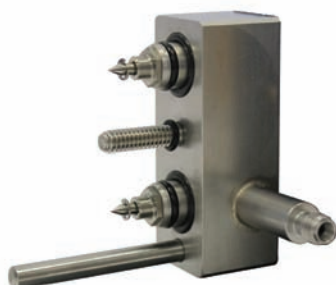


Gas Purifiers

AFS Purifiers



AFS Purifiers I & II



AFS Manifold

- Clean flow path, gas contacts only metal, glass and fluoroelastomer seals
- High capacity and efficiency in a single cartridge
- Easy cartridge replacement with twist on/off assembly knob
- Double seal construction for safety, especially when using hydrogen gas
- Check valves protect gas lines during cartridge replacement
- Includes mounting hardware for wall or bench
- Stainless steel fittings
- Reconditioning program allows for recycling of cartridge

Innovative Design

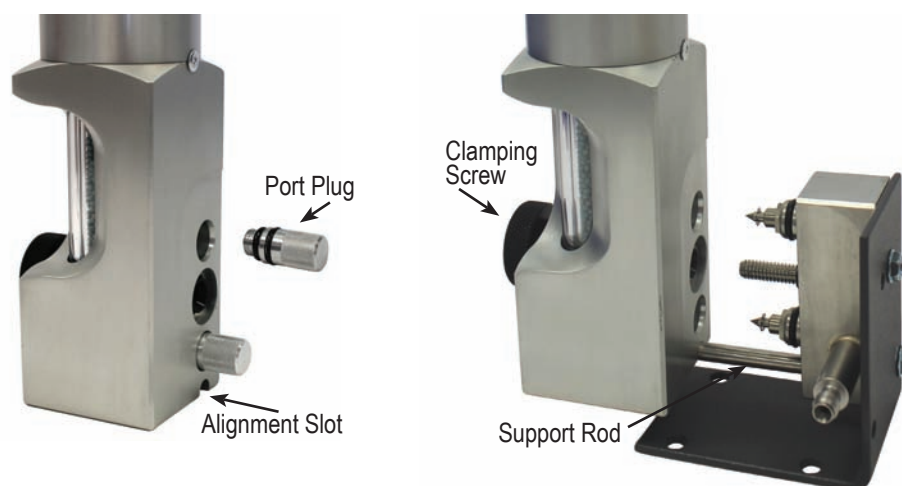
Two part system includes a small stainless steel manifold and a high capacity purifier cartridge.

The manifold mounts to a laboratory wall or bench with brackets included in the installation kit and connects to the gas lines with stainless steel compression fittings.

The cartridge easily attaches and detaches from the manifold with an assembly knob. To change the cartridge, simply twist the knob to disconnect the cartridge from the manifold and slide on a new cartridge. Twist the knob back for a tight, secure fit. Check valves close when the cartridge is removed.

Both the AFS Purifier I and AFS Purifier II have very high capacity and can be expected to supply four GCs for at least one year when used with 99.995% pure gas supplies (provided reasonable care is taken during tank changes).

Recommended maximum flow rate is 2 L/min and 200 psi maximum operating pressure.



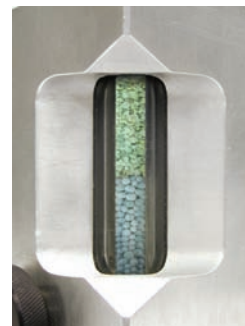
First photo shows the port plugs; second photo shows how to mount the AFS purifier to the manifold. Manifold shown attached to benchmount bracket; wall mount also supplied.

