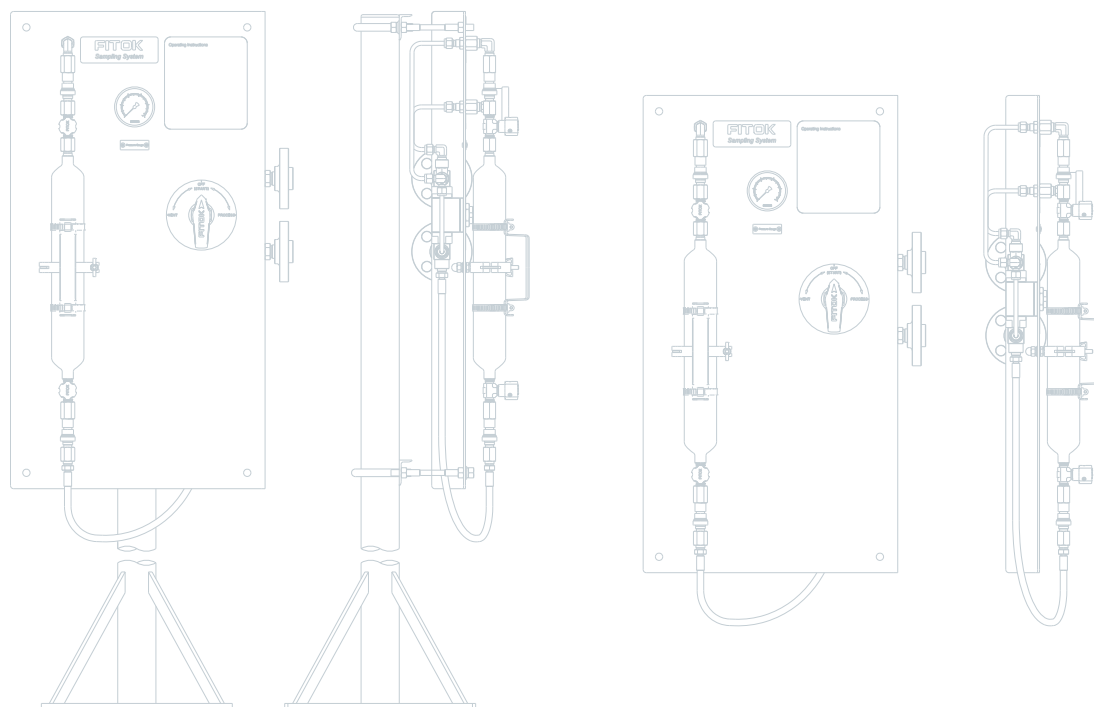


Cylinder Configuration Sampling Systems for Liquefied Gases



FITOK
Valves and Fittings

www.fitokgroup.com

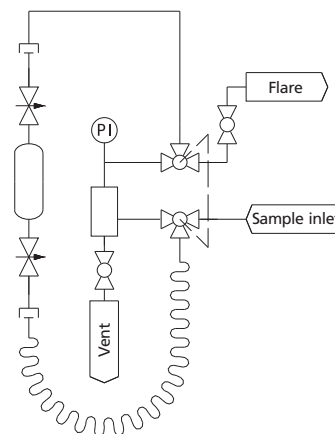
CSF4 - Vent to Flare Type with Expansion Chamber

Features

- Sampling from devices or process lines
- System purge to flare (no circulation loop)
- Predefined sampling volume controlled by an expansion chamber to ensure safe sampling
- Easy operation with a single handle

