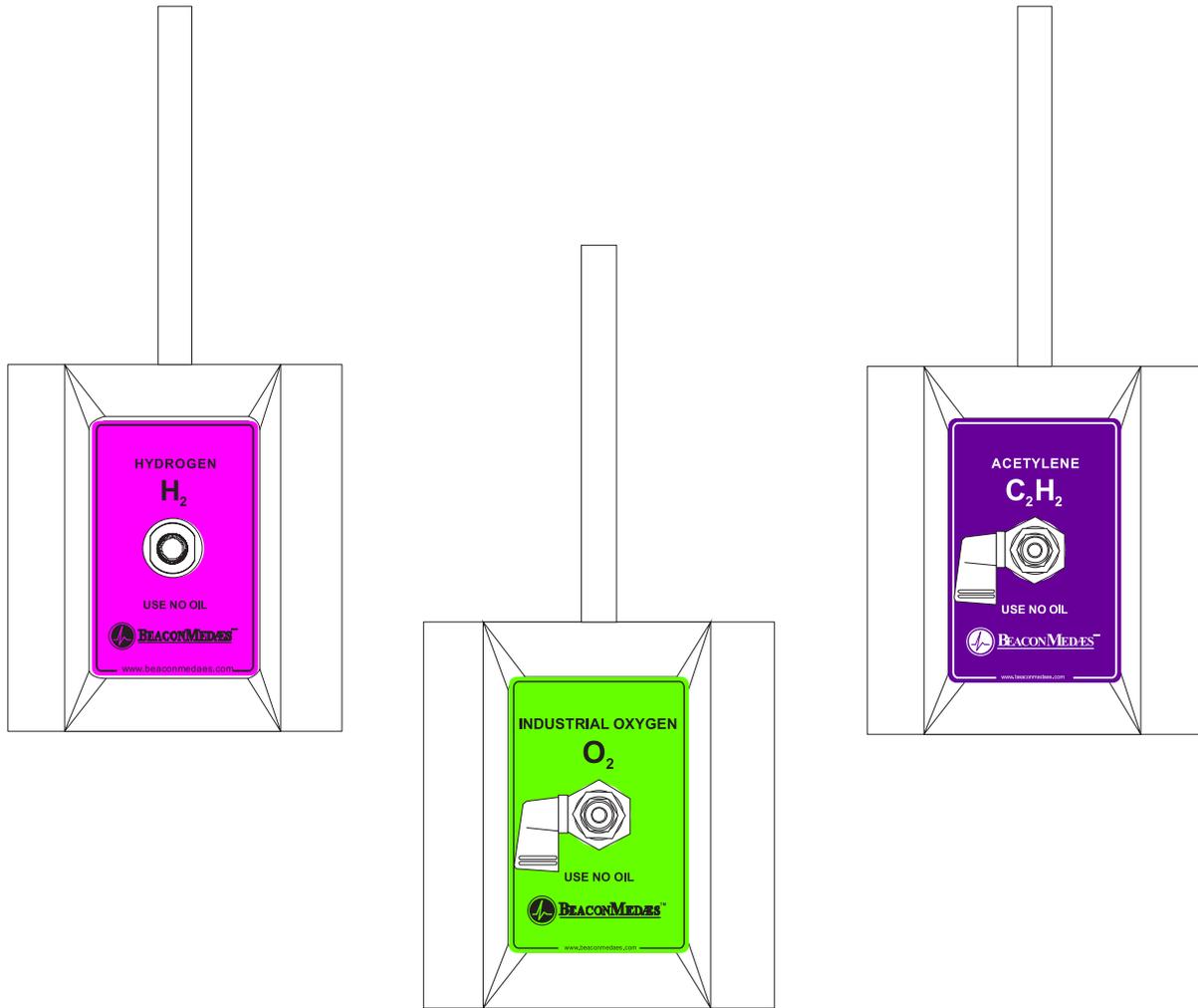


Installation, Operation and Maintenance Instructions



Wall Outlets for High Purity Gases

Part number 2205 6105 08

Revision 00

August 18, 2016



BEACONMEDAES[®]



Wall Outlets

Wall Outlets for high purity gases.

This unit is purchased from: _____

Date purchased: _____

Model number: _____

Serial number: _____

Option(s) included: _____

Any information, service or spare parts requests should include the machine serial number and be directed to:

BeaconMedæS
1800 Overview Drive
Rock Hill, SC 29730

Telephone: (888) 463-3427

Fax: (803) 817-5750

BeaconMedæS reserves the right to make changes and improvements to update products sold previously without notice or obligation.

Part number 2205 6105 08

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Wall Outlets for High Purity Gases

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Wall Outlets for High Purity Gases

Safety Precautions

Protect yourself and others. Read and understand the following instructions before attempting to use this equipment. Failure to understand and follow these instructions could result in serious personal injury and/or damage to equipment. Because of the many potential hazards associated with gases, read the Material Safety Data Sheet for each gas you will be using.

- Know and understand the physical and chemical properties of the gas being used.
- Observe general precautions for the use of gases.
- Observe safety precautions for the gas being used.
- Read and follow precautions on cylinder labels.
- Never use this equipment with gases not compatible with the materials of construction. The use of gases not compatible with the materials of construction may cause damage to equipment or injury to personnel.
- Many gases can cause asphyxiation by displacing oxygen in the atmosphere. Make certain the area where this equipment is installed is well ventilated. Provide a device to warn personnel of oxygen depletion in the work area.
- Use this equipment only in well ventilated areas. Vent gases to the outside atmosphere, and in an area away from personnel. Be sure that venting and disposal methods are in accordance with Federal, State, Provincial and local requirements. Locate and construct vent lines to prevent condensation or gas accumulation. Be sure the vent outlet cannot be obstructed by rain, snow, ice, insects, birds, etc. Do not inter-connect vent lines; if more than one vent is needed, use separate lines.
- Relief devices should be installed and properly vented in all gas handling systems to protect against equipment failure and over-pressurization.
- Never connect this equipment to a supply source having a pressure greater than the maximum rated pressure. Refer to the Product Specifications for maximum inlet pressure.

IMPORTANT FOR OXYGEN OUTLETS

Every component in contact with pure oxygen must be cleaned for oxygen service. A system is considered to be clean for oxygen service when internal organic, inorganic, and particulate matters have been extensively removed. Removal of contaminants such as greases, oils, thread lubricants, dirt, water, filings, scale, weld spatter, paints, or other foreign material is essential.

IMPORTANT FOR ACETYLENE OUTLETS

Acetylene can explode with extreme violence if the pressure is above 15 PSIG.

WARNING - COPPER ACETYLIDE

DO NOT USE COPPER PIPES IN ACETYLENE SERVICE.

Copper acetylide can form inside pipes made of copper or an alloy with high copper content. When dry, copper acetylide is a heat and shock sensitive high explosive.

FASCIA AND LABELS - COLORS, WORDING AND LAYOUT

BeaconMedæs has chosen the color coding as published by SEFA. The SEFA color coding is different from the color coding normally used in the medical industry for medical wall outlets. The SEFA color coding is extensively used in laboratories for all kinds of equipment including turrets and faucets.

ABOUT SEFA

The Scientific Equipment and Furniture Association is a voluntary international trade association representing members of the laboratory furniture, casework, fume hood and related equipment industry. The Association was founded to promote the industry with improved quality, safety and timely completion of laboratory facilities in accordance with customer requirements. SEFA uses its best effort to promote Recommended Practices for the benefit of the public in light of available information and accepted industry practices.

Wall Outlets for High Purity Gases

Introduction

These instructions are intended for use by experienced operators only. BeaconMedæs wall outlets are designed specifically for high purity gases. The outlets are cleaned, tested and prepared for the indicated gas service and are built following National Fire Protection Association and Compressed Gas Association guidelines.

Disclaimer

BeaconMedæs shall not be liable for errors contained herein or incidental or consequential damages in connection with providing this manual or the use of material in this manual.

Warning

Our equipment is primarily intended for use in compressed gas systems. BeaconMedæs products are designed for use by persons technically trained in the proper use and safe handling of gas delivery systems. Due to the high pressure and hazardous gases employed in these processes, misapplication could result in injury or death. BeaconMedæs expressly warns against the sale to, or use of our products by, anyone other than professionally trained personnel. Do not use this equipment where pressures and temperatures can exceed those listed under Section 1.3.

Through misuse, age, or malfunction, components used with inert, combustible, corrosive, toxic, or oxidizing gases can fail in various modes. The system designer is warned to consider the failure modes of all component parts used with the above mentioned gases and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure modes. Adequate safeguards can be, but are not limited to:

- Pressure relief devices adequately piped to a safe location;
- Gas detection devices connected to a proper warning audible and visual alarm;
- Automatic shutoff valves and/or manual shutoff valves with an emergency stop push button;
- Self-contained breathing apparatus;
- Pipeline purge system with inert gas;
- Fire extinguishers and/or automatic sprinklers.

System designers must provide a warning to end users in the systems instructional manual if protection against a failure mode cannot be adequately provided for.

It should be recognized that warnings are valid for any equipment, regardless of manufacturer, and are not restricted to equipment manufactured by BeaconMedæs. BeaconMedæs's reputation for equipment quality performance is well established. We feel we have the additional obligation to provide information or warnings to customers to assist them in applying our equipment in a reasonable and safe manner.

Manufacturer Statement

The information contained in this instruction manual has been compiled by BeaconMedæs, from what it believes are authoritative sources, and is offered solely as a convenience to its customers. While BeaconMedæs believes that this information is accurate and factual as of the date printed, the information, including design specifications, is subject to change without prior notice.

Design Changes

In line with our commitment to continuous improvement, BeaconMedæs reserves the right to make design modifications or discontinue manufacture of any equipment without prior notice.

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Wall Outlets for High Purity Gases

Abbreviations

C	Common	OSHA	Occupational Safety & Health Administration
CGA	Compressed Gas Association	PSIG	Pounds per Square Inch Gauge
FT-LBS	Foot-Pounds	SCFH	Standard Cubic Feet per Hour
IN-LBS	Inch-Pounds	VAC	Voltage, Alternating Current
N/C	Normally Closed	VDC	Voltage, Direct Current
N/O	Normally Open	PCB	Printed Circuit Board
NPT	National Pipe Taper		

Wall Outlets for High Purity Gases

1.0 General Information

1.1 Component Description

1.1.1 WOA Series

This analytical wall outlet consists of a pipe extension, an outlet block, a plaster guard, two (2) lock nuts and a quick connect assembly.

