AFS PolyGas I Purifier

A high-capacity gas purifying system that removes H_2O, O_2 and hydrocarbons



Introduction

The Advanced Filter System III is a high-capacity gas purifying system that removes H_2O, O_2 and hydrocarbons from inert gases and hydrogen. It contains two visual indicators, one for oxygen and one for moisture. When the indicator changes from green to gray, indicating oxygen contamination, or the light blue indicator changes to light brown, indicating water contamination, the filter cartridge should be changed.

The AFS PolyGas I is intended to remove 50 ppm or less of oxygen, water or hydrocarbons (C5 and above) from air, helium and other inert gases, nitrogen or hydrogen at flow rates of 2L/minute or less.

Specifications Limits

Temperature: 15°C to 35°C

Pressure: 0.75 to 13.8 bar

Gas supply: < 50 ppm H_2O, O_2 and Hydrocarbons

Flow rate: <2 L/min

WARNING:

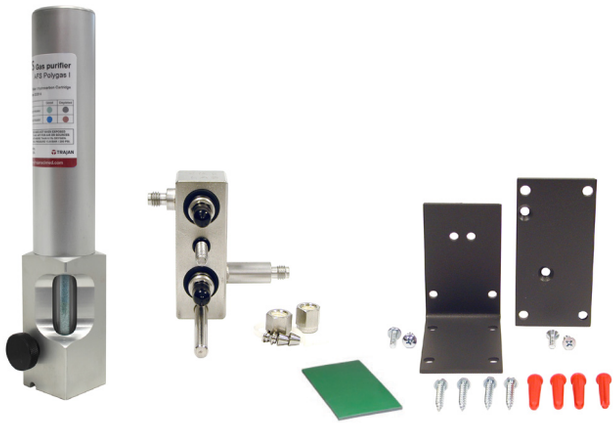
Warnings must be read carefully and understood. Improper use of this product can cause harm or death to personnel and damage to property!

- Wear safety glasses.
- Leak test all fittings when using hazardous or flammable gases.
- Do not use above 13.8 bar (200 psi).
- Do not open filter cartridge, even after use!
- Do not use to remove more than 50 ppm of oxygen! Rapid heating of the oxygen adsorbent will occur and high internal temperatures can result
- Points on manifold block are sharp.
- Special precautions might be required when using hydrogen. Consult local regulations and your company's safety procedures.

Instructions

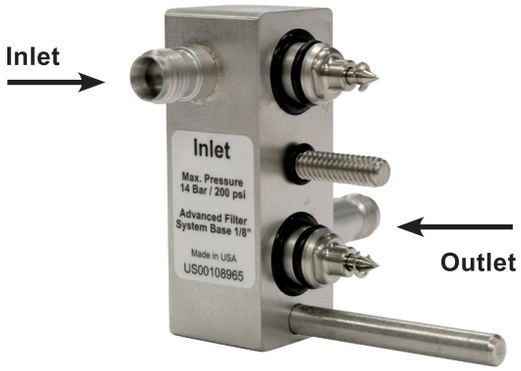
Please read through this entire manual to familiarize yourself with the operation of the AFS Purifier III before beginning setup. Use the same degree of care as you would with any precision instrument.

- Remove the AFS Purifier cartridge, manifold and mounting brackets from the package.
- Inspect the filter system. If there is any visible damage, contact your supplier immediately.



Connecting the manifold

NOTE: Do NOT remove the black plastic covers from the check valves until manifold installation is complete!



1. The manifold block must be connected to the gas lines. The compression fittings on the block fit 1/8” stainless steel tubing (202912) or 1/4” (202913). If you need to connect the filter to lines of another diameter, adapters will need to be installed first.
2. Select the bracket, bench-mount (L-shaped) or the wall-mount (flat), which you intend use. Use the bracket first to mark the holes on the bench or wall where the manifold will be mounted. The bench-mount bracket can also be attached without screws by using the supplied double sided tape (see pictures on page 3).
3. Drill the holes to mount the bracket, either to fit the anchors provided or to fit the screws without anchors, depending on the requirements.

   Note: In the case of the bench mount II configuration (see pictures on page 3), the bracket needs to be screwed into place first, before mounting manifold to the bracket.
4. Insert the long hex-head screw into the back of the manifold. Fasten one of the brackets to the manifold.
5. Fasten the bracket to the bench or wall in the correct position.
6. Thread the nuts, back ferrule and front ferrules onto the tubing. Insert the tubing into the manifold fittings, making sure that it reaches the bottom of the fitting.
7. Tighten the compression fittings. Compression fittings, making sure that it reaches the bottom of the fitting.
8. Remove the protective plastic cups from the manifold check valves. Be careful, the ends of the check valves are sharp!

