



# HYDRAULIC OUTBOARD PROPULSION UNITS

Portable Propulsion Units for Brown Water Applications.





# LET US INTRODUCE OURSELVES

For over 30 years, Thrustmaster of Texas has been designing, manufacturing and supporting marine propulsion systems for a global network of customers. Thrustmaster is the largest manufacturer of marine thrusters in the U.S.

Thrustmaster's propulsion units are manufactured in Houston, TX with a variety of configurations including self-contained and portable deck-mounted propulsion units, thru-hull azimuthing thrusters, Z-drives, waterjets, retractable thrusters and tunnel thrusters in power ranges from 35 to 10,740 hp ( 22 kW to 8 MW ).

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

Thousands of Thrustmaster diesel-hydraulic outboard propulsion units are operating all over the world as 360 degree steerable propellers on barges, double ended ferries, dredges, lift boats, maintenance and construction vessels in brown water applications.





# HYDRAULIC OUTBOARD PROPULSION UNITS

Thrustmaster's Outboard Drives are self-contained, hydraulic propulsion units that can quickly be installed on the deck or transom of any vessel to provide pinpoint maneuverability and propulsion. Freely azimuthing through 360° of steering range, the outboard drives are extremely responsive and ideal for tight quarter maneuvering and positioning applications.

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 the shock whenever the propeller hits bottom or is blocked

by a floating log or other obstruction. The shock is further limited and dampened by pressure compensation and hydraulic reliefs.

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. From full forward to full reverse in five seconds.

A hydraulic power tilt system capable of elevating the outboard drive assembly through an arc of 90° and on some units even 180° is available as one of the options. 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.

An optional hydraulically powered propeller depth adjustment mechanism can vary the propeller depth for light and loaded draft conditions.





# INTEGRATED HYDRAULIC OUTBOARD PROPULSION UNITS

The Thrustmaster series of deck-mounted outboard propulsion units are virtually maintenance free and provide years of operation in the harshest environments. The units feature 360° steering with 90° or 180° hydraulic power kick-up and optional propeller depth lifts. All units are available with or without nozzles. Nozzles increase slow speed pushing power by about 30%.

## tech specs

Model	Power		Max Stem Length		Propeller Diameter		Steering Through Range
	HHP	kW	ft	m	in	mm	
OD100	100	75	12	4	36	914	360°
OD100N	100	75	10	3	24	610	360°
OD150	150	112	12	4	38	965	360°
OD150N	150	112	10	3	28	711	360°
OD300	300	224	12	4	44	1118	360°
OD300N	300	224	18	5.5	39	991	360°

Note: Models with “N” suffix indicate units with nozzle.

## OVERVIEW

- Self-contained Propulsion Unit
- Deck-mounted
- 360 Degree Steering
- Outdrive leg Kick-up / Tilt
- Optional Hydraulic Depth Lift
- Shallow Water Operation

## APPLICATIONS

- Barges
- Double Ended Car Ferries
- Dredges
- Lift boats
- Maintenance Vessels
- Constructions Vessels
- Cleanup Vessels
- Landing Crafts





# MODULAR OUTBOARD PROPULSION UNITS

» The modular outdrive propulsion units preserve functional deck space by allowing the hydraulic power unit to be installed remotely on the vessel. Their versatility enables a single engine to power multiple outdrive propulsion thrusters at the same time. The propulsion units suit any size vessel or barge from 100 ft to 600 ft (30 m to 180 m) without major vessel conversions.

Model	Power		Max Stem Length		Nominal Thrust		Steering Through Range
	HHP	kW	ft	m	LBF	kN	
OD100	100	75	12	4	2300	10	360°
OD100N	100	75	10	3	2700	12	360°
OD150	150	112	12	4	3000	14	360°
OD150N	150	112	10	3	3800	17	360°
OD300	300	224	12	4	5300	24	360°
OD300N	300	224	18	5.5	8100	40	360°
OD500N	500	370	22	7	13400	60	360°
OD750N	750	560	30	9	19000	80	360°
OD1000N	1000	750	30	9	25000	100	360°
OD1500N	1500	1120	30	9	36000	160	360°
OD2000N	2000	1500	35	11	45000	200	360°
OD3000N	3000	2250	50	15	70000	310	360°

Note: Models with “N” suffix indicate units with nozzle.



