



PORTABLE RIVER FERRY

Turn Key, Rapidly Deployed, Double Ended River Ferry



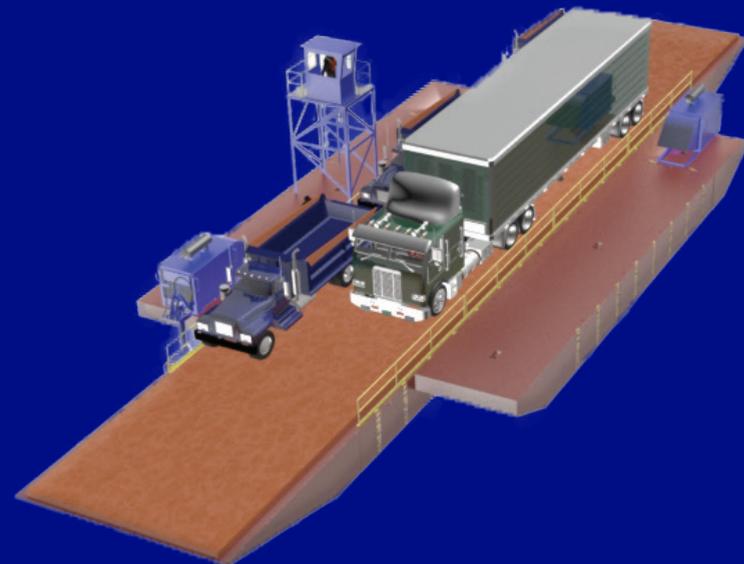
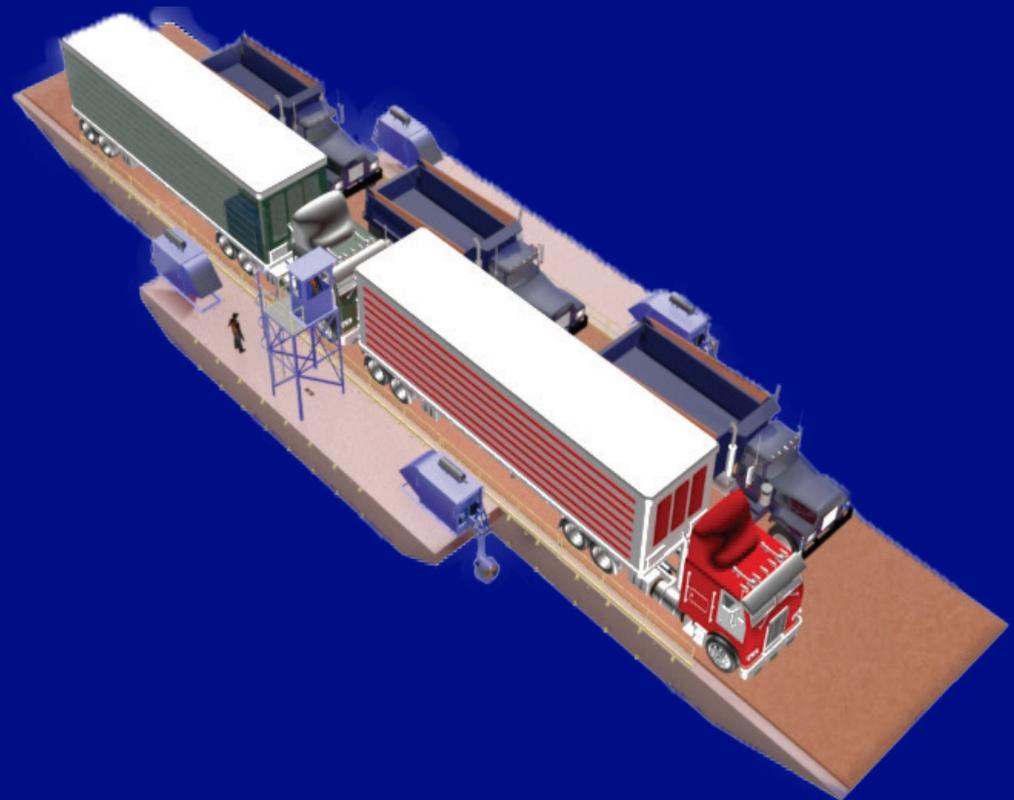
LET US INTRODUCE OURSELVES

For over 35 years, Thrustmaster of Texas has been designing, manufacturing and supporting marine propulsion systems for a global network of customers. All products are manufactured in Houston, Texas – the largest thruster factory in the world.

