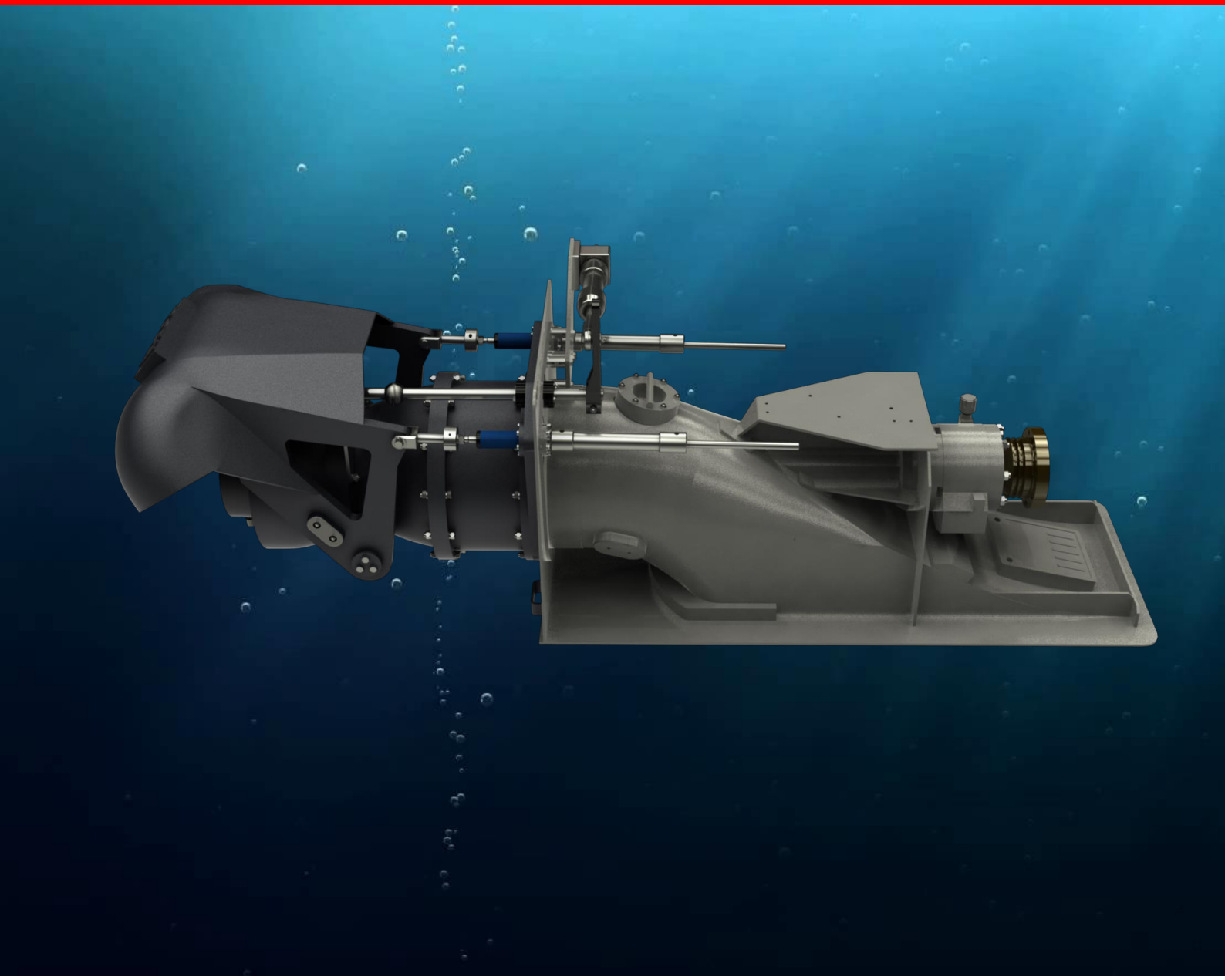
DOEN
WATER JETS

DOEN DJ170HP



Performance Reliability Simplicity

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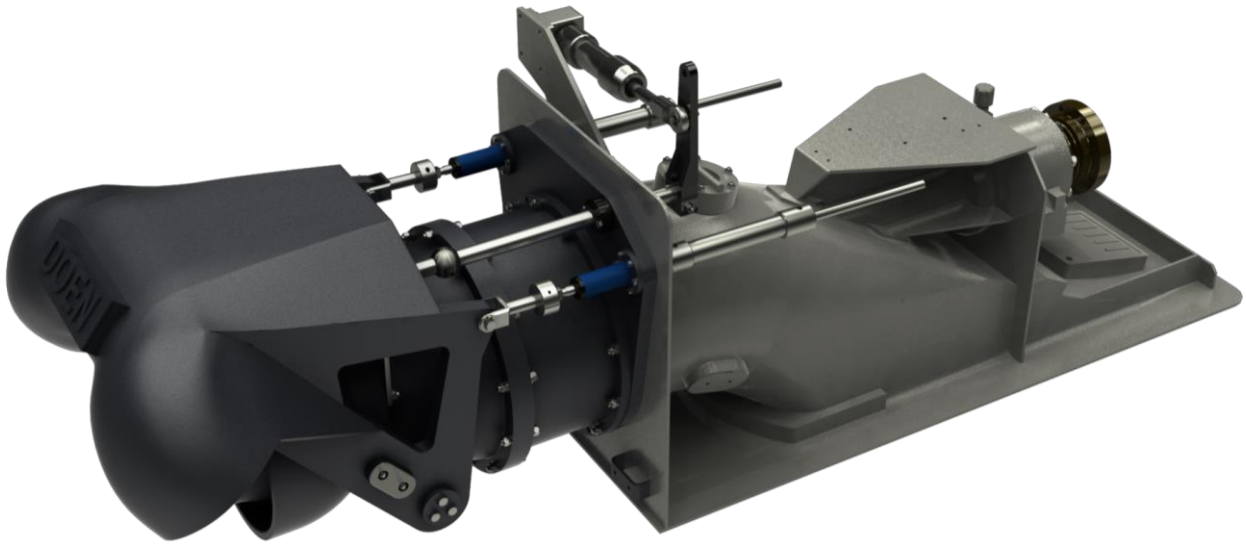
DOEN DJ170HP

The Mighty DJ170HP

DJ170HP is Doen's largest 100Series waterjet and comes with pre-fabricated intake duct. This 17-inch (432mm) waterjet perfectly meets DOEN's key design criteria of high performance, reliability and simplicity of construction and maintenance. This waterjet uses Doen's latest impeller technology to delivers mixed flow type, high speed performance, within an axial build. This approach combines the key benefits of excellent high-speed efficiency with superior cavitation margins and efficiency at lower speeds and cruise conditions.

Modular construction using Stainless Steel and heavy-duty powdercoated Aluminium components has made it lightweight, compact and simple to maintain while being a heavy duty commercially rated waterjet. An anode anti-corrosion system protects the waterjet. The fabricated Aluminium duct gives some flexibility, allowed a weight saving of 30% over a cast duct, and allows welding direct into Aluminium hulls. The duct can be also offered in steel to suit steel hulls.

The balanced steering nozzle design minimises operating force and provides precise control via the inboard tiller and conventional steering cylinder. Stand alone or fully integrated hydraulic power steering systems are available. The heavy-duty propulsion shaft and bearings, and reverse mechanism with two inboard mounted cylinders assist in providing long life and trouble-free operation. The design and construction allow the DJ170HP to be easily configured to meet BV, DNV, Lloyds, Rina or other marine standards on customer specification.