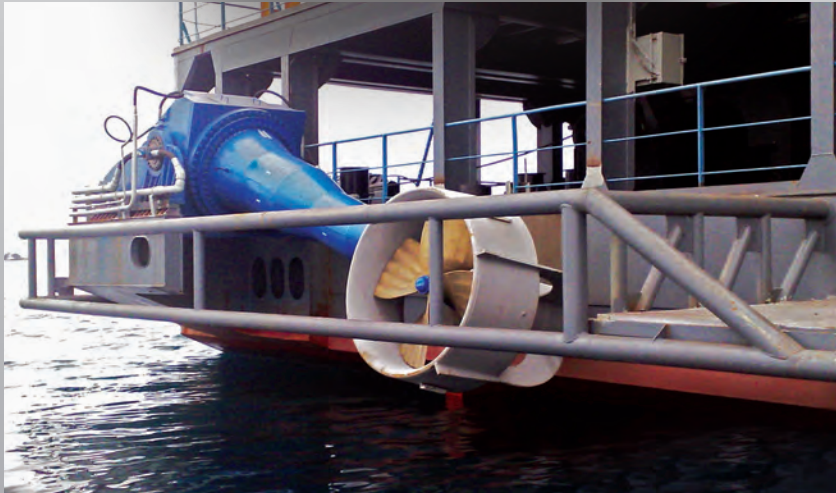
## OVERVIEW

- Self-contained Propulsion Unit
- Deck or Porch mounted
- 360 Degree Steering
- Emergency Kick-up / Tilt
- Dynamic Positioning



## APPLICATIONS

- Barges
- Pipe / Cable Lay Vessels
- Wind Turbine Installation Vessels
- Lift boats
- Maintenance Vessels
- Construction Vessels
- Ferries
- Dredges
- Jack-ups





# TRANSOM MOUNT

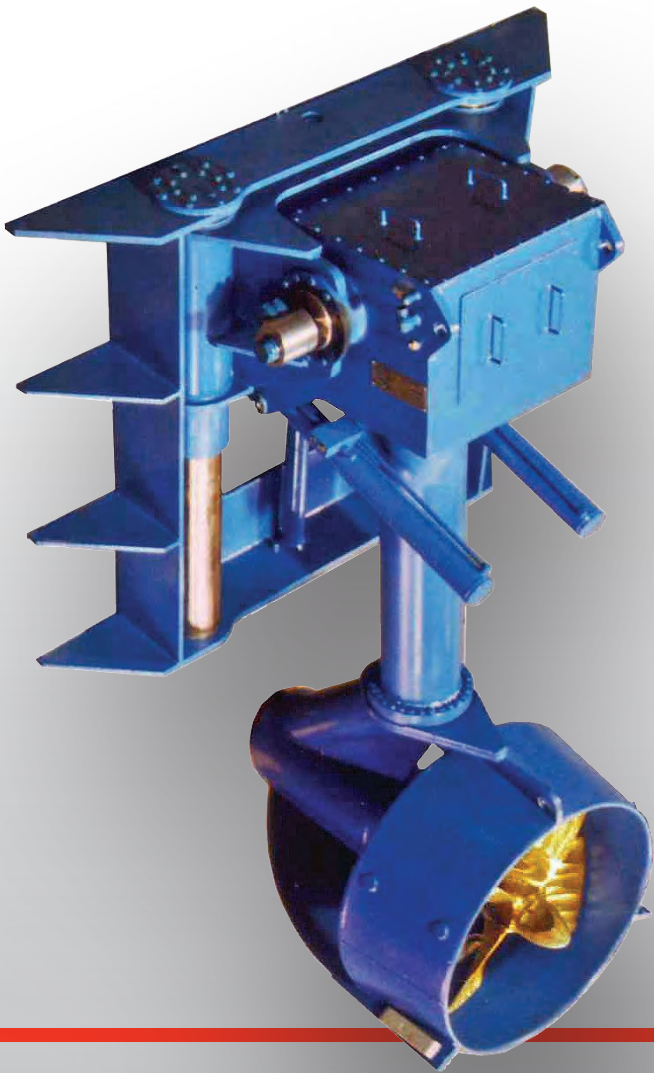
› The modular outboard propulsion units have the option to be mounted to the vessels transom. This unique feature further expands the preservation of functional deck space on any vessel while maintaining the outdrive propulsion thruster’s pinpoint maneuverability.

