SYM NAVAL

Tugboats

Port Tugboats / High-Capacity Tugboats

Power, versatility, and sustainability for every port

At SYM Naval, we design port tugboats that combine innovation, performance, and sustainability to adapt to the specific needs of each operation. Our offering includes two key segments, optimized to maximize efficiency and ensure exceptional support in any port.

* All tugboats have different options for propulsion systems and engine configurations.

Propulsion Power System

100% Electric

Hybrid (Diesel-Electric)

Diesel

Steering System

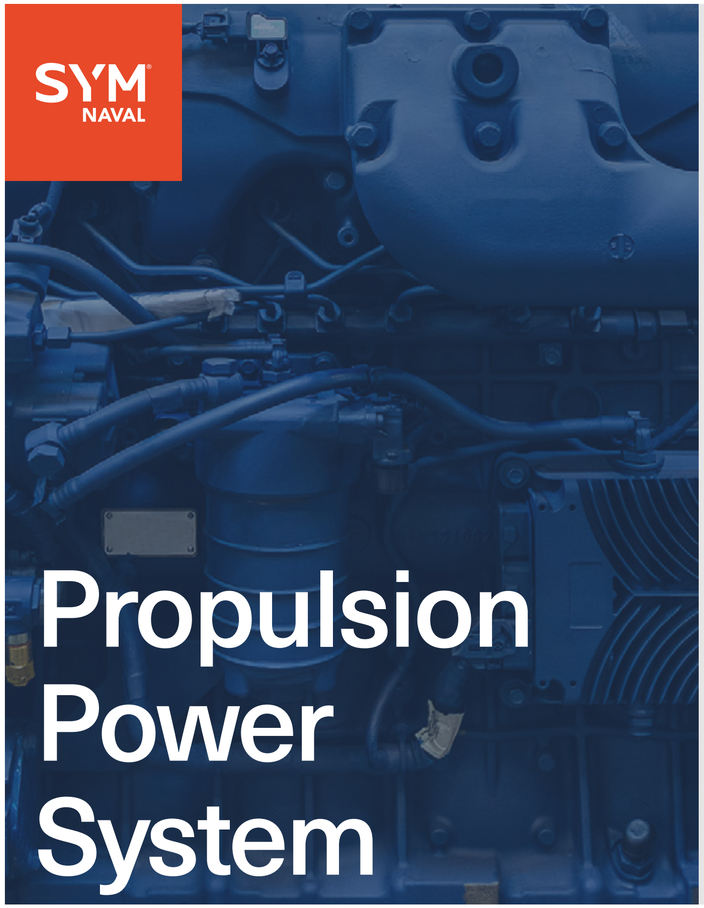
Conventional Shaft and Propeller Propulsion

Azimuthal Propulsion

Tugs

Port Tugboats (up to 35 tons): Compact, maneuverable, and sustainable.

High-Capacity Tugboats (up to 70 tons): Powerful, robust, and precise.



Propulsion Power System

We understand that each client has unique needs. That is why we offer a variety of engine options designed to adapt to the operational and environmental requirements of each port, regardless of its size. From reliable diesel systems to hybrid and fully electric solutions, our options meet the highest standards of efficiency and sustainability.

100% Electric Propulsion

- **Features**
  Utilizes electric motors, eliminating the need for fossil fuels and enabling near-silent operation.
- **Advantages**
  Zero emissions, no noise pollution, and low operational costs in terms of energy consumption.
- **Applications**
  Ideal for operations in urban ports or areas with strict emission and noise regulations.
- **Environmental Impact**
  The most sustainable option, significantly contributing to the reduction of the carbon footprint in port operations.

Hybrid Propulsion (Diesel-Electric)

- **Features**
  Combines diesel engines with electric systems, allowing operation in diesel mode, electric mode, or both, depending on operational needs.
- **Advantages**
  Provides great flexibility in fuel consumption and reduces emissions when operating in electric mode.
- **Applications**
  Ideal for ports seeking an intermediate option that balances power and sustainability.
- **Environmental Impact**
  Significant emission reduction compared to conventional diesel engines, especially in low-speed operations.

