



## ***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 26/DEC/2017. 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 21/MAY/2017 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: Clutches**

**Model Name(s): FM ( FALK B7B ) Marine Series and FKT Series**

**Presented to:**

GUMMI  
Esteban Echeverria 830  
(B1630CXR) Vincente Lopez  
BUENOS AIRES  
Argentina

**Intended Service:**

Marine Application - FM Marine Series: Air/ Pneumatic Clutch for Marine Propulsion Systems. FKT Series: Torque Transmitting or Stopping Mechanism as Clutch or Brake Mechanism.

**Description:**

FM Marine Series: An air actuating tube is bonded to a steel rim. Each rim has male and female continuous registers, in order to facilitate dual and triple clutch mountings. Each type has ventilated friction shoes which are connected to the tube by tow shoe pins, which are held in place by cotter pins. The ventilated friction shoes are also supported by rubber mold/lugs which are located on the inside of the air actual tube in order to provide consistent fit and positive connection between the tube and the friction shoes. FKT Series: The air actuating tube is contained within a metal housing that is made up by a rim and two side plates. The torque bars are held in position by the side plates which cross through the ventilation cavities of the aluminum brake shoes. Pressurizing the air tube, forces the aluminum brake shoes to constrict around the drum. The release springs that are contained with the ventilated cavities of the aluminum shoes retract the friction shoe assembly once the air pressure sent to actuating tube has been released. Each aluminum brake shoes is of ventilated construction in order to provide quick heat dissipation.

**Ratings:**

See attached "pdf" for details for Size, Torque Rating, etc.

**Service Restrictions:**

Unit Certification is required for this product.

**Comments:** 1. Ventilated Adapter, Adapter Hub, Drum Hub and Non-Fitted Bolt for all Rim's Flanges are not part of this Product Design Assessment. 2. For Marine Application, the ratio of the Clutch Static Holding Capacity to the Rated Torque is to be 1.5 or 1.7 of Min. Service Factor based on the applications as per 4-3-2/5.19.6 of the Steel Vessel Rules. 3. For the selection of the Clutch Size intended for a specific application, contact the Manufacturer.

**Notes / Documentation:** Supporting Data: FM & FKT - Ratings & Specification Product Sheets dated 2004; Catalog Pneumatic Clutches & Brakes Type FM, Page 85 to 102 Catalog No.: FKT/001-FM/001, Pneumatic Clutches & Brakes Type FKT; Calculation & Verification of the Friction Torque Value Type FM Marine Clutches; Design Modifications to FM Marine Clutches: Model 48-FM-650 - Dwg No. 00654,Rev.01; 00659, Rev.05;03089, Rev 00; 00669, Rev.01; 03061,Rev.00; Model 40-FM-550 - Dwg No. 00653,Rev.00; 00658,Rev.05;03090, Rev 00; 03058,Rev.00; Model 30-FM-500 - Dwg No. 00651,Rev.01; 00656, Rev.04;03091, Rev 00; 00666, Rev.02; Model 35-FM-500 - Dwg No. 00652,Rev.01; 00657, Rev.05;03103, Rev 00; 00671, Rev.01; Technical Specifications No. 00/00 - Guide for Materials (3 shts)

**Term of Validity:** This Product Design Assessment (PDA) Certificate 09-HS457078-2-PDA, dated 22/May/2012 remains valid until 21/May/2017 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:** 2012 Steel Vessels Rules 1-1-4/7.7, 1-1-Appendix 3, 4-3-1/5.9.5, 4-3-2/5.19.6, 4-3-2/5.19.7, 2012 Steel Vessels Rules (90M) 4-1-1/7.17; 2012 High-Speed Craft (HSC) 4/1.11,

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

Manufacturer's Internal Standard

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	09-HS457078-2-PDA	22/MAY/2012	21/MAY/2017



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.