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Global Waterjet Propulsion Unit Market Growth 2026-2032

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Abstracts

The global Waterjet Propulsion Unit market size is predicted to grow from US$ 231 million in 2025 to US$ 361 million in 2032; it is expected to grow at a CAGR of 6.6% from 2026 to 2032.

Waterjet propulsion units, as the core propulsion method for modern high-speed vessels, shallow-water vessels, and highly maneuverable official/work vessels, offer the value of solving problems associated with traditional propeller propulsion in shallow draft, high-speed navigation, frequent docking and undocking, and close-to-person operations. These problems include easy damage to the propeller, strict draft restrictions, high wake noise and vibration, poor low-speed maneuverability, and insufficient safety for personnel and floating objects. In traditional open-blade propulsion arrangements, the propeller and rudder system protrude from the hull, making them prone to scraping/entanglement in shallow water, near reefs, floating objects, or near-shore operations. Furthermore, the impact on the shaft system and gearbox is significant when reversing rapidly with high thrust. In contrast, waterjet propulsion draws in the flow from the hull bottom through a closed pump body, pressurizes it, and then ejects it through a nozzle. The jet propulsion provides thrust through the reaction force of the jet. Combined with deflectable rudders and thrust reversers, it achieves precise control over the direction and magnitude of the thrust. With almost no protruding rotating parts on the hull, it significantly improves shallow-water safety and high-speed maneuverability. For high-speed passenger ships, patrol boats, rescue boats, and offshore wind power maintenance vessels, waterjet propulsion units can provide controllable thrust near zero speed, achieving 'point-to-point' positioning, 'lateral translation,' and extremely short braking distances. They also maintain high propulsion efficiency at high speeds (30–45 knots or even higher). Therefore, they are gradually replacing traditional propeller propulsion in ship types requiring high speed, shallow

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water, high maneuverability, and personnel proximity to the water surface, becoming a key alternative in propulsion system solutions. In 2025, approximately 4,300 new waterjet propulsion units were installed globally in new shipbuilding and major retrofit projects, with an average unit price of USD 54,950 and a gross profit margin of approximately 24%–32%. Typical structures include an intake section and inlet grille, centrifugal or mixed-flow pump impeller and pump casing, nozzles and deflectable guide vanes, a thrust reverser system (bucket or split-type thrust reverser), drive shaft and coupling, shaft seals and bearings, hydraulic actuators, and an electrical control unit that works in conjunction with the propulsion control system. General parameters include compatible main engine power from 500 kW to 5 MW (single unit), design speed of 25–50 knots, pump impeller diameter of 300–1,200 mm, jet flow rate of 3–25 m?/s, and materials primarily stainless steel or high-strength aluminum alloy. Suitable drafts are typically less than 1.5 m. Typical usage: a 20–35 m high-speed rescue/patrol boat is typically equipped with two medium-power waterjet propulsion units; a 40–60 m high-speed passenger ship or offshore wind power maintenance vessel typically uses two to three high-power units; some special-purpose vessels and military high-speed boats may use four units with multiple nozzles. The upstream components consist of alloy steel shafting for marine diesel engines or electric motors, stainless steel/aluminum alloy castings and welded structural parts, seawater-resistant bearings and seals, hydraulic actuators and electrical control components. The cost of core raw materials and components accounts for approximately 52%–63% of the total cost of the propulsion unit.

Supply Situation

Upstream components include stainless steel or high-strength aluminum alloy castings and forgings for pump impellers and housings, alloy steel for bolts and fasteners, marine bearings and shaft seals (rubber/composite materials), hydraulic cylinders and hydraulic power units, control valves and solenoid valves, electrical control unit PCBs, and industrial connectors. Raw material and machining costs account for approximately 52%–63% of the total cost of a waterjet propulsion unit. Price fluctuations in stainless steel/aluminum alloy castings and forgings, and bearings/seals have the greatest impact on costs. Key suppliers include Outokumpu, Hydro/Alcoa, SKF, Trelleborg, and Parker Hannifin.

