

NEOTECHA SAPRO IN-LINE SAMPLING SYSTEMS

In-line sampling system for representative sampling without process interruption



FEATURES

- The sampling system ensures a 'true representative sample' without process interruption. Designed to be installed directly into a process pipeline.
- Offered with either a bottle or syringe collection method. This allows for different levels of safety and containment for different applications.
- The syringe collection method utilizes a Sapro valve with a universal bayonet connection which allows one syringe to be used at multiple sample points.
- The operation of the sampling system with bottle adapter is very simple and safe.
- The spring loaded lever automatically closes the sampler when it is released.
- The Sapro with bottle adapter comes standard with built-in locking device for safety.
- PFA lining is available for corrosive services.
- Easily disassembled for cleaning.
- Seat change is quick and easy.
- Spindle seal (including PFA lined) approved in accordance with TA-Luft VDI 2440.
- Tightness according DIN EN 12266, leakage rate A, bubble tight.
- Spark testing of all PFA lined and encapsulated parts is performed with 20 000 Volts.

GENERAL APPLICATION

The Sapro sampling systems are designed to extract true, representative samples from process piping systems with safety and simplicity as primary concerns. The sample can be collected with either a bottle or syringe. By utilizing the syringe, a sample can be taken without exposure to personnel or the environment.

TECHNICAL DATA

Valve (DN):	25 - 100 wafer or flanged
Syringe (ml):	20 - 250
Pressure (bar):	valve 16 syringe 10
Vacuum (mbar):	0.1
Temperature (°C)	
SS Sapro:	up to 200
PFA lined Sapro:	up to 200
Syringe:	up to 160

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SAPRO WITH BOTTLE SAMPLING SYSTEM

The Sapro sampling system is a simple, safe and effective method to take samples of highly corrosive media. The operation is achieved by a 90 degree turning of a spring loaded lever which closes automatically when released. The handle can be locked by a pad-lock. The stroke of the lever is adjustable to regulate the speed in which the bottle is filled. The displaced air in the empty bottle can be released to a plant scrubbing or venting system using the 1/4 inch NPT connection on the bottle adapter, as the bottle is filled.

When there is a need to automate the sampling process, a single acting spring return diaphragm actuator can be provided on a Sapro bottle sampling system. The stroke on the actuator is adjustable to regulate the speed in which the bottle is filled. Options such as fill level detecting and bottle sensing are also available.

Bottle adapters

The standard bottle adapter is in PTFE with an ISO GL 45 thread and 1/4 inch vent connection. Adapters are available per customer's bottle threading upon request. The standard discharge diameter of the bottle adapter is 4 mm and can be enlarged up to 12 mm upon request. An array of options are available to further customize the Sapro system per customer requirements.



Sapro wafer stainless steel with bottle adapter



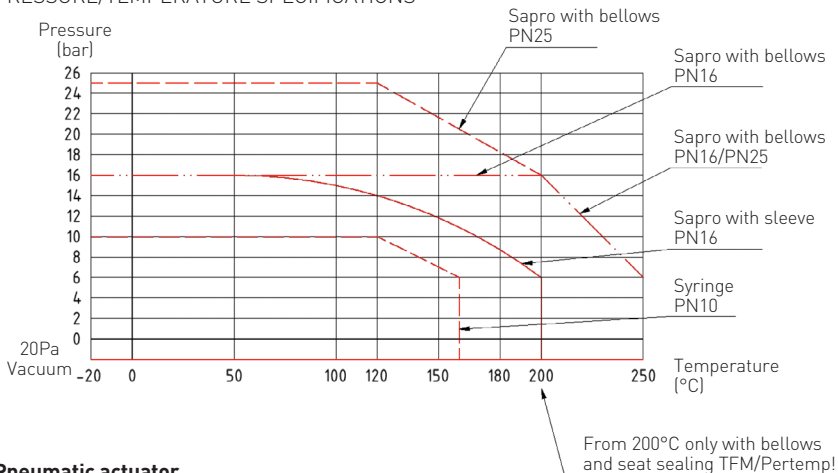
Sapro flanged PFA lined with bottle adapter