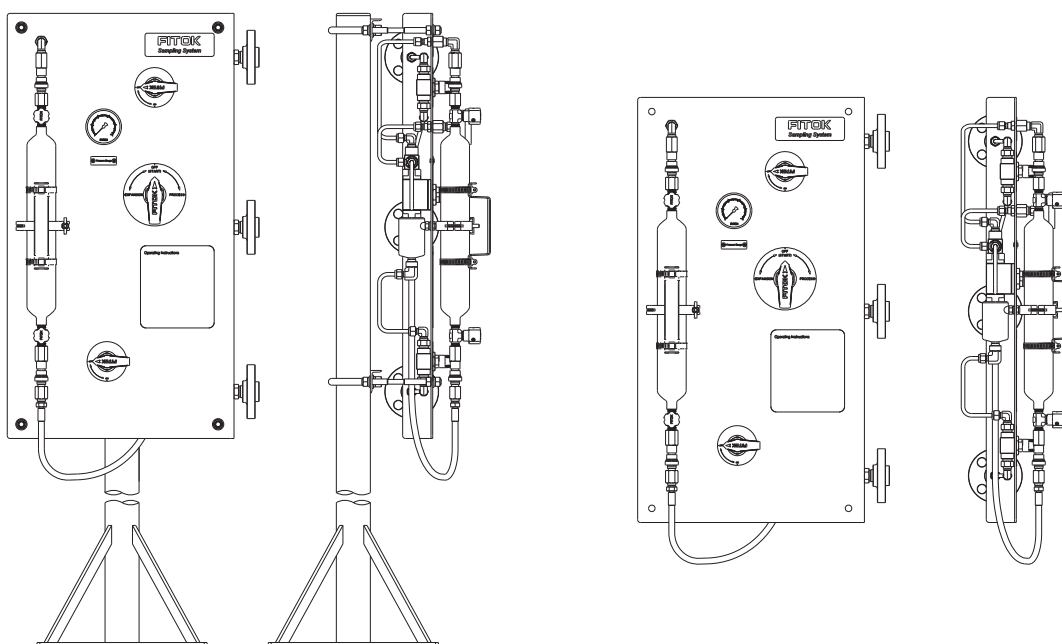
Basic Configuration

Wetted Material	316 SS
Cylinder Assembly	500 ml cylinder
	ND Series needle valves
	QC4 Series quick-connects
Sampling Valve	BF Series ball valves (gearbox linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Expansion Chamber	100 ml, to control the predefined sampling volume to 80% of the cylinder volume
Other Accessories	PS Series metal hoses
	Pressure gauge
Connections	NPS 1/2 flange



Note: Products of other specifications are available upon request.

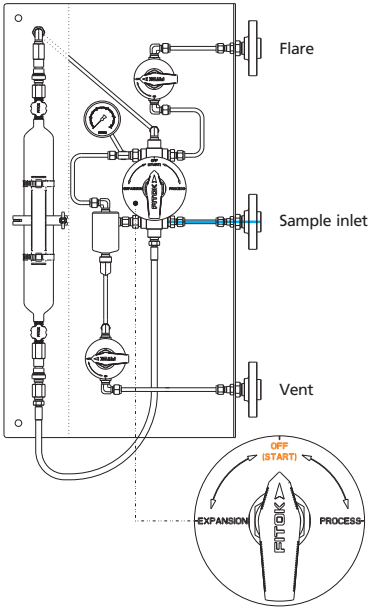
Typical Installation Mode



Operation

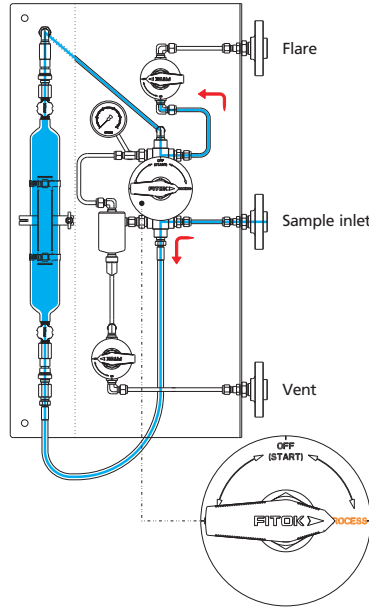
1 - Preparation

Install the sample cylinder and connect the hose to the bottom side of the cylinder. Open the needle valves at both ends of the cylinder.



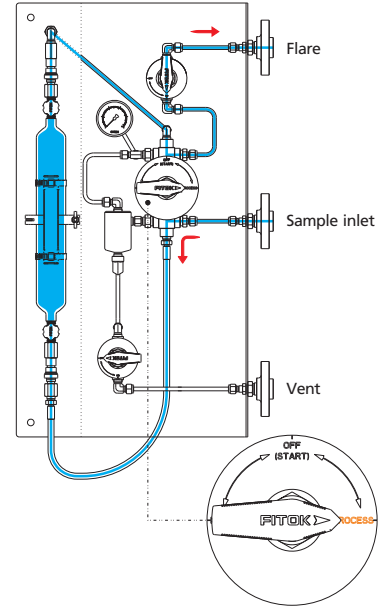
2 - Pre-sampling

Turn the handle to the "PROCESS" position, allowing the sample to flow into and fill the cylinder.



