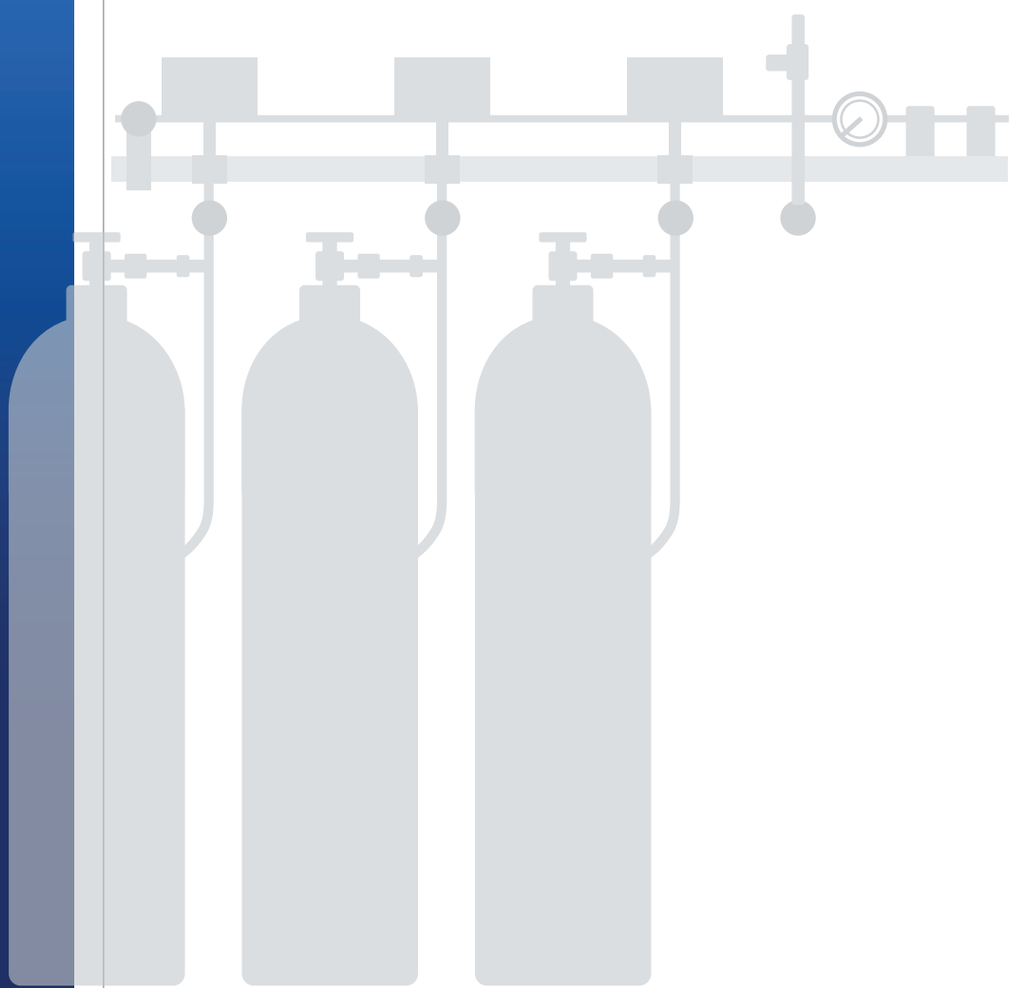
Swagelok® Source Inlet (SSI)

User Manual



Swagelok

Content

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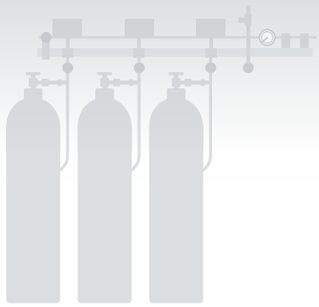


Swagelok® Source Inlet (SSI)

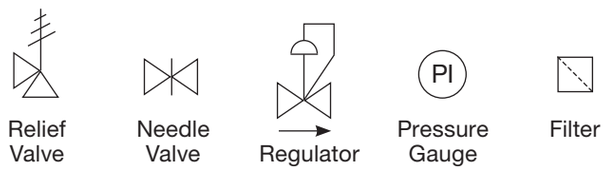
Introduction

Swagelok® source Inlet systems (SSI) are designed to handle incoming gases, usually from a bottle or bottle multipack source. The gas will flow through the SSI and connect to one of the other Swagelok systems, typically a Swagelok gas panel (SGP) or Swagelok changeover panel (SCO), where the pressure can be regulated.

