SENSOR SAMPLING SYSTEMS

IVSS
INLINE VALVE SAMPLING SYSTEM

Operating **Instructions**

These instructions provide information for installation, operation and maintenance of the Inline Valve Sampling System (IVSS).

The SENSOR Inline Valve Sampling System (IVSS) fits into a process piping system without the need to utilize, or create, a pressure differential to collect a sample. It can be designed to fit into 1", 2" or 3" diameter piping with a wafer or inline flange ended configuration. The IVSS uses a spring loaded lever valve handle to collect samples from a flowing line.

IVSS can be configured with needles or a thread-in bottle adapter for closed loop sample collection.

Wafer Valve

Inline Flanged Valve

Design and specifications are subject to change without notice.

For latest revision, go to ***SENSOReng.com***

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Installation

❶ Visually inspect unit for broken or missing components.

❷ Verify flange face is free of damage or deep scratches.

❸ Pull out the locking pin and verify that the valve opens and springs closed effectively.

❹ Verify the sample collection bottle to be used fits correctly into the shroud or threaded bottle adapter.

❺ Verify the spacing between the flanges where the valve is being installed, correctly match the face to face dimension of the valve assembly.

❻ Install appropriate gaskets between existing and mating flanges.

❼ Using appropriate length flange bolts, tighten connections appropriately.

❽ If utilizing an N_2 or vent line, connect tubing to appropriate connections and tighten using a 9/16" open-end wrench for 1/4" or 7/8" open-end wrench for 1/2"

DO NOT OVER TIGHTEN

❾ Pressurize piping with process media or hydrotest line and check for leaks.

❿ System is ready for sampling.

Operating Instructions

❶ Verify: **SAMPLE** lock pin has been removed if being used.
SAMPLE BOTTLE is in shroud or thread-in bottle is tightly secured.

❷ Pull sample valve lever and observe liquid flowing into sample bottle.

❸ When desired amount of sample is in bottle, release handle and allow valve to close.

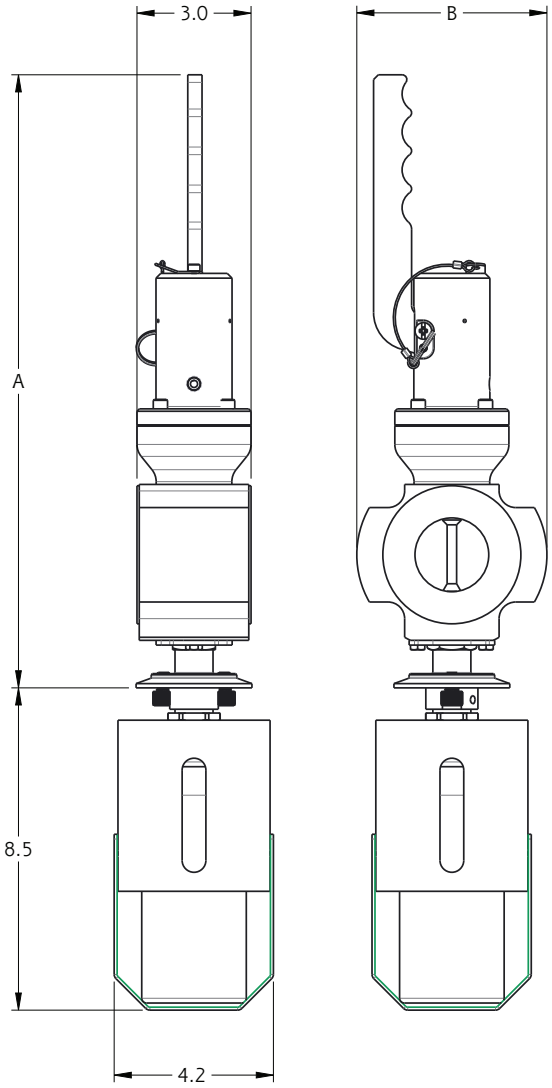
❹ Remove sample bottle. If thread-in bottle is used, install a cap before transportation to lab.

