CERTIFICATE NUMBER	25-0239857-PDA
EFFECTIVE DATE	08-Apr-2025
EXPIRY DATE	07-Apr-2030
ABS TECHNICAL OFFICE	Houston ESD - Piping

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

IMI CRITICAL ENGR PBM LLC

located at

1070 SANDY HILL RD., , Irwin, PA, United States, 15642

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product:	**Valve, Ball**
Model:	**AN Series 5 and TN Series 5**
Endorsements:	
Tier:	**3 - Type Approved, unit certification not required**

This Product Design Assessment (PDA) Certificate remains valid until 07/Apr/2030 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Electronically Signed by:

John Vincent B. Ulep
Senior Principal Engineer

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Tier: 3 - Type Approved, unit certification not required

Product: **Valve, Ball**
Model: **AN Series 5 and TN Series 5**
Endorsements:

Intended Service:
Marine & Offshore Applications - Industrial Flanged Ball Valves.

Description:
Flanged ball valves with bidirectional sealing (2-way ball valves).
Materials for these valves are as per ASME B16.34.

Rating:
Sizes: 1/2", 3/4", 1", 1 1/2", 2", 2 1/2", 3" and 4" Class 150 and 300 flanged connections in accordance with ASME B16.5.
Pressure and temperature ratings are as listed in ASME B16.34.
TN Series 5 (Ø6" through Ø12")

Service Restriction:
1) Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2) Valve end connections are to be in accordance with 4-6-2/5.5.4 of the 2025 ABS Rules for Building and Classing Marine Vessels.
3) Valves with taper-threaded joints refer to the sizes and pressure limitations in ABS Rule. Please refer to 4-6-2/5.5.5 of the 2025 ABS Rules for Building and Classing Marine Vessels.
3) As per 2025 ABS Rules for Building and Classing Marine Vessels 4-6-2/5.11.3 (c), “Resilient materials, where used, are subject to service limitations as specified by the manufacturers. Use of resilient materials in valves intended for fire mains is to be specifically approved based on submittal of certified fire endurance tests conforming to a recognized standard.” The valves in current type approval cannot be used in Fire main, Fire-fighting, USCG Categories Positive Shutoff or Category A (46 CFR 56.20-15) and other systems where fire testing is required.

Comments:
i) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
ii) All valves intended for installation on the side shell at or below the deepest load waterline, including those at the sea chests, are to be hydrostatically tested in the presence of the Surveyor, before installation, to a pressure of at least 5 bar (72.5 psi) in accordance with 4-6-2/7.3.2 of the 2025 ABS Rules for Building and Classing Marine Vessels.
(iii) Marking of the valves are to be in accordance with ASME B16.34.

Notes/Drawing/Documentation:
Drawing No. TN--Q503L--S, TN--Q503L--S, Revision: 3, Pages: 1
Drawing No. ANH-K5L-G, ANH-K5L-G, Revision: 1, Pages: 1
Drawing No. AN--D501L--I, AN--D501L--I, Revision: 1, Pages: 1
Drawing No. AN--J503M9-B, AN--J503M9-B, Revision: 1, Pages: 1
Drawing No. AN--K503L--I, AN--K503L--I, Revision: 4, Pages: 1
Drawing No. AN--E501L-RI, AN--E501L-RI, Revision: 4, Pages: 1
Drawing No. AN--E503M--I, AN--E503M--I, Revision: 2, Pages: 1
Drawing No. AN--L501L-RI, AN--L501L-RI, Revision: 3, Pages: 1
Drawing No. AN--L503M-RI, AN--L503M-RI, Revision: 4, Pages: 1
Drawing No. TN76Q5L-Z---02--P383, TN76Q5L-Z---02--P383, Revision: 1, Pages:1
Drawing No. AN--G503L--I, AN--G503L--I, Revision: 2, Pages: 1
Drawing No. AN--H501L-RI, AN--H501L-RI, Revision: 4, Pages: 1
Drawing No. TNE-Q5L-Z---02, TNE-Q5L-Z---02, Revision: 0, Pages: 1
Drawing No. TN--N501L-RS, TN--N501L-RS, Revision: 2, Pages:1

