GSR

Ventiltechnik
GmbH & Co. KG

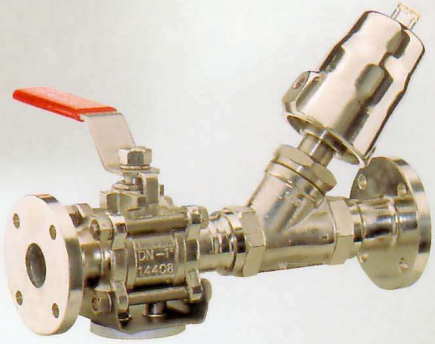
Product Range

- Solenoid controlled valve systems
- Pilot operated
- Direct acting
- Force pilot operated
- Externally (pressure) controlled valve systems
- Motorised valve systems
- Special constructions for all industry branches

Your partner in

modern valve technology

GSR
Ventiltechnik
GmbH & Co. KG



Dear Customer

Thank you very much for your interest in our products. By means of this brochure you will get an interesting insight into the world of valve technology. This overview will only show you a small and basic valve selection available from GSR.

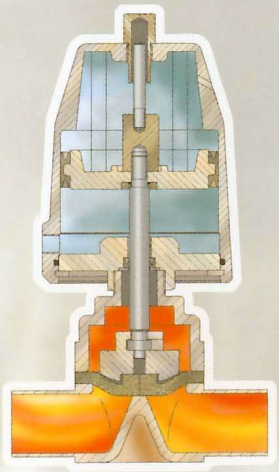
With over 25 years experience and technical understanding we are able to develop the best valve solution to match your requirements.

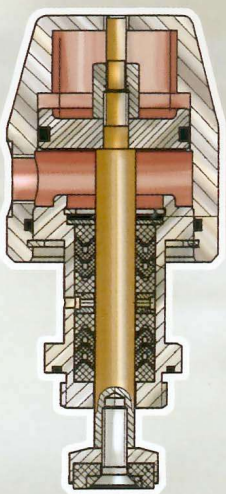
Finally, we want to draw your attention to our wide range of customer specific designs, which enhances our standard product range.

Why don't you just contact us or your local GSR sales partner for more information?

Yours faithfully,

GSR-Team





Innovative **Valve-** Technology

GSR Ventiltechnik GmbH & Co. KG

Company	**Phone**
Contact	**Telefax**
	E-Mail

◯ 2/2 way ◯ Solenoid valve system ◯ Pressure controlled valve system

◯ 3/2 way ◯ Spare parts for valve type

◯ 5/2 way ◯ Service set number

Function Solenoid valve systems

◯ **NC** – non energized closed ◯ **NO** – non energized open ◯ **UN** – universal (each inlet can be used as "p")

Function Pressure controlled valve

◯ **NC** – normally closed by spring power, in flow direction

◯ **NC** – normally closed by spring power, against flow direction (Anti-Waterhammer)

◯ **NO** – normally open by spring power

◯ **DW** – double acting actuator

Quantity	unit(s)		
Materials	Body:	Seal:	
Connection	Threaded G:	Flanged DN:	PN:
Pressure range	p1:	P2:	Δp: bar
Temperature range	Medium temp. °C	Ambient temp.	°C
Flow medium		Viscosity	mm^2/sec (centistokes)
Flow factor	m^3/h	requested flow rate: l/min	m3/h

Mounting

◯ Actuator in any position ◯ Actuator only in upright postion ◯ Actuator preferable in upright position

Supply voltage	V:	Hz (AC):	Watt (DC):

Ex proof ◯ Yes ◯ No class:

Further remarks/optional extras

Delivery time, required days/weeks

Pilot operated, solenoid valves

Valves of this design are distinguished by a simple, solid construction. The sealing of this valve is, either a diaphragm for pressures up to 20 bar, or a robust piston for pressures of 25, 40, 100 up to 150 bar and more.

