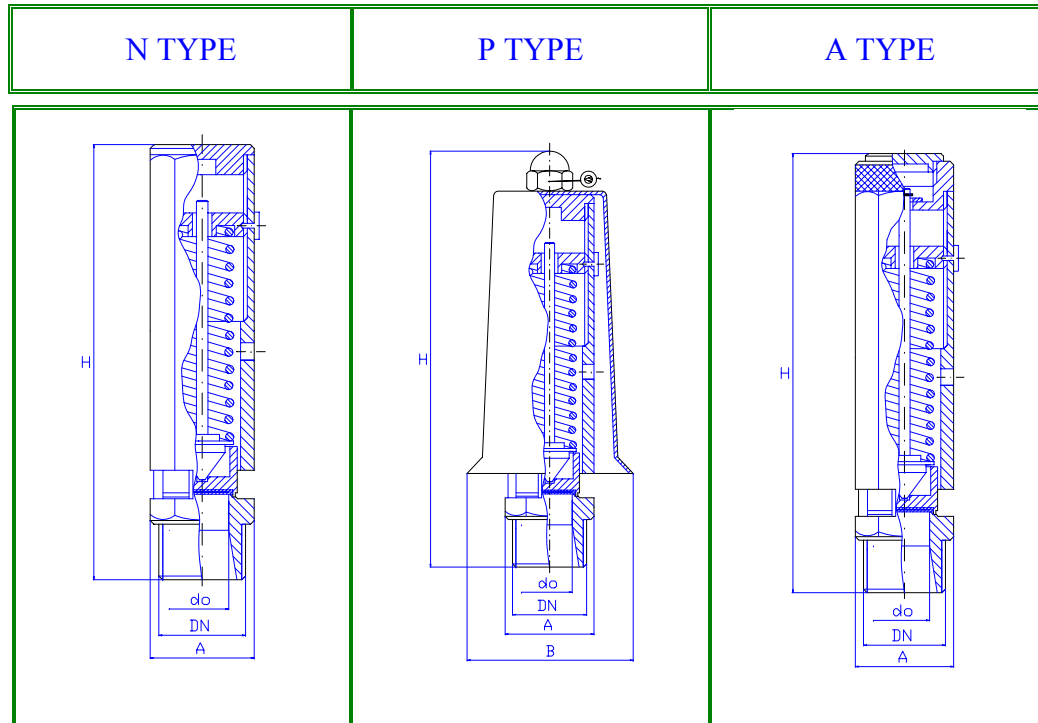




UNIVERSAL





**SAFETY VALVES WITH FREE DISCHARGE
 IN THE AIR**

MATERIALS

EN 12164 CW 614N BRASS

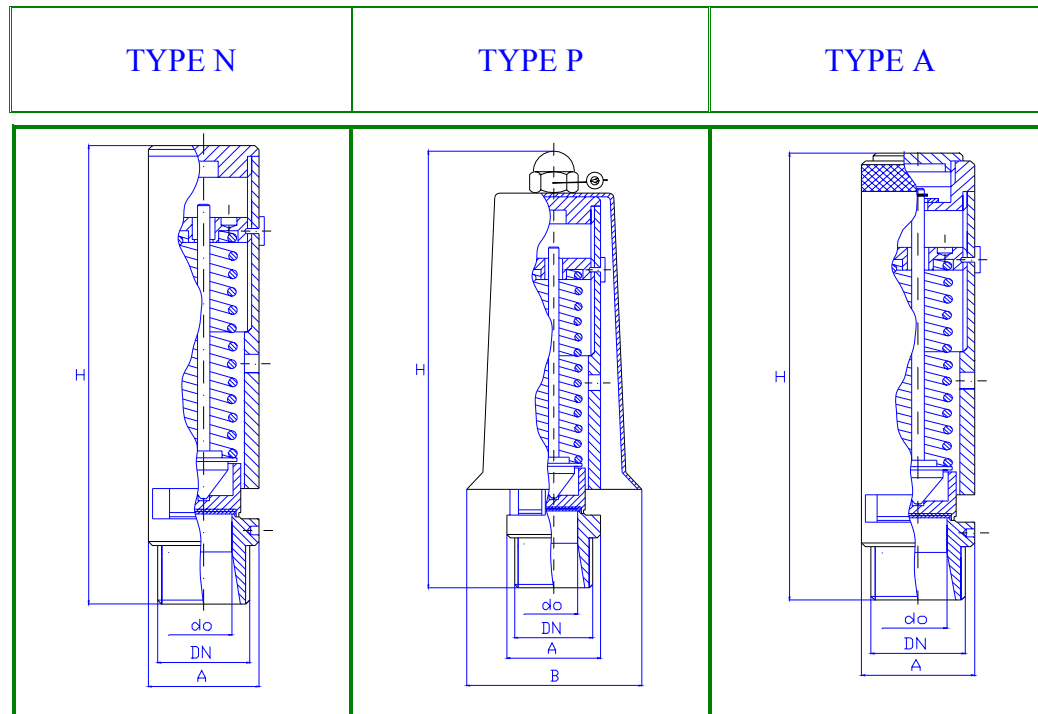
EN 1982 Cu Sn5 Zn5 Pb5 BRONZE

316 L STAINLESS STEEL

OVERPRESSURE 10%

BLOWDOWN 10%

TYPE	d0 Ø mm.	DN "G.	A mm.	B Ø mm.	H mm.	WEIGHT Kg.	K	LIFT mm.	PN	SET PRESSURE ADJUSTMENT RANGE bar
S10N	10	3/8 - 1/2	Hex. ch.22	-	84	0,185	0,84	4,5	40	0,4 ÷ 30
S10P	10		Hex. ch.22	44	101	0,235	0,84	4,5	40	0,4 ÷ 30
S10A	10		Hex. ch.22	-	90	0,200	0,84	4,5	40	0,4 ÷ 30
S15N	14,2	1/2 - 3/4	Hex. ch.28 / Ø 28	-	118	0,410	0,84	6,5	40	0,4 ÷ 30
S15P	14,2		Hex. ch.28 / Ø 28	53	136	0,475	0,84	6,5	40	0,4 ÷ 30
S15A	14,2		Hex. ch.28 / Ø 28	-	124	0,420	0,84	6,5	40	0,4 ÷ 30
H10N	10	1/2 - 3/4	Hex. ch.28 / Ø 28	-	118	0,430	0,96	6,5	100	2,0 ÷ 100
H10P	10		Hex. ch.28 / Ø 28	53	136	0,495	0,96	6,5	100	2,0 ÷ 100
H10A	10		Hex. ch.28 / Ø 28	-	124	0,440	0,96	6,5	100	2,0 ÷ 100



