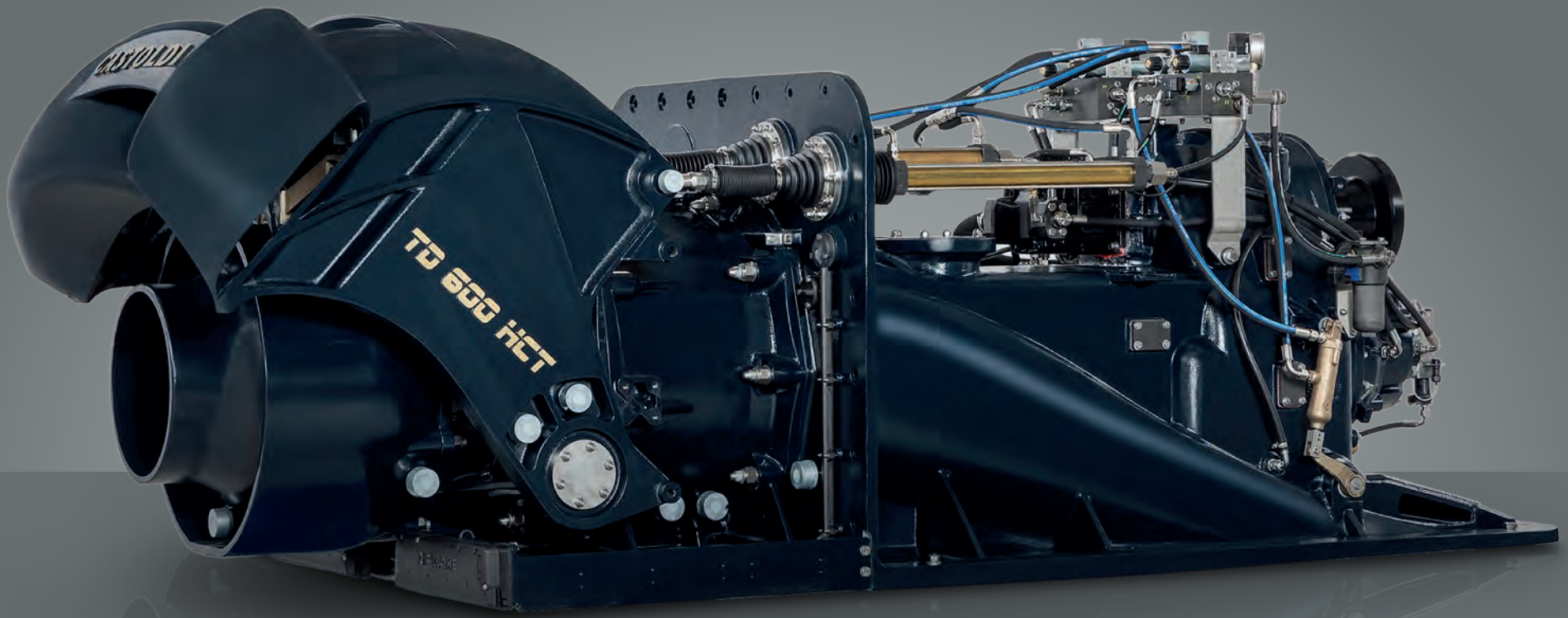
ADVANCED WATERJET DRIVE

TURBODRIVE 600 H.C.T.



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Since 1962

Forerunners, always

The **Turbodrive 600 H.C.T.** is an innovative high efficiency propulsion system with ground-breaking performance engineered to revolutionize the market of large waterjets. After four years of intensive research utilizing cutting-edge CAD and CFD software, Castoldi has successfully incorporated all the exclusive technical features of the **H.C.T.** range into this complete, easy-to-install propulsion system. Its compact design delivers significant advantages in dimensions, weight, and cost saving.

For the first time in the industry, a waterjet of this size comes equipped with advanced features such as:

- Integrated gearbox with multiple ratio options to precisely match any engine in its power range, coupled with a multi-disc hydraulic clutch.
- The advanced Clear-Duct unclogging system combining back-flushing with intake grid opening for unmatched duct cleaning.
- Waterjet mounted interceptors.

