BL – Bottle Configuration Sampling Systems for Liquids

A Series

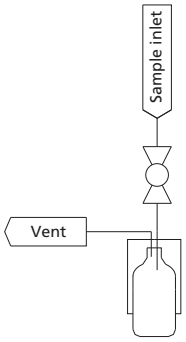
BLA1 - On-off Type

Features

◎ Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)

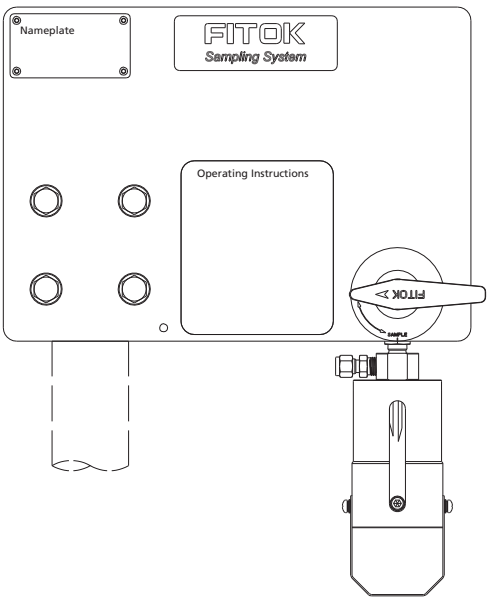
Basic Configuration

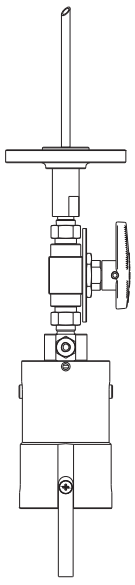
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 2-way ball valves: PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

Typical Installation Mode

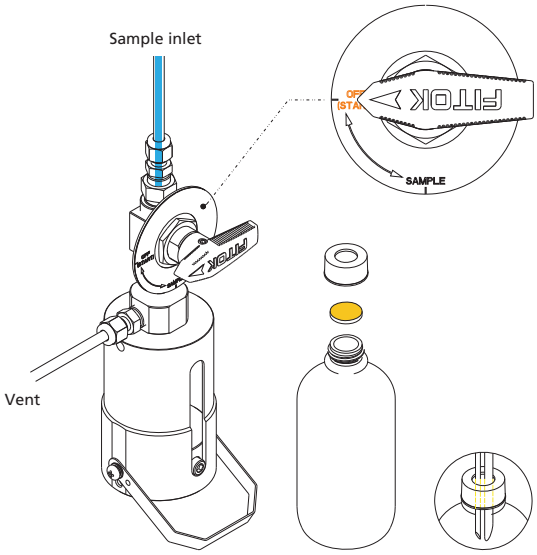




Operation

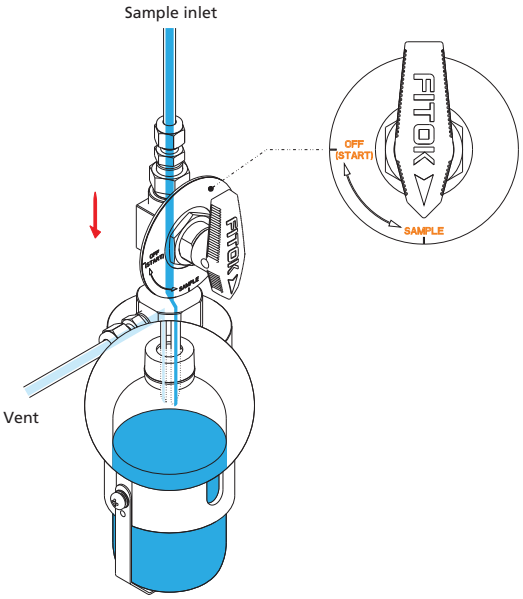
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



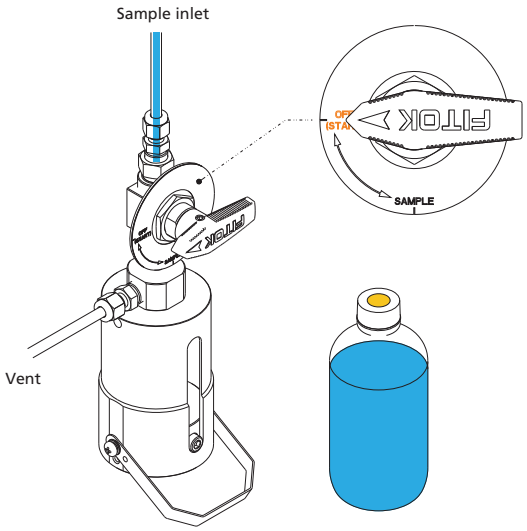
2 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle. When the required amount has been taken, turn the handle to the “OFF” position to close the sampling system.



3 - Off

Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



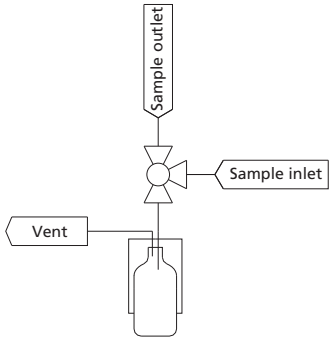
BLA2 - System Purge Type

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- System purge

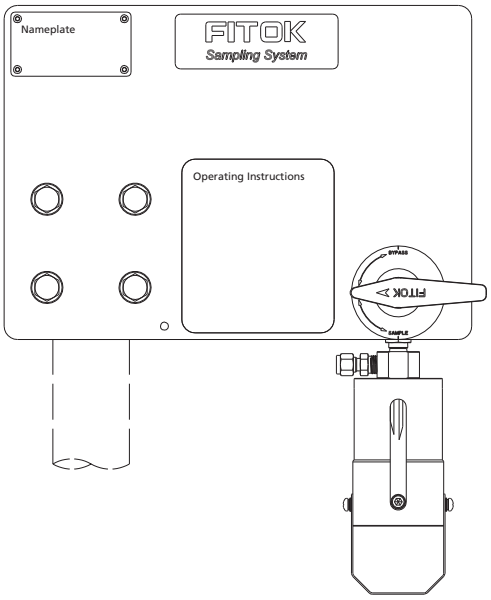
Basic Configuration

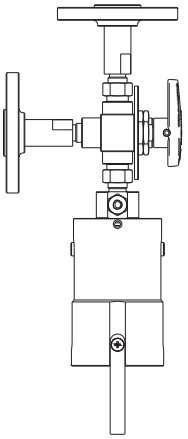
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves: PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

Typical Installation Mode

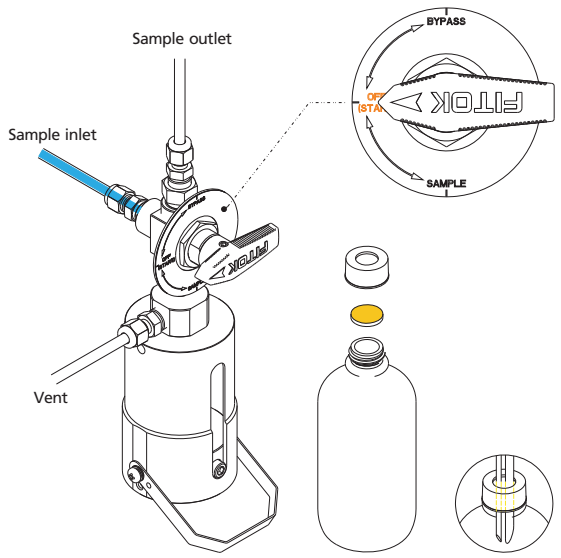




Operation

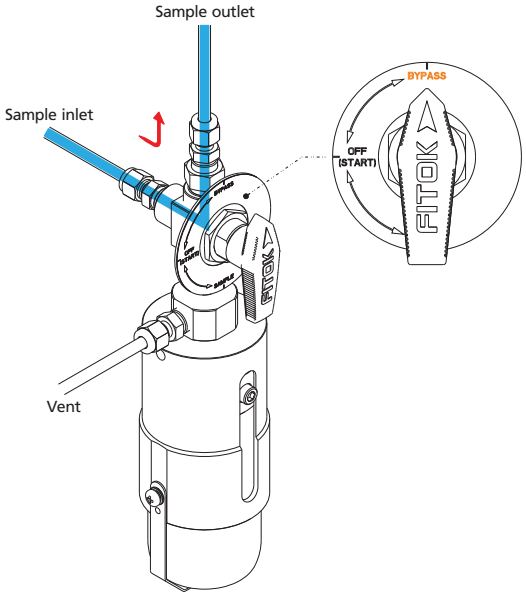
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



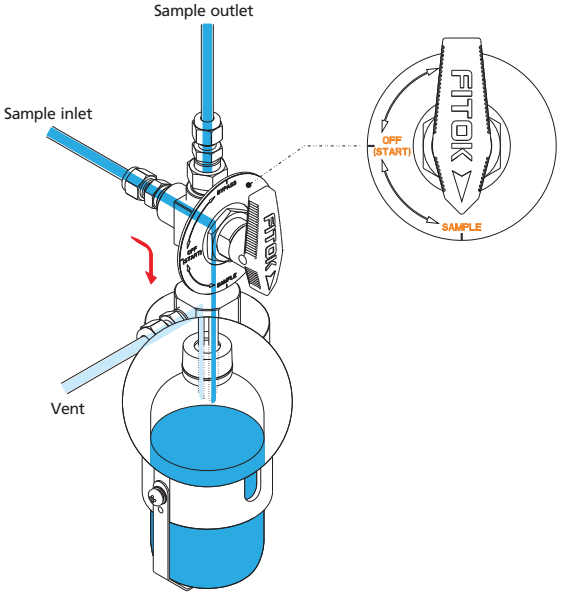
2 - System Purge

Turn the handle to the “BYPASS” position, allowing the sample to flow continuously through the system and purge system to ensure representative sampling.



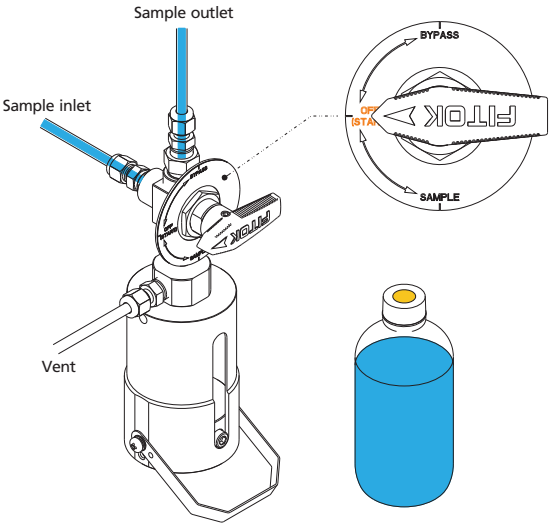
3 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle. When the required amount has been taken, turn the handle to the “OFF” position to close the sampling system.



4 - Off

Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



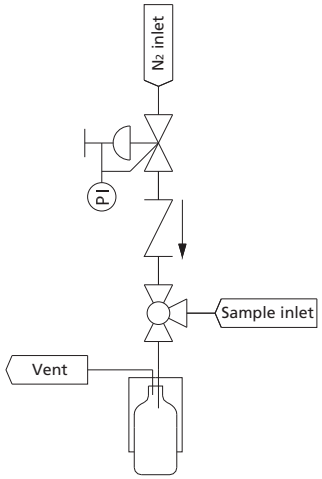
BLA3 - Back Purge Type

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- Back purge

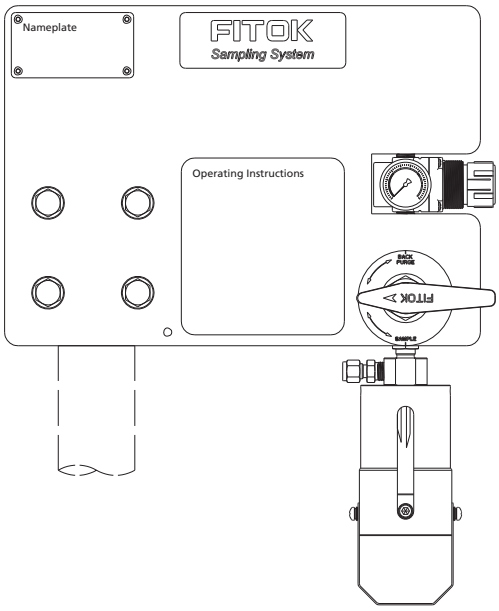
Basic Configuration

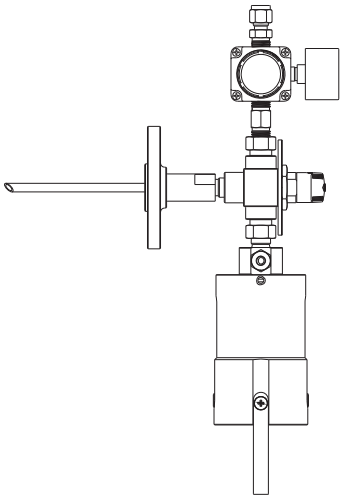
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves: PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

Typical Installation Mode

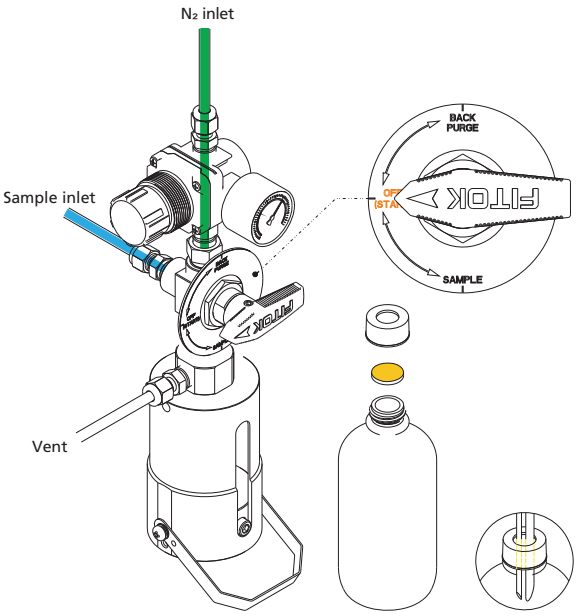




Operation

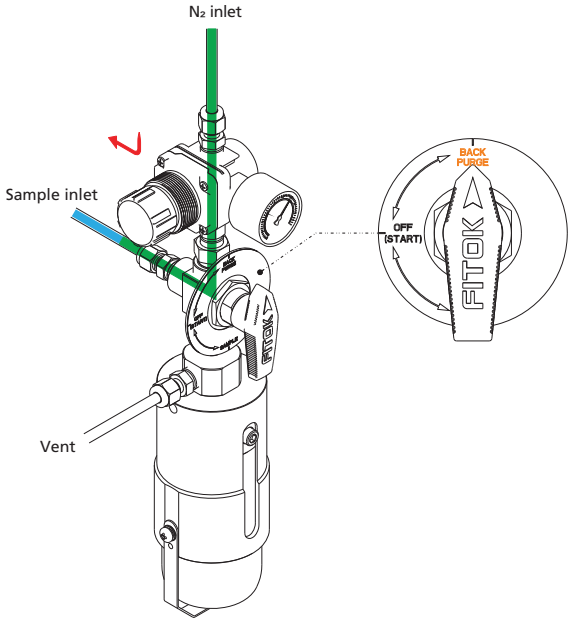
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



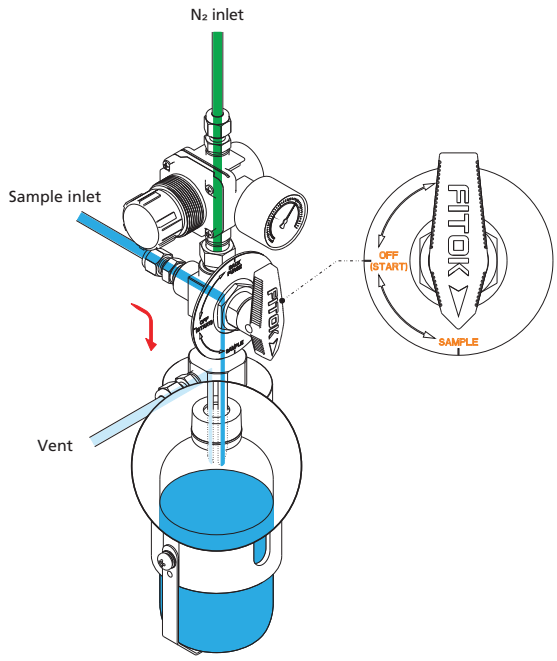
2 - Back Purge

Turn the handle to the “BACK PURGE” position, allowing Nitrogen to force the residual sample from the system into the process line to ensure representative sampling.



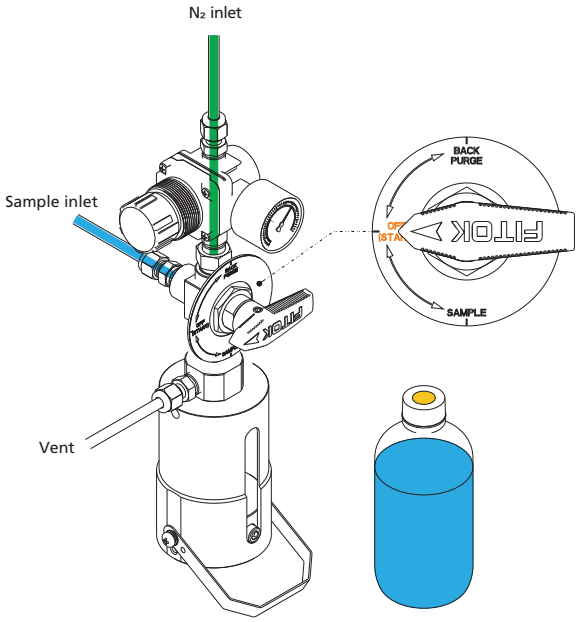
3 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle. When the required amount has been taken, turn the handle to the “OFF” position to close the sampling system.



4 - Off

Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



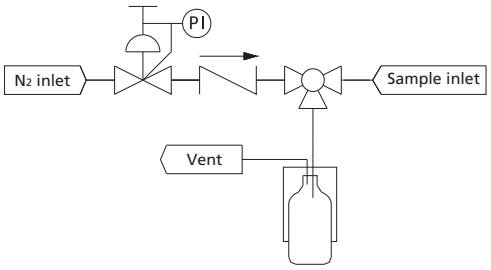
BLA4 - Needle Purge Type

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- Needle purge

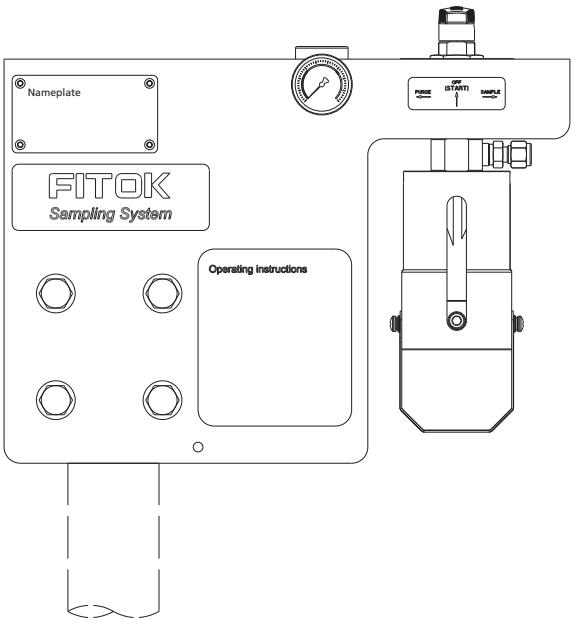
Basic Configuration

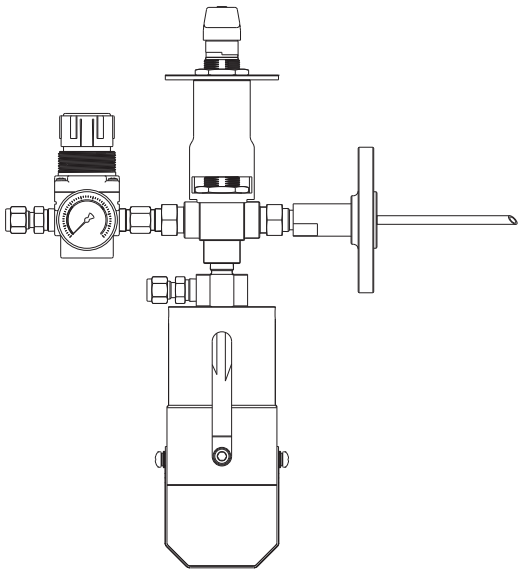
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves: PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

Typical Installation Mode

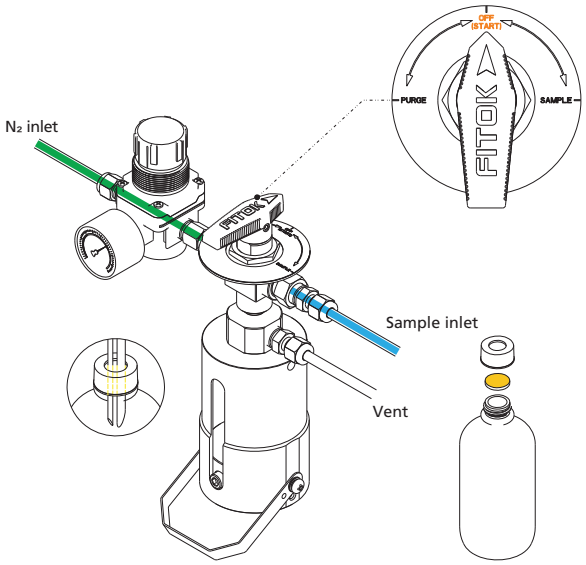




Operation

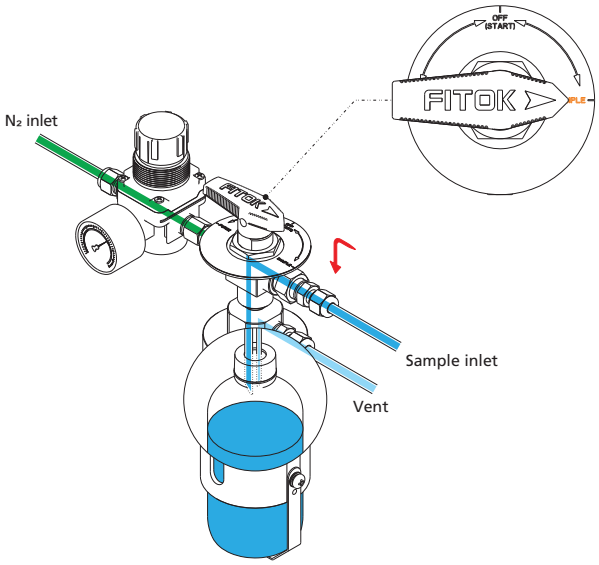
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



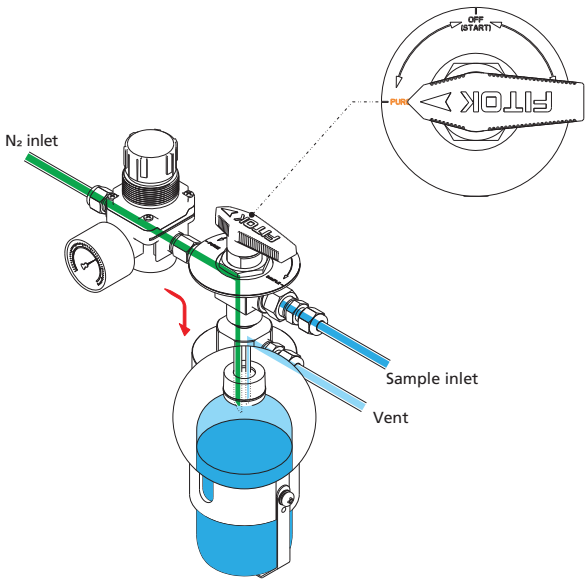
2 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle. When the required amount has been taken, turn the handle to the “OFF” position to close the sampling system.



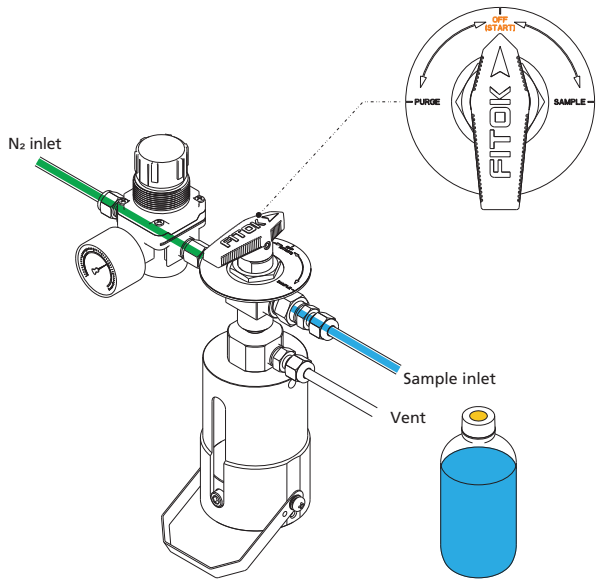
3 - Needle Purge

Turn the handle to the “PURGE” position, allowing Nitrogen to force the residual sample from the needle assembly into the bottle.



4 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



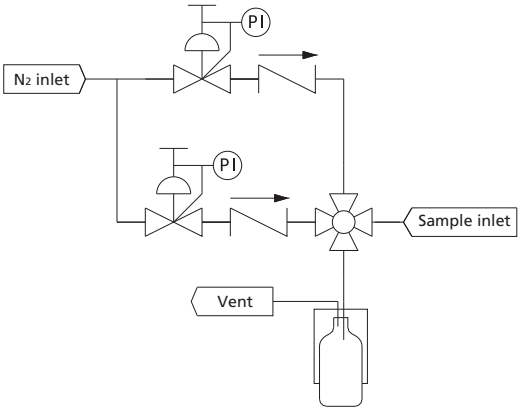
BLA5 - Back and Needle Purge Type

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- Back purge and needle purge

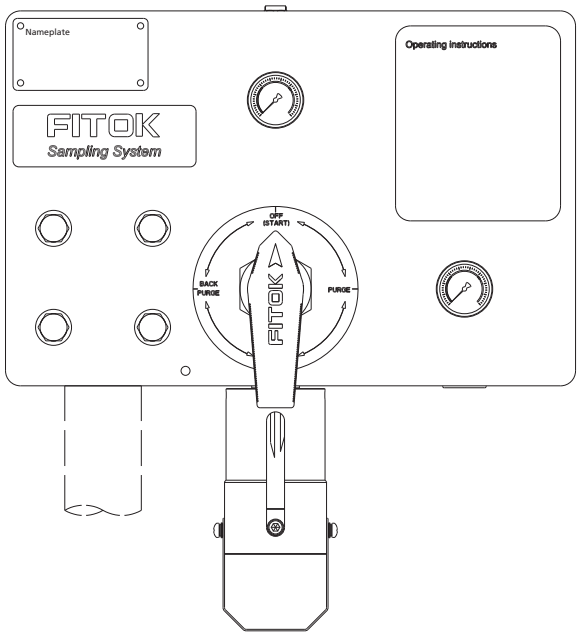
Basic Configuration

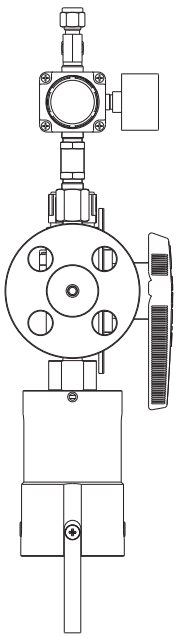
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BO Series 4-way ball valves: PTFE seat Max. working pressure: 2500 psig @ 70°F (172 bar @ 20°C) Temperature range: 50°F to 140°F (10°C to 65°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

Typical Installation Mode

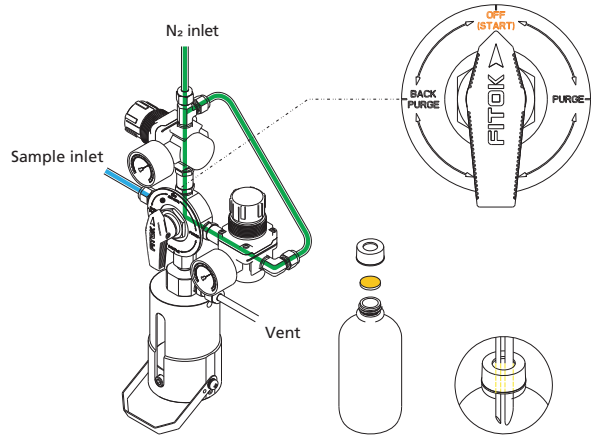




Operation

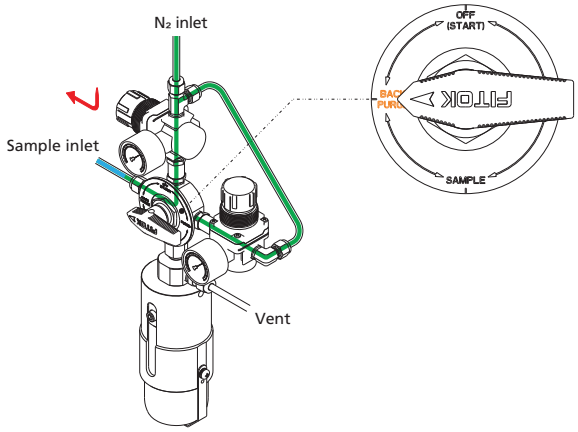
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



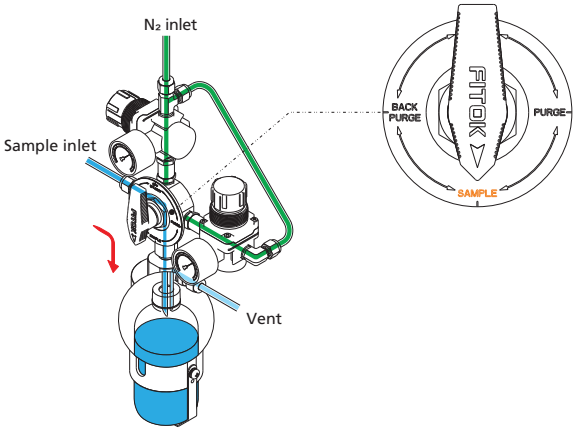
2 - Back Purge

Turn the handle to the “BACK PURGE” position, allowing Nitrogen to force the residual sample from the system into the process line to ensure representative sampling.



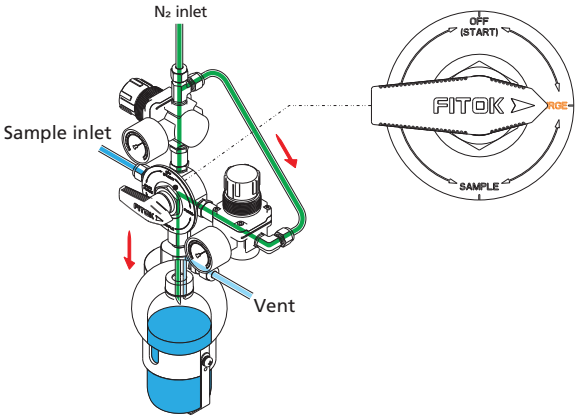
3 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle.



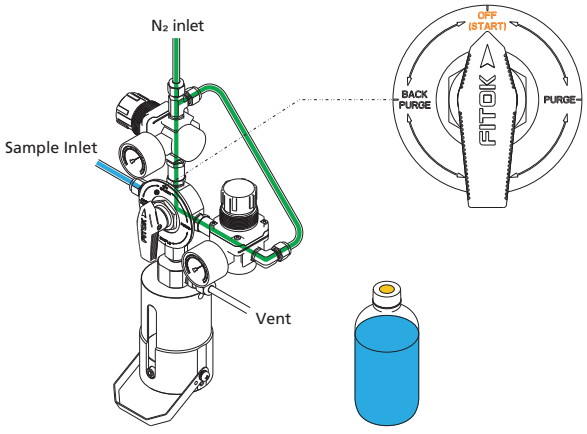
4 - Needle Purge

When the required amount has been taken, turn the handle to the “PURGE” position, allowing Nitrogen to force the residual sample from the needle assembly into the bottle.



5 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



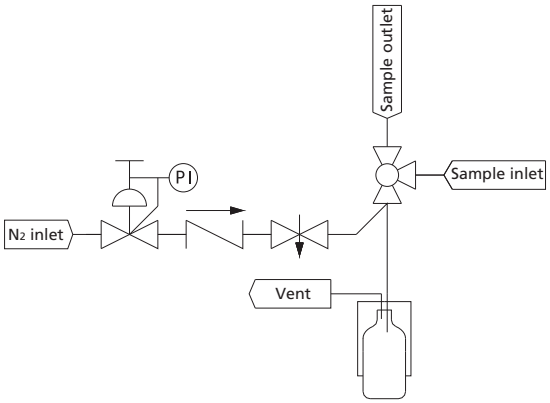
BLA6 - System Purge and Continuous Needle Purge Type

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- System purge and continuous needle purge

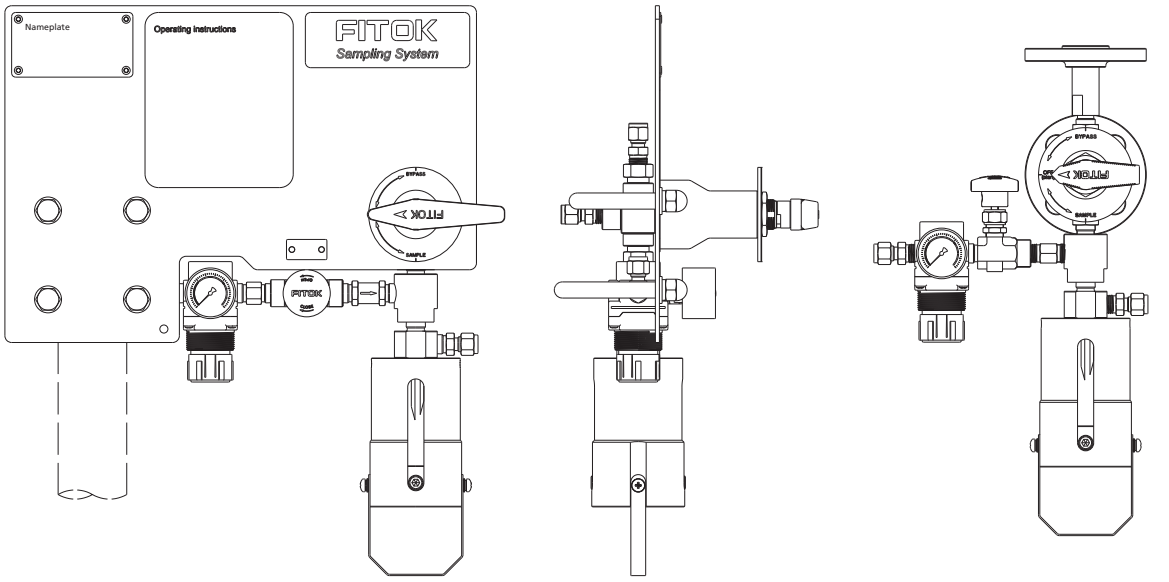
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves: 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)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves, NB Series needle valves
	Pressure gauge
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

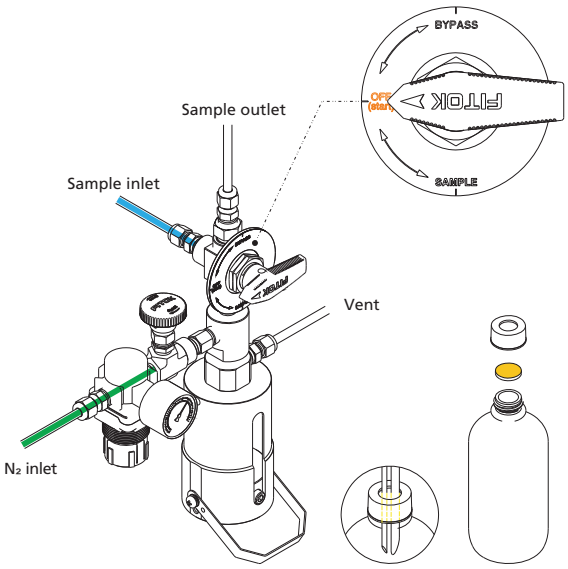
Typical Installation Mode



Operation

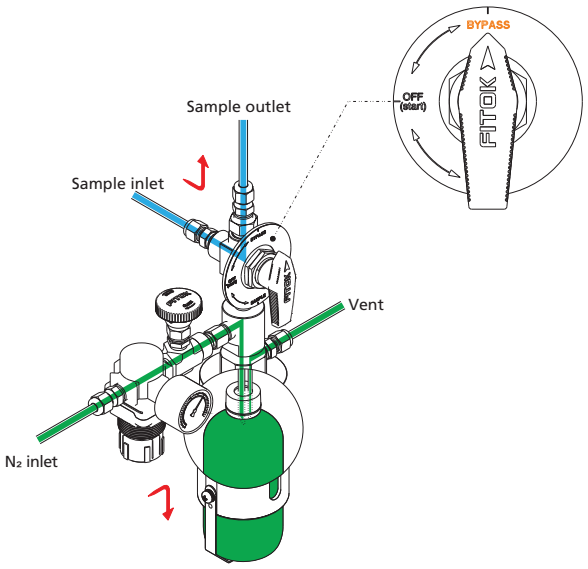
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



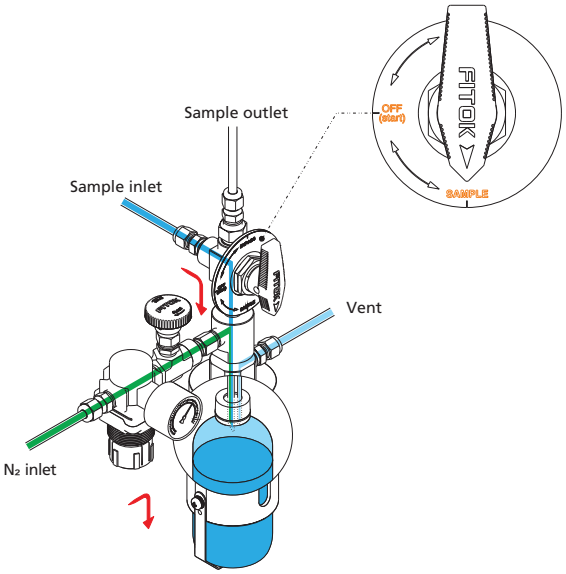
2 - Continuous Needle Purge and System Purge

Open the needle valve to purge the needle assembly and the bottle continuously with Nitrogen. Turn the handle to the "BYPASS" position, allowing the sample to flow continuously through the system and purge the system to ensure representative sampling.



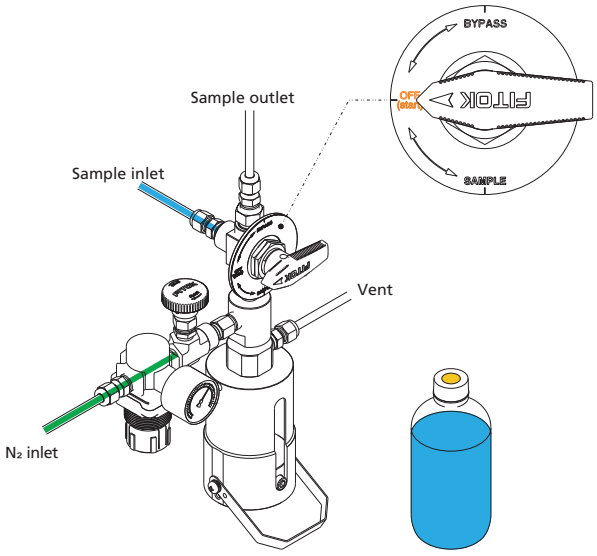
3 - Sampling

Turn the handle to the "SAMPLE" position, allowing the sample to flow into the bottle. When the required amount has been taken, turn the handle to the "OFF" position to close the sampling system.



