

# Roll Damping Stabilizers

The Maritime Dynamics, Inc. (MDI) 500 series fixed fin stabilizers have been designed for use with vessels typically between 80-120 metres in length and can be used in hulls fabricated from steel and aluminum. The system optimizes the requirements of excellent stabilization performance against cost, weight, power, space requirement and maintenance. Electronic controls ensure rapid, effective response for a variety of seakeeping conditions.



## TYPICAL 500 SERIES

The hydrodynamic fins are attached to a stock, carried in a Top Plate Assembly. Fin movement is by two double acting hydraulic actuators connected to a tiller head fitted to the stock. Oil flow to the actuators is via a fixed displacement pump and is governed by an electro-hydraulic proportional valve operated by the control system. The pressure in the system is kept within design limits by a gas-loaded accumulator and an automatic unloading valve. The accumulator discharges into the system when demand is high and recharges via the pump when demand is reduced. This allows the pump size, power consumption and cooling requirements to be reduced. An automatic greasing system is provided.

### *Hydrodynamic Fins*

Fins are semi balanced and available in various sizes ranging between 3.5 - 6m<sup>2</sup>. Fins up to and including 2.0 m<sup>2</sup> are fitted to the stock via a taper connection. Fins over 3.5 m<sup>2</sup> are fitted to the stock via either a taper or palm connection.

Alternative application dependent customized fins can be looked into where required.

### *Fin Stock*

Fabricated from Carbon Steel and treated to reduce wear and increase resistance to corrosion. With nylon fin applications, a tapered/keyed stainless steel stock is used.

Maximum Diameter: 270mm

### *Comfort Control*

The operator has the choice of 4 manually attenuated fin positions to modify the stabilization characteristics of the vessel to ensure ride comfort in varying sea conditions.

### *Installation*

The Top Plates are designed for installation from the inside of the hull and welded in position. The seatings are either welded (steel, aluminum) or laminated (GRP) to the hull interior. General seating arrangement drawings are included in the scope of supply.

### *Bearings*

The upper spherical bearing is of the double roller self-aligning type. The lower bearing consists of a plain bearing bush, which supports the stock where it passes through the hull.

### *Seal's*

Watertight integrity of the top plate is maintained by a simple stuffing box arrangement where 5 turns of Teflon type packing is compressed by a gland ring via 4 studs, nuts and washers. An inflatable seal is fitted to allow replacement of the packing without the ingress of seawater.

### *Hydraulic System (Option 1 or 2 Power Units)*

Power for the Top Plates is supplied from a power unit to the Top Plate mounted servo valve. The Power Pack is supplied assembled ready for connection to the Top Plates. Major components of which include:

*Hydraulic Pump* – Positive displacement constant volume type.

*Hydraulic Reservoir* – Standard 225 litre (50 gal.) capacity of steel construction. A sight glass is provided. Application dependent larger capacities are available.

*Heat Exchanger* – Sited immediately prior to the reservoir and cools return oil. Seawater is used as the cooling medium.

*Integral Motor/Pump Assembly* – The positive displacement constant delivery pump is driven by an electric motor.

*Accumulator* – Comprising of a steel shell containing a neoprene bag charged with nitrogen.

*Optional Extras* – Set of hydraulic hoses and fittings and remote control stations – 2 maximum.

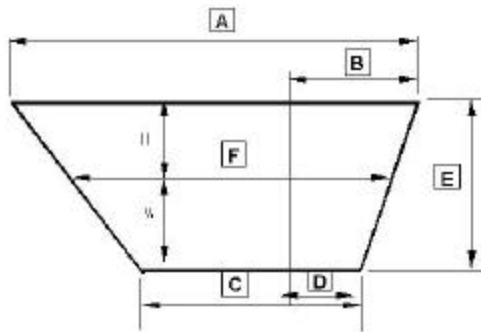


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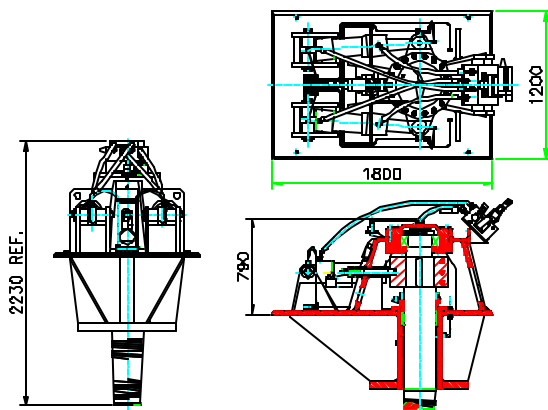
## FIN



## FIN DIMENSIONS

Fin Size M <sup>2</sup>	A MM	B	C	D	E	F
3.5	3227	806	1604	401	1449	2415
3.75	3340	835	1660	415	1500	2500
4.0	3460	865	1714	429	1549	2582
4.25	3556	889	1767	442	1597	2661
4.5	3659	914	1818	455	1643	2739
4.75	3759	940	1868	467	1688	2814
5.0	3857	965	1917	480	1732	2890
6.0	4225	1090	2100	525	1900	3160

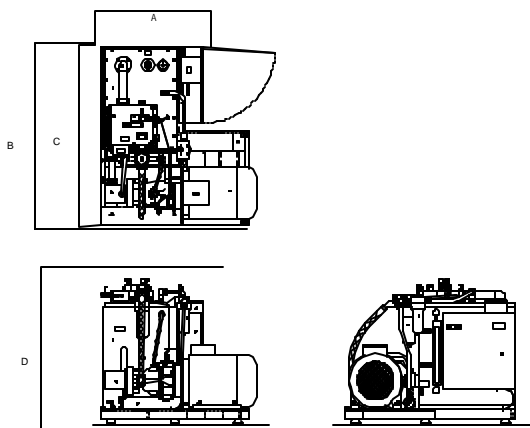
## TOP PLATE UNIT



## EQUIPMENT WEIGHTS (Typical)

2 x Top Plate	6600 Kg
1 x Hydraulic Power Units	700 Kg
2 x Hydraulic Power Units	700 Kg
1 x Control System	35 Kg
2 x Autolubrication	80 Kg

## POWER PACK



## POWER PACK DIMENSIONS

	A	B	C	D
500 Series	1000mm	1422	1200	1400



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