

TANK BLANKETING REGULATORS BKRI2

DESCRIPTION

Tank blanketing valves are commonly used in tank storage systems to prevent and protect against explosions (avoiding flammable liquids being vented from the vessel), to control product contamination against external air that may fill the vapour space, to reduce evaporation losses (consequently, production losses), to reduce internal corrosion (caused by air and moisture) and to prevent vacuum condition.

The blanketing process consists in covering the stored medium, usually a liquid, with a gas (normally N₂).

MAIN FEATURES

- Compact design.
- Non-rising adjustment knob.
- FDA / USP Class VI compliant seals.

STANDARD SURFACE FINISH

Internal movable parts and machined surfaces:

≤ 0,76 micron Ra – SF3.

Other surfaces: as casted.

Ultrasonic cleaning.

OPTIONS:

- Leakage line connection 1/4".
- Gauge connection on body.
- External pulse line (recommended for low set pressures < 10 mbar or high flow).
- Dome-loaded version.
- Blanketing with vacuum.
- Top cap (adjustment screw with cover).
- ATEX version.

USE:

Compressed air, nitrogen and other gases compatible with the construction.

AVAILABLE

MODELS:

BKRI2 – low pressure regulator.

SIZES:

DN 15 and DN 25.

REGULATING

RANGES:

5 to 10 mbar; 10 to 50 mbar; 20 to 200 mbar;
50 to 500 mbar; 5 to 4000 mbar (dome-loaded).

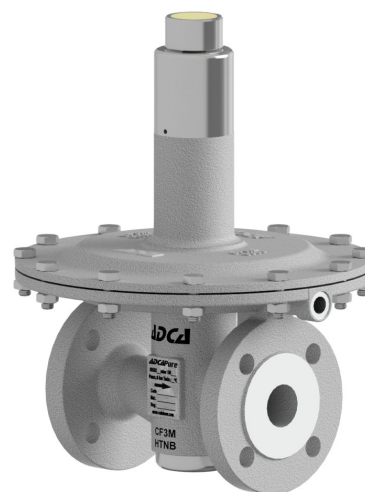
CONNECTIONS:

Flanged EN 1092-1 PN 16.

INSTALLATION:

Vertical installation recommended, to allow drainage, or horizontal as close to the process as possible in order to prevent long pipe sections and flow restrictions.

See IMI – Installation and maintenance instructions.



CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
DN 15 to 25	SEP

CE MARKING – ATEX VERSION (ATEX – European Directive)	
PN 16	Category
DN 15 to 25	Ex h IIB T6...T3 Gb

AIR CAPACITIES (Nm³/h)
Maximum inlet pressure 6 bar – Seat Ø 8 mm

SIZE	OUTLET PRESS. (mbar)	INLET PRESSURE (barg)								
		0,1	0,5	0,8	1	2	3	4	5	6
DN 15	5 to 10	3,5	18	28	37	56	77	92	111	128
	10 to 50	3,5	18	28	37	56	77	92	111	128
	20 to 200	–	18	28	37	56	77	92	111	128
	50 to 500	–	–	–	37	56	77	92	111	128
DN 25	5 to 10	4	20	32	40	63	85	102	125	140
	10 to 50	4	20	32	40	63	85	102	125	140
	20 to 200	–	20	32	40	63	85	102	125	140
	50 to 500	–	–	–	40	63	85	102	125	140

Outlet pressure should not be more than 50% of the inlet, in order to reach the mentioned flow rates.

AIR CAPACITIES (Nm³/h)
Maximum inlet pressure 12 bar – Seat Ø 5 mm

SIZE	OUTLET PRESS. (mbar)	INLET PRESSURE (barg)				
		2	4	6	8	12
DN 15	5 to 10	18	32	43	54	81
	10 to 50	18	32	43	54	81
	20 to 200	18	32	43	54	81
	50 to 500	18	32	43	54	81
DN 25	5 to 10	21	35	49	62	90
	10 to 50	21	35	49	62	90
	20 to 200	21	35	49	62	90
	50 to 500	21	35	49	62	90

Outlet pressure should not be more than 50% of the inlet, in order to reach the mentioned flow rates.