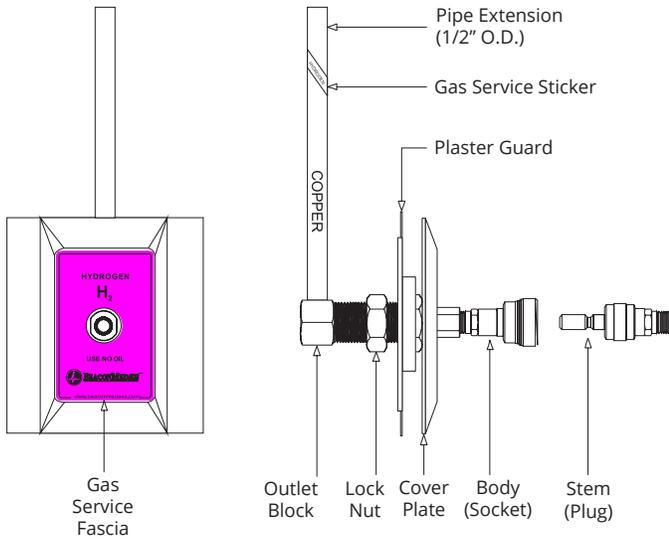


Figure 1.1 - WOA Series Component Description

Stem – The stem (plug) is equipped with an integral check valve that closes when uncoupled (DESO: Double-End Shut-Off)

Body – The body (socket) is equipped with an integral check valve that closes when uncoupled.

Spillage – Spillage is the amount of system gas that escapes when a quick-connect is uncoupled.

Air Inclusion – Air inclusion is the amount of air trapped between the body and stem that enters the system when a quick-connect is coupled.

Quick Connect Size	Spillage (cm ³)	Air Inclusion (cm ³)
1/4"	0.3	0.3
3/8"	1.0	1.0

1.1.2 WOI-O2 Series

This industrial wall outlet for oxygen service consists of a copper pipe extension, an outlet block, a plaster guard, two (2) lock nuts, a ball valve and a quick connect assembly.

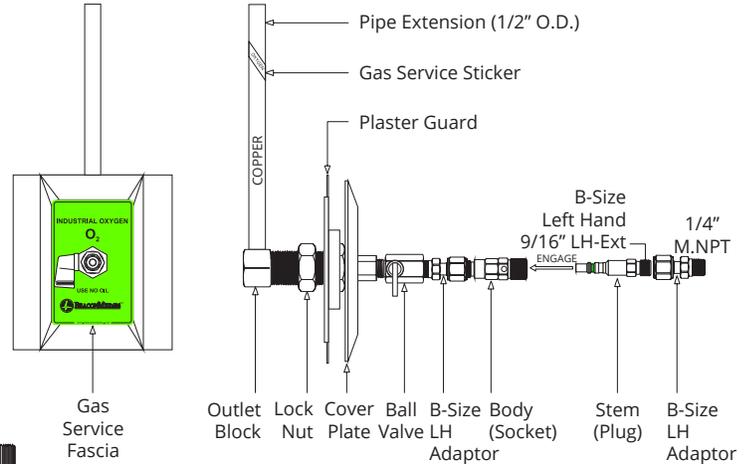


Figure 1.2 - WOI-O2 Component Description

WARNING

The socket quick connect shall always be on the gas supply side. DO NOT remove the isolation ball valve.

Plug – The plug (stem) is specific for oxygen service (green tip).

Socket – This socket-plug combination is a single shut-off style, meaning there is a check valve in the socket.

Construction – Brass construction has been cycle tested over 10,000 operations.

Not Interchangeable – Noninterchangeable oxygen and acetylene gas quick connects prevent accidental gas mixing.

Check Valve – Instant closure on reverse flow check valves with total shutoff at only 10 oz. of back pressure.

Gas-Tight – Spring-loaded locking mechanism responds to fingertip action and achieves a gas-tight connection. Double seal socket connection on second seal provides added safety protection.

Features and Connections – To make a connection, you'll need a plug and a socket of the same size. DO NOT interchange plugs or sockets of different sizes or brands. These quick connect fittings are made out of brass, which offers good corrosion resistance and low wear resistance.

Ball Valve – The ball valve should be used anytime the quick connect fittings are uncoupled for an extended period of time. Better yet, each time the wall outlet is not in service. The ball valve shall be closed to replace the socket fitting should it become defective.

Wall Outlets for High Purity Gases

1.1.3 WOI-C2H2 Series

This industrial wall outlet for acetylene service consists of a stainless steel pipe extension, an outlet block, a plaster guard, two (2) lock nuts, a ball valve and a quick connect assembly.

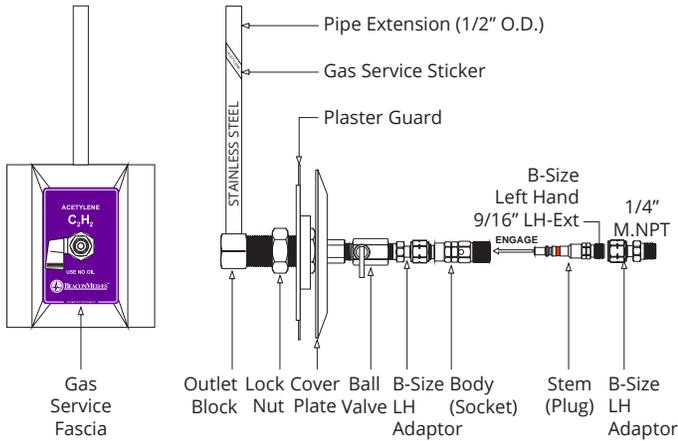


Figure 1.3 - WOI-C2H2 Component Description

Plug – The plug (stem) is specific for acetylene service (red tip).

Socket – This socket-plug combination is a single shut-off style, meaning there is a check valve in the socket.

Construction – Brass construction has been cycle tested over 10,000 operations.

Not Interchangeable – Noninterchangeable oxygen and acetylene gas quick connects prevent accidental gas mixing.

Check Valve – Instant closure on reverse flow check valves with total shutoff at only 10 oz. of back pressure.

Gas-Tight – Spring-loaded locking mechanism responds to fingertip action and achieves a gas-tight connection. Double seal socket connection on second seal provides added safety protection.

Features and Connections – To make a connection, you'll need a plug and a socket of the same size. DO NOT interchange plugs or sockets of different sizes or brands. These quick connect fittings are made out of brass, which offers good corrosion resistance and low wear resistance.

Ball Valve – The ball valve should be used anytime the quick connect fittings are uncoupled for an extended period of time. Better yet, each time the wall outlet is not in service. The ball valve shall be closed to replace the socket fitting should it become defective.

NOTE

The acetylene quick connect is not a flashback arrestor.

1.1.4 WOI-Compressed Air Series

This industrial wall outlet for compressed air service consists of a copper or stainless steel pipe extension, an outlet block, a plaster guard, two (2) lock nuts, a ball valve and a quick connect assembly.

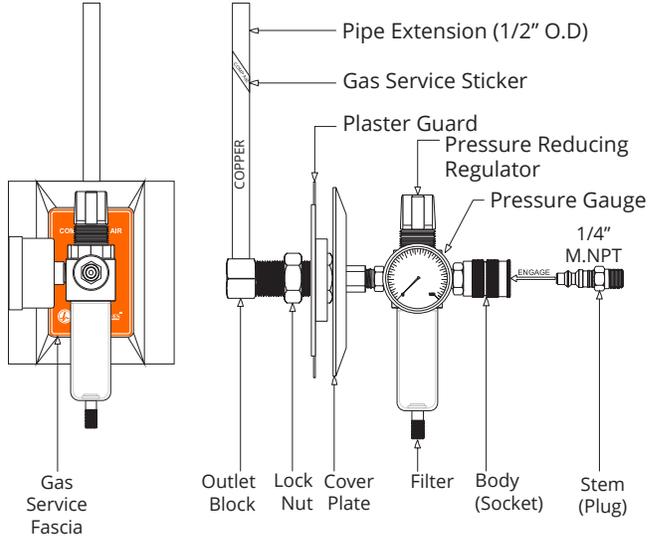


Figure 1.4 - WOI-Compressed Air Component Description

WARNING

The socket quick connect shall always be on the gas supply side. DO NOT remove the isolation ball valve.

Plug & Socket – Also known as industrial exchange couplings, these quick-connects have a brass socket and a zinc-plated steel sleeve and plug. Use with air. Quick connects are single shut-off style, so there is a check valve in the socket but not in the plug. Both plug and socket meet the dimensional requirements of Fed. Spec. A-A-59439 (formerly MIL-C-4109); the plug also meet ISO 6150/B and ANSI T3.20.14. Not rated for vacuum.

Standards – Both plug and socket quick connect adaptors meet CSA 6.9-M98 and ANSI Z21.41. They are not rated for vacuum.

Features and Connections – To make a connection, you'll need a plug and a socket of the same size. DO NOT interchange plugs or sockets of different sizes or brands. These quick connect fittings are made out of brass, which offers good corrosion resistance and low wear resistance.

Ball Valve – The ball valve should be used anytime the quick connect fittings are uncoupled for an extended period of time. Better yet, each time the wall outlet is not in service. The ball valve shall be closed to replace the socket fitting should it become defective.

Wall Outlets for High Purity Gases

Regulator – The delivery pressure range of the pressure reducing regulator is 1-125 PSIG. The pressure reducing regulator is a relief type, which exhaust excess downstream pressure when your system is blocked. The regulator accuracy is +/- 4 PSI.

Filter – The filter removes particles down to 5 microns. In addition to seeing what’s being filtered, the clear polyurethane bowl offers increased chemical resistance for use in systems with synthetic compressor oils and cleaning liquids.

Pressure Indicator – The pressure indicator range is 0-160 PSI.

1.1.5 WOI-LPG Series

This industrial wall outlet for liquefied petroleum gas service consists of a copper pipe extension, an outlet block, a plaster guard, two (2) lock nuts, a ball valve and a quick connect assembly.

Plug – The plug has a heat-sensitive fuse that will stop gas flow in the event of a fire.

Socket (Sleeve-Lock style) – This socket-plug combination is a single shut-off style. That means there is a check valve in the socket and not the plug.

