SANAYE GAZ IRAN CO.

Reflux 819

Pressure Regulators

Reflux 819

SANAYE GAZ IRAN CO.

Reflux 819 is pilot-controlled pressure regulator for medium and high pressure applications.
Reflux 819 is normally a fail to close regulator and specificaly will close under the following conditions:
- breakage of main diaphragm;
- lack of feeding to the pilot loop.

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

Modular Design

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

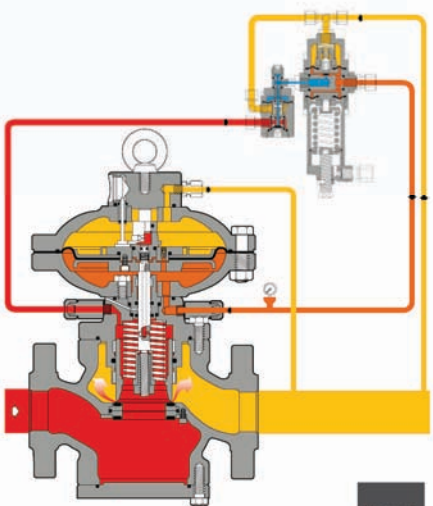

Fig. 1

Reflux 819

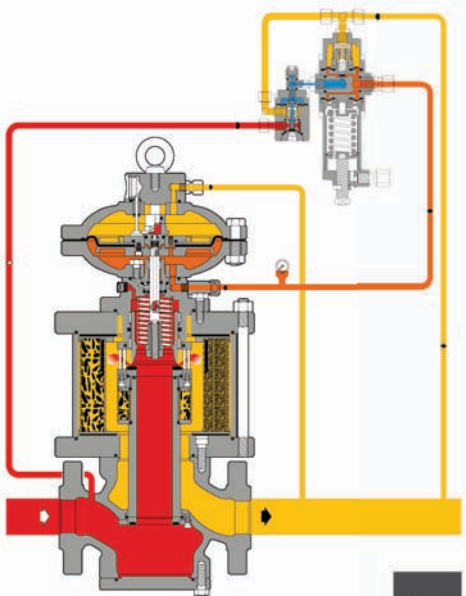

Fig. 2

Reflux 819 + DB

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

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SILENCER DB/819 — Reflux 819

Whenever certain noise limit is desired, the silencer allows you to considerably reduce the noise level (dBA) up to the required value.
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. Given the modular arrangement of the regulator, the silencer may be retrofited to both standard Reflux 819 version as well as those with incorporated slam-shut or monitor, without any need to piping modification.
Pressure reduction and control operate the same manner as in standard version.

SLAM SHUT SB/82 OR HB/97 — Reflux 819

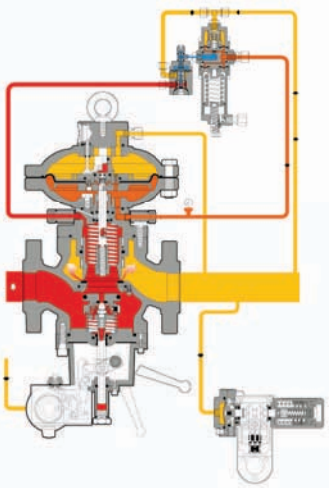

Fig. 3

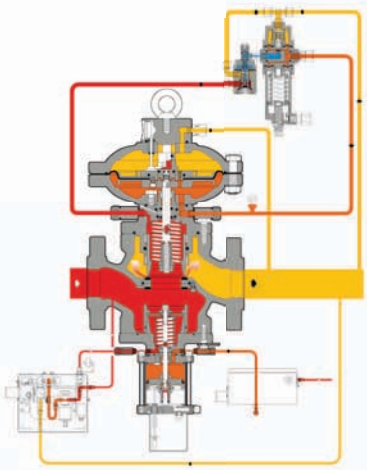

Fig. 4

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, and this can be done either during the manufacture process or be retrofited in the field. Retrofiting 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 this device are:
- intervention for over pressure and/or under pressure
- manual re-setting with internal by-pass 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).

