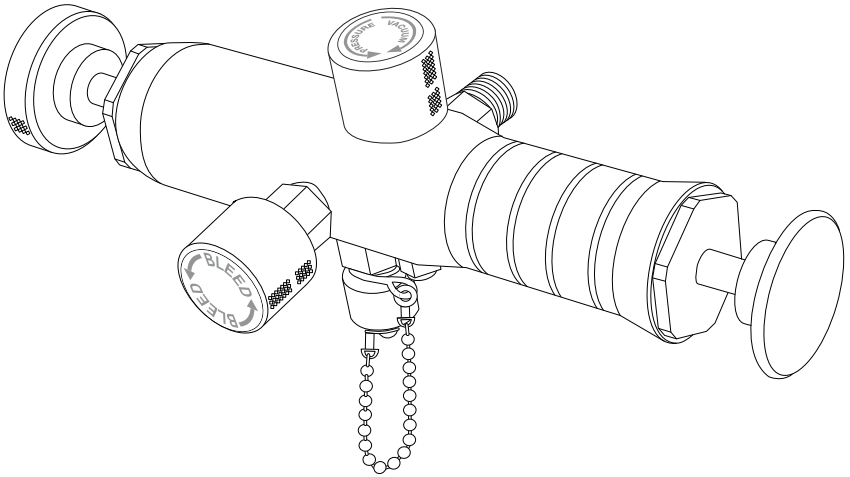
EN

Ralston

# Ralston DPPV Pressure/Vacuum **Test Pump** Operation Manual



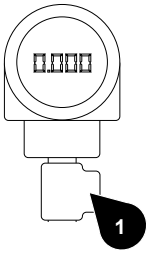

**For all models of the Ralston DPPV Pressure/Vacuum Test Pump**

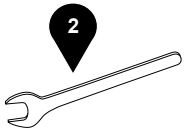
# Table of Contents

# Specifications

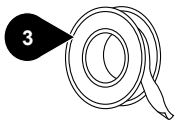
| | |
|---|---|
| **Pressure Range** | 0 to 125 psi (0 to 9 bar) |
| **Vacuum Range** | 0 to 23 inHg (0 to 584 mmHG) |
| **Media** | Air |
| **Outlet Port 1** | Male Ralston Quick-test™ outlet port, no check-valve, brass |
| **Outlet Port 2** | Male Ralston Quick-test™ outlet port with cap and chain, 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** | 1.71 lb (0.8 kg) |
| **Dimensions** | H: 3.63 in (9.22 cm)<br>W: 8.5 in (21.59 cm)<br>D: 3.63 in (9.22 cm) |

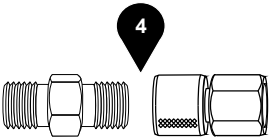
# Requirements




$^{9}/_{16}$", 15mm

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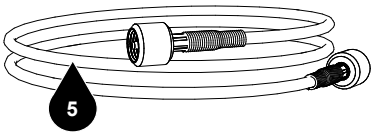
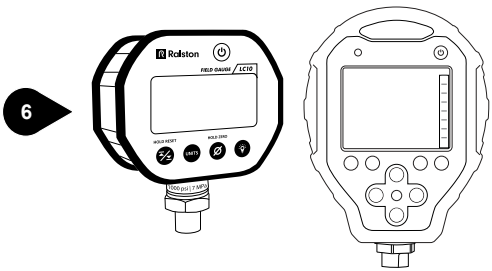



