Pressure Gauge Snubbers
Porous, Piston and Adjustable Type
Type 910.12.100 - Porous
Type 910.12.200 - Piston
Type 910.12.300 - Adjustable

Applications

Pressure gauge snubbers are intended to suppress the effect of pressure pulses and pressure peaks. Porous snubbers incorporate a fixed mesh disk. Piston snubbers are supplied with five pistons for use with a variety of media. Adjustable snubbers are provided with an adjustable needle valve that enables the operator to restrict the flow as operating conditions may demand even when the snubber is in service.

Pressure gauge snubbers will considerably increase the service life of pressure gauges in harsh applications such as on reciprocating pumps and compressors, hydraulic presses or fluid power systems and will additionally improve the reading accuracy of the gauge.

Pressure gauge snubbers are effective for applications with pressures above 5 psi.

910.12.100
Porous

910.12.200
Piston

910.12.300
Adjustable

Standard Features

Pressure Connection
¼" NPT or ½ NPT male x female (see selection chart)

Body Material
Brass or stainless steel

Piston Material (Type 910.12.200)
Stainless steel

Needle Valve Material (Type 910.12.300)
Stainless steel

O-Ring Material (Type 910.12.300)
Brass: Buna-N
Stainless Steel: FPM (Viton®)

Pressure Rating
Brass: 3000 psi - 5000 psi
Stainless Steel: 5000 psi - 15,000 psi
(see selection chart)

Temperature Rating
14°F to 248°F (-10°C to 120°C)

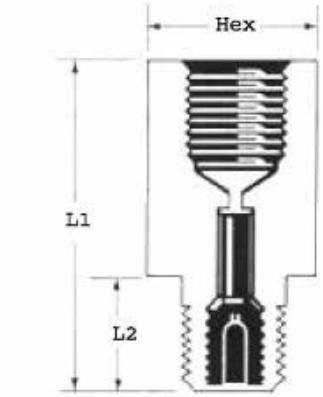
Application/Media
(See table on page 2)

Optional Extras (By Special Order)
- Pressure Connection: G ¼ B, G ½ B
- Degreased for oxygen service, maximum 725 psi at 60°C
- Material certificate per 3.1.B to EN 10 204

Installation and Instructions:

INSTALLATION: Type 910.12 pressure snubbers can be installed directly on the instrument to be protected.

MAINTENANCE: Type 910.12.100 porous snubbers can be cleaned by back flushing with a commercial grade solvent.
Type 910.12.200 piston snubbers are generally self-cleaning, however they can be cleaned manually by removing the threaded cap inside the pressure port, then removing the piston. Metal parts should be cleaned in a commercial grade solvent.
Type 910.12.300 adjustable snubbers can be cleaned by backing the needle valve out from the body in a counterclockwise direction until it stops and back flushing the pressure port with a commercial grade solvent.



Type 910.12.200 piston snubber shown

STANDARD SPECIFICATIONS

Type	Part #	Application/ Media	Male x Female Connection	Body Material	L1 (inches)	L2 (inches)	Hex (inches)	Maximum Pressure (psi)
910.12.100 Porous Snubber	4341503	Air, steam, gas	1/4" NPT	Brass	1.25	0.56	0.750	5000
	4341511	Light oil, water	1/4" NPT	Brass	1.25	0.56	0.750	5000
	4001524	Air, steam, gas	1/4" NPT	SS	1.50	0.70	0.750	15000
	50409671	Air, steam, gas	1/2" NPT	Brass	1.73	0.80	1.125	5000
	50409662	Air, steam, gas	1/2" NPT	SS	1.73	0.80	1.125	15000
910.12.200 Piston Snubber	4201639	Use with various media per piston selection*	1/4" NPT	Brass	1.60	0.53	0.810	5000
	4201647		1/2" NPT	Brass	1.90	0.63	1.125	5000
	4201655		1/4" NPT	SS	1.60	0.53	0.810	15000
	4201663		1/2" NPT	SS	1.90	0.63	1.125	15000
910.12.300 Adjustable Snubber	50334603	Adjustable to various media types	1/4" NPT	Brass	2.40	0.58	1.000	3400
	50334611		1/2" NPT	Brass	2.40	0.75	1.000	3400
	50334620		1/4" NPT	SS	2.40	0.58	1.000	5800
	50334638		1/2" NPT	SS	2.40	0.75	1.000	5800