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MONITOR PM/819 Reflux 819

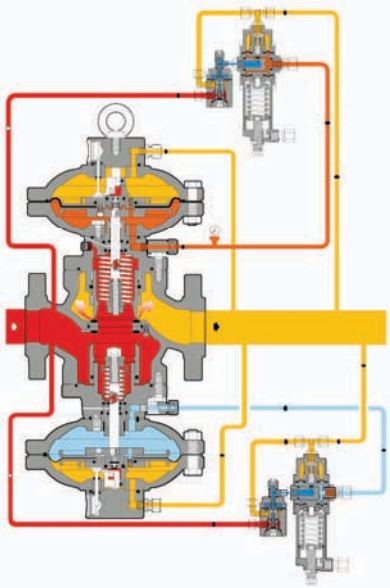

Fig. 5

This emergency regulator (monitor) is directly integrated to the body of the main regulator. Both pressure regulators, therefore, use the same valve body, although they have indipendent 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 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 reduction lines with compact dimensions.

MAIN FEATURES Reflux 819

> Design pressure: up to 102 bar (1479 Psig)
> Design temperature: -10°C to + 60°C (+14 to + 140 °F) (-20°C to + 60°C - 4 to + 140°F on request)
> Ambient temperature: -10°C to + 60°C (+14 to + 140°F) (-20°C to + 60°C - 4 to + 140°F on request)
> Range of inlet pressure bpe: 0,8 to 102 bar (11,6 to 1479 Psig)
> Range of outlet pressure Wh: 0,3 to 74 bar (5 to 1073 Psig) depending on installed pilot
> Minimum working differential pressure: 0,5 bar (7,25 Psig)
> 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.

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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

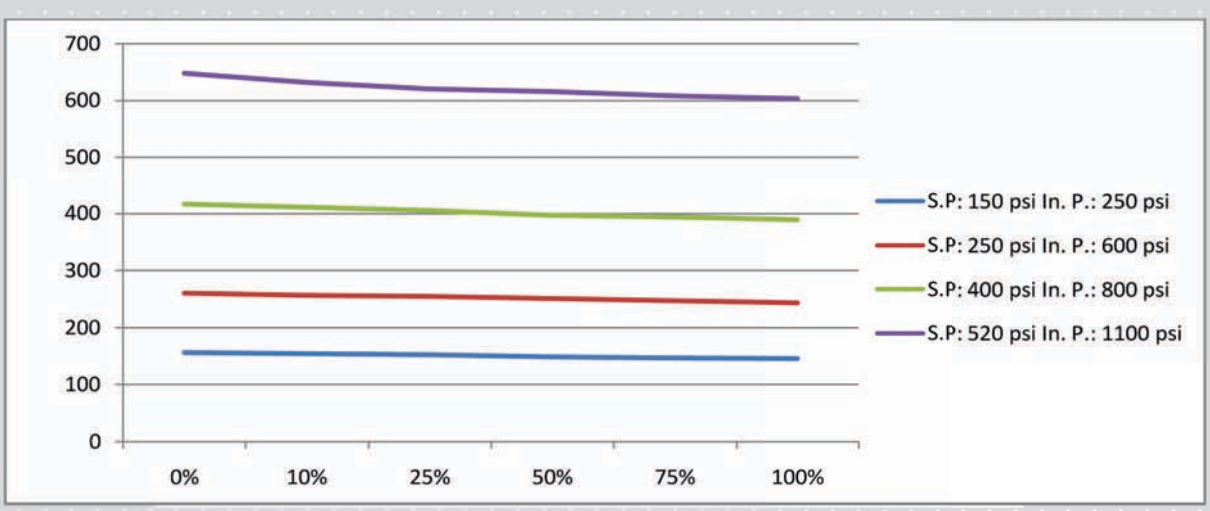
The characteristics listed above are referred to standard products. Special characteristics and materials for specific applications may be supplied upon request.

Cg, 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"
Cg flow coefficient	575	2220	4937	8000	16607	25933	36525
K_G flow coefficient	605	2335	5194	8416	17471	27282	38425
K1 body shape factor	106,78	106,78	106,78	106,78	106,78	106,78	106,78

CAUTION:

The graph gives a quick reference of maximum recommended regulator capacity depending on selected size. Values are expressed in actual m3/h of Natural gas (s.g. 0,6): to have the data directly in Nm3/h it is necessary to multiply the value by the outlet pressure value in bar – absolute.



