

NEW

ADVANCED WATERJET DRIVE

TURBODRIVE 600 H.C.T.



CASTOLDI

Since 1962
Forerunners, always

The **Turbodrive 600 H.C.T.** it is an innovative high efficiency propulsion system with ground-breaking performance destined to revolutionize the market of the large waterjets. Castoldi has transferred all the exclusive technical characteristics of the **H.C.T.** range into it creating, after 4 years of intense studies with the most advanced CAD and CFD software, a complete and easy-to-install propulsion system that allows compact applications, with considerable savings in dimensions, weight and costs.

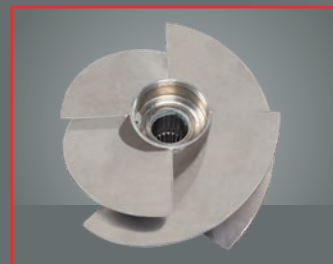
For the first time a waterjet of this size is equipped with an integrated gearbox (heavy duty certified) with many gear ratios available, matched to a multi-disc hydraulic clutch, the innovative Clear-Duct unclogging system (synchronizing operations of the impeller rotation reversing and the intake grid opening) and the integration with the interceptors. The steering and reversing actuators have been designed to manage the high forces involved with two hydraulic cylinders controlling the movement of the bucket. This allows rapid and efficient crash-stops and one cylinder dedicated to the steering nozzle for greater dynamic efficiency. The excellence of the materials used (such as the Duplex micro-cast stainless steel impeller and the titanium liner) and the production processes (anti-corrosion hard anodizing treatment protecting all the aluminium alloy components and three layers of special paint) make it unique for the construction quality.

The **Turbodrive 600 H.C.T.** is controlled by the **ACES** electronic system that can be supplied with several extra features such as position keeping, smart anchor, unmanned interface, autopilot integration and hybrid power.

#Thrust #Compactness #Lightness #Durability

TURBODRIVE 600 H.C.T.

