



FAMAT
ENGINEERED VALVES

"VALVES IN MOTION..."

SAMPLING VALVES



SWISS QUALITY
ISO 9001 / 2008

SERVOLIFT
Experts In Process, Handling & Design

CONTENTS

DESCRIPTION OF OPERATIONS			4
PATENTED PISTON			5
STANDARD DN50	2" size	125A®	6
TRI-CLAMP EASY CLEAN	2" size	125TC®	7
TRI-CLAMP EASY CLEAN	1" size	130TC®	7
CRUST BREAKING	2" size	125CC®	8
CRUST BREAKING	1" size	130CC®	8
AUTOMATIC TYPE	2" size	125AUT®	9
AUTOMATIC TYPE	1" size	130AUT®	9
NEAR INFRA RED	2" size	125NIR®	10
HIGH-CONTAINMENT	2" size	125OEL®	11
HIGH-CONTAINMENT	1" size	130OEL®	11
METALLIC	2" size	135A®	12
STANDARD 1" unit	1" size	130C®	12
HORIZONTAL SAMPLING VALVE	1" size	130H®	13
45° ORIENTED SAMPLING VALVE	1" size	130C® 45°	13
TECHNICAL DATA			14
DIMENSIONS			15
CLEANING/PURGING STERILIZATION			16
FLANGE CONNECTION			17
OUTLET COUPLING			18
BOTTLE (CONTAINER)			19, 20
PISTON/POLISHING			21
ACCESSORIES			22
CERTIFICATIONS/CONTACT			23

Since 1974 FAMAT has been developing and manufacturing valves for applications in all demanding industries, such as :

Water Works

Power Generation

PetroChemical

Oil and Gas

Pharmaceutical and Chemical

Cosmetics



For the **Pharmaceutical and Chemical industries**, FAMAT supplies a complete range of products and services allowing the sampling of products in the best conditions of efficiency in terms of the quality of the samples, total security, and cleanliness.

With its impressive references in the **Pharmaceutical and Chemical** production business (SANDOZ, NOVARTIS, MERCK, BIO-MERIEUX, PFIZER, BASF, GLAXO...) FAMAT is able to provide you the sampling solution you need...

FAMAT has today offices and distributors in most major countries in Europe, Middle-East, Asia and all of North America (SERVOLIFT). This global network allows FAMAT a close cooperation with our customer's and end-users, to guarantee a full satisfaction at all levels of the supply chain.

FAMAT SA is certified ISO 9001-2008. It's procedures guarantee the best services and quality.

FAMAT SA
Chemin des Jordils 40
1025 St-Sulpice
🇨🇭 Switzerland

DESCRIPTION OF OPERATIONS

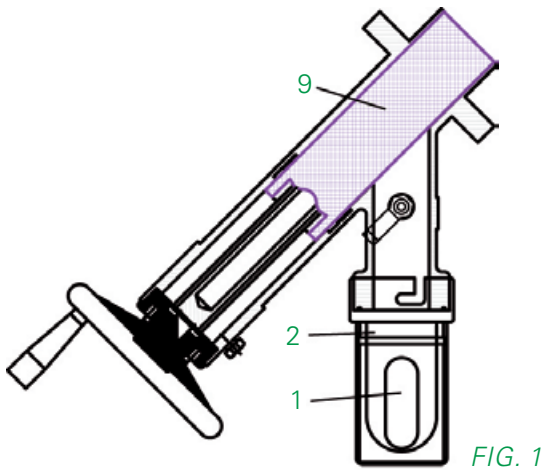


FIG. 1

CLOSED POSITION

The piston is flush fit to the wall of the reactor or dryer leaving no dead space (FIG. 1). A perfect seal is formed directly by the piston (9) against the body of the valve.

SAMPLING PROCEDURE

Turn the handwheel counter clockwise to lower the piston (9) to its open position.

While the product flows down into the sampling bottle (2), the operator can check the desired quantity of the product through the sight glass (1) (FIG. 2).