The steering and reversing actuators are specifically designed to precisely manage the control forces. Featuring dual hydraulic cylinders that actuate the reversing bucket movement for rapid and efficient crash-stops and a dedicated hydraulic cylinder for the steering nozzle to provide enhanced maneuverability and superior dynamic efficiency in all conditions.

Unparalleled construction quality distinguishes the **Turbodrive 600 H.C.T.**, featuring premium materials including a Duplex investment cast stainless steel impeller rotating in a titanium wear ring. Every aluminum alloy component receives anti-corrosion hard anodizing treatment plus three layers of protective paint, ensuring exceptional durability in marine environments.

The advanced ACES electronic control system offers numerous advanced control functions including dynamic position keeping, unmanned interface, autopilot integration, and hybrid power options, making the **Turbodrive 600 H.C.T.** the definitive choice for military, commercial, and leisure vessels requiring ultimate performance and reliability.

#Thrust #Compactness #Lightness #Durability

Main parts

Inboard mounted hydraulic actuators

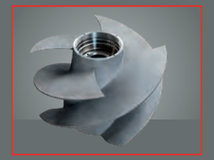
Inboard inspection hatches

Oil pump directly splined to the input shaft

Integrated heavy duty gearbox with N. 13 gear ratios available

Replaceable Titanium wear ring

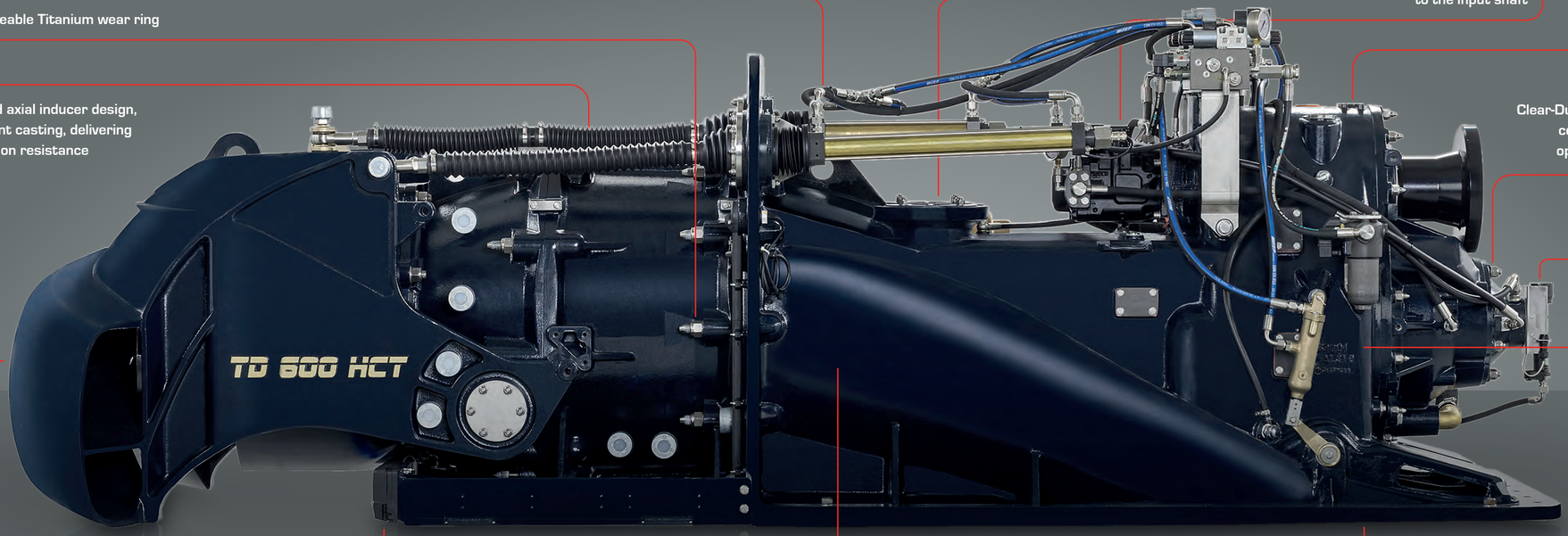
The Castoldi impeller employs an advanced axial inducer design, precision-manufactured through investment casting, delivering unmatched efficiency and superior cavitation resistance