Main parts



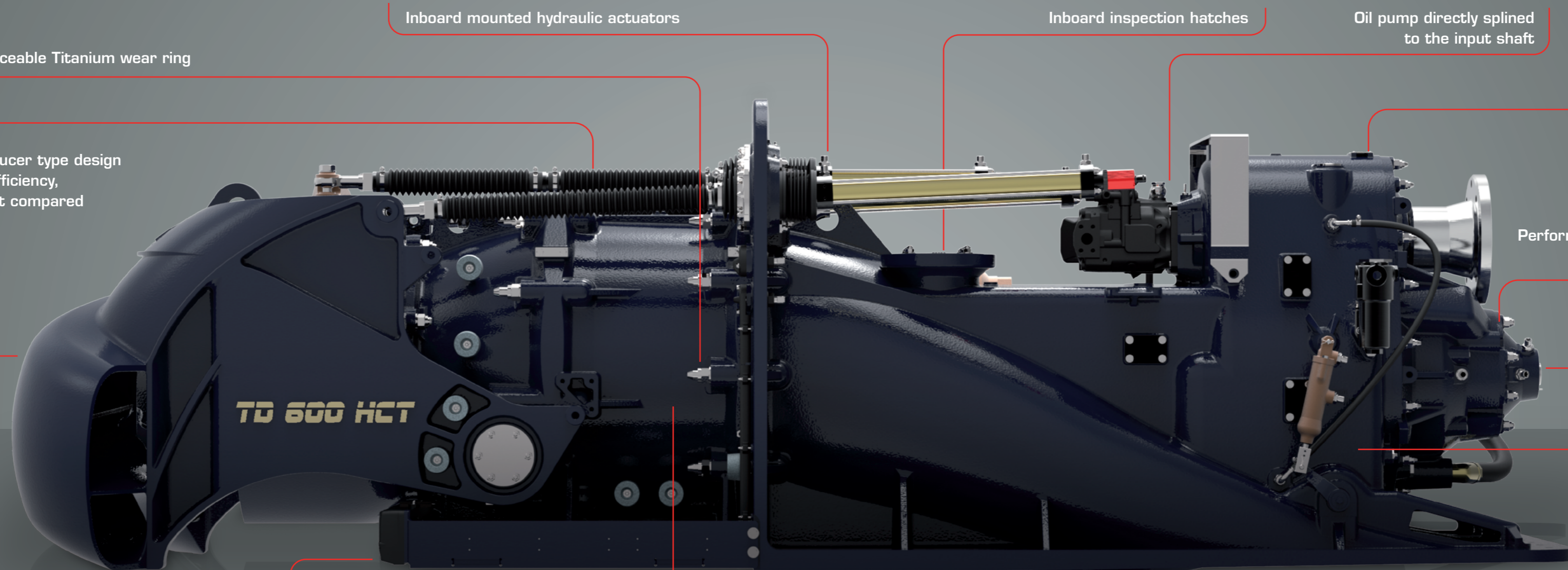
Replaceable Titanium wear ring

The Castoldi impeller is a true axial inducer type design and is recognized as having the best efficiency, cavitation resistance and lowest weight compared to any other type of pump.



New high efficiency reversing bucket and steering nozzle design

Integrated interceptors



Inboard mounted hydraulic actuators

Inboard inspection hatches

Oil pump directly splined to the input shaft

Integrated heavy duty gearbox with N. 13 gear ratios available

Clear-Duct unclogging system. Performs the synchronized operations of impeller rotation reversing and intake grid opening

Oil transducer

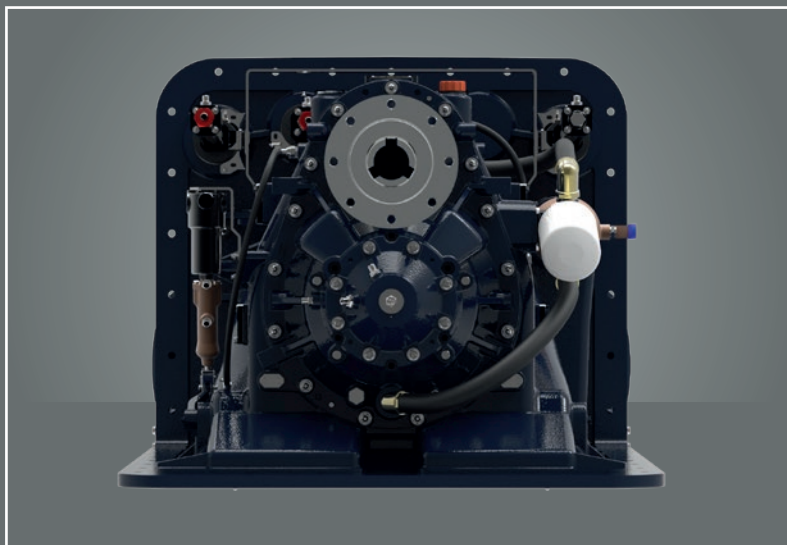
Built-in multi-disc hydraulic clutch

Impeller shaft rotating into a protective sleeve, oil immersed and not in contact with the water

Movable protection grid on water intake with hydrodynamically profiled set of bars (hydraulically controlled)



TURBODRIVE 600 H.C.T.



- **The highest thrust and best performance**

Assured by the new component design.

- **The most effective defense against marine corrosion**

Assured by the hard anodizing treatment protecting all the aluminium alloy components with 60 microns thickness of aluminum oxide (ceramic), three layers of special paint and cathodic protection by sacrificial anodes.

- **The most efficient anti-clogging system**

Assured by the Clear-Duct system performing the simultaneous electrically controlled operations of impeller rotation reversing and the intake grid opening.



- **The highest suitability to operate in sandy, dirty and shallow waters**

Thanks to the impeller shaft rotating into a protective sleeve, oil immersed and not in contact with the water.