AFS Purifier I

- Removes O₂, H₂O and Hydrocarbons (>C4) from inert gases and hydrogen
- Two high sensitivity indicators, for oxygen and moisture
- High capacity and efficiency for oxygen, water and hydrocarbons
- Suitable for multiple GC installations

Common applications for the AFS I include:

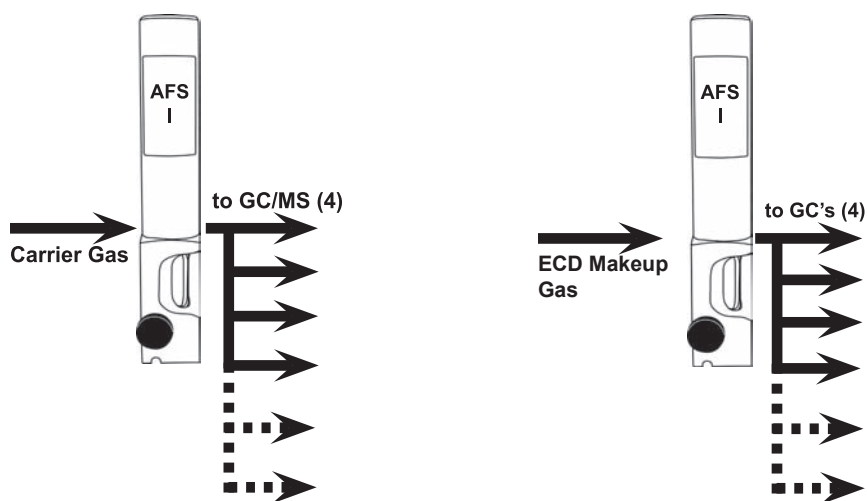
- GC and GC/MS carrier gas
- ECD make up gas
- ICP



AFS Purifier I;
oxygen and moisture indicator

Description	Item No.
AFS Purifier I, 1/8 in Fittings, Complete Kit	202900
AFS Purifier I, 1/4 in Fittings, Complete Kit	202902
Replacement Cartridge, AFS Purifier I	202910
Reconditioned Cartridge*, AFS Purifier I	202920
<i>*Requires exchange of depleted cartridge.</i>	
1/8 in AFS Purifier Manifold	202900MN
1/4 in AFS Purifier Manifold	202902MN

Some AFS purifiers and cartridges require special shipping and handling. Please contact CRS for instructions before returning any item for replacement.



Use of AFS Purifier I to protect multiple carrier gas lines or multiple ECD detectors.

Gas Purifiers

AFS Purifiers



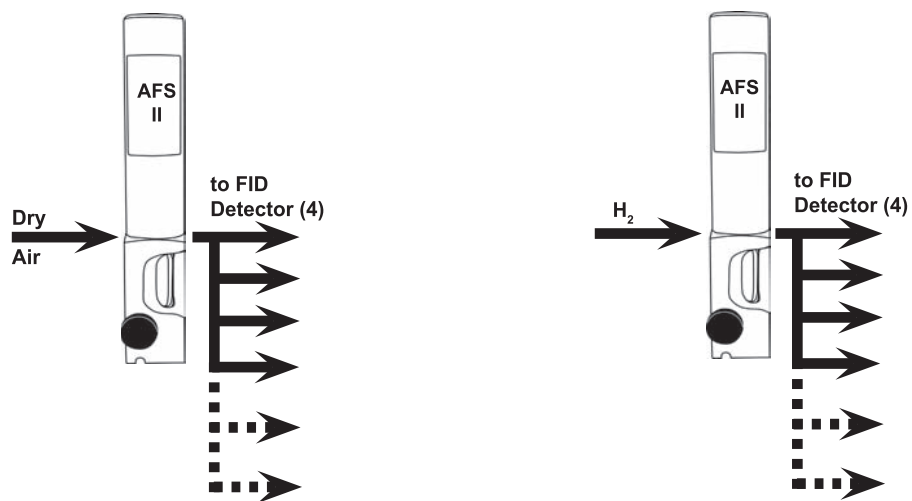
AFS Purifier II;
moisture indicator

AFS Purifier II

- Removes H₂O and Hydrocarbons, (>C₄) from dry air, hydrogen and inert gas
- High sensitivity indicator for moisture
- Intended to reduce baseline noise in FID detection
- Suitable for multiple GC installations

Description	Item No.
AFS Purifier II, 1/8 in Fittings, Complete Kit	202903
AFS Purifier II, 1/4 in Fittings, Complete Kit	202904
Replacement Cartridge, AFS Purifier II	202950
Reconditioned Cartridge*, AFS Purifier II	202930
<i>*Requires exchange of depleted cartridge.</i>	
1/8 in AFS Purifier Manifold	202900MN
1/4 in AFS Purifier Manifold	202902MN

Some AFS purifiers and cartridges require special shipping and handling. Please contact CRS for instructions before returning any item for replacement.



