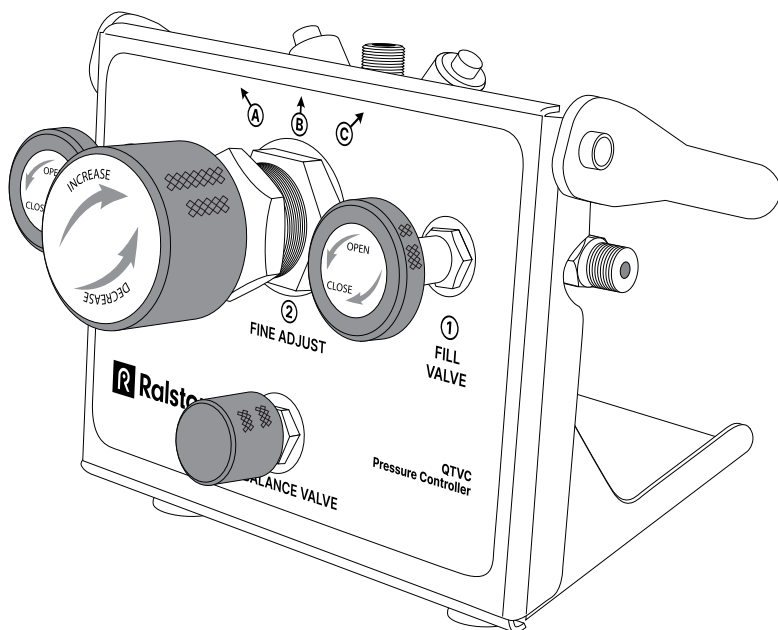
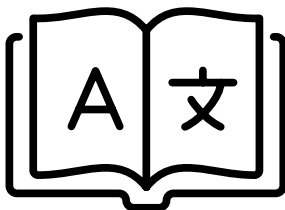


# Ralston QTVC Pressure Controller

## Operation Manual



For all models of the Ralston QTVC Pressure Controller





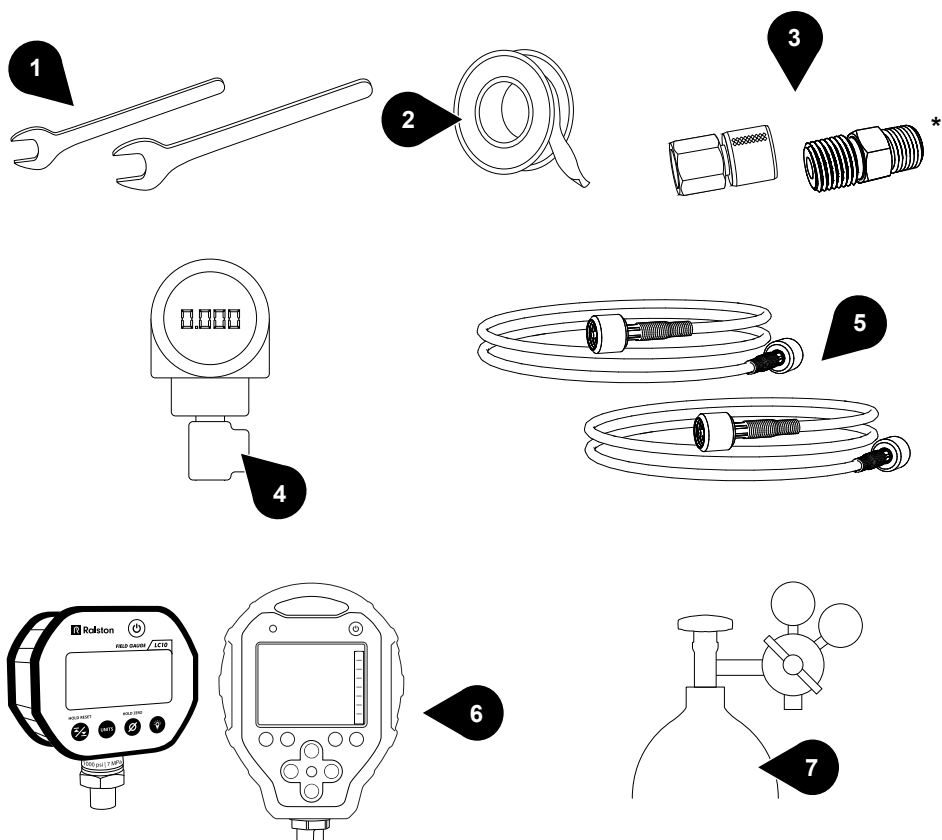
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# Specifications

