

PFA – lined Sampling Valve Series 27d / Series 27e

Application

Tight-closing cavity-free inline PFA-lined valve designed to sample liquids from flowing media without bypass. Particularly suitable for aggressive media in process plants:

- nominal diameters DN 25 and DN 50,
- nominal pressure PN 10/16
- temperatures -10°C to 200°C.

The **discontinuous** sampling valve **Series 27d** has the following characteristics:

- sampling with a defined sample volume from a material flow,
- diverse sample volumes,
- in the case of liquid media, depressurised sampling and therefore sampling from pressures to 16 bar and from vacuum permissible,
- no fore- and no after-running,
- no risk of overflow as the sample volume is determined per stroke,
- no direct connection to the environment,
- no false operation due to long opening times.

The **continuous** sampling valve **Series 27e** offers the following features:

- sampling with a variable sample volume from a material flow,
- sampling also possible under pressure to 16 bar,
- as standard with dead man's handle

Both valves consist of a sampling valve and a pneumatic quarter-turn actuator or a hand-lever resp. dead man's handle.

This modular design has the following characteristics:

- body of GGG 40.3 with PFA lining,
- ball / shaft of WN 1.4021 with PTFE coating,
- representative sampling due to the direct installation in the pipeline,
- no necking resp. abrasion of the pipeline during sampling,
- venting resp. control connection 1/4"
- sealing shells for a sampling without cavity,
- the sampling valve has a connection as per ISO 4796 DIN thread GL 45,
- ball stem sealing by means of a cup spring pre-loaded PTFE packing.
- connection as per DIN / ISO 5211
- face to face as per DIN EN 558-1, row 1



Fig. 1 - Sampling valve Series 27d / Series 27e

Sampling Valve Series 27d / 27e

Designs:

PFA-lined sampling valve available in the following designs:

- with hand lever (BR 27d),
- automatic with 180° turn actuator (BR 27d),
- with dead man's handle (BR 27e),
- automatic with quarter-turn actuator (BR 27e),
(for details see respective data sheet).

Special designs

- diverse materials for ball and sealing ring,
- heating jacket

Options and add-on components:

For the sampling valve, the following accessories are available individually or in combinations:

- protective box in stainless steel,
- special gas chamber exhaust,
- pneumatic switchbox for automation,
- support in protective box for an easy change of bottles,
- pneumatic timer,
- counter
- special flushing devices,
- pneumatic overflow control,
- adapter for locally employed sample containers,

other add-on parts are available as per specification on request

General technical data:

Nominal size	DN 25 to DN 50
Nominal pressure	PN 10/16
Temperature range	-10°C up to 200°C
Leakage rate	Leakage rate A acc. to DIN EN 12266-1, P12 (Leakage rate 1 BO acc. to DIN 3230 Part 3)
Flange connections	all DIN - Versions
Bottle connection	GL 45 acc. ISO 4796

Table 2 – Technical data

Materials:

Body	EN-JS 1049 (GGG 40.3) / PFA
Ball with shaft	WN 1.4021 / PTFE
Sealing ring	PTFE
Sealing ring inlet	PTFE
Stuffing box packing	PTFE - V-ring-packing with cup springs of WN 1.8159, Delta Tone
Bearing bushing	PTFE with carbon
Coating	PVC black (RAL9005)
Sample bottle	glass

Table 3 - Materials (WN = Material code)