**SAFETY VALVES WITH FREE DISCHARGE
 IN THE AIR**

MATERIALS

EN 12164 CW 614N BRASS

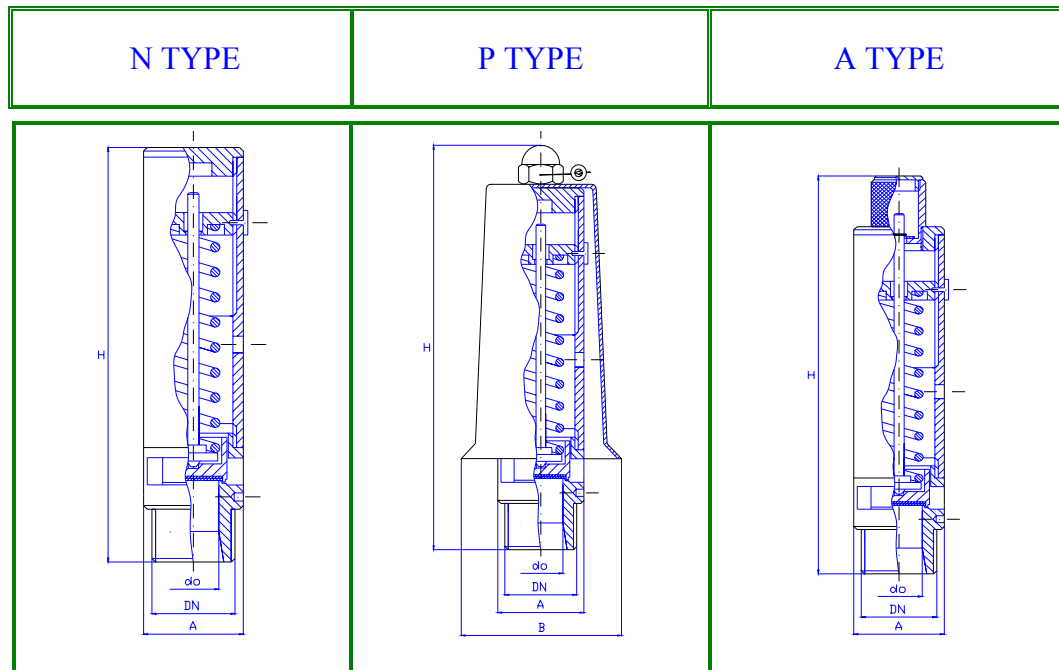
EN 1982 Cu Sn5 Zn5 Pb5 BRONZE

316 L STAINLESS STEEL

OVERPRESSURE 10%

BLOWDOWN 10%

TYPE	d0 Ø mm.	DN "G.	A mm.	B Ø mm.	H mm.	WEIGHT Kg.	K	LIFT mm.	PN	SET PRESSURE ADJUSTMENT RANGE bar
S20N	19,2	1	Ø40	-	155	0,990	0,84	8	40	0,4 ÷ 30
S20P	19,2		Ø40	70	172	1,070	0,84	8	40	0,4 ÷ 30
S20A	19,2		Ø40	-	166	1,060	0,84	8	40	0,4 ÷ 30
H15N	14,2	3/4 1	Ø40	-	155	1,040	0,96	8	100	2,0 ÷ 100
H15P	14,2		Ø40	70	172	1,120	0,96	8	100	2,0 ÷ 100
H15A	14,2		Ø40	-	166	1,110	0,96	8	100	2,0 ÷ 100



