



MATHESON

The Gas Professionals

PUR-Gas™ Purifier System



Instructions

*READ AND COMPLY WITH THESE INSTRUCTIONS BEFORE
INSTALLING, OPERATING, OR SERVICING*

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I. SERVICE

General Service

A unit which is not functioning in a normal manner should be removed from service until such time that repairs or replacement can be made. Upon completion of repair, full testing should be performed to assure the user that the unit has been returned to its original operating parameters. MATHESON can repair or replace equipment. To arrange for repair or replacement service, call 1-800-828-4313 and ask for the Warranty Administrator. **No product will be received by MATHESON without indication of gas service and without proper return material authorization provided by the warranty administrator. (All repairs must be made by MATHESON or an assigned and approved facility to maintain any warranties or guarantees).**

If the unit is under an applicable warranty, return the unit to MATHESON for repair or replacement. To arrange for warranty service, call 1-800-828-4313 and ask for the Warranty Administrator. **No product will be received by MATHESON without indication of gas service and without proper return material authorization provided by the warranty administrator.**

If advised by the Warranty Administrator to return the product to MATHESON, prepare the product for shipment and write, in large lettering the RMA Number assigned by the Warranty Administrator on the outside of the box. Also, if required by the Warranty Administrator, supply the completed RMA form with the product. Make sure that the product is adequately packaged, in the original shipping container if possible, and shipped prepaid (MATHESON will not accept COD freight) with a description of the observed deficiency to the attention of the:

Warranty Administrator
MATHESON
166 Keystone Drive
Montgomeryville, PA 18936

The user is expected to periodically inspect the product for leaks, loose or worn parts, broken or non-functioning components and to address those situations immediately. If the user would require verbal assistance in ascertaining the potential of a problem with any MATHESON product, contact the local MATHESON branch for assistance or your MATHESON Sales Representative.

II. LIMITED WARRANTY

This equipment is sold by MATHESON under the warranties set forth in the following paragraphs. Such warranties are extended only with respect to the purchase of this equipment directly from MATHESON or MATHESON's Authorized Agent as new merchandise and are extended to the first Buyer thereof other for than the purpose of resale.

For a period of one year from date of original delivery (ninety days in corrosive service) to Buyer or to Buyer's order, this equipment, is warranted to be free from functional defects in materials and workmanship and to conform to the description of this equipment contained in this manual and any accompanying labels and/or inserts, provided that this equipment is properly operated under the conditions of normal use and that regular and periodic maintenance and service is performed or replacements are made in accordance with the instructions provided. Expendable parts of this equipment are similarly warranted to be free from functional defects in materials and workmanship and to conform to the description of this equipment contained in this manual and any accompanying labels and/or inserts. The foregoing warranties shall not apply if the equipment has been repaired other than by MATHESON or a service facility designated by MATHESON, or if this equipment has not been operated and maintained in accordance with written instructions provided by MATHESON, or has been altered by anyone other than MATHESON, or if the equipment has been subject to abuse, misuse, negligence or accident.

MATHESON's sole and exclusive obligation and the Buyer's sole and exclusive remedy under the above warranties is limited to repairing or replacing, free of charge, at MATHESON's sole discretion, the equipment or part which is telephonically reported to be a problem to the local MATHESON Branch Location, and which if so advised, is returned with a written statement of the observed deficiency, not later than seven days after the expiration of the applicable warranty, to the MATHESON Gas Equipment Technology Center during normal business hours, transportation charges prepaid, and which, upon examination, is found to comply with the above warranties. The Buyer shall pay for return trip transportation charges for the equipment or part.

MATHESON shall not be otherwise liable for any damages including but not limited to incidental damages, consequential damages, or special damages, whether such damages result from negligence, breach of warranty or otherwise.

There are no express or implied warranties that extend beyond the warranties hereinabove set forth. MATHESON makes no warranty of merchantability or fitness for a particular purpose with respect to the equipment or parts thereof.

Acceptance of the equipment by the final buyer indicates the final buyer's acceptance of all warranties and limitations set forth above.