Fields of application

- *Filling systems*
- *Irrigation systems*
- *Fountain technologies*
- *Sanitary facilities*
- *Water treatment*
- *Pneumatics*
- *Mixer installations*
- *Conduit and pipeline constructions*
- *Drinking-water purification and supply units*
- *Universal applications for instrument- and mechanical engineering*
- *General industrial isolation value*

Type 28

Body and seal materials

- **Body:** Brass, red brass RG-5, stainless steel (AISI 316, AISI 304, AISI 430F), cast iron (GG-25), cast steel (GS-C25)
- Soft seals (elastomers) NBR (buna), EPDM, FKM (viton)
- Plastic seal (thermoplasts) PTFE (teflon)
- Top-level seal Tecapeak (similar to teflon, but more resistant to high pressures and high temperatures)

Type 46

Advantages of this kind of control systems

By use of small solenoids, high pressures at large nominal sizes can be controlled. The mounting of valves up to DN 50 is possible in any position. Due to a simple exchange of the coil as well as the seal, the valve can be easily serviced.

Type 40

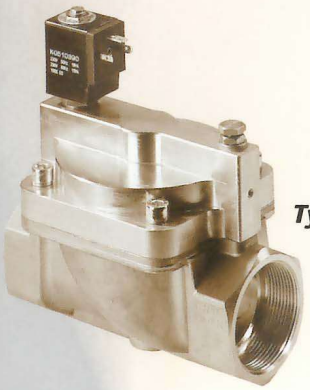
Pilot operated

Type	Design
40	2/2 Way diaphragm design
44	2/2 Way diaphragm + piston design
50	2/2 Way piston design
28	2/2 Way diaphragm design
25	2/2 Way piston design
46	2/2 Way piston design
74	3/2 Way piston design
81	5/2 Way pneumatic slide valve

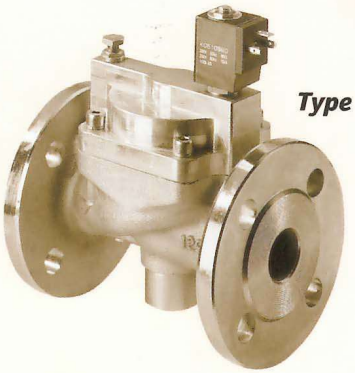
Optional

In order to open, pilot operated solenoid valves need a differential pressure (Δp) between inlet (P) and outlet (A).
Depending upon the valve type, GSR valves require a minimum inlet pressure of 0,3–2 bar (depending on the construction).
The continous differential pressure is necessary, in order to lift or to lower the seal from the sealing surface reliably.

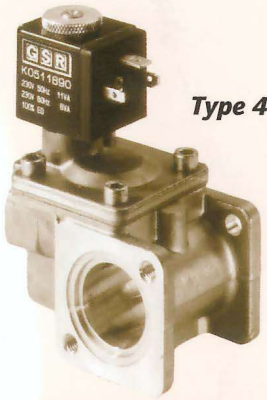
If the differential pressure falls when the valve opens, the stroke of the valve actuator will decrease.
Usually, these valves are suitable for nearly all applications, where "p" opens to atmospheric pressure.



Type 50



Type 25



Type 44

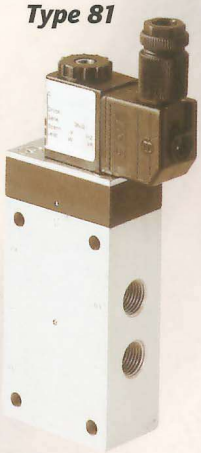
solenoid valves

Nominal	Connection		Function	Pressure range min./max.	Medium	Temperature		Supply voltage
	Threaded G	Flanged DN				norm. °C	max. °C	
DN 13-DN 75	G 1/4-G3		NC/NO	0,3-20 bar (0,3-16)	gaseous, liquid, clean Viscosity up to 22c St (mm^2/s) Suitable for vacuum	-10/+80	-20/+130	12*, 24*, 48*, 110, 120*, 230, 240*V DC/AC EEx (e) m II T4 Encapsulation "m" cable- or terminal box connection Voltage tolerance +5/-10%
DN 13	G 1/8-G 1/2		NC/NO	0,5-16 bar				
DN 13-DN 50	G 1/4-G2		NC/NO	1-40 bar		-10/+80	-40/+200	
DN 15-DN 50		PN 16/40	NC/NO	0,5-16 bar		-10/+80	-20/+130	
DN 13-DN 250		PN 16/40	NC/NO	1-40 bar		-10/+80	-40/+200	
DN 8-DN 40	G 1/4-G 6/4		NC/NO	1-150 bar		-10/+80	-40/+80	
DN 11-DN 50	G 1/4-G2		NC/NO	2-12 bar		-10/+80	-20/+130	
DN 6-DN 10	G 1/8-G 1/2		NC	2-10 bar		-10/+80		