Configurations

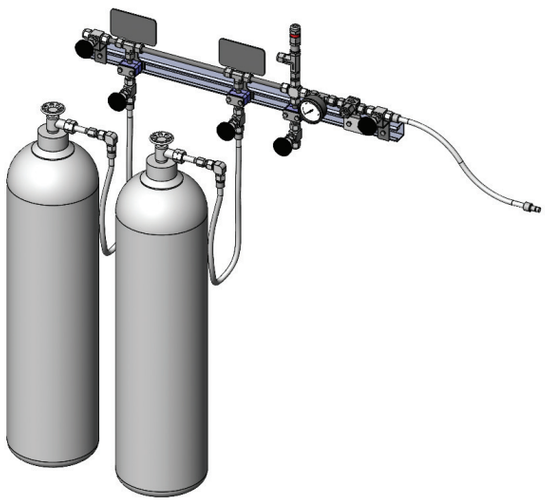
Overview

The SSI is available in three configurations. See the SSI section of the *Gas Distribution Systems, Application Guide*, MS-02-486, for additional information.

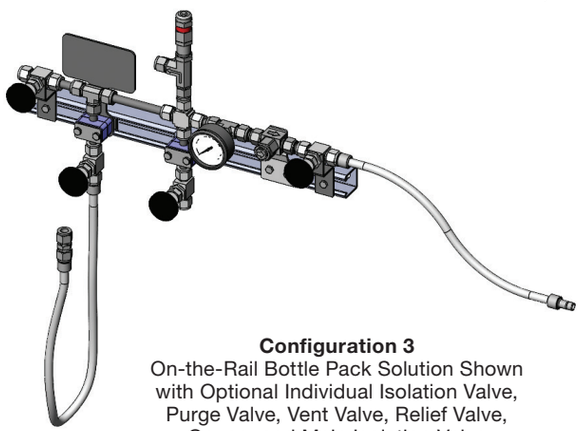


Configuration Symbols

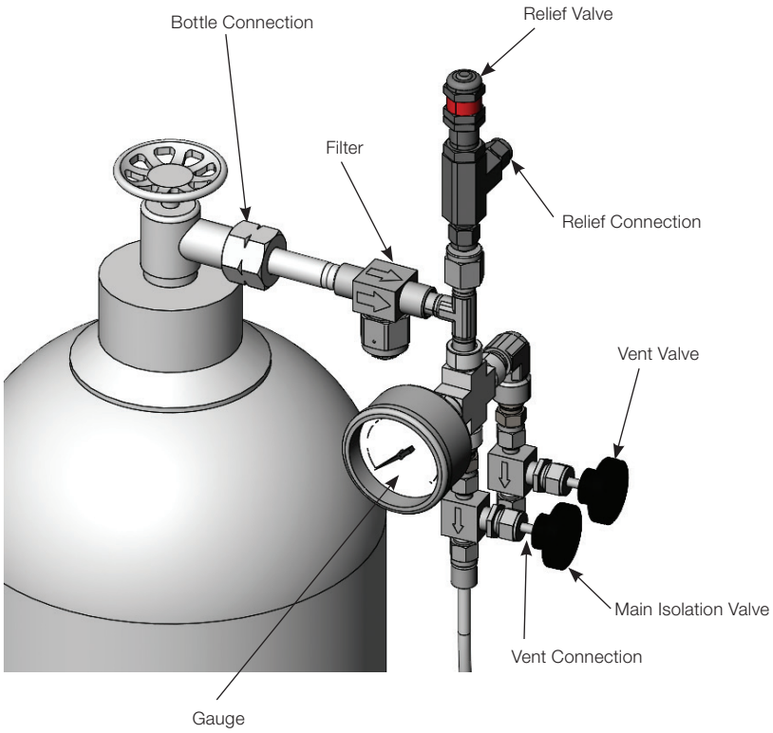
Configuration 1
On-the-Bottle Solution Shown with Optional Gauge, Isolation Valve, and Vent

