Direct action pressure reducing valve





For steam and gases. (For liquids, consult our technical department). Suitable for application in; ironing machines, laundries and dry cleaners', cooking vats, textile machinery, drying cylinders, autoclaves, steam ovens, distilleries, heat exchangers, the food industry, chemical laboratories, etc.

Specifications

- Materials carefully selected for resistance to wear, extreme and use a single, non-metallic, asbestos-free joint.
- Simplicity of design, ensuring minimum maintenance requirements.
- Easy installation; may be assembled in any position, even upside down.
- Moderate weight and size.
- Interior design conceived for maximum capacity and performance for size.
- Easy to adjust. The valves are supplied unregulated, but with the corresponding spring, duly identified, for the required pressure reduction.
- Rating plate which identifies the regulation field.
- Three springs, easily interchangeable and identified by colour and code.
- Anchoring system immune to vibrations; may be sealed to prevent manipulation.
- Selft-centring lock, independent of axle, designed to guarantee absolue precision of regulation at the most demandig points.
- Protective filter for the locking surfaces.
- High degree of airtightness of the lock at zero consumption, exceeding the requirements of EN 12266-1.
- Stainless steel bellows welded to the plasma. Airtightness tested with helium, ensuring absolute reliability and long life.
- All valves undergo throrough testing.
- Each component is numbered, registered and inspected. If previously requested, the valve will be accompanied by certificates corresponding to materials, batch, tests and performance.

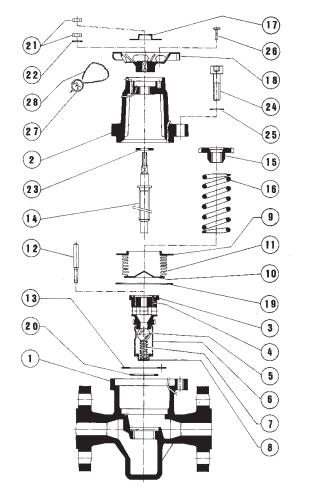
IMPORTANT

We recommend, if necessary, the use of thermal and acoustic insulation textile jackets Model 008. Depending on demand:

- May be manufactured using other materials for specific working conditions (high temperatures, fluids, etc.).
- Other connections.

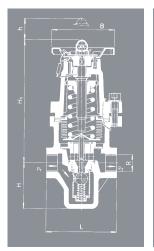
N ASME/FNPT ASME/ANS

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PIECE	FILUL	NODULAR IRON	CARBON STEEL	STAINLESS STEEL						
1	Body	Nodular iron (EN 5.3105)	Carbon steel (EN-1.0619)	Stainless steel (EN-1.4408)						
2	Cover	Aluminium (EN-AC-44200)	Aluminium (EN-AC-44200)	Aluminium (EN-AC-44200)						
3	Seating	Stainless steel (EN-1.4542)	Stainless steel (EN-1.4542)	Stainless steel (EN-1.4542)						
4	Guide	Graphite PTFE (Teflón)	Graphite PTFE (Teflón)	Graphite PTFE (Teflón)						
5	Lock	Stainless steel (EN-1.4034)	Stainless steel (EN-1.4034)	Stainless steel (EN-1.4034)						
6	Filter	Stainless steel (EN-1.4301)	Stainless steel (EN-1.4301)	Stainless steel (EN-1.4301)						
7	Auxiliary spring	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)						
8	Cap	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)						
9	Bellows ring	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)						
10	Bellows disc	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)						
11	Bellows	Stainless steel (EN-1.4571)	Stainless steel (EN-1.4571)	Stainless steel (EN-1.4571)						
12	Axle	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)						
13	Separator disc	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)	Stainless steel (EN-1.4404)						
14	Regulation screw	Carbon steel (EN-1.1191)	Carbon steel (EN-1.1191)	Carbon steel (EN-1.1191)						
15	Spring press	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)						
16	Spring	Chrome-silicon steel (EN-10270-2-FDSiCr)	Chrome-silicon steel (EN-10270-2-FDSiCr)	Chrome-silicon steel (EN-10270-2-FDSiCr)						
17	Rating plate	Stainless steel (EN-1.4301)	Stainless steel (EN-1.4301)	Stainless steel (EN-1.4301)						
18	Handwheel	Aluminium (EN-AC-44200)	Aluminium (EN-AC-44200)	Aluminium (EN-AC-44200)						
19	Body joint	Graphite	Graphite	Graphite						
20	Seating joint	PTFE (Topchem)	PTFE (Topchem)	PTFE (Topchem)						
21	Nut	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)						
22	Washer	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)						
23	Washer	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)						
24	Screw	Carbon steel (EN-1.1191)	Carbon steel (EN-1.1191)	Stainless steel (EN-1.4401)						
25	Washer	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)	Stainless steel (EN-1.4401)						
26	Anchoring bolt	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)	Carbon steel (EN-1.1141)						
27	Seal	Plastic	Plastic	Plastic						
28	Sealing wire	Sealing wire	Sealing wire	Sealing wire						
	R	1/2" to 1" (GAS, NPT)								
	DN		15 to 25 (EN, ANSI)							
	PN	25	40	40						
0055:	PRESSURE IN bar	17	17	17						
OPERAT CONDIT	MAX TEMP IN T.	210	230	230						
	MIN. TEMP. IN °C	-10	-10	-60						