Use of 2 AFS Purifier II to protect multiple FID detectors.

ZPure™ Purifiers

- Compact design fits many existing installations that use small aluminum purifiers
- Available with brass or stainless steel compression fittings, 1/8 in or 1/4 in
- Stainless steel bodies with 10 µm stainless steel frits at both ends to protect against dust
- High quality activated adsorbents for long purifier life and efficient contaminant removal
- Oxygen purifiers use advanced adsorbent technology developed by CRS
- Dimensions 2.5 cm diameter x 28 cm length, including fittings

ZPure Dual Purifier

- High efficiency - reduces O₂ and water contamination to low ppb levels
- High capacity
- Compact purifier design for use with GC/MS



ZPure Dual Purifier

The CRS ZPure Dual Purifier is a compact purifier designed for GC/MS carrier gas lines. It will protect the column's stationary phase from oxygen and water degradation, for improved baseline and sensitivity. It is also recommended for other point-of-use applications that require ultra-pure inert gas. Oxygen and water are removed to very low levels from He, Ar, N₂, H₂ or methane, at flow rates up to 2 L/min. Gas lines are protected from dust by 10 µm frits at both ends of the purifier. Advanced adsorbent technology allows high removal capacities for both oxygen and water.

Description	Brass	Stainless
ZPure Dual Purifier, 1/8 in Fittings	202206-B	202206-SS
ZPure Dual Purifier, 1/4 in Fittings	202207-B	202207-SS
ZPure Dual Purifier, Reconditioned, 1/8 in Fittings	202206R-B	202206R-SS
ZPure Dual Purifier, Reconditioned, 1/4 in Fittings	202207R-B	202207R-SS

Some CRS gas purifiers for oxygen and carbon dioxide removal require special shipping and handling. Please contact CRS for instructions before returning any item for replacement.

Gas Purifiers

ZPure™ Purifiers



ZPure H₂O Purifier

ZPure H₂O Purifier

- High capacity - reduces moisture to low ppb levels

The CRS ZPure H₂O Purifier removes water from inert gases, air or hydrogen at flow rates up to 2 L/min. Gas lines are protected from dust by 10 µm frits at both ends of the purifier.

Description	Brass	Stainless
ZPure H ₂ O Purifier, 1/8 in Fittings	202230-B	202230-SS
ZPure H ₂ O Purifier, 1/4 in Fittings	202231-B	202231-SS
ZPure H ₂ O Purifier, Reconditioned, 1/8 in Fittings	202230R-B	202230R-SS
ZPure H ₂ O Purifier, Reconditioned, 1/4 in Fittings	202231R-B	202231R-SS



ZPure O₂ Purifier

ZPure O₂ Purifier

- High efficiency - reduces O₂ to low ppb levels
- Outstanding capacity in a small high performance design
- Recommended for GC/MS carrier gases

The CRS ZPure O₂ Purifier is an ultra-high capacity purifier for oxygen removal in a small, high performance package. Superior results are made possible with our advanced adsorbent technology. It will remove oxygen at ambient conditions to low ppb levels from He, Ar, N₂, H₂ or methane at flow rates up to 2 L/min. Gas lines are protected from dust by 10 µm frits at both ends of the purifier. It is recommended for GC/MS carrier gases to protect the column's stationary phase from oxygen degradation.

Description	Brass	Stainless
ZPure O ₂ Purifier, 1/8 in Fittings	202216-B	202216-SS
ZPure O ₂ Purifier, 1/4 in Fittings	202217-B	202217-SS
ZPure O ₂ Purifier, Reconditioned, 1/8 in Fittings	202216R-B	202216R-SS
ZPure O ₂ Purifier, Reconditioned, 1/4 in Fittings	202217R-B	202217R-SS

Some CRS gas purifiers for oxygen and carbon dioxide removal require special shipping and handling. Please contact CRS for instructions before returning any item for replacement.