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Tier: 3 - Type Approved, unit certification not required

Drawing No. RP-1504-3 (USCG Seat Leakage), RP-1504-3 (USCG Seat Leakage), Revision: 0, Date: 30-Apr-2015, Pages: 6
Drawing No. AN--H503M--I, AN--H503M--I, Revision: 3, Pages: 1
Drawing No. TN--P501L--S, TN--P501L--S, Revision: 4, Pages:1
Drawing No. ANH-H5L-G, ANH-H5L-G, Revision: 0, Pages: 1
Drawing No. TN--Q503L-RS, TN--Q503L-RS, Revision: 0, Pages: 1
Drawing No. AN--J503L9-B, AN--J503L9-B, Revision: 0, Pages:1
Drawing No. AN--C503M--I, AN--C503M--I, Revision: 1, Pages: 1
Drawing No. AN--H501M-RI, AN--H501M-RI, Revision: 5, Pages: 1
Drawing No. TNH-P5L-A---08--J282, TNH-P5L-A---08--J282, Revision: 4, Pages: 1
Drawing No. TN--N503L-RS, TN--N503L-RS, Revision: 1, Pages: 1
Drawing No. ANH-C5L-G, ANH-C5L-G, Revision: 0, Pages: 1
Drawing No. TN--P503L--S, TN--P503L--S, Revision: 4, Pages: 1
Drawing No. AN--C501L--I, AN--C501L--I, Revision: 3, Pages: 1
Drawing No. ANH-L5L-G, ANH-L5L-G, Revision: 0, Pages: 1
Drawing No. AN--K501L--I, AN--K501L--I, Revision: 5, Pages: 1
Drawing No. AN--D501M--I, AN--D501M--I, Revision: 1, Pages: 1
Drawing No. AN--E501M--I, AN--E501M--I, Revision: 2, Pages: 1
Drawing No. AN--K503L-RI, AN--K503L-RI, Revision: 2, Pages:1
Drawing No. AN--L501M--I, AN--L501M--I, Revision: 3, Pages:1
Drawing No. AN--E503M-RI, AN--E503M-RI, Revision: 3, Pages: 1
Drawing No. TNE-N5L-G---34-Z, TNE-N5L-G---34-Z, Revision: 1, Pages: 1
Drawing No. AN--G503L-RI, AN--G503L-RI, Revision: 3, Pages: 1
Drawing No. TNH-M5M-Z---08-Q274, TNH-M5M-Z---08-Q274, Revision: 0, Pages: 1
Drawing No. AN--M501M-RI, AN--M501M-RI, Revision: 1, Pages: 1
Drawing No. RP-1510-1 (USCG Seat Leakage) R1, RP-1510-1 (USCG Seat Leakage) R1, Revision: 1, Date: 21-Pct-2015, Pages: 6
Drawing No. AN--H501M--I, AN--H501M--I, Revision: 6, Pages: 1
Drawing No. AN--H503M-RI, AN--H503M-RI, Revision: 3, Pages: 1
Drawing No. TN--N501L--S, TN--N501L--S, Revision: 2, Pages:1
Drawing No. TN--P503L-RS, TN--P503L-RS, Revision: 1, Pages: 1
Drawing No. AN--L503L-RI, AN--L503L-RI, Revision: 3, Pages: 1
Drawing No. AN--G503M-RI, AN--G503M-RI, Revision: 2, Pages: 1
Drawing No. TN--M501M--Q274, TN--M501M--Q274, Revision: 0, Pages:1
Drawing No. AN--H503L--I, AN--H503L--I, Revision: 3, Pages: 1
Drawing No. ANH-D5L-G, ANH-D5L-G, Revision: 0, Pages: 1
Drawing No. TN--N503L--S, TN--N503L--S, Revision: 1, Pages: 1
Drawing No. TN--Q501L-RS, TN--Q501L-RS, Revision: 2, Pages: 1
Drawing No. AN--J501L9-B, AN--J501L9-B, Revision: 0, Pages: 1
Drawing No. AN--C501M--I, AN--C501M--I, Revision: 1, Pages: 1
Drawing No. AN--K501L-RI, AN--K501L-RI, Revision: 7, Pages: 1
Drawing No. AN--D503L--I, AN--D503L--I, Revision: 2, Pages: 1
Drawing No. AN--K503M--I, AN--K503M--I, Revision: 6, Pages: 1
Drawing No. AN--E501M-RI, AN--E501M-RI, Revision: 3, Pages: 1
Drawing No. AN--L501M-RI, AN--L501M-RI, Revision: 2, Pages: 1
Drawing No. AN--G501L--I, AN--G501L--I, Revision: 3, Pages:
Drawing No. AN--L503L--I, AN--L503L--I, Revision: 4, Pages: 1
Drawing No. AN--M503M-RI, AN--M503M-RI, Revision: 2, Pages: 1
Drawing No. AN--G503M--I, AN--G503M--I, Revision: 3, Pages: 1
Drawing No. AN--K501M-RI, AN--K501M-RI, Revision: 8, Pages: 1
Drawing No. AN--E501L--I, AN--E501L--I, Revision: 2, Pages: 1
Drawing No. AN--E503L-RI, AN--E503L-RI, Revision: 4, Pages: 1
Drawing No. AN--L501L--I, AN--L501L--I, Revision: 6, Pages: 1
Drawing No. AN--G501M--I, AN--G501M--I, Revision: 5, Pages: 1