*** ralstoninst.com/adapters**

**What you need to use your DPPV Pressure/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.**

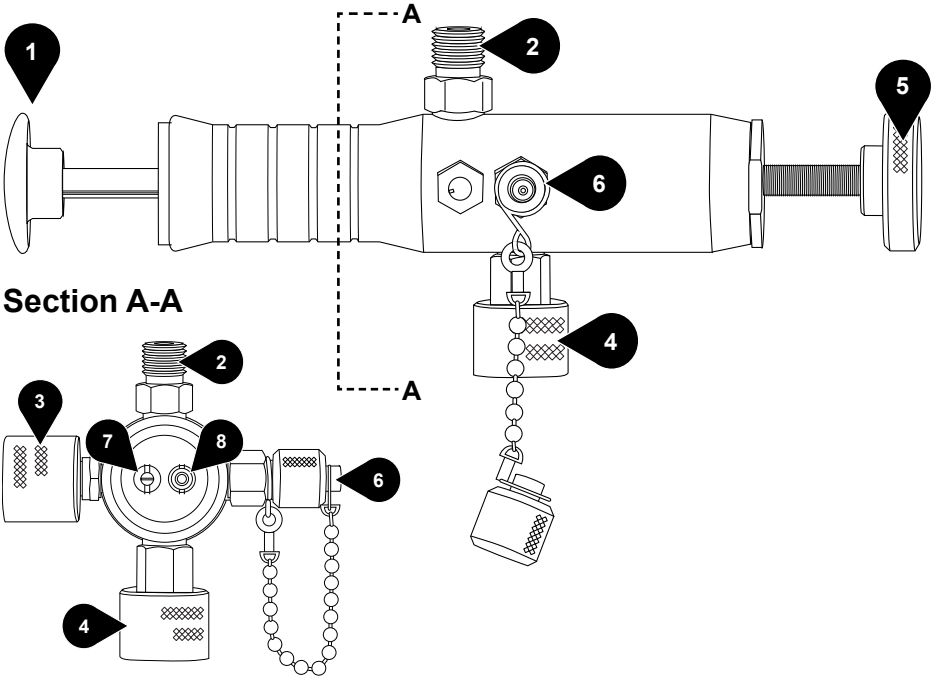
- Any modifications to this product with custom parts can result in hazardous operation of the hand pump.
- Use eye protection while using this product. Leaking gas, parts or hoses can be ejected at high speed and may cause injury.

## 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.

# DPPV Pressure/Vacuum Test Pump Overview

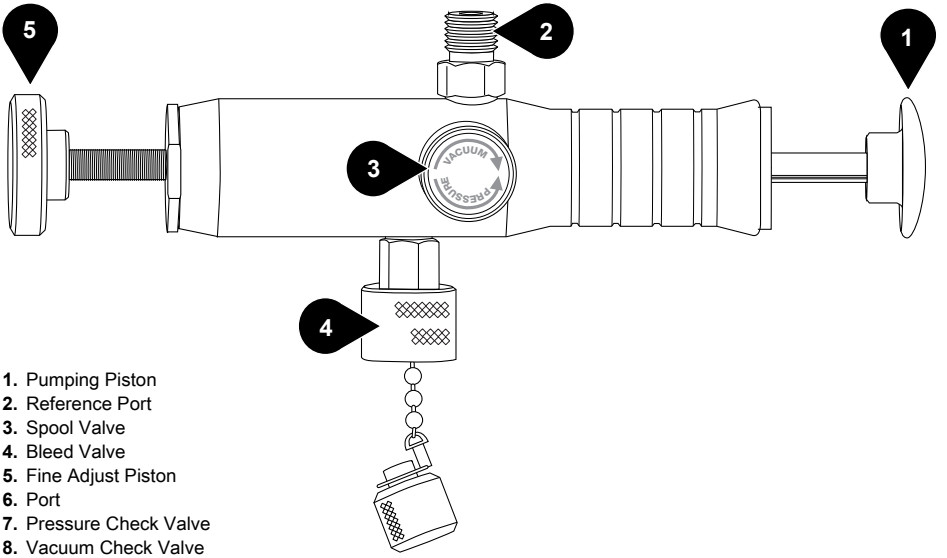
## Back




## Section A-A



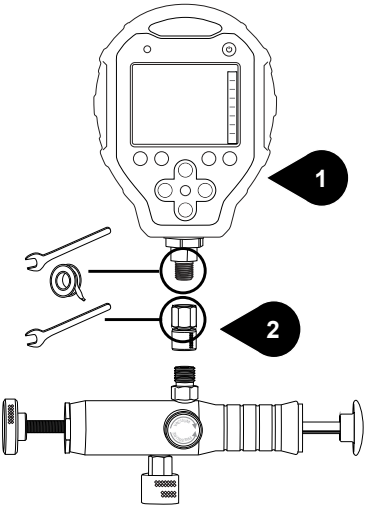

## Front




1. Pumping Piston
2. Reference Port
3. Spool Valve
4. Bleed Valve
5. Fine Adjust Piston
6. Port
7. Pressure Check Valve
8. Vacuum Check Valve