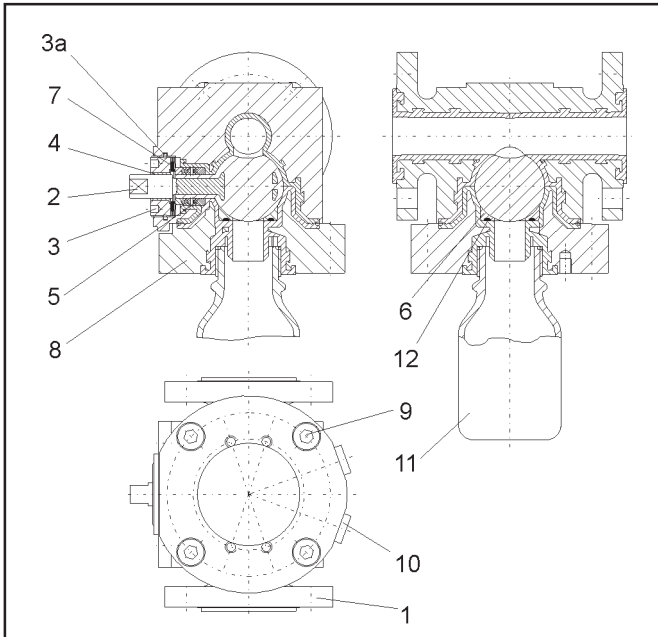


Fig. 2 - discontinuous Sampling Valve Series 27d

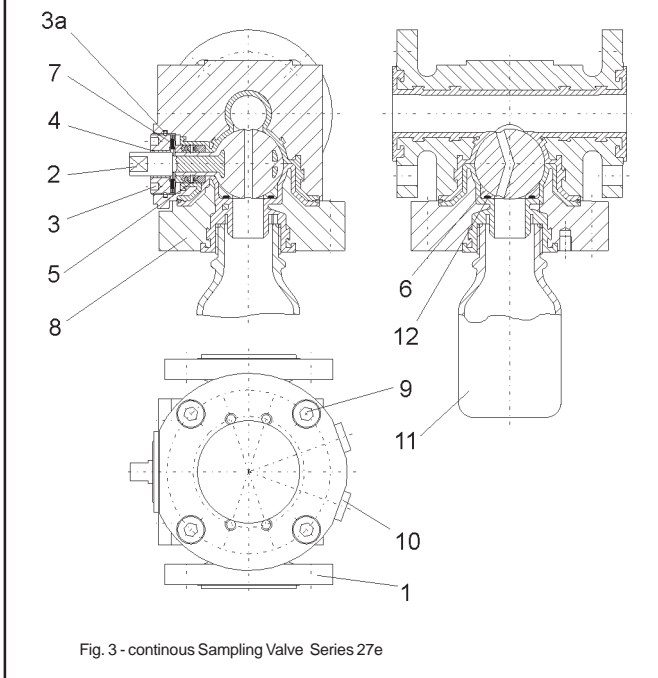


Fig. 3 - continous Sampling Valve Series 27e

Item	Description	Item	Description
1	Valve body	7	Spring washer
2	Ball	8	Bonnet
3	Stuffing box	9	Screw
3a	Retaining ring	10	Locking screw
4	Bearing bushing	11	Sample bottle
5	V-ring packing	12	O-ring
6	Sealing ring		

Table 1 – Parts list

Description of the valve:

The sampling valve is installed in the product pipeline by means of flanges and permits bi-directional flow.

Due to the concave milling-out of the ball (2), there is no necking in the area of the medium flow.
The ball is surrounded on all sides by tight-closing sealing (6) elements.
The sealing of the ball is by means of an exchangeable PTFE sealing ring. This can also be specially adapted to the medium.

The ball (2) is bearing-mounted and rotatable around the shaft.

The outward-leading stem is fitted as standard with a hand lever resp. dead man's handle.
The connection according to DIN-ISO 5211 permits the fitting of an actuator.

The sealing of the stem is ensured by means of a PTFE packing (5). The packing is maintenance-free pre-loaded via cup springs (7).

The sample bottle (11) has a connection in accordance with ISO 4796 thread GL 45.
Customer-specific adapters for other connections can also be offered.



Caution: Particular attention must be paid to the fact that only temperature-adapted vessels are employed for sampling!



Caution: In case of media temperatures above 60°C, safety precautions are to be taken due to the risk of scalding.