4 - Off

Close the needle valve. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



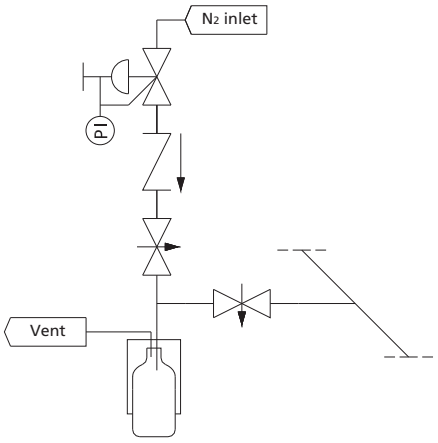
BLA7 - In-line and Needle Purge Type

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- In-line sampling valve to save sampling time
- Needle purge

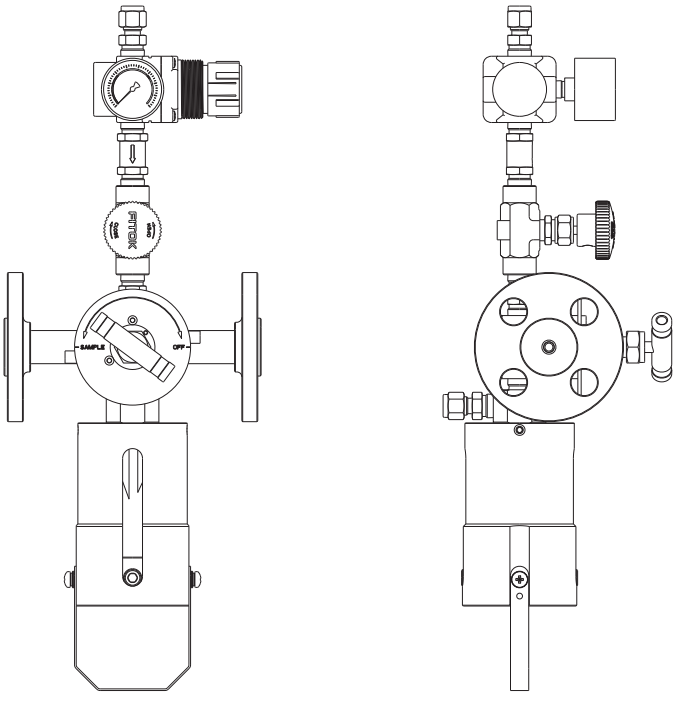
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	In-line valve: PTFE packing Max. working pressure: 3000 psig @ 70°F (206 bar @ 20°C) Temperature range: -4°F to 446°F (-20°C to 230°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves, NB Series needle valves
	Pressure gauge
Connections	Process: 1/4" FNPT
	Purge/vent: 1/4" tube fitting



Note: Products of other specifications are available upon request.

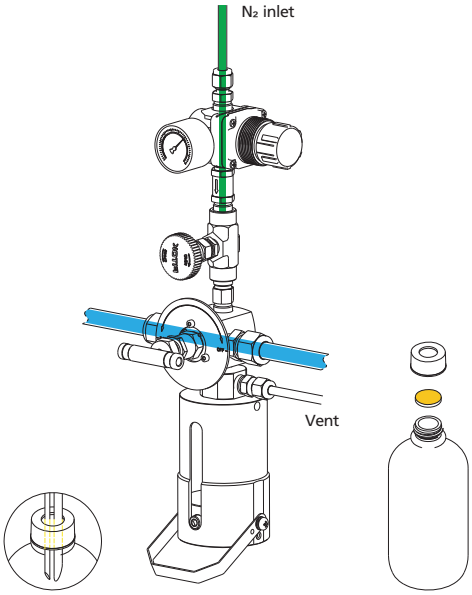
Typical Installation Mode



Operation

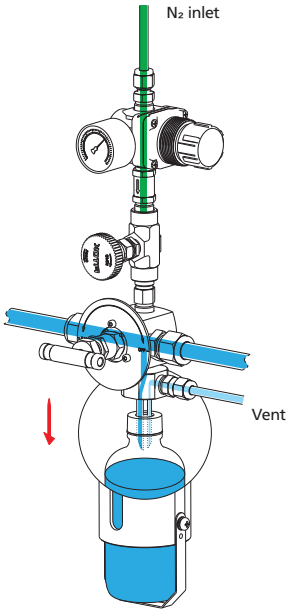
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



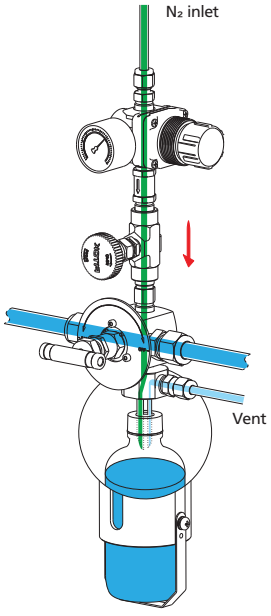
2 - Sampling

Turn the handle counterclockwise to open the sampling valve, allowing the sample to flow into the bottle. When the required amount has been taken, turn the handle clockwise to close the sampling valve.



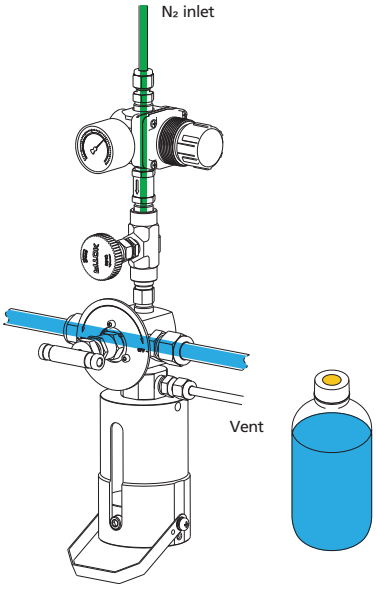
3 - Needle Purge

Open the valve on the Nitrogen branch, allowing Nitrogen to force the residual sample from the needle assembly and the valve into the bottle. Hold this position for a sufficient time.



4 - Off

Close the valve on the Nitrogen branch. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



B Series

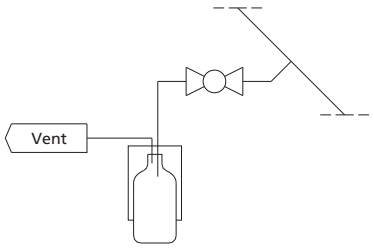
BLB1 - On-off Type with In-line Ball Valve

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- In-line sampling
- Fire safe and antistatic ball valve

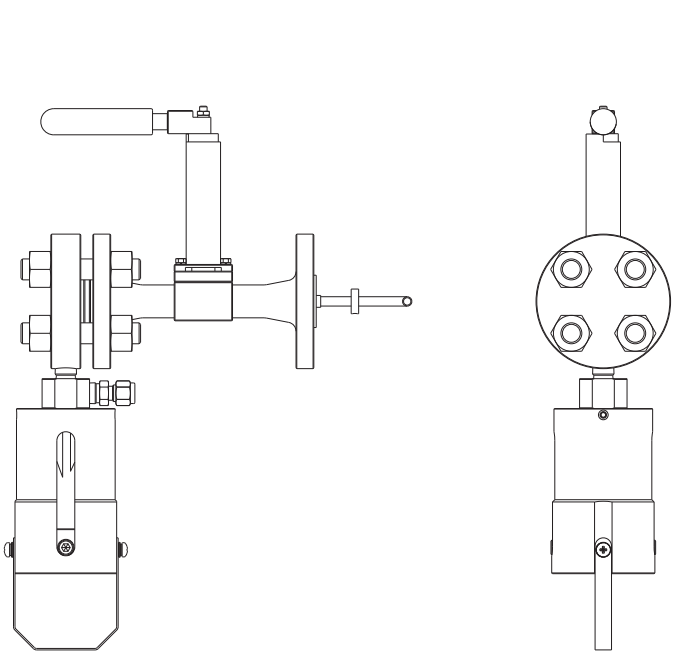
Basic Configuration

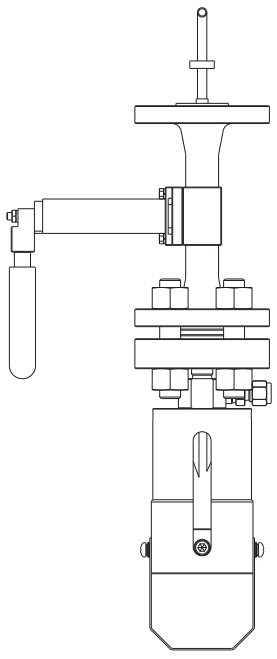
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	In-line ball valve: PTFE seat, fire safe and antistatic Max. working pressure: 276 psig @ 70°F (19 bar @ 20°C) Temperature range: -18°F to 298°F (-28°C to 148°C)
Connections	Process: NPS 1/2, ANSI B16.5 Class 150 RF flange
	Vent: 1/4" tube fitting
Others	Spring return handle



Note: Products of other specifications are available upon request.

Typical Installation Mode

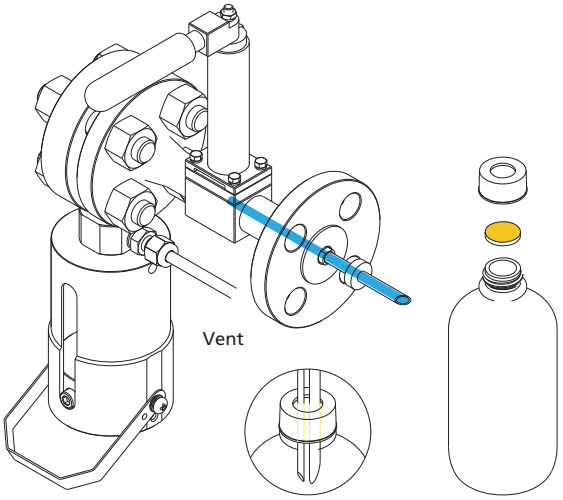




Operation

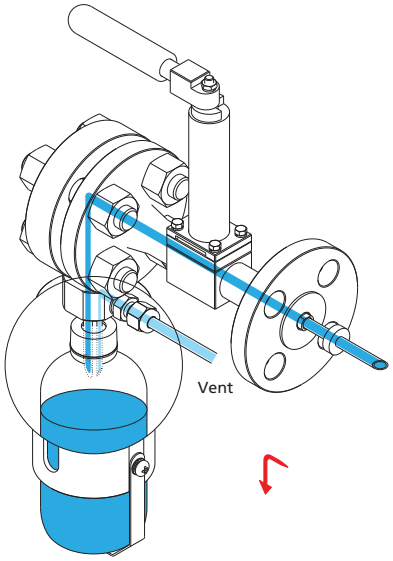
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



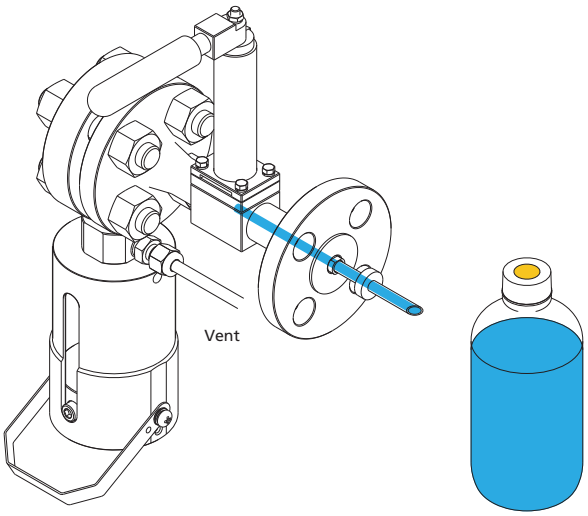
2 - Sampling

Open the in-line ball valve, allowing the sample to flow into the bottle. When the required amount has been taken, release the handle to close the valve automatically.



3 - Off

Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



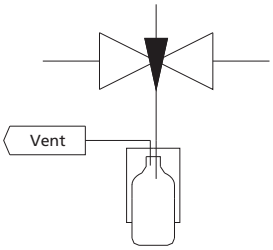
BLB2 - On-off Type with In-line Needle Valve

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- In-line sampling

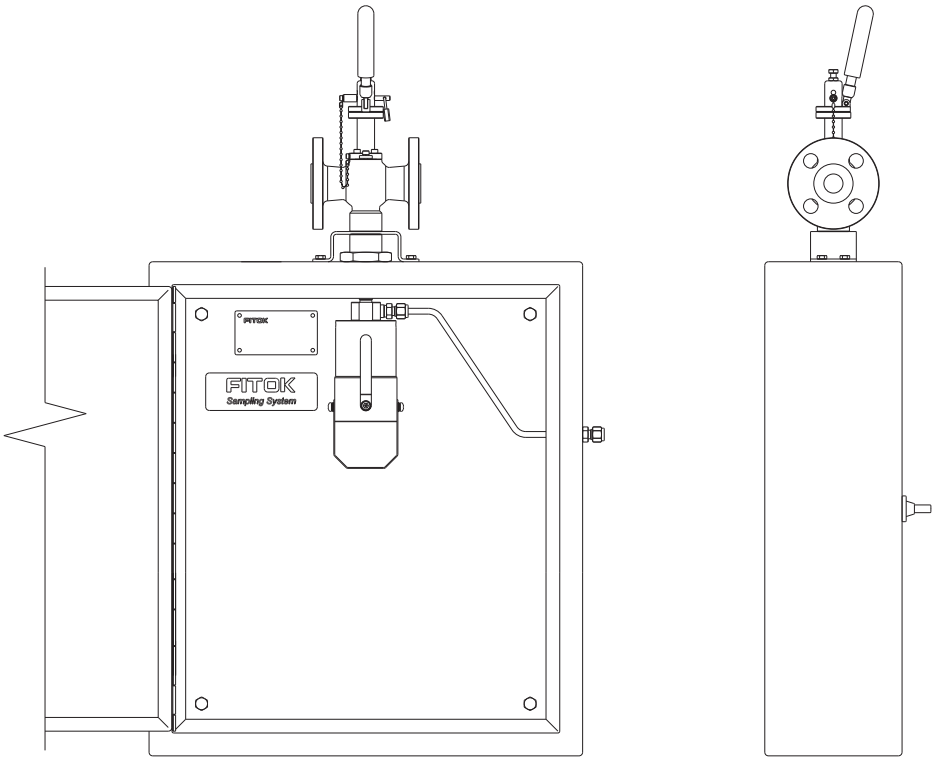
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	In-line needle valve: PTFE packing and PCTFE seat Max. working pressure: 276 psig @ 70°F (19 bar @ 20°C) Temperature range: -18°F to 298°F (-28°C to 148°C)
Connections	Process: NPS 3/4, ANSI B16.5 Class 150 RF flange
	Vent: 1/4" tube fitting
Others	Spring return handle



Note: Products of other specifications are available upon request.

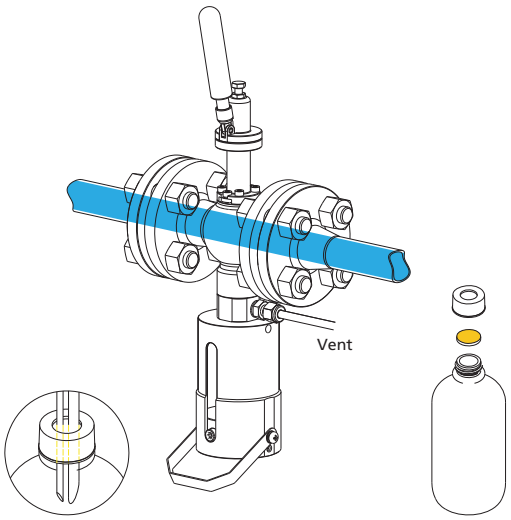
Typical Installation Mode



Operation

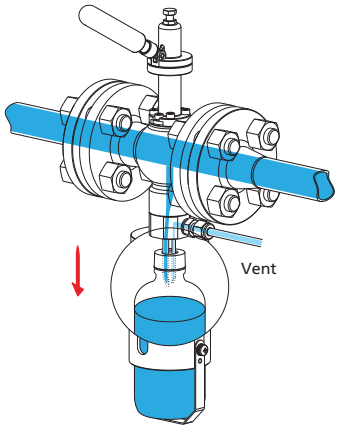
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



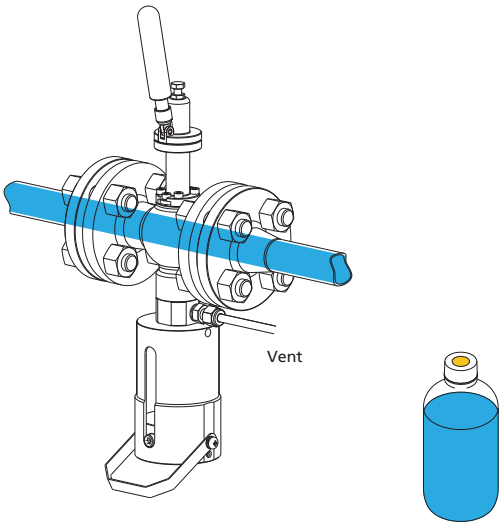
2 - Sampling

Open the in-line needle valve, allowing the sample to flow into the bottle. When the required amount has been taken, release the handle to close the valve automatically.



3 - Off

Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



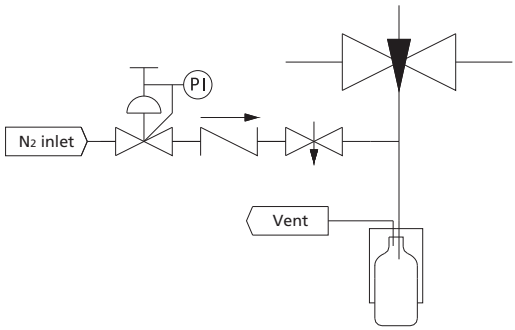
BLB3 - In-line and Continuous Needle Purge Type

Features

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- In-line sampling
- Sampling for viscous liquids
- Needle purge

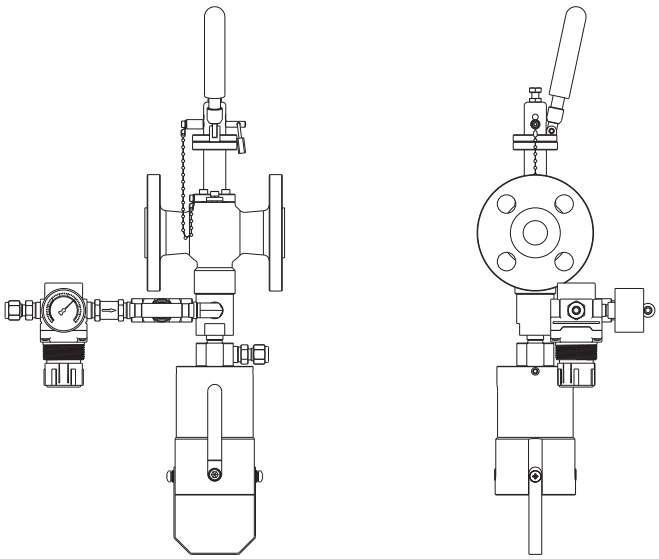
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	In-line needle valve: PTFE packing and PCTFE seat Max. working pressure: 276 psig @ 70°F (19 bar @ 20°C) Temperature range: -18°F to 298°F (-28°C to 148°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves, NB Series needle valves
	Pressure gauge
Connections	Process: NPS 3/4, ANSI B16.5 Class 150 RF flange
	Vent/purge: 1/4" tube fitting
Others	Spring return handle, purge connection



Note: Products of other specifications are available upon request.

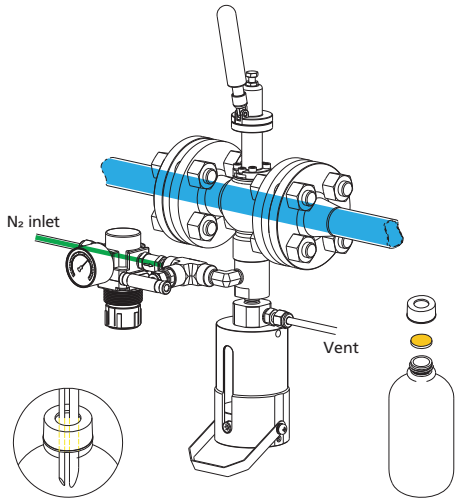
Typical Installation Mode



Operation

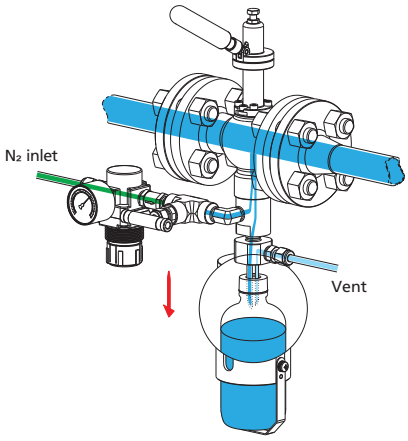
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



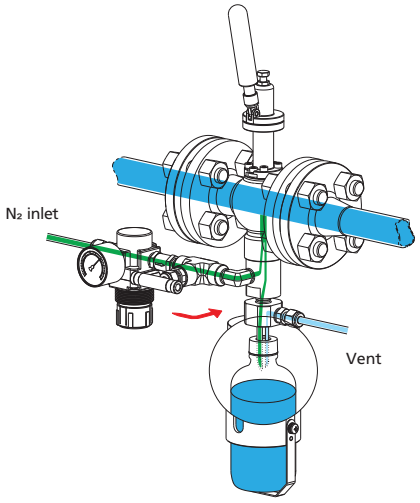
2 - Sampling

Open the in-line needle valve, allowing the sample to flow into the bottle. When the required amount has been taken, release the handle to close the valve automatically.



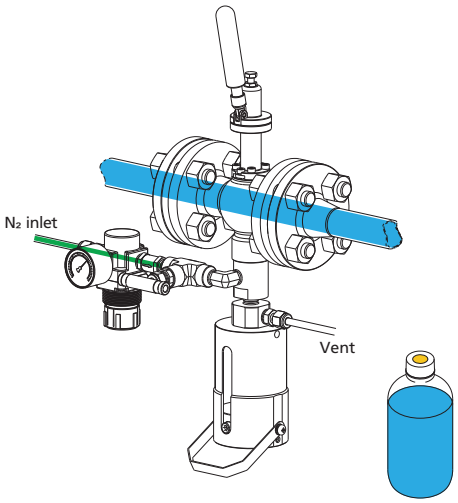
3 - Needle Purge

Open the valve on the Nitrogen branch, allowing Nitrogen to force the residual sample from the system into the bottle.



4 - Off

Close the valve on the Nitrogen branch. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



C Series

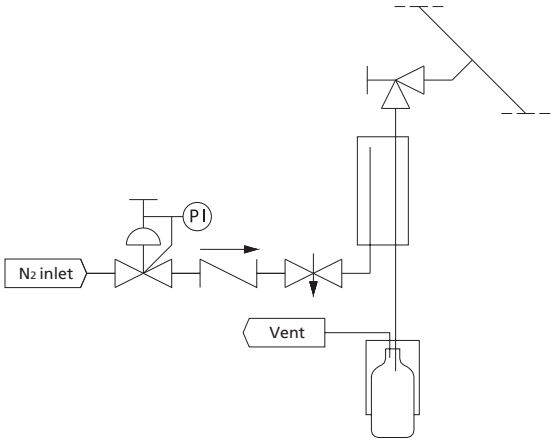
BLC1 - Purge Type

Features

- Sampling from vacuum, low or high pressure devices or process lines
- Sampling with a piston valve to ensure zero dead volume
- Sampling for highly viscous liquids
- Needle purge

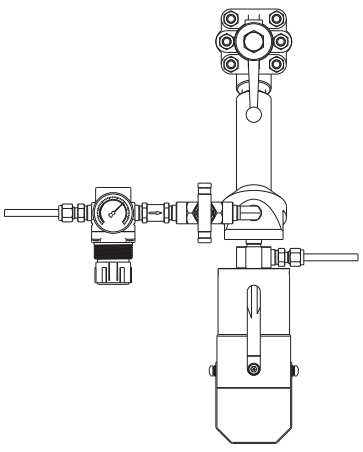
Basic Configuration

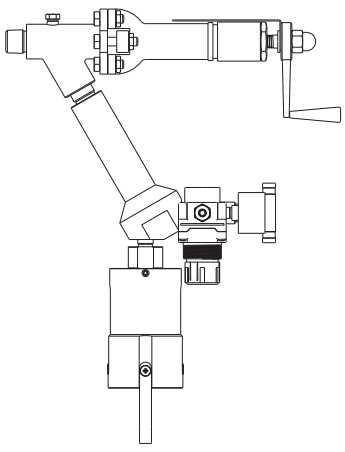
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	Piston valve: PTFE seat Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves, NB Series needle valves
	Pressure gauge
Connections	Process: 1/2" MNPT
	Vent/purge: 1/4" tube fitting

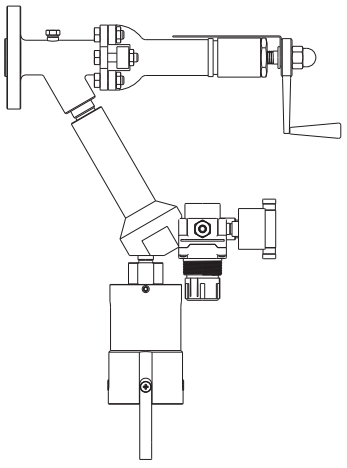


Note: Products of other specifications are available upon request.

Typical Installation Mode



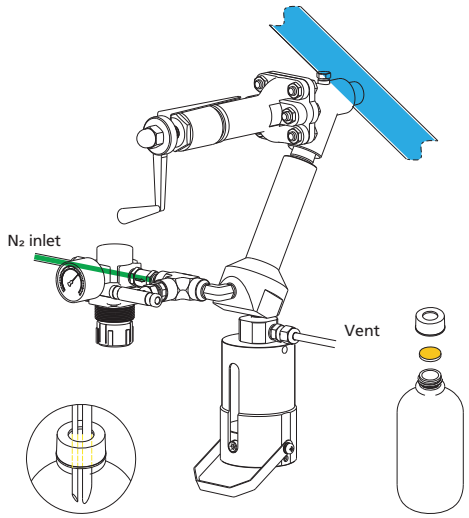




Operation

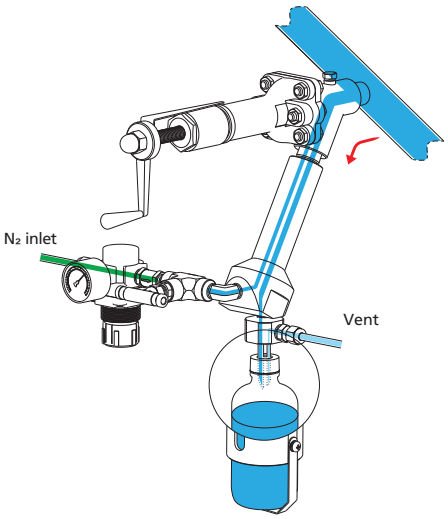
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



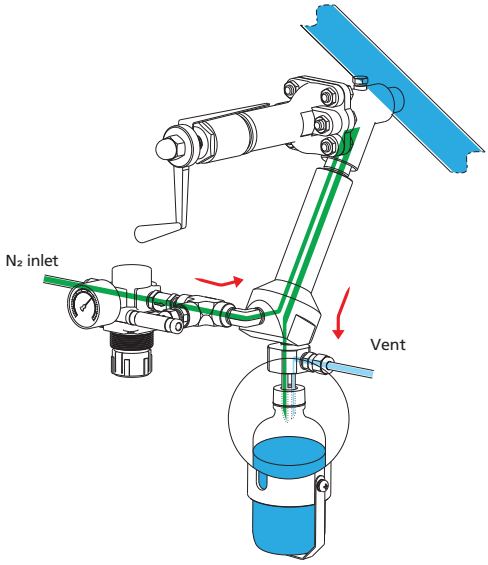
2 - Sampling

Open the piston valve, allowing the sample to flow into the bottle. When the required amount has been taken, close the piston valve.



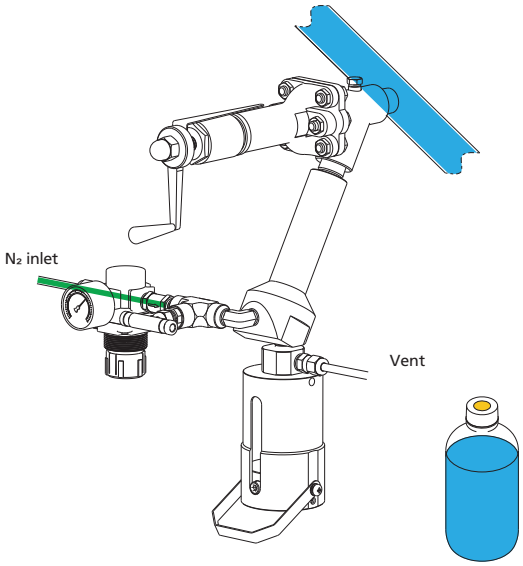
3 - Needle Purge

Open the valve on the Nitrogen branch, allowing Nitrogen to force the residual sample from the system into the bottle.



4 - Off

Close the valve on the Nitrogen branch. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



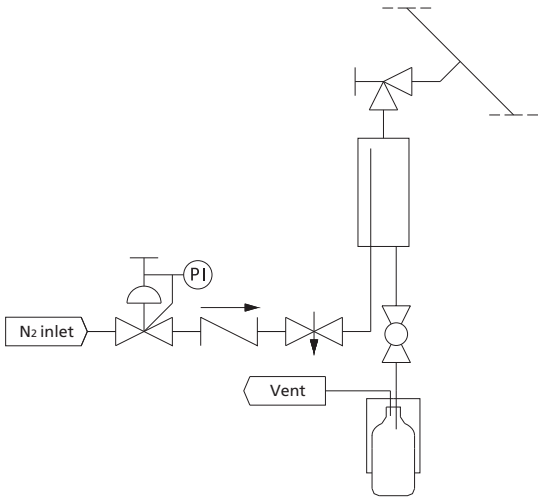
BLC2 - Fixed Volume and Purge Type

Features

- Sampling from vacuum, low or high pressure devices or process lines
- Fixed volume sampling
- Sampling with a piston valve to ensure zero dead volume
- Sampling for highly viscous liquids
- Needle purge

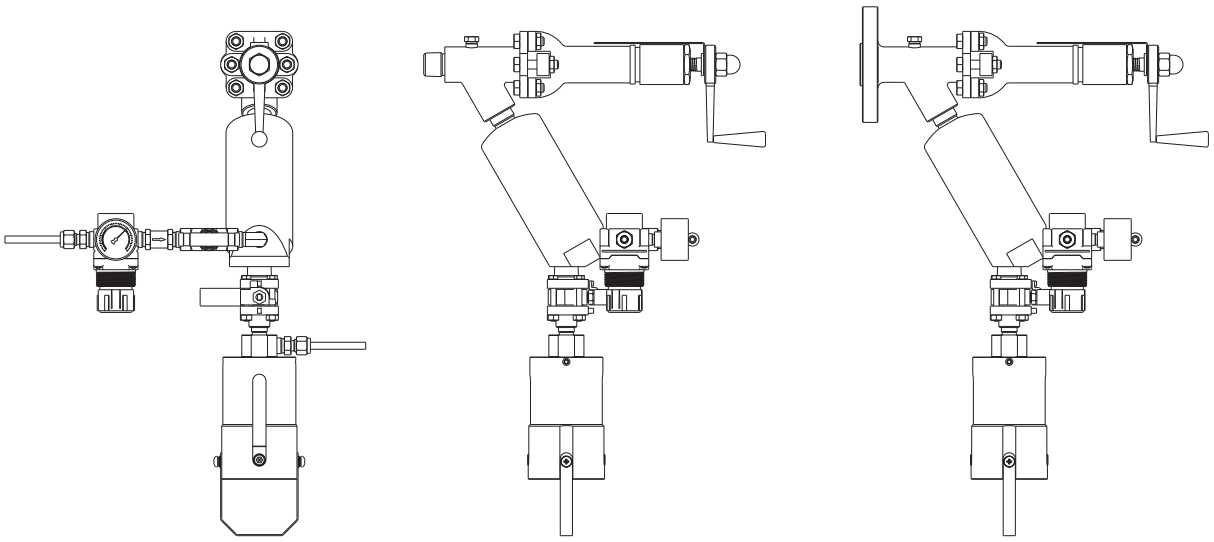
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	Piston valve: PTFE seat Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves, NB Series needle valves
	Pressure gauge
Connections	Process: 1/2" MNPT
	Vent/purge: 1/4" tube fitting



Note: Products of other specifications are available upon request.

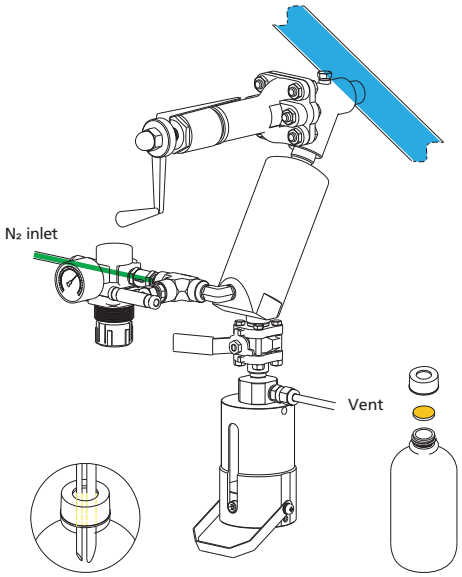
Typical Installation Mode



Operation

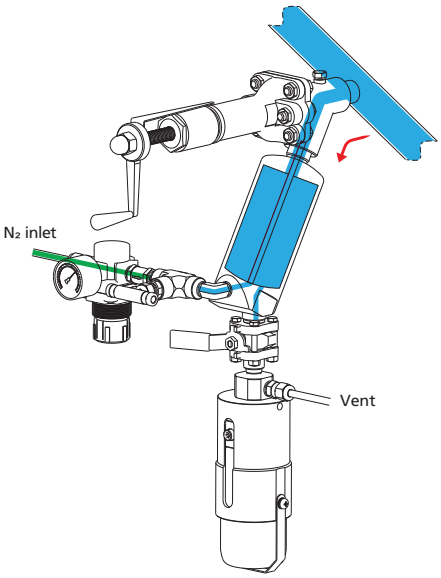
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



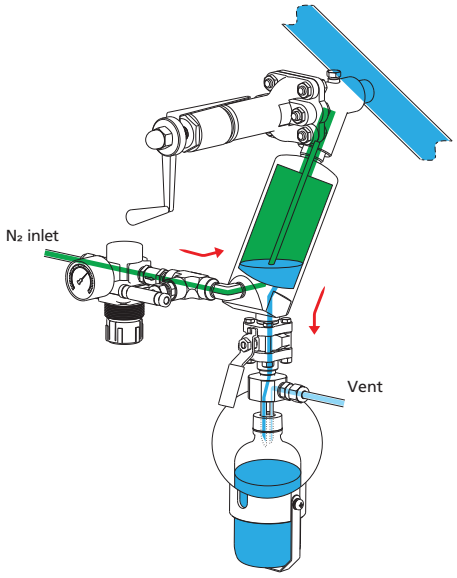
2 - Pre-sampling

Open the piston valve, allowing the sample to flow into the sample chamber. The amount of sample depends on the sample chamber volume and process pressure. Close the piston valve.



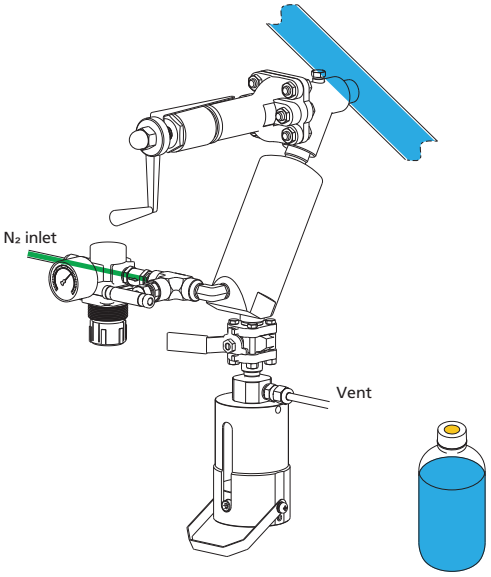
3 - Sampling

Open the valve on the Nitrogen branch and the valve above the needle assembly, allowing Nitrogen to force the sample from the sample chamber into the bottle and purge the system.



4 - Off

Close the valve on the Nitrogen branch and the valve above the needle assembly. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



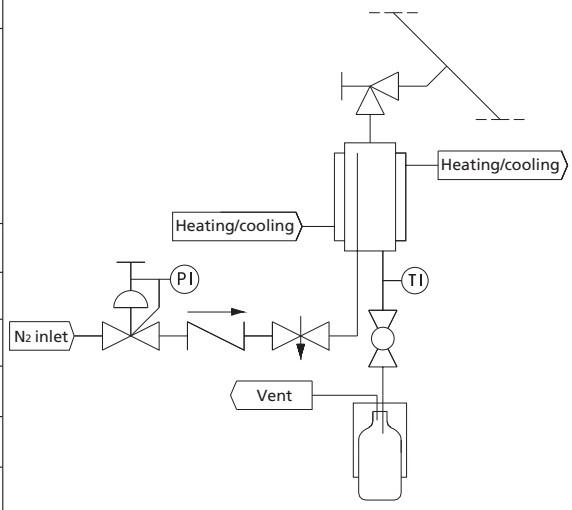
BLC3 - Fixed Volume Type with Heating/Cooling Jacket

Features

- Sampling from vacuum, low or high pressure devices or process lines
- Fixed volume sampling
- Sampling with a piston valve to ensure zero dead volume
- Sampling for highly viscous liquids
- Heating/cooling jacket to ensure sampling within a certain range of temperature
- Needle purge

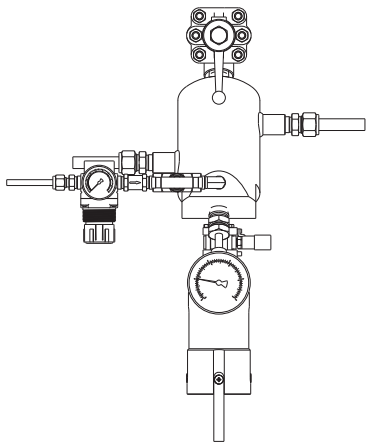
Basic Configuration

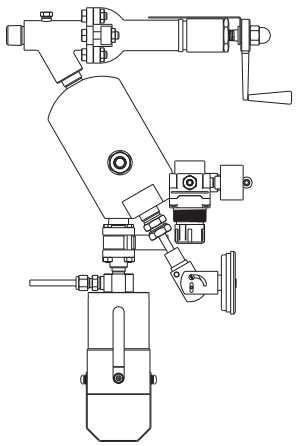
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	Piston valve: PTFE seat Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves, NB Series needle valves
	Pressure gauge
Connections	Process: 1/2" MNPT
	Vent/purge: 1/4" tube fitting
	Heating/cooling: 3/8" FNPT
Others	Heating/cooling jacket, sample chamber (200 ml), thermometer, BH Series ball valves

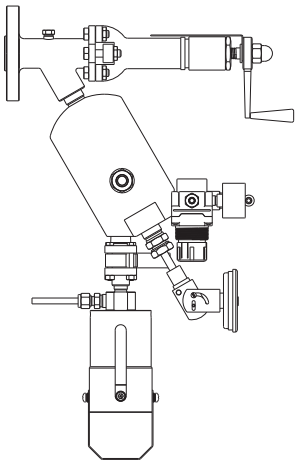


Note: Products of other specifications are available upon request.

Typical Installation Mode



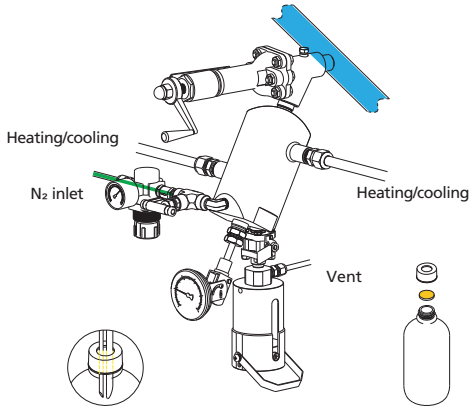




Operation

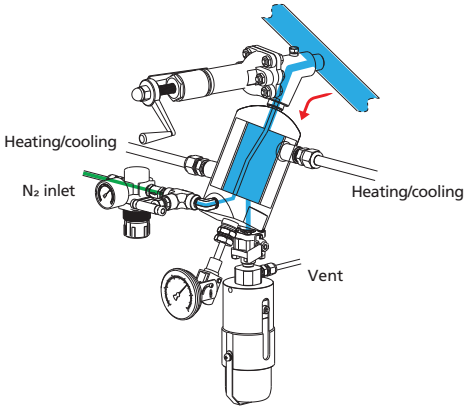
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



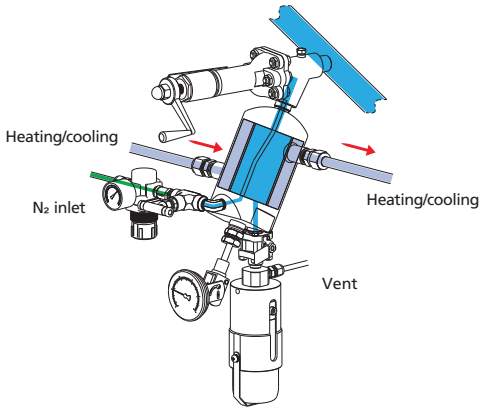
2 - Pre-sampling

Open the piston valve, allowing the sample to flow into the sample chamber. The amount of sample depends on the sample chamber volume and process pressure. Close the piston valve.



