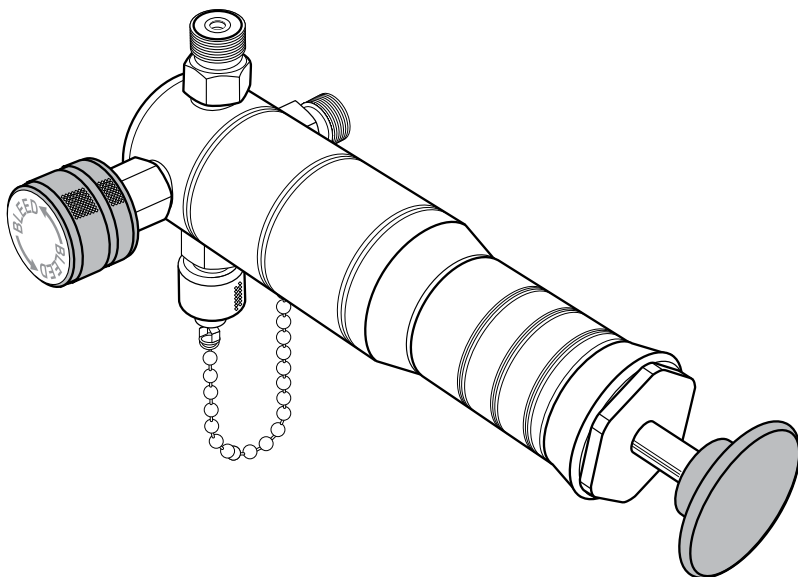


Gas Sampling Pump (SP0V) Operation Manual



For all models of SP0V Gas Sampling Pumps

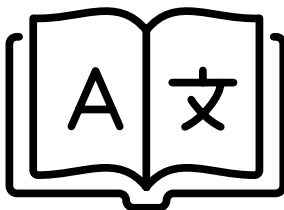


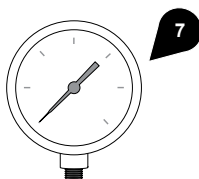
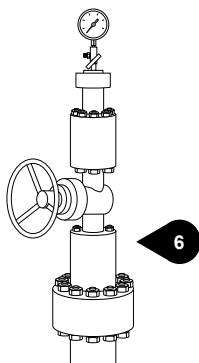
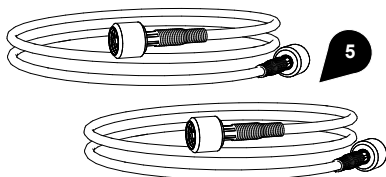
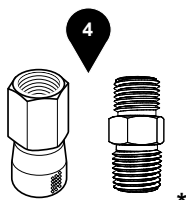
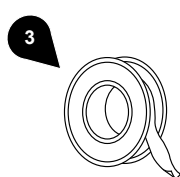
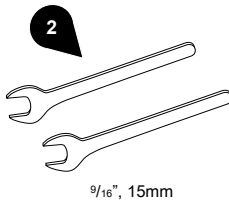
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Specifications

Pressure Range	0 to 100 psi (0 to 7 bar)
Vacuum Range	0 to 10 inHg (0 to 260 mmHg)
Media	Natural gas or any gas compatible with stainless steel, hard anodized aluminum and Viton seals
Temperature Range	0 to 130 °F (-18 to 54 °C)
Outlet Port 1	Male Ralston Quick-test™ outlet port, no check-valve, stainless steel
Inlet Port	Male Ralston Quick-test™ inlet port with check-valve, stainless steel
Outlet Port 2	Male Ralston Quick-test™ outlet port with cap and chain, stainless steel
Construction	Stainless steel, hard anodized aluminum (API 14.1 Compatible)
Seal Materials	Viton, Delrin, Teflon
Weight	2.87 lb (1.3 kg)
Dimensions	H: 10 in (25.4 cm) W: 3.75 in (9.525 cm) D: 7.75 in (19.685 cm)
Cleaning Procedure	ASTM G93-03:2011, CGA G-4.1:2009

Requirements



* ralstoninst.com/adapters

What you need to use your Gas Sampling Pump:

1. Gas Sample Cylinder
2. Wrenches
3. Thread Tape
4. Ralston Quick-test™ Adapters
5. Ralston Quick-test™ Hose
6. Gas Sample Source
7. Pressure Reference

