

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Propeller nozzle**

with type designation(s)

Propeller Nozzle 19A and 37 - Type 1665/0.5, 2120/0.5, 2625/0.5, 2900/0.5,

Issued to

**TYM Ganain, S.L.
Mos Pontevedra, Spain**

is found to comply with

DNV GL rules for classification – Ships**Application :****Propeller nozzles for use on thrusters****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2017-11-06**This Certificate is valid until **2022-11-05**.for **DNV GL**DNV GL local station: **Vigo**Approval Engineer: **Vidar Johansen**

**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: **262.1-009810-5**
Certificate No: **TAM00000RK**

Product description

Propeller nozzles for Brunvoll azimuth thrusters

Application/Limitation

Thruster type	19A-1665/0.5	19A-2120/0.5	19A-2625/0.5	19A-2900/0.5
Max.Speed (knots)	15	15	15	15
Max.Power (kW)	880	1500	2400	3500

This Type Approval does not cover ice class notations

Type Approval documentation

Other conditions

Welding between normal steel and stainless steel shall be carried out in accordance with a DNV GL approved Welding Procedure Specification (WPS), reference to DNV GL Rules Pt.2 Ch.4.

Marking of product

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



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Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years 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