

D type FREE OUTLET SAFETY VALVE

2800 AND 2810 SERIES

CHARACTERISTICS

The D type safety valves are dedicated to protect the equipment from potential overpressure. This is an automatic device that closes when the pressure conditions are back to normal. It is a spring type safety valve with a free outlet design. The D type safety valve is available in either brass or stainless steel construction, except for D7. The standard version is delivered sealed with NBR tightness and a testing device. It complies with the PN 40 pressure rating standards and is certified by a TÜV approval. It can be used on compressed air and other non hazardous compatible gases. Setting certificate and information folder, in compliance with the 1998 decree about the safety valves monitoring, are available on request.

AVAILABLE ITEMS

Type	D7	D10	D14
Brass	x	x	X
Stainless steel	-	x	X
TÜV #	SV_861	SV_784	SV_861
PN	40	40	40
Orifice (mm)	7	10	14
Surface cm ²	0.385	0.785	1.54
Lift (mm)	4	4	7
Min Calibration. (bar)	0.5	0.5	0.5
Max Calibration. (bar)	40	40	30 (20)
Inlet connection	G 1/4" M* or G 3/8" M	G 3/8" M* or G 1/2" M*	G 3/4" M* or G 1/2" M

*Standard models available

CONSTRUCTION STANDARDS

TÜV approval

EC0044 certification, category IV (modules B+D)

Maximum flow rate at set 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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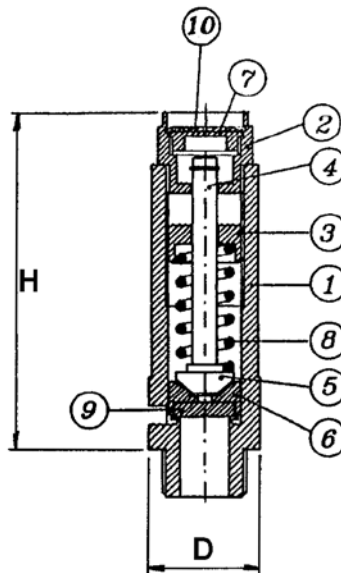


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CONSTRUCTION

		Brass	Stainless steel
1	Body	CW614N / 2.0372 Brass	AISI 316 / 1.4401
2	Testing device	CW614N / 2.0372 Brass	AISI 316 / 1.4401
3	Adjustment screw	CW614N / 2.0372 Brass	AISI 316 / 1.4401
4	Stem	CW614N / 2.0372 Brass	AISI 316 / 1.4401
5	Clack	CW614N / 2.0372 Brass	AISI 316 / 1.4401
6	Seat	CW614N / 2.0372 Brass	AISI 316 / 1.4401
7	Cap	CW614N / 2.0372 Brass	AISI 316 / 1.4401
8	Spring	C72 UNI 3823	AISI 316 / 1.4401
9	Bearing	NBR / EPDM / Viton / Silicone / Met. / PTFE	NBR / EPDM / Viton / Silicone / Met. / PTFE
10	Plate	CW614N / 2.0372 Brass	AISI 316 / 1.4401
11	Deflector	Al Mg	Al Mg
12	Nut	CW614N / 2.0372 Brass	AISI 316 / 1.4401



FLOW RATE COEFFICIENTS - (TÜV)


Type	Gas pressure < 3 bar	Gas pressure > 3 bar
D7	0.58	0.78
D10	0.65	0.77
D14	0.72	0.81

DIMENSIONS (mm)

Type	D7	D10	D14
H	65	74	111
D	20	23	30

For compressed air, please refer to the below chart. For other gases, please contact us.

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INSTALLATION

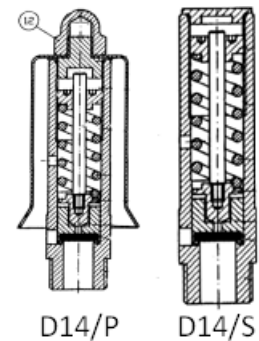
The valve has to be installed as close as possible to the device to protect. It has to be installed in a vertical position. There should be no valve between the safety valve and the device to protect. No foreign body should block the safety valve discharge openings. The exhaust has to be connected to 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

Nickel-plated brass construction
Brass construction with stainless steel body and clack
Safety valve without testing device D14/S type
Safety valve with deflector D10/P and D14/P types
EPDM, Viton®, silicone or metallic bearings
BSPT, NPT connections