DIMENSIONS (mm)

SIZE	A	B	C	D	d1	WEIGHT (kg)
DN 15	130	47,5	243,5	230	1/4"	9,7
DN 25	160	57,5	243,5	230	1/4"	10,8

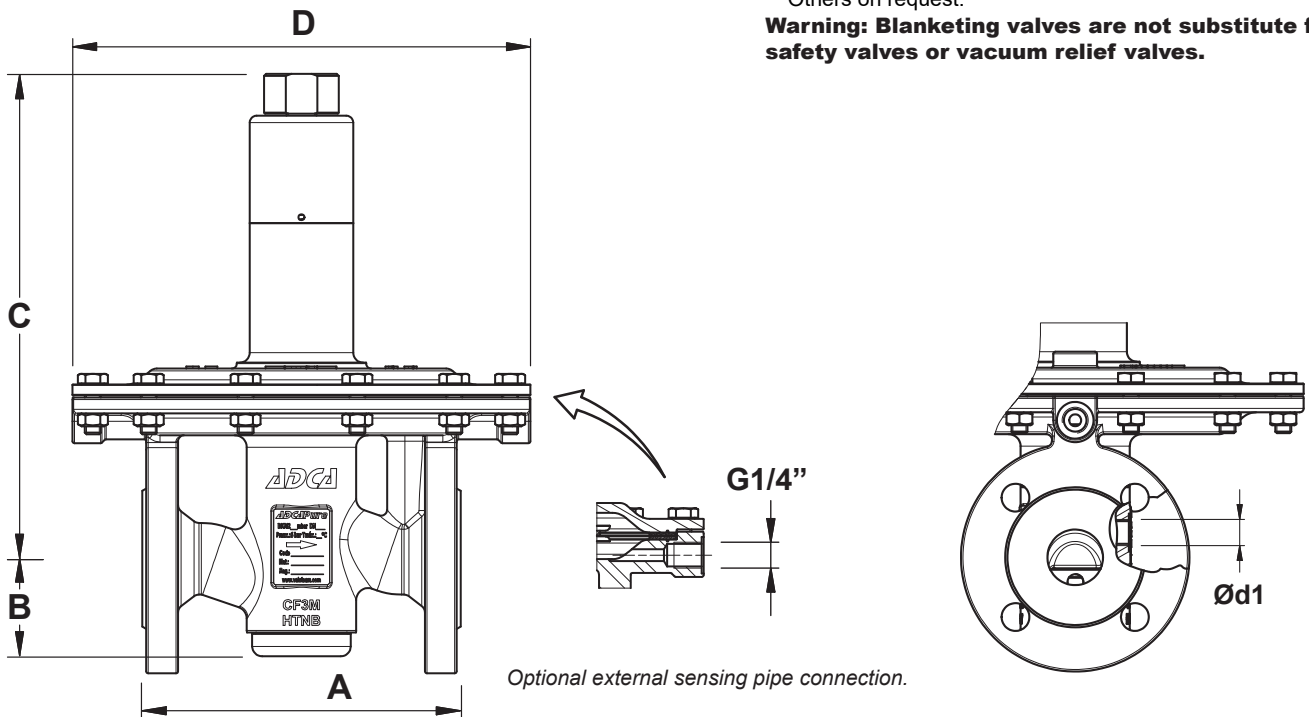
LIMITING CONDITIONS

Valve model	BKRI2	
Body design conditions	PN 16	
Max. upstream pressure	Seat Ø 5 mm	12 bar
	Seat Ø 8 mm	6 bar
Maximum downstream pressure *	500 mbar	
Minimum downstream pressure	5 mbar	
Maximum design temperature **	130 °C	

