

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Safety Valve for Boiler and Pressure Vessel**with type designation(s)
SL and SJ, SP and SPU, SP-3S

Issued to

Fukui Seisakusho Co., Ltd.
Hirakata, Osaka Pref., Japan

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018****DNV GL class programme DNVGL-CP-0186 – Type approval – Valves****Application :****Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.**

Type:	K. factor:
SL and SJ	2.22
SP and SPU	2.36
SP-3S	2.36

Issued at **Høvik** on **2020-11-19**This Certificate is valid until **2022-12-30**.for **DNV GL**DNV GL local station: **Kobe**Approval Engineer: **Andreas Hansen**

Zeinab Sharifi
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-008193-5**
Certificate No: **TAP00001FG**

Product description

Full lift, direct loaded spring, safety relief valves.

Types of end connections:

	SL and SJ	SP	SPU	SP-3S
Inlet	Flanged or welded	Tapered threads	Flanged	Flanged
Outlet	Flanged	Tapered threads	Tapered threads	Tapered threads

Application/Limitation

The safety valves may be used in the following systems: Compressed air and Steam

Sizes and flange / pressure rating:

	SL	SJ	SP and SPU	SP-3S
Nom. Size	1½"x2½", 1½"x3", 1½"x4", 2"x3", 2"x4", 2½"x4", 2½"x6", 3"x4", 3"x6", 4"x6", 4"x8", 6"x8", 6"x10", 8"x10", 8"x12"	1"x1½", 1"x2", 1¼"x2", 1¼"x2½", 1½"x2½", 1½"x3", 2"x3", 2"x4", 2½"x4", 2½"x6", 3"x5", 3"x6", 3½"x6", 4"x6", 4"x8", 4½"x8", 5"x8", 6"x8", 6"x10", 8"x10"	1¼", 1½", 2"	¾"
Seat diam.	24 - 176	24 - 176	28 - 44	19
Flange ratings	ANSI Class 150 lb, 300 lb, 600 lb, 900 lb, 1500 lb, 2500 lb, JIS 10K, 20K, 30K	JIS 10K, 20K, 30K, 45 K	ANSI Class 150 lb, 300 lb, JIS 10K, 20K	JIS 30K
Max. set pressure	206 bar (yoke & bonnet type)	55 bar (bonnet type)	20 bar	35 bar

Materials and maximum temperature:

	SP and SPU	SP-3S	SL and SJ			
Max. Temp	225 °C	150°C	400 °C	450 °C	510 °C	540 °C
Body	CAC 406	SCS13	ASTM A216 WCB or SCPH 2	ASTM A217 WC6 or SCPH 21		ASTM A217 WC9 or SCPH 32
Nozzle Seat	SUS403	SCS13, SUS304	SUS304, SCS13, A105 or CF8	SUS316, SCS14 or CF8M		
				A182 - F12		A182 - F22
Disc	SUS 630	SUS630	SUS 630	B637		

Minimum working temperature -10 °C.

On boilers or steam-heated steam generators the following limitations applies: Safety-valves of ordinary type with seats of less than 38 mm inside diameter are not to be used. For full lift safety valves the inside seat diameter is not to be less than 20 mm. Where only one safety valve of ordinary type is fitted, the inside diameter of the valve seat is not to be less than 50 mm

Threaded joints may not be used for piping systems conveying toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.

Threaded joints in CO2 systems shall be allowed only inside protected spaces and in CO2 cylinder rooms.

Threaded joints with tapered thread are only be allowed for:

- class I piping system, when outside diameter not more than 33.7 mm
- class II and class III piping systems, when outside diameter not more than 60.3 mm.

Threaded joints with parallel thread are only allowed for class III piping class systems when outside diameter is not more than 60.3 mm.

The valves covered by this certificate are not to be considered fire safe and therefore shall not be installed wherever fire safe application is required; e.g. as shut off or quick closing valves.

Type Approval documentation

Tests carried out

Capacity test

Production Testing

Each valve body shall be subjected to a hydrostatic pressure test at 1.5 times the maximum working pressure at room temperature.

Each valve shall be subjected to seat leakage test (at 90% of set pressure) after reset and have set pressure sealed and verified.

Certification

The Society's product certificates are required for Boiler safety valves or valves with $DN > 100$ mm having a design pressure, $p > 16$ bar and for ship side valves with $DN > 100$ mm regardless of pressure rating. For other valves, works certificate will be accepted.

Valve bodies shall be delivered with material certificates in accordance with DNVGL-RU-SHIP Pt.4 Ch.6 Sec.2 Table 3. Approval of manufacturer is required for VL and W material certificates.

Marking of product

For traceability to this type approval the valves are to be marked as a minimum with:

- manufacturer's name or trade mark
- valve type designation
- size
- set pressure and capacity

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.