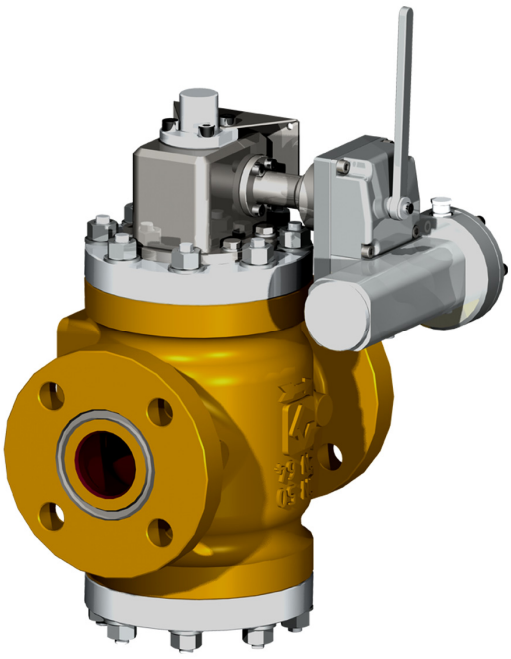
TOTALGAZ INDUSTRIE

GAS SHUT-OFF VALVE SB 750



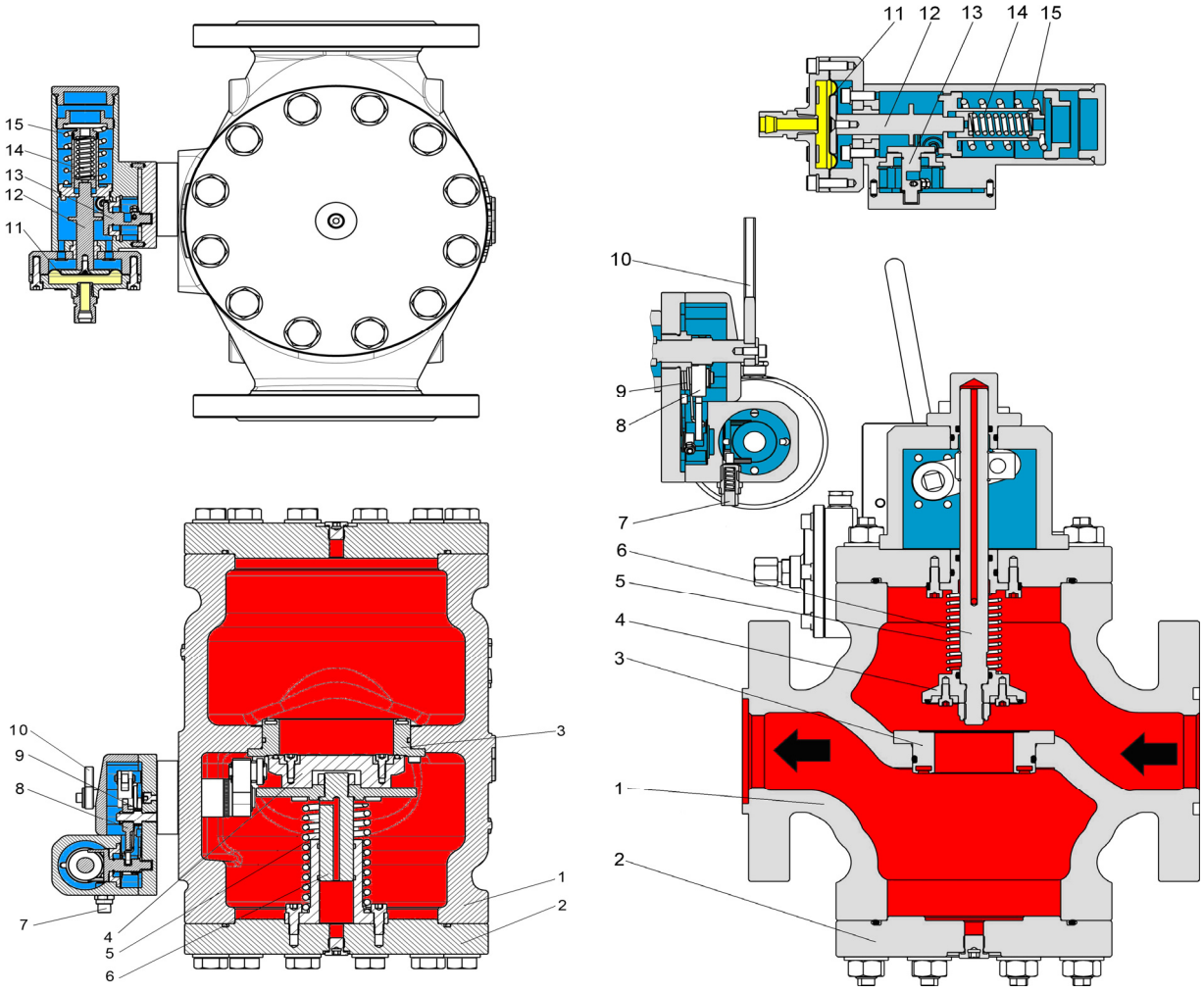
Introduction

The SB 750 is a shut-off valve with self-operation and manual resetting, suitable for transmission and distribution networks of air, natural gas, LPG, carbon dioxide (CO_2) and other non-corrosive gaseous media.

The SB 750 is a safety device which has the role of preventing the increase or decrease in the working pressure in the installation, outside the operating range for which it was designed.

The design ensures several advantages, such us:

- easy maintenance without removing the valve from the installation;
- manual resetting, whenever necessary;
- its mechanism can be mounted on any type of RTG regulator.



SB 750 A *SB 750 B*

Figure 1 - SB 750 operating diagram

1. Valve body; 2. Inspection cover; 3. Seat; 4. Valve plate holder; 5. Plate holder spring; 6. Rod; 7. Reset button; 8. Cam; 9. Cam spring; 10. Arming handle; 11. Servomotor diaphragm; 12. Diaphragm rod; 13. Fork; 14. Minimum spring; 15. Maximum spring.