ZPure HC Purifier

- High capacity and efficiency - reduces hydrocarbons to low ppb levels
- Recommended for use with FID gas lines

The CRS ZPure HC Purifier removes C5 weight and heavier hydrocarbons from inert gases, air or hydrogen. It is recommended for use with FID gas lines to improve baseline noise and sensitivity. Gas lines are protected from dust by 10 µm frits at both ends of the purifier.

Description	Brass	Stainless
ZPure HC Purifier, 1/8 in Fittings	202232-B	202232-SS
ZPure HC Purifier, 1/4 in Fittings	202233-B	202233-SS
ZPure HC Purifier, Reconditioned, 1/8 in Fittings	202232R-B	202232R-SS
ZPure HC Purifier, Reconditioned, 1/4 in Fittings	202233R-B	202233R-SS



ZPure HC Purifier

ZPure™ XL Purifiers

ZPure XL HC Purifier

- Extra-large capacity hydrocarbon purifier
- Reduces C5 weight and heavier hydrocarbons to low ppb levels
- Dimensions 5 cm diameter x 50 cm length including fittings

Description	Brass	Stainless
ZPure XL HC Purifier, 1/8 in Fittings	202232XL-B	202232XL-SS
ZPure XL HC Purifier, 1/4 in Fittings	202233XL-B	202233XL-SS



ZPure XL HC Purifier

ZPure XL H₂O Purifier

- Extra-large capacity moisture purifier
- Removes residual water from dry air or inert gases to low ppb levels
- Dimensions 5 cm diameter x 50 cm length including fittings

Description	Brass	Stainless
ZPure XL H ₂ O Purifier, 1/8 in Fittings	202230XL-B	202230XL-SS
ZPure XL H ₂ O Purifier, 1/4 in Fittings	202231XL-B	202231XL-SS



ZPure XL H₂O Purifier

ZPure™ Glass Purifiers



ZPure Glass Indicating O₂ Purifier

ZPure Glass Indicating O₂ Purifier

This glass purifier is an improved, compact indicating purifier for high-efficiency oxygen removal, suitable for use with chromatography carrier gas streams. It removes oxygen to low ppb levels, with an indicator that changes color from green to gray when adsorption capacity is depleted. The adsorbent forms copper oxide in the presence of oxygen; no gas is generated.

The ZPure Glass Indicating Oxygen Purifier is recommended as a downstream indicator for high-capacity traps such as the ZPure Dual or ZPure O₂. It can be used with non-oxidizing gases such as He, Ar, N₂, H₂ or CH₄. Dual seal design (see box below). Gas lines are protected from dust by 10 μm frits at both ends of the purifier. Maximum pressure is 6.8 bar (100 psig). Dimensions are 3.5 cm diameter x 26 cm length including fittings.

Description	Brass	Stainless
ZPure Glass Indicating Oxygen Purifier, 1/8 in Fittings	202236-B	202236-SS
ZPure Glass Indicating Oxygen Purifier, 1/4 in Fittings	202237-B	202237-SS
Reconditioned, 1/8 in Fittings	202236R-B	202236R-SS
Reconditioned, 1/4 in Fittings	202237R-B	202237R-SS



ZPure Glass H₂O/HC Purifier

ZPure Glass H₂O/HC Purifier

Removes water and C5 weight and heavier hydrocarbons from air or inert gases. The inner glass tube contains activated carbon, Co-Free™ moisture indicator and molecular sieve. Dual seal design (see box below). Dimensions are 3.5 cm diameter x 26 cm length including fittings; maximum pressure 6.8 bar (100 psig). Gas lines are protected from dust by 10 μm frits at both ends of the purifier.

Description	Brass	Stainless
ZPure Glass H ₂ O/HC Purifier, 1/8 in Fittings	202256-B	202256-SS
ZPure Glass H ₂ O/HC Purifier, 1/4 in Fittings	202257-B	202257-SS
Reconditioned, 1/8 in Fittings	202256R-B	202256R-SS
Reconditioned, 1/4 in Fittings	202257R-B	202257R-SS

Dual Seal Design

The glass inner tube is protected by a sealed outer plastic tube. Even if the glass tube fails, the gas system is fully protected against leaks.