Note: The generally valid regulations for prevention of accidents when taking samples are to be strictly observed!



Note: Please, pay attention to the usability acc. to the ATEX 94/9/EG in correspondance to the maintenance sheet before using the ball valve in hazardous area!



Note: Due to the fact of continuous sampling there is a risk to overfill the sample bottle. This demands the use of death man's handle to operate the valve. This secures to stop flow off product immedietly with end off manual operation.

Pressure - Temperature - Diagram:

The operating range is determined by the pressure - temperature - diagram. Process data and media can influence the values of the diagram.

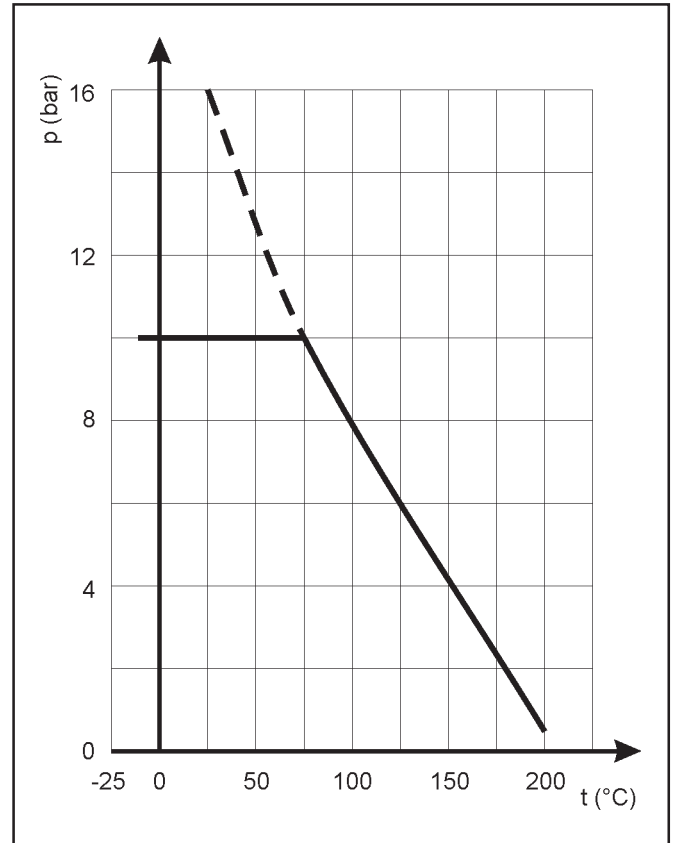


Fig. 4 - Pressure-Temperature Diagram

Operating and breakaway torques:

Differential pressure Δp in bar		0	5	10	16
DN	perm. operating torque M_{Dmax} in Nm	139	12	breakaway torque M_{d} in Nm	
	req. operating torque M_d in Nm				
25 up to 50		20	26	32	39

Table 4 - max. permissible operating torque, required operating torques and breakaway torques.

The breakaway torques indicated are average values which were measured at the appropriate differential pressures with air at 20°C. Operating temperature, medium as well as longer periods of operation can lead to a notable change in breakaway and operating torques.

The listed max. permissible operating torques are valid for the standard materials in table 3.

Dimensions and wights:

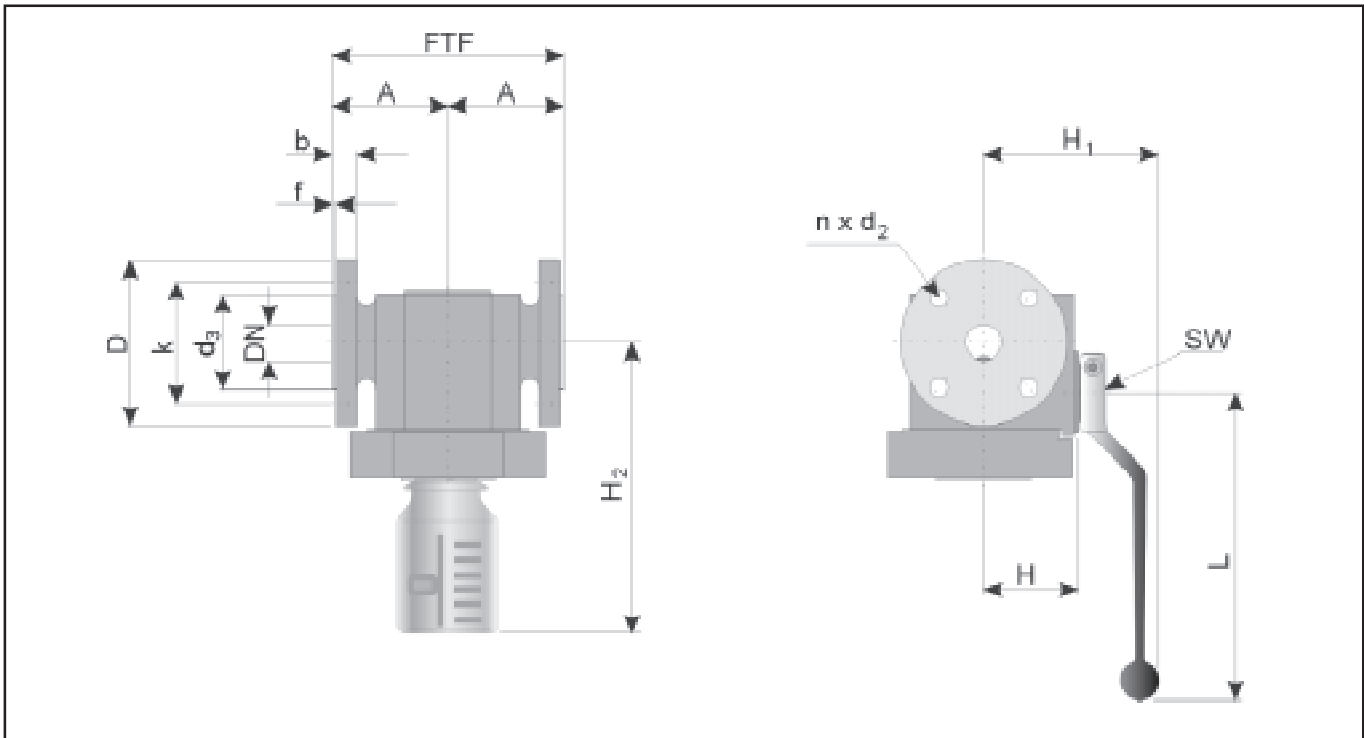


Fig. 5 – Sampling valve

DN		25	50
FTF		160	230
A		80	115
D		115	165
k		85	125
d3		65	102
b		17	20
f		2,5	3
n x d2		4 x 14	4 x 18
H		65	65
H1		140	140
H2	Sample bottle 100 ml	175	188
	Sample bottle 250 ml	215	228
	Sample bottle 500 ml	255	268
	Sample bottle 1000 ml	305	318
L		220	220
SW		12	12
DIN / ISO Connection		F07	F07
Weight in kg		10,5	14

Table 5 - Dimensions in mm and wight in kg

Selection and sizing of the ball valve:

1. Determination of the required nominal diameter
2. Selection of the valve in accordance with table 2, table 3 and the pressure-temperature-diagram.
3. Choice of the appropriate actuator in accordance with table 4.
4. Additional equipment.

Order text:

Sampling valve Series 27d / Series 27e
 DN / PN poss. special design
 Possible sampling volumes.,
 Hand lever resp. dead man's handle or automation,
 Medium, temperature, viscosity,
 Property, sampling vessel connection,
 Additional equipment,
 Other,

For your special requirements please contact our technical sales department

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Specifications subject to change without notice