DOEN DJ170HP

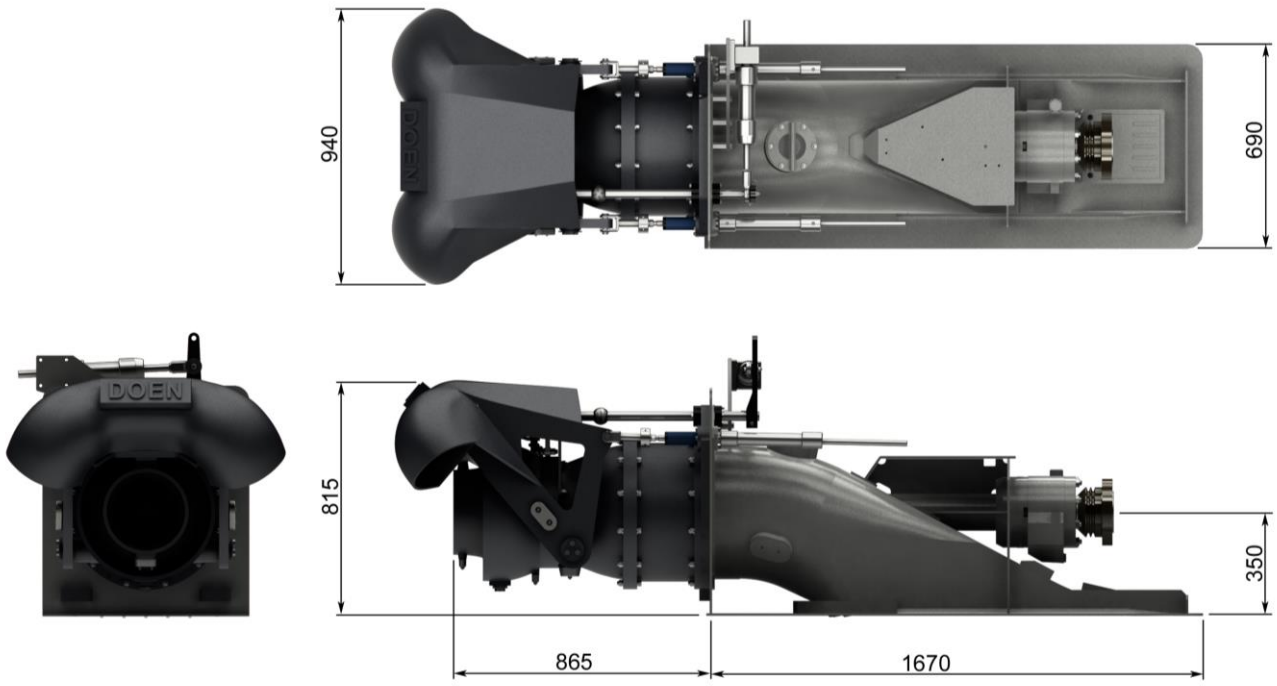
Reverse is by default controlled by Doen's standard hydraulic Rotary Servo Control (RSC) that provides proportional, position sensing, and control of the reversing bucket by way of a 3" (75mm) stroke Morse 33C cable. DJ170HP can also be configured with Doen's fully integrated electronic control system, ECS200 that is certifiable to class.

eDOCK single joystick docking control panel is an option for customers that opt for electronic controls. This device is intended for close docking manoeuvres and can function as a standalone control station. The joystick lever is used to co-ordinate the combined control of all waterjets speed setting, steering and reversing so as to provide the user with a simple vectored control.

The DJ170HP also comes in Direct Trust (DJ170HP-DT) and Integrated Waterjet (DJ170HP-IWJ) variants. With Doen's Direct Thrust waterjet products the impeller main shaft is arranged to thrust directly to the gearbox just like a conventional propeller arrangement.

While a bolted flange can be offered for fibreglass boats, the Integrated Waterjet method provides the simplest and most cost-effective method for installing waterjets into fiberglass vessels; a re-usable form is used in the hull mould to laminate over and shape the intake duct surface. The DJ170HP-IWJ is then installed directly into the hull as moulded. For the right applications, both product variants offer significant cost savings, simpler maintenance and more compact installation.

Doen WaterJets is a market leader in design and manufacturing of axial flow waterjets with over 45 years experience in design and application engineering, together with significant investment in R&D and a policy of continuous product improvement placing Doen waterjets at the forefront of the industry.



* Dimensions are in mm. All data are subject to change without prior notice.

Key Product Features:

HIGH THRUST PUMP

Optimally sized to best suit engine/s power range and target vessel size and weight envelope. The 17-inch axial flow pump efficiently converts horsepower into a high volume jet flow delivering high thrust, more range and more payloads with reduced fuel consumption.

