

G/L TYPE STEAM SAFETY VALVES

FEATURES

The G/L type safety valve is a device designed to protect steam installations against possible overpressures. They operate automatically and close when pressure conditions return to normal. The G/L safety valve is a brass or stainless steel spring safety valve with channelled exhaust, offset holes with test device. As a standard, it is delivered lead-sealed with a FPM + PTFE leak-tightness for the 2851 model, PTFE for the 2863 model, and with FFKM leak-tightness for the 2850 and 2860 models. The safety valve has a test lever. G/L safety valves are TÜV-certified, and are approved as category IV according to the D.E.S.P. directive. 2014/68 can be used for steam, gases and compatible liquids. Male gas connections at the inlet and outlet. Calibration certificate and manufacturer dossier according to the 20th of November 2017 decree concerning the monitoring of safety valves, upon simple request.



LIMITS OF USE

Type	G10/L	G14/L	G20/L	G25/L	G40/L
Fluid WP (bar):	30	60	60	60	14
Fluid WT (°C):	PTFE seat 6 bar / +165°C under saturated steam (2851-Brass)				
Fluid WT (°C):	PTFE seat 10 bar / +180°C under saturated steam (2863-SS)				
Fluid WT (°C):	FFKM seat from 6.5 to 15 bar / +200°C under saturated steam (2850-Brass)				
Fluid WT (°C):	FFKM seat from 0.5 to 15 bar / +200°C under saturated steam (2860-SS)				

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HYDRAULIC FEATURES

Type	G10/L	G14/L
Inlet DN	G 1/2" M	G 3/4" M
Outlet DN	G 1" M	G 1" M
Do orifice (mm)	10	13.5
Flow-rate coefficient	0.85	0.81 > 3 bar 0.86
ASME VIII flow-rate coefficient	0.85	0.629
CRN flow-rate coefficient	0.629	0.629
Calibration minimum (bar)	0.3	0.3
Calibration maximum (bar)	30	60

Type	G20/L	G25/L	G40/L
Inlet DN	G1"M or G1"1/4M	G 1"1/2 M	G 2" M
Outlet DN	G 1"1/4 M	G 1"1/2 M	G 2" M
Do orifice (mm)	20	25	40
Flow-rate coefficient	0.83	0.78	0.61 > 3 bar 0.71
ASME VIII flow-rate coefficient	0.629	0.629	0.629
CRN flow-rate coefficient	0.629	0.629	0.629
Calibration minimum (bar)	0.3	0.3	0.3
Calibration maximum (bar)	60	60	14

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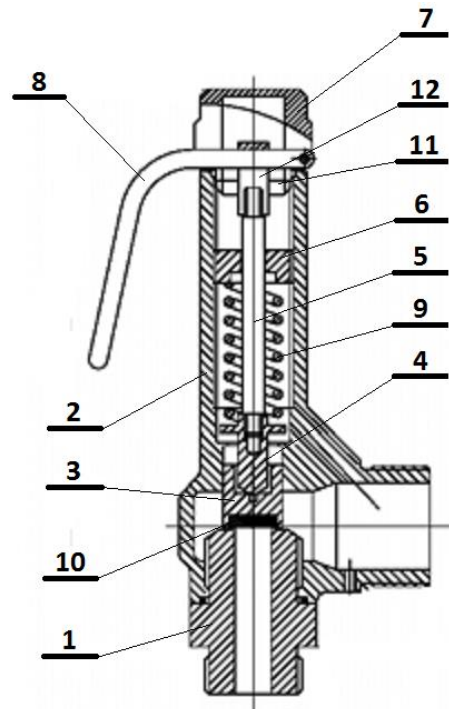
DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	O.N.
Pressure Equipment Directive 2014/68/EC	Category IV	CE 0036
Directive ATEX 2014/34	Ex II 2G/D c	
EN Construction standard	ISO 4126-1	
US Construction standard	ASME VIII Division 1	
Approval for Canada	CRN	
Approval for Russia	GOST-R	
Inlet and outlet connection	ISO 228:	

CONSTRUCTION

No.	Name	Brass version	Stainless steel version
1	Body	CW614N brass	1.4401 forged stainless steel
2	Bonnet	CW614N brass	AISI 316 forged stainless steel
3	Disc	CW614N brass	AISI 316 forged stainless steel
4	Needle	CW614N brass	AISI 316 forged stainless steel
5	Stem	CW614N brass	AISI 316 forged stainless steel
6	Adjustment screw	CW614N brass	AISI 316 forged stainless steel
7	Cap	CW614N brass	AISI 316 forged stainless steel
8	Lever	AISI 316 forged stainless steel	AISI 316 forged stainless steel
9	Spring	Alloy steel	AISI 302 SS
10	Seat	FPM / PTFE / KALREZ	PTFE / KALREZ
11	Plate	CW614N brass	AISI 316 forged stainless steel
12	Pin	CW614N brass	AISI 316 forged stainless steel