❺ Install new bottle into shroud or thread-in bottle adapter.

DO NOT ROTATE BOTTLE WHEN USING SHROUD

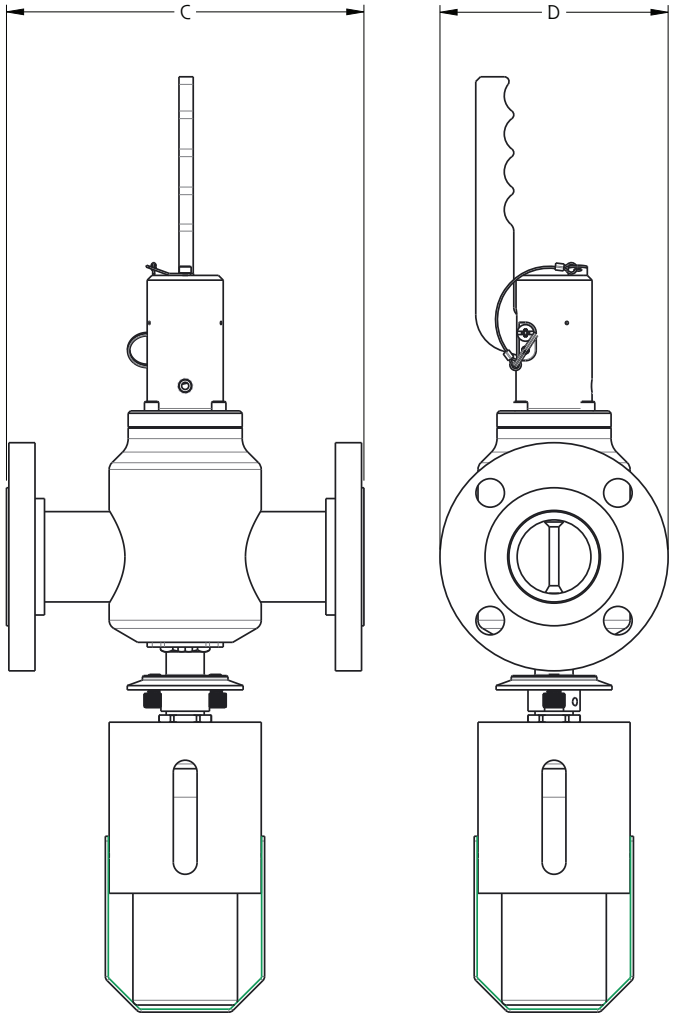
Dimension Drawings

Wafer Valve



	VALVE SIZE		
DIM	1"	2"	3"
A	15.6"	16.1"	17.4"
B	4.3"	5.0"	6.0"
C	7.9"	9.4"	11.0"
D	4.3"	6.0"	7.5"

Inline Flanged Valve



Dimensions are for reference only.
Contact the factory for certified drawings.

Needle Specifications

PROCESS NEEDLES

PART #	SIZE	MATL	O.D.	WALL	I.D.
S4610005	.083	316SS	.083	.010	.063
S4610013	.109	316SS	.109	.012	.085
S4610148	.148	316SS	.148	.015	.118
S4600008	.203	316SS	.203	.015	.173

VENT NEEDLES

PART #	SIZE	MATL	O.D.	WALL	I.D.
S4610011	.083	316SS	.083	.010	.063

CONCENTRIC NEEDLES

Part #	Process vent sizes
S4600001	.065”/.109”
S4600002	.083”/.148”
S4600004	.109”/.203”

Needle Replacement

Dual Needle

❶ Loosen jam nut on shroud assembly.

❷ Unscrew shroud assembly and remove.

❸ Remove the (3) set screws (#6-32 SHCS) with 7/64” allen wrench from needle retainer, remove retainer.

❹ Remove process needle by holding the barrel and pulling down.