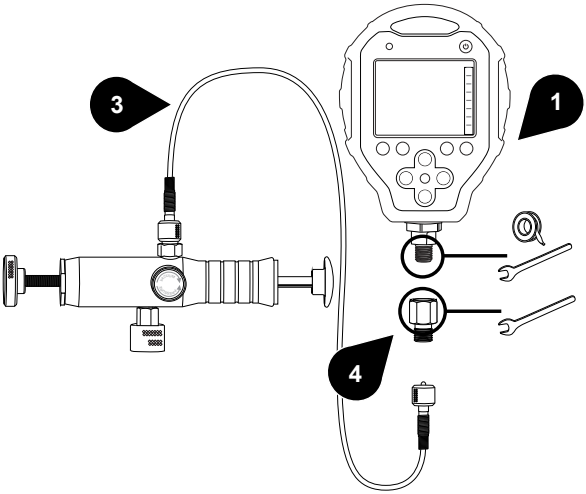
# Connecting Reference Gauge

### Male NPT Reference Gauge

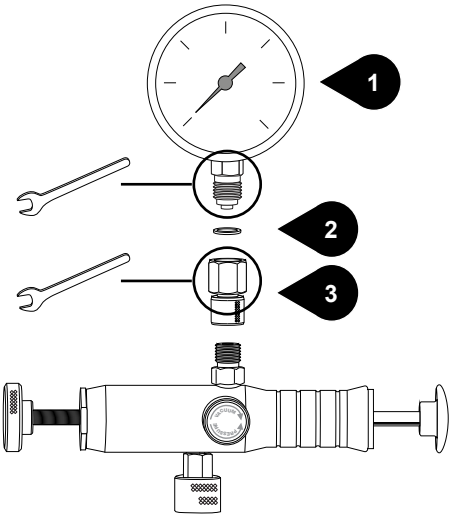



1. Reference Gauge with NPT male connection
2. NPT Female Ralston Quick-test™ Gauge Adapter
3. Ralston Quick-test™ Hose
4. NPT Female Ralston Quick-test™ Adapter

**or**

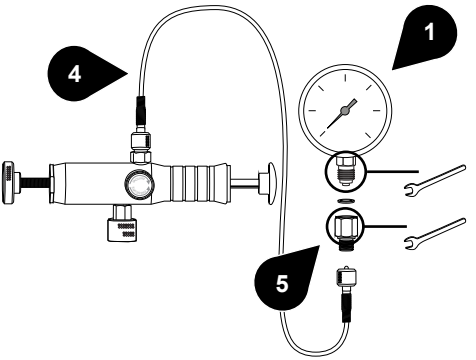


## Male BSPP Reference Gauge

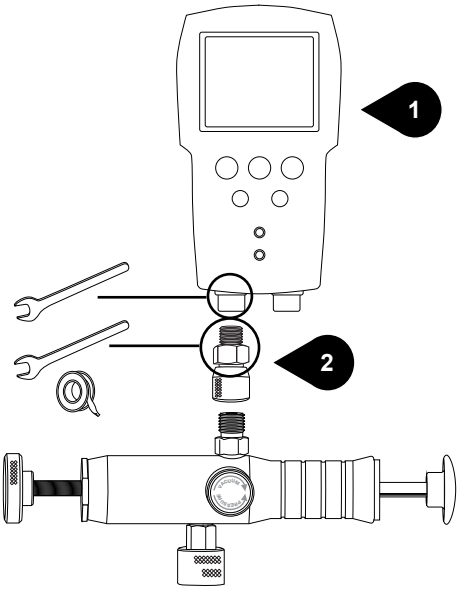



1. Reference Gauge with BSPP male connection
2. BSPP Washer
3. BSPP Female Ralston Quick-test™ Adapter
4. Ralston Quick-test™ Hose
5. BSPP Female (RG) Ralston Quick-test™ Adapter