Standards – Both plug and socket quick connect adaptors meet CSA 6.9-M98 and ANSI Z21.41. They are not rated for vacuum.

Features and Connections – To make a connection, you’ll need a plug and a socket of the same size. DO NOT interchange plugs or sockets of different sizes or brands. These quick connect fittings are made out of brass, which offers good corrosion resistance and low wear resistance.

Ball Valve – The ball valve should be used anytime the quick connect fittings are uncoupled for an extended period of time. Better yet, each time the wall outlet is not in service. The ball valve shall be closed to replace the socket fitting should it become defective.

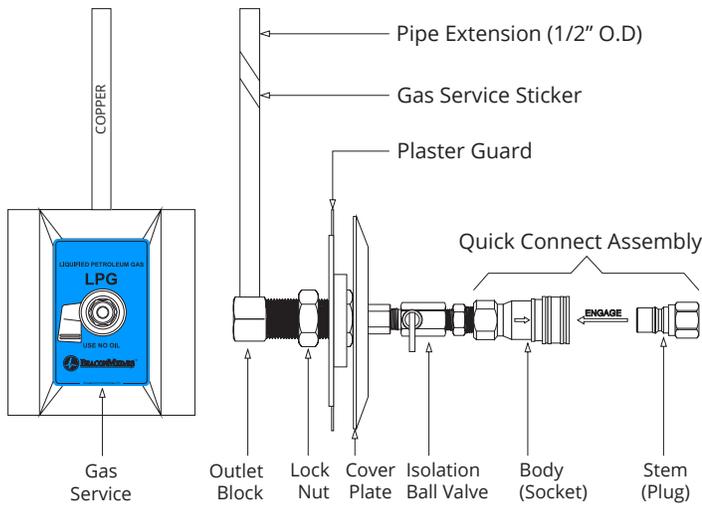


Figure 1.5 - WOI-LPG Component Description

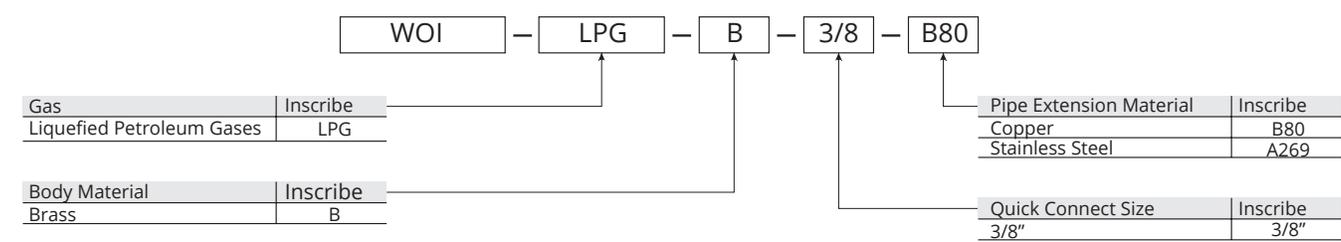
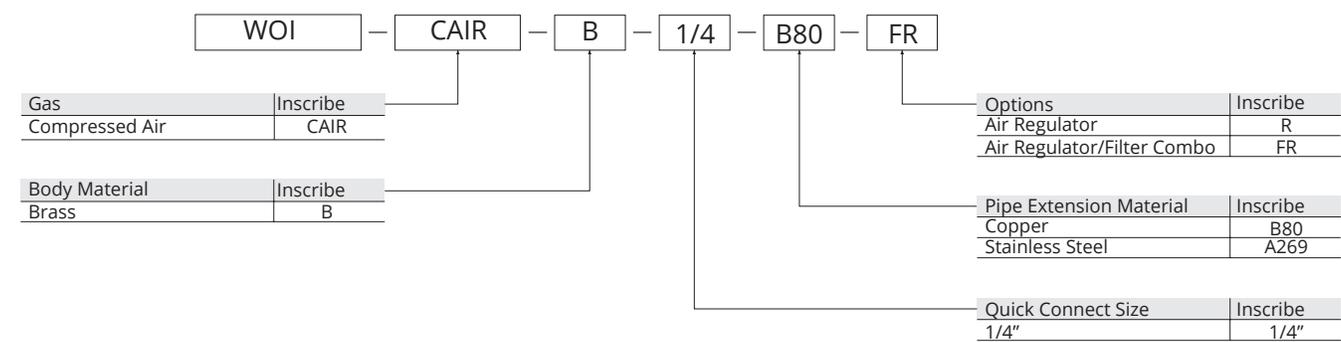
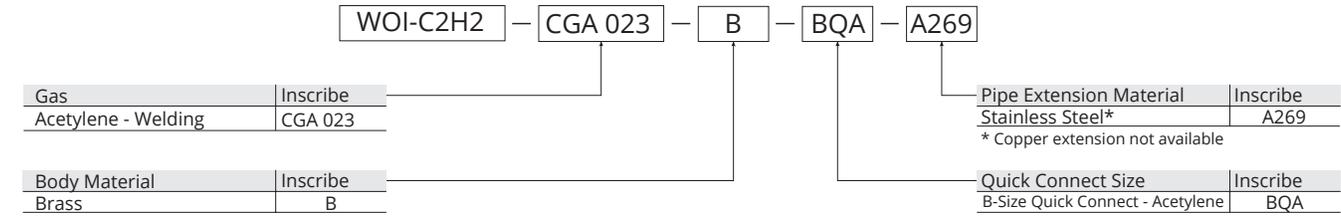
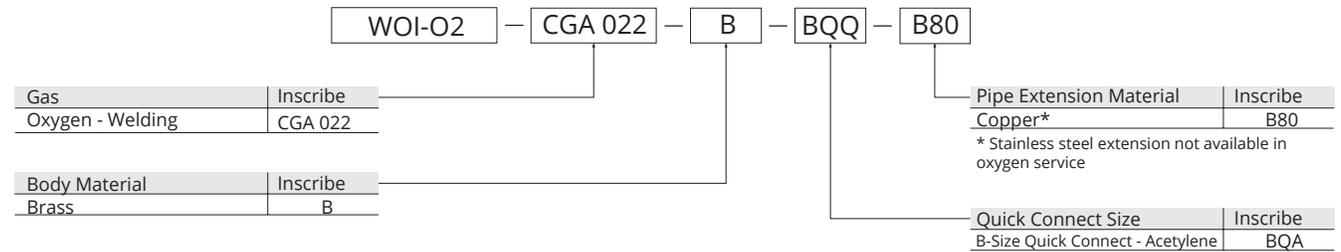
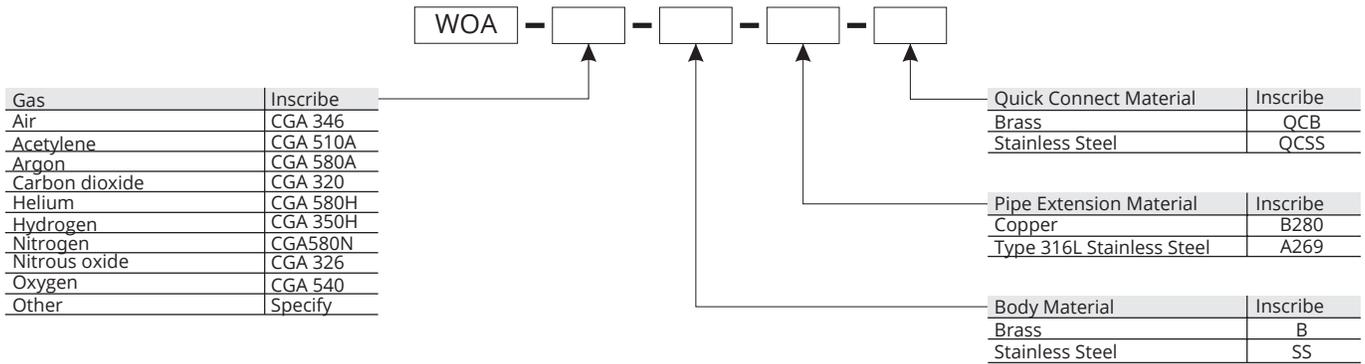
WARNING

The socket quick connect shall always be on the gas supply side. DO NOT remove the isolation ball valve.

This wall outlet is designed following the National Fuel Gas Code (NFPA 54). Installation shall be made by a qualified agency as defined in NFPA 54.

Wall Outlets for High Purity Gases

1.2 Ordering Information



Wall Outlets for High Purity Gases

1.3 Specifications

1.3.1 Outlets

WOA Series

	1/4" Quick Connects	3/8" Quick Connects
Service Fluids	Inert Gases and Oxygen	Flammable Gases, Carbon Dioxide & Air
Outlet Connection	1/4" M.NPT	1/4" M.NPT
Cleaning	Factory cleaned for oxygen service	Factory cleaned for oxygen service
Pipe Outside Diameter	1/2"	1/2"
Flow	Cv = 0.2	Cv = 0.5
Spillage⁽¹⁾	0.3 cm ³	1.0 cm ³
Air Inclusion⁽²⁾	0.3 cm ³	1.0 cm ³
Maximum Working Pressure	250 psig	250 psig

⁽¹⁾ Spillage is the amount of system gas that escapes when a quick connect is uncoupled.

⁽²⁾ Air inclusion is the amount of air trapped between the body and stem that enters the system when a quick connect is coupled.

WOI-CAir Series

Service Fluids	Compressed Air
Outlet Connection	1/4" M.NPT
Cleaning	Free of debris, lint and particle
Pipe Outside Diameter	1/2"
Flow	60 scfm at 100 psi
Filter Performance	5 microns
Maximum Working Temperature	150°F
Maximum Working Pressure	250 psig
Pressure Gauge Range	0-160 psig
Regulator Delivery Pressure Range	1-125 psig

Wall Outlets for High Purity Gases

1.3.2 Fascia (Label)

Gas Service	Background Color	Letters & Trim Color	Possible Symbol
Air	Orange	White	Air
Acetylene	Violet	White	C ₂ H ₂
Argon	Violet	White	Ar
Carbon Dioxide	Pink	White	CO ₂
Helium	Black	White	He
Hydrogen	Pink	Black	H ₂
Nitrogen	Brown or Gray	White	N ₂
Oxygen	Light Green	Black	O ₂
All Other Gases	Light Blue	White or Black	Chemical Symbol of Gas

1.3.3 Wall Outlet Setup (WOA Series)

The wall outlets setup varies with gas service. The type of gas will define the outlet size, style and fascia (label) color.