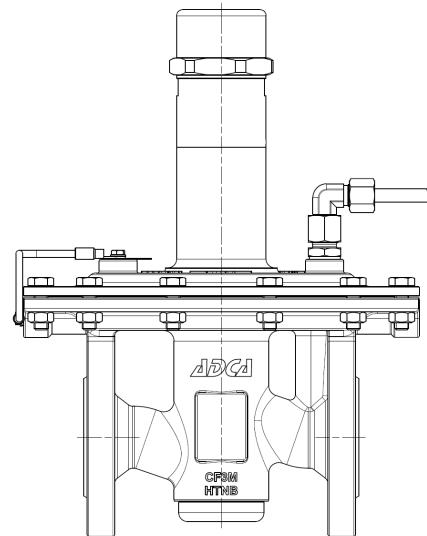
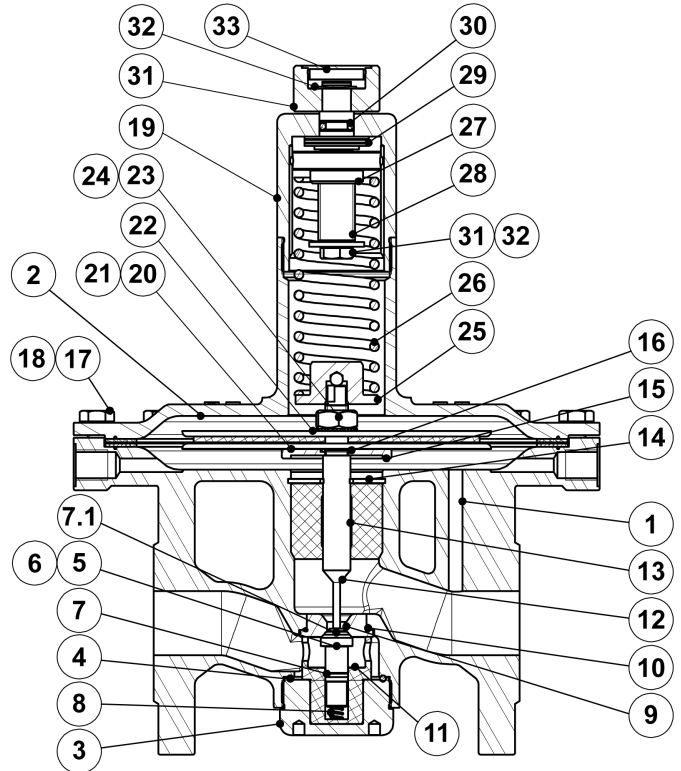
* 4000 mbar with dome load;

** Others on request.

Warning: Blanketing valves are not substitute for safety valves or vacuum relief valves.



MATERIALS		
POS. N°	DESIGNATION	MATERIAL
1	Valve body	A351 CF3M / 1.4409
2	Diaphragm top cover	A351 CF3M / 1.4409
3	Seat cover	AISI 316L / 1.4404
4	* O-ring	EPDM
5	* Piston	AISI 316L / 1.4404
6	* Valve head	AISI 316L / 1.4404
7	* O-ring	EPDM; FPM
7.1	* O-ring	EPDM; FPM
8	* Valve Spring	AISI 302 / 1.4300 (polished)
9	Seat	AISI 316L / 1.4404
10	* O-ring	EPDM
11	Guide	PTFE
12	Stem	AISI 316L / 1.4404
13	Stem guide	PTFE
14	Retaining ring	Stainless steel A2
15	Diaphragm plate	AISI 316L / 1.4404
16	* O-ring	EPDM
17	Bolts	Stainless steel A2-70
18	Nuts	Stainless steel A2-70
19	Spring cover	AISI 316L / 1.4404
20	* Lower diaphragm	PTFE (Gylon)
21	* Upper diaphragm	EPDM
22	Diaphragm plate	AISI 316L / 1.4404
23	Nut	Stainless steel A2-70
24	Washer	AISI 316 / 1.4401
25	Lower spring guide	AISI 316L / 1.4404
26	* Adjustment spring	AISI 302 / 1.4300
27	Top spring plate	AISI 316L / 1.4404
28	Adjustment screw	Brass </td
29	Bearing	Corrosion resistant steel
30	* O-ring	NBR
31	Adjustment nut	AISI 316L / 1.4404
32	Ext. bowed shaft ring	Stainless steel
33	Cover nut	Plastic

