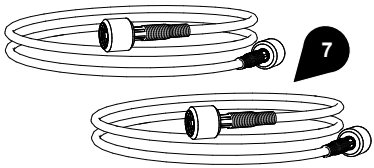
9/16", 15mm











*** ralstoninst.com/adapters**

What you need to use your Pressure Calibration Manifold:

1. Compressed Gas
2. Wrench
3. Ralston Quick-test™ Adapters
4. Pressure Reference
5. Device Under Test
6. Thread Tape
7. Ralston Quick-test™ Hose

Important Safety Notices

Important Safety Notices

⚠ WARNING: Do not exceed Maximum Working Pressure for this product or damage may result.

⚠ WARNING: Device under test should be isolated from the process, vented and vent valve closed prior to use.

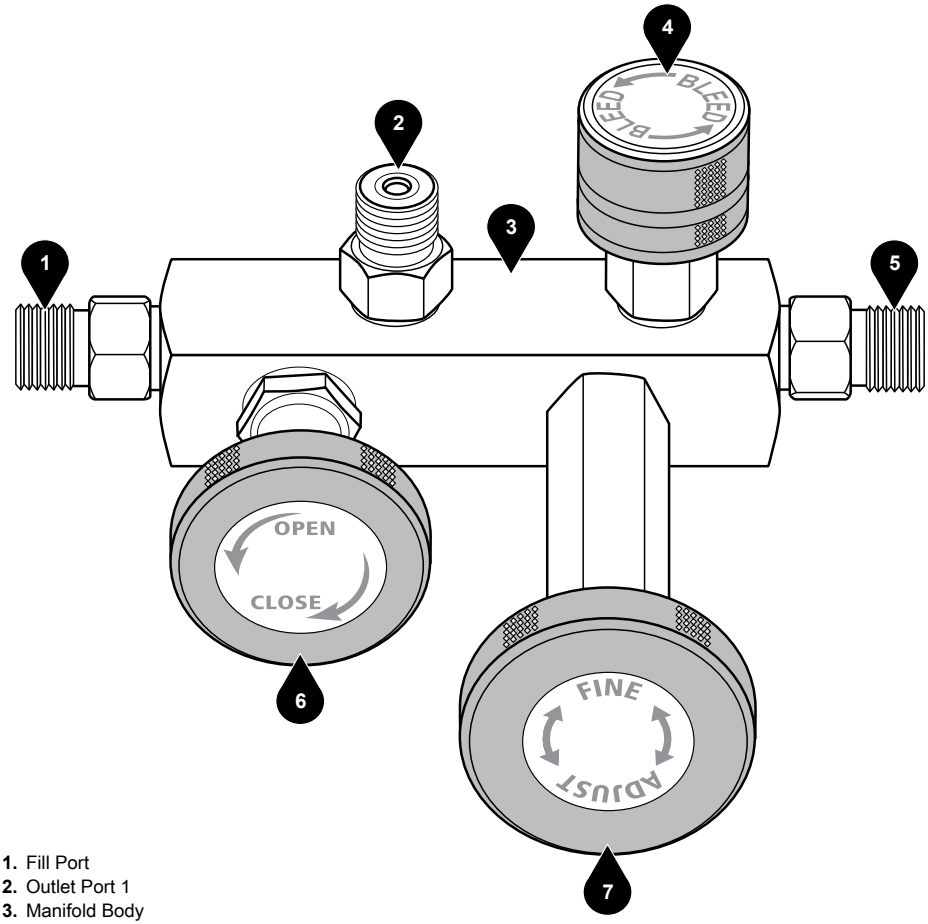
⚠ WARNING: Do not attempt to operate this product until you have read and fully understand the instructions and hazards of the product.

- Any modifications to this product with custom parts can result in hazardous operation of the product.
- Use eye protection while using this product. Leaking gas, parts or hoses can be ejected at high speed and may cause injury.