Outlet Style		
Gas Service	Wall Outlet Side	Hose Side
Inerts or Inert Gas Mixtures for Labs Such as: Argon Nitrogen Helium Krypton Xenon Neon	 1/4"	 1/4"
Flammables or Flammable Gas Mixtures for Labs Such as: Hydrogen Methane (not Natural Gas) Ethylene	 3/8"	 3/8"
Oxygen or Oxygen-Based Mixtures for Labs Does Not Apply to: Medical Oxygen Industrial (Welding) Oxygen Breathing Gas Mixtures	 1/4"	 1/4"
Carbon Dioxide or Carbon Dioxide-Based Mixtures for Labs Air or Air-Based Mixtures for Labs Does Not Apply to: Medical Air Industrial (Compressed) Air Breathing Air Mixtures	 3/8"	 3/8"

Figure 1.6 – Wall Outlet Setup Options

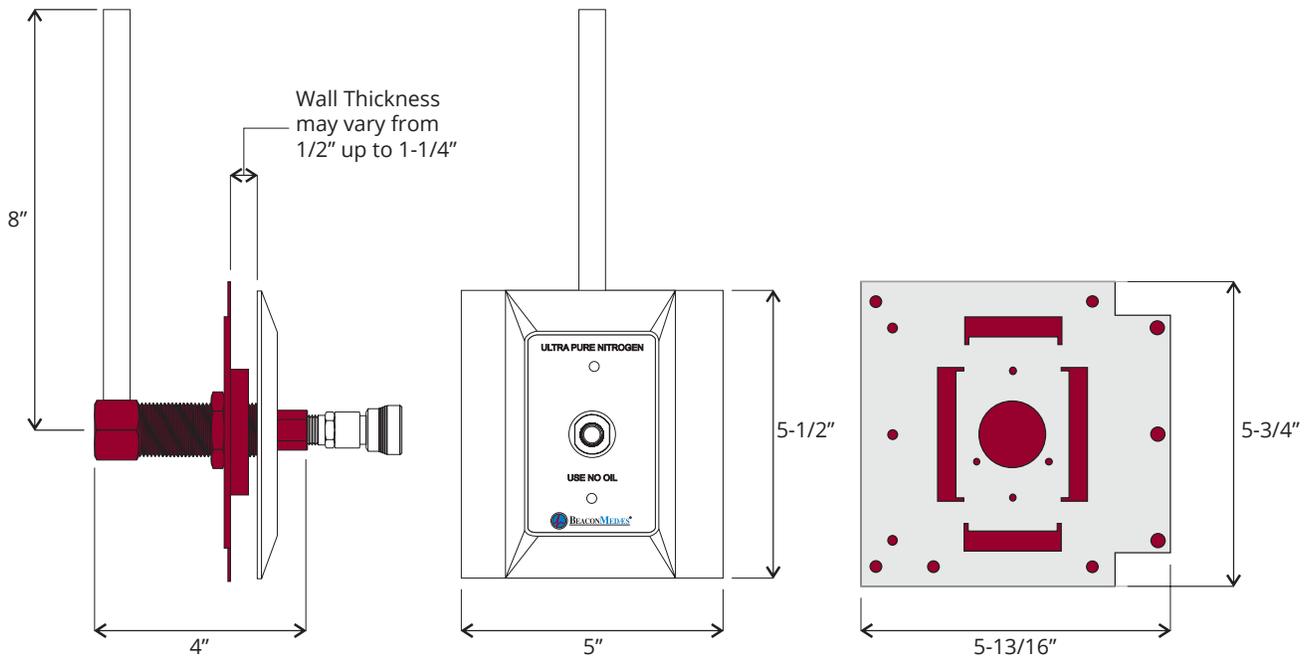
Wall Outlets for High Purity Gases

About the Quick Connects - Quick Connect couplers have color-coded plugs and sockets: fuel gas/red, oxygen/green, inert gas/blue. Quick Connects are designed so that the plug will connect only to the socket with the same gas service as the plug. For example, the oxygen plug connects only to the oxygen socket – it physically cannot be connected to the fuel gas socket or the inert gas socket. CGA connections are 022 for oxygen, 023 for fuel gas and 032 for inert gas.

NOTE

An arrow indicating gas flow direction is stamped on the body of the Quick Connect socket. When installing a Quick Connect, always position it in the correct flow direction. Gas will flow through a Quick Connect with a check valve only when it is installed in the correct direction.

1.4 Dimensions



Note: Dimensions are the same for each wall outlet series.

Figure 1.7 - Wall Outlet Dimensions

Wall Outlets for High Purity Gases

2.0 Installation

The entire wall outlet is shipped in two (2) sub assemblies: the wall assembly and the outlet assembly (see Figure 2.2-2.6). The wall assembly has to be installed before installing the outlet assembly.