The units feature 360° steering or 180° omni directional steering. 90° hydraulic power kick-up and optional propeller depth adjustment make the units perfectly suited for demanding brown water applications.

A single hydraulic power unit can be installed remotely on the vessel to power multiple outdrive propulsion thrusters.

Model	Power		Max Stem Length		Propeller Diameter		Steering Through Range
	HHP	kW	ft	m	in	mm	
OD100	100	75	12	4	36	914	360°
OD100N	100	75	10	3	24	610	360°
OD150	150	112	12	4	38	965	360°
OD150N	150	112	10	3	28	711	360°
OD300	300	224	12	4	44	1118	360°
OD300N	300	224	18	5.5	39	991	360°

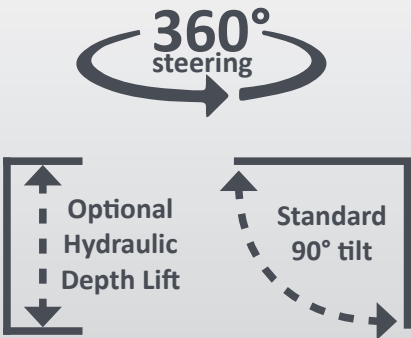
Note: Models with “N” suffix indicate units with nozzle.



Transom Mount Modular Outboard Propulsion Unit with Propeller Depth Adjustment and Tilt.

## OVERVIEW

- Self-contained Propulsion Unit
- Transom Mounted
- 360 Degree Steering
- Emergency Kick-up / Tilt
- Dynamic Positioning

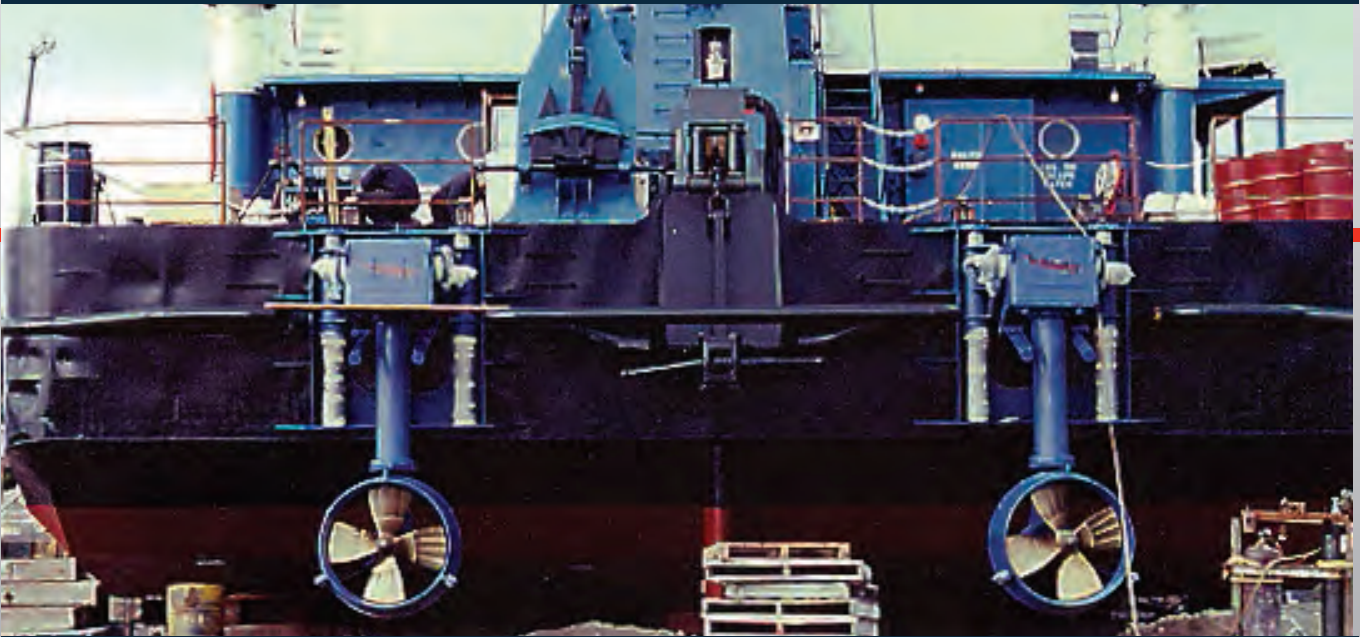


## APPLICATIONS

- Barges
- Pipe / Cable Lay Vessels
- Wind Turbine Installation Vessels
- Lift boats
- Maintenance Vessels
- Construction Vessels
- Ferries
- Dredges
- Lift Boats
- Jack-ups



Twin transom mounted modular propulsion units with depth adjustment tilted 90°



Twin transom mounted modular propulsion units with depth adjustment on stern.



