

Design Innovations Behind YONGDELI's Custom Offshore Dredging Vessels



Qingzhou, Shandong Mar 14, 2026 (Issuewire.com) - As global maritime trade expands and coastal infrastructure projects become increasingly complex, the demand for specialized, high-performance dredging equipment has reached an all-time high. Qingzhou Yongli Mining And Dredging Machinery Co., Ltd. (YONGDELI), a premier leader in the maritime engineering sector, is proud to unveil the sophisticated design innovations that drive its latest fleet. Central to this evolution is the [custom offshore dredging vessel designed by China's](#) leading engineers at YONGDELI, a machine that represents a perfect harmony between rugged durability and cutting-edge technological precision.

By integrating decades of manufacturing excellence with modern scientific research, YONGDELI is redefining how offshore sand extraction and land reclamation are performed in challenging marine environments.

A Legacy of Engineering Excellence

Based in the historic city of Qingzhou, YONGDELI has evolved from a regional manufacturer into an international powerhouse in the dredging and mining industry. As a recognized "High and New Technology Enterprise," the company does not merely assemble ships; it provides end-to-end solutions including research, design, production, and commissioning.

With a Class III Grade Three shipbuilding license from the **CCS (China Classification Society)** and

memberships in both the **China Dredging Association** and **Shandong Shipbuilding Industry Association**, YONGDELI operates at the pinnacle of maritime standards. Their commitment to quality is further solidified by ISO9001:2015 certification and over 30 national patents, ensuring that every vessel leaving their shipyard is a masterpiece of intellectual property and mechanical reliability.

Innovation in Customization: Meeting Specific Marine Challenges

One size does not fit all in the world of offshore dredging. Different coastal geographies, soil densities, and wave conditions require distinct mechanical approaches. YONGDELI's design philosophy centers on "Modular Customization."

1. Advanced Cutter Suction and Jet Suction Technologies

For offshore operations, YONGDELI has optimized the **Cutter Suction Dredger (CSD)**. The innovation lies in the cutter head design, which uses wear-resistant alloys and specialized tooth geometries to break through hard seabed strata that would stall standard equipment. For softer deposits or mineral-rich sands, their **Jet Suction and Siphon Sand Dredgers** utilize high-pressure water jets to fluidize material, maximizing the concentration of solids during the intake process and significantly reducing energy consumption per cubic meter of material moved.

2. Stability in Deep-Water Environments

Offshore dredging presents the challenge of swell and tidal currents. YONGDELI's custom vessels feature enhanced hull stability designs. By utilizing advanced computational fluid dynamics (CFD), engineers have optimized the hull shapes of their transport barges and multifunctional work boats to ensure steady operation even in moderate sea states, extending the operational window for contractors.

Specialized Mining Integration: Gold and Diamonds

Beyond traditional sand and silt removal, YONGDELI is a pioneer in underwater mineral processing. Their offshore vessels are often outfitted with integrated production lines for gold and diamond mining.

Floating Production Platforms: These are not merely dredgers but mobile factories.

Mineral Processing Units: Vessels can be equipped with jigs, centrifugal concentrators, and sluice boxes designed specifically for the gravity separation of heavy minerals in a marine environment.

Dual-Purpose Systems: The ability to switch between land-use washing plants and water-based production lines allows clients to maximize their return on investment across various project sites.

The Technology Backbone: Patents and Certifications

The "Innovation" in YONGDELI's title is backed by over **30 patent certificates**. These inventions cover everything from automated control systems that monitor the slurry density in real-time to eco-friendly propulsion systems that reduce the carbon footprint of dredging operations.

The reliability of these innovations is verified by international third-party giants. The **Yongli Series** products have been rigorously tested and certified by **SGS and BV (Bureau Veritas)**. These certifications serve as a passport for YONGDELI vessels, allowing them to operate in the most strictly regulated waters globally, from the Middle East to Southeast Asia and beyond.

Comprehensive Service: From Blueprint to Personnel

What sets YONGDELI apart is the "Personnel Allocation Service." Innovation is not just about the machine; it is about the synergy between the machine and the operator. YONGDELI provides comprehensive training and technical staff allocation to ensure that the custom-built vessels are operated at peak efficiency from day one.

The company's "Installation and Commissioning" team travels globally, ensuring that whether it is an amphibious dredger in a swampy delta or a massive bucket wheel dredger in open water, the equipment is calibrated to the specific mineral types and environmental conditions of the client's site.

Sustainable and Intelligent Dredging

In line with global shifts toward "Green Shipping," YONGDELI is investing heavily in:

- **Electric and Hybrid Power Systems:** Reducing noise pollution and fuel emissions in sensitive coastal ecosystems.
- **Intelligent Monitoring:** Utilizing IoT sensors to predict maintenance needs before a breakdown occurs, thereby minimizing downtime.
- **High-Efficiency Sand Sieving:** Innovations in sieving and washing equipment ensure that only the desired material is kept, while waste is returned to the seabed in a manner that minimizes turbidity and ecological impact.

"Our goal is not just to move earth, but to move the industry forward," says a lead engineer at YONGDELI. "Every patent we file and every CCS-certified hull we build is a step toward a more efficient, sustainable maritime future."

Looking Ahead: A Global Invitation

Qingzhou Yongli Mining And Dredging Machinery Co., Ltd. continues to adhere to the core principles of integrity, mutual benefit, and common development. By blending the heritage of one of China's "Ancient Nine States" with the high-tech requirements of the 21st century, the company remains the partner of choice for governments and private enterprises worldwide.

Whether it is a backhoe dredger for harbor maintenance or a complex **custom offshore dredging vessel designed by China** for deep-sea mining, YONGDELI stands ready to deliver.

Domestic and foreign customers are cordially invited to visit the state-of-the-art facilities in Shandong Province for factory inspections and to discuss how YONGDELI's design innovations can solve their most pressing maritime challenges.

Contact Information

For more information on product specifications, custom designs, or to request a quote, please visit the official company website:

Website: www.yonglidredger.com



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