Special expertise has been developed in designing and manufacturing equipment for maneuvering, navigating and positioning of slow-speed marine crafts and barges in shallow water.

Transporting large volumes of raw goods and materials by truck across undeveloped rivers in remote parts of the world can be challenging since building bridges is time consuming and may be cost prohibitive. A simple solution that is both cost effective and rapidly deployable is required.

Thrustmaster's Portable River Ferry is the solution. It is a complete, modular system transported over the road piece-by-piece, and easily assembled on location within days. It is capable of ferrying fully-loaded trucks across any river or lake. No need for dry docks or shipyard support. It can be assembled with help of a mobile crane, the heaviest pieces weighing not more than 12 metric tonnes. The ferry uses very heavy duty barge sections and is designed to the highest safety standards maintaining stability even after multiple hull compartments are flooded due to grounding incidents. The result is a safe, long lasting, and reliable double ended ferry; easily deployable anywhere in the world.





HOUSTON, TX FACTORY

PORTABLE RIVER FERRY OVERVIEW

Thrustmaster's Portable River Ferry is a turn-key modular package comprised of interlocking barge sections with ramps on both ends, self-contained hydraulic outboard propulsion units, a raised pilot house, and all necessary accessories. Thrustmaster's Portable River Ferry can be rapidly deployed in remote locations to form a double-ended ferry for crossing rivers with fully loaded trucks, trailers, lorries, combines and other heavy machinery.

The ferry uses Floatmaster interlocking flotation modules. Floatmaster modules are precision built, steel pontoons specifically designed for shallow-draft, inland-marine environments. They are heavily reinforced to withstand repeated use under extreme load conditions. The internal design is optimized to provide high structural rigidity and exceptional deck-bearing capacity. Thrustmaster's portable river ferry includes wooden decking in the package, effectively increasing deck bearing capacity to allow for axle loads of more than 20,000 lbs (9,000 kg). The interlocking flotation modules through their basis of design, increase the safety and durability of the complete ferry package. The modular compartmentalization creates redundancy in buoyancy allowing the vessel to maintain stability even after multiple float modules are compromised.

The Floatmaster sectional barges are connected by a high-strength locking system. Utilizing opposing "male" and "female" locks, the connection is simple, quick and resolute. The locking system is completely integral to all modules and has no separate loose pins, bolts, or other parts which may be lost or damaged. It is the strongest locking system in the industry with each lock comfortably handling 45 tons of tension or shear loads. The locking system is extremely precise; once engaged, the connection is near-rigid with no discernible play or flex between modules.





FAST CONNECTIONS,
NO LOOSE PARTS

EASY TO TRANSPORT

EASY ASSEMBLY IN
ONE DAY

REINFORCED
DURABLE CORNERS

FULLY
INTERCHANGEABLE

READILY INTERLOCKS
WITH FLEXIFLOAT
AND COMBIFLOAT
SECTIONAL BARGES



PROPULSION

The self-propelled portable river ferry comes equipped with outboard azimuth propulsion units that are easily bolted to the deck. The 37m ferry is equipped with two 125 kW self-contained, hydraulic outboard propulsion units and the 50 m ferry is equipped with four of the aforementioned propulsion units. Freely azimuthing through 360° of steering range, the outboard drives are extremely responsive and ideal for tight quarter maneuvering through narrow and shallow river ways. They will comfortably maneuver the fully loaded ferry through rivers with currents of up to six knots.

The transmission of each thruster is a hydrostatic drive - a smoother, more reliable alternative to mechanical transmissions. In a hydrostatic system, gears, drive shafts, bearings, clutches and other complicated parts are replaced with simple hydraulic hoses and fluid. The hydraulic drive acts as a torque converter providing unlimited propeller speed control while protecting the engine from overloading. The engine runs at constant speed, just like a generator. Full engine torque is available at any propeller speed.