*Application/Media	Piston
Gases	A, B
Water	B, C
Light Oil	C, D
Heavy Oil	E

Ordering information
To order the described products, the 7-8 digit product number is sufficient.
Optional extras required.

WIKA Instrument Corporation
1000 Wiegand Boulevard
Lawrenceville, GA 30044
Tel (770) 513-8200 Toll-free 1-888-WIKA-USA
Fax (770) 338-5118
E-Mail info@wika.com
www.wika.com

Needle valve and multiport needle valve Model IV1

For further approvals, see page 8

Applications

- Shut off and vent pressure measuring instruments
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Process industry: oil & gas, petrochemical, chemical industries, power generation, water and wastewater

Special features

- Low-wear design due to non-rotating spindle tip in the bonnet
- Low torque and smooth operation of valve handle even at high pressure
- Enhanced safety due to blow-out proof bonnet design
- Valve seat tested for leak tightness per BS 6755/ ISO 5208 leak rate A
- Customer-specific combination of valves and instruments (instrument hook-up) on request

Fig. left: Model IV10, needle valve
Fig right: Model IV11, multiport needle valve

Configurator

Standard articles

Description

Needle valves and multiport needle valves separate the process from measuring instruments such as pressure gauges, switches or transmitters. By closing this valve the instrument can be safely dismounted for service work like calibration or replacement. Versions with an additional vent connection are able to vent the instrument to the atmosphere by means of the needle valve. The multiport needle valve is already equipped with two additional connections. These can be used either as vent connections or for the connection of additional instruments.

Through the non-rotating spindle tip, the wear of the sealing elements is reduced. This results, particularly with frequent opening and closing, in a noticeable increase in the service life.

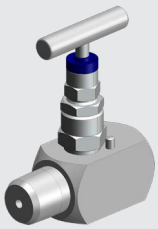
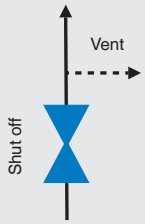
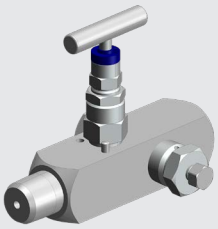
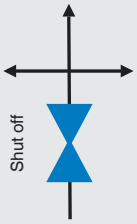
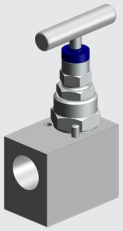
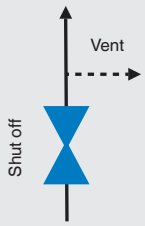
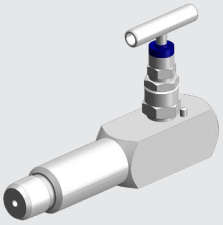
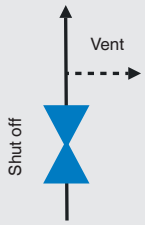
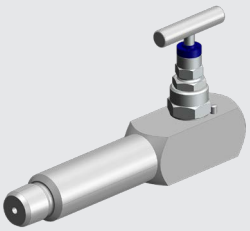
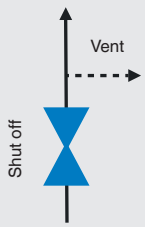
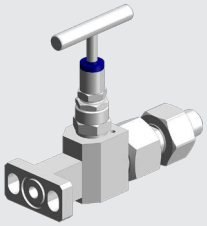
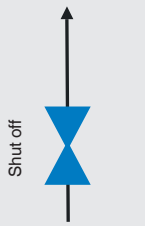
Through the blow-out proof design of the valve, working safety is improved, especially in applications with high pressure loading.