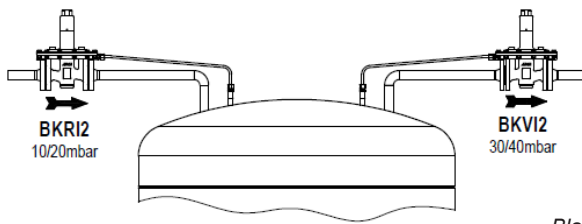


ATEX compliant version

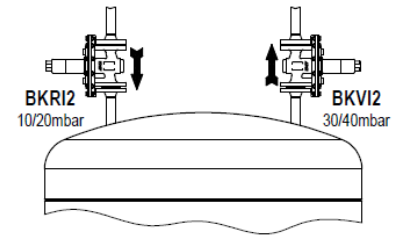
* Available spare parts;
FDA / USP Class VI seals certificate on request.
All valves have a serial number. In case of non standard valves, this number must be supplied if spare parts are ordered.

OPTIONS		
PRESSURE GAUGE CONNECTION	ADJUSTMENT SCREW WITH COVER	LEAKAGE LINE CONNECTION (1/4")

TYPICAL INSTALLATION



Blanketing with overpressure



ORDERING CODES BKRI2

Valve model	BRI	A	5	T	E	I	X	X	X	0	L	15	E
BKRI2 – A351 CF3M / 1.4409 blanketing low pressure regulator	BRI												
Regulating range													
5 to 10 mbar		0											
10 to 50 mbar		1											
20 to 200 mbar		2											
50 to 500 mbar		3											
5 to 4000 mbar (dome-loaded)		A											
Valve seat orifice													
Seat diameter 5 mm			5										
Seat diameter 8 mm			8										
Diaphragm													
PTFE (Gylon)				T									
EPDM (non-standard)				E									
Valve head													
EPDM					E								
FPM / Viton (FDA approval only)					V								
Adjustment knob, top cap and leakage line connection													
Stainless steel adjustment knob						I							
Top cap (adjustment screw with cover)						T							
Stainless steel adjustment knob w/ diaphragm cover leakage connection in case of diaphragm failure						L							
Top cap (adjustment screw with cover) w/ diaphragm cover leakage connection in case of diaphragm failure a)						U							
Dome-loaded top b)						X							
Gauge port options													
Without gauge ports								X					
Threaded gauge port on the left side (rel. to the flow direction) – downstream pressure – ISO 7 Rp 1/4"									4				
Threaded gauge port on the right side (rel. to the flow direction) – downstream pressure – ISO 7 Rp 1/4"										3			
Threaded gauge port on both sides – downstream pressure – ISO 7 Rp 1/4"											2		
Threaded gauge port on the left side (rel. to the flow direction) – downstream pressure – 1/4" NPT												W	
Threaded gauge port on the right side (rel. to the flow direction) – downstream pressure – 1/4" NPT													Y
Threaded gauge port on both sides – downstream pressure – 1/4" NPT													Z
Surface finish c)													
Standard surface finish													X
Mirror mechanical polished external surfaces (SF1)													P
Electropolished internal wetted parts (SF5)													E
Special features													
None													X
External pulse line													
Internal pulse orifice (standard)												0	
External pulse line connection 1/4"												1	
Pipe connection													
Flanged EN 1092-1 PN 16													L
Size													
DN 15													15
DN 25													25
Special valves / Extras													
ATEX compliant version													EX
Full description or additional codes have to be added in case of non-standard combination													
E													

a) This option must be chosen in case of ATEX compliant version; **b)** This option must be chosen in case of dome-loaded version; **c)** Consult IS PV20.00 for further details and other surface finish options.