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	K	ometec sr	<u> </u>	W	WV	W.1	ror	ne	te	C.1	ι -	K	om	iet	ec	sr	1 -	W	W	<i>N</i> .1	OI	ne	tec	2.11	[-	K	m	iet	ec	sr	1 -	W	WV	N.1	cor	ne	tec	2.1t
	R	DN	1/2" 3/4"								1"												20 25															
C	CONNECTIONS		Writtworth gas-light cylindrical female ISO 228/1 (DIN-259) II - Flar												S PN-25 EN-1092-1/PN-40 EN-1092-2 es class 150 lbs ASME/ANSI B.16.5																							
			NPT thread							ANSI/ASME B1.20.1										-1	l II								l II			- 1			Ш			
	Н			57						57					57					57					57					57								
	H1				1	50			150					150					150						150					150								
	h					25			25					25					25					25					25									
		L			_	35						5						05						50			150					160						
		В																			75					75					75			_				
	D				_					_							_				95 90				105	5			100 115				110					
		K																			_	60,3		75 69			69,90 85				79,40							
		1	_				_					_				14 15,90			14 1						14													
		b	_														16 11,20			0	18 1			12,70			18	8 14,30		0								
			RILLS N°. —					_					_				4				4					4												
生	NODULAR IRON		1,98				2,05				2,29				3,60				3,65				4,73															
WEIGHT IN KGE	CARBON STEEL			2,08							2,44				3,85				3,95				5,05															
<i>></i> -	STAINLESS STEEL				2,	13						25					2,	55					3,	95			4,08				5,20							
	SPRING REGULATING RANGE IN bar (REDUCED PRESSURE)		7	0,14 to 1,70 1,40 to 4,00 3,50 to 8,60		0,14 to 1,70				3,50 10 8,60	0,14 to 1,70		0,14 to 1,70			3,50 10 8,60	7	0,14 to 1,70		00,4	3,50 to 8,60		0,14 to 1,70		1,40 to 4,00		3,50 to 8,60		0,14 to 1,70		1,40 to 4,00		0 0 0 0	3,50 to 8,60				
			GAS	NPT	GAS	NPT	GAS	NPT	GAS	NPT	GAS	NPT	GAS	NPT	GAS	NPT	GAS	NPT	GAS	NPT	Z U	ANSI	Z	ANSI	Z Z	ANSI	Z N	ANSI	Z	ANSI	Z	ANSI	Z	ANSI	Z	ANSI	Z Z	ANSI
		NODULAR IRON 2001-	513.60261	513.602611	513.60262	513.602621	513.60263	513.602631	513.63461	513.634611	513.63462	513.634621	513.63463	513.634631	513.61061	513.610611	513.61062	513.610621	513.61063	513.610631	514.60261	514.602611	514.60262	514.602621	514.60263	514.602631	514.63461	514.634611	514.63462	514.634621	514.63463	514.634631	514.61061	514.610611	514.61062	514.610621	514.61063	514.610631
CODE		CARBON STEEL 2001-	513.80241	513.802411	513.80242	513.802421	513.80243	513.802431	513.83441	513.834411	513.83442	513.834421	513.83443	513.834431	513.81041	513.810411	513.81042	513.810421	513.81043	513.810431	514.80241	514.802411	514.80242	514.802421	514.80243	514.802431	514.83441	514.834411	514.83442	514.834421	514.83443	514.834431	514.81041	514.810411	514.81042	514.810421	514.81043	514.810431
		STAINLESS STEEL 2001-	513.80221	513.802211	513.80222	513.802221	513.80223	513.802231	513.83421	513.834211	513.83422	513.834221	513.83423	513.834231	513.81021	513.810211	513.81022	513.810221	513.81023	513.810231	514.80221	514.802211	514.80222	514.802221	514.80223	514.802231	514.83421	514.834211	514.83422	514.834221	514.83423	514.834231	514.81021	514.810211	514.81022	514.810221	514.81023	514.810231