**SAFETY VALVES WITH FREE DISCHARGE
 IN THE AIR**

MATERIALS

EN 12164 CW 614N BRASS

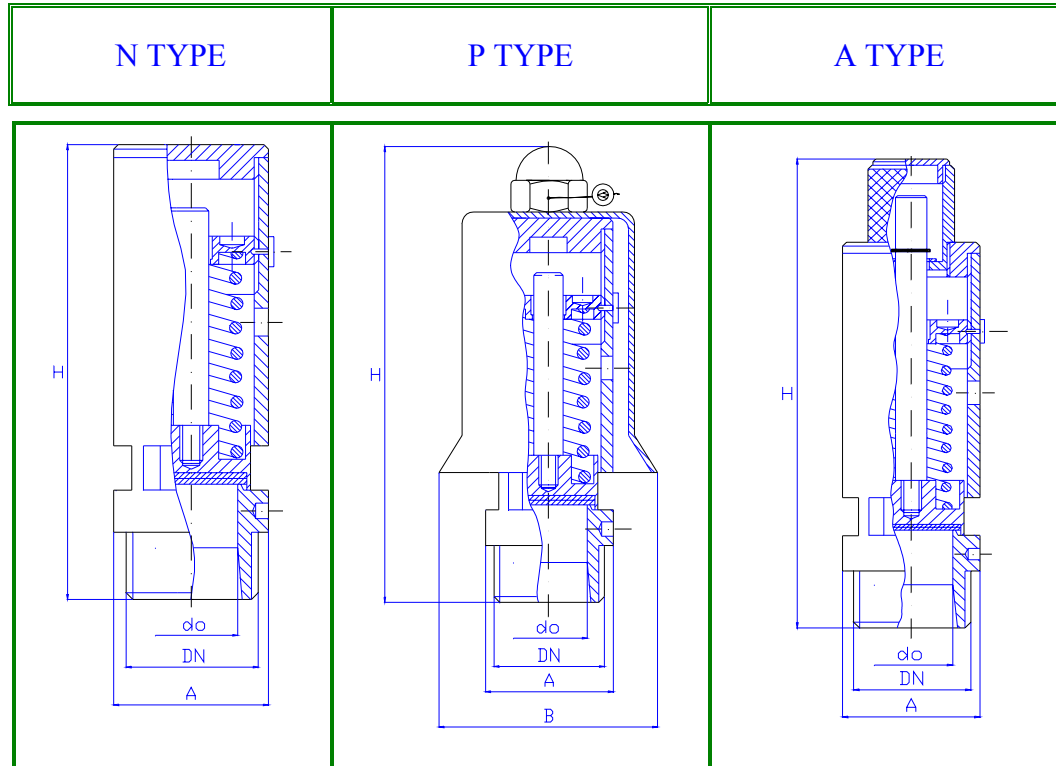
EN 1982 Cu Sn5 Zn5 Pb5 BRONZE

316 L STAINLESS STEEL

OVERPRESSURE 10%

BLOWDOWN 10%

TYPE	d0 Ø mm.	DN "G.	A mm.	B Ø mm.	H mm.	WEIGHT Kg.	K	LIFT mm.	PN	SET PRESSURE ADJUSTMENT RANGE bar
S25N	24,2	1 1 1/4 1 1/2	Ø48	-	177	1,310	0,84	10	40	0,4 ÷ 30
S25P	24,2		Ø48	85	204	1,510	0,84	10	40	0,4 ÷ 30
S25A	24,2		Ø48	-	209	1,500	0,84	10	40	0,4 ÷ 30
S32N	31,2	1 1/4 1 1/2 2	Ø60	-	213	2,320	0,84	12	40	0,4 ÷ 30
S32P	31,2		Ø60	105	240	2,570	0,84	12	40	0,4 ÷ 30
S32A	31,2		Ø60	-	245	2,500	0,84	12	40	0,4 ÷ 30
S40N	38	1 1/2 2	Ø73	-	248	3,920	0,84	14	40	0,4 ÷ 30
S40P	38		Ø73	125	275	4,240	0,84	14	40	0,4 ÷ 30
S40A	38		Ø73	-	280	4,100	0,84	14	40	0,4 ÷ 30



