

SG3890 Series

Tee & Cross Purge Assemblies

Purging, meaning to cleanse, is an important procedure which is often overlooked in many gas processes. Before initial and subsequent system startups, purging should be done to remove contaminants (such as air and water vapor) from the gas delivery system. To enhance operator safety, purging should also be done before changing out cylinders to remove residual corrosive or toxic gases.

Oxygen and moisture can adversely affect many applications, reducing the quality of products being produced, or affecting the results of tests being performed. In addition, many gases such as Hydrogen Chloride or Chlorine will react with moisture to form highly corrosive acids. These acids will attack most metals, including stainless steel, thereby reducing the service life of pressure regulators and other system components. Proper purging techniques can avoid these and other related problems.

Purging is often done by simply flowing the service gas through the system and venting until the system has been cleansed. However, when the service gas is toxic, corrosive or otherwise hazardous, purging by this method is not practical. In these cases, purging is normally accomplished using an inert purge gas such as dry Nitrogen.

Purge assemblies provide a means to introduce the purge gas into the system after the service gas cylinder has been connected. Advanced offers purge assemblies in two basic configurations, tee type and cross type.

Tee Type Purge Assemblies

Tee type purge assemblies are used between the gas cylinder and pressure regulator. They feature a diaphragm seal valve which connects to a regulated purge gas source. This allows the operator to flush the system with the purge gas to remove atmospheric contamination prior to start-up or after a cylinder change.

Similarly, the purge gas is also used to flush the service gas from the system before disconnecting an "empty" cylinder, reducing the potential for operator exposure.

Tee type purge assemblies have a check valve installed in the purge inlet port to prevent back flow of gas into the purge line should the purge valve be inadvertently left open. They are available in either brass or stainless steel construction.

Cross Type Purge Assemblies

Cross type purge assemblies are also used between the gas cylinder and pressure regulator. In addition to providing the same functions as tee type purge assemblies, cross purge assemblies also feature an inlet isolation valve and a vent valve.

The inlet valve allows the operator to isolate the pressure regulator and downstream system prior to a cylinder change. As such, the amount of air entering the system (when changing cylinders) is limited to just the internal area of the purge assembly itself. This keeps downtime to a minimum since this small area can be purged rather quickly.

The vent valve connects to a suitable disposal line. This allows the operator to remove the trapped service gas from the purge assembly when the isolation valve has been closed—a decided advantage when working with toxic or otherwise hazardous gases.

Cross type purge assemblies also have a check valve in the purge inlet port. They are available in Type 316 Stainless Steel construction only. Additionally, the Model SG3898 Purge Assembly features ¼-turn valves which allow for easy cycling, and provide a visual indication that the valves are opened or closed.

Specifications

Maximum Operating Pressure: 3000 psig

Inlet and Outlet Connections:

SG3893: CGA 320, 330, 346, 350, 510, 540, 580, 590 or 660 as ordered

SG3894, SG3897 and SG3898:

CGA 320, 330, 346, 350, 510, 540, 580, 590, 660, 670, 678 or 705 as ordered

Purge Gas and Vent Connections:
¼" compression type fittings

Approximate Weight:

SG3893 and SG3894: 1 ½ lbs
SG3897 and SG3898: 3 lbs

Materials of Construction

Metal Parts Exposed to Gas: See Table I

Valve Seats/Seals:

Diaphragm Seal Valves:

PCTFE/Stainless Steel

Check Valves: Viton®/Teflon®*

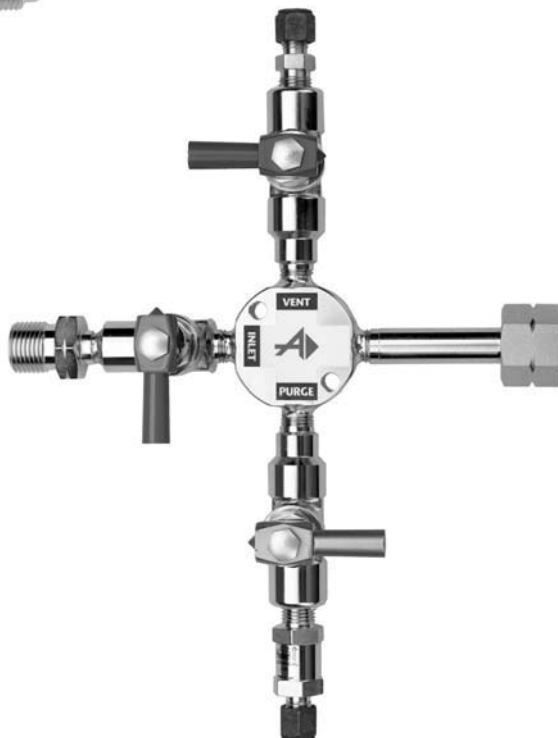
Check Valve Spring:

Type 302 Stainless Steel*

*Under normal operation, check valves are exposed to the purge gas only.



SG3893/SG3894
Purge Assembly



SG3898
Purge Assembly



SG3897
Purge Assembly

Table I

Part No.	Purge Assembly Configuration	Metal Parts Exposed to Gas	Valve Type
SG3893-(CGA)	Tee Type	Brass and Stainless Steel	Multi-Turn Diaphragm Seal
SG3894-(CGA)	Tee Type	Type 316 Stainless Steel	Multi-Turn Diaphragm Seal
SG3897-(CGA)	Cross Type	Type 316 Stainless Steel	Multi-Turn Diaphragm Seal
SG3898-(CGA)	Cross Type	Type 316 Stainless Steel	¼-Turn Diaphragm Seal

Where “(CGA)” is indicated above, insert appropriate Compressed Gas Association connection number to complete the part number. Example: SG3897-350. Order by complete number. Purge assemblies are not available with CGA connection numbers 110, 170, 180 or 240.

Optional Equipment

Equipment	Part No.
Inboard Helium Leak Test (cross purges only)	HT1000
Outboard Helium Leak Test (cross purges only)	HT1001