III. USER RESPONSIBILITY

This equipment will perform in conformity with the description thereof contained in this manual and accompanying labels and/or inserts when installed, operated, maintained and repaired in accordance with the instructions provided. This equipment must be checked periodically, with the frequency of such inspections depending upon the scope of use. Damaged, worn or contaminated equipment should not be used. Parts that are broken, missing, plainly worn, distorted or contaminated should be replaced immediately. Should such repair or replacement become necessary, MATHESON recommends that a telephonic or written request for service advice be made to the MATHESON Equipment Engineering Group in Montgomeryville, Pennsylvania or to the nearest MATHESON branch location.

This equipment or any of its parts should not be altered without the prior written approval of MATHESON Equipment Engineering Group. The user of this equipment shall have the sole responsibility for any malfunction, which results from improper use, faulty maintenance, damage, improper repair or alteration by anyone other than MATHESON or a service facility designated by MATHESON. Further, the ultimate user of the equipment is responsible for the training and safe operation of the equipment by personnel in his/her employ.

IV. SAFETY PRECAUTIONS

WARNING

- 1. The maximum concentration of Oxygen allowed in the gas is 0.5%**
- 2. The maximum system pressure is 150 psig (10Bar)**
- 3. Do not install a PUR-Gas purifier system near or in an excessively hot area (i.e., the hot-air exhaust at the rear of the GC)**
- 4. Install purifier cartridges in the appropriate position as indicated on the top of the baseplate**
- 5. Perform a reliable leak test when installing a baseplate or purifier cartridge**
- 6. Handle the purifier cartridge at the top of the housing and keep the cartridge upright when installing to avoid torsion/damage to the plastic exterior cover on the purifier cartridge; check for any cracks on the inner glass tube after installation**
- 7. NEVER REMOVE the white plastic mounting plugs located on the outside housing near the bottom of the cartridge; if they are missing, the cartridge should NOT be installed and should be returned to MATHESON**
- 8. NEVER replace the baseplate fittings; if new fittings are required, contact MATHESON for technical assistance.**
- 9. Use only original MATHESON baseplates; all warranties are voided with the use of a different model baseplate or other device.**

V. GENERAL DESCRIPTION

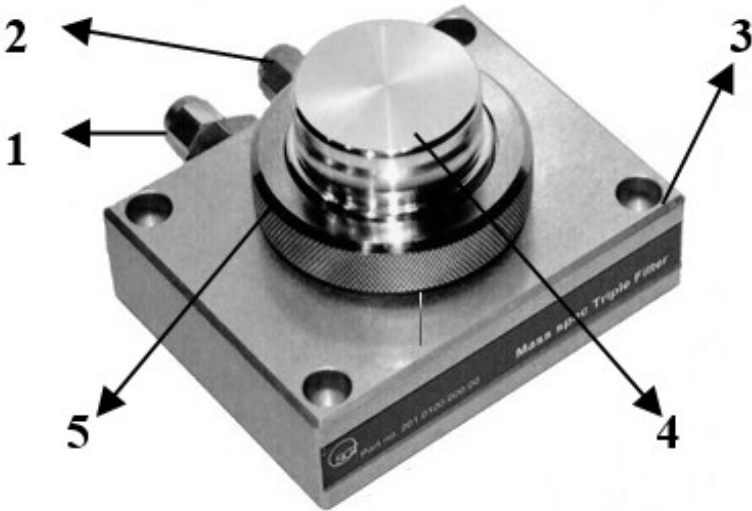
MATHESON PUR-Gas purifier cartridges are designed for the purification of non-corrosive gases with low concentrations of contaminants to better than 6.0 grade (99.99990 %) purity.

MATHESON PUR-Gas purifier cartridges are connected to an appropriate baseplate which is installed into the gas line.

VI. INSTALLATION OF A BASEPLATE

NEVER INSTALL AN OXYGEN PURIFIER IN A BASEPLATE POSITION SUITED FOR AIR. It will result in instant saturation!

A baseplate assembly can have either 1, 2, or 3 positions, depending on the number of gas purification applications. The following instructions are valid for each individual position on the baseplate.