SAFETY VALVES WITH FREE DISCHARGE IN THE AIR

MATERIALS

EN 12164 CW 614N BRASS

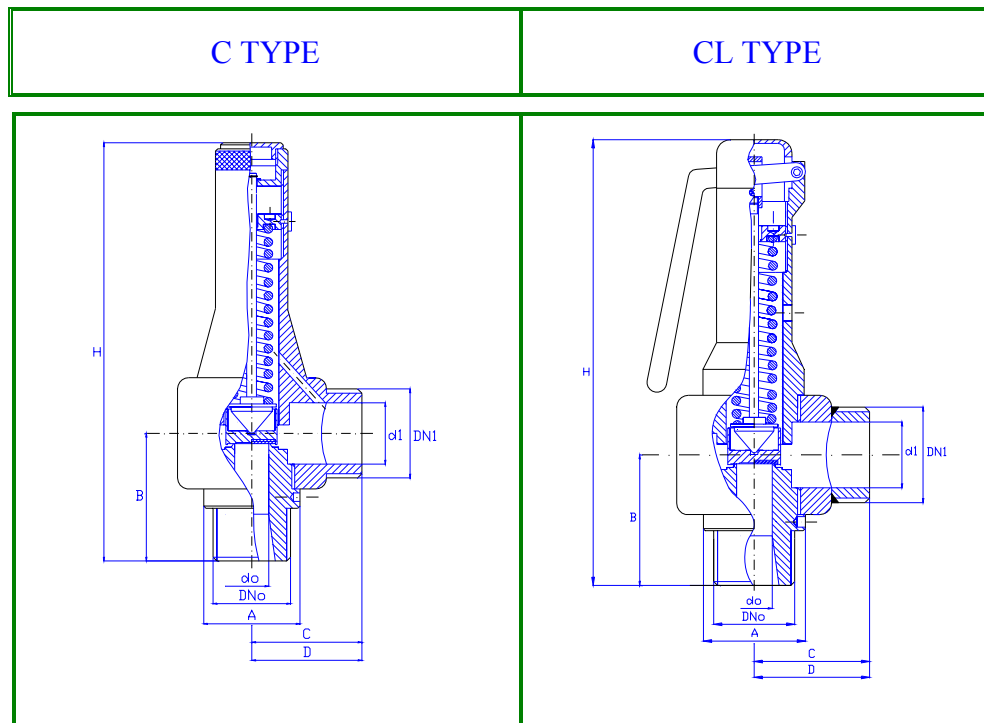
EN 1982 Cu Sn5 Zn5 Pb5 BRONZE

316 L STAINLESS STEEL

OVERPRESSURE 10%

BLOWDOWN 10%

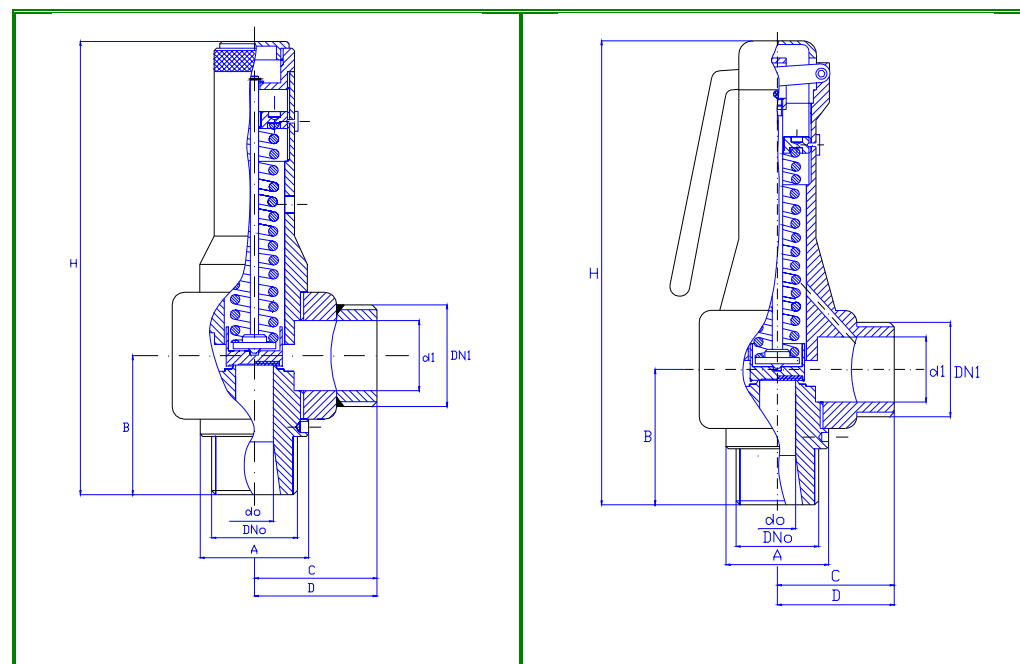
TYPE	d0 Ø mm.	DN "G.	A mm.	B Ø mm.	H mm.	WEIGHT Kg..	K	LIFT mm.	PN	SET PRESSURE ADJUSTMENT RANGE bar
R20N	20	1	Ø35 / 36	-	96	0,420	0,83	9	6	0,4 ÷ 6,0
R20P	20		Ø35 / 36	60	113	0,480	0,83	9		0,4 ÷ 6,0
R20A	20		Ø35 / 36	-	108	0,490	0,83	9		0,4 ÷ 6,0
R30N	30	1 1/4 1 1/2	Ø50	-	110	0,840	0,77	13	6	0,4 ÷ 6,0
R30P	30		Ø50	75	136	0,990	0,77	13		0,4 ÷ 6,0
R30A	30		Ø50	-	142	1,100	0,77	13		0,4 ÷ 6,0
R40N	38	1 1/2 2	Ø60 Hex. ch60	-	125	1,190	0,71	16	6	0,4 ÷ 6,0
R40P	38		Ø60 Hex. ch60	87	152	1,360	0,71	16		0,4 ÷ 6,0
R40A	38		Ø60 Hex. ch60	-	157	1,450	0,71	16		0,4 ÷ 6,0



SAFETY VALVES WITH CONVEYED DISCHARGE
MATERIALS
EN 12164 CW 614N BRASS
EN 1982 Cu Sn5 Zn5 Pb5 BRONZE
316 L STAINLESS STEEL
OVERPRESSURE 10%
BLOWDOWN 10%
CONNECTIONS TYPE
GAS MALE, GAS FEMALE, NPTM, NPTF, DIN, TRI CLAMP, SMS, OTHERS ON SPECIFIC REQUEST

TYPE	d0 Ø mm.	DN "G.	d1 Ø mm.	DN1 "G.	A mm.	B Ø mm.		C mm.		D Ø mm.		H mm.		WEIGHT Kg.		K	LIFT mm.	PN	SET PRESSURE ADJUSTMENT RANGE bar
						bronze	316 L	bronze	316 L	bronze	316 L	bronze	316 L	bronze	316 L				
S15C	14,2	3/4	20	1	32	42	47	37	47	41	54	142	147	0,950	1,020	0,82	6,5	IN 40 OUT 16	0,4 ÷ 30
S15CL												155	160	1,020	1,080				
S20C	19,2	1	26	1/1/2	40	51	54	46	54	53	60	192	195	2,050	1,950	0,82	8	IN 40 OUT 16	0,4 ÷ 30
S20CL												209	212	2,230	2,100				
H10C	10	1/2 3/4	20	1	32	42	47	37	47	41	54	124	147	1,000	1,070	0,95	6,5	IN 100 OUT 16	2,0 ÷ 100
H10CL												155	160	1,070	1,130				
H15C	14,2	1	26	1 1/2	40	51	54	46	54	53	60	192	195	2,150	2,050	0,95	8	IN 100 OUT 16	2,0 ÷ 100
H15CL												209	212	2,330	2,200				