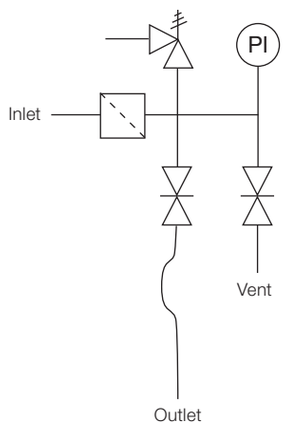


Configuration 2
On-the-Rail Solution Shown with Optional Individual Isolation Valve, Purge Valve, Vent Valve, Relief Valve, Gauge, and Main Isolation Valve

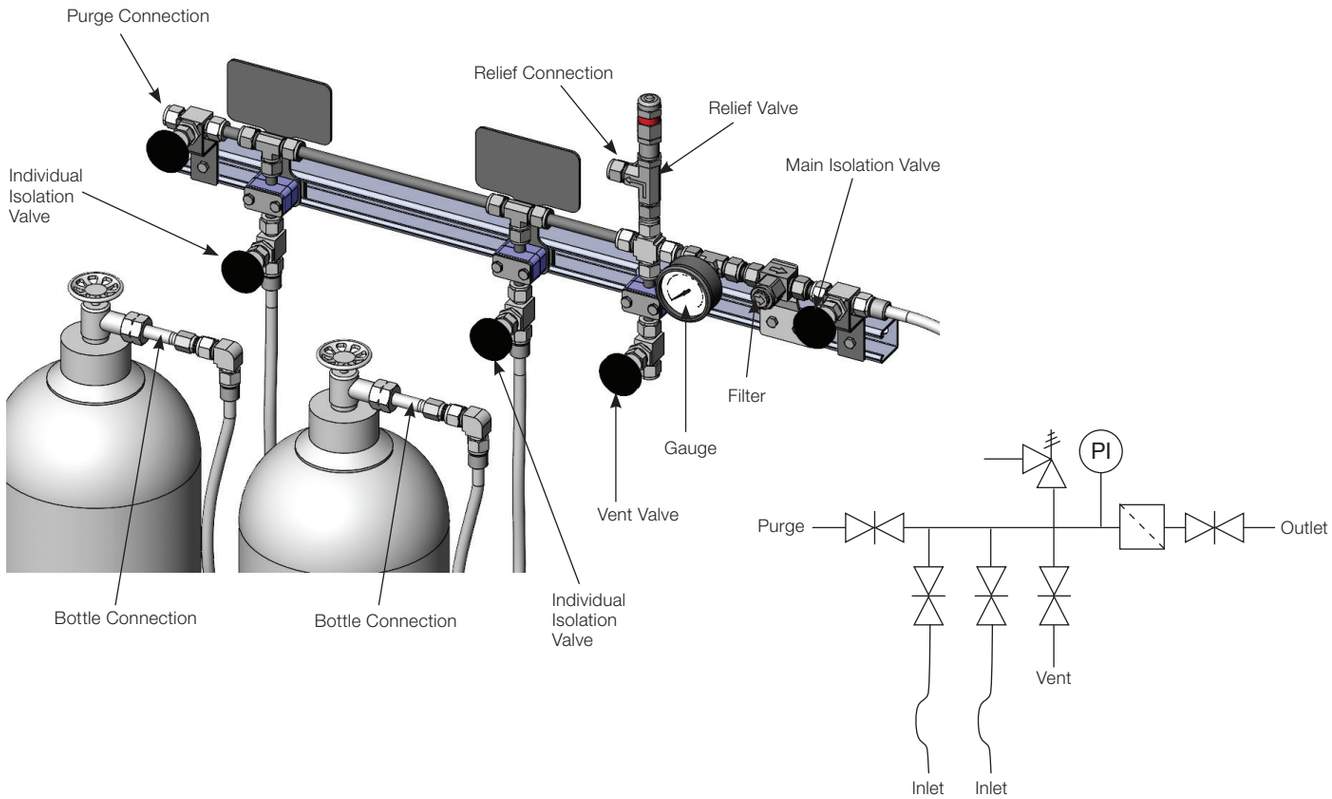


Configuration 3
On-the-Rail Bottle Pack Solution Shown with Optional Individual Isolation Valve, Purge Valve, Vent Valve, Relief Valve, Gauge, and Main Isolation Valve





