



**G type DUCTED EXHAUST SAFETY VALVE
2871 AND 288X SERIES**

Model/Ref: 28713



*Partnership.
Without Limits.*

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**G type DUCTED EXHAUST SAFETY VALVE
2871 AND 288X SERIES**

CHARACTERISTICS

The G type safety valves are dedicated to protect the equipment from potential overpressure. They are automatic and close when the pressure conditions are back to normal. It is a spring type safety valve with a ducted exhaust design and it is available in brass or stainless steel construction. The standard version is delivered sealed with FKM tightness. It complies with the PN 40 pressure rating standards and is certified by a TÜV approval. It can be used on compatible gases and liquids. Inlet and outlet attachments are male BSP type. Setting certificate and information folder, in compliance with the 1998 decree about the safety valves monitoring, are available on request.



AVAILABLE ITEMS

Type	G10	G14	G20	G25	G32	G40
Brass	x	x	x	x	x	x
Stainless steel	x	x	x	x	x	x
TÜV #	SV_913	SV_912	SV_913	SV_913	SV_913	SV_913
PN	40	40	40	40	40	40
Orifice (mm)	10	13.5	20	25	32	40
Surface cm ²	0.785	1.43	3.14	4.906	8.038	12.566
Lift (mm)	5	6	6	6	9	12
Min. Pressure setting (bar)	0.5	0.5	0.5	0.5	0.5	0.5
Max. Pressure setting (bar)	25	40	40	20	12.2	14
Inlet connection (brass)		G 1/2" M or G 3/4" M or G 1" M*	G 1" M or G 1" 1/4 M*	G " 1/4 M or G 1" 1/2 M*	G 1" 1/2 M or G 2" M*	
Inlet connection (SS)	G 1/2" M or G 3/4" M*	G 1/2" M or G 3/4" M or G 1" M*	G 1" M or G 1" 1/4 M*	G 1" 1/4 M or G 1" 1/2 M*		G 1" 1/2 M or G 2" M*
Outlet connection	G 1" M	G 1" M	G 1" 1/4 M	G 1" 1/2 M	G 1" 1/2 M	G 2" M

*Standard models available

CONSTRUCTION STANDARDS

TÜV approval
EC0044 certification, category IV (modules B+D)
Maximum flow rate at setting pressure + 10 %
Closing pressure: setting pressure -10 %

LIMITS OF USE

Maximum body pressure: PN 40
Maximum temperature of materials:
(Read taking into account the working pressure at operating temperature)

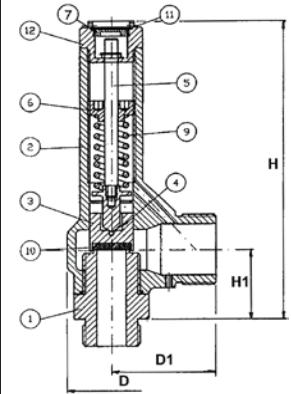
	Brass		Stainless steel	
	Min. temp.	Max. temp.	Min. temp.	Max. temp.
Bearing				
NBR	-10 °C	+100 °C	-10 °C	+100 °C
EPDM	-50 °C	+150 °C	-50 °C	+150 °C
FKM	-20 °C	+200 °C	-20 °C	+200 °C
Silicone	-50 °C	+200 °C	-60 °C	+200 °C
PTFE	-50 °C	+180 °C	-100 °C	+180 °C
Metal	-50 °C	+200 °C	-195 °C	+450 °C