C TYPE	CL TYPE
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SAFETY VALVES WITH CONVEYED DISCHARGE

MATERIALS

EN 12164 CW 614N BRASS

EN 1982 Cu Sn5 Zn5 Pb5 BRONZE

316 L STAINLESS STEEL

OVERPRESSURE 10%

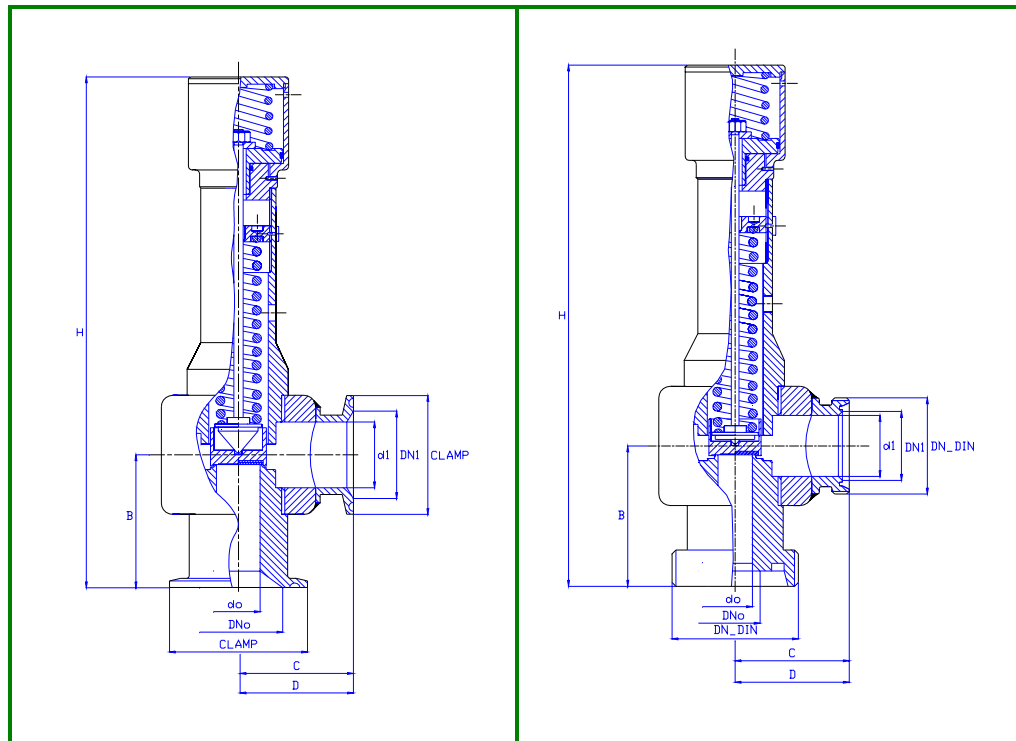
BLOWDOWN 10%

CONNECTIONS TYPE

GAS MALE, GAS FEMALE, NPTM, NPTF, DIN, TRI CLAMP, SMS, OTHERS ON SPECIFIC REQUEST

TYPE	d0 Ø mm.	DN "G.	d1 Ø mm.	DNI "G.	A mm.	B Ø mm.		C mm.		D Ø mm.		H mm.		WEIGHT Kg.		K	LIFT mm.	PN	SET PRESSURE ADJUSTMENT RANGE bar
						bronze	316 L	bronze	316 L	bronze	316 L	bronze	316 L	bronze	316 L				
S25C	24,2	1 1/4	32	2	50	60	62	60	62	67	70	217	219	3,800	3,300	0,82	10	IN 40 OUT 16	0,4 ÷ 30
S25CL												236	238	4,000	3,350				
S32C	31,2	1 1/2	38	2	60	68	69	61	69	68	76	260	261	5,200	4,500	0,82	12	IN 40 OUT 16	0,4 ÷ 30
S32CL												283	284	5,300	4,500				
S40C	38	2	48	2 1/2	70	78	77	71	77	80	85	300	299	7,300	6,200	0,82	14	IN 40 OUT 16	0,4 ÷ 30
S40CL												325	324	7,300	6,200				

