



Marine & Offshore

Certificate number: 02857/I0 BV

File number: ACM 159/17

Product code: 0240I

This certificate is not valid when presented without the full attached schedule
composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

GALI INTERNACIONAL S.A.

Sentmenat (Barcelona) - SPAIN

for the type of product

INTERNAL COMBUSTION ENGINE STARTING DEVICES

A Series & S Series

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 02 Jul 2029

For Bureau Veritas Marine & Offshore,

At BV BARCELONA, on 02 Jul 2024,

Rhandy Rafael PIÑERO GAUTIER

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=va6jrsmcx>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

AIR STARTERS for Diesel Engines **A series:**

- | | |
|--------------|---------------|
| - Serie A 15 | - Serie A 45 |
| - Serie A 17 | - Serie A 47 |
| - Serie A 25 | - Serie A 48 |
| - Serie A 27 | - Serie A 47Z |
| - Serie A28 | |

AIR STARTERS for Diesel Engines **S Series:**

- ACM159/701/2 Model S30
- ACM159/701/3 Model S38

Composed of an air admission valve, a volumetric gear pneumatic motor driving an internally geared crown and the output shaft for the engagement to the flywheel gear of the engine. The air exhaust is fitted with a silencer.

2. DOCUMENTS AND DRAWINGS:

Approved documents stored in BV PDR ACM159//701/2

3. TEST REPORTS:

Nil.

4. APPLICATION / LIMITATION:

AIR STARTERS for Diesel Engines **A series:**

SERIES	Maximum Air Pressure (bar)	Maximum Rating	Maximum Torque (Nm)
A 15	30	15 kW at 4000 rpm	66
A 17	40	16.5 kW at 4000 rpm	88
A 25	30	25 kW at 3500 rpm	133
A 27	40	30 kW at 2 800 rpm	188
A28	30	27 kW at 2750 rpm	225
A 45 / A 47 / A47Z	30	66 kW at 2300 rpm	540
A 48	40	95 kW at 2200 rpm	925

The Size of the air starter is to be in accordance with the size of the diesel engine, according to the instructions of the manufacturer.

AIR STARTERS for Diesel Engines **S Series:**

SERIES	MaximumAir Pressure (bar)	Maximum Power	Maximum Torque (Nm)
S30	30	41.5 kW at 2500 rpm	305
S38	30	42 kW at 2500 rpm	360

The Size of the air starter is to be in accordance with the size of the diesel engine, according to the instructions of the manufacturer.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **AIR STARTERS for Diesel Engines, series A & series S** are to be supplied by **GALI INTERNACIONAL S.A.** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - For information, **GALI INTERNACIONAL S.A.** has declared to Bureau Veritas the following production site(s):

Apartado 11
08181 Sentmenat (Barcelona)
SPAIN

6. MARKING OF PRODUCT:

- Serial number
- Size
- Rating
- Design Air Pressure
- Bureau Veritas Marks

7. OTHERS:

7.1 - It is **GALI INTERNACIONAL S.A.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 02857/H0 BV issued on 21 Nov. 2018 by the Society.

***** END OF CERTIFICATE *****