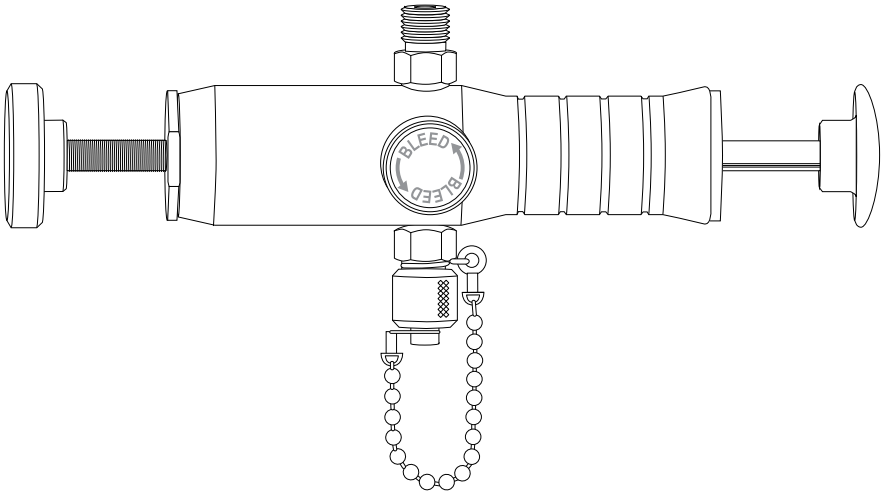
EN

Ralston

Ralston DV0V Vacuum Test Pump
Operation Manual



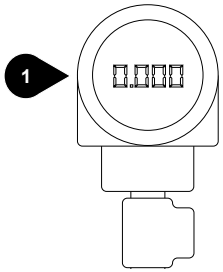
For all models of the Ralston DV0V Vacuum Test Pump

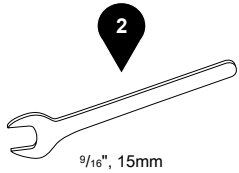
Table of Contents

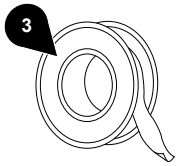
Specifications

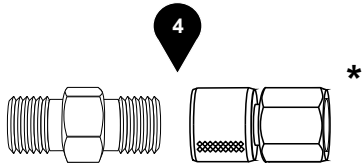
Vacuum Range	0 to 23 inHg (0 to 584 mmHG)
Media	Air
Vacuum Reference Port	Male Ralston Quick-test™ inlet port, no Check Valve, brass
Vacuum Inlet Port	Male Ralston Quick-test™ inlet port with cap and chain, brass
Temperature Range	0 to 130 °F (-18 to 54 °C)
Seal Materials	Buna-N, Delrin, Teflon
Construction	Anodized aluminum, brass, stainless steel
Fine Adjust Resolution	+/- 0.01 psi (+/- 0.7 mbar)
Weight	1.79 lb (0.8 kg)
Dimensions	H: 3.63 in (9.22 cm) W: 8.5 in (21.59 cm) D: 3.63 in (9.22 cm)

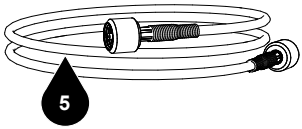
Requirements

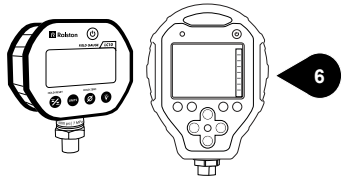












*** ralstoninst.com/adapters**

What you need to use your DV0V Vacuum Test Pump:

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

Important Safety Notices

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

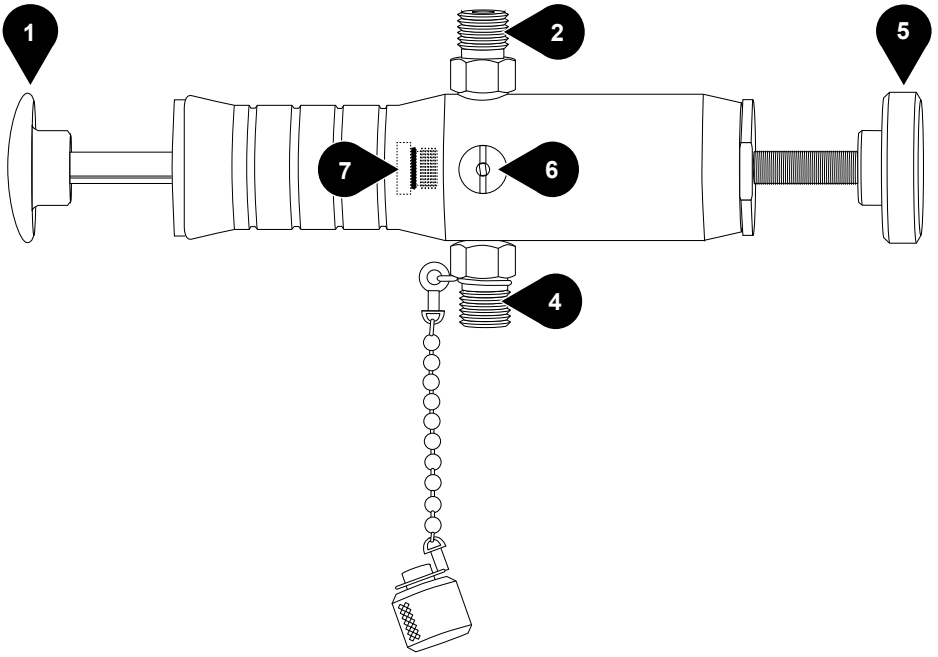
⚠ WARNING: Device under test should be isolated from the process, vented and vent valve closed prior to use.

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

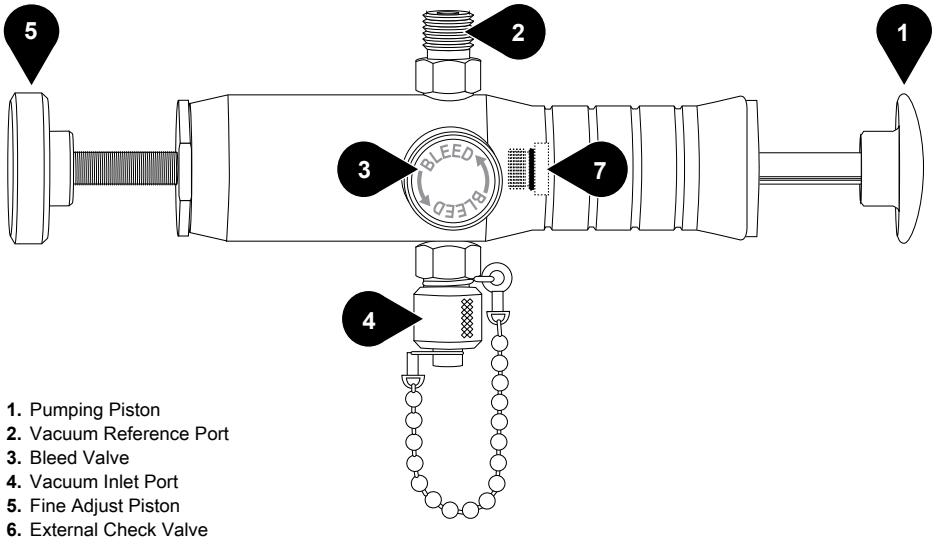
- Any modifications to this product with custom parts can result in hazardous operation of the hand pump.
- Use eye protection while using this product. Leaking gas, parts or hoses can be ejected at high speed and may cause injury.