Clear-Duct unclogging system. Simultaneously executes combined actions of back-flushing and intake grid opening for rapid and complete debris elimination

Oil transducer

Built-in multi-disc hydraulic clutch



New high efficiency reversing bucket and steering nozzle design

Integrated interceptors

The impeller shaft rotates within a protective oil-lubricated sleeve, ensuring complete isolation from water contact and maximizing operational life

Movable protection grid with hydrodynamically optimized bars, ensuring maximum flow efficiency while providing superior debris protection

- **The highest thrust and best performance**
  Assured by the new component design.

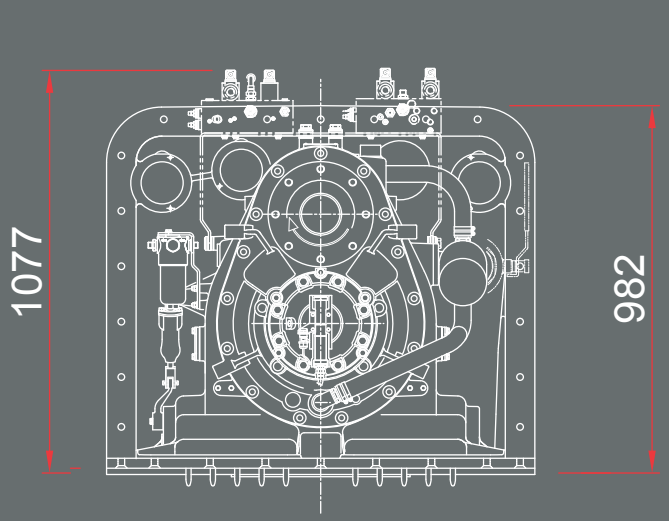
- **The most effective defense against marine corrosion**
  Assured by the hard anodizing treatment protecting all the aluminium alloy components with 60 microns thickness of aluminum oxide (ceramic), three layers of special paint and cathodic protection by sacrificial anodes.

- **The most efficient duct unclogging system**
  Assured by the proprietary Clear-Duct technology (optional), which simultaneously executes combined actions of back-flushing and intake grid opening for rapid and complete debris elimination

- **The highest suitability to operate in sandy, dirty and shallow waters**
  Thanks to the impeller shaft rotating within a protective oil-lubricated sleeve, ensuring complete isolation from water contact.