Turn the handwheel clockwise to bring back the piston (9) in its closed position. *A firm final turn of the handwheel will give reliable sealing and no dead space.*

Equalize the pressure (or vacuum) in chamber (V) by opening the valve (25).

Remove the sampling bottle (2) on its quick coupling connection (FIG. 3).

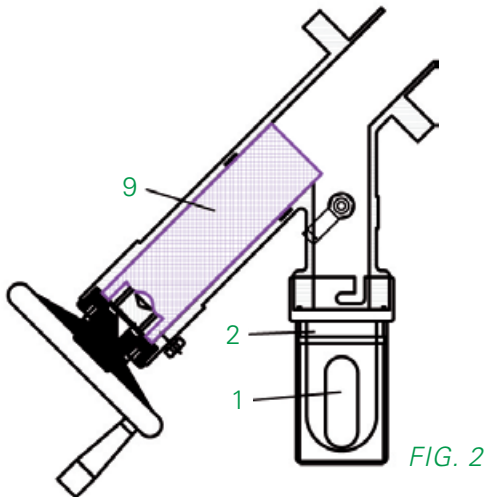


FIG. 2

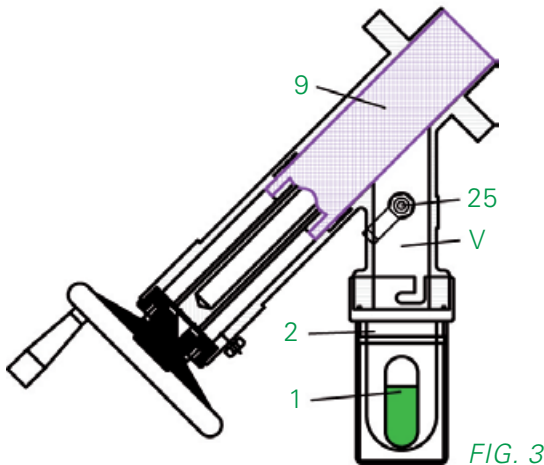


FIG. 3

PATENTED PISTON

E.P. TECH CONCEPT



In closed position, sealing is formed directly by the piston on the inside wall of the valve, without the need of a gasket.

The patented system inside this piston allows the PTFE to expand and insure a perfect tightness from vacuum up to 10 bar (145 psi).

The advantage of having an expendable piston inside the valve is to eliminate the need for O-rings that can be damaged during valve operation.

In this position, the piston will be flush with the connection point, leaving no dead space.

STANDARD 125A®

2" size



FIG. 1

Type 125A is the standard 2" sampling valve by Famat (FIG. 1).

Used for sampling applications of powders, granules, pastes and liquids under process conditions in the pharmaceutical, chemical and food industries.

Pressure from full vacuum up to 10 bar (145 psi).

Temperature from -20°C (-4°F) up to 180°C (360°F).

In standard configuration, the internal roughness is $Ra \leq 0.8 \mu\text{m}$ and the external is $Ra \leq 3.2 \mu\text{m}$.



TRI-CLAMP EASY CLEAN 125TC®

2" size

For EASY cleaning between batches



FIG. 1



FIG. 2

This sampling valve has one Tri-Clamp (TC) 2.5" near the handwheel (FIG. 1).

Called "EasyClean", the piston can be removed from the valve housing with the minimum of effort allowing full cleaning as shown on the picture (FIG. 2).

Please note, the dryer or the vessel has to be empty for this procedure. For CIP options (Cleaning In Place), please refer to page 16.

TRI-CLAMP EASY CLEAN 130TC®

1" size



1" version with a 1.5" tri-clamp near the handwheel.

CRUST BREAKING 125CC[®] 2" size



This valve is used for products which could plug inside the dryer or vessel and block the piston. To eliminate the risk of this impeding product flow into the sampling valve, Famat has developed the 125CC (FIG. 1). With this kind of valve type, the crust will be broken by the piston before the sample is taken.

1. Remove the security device.
2. Turn the red handwheel clockwise to move the piston into the dryer to break the crust as shown on the picture (FIG. 2).
3. Once the crust has been broken. Proceed with the standard sampling (page 4) with the black handwheel to get the sample inside the bottle.