# WORKMASTER SERIES

## INTEGRATED UNITS

The Workmaster series of deck-mounted propulsion units are brown water application workhorses. They feature 180° steering and proportional propeller speed control in forward and reverse, providing omni directional thrust capability. Hydraulic power 90° kick-up and propeller depth adjustment are available.

### tech specs

Model	Power		Max Stem Length		Propeller Diameter		Steering Range
	HHP	kW					
			ft	m	in	mm	
WM50	50	37	12	4	28	711	180°
WM75	75	56	12	4	30	762	180°
WM75N	75	56	10	3	24	610	180°
WM100	100	75	12	4	36	914	180°
WM100N	100	75	10	3	24	610	180°
WM150	150	112	12	4	38	965	180°
WM150N	150	112	10	3	28	711	180°
WM200	200	149	12	4	44	1118	180°
WM200N	200	149	10	3	32	813	180°
WM250	250	186	12	4	48	1219	180°
WM250N	250	186	10	3	35	889	180°
WM300	300	224	12	4	44	1118	180°
WM300N	300	224	10	3	39	991	180°

Note: Models with “N” suffix indicate units with nozzle.

### OVERVIEW

- Self-contained Propulsion Unit
- Deck-mounted
- 180 Degree Steering
- 90 Degree Emergency Kick-up / Tilt
- Optional Hydraulic Depth Lift
- Shallow Water Operation

### APPLICATIONS

- Barges
- Double Ended Ferries
- River boats
- Dredges
- Lift boats
- Maintenance Vessels
- Constructions Vessels