Material of wetted parts: PFA lined valve	
Body*	316 stainless steel PFA lined
Valve spindle	PFA encapsulated stainless steel
Seat retainer	Ceramic Al ₂ O ₃
Seat seal	Perfluorelastomer
Spindle seal	PTFE
Bottle adapter	PTFE

* Size 65-80-100 carbon steel PFA lined

Material of wetted parts: stainless steel valve	
Body	316 stainless steel
Valve spindle	316L stainless steel
Seat retainer	316L stainless steel
Seat seal	Perfluorelastomer
Spindle seal	PTFE or stainless steel bellows
Bottle adapter	PTFE

PRESSURE/TEMPERATURE SPECIFICATIONS



Pneumatic actuator

Required air pressure 2.5 bar

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DIMENSIONS FOR MANUAL AND PNEUMATIC OPERATED VALVE WITH BOTTLE

PFA LINED WAFER BODY FOR DIN PN 16 AND ANSI 150 FLANGES

DN	NPS	L _k mm	H mm	h mm	h1 mm	Weight kg
25	1	60	320	200	291	4.0
40	1½	60	336	207	299	5.2
50	2	60	348	212	305	6.2
65	2½	60	365	232	315	8.8
80	3	60	378	230	321	10.0
100	4	60	406	245	337	14.0

* Standard valve with bottle adapter ISO GL45E, vented and with PTFE spindle seal manual operated.
 h1 When pneumatically operated.
 For conductive PFA lined, substitute 7 with 5.

STAINLESS STEEL WAFER BODY FOR DIN PN 16 AND ANSI 150 FLANGES

DN	NPS	L _k mm	H mm	h mm	h1 mm	Weight kg
25	1	60	320	200	291	4.0
40	1½	60	336	207	299	5.2
50	2	60	348	212	305	6.2
65	2½	60	365	232	315	8.8
80	3	60	378	230	321	10.0
100	4	60	406	245	337	14.0

* Standard valve with bottle adapter ISO GL45E, vented and with PTFE spindle seal manual operated.
 h1 When pneumatically operated.
 Standard PN 16 rated, optional PN 25 rated.

PFA LINED FLANGED BODY FOR DIN PN 16 FLANGES

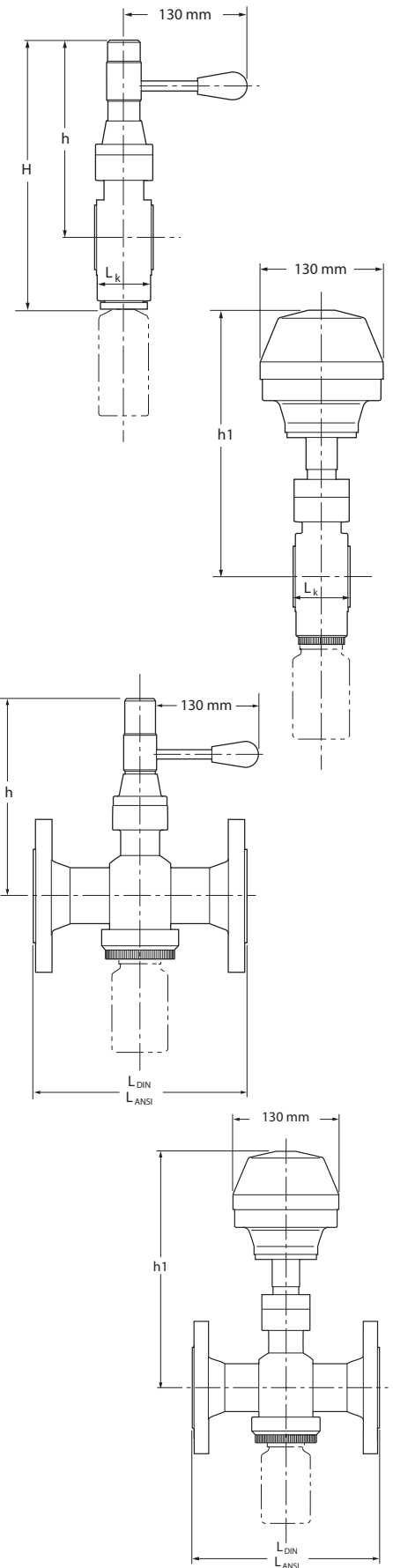
DN	NPS	L _{DIN} mm	h mm	h1 mm	Weight kg
25	1	160	200	291	6.6
40	1½	200	207	299	8.9
50	2	230	212	304	11.0
80	3	310	230	321	18.0

