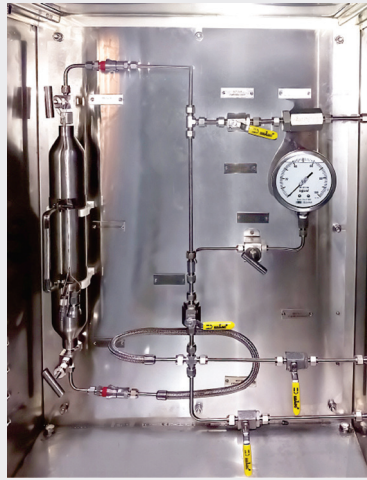


# Close Loop Sample Handling System

## CLSHS1



CLSHS1

### FEATURES

- » Quick Disconnect connections
- » Sampling directly from process
- » High Sample integrity
- » Ease of maintenance
- » Ease of Installation
- » Self-Standing
- » NACE certified
- » TPED & DOT Available on request

### ADVANTAGES

- » Enable operators to collect samples (gas or liquid) from process with the condition of i.e. high process pressure and temperature
- » Can also work in with toxic compounds, viscous solutions, with low vapor pressure, etc. Highly reliable for continuous operation
- » Samples can be collected in Sample Cylinders/Sample bottles in a fixed volume for lab testing.
- » Extending analyzer life
- » Facilitating field calibration

### APPLICATIONS

- » Petrochemical Industries
- » High purity gas analysis
- » Furnace or heat treating
- » Hydrocarbon gases or liquids
- » Refineries

### DESCRIPTION

Each Sampling System will be equipped with cylinder valves for controlling flow, venting & isolating the system from the process.

End connections could be flanged or as per end user/customer requirement.

Each sampling system will have flexible connection for the sample cylinder outlet and fixed connection for the sample cylinder inlet

Quick Disconnect connections shall be used and shall be capable enough of self-sealing with the ability to withstand at least (internal Pressure Range) internal pressure when disconnected from the cylinder.

The system will include bypass flow for cylinder and depressurizing the system before cylinder removal.

The system shall include provisions for securely holding the sample cylinder during sampling .

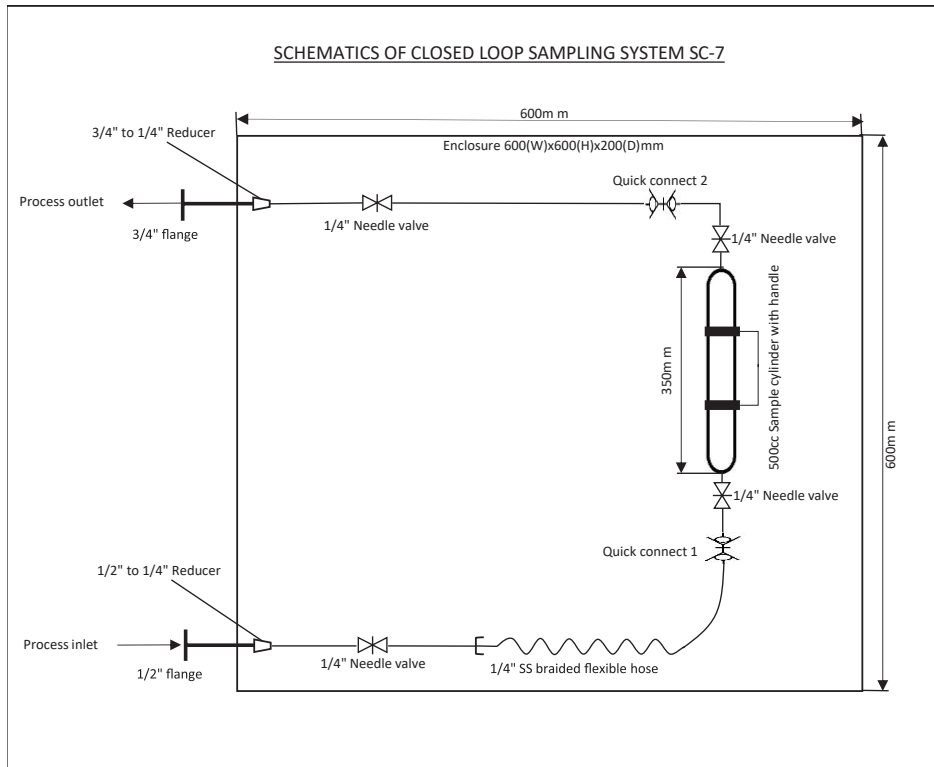
The system shall bear the a label indicating the maximum allowable operating pressure and temperature

