The Evolution Company

A Division of:

Soundown Corp

EMSS Oil Bath Shaft System

The Evolution Marine Shaft System (EMSS) is an oil bath shaft system for smooth, quiet, low maintenance propeller shaft installations. EMSS's integrated thrust bearing transfers the propeller's thrust force directly to the hull. By transferring the thrust directly to the hull the engine can installed on significantly softer mounts than a in a conventional shaft system. Combining the softer engine mounts with the smooth operation of the oil lubricated shaft results in lower noise and vibration levels aboard.

This system is comprised of a typical '22' alloy shaft which runs in a sealed, oil-lubricated shaft tube. The shaft is supported in the tube by a thrust bearing forward, needle bearing at the aft end, and intermediate support bearings as needed. A CV shaft, universal shaft, or flexible coupling is used to connect the reduction gear to the shaft.

The oil-lubricated section penetrates the hull runs from just aft of the engine to the aft face of the keel or strut. The aft end features a bronze housing with needle bearing and two double lip seals. A hardened race protects the shaft from bearing and/or seal wear in this area, providing extended service life of the system.

As the shaft and shaft log tube enter the hull, they mate mechanically with a larger diameter steel thrust bearing assembly. This thrust bearing assembly consists of a three-piece housing covering two tapered thrust bearings mechanically affixed to the shaft and operating within their own hardened race cones, a front double-lip seal with its own hardened race, and two double-lip seals -- one in front of the shaft log tube and an abutting seal in the aft cover of the thrust bearing housing. The shaft protrudes through the front of this thrust bearing housing and is keyed to accept a split collar shaft flange. The forward face of this split collar flange is machined to accept the bolt pattern of the internal connecting shaft.

The internal shaft connecting the oil-lubricated section to the adapter/transmission of the engine is of universal/constant-velocity joints/rubber flex joints by themselves or combined and may accommodate various angles between the engine and the shaft. Whenever space allows, a splined slip yoke is utilized to facilitate installation and to further accommodate the "free-floating motion" of a soft-mounted engine.

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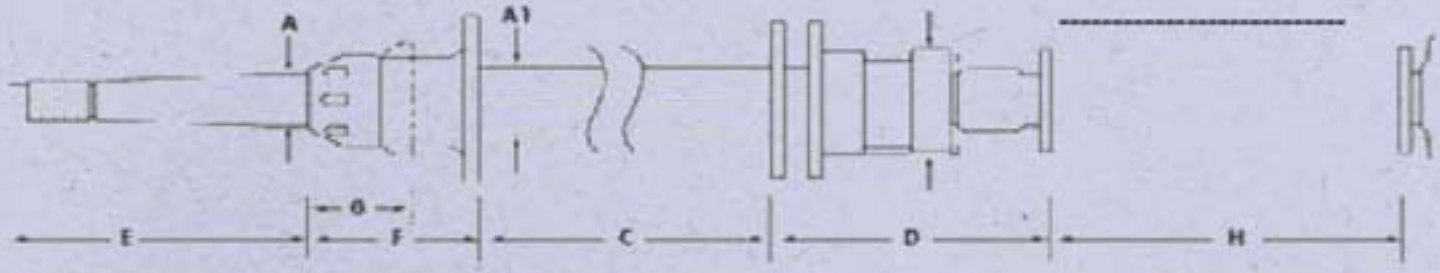
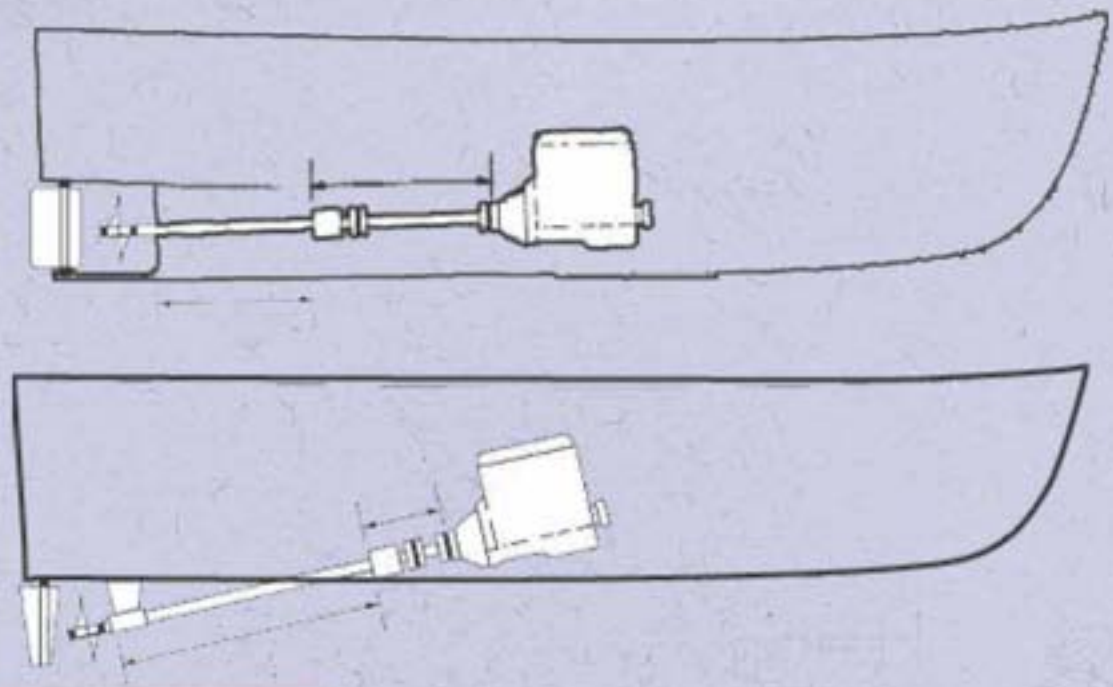
Dimensions



Shaft Diameter A (inches)	A1	B	C	D	E	F	G	H	Bearing Cap Diameter	Length
1	1.9	4	*	9.125	5.5	4.75	4.25	*	3	3.25
1 1/4	1.9	4	*	9.125	6.75	5	4.5	*	3.25	3.5
1 1/2	2.375	5.5	*	9.593	8.1875	6.375	4.625	*	3.75	3.625
1 3/4	2.875	6	*	10.813	9.5	6.75	5.0625	*	4	4.0625
2	2.875	6	*	10.4375	10.875	6.75	5.0625	*	4.31	4.0625
2 1/4	3.5	7	*	12.313	12.25	8.164	5.3125	*	5	4.3125
2 1/2	3.5	7	*	12.313	13.25	8.375	5.5	*	5	4.5
3	4	8	*	13.21	16	8.75	6	*	6	5

*To be provided to Evolution — All dimensions in inches

Typical Installation



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