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Drawing No. AN--G501M-RI, AN--G501M-RI, Revision: 4, Pages: 1
Drawing No. AN--L503M--I, AN--L503M--I, Revision: 3, Pages: 1
Drawing No. PurchaseOrder110636, PurchaseOrder110636, Revision: 0, Pages: 1
Drawing No. AN--H501L--I, AN--H501L--I, Revision: 5, Pages: 1
Drawing No. AN--H503L-RI, AN--H503L-RI, Revision: 3, Pages: 1
Drawing No. TN--M503M--Q274, TN--M503M--Q274, Revision: 0, Pages: 1
Drawing No. TN--P501L-RS, TN--P501L-RS, Revision: 1, Pages: 1
Drawing No. ANH-E5L-G, ANH-E5L-G, Revision: 2, Pages: 1
Drawing No. ANH-G5L-G, ANH-G5L-G, Revision: 0, Pages:1
Drawing No. TN--Q501L--S, TN--Q501L--S, Revision: 2, Pages: 1
Drawing No. AN--C503L--I, AN--C503L--I, Revision: 2, Pages: 1
Drawing No. AN--J501M9-B, AN--J501M9-B, Revision: 1, Pages:1
Drawing No. AN--D503M--I, AN--D503M--I, Revision: 2, Pages: 1
Drawing No. AN--K501M--I, AN--K501M--I, Revision: 7, Pages: 1
Drawing No. AN--K503M-RI, AN--K503M-RI, Revision: 5, Pages:1
Drawing No. AN--E503L--I, AN--E503L--I, Revision: 3, Pages: 1
Drawing No. AN--G501L-RI, AN--G501L-RI, Revision: 4, Pages:1

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 07/Apr/2030 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

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STANDARDS

ABS Rules:
2025 Rules for Conditions of Classification: 1A-1-4/7.7, 1A-1-A3 and A4, which covers the following:
2025 Rules for Building and Classing Marine Vessels: 4-6-2/5.5.4, 4-6-2/5.5.5, 4-6-2/5.11; 4-6-4/13.5.3

2025 Rules for Conditions of Classification - Offshore Units (Part 1B): 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, which covers the following:
2025 Rules for Building and Classing Offshore Units: 4-2-2/17

National:
ASME B16.34 (2020)

International:
NA

Government:
NA

EUMED:
NA

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OTHERS:
NA