California Proposition 65 Warning

⚠ **WARNING:** Products containing Brass can expose you to chemicals, including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, visit www.P65Warnings.ca.gov.

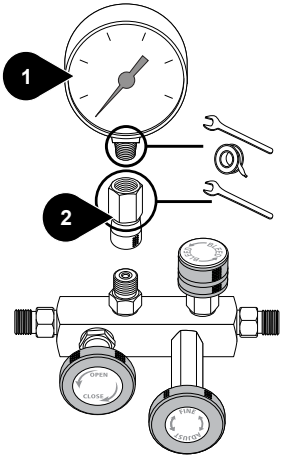
Pressure Calibration Manifold Overview



1. Fill Port
2. Outlet Port 1
3. Manifold Body
4. Bleed / Vent Valve
5. Outlet Port 2
6. Fill Valve
7. Fine Adjustment Piston

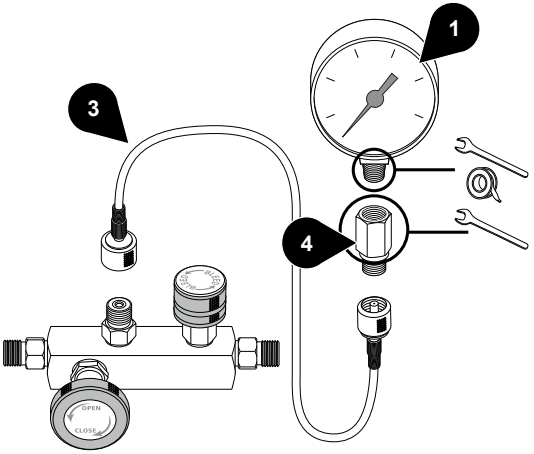
Connecting Reference Gauge

Male NPT Reference Gauge

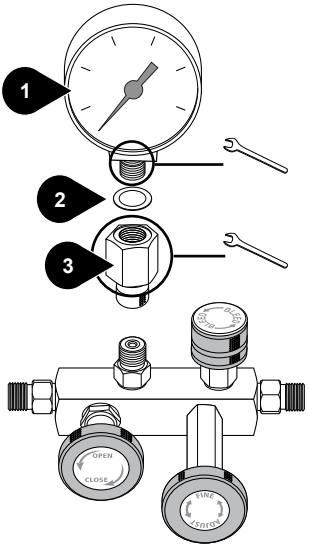


1. Reference Gauge with NPT male connection
2. NPT Female Ralston Quick-test™ Gauge Adapter
3. Ralston Quick-test™ Hose
4. NPT Female Ralston Quick-test™ Adapter

or

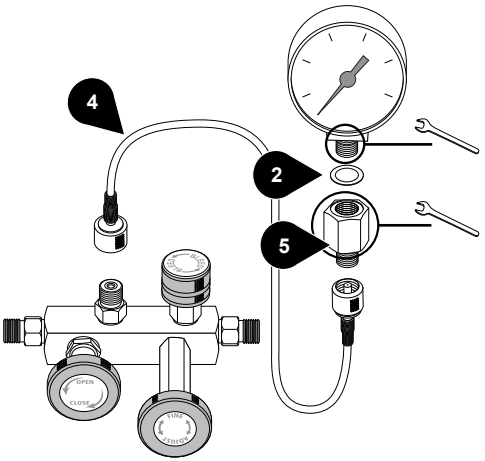


Male BSPP Reference Gauge

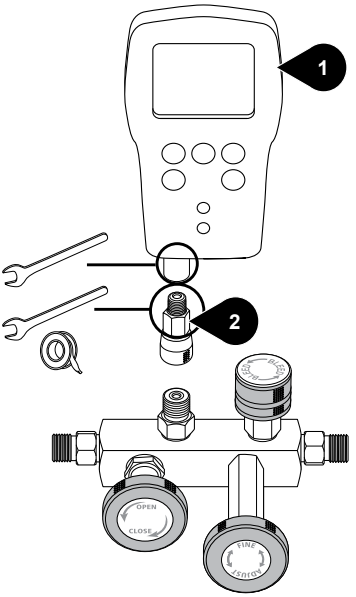


1. Reference Gauge with BSPP male connection
2. BSPP Washer
3. BSPP Female Ralston Quick-test™ Adapter
4. Ralston Quick-test™ Hose
5. BSPP Female (RG) Ralston Quick-test™ Adapter

