



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP00000FV
Revision No:
4

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.
Yangsan-si, Gyeongsangnam-do, Korea, Republic of

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment
DNV class programme DNV-CP-0186 – Type approval – Valves

Application:

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

K. factor: 0.864 (Steam & Gas (air)) - 0.6 (Liquid)

Issued at **Høvik** on **2025-06-26**

for **DNV**

This Certificate is valid until **2030-05-27**.

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Marc Avice**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

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

Material:

Body:	B584 C83600 or CAC406(BC6), A216 WCB or SC480
Bonnet:	B584 C83600 or CAC406(BC6), A216 WCB or SC480
Disc:	A276 304, 316, 316L
Stem:	A276 304, 316, 410
Seat:	A276 304, 316, 316L / A351 CF8, CF8M, CF3M
Gasket:	PTFE, Non Asbestos, Graphite
O-ring (Packed Lever Type):	NBR

Application/Limitation

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

Set pressure range	0.35 to 22 kgf/cm ² g
Temperature range	0 °C to 250 °C

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

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.

Safety valves of ordinary type with seats of less than 38 mm inside diameter and full lift safety valves with the inside seat diameter of less than 20 mm shall not to be used on boilers.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Design pressure for intended application shall be limited based on the corresponding Pressure/Temperature ratings of the end flanges used.

Safety valves on boilers shall fulfil the requirements stated in DNV-RU-SHIP Pt.4 Ch.7 Sec.5 [2.1].

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

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.3, JKS-C1321002 Rev.3, JKS-C1321003 Rev.3, JKS-C1321004 Rev.3, JKS-C1321005 Rev.3, JKS-C1321006 Rev.3, JKS-C1321007 Rev.3, JKS-C1321008 Rev.3, JKS-S1321001 Rev.3, JKS-S1321002 Rev.3, JKS-S1321003 Rev.3, JKS-S1321004 Rev.3, JKS-S1321005 Rev.3, JKS-S1321006 Rev.3, JKS-S1321007 Rev.3, JKS-S1321008 Rev.3, JKS-G1321057 Rev.3
Calculation sheet of safety valve capacity dated 2010-02-02
Capacity certification number JOK-M89007
DNV Type Approval drawing revised list dated 2025-01-03
Calculation Summary, document number JK-ER-250520-01 dated 2025.05.20

Tests carried out

Hydrostatic test report, Functionality & capacity test reports

Marking of product

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

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

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.



Job ID: **262.1-024628-3**
Certificate no.: **TAP00000FV**
Revision No: **4**

For retention of the Type Approval, a DNV 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 DNV-CP-0338.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.

Manufactured by

Jokwang I.L.I Co. Ltd
Yangsan-si, Gyeongsangnam-do, Republic of Korea



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP00000FW
Revision No:
4

This is to certify:

that the **Safety Valve for Boiler and Pressure Vessel**

with type designation(s)
JSV-FF41

issued to

Jokwang I.L.I. Co., Ltd.
Yangsan-si, Gyeongsangnam-do, Korea, Republic of

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment
DNV class programme DNV-CP-0186 – Type approval – Valves

Application:

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

K. factor: 0.864 (Steam & Gas (air)) - 0.6 (Liquid)

Issued at **Høvik** on **2025-06-26**

for **DNV**

This Certificate is valid until **2030-05-27**.

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Marc Avice**

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Product description

Full life type & full bore type safety valves – designation JSV-FF41

Material:

Body:	SC480 / A216 WCB
Bonnet:	SC480 / A216 WCB
Disc:	A276 304, 316, 316L
Stem:	A276 304, 316, 410
Seat:	A276 304, 316, 316L/ A351 CF8, CF8M, CF3M
Gasket:	PTFE, PCTFE, V7020

Application/Limitation

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

Set pressure range	22.1 to 33 kgf/cm ² g
Temperature range	0°C to 400 °C

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

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.

Safety valves of ordinary type with seats of less than 38 mm inside diameter and full lift safety valves with the inside seat diameter of less than 20 mm shall not to be used on boilers.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Design pressure for intended application shall be limited based on the corresponding Pressure/Temperature ratings of the end flanges used.

Safety valves on boilers shall fulfil the requirements stated in DNV-RU-SHIP Pt.4 Ch.7 Sec.5 [2.1].

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

Type Approval documentation

Test reports JK-QATV-2010-0322-4&-5&-6, JK-QATH-2010-0322-4&-5&-6, JK-QATF-2010-0322-1 (Hydrostatic test report, Functionality & capacity test reports) dated April 2010.

JKS-S1381001 Rev.3, JKS-S1381002 Rev.3, JKS-S1381003 Rev.3

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

Capacity certification number JOK-M89007

DNV Type Approval drawing revised list dated 2025.01.03

Calculation Summary, document number JK-ER-250520-01 dated 2025.05.20

Tests carried out

Hydrostatic test report, Functionality & capacity test reports

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

This certificate is only valid if required periodical assessments are carried out with satisfactory results.