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CONSTRUCTION

#	Item	Brass	Stainless steel
1	Body	CW614N / 2.0372 Brass	AISI 316 / 1.4401
2	Bonnet	CW614N / 2.0372 Brass	AISI 316 / 1.4401
3	Clack	CW614N / 2.0372 Brass	AISI 316 / 1.4401
4	Needle	CW614N / 2.0372 Brass	AISI 316 / 1.4401
5	Stem	CW614N / 2.0372 Brass	AISI 316 / 1.4401
6	Adjustment screw	CW614N / 2.0372 Brass	AISI 316 / 1.4401
7	Cap	CW614N / 2.0372 Brass	AISI 316 / 1.4401
8	Lever	AISI 316 / 1.4401	AISI 316 / 1.4401
9	Spring	C 72 UNI 3823	AISI 302
10	Seat	NBR/EPDM/Viton/Silicone/Met.	NBR/EPDM/Viton/Silicone/Met.
11	Plate	CW614N / 2.0372 Brass	AISI 316 / 1.4401
12	Testing device	CW614N / 2.0372 Brass	AISI 316 / 1.4401
13	Pin	CW614N / 2.0372 Brass	AISI 316 / 1.4401



FLOW RATE COEFFICIENTS - (TÜV)

Type	Gas pressure < 3 bar	Gas pressure > 3 bar
G10	0.75	0.77
G14	0.81	0.86
G20	0.67	0.79
G25	0.59	0.59
G32	0.52	0.52
G40	0.58	0.64

DIMENSIONS (mm)

Type	G10	G14	G20	G25	G32	G40
H - G type	144	144	240	240	240	294
H - G/M type	152	152	240	240	240	294
D	41	41	71	71	71	102
A	49	49	71	71	71	79
B	33	33	46	46	46	53

INSTALLATION

The valve has to be installed as close as possible to the device to protect. It has to be installed in a vertical position. There should be no valve between the safety valve and the device to protect. No foreign body should block the safety valve discharge openings. The exhaust has to be connected to pipework without any back-pressure and discharge in a safe place. The safety valve should not support the exhaust pipework. The safety valve mounting and maintenance have to be carried out in an appropriate way and according to the information sheet provided with the device.

PRE-SET, MATERIAL AND TEST CERTIFICATE

Standard pre-set and conformity certification according to EN 10 204 2.2 with series number marked on the safety valve.

OPTIONS

G/M type safety valve with testing lever
 Nickel-plated brass construction BSPT, NPT connections
 Brass construction with stainless steel body and clack
 DIN, clamp, flanged connections ...

FLOW RATE FOR LIQUIDS

Please use the following formula:

$$Q \text{ (kg / h)} = 0.9 \times K1 \times \text{ROOT} \left((P1-P2) \cdot Y \cdot 1000 \right) \times A \times 100 / 0.621$$

K1	Flow rate for a 10% overpressure	0,38
P1	Design pressure	Bar
P2	Backpressure	Bar
A	Orifice surface	cm ²
Y	Specific weight of the liquid at P1	Kg/dm ³

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WATER FLOW RATE AT 20 °C (KG/H) ACCORDING TO AD – Merkblatt A2 – TÜV

Pressure (bar)	G10	G14	G20	G25	G32	G40	Pressure (bar)	G10	G14	G20	G25	G32	G40
0,5	1014	1847	4056	6336	10382	16230	21	6571	11970	26283			
1	1434	2612	5735	8961	14682	22952	22	6725	12251	26901			
2	2028	3694	8111	12673	20763	32460	23	6876	12527	27506			
3	2483	4524	9934	15521	25430	39755	24	7024	12796	28097			
4	2868	5224	11471	17922	29364	45905	25	7169	13060	28677			
5	3206	5841	12825	20037	32829	51323	26		13318	29245			
6	3512	6398	14049	21950	35963	56222	27		13572	29802			
7	3794	6911	15174	23709	38844	60726	28		13821	30349			
8	4056	7388	16222	25346	41526	64919	29		14066	30886			
9	4302	7836	17206	26883	44045	68857	30		14306	31414			
10	4534	8260	18137	28337	46428	72582	31		14543	31933			
11	4756	8663	19022	29720	48694	76124	32		14775	32444			
12	4967	9048	19868	31042	50859	79509	33		15005	32947			
13	5170	9418	20679	32309		82756	34		15230	33443			
14	5365	9773	21460	33529		85880	35		15453	33931			
15	5553	10116	22213	34706			36		15672	34412			
16	5735	10448	22941	35844			37		15888	34887			
17	5912	10769	23647	36947			38		16101	35355			
18	6083	11082	24333	38018			39		16312	35817			
19	6250	11385	25000	39060			40		16519	36274			
20	6412	11681	25649	40075									

