

Reflex 819

Pressure Regulators

Pressure Regulators

Reflux 819

Reflux 819 is a pilot-controlled pressure regulator for medium and high pressure applications.

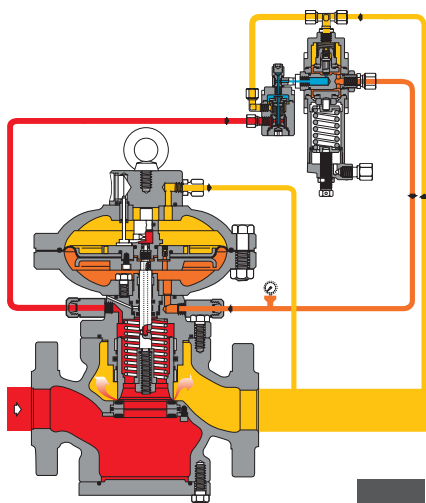
Reflux 819 is normally a fail to close regulator and will close under the following conditions:

- breakage of main diaphragm;
- lack of pressure feeding to the pilot loop.

This regulator is suitable for use with previously filtered, non-corrosive gases.

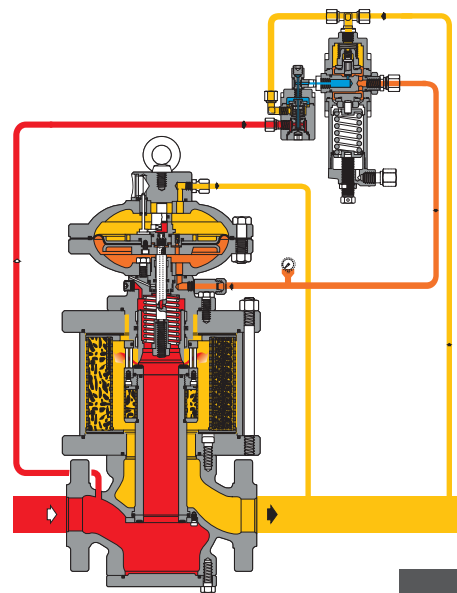
Modular Design

The Reflux 819 is modular in design and allows retrofitting of a monitor PM/819, slam shut valve, and/or silencer in the same body. The Reflux 819 regulator is truly a “top entry design” which allows for easy maintenance and retrofitting options in the field. The unique dynamic balancing system ensures an outstanding turn-down ratio combined with an extremely accurate outlet pressure control.



Reflux 819

Fig. 1



Reflux 819 + DB

Fig. 2

**DESIGNED
WITH YOUR
NEEDS IN MIND**

- COMPACT DESIGN
- EASY MAINTENANCE
- TOP ENTRY
- LOW NOISE

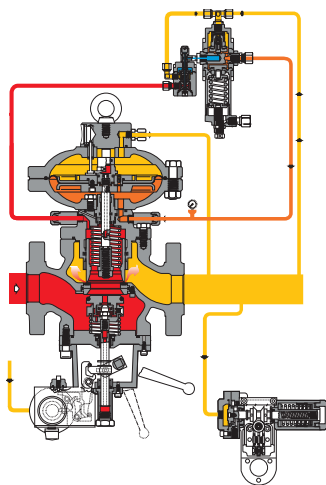
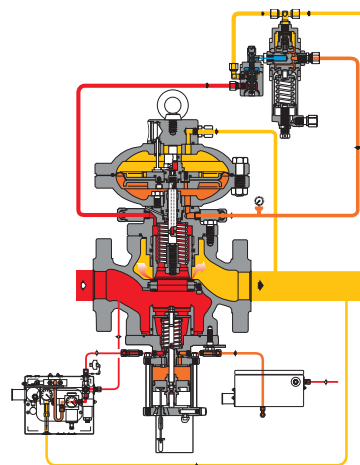
- OUTSTANDING TURN DOWN RATIO
- HIGH ACCURACY
- LOW OPERATION COST
- EXTREME FLEXIBILITY

SILENCER DB/819
Reflux 819

With decibel noise limitations becoming an increasing safety concern, the DB silencer option is a unique feature that reduces regulator noise. When the DB silencer is installed, it allows for a considerable reduction in noise level (dBa) up to 30 dBa, depending upon the application.

