



## Type Approval Certificate

*This is to certify* that the undernoted product(s) have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER	DINAK S.A. Camiño do Laranxo, nº 19 C.P. 36216 VIGO Spain
PRODUCT DESCRIPTION	Exhaust Gas Systems
PRODUCT TYPE	DINAK GE30+, GE50+, GE50 & GE100
APPLICATION	Twin-walled, insulated, modular, stainless steel, exhaust gas piping system for internal combustion engines
RATINGS	Size range : DN80 – 800 (GE) DN80 – 600 (GE+) Max. pressure : 5000 Pa Max. working temperature : up to 600°C
STANDARD	LR Rules and Regulations for the Classification of Ships LR Rules and Regulations for the Classification of Special Service Craft
Certificate No.	16/30012
Issue Date	15 August 2016
Expiry Date	14 August 2021
Sheet	1 of 3

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STANDARD (cont'd):

Following tests were carried out according to EN 1856-1:2009 Chimneys – Requirements for metal chimneys – System chimney products:

- gas tightness
- thermal performance in heat stress tests at shifted and vertical installation

Following tests were carried out according to EN 1856-1:2009 Chimneys – Requirements for metal chimneys – System chimney products and EN 1859:2000-07: Chimneys – Metal-chimneys – test methods:

- resistance to compression load
- resistance to tensile load
- resistance to compression load of supports
- resistance to wind load and
- resistance to non-vertical installation

OPERATIONAL  
LIMITATIONS

1. The surface temperature of the exhaust system is not to exceed 220°C, not insulated parts and / or connections to a different piping system are to be efficiently lagged to minimize the risk of fire and to prevent damage by heat. Where lagging is oil-absorbing or may permit the penetration of oil, the lagging is to be encased in sheet metal or equivalent.
2. This modular exhaust gas system is considered acceptable for use on ships, classed or intended for Classification with the Society, provided that the relevant system requirements, with regard to fire-safety and watertight integrity, are complied with.
3. The installation of the modular exhaust gas system is to be carried out in accordance with the instructions of the manufacturer.
4. Supporting of both the GE and GE+ modular exhaust system is to be carried out in accordance with the Typical Installation Diagrams in the brochure "DINAK GE Modular flue system for GENERATORS and TURBINES".

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Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations

The application of this Type Approval Certificate will be limited to the relevant scope of the Specified Standards and acceptance thereof by the local authorities.

A periodical assessment of the Product Quality Assurance will be required to maintain the validity of the Type Approval of the product. This assessment by LR Surveyor is required 30 months after the date of issue of this Certificate.

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Design Support  
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