

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Safety Valve for Boiler and Pressure Vessel**with type designation(s)  
**JSV-FF21**

Issued to

**Jokwang I.L.I. Co., Ltd.**  
**Yangsang-gi Gyeongsangnam-do, 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**  
**DNV GL class programme DNVGL-CP-0186 – Type approval – Valves****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****K. factor: 0.864 (Steam & Gas (air) ) - 0.6 (Liquid)**This Certificate is valid until **2020-05-27**.Issued at **Høvik** on **2016-10-14**DNV GL local station: **Gimhae MC & FIS**for **DNV GL**Approval Engineer: **Adel Samiei**

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**Marianne Spæren Marveng**  
**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:  
Certificate No: **TAP00000FV**

## Product description

Full lift type & full bore type safety valves – designation JSV-FF21

Body material : SC480 (Carbon Steel Castings) / GS-52 (Steel castings) / ASTM A27 Grade 70-36 (Cast Carbon Steel) / BC6 (Bronze) / A216 WCB (Carbon Steel Castings)  
Stem : ASTM A276 304 / A276 410 / A582 303  
Seat: SCS13,14,16/ A351 CF8,CF8M,CF3M  
Disc: A276 304,316,316L  
Gasket: PTFE, Non Asbestos, Graphite  
O-ring (Packed Lever Type):NBR

## Application

The safety valves may be used in the following systems: Steam, gas (air) and liquid in below design conditions:

Set pressure range      0.35 ~ 22 kgf/cm<sup>2</sup>  
Temperature range      0°C to 250 °C

## Limitation

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 shall not be used. (Reference is made to DNV GL ship rules Pt.4 Ch.7 Sec.5 [2.1.8])
- For full lift safety valves the inside seat diameter shall not be less than 20 mm. (Reference is made to DNV GL ship rules Pt.4 Ch.7 Sec.5 [2.1.8])
- The discharge from safety valves shall be to a point where hazard is not created. (Reference is made to DNV GL ship rules Pt.4 Ch.6 Sec.5 [7.4.1])

## Production test

All valve bodies shall be subject by the manufacturer to a hydrostatic test at a pressure equal to 1.5 times the set pressure (maximum working pressure at room temperature).

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

## Certification

Bodies of valves made of bronze (outlet size greater than 50 mm) shall be delivered with work material certificate. Otherwise, test report may be accepted.

Valves covered by this type approval certificate may be delivered with manufacturer's certificate. (Reference is made to DNV GL ship rules Pt.4 Ch.6 Sec.9 [3.3.1])

## Type Approval documentation

Test reports JK-QATV-2010-0322-1&-2&-3, JK-QATH-2010-0322-1&-2&-3, JK-QATF-2010-0322-1 (Hydrostatic test report, Functionality & capacity test reports)

Drawings: JKS-C1321001 Rev.1, JKS-S1321001 Rev.1, JKS-C1321002 Rev.1, JKS-S1321002 Rev.1, JKS-C1321003 Rev.1, JKS-S1321003 Rev.1, JKS-C1321004 Rev.1, JKS-S1321004 Rev.1, JKS-C1321005 Rev.1, JKS-S1321005 Rev.1, JKS-C1321006 Rev.1, JKS-S1321006 Rev.1, JKS-C1321007 Rev.1, JKS-S1321007 Rev.1, JKS-C1321008 Rev.1, JKS-S1321008 Rev.1, JKS-G1321057 Rev.2

Calculation sheet of safety valve capacity dated 2010-02-02

Capacity certification number JOK-M89007

## Tests carried out

Hydrostatic test report, Functionality & capacity test reports

## Marking of product

For traceability to this Type Approval the products are at least to be marked with:



Job Id:  
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- Manufacturer's name or trade mark
- Type designation
- Pressure rating
- Size

### **Periodical assessment**

For retention of the Type Approval a DNV GL Surveyor shall perform a periodical assessment every second Year. The objective of the periodical assessment is to verify that the conditions for the TA are not altered since the TAC was issued.

The main scope of the periodical assessment will normally include:

- Verification of the TA applicant's production and quality system w.r.t. ensuring continued consistent production of the type approved products at the TA applicant's own premises
- Review of the TA documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.