The Reflux 819 pressure regulator can be supplied with an incorporated silencer in either the standard version or version with incorporated slam-shut or incorporated monitor regulator. With the built-in silencer, the Cg and KG valve coefficients are 5% lower than the corresponding version without the silencer. The silencer may be retrofitted to the standard Reflux 819 as well as those with an incorporated slam-shut or monitor, without any need to modify the piping.

Pressure reduction and control operate in the same manner as the standard version.

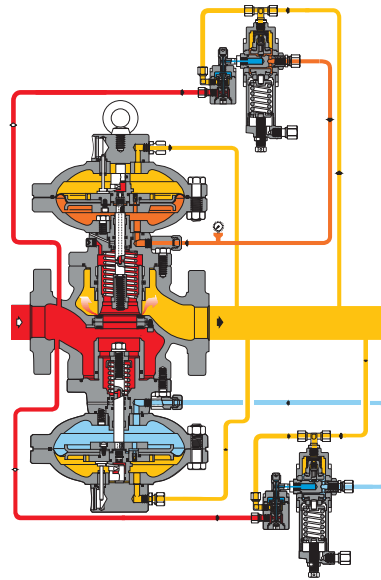
SLAM SHUT SB/82 OR HB/97
Reflux 819

Fig. 3

Fig. 4

The Reflux 819 pressure regulator offers the possibility of installing an incorporated slam shut valve SB/82 or HB/97 valve, depending on the regulator size. This can be done either during the manufacturing process or be retrofitted in the field. Retrofitting can be done without modifying the pressure regulator assembly.

The Cg and KG coefficients of a regulator plus incorporated slam-shut system are 7% lower than those for standard versions.

The main characteristics of the slam shut are:

- intervention for over pressure and/or under pressure
- manual re-setting with internal bypass activated by the lever mechanism;
- manual push button control;
- compact dimensions;
- easy maintenance;
- optional pneumatic or electromagnetic remote control;
- optional installation remote signal devices (contact switches or proximity switches).

MONITOR PM/819**Reflux 819****Fig. 5**

This emergency regulator (monitor) can be directly mounted onto the body of the main regulator. Both pressure regulators, therefore, use the same valve body, although they have independent actuators, pilots and valve seats.

The operational characteristics of the PM/819 monitor are the same as for the Reflux 819 regulator.

The Cg and KG coefficients of a regulator having an incorporated monitor are 7% lower than those for standard version.

Another great advantage offered by the incorporated monitor regulator is that it can be installed at any time, even on an already existing regulator, without piping modification. This solution allows the construction of regulator stations with compact dimensions.

MAIN FEATURES**Reflux 819**

> **Design pressure: up to 1450 PSIG (100 bar)**

> **Temperature:** Pietro Fiorentini regulators are suitable for a minimum operating ambient temperature of -31°F to 140°F if the following conditions are met:

- **Inlet flowing gas temperature shall be always higher than -4°F ;**
- **Inlet flowing gas shall be filtered, clean and without any liquid impurities;**

> **Range of inlet pressure bpe: 11.6 to 1450 PSIG (0,8 to 100 bar)**

> **Range of outlet pressure Wh: 5 to 1073 PSIG (0,3 to 74 bar) depending on installed pilot**

> **Minimum working differential pressure: 7.25 PSIG (0,5 bar)**

> **Accuracy class AC: up to 1%**

> **Closing pressure class SG: from 5% to 1% depending on outlet pressure**

> **Available size DN: 1" -2" -3" -4" -6" -8" -10"**

> **Flanging: class 150-300-600 RF or RTJ according to ANSI B16.5 and PN16 according to ISO 7005.**

MATERIALS
Reflux 819

Body	Cast steel ASTM A352 LCC for classes 300 and 600 ASTM A216 WCB for classes 150 and PN16
Head covers	ASTM A350 LF2 Forged steel
Stem	AISI 416 Stainless steel
Plug	ASTM A 350 LF2 Nickel coated on sealing surfaces
Valve seat	Steel + vulcanized rubber
Seals	Nitrile rubber
Compression fittings	According to DIN 2353 in zinc-plated carbon steel

The characteristics listed above are referred to standard products. Special characteristics and materials for specific applications may be supplied upon request.