2.1 Outlet Identification

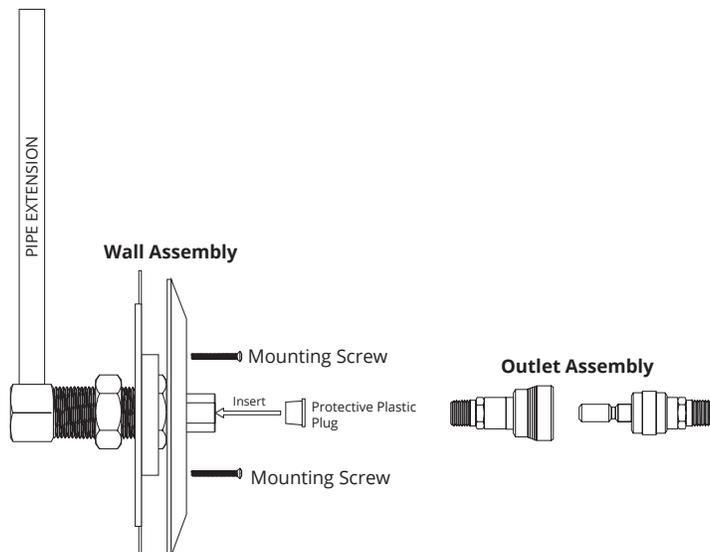


Figure 2.2 - WOA Outlet Series Identification

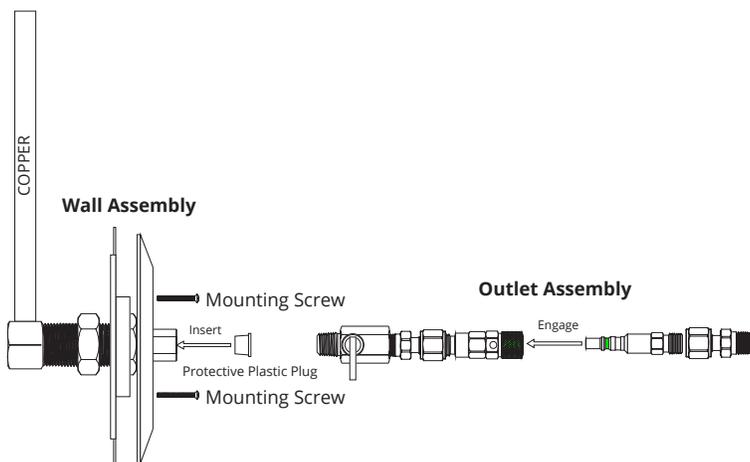


Figure 2.3 - WOI-O2 Outlet Series Identification

Wall Outlets for High Purity Gases

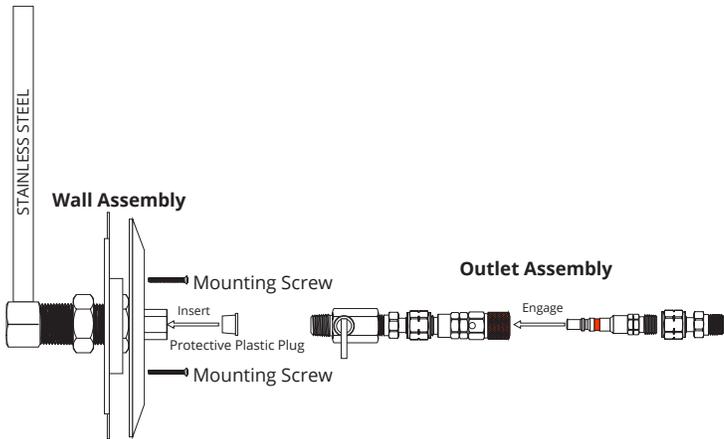


Figure 2.4 - WOI-C2H2 Outlet Series Identification

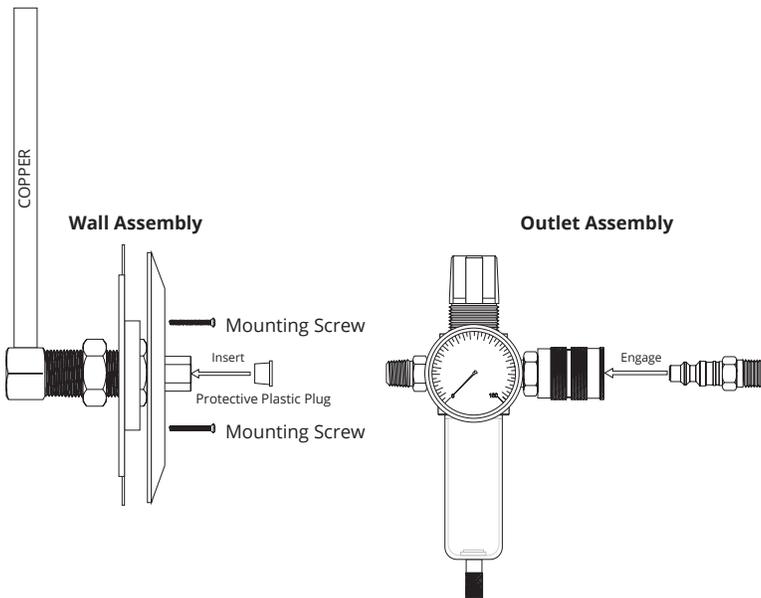


Figure 2.5 - WOI-CAir Outlet Series Identification

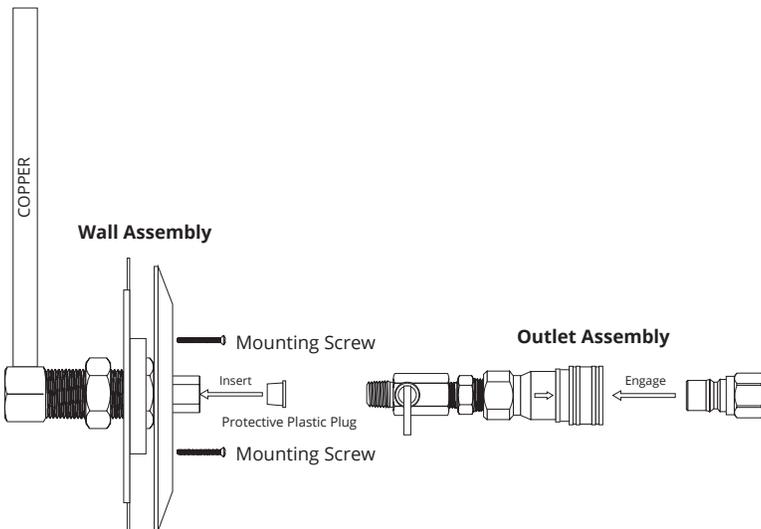


Figure 2.6 - WOI-LPG Outlet Series Identification

Wall Outlets for High Purity Gases

2.2 Installation

2.2.1 Wall Thickness Adjustment

- Make sure to select the wall assembly that corresponds to the gas service piping in the wall. The gas service of the wall assembly is labeled on the pipe extension.
- Provide rigid mounting for wall assembly appropriate for wall construction. Wall assemblies must be mounted to structural members. The strength of a sheet rock wall alone is not sufficient support. It is suggested that wall assemblies be installed with the outlet centerline approximately five feet above the finished floor or as specified by the building plans.
- The cover plate must be adjusted so that the hex part of the outlet block sticks out by 1/2" as shown on Figures 2.7 below.
- The plastic dust cap must remain in the outlet block outlet (except during silver brazing).

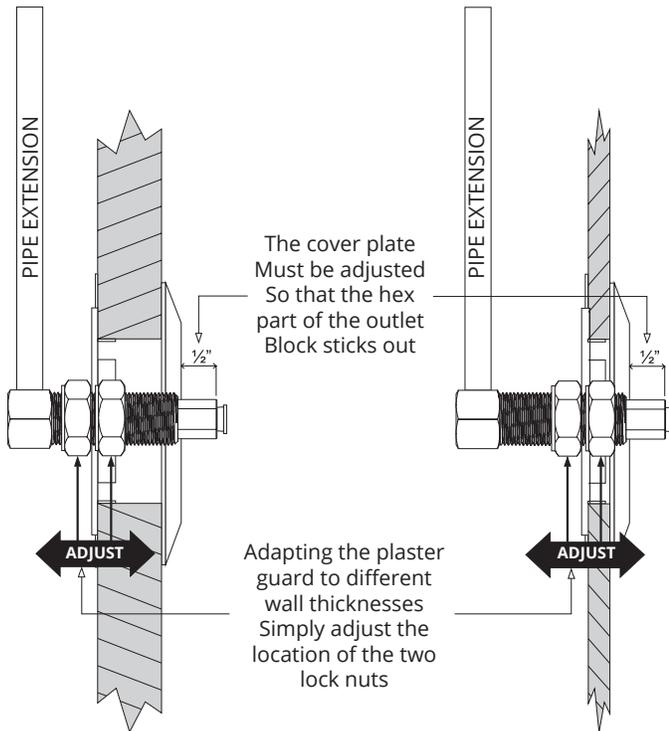


Figure 2.7 - Wall Thickness Adjustment

IMPORTANT

The two locknuts each have a lip that protrudes on one side. Make sure the lips are both pointing in the same direction toward the pipe extension (i.e. the back of the outlet).

2.2.2 Pipe Extension Orientation

- Using two (2) wrenches, slightly loosen the two lock nuts and rotate the pipe extension to the desired position.

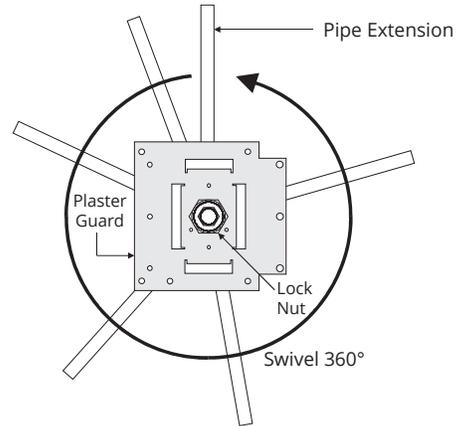
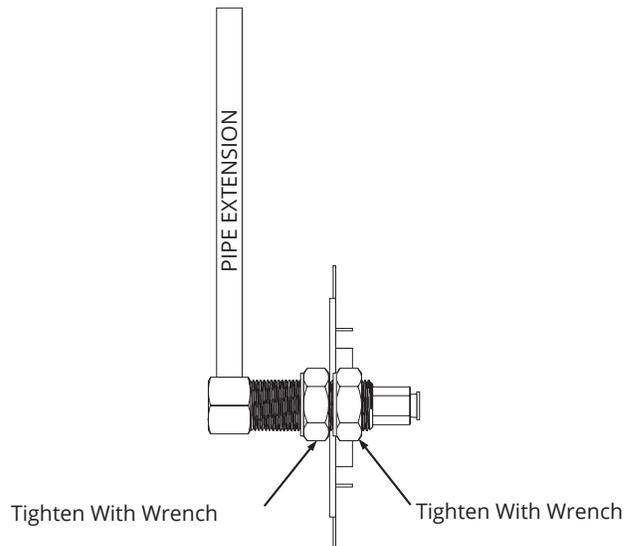


Figure 2.8 - Pipe Extension Orientation

- Once the position and orientation of the pipe extension have been determined and adjusted, tighten the two (2) locknuts as shown on Figure 2.9.
- Connect the extension tube to the piping system, making certain that piping is for the same service as labeled on the extension tube and mounting plate.



Once the position and orientation is determined and adjusted, tighten the two lock nuts together using two wrenches

Figure 2.9 - Locking the Wall Assembly in Place

- All joints must be brazed per the applicable standards (e.g., NFPA 99 or CAN/CSA Z305.1). **Do not use soft solder.**
- If the connection to the supply side is welded (stainless steel), the joint should be done using an orbital welding machine (with Argon purge) or by an experienced TIG welder.

Wall Outlets for High Purity Gases

2.2.3 Rough-In Assemblies

The outlet block, the two lock nuts and the plaster guard are known as the rough-in assembly. A maximum of three rough-in assemblies may be ganged together without horizontal bracing, provided they are anchored at each end to vertical structural members.

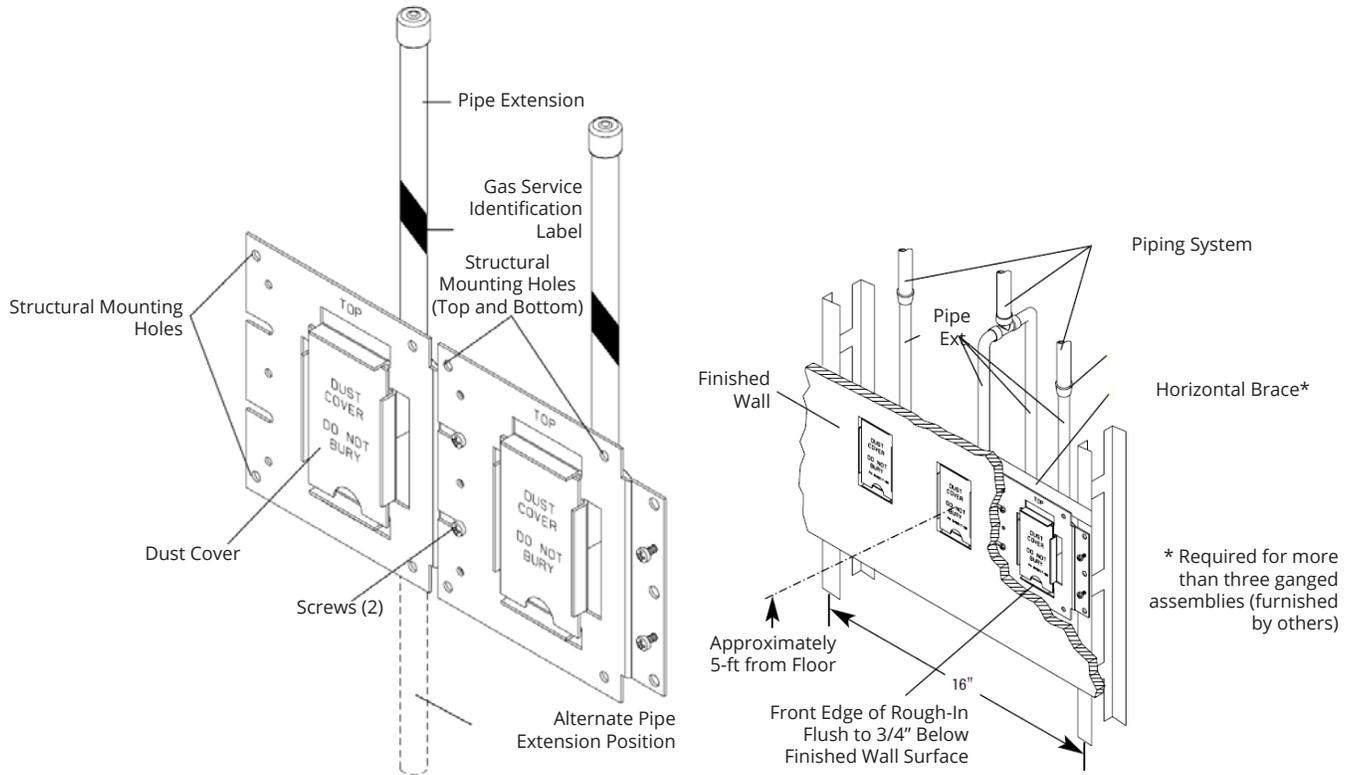


Figure 2.10 - Ganged Outlets (example: Medical Wall Outlet)

Wall Outlets for High Purity Gases

2.2.4 Pressure Testing

The pressure test shall be performed with the outlet assembly installed temporarily. The plastic plug must be removed and the outlet assembly shall be installed (see Figures 2.11-2.15). Once the pressure test has been done, remove the outlet assembly and put the plastic plug back into the outlet block. This will allow the installation of the brackets, the finished wall, the cover plate and the fascia. The outlet assembly shall be installed once the fascia has been installed. The male portion of the ball valve shall have Teflon tape before installation to the outlet block.

