



DNV

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM0000181

This is to certify:

That the Dual Fuel Engine

with type designation(s)
CX40DF

Issued to

**China Shipbuilding Power Engineering Institute Co., Ltd.
Shanghai, China**

is found to comply with

**DNV GL Rules for classification, Ships - DNVGL-RU-SHIP-Pt4 Ch3 Sec1
Reciprocating Internal Combustion Engines**

Application :

propulsion

Issued at **Hamburg** on **10th March, 2021**

This Certificate is valid until **9th March, 2026**.

DNV local station: **Shanghai**

for **DNV**

Approval Engineer: **Sven Neddenien**

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Olaf Drews
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

two stroke, in-line engine, reversible, crosshead, with supercharging, with charge air cooling, constant-pressure charging system, direct injection, injection operation electronically controlled, valve operation electronically controlled, dual fuel

Cylinder bore [mm]	400
Piston stroke [mm]	1770
No. of cylinders	6

Additional place of production

not applicable

Application/Limitation

Rated power [kW/cyl.]	974
Rated speed [rpm]	146
Mean effective pressure [bar]	18
Max. firing pressure [bar]	200

Type Approval documentation

Tests carried out

Documentation:

Test report title	CSSC CX40DF Engine TAT Report
Place of test	CSSC Marine Power Co., Ltd., Zhenjiang, China
Date of test	2020-12-26 until 2020-12-30

Test engine:

Model	C6X40DF
Serial no.	6X40DF/ZJ1
No. of cylinders	6
Power [kW/cyl.]	974
Speed [rpm]	146

Marking of product

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

Periodical assessment

Meetings on regularly basis and at least every second year with the Type Approval applicant (hereof: the Engine Designer) shall be arranged with the objective to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate was issued, and to keep DNV updated with regard to:

- The latest development status and design as covered by the Type Approval certificate.
- Damages and failures of products certified by DNV leading to break down or other malfunctions in service. The causes and reasons for the failure and results from investigations are to be made available to DNV upon request. Failure to inform DNV may lead to suspension of this Type Approval certificate.

In cases where the Type Approved design is manufactured at other companies, DNV shall verify that the Type Approval applicant has a quality control system for consistent production at their licensees/subcontractors.

Other Conditions

1. Engine safety, control and monitoring systems, including sensors and actuators, are not covered by this certificate. Documentation for engine safety, control (including speed governing), and monitoring systems shall be submitted for approval according to DNV GL Rules Ships Pt.4 Ch.9 Sec.1 Table 5 and/or as listed in relevant Type Approval certificates.
2. The integrated Gas Pressure Regulation (iGPR) is not covered by this certificate. A separate case-by-case approval or type approval is required for this sub-system.
3. The Dynamic Control Oxygen (DCO) system is not covered by this certificate. A separate case-by-case approval or type approval is required for this sub-system.

END OF CERTIFICATE