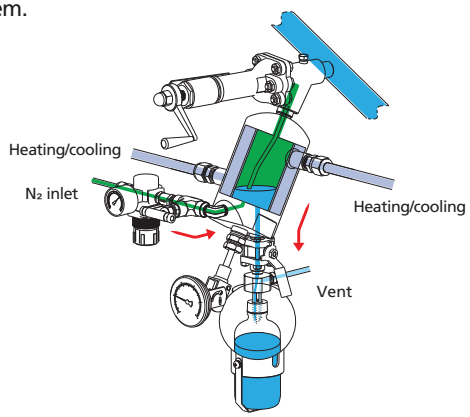
3 - Heating/cooling

Allow the heating/cooling fluid to flow through the heating/cooling jacket. Hold for a sufficient time until the sample reaches the required temperature.



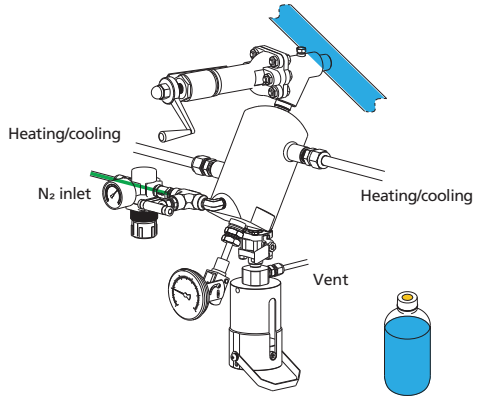
4 - Sampling

Open the valve on the Nitrogen branch and the valve above the needle assembly, allowing Nitrogen to force the sample from the sample chamber into the bottle and purge the system.



5 - Off

Close the valve on the Nitrogen branch and the valve above the needle assembly. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



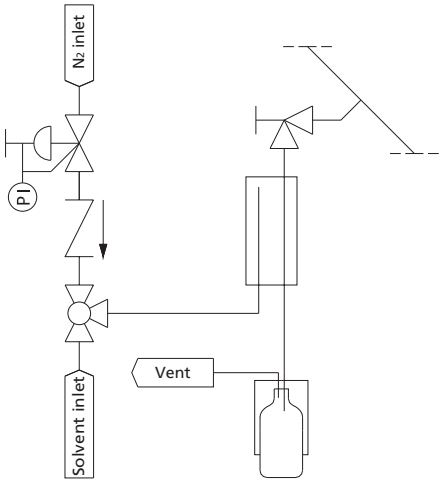
BLC4 - Solvent Purge Type

Features

- Sampling from vacuum, low or high pressure devices or process lines
- Sampling with a piston valve to ensure zero dead volume
- Sampling for highly viscous liquids
- Needle purge and solvent purge

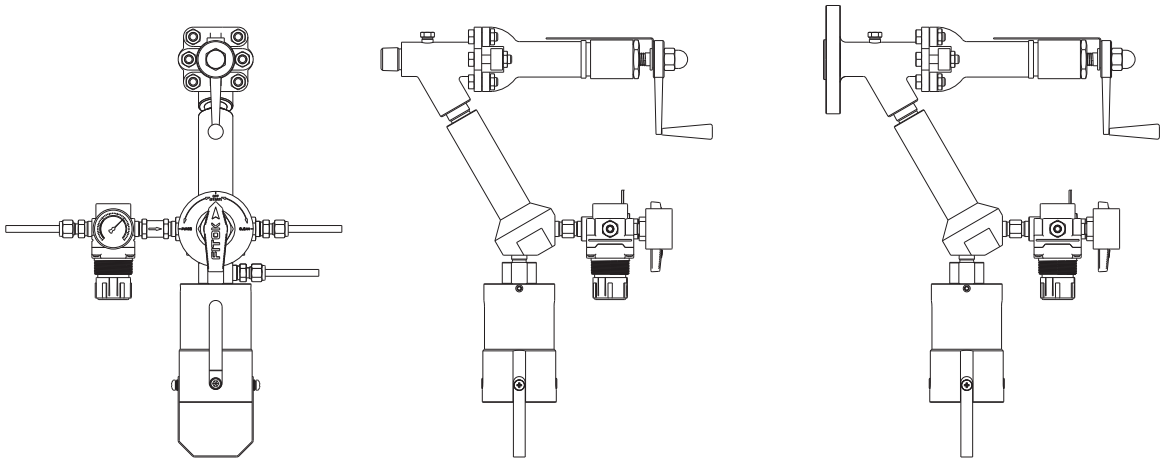
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	Piston valve: PTFE seat Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Purge Branch	Nitrogen regulator
	CV Series check valves, BF Series 3-way ball valves
	Pressure gauge
Connections	Process: 1/2" MNPT
	Vent/purge/solvent: 1/4" tube fitting



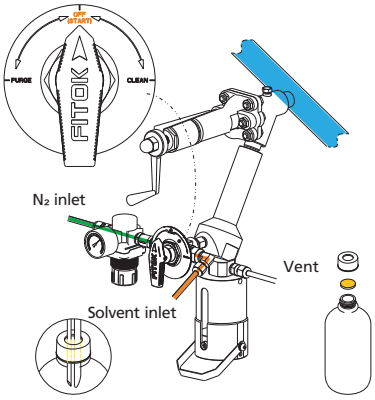
Note: Products of other specifications are available upon request.

Typical Installation Mode

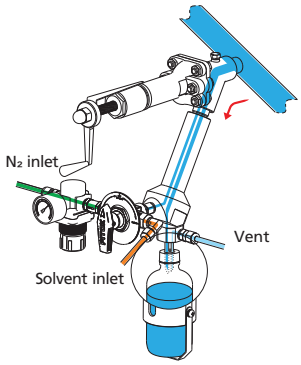


Operation

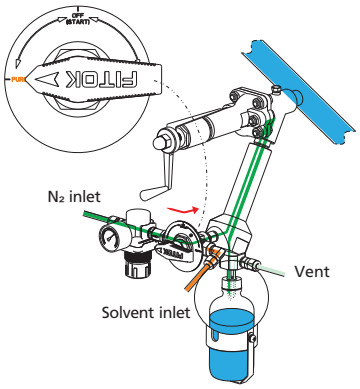
1 - Preparation
Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



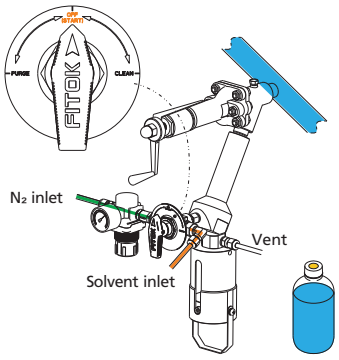
2 - Sampling
Open the piston valve, allowing the sample to flow into the bottle. When the required amount has been taken, close the piston valve.



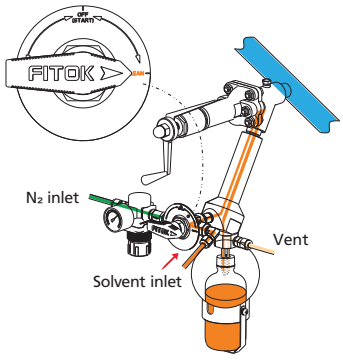
3 - Nitrogen Purge
Turn the handle to the “PURGE” position, allowing Nitrogen to force the residual sample from the system into the bottle.



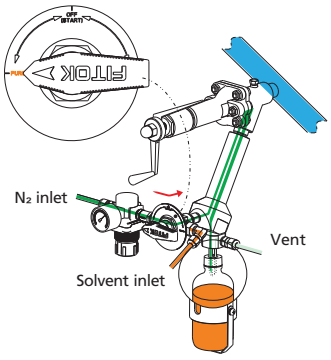
4 - Off
Turn the handle to the “OFF” position. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically.



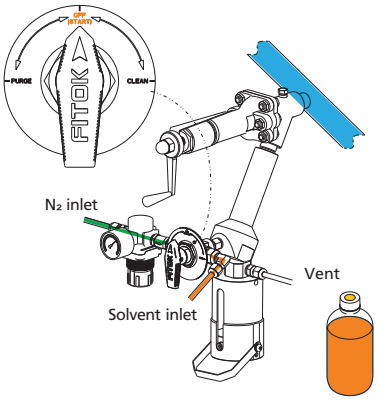
5 - Solvent Purge
Replace the bottle with a new one. Turn the handle to the “CLEAN” position, allowing the solvent to flow through the system into the bottle.



6 - Nitrogen Purge
Turn the handle to the “PURGE” position, allowing Nitrogen to force the residual solvent from the system into the sample bottle.



7 - Off
Turn the handle to the “OFF” position. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete solvent purging process.



D Series

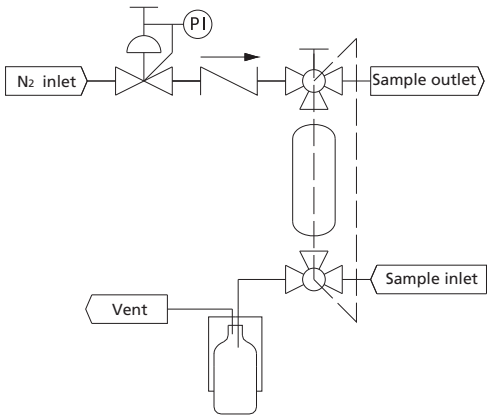
BLD1 - Threaded Connection Type

Features

- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge and needle purge
- Easy operation with a single handle by linkage valve

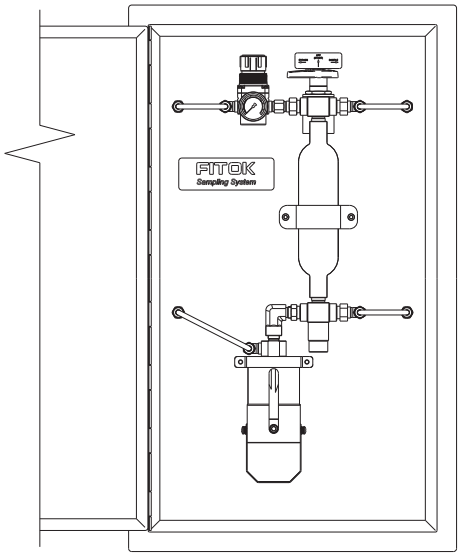
Basic Configuration

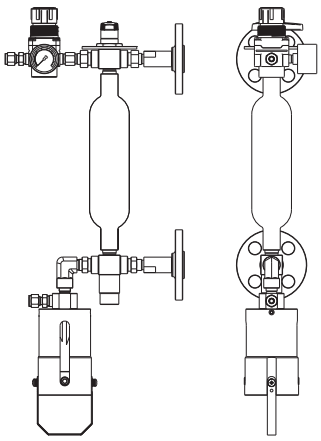
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves (rod linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" FNPT
Others	Sample chamber (200 ml)



Note: Products of other specifications are available upon request.

Typical Installation Mode

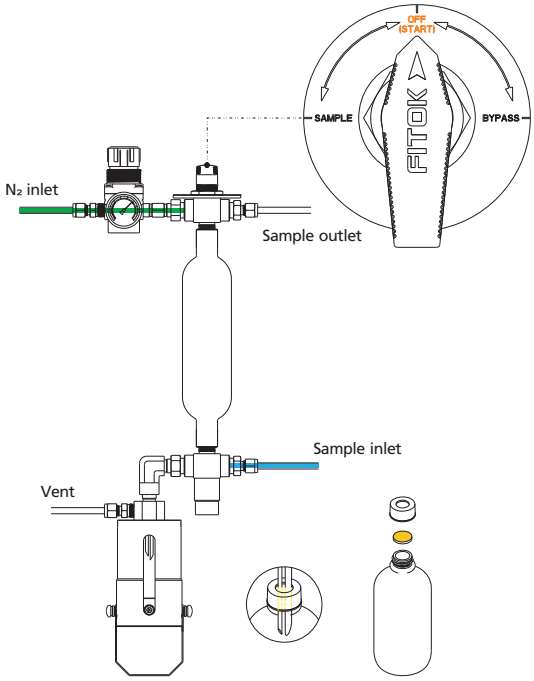




Operation

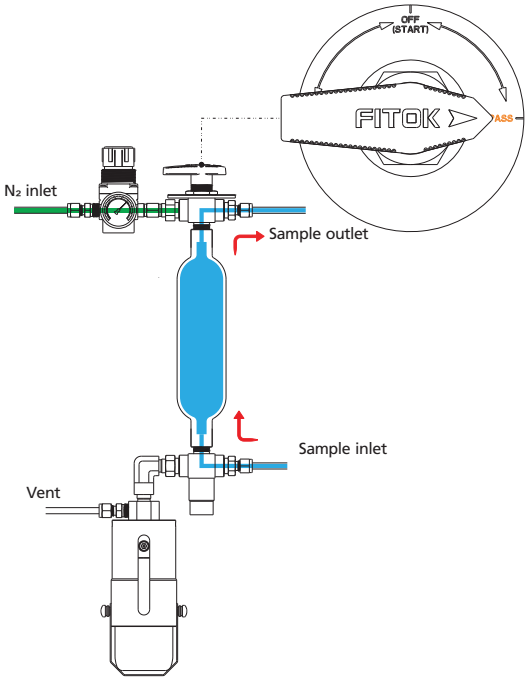
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



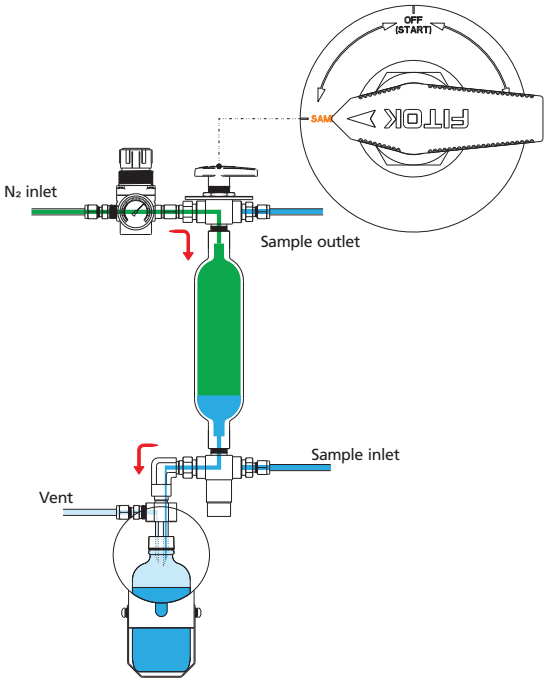
2 - System Purge

Turn the handle to the “BYPASS” position, allowing the sample to flow continuously through the sample chamber. Hold for a period of time to ensure representative sampling.



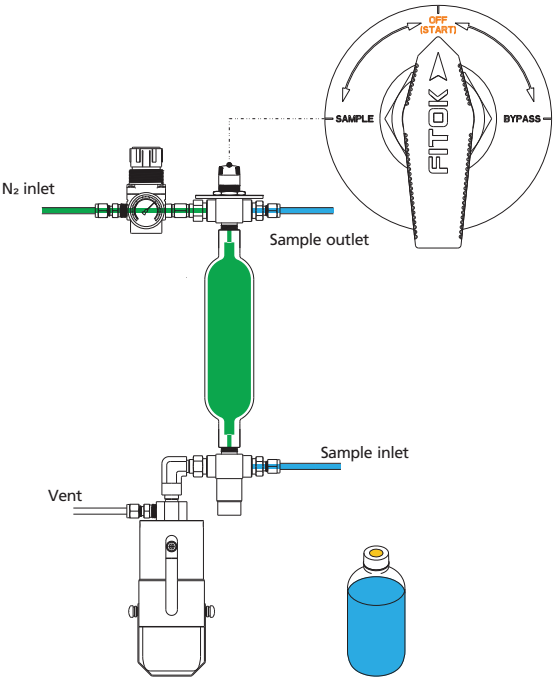
3 - Sampling

Turn the handle to the “SAMPLE” position, allowing Nitrogen to force the sample from the sample chamber into the bottle and purge the sample chamber and needle assembly. The amount of sample depends on the sample chamber volume.



4 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



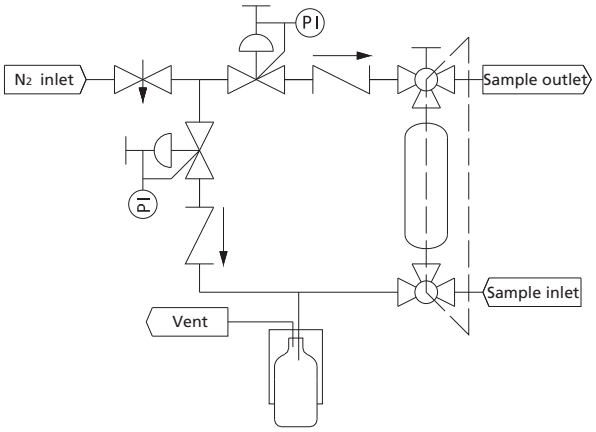
BLD2 - Continuous Needle Purge Type

Features

- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- Continuous needle purge and system purge
- Easy operation with a single handle by linkage valve

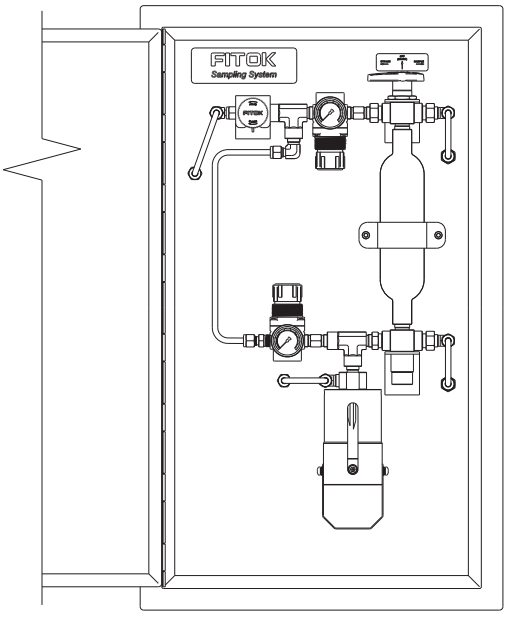
Basic Configuration

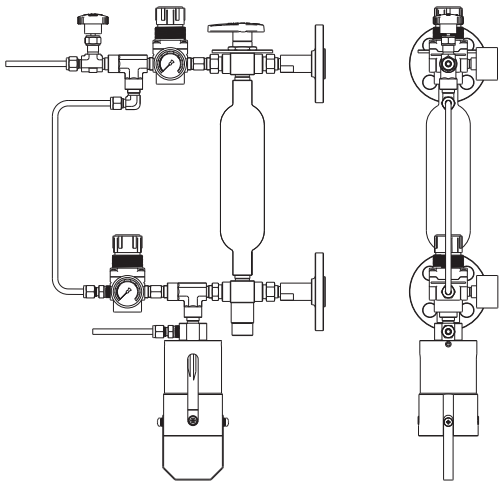
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves (rod linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves, NB series needle valves
	Pressure gauge
Connections	1/4" tube fitting
Others	Sample chamber (200 ml)



Note: Products of other specifications are available upon request.

Typical Installation Mode

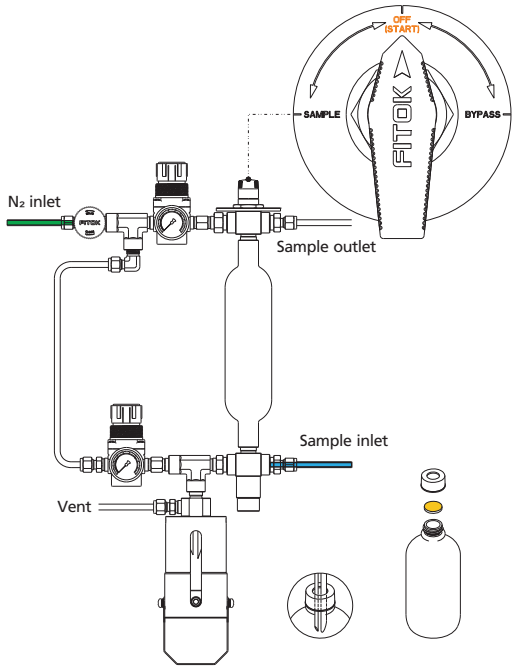




Operation

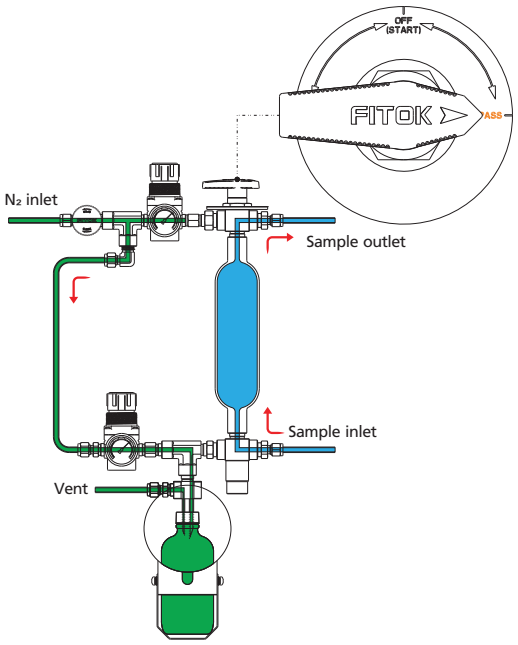
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



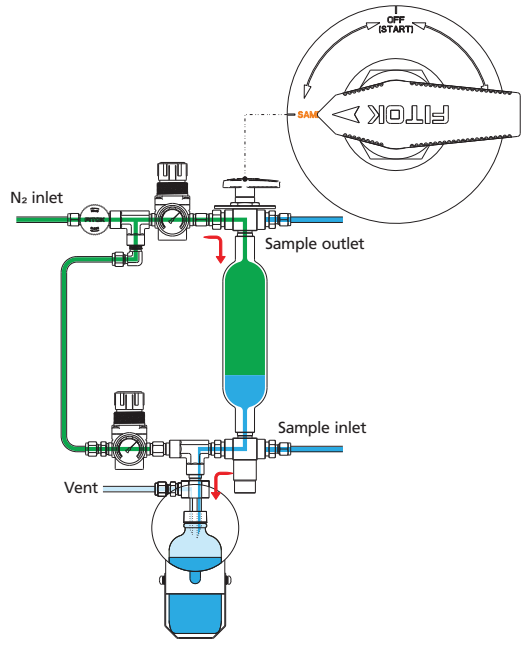
2 - Needle Purge and System Purge

Open the needle valve, allowing Nitrogen to purge the needle assembly and bottle continuously. Turn the handle to the "BYPASS" position to allow a continuous flow of sample through the sample chamber. Hold for a period of time to ensure representative sampling.



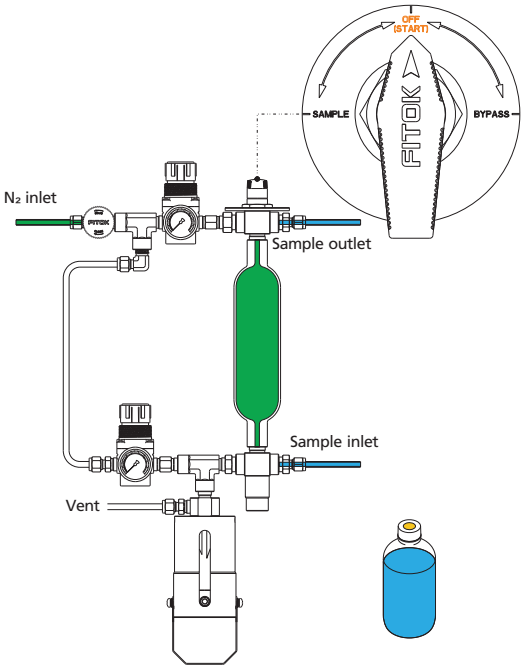
3 - Sampling

Turn the handle to the "SAMPLE" position, allowing Nitrogen to force the sample from the sample chamber into the bottle and purge the sample chamber and needle assembly. The amount of sample depends on the sample chamber volume.



4 - Off

Close the needle valve. Turn the handle to the "OFF" position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



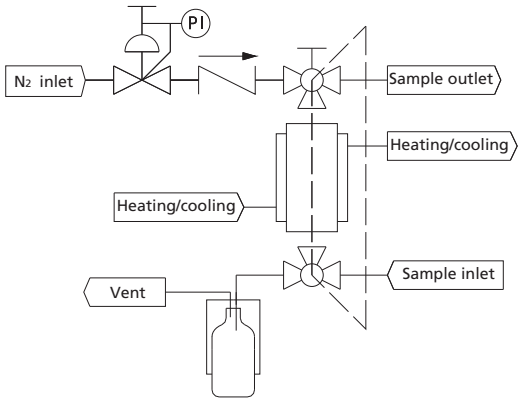
BLD3 - Heating/Cooling Type

Features

- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge and needle purge
- Heating/cooling jacket to ensure sampling within a certain range of temperature
- Easy operation with a single handle by linkage valve

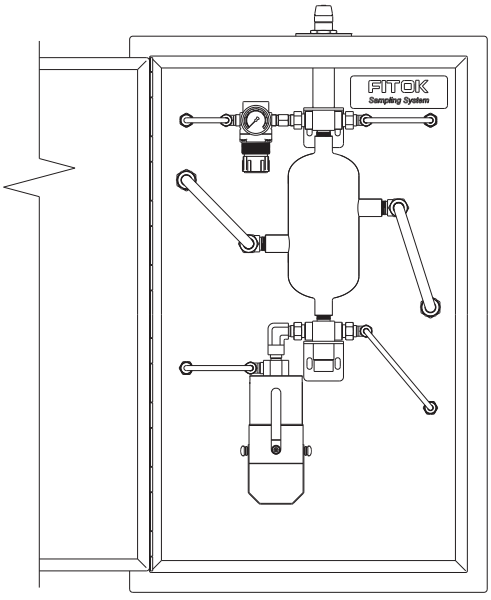
Basic Configuration

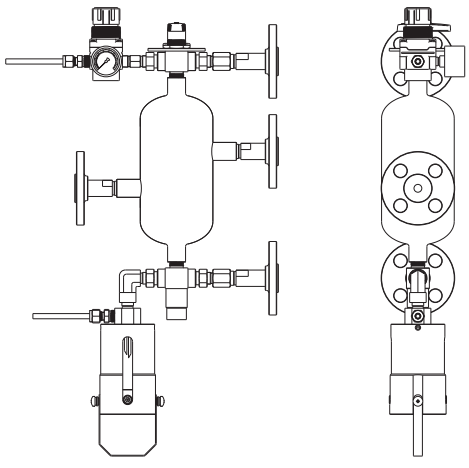
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves (rod linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	Process/vent/purge: 1/4" tube fitting
	Heating/cooling: 3/8" FNPT
Others	Heating/cooling jacket, sample chamber (200 ml)



Note: Products of other specifications are available upon request.

Typical Installation Mode

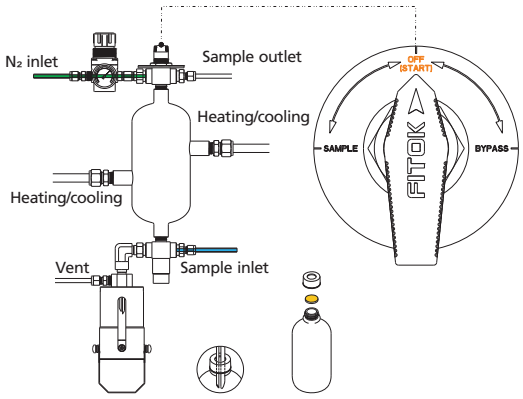




Operation

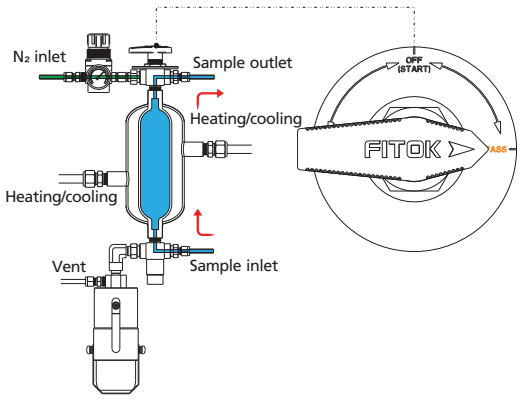
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



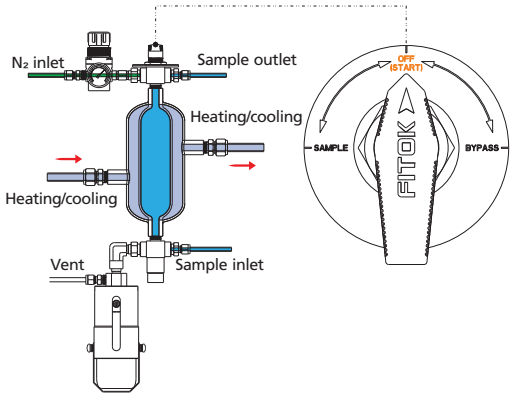
2 - System Purge

Turn the handle to the “BYPASS” position, allowing the sample to flow continuously through the sample chamber. Hold for a period of time to ensure representative sampling.



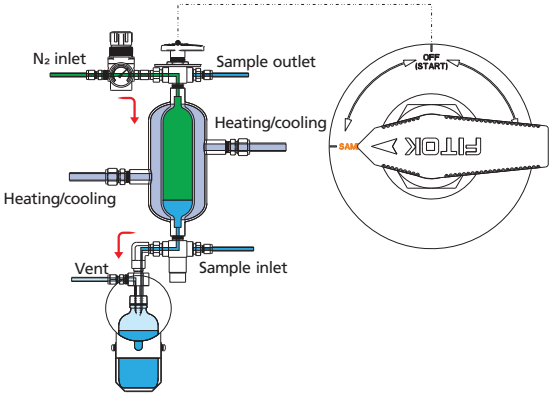
3 - Heating/cooling

Turn the handle to the “OFF” position, allowing the heating/cooling fluid to flow through the heating/cooling jacket. Hold for a sufficient time until the sample reaches the required temperature.



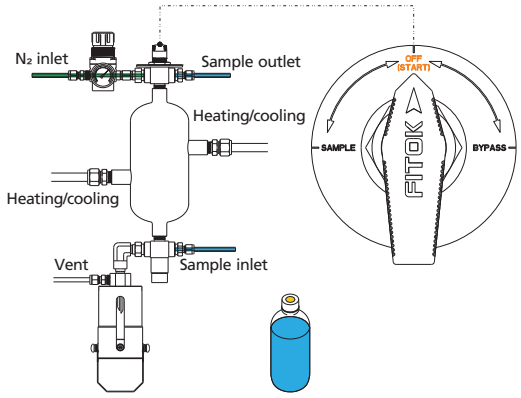
4 - Sampling

Turn the handle to the “SAMPLE” position, allowing Nitrogen to force the sample from the sample chamber into the bottle and purge the sample chamber and needle assembly. The amount of sample depends on the sample chamber volume.



5 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the sample bottle from the sleeve. The septum reseals automatically to complete the sampling process.



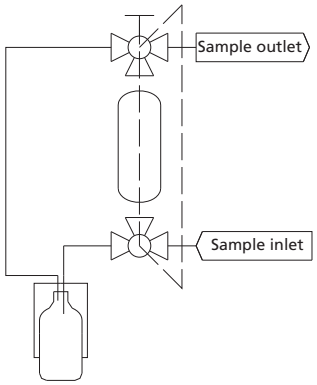
BLD4 - Sampling by Gravity Type

Features

- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge
- Sampling by gravity without Nitrogen purge
- Easy operation with a single handle by linkage valve

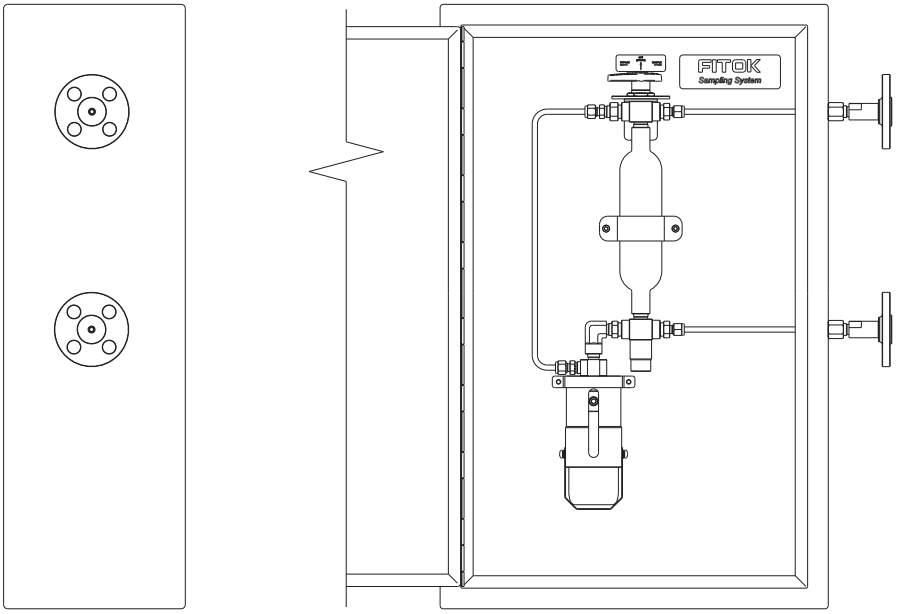
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves (rod 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)
Connections	1/4" tube fitting
Others	Sample chamber (200 ml)



Note: Products of other specifications are available upon request.

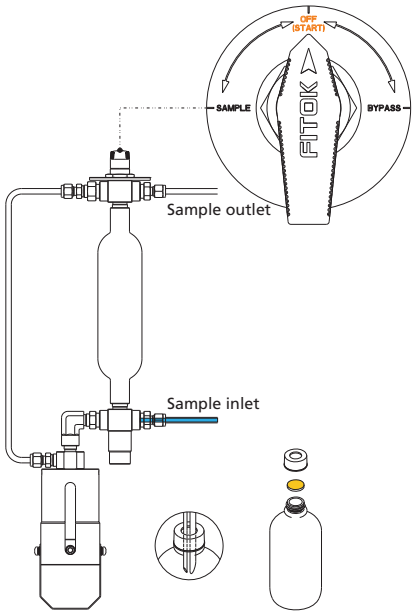
Typical Installation Mode



Operation

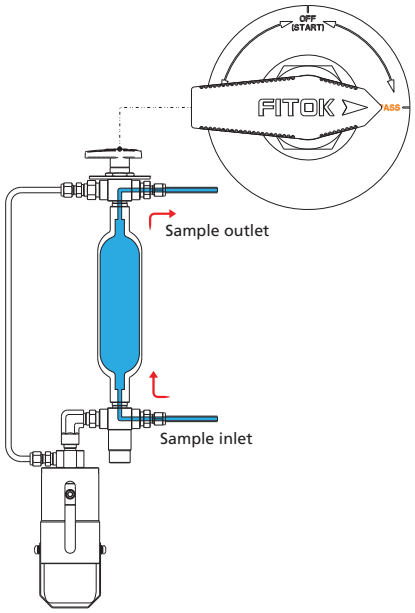
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



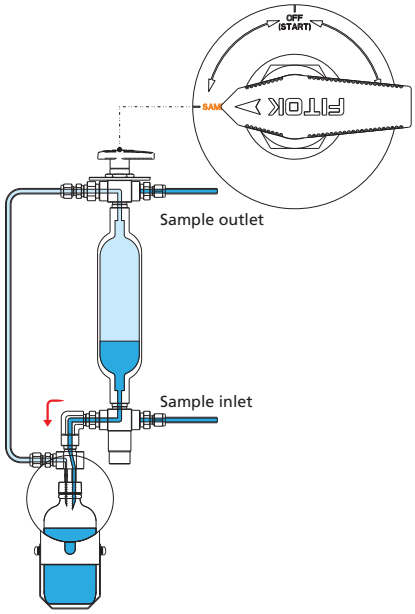
2 - System Purge

Turn the handle to the “BYPASS” position, allowing the sample to flow continuously through the sample chamber. Hold for a period of time to ensure representative sampling.



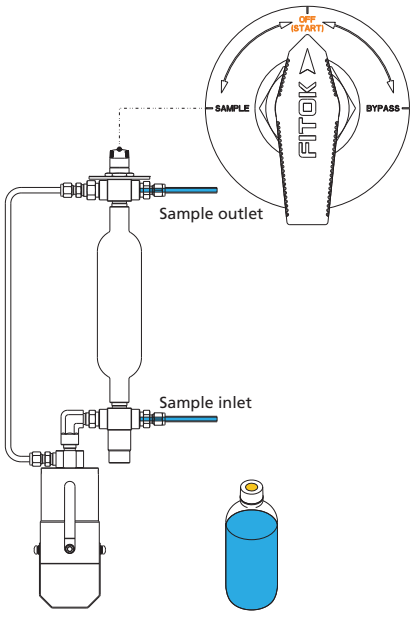
3 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle by gravity. Hold this position for a sufficient time. The amount of sample depends on the sample chamber volume.



4 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



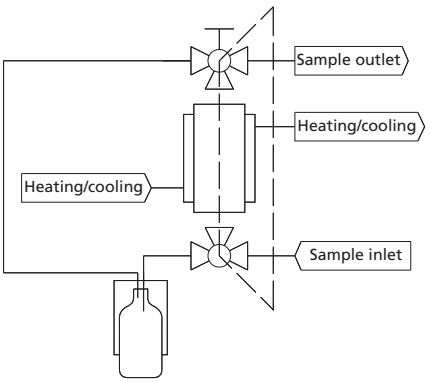
BLD5- Sampling by Gravity Type with Heating/Cooling Jacket

Features

- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge
- Sampling by gravity without Nitrogen purge
- Heating/cooling jacket to ensure sampling within a certain range of temperature
- Easy operation with a single handle by linkage valve

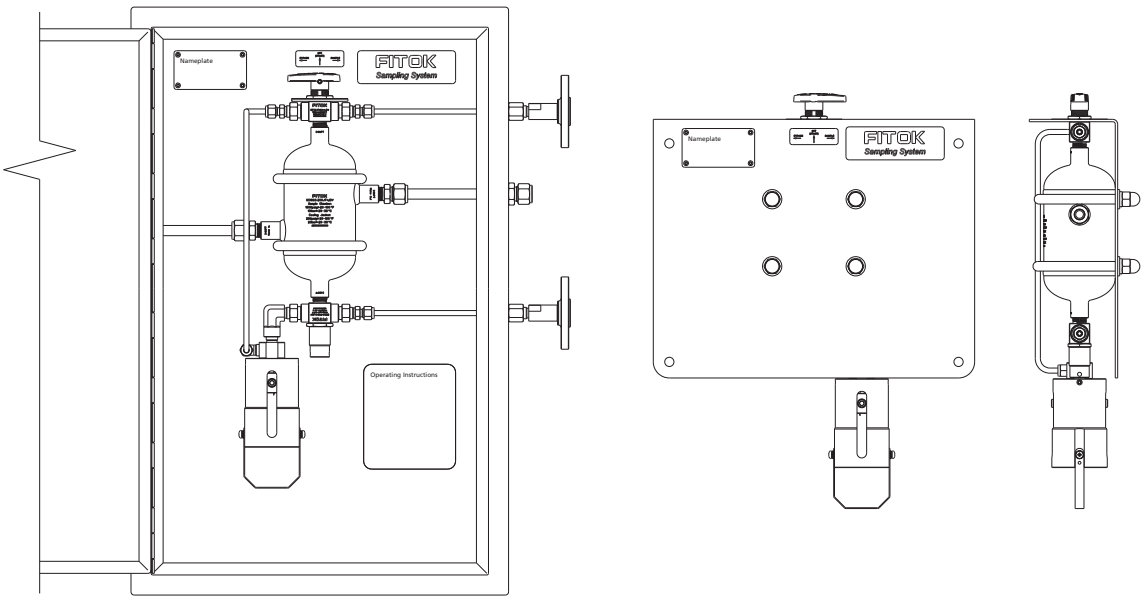
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves (rod 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)
Connections	Process: 1/4" tube fitting
	Heating/cooling: 3/8" FNPT
Others	Heating/cooling jacket, sample chamber (200 ml)



Note: Products of other specifications are available upon request.