Important Safety Notices

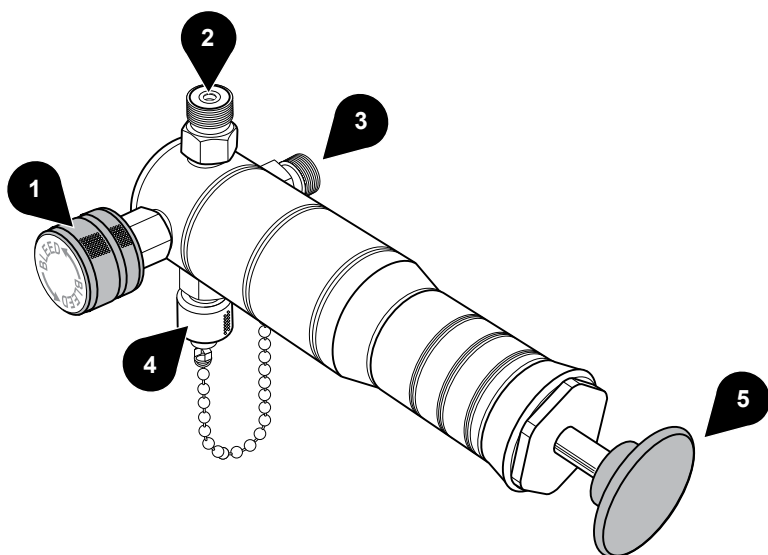
⚠ WARNING: Do not exceed Maximum Working Pressure for this product or damage may result.

⚠ 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 pump 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 hand pump.
- Use eye protection while using this product. Leaking gas, parts or hoses can be ejected at high speed and may cause injury.
- This pump has been cleaned for oxygen service. Storage of this pump outside of a sealed plastic bag will compromise the integrity of the cleaning process.
- Do not connect sampling pump to process lines with pressures greater than 100 psi (7 bar).

Gas Sampling Pump Overview

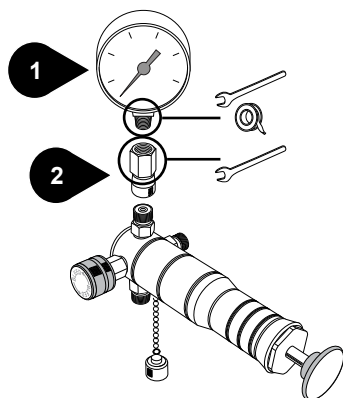


- 1. Bleed Valve
- 2. Outlet Port 1
- 3. Inlet Port
- 4. Outlet Port 2
- 5. Pumping Piston

Setting Up

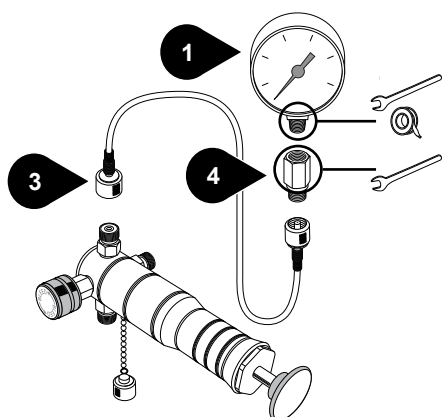
Connecting Reference Gauge

Male NPT Reference Gauge

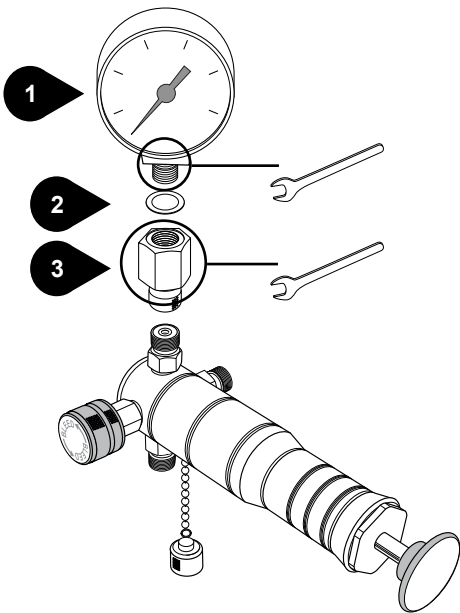


1. Reference Gauge with NPT male connection
2. NPT Female Ralston Quick-test™ Gauge Adapter
3. Ralston Quick-test™ Hose
4. NPT Female Ralston Quick-test™ Adapter