Diesel Propulsion

- **Features**
  Conventional diesel engines are a proven and reliable solution in the naval industry, offering high responsiveness and long service life.
- **Advantages**
  High fuel efficiency and power make them ideal for high-demand port operations.
- **Applications**
  Perfect for tugboats requiring constant operation where emission regulations are not strict.
- **Environmental Impact**
  Emits greenhouse gases, making it less sustainable compared to other options.

Propulsion Power System Type

PROPULSION TYPE	MAIN ADVANTAGE	BEST APPLICATION	ENVIRONMENTAL IMPACT
100% Electric	Zero emissions and low noise	Urban ports with strict environmental regulations	Minimal
Hybrid (Diesel-Electric)	Flexibility and emission reduction	Operations with variable demands	Reduced
Diesel	Power and efficiency	Constant, high-demand operations	High

Steering System

Two main types of propulsion systems are also available, each designed to provide optimal performance in different operational scenarios.

Conventional Shaft and Propeller Propulsion

- **Features**
This classic system uses a fixed shaft and propeller to generate thrust. It is one of the most reliable and well-established propulsion systems, suitable for standard port operations.

- **Advantages**
Its simple design allows for low maintenance costs and high durability. Additionally, its structure facilitates maneuverability in regular operating conditions.

- **Applications**
Ideal for small to medium-capacity tugboats performing general port maneuvers.

- **Maintenance**
Requires relatively simple maintenance, with easy access to spare parts and servicing.

Azimuthal Propulsion

- **Features**
Equipped with propellers that can rotate 360 degrees, azimuthal propulsion allows for superior maneuverability and precise control, even in confined areas.

- **Advantages**
Provides great versatility for complex maneuvers in busy ports, enabling the tugboat to move sideways or rotate on its own axis.

- **Applications**
Perfect for medium and large-capacity tugboats requiring precision in docking, undocking, or operations involving large vessels.

- **Maintenance**
Although more complex than the conventional system, its design optimizes energy use and reduces the need for directional changes, minimizing wear and tear.

Steering System Types

STEERING TYPE	MAIN ADVANTAGE	BEST APPLICATION	MAINTENANCE LEVEL
Conventional (Shaft and Propeller)	Reliability and low cost	General port maneuvers	Low
Azimuthal	Superior maneuverability	Complex and precise maneuvers	Moderate

Port Tugboats

Up to
35
tons

This segment of tugboats is designed for medium-intensity port operations, ideal for supporting the maneuverability of medium-sized vessels and auxiliary tasks within the port. These vessels, with towing capacities of up to 35 tons, offer:

Compactness and Optimal Maneuverability

Ideal for working in confined spaces and performing precise maneuvers.

Flexible Propulsion

Equipped with conventional shaft and propeller propulsion or azimuthal propulsion, depending on operational needs.

Sustainability

Models available with electric propulsion, reducing emissions and increasing energy efficiency.

Speed of up to 12 knots

Ensuring a rapid operational response in any port situation.

Port Tugboats

Models

The TSHT 3611 and TSHT 5422 port tugboats from SYM Naval are fully adapted to the operational needs of shipowners and the requirements of international port authorities. With lengths of 16 and 18 meters and a bollard pull of up to 11 and 22 tons, respectively, the TSHT series tugboats are capable of handling the most demanding port operations.

Both models are equipped with Doosan engines, delivering a total power output of 960 and 1,600 horsepower, with a maximum speed of 11 knots. Their compact design ensures high maneuverability and stability, making them ideal port vessels for assisting various maneuvers performed by other ships or floating structures within the port.

A compact and powerful design. High-maneuverability and stable port tugboats.

TSHT 3611

The TSHT 3611 port tugboat is the most compact model ever built by SYM Naval. It fully meets the requirements for assisting the maneuverability of medium-sized vessels and performing emergency or rescue tasks.

TSHT 5422

With greater power and increased fuel and freshwater tank capacities, the TSHT 5422 is a port support tugboat with enough space to accommodate a crew of up to 4 people.

