Certificate Number: 17-GE1600401-PDA
15/MAR/2017

Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 27-FEB-2022. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Valve, Butterfly
Model Name(s): Wafer, Lug, Flanged, Double flanged concentric and double eccentric valves.

Presented to:
TTV S.A.
C/ SEVERO OCHOA, 11
POL. IND. N. BUTARQUE
28914
Spain

Intended Service:	Marine, Offshore and Industrial piping system.
Description:	Wafer, Lug, Flanged and Double Flanged Butterfly valves having lever, gear or pneumatic operators. Sizes: Wafer & Lug valves DN32 to DN1400; Flanged valves DN50 to DN1400; Double flanged valves DN40 to DN1400; Double eccentric DN50 to DN300; Double eccentric Fire Safe DN50 to DN300. Valve Body material: Ductile iron, Stainless Steel, Duplex, Carbon steel, Bronze or Aluminium bronze.
Tier:	3
Ratings:	Pressure rating: PN10 to PN16 - ANSI150 Temperature range: Refer manufacturer's catalogue for working temperature.
Service Restrictions:	1) Wafer-type butterfly valves are not acceptable as shell valves. Butterfly valves with lugs, however, may be accepted. The connection arrangements for shell valves is to ensure that the valve remains in position should the piping inboard side be removed. 2) All valves intended for installation on ship 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. 3) Wafer eccentric valves DN50-300 have satisfactory passed fire test in accordance with ISO 10497:2010. 4) Unit Certification is not required for this

product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances must be clearly defined.

Comments: 1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 2) When selecting valves, the disks, disk faces, seats, stems and other wearing parts shall be made of material possessing corrosion and heat resisting qualities suitable for the service conditions to which they will be subjected. 3) All valves are to bear the trademark of the manufacturer legibly stamped or cast on the exterior of the valves and also the primary pressure rating and temperature rating at which the manufacturer guarantees the valve to meet the requirements of the standards.

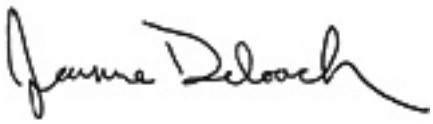
Notes / Documentation: 415-1181-030-A3 Rev. C TTV Valves with hand lever DN40-400 6362-7012-010-A3 Rev. A TTV Valves with hand lever DN32-400 416-1182-030-A3 Rev. 0 TTV Valves with hand leverDN50-400 417-1183-030-A3 Rev. A TTV Valves with hand leverDN40-400 407-1173-030-A3 Rev. 0 Wafer valve with gearbox and chain wheel DN40-500 408-1174-030-A3 Rev. 0 TTV Wafer valve with gearbox standard DN40-1400 411-1177-030-A3 Rev. 0 Wafer valve with pneumatic actuator D.A. DN40-400 412-1178-030-A3 Rev. 0 Wafer valve with pneumatic actuator S.A.D N40-400 12412-13362-010-A3 Rev.0 Wafer valve DN32-200 12413-13363-010-A3 Rev.0 Wafer valve DN250-400 7766-8716-010-A3 Rev.0 Wafer valve DN450-1400 12414-13364-010-A3 Rev.0 Lug valve DN32-200 12415-13365-010-A3 Rev.0 Lug valve DN250-400 7777-8727-010-A3 Rev.0 Lug valve DN450-1400 12416-13366-010-A3 Rev.0 Flanged Valve DN50 12417-13367-010-A3 Rev.0 Flanged Valve DN65-125 12418-13368-010-A3 Rev.0 Flanged valve DN150-200 12419-13369-010-A3 Rev.0 Flanged valve DN250-400 7784-8734-010-A3 Rev.0 Flanged valve DN450-1600 12420-13370-010-A3 Rev.0 Double flanged valve DN40-200 12421-13371-010-A3 Rev.0 Double flanged valve DN250-400 7839-8789-010-A3 Rev.0 Double flanged valve DN450-1400 11453-12403-010-A3 Rev.0 Wafer biexcentric valve DN50-300 12426-3376-010-A3 Rev.0 Lug biexcentric valve DN50-300 11342-12292-010-A3 Rev.0 Wafer biexcentric valve DN50-300 12425-13375-010-A3 Rev.0 Lug biexcentric valve DN50-300 12441-13391-010-A3 Rev.0 Wafer biexcentric valve Dn50-300 ISO10497 12442-13392-010-A3 Rev.0 Lug biexcentric valve DN50-300 ISO10497 1509 Type Test Report dated 25 April 2015 31386 Type Test Report dated 30 July 2015 31140 Tye Test Report dated 04 July 2016 29735 Type Test Report dated 16 April 2015 19888 Type Test Report dated 02 July 2014 27377 Type Test Report dated 04 December 2015 19890 Type Test Report dated 23 October 2013

Term of Validity: This Product Design Assessment (PDA) Certificate 17-GE1600401-PDA, dated 28/Feb/2017 remains valid until 27/Feb/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules: The Rules for Conditions of Classification, Part 1 2017 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: 2017 Steel Vessel Rules 4-6-2/5.11, 4-6-2/5.15

National Standards:
International Standards:
Government Authority:
EUMED:
Others:

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	17-GE1600401-PDA	28-FEB-2017	27-FEB-2022



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.