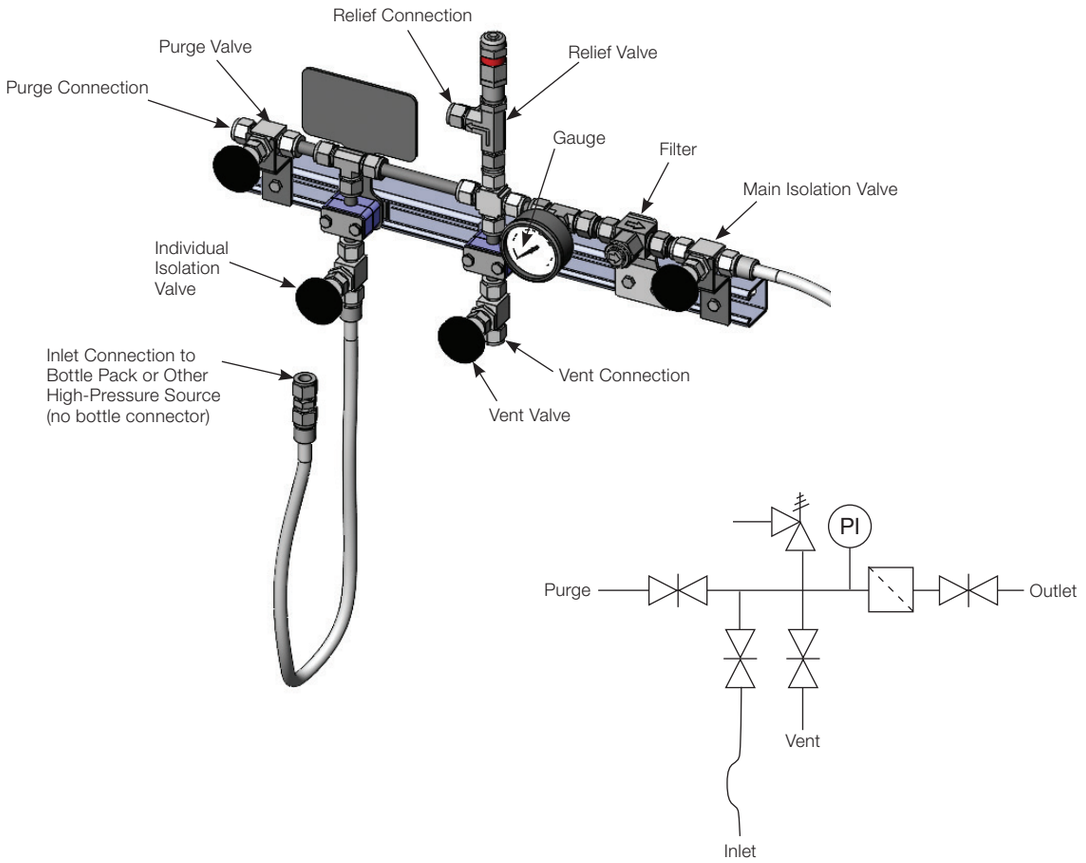
Configuration 1: On-the-Bottle Configuration with Optional Gauge, Vent Valve, Relief Valve, and Isolation Valve



Configuration 2: On-the-Rail Configuration with Optional Bottle Isolation, Purge Valve, Vent Valve, Relief Valve, Gauge, and Main Isolation Valve

The SSI will be configured in this manner when you choose one of the following bottle connection types. It is meant to connect directly to a bottle gas source.