Caution

Make sure to engage the security device in the red handwheel and as soon as possible to secure it with the lock to avoid any contact with the mixer or blades when bringing back the piston in its closed position.

The outlet length can be adapted on request.



CRUST BREAKING 130CC[®] 1" size



1" version.

AUTOMATIC 125AUT®

2" size

Standard sampling valve with a double acting actuator (FIG. 1).

ACTUATOR

Operating pressure: 4 to 10 bar
(58 to 145 psi)

Mode of operation: Double-acting

Pneumatic connection: 1/8"

PROXIMITY SENSOR

Measuring principal: Inductive



FIG. 1

AUTOMATIC 130AUT®

1" size

1" Version.



1" Version.

NEAR INFRA RED 125NIR®

2" size



FIG. 1

At the top of the piston, the 125NIR valve (*FIG. 1*) has a scraper which allows installation of a fiberoptic probe (*FIG. 2*).

This probe, ideally located, will measure several parameters such as *temperature, pH, humidity... and/or composition* of the product before taking the sample.

A second hole, on the scraper (*FIG. 2*), is made nearby the fiberoptic probe for the cleaning system (Nitrogen) as shown on the picture. The measuring probe (not shown on picture) is cleaned through a nozzle with Nitrogen.



FIG. 2

HIGH CONTAINMENT
2" size

125OEL®



Toxic products

To achieve a high containment of products during sampling operation is not easy. The 125OEL high containment sampling device allows you to do it.

The OEL (Operator Exposure Limit) describes the maximum concentration of a drug substance which can be tolerated in the air of the production room without any negative effect to the health of the operators.

OEL level we can offer:

- $< 1 \mu\text{g}/\text{m}^3$

Container capacity: 250 ml (# 16 cu in)

Tri-clamp connection: DN 50 - 2.5"

ADVANTAGES

*Quick dismantling for cleaning
(without tools) - incl. a cleaning device*

Compact dimensions

No dead volumes

AndockSystem split Valve

HIGH CONTAINMENT
1» size0

130OEL®

DN25 Version available soon.

METALLIC 135A®

2" size



FIG. 1

The 135A sampling valve (FIG. 1) is equipped with a metallic piston (Stainless Steel or Hastelloy) for sampling process up to 330°C (572° F). FDA certified up to 260°C.

Unlike the PTFE or PEEK piston, the metal piston has a high temperature gasket around it.

To avoid any damage when closing the piston, the gasket is recessed into the piston and seals against the valve cylinder wall making contact only after the final sealing turn of the handwheel. Tightness from vacuum up to 10 bar (145psi).

STANDARD 130C®

1" size



The design is similar to the 2" range with, as always, the patented expansion system for perfect sealing tightness.

Pressure from full vacuum up to 10 bar (145psi).

Temperature from -20°C (-4°F) up to 180°C (360°F).

In standard configuration, the internal roughness is $Ra \leq 0.8 \mu m$ and the external is $Ra \leq 1.6 \mu m$.

HORIZONTAL "THIEF" SAMPLING 130H[®]

1" size



The 130H is a new product dedicated to the horizontal powder sampling such as would be installed into a vertical chute.

The piston is intrusive and takes the sampling with special shaped chamber.

The Technology used for the piston is the same as the standard patented expandable piston, ensuring tightness without gasket and no dead zone (except the sample chamber).

45° ORIENTATED SAMPLING VALVE 130C 45°[®]

1" size



The 130C 45° is a variant of the standard 130C.

The body and the outlet are at 45° orientated for optimum flow and easy sampling.

The flange of the body is at 45° orientated relative to the sampler, which ensures, combined with the 45° outlet, to have the bottle in a vertical position.

In this configuration, the reactor with the help of the blades is pushing the product directly in the sampler.

