CERTIFICATE NUMBER	23-2460218-PDA
EFFECTIVE DATE	26-Sep-2023
EXPIRY DATE	25-Sep-2028
ABS TECHNICAL OFFICE	Hamburg Engineering Department

CERTIFICATE OF
Product Design Assessment

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

SAMSON AG

located at

WEISSMUELLER STR. 3, , D-60314 FRANKFURT, Germany

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:	**Cryogenic Valve**
Model:	**Series 240(Type 3241 & 3244) and 250(Type 3251, 3252 & 3256)**
Endorsements:	
Tier:	**5 - Unit Certification Required**

This Product Design Assessment (PDA) Certificate remains valid until 25/Sep/2028 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

Efstratios Maliatsos,Engineer/Consultant

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Tier: 5 - Unit Certification Required

Product: **Cryogenic Valve**
Model: **Series 240(Type 3241 & 3244) and 250(Type 3251, 3252 & 3256)**
Endorsements:

Intended Service:
Cryogenic Globe valves intended to be used as control valves in cargo handling systems of liquified gas tankers and liquified gas terminals.

Description:
Stainless steel flanged or buttwelded valves with metal to metal seating.

Material
Type 3241, 3244 - Body; A351CF8M, Seat; 1.4404, Plug; 1.4404, Plug seal; 1.4404
Type 3251, 3256 - Body; A351CF8M, Seat; 1.4404, Plug; 1.4404, Plug seal; Stellite 6B
Type 3252 – Body; A182F316L, Seat; 1.4404, Plug; 1.4404, Plug seal; Stellite 6B
Type 3256 – Body; A351CF8M, Seat; 1.4404, Plug; 1.4404, Plug seal; Stellite 6B

Rating:
Type 3241 - Size; 2” & 3”, PN 16, Design Temperature; -196 deg.C to + 85 deg C
Type 3244 - Size; 6”, PN 1 , Design Temperature; -50 deg.C to +85 deg C
Type 3251 - Size; 1” & 1.5”, Design Pressure 400 bar, Design Temperature; -196 deg.C to +85 deg C
Type 3251 - Size; 2”, Design Pressure 400 bar, Design Temperature; -40 deg.C to +85 deg C
Type 3252 - Size; 1”, Design Pressure 400 bar, Design Temperature; -196 deg.C to +85 deg C
Type 3256 - Size; 2” & 3”, Design Pressure 300 bar, Design Temperature; -196 deg.C to +85 deg C
Type 3256 - Size; 1.5”, Design Pressure 400 bar, Design Temperature; -196 deg.C to +85 deg C

Service Restriction:
1) Unit Certification is required for this product as per section 5C-8-5/13.1.1 (b) of the ABS Marine Vessels Rules. All valves are to be tested at the plant of manufacturer in the presence of the Surveyor, as required. Testing is to include hydrostatic test of the valve body at a pressure equal to 1.5 times the design pressure, seat and stem leakage test at a pressure equal to 1.1 times the design pressure in accordance with manufacturer's testing procedure. In addition, cryogenic testing consisting of valve operation and leakage verification for a minimum of 10% of each type and size of valve for valves intended to be used at a working temperature below -55°C.
2) For valves used for isolation of instrumentation in piping not greater than 25 mm, unit production testing need not be witnessed by the Surveyor. Records of testing are to be available for review per 5C-8-5/13.1.1(b) of the Marine Vessels Rules.

Comments:
1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Material testing of the products intended to be used at a working temperature below -55 degree C is to be witnessed by an ABS Surveyor in accordance with 5C-8-5/13.1 of the Marine Vessels Rules.
3. All valves are to bear permanent identification, such as the manufacturer's name or trademark, standard of compliance, material identify, pressure rating, etc. as required by the standard of compliance and at which the manufacturer guarantees the valve to meet the requirements of the standards. Such markings may be cast or forged integral with, stamped on, or securely affixed by nameplate on the component, and are to serve as a permanent means of identification of the component throughout its service life in accordance with 4-6-2/5.11.4 and 4-6-1/7.1.4 of the Marine Vessels Rules.

