

NEW

ADVANCED WATERJET DRIVE

TURBODRIVE 490 H.C.T.



CASTOLDI

Since 1962
Forerunners, always

Innovation and technological evolution without compromises.

This is the guideline that Castoldi engineers pursued in the development of the **Turbodrive 490 H.C.T.** waterjet, designing each component with the most advanced CAD and CFD softwares.

The result is a waterjet with high propulsive efficiency, capable of an outstanding static and dynamic thrust which, thanks to its integrated heavy duty gearbox with many gear ratios available (typical feature of all Castoldi waterjets), can be finely matched to any engine on the market.

The excellence of the materials used (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.

Extra accessories include the superior Clear-Duct unclogging system (performing the simultaneous operations of impeller reversing and intake grid opening), interceptor built-in integration as well as various available control systems, among which the high-end electronic **ACES** with additional features such as: position keeping, smart anchor, unmanned interface, autopilot integration and hybrid power.

#Thrust #Compactness #Lightness #Durability

Replaceable Titanium wear ring

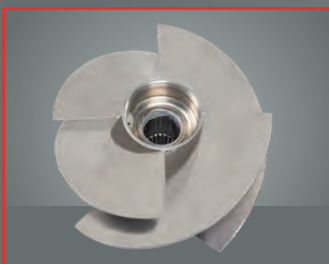
Inboard mounted hydraulic rams

Inboard inspection hatches

Oil pump directly splined to the input shaft

Integrated heavy duty gearbox with N. 20 gear ratios available

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.