<b>Pressure Range</b>	0 to 3,000 psi (0 to 210 bar)
<b>Vacuum Range</b>	0 to 10 inHg (0 to 260 mmHg)
<b>Temperature Range</b>	0 to 130 °F (-18 to 54 °C)
<b>Construction</b>	Anodized Aluminum, Brass, Plated Steel, Stainless Steel
<b>Seal Materials</b>	Buna-N, Delrin, Teflon
<b>Pressure Media</b>	Nitrogen, inert gas
<b>Fine Adjust Resolution</b>	±0.0005 PSI (0.03 mbar)
<b>Inlet Port</b>	Male Ralston Quick-test™, brass
<b>Outlet Port A</b>	Male Ralston Quick-test™ with cap and chain, brass
<b>Outlet Port B</b>	Male Ralston Quick-test™, brass
<b>Outlet Port C</b>	Male Ralston Quick-test™ with cap and chain, brass
<b>Weight</b>	5.38 lb (2.4 kg)
<b>Dimensions</b>	W: 8.5 in (21.59 cm) H: 6.16 in (15.65 cm) D: 7.38 in (18.75 cm)
<b>Fill and Vent Valves</b>	Soft seated construction
<b>Mechanical Rotation</b>	42 turns (pressure balanced)

# Requirements



\* [ralstoninst.com/adapters](http://ralstoninst.com/adapters)

## What you need to use your Pressure Controller:

1. Wrenches
2. Thread Tape
3. Ralston Quick-test™ Adapters
4. Device Under Test
5. Ralston Quick-test™ Hoses
6. Pressure Reference
7. Pressure Source

# Important Safety Notices

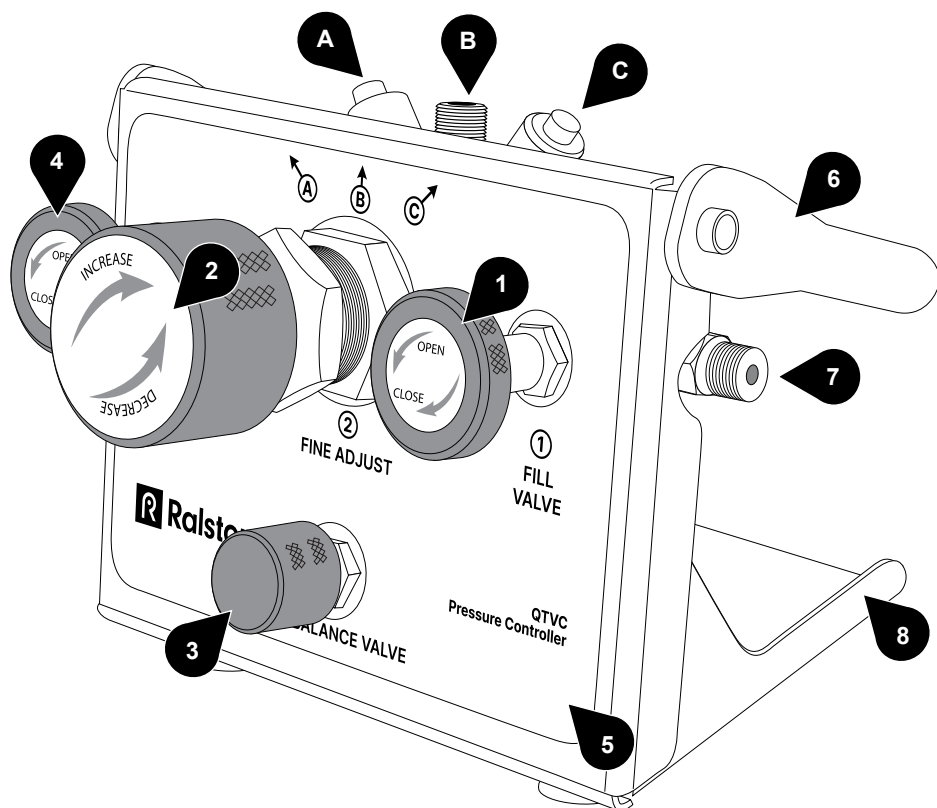
**⚠ WARNING: Do not exceed Maximum Working Pressure for this product or damage may result.**

**⚠ 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.

# Pressure Controller Overview

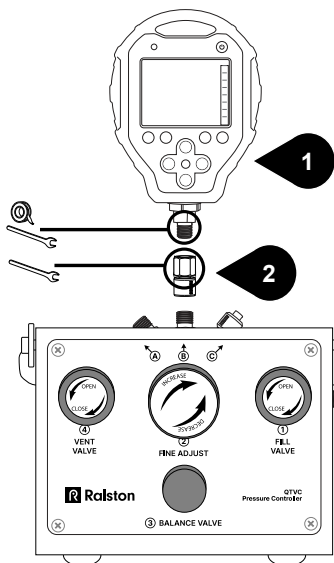


- A. Outlet Port A
- B. Outlet Port B
- C. Outlet Port C
- 1. Fill Valve
- 2. Fine Adjust Valve
- 3. Balance Valve
- 4. Vent Valve
- 5. Removable Front Panel
- 6. Carry Handle
- 7. Inlet Port
- 8. Stand