* Special voltage

Type 74

Type 81



equipment

■ Non energised (open) ■ High pressure range ■ Position indicator (reed contact) ■ Ex-Position indicator (reed contact) ■ Manual operation ■ Explosion proof ■ Design for high temperatures ■ Deviate medium and viscosity ■ Special flanges according to ANSI, groove/spring-design ■ NPT-thread ■ Special voltages ■ Free of oil and grease (for oxygen) ■ Weatherproof (IP 67) ■ Free of non-ferrous metal ■ Variable close muting ■ Certification according to DIN EN 10204 – 2.2, DIN EN 10204 – 3.1B and more...

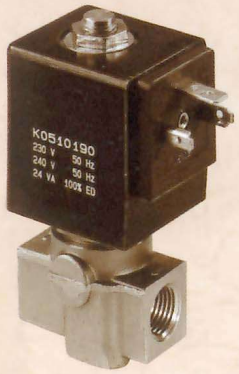
Direct acting solenoid valves

Under electrical power the plunger opens directly. The plunger is lifted off the orifice. Direct acting valves are non energised closed by spring power supported by the medium pressure in the standard construction.

Fields of application

- ***Low pressure gas supply for the industry and domestic usage according to DIN-EN 161***
- ***Safety control units for burner control systems***
- ***Relief unit for gas- and tank systems***
- ***Vacuum technologies***
- ***Pneumatics (type 52 + 72)***
- ***General industrial isolation valve***

Type 52



Type 72

Body and seal materials

- **Body:** Brass, red brass RG-5, stainless steel (AISI 316, AISI 304, AISI 430F), cast iron (GG-25), cast steel (GS-C25), spheroidal graphite construction (GGG 40.3)
- Soft seals (elastomers) NBR (buna), EPDM, FKM (viton)
- Plastic seal (thermoplasts) PTFE (teflon)

Due to the fact that PTFE (teflon) is a plastic material and can lead to a slight leakage, GSR guarantees only a leakage rate 2 according to DIN 3230 T3.

Type 73

Advantages of this kind of control systems

- High internal sealing at low medium pressure.

This kind of valve construction has no pilot drilling or channels. Therefore, it is less affected by contamination.

Solenoid valves

Type	Design
48	2/2 Way poppet design
23	2/2 Way poppet design
23/48	2/2 Way poppet design
52	2/2 Way poppet design
53-DVGW	2/2 Way poppet design
72	3/2 Way poppet design
73	3/2 Way piston design
75	3/2 Way poppet design

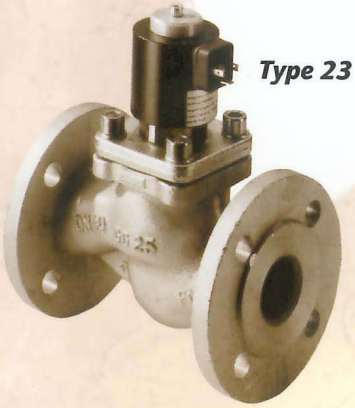
Universal = each connection port can be

Optional

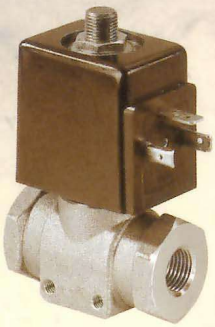
This type does not rely on a pressure differential. The function of the valve depends on the following three characteristics:

▮ Size of the seat (orifice) ▮ Operating pressure ▮ Magnetic force of coil

This type of control is preferably used for small nominal sizes, low pressures and vacuum.
Direct acting valves can be offered NC = non energised closed and optional in NO = non energised open.