* Standard valve with bottle adapter ISO GL45E, vented and with PTFE spindle seal manual operated.
 h1 When pneumatically operated.
 Face to face DIN PN 16 according DIN EN 558.
 For conductive PFA lined, substitute 7 with 5.

STAINLESS STEEL FLANGED BODY FOR DIN PN 16 AND ANSI 150 FLANGES

DN	NPS	L _{DIN} mm	L _{ANSI} mm	h mm	h1 mm	Weight kg
25	1	160	165	200	291	6.6
40	1½	200	165	207	299	8.9
50	2	230	178	212	304	11.0
65	2½	290	190	223	308	16.0
80	3	310	203	230	321	18.0
100	4	350	229	245	335	20.0

* Standard valve with bottle adapter ISO GL45E, vented and with PTFE spindle seal manual operated.
 h1 When pneumatically operated.
 Face to face DIN PN 16 according DIN EN 558 and ANSI 150 according ANSI B16.10.
 Standard PN 16 rated, optional PN 25 rated.



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WITH BOTTLE COLLECTION METHOD - DESCRIPTION OF OPERATION

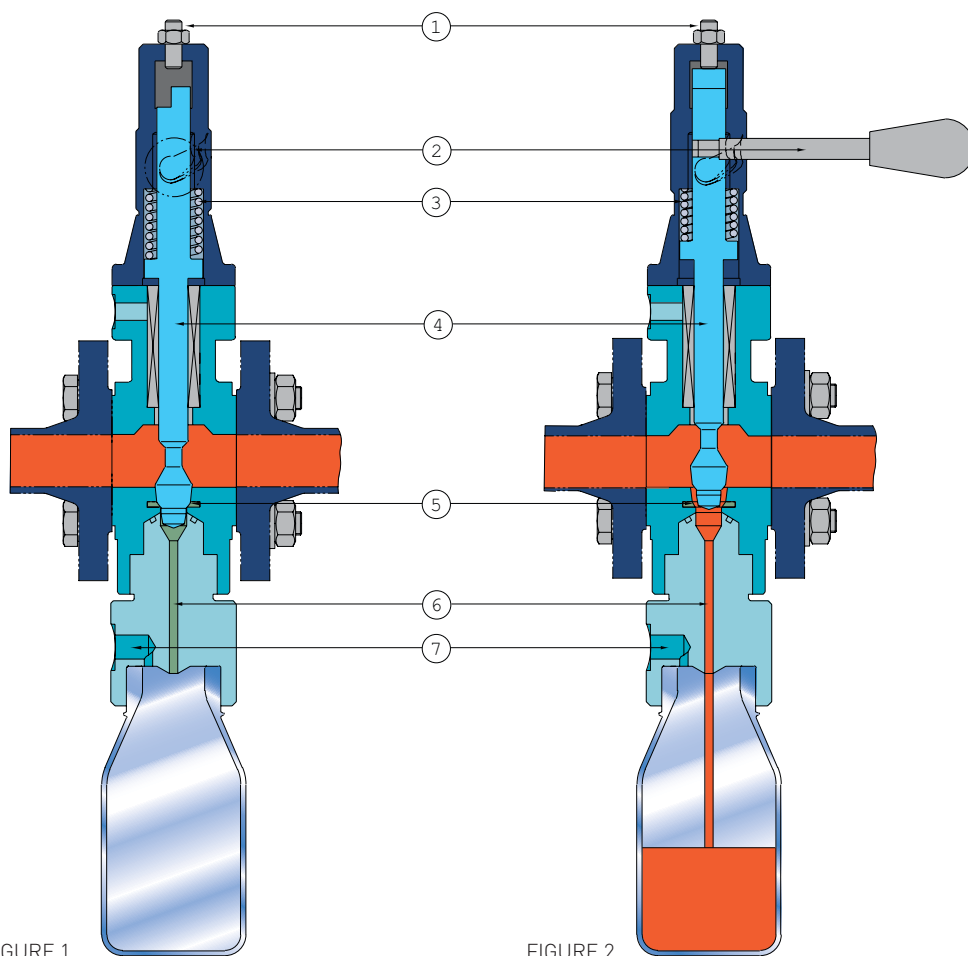


FIGURE 1

FIGURE 2

Figure 1 shows the Sapro valve with bottle in the closed position. The valve spindle (4) is pressed by the spring (3) against the soft seal (5). The soft seal is located between the body and seal