CERTIFICATE NUMBER	22-2208394-PDA
EFFECTIVE DATE	18-Feb-2022
EXPIRY DATE	17-Feb-2027
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

PRECIMA MAGNETTECHNIK GMBH

located at

Roeckerstr. 16, D-31675 Bueckeburg, 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:	**Brake, Electromagnetic Motor Brake**
Model:	**FDX 26, FDX 30, FDX 40, FDX 50.**
Endorsements:	
Tier:	**5 - Unit Certification Required**

This Product Design Assessment (PDA) Certificate remains valid until 17/Feb/2027 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

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

PRECIMA MAGNETTECHNIK GMBH
Roeckerstr. 16
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Email: info@precima.de
Web: www.precima.de

Tier: 5 - Unit Certification Required

Product: **Brake, Electromagnetic Motor Brake**
Model: **FDX 26, FDX 30, FDX 40, FDX 50.**
Endorsements:

Intended Service:
Brakes for holding and emergency stopping of hoisting and pulling machinery, deck machinery applications, for jacking and associated systems..

Description:
Spring-set disk brakes of fail safe design for dry run operation via two friction areas, closed by spring forces, operated (opened) by electromagnetic coils whereby provisions are optional made at the brake for manual release.

Rating:
Ambient temperatures:
-40°C to +45°C, Hub material A
-25°C to +45°C, Hub material B and heating coils
Degree of protection IP 67,
Coil duty cycle: S1,
Standard power supply 400 V AC, for coil 180 V DC (with rectifier type PMG 480), other voltage on request,
Optional anti-condensation heating 230 V AC, manual lever, wear monitoring sensors or function monitoring sensor,
Material A: X5CrNi18-10 (1.4301) stainless steel
Material B: X14CrMoS17 (1.4104) equal to ASTM A 582 / A 582 M-12 Type 430F stainless steel..
Inclination angle: any
For approved ratings and brake disc data click on link 'View More Details'.

Service Restriction:
- Unit Certification is required for this product.
- For hub material grade B heating coils must be arranged for ambient temperatures less than -10°C and CRC Class Notation. The heating coil is to be switched on at -10°C.
- The operation of brakes is to be demonstrated under simulated loss of power conditions.
- For CRC Class Notation the material is to be certified by the attending Surveyor. Brakes of fail-safe type are to be provided for all winches and are to be effective in stopping and holding the test load.
Refer to 2-6/15, 2-6/5 and 2-5/3.7 of the ABS Guide for Certification of Lifting Appliances.
- 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.

Comments:
- The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- The brakes are to be operated in line with manufacturer's recommendations/manuals.
- Jacking systems brakes should be engaged, when the power fails to the jacking motors.
- The torque rating of the jacking gear brake is to be equal to or greater than 120 % of the resultant brake torque caused by the maximum rated load applied to the climbing pinion from all the loading conditions aka severe storm holding load in elevated condition.

Notes/Drawing/Documentation:
See Attached File.

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 17/Feb/2027 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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Tier: 5 - Unit Certification Required

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:
2022 Rules for Condition of Classification: 1-1-4/7.7, 1-1-A3 and 1-1-A4, which covers the following:
2022 Rules for Building and Classing Marine Vessel Rules: 4-5-1/1.5, 4-8-3/1.7/1.11.1/1.17

2022 Rules for Conditions of Classification - Offshore Units and Structures: 1-1-A2, 1-1-A3, 1-1-4/9.7, which covers the following:
2022 Rules for Building and Classing Mobile Offshore Unit Rules: 6-1-9/5/9/13.3/19/Table 2.

2021 Guide for Certification of Lifting Appliances: 2-6/15, 2-6/5, 2-6/19.5, 2-6/21, 2-7/5.7, 2-10/5.

2021 Guide for the Classification of Drilling Systems: Table 1, 8/5.

National:
DIN VDE0580: 2011-11
2006/42/EG
2014/35/EU
RoHS Richtlinien 2011/65/EU
Verorddnung (EG) Nr. 1907-2006 Reach

International:
DIN EN ISO 12100: 2011-03
DIN EN 60529: 2014-09

Government:
NA

EUMED:
NA

OTHERS:
NA

22-2208394 -PDA

Attachment to 22-2208394-PDA covering
Brake, Electromagnetic Motor Brake
Models: FDX 26, FDX 30, FDX 40, FDX 50.
Issuance Date: 18-February-2022
Expiry Date: 17- February-2027
Intended Service:
Brakes for holding and emergency stopping of hoisting and pulling machinery, deck machinery applications, for jacking and associated systems.