Manufacturer Characteristics

HamiltonJet boasts a wide global reach and leading installed base in the high-speed passenger ship, patrol boat, and rescue boat markets; Marine Jet Power is highly

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competitive in the offshore wind power maintenance vessel and high-end workboat segments; Kongsberg and SCHOTTEL have secured a place in offshore engineering vessel and large high-speed workboat projects with their integrated solutions of 'propulsion equipment + propulsion control + power system'; Castoldi, Alamarin-Jet, and Doen WaterJets have cultivated the small and medium-sized high-speed boat and yacht markets for many years, exhibiting significant regional advantages.

Examples

W?rtsil?, with its comprehensive range of waterjet propulsion systems, has extensive application cases in the roll-on/roll-off fast ferry sector. The four MEKO A-200 SAN light frigates delivered to the South African Navy by the German shipyards Blohm & Voss and HDV employed a CODAG WARP (diesel-gas turbine combined waterjet propulsion and precision propeller) system. This system consisted of two diesel engines equipped with adjustable-pitch propellers and a 20 MW centerline gas turbine driving a Lips 210E waterjet propulsion unit. These waterjet propulsion units, equipped with a 2.8-meter diameter six-bladed impeller and a 2.1-meter air intake, were the largest waterjet propulsion units ever built and the first of their kind used on a naval vessel of this size (121 meters long/3500 tons displacement).

Applications

Waterjet propulsion units are primarily used in the construction and propulsion system retrofitting of high-speed passenger ships and ro-ro ships, high-speed ferries, law enforcement patrol boats, coast guard and customs vessels, search and rescue and fireboats, offshore wind power maintenance vessels, near-shore operation and service vessels, high-end yachts, and military high-speed boats. They are key equipment replacing traditional propeller propulsion under high-speed, shallow-water, and high-maneuverability requirements. Typical downstream customers include shipbuilding companies specializing in high-speed and special-purpose vessels such as Incat, Damen, Austal, Umoe Mandal, and Navantia, as well as coast guard/maritime and wind power bidding project operators and high-speed passenger transport companies in various countries.

Technological Trends

Technological upgrades are concentrated in four areas: First, efficient hydraulic design and cavitation-resistant optimization, using CFD to optimize the geometry of the inlet, impeller, and nozzle to improve propulsion efficiency by 2-5 percentage points at high

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speeds and reduce cavitation noise and pump vibration; second, deep integration with electric propulsion and hybrid power systems, integrating waterjet propulsion units with motors/inverters to support all-electric propulsion, diesel-electric hybrid, and battery pack switching, while remaining compatible with energy management systems; third, integrated propulsion and attitude control, enabling automatic berthing, precise low-speed maneuvering, and wave compensation in multi-nozzle, multi-thrust configurations through linkage with DP/automatic berthing systems and motion control systems; and fourth, material and corrosion protection upgrades, evolving towards super duplex stainless steel, seawater-resistant aluminum alloys, composite coatings, and replaceable wear-resistant bushings to improve durability in high-gravel, high-silt waters and reduce life-cycle maintenance costs. The overall trend points to higher propulsion efficiency, lower noise, higher maneuverability, and closer integration with ship automation/electric systems.