CA TYPE



SAFETY VALVES WITH PNEUMATIC ACTUATOR

MATERIALS

EN 12164 CW 614N BRASS

EN 1982 Cu Sn5 Zn5 Pb5 BRONZE

316 L STAINLESS STEEL

OVERPRESSURE 10%

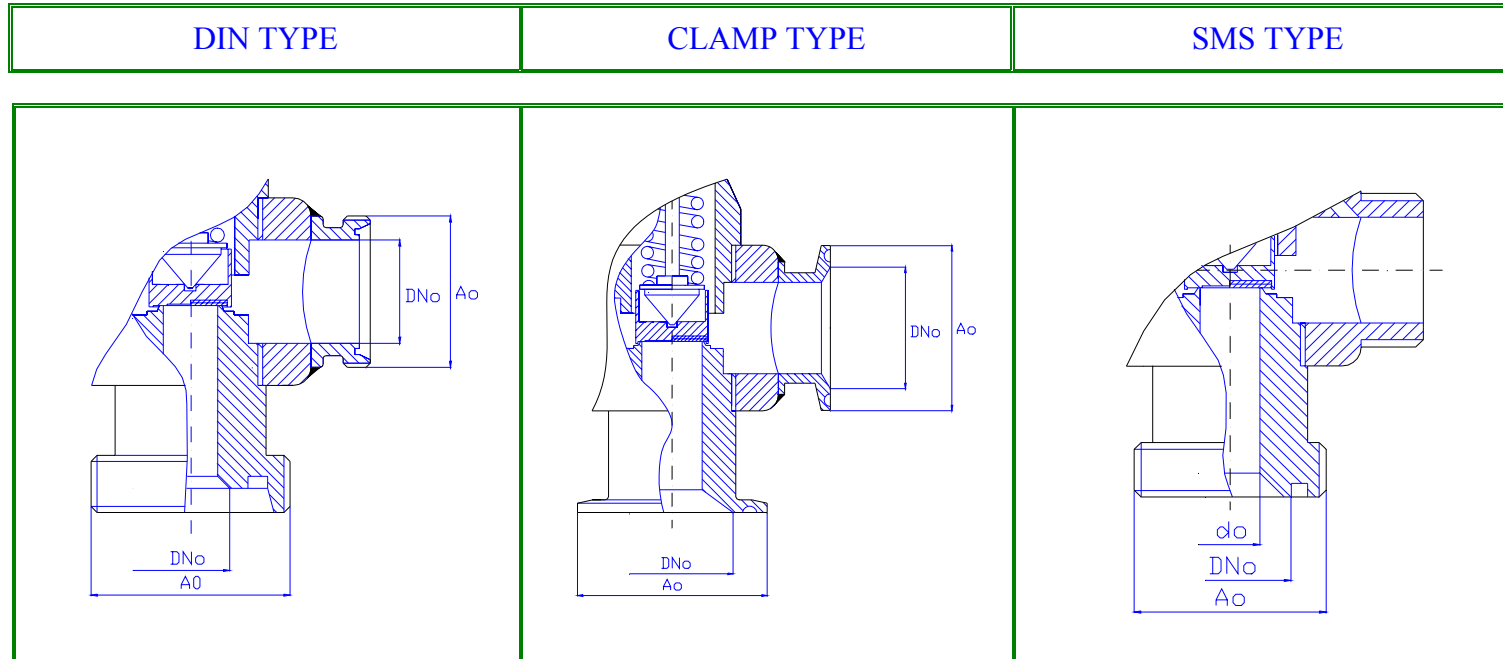
BLOWDOWN 10%

CONNECTIONS TYPE

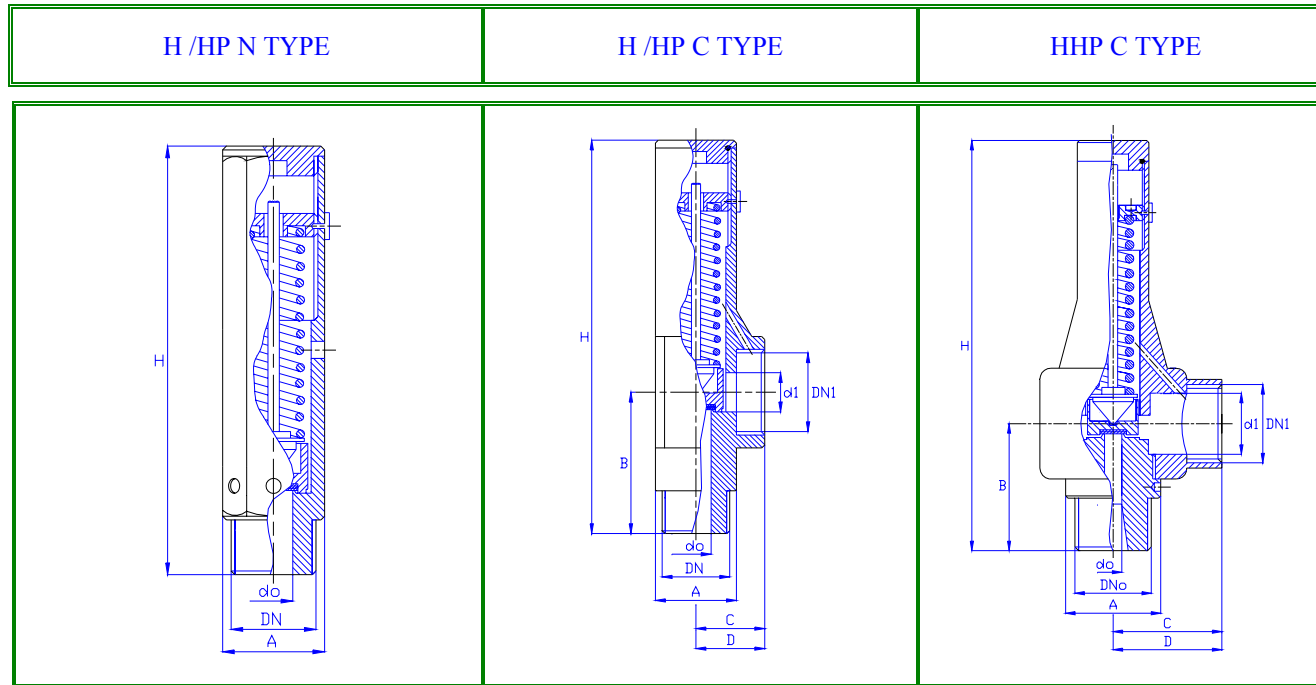
FOR OTHER DIMENSIONS, SEE STANDARD VALVE TYPE

TYPE	do Ø mm.	d1 Ø mm.	B mm.	C mm.	D Ø mm.	H mm.	WEIGHT Kg.	LIFT mm	SET PRESSURE ADJUSTMENT RANGE bar
S20CA	19.2	26	54	54	60	256	2,800	8	0.4 – 10
S25CA	24.2	32	62	66	72	279	4,200	10	0.4 – 10
S32CA	31.2	38	69	69	79	324	6,500	12	0.4 – 10
S40CA	38	48	77	77	89	362	8,800	14	0.4 – 10

SPECIAL CONNECTIONS



DIN		CLAMP		SMS	
DNo	Ao	DNo	Ao	DNo	Ao
DN 15 DIN	Rd 34X1/8"	1" T.C.	50,5	SMS S25	Rd 40X1//6"
DN 20 DIN	Rd 44X1/6"	1 1/2 T.C.	50,5	SMS S38	Rd 60X1/6"
DN 25 DIN	Rd 52X1/6"	2" T.C.	64	SMS S51	Rd 70X1/6"
DN 32 DIN	Rd 58X1/6"	2 1/2 T.C.	77,4		
DN 40 DIN	Rd 65X1/6"				
DN 50 DIN	Rd 78X1/6"				



SAFETY VALVES FOR HIGH PRESSURE
MATERIALS
EN 12164 CW 614N BRASS
EN 1982 Cu Sn5 Zn5 Pb5 BRONZE
316 L STAINLESS STEEL
OVERPRESSURE 10%
BLOWDOWN 10%

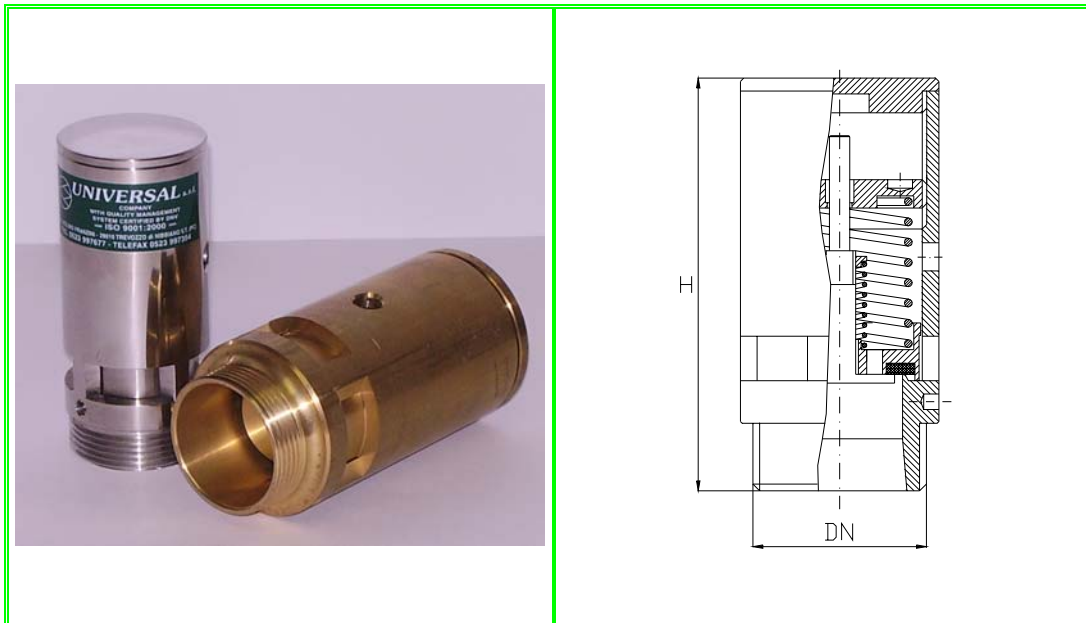
TYPE	d0 Ø mm.	DN "G.	d1 Ø mm.	DN1 "G.	A mm.	B Ø mm.		C mm.		D Ø mm.		H mm.		WEIGHT Kg.		K	LIFT mm.	PN	SET PRESSURE ADJUSTMENT RANGE bar
						bronze	316 SS	bronze	316 SS	bronze	316 SS	bronze	316 SS	bronze	316 SS				
H2N	2.5	1/4 3/8	-	-	22	-	-	-	-	-	-	84	102	0,220	0,240	0,05	4,5	DA 100 A 400	10 ÷ 400
H2C		1/2	10	1/2		35	35	19	16	23	23	100	102	0,330	0,330				0,5 ÷ 100
H5N	5	1/4 3/8	-	-	22	-	-	-	-	-	-	84	102	0,220	0,240		6,5		10 ÷ 400
H5C		1/2	10	1/2		35	35	19	16	23	23	100	102	0,330	0,330				
HP4/5N	4/5	3/8 1/2	-	-	28	-	-	-	-	-	-	118	120	0,430	0,430	0,76	6,5	10 ÷ 400	
HP4C/5C		3/4	14	1/2		35	35	25	25	30	30	128	130	0,580	0,580				0,5 ÷ 100
HP10C	10	1/2 3/4	14	1/2	28	35	35	25	25	30	30	128	130	0,580	0,580	0,76	8	10 ÷ 400	
HHP7N	7	3/4 1	-	-	40	-	-	-	-	-	-	155	161	1,200	1,150	0,95			10 ÷ 400
HHP7C	7		26	3/4		51	54	46	54	53	60	192	195	2,350	2,300	0,96			
HHP10N	10	3/4 1	-	-	40	-	-	-	-	-	-	155	161	1,200	1,150	0,95			10 ÷ 200
HHP10C	10		26	3/4		51	54	46	54	53	60	192	195	2,350	2,300	0,96			