# or

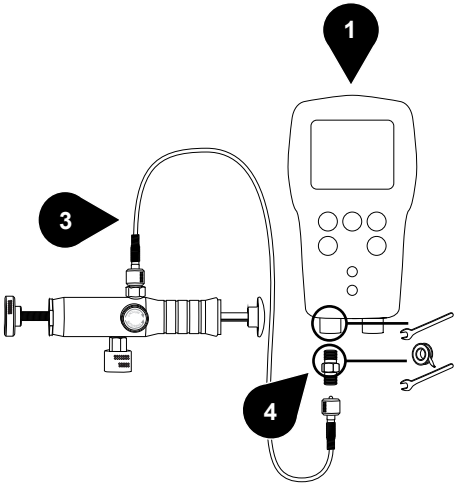


## Female NPT Pressure Reference Gauge




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

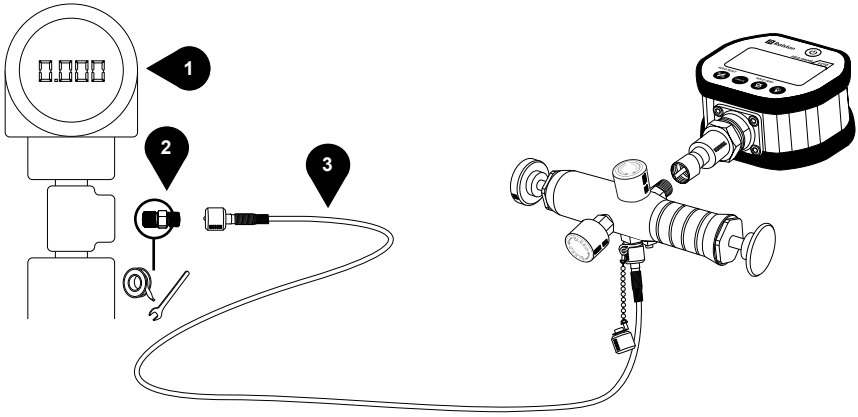
# or



# Connecting Device Under Test (DUT)

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

**2**

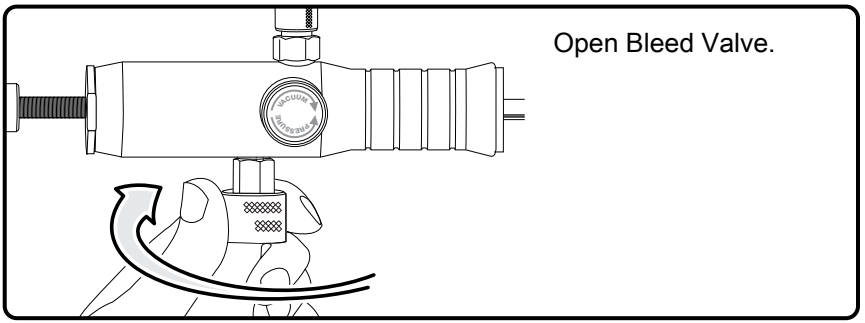



**1.** Device under test (DUT)
**2.** NPT Male Ralston Quick-test™ Adapter
**3.** Ralston Quick-test™ Hose

# Calibration

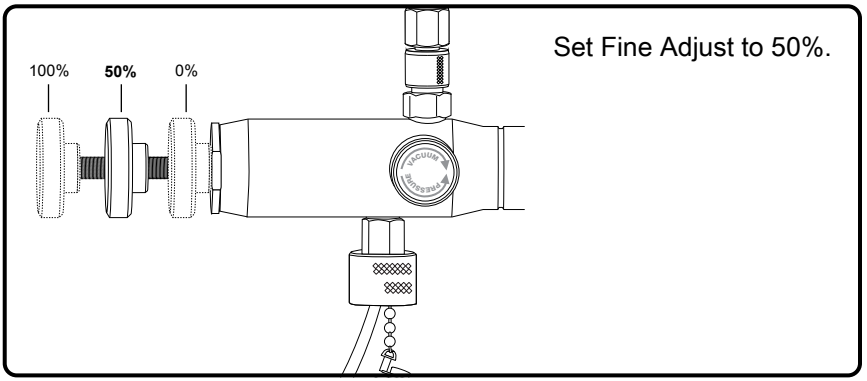
## Prepare the Pump

**1**



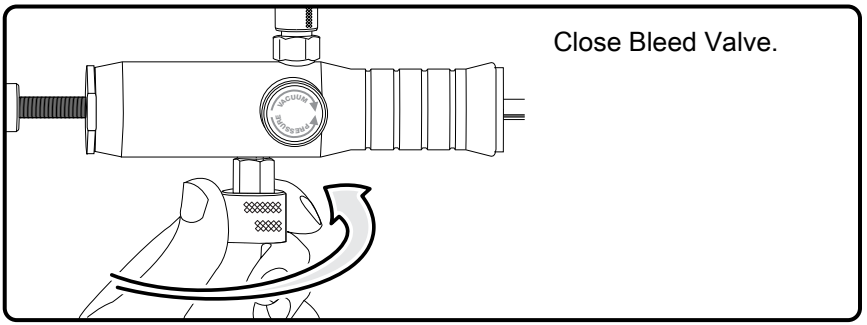

Open Bleed Valve.