Operation of SB 750 A and B

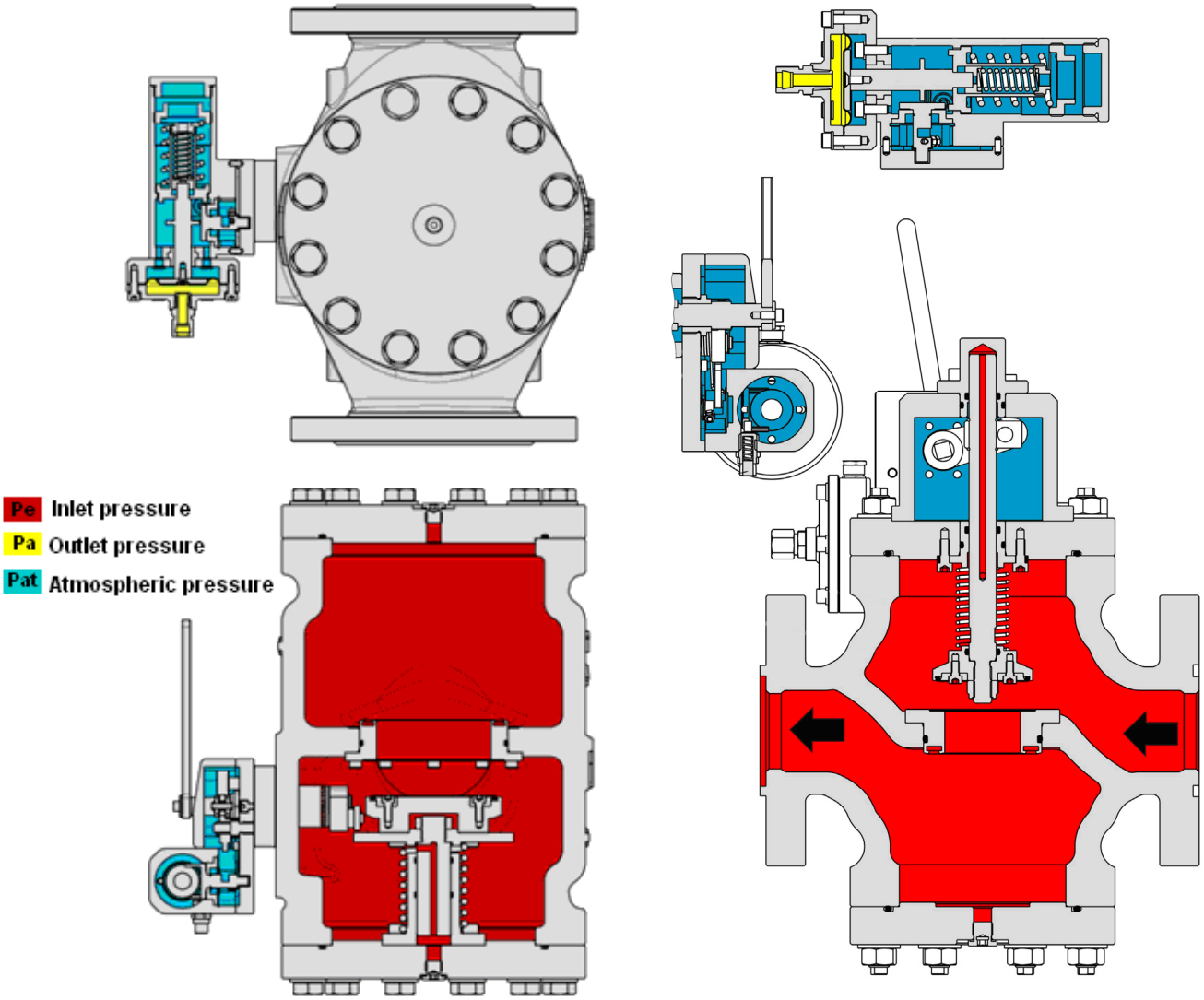


Figure 2

Operating diagram of SB 750 A *Operating diagram of SB 750 B*

The valve working position (Figure 2) is normally open. When the regulated pressure (Pa) value is within the set range, the shut-off valve is open.

The set pressure acts on the servomotor diaphragm (11) and maintains the rod (12) in a balance position. Thus, the cam (8) movement under the action of the spring is obstructed by the fork (13) whose radial movement is induced by the rod (12).

When the pressure exceeds the maximum allowable value, the force of the spring (15) is overcome, determining the rod to move (12). The fork (13) releases the cam (8) which moves under the action of the cam spring (9) and releases the valve plate holder (4).

When the pressure decreases below the minimum allowable value, the force of the minimum spring (14) determines the rod (12) to move rotating the fork (13) and releasing the cam (8)