DOUBLE ACTING SAFETY VALVES

These safety valves can satisfy, in the same time, two requirements for tanks and vessels, during loading and unloading operations:

- 1) to avoid dangerous overpressures
- 2) to avoid crushings due to internal depressions.

These valves are particularly suitable for tanks on trucks used for transport of cement, powders, flours and cereals.
 The set pressure is on customer request, but the depression set is fixed at 0,01 bar.
 Valve dimensions are really close, so they can be used in all situations and in all plants.



MATERIALS			
BODY AND ACCESSORIES	EN 12164 CW 614N BRASS EN 1982 Cu Sn5 Zn5 Pb5 BRONZE 316 L STAINLESS STEEL		
GASKET	N.B.R. -20°C++100°	NEOPRENE - 50°C ++150°	E.P.D.M. -50°C++150°
	SILICONE -60°C++200°	VITON -30°C++200°	VULKOLLAN -20°C++120°
SPRING	302 STAINLESS STEEL		
TYPE R30	DN Ø 1”1/4 – 1”1/2	H = 110	
TYPE R40	DN 1”1/2 – 2”	H = 125	

CALCULATING FORMULAE

GAS	VAPORE - STEAM	LIQUIDO - LIQUID	ACQUA SURRISCALDATA SUPERHEATED WATER
$Q_m = p_o C A K_{dr} \sqrt{\frac{M}{Z T_o}} \text{ Kg/h}$	$Q_m = 0.2883 C A K_{dr} \sqrt{\frac{P_o}{V}} \text{ Kg/h}$	$Q_m = 1.61 K_{dr} K_v A \sqrt{\frac{P_o - P_b}{V}} \text{ Kg/h}$	$Q_m = 0.2883 C A K_{dr} \sqrt{\frac{P_o}{V}} r \text{ Kcal/h}$

LEGEND:

Symbol	Description	Symbol	Description
A	Flow area or a safety valves (not curtain area)	M	Molar mass
C	Function of the isentropic exponent	Po	Relieving pressure
Kd	Coefficient of discharge °)	Pb	Back pressure
Kdr	Certified derated coefficient of discharge (Kdx0.9) °)	V	Specific volume at actual relieving pressure and temperature
KV	Viscosity correction factor	r	Vaporisation heat (referred to absolute pressure)
K	Isentropic exponent	Z	Compressibility factor at actual relieving pressure and temperature

PORTATA ARIA A 20°C IN Kg/h / AIR DISCHARGE CAPACITY Kg/h 20°C																								
TIPO VALVOLA VALVE TYPE	PRESSIONE DI TARATURA IN BAR / SET PRESSURE BAR																							
	0.4	1	1.5	2	2.5	3	3.5	4	4.5	5	6	7	8	9	10	12	14	16	18	20	22	25	28	30
R20	284	414	522	630	739	847	955	1064	1172	1280	1497	-	-	-	-	-	-	-	-	-	-	-	-	-
R30	599	874	1103	1332	1560	1789	2018	2247	2476	2105	3163	-	-	-	-	-	-	-	-	-	-	-	-	-
R40	887	1293	1631	1970	2309	2647	2986	3324	3663	4002	4679	-	-	-	-	-	-	-	-	-	-	-	-	-
S10	73	106	134	161	189	217	245	272	300	328	383	439	494	550	605	716	827	938	1049	1160	1271	1438	1604	1715
S15	146	214	270	325	381	437	493	549	605	661	773	885	997	1109	1220	1444	1668	1892	2116	2339	2563	2899	3234	3458
S20	268	390	493	595	697	800	902	1004	1106	1209	1413	1618	1822	2027	2231	2640	3049	3459	3868	4277	4686	5299	5913	6322
S25	425	620	783	945	1108	1270	1433	1595	1758	1920	2245	2570	2895	3220	3545	4195	4845	5494	6144	6794	7444	8419	9394	10044
S32	707	1031	1301	1571	1841	2111	2381	2651	2921	3192	3732	4272	4812	5352	5892	6972	8053	9133	10213	11293	12373	13994	15614	16694
S40	1049	1530	1930	2331	2731	3132	3533	3933	4334	4734	5536	6337	7138	7939	8740	10343	11945	13547	15150	16752	18355	20758	23162	24764
S15C-CL	143	209	263	318	372	427	482	536	591	645	755	864	973	1082	1191	1410	1628	1847	2065	2284	2502	2830	3157	3376
S20C-CL	261	381	481	581	681	781	880	980	1080	1180	1380	1579	1779	1979	2178	2578	2977	3376	3776	4175	4574	5173	5772	6172
S25C-CL	415	606	764	923	1081	1240	1399	1557	1716	1874	2192	2509	2826	3143	3460	4095	4729	5364	5998	6632	7267	8218	9170	9804
S32C-CL	690	1007	1270	1534	1797	2061	2325	2588	2852	3116	3643	4170	4697	5225	5752	6806	7861	8915	9970	11024	12079	13660	15242	16297
S40C-CL	1024	1493	1884	2275	2666	3057	3448	3839	4231	4622	5404	6186	6968	7750	8532	10096	11661	13225	14789	16353	17918	20264	22610	24175