ZPure Glass High Sensitivity Moisture Purifier

This gas purifier has an advanced design for applications requiring high-efficiency moisture removal with a highly sensitive moisture indicator. The adsorbing materials, HSMI™ and Molecular Sieve 5A, are held in a sturdy glass tube. The gas to be purified contacts only glass, metal, fluoroelastomer and the adsorbents. The moisture indicator turns color from light blue to gray at less than 1 ppm water to signal when capacity is reached.

The glass tube is sealed with a special dual sealing system to prevent leaks. An internal frit at each end prevents particulate contamination. The inner glass tube in the ZPure Glass High Sensitivity Moisture Purifier is enclosed in a plastic outer tube for safety. Dimensions are 3.5 cm diameter x 26 cm length including fittings, maximum pressure 6.8 bar (100 psig).

Description	Brass	Stainless
ZPure Glass High Sensitivity Moisture Purifier, 1/8 in Fittings	202283-B	202283-SS
ZPure Glass High Sensitivity Moisture Purifier, 1/4 in Fittings	202284-B	202284-SS



ZPure Glass High Sensitivity Moisture Purifier

ZPure Glass Moisture Purifier

This gas purifier is suitable for applications requiring high-efficiency moisture removal, with the benefit of low-sensitivity depletion indicator. Up to 6 grams water is removed to low ppb levels. The adsorbing materials, Molecular Sieve 5A and cobalt-free CoFree™ indicator, are held in a sturdy glass tube. Dual seal design (see box on previous page). Gas lines are protected from dust by 10 µm frits at both ends of the purifier.

CoFree changes color at about 5% relative humidity to signal leaks in the system; the molecular sieve removes moisture to trace levels. An internal frit at each end prevents particulate contamination. The inner glass tube in the CRS ZPure Moisture Purifier is enclosed in a plastic outer tube for safety. Dimensions are 3.5 cm diameter x 26 cm length including fittings, maximum pressure 6.8 bar (100 psig).

Description	Brass	Stainless
ZPure Glass Moisture Purifier, 1/8 in Fittings	202234-B	202234-SS
ZPure Glass Moisture Purifier, 1/4 in Fittings	202235-B	202235-SS
Reconditioned, 1/8 in Fittings	202234R-B	202234R-SS
Reconditioned, 1/4 in Fittings	202235R-B	202235R-SS



ZPure Glass Moisture Purifier

Gas Purifiers

Oxygen Purifiers



Model 1000

Model 1000 Oxygen Purifier

- High-capacity
- Exceptional efficiency
- Brass fittings

High capacity oxygen purifier, for long term protection of capillary column stationary phases against oxidation at GC operating temperatures. The Model 1000 is intended for use with non-oxidizing gases such as He, Ar, N₂, H₂ or CH₄, containing less than 0.1% oxygen. The adsorbent binds covalently with oxygen; no gas is generated from this reaction. Maximum pressure is 69 bar (1000 psig). Dimensions are 5 cm diameter x 37 cm length with fittings. Weight is 1.2 kg. Regeneration service is available.

Description	Item No.
Model 1000 Oxygen Purifier, 1/8 in Fittings	202200
Model 1000 Oxygen Purifier, 1/4 in Fittings	202202
Regeneration Service, 1/8 in	202204
Regeneration Service, 1/4 in	202205

Some CRS gas purifiers for oxygen and carbon dioxide removal require special shipping and handling. Please contact CRS for instructions before returning any item for regeneration.

Moisture Purifiers

Model 500 Moisture Purifier

- Contains molecular sieve 5A for high-efficiency drying
- Recommended for detector support gases and carrier gases
- Brass fittings

500 cc of molecular sieve in this metal purifier reduces moisture to very low levels. Internal frits at each end prevent particle contamination. Maximum pressure is 69 bar (1000 psig). Regeneration service is available. Dimensions are 5 cm diameter x 37 cm length with fittings. Weight is 1.2 kg.