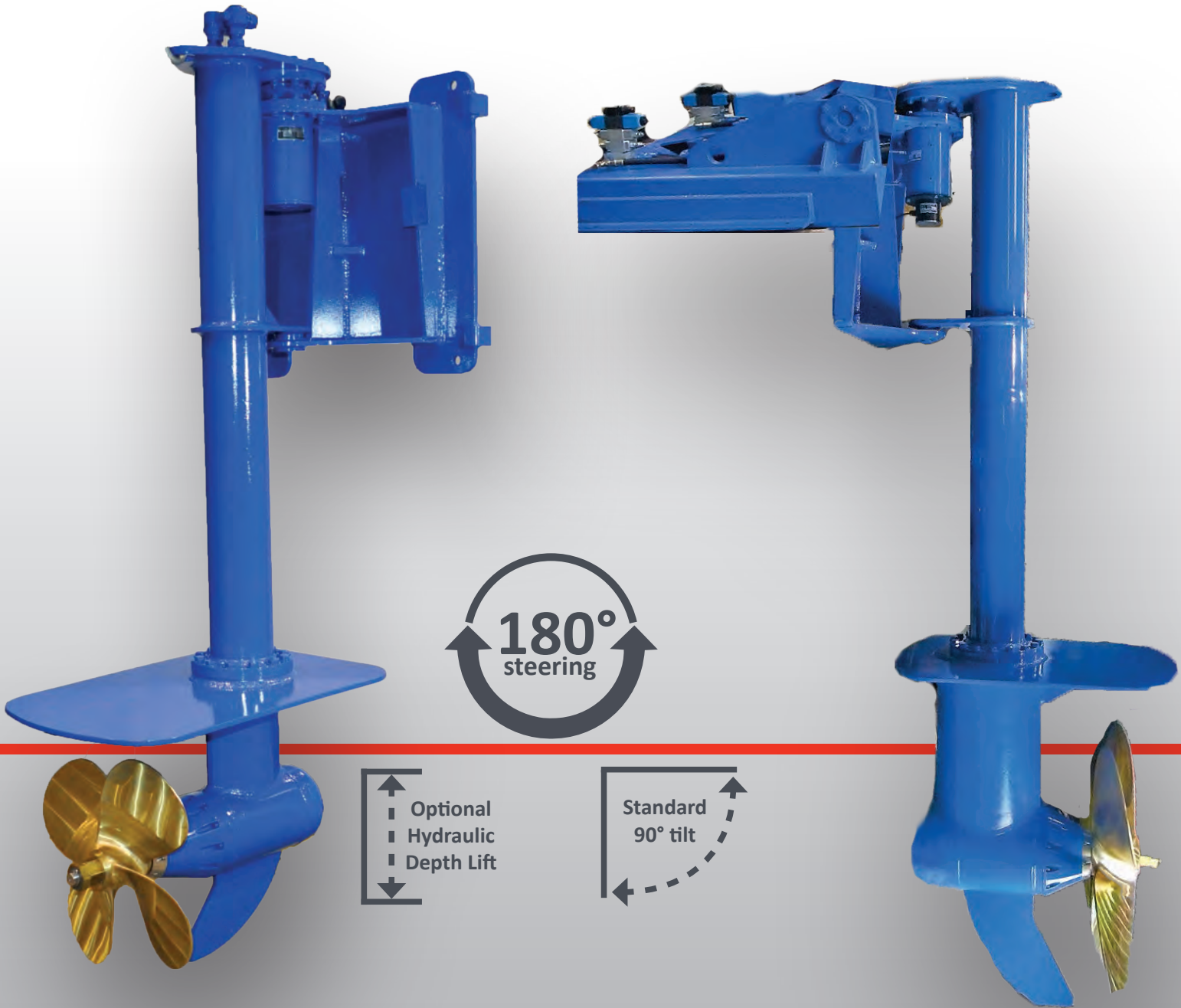
# WORKMASTER SERIES

## MODULAR UNITS

» The Workmaster series of transom or deck mounted modular outboard drives feature 180° degree steering and proportional propeller speed control in forward and reverse, providing omni-directional thrust capability. Hydraulic power 90° kick-up and propeller depth adjustment are available.

Model	Power		Max Stem Length		Propeller Diameter		Steering Range
	HHP	kW	Ft.	M	In.	mm	
WM50	50	37	12	4	28	711	180°
WM75	75	56	12	4	30	762	180°
WM75N	75	56	10	3	24	610	180°
WM100	100	75	12	4	36	914	180°
WM100N	100	75	10	3	24	610	180°
WM150	150	112	12	4	38	965	180°
WM150N	150	112	10	3	28	711	180°
WM200	200	149	12	4	44	1118	180°
WM200N	200	149	10	3	32	813	180°
WM250	250	186	12	4	48	1219	180°
WM250N	250	186	10	3	35	889	180°
WM300	300	224	12	4	44	1118	180°
WM300N	300	224	10	3	39	991	180°

Note: Models with “N” suffix indicate units with nozzle.



» Transom Mount Workmaster Modular Outboard Propulsion Unit with Tilt.

» Deck mounted Workmaster Modular Outboard Propulsion Unit with Tilt.

A RUGGED & DEPENDABLE  
BROWN WATER WORKHORSE

WORKMASTER



» Deck mounted Workmaster units operating in harsh brown water conditions.



» Transom mounted Workmaster WM75 unit in operation on a dredge.



# applications



- › Two OD150N (120 kW) Outdrive propulsion units installed on a barge for the military.



- › Two OD150N (110 kW) outdrive propulsion units propel the AST 33, a multi-purpose work barge belonging to Overseas AST, a civil marine construction company based in the United Arab Emirates and have been working trouble free for 3 years in a harsh shallow water environment.

