Diaphragm Valve type 317

Product description

Diaphragm Valve type 317 is distinguished in particular by its compact, short design, and is available in the dimensions DN65 to DN150.

Type 317 is connected to the piping by means of flanges.

GF Piping Systems offers the option of using a lockable handwheel in order to make the process even safer. This is an important and useful function for all areas of application of diaphragm valves.

For automated plants, the valves are also available with pneumatic actuator of the DIASTAR type.

Function

Diaphragm valves from GF Piping Systems are used for regulating, controlling as well as closing monitoring volume flows. Especially when transporting contaminated, aggressive or abrasive media, this type of valve has decisive advantages thanks to its simple function and optimized construction. Only the valve body and the diaphragm come into contact with the medium.

Applications

- Controlling pure and ultrapure media
- Applications with high viscosity and solid content
- Chemical dosing
- Water treatment

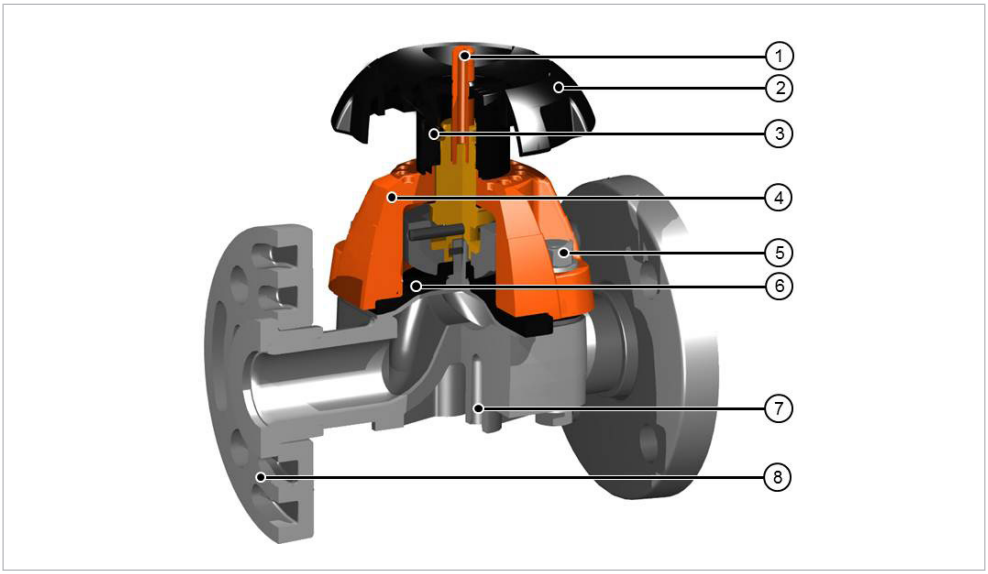
Benefits/features

- Reliable plastic valve for controlling neutral, aggressive, gaseous and liquid media
- None of the components come into contact with the medium
- Reliable and durable
- Flexible sealing element
- Integrated attachment and hence no transfer of operating forces to the piping system
- Position indicator

Possible flow media

Contaminated, solid or ultrapure media.

Technical data



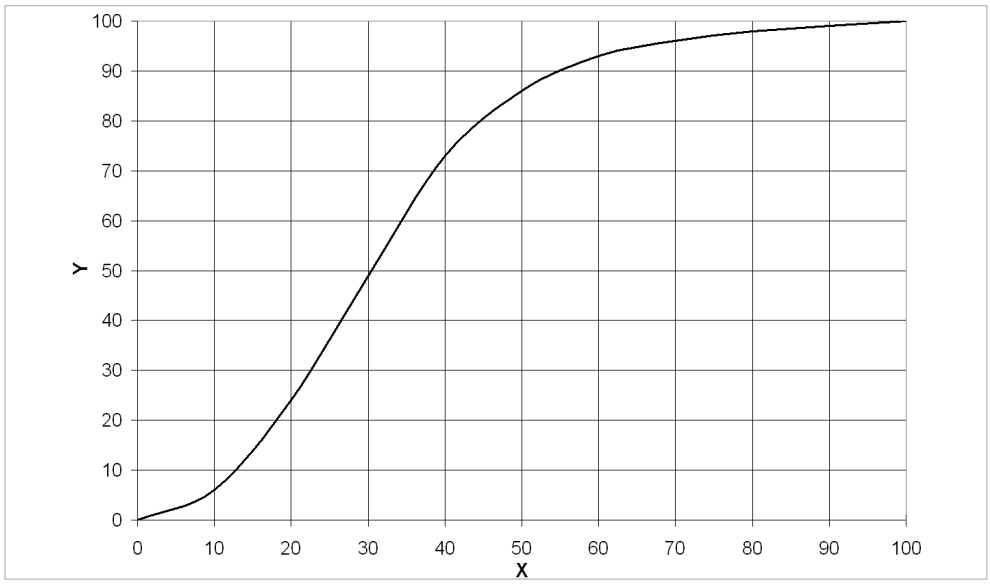
1 Position Indicator
2 Handwheel
3 Sealing disk
4 Upper part
5 Screws
6 Diaphragm
7 Fastening threads
8 Flange connector