**2**



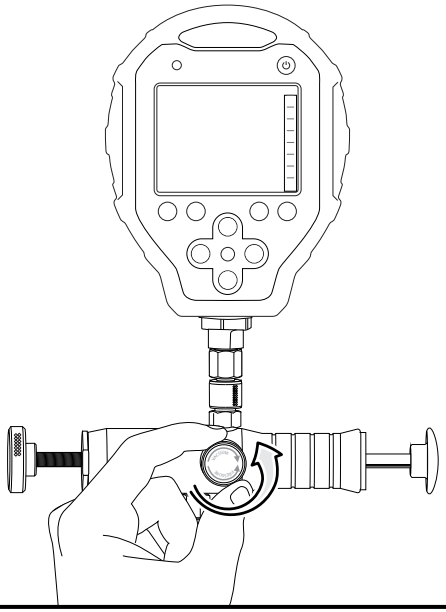

Set Fine Adjust to 50%.

**3**



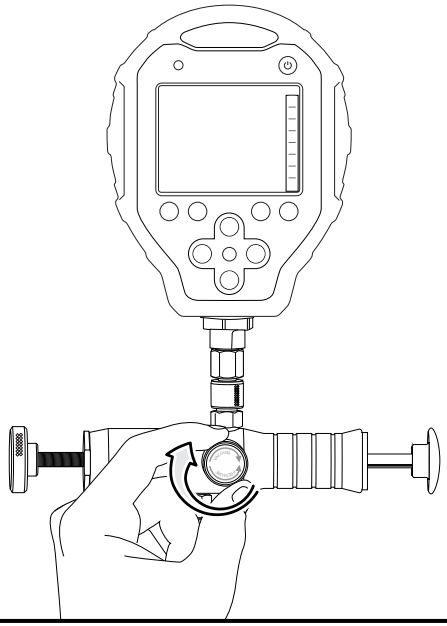

Close Bleed Valve.

# 4



Turn Spool Valve counterclockwise for pressure.

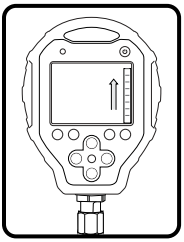
# or

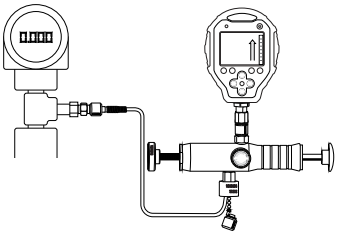


Turn Spool Valve clockwise for vacuum.