# Setting Up

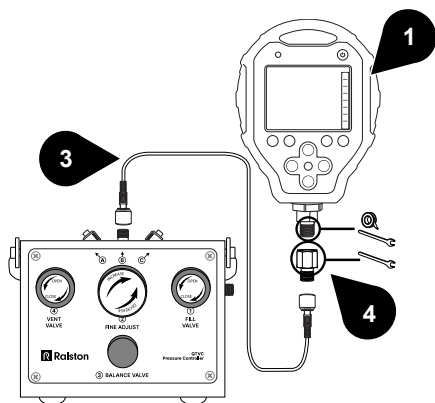
## Connecting Reference Gauge

### Male NPT Reference Gauge



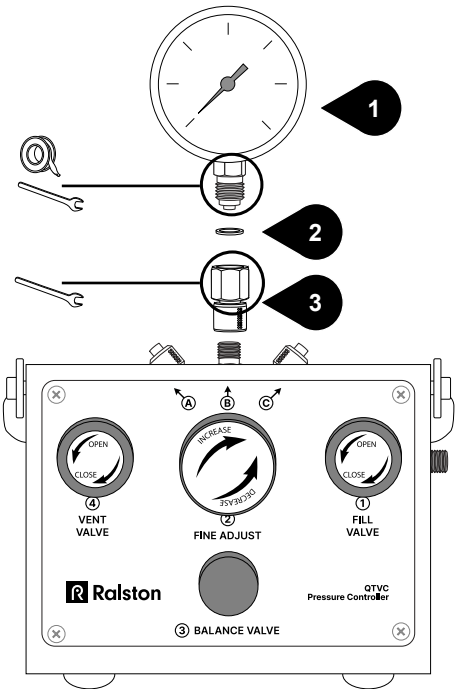
1. Reference Gauge with NPT male connection
2. NPT Female Ralston Quick-test™ Gauge Adapter
3. Ralston Quick-test™ Hose
4. NPT Female Ralston Quick-test™ Adapter

or

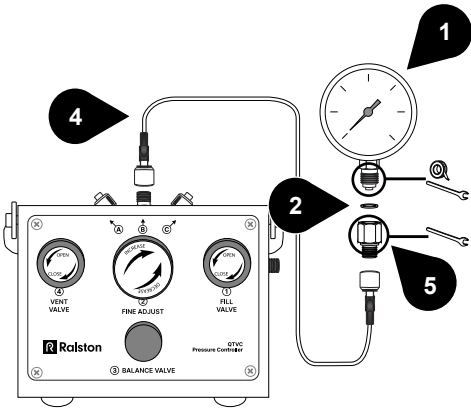




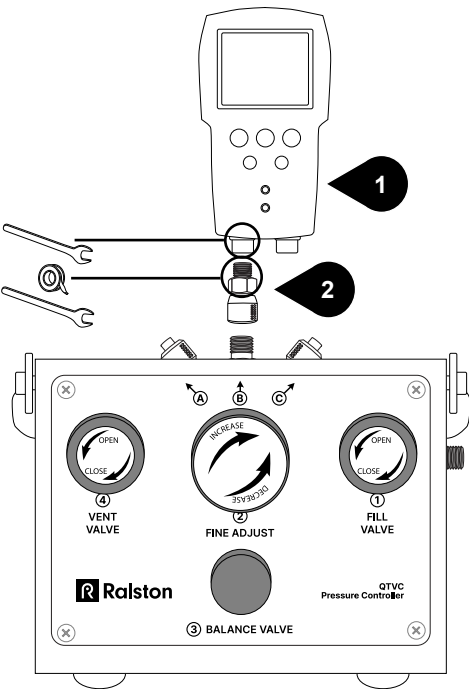
# Male BSPP Reference Gauge



or

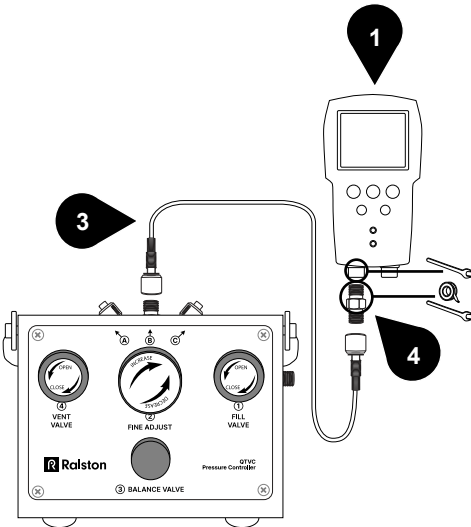


# Female NPT Pressure Reference Gauge



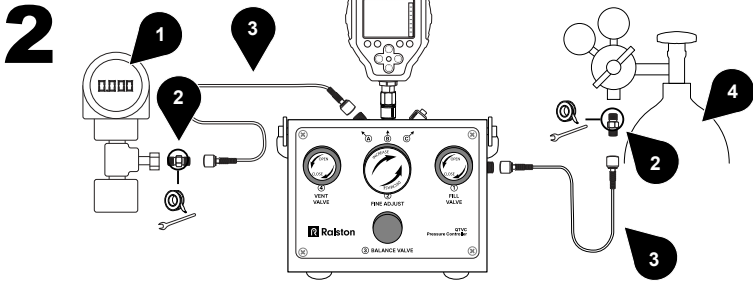
- 1. Reference Gauge with NPT female port
- 2. NPT Male Ralston Quick-test™ Gauge Adapter
- 3. Ralston Quick-test™ Hose
- 4. NPT Male Ralston Quick-test™ Adapter