DV0V Vacuum Test Pump Overview

Back



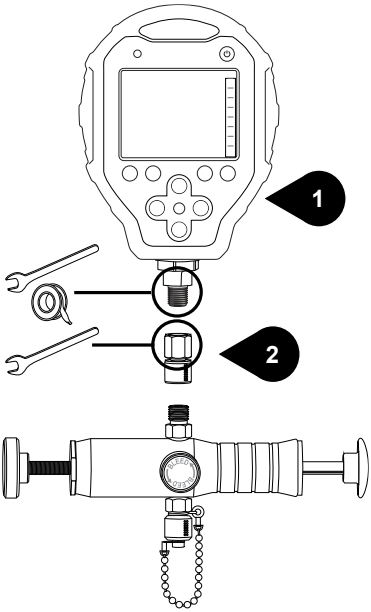
Front



1. Pumping Piston
2. Vacuum Reference Port
3. Bleed Valve
4. Vacuum Inlet Port
5. Fine Adjust Piston
6. External Check Valve
7. Internal Check Valve

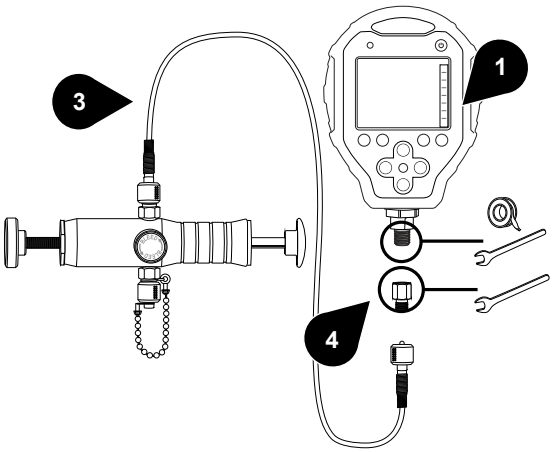
Connecting Reference Gauge

Male NPT Reference Gauge

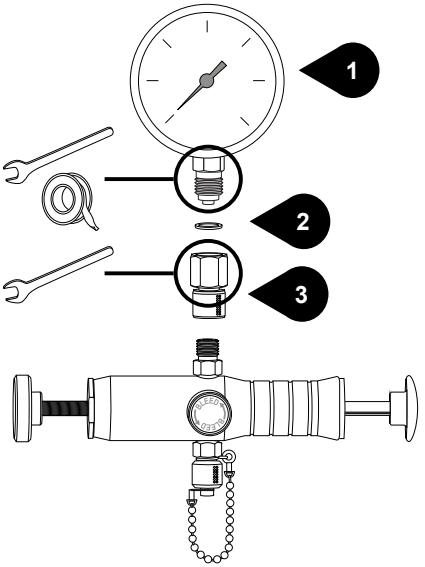


1. Reference Gauge with NPT male connection
2. NPT Female Ralston Quick-test™ Gauge Adapter
3. Ralston Quick-test™ Hose
4. NPT Female Ralston Quick-test™ Adapter