Type 23



Type 53

Type 23/48

Type 48

- direct acting

Nominal Size	Connection		Function	Pressure range min./max.	Medium	Temperature		Supply voltage
	Threaded G	Flanged DN				norm. °C	max. °C	
)N 8-DN 75	G 3/8-G3		NC/NO	0-3 bar	gaseous, liquid, clean	-10/+80	-40/+130	12*, 24*, 48*, 110, 120*, 230, 240*V
)N 15-DN 250		PN 16	NC/NO	0-1 bar	Viscosity up to 22c St (mm^2/s)	-10/+80	-40/+180	DC/AC
)N 15-DN 200	G 1/4-G2		NC/NO	0-0,3 bar		-20/+60		EEx (e) m II T4
)N 1-DN 6	G 1/8-G 1/2		NC/NO	0-300 bar	Suitable for vacuum	-10/+80	-40/+130	Encapsulation "m"
)N 4-DN 12	G 1/4-G 1/2		NC	0-4,3 bar		-15/+60		cable- or terminal box connection
)N 1-DN 6	G 1/8-G 1/2		Universal NC/NO	0-90 bar		-10/+80	-40/+130	Voltage tolerance +5/-10%
)N 6-DN 40	G 1/4-G2		Universal	0-20 bar		-10/+80	-40/+180	
)N 1-DN 5	G 1/4-G 1/2		Universal NC/NO	0-40 bar		-10/+80	-40/+180	

ed as "p" (pressure inlet)

* Special voltage

Type 75

equipment

▮ Non energised (open) ▮ High pressure range ▮ Position indicator (reed contact)
▮ Ex-Position indicator (reed contact) ▮ Manual operation ▮ Explosion proof ▮ Design for high temperatures up to 200°C
▮ Deviate medium and viscosity ▮ Special flanges according to ANSI, groove/spring-design ▮ NPT-thread ▮ Special voltages
▮ Free of oil and grease (for oxygen) ▮ Weatherproof (IP 67) ▮ Free of non-ferrous metal
▮ Variable close muting ▮ Certification according to DIN EN 10204 - 2.2, DIN EN 10204 - 3.1B and more...

Force pilot operated valves

No differential pressure is necessary in order to work. Force pilot operated valves open and close independent of pressure and seal only in direction of the arrow. The preferable mounting of force pilot operated valves is with upright actuator (horizontal pipe work). Please contact us before installing in a different position. The standard type of force pilot operated valves is NC = non energised closed. In order to avoid water hammer effects an adjustable close muting is supplied as standard for sizes from DN32.

Type 27

Type 49

Fields of application

- *Filling/bottling systems*
- *Steam boiler construction*
- *Liquid gas facilities*
- *Hot water application*
- *Heating circuits*
- *Power technology plant*
- *Petrochemics*
- *Pump technology*
- *Tank systems*
- *Environmental technology*
- *Water treatment*
- *Conduit and pipeline constructions*
- *Drinking-water purification and supply units*
- *Universal applications for instrument- and mechanical engineering.*

Type K 24

Body and seal materials

- **Body:** Brass, red brass RG-5, stainless steel (AISI 316, AISI 304, AISI 430F), cast iron (GG-25), cast steel (GS-C25)
- Soft seals (elastomers), NBR (buna), EPDM, FKM (viton)
- Plastic seal (thermoplasts) PTFE (teflon)
- Top-level seal Tecapeak (similar to teflon, but more resistant to high pressures and high temperatures)

Type E 24/24

Advantages of this kind of control systems

- Wide application range (from vacuum up to high pressure)
- Maximum operational safety
- Wide range of optional equipment
- Certificates according to DIN EN 10204-2.2, DIN EN 10204-3.1B and more

Force pilot ope

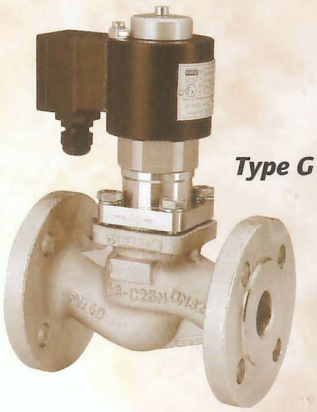
Type	Design
43	2/2 Way diaphragm design
27	2/2 Way diaphragm design
49	2/2 Way piston design
49 TH	2/2 Way piston design
49 K	2/2 Way piston design
24	2/2 Way piston design
K 24	2/2 Way piston design
E24-TH	2/2 Way piston design
G24-TRB	2/2 Way piston design
T24-TRD	2/2 Way piston design

Optional

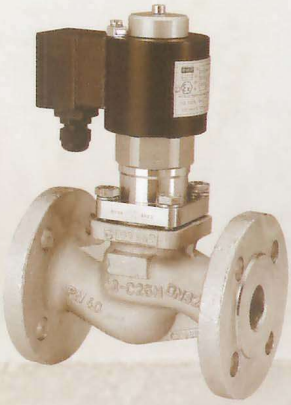
For these force pilot operated valves the servo assisted lift is combined with a direct actuation.
Consequently, force pilot operated valves do combine the avantages of the both mentioned control methods.