		Position 3 Character 1				
		CGA	BS341 (250 bar)	BS341 (300 bar)	DIN477-1 200 bar	DIN477-5 300 bar
		C	B	3	D	5
Position 3 Character 2	1		BS-1	BS-31	Nr. 1	
	2	CGA 680		BS-32		
	3	CGA 695	BS-3			
	4		BS-4			Nr. 54
	5				Nr. 5	Nr. 55
	6		BS-6		Nr. 6	Nr. 56
	7		BS-7		Nr. 7	Nr. 57
	8		BS-8	BS-38	Nr. 8	Nr. 58
	9				Nr. 9	Nr. 59
	0		BS-10	BS-30	Nr. 10	
	A				Nr. 11	Nr. 60
	B	CGA 320	BS-12		Nr. 12	
	C		BS-13		Nr. 13	
	D	CGA 350	BS-14		Nr. 14	
	E		BS-15			
	F	CGA 540	BS-16			
	G	CGA 580				
	H	CGA 590				
	I					
	J	CGA 660				



The SSI will be configured in this manner when you choose one of the following bottle connection types. It is made to connect to a gas source that does not have a bottle connection.

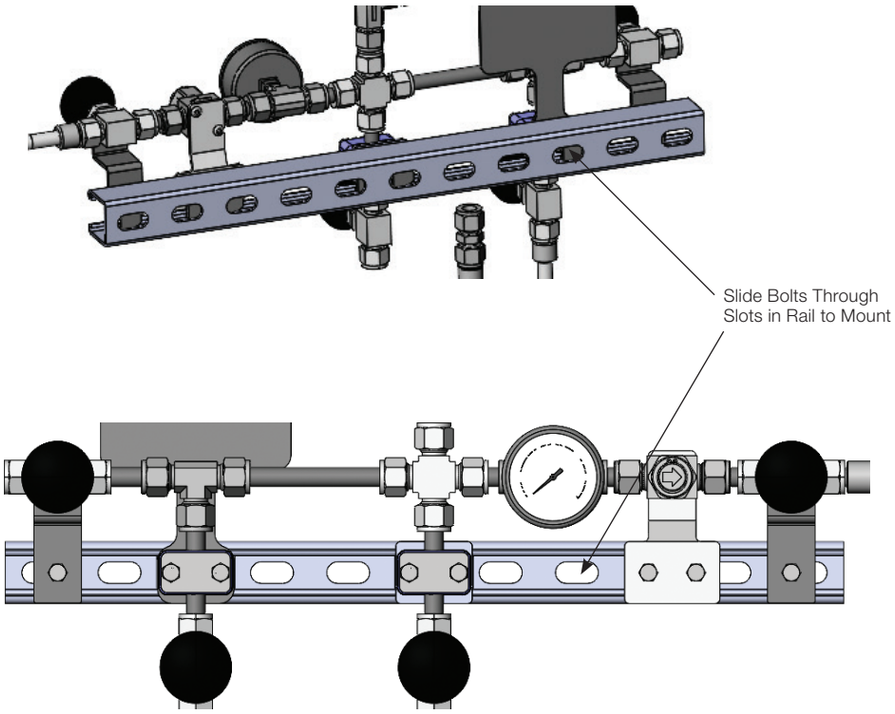
Postion 3 Character 1 and 2	End Connections When No Bottles to Be Connected	
	S4	1/4 in. Swagelok tube fitting
	S8	1/2 in. Swagelok tube fitting
	M6	6 mm Swagelok tube fitting
	M2	12 mm Swagelok tube fitting
	F4	1/4 in. female NPT
	N4	1/4 in. male NPT

NOTE: For pressure ratings, see the *Gas Distribution Systems, Application Guide*, MS-02-486, for additional information.

Configuration 3: On-the-Rail Configuration with No Bottle Connector and Optional Bottle Isolation, Purge Valve, Vent Valve, Relief Valve, Gauge, and Main Isolation Valve

Mounting

A rail is added to the manifold to mount all the components when one or more bottles are selected. This rail can be easily mounted to a wall through the slots provided.