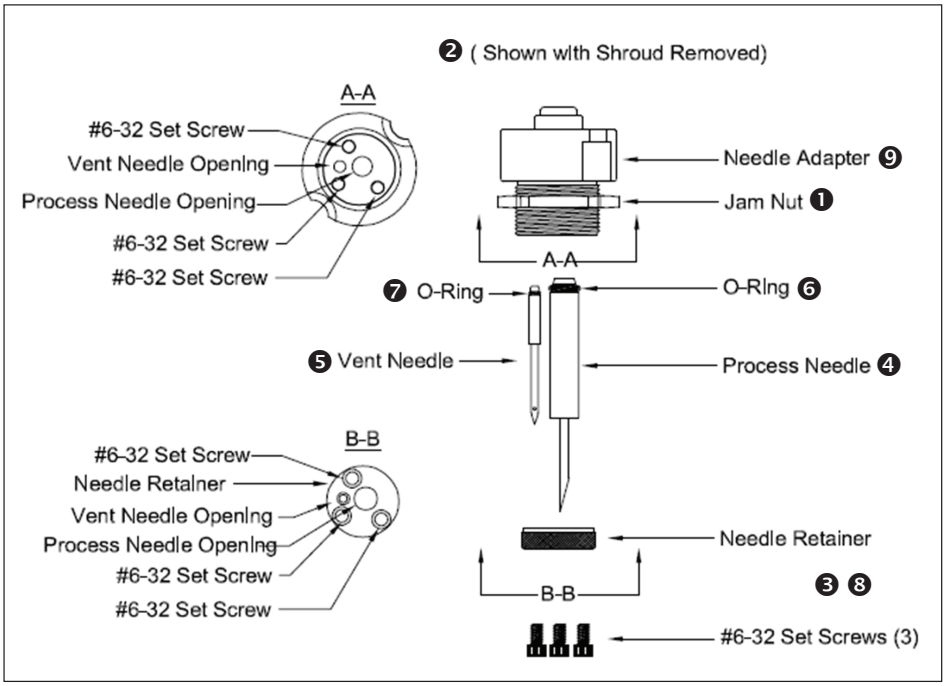
❺ Remove vent needle by holding down the barrel and pulling down.

❻ Make sure new process needle has o-ring installed on needle barrel, then install process needle in proper port.

❼ Inspect new vent needle for o-ring, then install in proper port.

❽ Reattach needle retainer using (3) set screws. Tighten until snug.

❾ Replace shroud by screwing it onto the needle adapter, making sure to adjust properly to secure sample bottle with strap, then tighten jam nut to lock shroud in place.



CONCENTRIC Needle

❶ Loosen jam nut on shroud assembly.

❷ Unscrew shroud assembly and remove.

❸ Remove the (3) set screws (#6-32 SHCS) with 7/64" allen wrench from needle retainer, remove retainer.