TANK BLANKETING REGULATORS BKVI2

DESCRIPTION

Tank blanketing valves are commonly used in tank storage systems to prevent and protect against explosions (avoiding flammable liquids being vented from the vessel), to control product contamination against external air that may fill the vapour space, to reduce evaporation losses (consequently, production losses), to reduce internal corrosion (caused by air and moisture) and to prevent vacuum condition. The blanketing process consists in covering the stored medium, usually a liquid, with a gas (normally N2).

MAIN FEATURES

Compact design.
 Non-rising adjustment knob.

STANDARD SURFACE FINISH

Internal movable parts and machined surfaces:
 ≤ 0,76 micron Ra – SF3.
 Other surfaces: as casted.
 Ultrasonic cleaning.

OPTIONS:

- Diaphragm leakage line connection.
- Gauge connection on body.
- External pulse line.
- Dome-loaded version.
- Blanketing with vacuum.
- Top cap (adjustment screw with cover).
- ATEX version.

USE: Compressed air, nitrogen and other gases compatible with the construction.

AVAILABLE

MODELS: BKVI2 – low pressure venting valve.

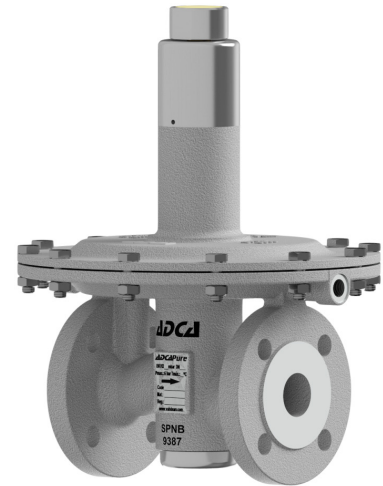
SIZES: DN 15 and DN 25.

REGULATING

RANGES: 5 to 10 mbar; 10 to 50 mbar; 20 to 200 mbar; 50 to 500 mbar; 5 to 4000 mbar (dome-loaded).

CONNECTIONS: Flanged EN 1092-1 PN 16.

INSTALLATION: Vertical installation recommended, to allow drainage, or horizontal as close to the process as possible in order to prevent long pipe sections and flow restrictions.
 See IMI – Installation and maintenance instructions.



CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
DN 15 to 25	SEP

CE MARKING – ATEX VERSION (ATEX – European Directive)	
PN 16	Category
DN 15 to 25	Ex h IIB T6...T3 Gb

AIR CAPACITIES (Nm³/h)
Seat Ø 21 mm

SIZE	SET PRESSURE	INLET PRESSURE (mbar)					
		10	20	40	100	200	500
DN 15	25% Overpressure	4,5	10,5	16	27	45	95
DN 15	50% Overpressure	4,5	10,5	16	27	45	95
DN 15	75% Overpressure	4,5	10,5	16	27	45	95
DN 15	100% Overpressure	4,5	10,5	16	27	45	95
DN 25	25% Overpressure	5,3	11,8	18	31	52	105
DN 25	50% Overpressure	7,2	14,5	26	40	66	125
DN 25	75% Overpressure	8,3	17	30	47	82	136
DN 25	100% Overpressure	9,8	18	36	52	91	148