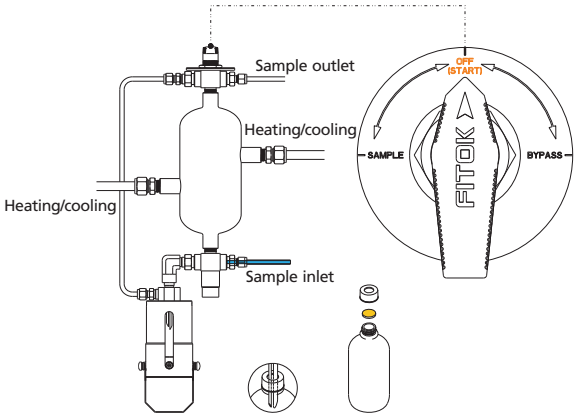
Typical Installation Mode



Operation

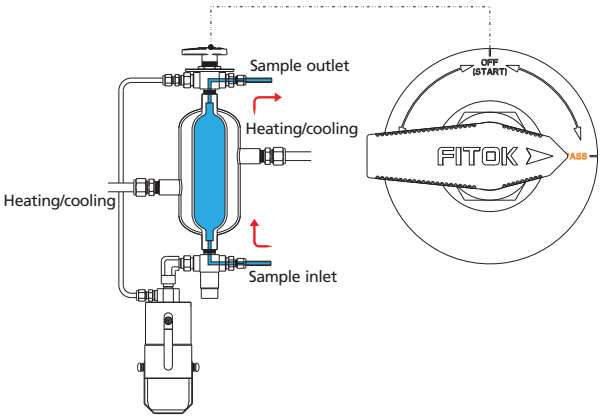
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



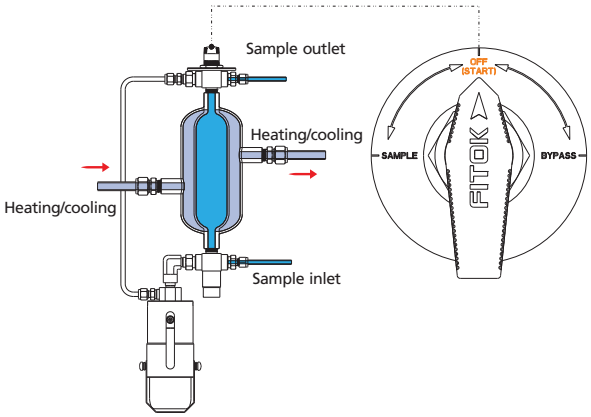
2 - System Purge

Turn the handle to the “BYPASS” position, allowing the sample to flow continuously through the sample chamber. Hold for a period of time to ensure representative sampling.



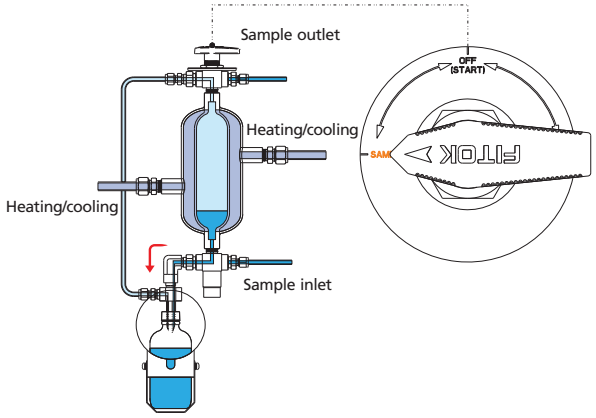
3 - Heating/cooling

Turn the handle to the “OFF” position, allowing the heating/cooling fluid to flow through the heating/cooling jacket. Hold for a sufficient time until the sample reaches the required temperature.



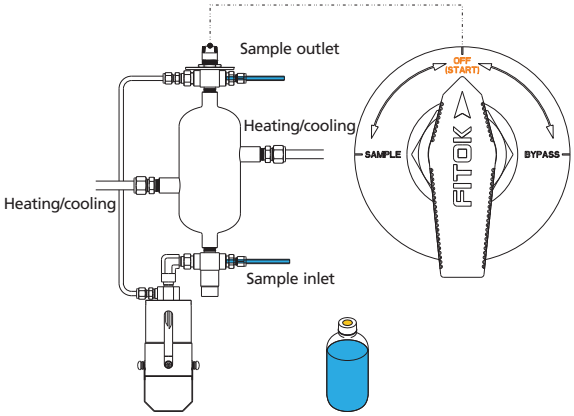
4 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle by gravity. Hold this position for a sufficient time. The amount of sample depends on the sample chamber volume.



5 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



E Series

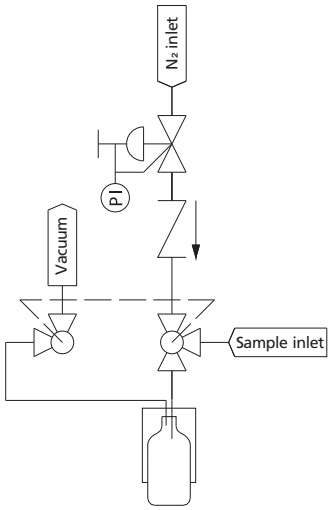
BLE1 - Back Purge Type with Vacuum Connection

Features

- Sampling from process lines at atmospheric pressure or vacuum condition
- Back purge
- Easy operation with a single handle by linkage valve

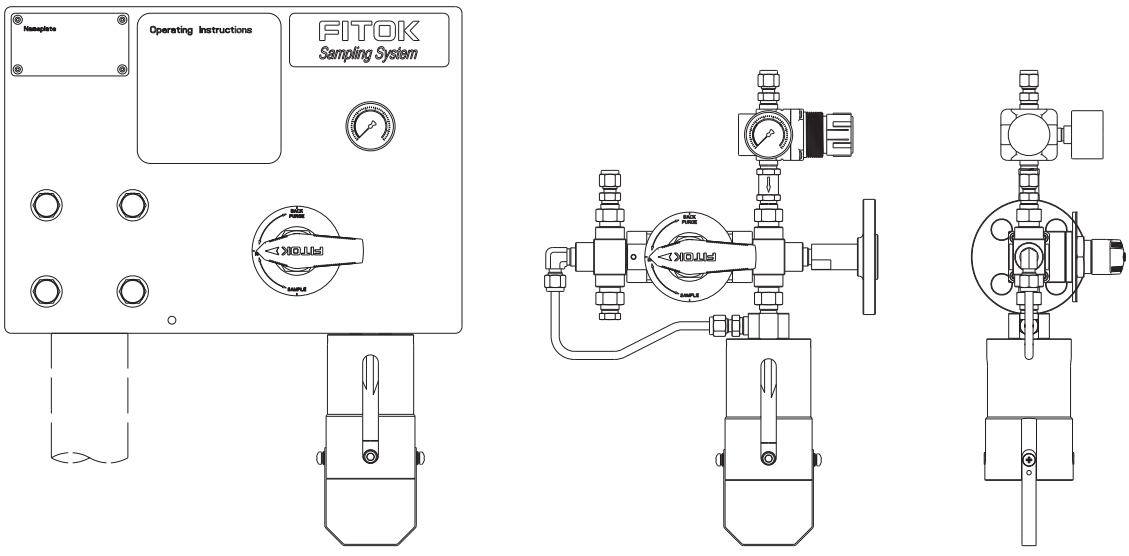
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way 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)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" tube fitting



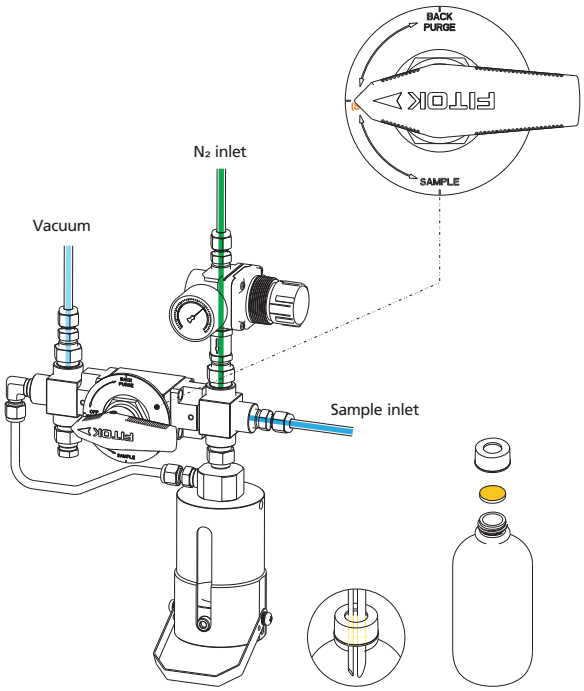
Note: Products of other specifications are available upon request.

Typical Installation Mode

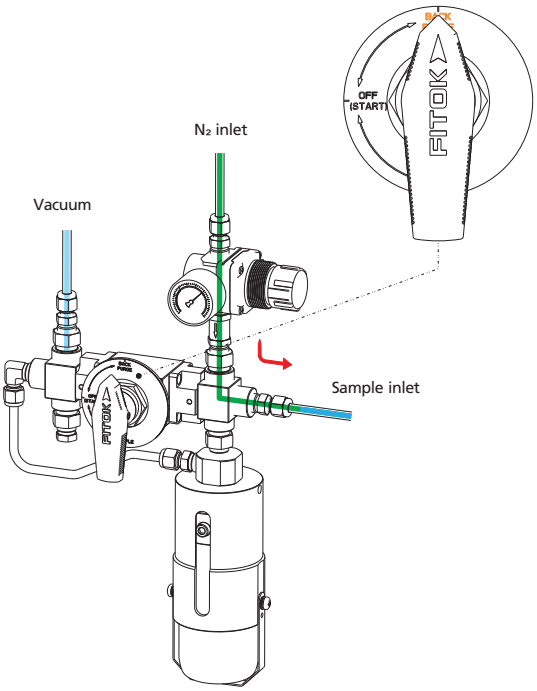


Operation

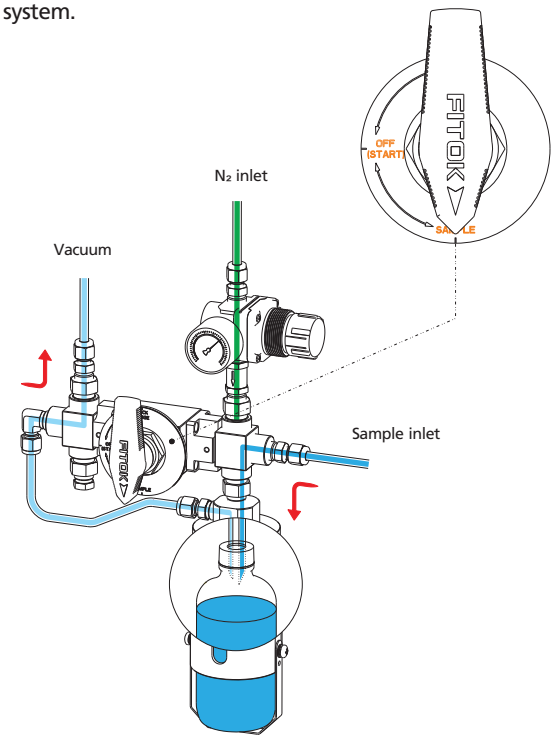
1 - Preparation
Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



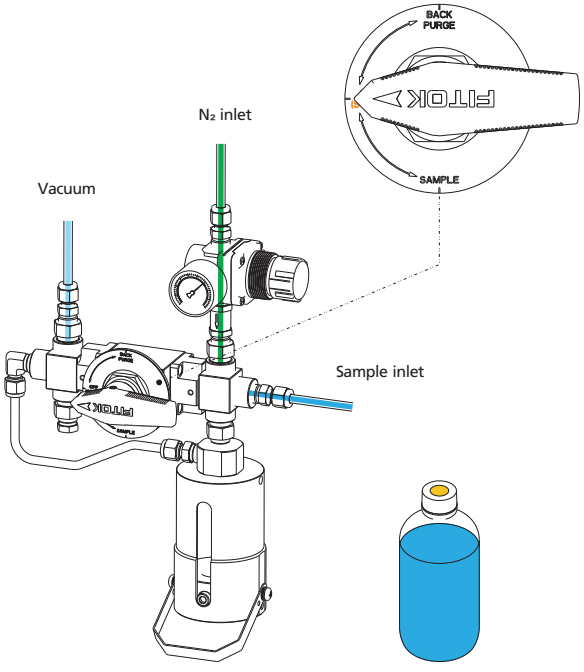
2 - Back Purge
Turn the handle to the “BACK PURGE” position, allowing Nitrogen to force the residual sample from the system into the process line to ensure representative sampling.



3 - Sampling
Turn the handle to the "SAMPLE" position, connecting the bottle with the vacuum connection to create a vacuum in the sample bottle. The sample flows into the bottle. When the required amount has been taken, turn the handle to the “OFF” position to close the sampling system.



4 - Off
Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



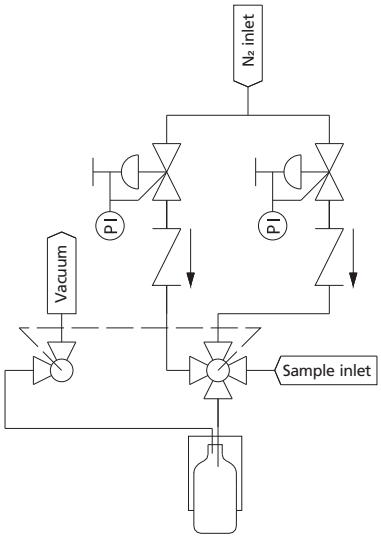
BLE2 - Back and Needle Purge Type with Vacuum Connection

Features

- Sampling from process lines at atmospheric pressure or vacuum condition
- Back purge and needle purge
- Easy operation with a single handle by linkage valve

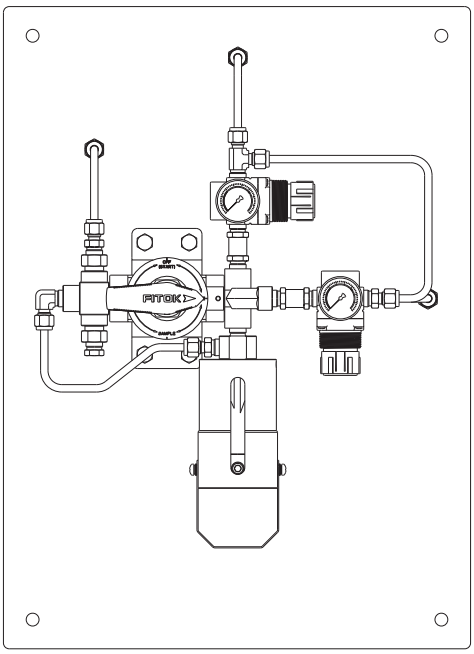
Basic Configuration

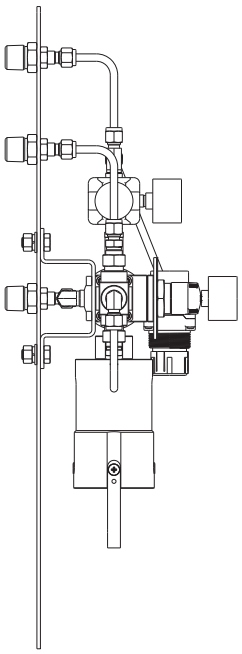
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves and BO Series 4-way ball valves (gearbox linkage): PTFE seat Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 300°F (-18°C to 148°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

Typical Installation Mode

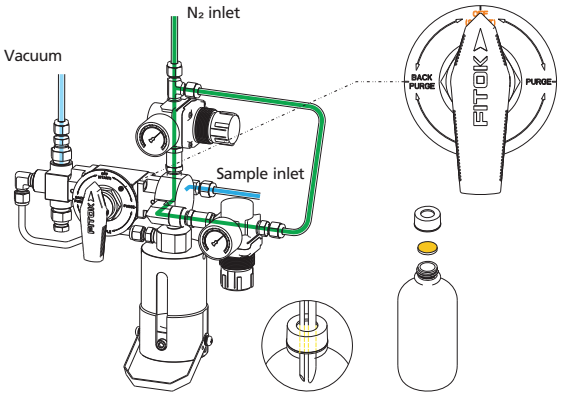




Operation

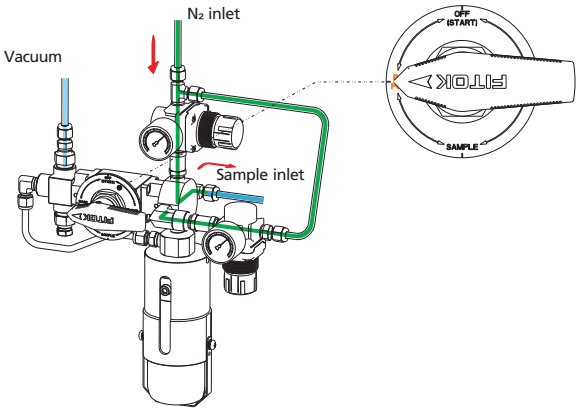
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



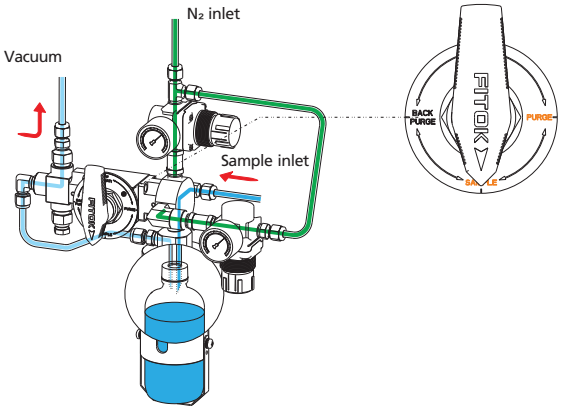
2 - Back Purge

Turn the handle to the “BACK PURGE” position, allowing Nitrogen to force the residual sample from the system into the process line to ensure representative sampling.



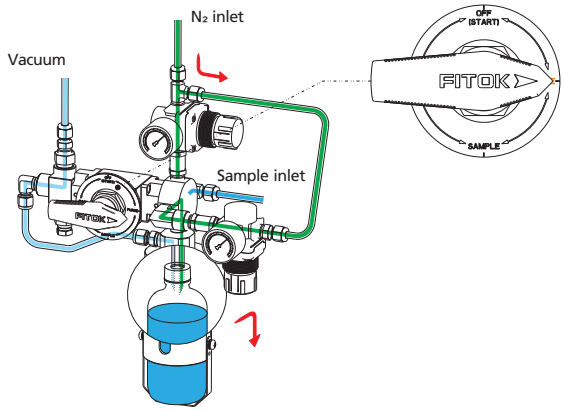
3 - Sampling

Turn the handle to the "SAMPLE" position, connecting the bottle with the vacuum connection to create a vacuum in the sample bottle. The sample flows into the bottle. When the required amount has been taken, turn the handle to the “PURGE” position.



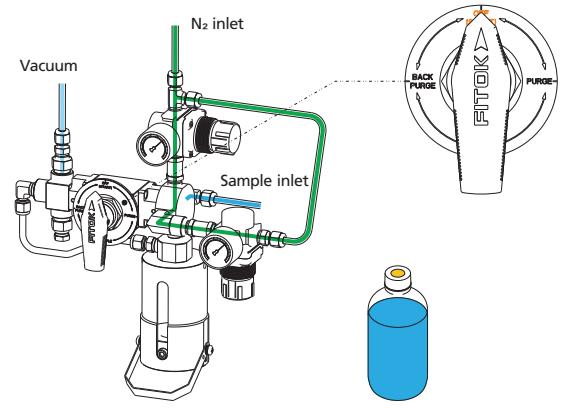
4 - Needle Purge

Allow Nitrogen to force the residual sample from the needle assembly into the bottle. Hold this position for a sufficient time.



5 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



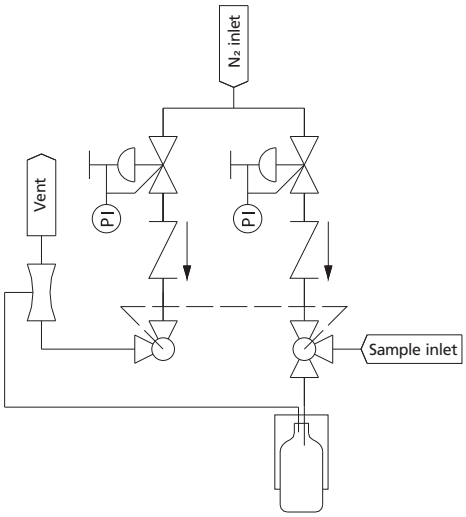
BLE3 - Back Purge Type with Venturi Unit

Features

- Sampling from process lines at atmospheric pressure or vacuum condition
- Back purge
- Easy operation with a single handle by linkage valve

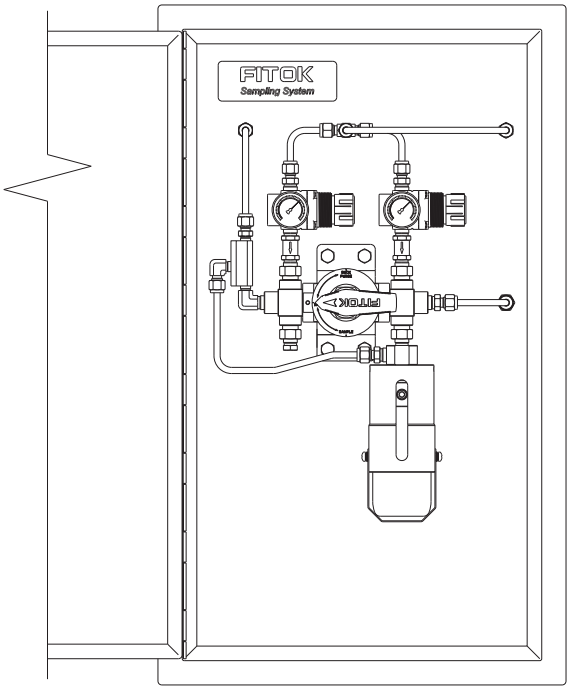
Basic Configuration

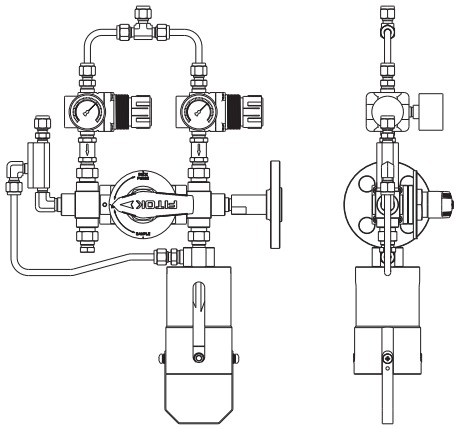
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves (gearbox linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Venturi Unit	Creating a vacuum in the sample bottle; sampling at atmospheric pressure or vacuum condition
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

Typical Installation Mode

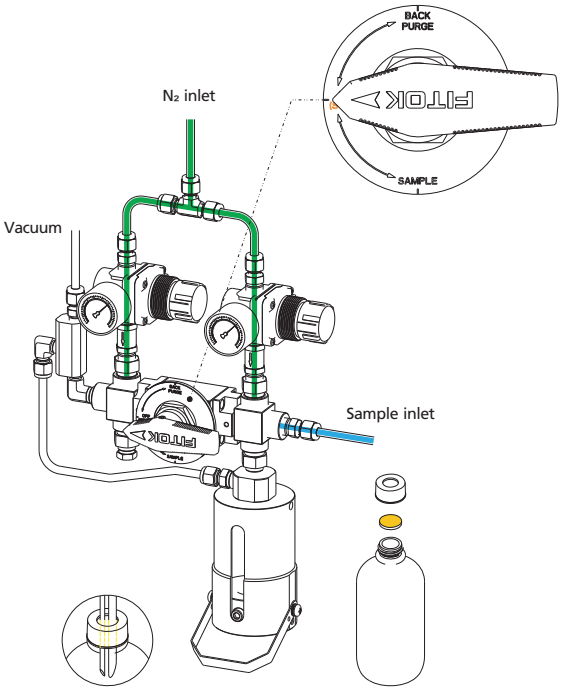




Operation

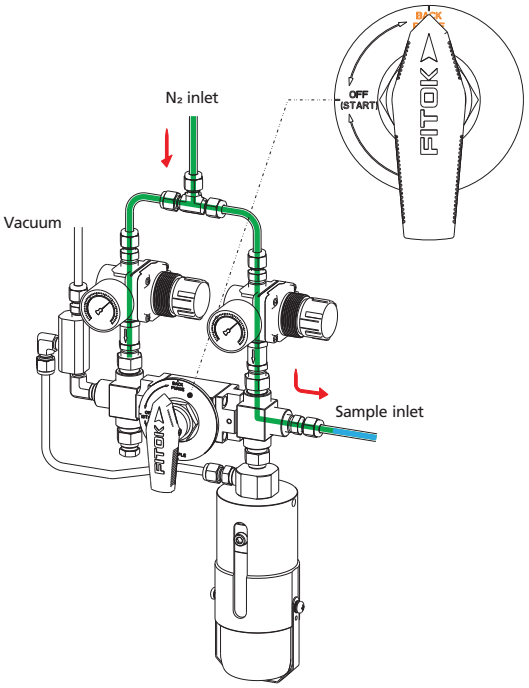
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



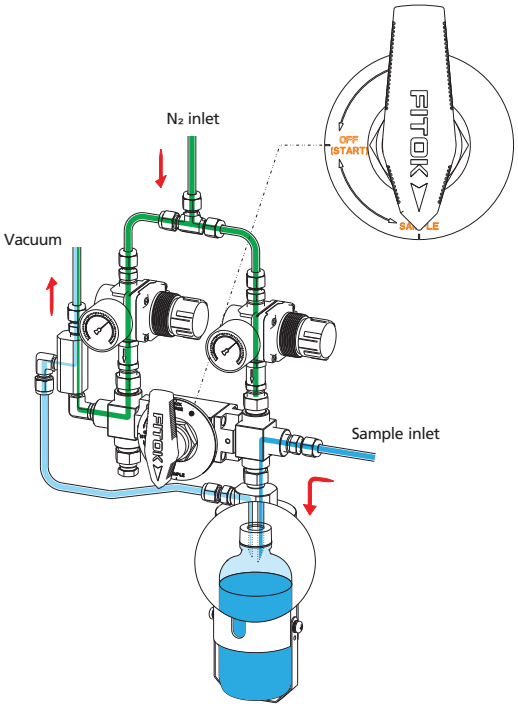
2 - Back Purge

Turn the handle to the “BACK PURGE” position, allowing Nitrogen to force the residual sample from the system into the process line to ensure representative sampling.



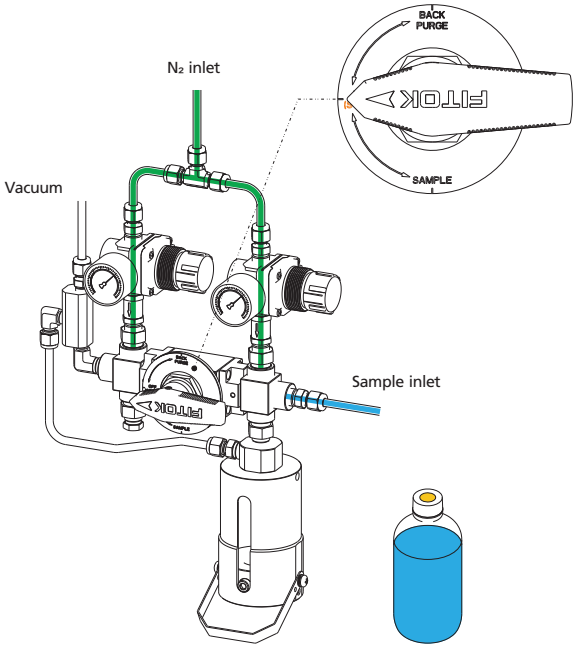
3 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle vacuumized by the venturi unit. When the required amount has been taken, turn the handle to the “OFF” position.



4 - Off

Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



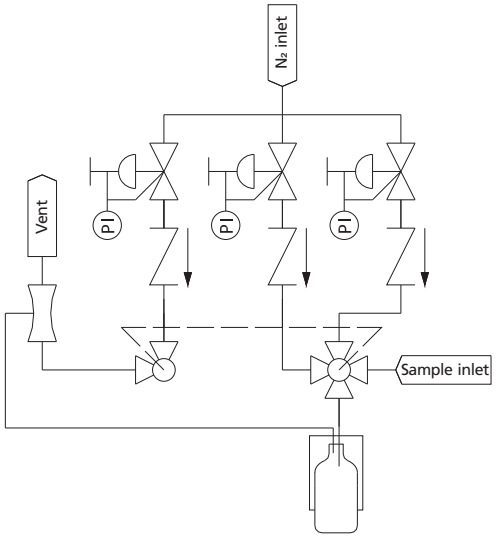
BLE4 - Back and Needle Purge Type with Venturi Unit

Features

- ◎ Sampling from process lines at atmospheric pressure or vacuum condition
- ◎ Back purge and needle purge
- ◎ Easy operation with a single handle by linkage valve

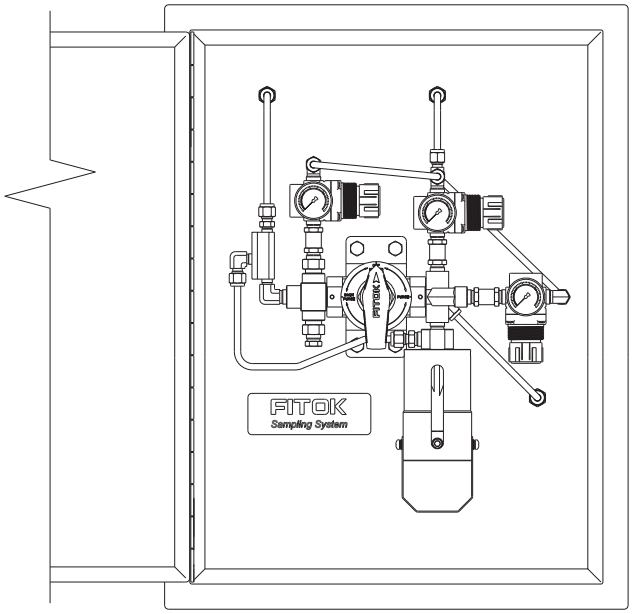
Basic Configuration

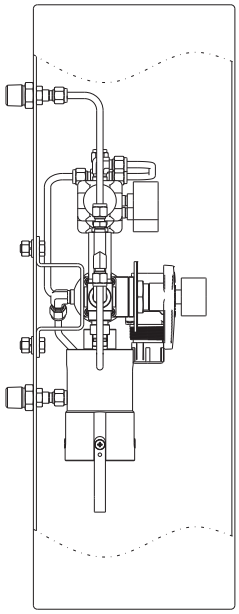
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves and BO Series 4-way ball valves (gearbox linkage): PTFE seat Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 300°F (-18°C to 148°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Venturi Unit	Creating a vacuum in the sample bottle, sampling at atmospheric pressure or vacuum condition
Connections	1/4" tube fitting



Note: Products of other specifications are available upon request.

Typical Installation Mode

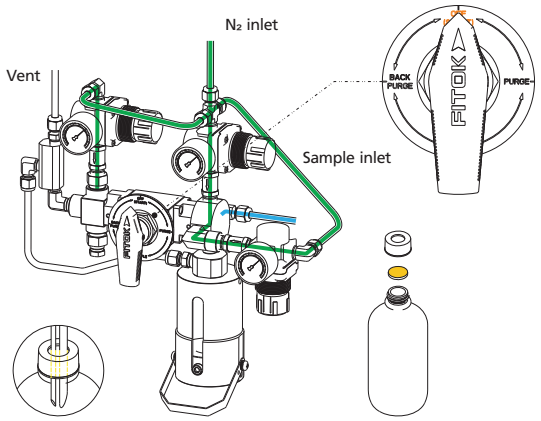




Operation

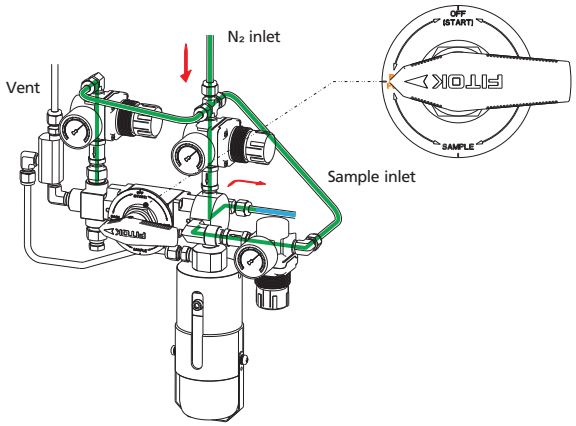
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



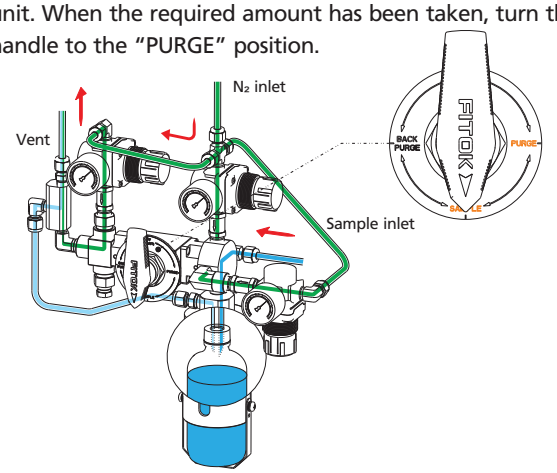
2 - Back Purge

Turn the handle to the “BACK PURGE” position, allowing Nitrogen to force the residual sample from the system into the process line to ensure representative sampling.



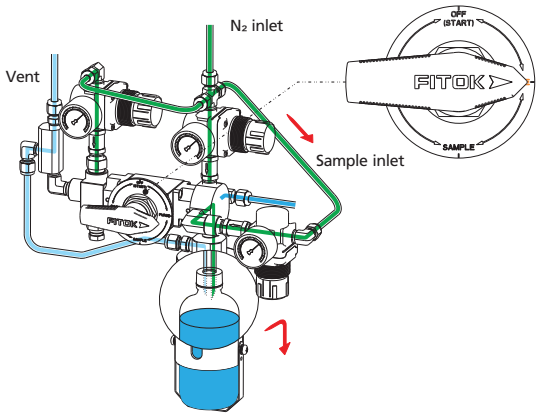
3 - Sampling

Turn the handle to the “SAMPLE” position, allowing the sample to flow into the bottle vacuumized by the venturi unit. When the required amount has been taken, turn the handle to the “PURGE” position.



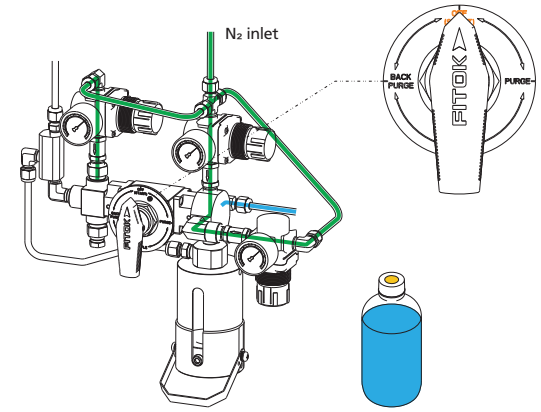
4 - Needle Purge

Allow Nitrogen to force the residual sample from the needle assembly into the bottle. Hold this position for a sufficient time.



5 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



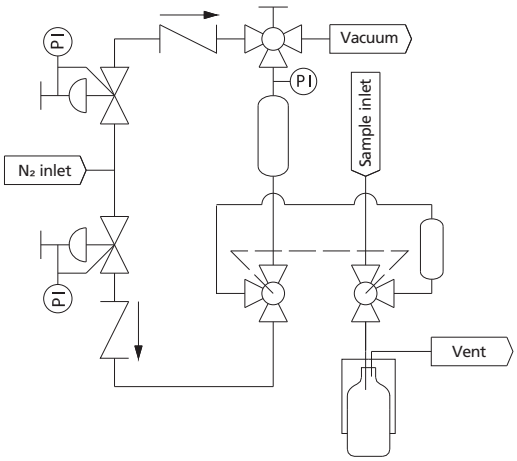
BLE5 - Overflow Type with Vacuum Connection

Features

- Sampling from process lines at atmospheric pressure or vacuum condition
- Fixed volume sampling
- Overflow sampling and back purge
- Easy operation with a single handle by linkage valve

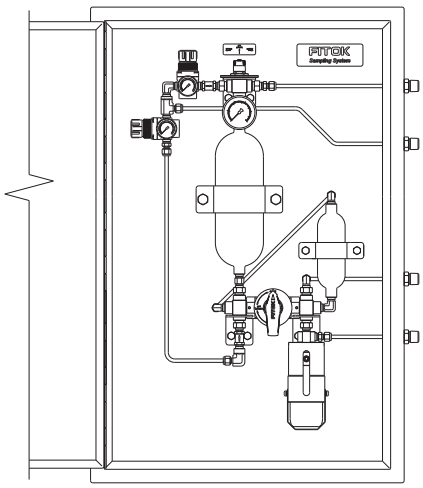
Basic Configuration

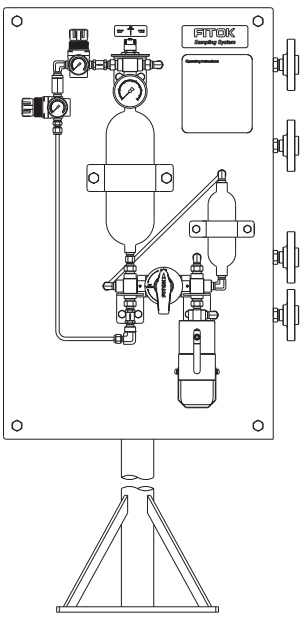
Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way ball valves (gearbox linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" tube fitting
Others	Overflow cylinder, sample chamber (200 ml), ball valve



Note: Products of other specifications are available upon request.

Typical Installation Mode

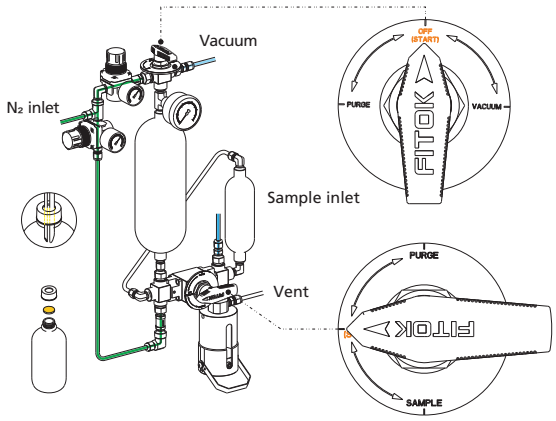




Operation

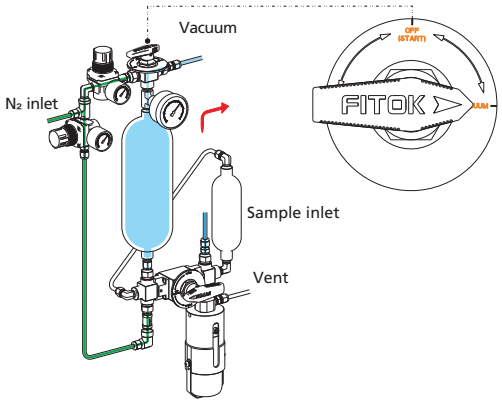
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



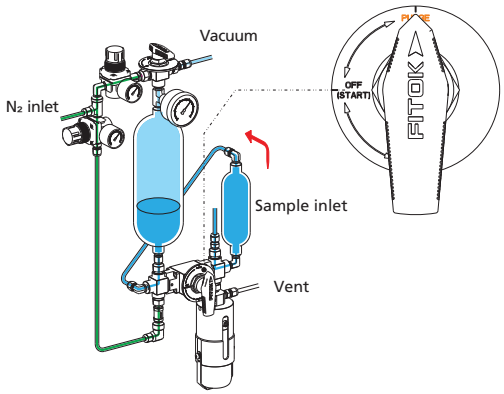
2 - Vacuum

Turn the handle on the top of the overflow cylinder to the "VACUUM" position to vacuumize the overflow cylinder. Turn the handle to the "OFF" position.



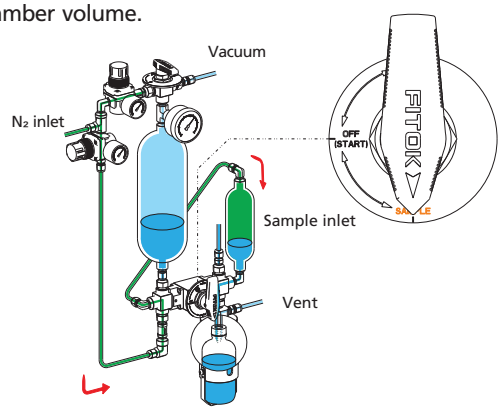
3 - System Purge

Turn the main handle to the "PURGE" position, allowing the sample to flow from the process line into the vacuumized overflow cylinder through the sample chamber to ensure representative sampling.