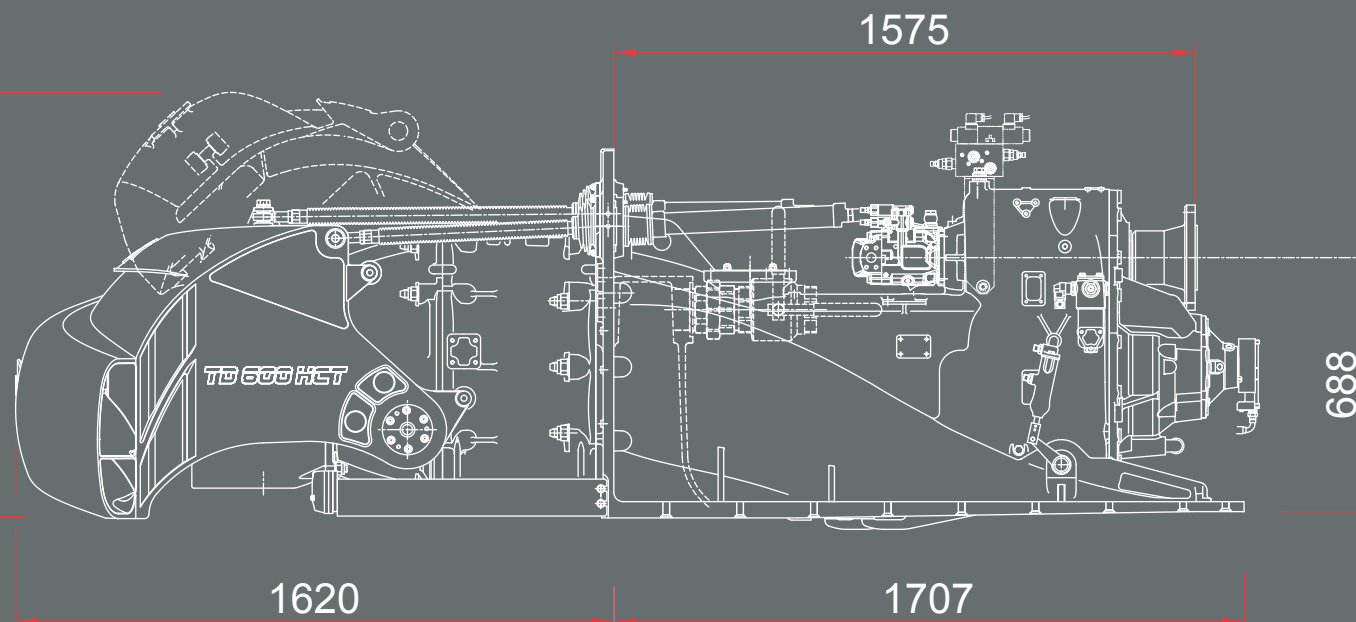
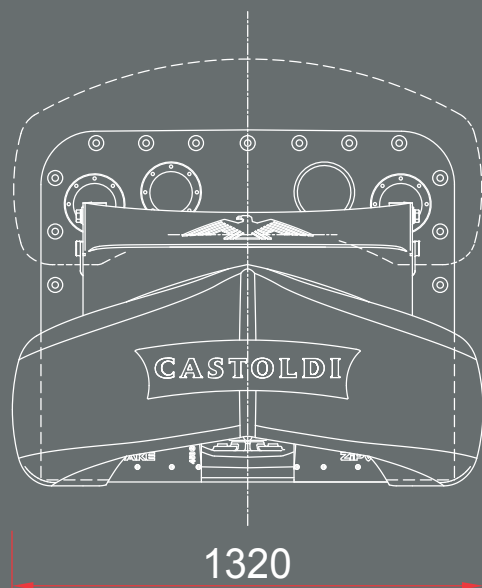