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

New high efficiency reversing bucket and steering nozzle design



Oil transducer

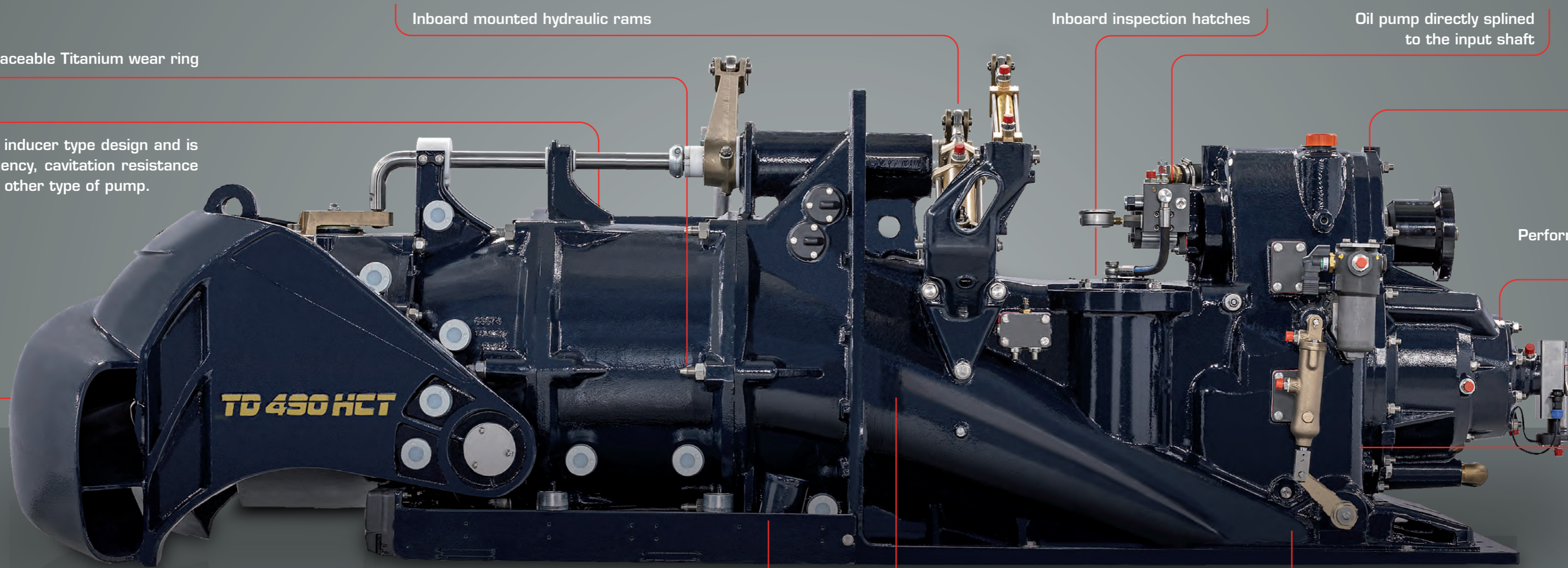
Built-in multi-disc hydraulic clutch

Integrated interceptors

Water pickup for engine cooling

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 490 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 (optional for H.C.T.) 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**