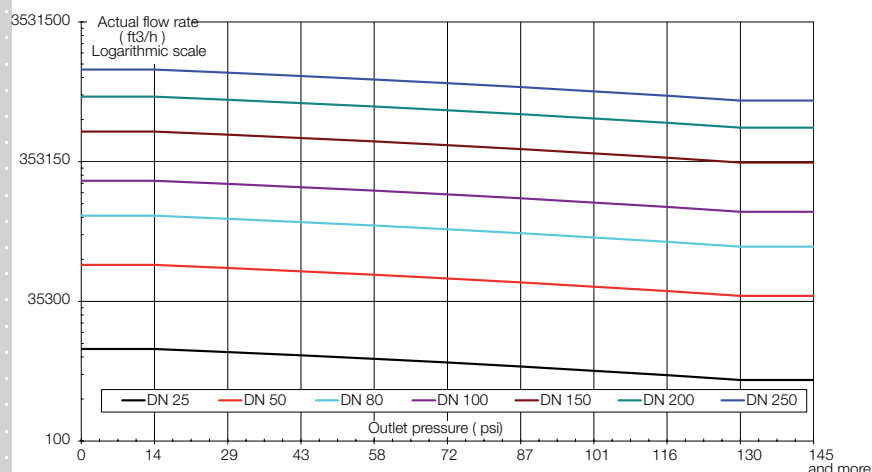
C_g, K_G and K₁ coefficient
Reflux 819

Nominal diameter (mm)	25	50	80	100	150	200	250
Size (inches)	1"	2"	3"	4"	6"	8"	10"
C_g flow coefficient	575	2,220	4,937	8,000	16,607	25,933	36,525
K_G flow coefficient	605	2,335	5,194	8,416	1,7471	2,7282	3,8425
K₁ body shape factor	106.78	106.78	106.78	106.78	106.78	106.78	106.78

For sizing formula refer to www.fiorentini.com/sizing

CAUTION:

The graph gives a quick reference of maximum recommended regulator capacity depending on selected size. Values are expressed in actual SCFH of Natural gas (s.g. 0,6): to have the data directly in SCFH it is necessary to multiply the value by the outlet pressure value in psi – absolute.



PILOTS

Reflux 819

Reflux 819 regulators are equipped with series 200 pilot as listed below:

- 204/. control range Wh: 4.35 to 623 PSIG (0,3 to 43 bar)
- 205/. control range Wh: 290 to 870 PSIG (20 to 60 bar)
- 207/. control range Wh: 595 to 1073 Psig (41 to 74 bar)

Pilots may be adjusted manually or remotely

Pilot adjustments

Reflux 819

Pilot type .../A	Manual setting
Pilot type .../D	Electric remote setting control
Pilot type .../CS	Pneumatic remote setting control
F.I.O.	Smart unit for remote setting, monitoring flow limitation and indirect flow measurement

Pre-regulators

The pilot loop is completed with a device called pre-regulator, separate from the pilot.

The pre-regulators listed below are available:

- **R14/A**: self adjusting pre-regulator that automatically regulates the feeding pressure to the pilot complete with integral filter at the inlet.
- **R42/A - R44/A - R45/A**: adjustable pre-regulator complete with integral filter at the inlet.

SLAM SHUT SWITCH SELECTION DEVICE

Reflux 819

MOD. SB	MIN.	MAX
101M	0.14* - 3.77*	0.29 - 14.5*
102M	0.58 - 40.61	2.9 - 79.77
102MH	40.61 - 79.77	2.9 - 79.77
103M	2.9 - 116	29 - 319
103MH	116 - 275.57	29 - 319
104M	23.2 - 261	108.77 - 652.66
104MH	261 - 594.65	108.77 - 652.66
105M	43.51 - 638.16	435.11 - 1,305.33
105MH	638.16 - 1,305.33	435.11 - 1,305.33