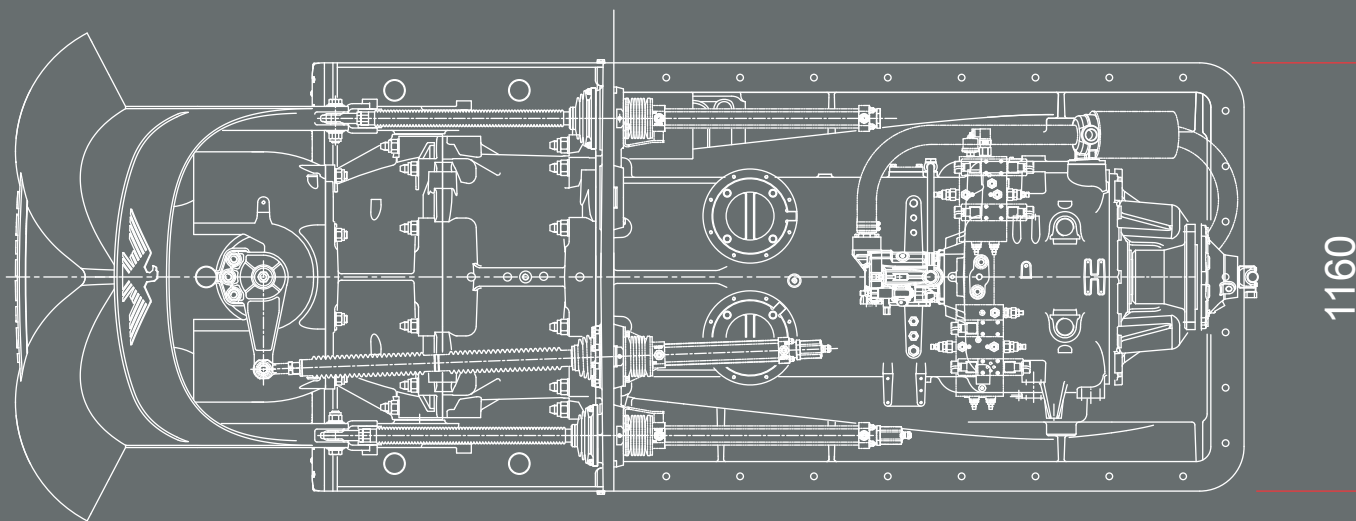
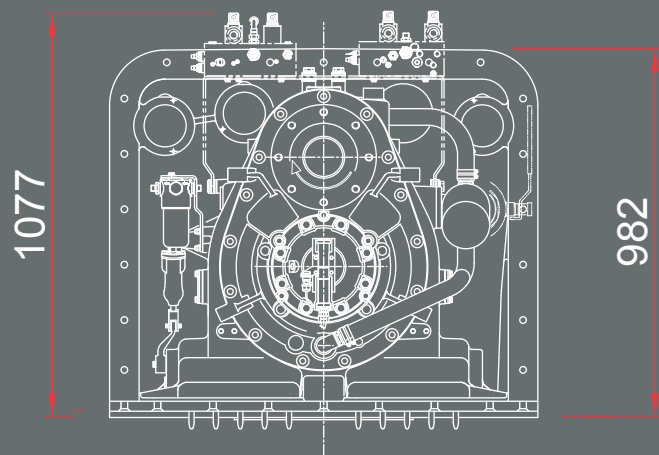
- **The longest operational life**