Specification		
Dimensions	d75/DN65 - d160/DN150	
Materials	Upper part	PPGF 30
	Handwheel	PP; PVC-U; PP TSG
Gasket/diaphragm materials	NBR; EPDM; PTFE/EPDM; FKM;	
Pressure levels	PN10	
	PN6 from DN100	
Actuation variants	Manually operated	
	Pneumatically actuated (see DIASTAR 025)	
Connections	Backing flange	DN65
	Fixed flange	from DN80
Accessories	DN65	Lockable handwheel
Product standard	EN ISO 16138	
Test standard	ISO 9393-2, EN 12266-1 (leackage rate A)	
Approvals	ACS, FDA, DIBt	

Kv 100 values

DN (mm)	Inch (inch)	d (mm)	Kv 100 (l/min)	Cv 100 US (US gal/min)	Kv 100 (m^3/h)
65	2 ½	75	992	69.5	59.5
80	3	90	1'700	119	102
100	4	110	2'700	189	162
150	6	160	6'033	422.3	362

Flow characteristics

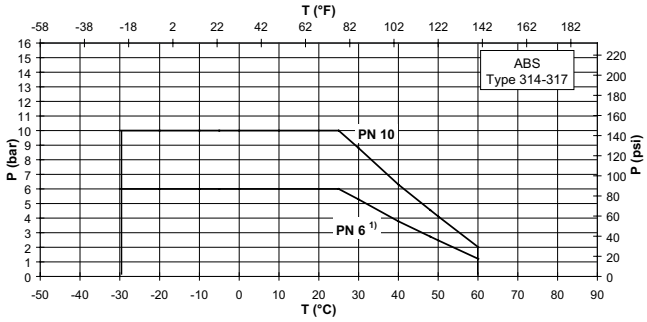


x Open angle (%)
y Kv, Cv value (%)

Pressure-temperature diagrams

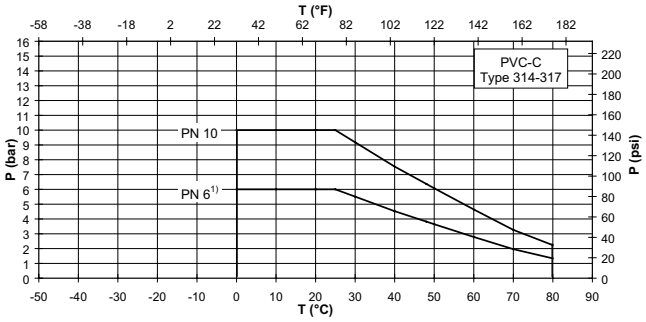
T Temperature (°C, °F)
P Permissible pressure (bar, psi)

ABS



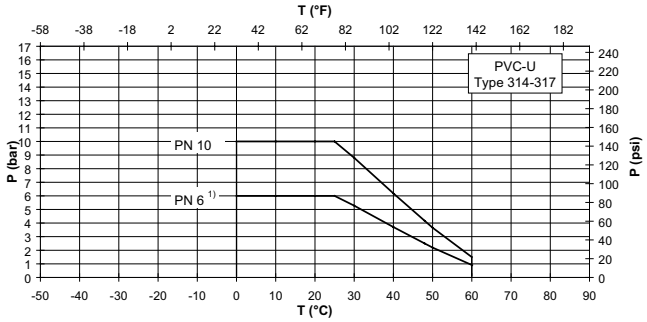
1) Only type 317, manually operated DN100 and DN150