1. Shut off the incoming gas source.
2. Cut the gas line using an appropriate metal tubing cutter.
3. Connect the gas Inlet (1) and Outlet (2) as indicated at the rear of the baseplate, **keeping the connections loose**.
4. Turn on the gas source and flush the line for at least 10 minutes with pure carrier gas at 8 psig minimum.
5. Tighten the incoming gas line at the Inlet (1) rear fitting.
6. Ensure that the flushcap (4) is securely tightened to the baseplate; push the cap down during mounting procedures.
7. Attach the baseplate using mounting holes (3) or use an optional wall mounting bracket.
8. Turn on the gas source and flush the line for at least 10 minutes with pure carrier gas at 8 psig minimum.

9. Remove the flushcap (4) by turning the knurled ring (5) counter-clockwise until the flushcap can be removed.
 - a. **Note:** As long as a purifier cartridge is not installed, no gas will pass through the baseplate.
10. Install a new purifier cartridge on the baseplate. See SECTION VIII, Installing a Purifier Cartridge, for more detail.
11. Flush the whole system for 15 minutes with pure carrier gas, at a recommended pressure of 90 psig.
12. Tighten the outgoing gas line at the Outlet (2) rear fitting.

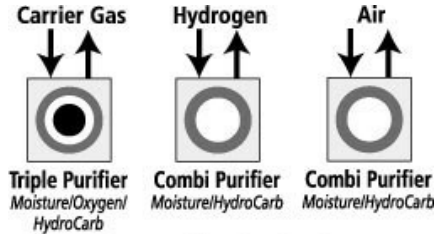
The analytical system is now ready to be used. Argon or Nitrogen peaks in the chromatogram should be negligible.

➤ **NOTE:** Always check for possible leaks in the system before operation.

VII. STANDARD PURIFIER CARTRIDGE/BASEPLATE COMBINATION

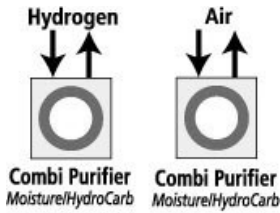
1. Purification System for GC/FID

High Capacity: Triple + 2x Combi purifier on 3-position baseplate



2. Purification System for Fuel Gas/FID

2x Combi purifier on 2-position baseplate



3. Purification System for Carrier Gas with MS-ECD-NPD

Triple purifier on 1-position baseplate



VIII. INSTALLING A PURIFIER CARTRIDGE

1. Remove the two metal diffusion-proof plugs from the purifier cartridge Inlet and Outlet (positioned at the bottom of the cartridge).
2. Remove the knurled ring (5) from the baseplate and place it around the purifier cartridge.
3. Place the purifier cartridge, along with the knurled ring, onto the baseplate, making sure all three holes on the bottom of the cartridge align with the two valves and positioning pin located on the baseplate.
4. Push the cartridge completely down onto the baseplate, and **hand tighten** the knurled ring while holding down the cartridge until it is firmly connected to the baseplate.

NOTE :

1. Once the purifier cartridge is positioned on the baseplate the Teflon seals will be punctured. It is necessary to keep the purifier cartridge in position to prevent air from entering the system.
2. Regularly check both the big and small Viton O-rings on the baseplate for hair cracks. The slightest leak allows moisture, oxygen and hydrocarbons to enter the system and contaminate the gas.
3. All MATHESON PUR-Gas purifier cartridges are packed under Argon, except for the special Helium-specific GC/MS purifier cartridges.