MOD. HB	MIN.	MAX
103	5.8 - 98.62	18,85 - 159.54
104	14.64 - 298.77	145,03 - 456.86
105	36.25 - 725.18	362,59 - 1,102.28
105/92	652.66 - 1,087.78	841,21 - 1,232.82

values in PSIG

OPTIONS
Reflux 819
For Regulator

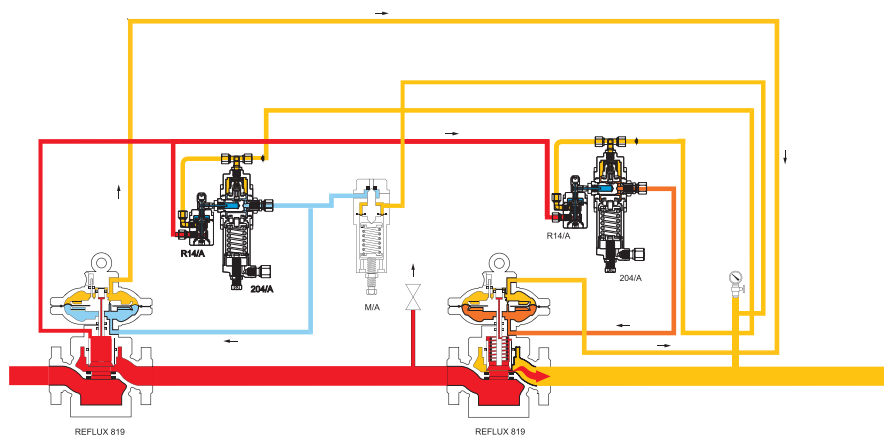
- stroke limiter
- flow-limiting devices
- limit switches
- position transmitters
- steel fittings, single or dual sealing

For Pilot

- supplementary filter CF 14
- dehydrating filter CF 14/D

IN-LINE MONITOR
Reflux 819

The monitor is generally installed upstream of the main regulator. Although the function of the monitor regulator is different, the two regulators are virtually identical from the point of view of their mechanical components. The only difference is that the monitor is set at a higher pressure than the main regulator. The Cg and KG coefficients of the regulator plus in-line monitor system are about 20% lower than those of the regulator alone.


M/A ACCELERATOR
Reflux 819

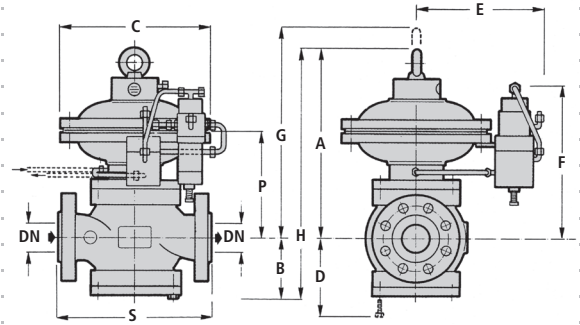
When the monitor is required to take over rapidly in the event of a main regulator failure, an M/A accelerator pilot installation on the monitor is recommended. Installation of the accelerator is when the monitor is used as safety accessory. This device, connected by sensing line to the downstream pressure, discharges the gas enclosed in the motorization chamber of the monitor regulator, allowing the monitor to take over faster.

The set point of M/A accelerator is usually higher than set point of the monitor by 4.35 to 7.25 PSIG.

In case of working monitor configuration (two stage pressure cut with monitor override), the accelerator may not be necessary.

REFLUX 819

Reflux 819



Overall dimensions in inches

Inches	1"	2"	3"	4"	6"	8"	10"
S - ANSI 150/PN 16	7.25	10	11.75	13.88	17.75	21.38	26.5
S - ANSI 300	7.75	10.5	12.5	14.5	18.62	22.38	27.88
S - ANSI 600	8.25	11.25	13.25	15.5	20	24	29.62
A	12.60	13.78	16.92	19.29	25.60	29.52	31.49
B	3.93	5.11	5.9	7.48	8.85	10.43	13.38
C	10.94	10.95	14.17	14.17	20.07	20.07	24
D	5.11	6.30	7.87	9.84	10.82	12.59	17.32
E	12.20	310	12.60	12.59	16.53	16.53	18.5
F	10.24	12.20	13.77	14.96	16.14	18.11	22
G	16.14	16.92	20.86	23.62	28.93	33.46	35.43
H	16.53	18.90	22.83	26.77	34.44	39.96	48.81
P	6.69	7.87	10.23	11.41	12.59	14.56	19.68
Tubing Connections	1/4" NPT						