The propeller shaft is directly driven by a hydraulic motor in the pod (the lower foot) of the unit. Rotating inertia is limited to the rotor of the hydraulic motor, the propeller shaft and the propeller itself. By virtue of this very low rotating inertia, the hydraulic drive easily absorbs shock loads whenever the propeller hits bottom or is blocked by a floating log or other obstruction. The shock loads are limited and dampened by pressure compensation and hydraulic reliefs.





Features	Benefits
Mounted on deck with no hull penetrations allowing easy and quick installation while the vessel is in the water.	Eliminates the need for expensive through-hull construction in shipyard and removes the need for engine alignment, stern tubes, rudders and steering gear.
360° steering of propeller provides omni-directional thrust for unequaled maneuverability at any vessel speed.	Spectacular control of the vessel at slow speed and zero speed, unlike the limited slow speed maneuverability of traditional fixed propeller / rudder designs.
The hydraulic drive train instantly relieves any transmission overloads	Foreign objects ingested by the propeller are unlikely to damage the transmission making the thruster extremely resilient and durable.
The hydraulic tilt feature allows elevating the propeller above the waterline.	Allows inspections, removal of ropes, and repairs to be made while the vessel is in the water. If desired, the entire unit may easily be removed from the vessel and repaired separately.
Completely self contained package with integral fuel tank is equivalent to a fully equipped engine room with fuel storage.	Replaces engine room, shaft line, stern tube, propeller/nozzle, rudder, steering gear and controls all with a single unit. Built in fuel day tank has enough capacity for 24 hours of operation before refill.
Infinitely proportional propeller speed control while engine runs at constant RPM, like a diesel-electric system.	Performance better than CPP and better than a diesel-electric system without the need for frequency control drive. Full torque available at any propeller speed.

Thrustmaster's hydrostatic transmission pump is the powerhouse of the hydraulic system. The engine is directly driving the pump - not the thruster. This pump controls the thruster through infinitely variable displacement. This means the propeller speed can be accurately controlled anywhere between standstill and maximum, both forward and reverse, without altering engine speed. The thruster motor is capable of going from full forward to full reverse in five seconds.

The propulsion unit is equipped with a hydraulic power tilt system capable of elevating the outboard drive assembly through an arc of 180°. This allows instant access for clearing of ropes or logs fouling the propeller. The tilt system incorporates relief valves that allow the outdrive assembly to kick up in the event it encounters a subsurface obstruction or in the case of grounding.

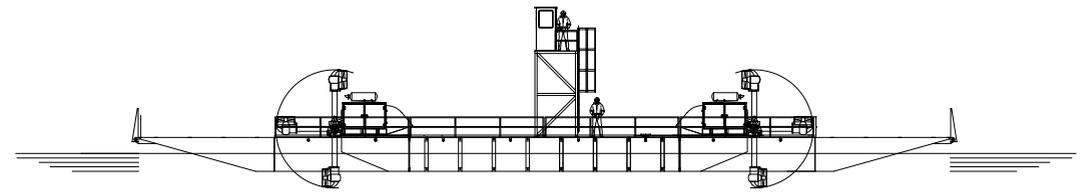
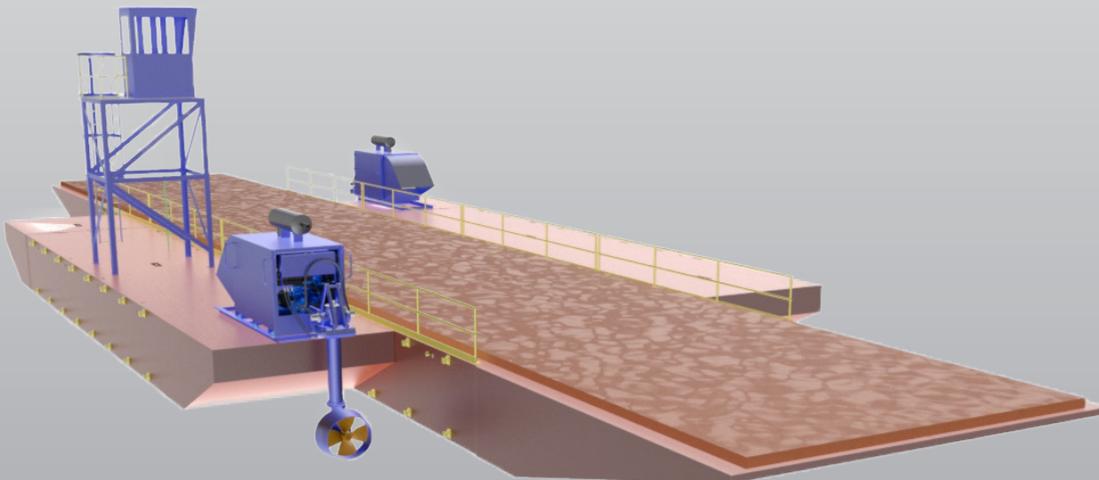
37 M PORTABLE RIVER FERRY