COMPRESSED AIR FLOW RATE (KG/H) ACCORDING TO AD – Merkblatt A2 – TÜV – at 0 °C

Pressure (bar)	D7	D10	D14	Pressure (bar)	D7	D10	D14	Pressure (bar)	D7	D10	D14
0,5	30	70	151	12,5	390	785	1620	24,5	739	1487	3069
1	44	98	210	13	404	814	1680	25	753	1517	3130
1,5	59	128	272	13,5	419	843	1741	25,5	768	1546	3190
2	76	160	336	14	434	873	1801	26	783	1575	3250
2,5	94	193	403	14,5	448	902	1861	26,5	797	1604	3311
3	114	229	472	15	463	931	1922	27	812	1634	3371
3,5	128	258	533	15,5	477	960	1982	27,5	826	1663	3432
4	143	287	593	16	492	990	2042	28	841	1692	3492
4,5	157	317	653	16,5	506	1019	2103	28,5	855	1721	3552
5	172	346	714	17	521	1048	2163	29	870	1751	3613
5,5	186	375	774	17,5	535	1078	2224	29,5	884	1780	3673
6	201	404	835	18	550	1107	2284	30	899	1809	3734
6,5	215	434	895	18,5	564	1136	2344	31	928	1868	
7	230	463	955	19	579	1165	2405	32	957	1926	
7,5	245	492	1016	19,5	593	1195	2465	33	986	1985	
8	259	521	1076	20	608	1224	2526	34	1015	2043	
8,5	274	551	1137	20,5	623	1253	2586	35	1044	2102	
9	288	580	1197	21	637	1282	2646	36	1073	2160	
9,5	303	609	1257	21,5	652	1312	2707	37	1102	2219	
10	317	639	1318	22	666	1341	2767	38	1131	2277	
10,5	332	668	1378	22,5	681	1370	2828	39	1161	2336	
11	346	697	1439	23	695	1399	2888	40	1190	2395	
11,5	361	726	1499	23,5	710	1429	2948				
12	375	756	1559	24	724	1458	3009				

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COMPRESSED AIR FLOW RATE (Nm³/h) ACCORDING TO AD – Merkblatt A2 - TÜV – at 0 °C

Pressure (bar)	D7	D10	D14	Pressure (bar)	D7	D10	D14	Pressure (bar)	D7	D10	D14
0,5	24	54	117	12,5	302	607	1253	24,5	572	1150	2374
1	34	76	163	13	313	630	1300	25	583	1173	2421
1,5	46	99	210	13,5	324	652	1346	25,5	594	1196	2468
2	59	124	260	14	335	675	1393	26	605	1218	2514
2,5	73	150	311	14,5	347	698	1440	26,5	617	1241	2561
3	88	177	365	15	358	720	1486	27	628	1264	2608
3,5	99	200	412	15,5	369	743	1533	27,5	639	1286	2654
4	110	222	459	16	380	766	1580	28	650	1309	2701
4,5	122	245	505	16,5	392	788	1627	28,5	662	1332	2748
5	133	268	552	17	403	811	1673	29	673	1354	2795
5,5	144	290	599	17,5	414	833	1720	29,5	684	1377	2841
6	155	313	646	18	425	856	1767	30	695	1399	2888
6,5	167	335	692	18,5	437	879	1813	31	718	1445	
7	178	358	739	19	448	901	1860	32	740	1490	
7,5	189	381	786	19,5	459	924	1907	33	763	1535	
8	200	403	832	20	470	947	1954	34	785	1581	
8,5	212	426	879	20,5	482	969	2000	35	808	1626	
9	223	449	926	21	493	992	2047	36	830	1671	
9,5	234	471	973	21,5	504	1015	2094	37	853	1716	
10	245	494	1019	22	515	1037	2141	38	875	1762	
10,5	257	517	1066	22,5	527	1060	2187	39	898	1807	
11	268	539	1113	23	538	1082	2234	40	920	1852	
11,5	279	562	1159	23,5	549	1105	2281				
12	290	584	1206	24	560	1128	2327				

COMPRESSED AIR FLOW RATE (l/min) ACCORDING TO – Merkblatt A2 - TÜV – at 0 °C

Pressure (bar)	D7	D10	D14	Pressure (bar)	D7	D10	D14	Pressure (bar)	D7	D10	D14
0,5	393	898	1950	12,5	5027	10118	20881	24,5	9526	19174	39568
1	569	1261	2709	13	5214	10496	21660	25	9713	19551	40347
1,5	764	1648	3501	13,5	5402	10873	22439	25,5	9901	19928	41126
2	979	2058	4329	14	5589	11250	23217	26	10088	20305	41904
2,5	1213	2492	5191	14,5	5777	11628	23996	26,5	10275	20683	42683
3	1465	2950	6087	15	5964	12005	24774	27	10463	21060	43461
3,5	1653	3327	6866	15,5	6152	12382	25553	27,5	10650	21437	44240
4	1840	3704	7645	16	6339	12759	26332	28	10838	21815	45019
4,5	2028	4082	8423	16,5	6527	13137	27110	28,5	11025	22192	45797
5	2215	4459	9202	17	6714	13514	27889	29	11213	22569	46576
5,5	2403	4836	9981	17,5	6901	13891	28668	29,5	11400	22947	47355
6	2590	5214	10759	18	7089	14269	29446	30	11588	23324	48133
6,5	2778	5591	11538	18,5	7276	14646	30225	31	11963	24078	
7	2965	5968	12316	19	7464	15023	31003	32	12337	24833	
7,5	3153	6345	13095	19,5	7651	15401	31782	33	12712	25588	
8	3340	6723	13874	20	7839	15778	32561	34	13087	26342	
8,5	3527	7100	14652	20,5	8026	16155	33339	35	13462	27097	
9	3715	7477	15431	21	8214	16532	34118	36	13837	27851	
9,5	3902	7855	16210	21,5	8401	16910	34897	37	14212	28606	
10	4090	8232	16988	22	8588	17287	35675	38	14587	29361	
10,5	4277	8609	17767	22,5	8776	17664	36454	39	14962	30115	
11	4465	8987	18545	23	8963	18042	37232	40	15337	30870	
11,5	4652	9364	19324	23,5	9151	18419	38011				
12	4840	9741	20103	24	9338	18796	38790				

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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 electric actuator 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 leak 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 is 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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