



Inert Gas Purifier GP-100

The GP-100 purifier has been designed to fill the needs of researching and development engineers and scientists, as well as production staff to provide a lightweight, compact, low-cost inert gas purification system. This unit operates off of standard cylinder gas to purify inert gases to ultra-high purity and avoids the problem of cylinder walls outgassing during storage. It can be placed in operation in less than 1 hour, simply by connecting the inlet, outlet fittings and 110VAC electrical connection.

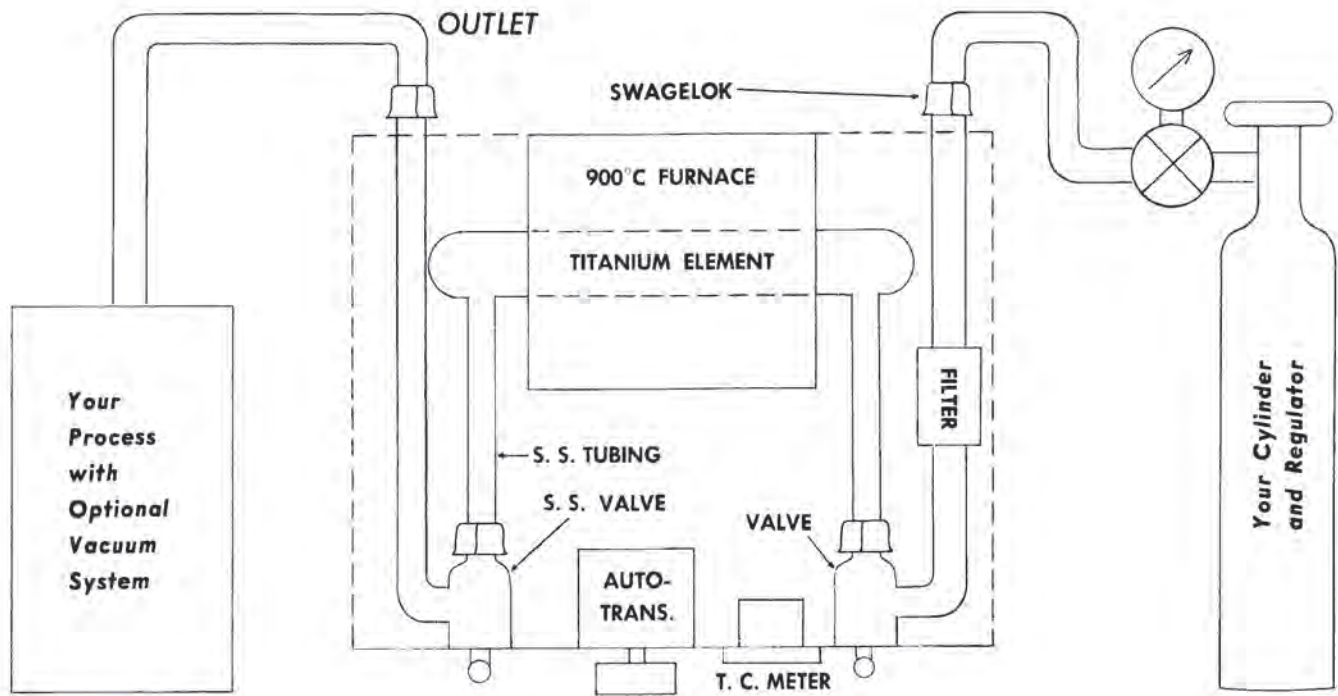


The GP-100 has been shown to purify 99.8% argon gas to 99.9991% purity as part of a worst case test. The principle impurity levels at flow rates of 1/4 liter/min. (0.53 cu. ft./hr.) were measured to be H₂O-2 p.p.m., N₂/CO-3 p.p.m., O₂-2 p.p.m., Ethane-1 p.p.m., other Hydrocarbons - no detection, and CO₂-1 p.p.m., with the limits of detectability set at 1 p.p.m.,* Available literature indicates that starting from a high purity gas and an all stainless steel system impurity levels as low as 10-8 p.p.m. in oxygen can be obtained. While the unit was designed primarily for argon gas, it may be used for helium, xenon, and neon.

Applications for the unit include purification of gases for sputtering modules, crystal growth furnaces, and glove boxes. A paper on "The Purification of Inert Gases" by R.T. Payne, Ph.D., discussing a variety of inert gas purification techniques is available upon request.

* Impurities were measured with a mass spectrometer by West Coast Technical Service, San Gabriel, California.

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S.S. – Stainless Steel

GP-100 INERT GAS PURIFIER

- Particle Filter:** On inlet side 7 microns nominal, replaceable
- Titanium Element:** Quartz, replaceable
- Furnace:** 400 watts maximum, 0-1000° C
- Temperature Control:** Chromel – Alumel Thermocouple, meter on front panel along with autotransformer control
- Outlet:** All stainless steel fittings, toggle valve, 1/4" Swagelok coupling
- Inlet:** 1/4" Swagelok coupling, particle filter and 1/4" toggle valve
- Maximum Flow:** At 99.9% pure inlet gas 1/4 liter/min. (0.53 cu. ft./hr.) at atmosphere pressure
- Pressure-Vacuum:** 10 psi maximum, helium leak tight vacuum
- Power Supply:** 110VAC, 5A; switch, pilot light and fuse on front panel
- Size:** 7-3/16" H x 19-1/8" W x 10-1/2" D
- Weight:** 20 Pounds
- Cooling:** Requires 1" clearance on all sides for adequate air cooling
- Options:** Also available in 220VAC unit, or all Stainless Steel tubing and parts throughout gas flow path