Thrustmaster's 37m ferry has a dead weight load carrying capability of 130 tons and a vessel speed of 6 knots. The 37m Portable River Ferry is composed of 14 modular barge sections.

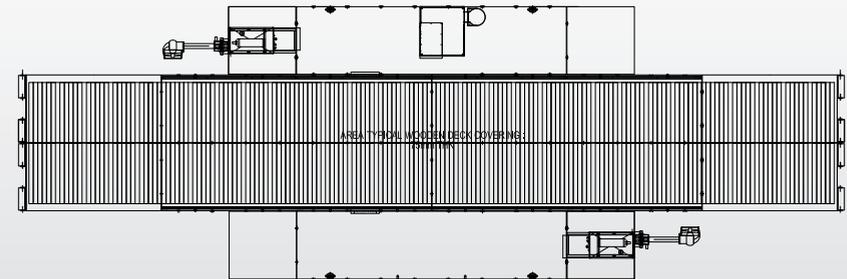
Equipped with two 125 kW self-contained, hydraulic outboard propulsion units the ferry is capable of transporting two (2) tractor trailers, six (6) dump trucks, or various other vehicle combinations.

The Ferry comes with a durable laminated mat decking suitable for heavy vehicle use. The ferry ramps have a deck bearing capacity of 29,294 kg/m² and ferry floats have a deck bearing capacity 24,412 kg/m².

The ferry is provided with an elevated steel operator cabin equipped with sliding door and windows on all walls affording 360° field of vision. The operator cabin is accessed by ladder on an elevated steel platform.