# Calibrate with Pressure

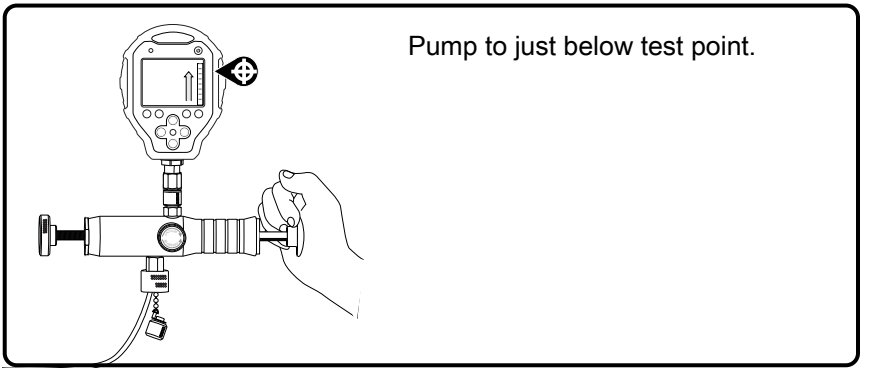
## Increase Pressure



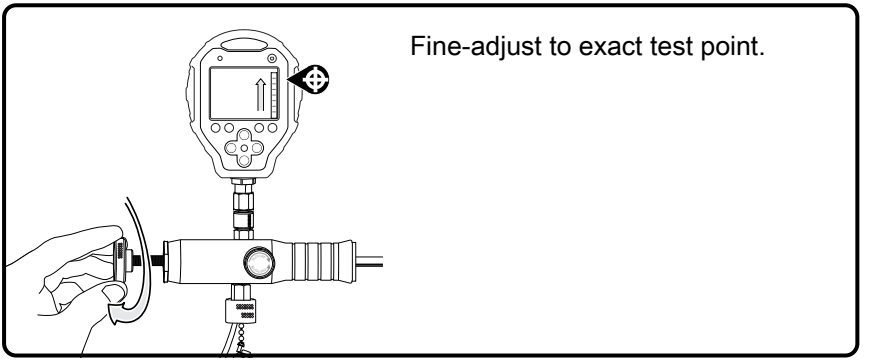


Test point

**1**

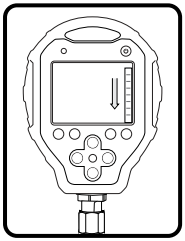


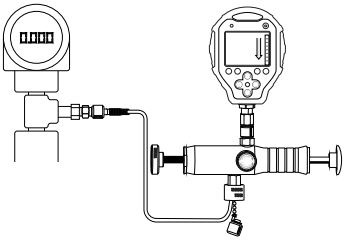

**2**




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

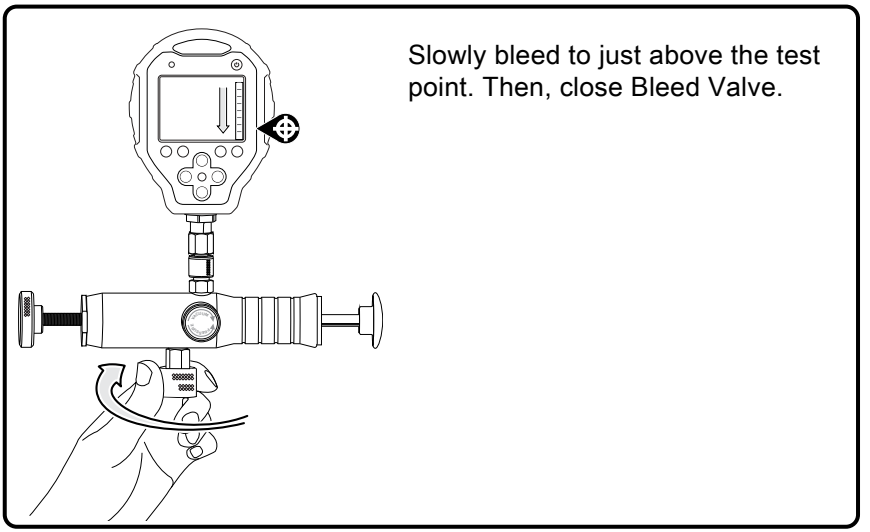
## Decrease Pressure





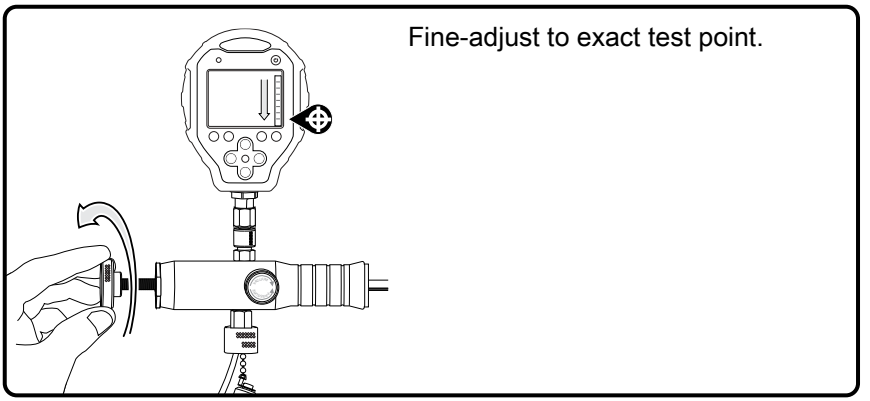
Test point

**1**



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

**2**

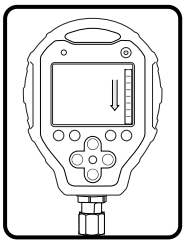


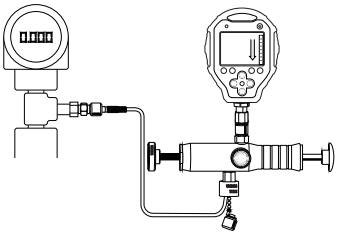
Fine-adjust to exact test point.