High sample integrity –

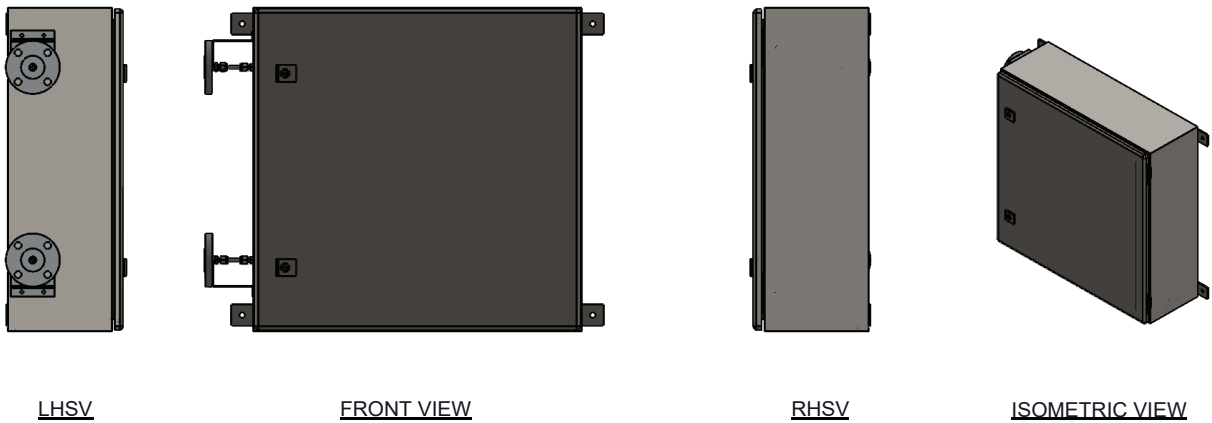
One or two process connections – easy to install and minimum potential leak points

Safe design, requiring minimum operator time and training

**SCHEMATIC DIAGRAM**



**GA DRAWING**





## Sample Cylinder



### FEATURES

- » Cylinder body is made of seamless pipe
- » Cold-formed female NPT threads provide greater strength.
- » Heavy-wall end connections provide strength.
- » Seamless tubing provides consistent wall thickness, size, and Capacity.
- » Certified & tested as per international standards.
- » Design as per EN 1964-3-2000.
- » Electro polishing from inside to avoid damage from liquid & gas.
- » Made from SS 304, SS 316 & SS 316L to provide better performance.

### DESCRIPTION

Axis manufactures Gas Sampling cylinders and is specially designed to collect and store high-pressure samples from the remote process location and provide safe containment for storage and transportation to the laboratory for analysis.

These cylinders are rated up to 2000 psi at room temperature for liquids and gases. Some applications include hydrocarbon sampling in refineries, gas sampling in chromatography, and condensate sampling in fossil fuel and nuclear power plants. In similar applications, petrochemical facilities and gas processing plants utilize sample cylinders. Axis makes sample cylinders that are TPED/DOT certified which provides more safety.

### ORDERING INFORMATION

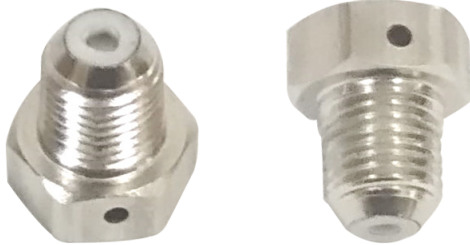
SC			Description
	<b>Material</b>		
	0		SS-304 L
	1		SS-316
	2		SS-316
	3		Others on request
	<b>End Connection</b>		
	0		1/4" F
	1		1/2" F
	2		Others on request
	<b>Capacity</b>		
	0		300 CC
	1		500 CC
	2		1000 CC
	3		Others on request
	<b>Certification</b>		
	0		No certification
	1		TPED
	2		DOT

### TECHNICAL SPECIFICATION

<b>Material</b>	SS 316 / SS 316 L
<b>Dimensions</b>	Depends on capacity
<b>Working pressure</b>	Up to 2000 PSIG
<b>Certification</b>	TPED 2010/35/EU ; DOT
<b>Mounting</b>	Wall mounting
<b>End Connections</b>	1/4" (F)*

\* Others on customer request

## Accessories



Rupture Disc

### RUPTURE DISC

Any pressurized gas cylinders must be equipped with safety relief valves. According to safety standards like DOT and TPED any transportable pressure storage devices must be protected with a relief valve which will be fitted within the cylinder body.