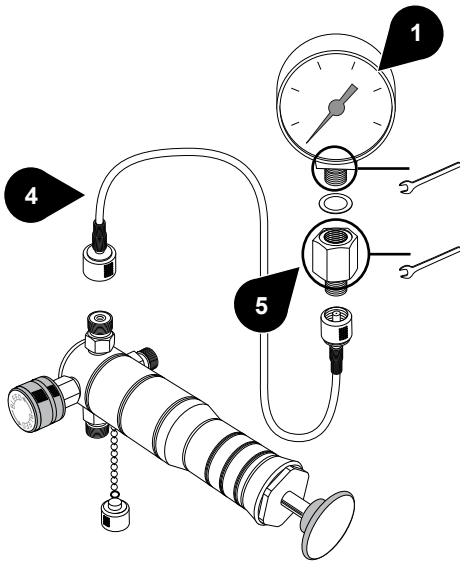
or



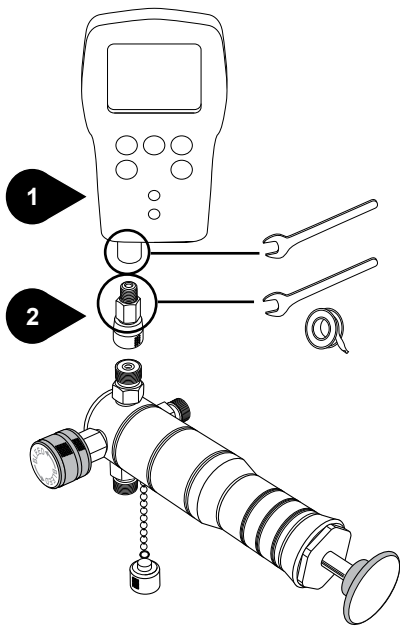
Male BSPP Reference Gauge



or

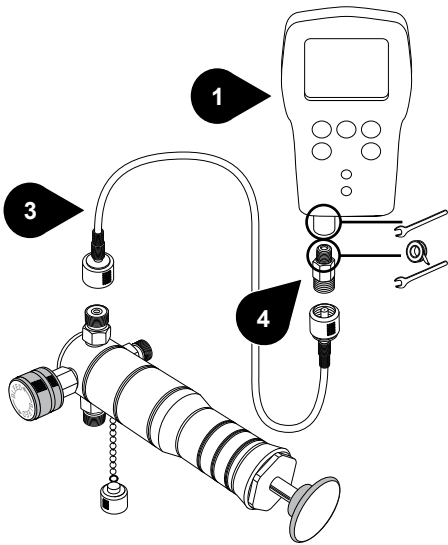


Female NPT Pressure Reference Gauge



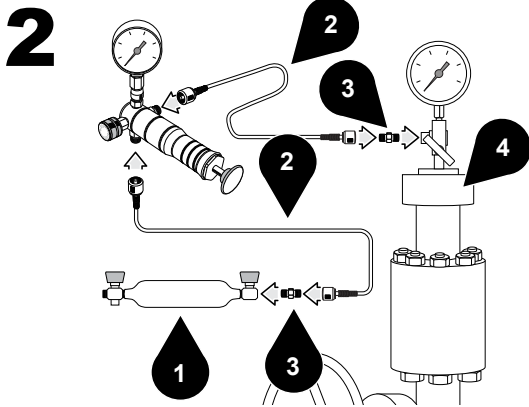
- 1. Reference Gauge with NPT female port
- 2. NPT Male Ralston Quick-test™ Gauge Adapter
- 3. Ralston Quick-test™ Hose
- 4. NPT Male Ralston Quick-test™ Adapter