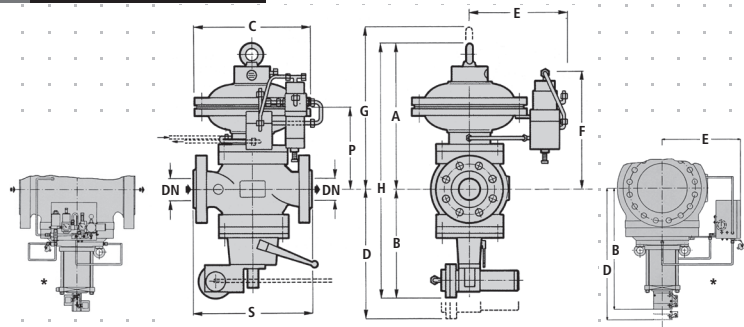
Face to face dimensions S according to IEC 534-3 and ANSI

Weights in Lbs

S - ANSI 150/PN 16	97	134.4	231.5	321.8	679	899.5	1,984
S - ANSI 300	99.2	136.7	240.3	344	760.5	1,036	2,094
S - ANSI 600	101.4	141	246.9	363.7	793.6	1,091	2,204

REFLUX 819 + SB82 / + HB97

Reflux 819



Overall dimensions in inches

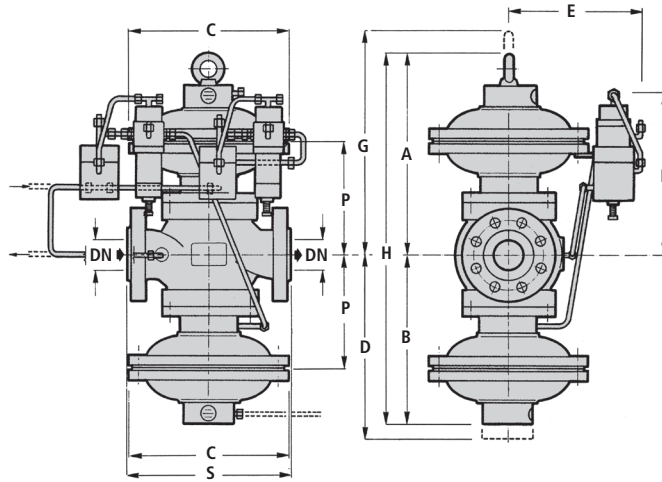
Inches	1"	2"	3"	4"	6"	8"	10"				
S - ANSI 150/PN 16	7.25	10	11.75	13.88	17.75	21.38	26.5				
S - ANSI 300	7.75	10.5	12.5	14.5	18.62	22.38	27.88				
S - ANSI 600	8.25	11.25	13.25	15.5	20	24	29.62				
A	12.59	13.77	16.92	19.29	25.59	29.52	31.49				
B	8.46	9.44	10.62	11.81	20.39*	14.76	25.39*	17.71	27.04*	20.86	31.33*
C	10.94	10.94	14.17	14.17	20.07	20.07	24.01				
D	11	13	14.96	17.32	25.59*	22.04	32.87*	24.6	35.43*	28.74	41.73*
E	12.20	12.20	12.59	12.59	14.09*	16.53	16.14*	16.53	17.51*	18.5	20.07*
F	10.23	11.41	13.77	14.96	16.14	18.11	22.04				
G	16.53	16.92	20.86	23.62	28.93	33.46	35.43				
H	21.06	23.22	27.55	31.1	40.35	47.24	52.36				
P	6.69	7.87	10.23	11.41	12.59	14.56	19.68				
Tubing Connections	1/4" NPT										

*Indicates dimensions with the MODEL HB/9

Face to face dimensions S according to ANSI; IEC 534-3 and EN 334

Weights in Lbs

S - ANSI 150/PN 16	116.8	156.5	253.5	352.7	705.5	1,014	2,094
S - ANSI 300	121.2	161	269	377	804.5	1,157	2,204
S - ANSI 600	123.4	165.5	275.5	397	837.7	1,212.5	2,314