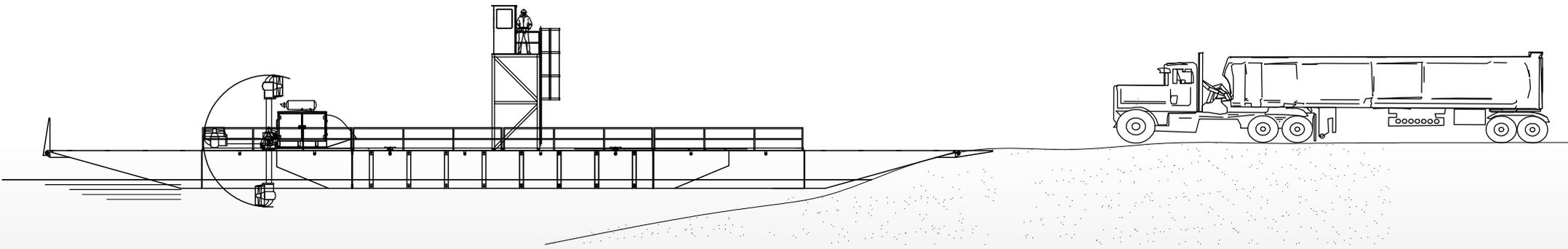


SIDE VIEW

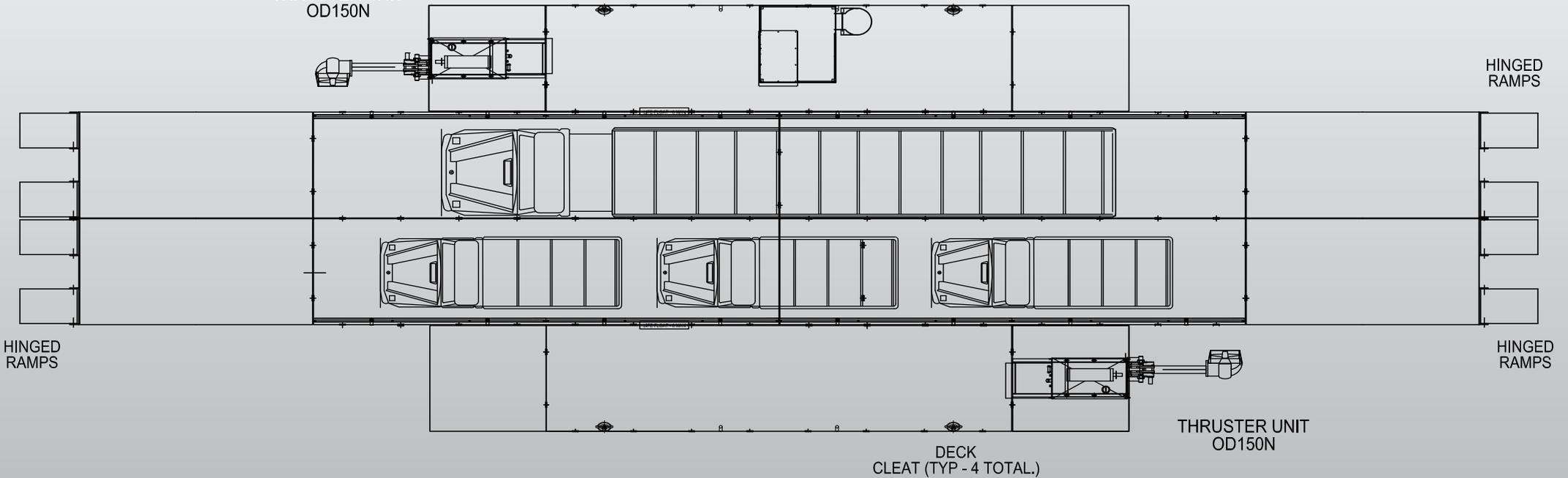


TOP VIEW

Max Dead Weight	130 Tons
Vehicle Capacity	Two tractor trailers, or twelve dump trucks
Propulsion	Qty 2 Diesel-Hydraulic Outboard Thrusters
Vessel Speed	6 kn
Ferry Style	Roll-On Roll-Off (RO-RO), Double Ended
Ferry Length	36.6 m (120 ft)
Ferry Breadth	12.3 m (40 ft)
Ferry Depth	1.54 m (5 ft)
Rated Power	250 kW (2x 125 kW)
Full Load Draught	0.80 m (32 inches)
Qty. of Ferry Modules	14
Deck Bearing Capacity	24,412 kg/m ²
Ramps Bearing Capacity	29,294 kg/m ²



THRUSTER UNIT
OD150N



37 M PORTABLE RIVER FERRY



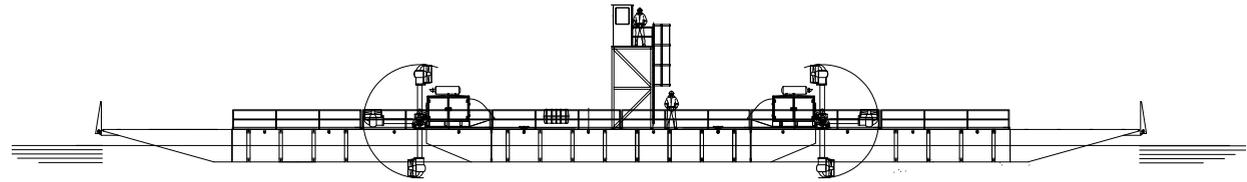
50 M PORTABLE RIVER FERRY

Thrustmaster's 50 m Portable River Ferry has a dead weight load carrying capability of 260 tons and vessel speed of 6 knots. The 50m Portable River ferry is composed of 23 modular barge sections.