or

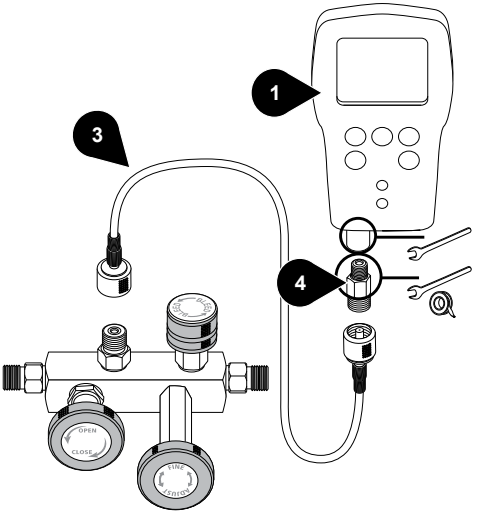


Female NPT Pressure Reference Gauge



1. Reference Gauge with NPT female port
2. NPT Male Ralston Quick-test™ Gauge Adapter
3. Ralston Quick-test™ Hose
4. NPT Male Ralston Quick-test™ Adapter

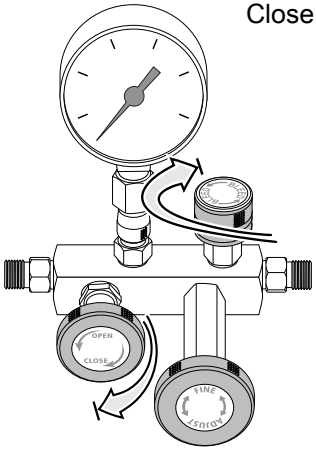
or



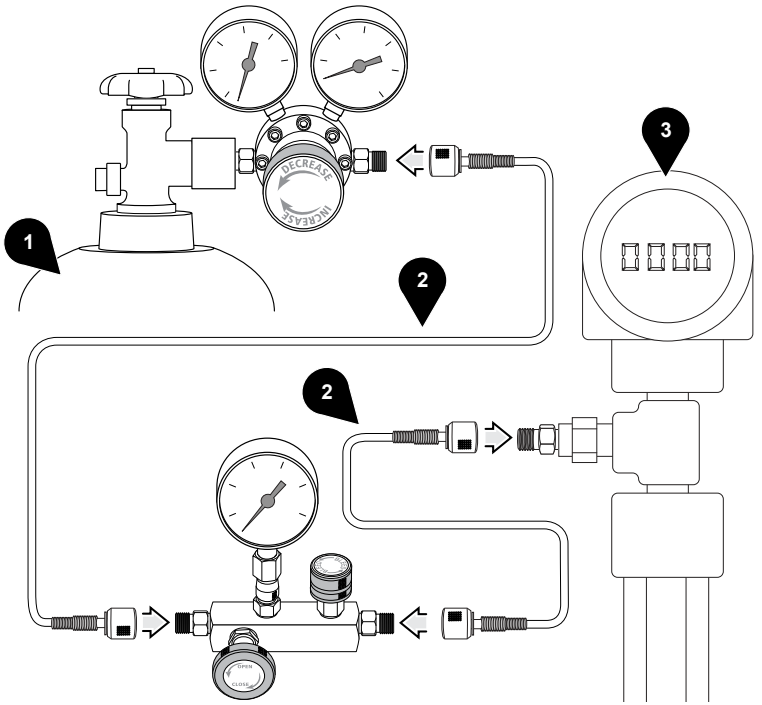
Connecting Device Under Test (DUT)