or



# Connecting Device Under Test (DUT) and Pressure Source

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

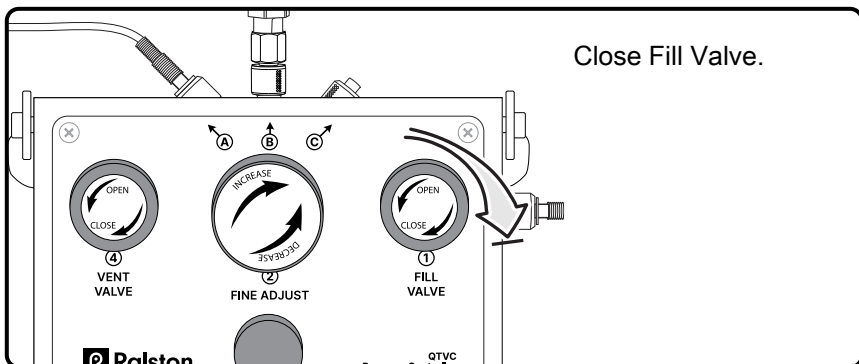


1. Device under test (DUT)
2. Ralston Quick-test™ Adapters
3. Ralston Quick-test™ Hoses
4. Pressure source

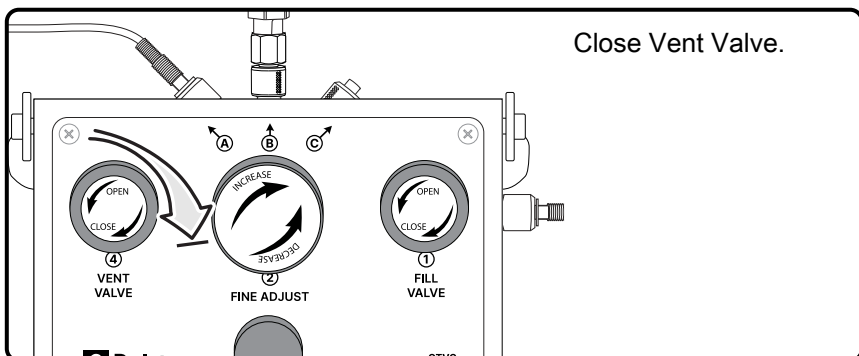
# Calibration

## Prepare the Pressure Controller

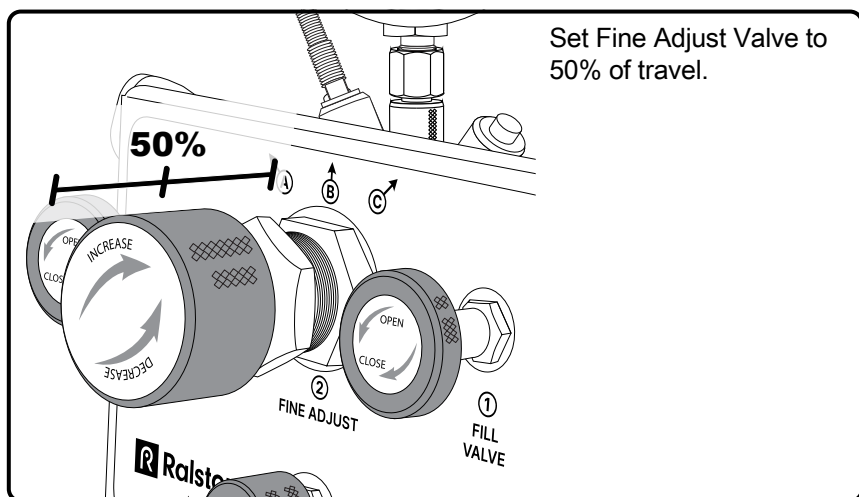
1



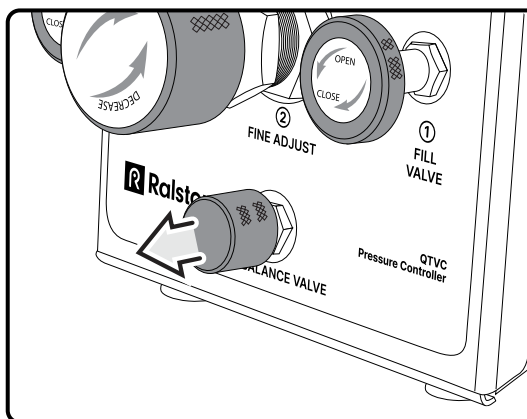
2



3



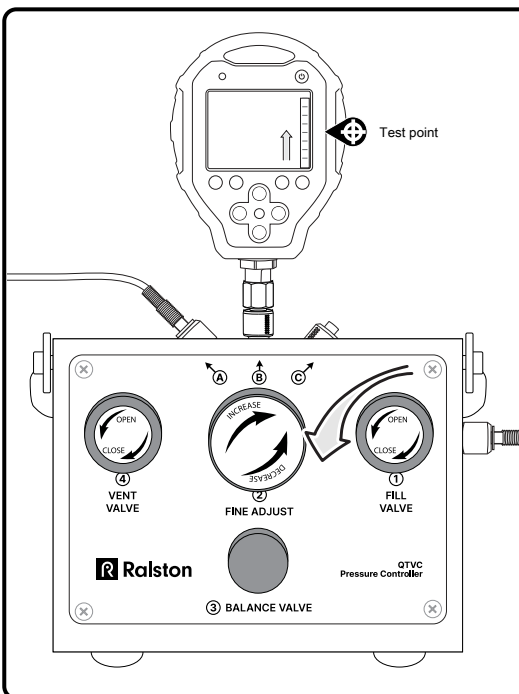
# 4



Pull Balance Valve out.