Notes/Drawing/Documentation:
See attached file

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 25/Sep/2028 or until the Rules and/or

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Tier: 5 - Unit Certification Required

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.

STANDARDS

ABS Rules:
Rules for Conditions of Classification, Part 1 - 2023, 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
2023 Marine Vessels Rules 4-6-2/5.11, 4-6-2/5.15, 5C-8-5/12.2, 5C-8-5/13.1.1, 5C-8-6/2.2;

Rules for Conditions of Classification, Part 1 - 2023 Offshore Units and Structures, 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:
2023 Mobile Offshore Units Rules 4-2-2/9;

National:
NA

International:
IGC Code 2016 Edition

Government:
NA

EUMED:
NA

OTHERS:
NA

23-2460218-PDA

Attached to 23-2460218-PDA
Covering SAMSON AG, Cryogenic Valves
Series: Series 240(Type 3241 & 3244) and 250(Type 3251, 3252 & 3256)
Issuance Date: 26-Sep-2023
Expiration Date: 25-Sep-2028

Drawing List

Engineering Office:	Hamburg Engineering Department	
Submitter:	SAMSON AG (738966)	
Drawing No	**Revision No**	**Drawing Title**
ABSonlineApplication2	-	ABSonlineApplication2
Samson DE, 202300401-R001, DN40 Control valve, Q-1066 (E1185) signed	-	Samson DE, 202300401-R001, DN40 Control valve, Q-1066 (E1185) signed
Correspondence	-	CorrepondneceProjectNoApproach
DoM_for_19-HS1926436-PDA_rev02_signed	-	Declaration of Conformity
1040-0122	12	1040-0122_SWD_000_12_en
1040-0125	05	1040-0125_05_en
1040-0126	04	1040-0126_04_en
1040-0129	09	1040-0129_SWD_000_09_en
1040-0095	09	1040-0095_SWD_000_09_en
1040-0138	01	1040-0138_SWD_000_01_en
1040-0235	04	1040-0235_SWD_000_04_en
1040-0231	05	1040-0231_SWD_000_05_en
1040-0234	05	1040-0234_SWD_000_05_en
1040-0121	10	1040-0121_SWD_000_10_en
1120-1133	33	1120-1133_RDR_000_33
1040-0130	05	1040-0130_SWD_000_05_en
1040-0139	01	1040-0139_SWD_000_01_en
1040-0127	06	1040-0127_06_en
1040-0140	03	1040-0140_SWD_000_03_en
1040-0131	03	1040-0131_SWD_000_03_en
ITP_2000189156_Cryo_Rev00 signed	00	ITP_2000189156_Cryo_Rev00 signed
ITP_2000189156_Rev00 signed	00	ITP_2000189156_Rev00 signed

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Drawings approved under T1926436