Overall dimensions in inches

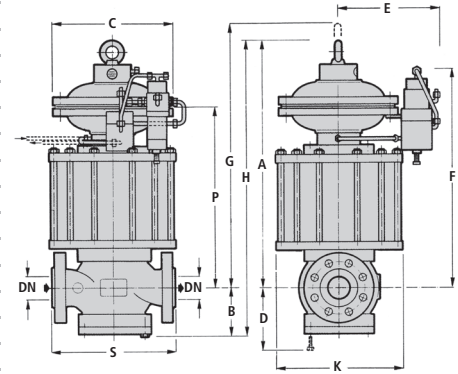
Inches	1"	2"	3"	4"	6"	8"	10"
S - ANSI 150/PN 16	7.25	10	11.75	13.88	17.75	21.38	26.5
S - ANSI 300	7.75	10.5	12.5	14.5	18.62	22.38	27.88
S - ANSI 600	8.25	11.25	13.25	15.5	20	24	29.62
A	12.59	13.77	16.92	19.29	25.59	29.52	31.49
B	12.59	13.77	16.92	19.29	25.59	29.52	31.49
C	10.94	10.94	14.17	14.17	20.07	20.07	24.01
D	16.14	16.92	20.86	23.62	28.93	33.46	35.43
E	12.2	12.2	12.59	12.59	16.53	16.53	18.5
F	12.23	11.41	13.77	14.96	16.14	18.11	22.04
G	16.14	16.92	20.86	23.62	28.93	33.46	35.43
H	25.19	27.55	33.85	38.58	51.18	59.05	63
P	6.69	7.87	10.23	11.41	12.59	14.56	19.68
Tubing Connections	1/4" NPT						

Face to face dimensions S according to ANSI, IEC 534-3 and EN 334

Weights in Lbs

S - ANSI 150/PN 16	185	231.5	296.7	540	1,139.7	1,477	3,086.5
S - ANSI 300	187.3	233.7	405.7	562.2	1,221.5	1,611.5	3,196.7
S - ANSI 600	189.5	238	412.2	582	1,254.5	1,666.7	3,307



REFLUX 819 + DB/819
Reflux 819

Overall dimensions in inches

Inches	1"	2"	3"	4"	6"	8"	10"
S - ANSI 150/PN 16	7.25	10	11.75	13.88	17.75	21.38	26.5
S - ANSI 300	7.75	10.5	12.5	14.5	18.62	22.38	27.88
S - ANSI 600	8.25	11.25	13.25	15.5	20	24	29.62
A	20.47	22.63	27.55	31.49	36.81	42.71	51.18
B	3.93	5.11	5.9	7.48	8.85	10.43	13.38
C	10.94	10.94	14.17	14.17	20	20	24
D	5.11	6.29	7.87	9.84	10.82	12.59	17.32
E	12.2	12.2	12.59	12.59	16.53	16.53	18.5
F	16.73	19.48	24.21	26.37	31.29	35.23	4.33
G	24	25.19	30.9	35.23	44.09	49.21	59
H	24.4	27.75	33.46	38.97	45.66	53.14	64.56
P	14.56	15.74	19.88	23	27.16	30.31	39.37
K	8.66	11.81	13	15.35	18.89	23.42	27.36

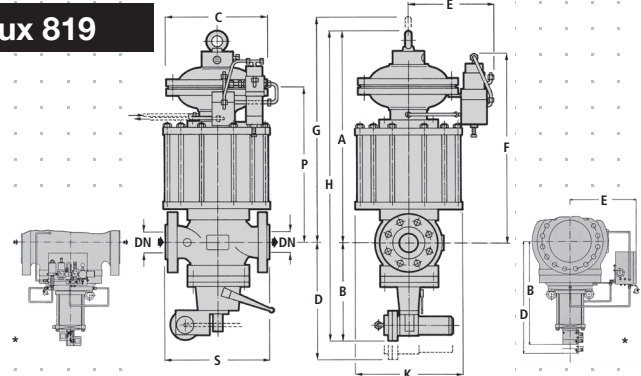
Tubing Connections

1/4" NPT

Face to face dimensions S according to ANSI, IEC 534-3 and EN 334

Weights in Lbs

S - ANSI 150/PN 16	154.3	277.7	430	573.2	1,245.7	1,841	2,822
S - ANSI 300	158.73	282.2	449.7	673.1	1,340	2,039	3,042.5
S - ANSI 600	161	286.6	456.3	657	1,411	2,093.5	3,152.5