which in its turn moves under the action of the spring (9) and releases the piston stop mechanism.

The movement of the valve plate holder (4) under the action of the spring (5) determines the valve to close. Sealing is ensured by O-rings and seat valve plate.

The operating mechanism servomotor can be equipped with a control diaphragm or with a piston depending on the monitored pressure. There are six types of servomotors covering different pressure ranges listed in Table 1.

Table 1

Servomotor	**Intervention limits** [bar]	
	underpressure	**overpressure**
SM 70	0,03 ÷ 2,9	0,02 ÷ 3,85
SM 50	0,06 ÷ 5,6	0,27 ÷ 7,6
SM 37	0,2 ÷ 12,4	2,04 ÷ 15,4
SM 25	1,4 ÷ 22,4	15,1 ÷ 30,2
SM 20	1,3 ÷ 34,9	12,0 ÷ 47,2
SM 15	2,4 ÷ 62,1	21,3 ÷ 83,8

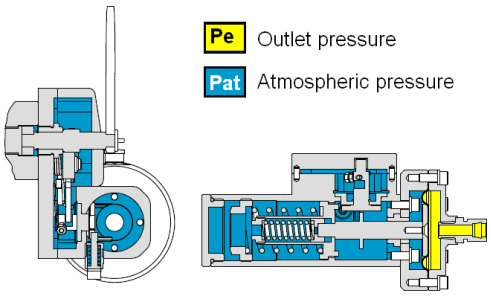


Figure 3 - SB 75 control device

Arming of SB 750 A and B valves

Open the by-pass valve until the pressure in the outlet pipe reaches the value set by the regulator.