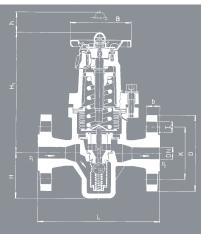
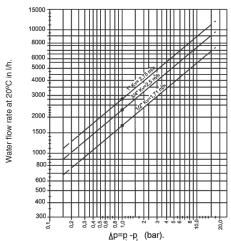


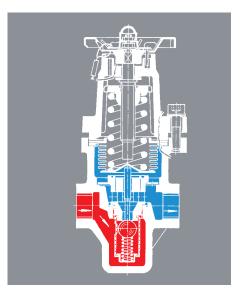
TABLE OF PRESSURES, FLOW COEFFICIENTS AND REGULATION FIELDS										
	F	1/2"	1"							
	[15 20 25								
MAXIM	IUM INPUT PRES	17								
MAXIM	IUM REDUCTION	DIFFERENTIAL IN bar		P1:10						
MINIMUM REDUCED PRESSURE IN bar (P2 MIN.) 0,14										
FLOW	COEFFICIENT KV	1,50	2,50	3,00						
l bar	0,14 to 1,70	CODE	56494							
NGE IN URE)	0,14101,70	IDENTIFICATION COLOUR	White							
TING RANGE PRESSURE)	1,40 to 4,00	CODE		56495						
REGULAT	1,40 to 4,00	IDENTIFICATION COLOUR	Pink							
SPRING REGULATING RANGE IN bar (REDUCED PRESSURE)	3,50 to 8,60	CODE	56496							
SPR	3,50 10 6,00	IDENTIFICATION COLOUR		Red						