Name	Brass version (kg)	Stainless steel version (kg)
G10/L	0.76	
G14/L	0.78	
G20/L	1.64	
G25/L	3.30	
G40/L	6.47	

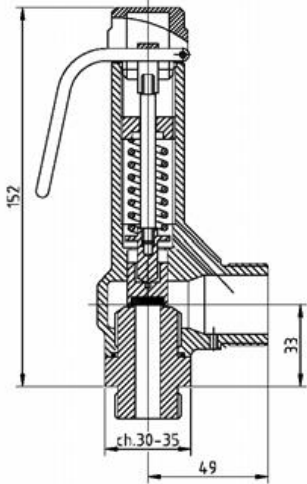
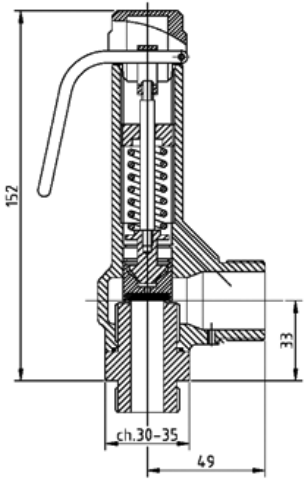
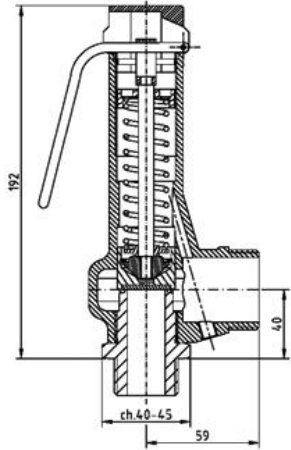
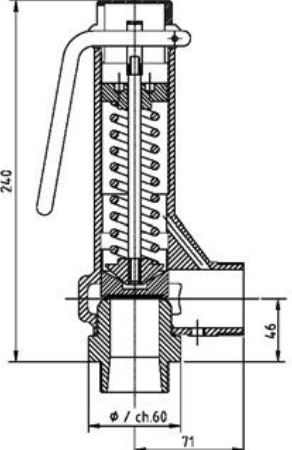
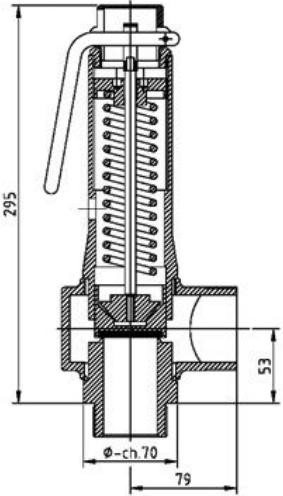


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DIMENSIONS (mm)

G10/L	G14/L
	
G20/L	G25/L
	
G40/L	
	

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INSTALLATION

The safety valve has to be positioned as close as possible to the volume to protect. It must always be installed, in the vertical position. No valve must be installed in-between the volume to protect and the safety valve. No foreign body must block the discharge orifice of the safety valve. The exhaust has to be connected to piping without counter-pressure, discharging into a hazard free location. The safety valve must not support the exhaust piping. The safety valve installation and servicing have to be carried out according to state-of-the-art rules, following the instruction leaflet provided with the safety valve.

OPTION

Nickel-plated brass safety valve.
Brass body and stainless steel disc.
BSPT, NPT connection.
Flange, DIB, clamp, etc... connection.

STEAM FLOW-RATE IN kg/h

According to the ISO 4126-7 standard

Type	G10/L	G14/L	G20/L	G25/L	G40/L
P (bar)	Kg/h				
1	76	132	297	436	903
2	114	206	447	656	1444
3	152	281	595	874	2037
4	190	351	742	1090	2541
5	228	420	889	1305	3043
6	265	489	1035	1520	3544
7	302	558	1181	1734	4043
8	340	627	1326	1948	4541
9	377	695	1472	2161	5038
10	414	764	1617	2374	5536
11	451	833	1762	2588	6033
12	488	901	1908	2801	6530
13	525	970	2052	3013	7026
14	563	1038	2197	3226	7523
15	600	1107	2343	3440	-
16	637	1176	2488	3653	-
17	674	1245	2634	3867	-
18	711	1313	2779	4080	-
19	749	1382	2925	4294	-
20	786	1451	3070	4508	-
21	823	1520	3216	4722	-
22	861	1589	3362	4937	-
23	898	1658	3509	5152	-
24	936	1727	3655	5367	-
25	973	1796	3802	5582	-

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INSTALLATION AND SERVICING REGULATION

1 - DESCRIPTION

1.1 NGI spring safety valves are designed for steam, gas, and liquids. They are the result of tens of years of experience on many applications, and widely provide their function of ultimate of pressure devices. They are able to guarantee that the internal pressure does not exceed the authorised maximum, even if other safety systems installed upstream are faulty, insofar as they have been sized correctly.