- **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.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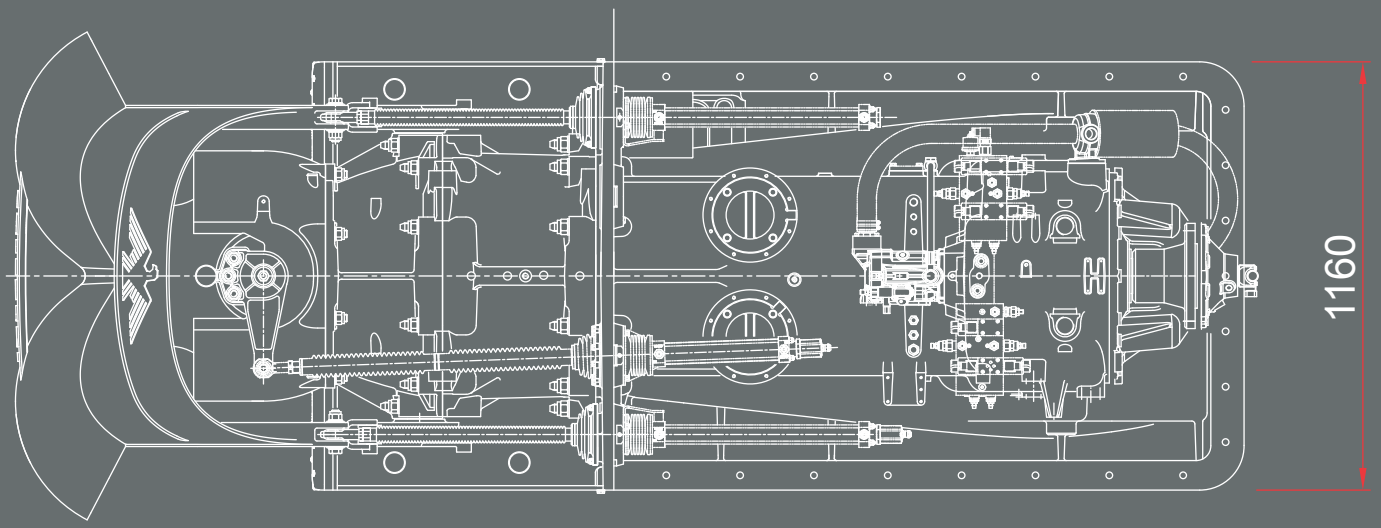
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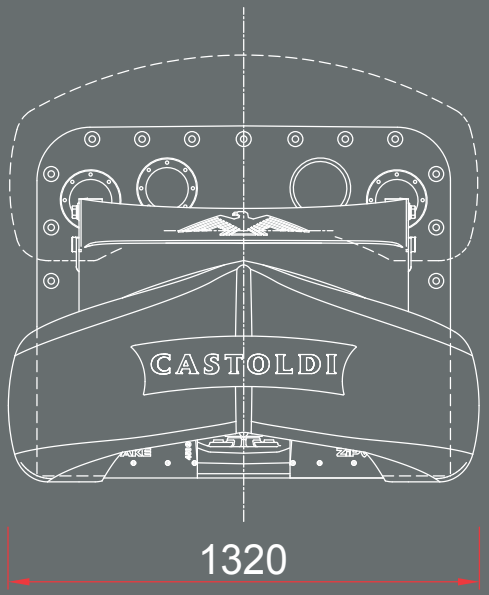
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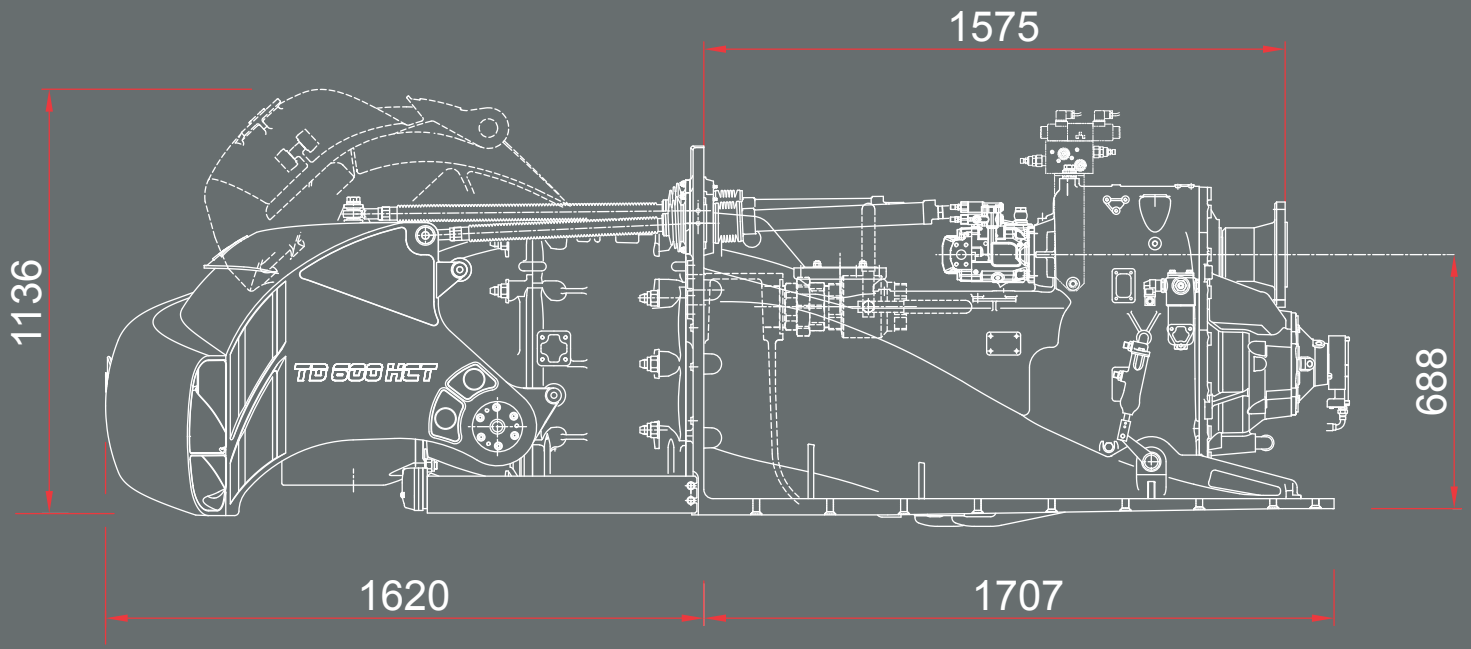
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TURBODRIVE 600 H.C.T.

