



Marine & Offshore
Division

Certificate number: 02857/G1 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

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

This certificate is issued to attest that BUREAU VERITAS 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: 29 Jul 2018

For BUREAU VERITAS,
At BV MADRID, on 07 Apr 2015,
Montserrat Espin



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. 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 Division 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 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 SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

AIR STARTERS for Diesel Engines:

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

2. DOCUMENTS AND DRAWINGS:

Documents:	Arrancador Air Stater A48 Expediente tecnico de construccion A27-R/A27-L
Specifications:	B.29.985 - 1984 B.29.983 - 1984 B.23.828 - 1980
Drawings:	A155115000a A175117000 A475147000.003c

3. TEST REPORTS:

Nil.

4. APPLICATION / LIMITATION:

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
A 45 / A 47	30	66 kW at 2300 rpm	540
A 48	30	77 kW at 2200 rpm	640

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 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.

6. MARKING OF PRODUCT:

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

7. OTHERS:

7.1 - This approval is given with the understanding that the manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 02857/G0 BV issued on 29 Jul 2013 by the Society.

*** END OF CERTIFICATE ***