Arm the shut-off valve by turning the handle (10) in the direction shown. Thus, the shut-off valve is armed and will stay open as long as the Pa pressure is maintained within the prescribed range.

Resetting of SB 750 A and B valves

The valve is reset only in exceptional cases (regulator major faults). In order to reset the shut-off valve, break the seal on the reset button (7), then press the button until the valve intervenes. Perform the rearming as described above.

Figure 4 shows the position recommended for installing the SB 750 shut-off valve.

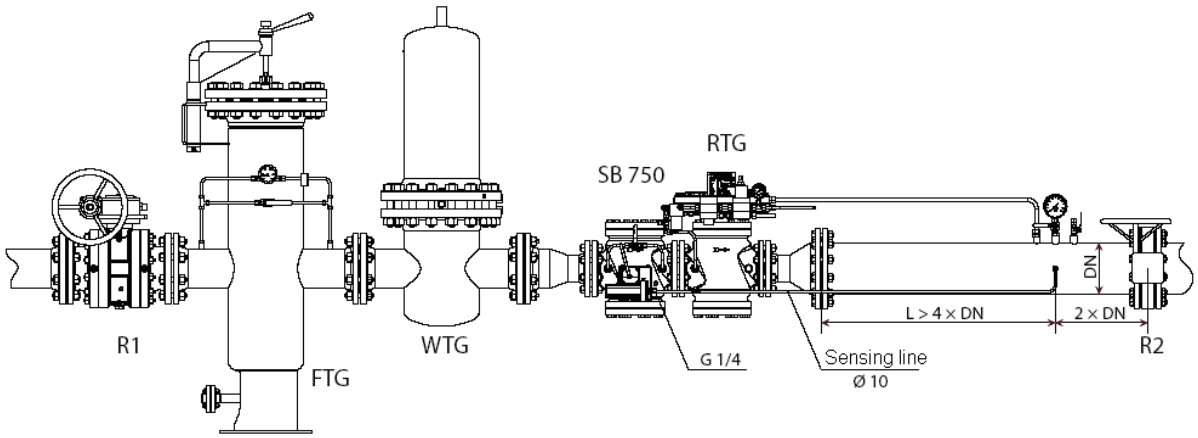


Figure 4 – Position recommended for installing

Technical characteristics

Table 2 – Technical characteristics of the SB 750 valve

Nominal pressure [bar]	16 / 25 / 40 / 64 / 100
Intervention for minimum pressure [bar]	0.015 ÷ 27
Intervention for maximum pressure [bar]	0.08 ÷ 75
Intervention accuracy (AG)	± 1/5 %
Connection type: equal flanges (PN)	16 / 25 / 40 / 64 /100
Ambient temperature [°C]	-20 ÷ 80 (optionally, -30÷ 80)
Working fluid temperature [°C]	-10 ÷ 60 (optionally, -20÷ 60)
Working medium	Air, natural gases, LPG and other non-corrosive gases

Constructive variants

1. **SB 750 A** – used for all nominal diameters for pressures lower than or equal to 40 bar.
2. **SB 750 B** – used for all nominal diameters for pressures up to 100 bar.

Materials

Table 3

Part	Material
Bodies	ASTM A216 WCB, A352 LCB
Seat	AISI 316
Rod	AISI 316
Caps	S355J2
Internal parts	Cu-Zn Alloy, Al alloy, stainless steel
Diaphragm	Rubber (NBR) with textile insert
O-rings	Rubber (NBR), Viton

Adjustment springs

The table below lists the springs used with the SB 75 control mechanism for various setting ranges.