Drawing List

Engineering Office:	Hamburg Engineering Department	
Submitter:	PRECIMA MAGNETTECHNIK GMBH (518673)	
Drawing No	**Revision No**	**Drawing Title**
ActOnForm_	-	ActOnForm_
FDX0500005000~0	-	FDX0500005000~0
FDX 26...50 (standard) Fastening calculation	-	FDX 26...50 (standard) Fastening calculation
FDX 26...50 (standard) Hollow screw calculation	-	FDX 26...50 (standard) Hollow screw calculation
FDX 50 HS (R218) uncontoured	-	FDX 50 HS (R218) uncontoured
FDX 50 (standard) Feather key calculation	-	FDX 50 (standard) Feather key calculation
FDX 26...50 (standard) Rotor calculation	-	FDX 26...50 (standard) Rotor calculation
FDX 50 Brake Data and Nominal Torque	-	FDX 50 Brake Data and Nominal Torque
3 M98080E	-	3 M98080E
Declaration of Conformity_2	-	Declaration of Conformity_2
Correspondence	-	Fee Acceptance&PDA Draft Confirmation

Drawing List as per 16-HG1534999-PDA (June 2016)

- Drawing No. 1, Flyer, Revision: -, Pages: 6
- Drawing No. 10, Request form, Revision: -, Pages: 3
- Drawing No. 2, Operating and Assembly Instructions, Revision: 05, Pages: 28
- Drawing No. 3 M98080E, Brake FDX 26 to -40, Revision: 8, Pages: 1
- Drawing No. 4, ISO Certificate, Revision: -, Pages: 1
- Drawing No. 5, IP TUEV Test, Revision: -, Pages: 7
- Drawing No. 6, CCS test certificate, Revision: -, Pages: 3
- Drawing No. 7, DNV and GL certificate, Revision: -, Pages: 1
- Drawing No. 9, Material certificate, Revision: -, Pages: 2
- Drawing No. Correspondence, e-mail of 20-06-2016, Revision: -, Pages: -
- Drawing No. None 8, CSA Certificate, Revision: -, Pages: 3
- D-FMEA FDX 30- M98-080 -anchor plate 2, FMEA 2 anchor plate, Revision: -, Pages: 1
- D-FMEA FDX 30 acc. M98-080 -Hub Page 1, FMEA hub, Revision: -, Pages: 1
- D-FMEA FDX 30 - M98-080 -friction lining, FMEA friction lining, Revision: -, Pages: 1
- D-FMEA FDX 30- M98-080 -Anchor plate page 1, FMEA 1 anchor plate, Revision: -, Pages: 1
- D-FMEA FDX 30- M98-080 -Anchor plate page 3, FMEA 3 anchor plate, Revision: -, Pages: 1
- D-FMEA FDX 30 acc. M98-080 -hub page 2, FMEA hub 2, Revision: -, Pages: 1
- D-FMEA FDX30 - M98-080 -Rotor complete, FMEA rotor, Revision: -, Pages: 1
- D-FMEA FDX30 acc. M 98-080 - rotating field page 2, FMEA rotating field, Revision: -, Pages: 1
- D-FMEA FDX30 acc. M 98-080 - rotating page 1 , FMEA rotating field, Revision: -, Pages: 1
- D-FMEA FDX30 - M 98-080-Spule complete, FMEA 1 solenoid, Revision: -, Pages: 1
- D-FMEA FDX30 - M 98-080-Spule complete, FMEA 2 solenoid, Revision: -, Pages: 1
- D-FMEA FDX30 acc. M 98-080 - Solenoid case page1, solenoid case 1, Revision: -, Pages: 1
- D-FMEA FDX30 - M98-080 -Solenoid case complete, solenoid case, Revision: -, Pages: 1
- D-FMEA FDX30 acc. M 98-080 - Solenoid case page 2, solenoid case 2, Revision: -, Pages: 1

Additional Product Details

Electromagnetic Motor Brakes

'Precima Magnettechnik GmbH'
PDA Certificate No. 22-2208394
Issuance date: 18-Feb-2022
Expiry date:17-Feb- 2027

Model FDX

Brake Data and Nominal Torque				
Size	**Nominal Dynamic Torque**	**Maximum Air Gap between coil body and armature plate**	**Minimum Required Shaft Diameter**	**Keyway DIN 6885 Tight fit JS9 With**
FDX 26	250 Nm	1.9 mm	40H7 mm	12 mm
FDX 30	500 Nm	1.9 mm	50H7 mm	14 mm
FDX 40	1000 Nm	1.7 mm	65H7 mm	18 mm
FDX 50	2000 Nm	1,7 mm	80 mm	22 mm