Job ID: **262.1-022628-3**
Certificate no.: **TAP00000FW**
Revision No: **4**

For retention of the Type Approval, a DNV 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 DNV-CP-0338.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.

Manufactured by

Jokwang I.L.I. Co., Ltd.
Yangsan-si, Gyeongsangnam-do, Republic of Korea



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP00000FX
Revision No:
4

This is to certify:

that the **Safety Valve for Boiler and Pressure Vessel**

with type designation(s)
JSV-LT12

issued to

Jokwang I.L.I. Co., Ltd.
Yangsan-si, Gyeongsangnam-do, Korea, Republic of

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment
DNV class programme DNV-CP-0186 – Type approval – Valves

Application:

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

K. factor: 0.82 (Steam & Gas (air)) - 0.45 (Liquid)

Issued at **Høvik** on **2025-06-26**

for **DNV**

This Certificate is valid until **2030-05-27**.

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Marc Avice**

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Product description

Low lift type safety valves – designation JSV-LT12

Material:

Body:	C3771 / B124 C37700 / CAC406(BC6) / B62 C83600
Bonnet:	CAC406 (BC6) / B62 C83600
Disc:	C3771
Stem:	A276 304
Gasket:	PTFE
O-ring:	FPM

Application/Limitation

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

Set pressure range	0.35 to 11 kgf/cm ² g
Temperature range	-20°C to 220 °C

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

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.

Safety valves of ordinary type with seats of less than 38 mm inside diameter and full lift safety valves with the inside seat diameter of less than 20 mm shall not to be used on boilers.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Design pressure for intended application shall be limited based on the corresponding Pressure/Temperature ratings of the end flanges used.

Safety valves on boilers shall fulfil the requirements stated in DNV-RU-SHIP Pt.4 Ch.7 Sec.5 [2.1].

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

Type Approval documentation

Test reports JK-QATV-2010-0322-7 & -8, JK-QATH-2010-0322-7 & -8, JK-QATF-2010-0322-1 (Hydrostatic test report, Functionality & capacity test reports) dated April 2010.

Drawing number JKS-C1192001 Rev.3

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

Capacity certification number JOK-M89007

DNV Type Approval drawing reviewed list dated 2025.01.03

Calculation summary, document number JK-ER-250520-01 dated 2025.05.20

Tests carried out

Hydrostatic test report, Functionality & capacity test reports

Marking of product

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

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

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.



Job ID: **262.1-024630-4**
Certificate no.: **TAP00000FX**
Revision No: **4**

For retention of the Type Approval, a DNV 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 DNV-CP-0338.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.

Manufactured by

Jokwang I.L.I. Co., Ltd.
Yangsan-si, Gyeongsangnam-do, Republic of Korea



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP00000FY
Revision No:
4

This is to certify:

that the **Safety Valve for Boiler and Pressure Vessel**

with type designation(s)
JSV-HT41

issued to

Jokwang I.L.I. Co., Ltd.
Yangsan-si, Gyeongsangnam-do, Korea, Republic of

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment
DNV class programme DNV-CP-0186 – Type approval – Valves

Application:

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

K. factor: 0.8 (Steam & Gas (air)) - 0.55 (Liquid)

Issued at **Høvik** on **2025-06-26**

for **DNV**

This Certificate is valid until **2030-05-27**.

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Marc Avice**

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Product description

High lift type safety valves – designation JSV-HT41

Material:

Body:	A276 304 / SUS304
Bonnet:	B62 C83600 / CAC406(BC6)
Disc:	A276 304
Stem:	A276 304
Gasket:	PTFE

Application/Limitation

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

Set pressure range	0.5 to 33 kgf/cm ² g
Temperature range	0°C to 220 °C

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

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.

Safety valves of ordinary type with seats of less than 38 mm inside diameter and full lift safety valves with the inside seat diameter of less than 20 mm shall not to be used on boilers.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Design pressure for intended application shall be limited based on the corresponding Pressure/Temperature ratings of the end flanges used.

Safety valves on boilers shall fulfil the requirements stated in DNV-RU-SHIP Pt.4 Ch.7 Sec.5 [2.1].

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

Type Approval documentation

Test reports JK-QATV-2010-0322-9 &-10, JK-QATH-2010-0322-9 &-10, JK-QATF-2010-0322-1 (Hydrostatic test report, Functionality & capacity test reports) dated April 2010.

Drawing number JKS-C1272001 Rev.2

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

Capacity certification number JOK-M89007

DNV Type Approval drawing revised list dated 2025-01-03

Calculation Summary, document number JK-ER-250520-01 dated 2025.05.20

Tests carried out

Hydrostatic test report, Functionality & capacity test reports

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

This certificate is only valid if required periodical assessments are carried out with satisfactory results.



Job ID: **262.1-024631-3**
Certificate no.: **TAP00000FY**
Revision No: **4**

For retention of the Type Approval, a DNV 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 DNV-CP-0338.

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Manufactured by

Jokwang I.L.I. Co., Ltd.
Yangsan-si, Gyeongsangnam-do, Republic of Korea