The valves operate from 0 bar up to the maximum operated pressure. These valves can be fitted in applications where direct controlled valves are used. Due to the servo assisted lift, a smaller low-powered solenoid can be used compared to direct-controlled valve.

Type 43



Type G 24



Type T 24

rated solenoid valves

Nominal Size	Connection		Function	Pressure range min./max.	Medium	Temperature		Supply voltage
	Threaded G	Flanged DN				norm. °C	max. °C	
DN 13-DN 50	G 1/4-G2		NC/NO	0-16 bar	gaseous, liquid, clean	-10/+80	-20/+130	12*, 24*, 48*, 110, 120*, 230, 240*V
DN 15-DN 200		PN 16 PN 25/40	NC/NO	0-16 bar	Viscosity up to 22c St (mm^2/s)	-10/+80	-20/+130	DC/AC
DN 13-DN 76	G 1/4-G3		NC/NO	0-25/40 bar		-10/+80	-40/+200	EEx (e) m II T4
DN 13-DN 50	G 1/4-G2		NC/NO	0-40 bar		-10/+200		Encapsulation "m"
DN 13-DN 50	weld ends		NC/NO	0-21 bar		-10/+80		terminal box connection
DN 15-DN 300		PN 16/40	NC/NO	0-16/40 bar		-10/+80	-40/+130	Voltage tolerance +5/-10%
DN 15-DN 100		PN 40	NC/NO	0-21 bar		-10/+80		
DN 15-DN 200		PN 16/40	NC/NO	0-16/40 bar		+180	+200	
DN 15-DN 100		PN 40	NC	0-25 bar		-20/+50	-40	
DN 15-DN 50		PN 40	NC	0-25 bar		+180	+200	

Type 49 TH

* Special voltage

equipment

- Non energised (open)
- High pressure range
- Position indicator (reed contact)
- Ex-Position indicator (reed contact)
- Manual operation
- Explosion proof
- Design for high temperatures up to + 300°C
- Deviate medium and viscosity
- Special flanges according to ANSI, groove/spring-design
- NPT-thread
- Special voltages
- Free of oil and grease (for oxygen)
- Weatherproof (IP 67)
- Free of non-ferrous metal
- Variable close muting
- Fast closing
- Certification according to DIN EN 10204 - 2.2, DIN EN 10204 - 3.1B and more...

Externally (pressure) controlled valves

The standard valve is normally closed by spring power. When the actuator is pressurised the piston and seal is lifted up – the valve is open. These valves are controlled by a 3/2-way direct-acting solenoid valve type 72 (see page 6). This pilot valve is either mounted directly to the actuator, or outside in a protected environment.

Fields of application

- *Bottling/filling systems*
- *Brewery & beverage technology*
- *Chemistry facilities*
- *Mixer installations*
- *Food processing*
- *Concrete- and cement industry*
- *Vacuum technologies*
- *Water treatment*
- *Pneumatics*
- *Laundries*

Type 22

Type 63

Type 64

Type 26

Type 60

Advantages of this kind of control systems

- Simple and robust function
- Suitable for all media with a viscosity up to 600 mm^2/s (centistokes)
- With regard to construction a high chemical and thermical resistance is given
- Resistance to dirt and any sort of contamination
- Cost-effective in fields of explosion proof by means of a small EEx-pilot valve type 72.

A high circulation speed can be created inside the valve when media is fluid. Together with the high closing force of the spring, a so called water hammer effect can be caused when the valve moves from one position to the other. Therefore, we recommend a closing direction against medium flow. The exact working pressure depends on the instrument pressure of the pilot valve.

Optional equipment

Position indicator (visual and electrical) ▮ Manual operation ▮ Free of oil and grease (for oxygen) ▮ Vacuum construction ▮ Pressure compensation function ▮ Vacuum-pressure construction ▮ Double acting actuator ▮ Free of non-ferrous metal ▮ Special flanges according to ANSI 150/300 lbs RF ▮ Temperatures up to + 300° C ▮ High pressures ▮ Certificates according to DIN EN 10204 – 2.2, DIN EN 10204 – 3.1.B and more...