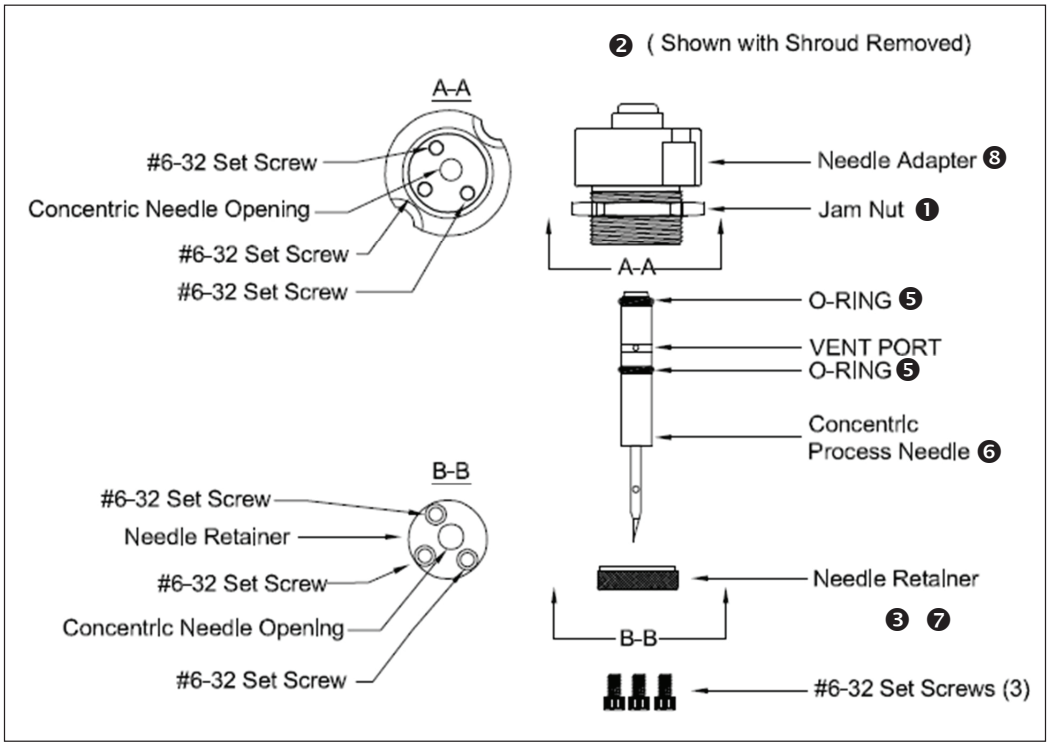
❹ Remove concentric needle (Process/Vent in one needle) by pulling needle down, holding the barrel of the needle.

❺ Make sure new process needle has both o-rings installed (as shown) on needle barrel and that the vent port groove on needle is clear.

❻ Install concentric needle in proper port.

❼ Replace needle retainer and (3) set screws.

❽ Replace shroud by screwing it onto the needle adapter making sure to adjust properly to secure sample bottle, then tighten jam nut to lock shroud in place.



Repair the Valve & Replace Packing

❶ Carefully remove the (4) socket head screws (1/4-20 x 3/4) securing bonnet assembly. The bonnet assembly will spring slightly upward. Remove bonnet assembly and set aside.

❷ Inspect o-ring. Replace if damaged.

❸ Remove packing retainer, spring washers and spacer and set aside.

❹ Using a pick, remove old v-ring packing and discard.

❺ In wafer valves, upper body may also be removed to aid in packing replacement. Remove the (4) socket head screws (10-32 x 1-3/8). Remove the upper body and inspect o-ring, replacing if damaged.

❻ Press new v-ring male adapter into bottom of packing chamber. Add (5) standard v-rings. Add v-ring female adapter to top of stack. If wafer upper body was removed, reinstall after 1-2 v-rings.

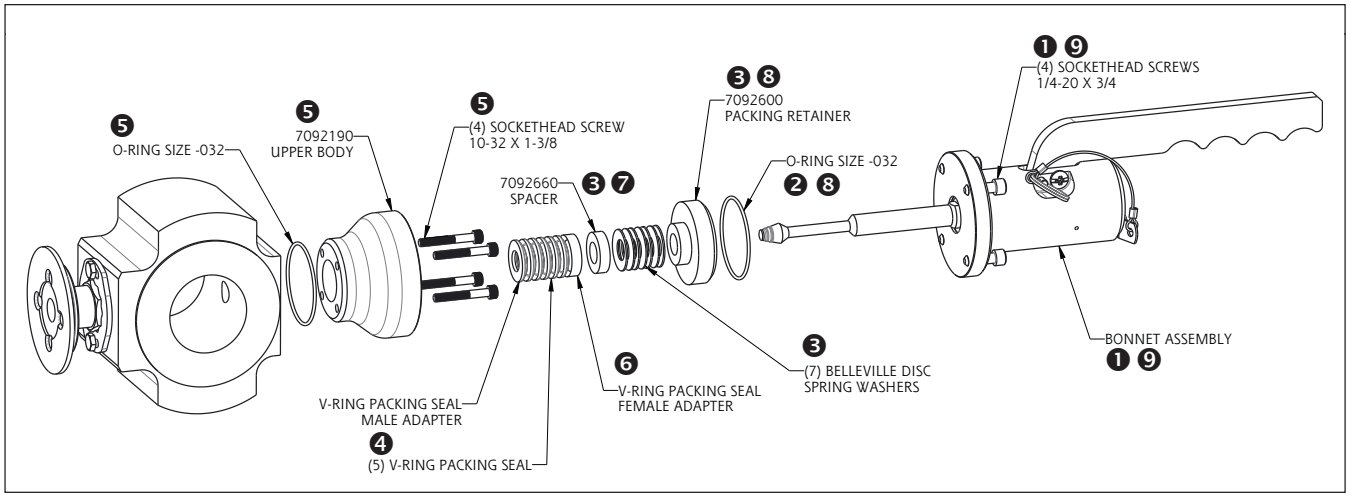
❼ Replace spacer and disc springs and alternate every disc spring orientation.