PVC-C



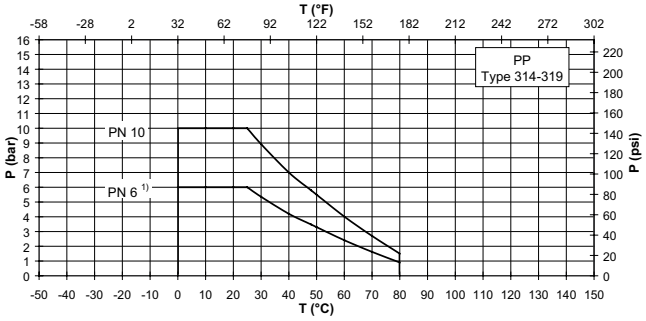
1) Only type 317, manually operated DN100 and DN150

PVC-U



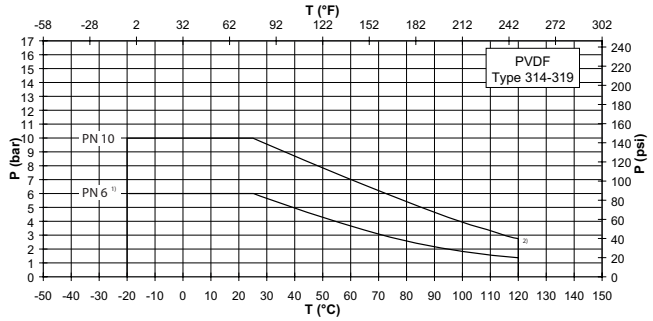
1) Only type 317, manually operated DN100 and DN150

PP



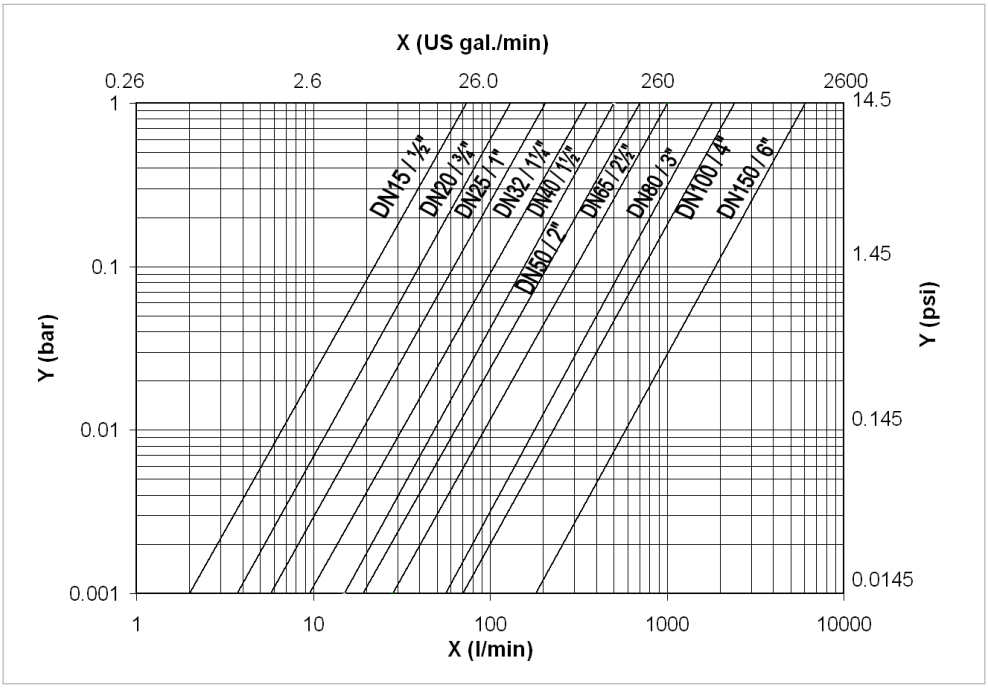
1) Only type 317, manually operated DN100 and DN150

PVDF



1) Only type 317, manually operated DN100 and DN150
2) Higher temperature after consultation

Pressure losses



X Flow rate (l/min, US gal/min)
Y Pressure loss Δp (bar, psi)

Reference values for tightening torque of flange connection screws of type 317

d (mm)	DN (mm)	Inch (inch)	Total number of screws	Torque (Nm)	Torque (lfb)
75	65	2 ½	8 x M16 x 85	25	222
90	80	3	16 x M16 x 95	15	133
110	100	4	16 x M16 x 100	20	177
160	150	6	16 x M16 x 110	35	310