Thanks to the presence of all oil lubricated bearings.

- **The most compact installation**

Thanks to the presence of the built-in gearbox and hydraulic multi-disc clutch.

Dimensions



TURBODRIVE 600 H.C.T.

Impeller: Duplex stainless steel

Impeller housing: G Al Si 9 aluminum alloy

Impeller housing wear ring: Titanium

Impeller shaft: Aquamet 17 stainless steel

Input shaft: 39 Ni Cr Mo 3 high grade steel

Stator: G Al Si 7 aluminum alloy

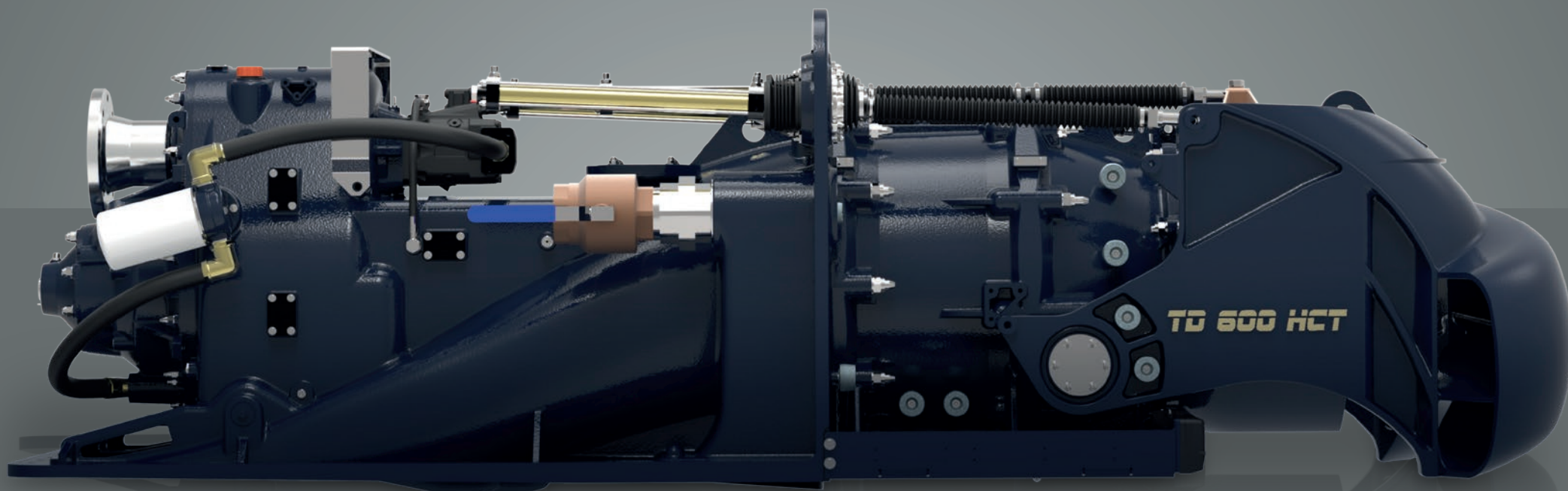
Steering nozzle and reversing bucket: G Al Si 7 aluminum alloy