or

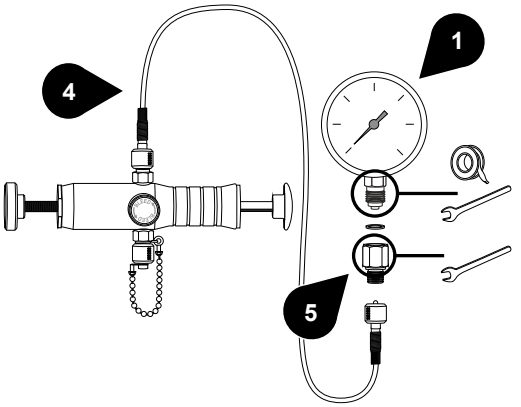


Male BSPP Reference Gauge

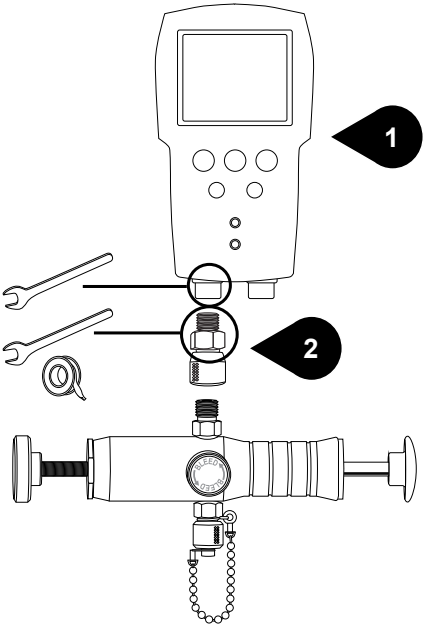


1. Reference Gauge with BSPP male connection
2. BSPP Washer
3. BSPP Female Ralston Quick-test™ Adapter
4. Ralston Quick-test™ Hose
5. BSPP Female (RG) Ralston Quick-test™ Adapter

or

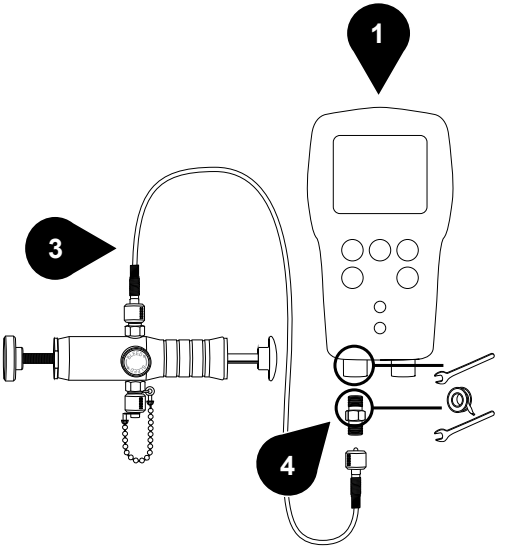


Female NPT Pressure Reference Gauge



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

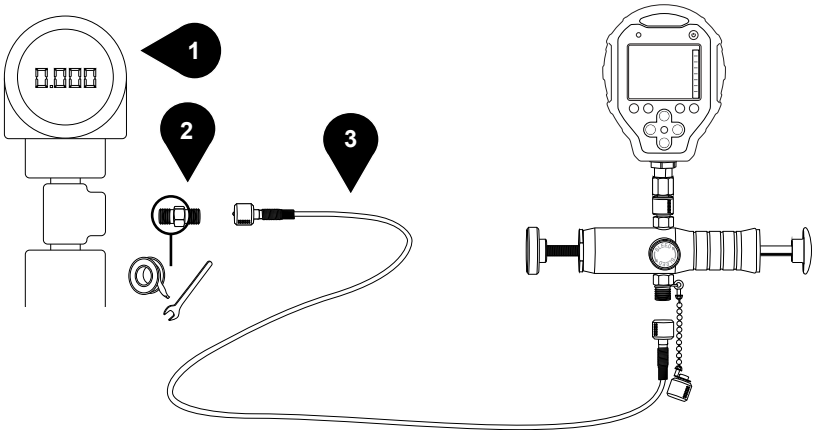
or



Connecting Device Under Test (DUT)