❽ Replace packing retainer and o-ring.

❾ Replace bonnet and carefully press down to compress springs. Replace (4) socket head screws (1/4-20 x 3/4). Unless otherwise specified, torque fasteners to

10-32: 28±2 in-lbs

1/4-20: 70±5 in-lbs



Repair or Replace the Spindle Seat (Teflon Piece)

❶ Remove (2) hex head screws (10-32 x 1/2). Locking plate should remain loose on body adapter.

❷ Remove body adapter and set aside.

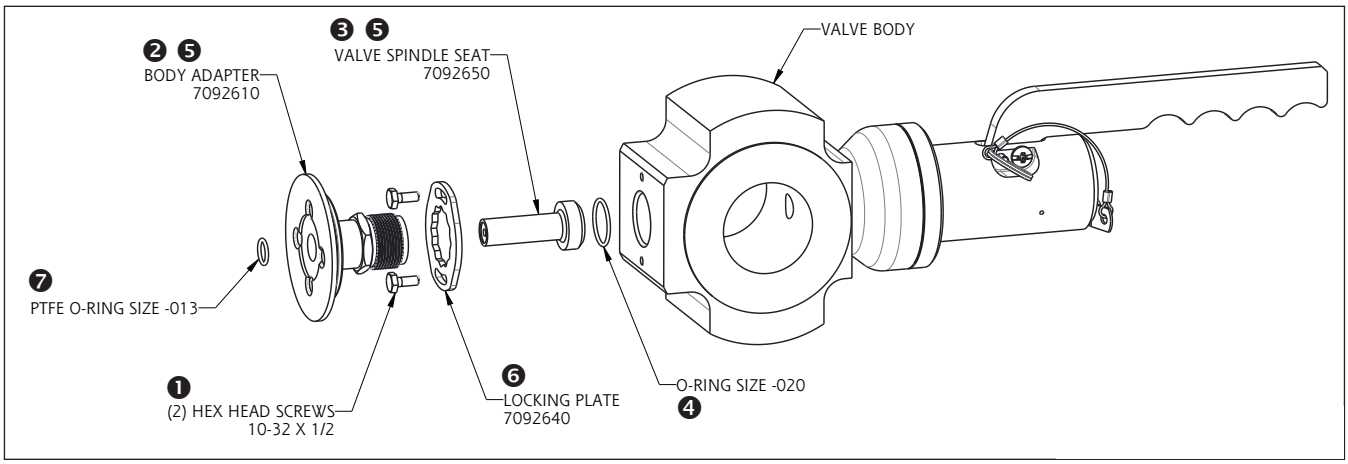
❸ Remove old valve spindle seat and discard.

❹ Remove and inspect o-ring. Reinstall or replace if damaged.