Steering/Reversing rams: AISI 316 stainless steel

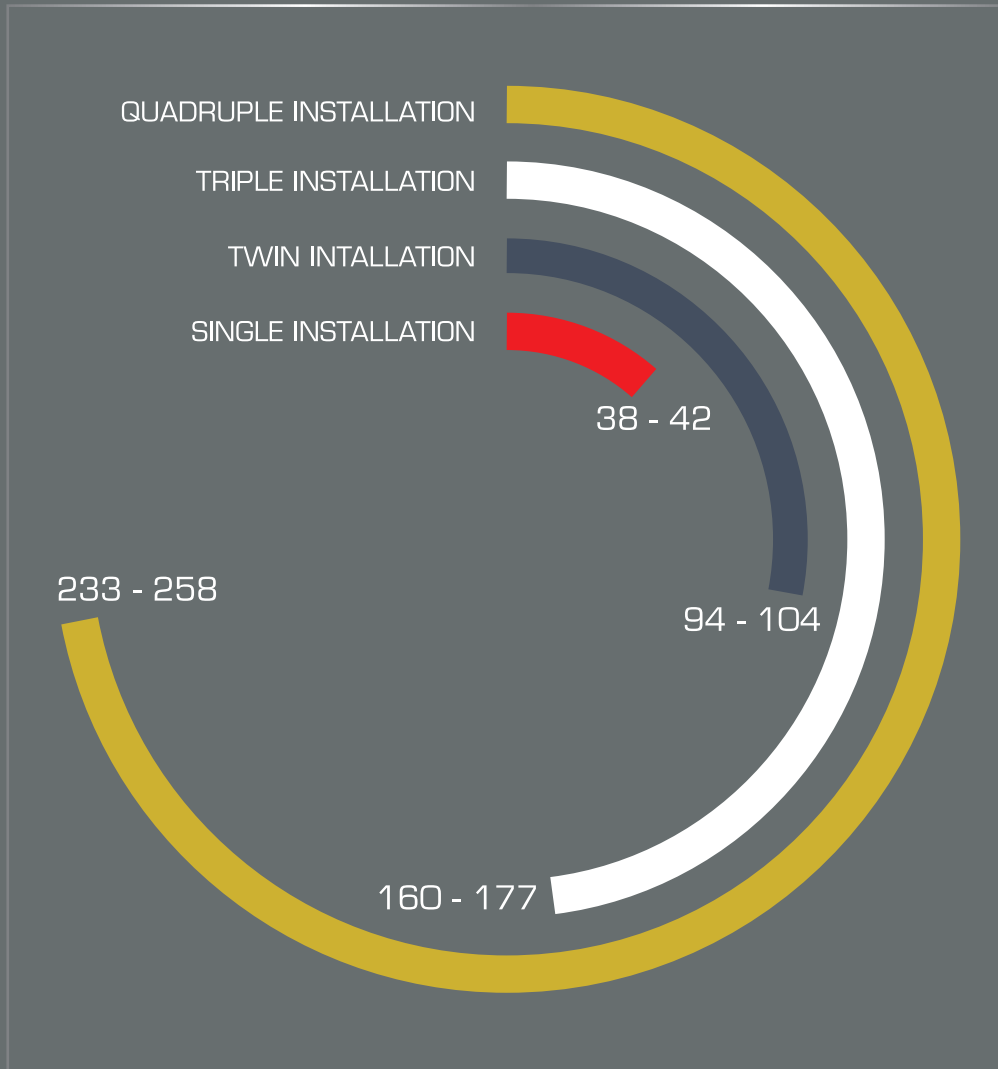
Waterjet body: G Al Si 9 aluminum alloy

Gear wheels: Surface carbo hardened high grade 18 Ni Cr Mo 5 steel

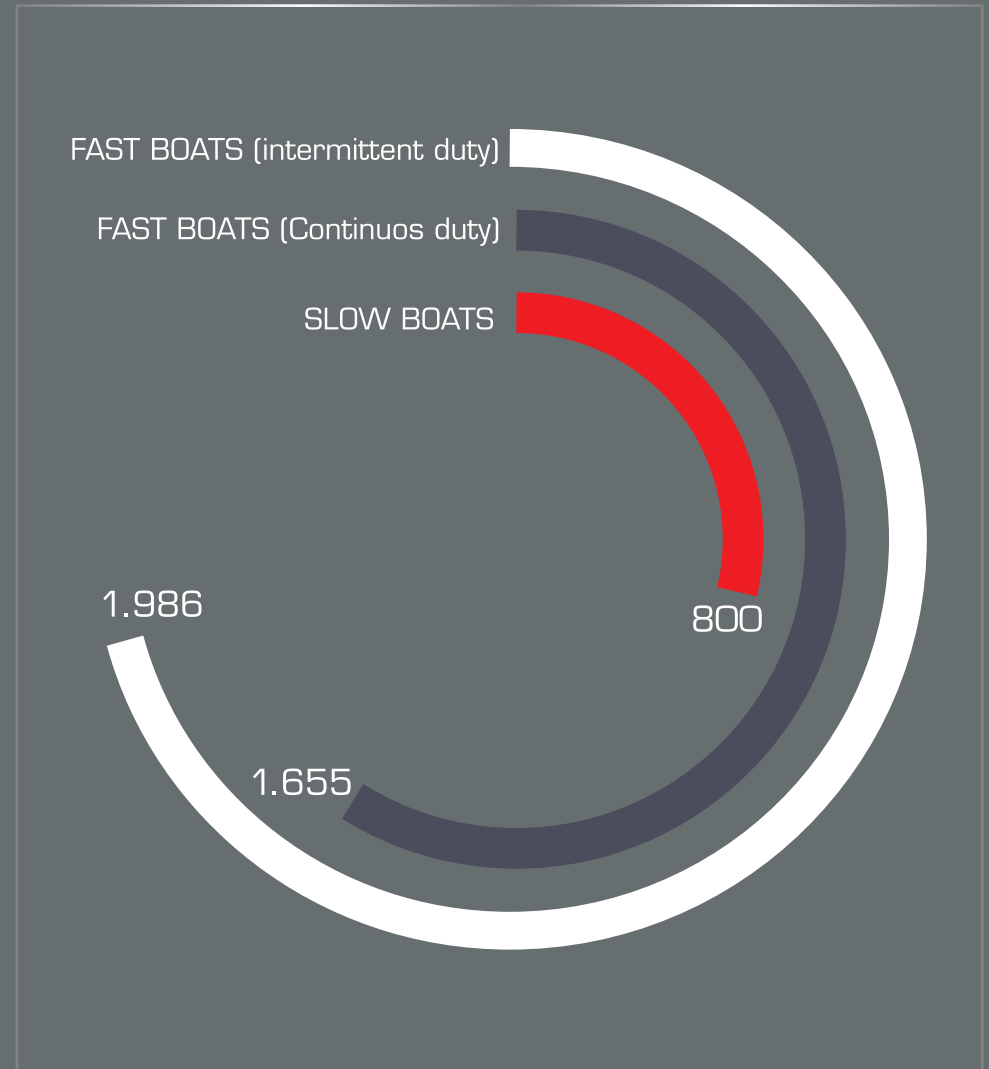
The whole unit is protected by a hard anodizing treatment, plating all light-alloy components with 60 microns thickness of aluminum oxide (ceramic), three layers of special paint and cathodic protection by zinc anodes



MAXIMUM SUGGESTED DISPLACEMENT (t)



MAX POWER INPUT (kW)



Impeller: N.4 blades, single stage, axial flow

Impeller diameter: 600 mm at the inlet

Stator: N. 5 blades

Integrated heavy duty gearbox: With N.13 gear wheels ratio available

Input flange: Suit up to 285 mm diameter drive shaft flange

Impeller disconnecting/connecting system: Built-in multi-disc hydraulic clutch

Transom angle: 90°

Drive shaft rotation: Clockwise looking at the input driveshaft flange

Inspection hatch: N. 2, inboard

Hydraulic actuators: All inboard, waterjet mounted

Water pick-up for engine cooling: Suit 4" GAS

Hydraulic power unit and accessories: Incorporated hydraulic pump directly splined to the input shaft for the waterjet power controls. Solenoid valves and piping complete the hydraulic plant (all inboard, waterjet mounted)

Unit dry weight (including gearbox, hydraulic clutch, water intake, grid, duct, anodes etc.): 1.580 kg

Hydraulic weight (oil pump, actuators, solenoid valves, brackets): 102 kg

Entrained water volume: 450 l

Oil volume: 56 kg "SAE 30" Uni-Grade oil type (gearbox and hydraulics)

B.P.R.: Additional water intake for take-off improvement

Water intake protection: Movable debris screen grid with double set of hydrodynamically profiled bars

Bearings: All oil lubricated

Clear-Duct unclogging system: Superior unclogging system by simultaneous operations of impeller reversing and intake grid opening

Reversing system: Castoldi compact "Twin-Duct" reversing bucket. (75% of the forward static thrust)

Steering system: Castoldi steering nozzle integrated in a protective bowl



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