LIMITING CONDITIONS

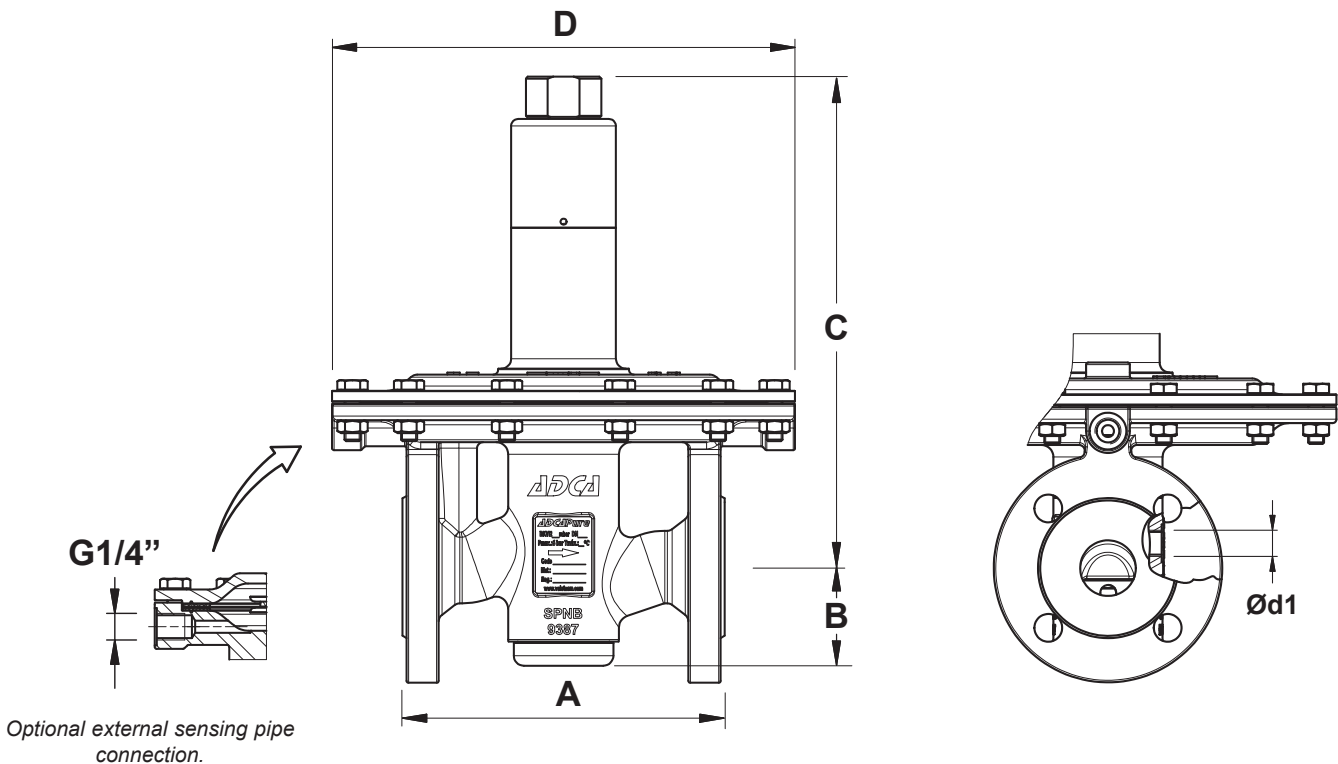
Valve model	BKV12
Body design conditions	PN 16
Maximum operating pressure	6 bar
Maximum upstream pressure *	500 mbar
Minimum upstream pressure	5 mbar
Maximum design temperature **	130 °C

* 4000 mbar with dome load;
** Others on request.

Warning: Blanketing valves are not substitute for safety valves or vacuum relief valves.

DIMENSIONS (mm)

