



*SS Independence  
683' Passenger Ship*



*U.S. Navy MCM Class  
217' Mine Counter Measure*



*R/V Akademik Federov  
456' Polar Research Vessel*



*Sealand Anchorage  
65,000 DWT Tank Ship*



*R/V Tully  
69 Meter Hydrographic Survey Vessel*



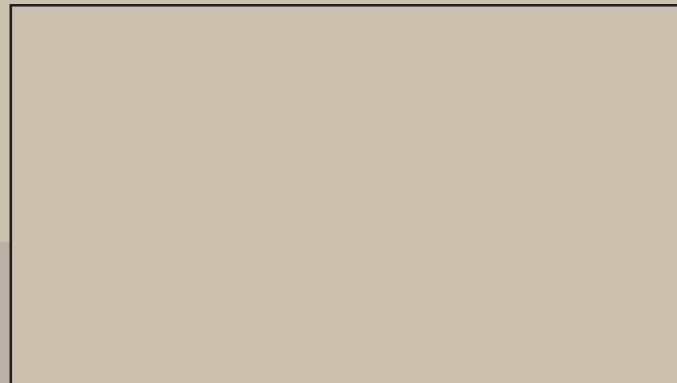
*USNS TAKX  
630' Prepositioning RO/RO*



*Marine Maneuvering and Propulsion Systems*

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# OmniTHRUSTER™

*Marine Maneuvering and Propulsion Systems*



*JT Series*

# The World of *OmniTHRUSTER*™

# Uncompromised Control!



*OmniThruster*™, the leader in the development of the water jet thruster, has taken the simple function of side thrusting to a new level — total vessel maneuverability. For years propulsion and maneuvering was accomplished by propellers for forward and aft movement and a ducted propeller for port and starboard thrusting. The marine industry entered a new era with the development of the *OmniThruster* Jet Thruster and its implementation of a mixed flow impeller.

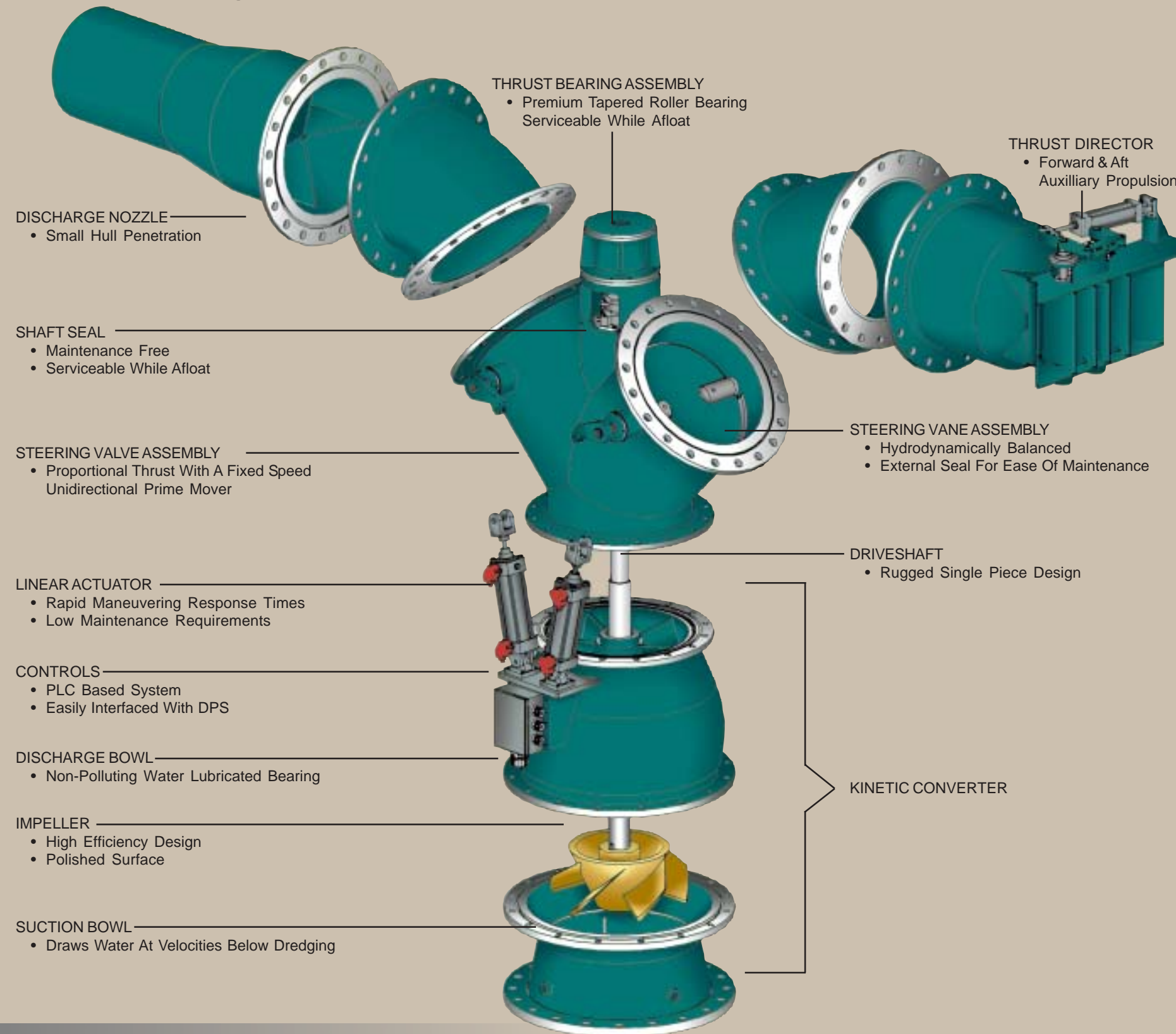
The patented *OmniThruster* system utilizes the principle of Newton's third law of motion which states, "to every action there is an equal and opposite reaction."