or

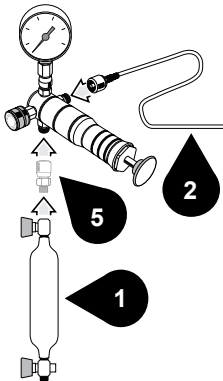


Connecting Gas Sample Cylinder

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



or

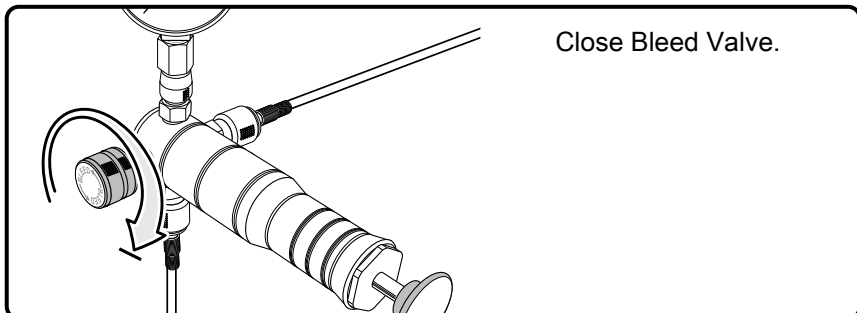


- 1. Gas Sample Cylinder
- 2. Ralston Quick-test™ Hose
- 3. NPT Male Ralston Quick-test™ Adapter
- 4. Gas Sample Source
- 5. Female Ralston Quick-test™ Pressure Calibrator Adapter

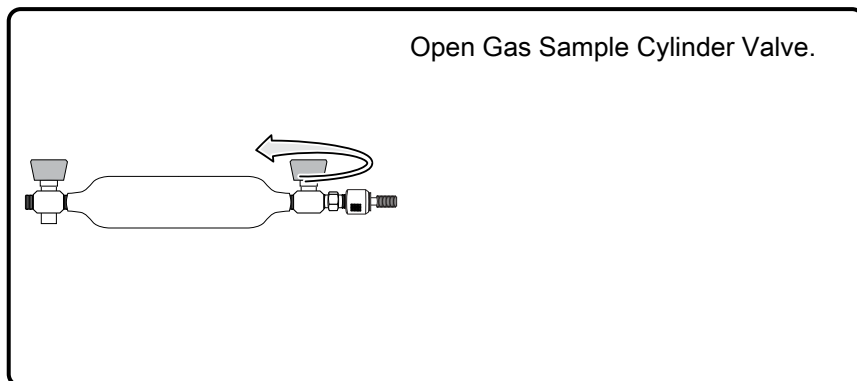
Operation

Collect a Gas Sample

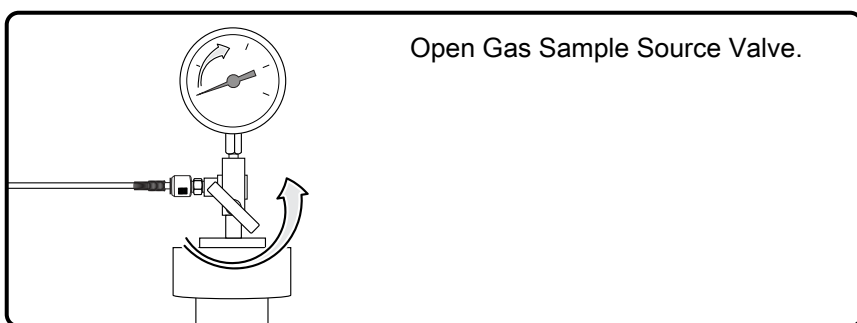
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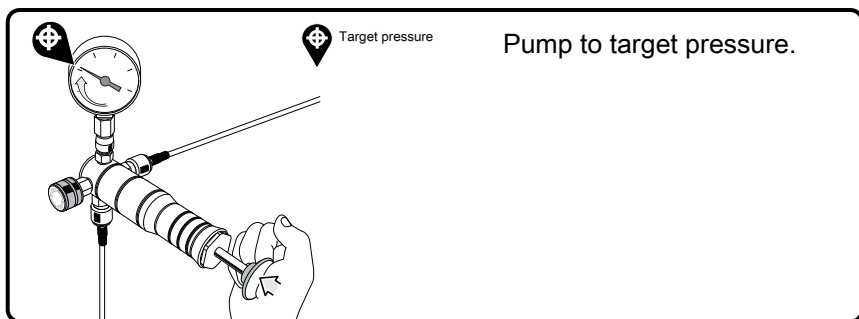
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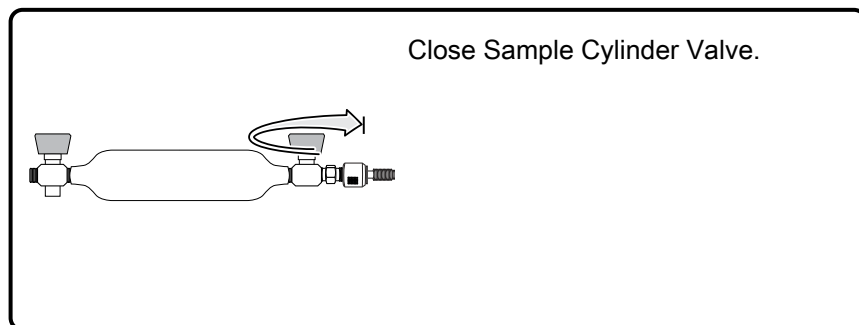


