

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Spark Arrestor**

with type designation(s)

Donaldson FC type: M045123, M060037, M060038, M065030, M070068, M070069, M080024, M090091 and M100016

Issued to

**Donaldson SAS
Domjean, France**

is found to comply with

DNV GL rules for classification – Ships**DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018****Application :****The spark arrestor is approved for use in the exhaust line of diesel engines, boilers and equipment containing sources of ignition installed onboard ships or offshore units classed by DNV GL.**Issued at **Høvik** on **2018-07-06**for **DNV GL**This Certificate is valid until **2023-06-30**.DNV GL local station: **Le Havre**Approval Engineer: **Amir Dzaferi**

**Oddvar Deinboll
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.



Job Id: **262.1-008830-3**
Certificate No: **TAM00000Y2**

Product description

Spark Arrestor of FC type: M045123, M060037, M060038, M065030, M070068, M070069, M080024, M090091 and M100016

Application/Limitation

Technical data for spark arrestors:

Spark arrester	Flow rating [cu.ft./min]	Flow rating [cu.ft./min]
	Vertical position	Horizontal position
FCM04-5123	145.5	130.5
FCM06-0038	120	126
FCM06-0037	296	273
FCM06-5030	436	427
FCM07-0068	644	597
FCM07-0069	1000	842
FCM08-0024	845	815
FCM09-0091	1670	-
FCM10-0016	2660	2480

Material:	Aluminized steel
Media temperature range of spark arrester:	-20 C up to 677C

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

The principle of spark arrester is approved for use in inside exhaust silencer (muffler).

Type Approval documentation

Drawings:	Title:
FC M045123 Rev. 9	Spark arrester assy exh rnd 114mm nom size 121mm lg body 39mm in 32mm
FC M060038 Rev. 12	Spark arrester assy exh rnd 152mm nom size 89mm lg body 39mm in 39mm
FC M060037 Rev. 14	Spark arrester assy exh rnd 152mm nom size 123mm lg body 51mm in 51mm
FC M065030 Rev. 14	Spark arrester assy exh rnd 165mm nom size 152mm lg body 64mm in 64mm
FC M070068 Rev. 16	Spark arrester assy exh rnd 178mm nom size 186mm lg body 76mm in 76mm
FC M070069 Rev. 17	Spark arrester assy exh rnd 178mm nom size 222mm lg body 89mm in 89mm
FC M080024 Rev. 14	Spark arrester assy exh rnd 203mm nom size 262mm body 102mm in 101mm
FC M090091 Rev. 18	Spark arrester assy exh rnd 229mm nom size 293mm body 128mm in 127mm
FC M100016 Rev. 13	Spark arrester assy exh rnd 254mm nom size 331mm body 155mm in 155mm

Tests carried out

Test results of all spark arrestors and letter from USDA dated 13.08.1976 confirming that the testing method meet requirements of USDA Forest service standard 5100-1a for spark arrester. This standard is equivalent to SAE J350 Spark Arresters for Medium Sized Engines.

Marking of product

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

Periodical assessment

For retention of the type approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years, both referring to the issue date of the type approval certificate to verify that the



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conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

In cases where the type approved product is manufactured at other companies, the periodical assessment shall verify that the type approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore, periodical assessment shall be carried out randomly at these companies.

Other conditions

DNV GL product certificate is not required.

END OF CERTIFICATE