IMPELLER TECHNOLOGY

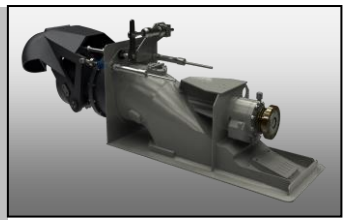
The DJ170HP can be configured for high bollard pull (maximum low speed thrust) or variable speed and load operation. Impeller and nozzle combinations are custom matched to each application to ensure optimum performance is achieved.

VERIETY OF CONTROL SYSTEMS

Customers have a range of controls to choose from for DJ170HP; from simple hydro-mechanical follow-up RSC to fully integrate electronic control system, ECS200 which satisfies the standards of all international classification societies.

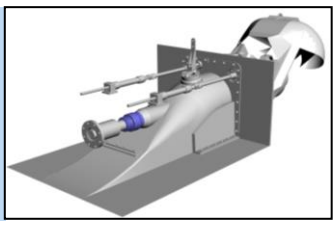
HEAVY-DUTY COMPONENT

The heavy-duty propulsion shaft and bearings, and a robust reverse mechanism with two inboard cylinders assist in providing long life and trouble-free operation under harsh and demanding conditions, such as frequent crash stop maneuver at full speed at full throttle.



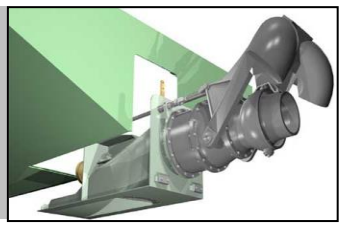
PRODUCT VARIANTS

The DJ170HP also comes in Direct Thrust (DT) and Integrated Waterjet (IWJ) variants. DJ170HP-DT offers a cheaper, simpler and compact solution for the right applications and DJ170HP-IWJ provides the simplest and most cost-effective method for installing waterjet into fiberglass hulls.



PRE-FABRICATED INTAKE DUCKT

The prefabricated duct is manufactured in Aluminium or Steel to specifically suit the hull material and is supplied as a complete fully machined part ready to install. Custom designs are possible to optimize vessel performance and to improve hull installation and machinery interfacing.



Performance Reliability Simplicity

UNIT DETAILS

Maximum Rec. Power Continuous:	up to 750skW (1000shp)
Maximum Rec. Power Sprint:	up to 930skW (1250shp) (A)
Maximum Rec. Impeller speed:	1975rpm
Dry Weight:	510 kg (complete waterjet including jet mounted hydraulic items)
Entrained Water:	140 kg
Loss of buoyancy:	0.140 m^3 (duct volume within hull bound)
Corrosion Protection:	Cathodic with Anodes
Design Standard:	To international authority standards

(A) Requires application approval by Doen WaterJets

CONSTRUCTION DETAILS

Impeller

Diameter:	17 inch (432mm)
No of Stages/Configuration:	Single Stage – Axial pump construction
Standard Rotation:	Anti-clockwise (Looking forward from stern)
Impeller Material:	Cast CF8M Stainless Steel

Pump Assembly

Impeller Casing Material:	Cast ASTM A356 Alum. Alloy with stainless steel liner
Discharge Nozzle Material:	Cast ASTM A356 Alum. Alloy

Steering System

Description:	Balanced nozzle
Operation:	Inboard tiller actuation
Steering Bowl/Nozzle Material:	Cast ASTM A356 Aluminium Alloy

Reverse System

Description:	Split Duct Type – “High Thrust”
Operation:	Hydraulic with Inboard Cylinder Actuation
Reverse duct material:	Cast ASTM A356 & 5083 grade plate Aluminium

Shaft Assembly

Main Shaft Material:	Stainless Steel Grade SAF 2205
Rear Bearing:	Water Lubricated Cutlass Bearing
Main Bearings:	Spherical roller Thrust Bearing Spherical roller Radial Bearing
Lubrication:	Oil lubrication
Shaft Seal:	Face type Mechanical Seal
Coupling Flange:	GWB (DIN) Series to suit application
Shaft Angle:	0 degrees standard – Custom shaft angles available

Intake Body

Material:	5083 grade Aluminium
Inspection Opening:	Inboard
Intake Grate:	Removable Stainless Steel Bars

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Deon WaterJets policy is one of R&D and continual product improvement, therefore information and specifications can change without notice. For the latest information please go to our website, www.doen.com

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