COMPRESSED AIR FLOW RATE (Nm³/h) ACCORDING TO AD – Merkblatt A2 - TÜV

Pressure (bar)	G10	G14	G20	G25	G32	G40	Pressure (bar)	G10	G14	G20	G25	G32	G40	Pressure (bar)	G10	G14	G20	G25	G32	G40
0,5	62	122	302	404	433	769	14	675	1373	3191	4273	8981	27,5			2617	6080			
1	84	166	409	547	586	1064	14,5	698	1419	3298	4417		28			2663	6187			
1,5	108	217	516	691	740	1370	15	720	1465	3405	4560		28,5			2709	6294			
2	130	262	623	834	893	1678	15,5	743	1512	3512	4703		29			2755	6401			
2,5	154	314	730	977	1047	2015	16	766	1558	3619	4847		29,5			2801	6508			
3	177	360	837	1120	1200	2355	16,5	788	1604	3726	4990		30			2847	6615			
3,5	200	406	944	1264	1354	2656	17	811	1650	3833	5133		30,5			2893	6722			
4	222	452	1051	1407	1507	2957	17,5	833	1696	3940	5277		31			2939	6830			
4,5	245	498	1158	1550	1661	3258	18	856	1742	4047	5420		31,5			2985	6937			
5	268	544	1265	1694	1814	3560	18,5	879	1788	4154	5563		32			3031	7044			
5,5	290	590	1372	1837	1968	3861	19	901	1834	4261	5707		32,5			3078	7151			
6	313	636	1479	1980	2122	4162	19,5	924	1880	4368	5850		33			3124	7258			
6,5	335	683	1586	2124	2275	4463	20	947	1926	4475	5993		33,5			3170	7365			
7	358	729	1693	2267	2429	4764	20,5	969	1972	4582			34			3216	7472			
7,5	381	775	1800	2410	2582	5066	21	992	2018	4689			34,5			3262	7579			
8	403	821	1907	2554	2736	5367	21,5	1015	2064	4796			35			3308	7686			
8,5	426	867	2014	2697	2889	5668	22	1037	2110	4903			35,5			3354	7793			
9	449	913	2121	2840	3043	5969	22,5	1060	2156	5010			36			3400	7900			
9,5	471	959	2228	2984	3196	6270	23	1082	2202	5117			36,5			3446	8007			
10	494	1005	2335	3127	3350	6572	23,5	1105	2248	5224			37			3492	8114			
10,5	517	1051	2442	3270	3503	6873	24	1128	2295	5331			37,5			3538	8221			
11	539	1097	2549	3414	3657	7174	24,5	1150	2341	5438			38			3584	8328			
11,5	562	1143	2656	3557	3810	7475	25	1173	2387	5545			38,5			3630	8435			
12	584	1189	2763	3700	3964	7776	25,5		2433	5652			39			3676	8542			
12,5	607	1235	2870	3843		8078	26		2479	5759			39,5			3722	8649			
13	630	1281	2977	3987		8379	26,5		2525	5866			40			3768	8756			
13,5	652	1327	3084	4130		8680	27		2571	5973										

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COMPRESSED AIR FLOW RATE (l/min) ACCORDING TO – Merkblatt A2 - TÜV