Tightening torque for diaphragms of type 317

d	DN	Tightening torques for elastomer diaphragms		Tightening torque for PTFE diaphragms	
(mm)	(mm)	(Nm)	(lbf)	(Nm)	(lbf)
75	65	25	221.3	25	221.3
90	80	30	265.5	30	265.5
110	100	30	265.5	30	265.5
160	150	40	354.0	40	354.0

Operating torque for handwheel

DN (mm)	Inch (inch)	Tightening torque (Nm)
65	2 ½	20
80	3	30
100	4	45
150	6	140

Technical basics

The upper part of the housing is made of PPGF (fiberglass-reinforced polypropylene) and is screwed to the lower part of the housing with four bolts, which avoids exposed metal screws. A position indicator integrated into the handle is required for determining the diaphragm position.

i All diaphragm valves of type 317 in metric sizes are manufactured with flange versions DN65–DN150, and in accordance with EN ISO 16138.

Valve handling

Installation notes

In piping systems that are subject to changes in temperature, longitudinal and bending forces are created when thermal expansion is prevented. To avoid compromising the functioning of the valve, these forces must be absorbed through appropriate fixed points in front of and behind the valve. Diaphragm valves and pipes must be aligned with one another so that the valve is not subjected to superimposed loads.

Ensure that the valve is open and not under pressure. Using a calibrated torque wrench, all four screws must be evenly tightened crosswise to screw positions in accordance with the recommended torques.

Integrated mounting

The diaphragm valve includes an integrated mounting insert. Mounting plates help to compensate different distances from the mounting surface to the pipe axis. They are adapted to the pipe clips from GF Piping Systems. With the integrated inserts, the forces that can be generated when operating the valve are absorbed (e.g., breakaway torque). Because of this, no operating forces are transferred to the piping system.

Selection of lubricants

Gaskets and spare parts can be mounted with silicon-based grease. Other lubricants may chemically attack the diaphragm valve material or diaphragm. Therefore, never use mineral-oil-based grease or Vaseline. Pay attention to special instructions for silicon-free and high purity diaphragm valves.

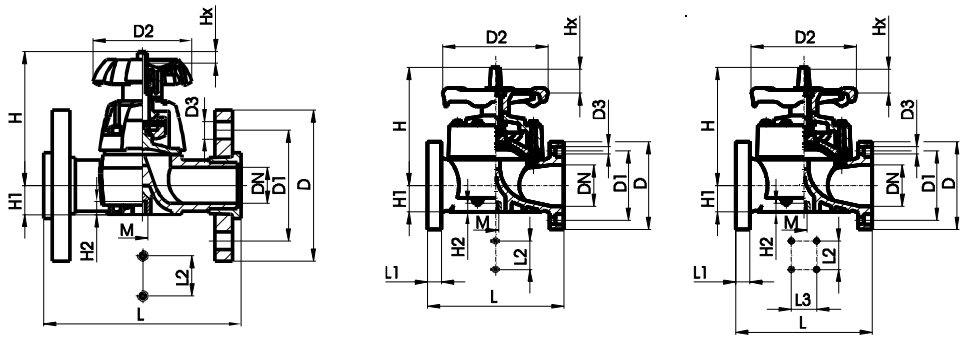
Maintenance notes

Check the connection between the upper part and valve body for leak-tightness at regular intervals. Leaky threaded connections must be tightened. We recommend that you actuate continuously opened or closed valves once to twice a year to check their function.

⚠ Installation and maintenance must be performed in accordance with the corresponding installation manual. The installation manual is provided with the product, see also the online product catalog at www.gfps.com

Dimensions

DN65 **DN80-100** **DN150**



d (mm)	DN (mm)	Inch (inch)	D (mm)	D1 (mm)	D2 (mm)	D3 (mm)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	H (mm)	H1 (mm)	H2 (mm)	M	Hx (mm)
75	65	2 ½	185	145	152	18	290		70		201	46	15	M8	30
90	80	3	200	160	270	18	310	35	120		265	57	23	M12	40
110	100	4	225	180	270	18	350	35	120		304	69	23	M12	50
160	150	6	285	240	400	32	480	26	100	200	437	108	23	M12	70

ⓘ For further information on accessories, refer to the online product catalog at www.gfps.com

Mobile apps and online tools to support configuration and calculation at www.gfps.com/tools

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Tel. +41 52 631 11 11 • www.gfps.com • E-Mail: info.ps@georgfischer.com

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