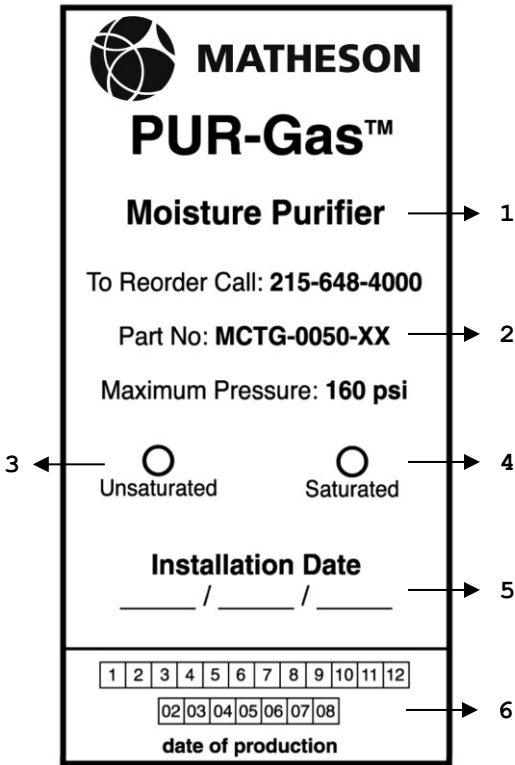
IX. REPLACEMENT OF A PURIFIER CARTRIDGE

A purifier cartridge needs to be exchanged when the visual indicators start changing color. The original indicator color and the color after saturation are listed in the table below.

Indicator Color Changes

Type of Purifier	Indicator Color Change
Moisture	Brown to white
Oxygen	Green to gray
Hydrocarbon	No indicator
Combi	Brown to white
Triple	Brown to white Green to gray

Explanation of Specifications on Purifier Cartridge Label



1. Type of purifier cartridge
2. MATHESON part number for purifier cartridge
3. Indicator color **before** saturation
4. Indicator color **after** saturation
5. Installation date (to be filled in by user)
6. Month/Year of production

Specific Capacities of Purifier Types

Type of Filter	Capacity		
	H ₂ O (grams)	O ₂ (mL)	Hydro- carbons
Moisture	7.2		
Oxygen		1000	
Hydrocarbon			Not specified
Combi	3.6		Not specified
Triple	1.8	500	Not specified

Note: The data given in the table strongly depends on the level of gas purity prior to entering the purifier.

Note: Replacement of the purifier cartridge is recommended at least every six months, regardless of the saturation level.

X. ORDERING INFORMATION

MBAS-0014	1-Position Standard Baseplate (1/8" Brass Fittings)
MBAS-0015	2-Position Standard Baseplate (1/8" Brass Fittings)
MBAS-0016	3-Position Standard Baseplate (1/8" Brass Fittings)
MBAS-0017	2-Position LC/MS Baseplate (1/4" Brass Fittings)
MBAS-0018	1-Position Baseplate with 1/4" Brass Fittings
MBAS-0019	2-Position Baseplate with 1/4" Brass Fittings
MBAS-0020	3-Position Baseplate with 1/4" Brass Fittings
MBAS-0022	1-Position Baseplate with 1/8" SS Fittings
MBAS-0023	2-Position Baseplate with 1/8" SS Fittings
MBAS-0024	3-Position Baseplate with 1/8" SS Fittings
MBAS-0026	1-Position Baseplate with 1/4" SS Fittings
MBAS-0027	2-Position Baseplate with 1/4" SS Fittings
MBAS-0028	3-Position Baseplate with 1/4" SS Fittings
MBAS-0029	2-Position LC/MS Baseplate with 1/4" SS Fittings
MCTG-0050	Moisture Cartridge
MCTG-0051	Oxygen Cartridge
MCTG-0052	Hydrocarbon Cartridge
MCTG-0053	Triple Cartridge (O ₂ /H ₂ O/HC)
MCTG-0054	Combi Cartridge (H ₂ O/HC)
MCTG-0055	LC/MS Charcoal Cartridge Set (2)
MCTG-0056	Moisture 2-Pack Bundle
MCTG-0057	Oxygen 2-Pack Bundle
MCTG-0058	Hydrocarbon 2-Pack Bundle
MCTG-0059	Triple 2-Pack Bundle
MCTG-0060	Combi 2-Pack Bundle
MCTG-0061	GC/MS Total Gas Purifier Bundle; 1-Triple + 2-Combi Cartridges
MCTG-0062	Triple Cartridge, Helium Filled
MCTG-0063	Triple Cartridge, Helium Filled 2-Pack Bundle
MCON-0577	O-ring Replacement Set
MCON-0578	Wall-Mount Bracket Fixture



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