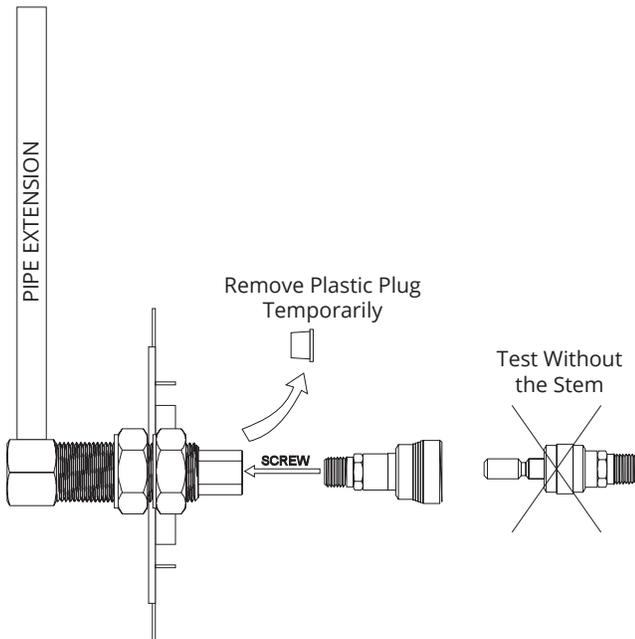


Figure 2.11 - Pressure Testing Setup (WOA)

PRESSURE RATINGS	
Pipe Extension (Copper)	600 PSI
Pipe Extension (Stainless Steel)	2625 PSI
Outlet Block	3000 PSI
Quick Connect 1/4" when Coupled	3000 PSI
Quick Connect 3/8" when Coupled	1500 PSI
WARNING	
The pressure rating both uncoupled and when coupling and uncoupling is 250 PSI. When pressure testing this wall outlet, the pressure test must be performed with the body (socket) installed (No Stem). The test pressure shall not exceed 250 PSI.	

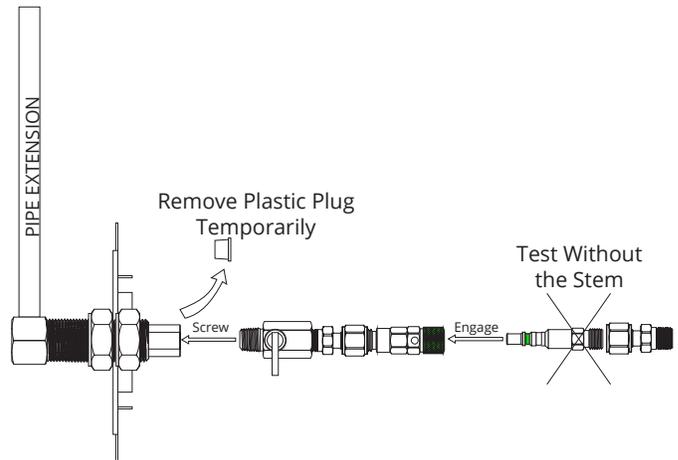


Figure 2.12 - Pressure Testing Setup (WOI-O2)

PRESSURE RATINGS	
Pipe Extension (Copper)	650 PSI
Outlet Block	3000 PSI
Ball Valve	200 PSI
Quick Connect	200 PSI
WARNING	
When pressure testing this wall outlet, the pressure test must be performed with the ball valve installed. The test pressure shall not exceed 220 PSI with the ball valve in CLOSED position only.	

Wall Outlets for High Purity Gases

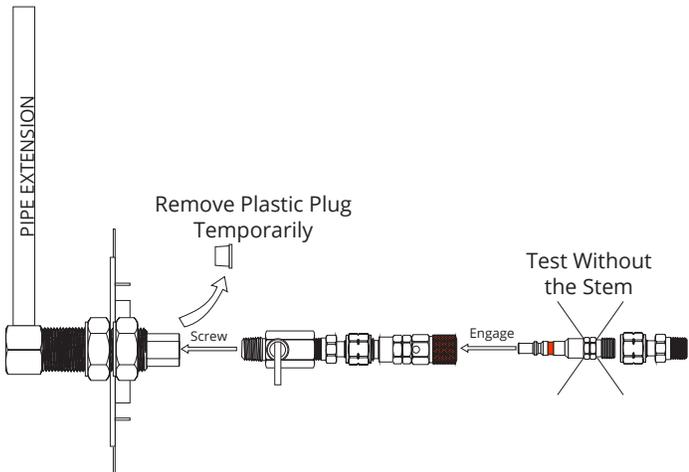


Figure 2.13 - Pressure Testing Setup (WOI-C2H2)

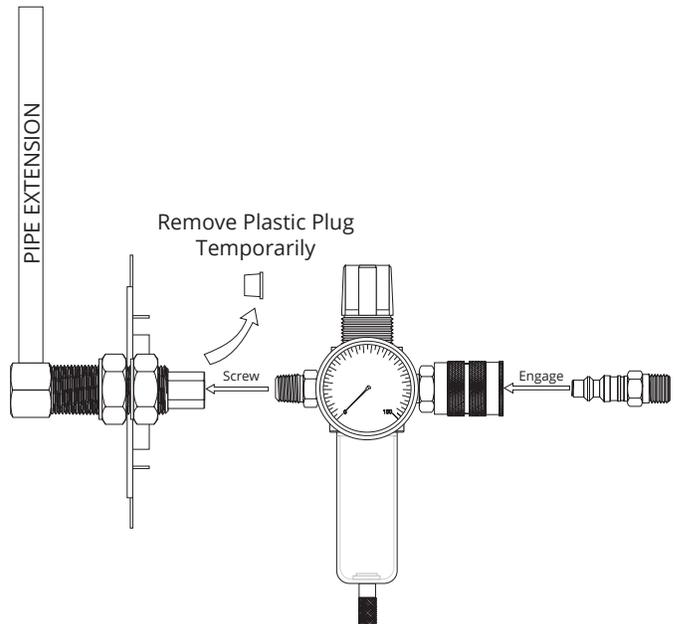


Figure 2.14 - Pressure Testing Setup (WOI-CAir)

PRESSURE RATINGS	
Pipe Extension (Stainless Steel)	2625 PSI
Outlet Block	3000 PSI
Ball Valve	200 PSI
Quick Connect	200 PSI
WARNING	
When pressure testing this wall outlet, the pressure test must be performed with the ball valve installed. The test pressure shall not exceed 220 PSI with the ball valve in CLOSED position only.	

PRESSURE RATINGS	
Pipe Extension	600 PSI
Outlet Block	3000 PSI
Ball Valve	200 PSI
Quick Connect	0.5 PSI (for UL Certification only)
WARNING	
When pressure testing this wall outlet, the pressure test must be performed with the pressure reducing regulator installed. The test pressure shall not exceed 165 PSI with the pressure reducing regulator in CLOSED position only.	

Wall Outlets for High Purity Gases

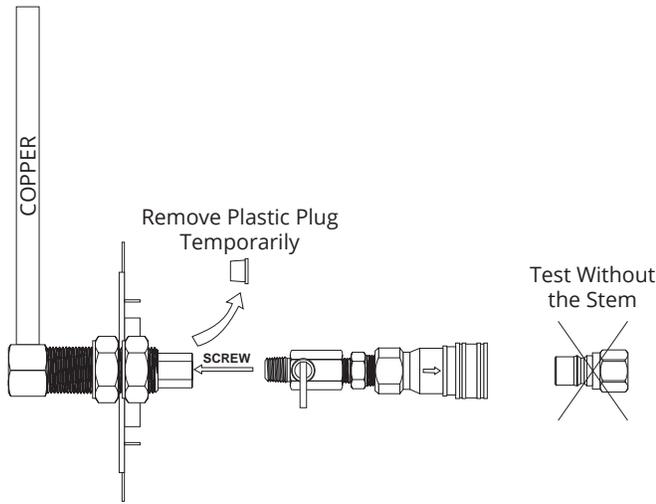


Figure 2.15 - Pressure Testing Setup (WOI-LPG)

PRESSURE RATINGS	
Pipe Extension	600 PSI
Outlet Block	3000 PSI
Ball Valve	200 PSI
Quick Connect	0.5 PSI (for UL Certification only)
WARNING	
When pressure testing this wall outlet, the pressure test must be performed with the pressure reducing regulator installed. The test pressure shall not exceed 220 PSI with the ball valve in CLOSED position only.	

2.2.5 Cover Plate and Fascia Plate

WARNING
DO NOT bury the outlet during the drywall and plaster application. Ensure that the plastic plug is in place in the outlet block outlet port.

IMPORTANT
It is of paramount importance to make sure that all protective caps and plugs are installed at all times. The plugs and caps are preventing dust, scale and other contaminants to enter this wall outlet or the pipeline system.
Particles and contaminants are the primary source of leaks and check valve malfunctions.

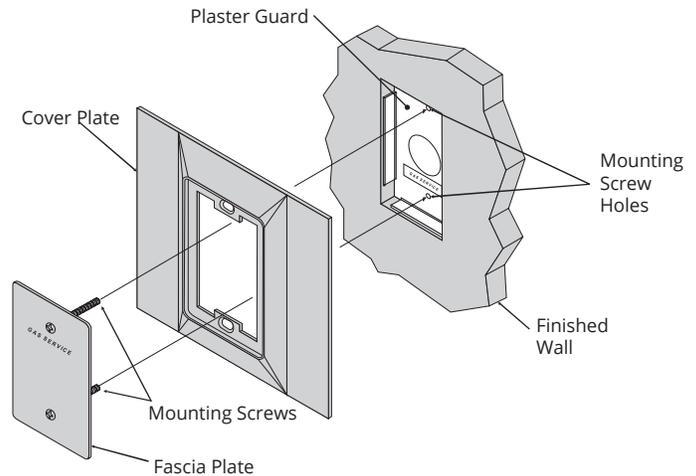


Figure 2.16 - Cover Plate, Fascia Plate Installation

- Align the fascia plate and the cover plate as shown in Figure 2.16.
- Alternately tighten the mounting screws until the cover plate and the fascia plate are held snug against the finished wall. Adjacent cover plates can be aligned by placing a straight edge along the bottom of all cover plates while tightening the screws.

