

Stainless Steel Sampling Valve Series 27h

Application

Tight-closing cavity-minimized valve designed to sample from liquid media. Particularly suitable for aggressive media, especially for vessels:

- outlet nominal diameters DN 50 to DN 150, and 2" to 6"
- nominal pressure PN 16 as well as ANSI 150 lbs
- temperatures -10°C to 200°C.

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

- sampling with a defined sample volume from a vessel,
- diverse sample volumes
- in the case of liquid media, depressurised sampling and therefore sampling at high pressures 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 valve consists of a sampling valve and a pneumatic quarter-turn actuator or a hand-lever.

This modular design has the following characteristics:

- variable inlet and oblique assembly of the ball provide an optimal cavity-minimized design,
- especially suitable for mixing vessel,
- body, ball and shaft of corrosion-resistant steel,
- representative sampling due to the direct installation to the vessel,
- venting resp. control connection 1/8"
- 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
- continuous sampling is optionally available

The optional **continuous** sampling valve **Series 27h** has the following characteristics:

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

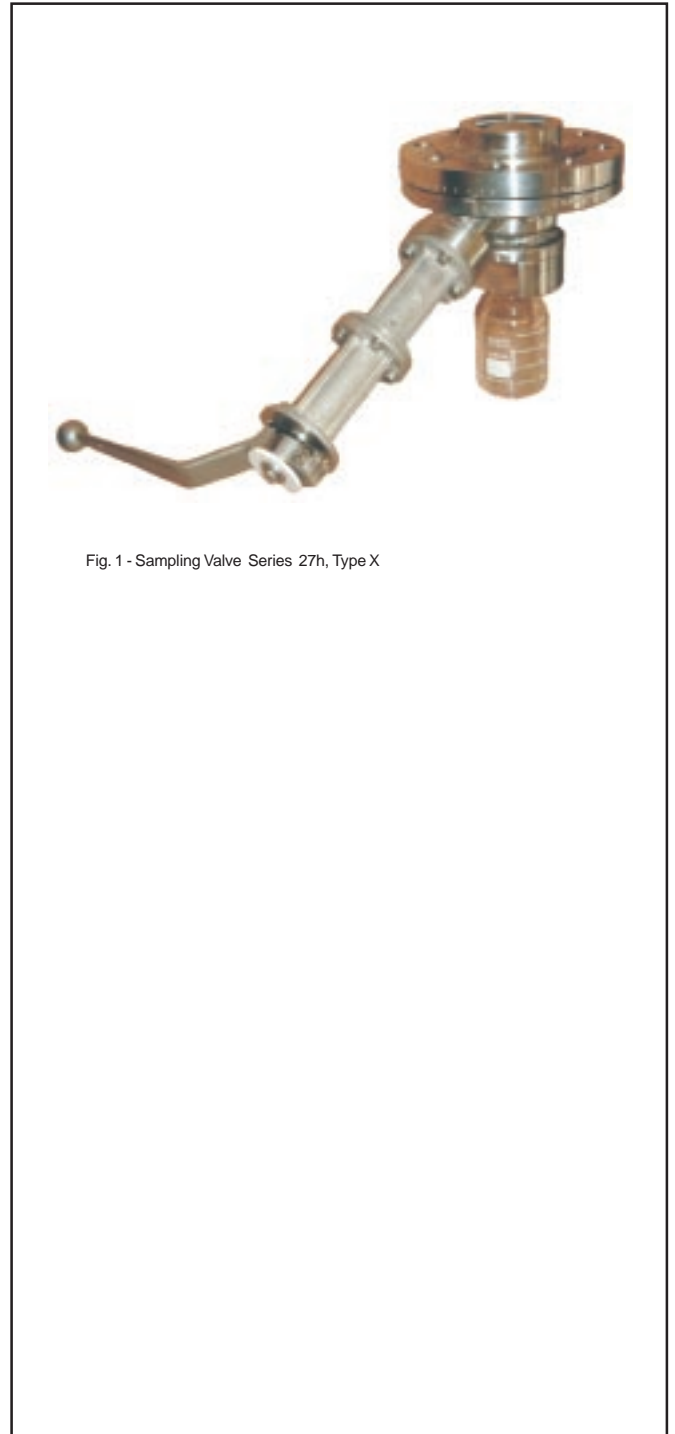


Fig. 1 - Sampling Valve Series 27h, Type X

Sampling Valve Series 27h

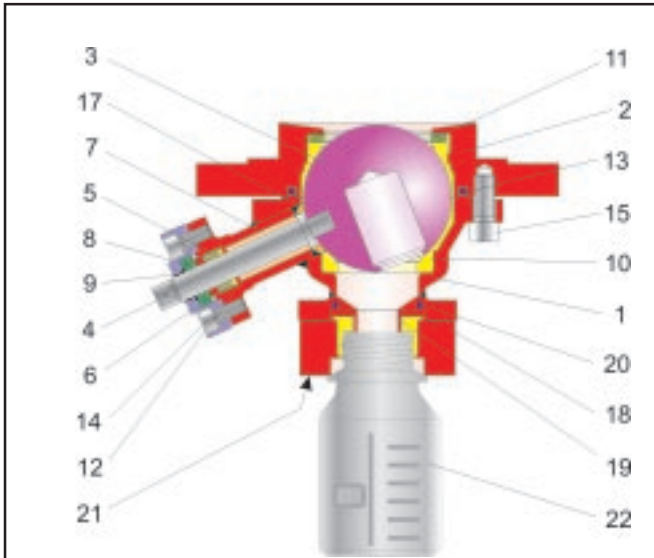


Fig. 2 - discontinues Sampling Valve - Type X

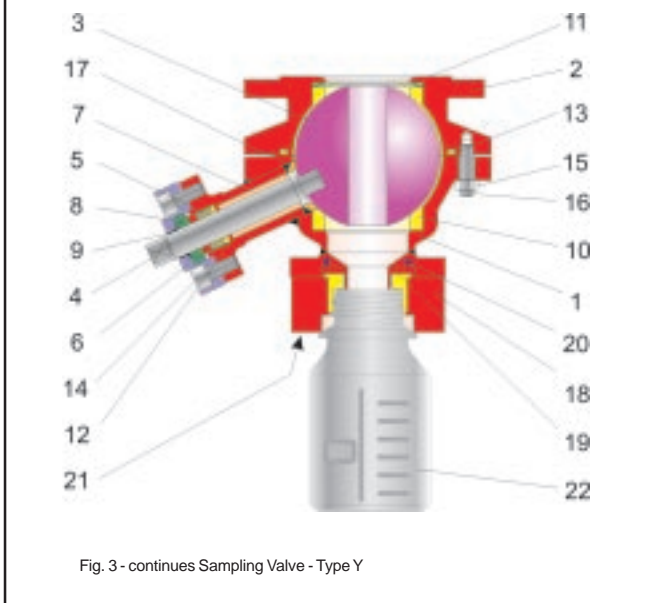


Fig. 3 - continues Sampling Valve - Type Y

Designs:

Stainless steel sampling valve available in the following designs:

- with hand lever (discontinuous),
 - automatic with 180° quarter-turn actuator (discontinuous),
 - with dead man's handle (continuous),