TECHNICAL DATA

MATERIAL STANDARD

Sampling Valve

Bottle (container)

	Stainless Steel 1.4435 (316L) Hastelloy (C22) 2.4602	PTFE (reinforced with glassfibers) FDA	PEEK (PolyEther EtherKetone) FDA	Perfluoroelastomer FFKM Viton (FEP) FDA	Borosilicate 3.3
Body / Flange / Coupling	■				
Piston	■	■	■		
Gaskets				■	
Sight Glass					■

Remark: special material and special options on request

HCB

High-Containment

(p. 11)

Body / Coupling	■		■		
Piston	■				
Gasket		■		■	
Sight Glass					■

■ All valves are equipped with Purging Valve ¼" G or ½" Ferrule and Handwheel in Aluminium or Thermoplast

WEIGHT

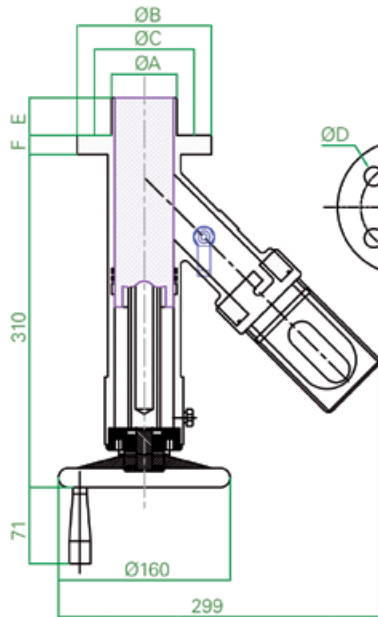
	125A	125TC	125CC	125AUT	125NIR	125OEL	135A	130C	130TC	130CC	130OEL	130H	130C 45°
kg	10	11	14	13	15	18	13	4	4	7.4	10.8	7.2	4
lbs	22	24	31	28	33	39.6	28	8.8	8.8	16.28	22	15.84	8.8

PRESSURE / TEMPERATURE

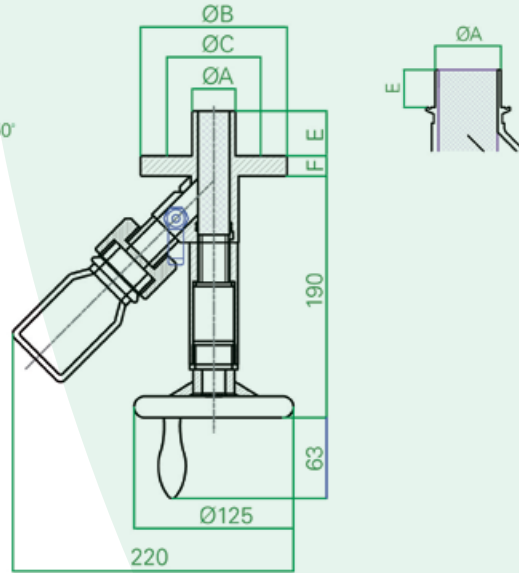
Full vacuum, up to 10 bar (145 psi) for all valves.

-20°C / -4°F, up to 180°C / 360°F for all valves, except type 135A: up to 300°C / 572°F

DIMENSIONS



2" Type 125



1" Type 130

Type	[millimeters]	A	B	C	NB	D	E	F
2" size Type 125	FD (Famat-DIN)	61 ⁺⁰ _{-0.05}	125	100	4	13	35	18
	ND (DIN 50 (2" size))	61 ⁺⁰ _{-0.05}	165	125	4	18	35	21
	FA (FAMAT ANSI)	61 ⁺⁰ _{-0.05}	127	98.4	4	15.9	35	18
	NA (2" 150 lbs ANSI/ASME)	61 ⁺⁰ _{-0.05}	152.4	120.6	4	19	35	18
	TC (TRI-CLAMP 2½")	60 ⁺⁰ _{-0.05}					35	
1" size Type 130	FD (PN10 - DN25)	34 ⁺⁰ _{-0.05}	115	85	4	14	35	16
	NA (1" 150 lbs ANSI/ASME)	34 ⁺⁰ _{-0.05}	107.9	79.4	4	15.9	35	16
	TC (TRI-CLAMP 1½")	34 ⁺⁰ _{-0.05}					35	

Remark: 1 inch = 25.4 mm

On request: The valve and flange dimensions can be adapted (if possible attach a drawing with your enquiry).