1.2 NGI safety valves are made of brass or stainless steel. All safety valves are calibrated and lead sealed at the factory, for maximum safety and minimum maintenance.

2 - GUARANTEE

2.1 Before any contact with our services, please identify the type of safety valve and the individual number engraved on the safety valve body.

2.2 NGI safety valves have a 24-month guarantee, as of the delivery date. Parts admitted as faulty by an assessment at our factory, will be replaced at our expense. Complaints resulting from the incorrect use, modification of the safety valve, a leak following the passage of impurities, shall not be accepted.

3 - TRANSPORT, INSPECTION AT ACCEPTANCE AND STORAGE

3.1 CAUTION: The safety valve can be damaged by vibrations, impacts and the contact with impurities. For this reason, the safety valve has to be handled with precaution, without removing the protective plugs before installation, and without manoeuvring the test lever.

3.2 At acceptance, check that:

- the packaging is in good condition,
- the delivered safety valve is as ordered,
- the equipment has not been damaged,
- the safety valve is delivered with a calibration certificate whose number must match that engraved on the safety valve body.

3.3 It is recommended to install the safety valve as of acceptance and not to leave it unused. If the equipment has to be stored, it must be in a dry place protected from the weather.

4 - PRECAUTIONS FOR OPERATION

4.1 Before installing, make sure that the installation is completely depressurized and brought to ambient temperature.

4.2 Any adjustment or any modification can only be made by technicians qualified for safety valves.

4.3 CAUTION WITH TOXIC GASES

If the safety valve is installed on an acid tank, wear gloves and safety glasses, and any other personal protection needed.

4.4 The safety valve cannot be commissioned unless it has been calibrated, lead sealed and certified by NGI. The calibration certificate bears the indication of the exact pressure of its calibration.

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4.5 When a safety valve with free exhaust in operation, has to be tested, make sure beforehand that nobody stays in the way of the exhaust. Do not let toxic, explosive or flammable products discharge into the atmosphere. Before testing, schedule a controlled degassing procedure in a confined volume.

4.6 Do not perform work on the safety valve, do not break its lead seal, and do not modify its calibration pressure.

4.7 Do not subject the safety valve to a hot or cold shock.

4.8 In case of malfunctioning, contact SECTORIEL or NGI immediately.

4.9 CAUTION: ONLY STAINLESS STEEL SAFETY VALVES MUST BE INSTALLED IN A CORROSIVE ENVIRONMENT.

4.10 The type of connection has to match the piping class of the installation.

4.11 We recommend to choose, preferably, a channelled exhaust safety valve. If the safety valve discharges directly into the atmosphere, direct the exhaust so as not to cause any damage to equipment or persons. Upon request, it is possible to provide a safety valve with a leak detector for the control and instrumentation.

5 - INSTALLATION

5.1 Check that the lead seal has not been damaged.

5.2 Safety valves have to be installed in the vertical position with the bonnet upwards.

5.3 Be careful not to damage the seats, remove the protective plugs and install the safety valve on the installation according to its type of connection.

5.4 No isolation valve shall be placed in-between the volume to protect and the safety valve.

5.5 No reduction limiting the flow-rate to discharge shall be placed in-between the volume to protect and the safety valve.

5.6 For channelled exhaust safety valves, make sure that the discharge piping discharges into a location free of hazards for personnel and the environment.

5.7 If the safety valve exhaust has to be connected to a piping, make sure that the latter is as short as possible so as to create just a minimum counter-pressure.

5.8 The piping connected to a channelled exhaust safety valve should not be supported by the safety valve itself. Otherwise, leaks may occur.

6 - CLEANING AND LUBRICATION

6.1 NGI safety valves are designed not to require any lubrication.

6.2 Keep the safety valve clean and in running order. Check, in particular, that the exhaust stays clear and that no foreign body blocks the discharge piping.

7 - USUAL MAINTENANCE

7.1 The safety valve is a sensitive safety element which has to be checked periodically. In case of reported malfunctioning, please contact SECTORIEL or NGI.

7.2 CAUTION: NGI and SECTORIEL are no longer responsible for the proper operation of a safety valve which has been disassembled, modified or re-calibrated by a person not authorised by NGI or SECTORIEL.

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8 - PERIODIC INSPECTION

8.1 To make sure that the safety valve is still operating, it has to be tested periodically. To carry out this test, the lever or the test thumb screw have to be manually actuated, briefly. To protect the installation during this test, the test pressure must stay between 80 and 90% of the calibration pressure. The safety valve has to be wide open to allow a significant flow-rate to circulate.

At re-closing, make sure that the seat is again leak-tight. At the start of an installation, it is recommended to carry this test regularly.

8.2 For use on gas or steam on installations located on the French territory, comply with the prescriptions of the order of November 20th 2017 concerning the monitoring of safety valves.

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