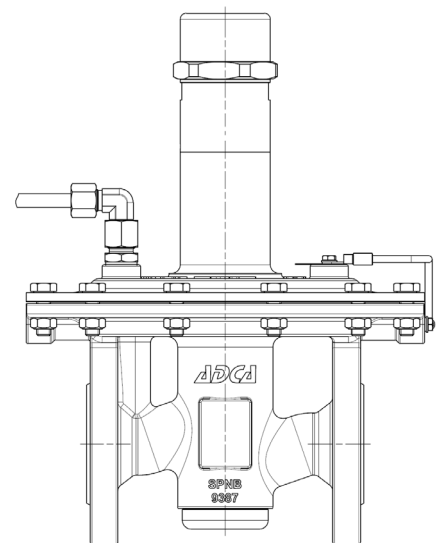
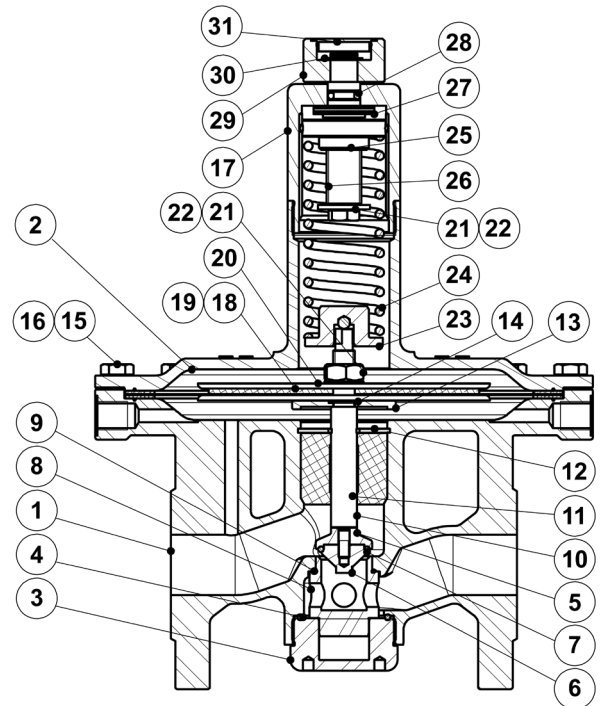
SIZE	A	B	C	D	d1	WEIGHT (kg)
DN 15	130	47,5	243,5	230	1/4"	9,7
DN 25	160	57,5	243,5	230	1/4"	10,8



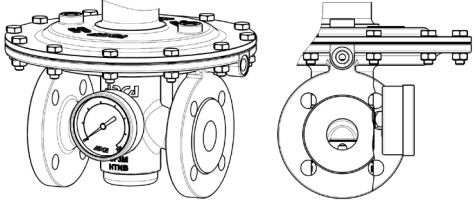
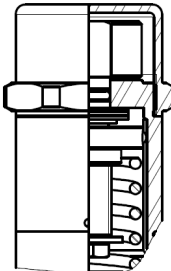
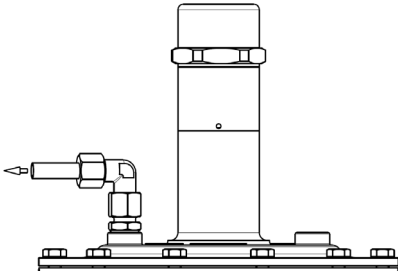
Optional external sensing pipe connection.

MATERIALS		
POS. N°	DESIGNATION	MATERIAL
1	Valve body	A351 CF3M / 1.4409
2	Diaphragm top cover	A351 CF3M / 1.4409
3	Seat cover	AISI 316L / 1.4404
4	* O-ring	EPDM
5	Plug disc	AISI 316L / 1.4404
6	* Valve head	AISI 316L / 1.4404
7	* O-ring	EPDM or Viton
8	Seat	AISI 316L / 1.4404
9	* O-ring	EPDM
10	Stem	AISI 316L / 1.4404
11	Stem guide	PTFE
12	Retaining ring	Stainless steel A2-70
13	Diaphragm plate	AISI 316L / 1.4404
14	* O-ring	EPDM
15	Bolts	Stainless steel A2-70
16	Nuts	Stainless steel A2-70
17	Spring cover	AISI 316L / 1.4404
18	* Lower diaphragm	PTFE (Gylon)
19	* Upper diaphragm	EPDM
20	Diaphragm plate	AISI 316L / 1.4404
21	Nut	Stainless steel A2-70
22	Washer	AISI 316 / 1.4401
23	Lower spring guide	AISI 316L / 1.4404
24	* Adjustment spring	AISI 302 / 1.4300
25	Top spring plate	AISI 316L / 1.4404
26	Adjustment screw	Brass
27	Bearing	Corrosion resistant steel
28	* O-ring	NBR
29	Adjustment nut	AISI 316L / 1.4404
30	Ext. bowed shaft ring	Stainless steel
31	Cover nut	Plastic