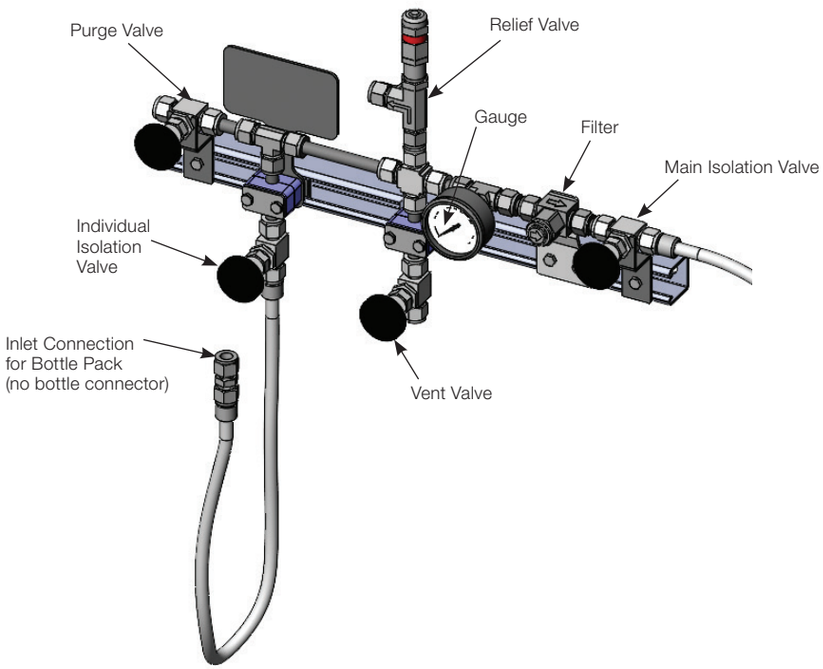


Installation

1. Slide bolts through slotted holes to mount to desired vertical surface (wall, bench, etc.).
2. Ensure rail is not loose, bolts are tightly fastened, and the SSI is securely mounted.
3. Ensure the gas bottle connector on the cylinder matches the bottle connector on the SSI.
4. Connect cylinder(s).

System Startup

1. Close the **vent valve**, **isolation valve(s)**, and **purge valve** (if present).
2. Ensure proper gas compatibility with supplied bottle connector.
3. Ensure cylinder(s) are connected.
4. Open **individual isolation valve** (if present).
5. Ensure **gauge** is reading proper pressure.
6. Ensure **relief valve** (if present) is not relieving pressure.
7. Open **main isolation valve** (if present).



Operation

⚠ **CAUTION** **To increase service life, ensure proper valve performance, and prevent leakage, apply only as much torque as is required to achieve positive shutoff.**