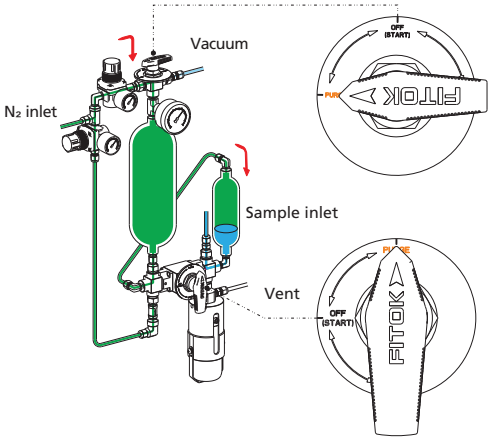
4 - Sampling

Turn the main handle to the "SAMPLE" position, allowing Nitrogen to force the sample from the sample chamber into the bottle and purge the sample chamber and needle assembly. The amount of sample depends on the sample chamber volume.



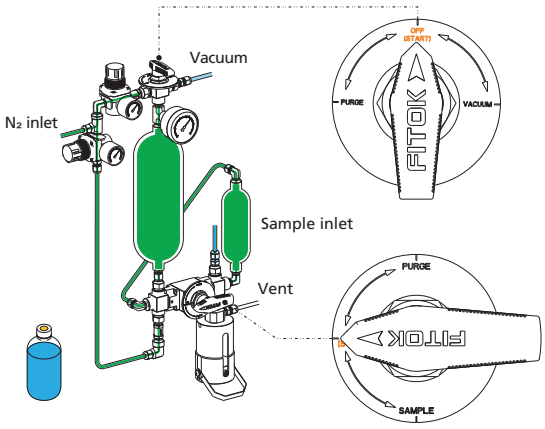
5 - Back Purge

Turn the main handle and the handle on the top of the overflow cylinder to the "PURGE" position, allowing Nitrogen to force the residual sample from the system into the process line.



6 - OFF

Turn the two handles to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



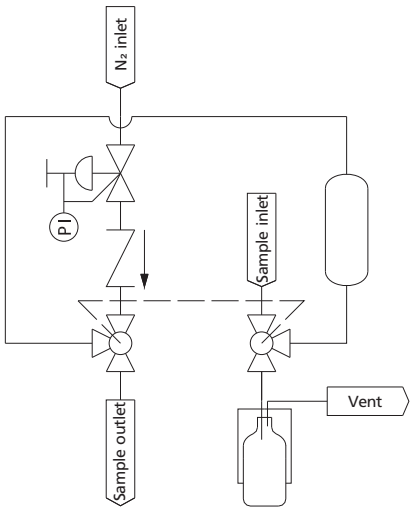
BLE6 - Fixed Volume Type

Features

- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge and needle purge
- Easy operation with a single handle by linkage valve

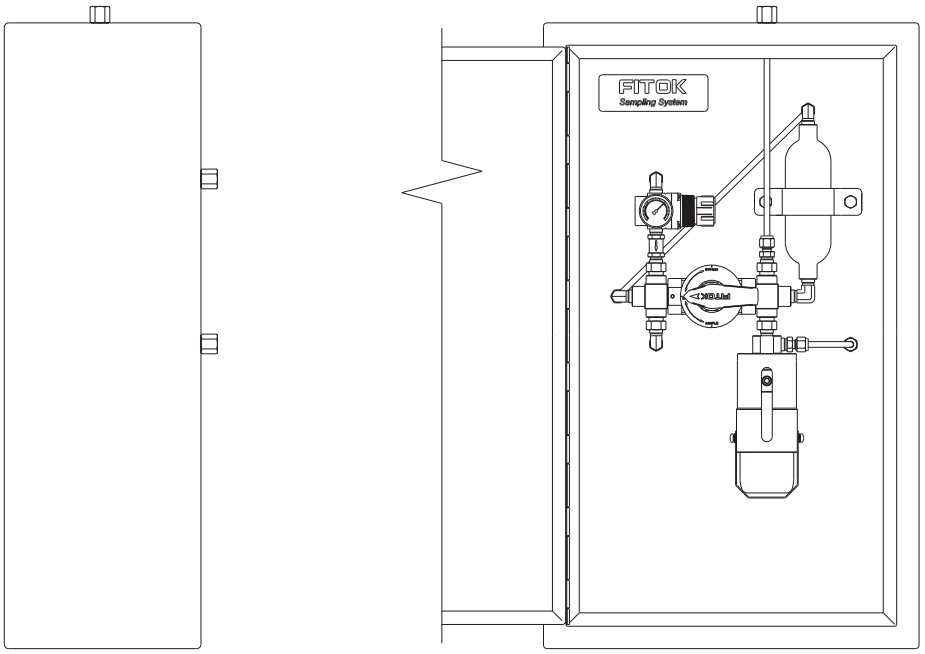
Basic Configuration

Wetted Material	316 SS
Sleeve Assembly	250 ml sleeve with bottle retaining clip
Needle Assembly	Process/vent needle ID: 1.4 mm (0.06")
Sampling Valve	BF Series 3-way 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)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" tube fitting
Others	Sample chamber (200 ml)



Note: Products of other specifications are available upon request.

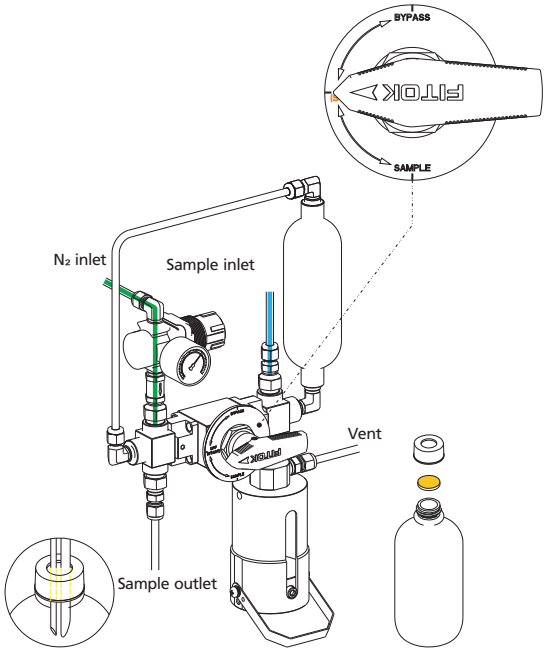
Typical Installation Mode



Operation

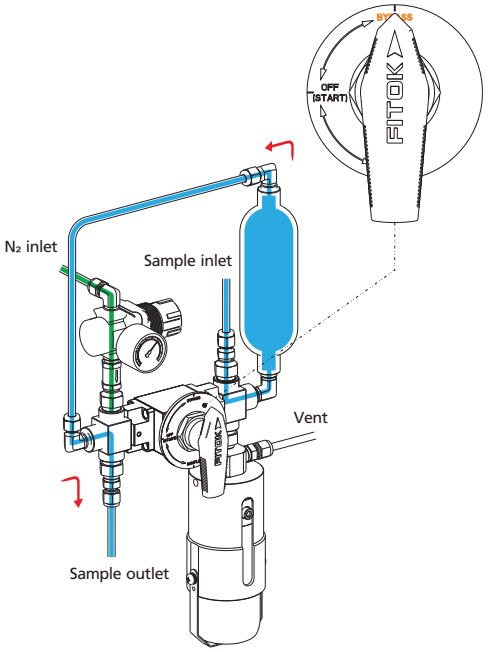
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Swing down the bottle retaining clip.



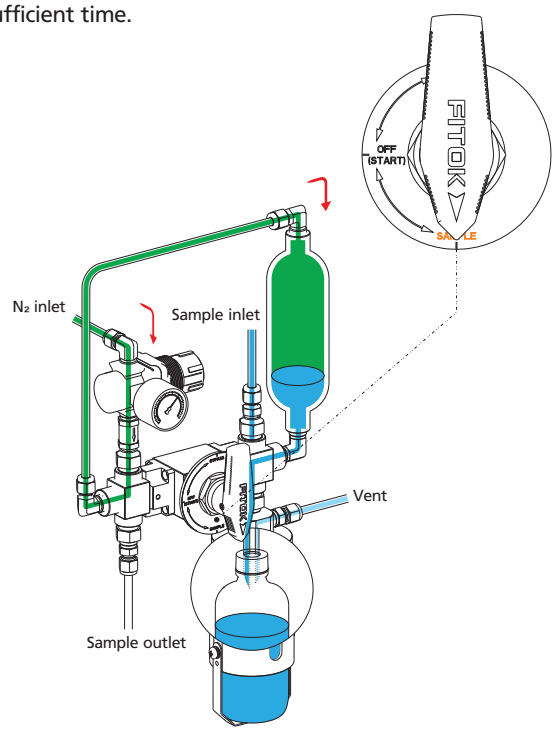
2 - System Purge

Turn the handle to the “BYPASS” position, allowing the sample to flow continuously through the sample chamber. Hold for a period of time to ensure representative sampling.



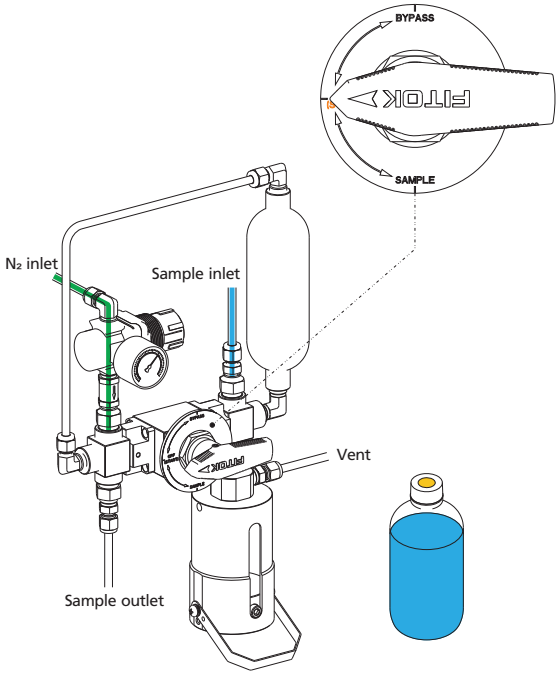
3 - Sampling

Turn the handle to the “SAMPLE” position, allowing Nitrogen to force the sample from the sample chamber into the bottle and purge the sample chamber and needle assembly. This position can be held for a sufficient time.



4 - Off

Turn the handle to the “OFF” position to close the sampling system. Remove the bottle retaining clip and take out the bottle from the sleeve. The septum reseals automatically to complete the sampling process.



CG - Cylinder Configuration Sampling Systems for Gases

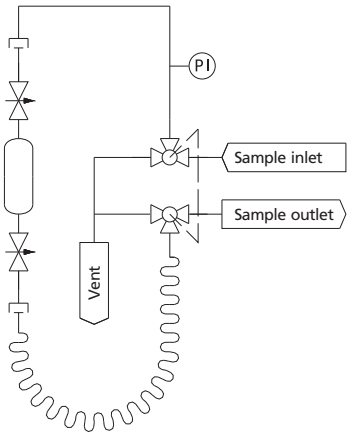
CGG1 - System Purge Type

Features

- Sampling from devices or process lines
- System purge
- Easy operation with a single handle by linkage valve

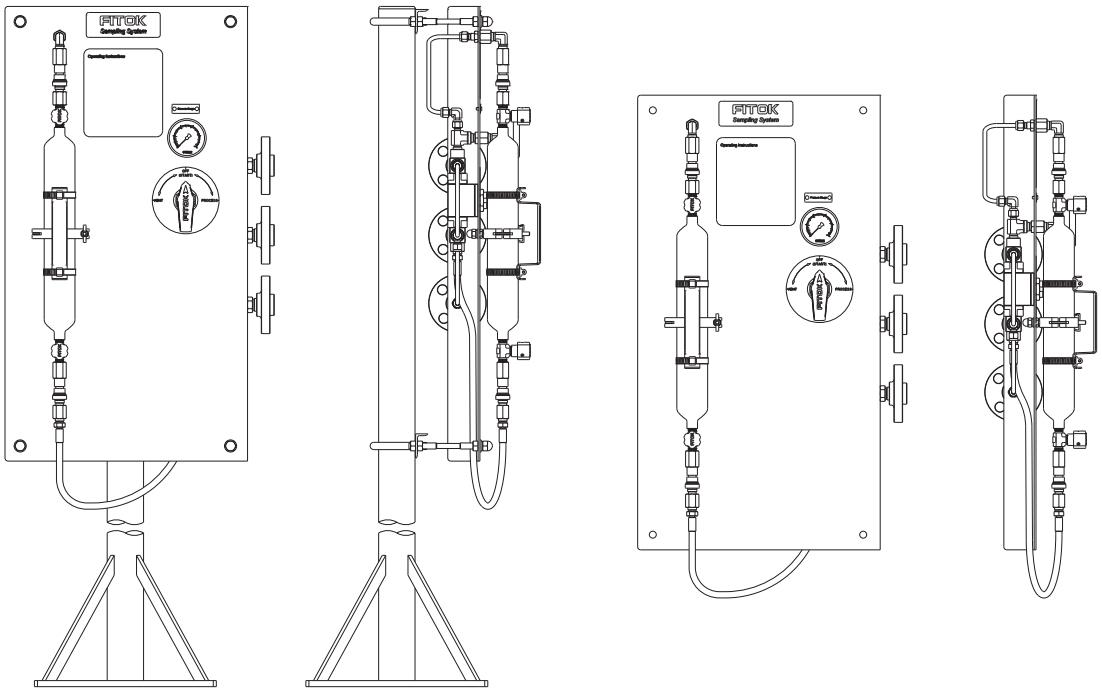
Basic Configuration

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)
Other Accessories	PS Series metal hoses
	Pressure gauge
Connections	NPS 1/2 flange



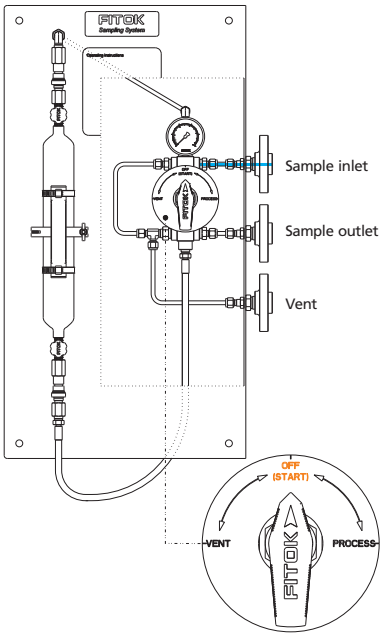
Note: Products of other specifications are available upon request.

Typical Installation Mode

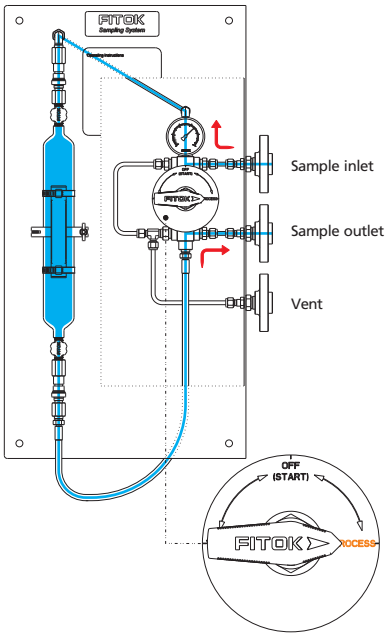


Operation

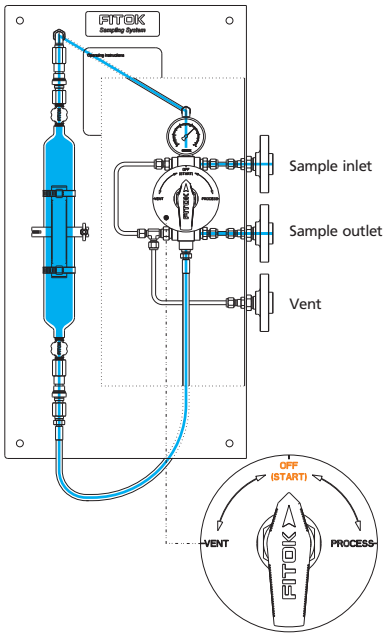
1 - Preparation
Install the sample cylinder and connect the hose to the bottom side of the cylinder. Open the needle valves at both ends of the cylinder.



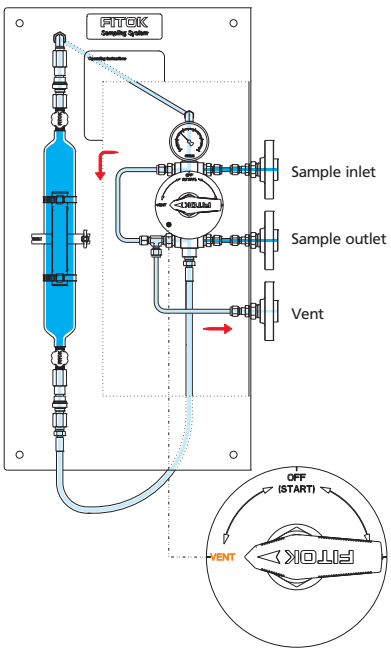
2 - Sampling
Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the cylinder. Hold for a period of time to ensure representative sampling.



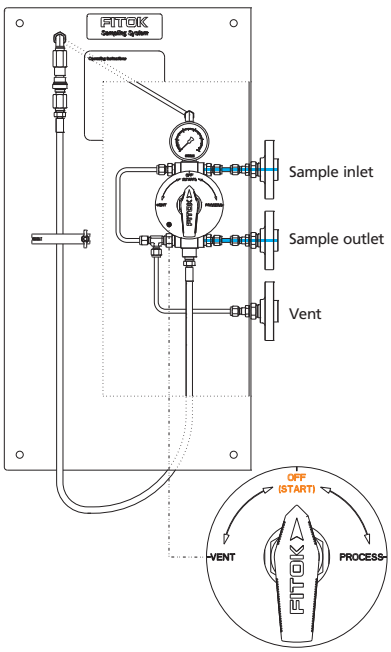
3 - Off
Turn the handle to the “OFF” position. Close the needle valves at both ends of the cylinder.

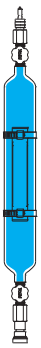


4 - Depressurization/vent
Turn the handle to the “VENT” position, connecting the sampling line with the vent line to depressurize and discharge the residual sample.



5 - 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.





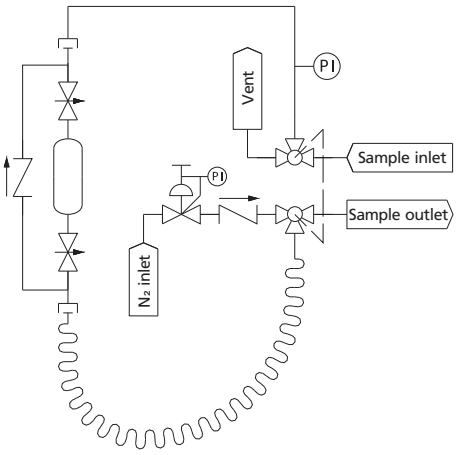
CGG2 - Bypass and System Purge Type

Features

- Sampling from devices or process lines
- System purge
- Easy operation with a single handle by linkage valve

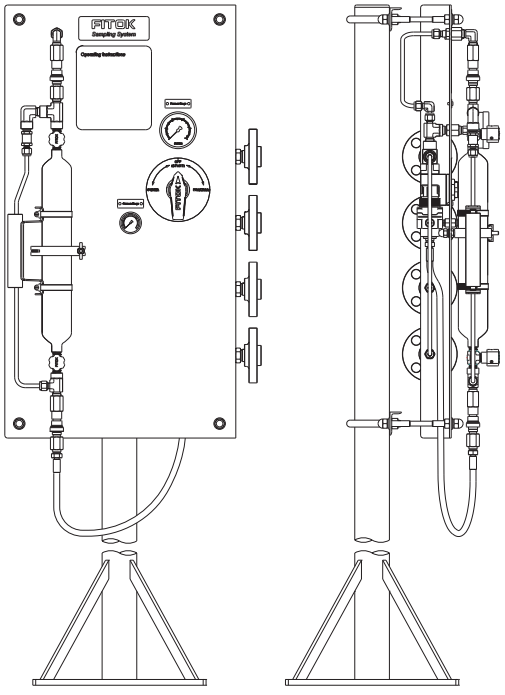
Basic Configuration

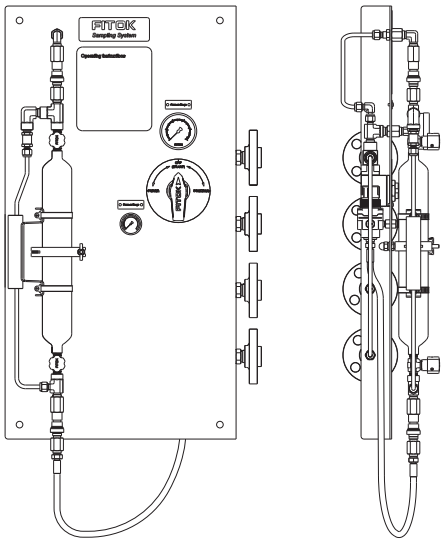
Wetted Material	316 SS
Cylinder Assembly	500 ml cylinder
	ND Series needle valves
	QC4 Series quick-connects
	CV Series check valves
Sampling Valve	BF Series ball valves (gearbox linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
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

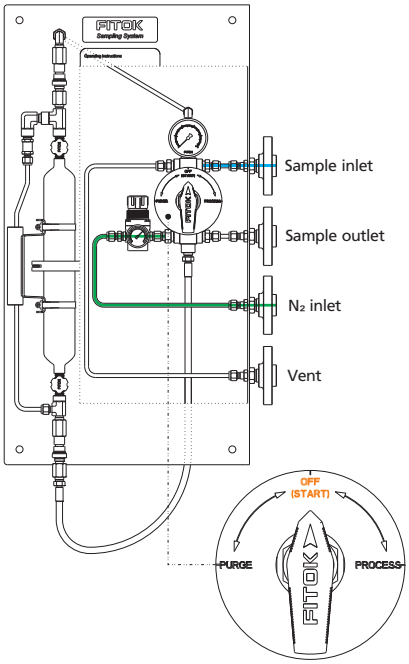




Operation

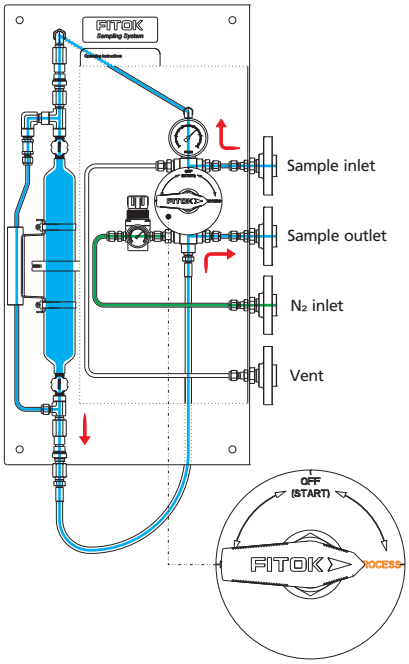
1 - Preparation

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.



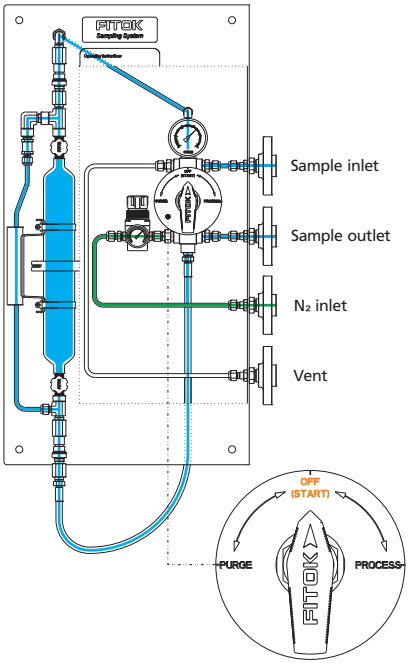
2 - Sampling

Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the cylinder. Hold for a period of time to ensure representative sampling.



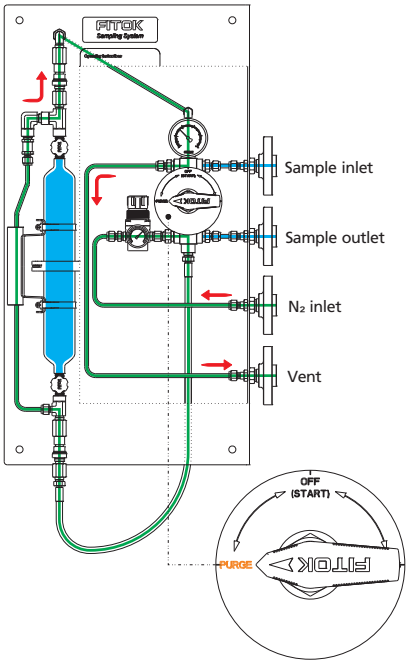
3 - Off

Turn the handle to the “OFF” position. Close the needle valves at both sides of the cylinder.



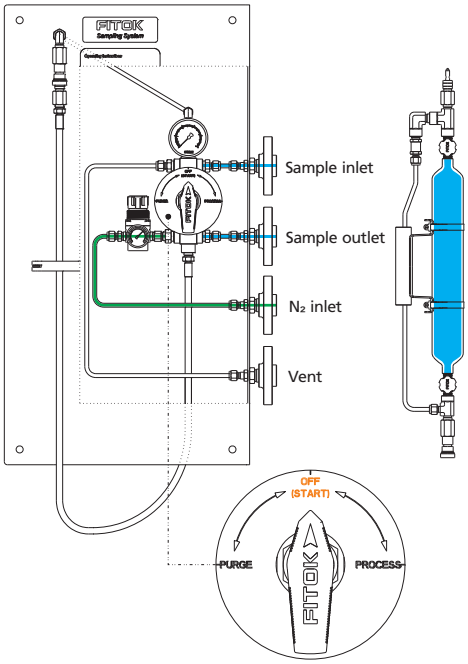
4 - Purge

Turn the handle to the “PURGE” position, allowing Nitrogen to flow through the quick-connects and bypass to force the residual sample out of the system.



5 - 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.



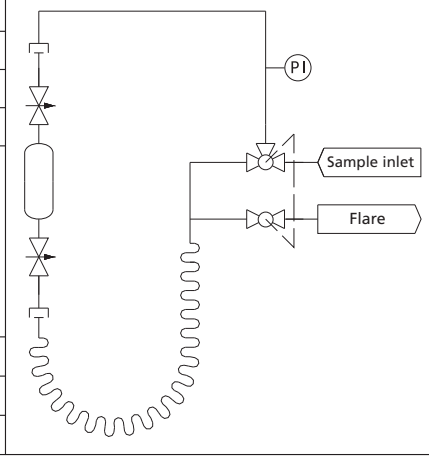
CGG3 - Vent to Flare Type

Features

- Sampling from devices or process lines
- System purge to flare (no circulation loop)
- Easy operation with a single handle by linkage valve

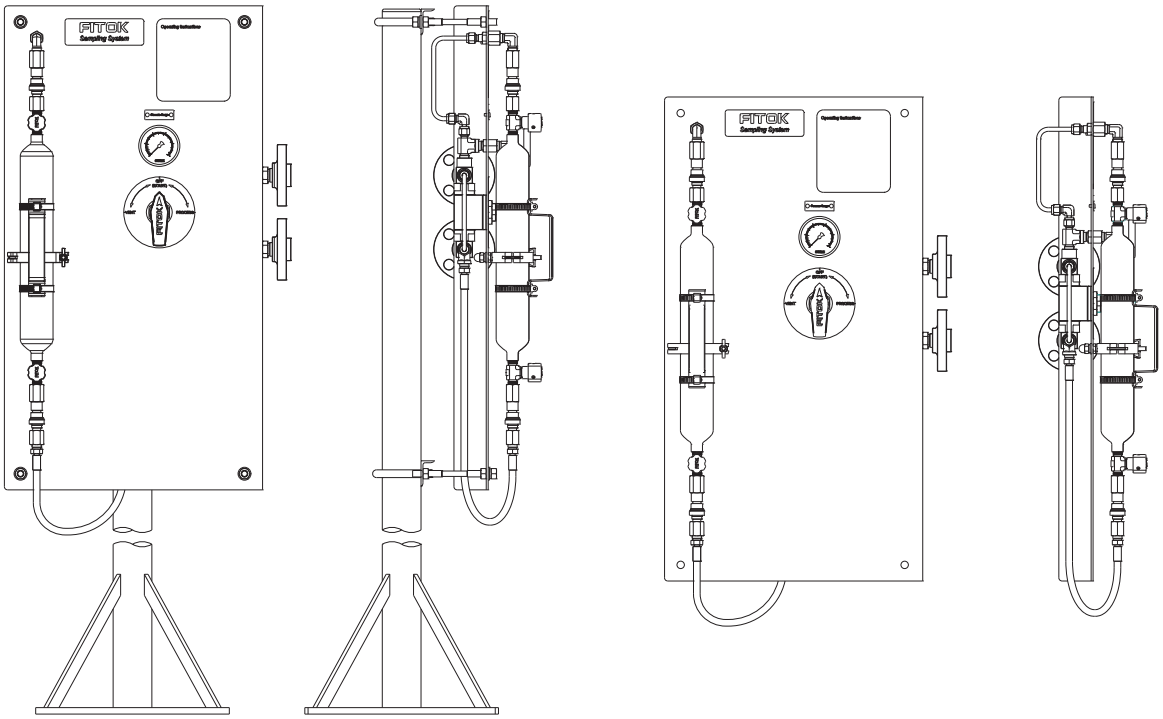
Basic Configuration

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)
Other Accessories	PS Series metal hoses
	Pressure gauge
Connections	NPS 1/2 flange



Note: Products of other specifications are available upon request.

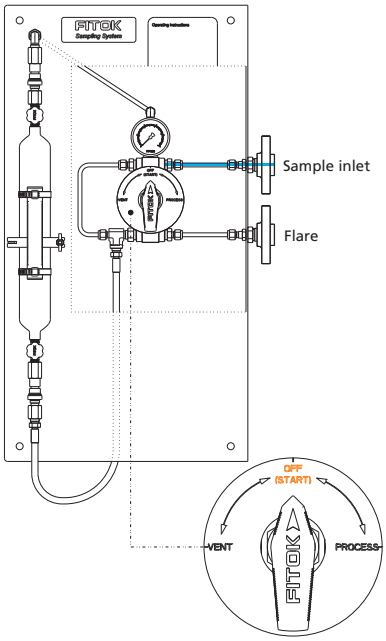
Typical Installation Mode



Operation

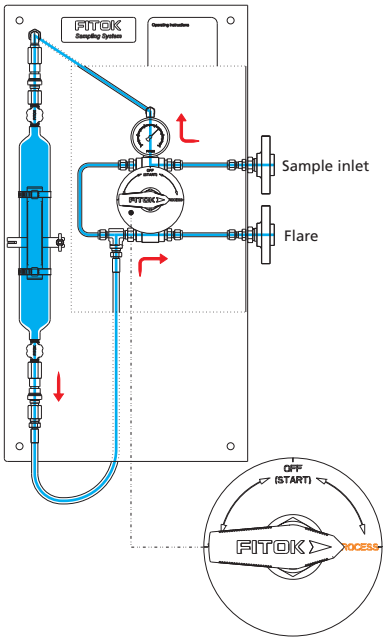
1 - Preparation

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.



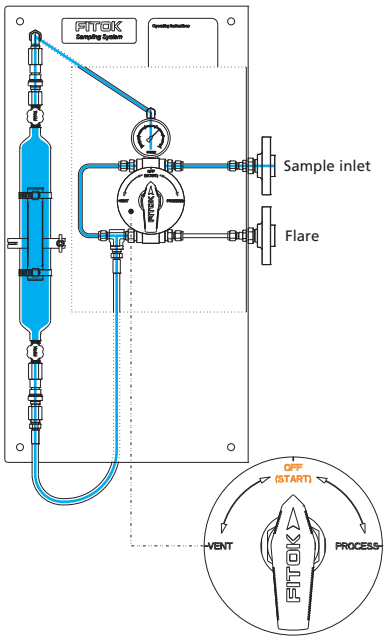
2 - Sampling

Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the cylinder. Hold for a period of time to ensure representative sampling.



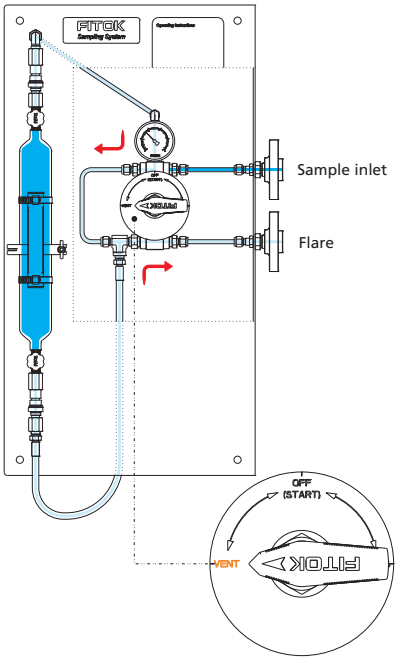
3 - Off

Turn the handle to the “OFF” position. Close the needle valves at both sides of the cylinder.



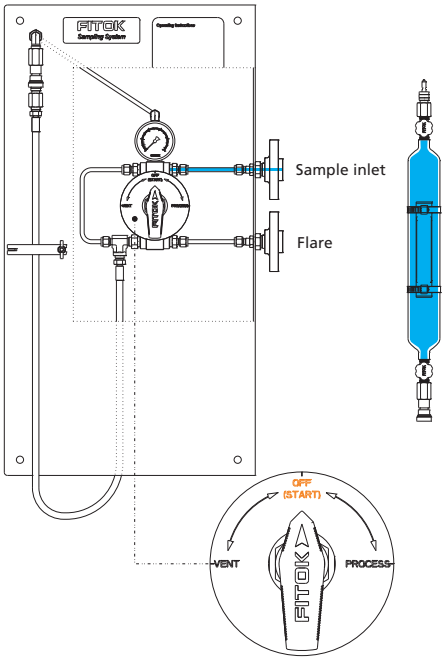
4 - Depressurization/vent

Turn the handle to the “VENT” position, connecting the sampling line to the flare to depressurize and discharge the residual sample out of the system.



5 - 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.



CS - Cylinder Configuration Sampling Systems for Liquefied Gases

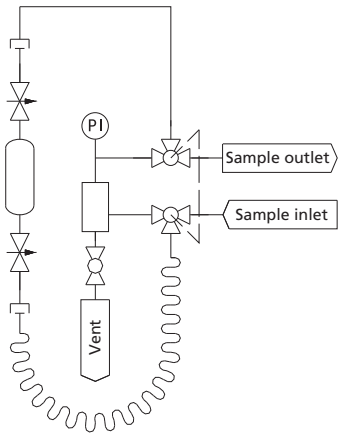
CSF1 - System Purge Type with Expansion Chamber

Features

- Sampling from devices or process lines
- System purge
- Predefined sampling volume controlled by an expansion chamber to ensure safe sampling
- Easy operation with a single handle by linkage valve

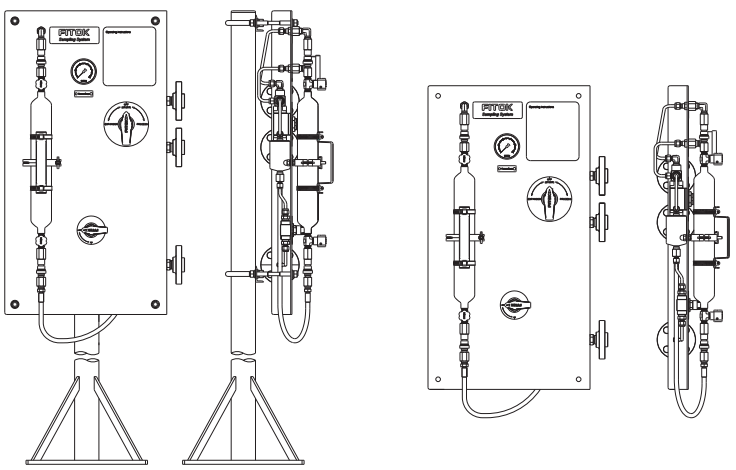
Basic Configuration

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	100ml, 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.

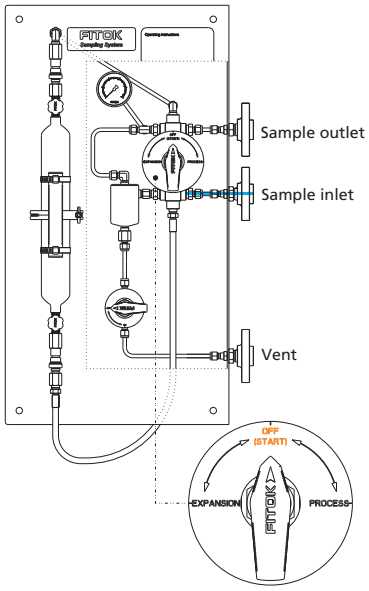
Typical Installation Mode



Operation

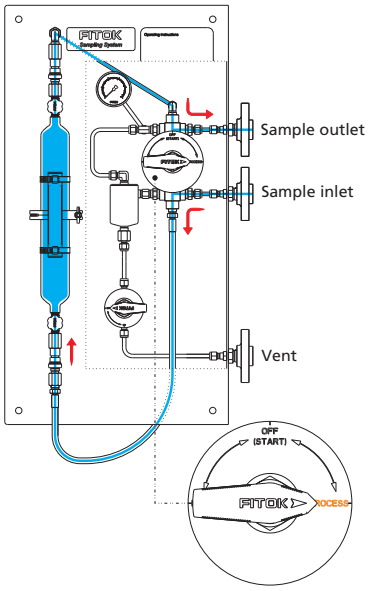
1 - Preparation

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.



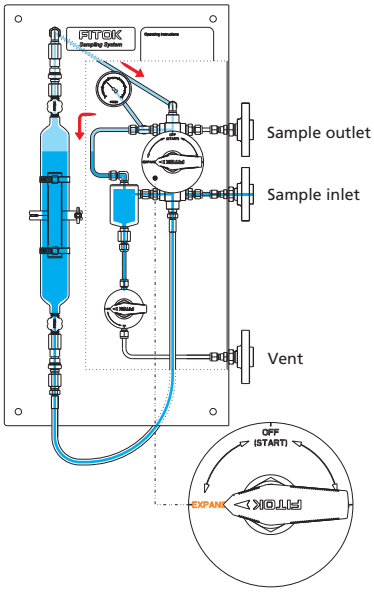
2 - Sampling

Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the cylinder. Hold for a period of time to ensure representative sampling.



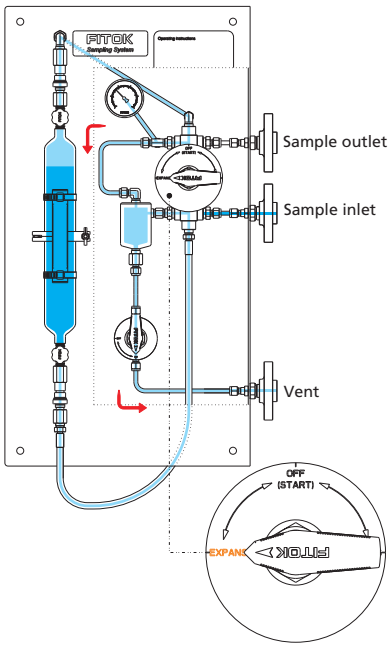
3 - Expansion

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.



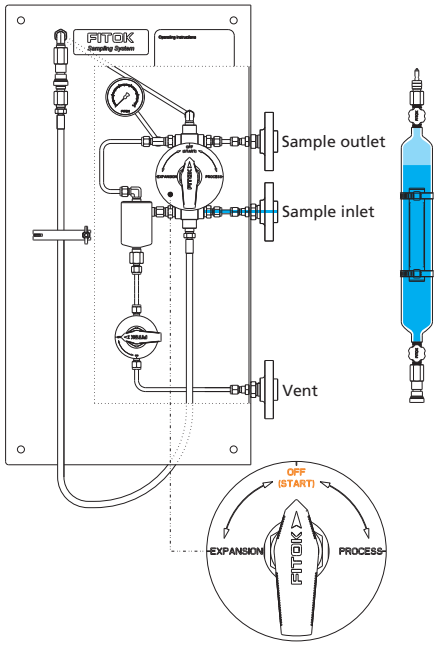
4 - Depressurization/vent

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



5 - 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.