With an *OmniThruster*, water is drawn in at relatively low velocity, absorbs energy imparted by the Kinetic Converter, then passes through specially designed nozzles at which time the mass flow is optimally accelerated and dispatched at a high velocity. This accelerated water mass produces the reactive force which acts upon the vessel's hull.

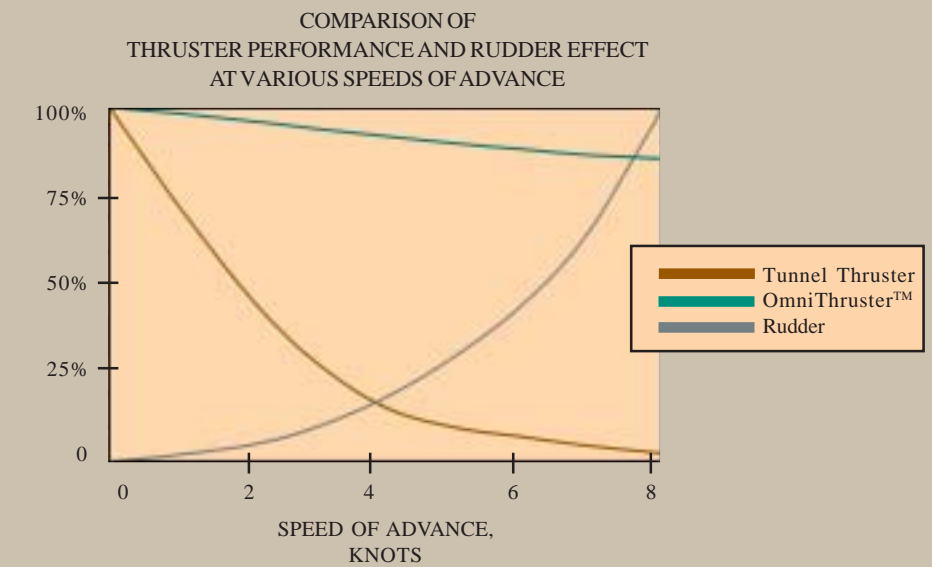
The maneuvering and auxiliary propulsion capabilities of the *OmniThruster* have proven suitable for numerous military applications. Years of research and development of custom systems for governments worldwide have resulted in the many options available to the commercial market today.

When considering a new build, or a retrofit, don't settle for yesterday's technology when the proven technology of today's modern navies is available in the *OmniThruster* JT Series.

