

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Safety Valve for Boiler and Pressure Vessel**with type designation(s)
SPSL-1S, SPSH-3S, SPSF-1F, SPSF-3F

Issued to

SUN PRECISION Co., Ltd.
Busan, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**DNV GL rules for classification – Ships Pt.4 Ch.7 Pressure equipment****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:
SPSL-1S	air/steam: 0.84 ; water: 0.62
SPSH-3S	air/steam: 0.84 ; water: 0.62
SPSF-1F	air/steam: 0.864 ; water: 0.62
SPSF-3F	air/steam: 0.864 ; water: 0.62

Issued at **Høvik** on **2019-05-06**This Certificate is valid until **2024-05-05**.for **DNV GL**DNV GL local station: **Gimhae Station**Approval Engineer: **Adel Samiei**

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.



Product description

Four types of safety valves

Material	SPSL-1S	SPSH-3S	SPSF-1F	SPSF-3F
Body	Copper Alloy JIS-C3771	Copper Alloy CAC406	(1) Ferritic Nodular Cast Iron FCD450	(1) Carbon Steel SC480 (2) Stainless Steel SCS13 & SCS14
Bonnet	Copper Alloy CAC406		(2) Bronze Casting BC6 (3) Carbon Steel SC480 (4) Stainless Steel SCS13 & SCS14	
Cap	Ferritic Nodular Cast Iron FCD450			
Disc	Copper Alloy JIS-C3604	Stainless Steel SUS304		
Spring seat	Copper Alloy JIS-C3604		Stainless Steel SUS304	
Gasket	PTFE			

Minimum body thicknesses are according to ASME B16.34

Sizes covered by this certificate:

- 1) SPSL-1S & SPSH-3S: (with end threaded connections)
15A (1/2"x3/4"), 20A (3/4"x3/4"), 25A (1"x1"), 32A (1 1/4"x 1 1/4"), 40A (1 1/2"x1 1/2"), 50A (2"x2")
- 2) SPSF-1F and SPSF-3F: (with flanged end connections)
15x25, 20x25, 25x40, 25x50, 32x65, 40x50, 40x65, 50x80,
Only SPSF-1F: 65x100, 80x100, 80x125, 100x150, 125x200, 150x200, 200x250

Application/Limitation

Valves covered by this certificate may be used on air, steam or liquid with following design conditions:

	Medium	SPSL-1S	SPSH-3S	SPSF-1F	SPSF-3F
Design Pressure / set Pressure (bar)	air, steam or liquid	10	33	20	33

Temperature range: 0°C to +200°C

Valves with threaded end connections:

- shall not be installed in systems conveying toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.
- tapered threads: may only be accepted for:
 - 1) Piping class I where the outside diameter is not more than 33.7 mm
 - 2) Piping classes II and III where the outside diameter is not more than 60.3 mm.
- parallel threads: shall be allowed for class III, outside diameter not more than 60.3 mm.

Valves covered by this certificate shall not be installed on LNG/LPG applications.

On boilers or steam-heated steam generators 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

The valves covered by this certificate are not to be considered fire safe, and shall not be installed in systems where fire safe application is required.

Production Testing

Each valve body shall be subjected to a hydrostatic pressure test at 1.5 times the design pressure.

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

Certification

Boiler safety valves shall be delivered with a DNV GL product certificate.

For Valves installed on equipment other than boilers, the DNV GL product certificates for sizes greater than 100 mm and design pressure greater than 16 bar. Otherwise, works certificate will be accepted.

Material certificates for valve bodies shall be according to DNV GL Pt.4 Ch.6 Sec.2 Table 3.

Type Approval documentation

Tests carried out

Hydrostatic test, Functional & Capacity test, seat tightness test

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
- Design or type designation
- Size (pipe size of valve inlet)
- Set pressure and capacity
- Arrow to indicate direction of flow

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.