REFLUX 819+DB/819+SB82 /+HB97
Reflux 819

Overall dimensions in inches

Inches	1"	2"	3"	4"	6"	8"	10"				
S - ANSI 150/PN 16	7.25	10	11.75	13.88	17.75	21.38	26.5				
S - ANSI 300	7.75	10.5	12.5	14.5	18.62	22.38	27.88				
S - ANSI 600	8.25	11.25	13.25	15.5	20	24	29.62				
A	20.47	22.63	27.55	31.49	36.81	42.71	51.18				
B	8.46	9.44	10.62	11.81	20.39*	14.76	25.39*	17.71	27*	20.86	796*
C	10.94	10.94	14.17	14.17	20	20	24				
D	11	13	14.96	17.32	25.59*	22	32.87*	24.6	35.43*	28.74	1060*
E	12.2	12.2	12.59	12.59	14.09*	16.53	16.14*	16.53	17.51*	18.5	510*
F	16.73	19.48	24.21	26.37	31.29	34.05	43.30				
G	24	25.19	30.9	35.23	44.09	49.21	59.05				
H	28.93	32.08	38.18	43.3	51.57	60.43	72.05				
P	14.56	15.74	19.88	22.63	27.16	30.31	39.37				
K	8.66	11.81	13	15.35	18.89	23.42	27.36				

Tubing Connections

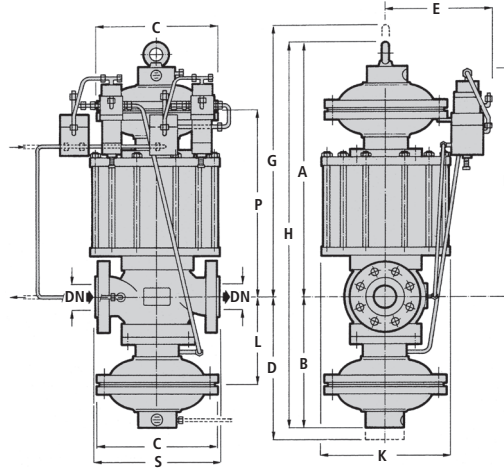
1/4" NPT

*Indicated dimensions with the MODEL HB/97

Face to face dimensions S according to ANSI, IEC 534-3 and EN 334

Weights in Lbs

S - ANSI 150/PN 16	174	300	452	604	1,272	1,955.5	2,932
S - ANSI 300	180.7	306.5	478.5	670.5	1,384.5	2,160.5	3,152.5
S - ANSI 600	183	311	485	690	1,455	3,307	3,263



Overall dimensions in inches

Inches	1"	2"	3"	4"	6"	8"	10"
S - ANSI 150/PN 16	7.25	10	11.75	13.88	17.75	21.38	26.5
S - ANSI 300	7.75	10.5	12.5	14.5	18.62	22.38	27.88
S - ANSI 600	8.25	11.25	13.25	15.5	20	24	29.62
A	20.47	22.63	27.55	31.49	36.81	42.71	51.18
B	12.59	13.77	16.92	19.29	25.59	29.52	31.49
C	10.94	10.94	14.17	14.17	20	20	24
D	16.14	16.92	20.86	23.62	28.93	33.46	35.43
E	12.2	12.2	12.59	12.59	16.53	16.53	18.5
F	16.73	19.48	24.21	23.37	31.29	35.23	43.3
G	24	25.19	30.9	35.23	44.09	49.21	59.05
H	33.07	36.41	44.48	50.78	62.4	72.24	82.67
P	14.56	15.74	19.88	22.63	27.16	30.31	39.37
K	8.66	11.81	13	15.35	18.89	23.42	27.36

Tubing Connections

1/4" NPT

Face to face dimensions S according to ANSI, IEC 534-3 and EN 334

Weights in Lbs

S - ANSI 150/PN 16	242.5	374.8	595.3	791.5	1,706.5	2,418.7	3,924.5
S - ANSI 300	247	379.2	588.5	855.4	1,726.2	2,612.5	4,144.7
S - ANSI 600	249.2	383.7	595.2	875.5	1,796.7	2,667.5	4,255

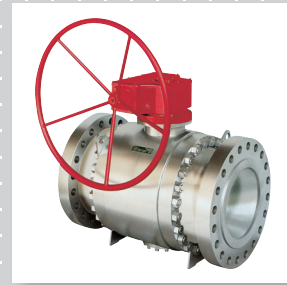




Reducing and Metering Stations



Slam Shut Valves



Ball Valves



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Fiorentini**

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