Externally contro

Type	Design
60	2/2 Way diaphragm + piston designdesign
63	2/2 Way poppet design
64	2/2 Way diaphragm design
22	2/2 Way poppet design
26	2/2 Way piston design
78	3/2 Way poppet design
79	3/2 Way poppet design

Motorised valv

08	2 Way and 3 Way
10	3 Way
14	2 Way

All specifications in accordance

Externally (pressure) controlled valves are suitable for the control of gaseous, polluted as well as aggressive media. The actuator is seperated from the medium by a self-adjusting packing box, u-cup seal or a diaphragm.
Compressed and clean air, water or oil of 4–10 bar and a voltage of 12 VDC up to 230 VAC for the pilot valve type 72 are necessary for the actuation.
Due to the fact that compressed air is available nearly all over, this type of valve is the most popular for problematical media. If there is no compressed air, a cost-effective compressor for the production of compressed air can be made available. On average, only 0,4 litre of air are consumed for each switching. A return line for the control medium air is not necessary because the air will be returned into the atmosphere during the switching periods.

Type 79

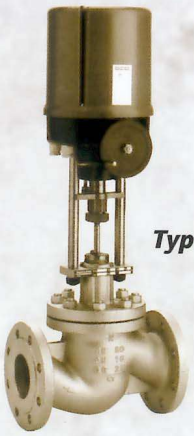
Type 78

Motorised valves

Motorised valve systems as 2 and 3 way design are mainly used for process engineering. The main applications find themselves in regulation functions of different kinds of media.

lled valves

Type of control	Nominal Size	Connection		Function	Pressure range min./max.	Temperature	
		Threaded G	Flanged DN			norm. °C	max. °C
pilot operated	DN 13-DN 50	G 1/4-G2		NC	1-40 bar (0,5-20)	-10/+80	-40/+200
direct acting	DN 10-DN 76	G 3/8-G3		NC/NO	0-40 bar	-10/+80	-40/+200
direct acting	DN 10-DN 50	G 1/4-G2	PN 10/40	NC/NO	0-10 bar	-10/+80	-20/+130
direct acting	DN 15-DN 200		PN 16/40	NC/NO	0-40 bar	-10/+80	-40/+200
force pilot operated	DN 15-DN 300		PN 16/40	NC/NO	0-40 bar	-10/+80	-20/+200
direct acting	DN 13-DN 50	G 1/2-G2		Universal	0-16 bar	-10/+80	-40/+200
direct acting	DN 15-DN 150		PN 16/40	Universal	0-16 bar	-10/+80	-40/+200



Type 08

Type 10

es

direct acting/ motorised construction	DN 15-DN 200		PN 16/40	NO/NC regulation	0-40 bar	-10/+80	-40/+250
direct acting/ motorised construction	DN 13-DN 50	G 1/2-G2		NO/NC regulation	0-12,5 bar	-10/+80	-20/+130
direct acting/ motorised construction	DN 13-DN 76	G 1/2-G3		NO/NC regulation	0-40 bar	-10/+80	-40/+200

:o filtered, free of condensation, free of dust and oil, air quality according to ISO 8573.1

Type 14

More... Information

Body materials

Pressure nominal	Body material
PN16–PN40	Brass
PN16	Red brass RG-5
PN10	Aluminium
PN40–PN150	Stainless steel (AISI 316, AISI 304, AISI 430F)
PN16	Cast iron GG-25 DIN EN GJL 250 n. EN1561
PN25–PN40	Cast steel GSC-25 DIN EN GP240GH n. EN10213-2
PN25	Spheroidal graphite cast iron GGG-40.3 DIN EN GJS400-15 n. EN1563

Seal materials

Seal material	Characteristics
NBR (Buna-N)	Elastic standard material for neutral media like air and water. Temperature range: -10° C up to +90° C.
EPDM (Buna-AP)	Resistant against caustic solutions and acids of lower concentration, water, hot water and steam. Not resistant with oil and grease. Temperature range: -20° C up to +130° C.
FKM (Viton)	Suitable for gases, oxygen, gasoline (petrols) and oils (also synthetic oils). Not suitable with steam and hot water. Temperature range: -20° C up to +150° C.
PTFE (Teflon)	A thermoplast is not elastic. Therefore not suitable for diaphragms. Suitable for high aggressive media, high temperature and pressure ranges. Temperature range: -40° C up to +200° C.
Tecapeak	A top-level seal (similar to PTFE) for pressure ranges up to 350 bar and temperatures to +300° C.

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