Table 4 – Adjustment springs for the SB 75 control mechanism

Servomotor type	Minimum spring		Maximum spring	
	Code	**Adjustment range** [bar]	**Code**	**Adjustment range** [bar]
SM 15	1450353	2.4 ÷ 4.8	1450367	21.3 ÷ 42.7
	1450354	4.1 ÷ 8.3	1450368	41.9 ÷ 83.8
	1450355	8.0 ÷ 15.6		
	1450358	9.0 ÷ 18.2		
	1450359	17.8 ÷ 35.7		
	1450360	34.9 ÷ 62.1		
SM 20	1450353	1.3 ÷ 2.7	1450367	12.0 ÷ 24.0
	1450354	2.3 ÷ 4.6	1450368	23.5 ÷ 47.2
	1450355	4.5 ÷ 8.7		
	1450358	5.1 ÷ 10.2		
	1450359	10.0 ÷ 20.1		
	1450360	19.6 ÷ 34.9		
SM 25	1450354	1.4 ÷ 3.0	1450368	15.1 ÷ 30.2
	1450355	2.9 ÷ 5.6		
	1450359	6.4 ÷ 12.8		
	1450360	12.5 ÷ 22.4		
SM 37	1450352	0.2 ÷ 0.5	1450366	2.04 ÷ 4.1
	1450353	0.4 ÷ 0.9	1450367	3.9 ÷ 7.8
	1450354	0.7 ÷ 1.5	1450368	7.6 ÷ 15.4
	1450355	1.4 ÷ 2.9		
	1450358	1.6 ÷ 3.3		
	1450359	3.2 ÷ 6.5		
	1450360	6.4 ÷ 12.4		
SM 50	1450351	0.06 ÷ 0.14	1450364	0.27 ÷ 0.55
	1450352	0.12 ÷ 0.25	1450365	0.53 ÷ 1.07
	1450353	0.21 ÷ 0.44	1450366	1.0 ÷ 2.0
	1450354	0.37 ÷ 0.75	1450367	1.9 ÷ 3.8
	1450355	0.72 ÷ 1.40	1450368	3.7 ÷ 7.6
	1450356	0.21 ÷ 0.43		
	1450357	0.42 ÷ 0.85		
	1450358	0.81 ÷ 1.63		
	1450359	1.60 ÷ 3.20		
	1450360	3.13 ÷ 5.60		
SM 70	1450351	0.03 ÷ 0.08	1450361	0.02 ÷ 0.04
	1450352	0.06 ÷ 0.1	1450362	0.03 ÷ 0.08
	1450353	0.1 ÷ 0.2	1450363	0.06 ÷ 0.14
	1450354	0.1 ÷ 0.4	1450364	0.13 ÷ 0.28
	1450355	0.3 ÷ 0.7	1450365	0.27 ÷ 0.55
	1450356	0.1 ÷ 0.2	1450366	0.51 ÷ 1.02
	1450357	0.2 ÷ 0.5	1450367	0.98 ÷ 1.95
	1450358	0.4 ÷ 0.8	1450368	1.92 ÷ 3.85
	1450359	0.8 ÷ 1.7		
	1450360	1.6 ÷ 2.9		