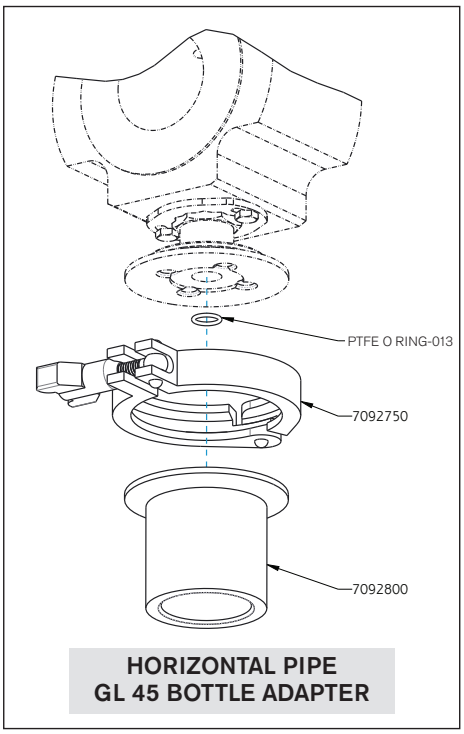
❺ Slide new valve spindle seat into body adapter. Ensure locking plate is loose around body adapter and thread into valve body. Tighten to 1/4 turn past sung.

❻ Reinstall locking plate to valve body using the (2) hex head screws.

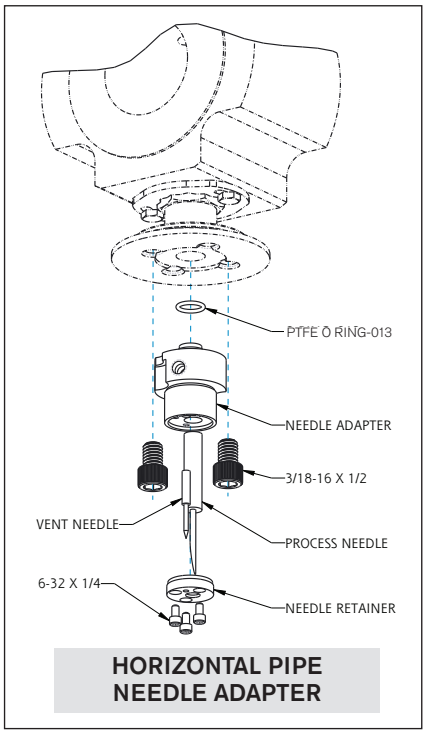
❼ Ensure PTFE o-ring is in place before reinstalling bottle or needle adapter.