 - automatic with 90° quarter-turn actuator (continuous),
- (for details see respective data sheet).

Special designs

- body and ball of special materials (e. g. Hastelloy),
- special face to face sizes
- heating jacket,
- high pressure version
- high temperature version
- body with flushing connections

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 outlet	DN 50 to DN 150 as well as 2" to 6"
Nominal pressure	PN16 to PN40 as well as ANSI 150 lbs
Temperature range	see Pressure-Temperature diagram
Ball sealing	TFM (PTFE)
Leakage rate	Leakage rate A acc. to DIN EN 12266-1, P12 (Leakage rate 1 BO acc. to DIN 3230 Part 3)
Flanges	all DIN-Versions, ANSI 150 lbs on request
Bottle connection	GL 45 acc. to ISO 4796

Table 2 – Technical data

Item	Description	Item	Description
1	Body outlet	12	Thrust washer
2	Body inlet	13	Body sealing
3	Ball	14	Screw
4	Control shaft	15	Screw / Stud bolt
5	V-ring packing	16	Nut
6	Stuffing box flange	17	Ring
7	Bearing bushing	18	Bonnet
8	Set of spring washers	19	Funnel
9	Bearing bushing	20	O-ring
10	Seat ring	21	Screw
11	Spring washer	22	Sample bottle

Table 1 - List of parts

Materials:

Body	1.4571 / 1.4408
Ball	1.4408
Control shaft	1.4571 / 1.4462
Seat rings	TFM (PTFE)
Stuffing box packing	PTFE - V-ring packing with spring washers in WN 1.8159
lower bearing bushing	PTFE with glass
upper bearing bushing	PTFE with carbon
Body sealing	PTFE
Sample bottle	Glass

Table 3 - Materials

Description of the valve:

The sampling valve is fitted to the bottom flange of the vessel by means of flanges.

The ball is surrounded on all sides by tight-closing sealing (10) 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 (3) 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 (8).

The glass vessel (20) 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 medium can influence the values of the diagram.