# Presenting the *OmniTHRUSTER™* JT Series . . .



The OmniThruster JT is a scientifically designed and patented system for maneuvering and auxiliary propulsion. The JT utilizes a mixed-flow impeller that draws water in through an intake, located at the bottom of the vessels hull, then dispatches it through the steering valve assembly. The steering valve directs the flow continuously, rapidly, and proportionally to the nozzles for neutral, port or starboard thrust. Optional Thrust Directors give complete control of thrust for forward or aft auxiliary propulsion. As long as the intake remains fully submerged, the nozzles may be completely out of the water and still generate thrust. The resulting high velocity waterjet delivers effective thrust while the vessel is underway, in rough seas, or in strong currents.



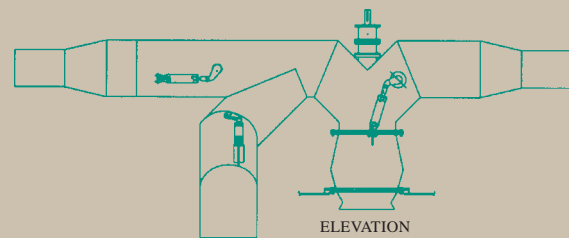
The system consists of five basic building blocks — the *Kinetic Converter*, *Steering Valve*, *Nozzles*, *Thrust Directors* (optional), and *Electronic Controls*. These blocks can be easily assembled within the space constraints of a new vessel or a retrofit. To further optimize installation space, the system can be configured in either a horizontal or a vertical orientation.



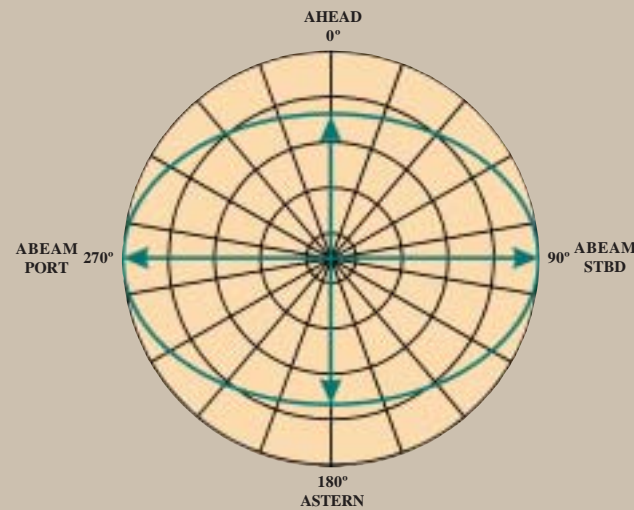
# Unparalleled Maneuverability!

## Auxiliary Propulsion

OmniThruster's unique and patented Thrust Directors add forward and aft auxiliary propulsion to the standard port/starboard system. This is physically accomplished by deflecting the waterjet to the fore or aft which produces an equal and opposite reaction. When the Thrust Directors are coupled with an upgraded control system, a fully proportional 360° maneuvering system results. The polar thrust diagram gives the resultant thrust vectors/magnitudes that are possible with the fully proportional system.



Port, Starboard and Forward Thrusting Provides "Take Home" Capability.



Full "Take Home" capability is available with the use of a dedicated forward thrusting nozzle. This vane type nozzle, located towards the keel of the vessel, ejects water to the aft at a shallow discharge angle. The result is slow speed auxiliary propulsion that can be used to keep the vessel headed in the right direction.

The ability of the OmniThruster JT to provide auxiliary propulsion and steering, totally independent of the main propulsion and steering systems, provides a fully redundant back up. In effect, a built-in tug!

## Economically and Environmentally Sound

In today's competitive market it pays to look beyond the bottom line. The OmniThruster JT offers long-term fuel and maintenance savings.

The OmniThruster JT system is economical while cruising. This is accomplished by utilizing relatively small hull penetrations, locating the intake toward the low drag region of the keel, and the elimination of drag intensive protrusions. These features, coupled with the ability to place the thruster system in hydraulic lock while underway, result in an overall drag reduction of approximately 3%. All of this adds up to substantial long-term fuel savings!