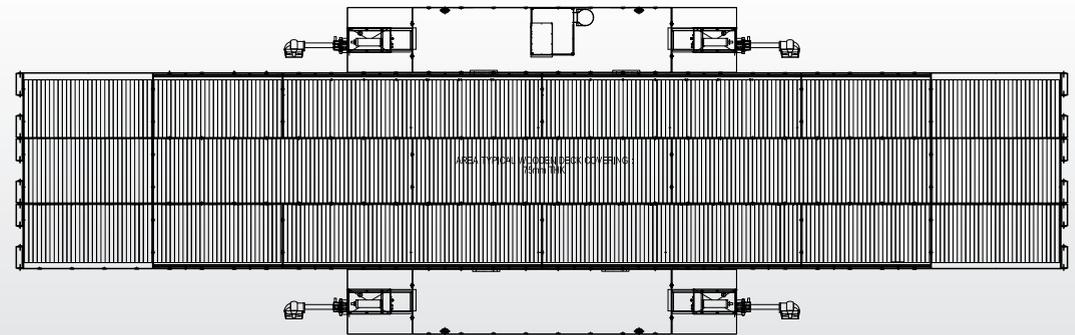
Equipped with four 125 kW self-contained, hydraulic outboard propulsion units the ferry is capable of transporting four tractor trailers, 12 dump trucks, or various other vehicle combinations.

The Ferry comes with a durable laminated mat decking suitable for heavy vehicle use. The ferry ramps have a deck bearing capacity of 29,294 kg/m² and ferry floats have a deck bearing capacity 24,412 kg/m².

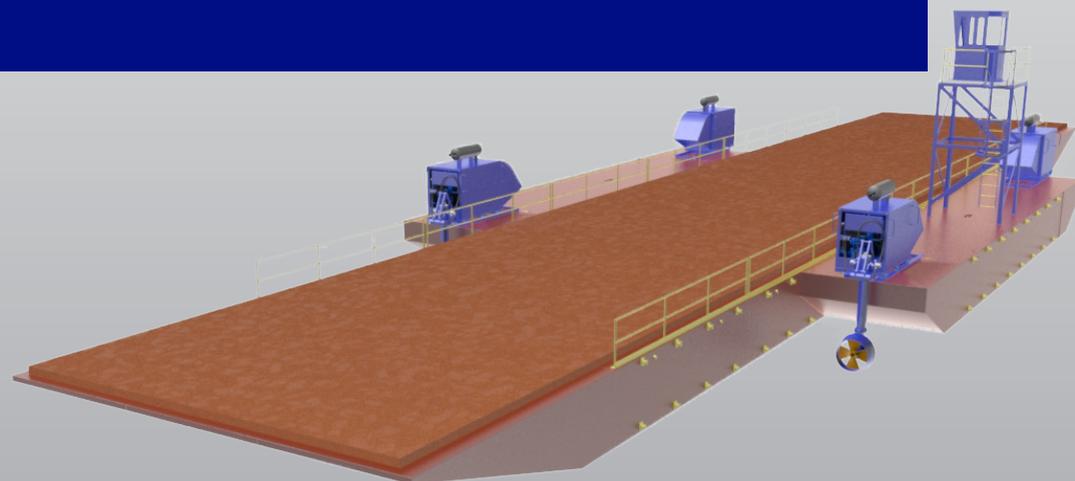
The ferry is provided with an elevated steel operator cabin equipped with sliding door and windows on all walls affording 360° field of vision. The operator cabin is accessed by ladder on an elevated steel platform.



