TYPE APPROVAL CERTIFICATE

Certificate No:
TAM000018B

This is to certify:

That the Diesel Engine

with type designation
49CTAG-4V

Issued to
Sandfirden Technics B.V.
Den Oever, Netherlands

is found to comply with
DNV Rules for classification, Ships - DNVGL-RU-SHIP-Pt4 Ch3 Sec1, Reciprocating Internal Combustion Engines

Application :

Auxiliary / emergency

Products approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **10th May, 2021**
This Certificate is valid until **9th May, 2026**.

DNV local station: **Rotterdam**

for **DNV**

Approval Engineer: **Dag Harald Williksen**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description
Four stroke, in-line engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, direct injection, injection operation electronically controlled, valve operation by cams, liquid fuel

Cylinder bore [mm]	108
Piston stroke [mm]	134
No. of cylinders	4

Additional place of production
AGCO POWER OY, Linnavuori, Finland

Application/Limitation

Rated power [kW]	118	130
Rated speed [rpm]	1500	1800
Mean effective pressure [bar]	19.2	17.7
Max. firing pressure [bar]	162	135.2

Type Approval documentation

Tests carried out

Documentation:	
Test report title	-
Place of test	Den Oever, The Netherlands
Date of test	2007-11-21 until 2007-12-06
Test engine:	
Model	74CTAG
Serial no.	T20850
No. of cylinders	6

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

Periodical assessment
Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

In case 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
Flexible hoses with couplings to be type approved by DNV.

Engine safety, control and monitoring systems, including sensors and actuators are not covered by this type approval certificate. Documentation for engine safety, control including speed governing and monitoring systems shall be submitted for approval according to the rules Pt.4 Ch.9 Sec.1 Table 5 - Documentation requirements.

Electric cables and cabling are not covered by this approval and must be verified to comply to the rules Pt.4 Ch.8 - Electrical Installation.

END OF CERTIFICATE