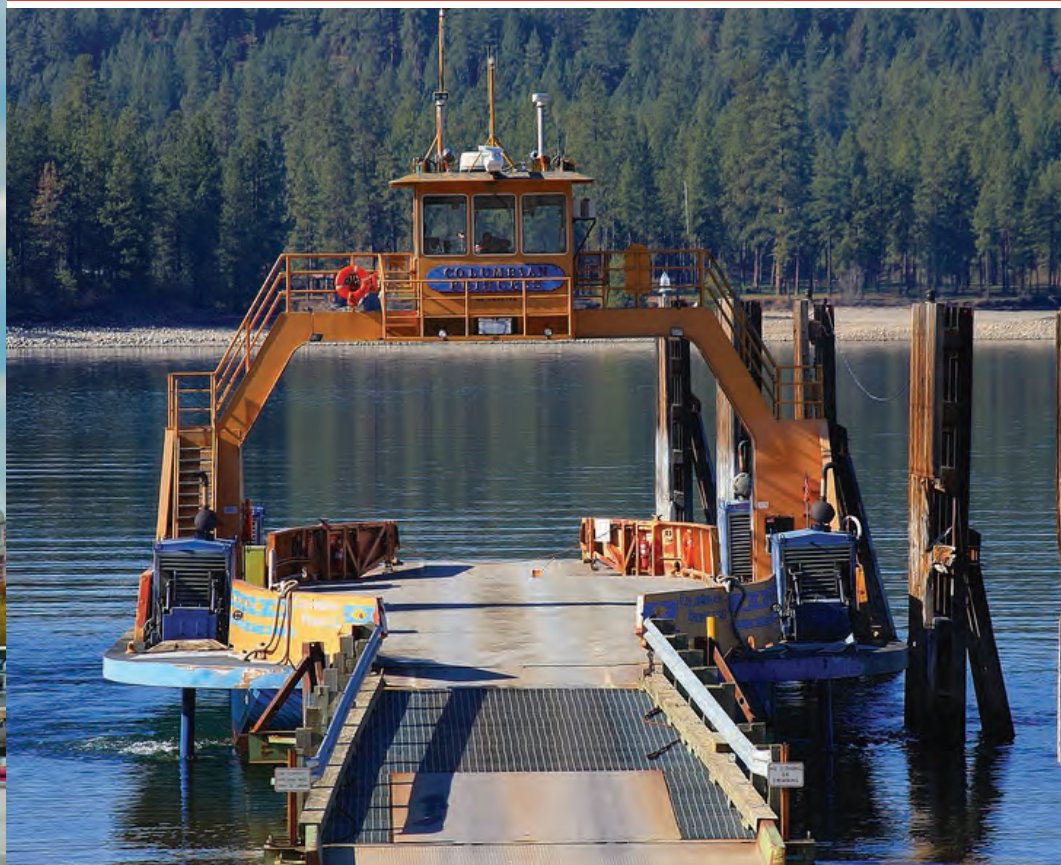


- › Two Workmasters WM300N installed on a barge with depth adjustment and 90 degree hydraulic tilt.





- › Two OD250 (190 kW) modular outboard propulsion units mounted on the aft deck for the Silver Sturgeon, a dinner cruise vessel operating since 1996 on the Thames River in London without any issues - the flagship of Woods River Cruises.



- › Four OD150 (110 kW) integrated outboard propulsion units mounted on the deck of the Colombian Princess, river transport ferry. The ferry has been operating 20 hours every day for over 20 years.



- › Two OD300N (220 kW) modular outboard propulsion units on the Real McCoy II, a river transport ferry.





› Outdrive propulsion on a sectional environmental cleanup barge providing maneuverability along the shoreline.



› Single Workmaster outdrive propulsion unit installed on a spill cleanup barge of MSRC (Marine Spill Response Corporation).



› Two outdrive propulsion units installed on the deck of a barge for the U.S. Navy.





# FEATURES & BENEFITS

## FEATURE

Mounted on deck with no hull penetrations allowing easy and quick installation while the vessel is in the water.

Instantly turn dumb barges into self propelled vessels. Eliminates the need for expensive through-hull construction in shipyard and removes the need for engine alignment, stern tubes, rudders and steering gear.

## BENEFIT

## FEATURE

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.

## BENEFIT

## FEATURE

The hydraulic drive train instantly relieves any transmission overloads

Foreign objects ingested by the propeller will not damage the transmission making the thruster extremely resilient and durable.

## BENEFIT

## FEATURE

Thrusters use podded design concept. Propeller shaft is directly driven by hydraulic motor in the foot (or pod) of the thruster.

High propulsion efficiency, no gear losses. Reliable due to its simplicity & limited number of moving parts. Lateral & torsional critical speeds are far above operating speeds. Runs smooth, no vibration.

## BENEFIT

## FEATURE

The hydraulic tilt feature allows elevating the propeller above the waterline.

Allows inspections 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.

## BENEFIT

## FEATURE

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.

## BENEFIT

## FEATURE

Completely self contained package is equivalent to a fully equipped engine room.

Replaces engine room, shaft line, stern tube, propeller/ nozzle, rudder, steering gear and controls all with a single unit.

## BENEFIT





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