CLEANING / PURGING **STERILISATION**



By placing 2 cleaning valves on the body, the solvent will clean/sterilize around the piston, the outlet and the bottle which is also equipped with a valve.

Once flushing is complete, the chamber is dried by nitrogen through the same cleaning valves.



Purging/cleaning valve ¼" G in stainless steel



Purging/cleaning valve Tri-Clamp in stainless steel

Standard
0.5"

FLANGE CONNECTION



Special connection point

On request



DIN/ANSI Norm as requested



Tri-clamp connection

Standard



Without nozzle

The piston will tighten and will expand directly connexion on itself inside the reactor housing.



O-ring on the connection point

For dimensions of the nozzle (page 19) length and diameter of the nozzle can be customized.

OUTLET COUPLING



Bayonet coupling



Tri-clamp coupling

Standard ISO 2852

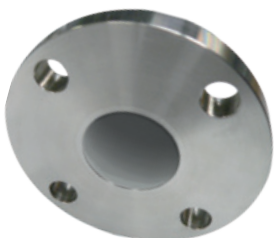


Food coupling

Standard DN 50



GL 45 coupling



*DIN/ANSI Flange
(if used as a tank bottom valve)*

BOTTLE (CONTAINER)



Type B101
Bottle with bayonet coupling



Type B101 - TC
Bottle with Tri-Clamp coupling
Standard 2.0"



Type B101 - RL
Bottle with food coupling
Standard 2"



Type B105 - Glass Bottle
Bayonet - GL 45

A Metallic protection can be added.
Size: 50 ml (3 cu in), 100 ml (7 cu in),
250 ml (15 cu in), 500 ml (30 cu in).

BOTTLE (CONTAINER)



Type B102

Bottle with bayonet coupling

2" version

Shock resistant system.



Type SB102

Bottle with bayonet coupling

1" version of B102

Shock resistant system.



Type B102 - TC

Bottle with Tri-Clamp coupling

Standard 2.0"

Shock resistant cleaning system.



Type B109

Sight glass

Standard 2.0"



*Security lock
available in option
on all bottles*

PISTON



Type P925

Piston in PTFE reinforced with glassfibers



Type P935

Piston in PEEK



Type P922

Piston in GFK-reinforced PTFE with metallic scraper.

Recommended for abrasive or sticky products.

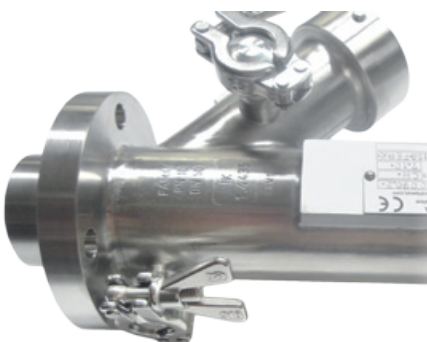


Type P909

Metallic piston for high temperature up to 300°C (# 572° F)

FDA certified up to 260°C.
Sampling valve 135A, (page 12).

POLISHING



Standard internal polishing for 2" size = 0.8 mm.

Standard external polishing for 2" size = 3.2 mm.

Standard internal polishing for 1" size = 0.8 mm.

Standard external polishing for 1" size = 1.6 mm.



ACCESSORIES



Handwheel in aluminium



Handwheel in stainless steel



Handwheel in plastic with number of turns indicator



Limit switch



Bottle cover



Valve Body cover

CERTIFICATIONS



PED



SERVOLIFT

Experts In Process, Handling & Design

SERVOLIFT L.L.C.
105-B West Dewey Ave
Wharton, NJ 07885
USA
T. 973-442-7878
info@servo-lift.com | www.servo-lift.com

FAMAT SA
Chemin des Jordils 40
1025 St-Sulpice
 Switzerland
T. +41 (0)21 695 26 26
info@famat.com | www.famat.com