1 Isolate the Device Under Test (DUT) from the process and vent DUT prior to connecting to it.

2 Close Bleed Valve and Fill Valve.



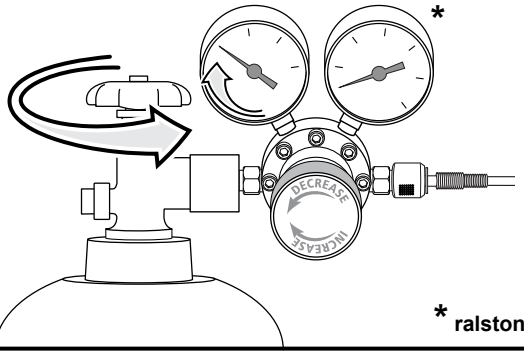
3



1. Pressure source
2. Ralston Quick-test™ Hoses
3. Device under test (DUT)

Pressurize System

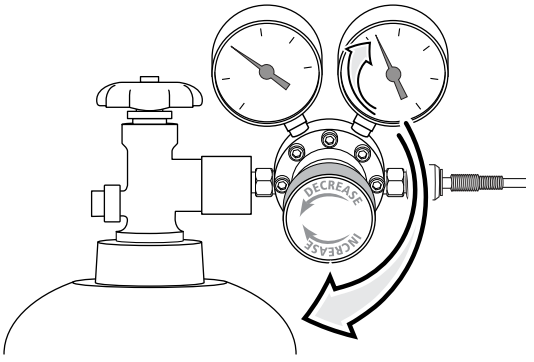
1



Open Pressure Source.

* ralstoninst.com/pressure-regulators

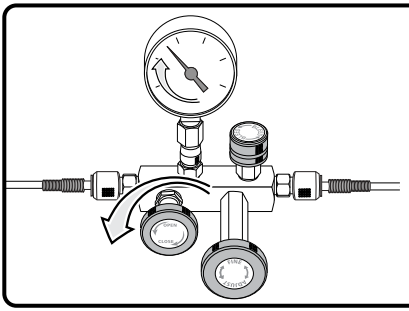
2



Turn Pressure Regulator Valve clockwise.

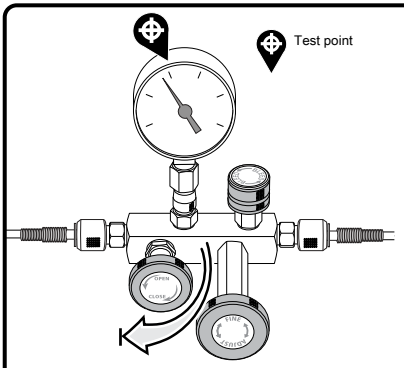
Increase Pressure

1



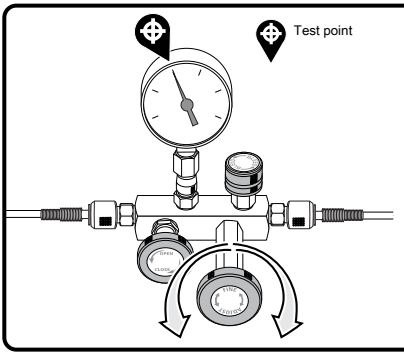
Open Fill Valve.

2



Close Fill Valve below Test Point.

3

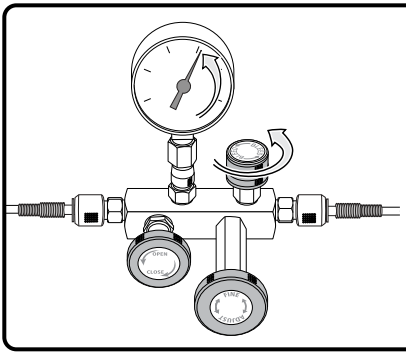


Fine-adjust to exact test point.