Overall dimensions

Dimensional characteristics

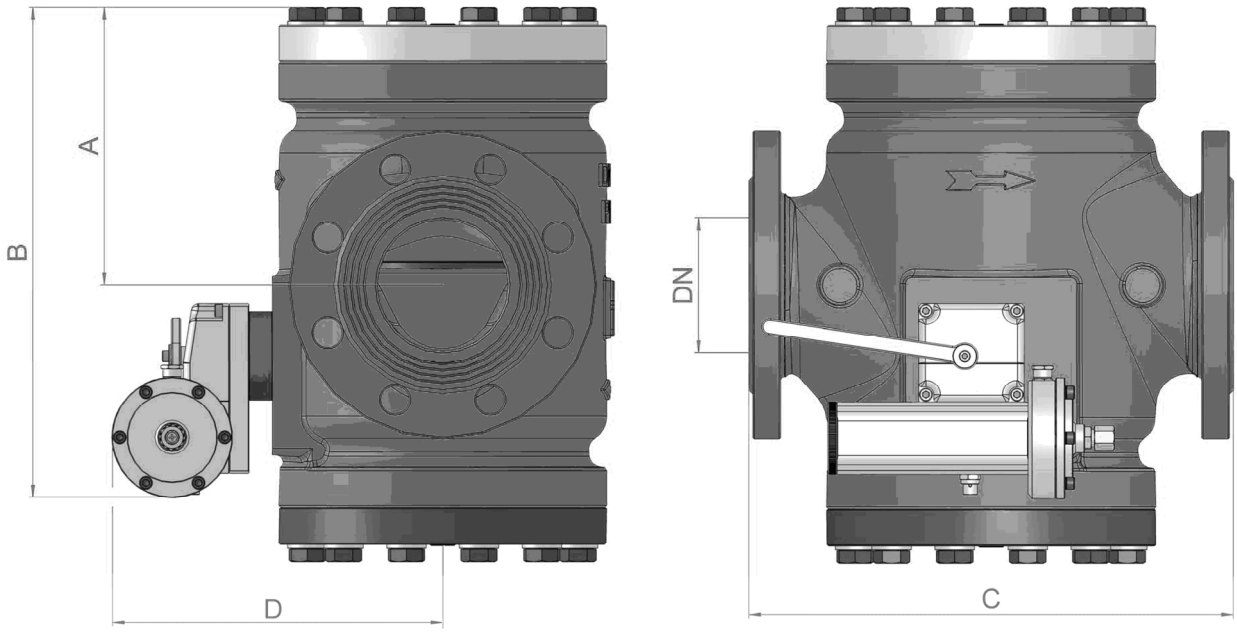


Figure 5 - SB 750 A

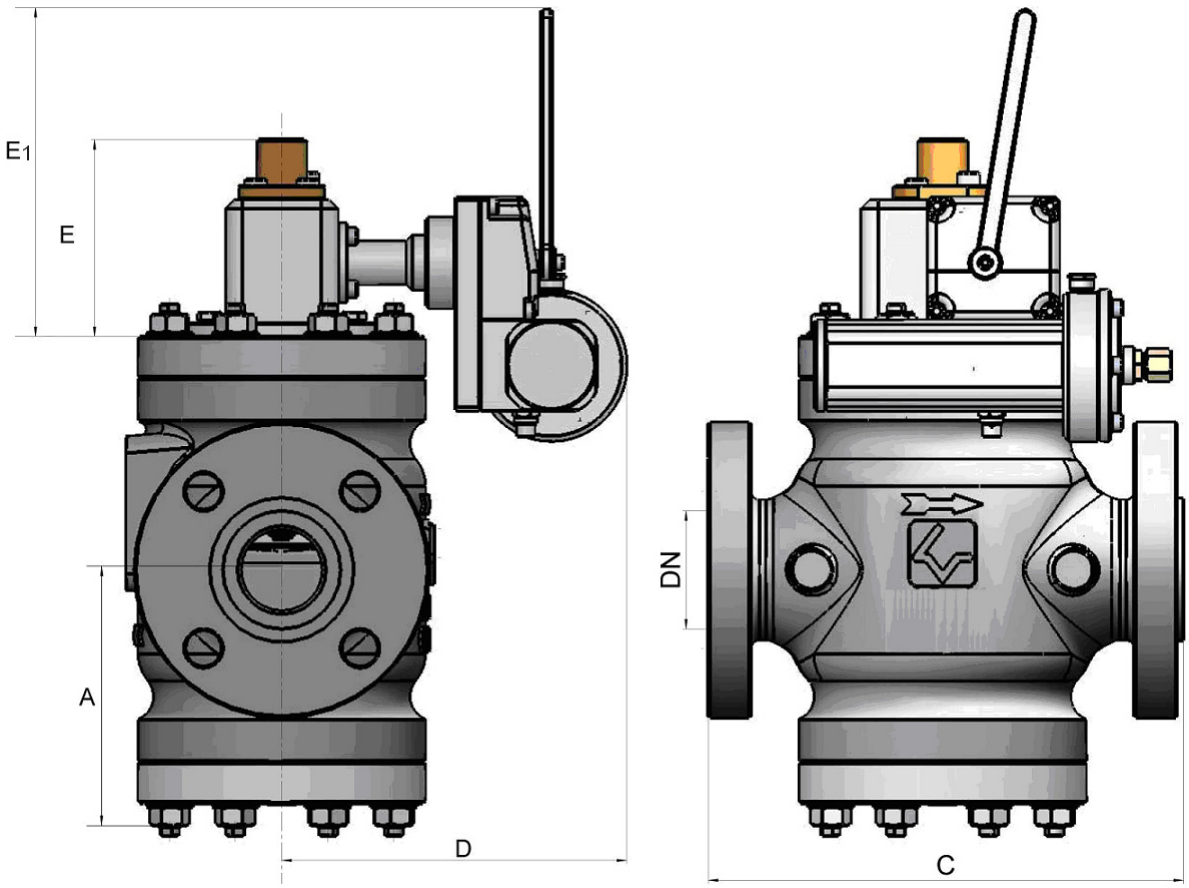


Figure 6 - SB 750 B

Table 5 – Overall dimensions - SB 750 A

DN		A	B	C [mm]		D
[mm]	[inch]	[mm]	[mm]	**PN 16-25**	**PN 40**	[mm]
25	1”	90	250	184	197	222
32	1/4”	100	260	194	212	235
40	1/2”	115	275	222	235	258
50	2”	130	290	254	267	270
80	3”	175	335	298	317	310
100	4”	210	370	352	368	350
150	6”	230	390	451	473	425
200	8”	365	630	543	568	505
250	10”	450	525	673	708	570
300	12”	550	710	737	776	710
400	16”	730	890	1016	-	810

Table 6 – Overall dimensions - SB 750 B

DN		A	B	C [mm]			D	E	E1
[mm]	**[inch]**	**[mm]**	**[mm]**	**PN 16-25**	**PN 40**	**PN 64-100**	**[mm]**	**[mm]**	**[mm]**
25	1”	90	250	184	197	210	222	138	200
32	1/4”	100	260	194	212	224	235	140	200
40	1/2”	115	275	222	232	251	258	142	200
50	2”	130	290	254	267	286	270	144	200
80	3”	175	335	298	317	337	310	150	200
100	4”	210	370	352	368	394	350	155	225
150	6”	230	390	451	473	508	425	220	280
200	8”	365	630	543	568	610	505	230	280
250	10”	450	525	673	708	752	570	258	300
300	12”	550	710	737	776	819	710	285	300
400	16”	730	890	1016	-	-	810	340	400