Model 500

Description	Item No.
Model 500, Molecular Sieve Drying Purifier, 1/8 in Fittings	202270
Model 500, Molecular Sieve Drying Purifier, 1/4 in Fittings	202272
Regeneration Service	202254

Gas Purifiers

Hydrocarbon Purifiers



Model 300

Model 300 High Pressure Hydrocarbon Purifier

This is a high-pressure metal cylinder filled with 500 cc of activated charcoal. It will remove C5 and heavier hydrocarbons at room temperature from your FID air and H₂ lines to minimize noise and extraneous peaks in the signal. It is also recommended for use with purge and trap apparatuses and with GC carrier gases for trace analyses. Frits in each end prevent particulates from entering the gas stream. Maximum pressure is 69 bar (1000 psig). Dimensions are 5 cm diameter x 37 cm length with fittings. Weight is 1.0 kg. Regeneration service is available.

Description	Item No.
Model 300 Hydrocarbon Purifier, 1/8 in Fittings	202330
Model 300 Hydrocarbon Purifier, 1/4 in Fittings	202332
Regeneration Service	202254

Moisture/Oil/Dust Purifiers

Gas-Dry Purifier

The Gas Dry Purifier is a moisture and dust purifier suitable for drying laboratory air or central air supplies. It has a high-strength polycarbonate body with aluminum endcaps and standard brass compression fittings. The purifier is filled with molecular sieve and a cobalt-free moisture indicator that changes color in the presence of water. This purifier is not recommended for high purity GC applications. Maximum pressure is 6.9 bar (100 psig). Dimensions are 3.5 cm diameter x 26 cm length with fittings.



202238-B

Description	Brass	Stainless
Gas-Dry Purifier, 1/8 in fittings	202238-B	202238-SS
Gas-Dry Purifier, 1/8 in fittings - Long	202238L-B	202238L-SS
Gas-Dry Purifier, 1/4 in fittings	202239-B	202239-SS
Gas-Dry Purifier, 1/4 in fittings - Long	202239L-B	202239L-SS

Big Purifier

The Big Purifier has a 400 cc total volume of molecular sieve 5A and indicator in a clear acrylic tube. Available with CoFree cobalt-free indicator. The indicator changes color at low relative humidity. Maximum pressure is 6.9 bar (100 psig). Dimensions are 6 cm diameter x 43 cm length including fittings. Weight is 1.0 kg. For high-efficiency moisture removal, the Model 500, page 27, is recommended. For carrier gas purification, the AFS Purifier I, page 19, is recommended.



202290

Description	Item No.
Big Purifier, CoFree Indicator, 1/8 in fittings	202290
Big Purifier, CoFree Indicator, 1/4 in fittings	202292
Refill Kit	202298

Gas Purifiers

Split Vent Purifier



- Remove organics before they reach the lab atmosphere
- Filled with activated charcoal, a highly-efficient adsorbent
- Attaches to GC split vent

Contains 1200 mg of activated charcoal. Weekly or biweekly replacement of the charcoal tubes is recommended, depending on GC use. The split vent purifier consists of glass adsorbent tubes, 1/8 in end fittings and a clear plastic protective sleeve. Each purifier comes with 3 replacement charcoal tubes. Length 16 cm.

Description	Item No.
Injector Split Vent Purifier	202346
Replacement Split Vent Tubes, 3/pk	202348
1/8 in PTFE Ferrules, 10/pk	214200
1/8 in to 1/16 in PTFE Reducing Ferrules, 10/pk	214210

CO₂ Purifier

Removes carbon dioxide from the gas stream. High-capacity; it will irreversibly bind 100 g of carbon dioxide (cannot be regenerated). It's unique design uses NaOH blended with molecular sieve to scrub out CO₂. The reaction produces water which is adsorbed by the molecular sieve. When downstream water is a concern, it is recommended to use a second moisture purifier in line as a safety measure. Not recommended for GC use. Maximum pressure is 69 bar (1000 psig). Dimensions are 5 cm diameter x 37 cm length with fittings. Weight is 1.3 kg.



202350

Description	Item No.
Carbon Dioxide Purifier, 1/8 in Fittings	202350
Carbon Dioxide Purifier, 1/4 in Fittings	202352

Some CRS gas purifiers for oxygen and carbon dioxide removal require special shipping and handling. Please contact CRS for instructions before returning any item for regeneration.