Market Influencing Factors

The growth of the waterjet propulsion unit market is driven by multiple factors: On the one hand, the increase in global coastal and inland waterway high-speed passenger transport, law enforcement and rescue missions, as well as the increase in offshore wind power operation and maintenance and near-shore engineering operations, has led to a continuous increase in the number of high-speed, shallow-water, and highly maneuverable vessels, directly driving the new installation volume of waterjet propulsion units; on the other hand, the expansion of the coastal tourism, marine leisure, and high-end yacht markets, and the demand for high speed and comfort, are driving shipowners to prefer waterjet propulsion in new projects to achieve lower vibration and higher maneuverability. Meanwhile, many national/regional government departments, coast guards, and maritime agencies are replacing older propeller-driven high-speed boats with waterjet-propelled boats through fleet renewal programs, thus forming relatively stable public sector orders; on the cost side, fluctuations in the prices of stainless steel and aluminum alloy materials, and rising processing capacity and labor costs are putting pressure on the manufacturing costs of waterjet propulsion systems, forcing suppliers to control costs through modular design and regionalized manufacturing. Overall, the waterjet propulsion market exhibits a pattern of 'driven by high-speed and special-purpose vessels + supported by public sector and wind power bidding projects + coexistence of international brands and regional manufacturers + additional premium brought by electric propulsion and intelligent control.' It is expected to maintain medium-to-high-speed growth in the high-speed and special-purpose vessel sectors in the next few years, while remaining a relatively niche but technologically advanced and high-value-added propulsion solution in the traditional commercial vessel sector.

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LP Information, Inc. (LPI) ' newest research report, the “Waterjet Propulsion Unit Industry Forecast” looks at past sales and reviews total world Waterjet Propulsion Unit sales in 2025, providing a comprehensive analysis by region and market sector of projected Waterjet Propulsion Unit sales for 2026 through 2032. With Waterjet Propulsion Unit sales broken down by region, market sector and sub-sector, this report provides a detailed analysis in US$ millions of the world Waterjet Propulsion Unit industry.

This Insight Report provides a comprehensive analysis of the global Waterjet Propulsion Unit landscape and highlights key trends related to product segmentation, company formation, revenue, and market share, latest development, and M&A activity. This report also analyzes the strategies of leading global companies with a focus on Waterjet Propulsion Unit portfolios and capabilities, market entry strategies, market positions, and geographic footprints, to better understand these firms’ unique position in an accelerating global Waterjet Propulsion Unit market.

This Insight Report evaluates the key market trends, drivers, and affecting factors shaping the global outlook for Waterjet Propulsion Unit and breaks down the forecast by Engine Power, by Application, geography, and market size to highlight emerging pockets of opportunity. With a transparent methodology based on hundreds of bottom-up qualitative and quantitative market inputs, this study forecast offers a highly nuanced view of the current state and future trajectory in the global Waterjet Propulsion Unit.

This report presents a comprehensive overview, market shares, and growth opportunities of Waterjet Propulsion Unit market by product type, application, key manufacturers and key regions and countries.

Segmentation by Engine Power:

3000 kW

3500 kW

Others

Segmentation by Material:

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Aluminium Waterjets

Steel Waterjets

Segmentation by Maximum Speed:

30 knots

40 knots

Others

Segmentation by Application:

Merchant Ships

Ferry

Fishing Boats

Others

This report also splits the market by region:

Americas

United States

Canada

Mexico

Brazil

APAC

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China

Japan

Korea

Southeast Asia

India

Australia

Europe

Germany

France

UK

Italy

Russia

Middle East & Africa

Egypt

South Africa

Israel

Turkey

GCC Countries

The below companies that are profiled have been selected based on inputs gathered from primary experts and analysing the company's coverage, product portfolio, its

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market penetration.

W?rtsil?

Kongsberg

HamiltonJet

Marine Jet Power

Larsen & Toubro

Castoldi

Alamarin-Jet

Doen WaterJets

SCHOTTEL

Thrustmaster

Flo Pro Marine

NAMJet

Bosung Industry

Key Questions Addressed in this Report

What is the 10-year outlook for the global Waterjet Propulsion Unit market?

What factors are driving Waterjet Propulsion Unit market growth, globally and by region?

Which technologies are poised for the fastest growth by market and region?

How do Waterjet Propulsion Unit market opportunities vary by end market size?

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How does Waterjet Propulsion Unit break out by Engine Power, by Application?

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