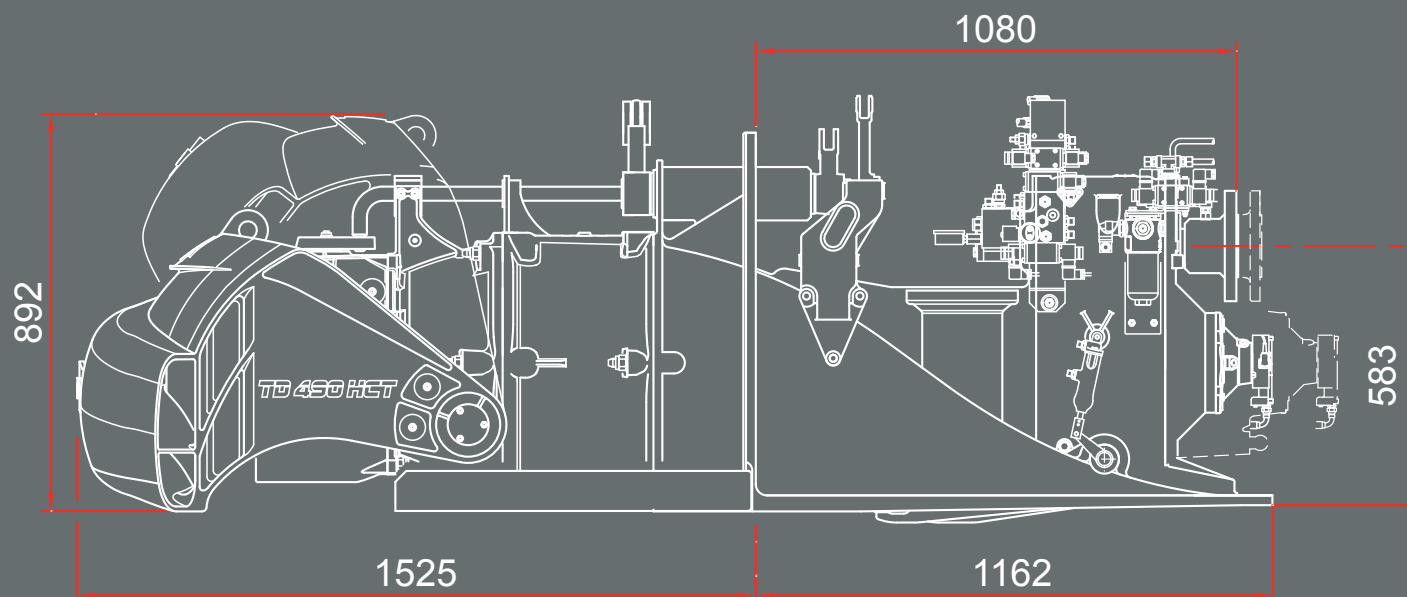
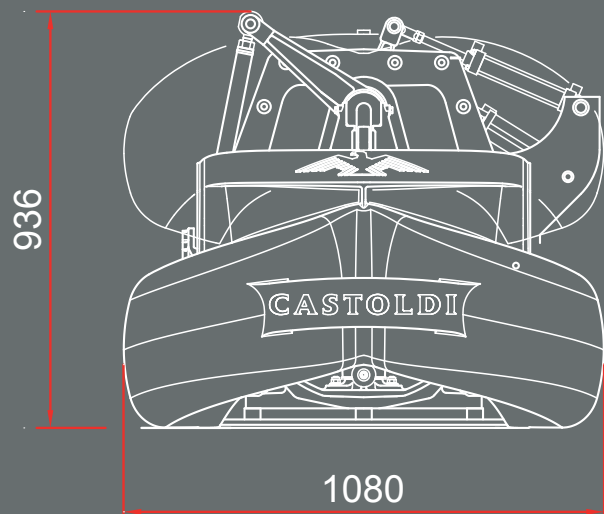
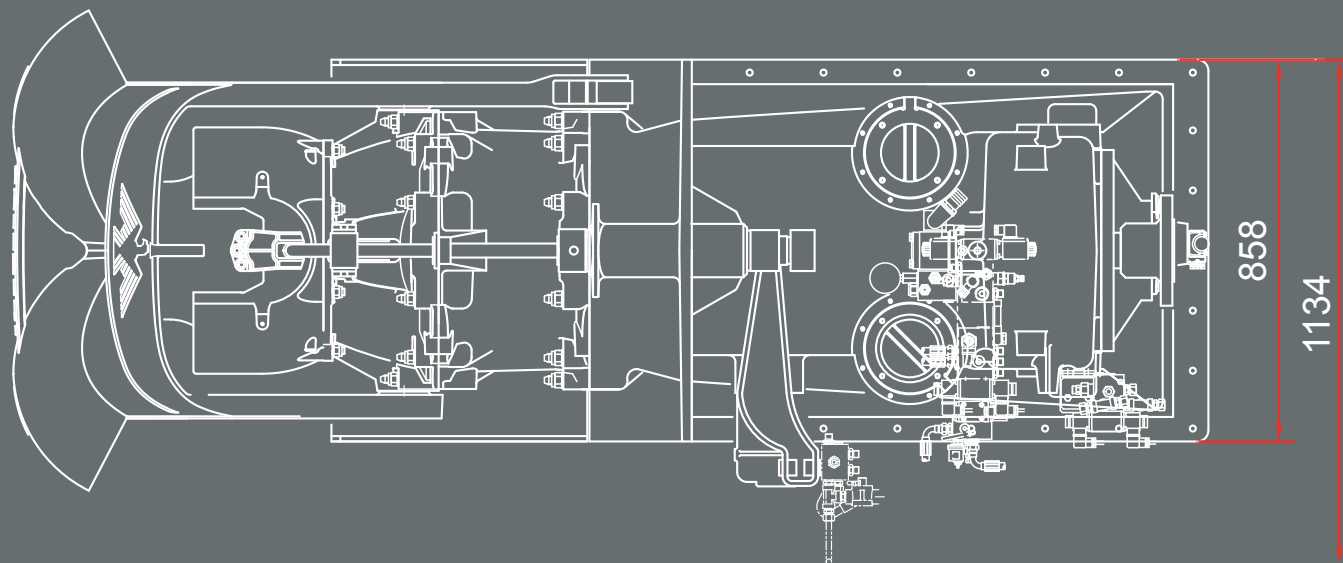
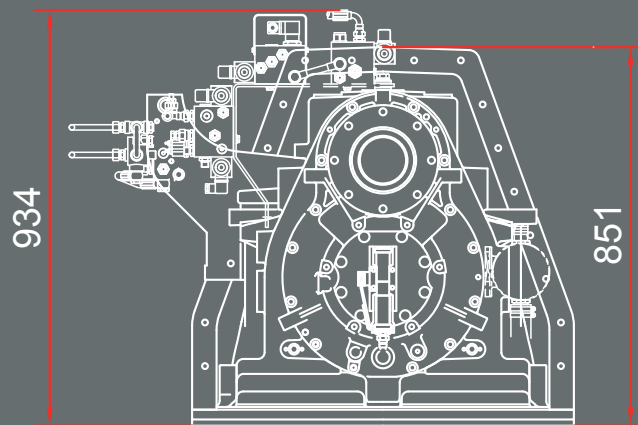
Thanks to the presence of all oil lubricated bearings.