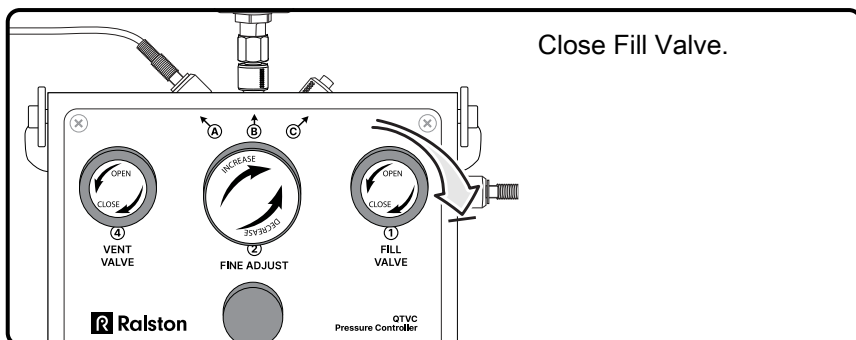
## Increase Pressure

# 1

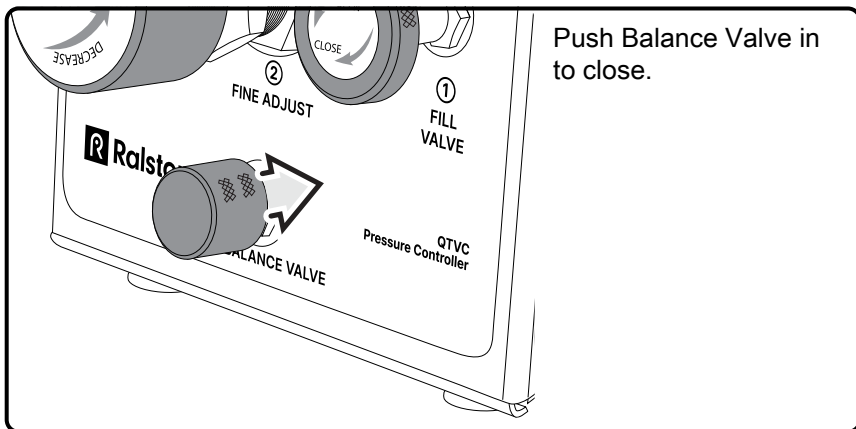


Slowly open Fill Valve to just below first test point.