PER AVERE LA PORTATA IN L/1' MOLTIPLICARE PER 13,837 / TO HAVE THE L/1' DISCHARGE CAPACITY, MULTIPLY FOR 13,837
 PER AVERE LA PORTATA IN m³/h DIVIDERE PER 1,2045 / TO HAVE THE m³/h DISCHARGE CAPACITY, DIVIDE BY 1,2045
 PER AVERE LA PORTATA IN Nm³/h' DIVIDERE PER 1,2479 / TO HAVE THE Nm³/h DISCHARGE CAPACITY, DIVIDE BY 1,2479

PORTATA ARIA A 20°C IN Kg/h / AIR DISCHARGE CAPACITY Kg/h 20°C

TIPO VALVOLA VALVE TYPE	PRESSIONE DI TARATURA IN BAR / SET PRESSURE BAR																							
	0.4	1	2	4	6	8	10	12	14	18	20	22	25	28	30	35	40	45	50	60	70	80	90	100
H2N-C	-	-	-	-	-	-	2.25	2.66	3.08	3.90	4.32	4.73	5.35	5.97	6.38	7.41	8.44	9.48	10.51	12.57	14.64	16.70	18.77	20.83
H5N-C	1.08	1.58	2.40	4.05	5.70	7.36	9.01	10.66	12.31	15.61	17.26	18.92	21.39	23.87	25.52	29.65	33.78	37.91	42.03	50.29	58.55	66.80	75.06	83.32
HP4N-C	-	-	-	-	-	-	5.76	6.82	7.88	9.99	11.05	12.11	13.69	15.28	16.33	18.98	21.62	24.26	26.90	32.19	37.47	42.75	48.04	53.32
HP5N-C	-	-	2.40	4.05	5.70	7.36	9.01	10.66	12.31	15.61	17.26	18.92	21.39	23.87	25.52	29.65	33.78	37.91	42.03	50.29	58.55	66.80	75.06	83.32
H10N	-	-	184	311	438	564	691	818	945	1199	1325	1452	1642	1833	1959	2277	2594	2911	3228	3962	4496	5130	5764	6398
H15N	-	--	371	627	883	1139	1394	1650	1906	2417	2673	2929	3312	3696	3952	4591	5230	5870	6509	7787	9066	10345	11623	12902
H10C	-	-	182	308	433	559	648	810	935	1186	1312	1437	1625	1814	1939	2253	2567	2880	3194	3822	4449	5077	5704	6332
HP10C	-	-	146	246	346	447	547	648	748	949	1049	1150	1300	1451	1551	1802	2053	2304	2555	3057	3559	4061	4563	5065
H15C	-	-	368	621	874	1127	1380	1633	1886	2392	2645	2898	3278	3657	3910	4543	5176	5808	6441	7706	8972	10237	11502	12767

TIPO VALVOLA VALVE TYPE VALVES	PRESSIONE DI TARATURA IN BAR / SET PRESSURE BAR																							
	120	150	180	200	240	260	280	300	320	350	380	400												
H2N-C	24.96	31.15	37.34	41.47	49.73	53.86	57.98	62.11	66.24	72.43	78.63	82.75	-	-	-	-	-	-	-	-	-	-	-	-
H5N-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HP4N-C	63.89	79.74	95.60	106	127	137	148	159	169	185	201	211	-	-	-	-	-	-	-	-	-	-	-	-
HP5N-C	99.83	124	149	165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

PER AVERE LA PORTATA IN L/1' MOLTIPLICARE PER 13,837 / TO HAVE THE L/1' DISCHARGE CAPACITY, MULTIPLY FOR 13,837
 PER AVERE LA PORTATA IN m³/h DIVIDERE PER 1,2045 / TO HAVE THE m³/h DISCHARGE CAPACITY, DIVIDE BY 1,2045
 PER AVERE LA PORTATA IN Nm³/h' DIVIDERE PER 1,2479 / TO HAVE THE Nm³/h DISCHARGE CAPACITY, DIVIDE BY 1,2479

PORTATA VAPORE IN Kg/h / STEAM DISCHARGE Kg/h																							
TIPO VALVOLA VALVE TYPE	PRESSIONE DI TARATURA IN BAR / SET PRESSURE BAR																						
	0,5	0,75	1	1,25	1,5	1,75	2	2,25	2,5	2,75	3	3,25	3,5	3,75	4	4,5	5	5,5	6	7	8	10	12
S15C-CL	91	112	133	149	166	183	199	216	232	249	266	282	299	315	331	365	398	430	464	529	592	725	854
S20C-CL	166	205	242	273	304	334	365	395	425	455	486	516	546	577	605	667	772	787	848	966	1083	1325	1561
S25C-CL	263	326	385	433	483	531	579	628	675	723	772	820	867	916	961	1059	1155	1250	1346	1535	1720	2104	2479
S32C-CL	438	541	640	720	802	882	963	1044	1122	1201	1283	1363	1441	1523	1598	1760	1919	2078	2238	2552	2860	3498	4120
S40C-CL	650	803	949	1068	1190	1309	1428	1548	1664	1782	1903	2022	2138	2259	2371	2611	2847	3083	3320	3785	4242	5198	6112
H10C-CL	-	-	-	-	-	-	115	124	133	143	153	162	171	181	190	209	228	247	266	304	340	416	490
H15C-CL	-	-	-	-	-	-	231	250	269	288	308	327	347	366	384	423	461	499	537	612	686	840	989