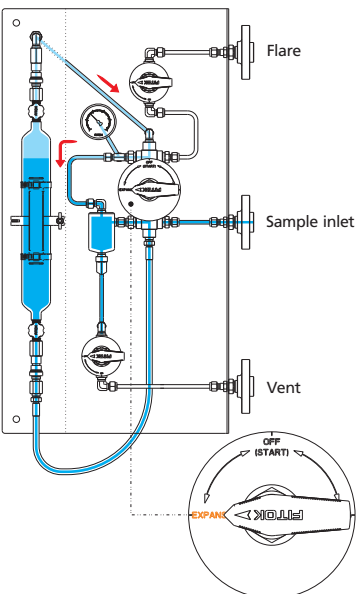
3 - Sampling

Open the ball valve on the flare branch, connecting the sampling line to the flare to allow the sample to flow continuously into the cylinder. Hold for a period of time to ensure representative sampling. Subsequently, close the ball valve.



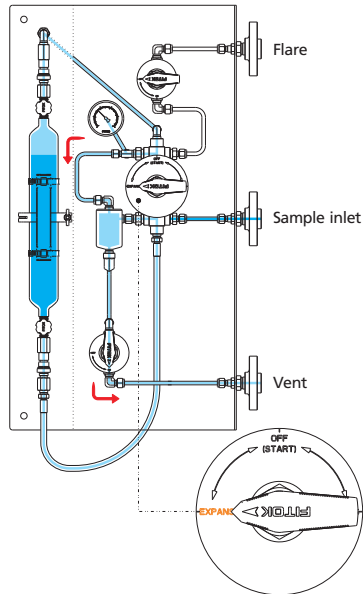
4 - Expansion

Turn the handle to the "EXPANSION" position, connecting the cylinder with the expansion chamber. Hold for a period of time to transfer a portion of sample to the expansion chamber. Close the needle valves at both ends of the cylinder.



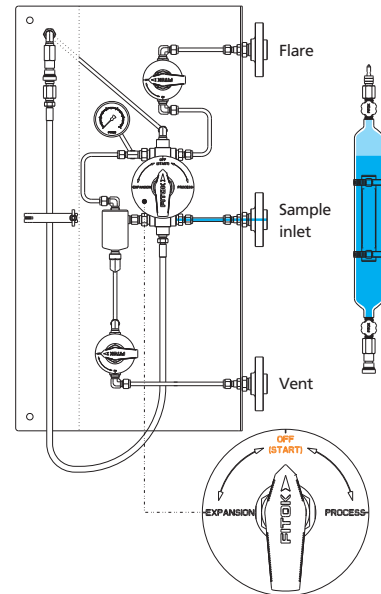
5 - Depressurization/vent

Open the ball valve on the expansion chamber, connecting with the vent line to depressurize and discharge the residual sample out of the system. Subsequently, close the ball valve.



6 - Off

Turn the handle to the "OFF" position and disconnect the hose. Remove the cylinder and connect the hose to the top quick-connect to complete the sampling process.