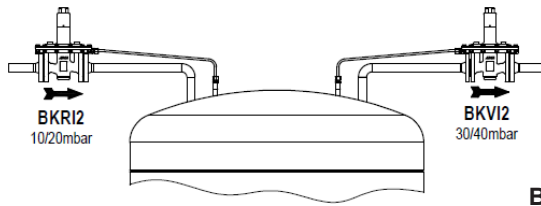
* Available spare parts;
 FDA / USP Class VI seals certificate on request.
 All valves have a serial number. In case of non standard valves, this number must be supplied if spare parts are ordered.



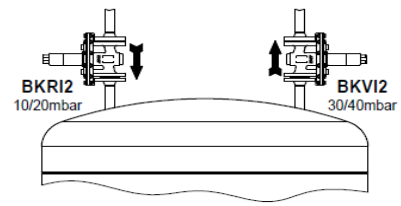
ATEX compliant version

OPTIONS		
PRESSURE GAUGE CONNECTION	ADJUSTMENT SCREW WITH COVER	LEAKAGE LINE CONNECTION (1/4")
		

TYPICAL INSTALLATION



Blanketing with overpressure



ORDERING CODES BKVI2													
Valve model	BVI	A	2	T	E	I	X	X	X	0	L	15	E
BKVI2 – A351 CF3M / 1.4409 blanketing low pressure vent valve	BVI												
Regulating range													
5 to 10 mbar		0											
10 to 50 mbar		1											
20 to 200 mbar		2											
50 to 500 mbar		3											
5 to 4000 mbar (dome-loaded)		A											
Valve seat orifice													
Seat diameter 21 mm			2										
Diaphragm													
PTFE (Gylon)				T									
EPDM (non-standard)				E									
Valve head													
EPDM					E								
Viton (non-standard)					V								
Adjustment knob, top cap and captured vent													
Stainless steel adjustment knob						I							
Top cap (adjustment screw with cover)						T							
Stainless steel adjustment knob w/ diaphragm cover leakage connection in case of diaphragm failure						L							
Top cap (adjustment screw with cover) w/ diaphragm cover leakage connection in case of diaphragm failure a)						U							
Dome-loaded top b)						X							
Gauge port options													
Without gauge ports							X						
Threaded gauge port on the left side (rel. to the flow direction) – downstream pressure – ISO 7 Rp 1/4"								4					
Threaded gauge port on the right side (rel. to the flow direction) – downstream pressure – ISO 7 Rp 1/4"									3				
Threaded gauge port on both sides – downstream pressure – ISO 7 Rp 1/4"										2			
Threaded gauge port on the left side (rel. to the flow direction) – downstream pressure – 1/4" NPT											W		
Threaded gauge port on the right side (rel. to the flow direction) – downstream pressure – 1/4" NPT												Y	
Threaded gauge port on both sides – downstream pressure – 1/4" NPT													Z
Surface finish c)													
Standard surface finish												X	
Mirror mechanical polished external surfaces (SF1)													P
Electropolished internal wetted parts (SF5)													E
Special features													
None													X
External pulse line													
Internal pulse orifice (standard)												0	
External pulse line connection 1/4"													1
Pipe connection													
Flanged EN 1092-1 PN 16													L
Size													
DN 15													15
DN 25													25
Special valves / Extras													
ATEX compliant version													EX
Full description or additional codes have to be added in case of non-standard combination													E

a) This option must be chosen in case of ATEX compliant version; b) This option must be chosen in case of dome-loaded version; c) Consult IS PV20.00 for further details and other surface finish options.