



## ***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 17/DEC/2018. 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 12/NOV/2019 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:** Thruster, Tunnel Hydraulic Thruster

**Model Name(s):** 24TT Series: 24TT60L/H, 24TT70L/H. 24TT80L/H, 24TT90L/H, 24TT100, and 24TT110

**Presented to:**

THRUSTMASTER OF TEXAS, INC.  
6900 THRUSTMASTER DR.  
United States

**Intended Service:**

Bow and stern thrusters for athwartship maneuvering and dynamic positioning service.

**Description:**

Each tunnel thruster is equipped with a hydraulic motor, a fixed pitch propeller and a tunnel. Tunnel outer diameter is 24" for Series 24TT with optional steel or aluminum tunnel material.

**Tier:**

5

**Ratings:**

24TT: 24" OD Tunnel, 22.5"OD propeller, tunnel wall thickness 1/2", included models: 24TT60L/H: horse power at propeller shaft 54hp, propeller shaft speed 805 rpm, bollard pull force 1250 lbs; 24TT70L/H: horse power at propeller shaft 62hp, propeller shaft speed 841 rpm, bollard pull force 1500 lbs; 24TT80L/H: horse power at propeller shaft 71hp, propeller shaft speed 875 rpm, bollard pull force 1700 lbs; 24TT90L/H: horse power at propeller shaft 81hp, propeller shaft speed 908 rpm, bollard pull force 1900 lbs; 24TT100: horse power at propeller shaft 90hp, propeller shaft speed 937 rpm, bollard pull force 2150 lbs; 24TT110: horse power at propeller shaft 100hp, propeller shaft speed 963 rpm, bollard pull force 2350 lbs.

**Service Restrictions:**

Unit Certification is required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard including inspection standards and tolerances must be clearly defined.

**Comments:**

The Manufacturer has provided a declaration about the control of, or the lack of

Asbestos in this product. 1) Upon completion of installation performance tests are to be carried out in the presence of an ABS Surveyor in a sea trial. 2) ABS Certificates of vendor supplied propellers and gear units are to be made available to the Surveyor. 3) When supplied with optional hydraulic hose assemblies, the rated burst pressure of each hose assembly is to be at least four times the maximum allowable working pressure and each hose type is to be fire resistant as per 4-6-2/5.7 of the ABS Rules. Welding procedures and welding are to the satisfaction of attending Surveyor.

**Notes / Documentation:**

For Aluminum Tunnel Thrusters: Drawing No. D121016, Rev 0, Tunnel Thruster Weldment 24 Alum; Drawing No. C105665, Rev 0, Housing Thruster Mach, Alum; Drawing No. D105662, Rev 0, Housing Welding, Alum; Drawing No. B105664, Rev 0, Segment pipe, Alum; Drawing No. B105663, Rev A, Flange Burning, Alum; Drawing No. B120098, Rev 0, AY ROTATING GROUP GA15 AL ABS; Drawing No. D121021, Rev. 0, Ay 24 TT 60-90L 110 and 110-AL; 36 LG, ABS; Drawing No. B121040, Rev 0, GA 24TT-AL AT 36LG. For Carbon Steel Tunnel Thrusters: Drawing No. D123239, Rev 0, Tunnel Thruster Weldment 24TT, 36"LG, CS; Drawing No. C100778, Rev A, Housing Thruster Mach, CS; Drawing No. D100777, Rev 0, Housing Thruster, Weldment, CS; Drawing No. B100779, Rev B, Segment pipe, CS; Drawing No. B100534, Rev A, Flange Burning, CS; Drawing No. B111980, Rev B, AY ROTATING GROUP 24TT-CS; Drawing No. B123240, Rev 0, Ay 24 TT 60-90L 110 and 110-CS; Drawing No. C103523, Rev A, Shaft Propeller Pre Mach; Drawing No. C103522, Rev A, Shaft Propeller Final Mach; Drawing No. E120869, Rev 0, Propeller, Right Hand; Drawing No. B119510, Rev 0, Hub Propeller 24TT/16TT; Drawing No. B123243, Rev 0, Outline Drawing - 24TT60L/H, 70L/H, 80L/H, 90L/H, 100, and 110.

**Term of Validity:**

This Product Design Assessment (PDA) Certificate 14-HS1274750-PDA, dated 13/Nov/2014 remains valid until 12/Nov/2019 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:**

Rules for Conditions of Classification, Part 1 - 2014 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: Steel Vessels 4-3-5/1.1, 4-3-5/1.5.3, 4-3-5/13, 3-2-2/5.11;

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

Manufacturer's Standard.

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	14-HS1274750-PDA	13/NOV/2014	12/NOV/2019



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.