30	SII	- WWW	.rome	lec.it -	Kom	etec si	1 - WV	ioi.wv					
		DN	1	5		20	25						
1	DD	ESSURE	I- Saturated stea II- Air at 0°C and	am in Kg/h. F i 1,013 bar in	or other, not so d than water a	ense liquids, other t 20°C apply:	$egin{array}{ll} V_{\rm A} &=& { m Water flow according to table.} \ V_{\rm L} &=& { m Liquid flow.} \ Q_{\rm A} &=& { m Water density at a 20^{\circ}C} \ (Q_{\rm A} = 998 \ { m Kg/m^3}).} \ Q_{\rm L} &=& { m Liquid density.} \end{array}$						
1		IN bar	[Nm3/h]. III- Water flow ra	am in Kg/h. F i 1,013 bar in ate at 20°C in l/h. essure ∆ p and	$\sqrt{2}$	$\sqrt{\varrho_{\rm L}}$	Q_A = Water dens $(Q_A = 99)$	ity at a 20°C 8 Kg/m³).					
н		IIN Dai	coefficient Kv.	essure Ap and		DAY = Ar. A B		ity.					
1	INPU ⁻	T REDUCED											
н								Ш					
		0,2	6	8	7	9	10	14					
н		1	26	35	32	39	42	58					
н		1,5	30	40	37	48	52	71					
		0,3	12	15	15	18	21	27					
п			30	33	37	49	54	74					
н			42	54	52	67	73	101					
н			50	67	64	82	89	123					
н		2.5	66	75	70	93	99	138					
- 1		0,4	19	25	24	30	32	43					
н		1	38	49	45	61	69	89					
п		1,5	50	67	62	82	87	121					
н		2	62	82	77	100	108	150					
н		2,5	70	91	87	114	122	172					
		3	75	98	92	121	129	189					
		0,5	42	57	52	69	79	98					
н		2	68	90	85	113	120	168					
н			88	115	108	143	153	213					
			96	125	120	155	168	232					
		0,6	46	60	57	74	82	108					
		2	74	98	92	123	132	181					
	6	3	98	126	120	159	171	236					
		4	110	142	136	180	192	265					
		5	106	139	132	175	188	260					
			50	67	63	84	89	119					
		0,7	81	106	102	133	142	194					
			104	135	131	171	182	254					
			118	154	148	194	206	288					
1		6	114	150	142	188	201	278					
н		0,8	54	71	67	88	94	129					
н		2	87	113	108	141	152	213					
н	8	3	112	146	138	181	196	272					
н	0	4	129	169	162	221	227	314					
н		6	138	180	173	253	245	338					
		0,9	48	67	63	82	92	125					
н			90	116	120	147	157	216					
ı			116	151	145	189	204	280					
			136	177	170	221	239	333					
н			150	195	187	244	264	363					
н			155	199	194	250	275	374					
ı		1	58	77	73	95	105	142					
п		2	92	122	121	151	164	227					
п		3	120	158	150	196	214	293					
п	10	4	142	186	178	233	250	347					
н		6	170	208	212	277	297	412					
н		8	178	229	220	286	307	426					
		1,1	66	88	82	108	121	160					
н			96	127	123	159	171	240					
н			130	170	162	212	227	316					
			158	205	195	255	276	380					
			196	221	242	317	339	473					
			214	278	266	347	374	518					
		8,6	218	284	271	355	383	530					
		1,2	73	99	95	126	132	186					
		2	108	135	128	167	178	249					
		3	138	177	170	221	240	332					
п	12	4	165	214	205	268	290	398					
н		6	206	268	255	332	360	492					
н		8	230	300	285	374	404	578					
		8,6	233	305	289	380	414	579					
		1,3	85	111	106	140	148	208					
			110	141	134	175	187	260					
			141	185	175	231	249	343					
	13		170	224	213	278	298	412					
			217	283	281	350	382	527					
			246	325	307	403	435	604					
		8,6	251	356	314	412	445	615					
		1,5	92	117	113	148	161	220					
		2	112	142	138	179	196	266					
		3	144	187	177	236	252	348					
	15	4	172	229	208	285	308	420					
		6	202	284	290	365	390	544					
		8	222	336	318	419	448	626					
		8,6	240	343	355	428	459	639					
		1,7	104	128	123	160	173	239					
		2	116	145	141	183	196	270					
			147	191	181	241	258	355					
	17		174	233	221	328	314	429					

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Valid flow rates for completely opened valve with metal/soft seats.
 Non-recommended working conditions.





Area of influence of input pressure. (P1)

Area of influence of reduced pressure. (P2)

The operation of the reducing valve is based on the principle of direct action. The force exerted by the spring displaces the axle and maintains the locking ball open. The fluid exerts an opposite force on the hood as it passes, which tends to reduce the section of passage of the fluid through the seating. The action of the spring and reaction of the pressure on the bellows balance each other, and the reduced pressure is maintained constant.

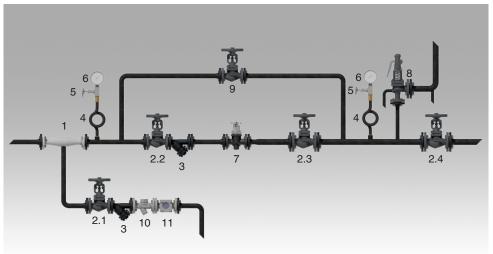
The fluctuations in consumption affect the reduced pressure. The bellows detects these variations via the balance hole, provoking a change in the passage of fluid as a function of the established reduced pressure.

In working conditions with zero consumption, the valve remains closed and completely airtight when there is a slight increase in reduced pressure.