retainer to allow easy seat replacement. By operating lever (2) the spindle (4) is lifted by the dead man's lever from the seat (5), so that the medium can enter through port (6) into the bottle.

Figure 2 shows the Sapro in the open position. The stroke of the lever (2) can be adjusted by the travel stop (1). The contoured spindle head allows a smooth and controlled sample flow into the bottle. The air in the bottle is forced out through a ventilation connection (7).

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SAMPLING SYSTEM WITH SYRINGE

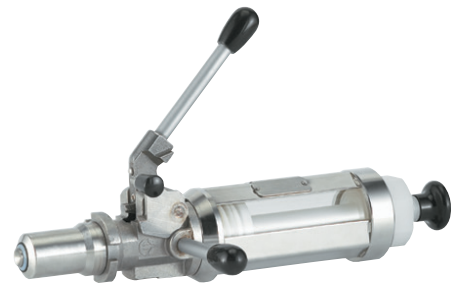
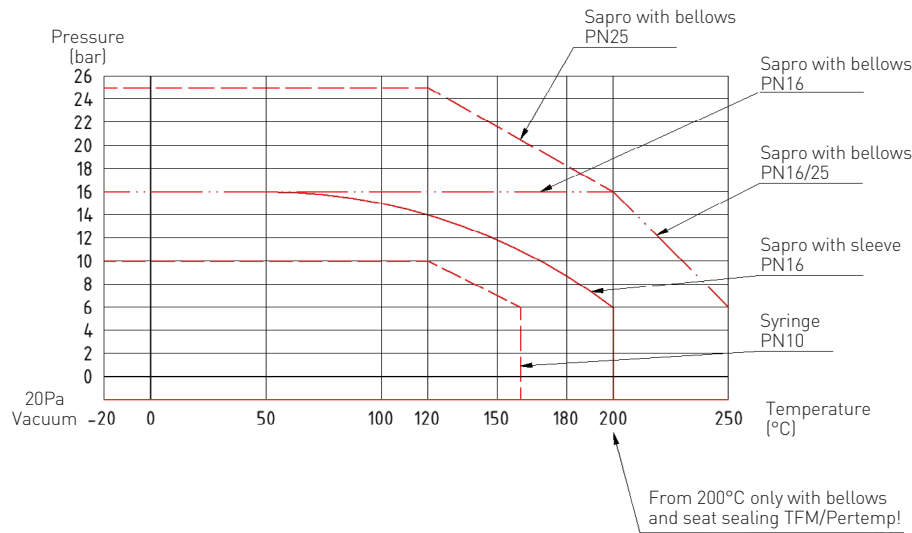
When the number one priority is to have total containment of the sampling medium, we can provide a sampling system with a syringe.

The connection of the syringe is universal and can connect to any size Sapro valve. By utilizing the available syringe, a sample can be taken without exposure to personnel or the environment. With the ever increasing concerns regarding fugitive emissions, the Sapro sampling system with the syringe is an ideal solution when hazardous samples have to be taken.