Connecting the manifold options

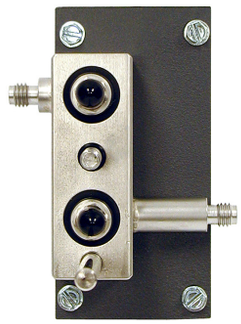


Figure 1: Wall mount

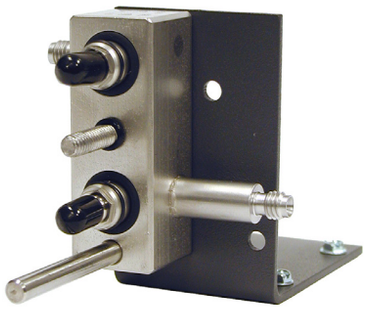


Figure 2: Bench mount I

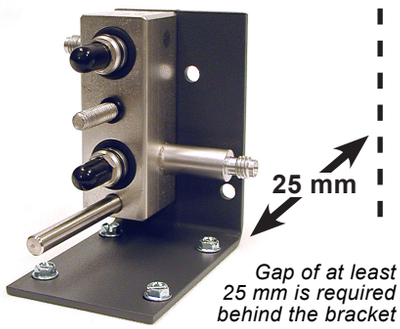


Figure 3: Bench mount II



Figure 4: Bench mount I with no screws

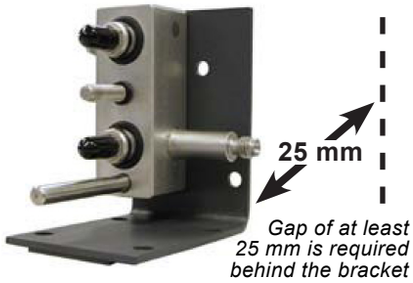


Figure 5: Bench mount II with no screws

Optional bench mount I / II without screws

Make sure to clean the area on bench thoroughly, before placing the bracket in place.
Note: Tape mounting is not intended for wall use.



Step 1. Remove one side of the double sided tape and place securely on the bottom of the manifold bracket.



Step 2. Remove other and secure the manifold bracket to the desired location on bench top.

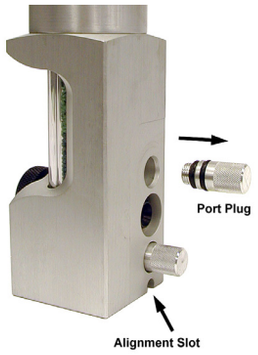
Mounting the filter cartridge

The cartridge is protected in shipping by two port plugs with o-rings seals. In addition, two aluminum cups limit the exposure of adsorbent during assembly, until they are pierced as the cartridge is mounted. Exposure to air for several minutes during filter installation or change will not damage the adsorbents.

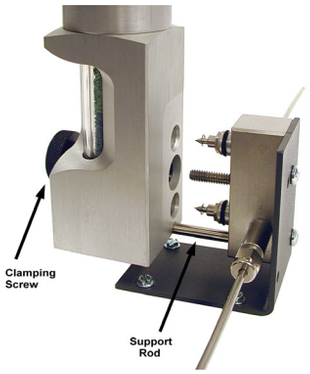
1. Remove the two port plugs. Save these plugs in case the cartridge needs to be sealed.

2. Rest the alignment slot of the cartridge on the bottom support rod of the manifold, and slide it forward until the two ports of the manifold slide into the sockets of the cartridge. Be careful to point the check valve needles into the port holes so that they do not scratch the back of the filter.

3. Push the cartridge forward, engage the clamping screw and tighten thoroughly.



4. Leak check the fittings.
   If you are using hydrogen or hazardous gas, additional special procedures may be called for. Consult your company's safety procedures.



5. The filter cartridge is shipped full of helium, but the gas lines should still be purged with a gas flow for at least several hours after the initial installation. Moisture levels downstream of the instrument may continue to improve for several days.

Operation and Maintenance

The AFS PolyGas I Purifier has two visual indicators, one for oxygen and one for moisture. When the green indicator changes to gray, indicating oxygen contamination, or the blue indicator changes to light brown, indicating water contamination, the filter cartridge should be changed.

To exchange the spent cartridge, first turn off the gas supply upstream of the filter. Shut down any instruments downstream of the filter. The check valves in the manifold will interrupt the gas supply when the cartridge is removed and protect the gas lines from the atmosphere.

Unscrew the clamping screw. This pushes the cartridge off the manifold spools. Only after the screw is completely disengaged it is possible to remove the filter form the manifold.

Mount the replacement cartridge as instructed in the section"Setup".



Troubleshooting		
Condition	**Possible cause**	**Recommendation**
Leak.	O-rings between cartridge and manifold are not leak tight.	Remove and check the manifold o-rings for dirt or scratches. Inspect the sealing surfaces on the cartridge and manifold for scratches. Replace the o-ring if necessary.
Indicator changes quickly.	Leak in gas line.	Find and fix leak.
	Contaminated gas.	Verify that the source meets specifications as listed under “Limits” on page 1. If the gas source is supplying other filters as well, check the condition of these filters. Otherwise check specification and procedures for verifying gas quality.

Part number	Part description and detail
202912	AFS PolyGas I Purifier, 1/8” fittings, complete kit
202913	AFS PolyGas I Purifier, 1/4” fittings, complete kit
202914	Replacement cartridge, AFS PolyGas I Purifier

Support and Repair

If the AFS PolyGas I Purifier is still in the warranty period, please contact your dealer for support.
If the warranty period has expired, please www.trajanscimed.com visit for information about how to purchase a replacement cartridge.

References

Recycling
For recycling contact your local Trajan sales office or distributor.

Information and support

Visit www.trajanscimed.com or
contact techsupport@trajanscimed.com

Specifications are subject to change without notice.

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