Certificate no.:
**TAM00001CS**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**that the Reduction Gear for Auxiliary Purpose**

with type designation(s)
**DGR 180**

issued to
## D-I Industrial Co., Ltd.
**Jinju-si, Gyeongsangnam-do**, **Korea, Republic of**

is found to comply with
**DNV rules for classification – Ships Pt.4 Ch.4 Rotating machinery – power transmission**

## Application:

**Product approved by this certificate is accepted for installation on all vessels classed by DNV.**

Issued at **Høvik** on **2025-03-12**
This Certificate is valid until **2030-03-11**.
DNV local unit: **Gimhae Station**

for **DNV**

Approval Engineer: **Svein-Olav Hannevik**

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 stage cylindrical gear reduction.

## Application/Limitation
Intended for auxiliary machinery with main data and limitation as stated in table below.

| Model | Gear ratio | Max input torque [kNm] | Input speed [rpm] | Power [kW] | Application factor cont. $K_A$ | Application factor peak, $K_{A\ PEAK}$ |
|---|---|---|---|---|---|---|
| DGR 180 | 2.615 | 1775 | 2100 | 390.3 | 1.3 | 1.3 |

## Type Approval documentation

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

## Periodical assessment
For retention of the type approval, a DNV 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 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.

END OF CERTIFICATE