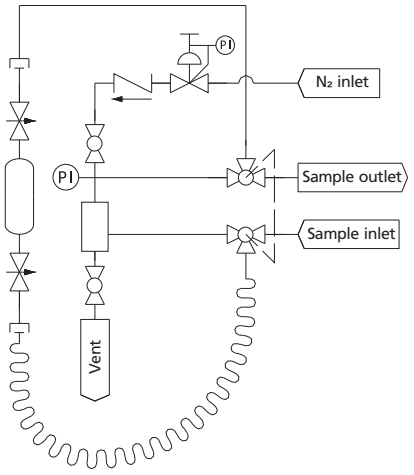
CSF2 - Expansion Chamber Purge Type

Features

- Sampling from devices or process lines
- System purge and expansion chamber purge
- Predefined sampling volume controlled by an expansion chamber to ensure safe sampling
- Easy operation with a single handle

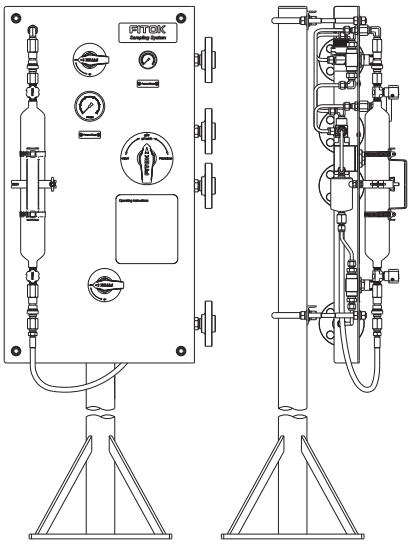
Basic Configuration

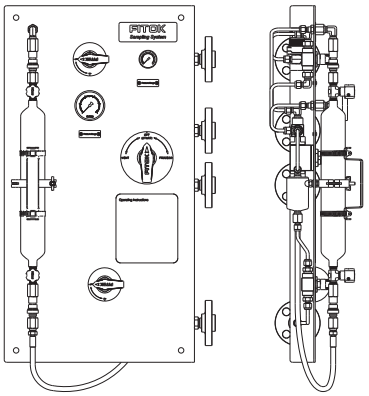
Wetted Material	316 SS
Cylinder Assembly	500 ml cylinder
	ND Series needle valves
	QC4 Series quick-connects
Sampling Valve	BF Series ball valves (gearbox linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Expansion Chamber	100ml, 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

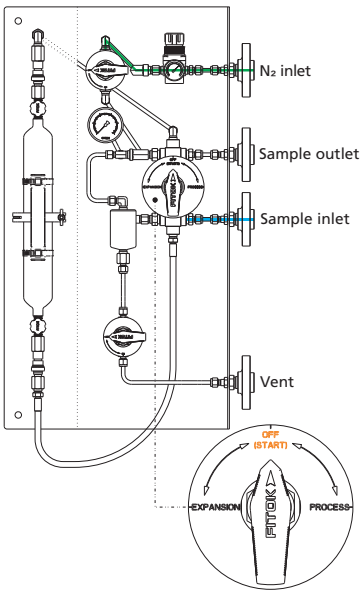




Operation

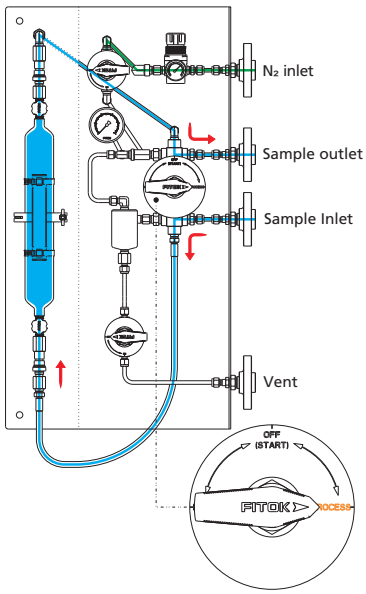
1 - Preparation

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.



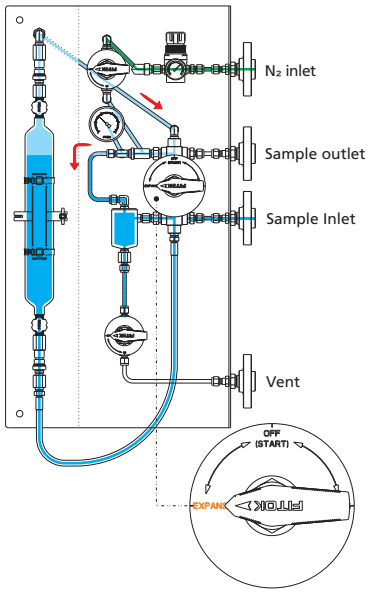
2 - Sampling

Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the cylinder. Hold for a period of time to ensure representative sampling.



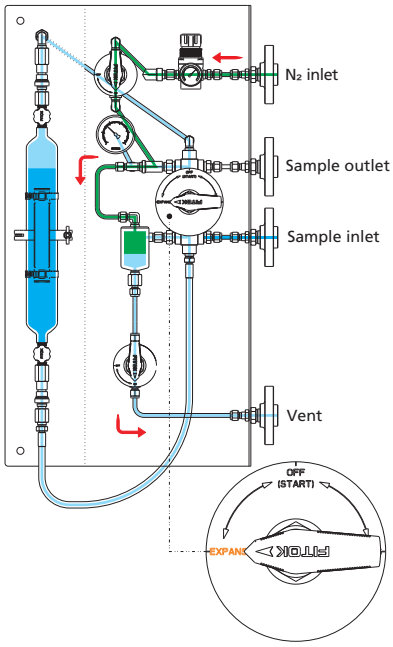
3 - Expansion

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.



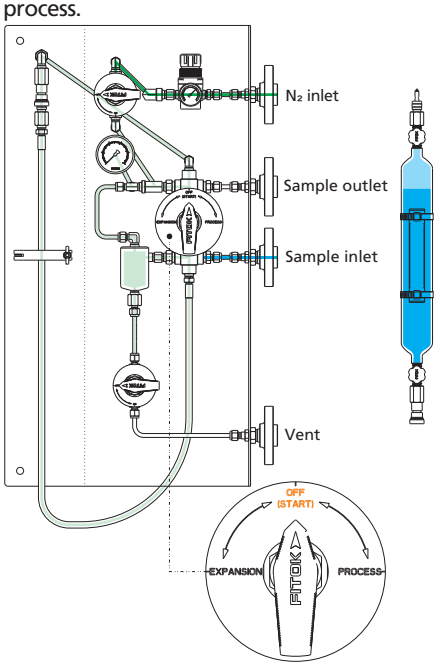
4 - Purge

Open the ball valve on the expansion chamber and the ball valve on the vent branch, allowing Nitrogen to purge the expansion chamber. Subsequently, close all the ball valves.



5 - 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.



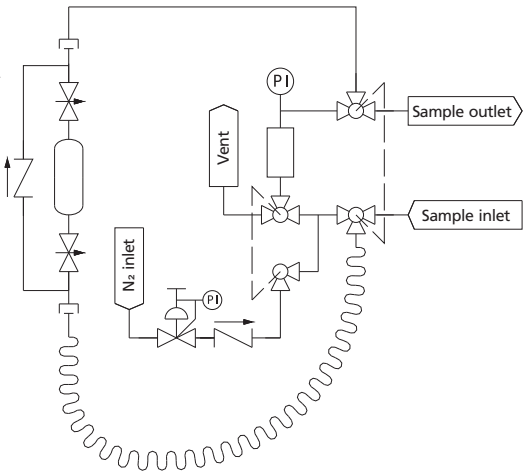
CSF3 - Bypass Purge Type with Expansion Chamber

Features

- Sampling from devices or process lines
- System purge and bypass purge
- Predefined sampling volume controlled by an expansion chamber to ensure safe sampling
- Easy operation with a single handle by linkage valve

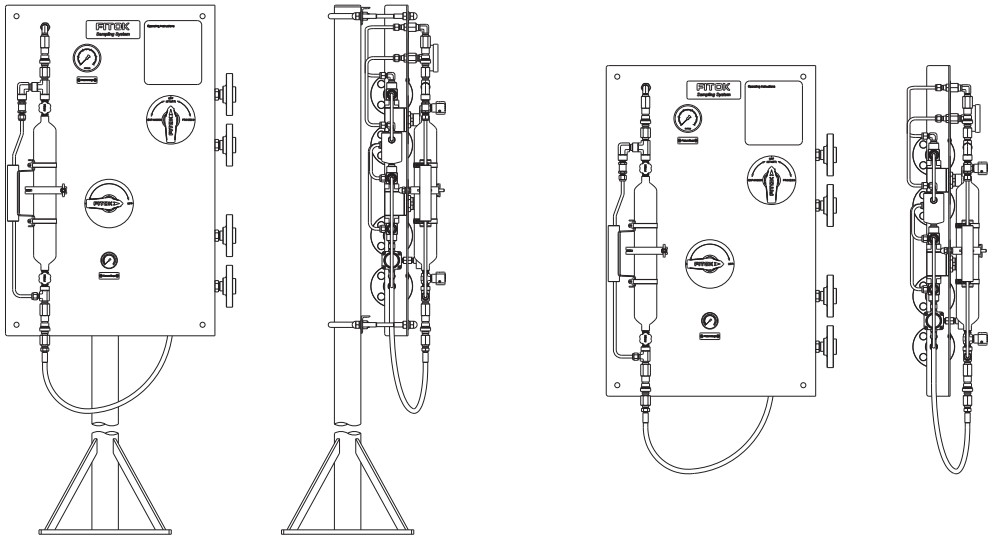
Basic Configuration

Wetted Material	316 SS
Cylinder Assembly	500 ml cylinder
	ND Series needle valves
	QC4 Series quick-connects
	CV Series check valves
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)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Expansion Chamber	100ml, 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.

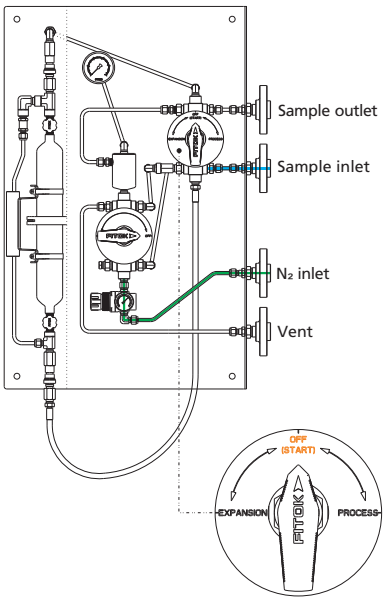
Typical Installation Mode



Operation

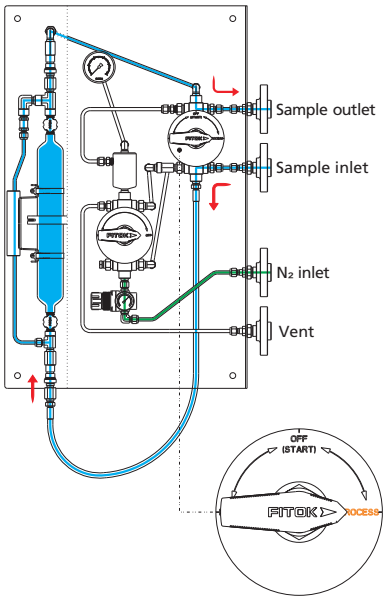
1 - Preparation

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.



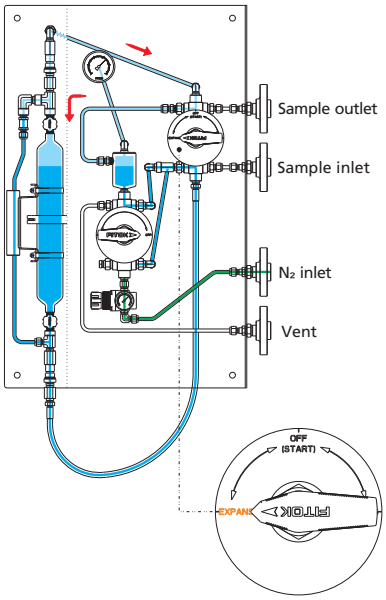
2 - Pre-sampling

Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the cylinder. Hold for a period of time to ensure representative sampling.



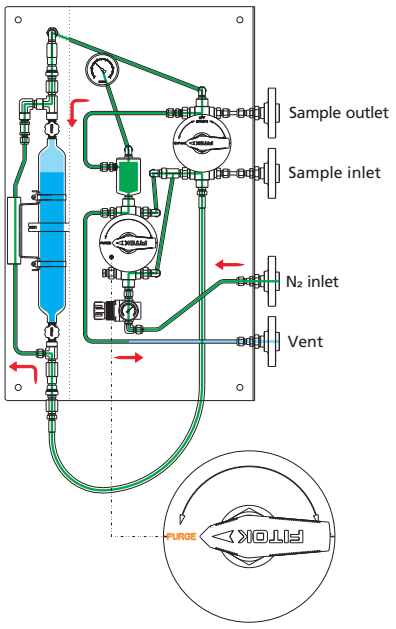
3 - Expansion

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.



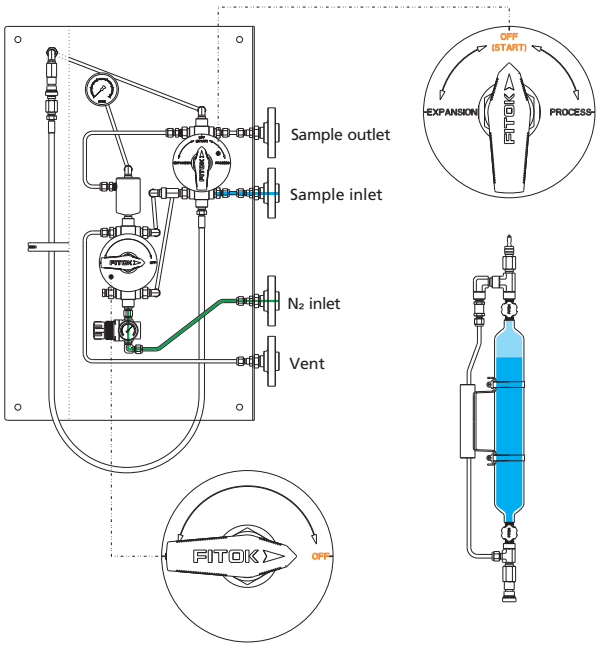
4 - Purge

Turn the handle of the valve on the purge line to the “PURGE” position, allowing Nitrogen to flow through the quick-connects and bypass to force the residual sample out of the system.



5 - Off

Turn the two handles 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.



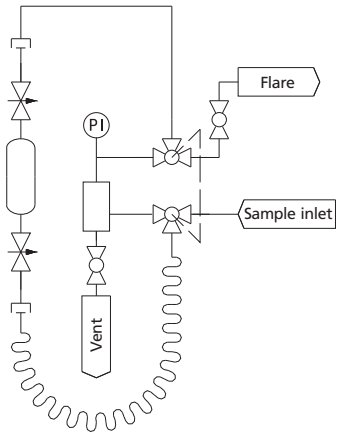
CSF4 - Vent to Flare Type with Expansion Chamber

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 by linkage valve

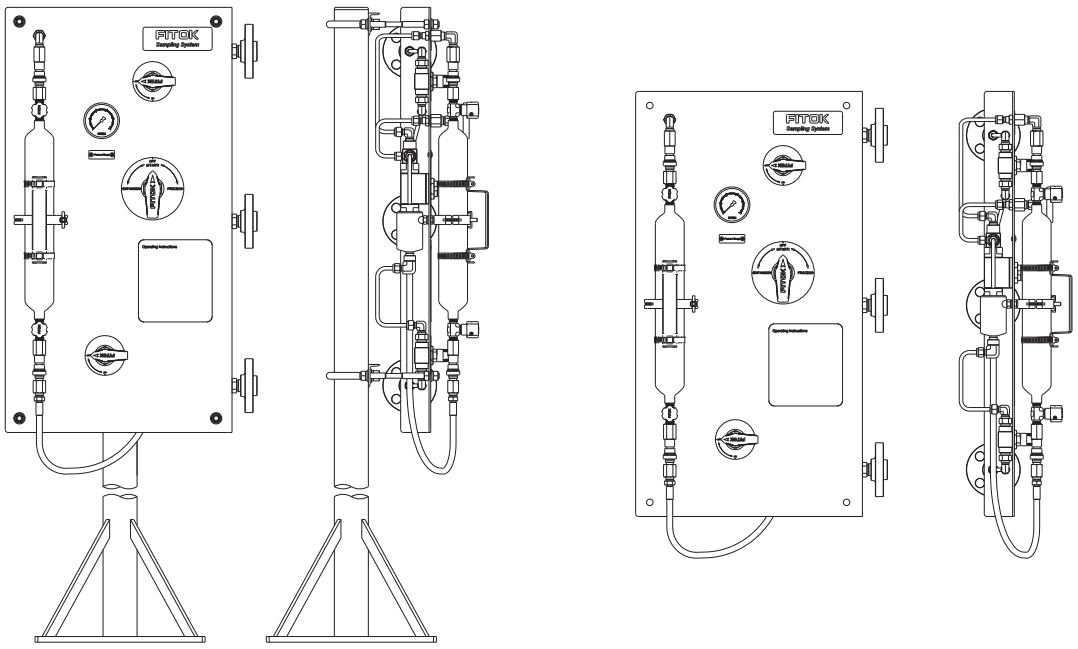
Basic Configuration

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



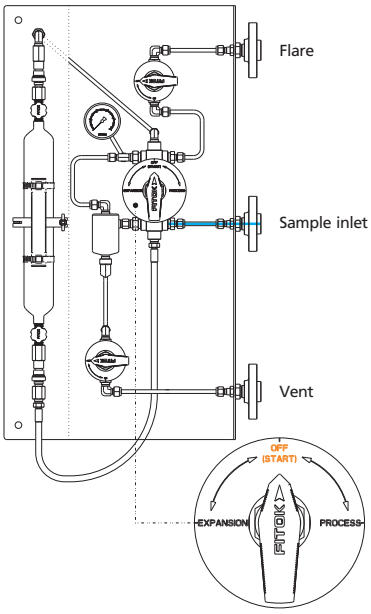
Note: Products of other specifications are available upon request.

Typical Installation Mode

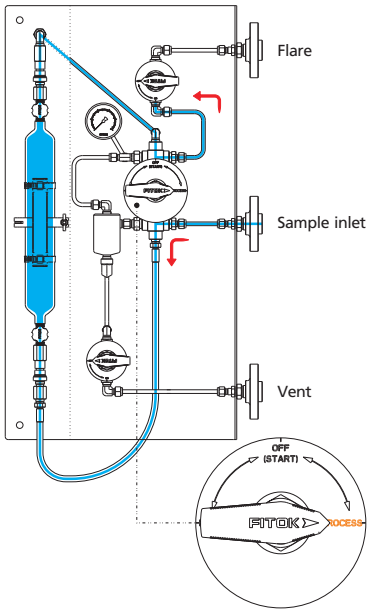


Operation

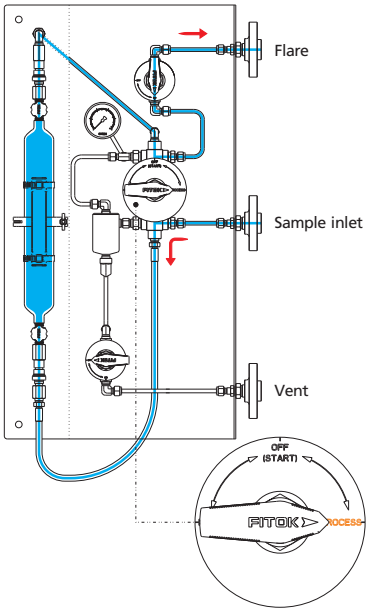
1 - Preparation
Install the sample cylinder and connect the hose to the bottom side of the cylinder. Open the needle valves at both ends of the cylinder.



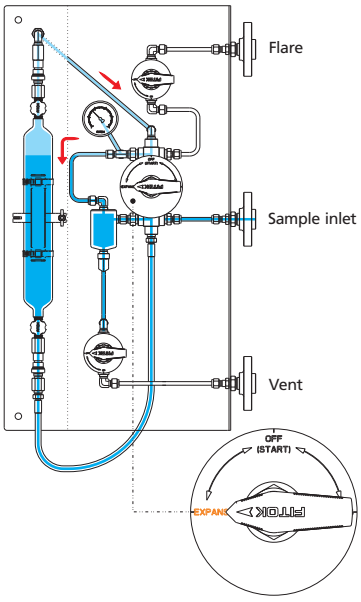
2 - Pre-sampling
Turn the handle to the “PROCESS” position, allowing the sample to flow into and fill the cylinder.



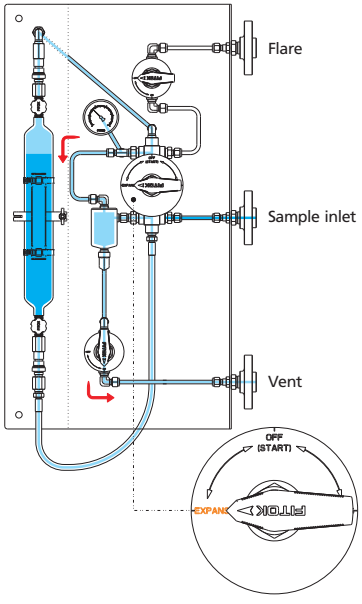
3 - Sampling
Open the ball valve on the flare line, connecting the sampling line to the flare to allow the sample to flow continuously into the cylinder. Hold for a period of time to ensure representative sampling. Subsequently, close the ball valve.



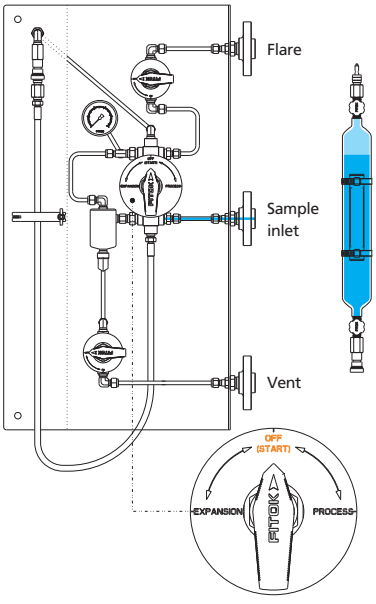
4 - Expansion
Turn the handle to the “EXPANSION” position, connecting the cylinder with the expansion chamber. Hold for a period of time to transfer a portion of sample to the expansion chamber. Close the needle valves at both ends of the cylinder.



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.



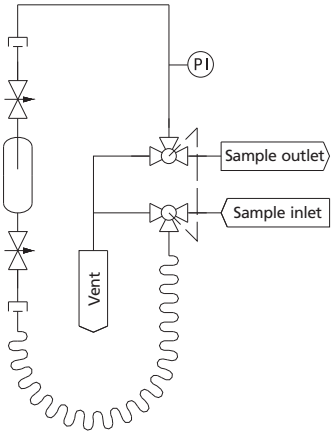
CSF5 - Outage Tube Type

Features

- Sampling from devices or process lines
- System purge
- Predefined sampling volume controlled by an outage tube to ensure safe sampling
- Easy operation with a single handle by linkage valve

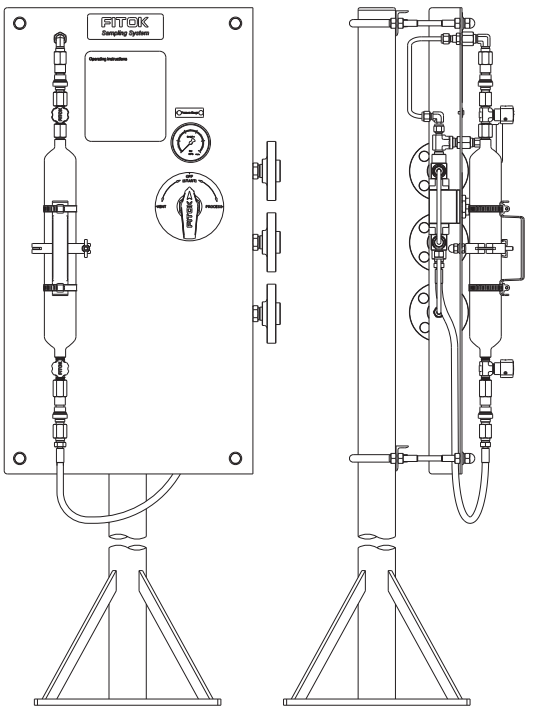
Basic Configuration

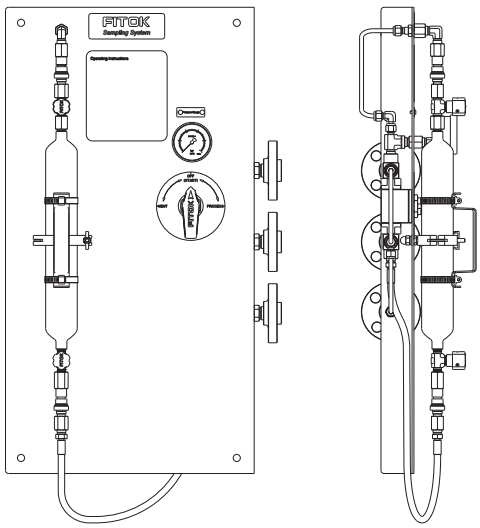
Wetted Material	316 SS
Cylinder Assembly	500 ml cylinder
	ND Series needle valves
	QC4 Series quick-connects
Sampling Valve	BF Series ball valves (gearbox linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Outage Tube	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

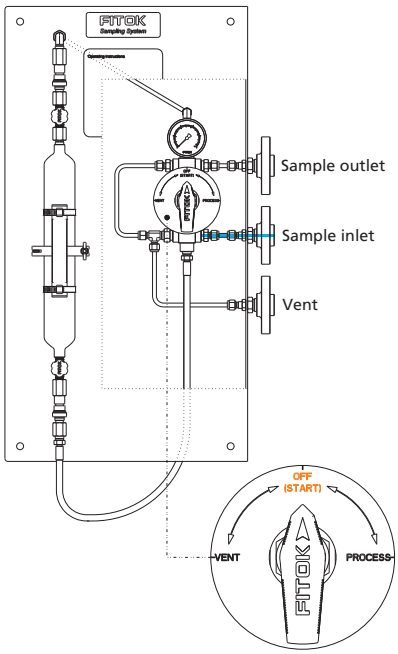




Operation

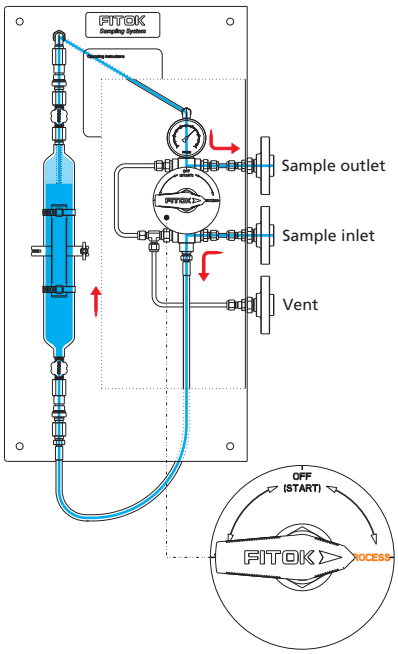
1 - Preparation

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.



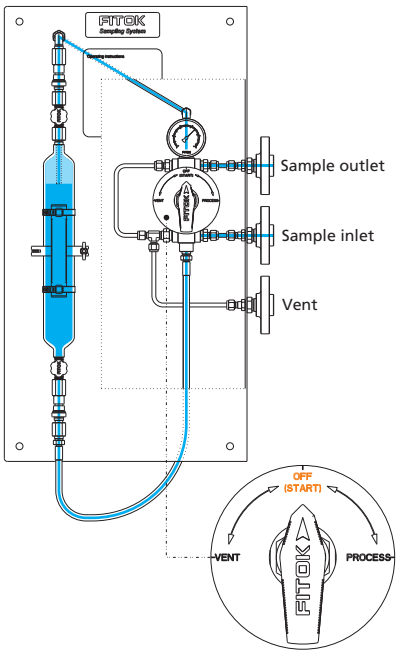
2 - Sampling

Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the sample cylinder. Hold for a period of time to ensure representative sampling.



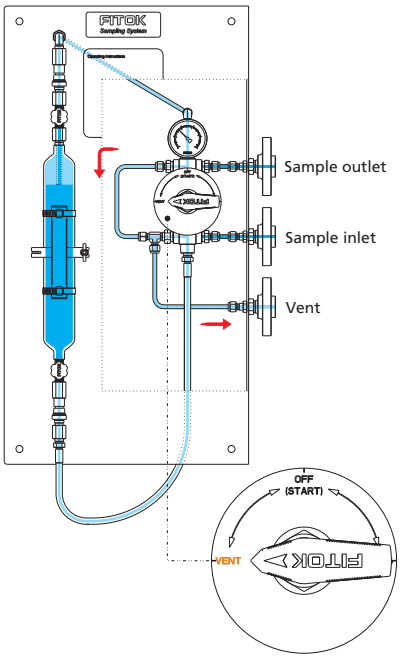
3 - Off

Turn the handle to the “OFF” position. Close the needle valves at both sides of the cylinder.



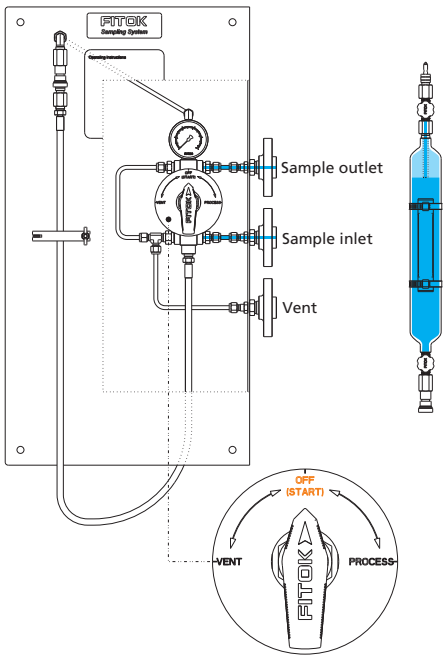
4 - Depressurization/vent

Turn the handle to the “VENT” position, connecting the sampling line with the vent line to depressurize and discharge the residual sample out of the system.



5 - 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.



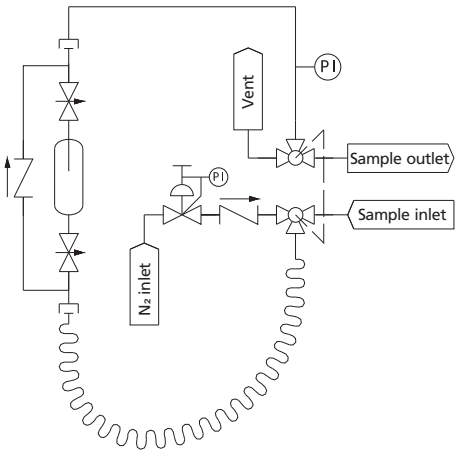
CSF6 - Bypass Purge Type with Outage Tube

Features

- Sampling from devices or process lines
- System purge and bypass purge
- Predefined sampling volume controlled by an outage tube to ensure safe sampling
- Easy operation with a single handle by linkage valve

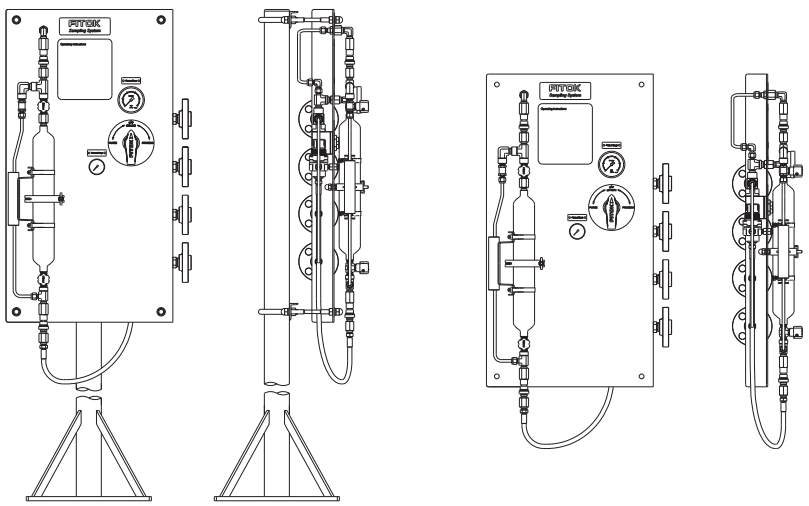
Basic Configuration

Wetted Material	316 SS
Cylinder Assembly	500 ml cylinder
	ND Series needle valves
	QC4 Series quick-connects
	CV Series check valves
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)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Outage Tube	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.

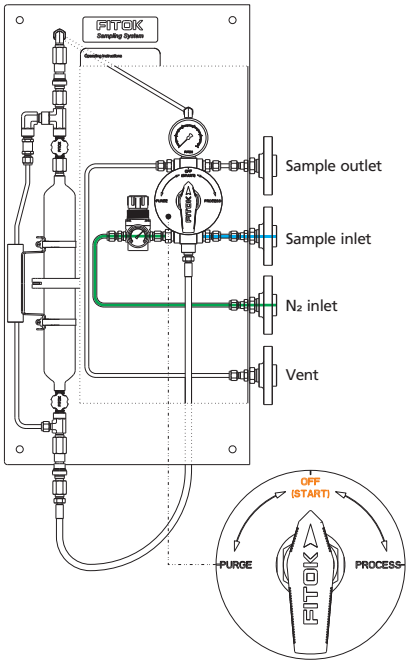
Typical Installation Mode



Operation

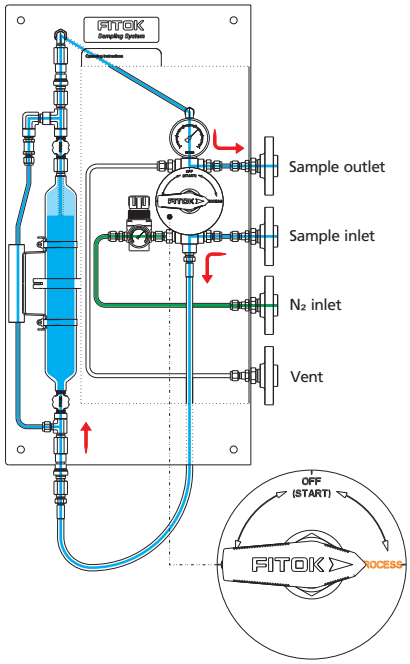
1 - Preparation

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.



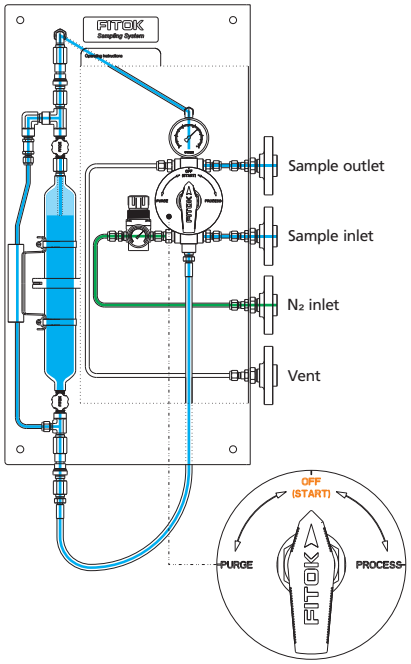
2 - Sampling

Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the cylinder. Hold for a period of time to ensure representative sampling.



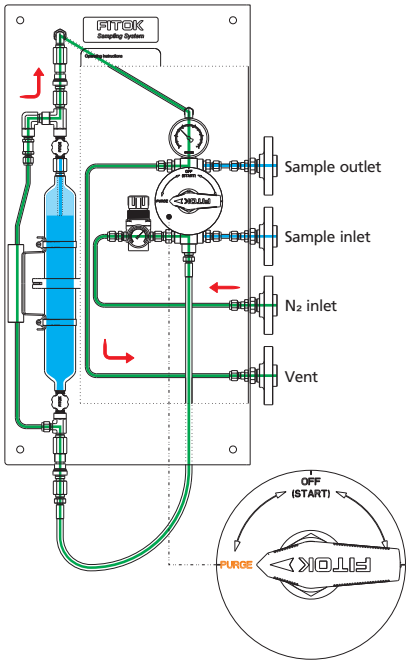
3 - Off

Turn the handle to the “OFF” position. Close the needle valves at both ends of the cylinder.



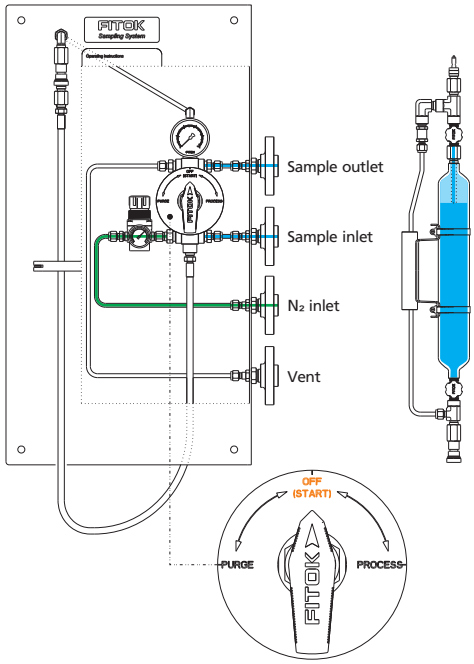
4 - Purge

Turn the handle to the “PURGE” position, allowing Nitrogen to force the residual sample out of the system.



5 - 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.



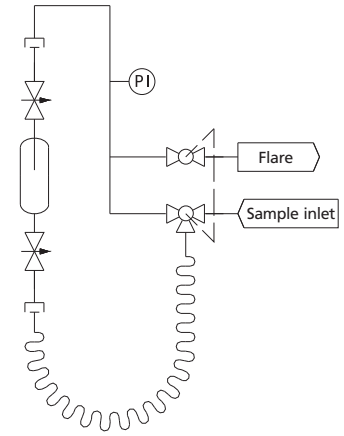
CSF7 - Vent to Flare Type with Outage Tube

Features

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

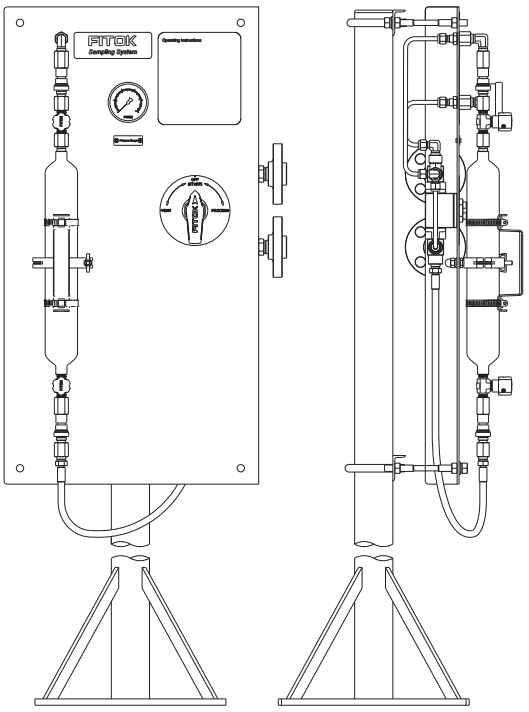
Basic Configuration

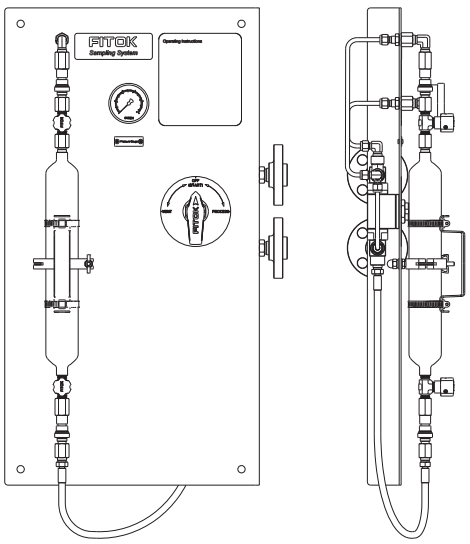
Wetted Material	316 SS
Cylinder Assembly	500 ml cylinder
	ND Series needle valves
	QC4 Series quick-connects
Sampling Valve	BF Series ball valves (gearbox linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Expansion Chamber	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

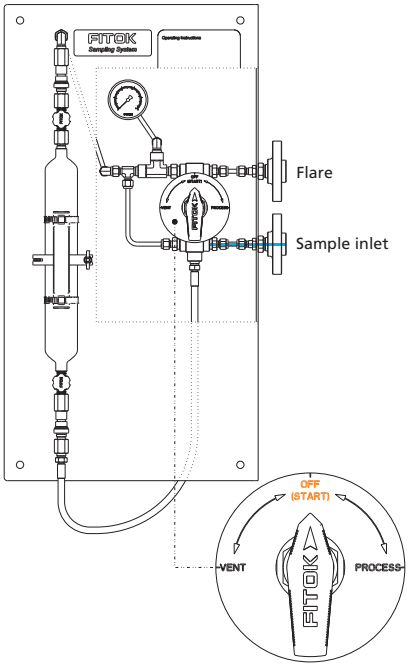




Operation

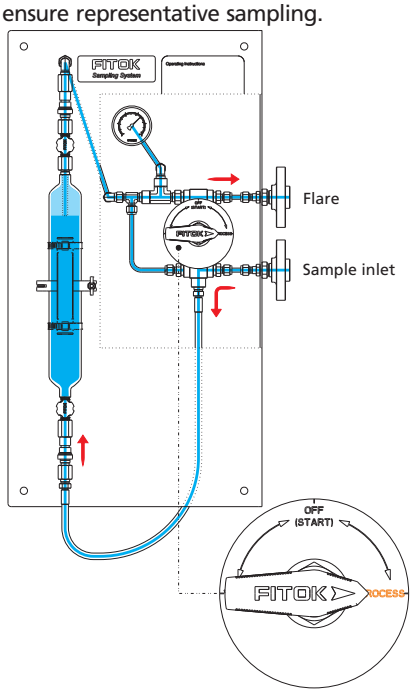
1 - Preparation

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.



