



# Inert Gas Purifier GP-100

The GP-100 purifier has been designed to fill the needs of research & development engineers, scientists, and 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 set up for operation in less than one hour, simply by connecting the inlet, outlet fittings and 115VAC or 230VAC 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 H<sub>2</sub> 0-2 p.p.m., N<sub>2</sub> /CO-3 p.p.m., O<sub>2</sub> -2 p.p.m., Ethane-1 p.p.m., other Hydrocarbons - no detection, and CO<sub>2</sub>-1 p.p.m., with the limits of detectability set at 1p.p.m.\*

Available literature indicates that when 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 also 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 technical paper titled *The Purification of Inert Gases* by R.T. Payne PhD discusses a variety of inert gas purification techniques, and is available upon request.

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

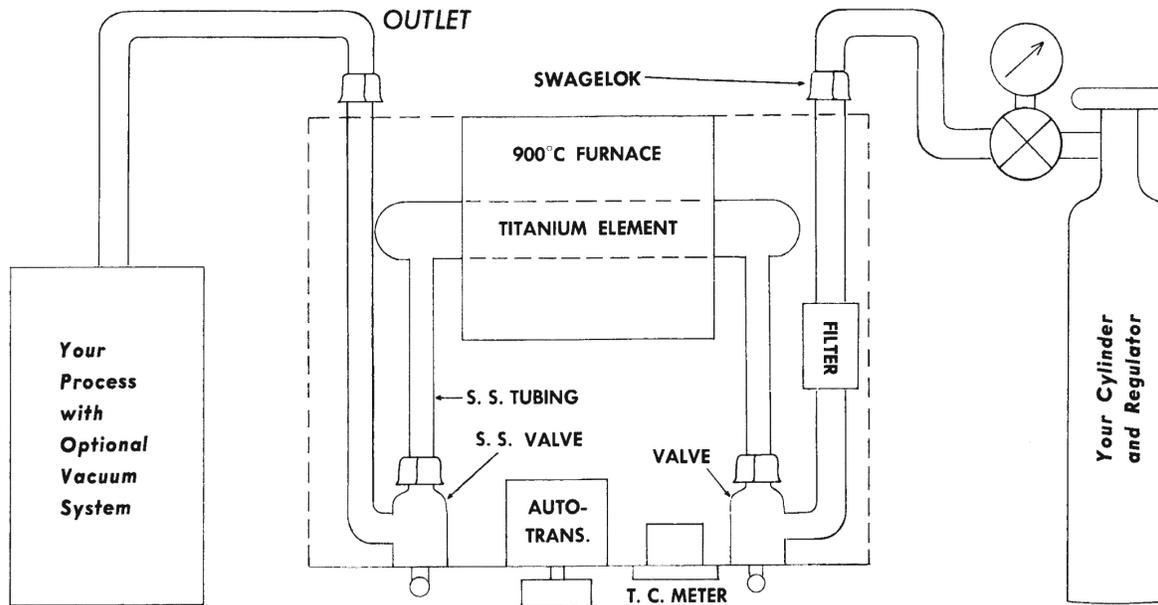
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S.S. = Stainless Steel

## 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:	115VAC, 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 lbs
Cooling:	Requires 1" clearance on all sides for adequate air cooling
Options:	Also available in 230VAC unit, or all Stainless Steel tubing and parts throughout gas flow path
Model P/N's:	GP100-115V, GP100-115V-SS, GP100-230V, GP100-230V-SS