Wall Outlets for High Purity Gases

2.2.6 Outlet Assembly Installation

At this point in time, the pressure test has been performed successfully and the fascia and cover plate have been installed. Figures 2.17-2.21 shows how to install the outlet assembly to the outlet block. The ball valve's final position shall be at 9 o'clock and must be left in closed position until the outlet is ready for use. The outlet assembly is tagged to identify the gas service.

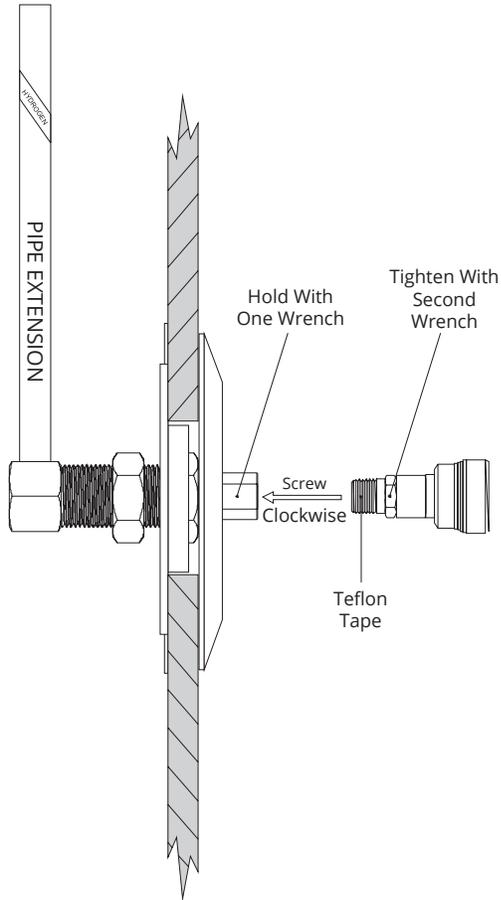


Figure 2.17 – Outlet Assembly Installation (WOA)

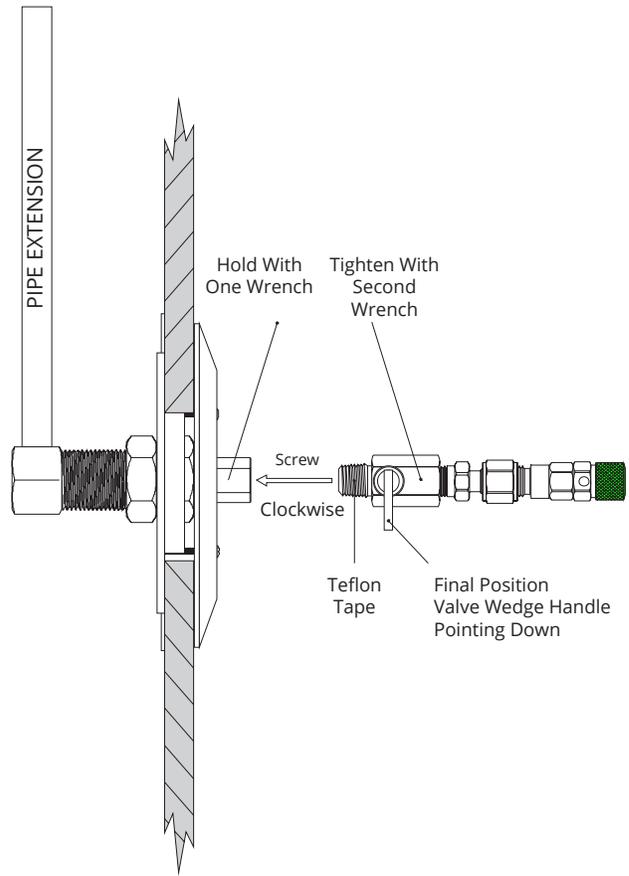


Figure 2.18 – Outlet Assembly Installation (WOI-O2)

Wall Outlets for High Purity Gases

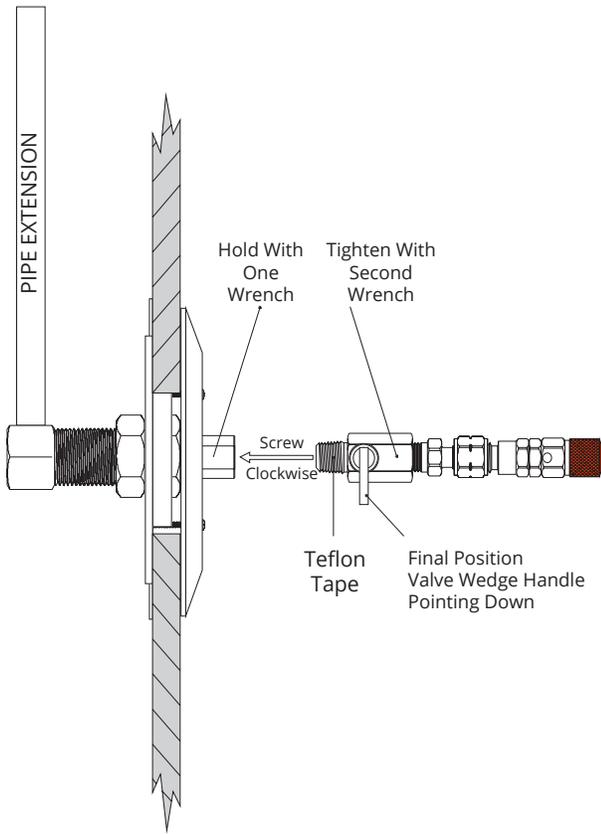


Figure 2.19 – Outlet Assembly Installation (WOI-C2H2)

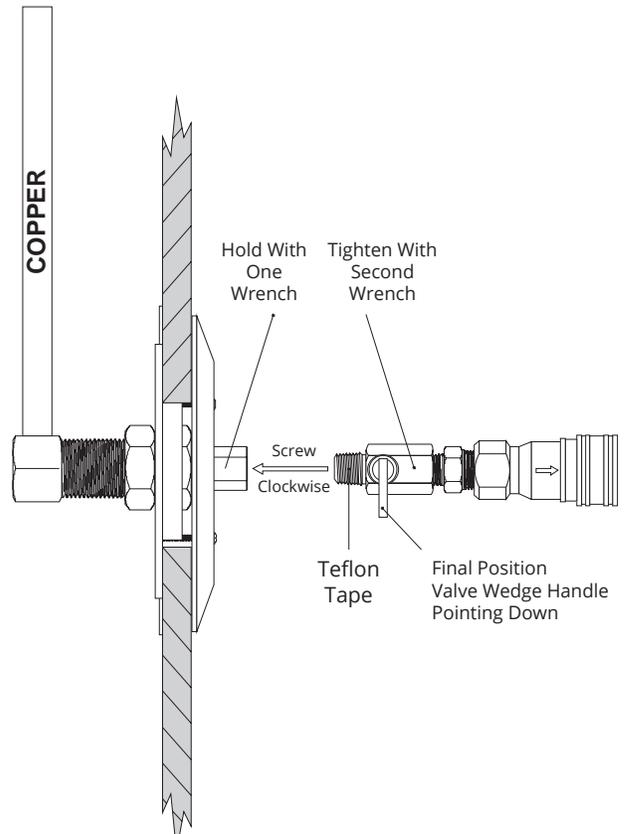


Figure 2.21 – Outlet Assembly Installation (WOI-LPG)

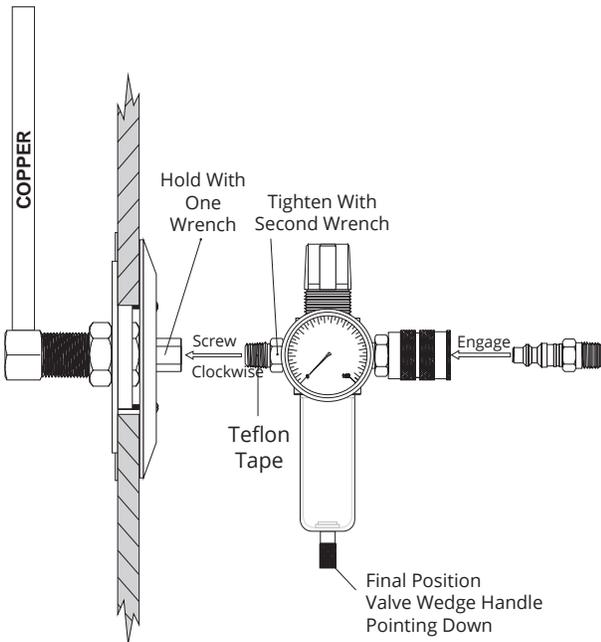


Figure 2.20 – Outlet Assembly Installation (WOI-CAir)

WARNING

The outlet assembly, the plaster guard and the fascia plate are tagged identifying the gas service.

Make sure the identification is all the same before you put the wall outlet in service.

WARNING

A final pressure test must be performed once the outlet assembly has been installed. This final pressure test shall be performed with an inert gas before putting the service gas in the pipeline.

IMPORTANT

Support hanging hoses or other equipment to prevent side load.

Wall Outlets for High Purity Gases

3.0 Operation

3.1 Quick Connect Settings

3.1.1 WOA Series

- Use filters upstream of quick-connects
- Use body and stem protectors or dust caps on uncoupled bodies and stems (sold separately)
- Align bodies and stems when coupling or uncoupling
- Couple and uncouple quick connects at room temperature
- Couple and uncouple quick-connects during system cleaning operations
- Support hanging hoses or other equipment to prevent side load
- Re-lubricate stem seal O-rings periodically (consult BeaconMedæS for details)

WARNING

The pressure rating both uncoupled and when coupling and uncoupling is 250 PSI.

WARNING

Pressure rating restrictions apply when coupling and uncoupling quick-connects.

CAUTION

Do not rotate quick-connects while coupled.
Do not insert foreign objects into uncoupled bodies or stems.