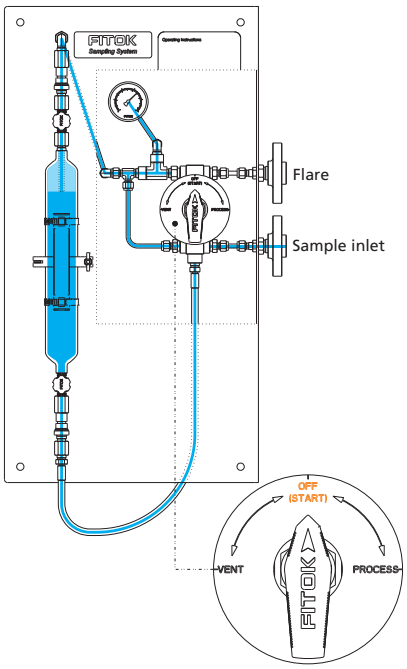
2 - Sampling

Turn the handle to the “PROCESS” position, allowing the sample to flow continuously into and fill the sample cylinder. Hold for a period of time to ensure representative sampling.



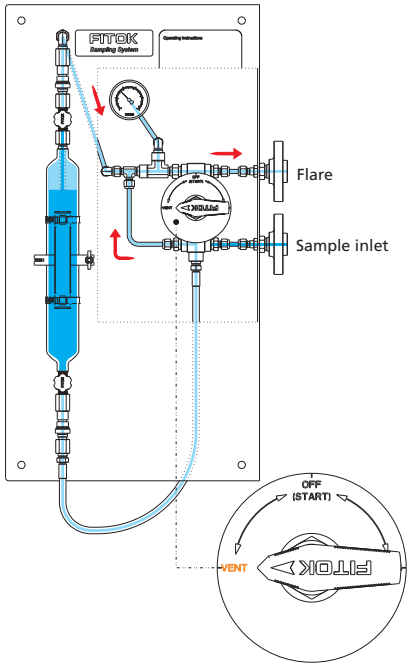
3 - Off

Turn the handle to the “OFF” position. Close the needle valves at both sides of the cylinder.



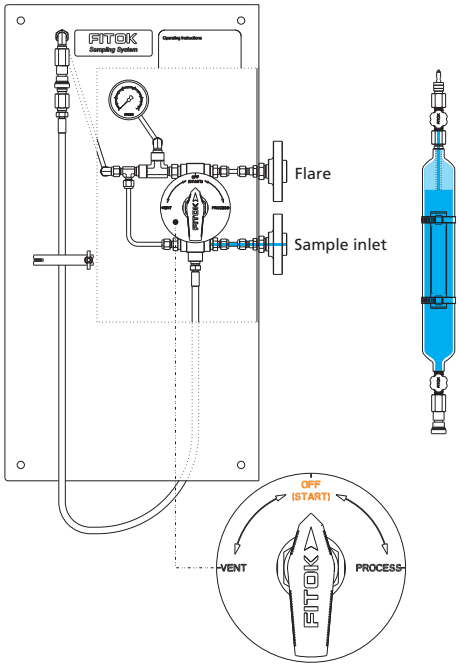
4 - Depressurization/vent

Turn the handle to the “VENT” position, connecting the sampling line to the flare to depressurize and discharge the residual sample out of the system.



5 - 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.



SR - Sample Handling Systems

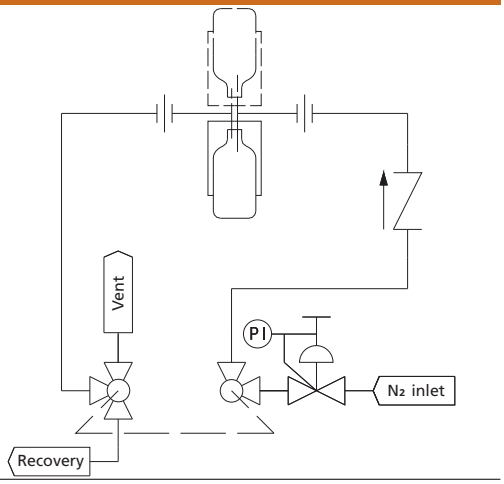
SRB - Sample Recovery System for Bottle

Features

- Recover the sample from the sample bottle and purge the bottle
- Closed recovery without spillage
- Easy operation with a single handle by linkage valve

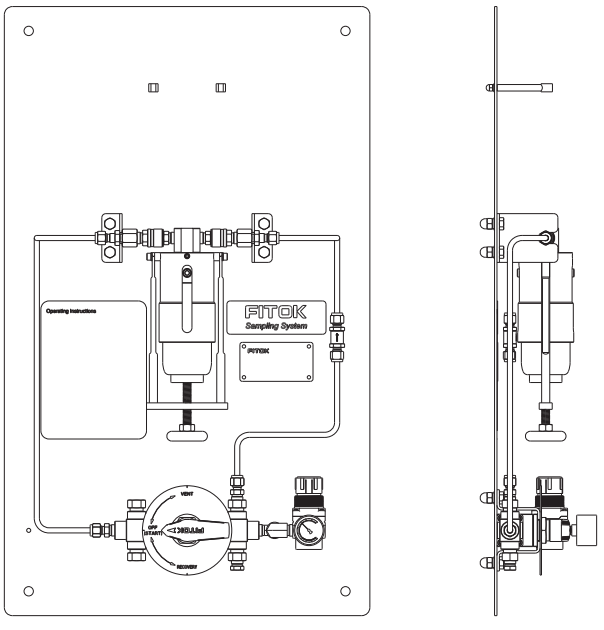
Basic Configuration

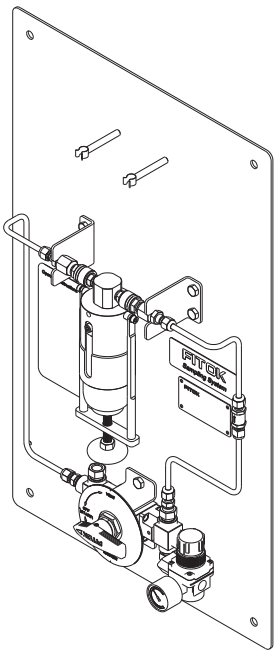
Wetted Material	316 SS
Needle Assembly	Process/vent needle ID: 3.0 mm (0.12")
Analysis Valve	BF Series 3-way ball valves (gearbox linkage): PTFE seat and FKM O-ring Max. working pressure: 1500 psig @ 70°F (103 bar @ 20°C) Temperature range: 0°F to 450°F (-18°C to 232°C)
Nitrogen Branch	Nitrogen regulator
	CV Series check valves
	Pressure gauge
Connections	1/4" FNPT



Note: Products of other specifications are available upon request.

Typical Installation Mode

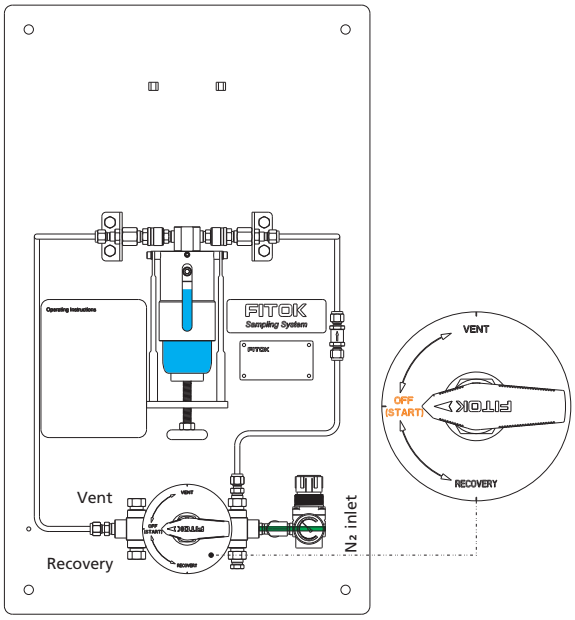




Operation

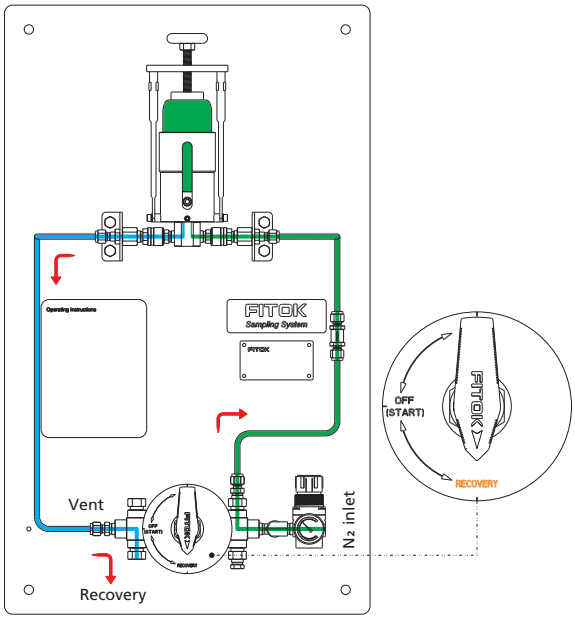
1 - Preparation

Place a new septum on the sample bottle. Insert the bottle with cap and septum into the sleeve until the septum is pierced by the needles. Turn the screw till the bottle is fixed in the sleeve.



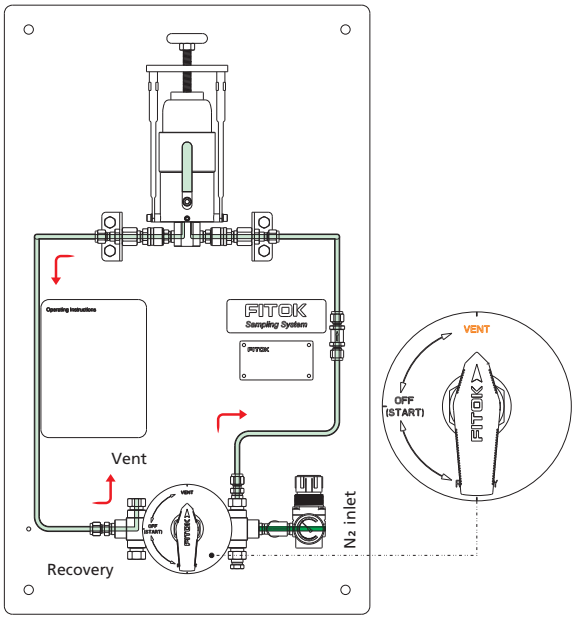
2 - Recovery

Turn the sleeve upside down and fix it by the retaining clips. Turn the handle to the “RECOVERY” position, allowing Nitrogen to drive liquids out of the bottle to the recovery connection. This position can be held for any required time.



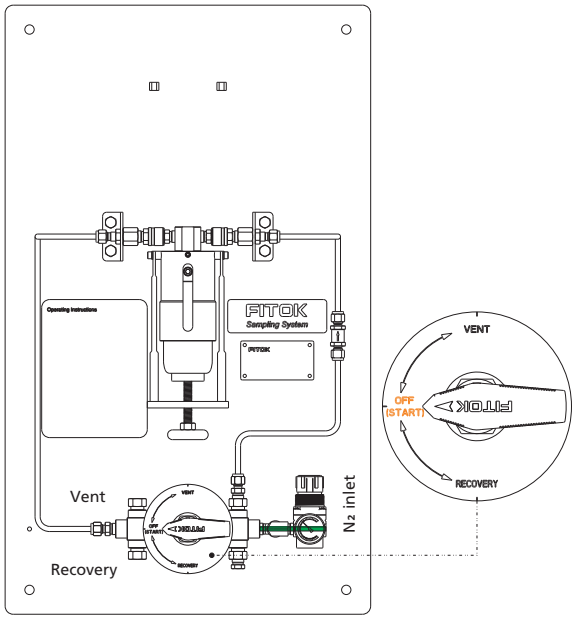
3 - Depressurization

Turn the handle to the “VENT” position to allow the bottle to depressurize.



4 - Off

Turn the handle to the “OFF” position and turn the sleeve back to the initial position. Unfix the screw and remove the bottle. The septum reseals automatically to complete sample recovery.



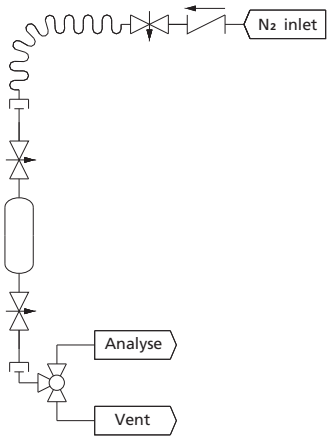
SRC - Sample Emptying System for Cylinder

Features

- Analyse the sample from the sample cylinder and empty the cylinder for application in the laboratory
- Closed emptying without spillage
- Depressurization of quick-connects

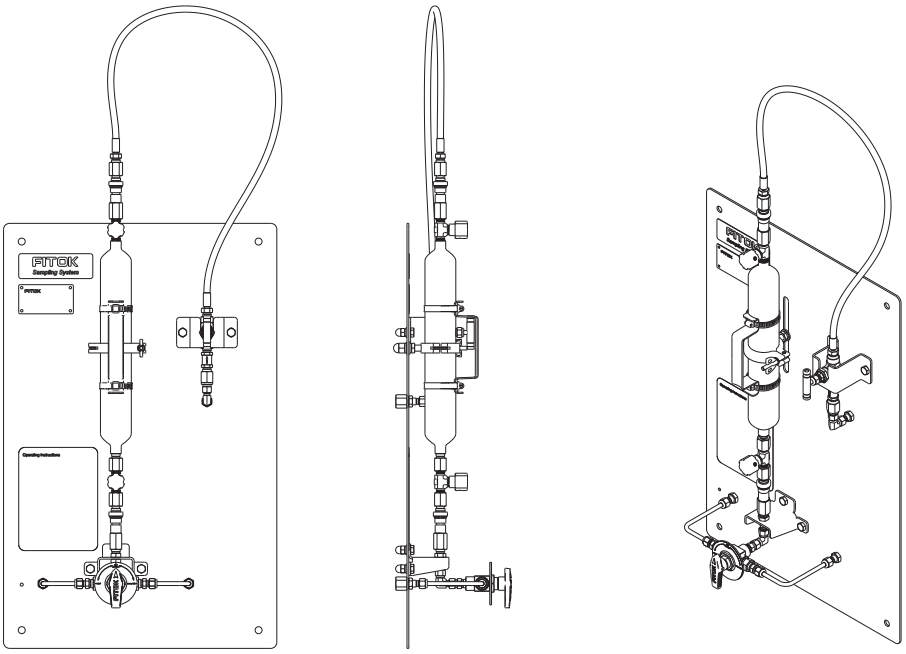
Basic Configuration

Wetted Material	316 SS
Cylinder Assembly	500 ml cylinder
	ND Series needle valves
	QC4 Series quick-connects
Analysis/Vent Valve	BF Series 3-way ball valves: 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)
Other Accessories	CV Series check valves
	NB Series needle valves
	PS Series metal hoses
Connections	Analyse/purge/vent: 1/4" FNPT
	Cylinder: quick-connects



Note: Products of other specifications are available upon request.

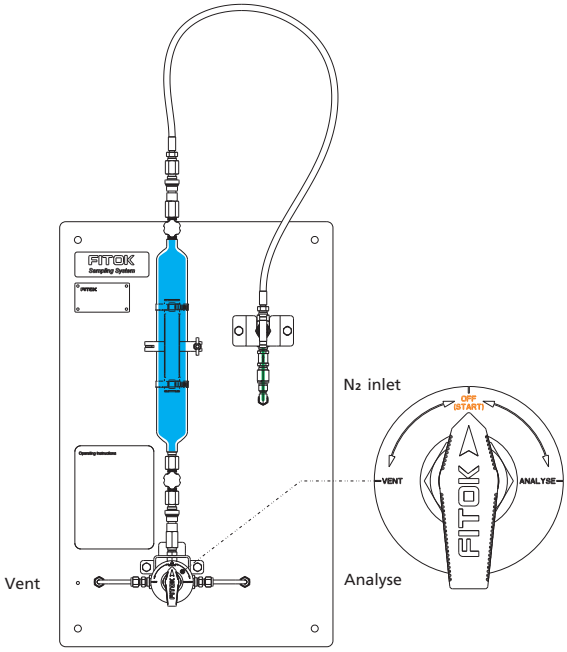
Typical Installation Mode



Operation

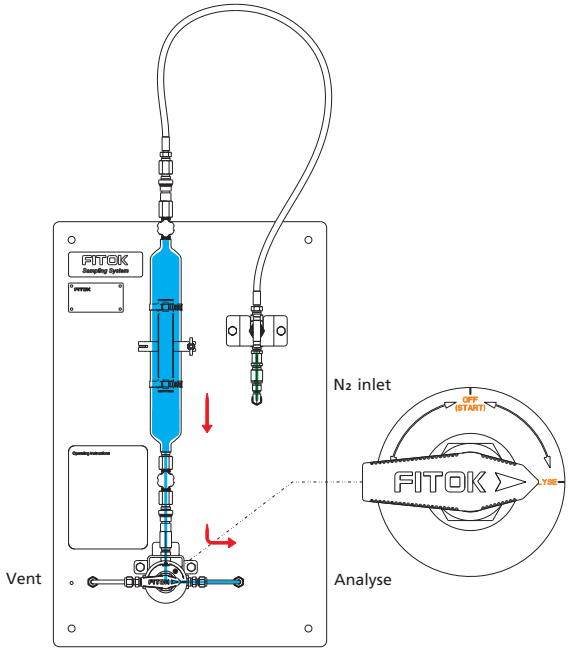
1 - Preparation

Install the sample cylinder. Connect the hose to the top quick-connect of the cylinder.



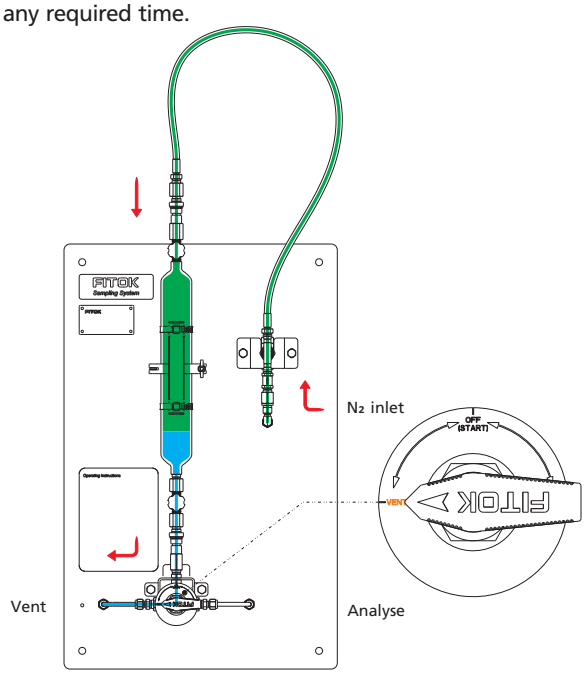
2 - Analyse

Open the needle valves of the cylinder. Turn the handle to the “ANALYSE” position, allowing the sample to flow into the analyser. When the required amount has been taken, turn the handle to the “OFF” position.



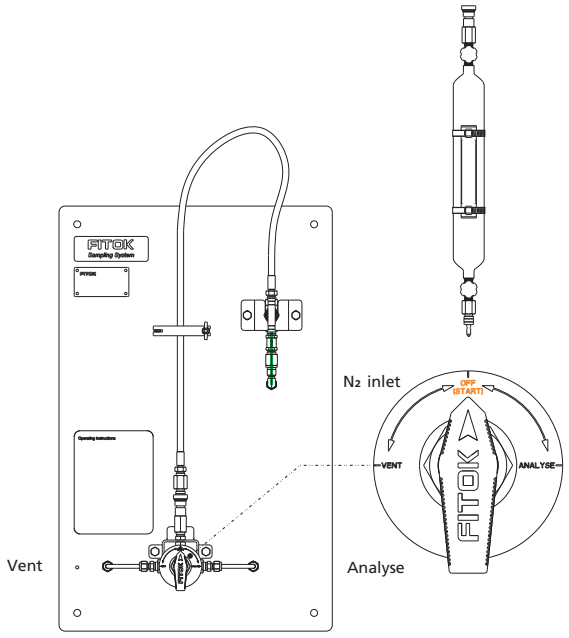
3 - Vent

Turn the handle to the “VENT” position. Open the needle valve on the Nitrogen branch, allowing Nitrogen to purge the cylinder to ensure that any residual fluid is removed from the cylinder. This position can be held for any required time.



4 - Off

Turn the handle to the “OFF” position and close all the needle valves. Disconnect the hose, remove the cylinder and connect the hose to the bottom quick-connect.



Stream Switching System

SSM Series

FITOK

www.fitokgroup.com

Contents

Stream Switching Systems

SSM Series Stream Switching System is a modular assembly designed for process analyzer systems. The system utilizes surface mount technology and modular design to integrate multiple streams into a compact assembly. It boasts the advantage of compact design, easy maintenance and high reliability.

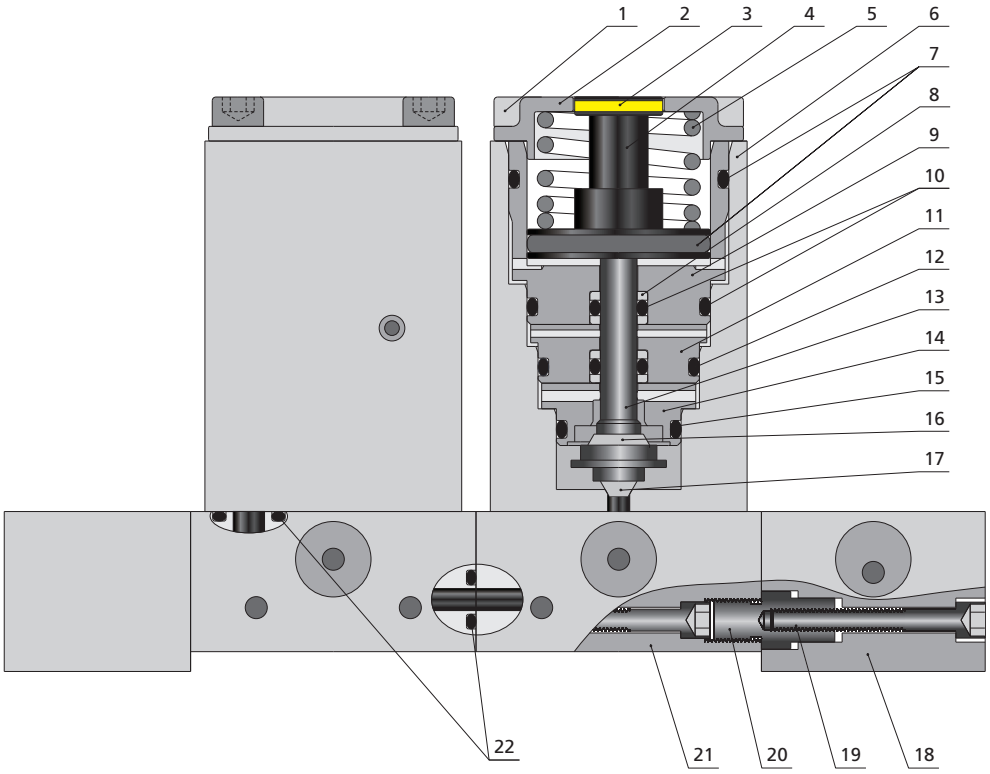
Features

- ◎ Modular design for easy installation and maintenance
- ◎ Compact design for low internal volume and maximum system efficiency
- ◎ Built-in pneumatic actuator provides repetitive shutoff and fewer potential leak points
- ◎ Position indicator for maximum system safety
- ◎ Double block and bleed design prevents cross contamination
- ◎ Multiple module options

Technical Data

- ◎ Material: 316 SS for the main body
- ◎ Orifice: 0.12" (3 mm)
- ◎ Working pressure: 500 psig (34.5 bar)
- ◎ Actuation pressure: 87 psig (6 bar)
- ◎ O-ring working temperature:
  FKM: -4°F to 392°F (-20°C to 200°C)
  FFKM: -13°F to 464°F (-25°C to 240°C)
  NBR: -22°F to 212°F (-30°C to 100°C)
  EPDM: -40°F to 300°F (-40°C to 148°C)
- ◎ Seat working temperature:
  PCTFE：-20°F to 200°F (-28°C to 93°C)
  PEEK: -20°F to 400°F (-28°C to 204°C)

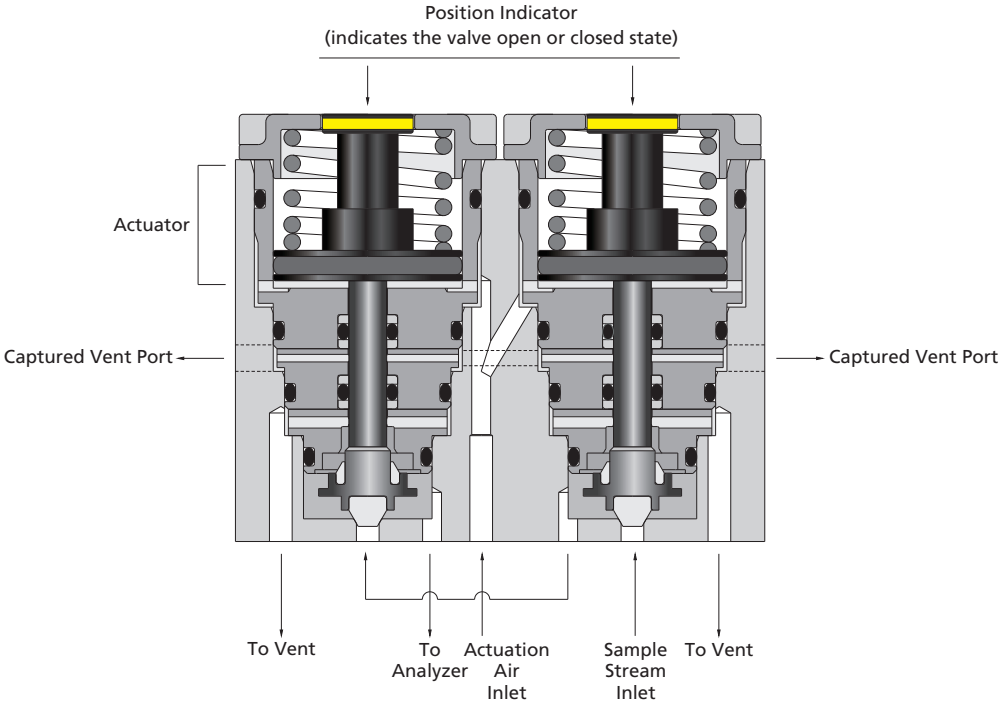
Materials of Construction



Item	Component	Material
1	Bolt	Stainless Steel
2	Cap	316 SS
3	Position Indicator	Polyester
4	Piston	Anodized Aluminium
5	Spring	S17700
6	Body	316 SS
7	O-ring	FKM/FFKM/NBR/EPDM
8	Backup Ring	PTFE
9	Upper Bonnet	316 SS
10	O-ring	FKM/FFKM/NBR/EPDM
11	Center Bonnet	316 SS
12	O-ring	FKM/FFKM/NBR/EPDM
13	Stem	316 SS
14	Lower Bonnet	316 SS
15	O-ring	FKM/FFKM/NBR/EPDM
16	Backseat	PCTFE/PEEK
17	Seat	PCTFE/PEEK
18	End Plate	316 SS
19	Bolt	S17400
20	Bolt	S17400
21	Base Plate	316 SS
22	O-ring	FKM/FFKM/NBR/EPDM

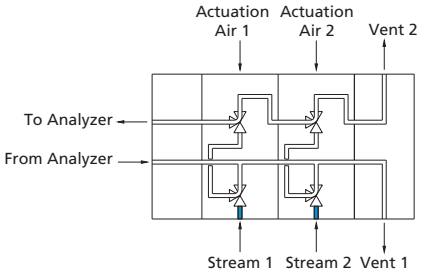
Note: For systems of other materials, please contact FITOK Group or our authorized distributors.

Flow Diagram

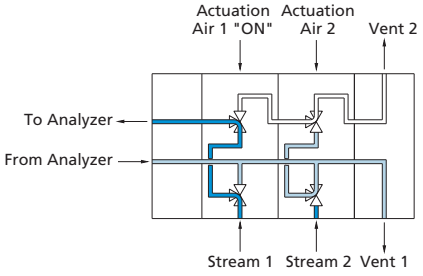


Example shown is a two stream switching system with the flow diagram as follows:

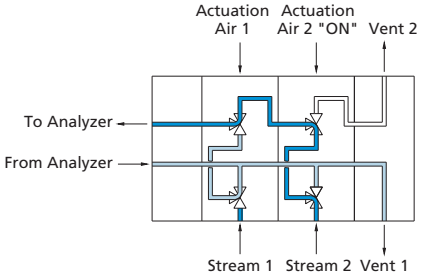
1. The system is in the "off" position.



2. When Stream 1 is in the "on" position, the sample flows from Stream 1, through the analyzer, and is routed to Vent 1. Other streams are in the "off" position.



3. When Stream 2 is in the "on" position, the sample flows from Stream 2, through the analyzer and is routed to Vent 1. Other streams are in the "off" position.

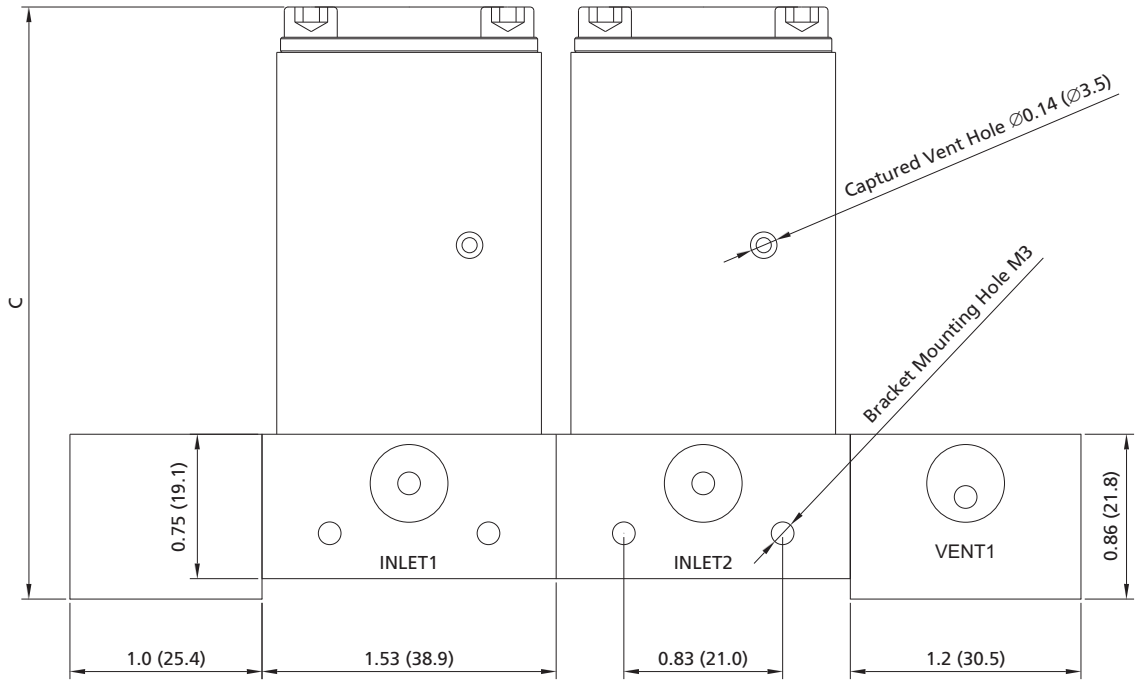


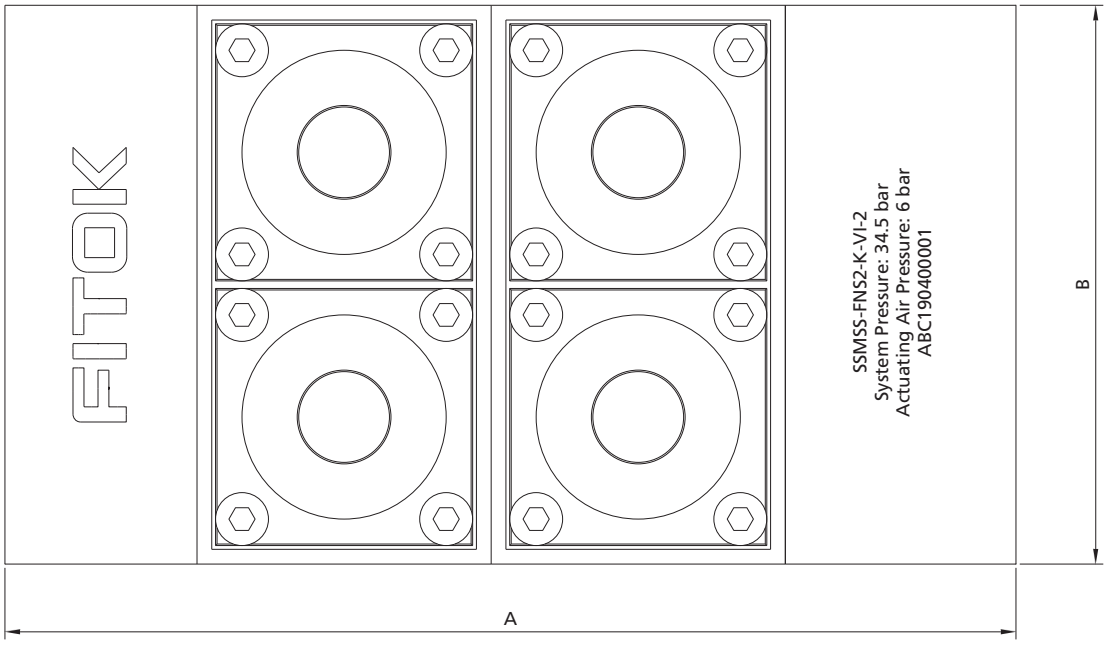
Ordering Information

Basic Ordering Information

Dimensions

Dimensions are in inches (millimeters). Example shown is a two stream switching system.





Basic Ordering Number	End Connection	Dimensions, in. (mm)		
		A	B	C
SSM□□-FNS2-□-□-2	Inlet, outlet, vent and actuation air inlet: 1/8" Female NPT	5.26 (133.7)	2.91 (73.9)	3.08 (78.3)
SSM□□-FNS2-□-□-3		6.80 (172.6)		
SSM□□-FNS2-□-□-4		8.33 (211.5)		
SSM□□-FNS2-□-□-5		9.86 (250.4)		

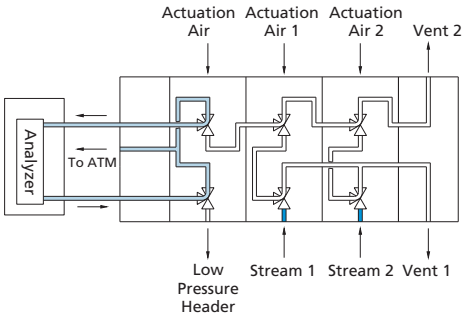
To get a complete ordering number, add corresponding designators to the basic ordering number. For dimensions of other modules or other assemblies, please contact FITOK Group.

Module Options

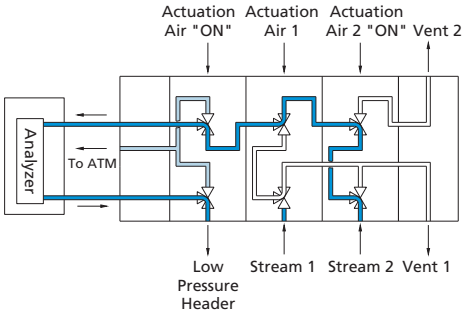
Atmospheric Reference Vent (ARV) Module

The ARV Module is positioned between the analyzer and stream modules and is used to equalize the sample loop pressure to atmospheric pressure. It has all the features available to a standard stream module and is configured with a dedicated ARV base plate.
Example shown is a two stream switching system with the flow diagram as follows:

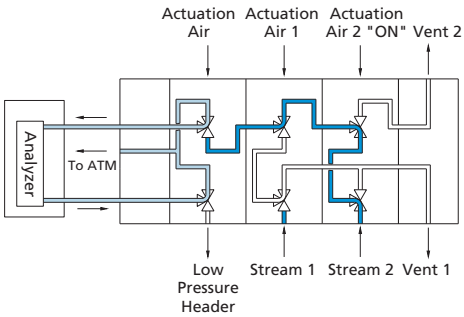
1. All valves are in the "off" position. The system is "open" to atmospheric vent (ATM).



2. Stream 2 and the ARV Module are in the "on" position, purging the sample loop to the low pressure header to ensure representative sampling.

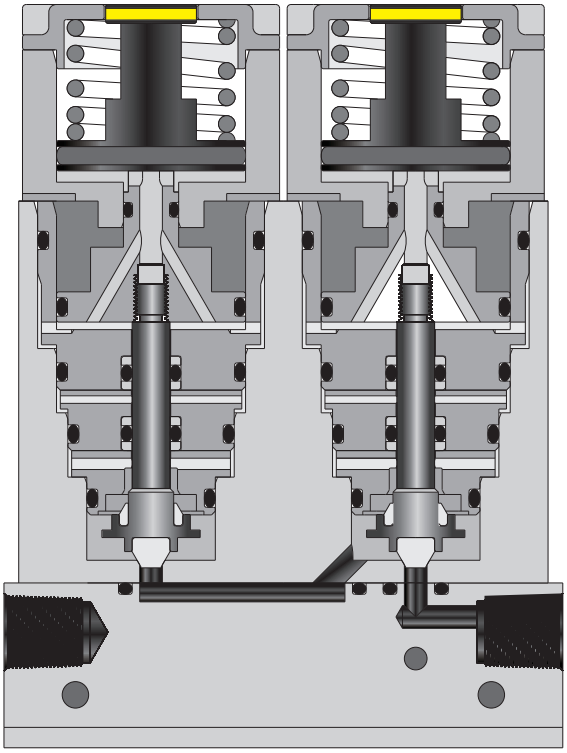


3. Stream 2 is in the "on" position and the ARV Module is in the "off" position, equilibrating the sample loop pressure to atmospheric vent pressure.



Low Pressure Actuation (LPA) Module

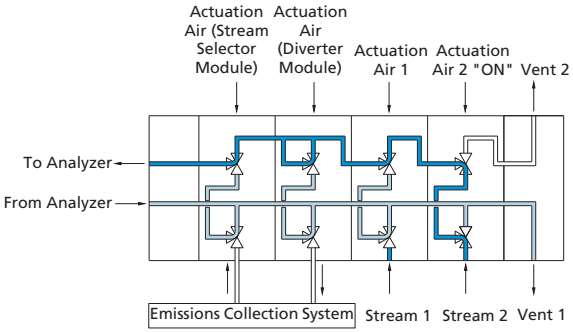
The LPA Module can be incorporated onto existing system without affecting all other features and requires only 36 psig (2.5 bar) actuating air pressure.



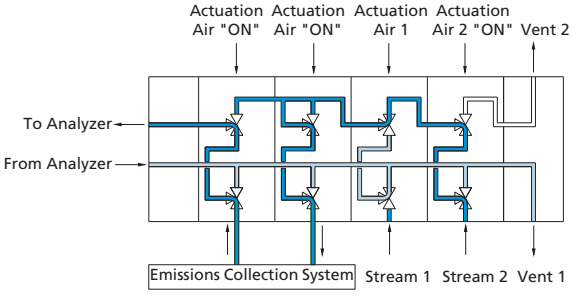
CEMS (Continuous Emissions Monitoring System) Module

CEMS Module consists of a Diverter Module and a Stream Selector Module. By actuating the CEMS module, the selected gas can be directed either up the emissions collection system or goes directly to the analyzer.
The system can be configured for continuous emissions monitoring, analyzer calibration and validation routines.
Example shown is a two stream switching system with the flow diagram as follows:

1. The Stream 2 is in the "on" position and the sample flows directly to the analyzer.

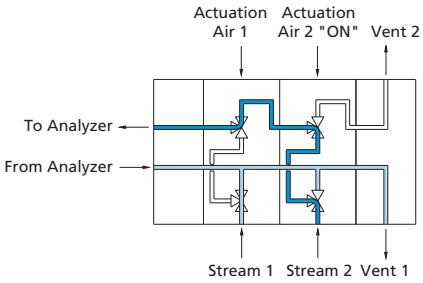


2. The Stream 2 and CEMS Module are in the "on" position. The sample is flowing through CEMS Module to the analyzer.



Fast Loop (FL)

Example shown on the right is a two stream switching system. Stream 1 is illustrated in the "off" position and sample flows to the Vent 1. Stream 2 is illustrated in the "on" position, and the flow is directed to the analyzer. The internal fast loop maintains the double block and bleed feature.



