

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Waterjet**with type designation(s)
HT900

Issued to

C W F Hamilton & Co. Ltd.
Christchurch, CAN, New Zealand

is found to comply with

DNV GL rules for classification – Ships**DNV GL rules for classification – High speed and light craft****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2018-05-03**This Certificate is valid until **2023-05-02**.DNV GL local station: **Auckland**for **DNV GL**Approval Engineer: **Stanislav Avanesov**

Burkhard Lilienthal
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.



Product description

Waterjet propulsion unit with steering and reversing system

Application/Limitation

The waterjet is approved for propulsion duty with the following rating:

Impeller type	Max shaft power (kW)	Impeller shaft speed (rpm)	Max torque (kNm)	Max Application factor (Ka)
8300	4940	842	56.03	1.1
7100	4940	886	53.25	1.1

Hydraulic steering and reversing cylinder sizes:

Type	Tube inner diameter (mm)	Rod diameter (mm)	Max. stroke (mm)	Working pressure/ Design pressure
HT900	63	32	478	90 bar / 112,5 bar

The waterjet is to run within safe operation range (no harmful cavitation) to achieve a satisfactory lifetime.

The input coupling flange is approved for maximum torque of 38.32 kNm (rating 2793 kW @ 696 rpm).

Type Approval documentation

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 DNVGL surveyor shall perform a survey after 2 and 3,5 years after issue of certificate to verify that the conditions of the Type Approval are complied with.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate was issued. The main scope of the Periodical Assessment will normally include:

- Verification of the Type Approval applicant's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the Type Approval documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.

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.

When a Type Approved product is manufactured at other companies, the Type Approval applicant takes the sole responsibility for the conformity of the product to the applicable requirements.

Other Conditions



Job Id: **262.1-028497-1**
Certificate No: **TAM00000VY**

Flexible hoses to be Type Approved by DNVGL.

The following items are to be submitted for approval in each separate case:

- The hydraulic system for steering and reversing
- Control system
- Alarmlist with set points and delay time
- Connection to driving unit
- Connection to hull (shipbuilder responsibility)
- Emergency/local steering procedure
- Coupling flange

END OF CERTIFICATE