Repeat steps 1 through 3 for each test point up-scale

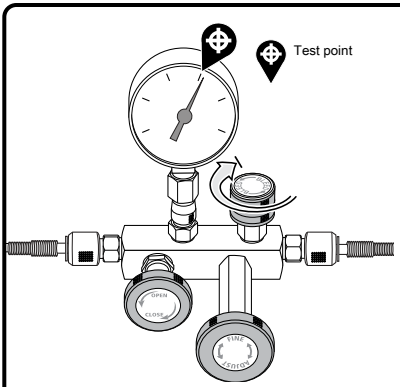
Decrease Pressure

1



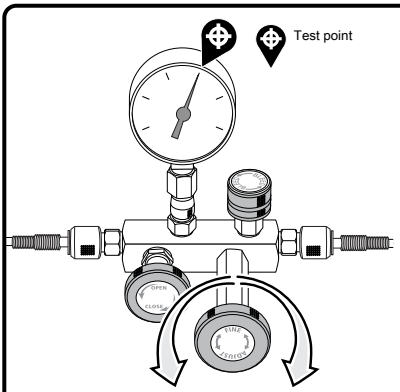
Open Bleed Valve.

2



Close Bleed Valve just above test point.

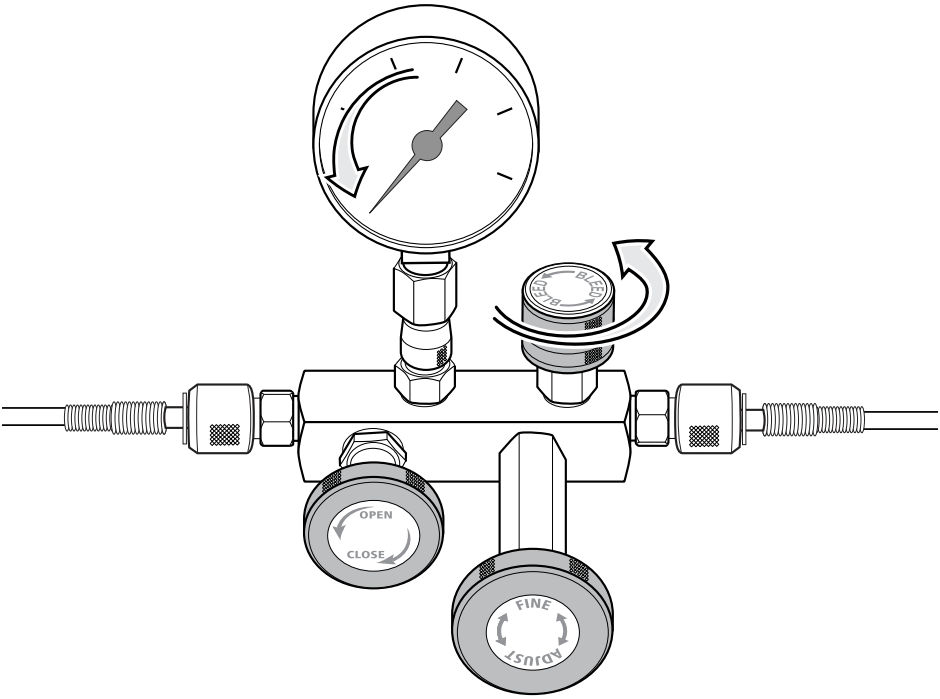
3



Fine-adjust to exact test point.

Venting System

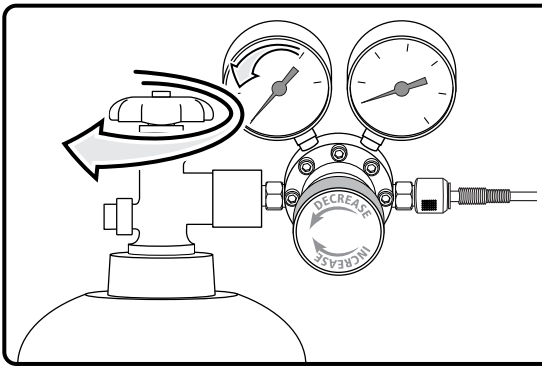
Vent system when calibration is completed.