Impeller: Duplex stainless steel, investment cast

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

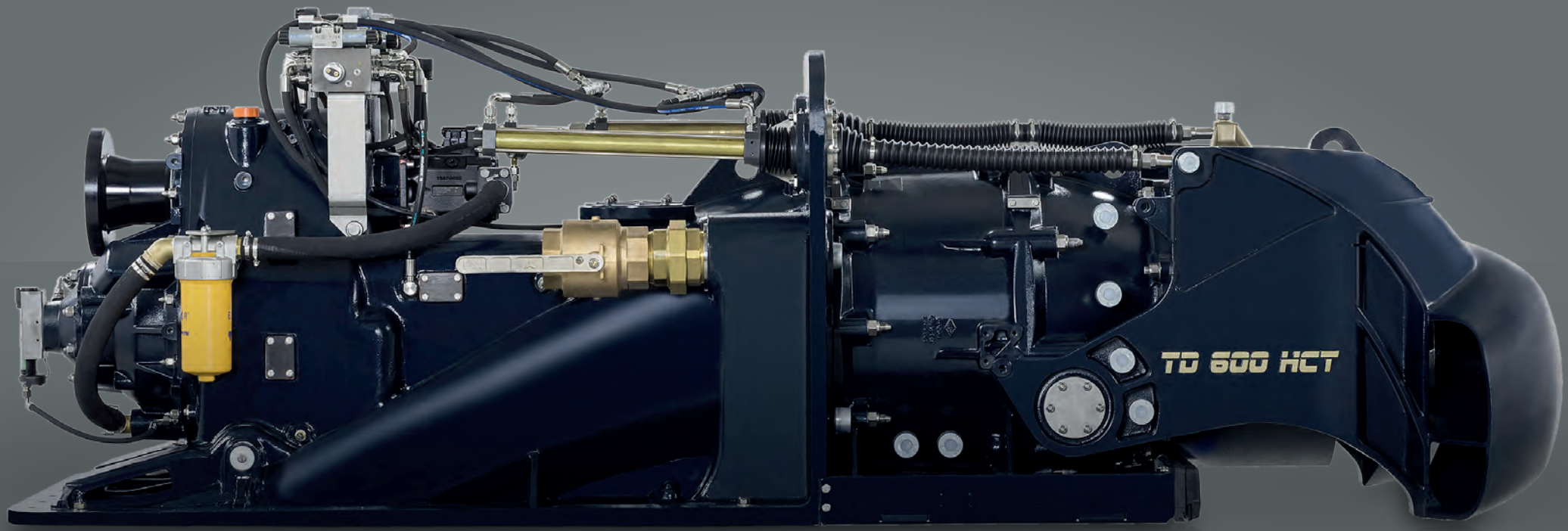
Steering nozzle and reversing bucket: G Al Si 7 aluminum alloy