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

2

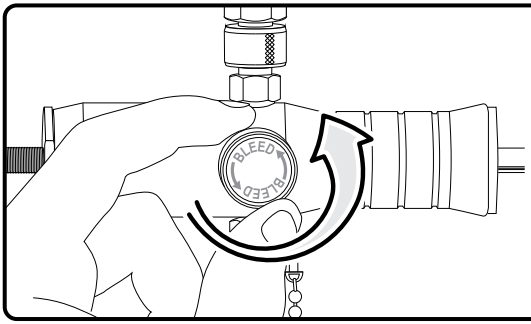


1. Device under test (DUT)
2. NPT Male Ralston Quick-test™ Adapter
3. Ralston Quick-test™ Hose

Calibration

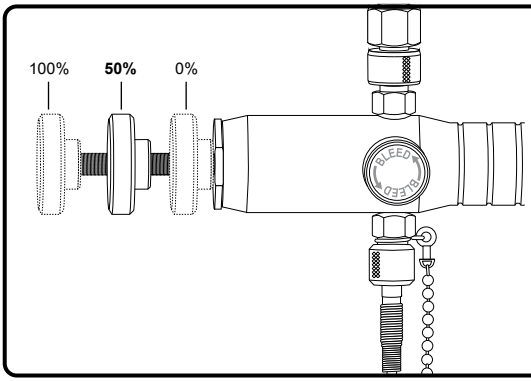
Prepare the Pump

1



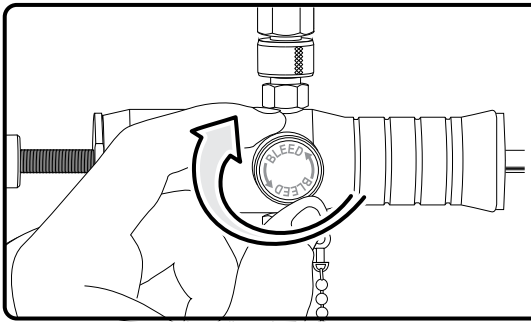
Open Bleed Valve.

2



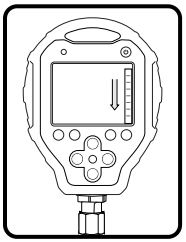
Set Fine Adjust to 50%.

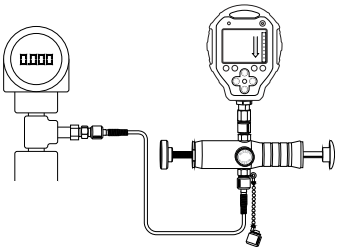
3



Close Bleed Valve.