Pressure (bar)	G10	G14	G20	G25	G32	G40
0,5	1036	2038	5026	6732	7211	12821
1	1403	2761	6810	9120	9770	17730
1,5	1794	3613	8594	11509	12329	22827
2	2167	4362	10377	13897	14888	27975
2,5	2572	5234	12161	16286	17447	33585
3	2950	6002	13944	18675	20005	39247
3,5	3327	6769	15728	21063	22564	44267
4	3704	7537	17512	23452	25123	49287
4,5	4082	8304	19295	25840	27682	54307
5	4459	9072	21079	28229	30241	59327
5,5	4836	9840	22862	30618	32800	64347
6	5214	10607	24646	33006	35358	69367
6,5	5591	11375	26429	35395	37917	74387
7	5968	12143	28213	37783	40476	79407
7,5	6345	12910	29997	40172	43035	84427
8	6723	13678	31780	42561	45594	89446
8,5	7100	14446	33564	44949	48152	94466
9	7477	15213	35347	47338	50711	99486
9,5	7855	15981	37131	49726	53270	104506
10	8232	16748	38915	52115	55829	109526
10,5	8609	17516	40698	54504	58388	114546
11	8987	18284	42482	56892	60947	119566
11,5	9364	19051	44265	59281	63505	124586
12	9741	19819	46049	61670	66064	129606
12,5	10118	20587	47833	64058	68622	134626
13	10496	21354	49616	66447	71181	139646
13,5	10873	22122	51400	68835	73740	144666

Pressure (bar)	G10	G14	G20	G25	G32	G40
14	11250	22890	53183	71224	149686	
14,5	11628	23657	54967	73613		
15	12005	24425	56750	76001		
15,5	12382	25193	58534	78390		
16	12759	25960	60318	80778		
16,5	13137	26728	62101	83167		
17	13514	27495	63885	85556		
17,5	13891	28263	65668	87944		
18	14269	29031	67452	90333		
18,5	14646	29798	69236	92721		
19	15023	30566	71019	95110		
19,5	15401	31334	72803	97499		
20	15778	32101	74586	99887		
20,5	16155	32869	76370			
21	16532	33637	78153			
21,5	16910	34404	79937			
22	17287	35172	81721			
22,5	17664	35939	83504			
23	18042	36707	85288			
23,5	18419	37475	87071			
24	18796	38242	88855			
24,5	19174	39010	90639			
25	19551	39778	92422			
25,5	40545	94206				
26	41313	95989				
26,5	42081	97773				
27	42848	99556				

Pressure (bar)	G10	G14	G20	G25	G32	G40
27,5	43616	101340				
28	44384	103124				
28,5	45151	104907				
29	45919	106691				
29,5	46686	108474				
30	47454	110258				
30,5	48222	112042				
31	48989	113825				
31,5	49757	115609				
32	50525	117392				
32,5	51292	119176				
33	52060	120959				
33,5	52828	122743				
34	53595	124527				
34,5	54363	126310				
35	55130	128094				
35,5	55898	129877				
36	56666	131661				
36,5	57433	133445				
37	58201	135228				
37,5	58969	137012				
38	59736	138795				
38,5	60504	140579				
39	61272	142363				
39,5	62039	144146				
40	62807	145930				

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D / E / F / G NGI SERIES SAFETY VALVES MOUNTING AND MAINTENANCE INFORMATION SHEET

1. Description

- a. NGI spring loaded safety valves are suitable for use on gas, steam and liquids. They are the result of 10 years of experience on many applications and ensure the ultimate protection of pressured equipment. They are able to guarantee that the internal pressure does not exceed the maximum authorized pressure, even if other safety devices installed upstream are defective, as long as they are properly sized.
- b. NGI spring loaded safety valves have a brass or stainless steel construction. The pressure of all the safety valves is pre-set and they are all sealed at the plant in order to ensure a maximum safety and a minimum maintenance level.

2. Warranty

- a. Before contacting us, please make sure to identify the type of safety valve as well as the individual number engraved on the safety valve body.
- b. The NGI safety valves are guaranteed 12 months after the delivery date. The defective pieces, after our expertise, will be replaced at our own expense. We will not accept any claim of damage caused by a wrong use, a modification of the safety valve or by a leakage due to impurities.