The natural gas design, model IV1N is available with a metering valve that enables both, instrument shut-off and flow control.

On request, WIKA offers the professional assembly of valves and pressure measuring instruments and also other accessories into a ready-to-install instrument hook-up. To ensure the performance of the complete system, an additional leak test is carried out on the instrument hook-up.

Data sheets showing similar products and accessories:
Block-and-bleed valve, 2-valve manifold; models IV2; see data sheet AC 09.19
Valve manifold for differential pressure measuring instruments; models IV3, IV5; see data sheet AC 09.23

Functionality

Model		Description	Functional diagram
	**IV10**	Needle valve	
	**IV11**	Multiport needle valve	
	**IV19**	Needle valve, angled connections 90°	
	**IV1A**	Needle valve, extended valve body, 75 mm [2.95 in]	
	**IV1B**	Needle valve, extended valve body, 100 mm [3.94 in]	
	**IV1N**	Needle valve, natural gas design	

Specifications

Basic information	
Basic features	■ Blow-out proof valve spindle ■ Non-rotating, low-wear spindle tip ■ Metal-to-metal back seat design
Special design features	■ Without ■ For oxygen, oil- and grease-free ■ ASME B31.1, power piping (only available with graphite sealing packing) ■ Dielectric design (only available for model IV1N)
Standards used	
Basic design	■ MSS SP-99, valves for measuring instruments ■ MSS SP-105, instrument valves for code applications ■ ASME B16.34, valves – flanged, threaded and welding end ■ ASME B1.20.1, pipe threads, general purpose (inch) ■ ASME B31.3, process piping ■ ASME BPVC, section VIII, division 1
Special design	■ Without ■ ISO 10497, API 6FA and API 607, type test for fire safety ■ TA-Luft (VDI 2440) and ISO 15848-1, type test for fugitive emissions
Tests	MSS SP-61, pressure testing of valves
Special tests	■ Without ■ API 598, valve inspection and testing ■ ISO 5208, pressure testing of metallic valves with leakage rate A
Material requirements	NACE MR0175 / ISO 15156, use in H_2S-containing environments in oil and gas production
Special material requirements	■ Without ■ NORSOK M-630, specification for use in pipelines (Norway)
Marking	MSS SP-25, standard marking system for valves

Bonnet	
Bonnet design	■ Screwed bonnet, 4 mm [0.16 in] bore size ■ Bonnet with extended handle, 4 mm [0.16 in] bore size ■ Miniature bonnet, 4 mm [0.16 in] bore size ■ Cryogenic bonnet for medium temperatures to -196 °C [-320 °F], 4 mm [0.16 in] bore size ■ OS&Y bonnet, bolted, 8 mm [0.31 in] bore size [1)] ■ Bolted bonnet, 8 mm [0.31 in] bore size ■ Bolted bonnet, 10 mm [0.39 in] bore size ■ Bonnet for panel mounting, 4 mm [0.16 in] bore size ■ Metering bonnet for natural gas, 9.5 mm [0.375 in] bore size
	→ For bonnet design, see page 5
Bonnet variant	■ Without ■ Anti-tamper for shut-off valve, padlock not included ■ Anti-tamper for shut-off valve, padlock included ■ Small T-handle ■ T-handle from stainless steel 316L (1.4404)