The syringe serves as both the actuator and the sample container and is available in a variety of materials which can handle highly corrosive media.

Once the sample is taken, the syringe can then be transported to the lab and can be converted to a needle syringe for easy sample transfer.

OPERATING DATA



Material of wetted parts: stainless steel valve

Body	316 stainless steel
Valve spindle	316L stainless steel
Seat retainer	316L stainless steel
Seat seal	Perfluorelastomer
Bayonet coupling	316 stainless steel
Spindle seal	316L stainless steel 2-layer bellows
Safety plug	316 stainless steel with perfluorelastomer

Material of wetted parts: PFA lined valve

Body	316 stainless steel PFA lined
Valve spindle	PFA encapsulated stainless steel
Seat retainer	Ceramic Al ₂ O ₃
Seat seal	Perfluorelastomer
Bayonet coupling	316 stainless steel/Halar coated interior
Spindle seal	PTFE
Safety plug	PTFE

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DIMENSIONS FOR VALVE WITH SYRINGE

PFA LINED WAFER BODY FOR DIN PN 16 AND ANSI 150 FLANGES

DN	NPS	L _k mm	H mm	h mm	Weight kg
25	1	60	245	142	4.0
40	1½	60	260	150	5.1
50	2	60	272	156	6.1
65	2½	60	291	166	8.7
80	3	60	305	174	10.0
100	4	60	331	188	13.7

For conductive PFA lined, substitute 7 with 5.

STAINLESS STEEL WAFER BODY FOR DIN PN 16 AND ANSI 150 FLANGES

DN	NPS	L _k mm	H mm	h mm	Weight kg
25	1	60	245	142	4.0
40	1½	60	260	150	5.1
50	2	60	272	156	6.1
65	2½	60	291	166	8.7
80	3	60	305	174	10.0
100	4	60	331	188	13.7

Standard PN 16 rated, optional PN 25 rated.

PFA LINED FLANGED BODY FOR DIN PN 16 FLANGES

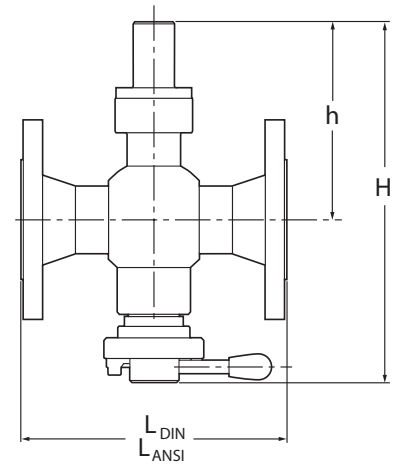
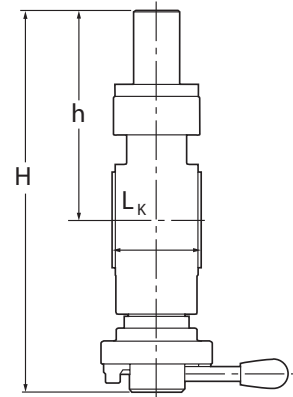
DN	NPS	L _{DIN} mm	L _{ANSI} mm	H mm	h mm	Weight kg
25	1	160	-	245	142	6.6
40	1½	200	-	260	150	8.9
50	2	230	-	272	156	11.0
80	3	310	-	305	174	18.0

Face to face DIN PN 16 according DIN EN 558-1.
For conductive PFA lined, substitute 7 with 5.

STAINLESS STEEL FLANGED BODY FOR DIN PN 16 AND ANSI 150 FLANGES

DN	NPS	L _{DIN} mm	L _{ANSI} mm	H mm	h mm	Weight kg
25	1	160	165	245	142	6.6
40	1½	200	165	260	150	8.9
50	2	230	178	272	156	11.0
65	2½	290	190	291	166	16.0
80	3	310	203	305	174	18.0
100	4	350	229	331	188	20.0

Face to face DIN PN 16 according DIN EN 558-1 and ANSI 150 according ANSI B16.10.
Standard PN 16 rated, optional PN 25 rated.