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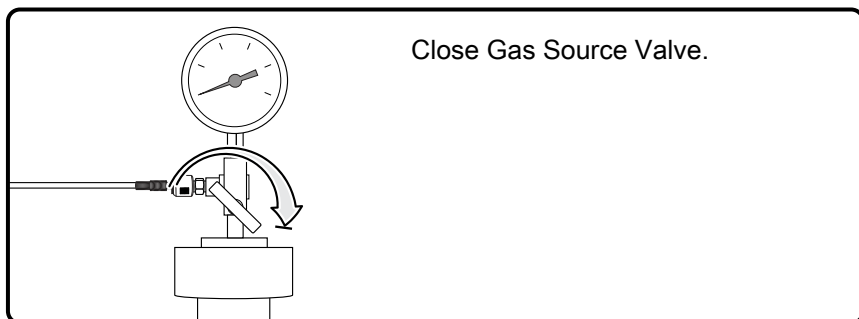


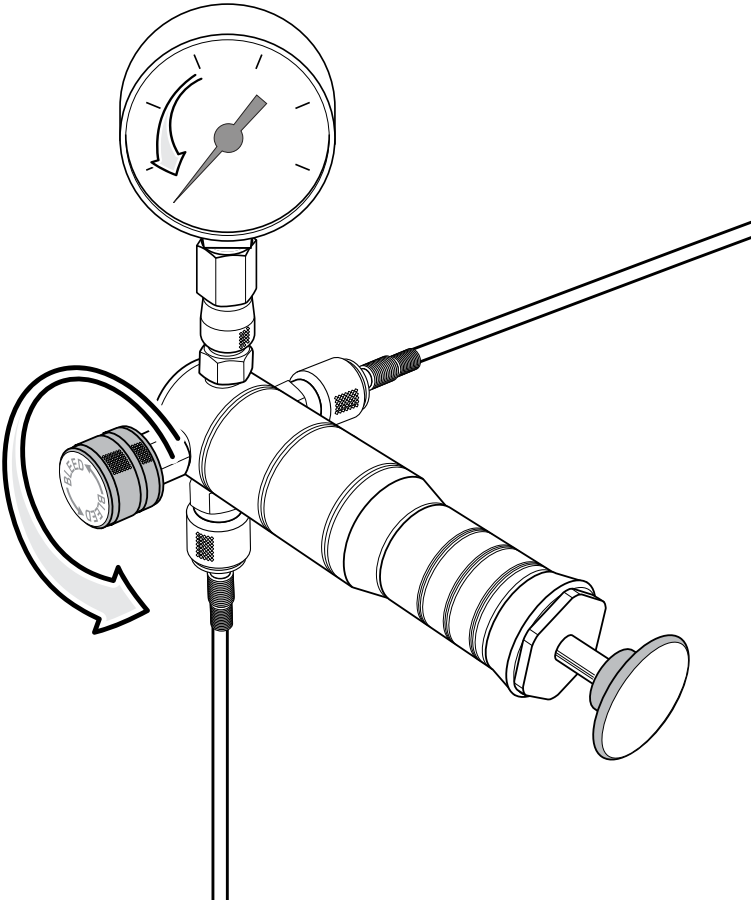
Pressurize and purge sample cylinder according to requirements.
Then, vent and repressurize the cylinder to collect the sample.