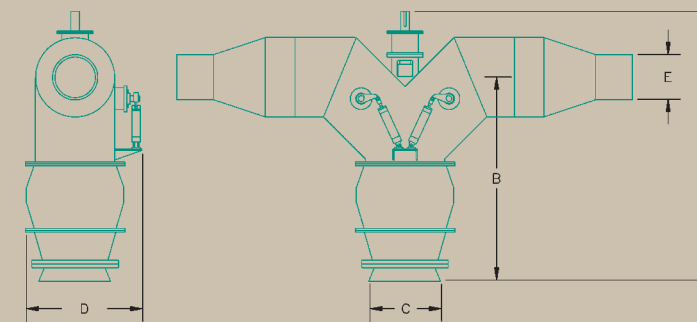
The OmniThruster JT is mechanically simple and easy to maintain. Lubrication points and the main thrust bearing are completely serviceable from within the hull, while afloat. Also, the elimination of submerged gearboxes and the use of water lubricated bearings alleviates the fear of pollution due to leaking seals.

# JT Series

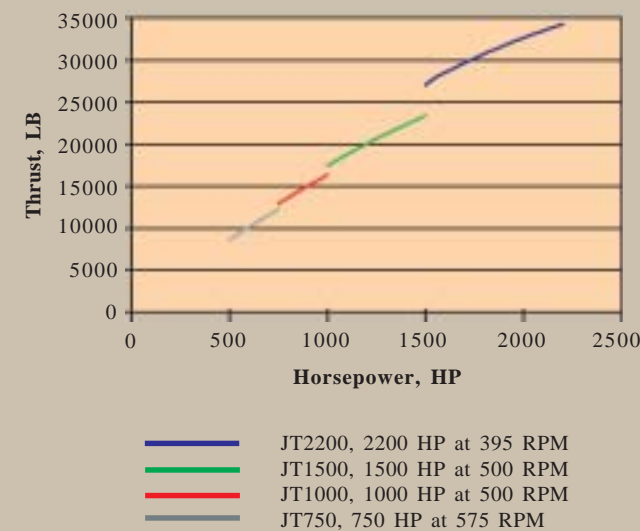
## SPECIFICATIONS

### TABLE OF DIMENSIONS

JT MODEL NO:	750	1000	1500	2200	
Maximum Power Rating	KW	560	746	1120	1640
	HP	750	1000	1500	2200
Overall Height "A"	MM	3023	3404	4140	4674
	INCH	119	134	163	184
Height to Exit "B"	MM	2108	2795	3200	3759
	INCH	83	110	126	148
Intake "C"	MM	838	889	1041	1524
	INCH	33	35	41	60
Width "D"	MM	1372	1651	1930	1930
	INCH	54	65	76	76
Nozzle Diameter "E"	MM	430	600	735	865
	INCH	17	24	29	34
Dry Weight (Less Nozzles)	KGS.	3645	4355	6490	9091
	LBS.	7800	9800	15000	20000



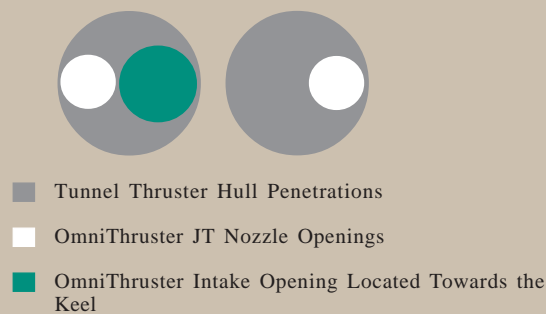
## JT SERIES POWER RANGES



Note: Thrust Estimates Dependant on System Losses

To supplement the design and installation activity, OmniThruster offers customers and Naval Architects three dimensional, computer generated outline drawings on request.

## COMPARATIVE HULL PENETRATIONS



## STANDARD DESIGN / CONSTRUCTION

DESIGN	Standard	ABS, DNV, Lloyds Register
FEATURES	Impeller Type	Mixed Flow
	Rotation	CCW (as viewed from input shaft)
	Thrust Bearing	Tapered Roller
	Shaft Bearing	Water Lubricated, Rubber / Composite
	Shaft Seal	Packing / Lip or Mechanical Seals
	Steering Vane Shaft Seal	Lip Type Seal
MATERIALS	Coating	Scotchcote® 134 Internal / External
	Orientation	Horizontal or Vertical Installation
	Drive Shaft	17-4 / Nitronic 50
CONTROLS	Casing	A36, Aluminum, NI-AL-BRZ
	Impeller	316 SS, NI-AL-BRZ
	Standard	"Solid-State" Full Port / Full Stbd.
Optional	"PLC" Based Fully Proportional	
Auxiliary	Wing Stations / Auxiliary Panels Available	