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PILOTS — Reflux 819

Reflux 819 regulators are equipped with series 200 pilot as listed below:
- 204/. control range Wh: 0,3 to 43 bar; (4,35 to 623 Psig)
- 205/. control range Wh: 20 to 60 bar; (290 to 870 Psig)
- 207/. control range Wh: 41 to 74 bar; (595 to 1073 Psig)

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

Preregulators

The pilot loop is completed with a device called preregulator, separate from the pilot.
The preregulators listed below are available:
- **R14/A**: self adjusting preregulator that automatically regulates the feeding pressure to the pilot complete with integral filter at the inlet.
- **R42/A - R44/A - R45/A**: adiustable preregulator complete with integral filter at the inlet.

PRESSOSTATIC DEVICE — Reflux 819

MOD. SB	MIN.	MAX
101M	0,01* ÷ 0,26*	0,02 ÷ 1*
102M	0,04 ÷ 2,8	0,2 ÷ 5,5
102MH	2,8 ÷ 5,5	0,2 ÷ 5,5
103M	0,2 ÷ 8	2 ÷ 22
103MH	8 ÷ 19	2 ÷ 22
104M	1,6 ÷ 18	7,5 ÷ 45
104MH	18 ÷ 41	7,5 ÷ 45
105M	3 ÷ 44	30 ÷ 90
105MH	44 ÷ 90	30 ÷ 90

MOD. HB	MIN.	MAX
103	0,4 ÷ 6,8	1.3 ÷ 11
104	1,01 ÷ 20,6	10 ÷ 31,5
105	2,5 ÷ 50	25 ÷ 76
105/92	45 ÷ 75	58 ÷ 85

values in bar(g)

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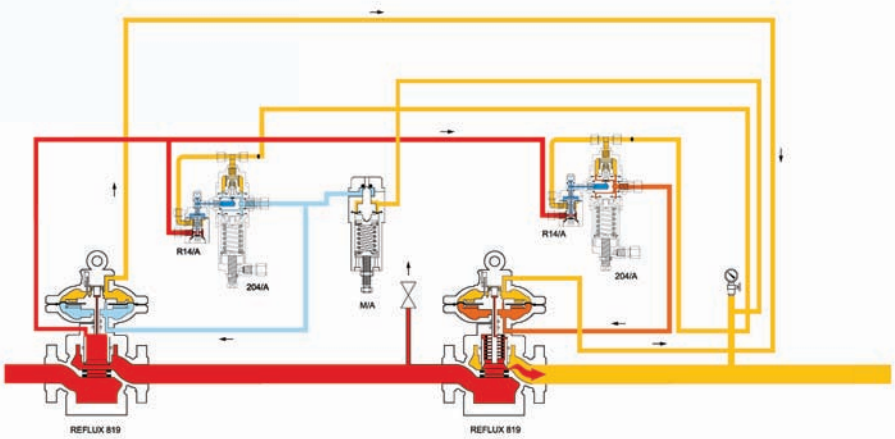
OPTIONALS — Reflux 819

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 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 mandatory when monitor is used as safety accessory according to PED directive. 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 0.3 to 0.5 bar.

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

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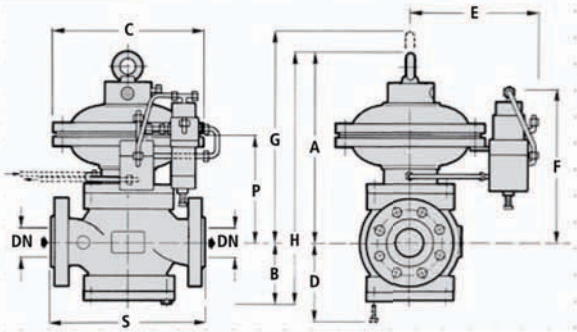