	TSHT 3611	TSHT 5422
Diesel Oil Capacity	14 m^3	18 m^3
Engines	2 x Doosan V158TIH	2 x Doosan 4V222TIH
Auxiliary Generators	John Deere 2 x 380V 50Hz de 32 kW	
Freshwater Tanks	4,60 m^3	6m^3
Bollard Pull	11 tn	22 tn
Fire Pump	Feit AT 6-1 - Eléctrica - Auto-imprimación	

Port Tugboats

Details & Equipment

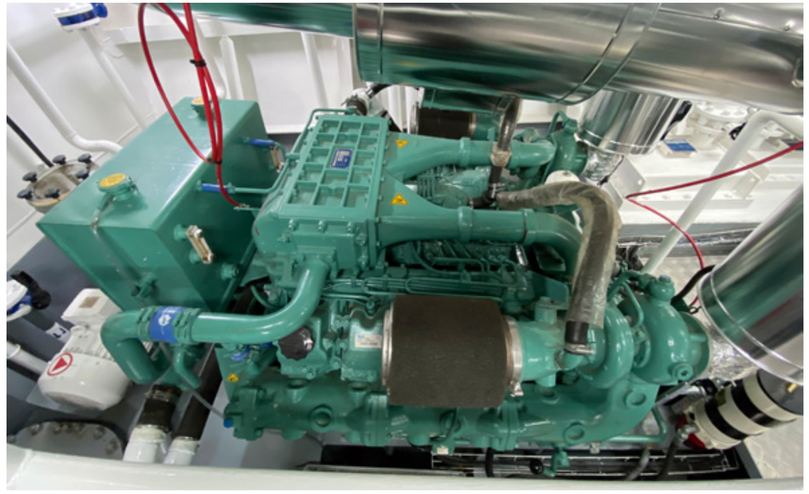
A customized construction designed to meet the shipowner's needs and the operational requirements of its crew.

Cabin

Control console adapted to the operational needs of the crew.

Engine Room

Spacious working area for the crew.



Engine

Equipped to operate under the demanding conditions of port support tasks.

Accommodation

Cabin for 4 people with a kitchen and dining area.

High-Capacity Tugboats

Up to 70 tons

Designed for the most demanding tasks, this segment of tugboats is essential for assisting the maneuvering of large vessels and performing heavy towing operations. With bollard pull capacities ranging from 35 to 70 tons, these tugboats offer:

Superior Bollard Pull

Specifically designed for high-demand operations and large-scale port maneuvers.

Advanced Propulsion

In addition to traditional options, these tugboats are equipped with azimuthal propulsion for enhanced maneuverability and precision in complex operations.

Hybrid and Electric Options

In line with global sustainability trends, these models can be configured with electric or hybrid propulsion, reducing both operational costs and environmental impact.

Robust Construction

With a registered length under 24 meters, their compact and sturdy design ensures maximum stability and safety in challenging operational conditions.

Both segments can be customized according to the specific requirements of the client, ensuring that each tugboat is perfectly adapted to the port's operational needs and complies with local and international regulations.

Naval Engineering with Quality and Sustainability Assurance

ISO 14001 Certification – A testament to our clear commitment to environmental sustainability.

ISO 45001 Certification – Occupational Health and Safety Management System, ensuring safe and healthy workplaces, preventing accidents and occupational health issues.

ISO 9001 Certification – Ensuring that our processes meet the highest standards in shipbuilding, conversion, and repair.

Commitment to Sustainability - SYM Naval actively engages in maintenance, reforestation, cleaning, and environmental protection initiatives, defining specific action plans in collaboration with relevant authorities.

1

Naval Engineering Office

A highly specialized technical office capable of managing major naval engineering challenges with the highest quality standards, from project inception to completion.

2

Quality Control

Ship construction in steel and aluminum.Custom-designed and built vessels. IACS-classified ships.

3

Worldwide Technical Assistance

Support at sea, in port, and in dry dock. Dry dock maintenance and repair services.Global coverage through riding squads.

4

Custom Projects

Technical and commercial needs analysis for custom ship construction. Over 200 satisfied clients worldwide.

5

Over 25 Years of Experience

Providing specialized technical services in the cruise sector.A proven track record of reliability and commitment in every project.

6

Commitment to the Environment

ISO 14001 Certification, ensuring a strong commitment to environmental sustainability.Maintaining the highest environmental standards in all operations and facilities.

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