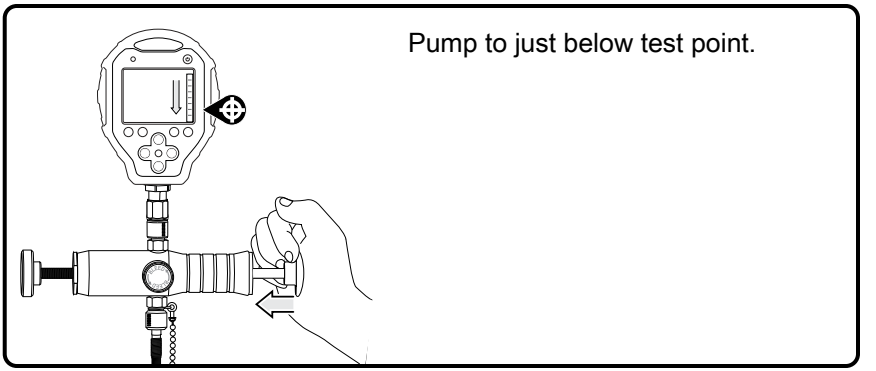
Increase Vacuum



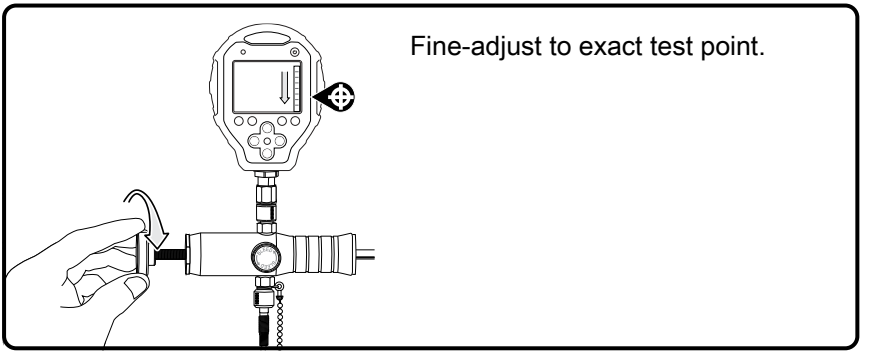


Test point

1

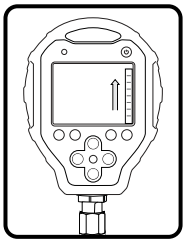


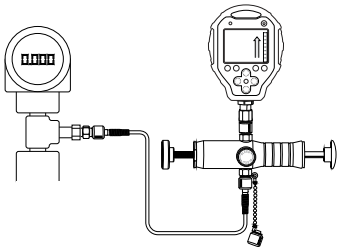
2



Repeat steps 1 through 2 for each test point up-scale.

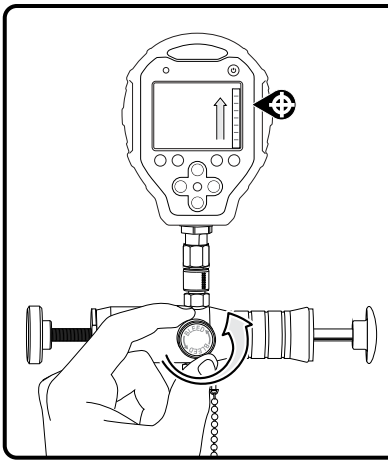
Decrease Vacuum





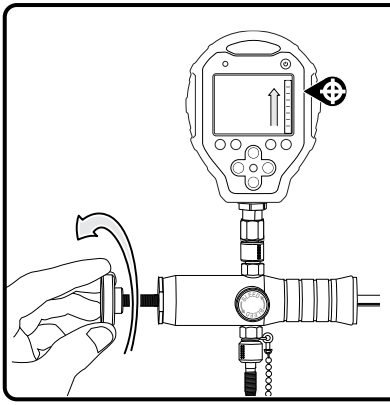
Test point

1



Slowly bleed to just above the test point. Then, close Bleed Valve.

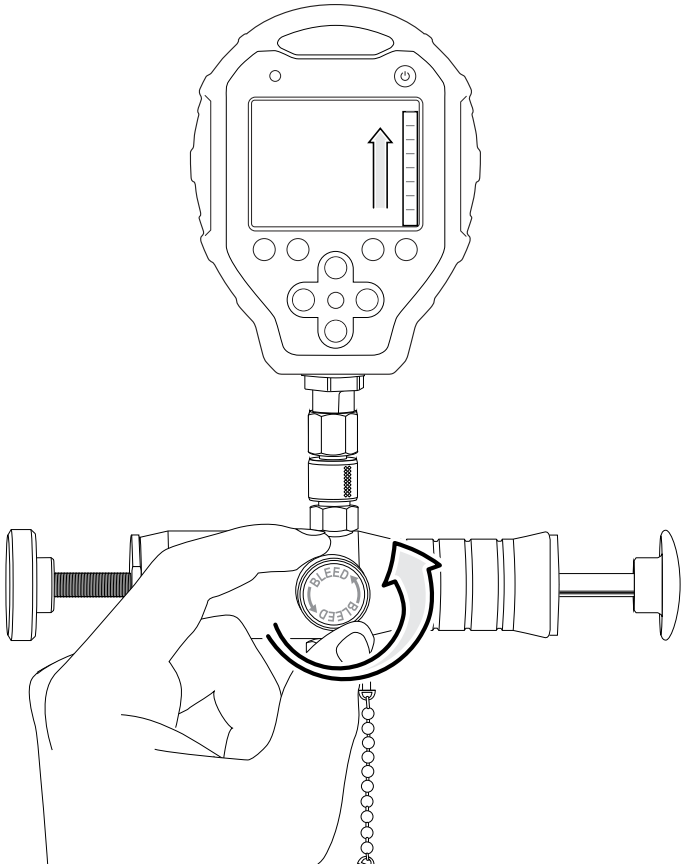
2



Fine-adjust to exact test point.

