



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **M-12346**

This is to certify that the  
**Spark Arrestor**

with type designation(s)  
**MSA 1, MSA 2, MSA 3, MAA 1, MAA 2, MAA 3**

Manufactured by  
**Industrial & Marine Silencers (IMS) Limited**  
**LEICESTERSHIRE, United Kingdom**

is found to comply with  
**Det Norske Veritas' Offshore Standards**  
**Det Norske Veritas' Rules for Classification of Ships**  
**EEMUA Publ. No. 107 (1992)**  
**NS-EN 1834-1**

Application

**The combined silencer/spark arrestors are approved for use in areas where emission of exhaust gasses is permitted onboard ships and mobile offshore units classed by Det Norske Veritas.**

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2013-07-05**

DNV local station: **Sheffield**

Approval Engineer: **Amir Dzaferi**

for **Det Norske Veritas AS**  
Digitally Signed By: Lie, Torbjørn  
Location: DNV Høvik, Norway  
Signing Date: 2013-07-05



**Torbjørn Lie**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

### Product description

The Spark Arrestors are of a cyclone/centrifugal design, and perform a part of the combined silencer/spark arrestor types MSA 1, MSA 2, MSA 3, MAA 1, MAA 2 and MAA 3.

### Alternative place of production

JP (Wuxi) Mechanism Co., Ltd.  
Donggang Town, Xishan District, Wuxi City, Jiangsu, China.

### Application/Limitation

The spark arrestors are approved for use onboard ships and mobile offshore units classified by Det norske Veritas in areas where emission of exhaust gasses is permitted.

Type of arrestor to be chosen according to the maker's instructions.

### Type Approval documentation

The approval is based on the following documentation:

#### Drawings:

022237 MAA1 Spark arrestor type silencer  
021766 MAA2 SE Exhaust Silencer  
022115 MAA3 SP/Arr.silencer  
022203 MSA-1 Spark Arrestor  
021211 NB MSA2 Exhaust silencer  
014106 NB MSA3/Se Parke arrestor silencer

Manufacturers test report dated 92.02.13, signed and stamped by the attending surveyor.

### Tests carried out

Test of discharge of sparks acc. to O.C.M.A. publication no. MEC-1.  
and test procedure described in test report dated 92.02.13.

Test report 2002-3410, test according to EN-1834

### Marking of product

The product to be marked with manufacturer's name or trademark and type number identification

### Certificate Retention Survey

For retention of the Type Approval, DNV surveyor shall perform a survey every second year and before expiry date of this certificate to verify that the conditions of the type approval are complied with.