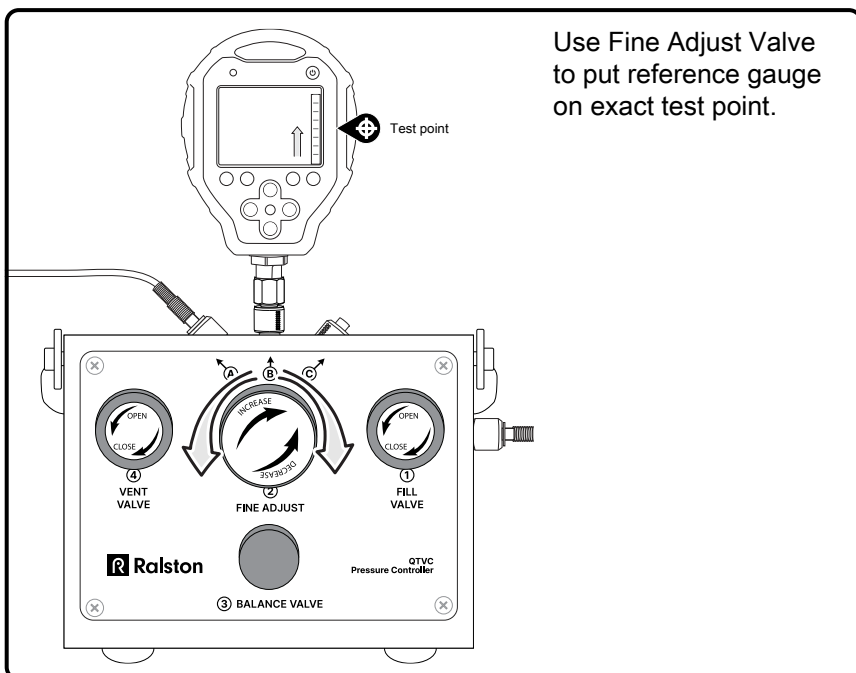
# 2



# 3

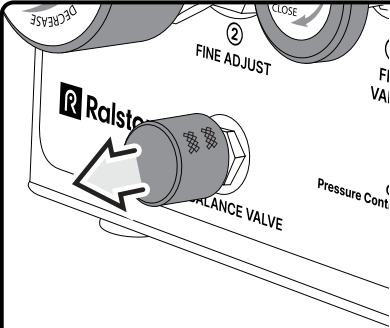


# 4



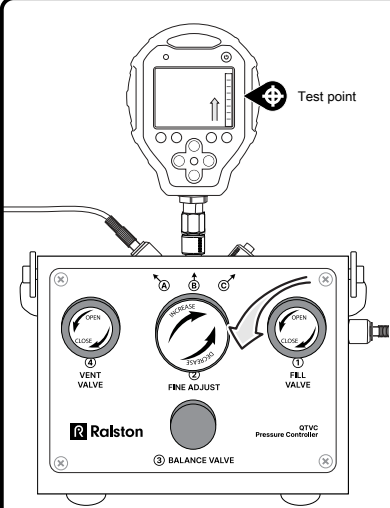
# To Continue Moving Up-scale in Pressure

1



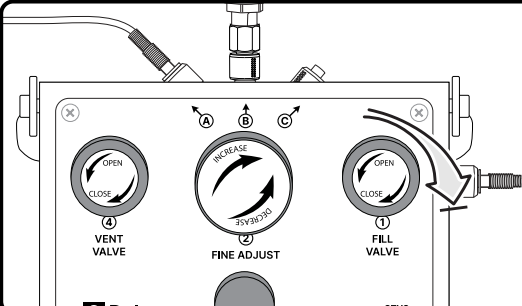
Pull Balance Valve out to open.

2



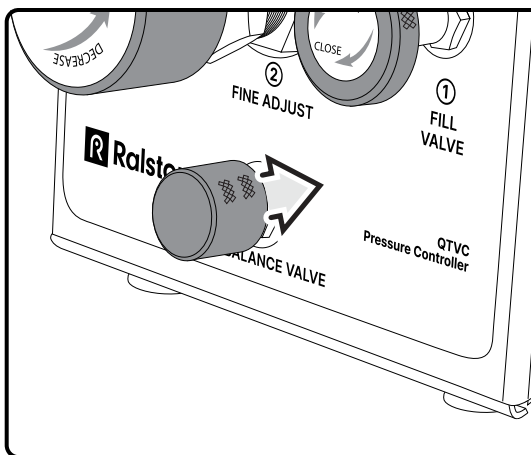
Slowly open Fill Valve to just below next test point.

3



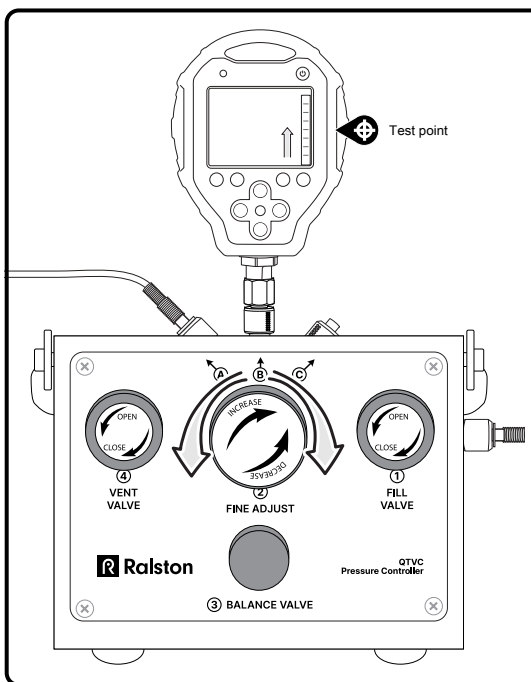
Close Fill Valve.

# 4



Push Balance Valve in to close.

# 5



Fine-adjust to exact test point.

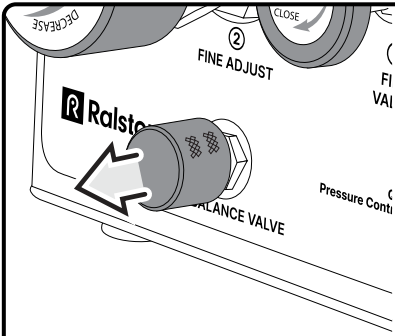


Repeat for each test point up-scale until range is complete.



# To Move Down-scale in Pressure

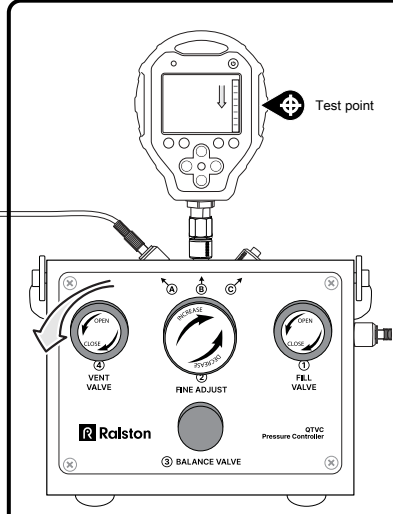
1



Pull Balance Valve out to open.