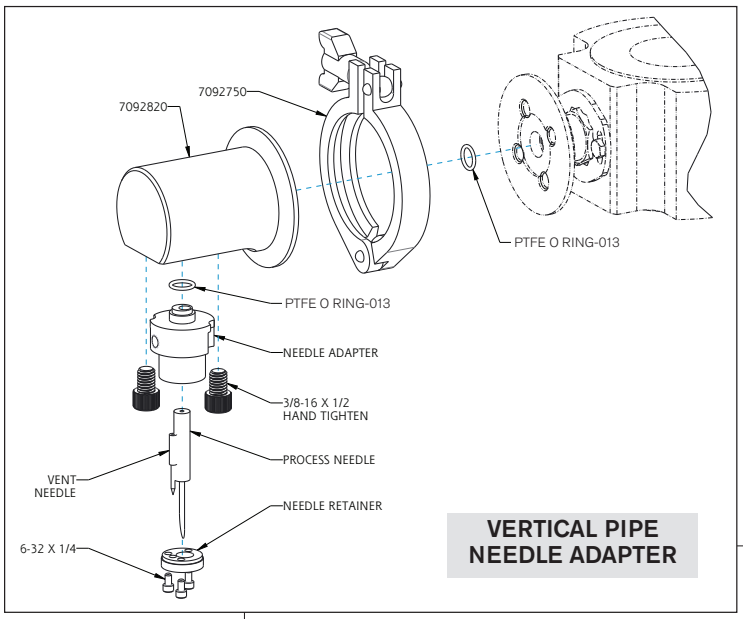
Bottle Connection Configuration Options



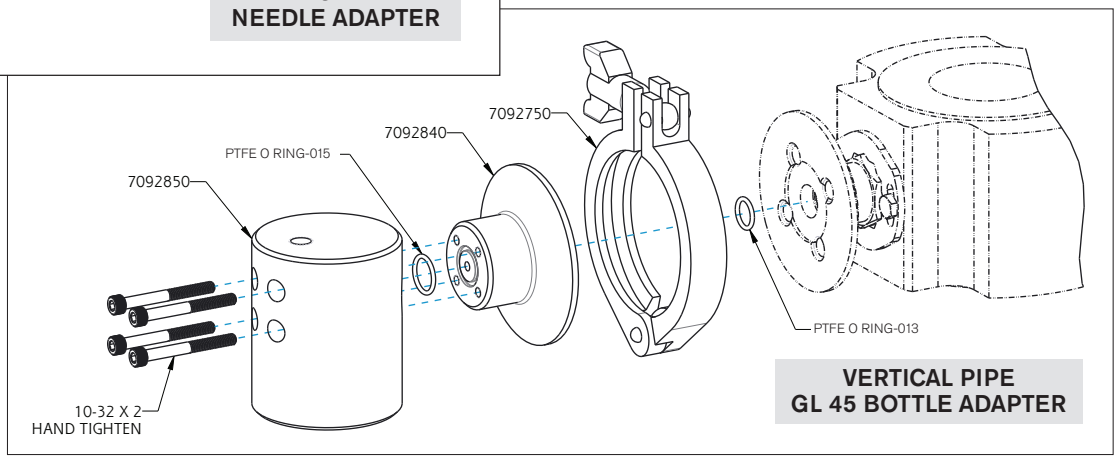
HORIZONTAL PIPE
GL 45 BOTTLE ADAPTER



HORIZONTAL PIPE
NEEDLE ADAPTER



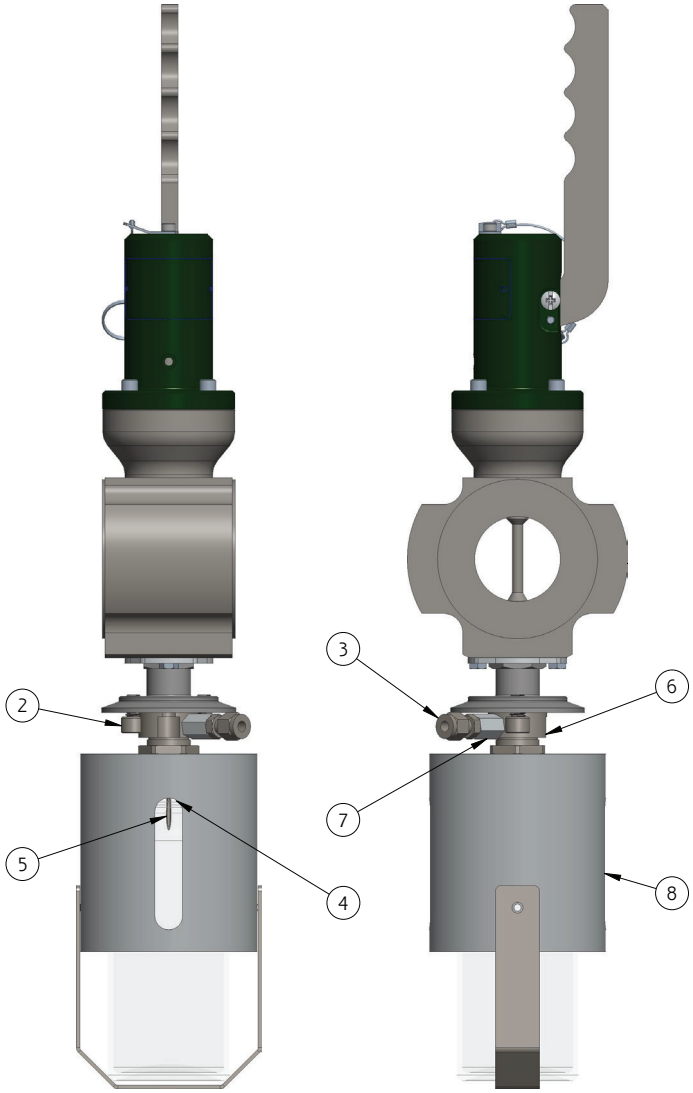
VERTICAL PIPE
NEEDLE ADAPTER



VERTICAL PIPE
GL 45 BOTTLE ADAPTER

Spare Parts

ITEM	QTY	PART NUMBER	DESCRIPTION
2	2	S2001003	SCR SCH 3/8-16 X 1/2"LG 5/16"DR 316SST
3	1	S3204002	TBG STR ADAPT 1/4T X 1/16NPT 316 SST
4	1	S4600011	ADAPTER S NEEDLE D/A
5	1	S4610011	NEEDLE VENT .083 316SST/VITON
6	1	S4610013	NEEDLE PROCESS .109 316SST/VITON
7	1	S6000123	ADAPT 1/16"MNPT X 1/16"FNPT 316SST IVSS PURGE
8	1	S6500102	SHROUD ASSEMBLY, 16OZ STD



Bottle, Cap and Septum Supplies

Caps

Size	Hole	Bag Qty	Part #
20mm	.500”	100pcs	CAP20P
22mm	.586”	100pcs	CAP22P
24mm	.586”	100pcs	CAP24P
28mm	.625”	100pcs	CAP28P
33mm	.625”	100pcs	CAP33P
38mm	.750”	100pcs	CAP38P

Septa

Max temperature rating for this style is 200°C (392°F).

Size	Thickness	Bag Qty	Part #
20mm	100mil	100pcs	SEP20TS
22mm	100mil	100pcs	SEP22TS
24mm	100mil	100pcs	SEP24TS
28mm	100mil	100pcs	SEP28TS
33mm	100mil	100pcs	SEP33TS
38mm	100mil	100pcs	SEP38TS

Caps and Septa