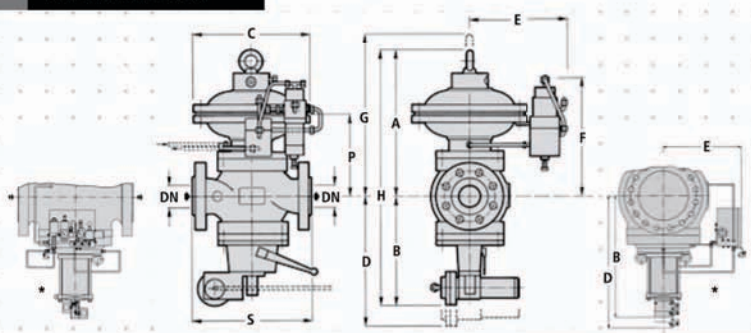
Overal dimensions in mm

Size (mm)	25	50	80	100	150	200	250
Inches	1"	2"	3"	4"	6"	8"	10"
S - Ansi 150/PN 16	184	254	298	352	451	543	673
S - Ansi 300	197	267	317	368	473	568	708
S - Ansi 600	210	286	336	394	508	609	752
A	320	350	430	490	650	750	800
B	100	130	150	190	225	265	340
C	278	278	360	360	510	510	610
D	130	160	200	250	275	320	440
E	310	310	320	320	420	420	470
F	260	290	350	380	410	460	560
G	410	430	530	600	735	850	900
H	420	480	580	680	875	1015	1240
P	170	200	260	290	320	370	500
Tubing Connections				Δe10 x Δi 8			

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

Weights in Kgf

S - Ansi 150/PN 16	44	61	105	146	308	408	900
S - Ansi 300	45	62	109	156	345	470	950
S - Ansi 600	46	64	112	165	360	495	1000



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S - Ansi 300	197	267	317	368		473		568		708	
S - Ansi 600	210	286	336	394		508		609		752	
A	320	350	430	490		650		750		800	
B	215	240	270	300	518*	375	645*	450	687*	530	796*
C	278	278	360	360		510		510		610	
D	280	330	380	440	650*	560	835*	625	900*	730	1060*
E	310	310	320	320	358*	420	410*	420	445*	470	510*
F	260	290	350	380		410		460		560	
G	410	430	530	600		735		850		900	
H	535	590	700	790		1025		1200		1330	
P	170	200	260	290		320		370		500	
Tubing Connections				Δe10 x Δi 8							

*indicated Dimensions with the MODEL HB/97

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

Weights in Kgf

S - Ansi 150/PN 16	53	71	115	160	320	460	950
S - Ansi 300	55	73	122	171	365	525	1000
S - Ansi 600	56	75	125	180	380	550	1050

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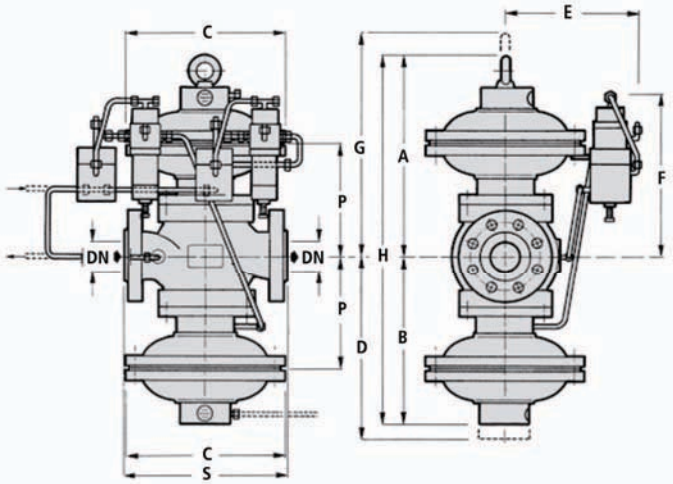

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S - Ansi 300	197	267	317	368	473	568	708
S - Ansi 600	210	286	336	394	508	609	752
A	320	350	430	490	650	750	800
B	320	350	430	490	650	750	800
C	278	278	360	360	510	510	610
D	410	430	530	600	735	850	900
E	310	310	320	320	420	420	470
F	260	290	350	380	410	460	560
G	410	430	530	600	735	850	900
H	640	700	860	980	1300	1500	1600
P	170	200	260	290	320	370	500
Tubing Connections				Δe10 x Δi 8			

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

Weights in Kgf

S - Ansi 150/PN 16	84	105	180	245	517	670	1400
S - Ansi 300	85	106	184	255	554	731	1450
S - Ansi 600	86	108	187	264	569	756	1500

REFLUX 819 + DB/819

Reflux 819

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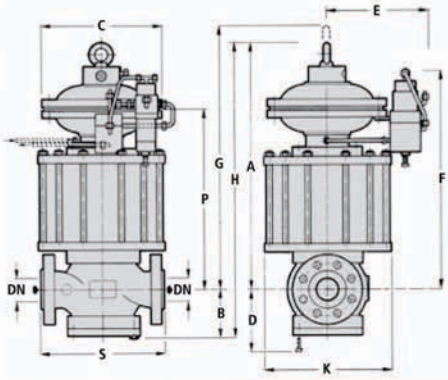