Labels: DECREASE, FINE ADJUST, CLOSE, FI VAL, Pressure Controller, BALANCE VALVE, Ralston

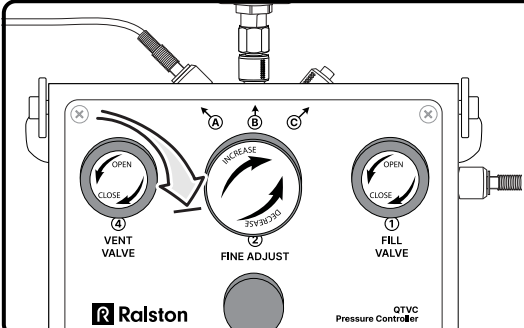
2



Slowly open Vent Valve to just above next test point.

Labels: Test point, Ralston, QTVC Pressure Controller, VENT VALVE, FINE ADJUST, FILL VALVE, BALANCE VALVE, OPEN, CLOSE, INCREASE, DECREASE

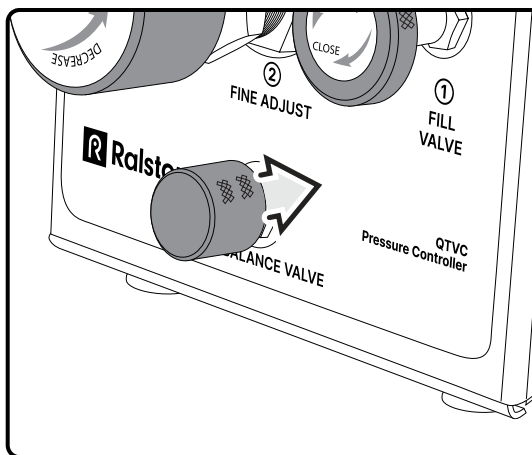
3



Close Vent Valve.

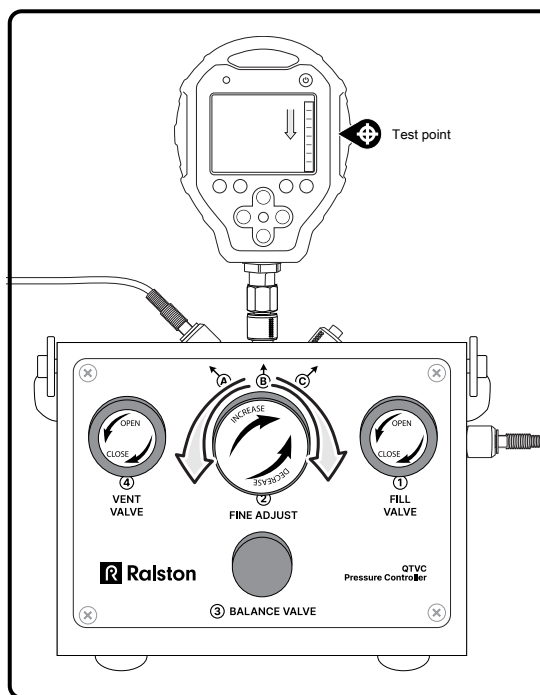
Labels: Ralston, QTVC Pressure Controller, VENT VALVE, FINE ADJUST, FILL VALVE, BALANCE VALVE, OPEN, CLOSE, INCREASE, DECREASE

# 4



Push Balance Valve in to close.

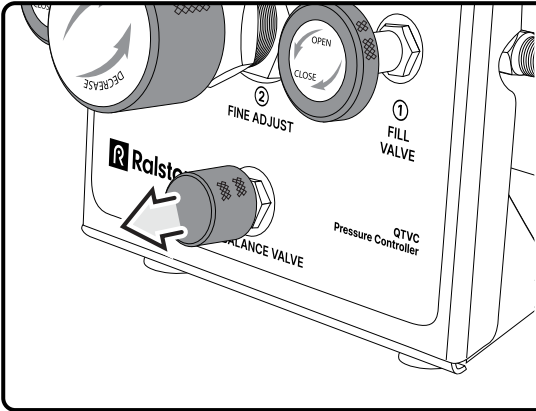
# 5



Fine-adjust to exact test point.

# Venting System

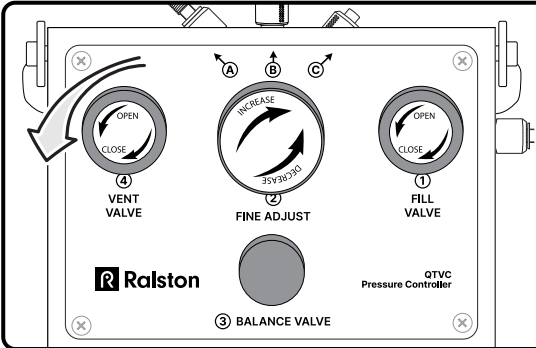
1



A close-up photograph of the Ralston QTVC Pressure Controller. The device is white with black text and controls. A large grey arrow points to the 'BALANCE VALVE' knob, which is being pulled outwards. Other controls visible include a 'FINE ADJUST' knob with 'OPEN' and 'CLOSE' markings, and a 'FILL VALVE' knob with '1' and 'FILL VALVE' markings. The Ralston logo and 'QTVC Pressure Controller' text are also visible.

