

NANOACHEM[®]

NANOACHEM[®] MAX[™] Gas Purifier

High-flow and high-pressure purifier for inert and corrosive applications

Overview

NANOACHEM[®] MAX[™] purifiers are designed to purify high flows of gas while operating at high pressures. This combination allows for cost-effective ambient operation for bulk gas purification.

NANOACHEM[®] MAX[™] uses the same In2Go[™] based inert purification medium that is currently in widespread use around the world for sensitive applications. In2Go[™] provides extended purifier lifetime and sub 100 ppt removal efficiency to ensure the longest lifetime and highest capacity of any purifier on the market.

The compact design of NANOACHEM[®] MAX[™] allows for flexible placement in any location with no requirements for heat, electricity, or exhausted enclosures.

Applications

- Bulk gas operations for plants needing higher flows and pressures
- Operation to 5000 slpm (180 m³/h) and 3000 psig (207 bar)

Features and Benefits

- High capacity
- Long lifetimes
- Sub-ppt efficiency
- Low overall cost of ownership
- Room temperature operation - no power required
- No conditioning required
- Easy to install and operate
- Patented technology

Specifications

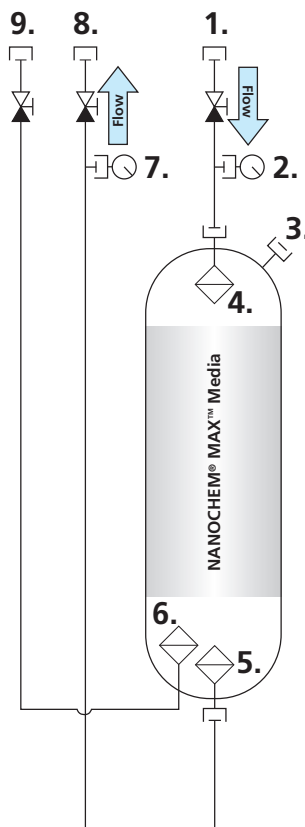
Hardware

The purifier typically consists of an inlet valve, a canister filled with the purification media, an inlet pressure gauge, a gas sample port, an outlet pressure gauge, and an outlet valve. The canister volume is 10 L.

Construction Materials

All purifier hardware components that contact the process gas stream are:

- 304 stainless - purifier body
- 316L stainless steel - tubing, valve bodies, filters
- Nickel 200 - face-seal gaskets
- Polychlorotrifluoroethylene - valve seats
- Type 316 stainless steel - valve diaphragms
- Purifier support plates are fabricated of 0.25" thick 6061-T6 aluminum
- Purifier support frames are fabricated of 1" x 1" 304 stainless steel square tubing
- 0.5 micrometer SS sintered frit filter at the outlet
- Internal surface finish < 10 µin R

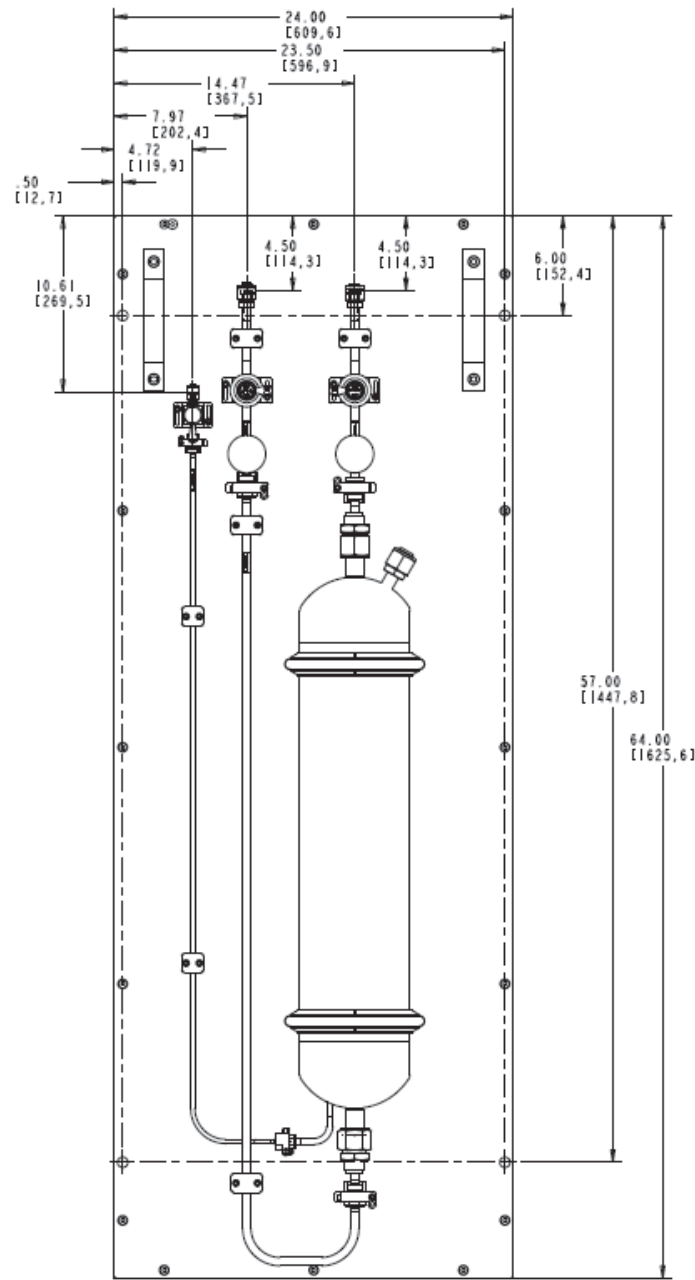


1. Process Gas Inlet (1/2" MVCR)
2. Inlet Pressure Gauge
3. Overpressure Relief (1/2" tube)
4. Inlet Gas Filter
5. Outlet Gas Filter
6. Sample Port Gas Filter
7. Outlet Pressure Gauge
8. Process Gas Outlet (1/2" MVCR)
9. Sample Port (1/4" MVCR)



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• Dimensions



HF-10000-HP Purifier back plate dimensions

Note: MATHESON reserves the right to change specifications at any time. Refer to a current data sheet or contact your MATHESON sales representative to get detailed specifications.

• Piping

Nominal outside diameter of all purifier and manifold piping is ¼" or ½". Radiograph inspection is performed on all orbital welds.

• Purifier Vessel

The pressure vessel is designed and manufactured per ASME Boiler and Pressure Vessel Code Section VIII, Division 1, 2015 Edition.

• Filtration

The purifier is equipped with 0.2 μ particle filtration, internal to the canister assembly.

• Rupture Disc

The purifier is equipped with a rupture disc installed on the media fill port, which is designed to burst at 3,000 psig @ 49° C / 120° F.

Note: Purifiers normally operate at room temperature. The maximum operating temperature recommended is 40° C / 104° F. Operating the purifier above this pressure and temperature will result in bursting of the rupture disc and rapid loss of pressure in the purifier and system. The purifier is equipped with a filter and vent line on the fill port where the rupture disc is installed. The vent line should be connected to a suitable vent.

• Flow Rate

Media bed volume	10 L
Maximum process gas flow rate slpm (NM ³ /hr)	5000* (300)
Maximum permissible operating pressure psig (MPa)	3000 (20.6)

*Estimated flow rate. Flow rate may be higher dependent on inlet pressure.

Specifications are subject to change. Please check www.mathesongas.com for most current information.
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