Installation

- Allways install the valve in a section of horizontal tubing, as close as possible to the point of consumption.
- The valve may be assembled in any position, even upside-down.
- Verify that the fluid flows in the direction indicated by the arrow on the body of the valve.
- The input and output tubes must be of the correct size and properly supported, to avoid any fall in pressure or tension.
- The output tubing should ideally have a greater diameter than the input tubing, to avoid excessive velocity of flow of the liquid.
- In accordance with the requirements of "Regulations for pressure devices ITC-MIE-AP 2 5.8", the pressure reduction facilities in steam circuits will be supplied with:
- 1- A pressure gauge with syphon tube and three end cock, in accordance with article 11 of the MIE-AP 1 instructions, "Boilers", located before and after the reduction valve.
- 2- A safety valve following the reduction valve, capable of evacuating the maximum flow of steam, which permits flow at the level regulated and adjusted to the maximum reduced pressure of service plus a maximum of 10%.

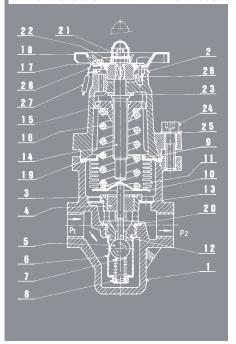
Example of installation for steam

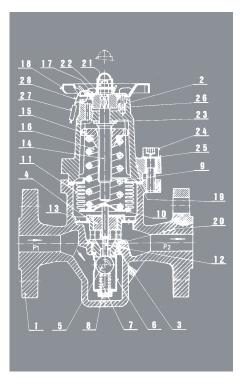


- Condensate separator.
- 2 Interruption valve.
- 3 Filter.
- 4 Syphon tube.
- 5 Pressure gauge cock.
- 6 Pressure gauge.
- 7 Pressure reducing valve.
- 8 Safety valve.
- 9 Interruption valve with adjusting cone.
- 10 Condensate purger.
- 11 Window sight glasses.

IMPORTANT

- The distance between the pressure reducing valve 7 and the interruption valves 2.2 and 2.3 must be 8 ÷ 10 times the
- It is advisable to install the separator and the condensate purger 10 using wet steam with dragging.
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1- Before start-up, the tubes and the inside of the valve itself should be cleaned, eliminating any residues or impurities, particularly from the locking surfaces.

- 2- Check the rating plate (17) to verify that the regulation field for the reduced pressure is appropriate and that the spring (16) corresponds to the same range.
- 3- Remove the nut (21), the rating plate (17) and the anchoring bolt (26).
- 4- With the input interruption valve fully open and the output interruption valve closed, turn the handwheel (18) gradually from left to right to increase the reduced pressure, or from right to left to decrease it, until the required reduced pressure is obtained at zero consumption.
- 5- Slowly open the output interruption valve.
- 6- Readjust the required reduced pressure in consumption conditions.
- 7- Put the anchoring bolt (26) and the rating (17) in place, and fix with the nut (21).
- 8- Seal the valve to prevent further adjustments, using the sealing wire (28) and the seal (27).
- 9- We recommend that the input pressure P1 and the reduced pressure P2 be recorded in the corresponding space of the rating plate (17).

Assembly and disassembly

- 1- Unseal the valve by cutting the wire (28).
- 2- Remove the nut (21), the rating plate (17) and the anchoring bolt (26).
- 3- Turn the handwheel (18) from right to left until you notice the spring (16) loosening.
- 4- Remove the screws (24) along with the washers (25).
- 5- Separate the cover (2) from the body (1), and you will have access to all the internal components. This enables simple maintenance and replacement of the spring (16), the bellows components (9) (10) (11) and the seating components (3) (4) (5) (6) (7)
- 6- If the seating has been disassembled, replace the joint (20) with a new one. Put a new body joint in place (19).
- 7- Put the axle (12) in the guide hole (4) and check that it can move freely and is perpendicular to the bellows disc (10) when the bellows components (9) (10) (11) are put in place.
- 8- Select the spring (16) corresponding to the reduced pressure.
- 9- Put the cover (2) on the body (1) and the screws (24) with the washers (25), and screw them in.
- 10- Finally, proceed as described in "Start-up and adjustment of the reduced pressure".

Maintenance

Correct installation with interruption valves at the input and output points facilitates maintenance.

The filter (6) should be cleaned regularly.

When assembling the valve, replace the seating joint (20) and body joint (19) with new



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