Pull Balance Valve out.

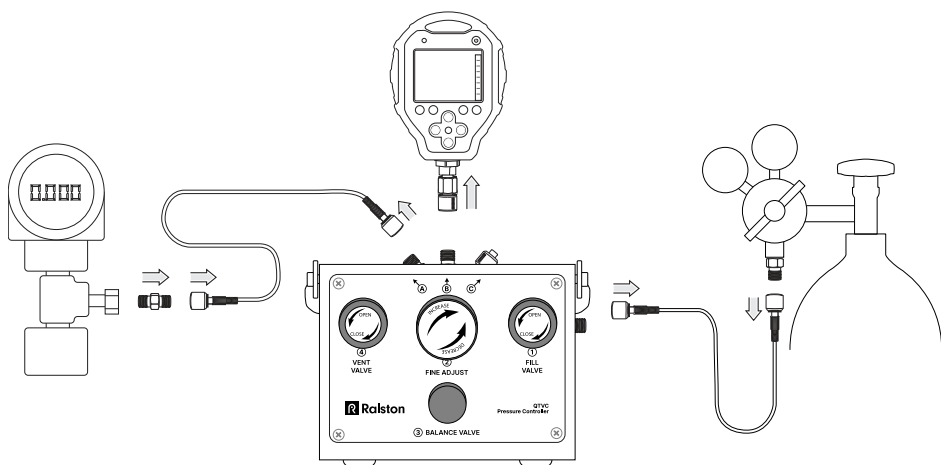
2



A photograph of the front panel of the Ralston QTVC Pressure Controller. The panel is white with black text and controls. A large grey arrow points to the 'VENT VALVE' knob, which is being turned counter-clockwise towards the 'OPEN' position. Other controls include a 'FINE ADJUST' knob with 'INCREASE' and 'DECREASE' markings, a 'FILL VALVE' knob with '1' and 'FILL VALVE' markings, and a 'BALANCE VALVE' knob with '3' and 'BALANCE VALVE' markings. The Ralston logo and 'QTVC Pressure Controller' text are also visible.

Open the Vent Valve.

## Storage and Transport



Disconnect hoses and pressure reference, and store everything.

## 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 balance valve O-rings with silicone lubricant.

# Troubleshooting

## **There is a drop in system pressure when the Pressure Controller has been pressurized and the Fill Valve is closed**

If there is a drop in system pressure when the Pressure Controller 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 Pressure Controller 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 Balance and Fill Valves.
5. Apply pressure to unit.
6. Close Fill Valve.
7. Spray soapy water or leak detection fluid where leaks are suspected or immerse the Pressure Controller in water. Be careful not to immerse the pressure gauge or calibrator.
8. Observe where the 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 O-ring, and backup ring if applicable.
11. Replace the O-ring, and backup ring if applicable.
12. Reassemble.

## **Fine Adjust Valve is difficult to operate**

If the Fine Adjust Valve is difficult to operate over years of service, then the inside walls of the piston need grease.

1. Remove the Fine Adjust Valve.
2. Apply a thin coat of graphite grease, such as Dow Corning® Moly-kote G-n Metal Assembly Paste (or equivalent) to the inside walls of the piston.
3. Reassemble.

## **The Pressure Controller does not adjust pressure**

If the Pressure Controller does not adjust pressure, then the O-rings in the Balance Valve and/or Fine Adjust Valve need to be cleaned and lubricated.

1. Remove the Balance Valve assembly from the front of the panel.
2. Clean and lubricate the O-ring.
3. Replace the O-ring.
4. Reassemble.
5. If the Pressure Controller still does not adjust pressure, then remove the Fine Adjust Piston.
6. Clean and lubricate the O-ring and backup ring.
7. Reassemble.

## **The Balance Valve gets stuck in the closed position and cannot be opened**

If the Balance Valve gets stuck in the closed position and cannot be opened, then there is gas trapped in the top of the fine adjust piston, because the Pressure Controller was vented with the Balance Valve in the closed position.

1. Open the Vent Valve 4-5 turns until you hear gas escaping from the top of the fine adjust piston. It will take several turns as there is a secondary seal in the Vent Valve that must be opened.

**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](http://ralstoninst.com/support)**

Email: **[support@ralstoninst.com](mailto:support@ralstoninst.com)**

Parts and Service: **[ralstoninst.com/qtvv](http://ralstoninst.com/qtvv)**

# Ralston QTVC Pressure Controller

## Operation Manual

For all models of the Ralston QTVC Pressure Controller



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Support: [ralstoninst.com/support](http://ralstoninst.com/support) • Parts and Service: [ralstoninst.com/qtvc](http://ralstoninst.com/qtvc)

Email: [support@ralstoninst.com](mailto:support@ralstoninst.com)