The rupture disc has protected the cylinder from overpressure. When the pressure inside the cylinder will increase, the rupture disc vents the cylinder pressure into the atmosphere.

This rupture disc is fitted in the needle valve at the end of the sample cylinder. The rupture disc has a male thread on it so it can be easily fitted. When the pressure inside the cylinder will be higher than its rating, the rupture disc will open and release the pressure into the atmosphere and save the cylinder from the explosion. In the normal operation to avoid leakage from its end, there is an o-ring fitted on the rupture disc.

### TECHNICAL SPECIFICATION

<b>Body material</b>	SS 316 / SS 316 L
<b>O-ring</b>	Viton
<b>Burst Pressure</b>	As per the requirement
<b>End Connections</b>	1/4" (F)*

\* Others on customer request



Outage Tube

### OUTAGE TUBE

When the temperature inside the cylinder increases, Fluid expands this expansion will increase cylinder pressure. There shall be free vapor space in the top portion of the cylinder, but sometimes due to overfilling the fluid vapor space cannot be maintained. At that time sudden change in ambient temperature will increase the cylinder pressure which affects its safety.

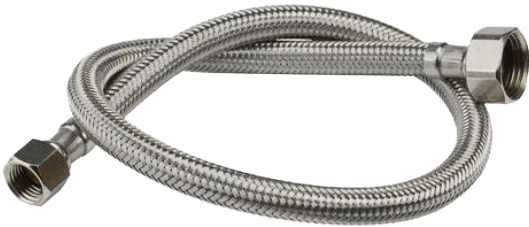
The outage tube works as a vapor spacer in the cylinder and is fitted in the cylinder's top end. When the temperature inside the cylinder will be increased, the fluid will automatically come out in the ambient via an outage tube.

The outage tube mainly has an NPT male thread on its surface which will be fitted in the respective cylinder end female NPT connection. The length of this outage tube depends upon the vapor space available in the cylinder. The seamless tube is welded at the end of the required NPT thread connection.

### TECHNICAL SPECIFICATION

<b>Body material</b>	SS 316 / SS 316 L
<b>End Connections</b>	1/4" (M) & 1/4" NPT (F)*

\* Others on customer request



**Flexible Hose**

**FLEXIBLE HOSE**

Axis manufactures Flexible hose pipe is specially designed to transfer high-pressure samples fluid between two distance points and provides a safe environment for transportation of high-pressure. The flexible metal hose helps absorb vibrations, pipe movements, and noise. They are designed to connect misaligned rigid piping. The metallic hose pipes are durable, corrosion, and temperature resistant.

The flexible hose is made from SS304, SS-316 material as core material, and Teflon, ss-304 & SS-316 as braided material. The flexible hose is suitable for pressure up to 200 bar and for vacuum application, also suitable for 300 °C temperature. The flexible hose can be available in any length as per the customer’s requirements.

**TECHNICAL SPECIFICATION**

<b>Core material</b>	Stainless steel, Teflon
<b>Braid material</b>	Stainless steel
<b>Maximum pressure</b>	200 bar *
<b>Maximum Temperature</b>	300 °C
<b>End fitting type</b>	NPT (M/F), BSP (M/F)**
<b>End fitting size</b>	1/4” , 1/2” & 3/4” **
<b>Tube Length</b>	As per customer requirements

\* Available in the low-pressure range  
 \*\* Others on customer request



**Quick Connector**

**QUICK CONNECTOR**

Quick-connect fittings are used to connect fluid lines with equipment that requires repeated connections and disconnections. They are designed for easy hand operation for use with fitting attachments primarily on mobile machinery.

The design is simple: a male end-or plug-is inserted into a female end-or socket-to make a secure, leak-tight seal. They are sometimes called push-to-connect because connecting them requires only a quick push. No twisting, turn or wrenching necessary.

**TECHNICAL SPECIFICATION**

<b>Material</b>	SS-316, Brass
<b>O-ring</b>	Viton*
<b>Spring</b>	SS 316
<b>Pressure</b>	150 bar **
<b>End fitting size</b>	1/4” , 1/2” & 3/4” ***

\*Depends on working fluid  
 \*\*Available in the low-pressure range  
 \*\*\* Others on request