Notation

The shut-off valves are identified by specifying the model, the nominal dimensions of the inlet-outlet connections and the maximum working pressure.

SB	750	-	X	-	X	-	X	Description
			A					for pressures lower than or equal to 40 bar
			B					for pressures up to 100 bar
					025			DN 25
					032			DN 32
					040			DN 40
					050			DN 50
					080			DN 80
					100			DN 100
					150			DN 150
					200			DN 200
					250			DN 250
					300			DN 300
					400			DN 400
							016	PN 16
							025	PN 25
							040	PN 40
							064	PN 64
							100	PN 100

For example, the SB 750–A–50–25 notation designates a 750 shut-off valve, constructive variant A with nominal diameter of connections DN 50 and maximum working pressure of 25 bar.

The manufacturer reserves the right to make modifications without any prior notification.

CT No. 219 / 2009

TOTALGAZ INDUSTRIE

Nr. R.C.: J-22-3277/1994
CUI: RO6658553

IBAN: RO28BRDE240SV13842272400
B.R.D. G.S.G. Iaşi

Şos. Păcurari, nr. 128,
Iaşi, cod 700545, România
Tel. : 0040-232-216.391(2)
Fax : 0040-232-215.983
E-mail: office@totalgaz.ro
Web: www.totalgaz.ro

Certified Management System