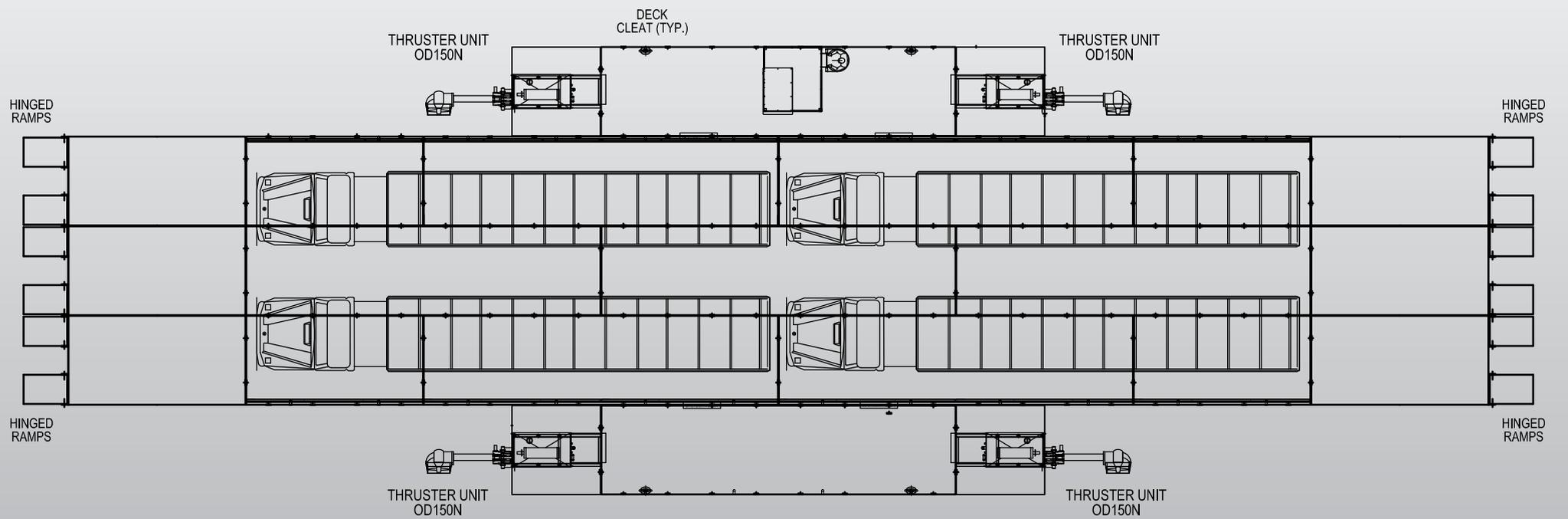
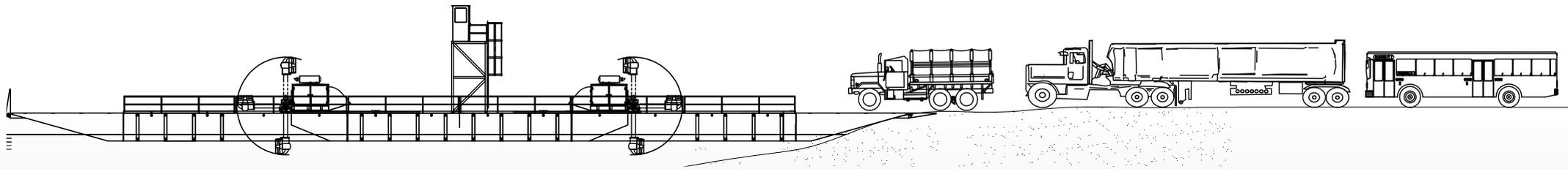
SIDE VIEW



TOP VIEW



Max Dead Weight	260 Tons
Vehicle Capacity	Four tractor trailers, or 12 dump trucks
Propulsion	Qty 4 Diesel-Hydraulic Outboard Thrusters
Vessel Speed	6 kn
Ferry Style	Roll-On Roll-Off (RO-RO), Double Ended
Ferry Length	48.8 m (160 ft)
Ferry Breadth	15.24 m (50 ft)
Ferry Depth	1.54 m (5 ft)
Rated Power	500 kW (4x 125 kW)
Full Load Draught	0.77 m (30 inches)
Qty. of Ferry Modules	23
Deck Bearing Capacity	24,412 kg/m ²
Ramps Bearing Capacity	29,294 kg/m ²



50 M PORTABLE RIVER FERRY



PRODUCT SUPPORT

Support throughout the entire life of the product.

Thrustmaster offers comprehensive support throughout the entire product life-cycle, anywhere in the world.

The focus is always on customer satisfaction, efficient operation of the Thrustmaster product, and on short repair and maintenance times.

Thrustmaster maintains a large inventory of spare parts at all times. Current parts inventory in our Houston plant is almost \$30 million dollars.

Thrustmaster Services Include:

- 24/7 Service Response Hot line
- Propulsion System Trouble Shooting
- Mechanical, Hydraulic & Electrical Repairs
- Emergency Service Tiger Teams
- System Installation & Commissioning
- Technical Services & Field Engineering
- Upgrades & Modifications Equipment
- Efficiency Improvements
- Operational Training





*The portable river ferry is not tied to fixed landing points. Landing locations can easily be changed depending on changing river width and bank conditions.



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