Steering/Reversing rams: AISI 316 stainless steel

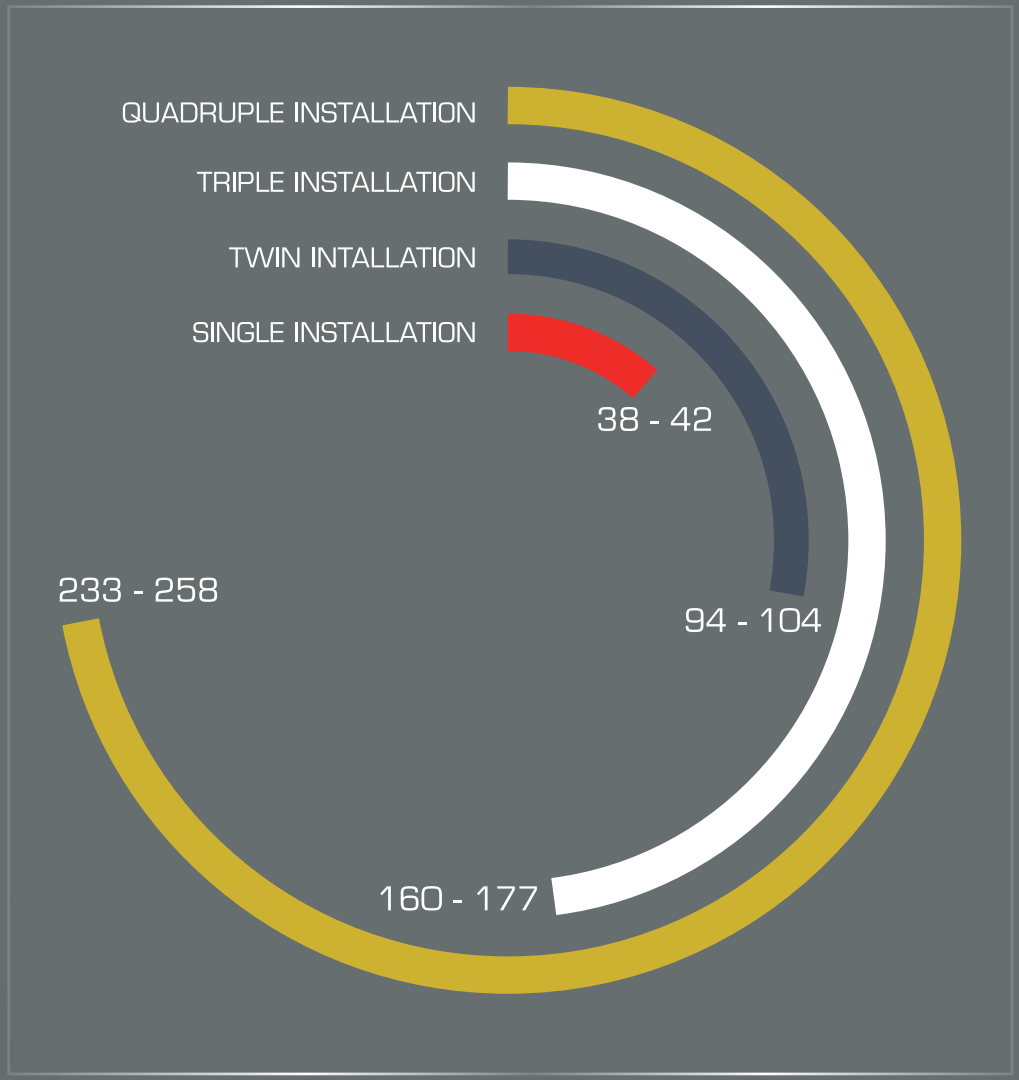
Waterjet body: G Al Si 9 aluminum alloy

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

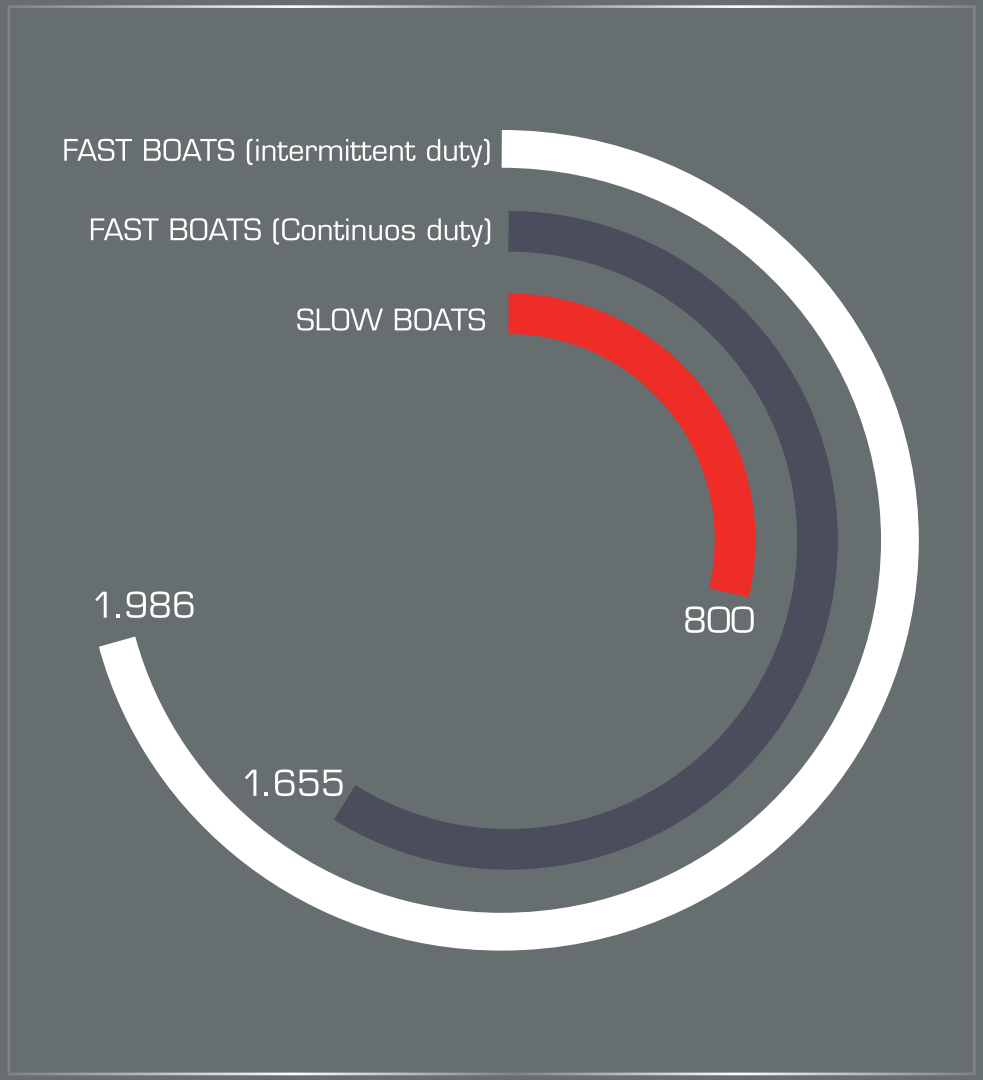
The whole unit is protected by a hard anodizing treatment, plating all light-alloy components with 60 microns thickness of aluminum oxide (ceramic), three layers of special paint and cathodic protection by zinc anodes



MAXIMUM SUGGESTED DISPLACEMENT (t)



MAX POWER INPUT (kW)



Technical specifications

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 plant:	Pump, solenoid valves and piping assembly (all inboard-mounted directly on waterjet unit)
Unit dry weight (including gearbox, hydraulic clutch, water intake, grid, duct, anodes etc.):	1.700 kg
Hydraulic weight (oil pump, actuators, solenoid valves, brackets):	120 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 hydrodynamically optimized bars featuring dual-action movement
Bearings:	All oil lubricated
Clear-Duct:	Advanced unclogging system through simultaneous back-flushing and intake grid opening operations, 31 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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