Assembly Options

Assembly Name	Ordering Number	Content
Standard stream module	SSMSS-FNS2-K-VI-SM	Standard base plate, valve module and instructions
Standard base plate	SSMSS-FNS2-VI-SB	Base plate, O-ring, bolt kits, instructions
Valve module	SSMSS-K-VI-VM	Valve body, cap, bonnet, stem seal kit, O-ring, spring, piston, position indicator, bolts, instructions
Valve seal kit	SSMSS-K-VI-SR	Bonnet, stem seal kit, O-ring, spring, piston, position indicator, instructions

Additional Options

Special Cleaning and Packaging (FC-02)

Special cleaning and packaging are available to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C. To order, add the suffix **-F2** to the end of standard ordering number.

NACE Compliance

NACE compliance is available to meet the requirements of NACE MR0175/ISO 15156. To order, add the suffix **-S** to the end of standard ordering number.

Sulfinert Treatment

All wetted components are sulfinert-treated. To order, add the suffix **-SI** to the end of standard ordering number.

Ordering Number Description

SSMSS - FNS2 - K - VI - 2TH - ARV - F2

Series	Body Material	Inlet Type	Inlet Size	Seat Material	O-ring Material	Number of Modules	Captured Vent Size	Expansion Module	Options
SSM	SS 316 SS	FL Fractional Tube Fitting	1 1/16"	K PCTFE	VI FKM	1	∅3.5 mm	None	None
		FNS Female NPT	2 1/8"	P PEEK	Z FFKM	2	TH 10-32 UNF	ARV Atmospheric Reference Vent	F2 FC-02
					B NBR	3		LPA Low Pressure Actuation	S NACE Compliance
					E EPDM	4		CEMS Continuous Emissions Monitoring System	SI Sulfinert Treatment
						5		FL Fast Loop	

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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FK-IC-SSM-01-EN-200424

Accessories

Sample Bottles

◎ Material: Soda-lime glass, Amber soda-lime glass, Borosilicate glass, Polyethylene and Polypropylene
◎ Volume: 50 ml, 60 ml, 100 ml, 150 ml, 250 ml, 300 ml, 500 ml, 1000 ml, 2 oz, 4 oz, 8 oz, 16 oz and 32 oz

Septa

◎ Material: Natural rubber, EPDM (Ethylene-Propylene-Diene Monomer), Silicone rubber, PTFE coated butyl, PTFE coated silicone and FKM (Viton)
◎ Size: ⌀19 mm, ⌀21 mm, ⌀22 mm, ⌀26 mm, ⌀30 mm, ⌀45 mm, etc.

Caps

◎ Material: Aluminum, Polypropylene and PBT
◎ Specification: ML19, ML21, ML22, ML26, ML30, GL45, etc.

Needle Assemblies

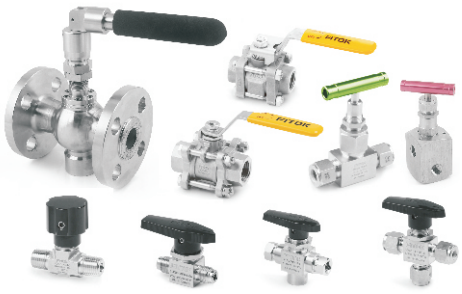
◎ Material: 316L, 304L, Hastelloy C-276, etc.
◎ Process needle ID (mm) × Vent needle ID (mm):
1.4 × 1.4, 2.0 × 1.4, 2.0 × 2.0, 3.0 × 1.4, 3.0 × 3.0, 4.0 × 1.4 and 6.0 × 1.4
◎ Model: PTN, PTO, etc.

Sleeves

◎ Body material: 304 SS, 316 SS, etc.
◎ Matching bottle volume: 60 ml, 100 ml, 125 ml, 150 ml, 250 ml, 300 ml, 500 ml, 1000 ml, 2 oz, 4 oz, 8 oz, 16 oz and 32 oz

Valves

- Type: Ball valves, needle valves and in-line valves
- Body material: 316 SS, 304 SS, Hastelloy C-276, Alloy 400, etc.
- Seat material: PTFE, PCTFE and PEEK
- O-ring material: FKM (Viton), FFKM (Kalrez) and EPDM
- Size: Available in a variety of sizes
- Connection: Available in a variety of connection types



Cylinders and Cylinder Assemblies

- Configuration: Standard configuration, outage tube configuration and bypass purge configuration
- Volume: 75 ml, 150 ml, 300 ml, 500 ml, 1000 ml and 2250 ml
- Material: 304L, 316L and Alloy 400
- Connection: Available in a variety of connection types
- TPED Cylinders or DOT cylinders optional

Metal Hoses

- Series: PS, MH series, etc.
- Core tube material: 316 SS and smooth PTFE
- Overbraid material: 304 SS
- Hose size: 1/4" to 1"
- Connection: Available in a variety of connection types

Quick-connects

- Series: QC, QTM series, etc.
- Body material: 316 SS, Brass, etc.
- O-ring material: FKM (Viton), FFKM (Kalrez) and EPDM
- Size: Available in a variety of sizes
- Connection: Available in a variety of connection types

Sample Cylinders

Application

- Hydrocarbon sampling for refineries
- Gas sampling for chromatography experiments
- Condensate sampling for fossil fuel and nuclear power plants
- As surge accumulators or reaction vessels
- As snubbers in reactor feed lines

Features

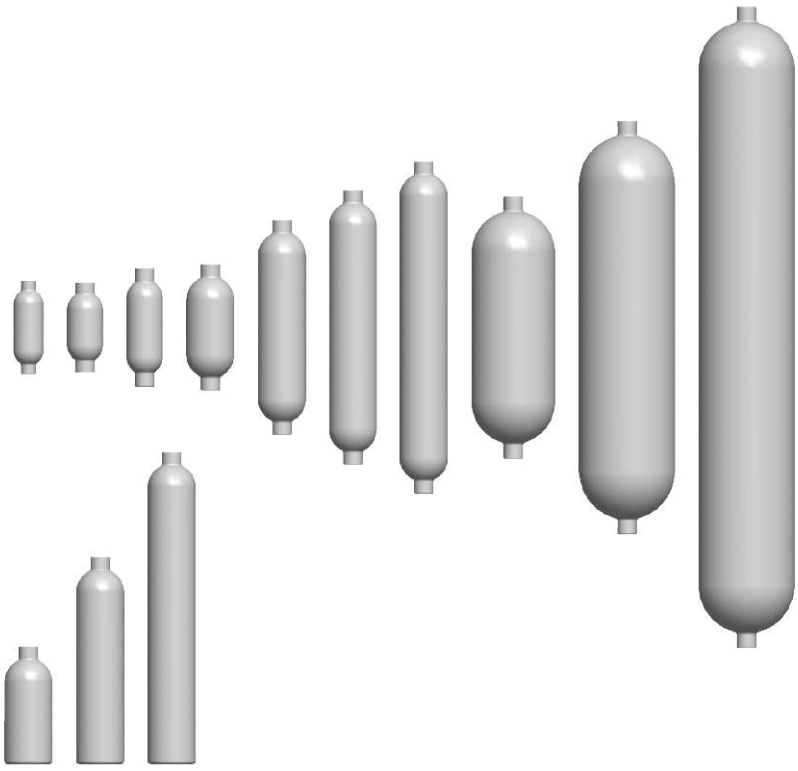
- Capacities from 40 cm^3 to 3785 cm^3 (1 gal)
- Spun cylinder body machined from seamless tubing to provide consistent wall thickness, size and capacity
- Cold-formed female NPT thread to provide high strength
- 1/8'', 1/4'' and 1/2'' female NPT connections
- Full-penetration gas tungsten arc-weld construction to ensure no leak for sampling (single-ended cylinder only)
- DOT and non-DOT cylinders available
- Accessories, such as valves, relief devices, outage tubes, carrying handles, caps and plugs available

Design

FITOK sample cylinders are designed and manufactured in compliance with 49 CFR, the stringent regulation of U.S. Department of Transportation, to provide high reliability and long service life.

Spun cylinders are made of seamless tubing to increase the wall thickness of neck transitions and thread areas which provides high strength to reduce the leak risks.

The cylinders are internal sandblasted to ensure smooth surface and minimized remaining particles for easy cleaning.



Materials

FITOK DOT cylinders are available in 304L SS and 316L SS. FITOK non-DOT cylinders are available in 304L SS, 316 L SS and Alloy 400. For cylinders of other materials, please contact FITOK Group or our authorized distributors.

Pressure - Temperature

Material	316L SS	316L SS, 304L SS	304L SS	Alloy 400	316 SS	304L SS
DOT Specification	DOT-3A 5000 TC-3ASM 344	DOT-3E 1800 TC-3EM 124	DOT-3A 1800 TC-3ASM 124	—	—	—
Temperature, °F (°C)	Working pressure, psig (bar)					
-65 (-53) to 100 (37)	5000 (344)	1800 (124)	1800 (124)	1800 (124)	1000 (69.0)	500 (34.4)
200 (93)	3960 (272)	1360 (93.7)	1360 (93.7)	1580 (108)	840 (57.8)	500 (34.4)
300 (148)	3570 (245)	1230 (84.7)	1230 (84.7)	1490 (102)	760 (52.3)	500 (34.4)
400 (204)	3290 (226)	1130 (77.8)	1130 (77.8)	1430 (98.5)	700 (48.2)	500 (34.4)
500 (260)	3060 (210)	1050 (72.3)	1050 (72.3)	1420 (97.8)	650 (44.7)	500 (34.4)
600 (315)	2920 (201)	1000 (69.0)	1000 (69.0)	1420 (97.8)	620 (42.7)	500 (34.4)
650 (343)	2870 (197)	980 (67.5)	980 (67.5)	1420 (97.8)	610 (42.0)	500 (34.4)
700 (371)	2810 (193)	970 (66.8)	970 (66.8)	1420 (97.8)	590 (40.6)	500 (34.4)
750 (398)	2750 (189)	950 (65.4)	950 (65.4)	1410 (97.1)	580 (39.9)	500 (34.4)
800 (426)	2700 (186)	930 (64.0)	930 (64.0)	—	570 (39.2)	500 (34.4)
850 (454)	2640 (181)	—	—	—	560 (38.5)	—

Notes:
1. Working temperature is limited to 300°F (148°C) maximum for cylinders with PTFE internal coating.
2. Working pressure and temperature may be restricted by individual local government regulations.

Testing

Single-ended Cylinders

All single-ended cylinders are hydrostatically tested at 1000 psig (69 bar).

Double-ended Cylinders

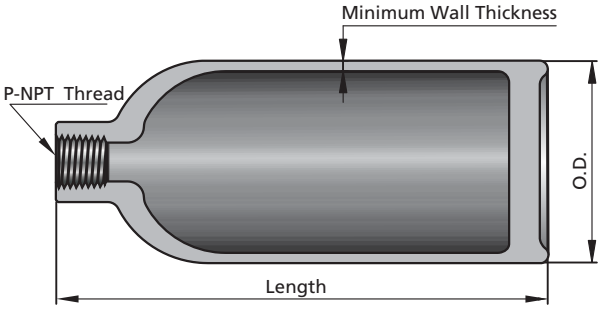
All double-ended cylinders are hydrostatically tested to at least 5/3 times the working pressure.
DOT-3A 1800 cylinders are hydrostatically tested at 3000 psig (206 bar) minimum .
DOT-3E 1800 cylinders are hydrostatically tested at 3050 psig (210 bar).
DOT-3A 5000 cylinders are hydrostatically tested at 8500 psig (586 bar) minimum.

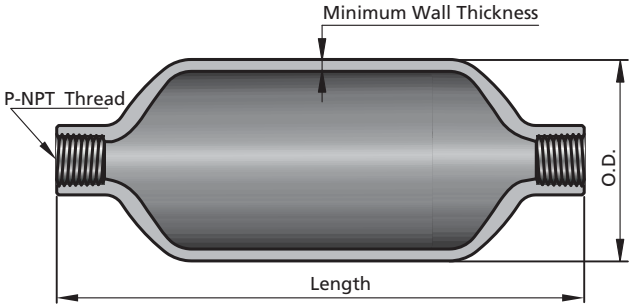
Transportable Pressure Equipment Directive (TPED)

The Transportable Pressure Equipment Directive (TPED) provides requirements for the design, manufacturing, and testing of transportable pressure vessels and accessories, including sample cylinders and rupture discs. The directive aims to provide a uniform level of product safety throughout the European Union countries.
For information about FITOK TPED-compliant products, please refer to FITOK Catalog *Sample Cylinders Compliant with the Transportable Pressure Equipment Directive (TPED)*.

Technical Data

Dimensions are for reference only and are subject to change.





Material Grade/Cylinder Specification	Pressure Rating psig (bar)	Cylinder Volume (cm^3±10%)	P in.	Dimensions, in. (mm)			Weight lb (kg)
				O.D.	Length	Minimum Wall Thickness	
Single-ended							
304L SS/	500 (34.4)	150	1/4	2.00 (50.8)	4.88 (124)	0.093 (2.4)	1.10 (0.50)
		300			8.62 (219)		1.80 (0.82)
		500			13.6 (345)		2.70 (1.2)
Double-ended							
304L SS/ DOT-3E 1800	1800 (124)	40	1/8	1.25 (31.8)	3.88 (98.6)	0.070 (1.8)	0.31 (0.14)
		50	1/4	1.5 (38.1)	3.75 (95.2)	0.093 (2.4)	0.38 (0.17)
		75			4.94 (125)		0.62 (0.28)
		150①	1/4	2.00 (50.8)	5.25 (133)		0.94 (0.43)
		290			8.86 (225)		1.79 (0.81)
		300①			8.94 (227)		1.80 (0.83)
		400			11.4 (290)		2.10 (0.95)
		500①			13.8 (351)		2.61 (1.20)
304L SS/ DOT-3A 1800	1800 (124)	1000①	1/4 or 1/2	3.50 (88.9)	10.9 (277)	0.180 (4.6)	6.50 (2.90)
		2250①	1/4 or 1/2	4.00 (102)	17.2 (437)	0.206 (5.2)	14.00 (6.40)
		3785① (1 gal)			26.7 (678)		21.00 (9.50)
316L SS/ DOT-3E 1800	1800 (124)	150①	1/4	2.00 (50.8)	5.25 (133)	0.093 (2.4)	0.94 (0.43)
		290			8.86 (225)		1.79 (0.81)
		300①			8.94 (227)		1.80 (0.83)
		500①			13.8 (351)		2.60 (1.20)
316L SS/ DOT-3A 5000	5000 (344)	150①	1/4	1.90 (48.2)	8.00 (203)	0.240 (6.1)	3.00 (1.40)
		300①			14.5 (368)		5.60 (2.50)
		500①			23.5 (597)		9.10 (4.10)
Alloy 400	1800 (124)	150	1/4	2.00 (50.8)	5.25 (133)	0.093 (2.4)	0.94 (0.43)
		300			8.94 (227)		1.80 (0.82)
		500			13.8 (351)		2.90 (1.30)

① DOT cylinders are available.
TC certified sample cylinders are also available upon request. For more information, please contact FITOK Group or our authorized distributors.

Options for Internal Cylinder Surface Treatments

PTFE Coating

The internal cylinder surface can be coated with PTFE to provide a nonstick surface for easy cleaning.

Electropolishing

Electropolishing can provide a clean internal surface with a high degree of passivation.

Cleaning and Packaging

All FITOK sample cylinders and cylinder valves are cleaned and packaged in accordance with FITOK *FC-01 Standard Cleaning and Packaging.*

FITOK *FC-02 Special Cleaning and Packaging* in compliance with the requirements of ASTM G93 Level C is optional.

Overpressure Protection

Cylinders for compressed air must be equipped with pressure relief devices in accordance with US DOT regulations and CGA Pamphlet S-1.1. The CGA Pamphlet lists devices that can be used with specific gases. It also contains information on other types of pressure relief devices.

⚠ Be sure to use the correct pressure relief device for the gas being used.

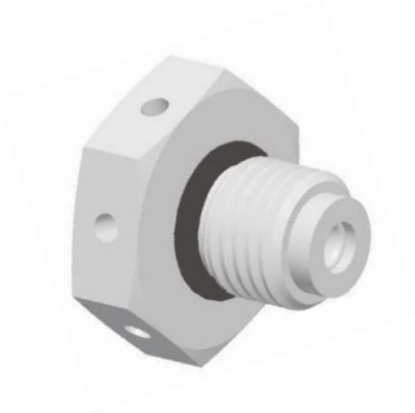
⚠ Proper filling of the cylinder according to DOT specifications or other local regulations, is critical in preventing overpressurization.

Rupture Disc Kits

Rupture disc kits protect sample cylinder from overpressurization by venting the gas to atmosphere.
The rupture disc kits are used to be installed in valves or rupture disc tees and sealed by O-rings.
The rupture disc kits can be easily replaced without removing valves or tees from cylinders.

Materials of Construction

Component	Material Grade/ASTM Specification
Body, inlet ring	316 SS/A479
Rupture disc	Alloy 600/B168
O-ring	Fluorocarbon FKM



Ordering Information

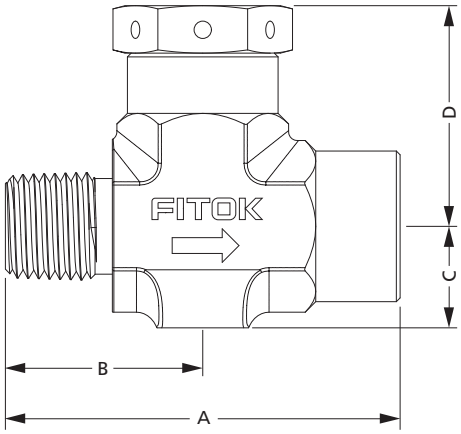
Nominal Burst Pressure at 70°F (20°C)	Ordering Number
2850 psig ± 150 psig 196 bar ± 10.3 bar	SS-RDD-7BS-2850
1900 psig ± 100 psig 130 bar ± 6.8 bar	SS-RDD-7BS-1900

Note: The rupture disc kits should be used with FITOK Rupture Disc Tees.

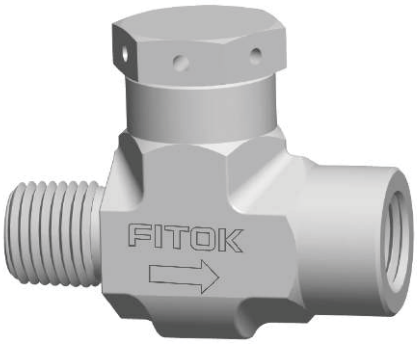
Rupture Disc Tees

These compact assemblies are designed for using with FITOK valves. Tees are made of 316 SS. Each tee is supplied with a rupture disc kit.

Ordering Information and Dimensions



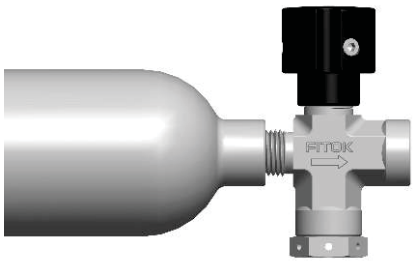
End Connections		Ordering Number	Dimensions, in. (mm)			
Inlet	Outlet		A	B	C	D
With 2850 psig (196 bar) Rupture Disc						
1/4 in. Male NPT	1/4 in. Female NPT	SS-TM4-F4-RD28	2.06 (52.4)	1.03 (26.2)	0.53 (13.5)	1.16 (29.4)
1/2 in. Male NPT		SS-TM8-F4-RD28	2.63 (66.7)	1.50 (38.1)	0.75 (19)	1.42 (36)
With 1900 psig (130 bar) Rupture Disc						
1/4 in. Male NPT	1/4 in. Female NPT	SS-TM4-F4-RD19	2.06 (52.4)	1.03 (26.2)	0.53 (13.5)	1.16 (29.4)
1/2 in. Male NPT		SS-TM8-F4-RD19	2.63 (66.7)	1.50 (38.1)	0.75 (19)	1.42 (36)



Nonrotating-stem Needle Valves with Rupture Disc Kits

Ordering Information and Dimensions

End Connections		Flow Pattern	Valve Ordering Number	Orifice in. (mm)
Inlet	Outlet			
With 2850 psig (196 bar) Rupture Disc				
1/4 in. Male NPT	1/4 in. Female NPT	Straight	NDSS-NS4-FNS4-7-SAFE2	0.16 (4.0)
		Angle	NDSS-NS4-FNS4-7-A-SAFE2	
1/2 in. Male NPT			NDSS-NS8-FNS4-8-A-SAFE2	0.22 (5.6)
With 1900 psig (130 bar) Rupture Disc				
1/4 in. Male NPT	1/4 in. Female NPT	Straight	NDSS-NS4-FNS4-7-SAFE1	0.16 (4.0)
		Angle	NDSS-NS4-FNS4-7-A-SAFE1	
1/2 in. Male NPT			NDSS-NS8-FNS4-8-A-SAFE1	0.22 (5.6)



1. Dimensions are for reference only and are subject to change.
2. Other FITOK valves are available for using with sample cylinders. Please contact FITOK Group or our authorized distributors for details.

Spring Relief Devices

Introduction

◎ Spring relief devices can be used with FITOK sample cylinders as a safety device.

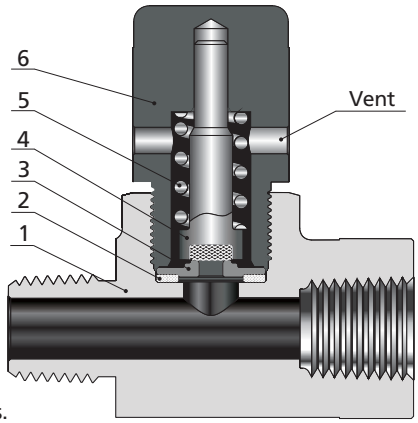
◎ When the system pressure reaches the set pressure, the device will open automatically to release the excess pressure in the system. After stabilizing the system pressure, the device will close automatically.

Working Temperature

−20°F~250°F (−29℃~121℃)

Materials of Construction

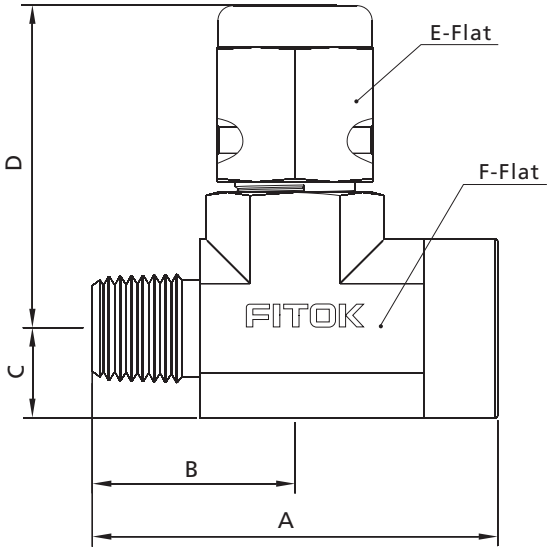
Item	Component	Material Grade/ASTM Specification
1	Body	316 SS/A182
2	Gasket	PCTFE/D1430
3	Seat	316 SS/A479
4	Stem	316 SS/A479+Fluorocarbon FKM
5	Spring	304 SS/A313
6	Bonnet	316 SS/A479



1. Lubricant: Silicone-based.
2. For other materials, please contact FITOK Group or our authorized distributors.

Dimensions and Ordering Information

All dimensions are for reference only and are subject to change.



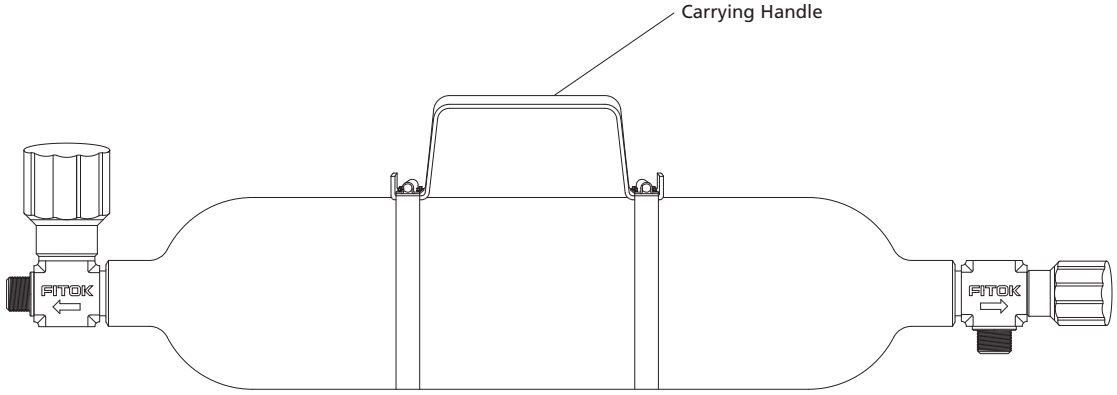
Basic Ordering Number	Connection Type and Size		Dimensions, in. (mm)						Set Pressure, psig (bar)
	Inlet	Outlet	A	B	C	D	E	F	
RTSS-NS4-FNS4-4	1 /4 Male NPT	1 /4 Female NPT	2.11 (53.6)	1.05 (26.8)	0.46 (11.7)	1.68 (42.7)	0.81 (20.6)	0.81 (20.6)	350 ~ 400 (24~27)
RTSS-NS4-FNS4-6									540 ~ 600 (37~41)
RTSS-NS4-FNS4-8									700 ~ 800 (48~55)
RTSS-NS6-FNS4-4	3 /8 Male NPT								350 ~ 400 (24~27)
RTSS-NS6-FNS4-6									540 ~ 600 (37~41)
RTSS-NS6-FNS4-8									700 ~ 800 (48~55)

For other set pressures, please contact FITOK Group or our authorized distributors.

Sample Cylinder Accessories

Carrying Handle

The carrying handle provides convenience for transportation of sample cylinders. The handle is made of 304 SS and is available for 290 cm^3 cylinders or larger cylinders.

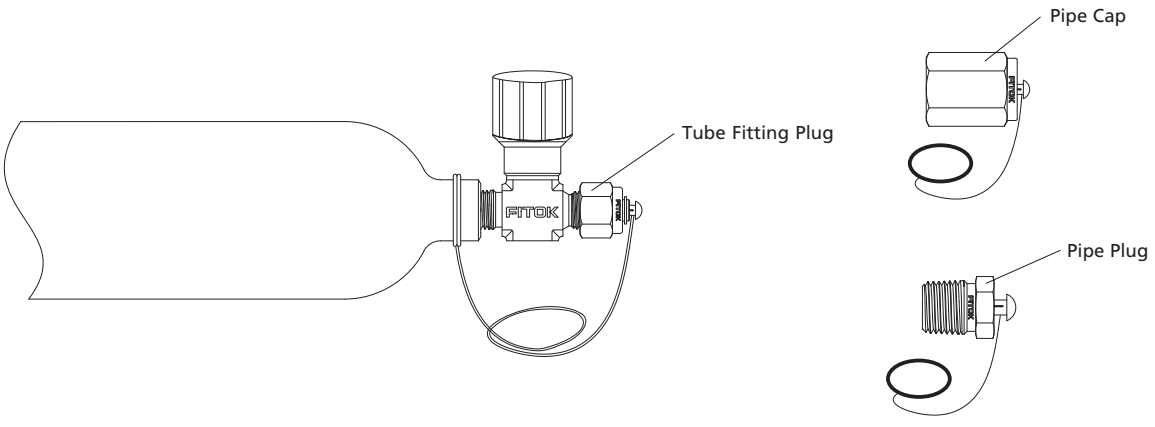


Ordering Information

Cylinder OD in. (mm)	Cylinder Volume cm^3	Ordering Number
1.9 (48.2)	290~500	HD-CY2-H2
2.0 (50.8)		
3.5 (88.9)	1000	HD-CY3-H2
4.0 (102)	2250/3785	HD-CY4-H4

Caps and Plugs

Caps and plugs are used for cylinder valves to protect the connections (tube fitting or NPT thread) from damages during cylinder transportation. For details, please contact FITOK Group or our authorized distributors.



End Caps

In order to enable users to transport pressurized samples in safety, end caps are offered by FITOK to protect valves from damages. Each end cap is screwed onto a neck ring that has been cold forged to the cylinder neck. End caps are made of carbon steel and are only available for 2250 cm^3 and 3785 cm^3 (1 gal) cylinders . FITOK angle pattern valves can be used for cylinders with end caps.

Note: Double-ended cylinders with end caps on both ends are standard configurations.

Outage Tubes

Features

- 316 SS and Alloy 400 available
- 1/4'' and 1/2'' NPT connections available

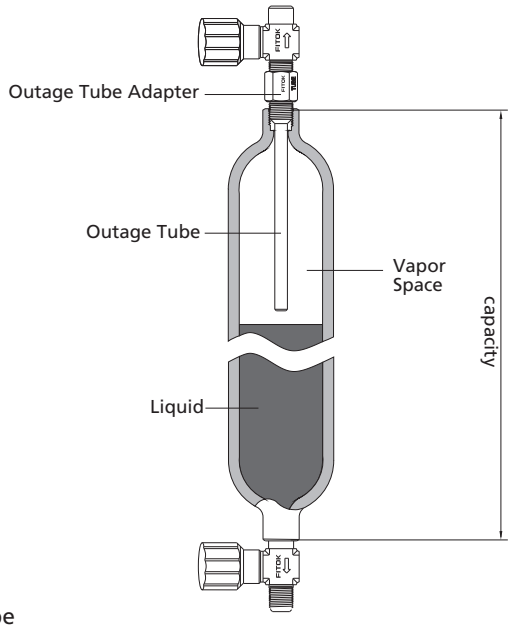
Construction

Outage tube is welded to the male thread end of an adapter. Screw the adapter with outage tube into the female thread end of a sample cylinder.

Purpose

The outage tube provides a vapor space of desired volume in a cylinder with liquefied gas. Therefore, liquids can expand when the temperature increases. A small temperature increase can make the liquids expanded and the pressure increased dramatically if there is not enough vapor space.

Note: For safe filling limits of your application, please refer to local regulations or other guidelines.



Usage

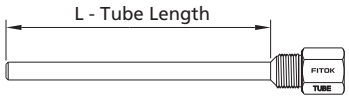
Outage tube is used to keep a certain vapor space in a cylinder.
The space is determined by the length of outage tube.
Outage is the vapor space in the cylinder expressed as a percentage of the total volume of the cylinder.

% outage = (vapor space/total volume) × 100

To obtain an exact outage, each outage tube and cylinder assembly should be calibrated by a suitable method.

Outage Tube Length

The outage tube length (L) is measured from the end of the pipe fitting to the end of the tubing. The table below shows approximate outage tube length for standard sample cylinders.

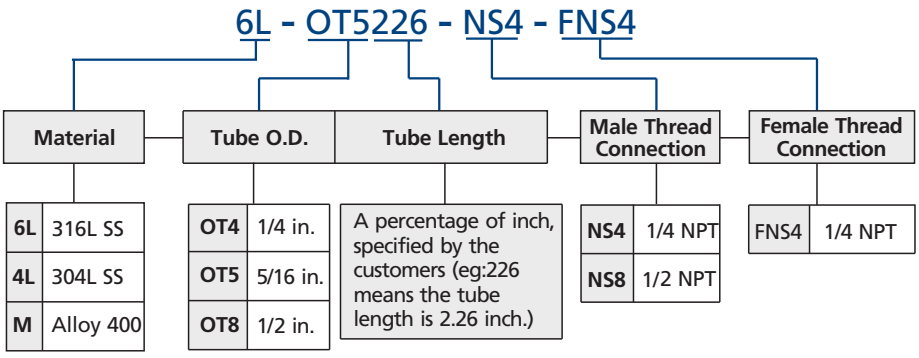


Tube of desired length is available upon request.

Tube O.D.	Cylinder Volume (cm^3±10%)	Code		Minimum Outage, %				
				10	20	30	40	50
				Tube Length, in.				
1/4"	40	Applicable to double-ended cylinders rated to 1800 psig	4087	0.87	1.11	1.35	1.59	1.84
5/16"	50		5085	0.85	1.07	1.28	1.50	1.71
	75		5102	1.02	1.34	1.66	1.98	2.31
	150		5112	1.12	1.45	1.79	2.13	2.46
	300		5165	1.65	2.32	2.99	3.67	4.34
	400		5200	2.00	2.90	3.79	4.69	5.59
	500		5226	2.26	3.38	4.50	5.62	6.74
	1000		5231	2.31	3.06	3.81	4.56	5.31
	2250		5717	3.30	4.59	5.88	7.17	8.46
	3785 (1 gal)		51114	4.62	6.79	8.96	11.14	13.31
1/2"	1000		8221	2.21	2.96	3.71	4.46	5.21
	2250		8846	3.30	4.59	5.88	7.17	8.46
	3785 (1 gal)		8452	4.52	6.69	8.86	11.04	13.21
5/16"	150	Applicable to single-ended cylinders rated to 500 psig	5109	1.09	1.43	1.77	2.12	2.46
	300		5159	1.59	2.27	2.96	3.65	4.34
	500		5560	2.16	3.30	4.45	5.60	6.74
	150	Applicable to double-ended cylinders rated to 5000 psig	5162	1.62	2.17	2.71	3.26	3.81
	300		5274	2.74	3.84	4.93	6.03	7.12
	500		5439	4.39	6.21	8.04	9.86	11.68

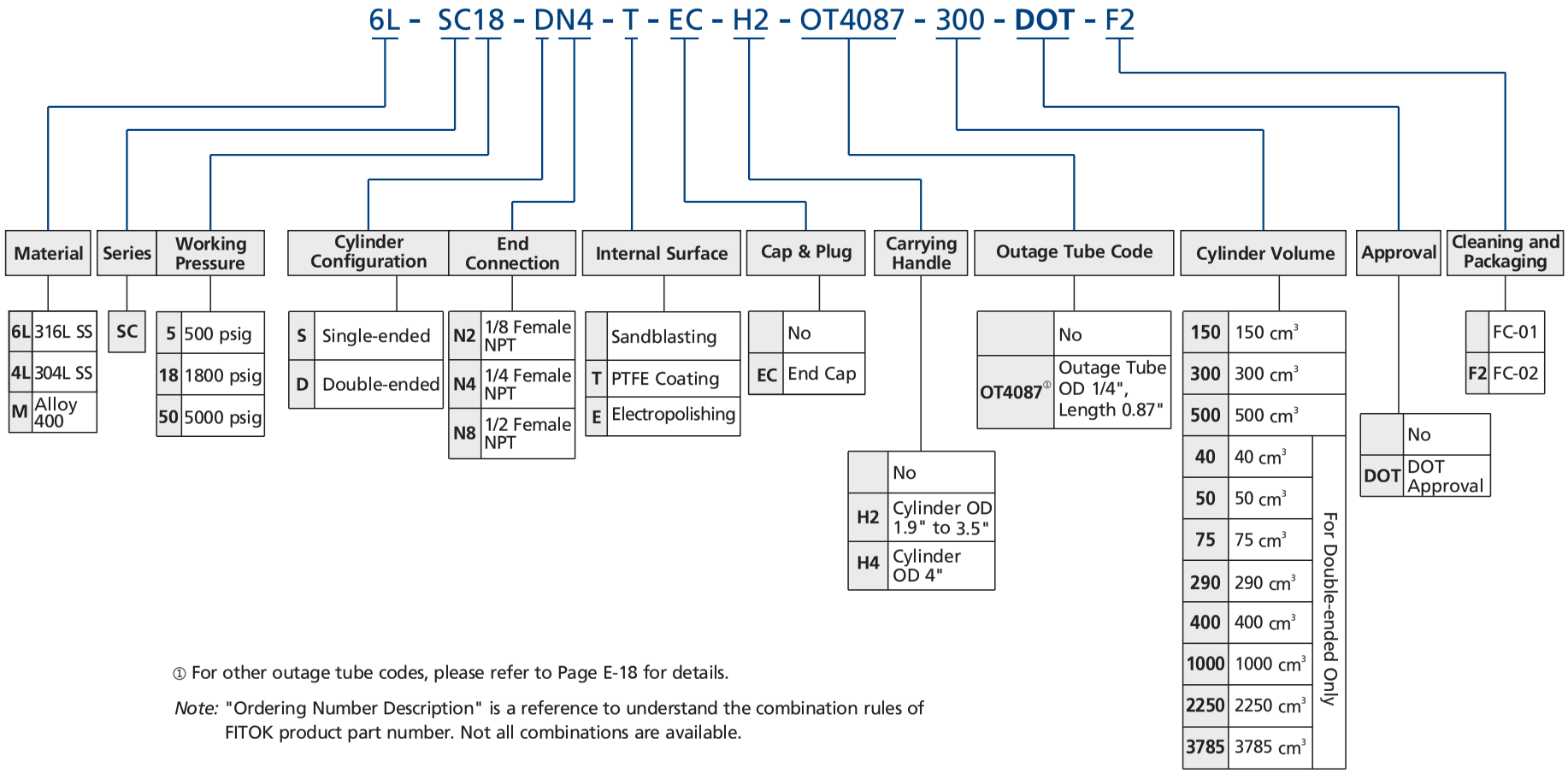
For the use of sample cylinder and outage tube, please refer to ASTM D1265, *Standard Practice for Sampling Liquefied Petroleum (LP) Gases, Manual Method.*

Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Ordering Number Description



① For other outage tube codes, please refer to Page E-18 for details.

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

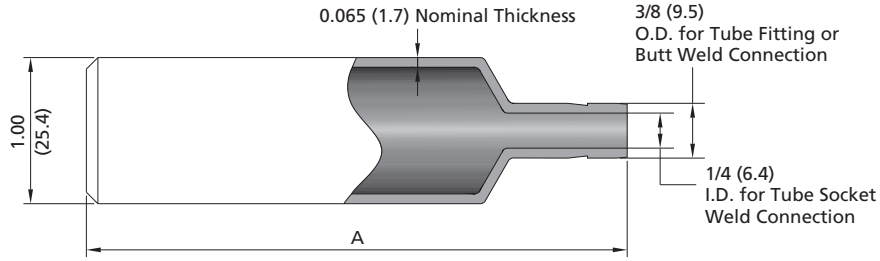
Miniature Sample Cylinders

Features

- Maximum working pressure: 1000 psig (69.0 bar)
- Capacities: 10, 25 and 50 cm^3
- Single-ended and double-ended configurations available
- Smooth internal neck transition for easy cleaning
- Stainless steel construction to ensure high corrosion resistance
- Full-penetration butt weld constructions

Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.



Cylinder Configuration	Cylinder Volume cm^3	Volume Tolerance	Working Pressure psig (bar)	A in. (mm)	Average Weight oz (g)
Single-ended	10	±10%	1000 (69.0)	2.19 (55.6)	2.2 (62)
	25	±5%		3.69 (93.7)	3.2 (91)
	50			6.25 (159)	5.6 (159)
Double-ended	10	±10%		2.75 (69.8)	1.9 (54)
	25	±5%		4.25 (108)	3.3 (94)
	50			6.81 (173)	5.1 (145)

Testing and Cleaning

Each miniature cylinder is pressure tested at 1667 psig (115 bar) with Nitrogen.
Special Cleaning and Packaging in compliance with ASTM G93 Level C is optional.

Cautions

1. No impingement during the usage of the cylinders.
2. Don't expose the cylinders in the sun or bake next to the heat source.
3. Sample cylinders are strictly prohibited roasting by fire when the cylinders are frozen.
4. When using the sample cylinders, the working pressure should not exceed its maximum allowable working pressure.

Ordering Number Description

6L - MC - DFT6 - 10 - F2

Material	Series	Cylinder Configuration	End Connection	Cylinder Volume	Cleaning and Packaging
6L 316L SS	MC	S Single-ended	FT6 3/8" tube fittings (applicable to butt weld for 3/8" OD, or tube socket weld for 1/4" ID)	10 10 cm^3	FC-01
4L 304L SS		D Double-ended		25 25 cm^3	F2 FC-02
				50 50 cm^3	