



# SUBMERSIBLE MOTORS

## INDUSTRIAL PRODUCT AND SERVICE

### PRODUCT SPECIFICATION

#### BRUSH HMA Submersible Motors

BRUSH HMA has many years valuable experience with the design and manufacture of submersible motors used in the dredging industry dating back to the mid 1970's. This experience has been built up over the years and has now set BRUSH HMA up as a major supplier to the main Dredging companies

#### Motor Designs

BRUSH HMA's AC submersible motors are specially designed to suit customer's requirements.

Special attention has been paid to the design of a sturdy, rugged motor with:

- Low maintenance requirements
- Very high reliability
- Expected service lifetime of over 30 years
- The motor can be adjusted in speed, power and torque by means of a frequency converter

Low speed designs are available up to 6.5 MW leaving out the need for a gearbox to improve the reliability of the underwater drive system. Specifics for the design are:

- The BRUSH submersible motors have a generous overload margin with solid lamination, winding and rotor design
- The BRUSH submersible motor is oil filled and therefore no re-greasing of the bearings is required. The oil filling also prevents from condensation of water in the motor
- The motor will be supplied with bearings to cope with the pump impeller forces and are designed for 30,000 running hours as a minimum
- Cooling of the motor can be either by natural cooling or forced cooling both by the surrounding seawater

The following instrumentation is available:

- Stator temperature measurement
- Bearing temperature measurement
- Oil temperature measurement
- Shaft speed measurement (redundant)
- Pressure difference transmitter Seawater / Oil
- Water leakage detection in auxiliary connection boxes

Furthermore options are available for:

- Exchangeable drive shaft
- Factory load test
- Horizontal and/or vertical execution



A BRUSH 2.6MW submersible motor with natural cooling arrangement supplied to Boskalis for the Prins der Nederlanden vessel.



The Prins der Nederlanden at sea.



A BRUSH 4MW submersible motor with forced cooling fitted to the Gerardus Mercator vessel, supplied to Jan de Nul.

## Repair and Re-conditioning

In addition to the manufacture of new submersible motors BRUSH HMA also conducts maintenance, repair and re-conditioning of submersible motors of our own design and third party manufactures at our facility in Ridderkerk, The Netherlands.

## BRUSH HMA

BRUSH HMA owes its origins to Smit Slikkerveer and Holec Machines en Apparaten, both were important manufacturers of electrical machines and providers of service activities.

BRUSH Specialises in:

### Turbogenerators

Design, production of 2-pole and 4-pole generators driven by gas or steam turbines. More information on this subject can be found in our Brush Turbogenerators brochure.

### After Sales Support

Maintenance, repair and overhaul of large electrical machines of any make and type and associated equipment. This work can be carried out both on site and in our workshop. In addition, the Industrial Products & Services department designs and produces special electrical machines and parts.

### For more information please contact us at:

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Final assembly of a new build submersible motor at our Ridderkerk facility



In works repair of a third party air cooled submersible motor.



A BRUSH 4MW submersible motor assembled on the dredging arm, being lowered into position.



Certificate No 21024



Certificate No 21025



Certificate No 936683



Certificate No 00282



Certificate No 00066

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