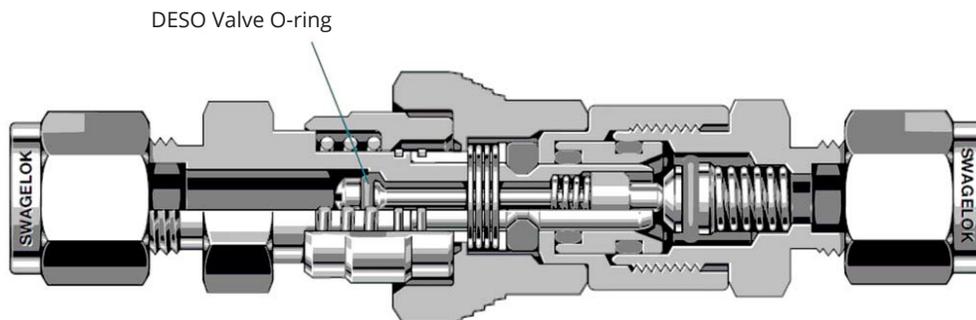


Figure 3.1 - Anatomy of a DESO Quick-Connect

Wall Outlets for High Purity Gases

3.1.2 WOI-O2 and WOI-C2H2 Series

Connecting the socket to the plug

1. Hold the plug and socket as shown in Figure A
2. Press together until the color-coded sleeve on the socket moves slightly forward and locks firmly in position as shown in Figure B
3. Check for secure connection by pulling gently on the hose

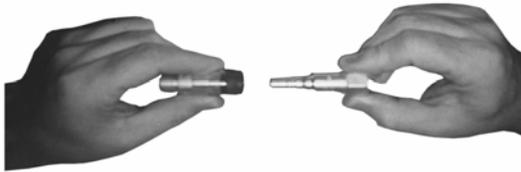


Figure A

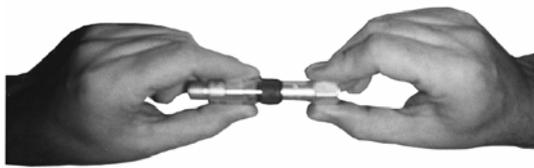


Figure B

CAUTION

After installation, always perform a leak test using a "soapy solution" like Snoop or other solution compatible with the gas(es) being used.

In the event of a flashback or backfire, always retest quick connects with leak test before reusing.

Disconnecting the socket from the plug

1. Hold the plug and the color-coded sleeve on the socket as is shown in Figure C
2. Pull the sleeve to the right. As the sleeve is pulled back, it will release the plug and gas flow will stop instantly.



Figure C

NOTE

Always shut off gas the ball valve when work is completed. After disconnecting plug, take care of plug to avoid damage.

CAUTION

Check valves are designed to prevent accidental mixing of oxygen and fuel gas.

Check valves can be used as precaution to avert potentially dangerous situations, but are not a substitute for careful handling or strict adherence to safety rules and procedures.

3.1.3 WOI-Ci compressed Air and WOI-LPG Series

Connecting the socket to the plug

1. Pull socket sleeve back
2. Insert plug into socket and release sleeve
3. Push plug in socket until sleeve snaps forward (WOI-LPG only)
4. Leak test using soapy water solution
5. To put in service, open the ball valve (WOI-LPG only)

Disconnecting the socket from the plug

1. Close the shut off valve (WOI-LPG only)
2. To release plug, pull sleeve back away from plug, pull out plug
3. Leak test using soapy water solution

Wall Outlets for High Purity Gases

3.1.4 Pressure Testing - Quick Connect (WOI-O2)

CAUTION

Check valves are designed to prevent accidental mixing of oxygen and fuel gas. Check valves can be used as precaution to avert potentially dangerous situations, but are not a substitute for careful handling or strict adherence to safety rules and procedures.

Leak Testing Of Internal Check Valves

NOTE

All testing for gas leaks should be conducted in a well-ventilated area.

1. Separate the Quick Connect by disconnecting the socket from the plug.
2. Remove plug from torch.
3. Disconnect hose from regulator outlet.
4. Attach plug to the regulator.
5. Reconnect the socket (which is still connected to the hose) to the plug.

CAUTION

Plugs must be attached to regulators with the same gas services as the plug. For example, an oxygen plug must be attached to an oxygen regulator only. A fuel gas plug must be attached to a fuel gas regulator only.

6. Adjust regulator pressure to approximately 3 to 5 psi.
7. Check for leakage by spraying soapy solution to the quick connectors. Bubbles will appear if the check valve is leaking. Replace quick connect if check valve is leaking.

NOTE

Make sure that an excessive amount of gas is not allowed to escape when testing for leaks.

8. After leak test is completed and no leaks are found, reassemble the socket and hose for normal operation.

Leak Testing Of Socket

1. Adjust regulator pressure to approximately 3 to 5 psi.
2. Close torch valve.
3. Disconnect coupler and submerge the socket in water. Bubbles will appear if the socket is leaking. Replace socket if leaking.
4. After leak test is completed and no leaks are found, reconnect plug and socket for normal operation.

NOTE

After completion of leak testing of reverse flow check valves and socket, purge the hoses and test the entire system for leaks before lighting. Follow manufacturers' instructions when purging hoses.

WARNING

The quick connect assembly contains chemicals, including lead, known to the state of California to cause cancer and birth defects or other reproductive harm.

Wash hands after handling.

For more information on safe welding practices contact the American Welding Society.

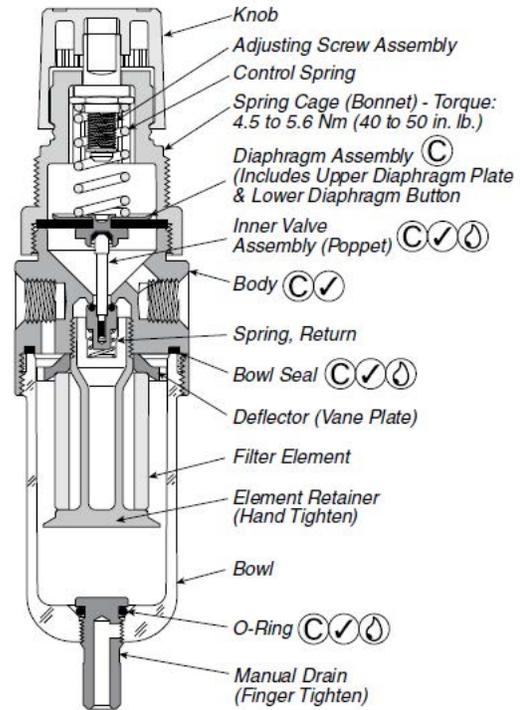
Wall Outlets for High Purity Gases

3.1.5 Filter/ Regulator Operation (WOI-CAir)

WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all airlines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint etc. If masking is not possible, contact your local representative for replacement labels.



- Lightly grease with provided lubricant
- Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- Clean with lint-free cloth

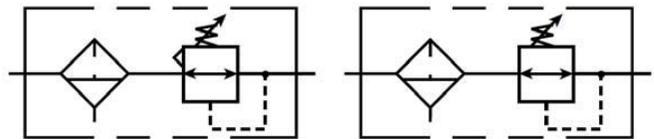


Figure 3.2 - Filter/Regulator Components

Wall Outlets for High Purity Gases

CAUTION

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

WARNING

Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed maximum primary pressure rating.

Installation

1. The Filter / Regulator should be installed with reasonable accessibility for service whenever possible – repair service kits are available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Also, new pipe or hose should be installed between the Filter / Regulator and equipment being protected.
2. The upstream pipe work must be clear of accumulated dirt and liquids.
3. Select a Filter / Regulator location as close as possible to the equipment being protected.
4. Install Filter / Regulator so that air flows into port labelled “IN” on body.

Operation

1. Both free moisture and solids are removed automatically by the filter.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the Baffle or End Cap.
3. The Filter Element should be removed and replaced when pressure differential across the filter is 69 kPa (10 PSIG).
4. Before turning on the air supply, disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
5. Then turn Knob clockwise and adjust regulator to desired downstream pressure. This permits pressure to build up slowly in the downstream line.
6. To decrease regulated pressure settings, always reset from a pressure lower than the final setting required. Example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).
7. When desired secondary pressure setting has been reached, push the Knob down to lock this pressure setting.

Wall Outlets for High Purity Gases

Service

CAUTION

Disconnect or shut off air supply and exhaust the primary and secondary pressures before servicing unit. Turning the adjusting knob counterclockwise does not vent downstream pressure on non-relieving regulators. Downstream pressure must be vented before servicing regulator.

CAUTION

Grease packets are supplied with kits for lubrication of seals. Use only mineral based grease or oils. Do not use synthetic oils such as esters. Do not use silicones.

NOTE

After servicing unit, turn on air supply and adjust regulator to the desired downstream pressure. Check unit for leaks. If leakage occurs, do not operate - conduct repairs and retest.

Servicing Filter Element - (Refer to Figure 3.2)

1. Unscrew and remove Bowl.
2. Unscrew the Element Retainer from Body and then remove Element.
3. Clean all internal parts and bowl before reassembling.
4. Install new element. **IMPORTANT:** The Filter / Regulator will not operate properly if the Deflector is not installed properly. The Deflector must be installed between the Element Retainer and the Filter Body.
5. Attach Element Retainer and finger tighten firmly.
6. Replace Bowl Seal. Lightly lubricate new seal to assist with retaining it in position.
7. Install Bowl into Body and tighten; hand tight, plus 1/4 turn.

Servicing Regulator - (Refer to Figure 3.2)

1. Disengage the Adjusting Knob by pulling upward. Turn Adjusting Knob counterclockwise until the compression is released from the Pressure Control Spring.
2. Remove the Bonnet and Bowl assemblies by unscrewing the Bonnet and Bowl from the body.
3. Remove Diaphragm Assembly from Bonnet Assembly.
4. Remove Element Retainer, Filter Element, Poppet Assembly, Poppet Return Spring.
5. Clean and carefully inspect parts for wear or damage. Wipe parts, clean with soapy water or denatured alcohol but do not use denatured alcohol on plastic bowl or sight gauge. If using compressed air to blow dry, be sure to wear appropriate eye protection. If replacement is necessary, use parts from service kits. Clean Bowl.
6. Lubricate O-rings with grease found in service kits.
7. Install Filter Element onto the Element Retainer and firmly tighten.
8. Install Poppet Return Spring, Poppet Assembly, and Element Retainer
9. Install Diaphragm Assembly into Body Assembly. Assemble Bonnet Assembly onto Body and tighten per Figure 3.2.
10. Install Bowl into Body and tighten, hand tight, plus 1/4 turn.

IMPORTANT

The Filter / Regulator will not operate properly if the Deflector is not installed properly.

The Deflector must be installed between the Element Retainer and Filter Body



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