Storage and Transport

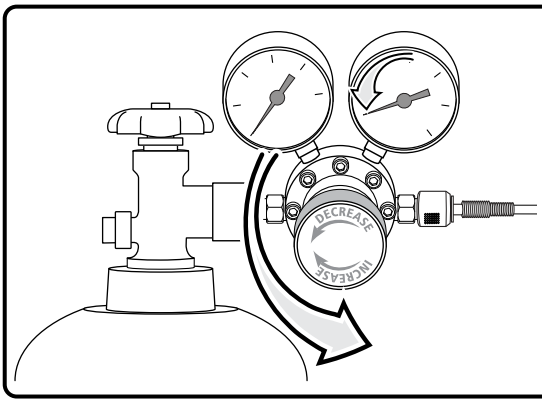
Vent system when calibration is completed. See page 13.

1



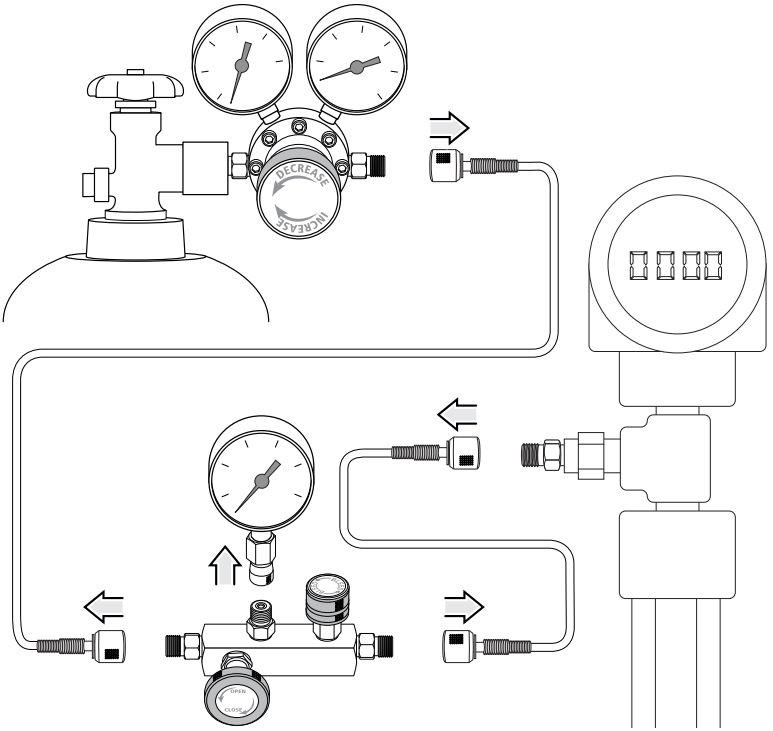
Close Pressure Source.

2



Turn Pressure Regulator Valve counterclockwise.

3



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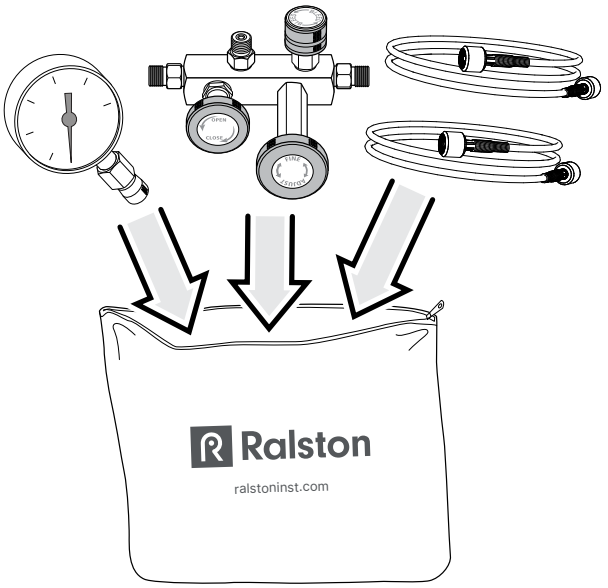