1) Type tested for fire safety per ISO 10497, API 6FA and API 607

Process connection / Instrument connection

Standard	■ Threaded connection per ANSI B1.20.1, code NPT ■ Threaded connection per ISO 228-1, code G ■ Swivel connection ■ Weld-in connection ■ Compression fitting ■ Flange connection per IEC 61518, Form A or Form B (only available for model IV1N) ■ Connection for EMICOgauge [1]	
Size	■ ¼ NPT ■ ⅜ NPT ■ ½ NPT ■ ¾ NPT	■ G ¼ ■ G ⅜ ■ G ½ ■ G ¾
Vent connection	■ Without ■ Lateral bleeder screw, plug screw included ■ ¼ NPT female, plug screw included ■ ½ NPT female, plug screw included ■ ¼ NPT female with installed bleeder screw ■ G ¼ female, plug screw included ■ G ½ female, plug screw included ■ Connection 2: with plug screw, connection 3: with bleeder screw [2]	
Test connection	■ Without ■ Test flange Ø 40 mm [1.57 in]	

1) For assembly with pressure gauge model 23x.30 or 26x.30, see data sheet PM 02.04 or PM 02.33
2) Only available for model IV11, multiport needle valve

Operating conditions

Permissible operating pressure	■ ≤ 3,000 psi or ≤ 206 bar ■ ≤ 6,000 psi or ≤ 420 bar ■ ≤ 10,000 psi or ≤ 690 bar [1]
Pressure and temperature limits	The limits for operating pressure and temperature depend on the version and the sealing material. → For diagram, see page 7

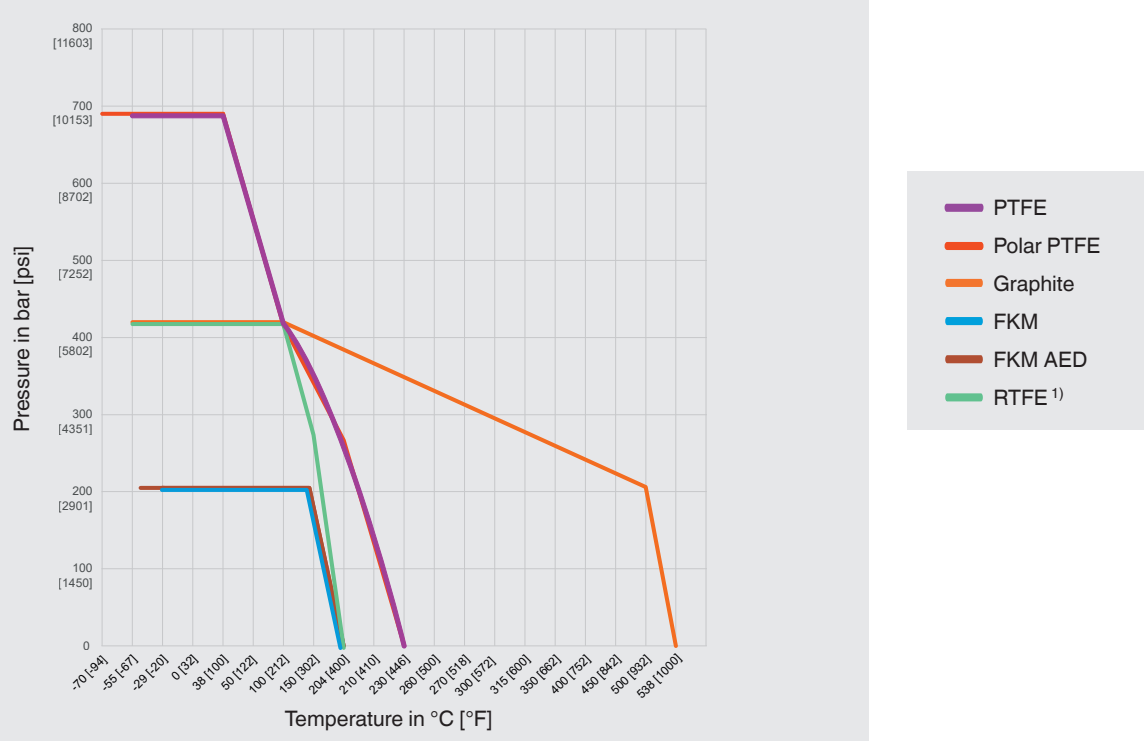
1) Not available for flange connections. Only available with material of the sealing packing from PTFE, see page 5

