Certificate No:
TAP00002FU

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Ball Valve

with type designation(s)
ASME 515/530 Series, ASME 800 Series, EN-DIN 516/540/316/340 Series

Issued to
JC Fabrica de Valvulas, S.A.U.
Sant Boi de Llobregat, BARCELONA, Spain

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0186 – Type approval – Valves

Application :

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

Temperature range:	**See next pages.**
Max. working press.:	**PN16, PN40, 150#, 300# and 800#**
Sizes:	**See next pages.**

Issued at **Høvik** on **2022-07-25**
This Certificate is valid until **2027-07-24**.
DNV local station: **Barcelona FIS**

Approval Engineer: **Nishant Koti**

for **DNV**

Sinisa Sedlan
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.

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 300,000 USD.

Product description

Two types (two-piece and three-piece), full bore ball valves designed according to design standards and end connections as provided below:

- Two Pieces - Full Bore - Flanged - Raised Face - Split Body
- Three Pieces - Full Bore - Split Body

Design standards:

- Fig. 515 – Body thickness and bolting in accordance with ASME B16.34
- Fig. 530 – Body thickness and bolting in accordance with ASME B16.34
- Fig. 516/316 – Body thickness and bolting in accordance with ISO 17292
- Fig. 540/340 – Body thickness and bolting in accordance with ISO 17292
- ASME 800 Series – Body thickness and bolting in accordance with ASME B16.34

End connections:

- Fig. 515 – Flanges Type RF Class 150 in accordance with ASME B16.5
- Fig. 530 – Flanges Type RF Class 300 in accordance with ASME B16.5
- Fig. 516/316 – Flanges Type RF PN16 in accordance with ISO 1092-1
- Fig. 540/340 – Flanges Type RF PN40 in accordance with ISO 1092-1
- ASME 800 Series
  - BW Acc. ASME B16.25 & EN10216.
  - SW Acc. ASME B16.11.
  - NPT Acc. ASME B1.20.1.
  - BSP Acc. ISO 228-1.

Size:

- Fig. 515 - pressure rating class 150 and size range from ½" to 8" (10 sizes)
- Fig. 530 – pressure rating class 300 and size range from ½" to 6" (8 sizes)
- ASME 800 Series* – pressure rating class 800 and size range from 3/8" to 2" (7 sizes)
- Fig. 516/316 - pressure rating PN16 and size range from DN65 to DN200 (6 sizes)
- Fig. 540/340 – pressure rating PN40 and size range from DN15 to DN150 (11 sizes)

Materials:

Component	*for Two Pieces - Full Bore - Flanged - Raised Face - Split Body*		*for Three Pieces - Full Bore - Split Body*
Body	ASTM A216 Gr. WCB/ASTM A351 Gr.CF8M/ ASTM A352 LCC	1.0619/1.4408	ASTM A105N/ASTM A352 Gr. LF2/ASTM A479 TP.316L
Body Connector	ASTM A216 Gr. WCB/ASTM Gr.CF8M/ ASTM A352 LCC	1.0619/1.4408	ASTM A105N/ASTM A352 Gr. LF2/ASTM A479 TP.316L
Ball	ASTM A479 TP. 316 / ASTM A351 Gr.CF8M	ASTM A479 TP. 316 / ASTM A351 Gr.CF8M	ASTM A479 TP. 316
Stem	ASTM A479 TP. 316	ASTM A479 TP. 316	ASTM A479 TP. 316
Bolting	ASTM A193 Gr. B7M/ASTM A193 B8M/ ASTM A320 Gr. L7M	A4-70 / 8.8 Zinc plated	ASTM A320 Gr. L7M / ASTM A193 Gr. B7M / ASTM A193 Gr. B8M
Seat Ring	PTFE	PTFE	PTFE + CG
Seals, Gasket	PTFE, Graphite, 25% G.F + PTFE and FKM (O-ring)	PTFE, Graphite, 25% G.F + PTFE and FKM (O-ring)	PTFE, Graphite, TFM+GF and FKM (O-ring)

Application/Limitation

Valves covered by this certificate are approved to be used under the following design conditions:

Parameter	*for Two Pieces - Full Bore - Flanged - Raised Face - Split Body*		*for Three Pieces - Full Bore - Split Body*
Pressure class	Class 150, Class 300 as per ASME B16.34	PN16, PN40 as per ISO 17292	Class 800 as per ASME B16.34
Temperature range	-29 °C to +230 °C (WCB) -50 °C to +230 °C (CF8M)	-29 °C to +230 °C (1.0619) -50 °C to +230 °C (1.4408)	-29 °C to +260 °C (A105N) -50 °C to +260 °C (316L)

	-46 °C to +230 °C (LCC)		-46 °C to +260 °C (LF2)
Size	½" to 8" (Cl 150) ½" to 6" (Cl 300)	2 ½" to 8" (PN16) ½" to 6" (PN40)	3/8" to 2"

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.

Type Approval documentation

Tests carried out

Fire test in accordance with API 607, API 6FA
Test carried out according to API 6D, API 598, EN 12266-1.

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).

Marking of product

Minimum marking requirements shall be as outlined in relevant valve design standard API 6D, ISO 17292, ASME B16.34.

Periodical assessment

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 DNVGL-CP-0338.