Maintenance

Maintenance Interval

Every 300 uses or 3 months

Maintenance Procedure

- Lubricate the Ralston Quick-test™ fittings by squirting 2 ml of oil inside the connection.
- Lubricate the fine adjust piston O-rings with silicone lubricant.
- Lubricate the threads on the valves and fine adjust piston with a graphite-based grease, such as Dow Corning® G-n Metal Assembly Paste (or equivalent).

Troubleshooting

There is a drop in system pressure when the Calibration Manifold has been pressurized and the Fill Valve is closed.

If there is a drop in system pressure when the Calibration Manifold has been pressurized and the Fill Valve is closed, then there is a leak. Follow these instructions to locate and repair the leak:

1. Connect the Calibration Manifold to a Device Under Test (DUT) and connect a Ralston Quick-test hose to the Inlet Port.
2. Make sure the process connections are assembled wrench-tight.
3. Close Vent Valve.
4. Open Fill Valve.
5. Apply Pressure to unit.
6. Close Fill Valve.
7. Spray soapy water or leak detection fluid where leaks are suspected or immerse the Calibration Manifold in water. Be careful not to immerse the pressure gauge or calibrator.
8. Observe where bubbles are coming from to determine where there is a leak.
9. Remove the leaking part and remove the O-ring.
10. Clean and lubricate the leaking O-ring, and backup ring with silicone grease if applicable.
11. Replace the O-ring, and backup ring if applicable.
12. Reassemble.

Fine Adjust Piston is difficult to operate.

If the Fine Adjust Piston is difficult to operate over years of service, then the inside walls of the piston need grease. Follow these instructions:

1. Remove the Fine Adjust Piston.
2. Apply a thin coat of graphite grease, such as Dow Corning® G-n Metal Assembly Paste (or equivalent) to the inside walls of the fine adjust body and the threads.
3. Lubricate the fine adjust piston O-rings with silicone lubricant
4. Reassemble.

The unit is leaking.

If the unit is leaking, then follow these instructions to locate and repair the leak:

1. Spray soapy water or leak detection fluid where leaks are suspected or immerse the Calibration Manifold in water. Be careful not to immerse the pressure gauge or calibrator.

2. If leak is around the fill valve or the bleed-off valve, then follow these instructions:
   a. Remove the fill valve and/or the bleed-off valve.
   b. Replace the leaking part.
   c. Reassemble.
3. If the leak is around the vernier piston, then follow these instructions:
   a. Remove the vernier piston, O-ring and backup ring.
   b. Inspect the O-ring and backup ring for damage.
   c. Clean, lubricate and replace the leaking O-ring and backup ring.
   d. Reassemble.
4. If the leak is coming from one of the inlet or outlet fittings, then follow these instructions:
   a. Remove the fitting.
   b. If external leak then remove and replace external o-ring.
   c. If internal leak then lubricate internal o-ring.
   d. Reassemble.

The unit is difficult to use (i.e. valves don't shut off).

If the unit is difficult to use (i.e. valves don't shut off), then replace the fill or bleed-off valve.

If the issue was not resolved by these troubleshooting instructions, then please contact support listed on page 19.

Support

Hours: **8:30 am – 5:00 pm EST**
Phone: **1 440-564-1430** • Toll Free: **1 800-347-6575 (US and Canada)**
Web: **ralstoninst.com/support**
Email: **support@ralstoninst.com**
Parts and Service: **ralstoninst.com/calibration-manifolds**

Notes

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