Application Questionnaire for Selection of FITOK Sampling System

I. Customer Information		Customer Name		End User	
II. Project Information		Project Name		Site Location	
III. Technical Parameters					
No.	Section	Specification			
1	Process Data	Sample/fluid name and composition			
2		Tag number			
3		Fluid phase state	<input type="radio"/> Liquid	<input type="radio"/> Gas	<input type="radio"/> Liquefied gas
4		Design pressure	<input type="radio"/> psig	<input type="radio"/> bar	
5		Operating pressure* ¹	<input type="radio"/> psig	<input type="radio"/> bar	
6		Saturated vapor pressure* ²	<input type="radio"/> psig	<input type="radio"/> bar	
7		Design temp.	<input type="radio"/> °C	<input type="radio"/> °F	
8		Operating temp.* ³	<input type="radio"/> °C	<input type="radio"/> °F	
9		Particles* ⁴	<input type="checkbox"/>	Size and Content	_____ μm, _____ %
10	Materials of Construction	Wetted material	<input type="radio"/> 316SS (Std.) <input type="radio"/> Alloy 400 <input type="radio"/> Hastelloy C-276 <input type="radio"/> Others _____		
11		O-ring material	<input type="radio"/> FKM (Viton)(Std.) <input type="radio"/> FFKM (Kalrez) <input type="radio"/> EPDM <input type="radio"/> Others _____		
12		Valve seat material	<input type="radio"/> PTFE (Std.) <input type="radio"/> PEEK <input type="radio"/> PCTFE <input type="radio"/> Others _____		
13	Connection Type	Inlet/outlet type and size	Inlet _____ Outlet _____		
14		Vent type and size	Vent _____		
15		Nitrogen port type and size	Nitrogen port _____		
16	Sample Container	Container type	<input type="radio"/> Bottle <input type="radio"/> Cylinder		
17	Bottle	Bottle volume	<input type="radio"/> 50 ml <input type="radio"/> 60 ml <input type="radio"/> 100 ml <input type="radio"/> 150 ml <input type="radio"/> 250 ml <input type="radio"/> 300 ml <input type="radio"/> 500 ml <input type="radio"/> 1000 ml <input type="radio"/> 2 oz <input type="radio"/> 4 oz <input type="radio"/> 8 oz <input type="radio"/> 16 oz <input type="radio"/> 32 oz <input type="radio"/> Others _____		
18		Needle assembly size: process needle ID (mm) x vent needle ID (mm)	<input type="radio"/> 1.4 x 1.4 (Std.) <input type="radio"/> 2.0 x 1.4 <input type="radio"/> 2.0 x 2.0 <input type="radio"/> 3.0 x 1.4 <input type="radio"/> 3.0 x 3.0 <input type="radio"/> 4.0 x 1.4 <input type="radio"/> 6.0 x 1.4		
19		Bottle material	<input type="radio"/> Soda-lime glass (Std.) <input type="radio"/> Amber glass <input type="radio"/> Borosilicate glass <input type="radio"/> Polyethylene <input type="radio"/> Polypropylene <input type="radio"/> Others _____		
20		Septum material	<input type="radio"/> PTFE coated silicone(Std.) <input type="radio"/> EPDM <input type="radio"/> Silicone rubber <input type="radio"/> FKM <input type="radio"/> PTFE coated butyl <input type="radio"/> Natural rubber <input type="radio"/> Others _____		
21		Cap material	<input type="radio"/> Polypropylene <input type="radio"/> PBT (Polybutylene terephthalate) <input type="radio"/> Aluminium		
22	Cylinder	Cylinder volume	<input type="radio"/> 75 ml <input type="radio"/> 150 ml <input type="radio"/> 300 ml <input type="radio"/> 500 ml <input type="radio"/> 1000 ml <input type="radio"/> 2250 ml <input type="radio"/> Others _____		
23		Cylinder material	<input type="radio"/> 316L (Std.) <input type="radio"/> 304L <input type="radio"/> Alloy 400 <input type="radio"/> Others _____		<input type="checkbox"/> PTFE coated



Application Questionnaire for Selection of FITOK Sampling System

24	Accessories	Enclosure type and material	<input type="checkbox"/>	<input type="radio"/> Standard <input type="radio"/> Insulated <input type="radio"/> Heated by electric <input type="radio"/> Heated by steam	<input type="radio"/> 304SS (Std.) <input type="radio"/> 316SS <input type="radio"/> Others _____	
25		Panel	<input type="checkbox"/>	Material	<input type="radio"/> 316SS <input type="radio"/> 304SS <input type="radio"/> Others _____	
26		Pipe stand	<input type="checkbox"/>	Material	<input type="radio"/> 304SS <input type="radio"/> CS20 <input type="radio"/> Others _____	
27		Cooler	<input type="checkbox"/>	Cooling inlet/outlet type and size		Inlet _____ Outlet _____
28		Steam tracing	<input type="checkbox"/>	Steam inlet/outlet type and size		Inlet _____ Outlet _____
29		Others* ⁵				
30		P&ID	Please provide comments or sketch if applicable.			
31	Documentation	<input type="checkbox"/> Material Certification EN10204:2004-3.1		<input type="checkbox"/> Inspection & testing report		
32		<input type="checkbox"/> Others, please specify:				

- Remarks:**
- *1 Fix volume sampling system is recommended when inlet pressure > 150psig (10.3bar).
 - *2 Cylinder configuration sampling system is recommended when vapor pressure > 10psia (0.69bar).
 - *3 Cooler is recommended when sample temperature > 140°F (60°C).
 - *4 Filter is recommended when particle size >100μm.
 - *5 If other accessories (such as: check valve, carbon canister, spring return handle and etc.) are needed, please specify.
- 6 Single choice Optional