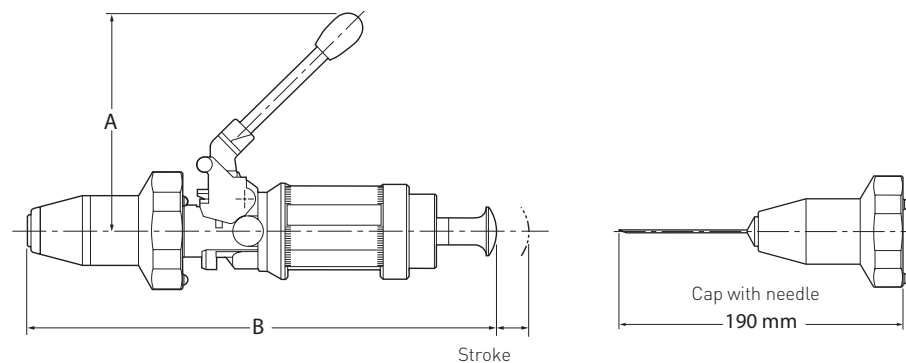
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DIMENSIONS FOR VALVE WITH SYRINGE

SYRINGE WITH CAP

Volume (ml.)	Piston dia. mm	A mm	B mm	Stroke mm	Borosilicate glass		SS 316	Cat.-No.*
					Weight kg		Weight kg	
20	25	140	300	20	1.5		1.9	SK020Z7K1SS00
50	40	140	300	40	1.5		1.9	SK050Z7K1SS00
100	40	140	340	80	1.7		2.1	SK100Z7K1SS00
250	40	140	400	130	2.4		3.0	SK250Z7K1SS00

* Standard syringe = type Z7 with Borosilicate glass and Hastelloy spindle. (Other materials see table below)



MATERIAL OF WETTED PARTS

Part	Material		
	Z7	Z1	Z2
Spindle	Hastelloy	SS 316L	SS 316L
Spindle seal	Perfluorelastomer	Perfluorelastomer	Perfluorelastomer
Piston	PTFE	PTFE	PTFE
Cylinder	Borosilicate	SS 316L	Borosilicate glass
Safety cap	Thermoplastic	Thermoplastic	Thermoplastic
Needle SS	SS	SS	SS

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SYRINGE - DESCRIPTION OF OPERATION

Figure 3 shows the valve and syringe unconnected. Both units can be connected via an universal bayonet interface. The syringe is provided with a safety locking device to prevent operation when not properly connected.

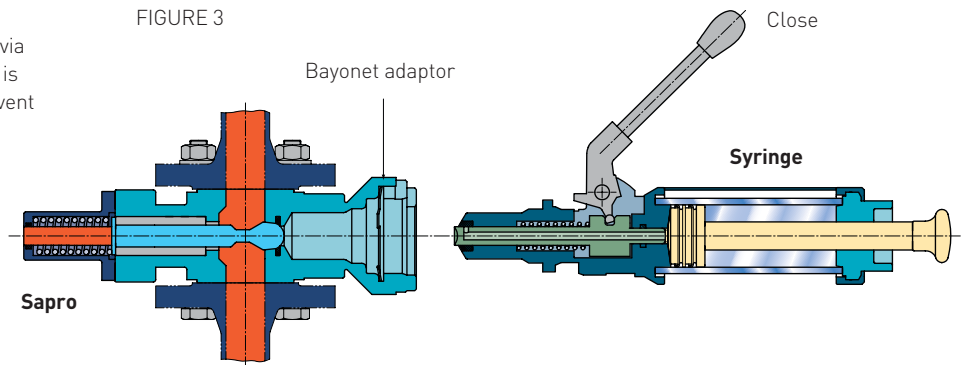


Figure 4 shows the valve and syringe in the closed position. By operating lever (1), the spindle (2) of the syringe lifts the spindle (3) of the valve from the seat (4) thus opening the valve so that medium can enter through port (5) into the syringe (See Figure 5).