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

# Calibrate with Vacuum

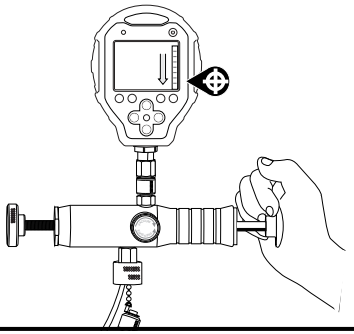
## Increase Vacuum





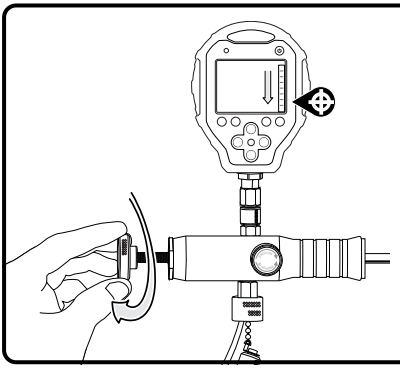
Test point

**1**



Pump to just below test point.

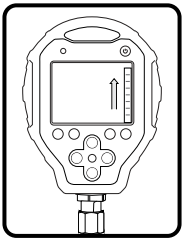
**2**

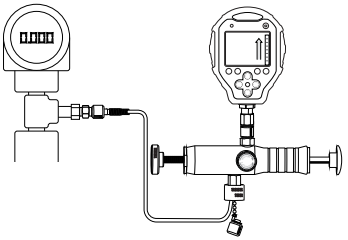


Fine-adjust to exact test point.

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

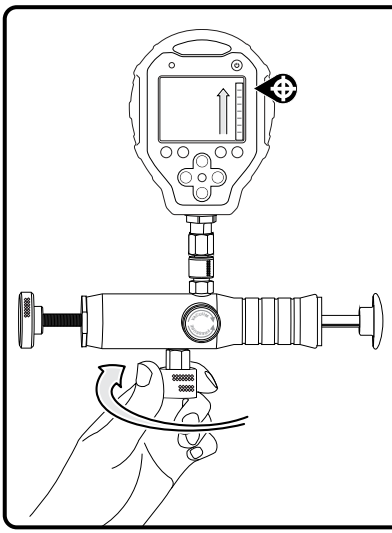
## Decrease Vacuum





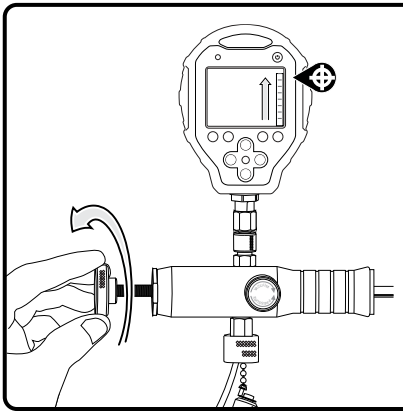
Test point

**1**



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

**2**

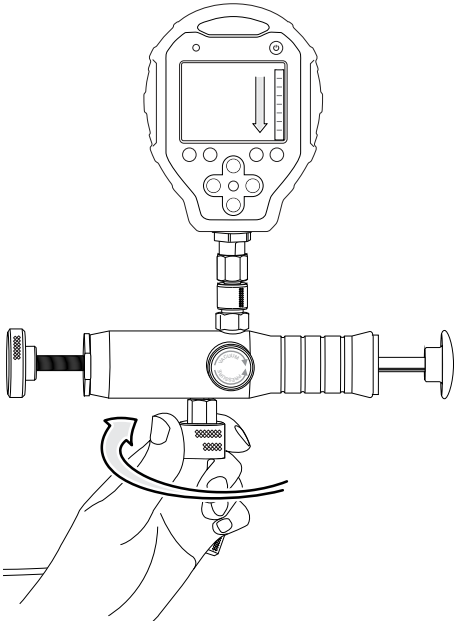


Fine-adjust to exact test point.

