



Certificate no.:  
**TAP00002S7**

# TYPE APPROVAL CERTIFICATE

**This is to certify:**

**that the Globe Valve**

with type designation(s)

**DJ41, DJ61, DJ641, DJ661, DJ43**

issued to

**Sichuan Chengdu Air-Separation Plant Valve Co., Ltd.  
Chengdu, China**

is found to comply with

**DNV class programme DNV-CP-0186 – Type approval – Valves  
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems  
DNV rules for classification – Ships Pt.5 Ch.7 Liquefied gas tankers  
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021**

## Application:

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

| Type: | Temperature range: | Max. working press.: | Sizes:             |
|-------|--------------------|----------------------|--------------------|
| DJ41  | -196°C to 120°C    | CL150 and CL300      | NPS 1/2" to NPS 8" |
| DJ61  | -196°C to 120°C    | CL150 and CL300      | NPS 3/8" to NPS 8" |
| DJ641 | -196°C to 120°C    | CL150 and CL300      | NPS 1/2" to NPS 8" |
| DJ661 | -196°C to 120°C    | CL150 and CL300      | NPS 3/8" to NPS 8" |
| DJ43  | -196°C to 120°C    | CL150                | NPS 2" to NPS 8"   |

Issued at **Høvik** on **2025-01-16**

This Certificate is valid until **2030-01-15**.

for **DNV**

DNV local unit: **Wuhan NB & CMC**

Approval Engineer: **Per Ola Nymo**

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

Manual and pneumatic actuated globe valves for cryogenic service with flanged or welding ends.

Manual valves:

Flanged Type Globe Valve (DJ41) / Welded Type Globe Valve (DJ61)

Three-way Globe Valve (DJ43)

Pneumatic actuated\*:

Flanged Type Globe Valve (DJ641) / Welded Type Globe Valve (DJ641)

\*The pneumatic actuated valves are spring operated to closed position in case of loss of pressure.

Design code: ASME B16.34

Butt weld ends according to: ASME B16.25

Flanged ends according to: ASME B16.5

Valve Inspection and Testing: ISO 28921-1

Materials:

| Component     | Material spec.                                                                                       |
|---------------|------------------------------------------------------------------------------------------------------|
| Body          | ASTM A351/A351M CF8, CF8M, CF3, CF3M                                                                 |
| Bonnet        | ASTM A351/A351M CF8, CF8M, CF3, CF3M<br>ASTM A182/182M F304, F304L, F316, F316L                      |
| Disc          | ASTM A351/A351M CF8, CF8M, CF3, CF3M, ASTM A182/A182M F304, F304L, F316L, F316                       |
| Stem          | ASTM A182/A182M F 304, F304L, F316L, F316                                                            |
| Bolting       | ASTM A193/A193M B8-CL2, B8M-CL 2, A2-70, A4-8 0                                                      |
| Sealing ring  | RPTFE (for General machinery service and Cryogenic service)<br>PCTFE (for General machinery service) |
| Seals, Gasket | 316, 316L, 304, 304L stainless steel spiral wound gasket                                             |

## Application/Limitation

Valves covered by this certificate may be used under the following design conditions:

| Parameter            | Values                                                                                                                                                          |                                                                                  |                                                                            |                                                                                  |                                |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------|
| Pressure class       | Class 150 and Class 300                                                                                                                                         |                                                                                  |                                                                            |                                                                                  | Class 150 and Class 300        |
| Service              | General machinery service or LNG/LPG applications - Cryogenic Service                                                                                           |                                                                                  |                                                                            |                                                                                  |                                |
| Temperature range    | -196 °C to +120 °C                                                                                                                                              |                                                                                  |                                                                            |                                                                                  |                                |
| Pressure-Temperature | Acc. to ASME B16.34.<br>For temperatures below minimum temperature in ASME B16.34, pressure rating according to lowest temperature in ASME B16.34 also applies. |                                                                                  |                                                                            |                                                                                  |                                |
| Type of valve        | Globe valve (manual)                                                                                                                                            |                                                                                  | Pneumatic actuated globe valve                                             |                                                                                  | Three-way globe valve (manual) |
| Type                 | DJ41                                                                                                                                                            | DJ61                                                                             | DJ641                                                                      | DJ661                                                                            | DJ43                           |
| Bonnet prepared for  | manual operation                                                                                                                                                |                                                                                  | actuator operation                                                         |                                                                                  | manual operation               |
| Size (NPS)           | 1/2", 3/4", 1",<br>1 1/4", 1 1/2",<br>2", 2 1/2",<br>3", 4", 5", 6",<br>8"                                                                                      | 3/8", 1/2", 3/4",<br>1", 1 1/4",<br>1 1/2", 2",<br>2 1/2", 3", 4",<br>5", 6", 8" | 1/2", 3/4", 1",<br>1 1/4", 1 1/2",<br>2", 2 1/2",<br>3", 4", 5", 6",<br>8" | 3/8", 1/2", 3/4",<br>1", 1 1/4",<br>1 1/2", 2",<br>2 1/2", 3", 4",<br>5", 6", 8" | 2", 2 1/2", 3", 4", 6", 8"     |
| End connection       | Flanged                                                                                                                                                         | Welding ends                                                                     | Flanged                                                                    | Welding ends                                                                     | Flanged                        |

Valves covered by this certificate may be used in LNG/LPG applications - Cryogenic Service.

The approval does not include evaluation of actuator, function, travel times and/or other equipment for remote control of the valves. The pneumatic actuated globe valves do not include option for manual closure.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. Valves of austenitic stainless steel shall not be used in direct contact with seawater. Reference is made to DNV Rules for Ships Pt.4 Ch.6 Sec.2

The valves covered by this certificate (except the pneumatic actuated globe valves) 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

Cryogenic prototype tests witnessed by DNV, 2024-05-11.

Flow tests of valves according to GB/T 30832-2014

Fire tests of pneumatic actuated globe valves DJ641/DJ661 according to ISO 10497:2022.

### 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).

### Marking of product

Minimum marking requirements shall be as outlined in the valve design standard in addition to minimum design temperature towards cryogenic applications.

### Periodical assessment

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

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>.