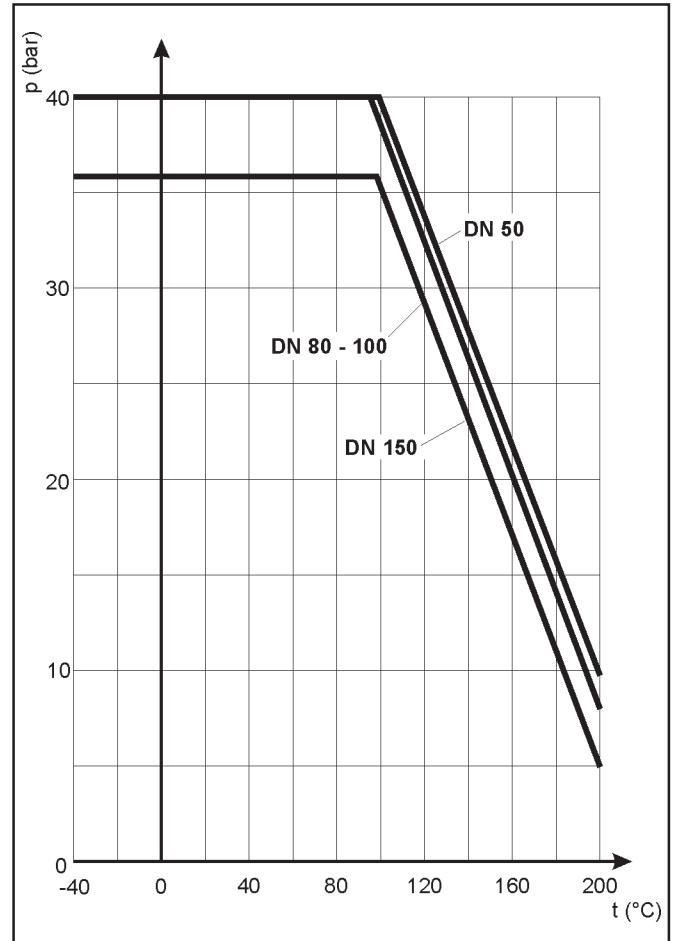


Fig. 4 - Pressure-Temperature-Diagram

Operating and breakaway torques:

Differential pressure Δp in bar		0	2	4	6	8	10
DN	perm. operating torque MDmax. in Nm	required operating torque Md in Nm	breakaway torque Mdl in Nm				
50 / 2"	134	20	30	34	39	43	48
80 / 3"	419	60	86	98	110	121	133
100 / 4"	577	95	138	157	176	195	214
150 / 6"	1435	190	270	309	349	387	427

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.

Dimensions and weights:

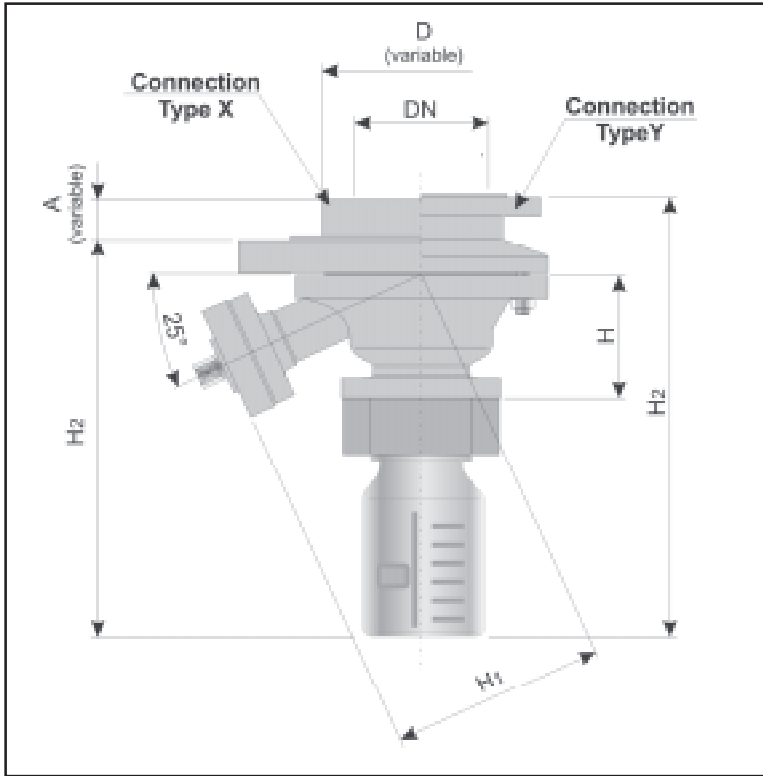


Fig. 5 – Dimensional drawing

DN - inlet	50 2"	80 3"	100 4"	150 6"	80 3"	100 4"	150 6"	200 8"	100 4"	150 6"	200 8"	150 6"	200 8"	250 10"	
Type	Y	X	X	X	Y	X	X	X	Y	X	X	Y	X	X	
H	115				155				175				240		
H1	130				158				179				246		
H2															
A (variable)	-	35	35	40	-	35	40	40	-	40	40	-	40	40	
D (variable)	-	94	129	179	-	129	179	199	-	179	199	-	233	249	
DIN ISO Connection	F 05				F 07				F 07				F 10		
Weight	20	17	17	19	36	36	35	38	51	43	45	105	112	150	

Table 5 - Dimensions in mm and weights in kg

Standard design, further designs in accordance with the respective vessel brackets are possible

Selection and sizing of the bottom drain valve:

1. Determination of the required nominal diameter
2. Choice of the connection in accordance to the specified vessel brackets
3. Check the application with respect to the pressure-temperature-diagram.
4. Choice of the appropriate actuator in accordance with table 4.
5. Additional equipment.

Order text:

Sampling valve Series 27h,
 DN / PN design ,
 Possible special version
 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