Drawing No. 1040-0095-SWD, 3241 (1/2" - 6") Standard, Revision: 6, Pages: -
Drawing No. 1040-0121-SWD, 3241 (1/2" - 6") Insulation Section, Revision: 6, Pages: -
Drawing No. 1040-0122-SWD, 3241 (1/2" - 6") Bellows, Revision: 7, Pages: -
Drawing No. 1040-0129-SWD, 3251 Standard, Revision: 3.h, Pages: -
Drawing No. 1040-0130-SWD, 3251 Insulation Section, Revision: 2.d, Pages: -
Drawing No. 1040-0131-SWD, 3251 Bellows, Revision: 1.g, Pages: -
Drawing No. 1040-0138-SWD, 3256 Standard, Revision: 0.a, Pages: -
Drawing No. 1040-0139-SWD, 3256 Insulation Section, Revision: 0.a, Pages: -
Drawing No. 1040-0140-SWD, 3256 Bellows, Revision: 0.a, Pages: -
Drawing No. 1040-0231-SWD, 3244 (1/2" - 6") Standard, Revision: 2, Pages: -
Drawing No. 1040-0234-SWD, 3244 (1/2" - 6") Bellows, Revision: 2, Pages: -
Drawing No. 1040-0235-SWD, 3244 (1/2" - 6") Insulation Section, Revision: 2, Pages: -
Drawing No. 1120-1133-29 Werkstoffe, Technical Data Type, Revision: 0, Pages: -
Drawing No. 1139-4133, 3252 (1" Class 2500), Revision: 0, Pages: -
Drawing No. 1139-4133_Part List, Parts List, Revision: -, Pages: -
Drawing No. 2105969-28, Type 3244, DN 6" - Test Report, Revision: 1, Pages: -
Drawing No. BOM_Series240_Type3241, Bill of Material 3241, Revision: -, Pages: -
Drawing No. BOM_Series240_Type3244, Bill of Material 3244, Revision: -, Pages: -
Drawing No. BOM_Type_3251, Bill of Material - Type 3251 (Series 250), Revision: -, Pages: -
Drawing No. BOM_Type_3256, Bill of Material - Type 3256 (Series 250), Revision: -, Pages: -
Drawing No. tge abs-28112014073438, Type Test Report, Revision: -, Pages: -
Drawing No. Type 3241, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. Type 3244, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. Type 3251, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. Type 3252, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. Type 3256, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. 1853446 & 1842670_report cryotest_signed by BV, Cryogenic Test Report 3241, Revision: 0, Pages: -
Drawing No. BV Type Approval, Type Approval Certificate, Revision: 0, Pages: -
Drawing No. DNV_Type-Approval, Type Approval Certificate, Revision: 0, Pages: -
Drawing No. Overview Orders TGE, Overview Orders, Revision: 0, Pages: -
Drawing No. Protokolle DN 25 50 80 PN 40, Inspection Certificate, Revision: 0, Pages: -
Drawing No. Protokolle DNV Typenzulassung, Inspection Certificate, Revision: 0, Pages: -
Drawing No. Q-1067, Cryogenic test procedure acc. to BS 6364, Revision: -, Pages: -
Drawing No. Q-2022, Testing Instruction, Revision: -, Pages: -
Drawing No. Q_2021_Cryogenic_Test, Test Procedure Cryogenic Temperatures, Revision: 0, Pages: -
Drawing No. Specification Kom 2105969, Data Sheets Rasheeda, Revision: 0, Pages: -
Drawing No. Type 3246, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. Type 3248, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. Type 3253, Information Sheet Part 1, Revision: -. Pages: -
Drawing No. Type 3254, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. Type 3259, Information Sheet Part 1, Revision: -, Pages: -
Drawing No. xxx1040-0125-SWD, 3241 (8" - 12") Standard, Revision: 1, Pages: -
Drawing No. xxx1040-0126-SWD, 3241 (8" - 12") Insulation Section, Revision: 1, Pages: -
Drawing No. xxx1040-0127-SWD, 3241 (8" - 12") Bellows, Revision: 2, Pages: -

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Drawings approved under T1295988

1) Pressure & Cryogenic Test Reports witnessed by ABS Surveyors.
2) Drawing Numbers Type/Standard/with Insulation section/with Bellows
Type 3241- Standard 1040-0095-SWD rev.6, Insulation Section 1040-0121-SWD rev.6, Bellows 1040-0122-SWD rev.7
Type 3244- Standard 1040-0231-SWD rev.3/ Insulation Section 1040-0235-SWD rev.2/ Bellows 1040-0234-SWD rev.2
Type 3251- Standard 1040-0129-SWD rev. 3.h/ Insulation Section 1040-0130-SWD rev. 2.d/ Bellows 1040-0131-SWD rev. 1.g
Type 3252- 1139-4133 rev.0
Type 3256- Standard 1040-0138-SWD rev.0.a/ Insulation Section 1040-0139-SWD rev.0.a/ Bellows 1040-0140-SWD rev.0.a