Material

Wetted parts		
Valve body, bonnet body	■ Stainless steel 316/316L (1.4401/1.4404) ■ Stainless steel 321 (1.4541) ■ Monel 400 (2.4360) ■ Hastelloy C276 (2.4819)	■ Stainless steel 6Mo (1.4547) ■ Duplex F51 (1.4462) ■ Super Duplex F55 (1.4501) ■ Inconel 625 (2.4856) ■ Incoloy 825 (2.4858)
Spindle tip	■ Stainless steel 316/316L (1.4401/1.4404) ■ Monel 400 (2.4360) ■ Hastelloy C276 (2.4819)	■ Duplex F51 (1.4462) ■ Inconel 625 (2.4856) ■ Hardfaced with Stellite 6
Sealing packing	■ PTFE, temperature range: -55 ... +204 °C [-67 ... +400 °F] ■ Polar PTFE, temperature range: -70 ... +204 °C [-94 ... +400 °F] ■ Graphite, temperature range: -55 ... +500 °C [-67 ... +932 °F] ■ SIGRAFLEX® ZX graphite, nuclear quality, temperature range: -55 ... +500 °C [-67 ... +932 °F] ■ FKM, temperature range: -29 ... +180 °C [-20 ... +356 °F] ■ FKM AED [1], temperature range: -46 ... +180 °C [-50 ... +356 °F] ■ RTFE [2], temperature range: -55 ... +180 °C [-67 ... +356 °F]	
Non-wetted parts		
Gland nut, valve spindle, sealing bush, locking nut, locking pin	Stainless steel	
Handle	■ Stainless steel 303 (1.4305) ■ Stainless steel 316/316L (1.4401/1.4404)	

1) Anti-explosive decompression
2) Reinforced PTFE, material for optional certificate “Emission protection in accordance with TA-Luft (VDI 2440) and ISO 15848-1”

Pressure-temperature diagram



Sealing packing	Max. allowable operating pressure at defined temperatures			
	Minimum temperature	Temperature of 0 °C [32 °F]	Temperature of 20 °C [68 °F]	Maximum temperature
PTFE	690 bar at -55 °C	690 bar	690 bar	276 bar at 204 °C
	10,000 psi at -67 °F	10,000 psi	10,000 psi	4,000 psi at 400 °F
Polar PTFE	690 bar at -70 °C	690 bar	690 bar	276 bar at 204 °C
	10,000 psi at -94 °F	10,000 psi	10,000 psi	4,000 psi at 400 °F
Graphite or SIGRAFLEX® ZX graphite	420 bar at -55 °C	420 bar	420 bar	206 bar at 500 °C
	206 bar at -67 °F	6,000 psi	6,000 psi	2,987 psi at 932 °F
FKM	206 bar at -29 °C	206 bar	206 bar	206 bar at 180 °C
	2,987 psi at -20 °F	2,987 psi	2,987 psi	2,987 psi at 356 °F
FKM AED	206 bar at -46 °C	206 bar	206 bar	206 bar at 180 °C
	2,987 psi at -50 °F	2,987 psi	2,987 psi	2,987 psi at 356 °F
RTFE [1]	420 bar at -55 °C	420 bar	420 bar	276 bar at 180 °C
	6,000 psi at -67 °F	6,000 psi	6,000 psi	4,000 psi at 356 °F

1) Reinforced PTFE, material for optional certificate “Emission protection in accordance with TA-Luft (VDI 2440) and ISO 15848-1”

The table above provides information about the characteristics of the sealing at the respective process parameters.
To maximise the service life, it is recommended that the valve should not be operated continuously at the temperature limits.

The minimum design temperature for needle valves is -55 °C [-67 °F].
For continuously low operating temperatures ≤ -55 °C [≤ -67 °F] a special polar design is needed.