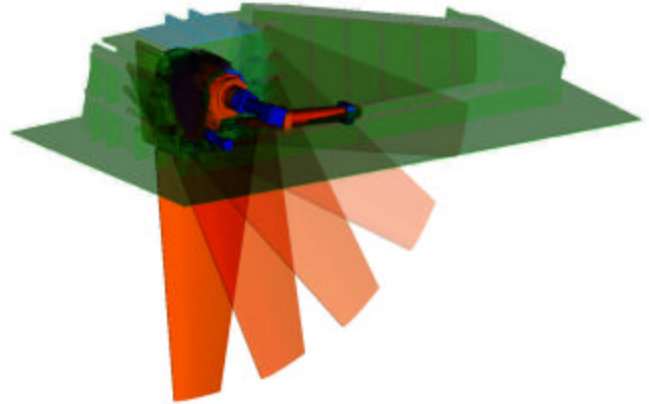


Maritime Dynamics, Inc.

Retractable Fin

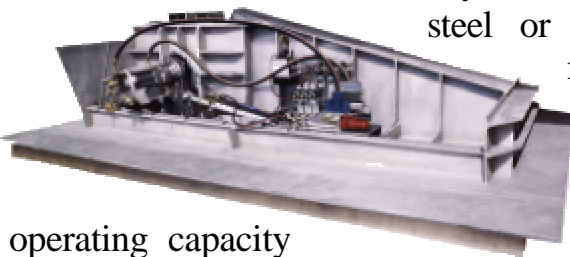
The MDI Retractable Fin provides flexibility in the design of any ride control system. Retractable Fins are used to reduce roll motions, helping to minimize motion sickness incidence and fatigue of both passengers and crew. While fins are usually coupled to greatly reduce roll motions, they can be combined with any of MDI's other ride control components to offer a complete system for maximum reduction of motions in all directions.



In calm sea conditions, or when not required, the Retractable Fin combines safety and convenience of stowing the fin, which increases the vessel's speed and reduces the risks of hitting submerged objects. The retracted fin has added benefits of reducing overall drag and fuel consumption, and allows for safe operation in and around harbors.

One powerful hydraulic ram deploys and retracts the fin according to commands from MDI's System Controller. The controller detects vessel motions induced from varying sea states, processes those motions through vessel specific algorithms, and sends commands to a separate ram that changes the fin's angle to reduce the overall motions of the vessel. All of this is done in fractions of seconds to create the smoothest ride possible.

The structural design of the equipment has been optimized to reduce the weight of this unit to less than half of any other competitor. The support structure can be provided in steel or aluminum to directly match the connecting hull material. Different fin aspect ratios are provided to match the operating speed of your vessel. The target size for these units support .50 through 2.5 square meter fins. At high speeds, in excess of the operating capacity of the fin, the fin is retracted and locked. Extensive testing and CFD work has been performed to optimize the slot interface geometry to the fin and surrounding hull at high speed. With the fin retracted, the slotted opening will provide cavitation free operation of the vessel to speeds of 50 knots.



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