5

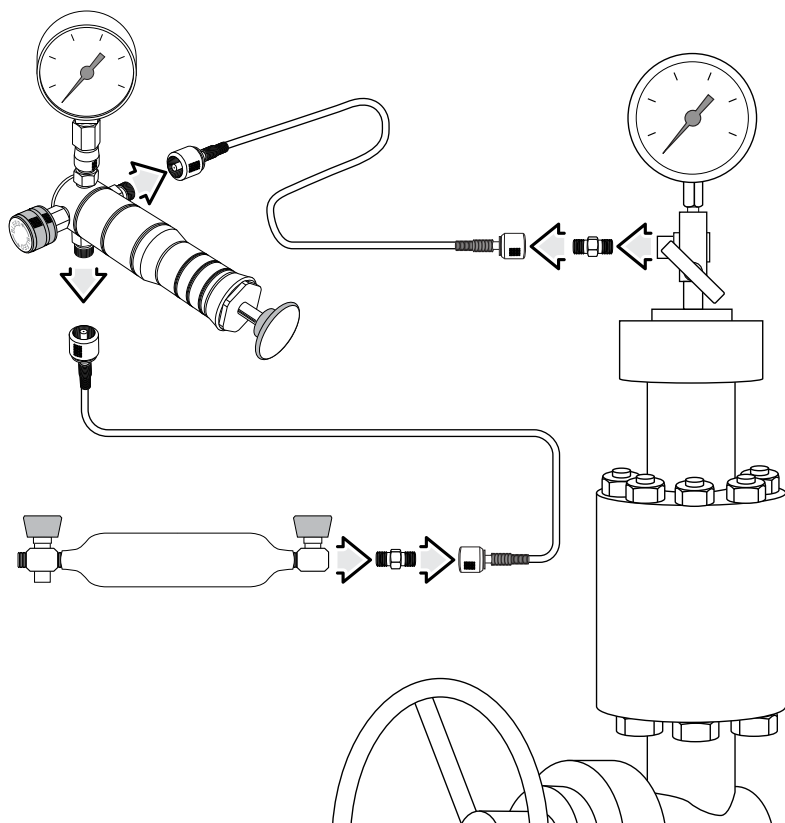


6





Storage and Transport



Disconnect hoses, Gas Sample Source and Gas Sample Cylinder. Store everything. To keep Gas Sampling Pump free of hydrocarbons during transport, we recommend storing pump and accessories in a sealed plastic bag.

Maintenance

Maintenance Interval

Every 300 uses or 3 months

Maintenance Procedure

- Lubricate inlet port, gauge port, and outlet port by squirting 2 ml of Krytox GPL 103 or equivalent Oxygen compatible lubricant inside the connections.

The pump will pump up, but pressure slowly decreases

If the pump will pump up, but pressure slowly decreases, then there is an external leak. Follow these instructions to locate and repair the leak:

1. Connect the pump to a Device Under Test (DUT) with a Ralston Quick-test™ hose.
2. Make sure the process connections are assembled wrench-tight.
3. Pressurize the Hand Pump.
4. Spray soapy water or leak detection fluid where leaks are suspected or immerse the pump in water. Be careful not to immerse the pressure gauge or calibrator.
5. Observe where bubbles are forming to determine where there is a leak.
6. Remove the leaking part and remove the cut or damaged O-ring.
7. Clean and lubricate the O-ring.
8. Replace the O-ring and reassemble.

Pumping Piston pushes out by itself and pressure decreases

If the Pumping Piston pushes out by itself and pressure decreases, then the internal Check Valve is not functioning properly. Follow the instructions to replace the internal Check Valve:

1. Remove the Pumping Piston.
2. Remove the Internal Check Valve.
3. Clean and lubricate the Check Valve.
4. Reinstall the Check Valve.
5. Reinstall the Pumping Piston.

When the Pumping Piston is pumped, pressure does not increase

If when the Pumping Piston is pumped, pressure does not increase, then the External check valve in the Inlet fitting may be leaking. Follow these instructions to repair or replace the Inlet fitting:

1. Remove any hoses from inlet and outlet fittings.
2. Cap outlet fittings.
3. Attempt to pressurize the Hand Pump.
4. Spray soapy water or leak detection fluid on the inlet fitting or immerse the pump in water.
5. Observe where bubbles are forming to determine where there is a leak.
6. If it is determined to be the inlet fitting, then remove, clean, lubricate and reinstall.
7. If this does not solve the problem then replace the inlet fitting.

The pumping piston is difficult to pump.

If the pumping piston is difficult to pump after years of use, then apply a thin coat of Krytox GPL 203 grease or equivalent Oxygen-compatible lubricant.

If the issue was not resolved by these troubleshooting instructions, then please contact support listed on page 17.

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/sp0v**

Gas Sampling Pump (SP0V)

Operation Manual

For all models of SP0V Gas Sampling Pumps



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