Overal dimensions in mm

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Inches	1"	2"	3"	4"	6"	8"	10"
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S - Ansi 300	197	267	317	368	473	568	708
S - Ansi 600	210	286	336	394	508	609	752
A	520	575	700	800	935	1085	1300
B	100	130	150	190	225	265	340
C	278	278	360	360	510	510	610
D	130	160	200	250	275	320	440
E	310	310	320	320	420	420	470
F	425	495	615	670	795	895	1100
G	610	640	785	895	1120	1250	1500
H	620	705	850	990	1160	1350	1640
P	370	400	505	585	690	770	1000
K	220	300	330	390	480	595	695
Tubing Connections				Δe10 x Δi 8			

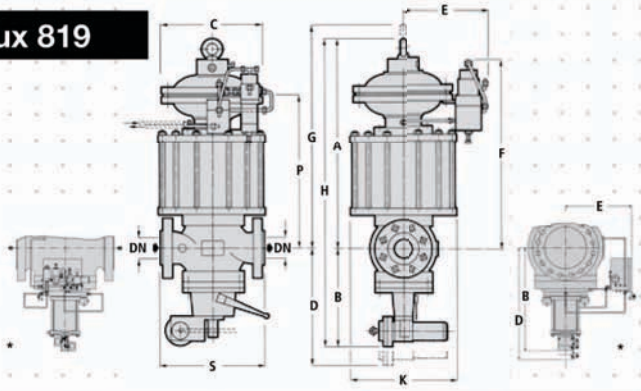
Face to face dimensions S according to IEC 534-3 and EN 334

Weights in Kgf

S - Ansi 150/PN 16	70	126	195	260	565	835	1280
S - Ansi 300	72	128	204	289	608	925	1380
S - Ansi 600	73	130	207	298	640	950	1430

REFLUX 819+DB/819+SB82 /+HB97

Reflux 819



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S - Ansi 600	210	286	336	394		508		609		752	
A	520	575	700	800		935		1085		1300	
B	215	240	270	300	518*	375	645*	450	687*	530	796*
C	278	278	360	360		510		510		610	
D	280	330	380	440	650*	560	835*	625	900*	730	1060*
E	310	310	320	320	358*	420	410*	420	445*	470	510*
F	425	495	615	670		795		865		1100	
G	610	640	785	895		1120		1250		1500	
H	735	815	970	1100		1310		1535		1830	
P	370	400	505	575		690		770		1000	
K	220	300	330	390		480		595		695	
Tubing Connections				Δe10 x Δi 8							

*indicated Dimensions with the MODEL HB/97

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

Weights in Kgf

S - Ansi 150/PN 16	79	136	205	274	577	887	1330
S - Ansi 300	82	139	217	304	628	980	1430
S - Ansi 600	83	141	220	313	660	1500	1480

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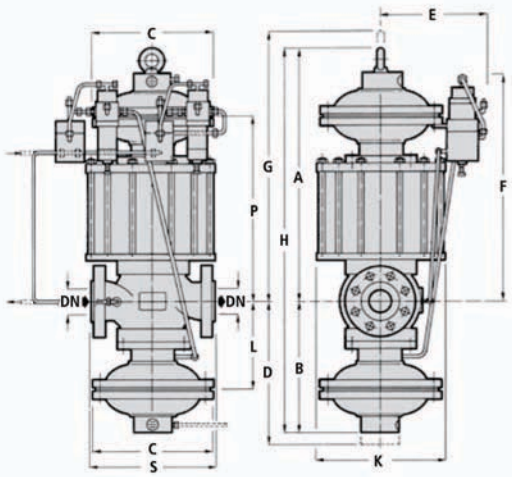

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E	310	310	320	320	420	420	470
F	425	495	615	670	795	895	1100
G	610	640	785	895	1120	1250	1500
H	840	925	1130	1290	1585	1835	2100
P	370	400	505	575	690	770	1000
K	220	300	330	390	480	595	695
Tubing Connections				Δe10 x Δi 8			

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

Weights in Kgf

S - Ansi 150/PN 16	110	170	270	359	774	1097	1780
S - Ansi 300	112	172	267	388	783	1185	1880
S - Ansi 600	113	174	270	397	815	1210	1930