Repeat steps 1 and 2 for each test point down-scale.

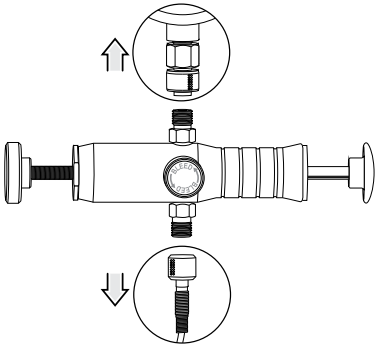
Venting System



When finished testing, open the Bleed Valve and vent the system.

Storage and Transport

1



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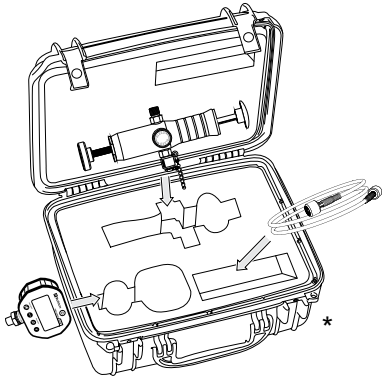

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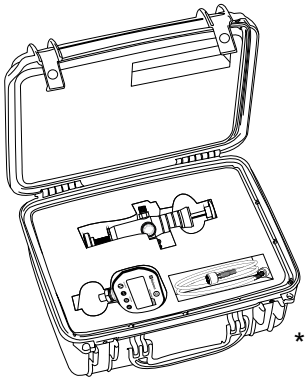

* Ralston DP0V, DV0V or DPPV Test Pump Carrying Case (DP0V-CASE). Sold separately.

Maintenance

Maintenance Interval

Every 300 uses or 3 months

Maintenance Procedure

- Lubricate internal Check Valve by removing pumping piston and internal Check Valve. Squirt 2 ml of oil into the threaded end of the Check Valve and reassemble. When the pumping piston is pumped the oil will be pumped through the internal Check Valve.
- Lubricate external Check Valve by removing external Check Valve. Squirt 2 ml of oil into the threaded end of the Check Valve and reassemble. When the pumping piston is pumped the oil will be pumped through the external Check Valve.
- Lubricate the Ralston Quick-test™ fittings by squirting 2 ml of oil inside the connection.
- Lubricate the pumping piston and the fine adjust piston O-rings with silicone lubricant.

Troubleshooting

The pump will pull a vacuum, but vacuum slowly decreases

If the pump will pull a vacuum, but vacuum 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. Pull a vacuum with the Hand Pump.
4. Spray soapy water or leak detection fluid where leaks are suspected.
5. Observe where bubbles are getting sucked into the pump to determine where there is a leak.
6. Remove the leaking part and remove the O-ring.
7. Clean and lubricate the O-ring.
8. Replace the O-ring and reassemble.

Vacuum decreases when pumping piston returns to pump

If the vacuum decreases when pumping piston returns to pump, 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, vacuum does not increase and air is felt getting sucked into the External Check Valve located opposite of the Bleed Valve.

If when the Pumping Piston is pumped, vacuum does not increase and air is felt leaking into the External Check Valve located opposite of the Bleed Valve, then the External Check Valve is not functioning properly. Follow instructions to replace the External Check Valve:

1. Remove the External Check Valve
2. Clean and lubricate the External Check Valve.
3. Reinstall the External Check Valve.

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 graphite grease, such as Dow Corning® Moly-kote G-n Metal Assembly Paste (or equivalent).

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/dv0v**

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For all models of the Ralston DV0V Vacuum Test Pump

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MT-0007-PA-EN REV 1