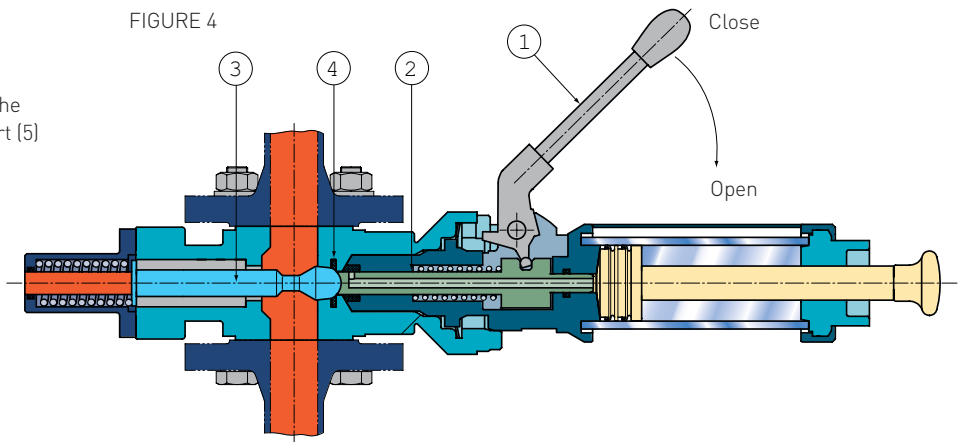
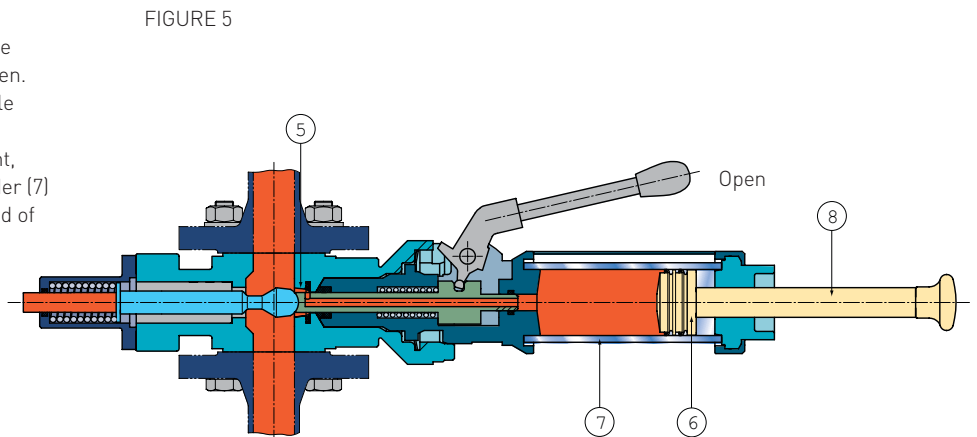


Figure 5 shows the valve and syringe in the open position. The sample can now be taken. If the system is under pressure, the sample will flow into the syringe through port (5) displacing piston (6). If a vacuum is present, the sample has to be pulled into the cylinder (7) by pulling the mushroom cap (8) on the end of the piston.



When the lever is released, the valve and syringe close automatically. For safety purposes, the syringe head cannot be inserted or removed unless it is in the locked position. This will prevent a sample from being taken before the syringe is properly in place. The syringe can be emptied by placing the cap with the needle on to the injector head.

NEOTECHA SAPRO IN-LINE SAMPLING SYSTEMS

ACCESSORIES AND OPTIONS



SAPRO WITH SEPTUM ADAPTOR



SAPRO FLANGED WITH BOTTLE BASKET



SAPRO ASEPTIC SAMPLING SYSTEM



SAPRO WITH BOTTLE SUPPORT



SAPRO WITH SAFETY CABINET



LAB STAND FOR SYRINGE



ASEPTIC TANK SAMPLER



TANK SAMPLER WITH SYRINGE



TANK SAMPLER WITH PLUG

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