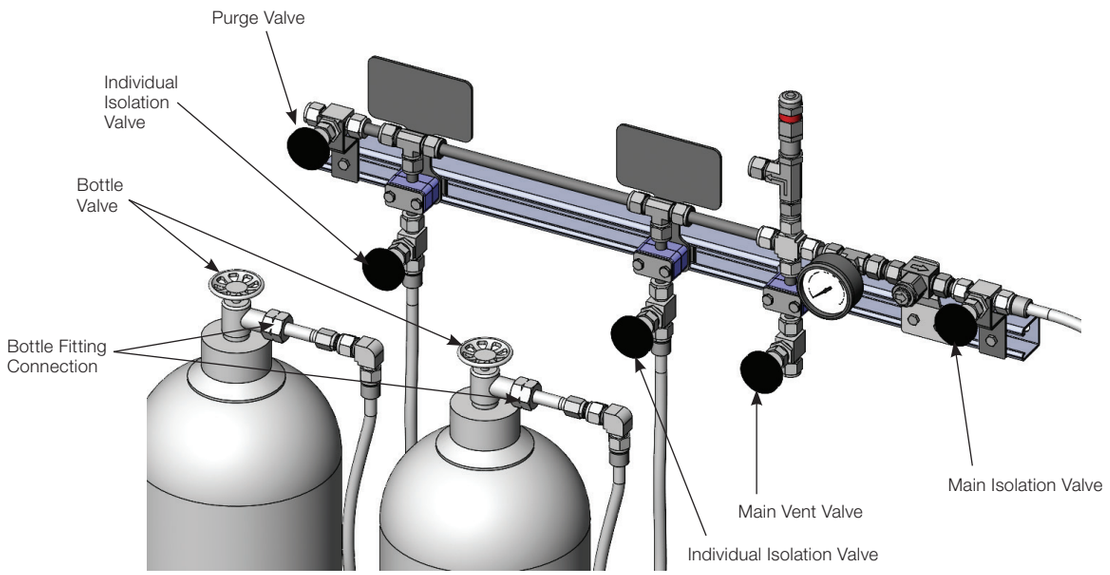
Bottle Change Procedure

1. Ensure **purge valve** is closed.
2. Close **bottle** valves.
3. Open **individual isolation valves**.
4. Close **main isolation valve**.
5. Open **main vent valve**.
6. When gas ceases to flow, close the **main vent valve**.
7. Loosen **bottle fitting connection** and change out the bottles.
8. Tighten **bottle fitting connections** on the new bottles.
9. Ensure **individual isolation valves** remain open.
10. Open the **bottle valves** to desired bottles.
11. If gauge is present, ensure working pressure of bottle.
12. Open **main isolation valve**.

Purge Gas Procedure

1. Make sure **purge valve** is closed. Connect purge gas to **purge valve**.
2. Close **bottle valves**.
3. Open **individual line isolation valves**.
4. Close **main isolation valve**.
5. Open **main vent valve**.
6. Open gas **purge valve,** ensuring there is correct supply pressure.
7. Once purge is complete, turn off **purge valve**.
8. Close **main vent valve**.

NOTE: This purge process can vary depending on your requirements or local regulations, gas systems used, gas pressures used, and reason for purging. It is only meant as a guide for for development of your own purge procedure.



Maintenance

- All components are designed to be easily replaced within the system. Brackets may be unbolted from the rail with the components attached and any maintenance on the SSI can be done in a different location if needed. The components can also be unbolted from the bracket and replaced with the bracket remaining in place.
- The filter is mounted on a bracket to enable the filter nut to be removed easily without unbolting anything from the system. Follow *TF Series Tee-Type Filter Service Instructions,* MS-CRD-0007, to perform maintenance on the filter based on wear and fatigue.
- Establish an inspection schedule for any hoses within the SSI based on system application and replacement history. Replace hoses as necessary following local regulations.

Maintenance by System Component

System Component	Replacement Ordering Information
Proportional relief valve (R3A series)	*Proportional Relief Valves, R Series,* MS-01-141
Swagelok tube fitting	*Gaugeable Tube Fittings and Adapter Fittings,* MS-01-140
D series needle valve	*Nonrotating-Stem Needle Valves, D Series,* MS-01-42
0, 1, 18, 20, and 26 series integral bonnet needle valve	*Integral Bonnet Needle Valves, 0, 1, 18, 20, and 26 Series*, MS-01-164
TF series filter	*Filters,* MS-01-92
T, X, FM, and FX series hose	*Hose and Flexible Tubing*, MS-01-180

Reference Instruction Documents

Swagelok Tube Fitting Instructions for 1 in (25 mm) and Smaller Fittings, MS-12-01
R3A Series Externally Adjustable Relief Valve Maintenance Instructions, MS-CRD-0013
R4 Series Relief Valve Spring and Seal, MS-CRD-0048
TF Series Tee-Type Filter Service Instructions, MS-CRD-0007
D Series Maintenance Instructions, MS-INS-DK-1
Repacking Instructions for Integral Bonnet Needle Valves, 0, 1, 18, 20, and 26 Series, MS-INS-IB-LL
Replacing O-Ring Seals for Integral Bonnet 0, 1, 18, 20, and 26 Series Needle Valves, MS-INS-FB-OR

Troubleshooting

Symptom	Cause	Remedy
No/Low outlet flow or low outlet pressure.	Isolation valve is shut.	Open isolation valve.
	Filter is clogged.	Replace filter element.
	Supply line obstructed.	Remove obstruction or replace line.
	Bottles are empty.	Switch bottles.
Vent, purge, or isolation valve does not shut off.	Valve not closed fully.	Tighten valve.
		Replace valve.
	Valve is damaged.	Replace valve.
Vent, purge, or isolation valve leaks externally.	Packing is leaking.	Make packing adjustment.
	Valve is damaged.	Replace valve.
Relief valve relieving pressure.	Bottle pressure is too high.	Check bottle pressure.
	Set point of relief valve is too low.	Check set point of relief valve.

For any symptoms not identified in the above table, please contact your local Swagelok sales and service center.

Safe Product Selection
When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

⚠ WARNING
Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.

Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com or contact your authorized Swagelok sales and service center.

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