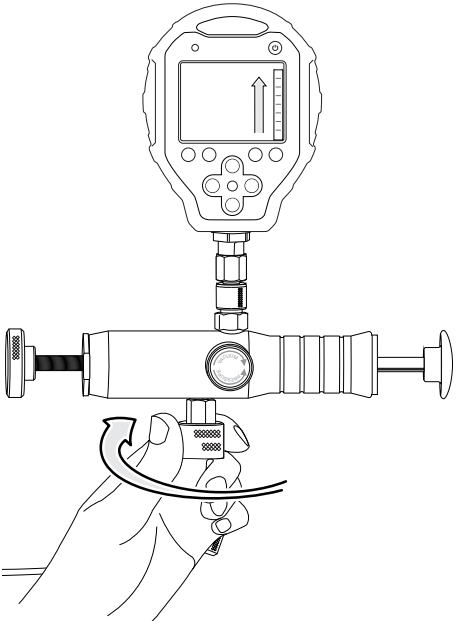
**Repeat steps 1 and 2 for each test point down-scale.**

# Venting System

## Release Pressure



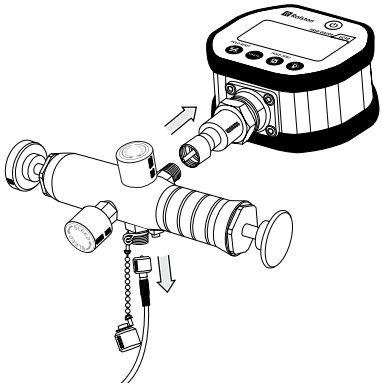
## Release Vacuum



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

# Storage and Transport

**1**



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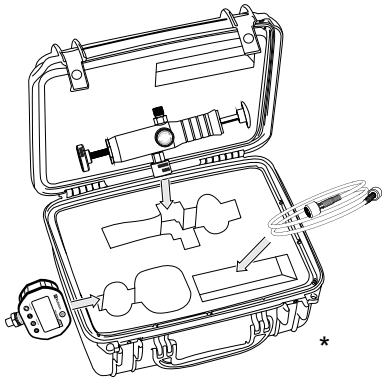

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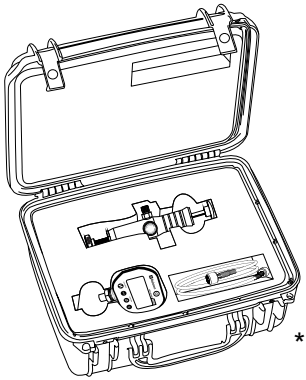
**3**



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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 Valves by removing pumping piston and internal Check Valves. 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 Check Valves.
- 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 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).

# Pressure Mode

## 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 Pressure Check Valve is not functioning properly. Follow these instructions to replace the Pressure Check Valve (See Section A-A on page 8 for reference):

1. Remove the Pumping Piston.
2. Remove the Pressure Check Valve.
3. Clean and lubricate the Pressure Check Valve.
4. Reinstall the Pressure 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 Vacuum Check Valve is not functioning properly. Follow these instructions to replace the Vacuum Check Valve (See Section A-A on page 8 for reference):

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

# Vacuum Mode

## 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 Vacuum Check Valve is not functioning properly. Follow these instructions to replace the Vacuum Check Valve (See Section A-A on page 8 for reference):

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

## When the Pumping Piston is pumped, vacuum does not increase

If when the Pumping Piston is pumped, vacuum does not increase, then the Vacuum Check Valve is not functioning properly. Follow these instructions to replace the Vacuum Check Valve (See Section A-A on page 8 for reference):

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

**If the issue was not resolved by these troubleshooting instructions, then please contact support listed on page 21.**

# 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/dppv**

# **Ralston DPPV Pressure/Vacuum Test Pump** Operation Manual

**For all models of the Ralston DPPV Pressure/Vacuum Test Pump**


**ralstoninst.com**

Hours: **8:30 am – 5:00 pm EST**
Phone: **1 440-564-1430**
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Email: **support@ralstoninst.com**



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