- **The most compact installation**

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



Dimensions



TURBODRIVE 490 H.C.T.

Impeller: Duplex stainless steel

Impeller housing: G.AI.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.AI.SI.7 aluminum alloy

Steering nozzle and reversing bucket: G.AI.SI.7 aluminum alloy

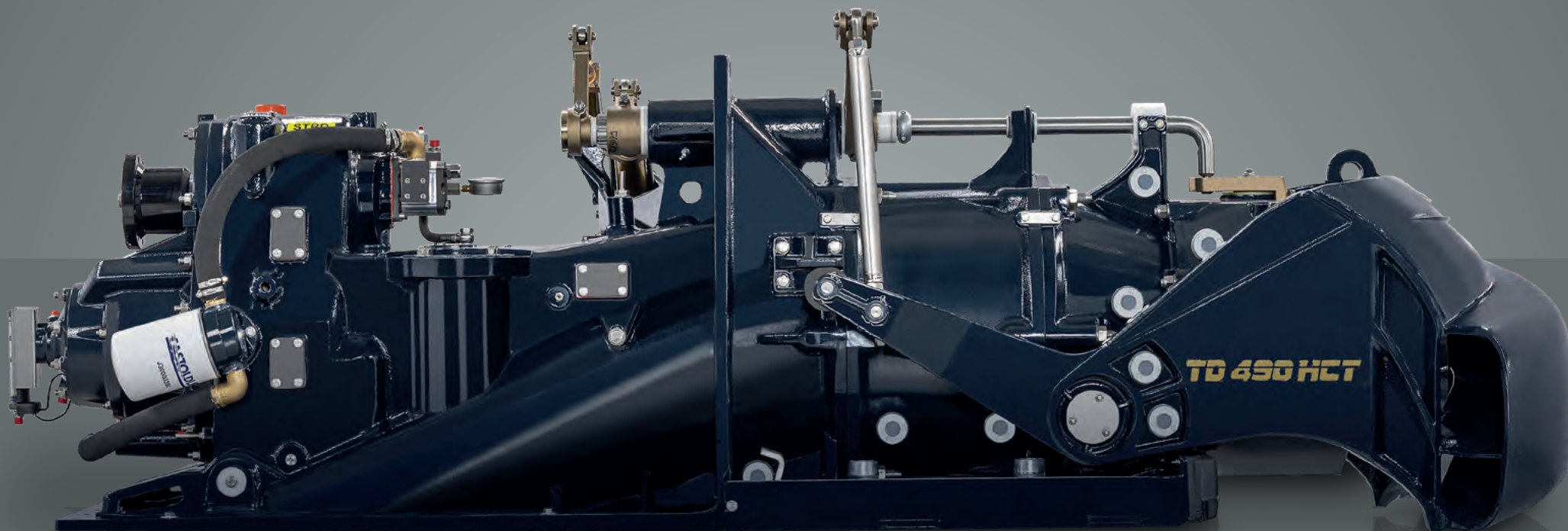
Steering shaft: Nitronic 50

Reversing shaft: AISI 316 stainless steel

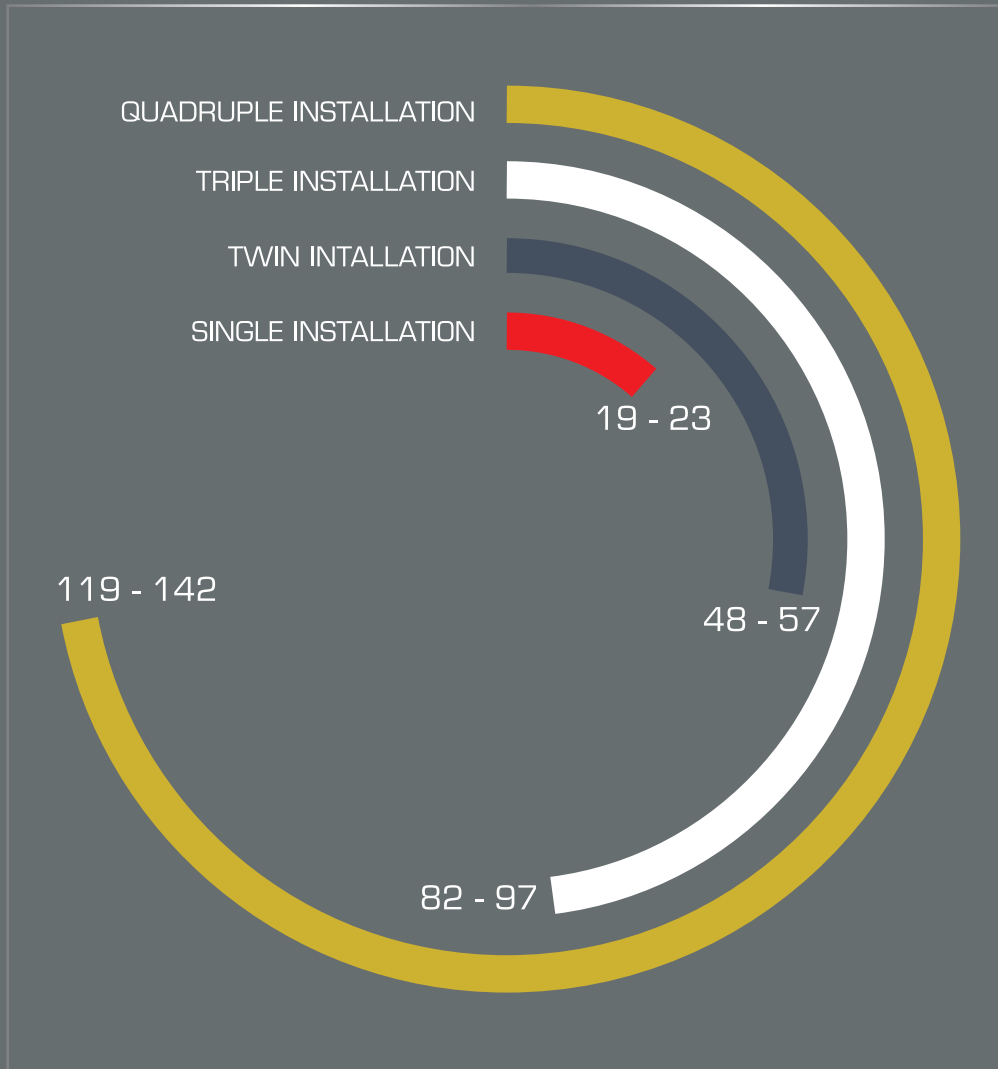
Waterjet body: G.AI.SI.9 aluminum alloy

Gear wheels: Surface carbo hardened high grade 18 NI.CR.MO. 5 steel

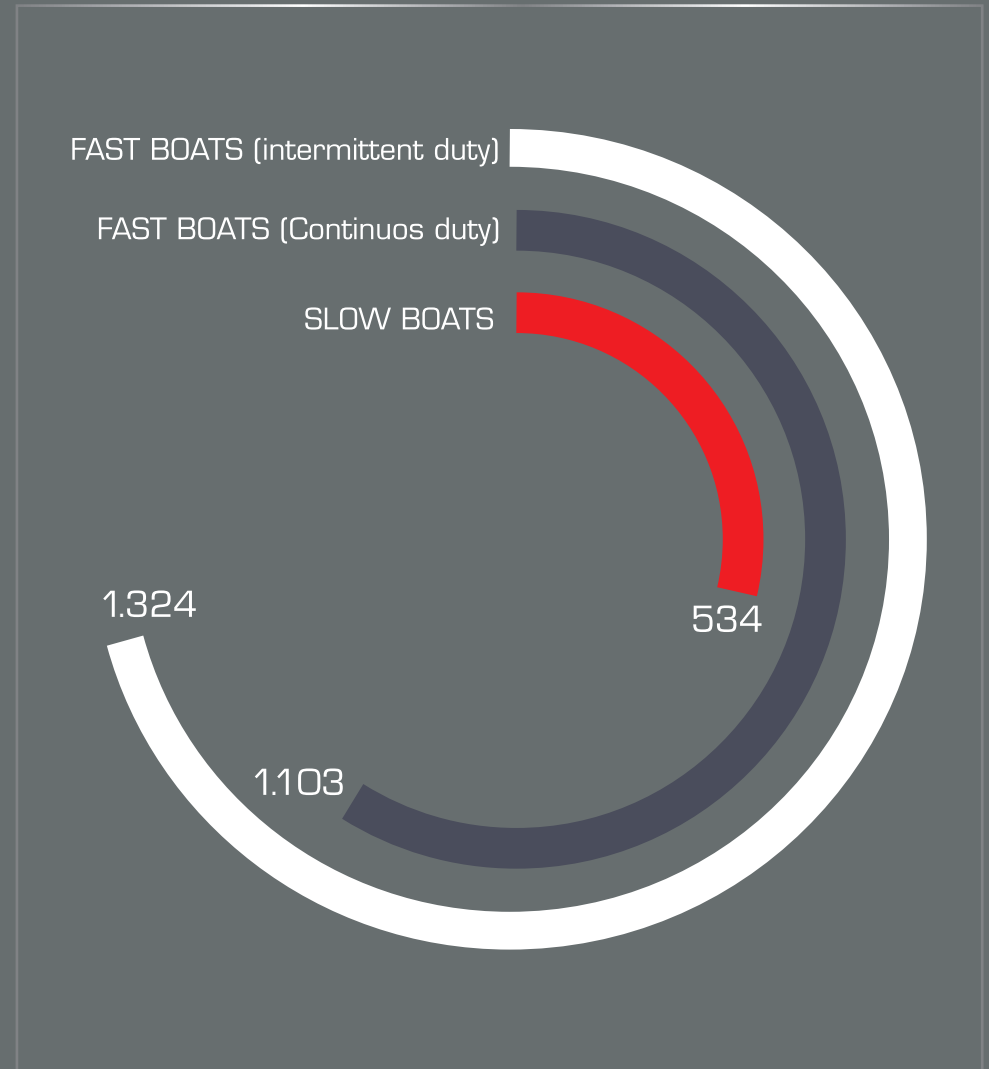
The whole unit is protected by a hard anodizing treatment, plating all light-alloy components with 60 microns thickness of aluminum oxide (ceramic), three layers of special paint and cathodic protection by zinc anodes



MAXIMUM SUGGESTED DISPLACEMENT (t)



MAX POWER INPUT (kW)



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

Impeller diameter: 490 mm at the inlet

Stator: N. 5 blades

Integrated heavy duty gearbox: With N.20 gear wheels ratio available

Input flange: Suit up to 250 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 2" 1/2 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.): 941 kg

Hydraulic weight (oil pump, actuators, solenoid valves, brackets): 54 kg

Entrained water volume: 256 l

Oil volume: 35 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 (optional): Superior unclogging system by simultaneous operations of impeller reversing and intake grid opening, 45 kg

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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