Size	Thickness	Bag Qty	Part #
20mm	100mil	100pcs	CPS20PTS
22mm	100mil	100pcs	CPS22PTS
24mm	100mil	100pcs	CPS24PTS
28mm	100mil	100pcs	CPS28PTS
33mm	100mil	100pcs	CPS33PTS
38mm	100mil	100pcs	CPS38PTS

Bottles with Cap and Septum

Clear

Maximum temperature resistance 121°C (249°F)
Thermal shock resistance 40°C (104°F)

Volume	Cap Size	Septa Thickness	Case Qty	Part #
1oz/29.57ml	20mm	100mil	360pcs	BSC0120CTS
2oz/59.14	20mm	100mil	120pcs	BSC0220CTS
4oz/125ml	22mm	100mil	24pcs	BSC0422CTS
8oz/250ml	24mm	100mil	24pcs	BSC0824CTS
16oz/500ml	28mm	100mil	12pcs	BSC1628CTS
32oz/1000ml	33mm	100mil	12pcs	BSC3233CTS

HDPE

Plastic has a low maximum temperature resistance at 71°C (160°F).

Volume	Cap Size	Septa Thickness	Case Qty	Part #
4oz/125ml	24mm	100mil	24pcs	BSC0424PTS
8oz/250ml	28mm	100mil	24pcs	BSC0828PTS
16oz/500ml	28mm	100mil	12pcs	BSC1628PTS

Boro Clear

The temperature resistance gives a maximum temperature of 500°C (900°F).

Volume	Cap Size	Septa Thickness	Case Qty	Part #
4oz/125ml	33mm	100mil	24pcs	BSC0433BTS
8oz/250ml	33mm	100mil	24pcs	BSC0833BTS
16oz/500ml	33mm	100mil	12pcs	BSC1633BTS
32oz/1000ml	45mm	100mil	12pcs	BSC3245BTS

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