3. Transport, check upon delivery and storage

- a. BEWARE: the safety valve can be damaged by vibrations, shocks or impurities. Consequently, the valve has to be handled carefully without removing the protection covers or use the testing lever before installation.
- b. When delivered, please check:
 - The quality of the package
 - The conformity of the safety valve to the ordered one
 - The possible damages
 - That the safety valve is delivered with its calibration certificate, which number has to correspond to the number engraved on the safety valve body.
- c. It is recommended to install the safety valve right after the delivery and not to leave it without using it. If the device is stored, it has to be in a dry and sheltered place

4. Precautions for use

- a. Before installation, please check that the device is depressurized and at room temperature.
- b. Any adjustment or modification has to be operated by safety valves qualified technicians only.
- c. WARNING – TOXIC GASES: If the safety valve is installed on an acid storage tank, make sure to use gloves and glasses or any other necessary protection equipment.
- d. A safety valve can be put into operation only if it is sealed and certified and if its pressure has been pre-set by NGI. The pre-set certificate mentions the exact pressure setting.
- e. When a free outlet safety valve has to be tested, please previously make sure that no one stays in the exhaust valve direction. Do not let toxic, explosive or flammable material exhaust in the atmosphere. Before the test, plan the controlled degassing procedure into a confined space.
- f. Do not modify the safety valve, damage its sealing or modify its pressure setting.
- g. Do not create hot or cold thermal shock on the safety valve.
- h. In the event of a malfunction, please immediately contact SECTORIEL or NGI.
- i. BEWARE: IN A CORROSIVE ENVIRONMENT, ONLY STAINLESS STEEL SAFETY VALVES SHOULD BE INSTALLED.

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- j. The connection type has to comply with the device piping system.
- k. We recommend you to select ducted exhaust safety valve. If the safety valve has an atmosphere exhaust system, please direct it so that it does not cause any material or corporal damage. Possibility to provide a safety valve with a leakage detector for the control system on request.

5. Installation

- a. Check that the sealing is not damaged.
- b. The spring loaded safety valves have to be installed in a vertical position with bonnet facing up.
- c. Remove the protection covers, taking care of not damaging the bearings, and mount the safety valve on the installation following its connection type.
- d. It is prohibited to install an isolating valve between the safety valve and the device to protect.
- e. It is prohibited to install a reduction fitting limiting the flow to evacuate between the safety valve and the device to protect.
- f. For ducted exhaust safety valves, make sure that the piping discharge will not cause any personnel or environmental damage.
- g. If the safety valve has to be connected to pipework, please make sure that it is as short as possible in order to create the lowest back pressure possible.
- h. The exhaust piping connected to a ducted exhaust safety valve should not be supported by the safety valve itself. Otherwise, leakage might appear.

6. Cleaning and lubrication

- a. The NGI safety valves are designed to avoid the need of any lubrication
- b. Maintain the safety valve clean and fully operational. For example, check that the exhaust system remains open and that no foreign body blocks the exhaust piping.

7. Routine maintenance

- a. The safety valve is a sensitive safety element that has to be verified periodically. In case of any malfunctioning, please contact SECTORIEL or NGI.
- b. BEWARE: SECTORIEL and NGI are not responsible for the safety valve effective operation if the device is dismantled, modified, or reset by anyone who is not assigned by either SECTORIEL or NGI.

8. Inspection and regular maintenance

- a. Regular testing of valves is essential to maintain operational efficiency. To test it, the lever can be manually operated briefly. To protect the installation during the test, the testing pressure has to stay between 80 and 90% of the setting pressure. The safety valve should be widely open to ensure a significant flow rate. While reclosing, make sure that the seat remains tight. At the installation start-up phase, we recommend to operate this test on a regular basis.
- b. For use on gas or steam installation based in France, comply with the Decree of December, 4th 1998 relating to safety valves supervision.

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