



# MERCURISER SERVICE BULLETIN

Section: XII (Service Bulletins)

Number: 65-408

Date : 5/18/65

Cut individual items along broken lines & paste in appropriate sections of your Mer-Cruiser Service Manual.

- A. Noise in the Stern Drive Unit
- B. Storing Stern Drive Units - Warning!
- C. Oil Contamination - 4 & 6-Cyl. Engines
- D. Recommended "X" Dimension

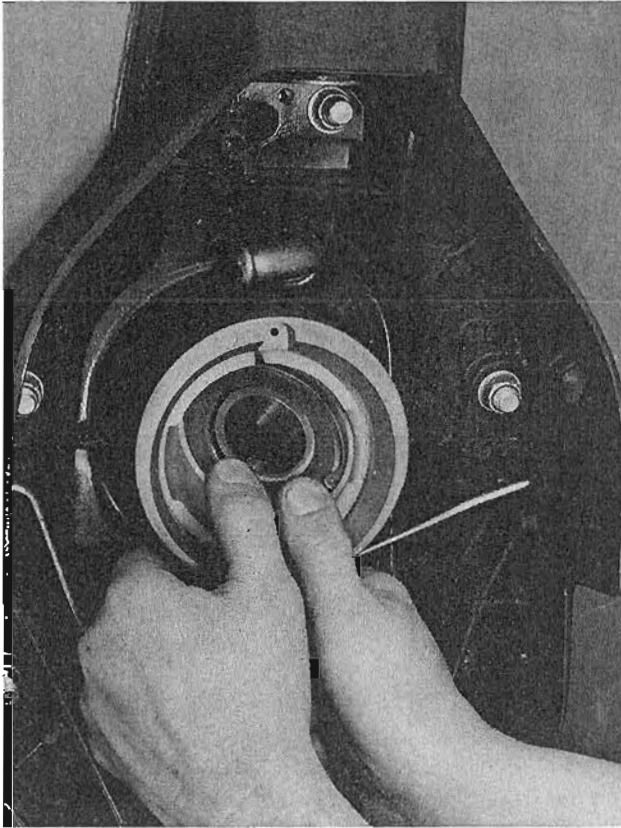


Figure 1. Install Ball Bearing and Nylon Retainer

## A. NOISE IN THE STERN DRIVE UNIT

(For Installation Section II)

If a knocking or "clunking" noise occurs on turns, it may be caused by one of the following:

1. Incorrect shimming between gimbal housing ball bearing and gimbal housing. To correct, add shims between nylon bearing carrier adaptor and gimbal so that ball bearing fits very tightly in nylon adaptor. Try various sized shims until ball bearing just can be tilted (force fit) into position. (Fig. 1)
2. Rough bearing: To correct, replace ball bearing and reshim ball bearing, as outlined in "1" preceding.

*NOTE: Use minimum number of shims to obtain correct total thickness.*

3. Transom too thin: If transom is too thin, end thrust is exerted against universal joint which causes the universal joint to "buckle". To correct, install a plywood shim between inner transom plate and inner surface of transom. The transom opening must be cut in the shim to the transom specifications and aligned precisely with the opening in the transom.

4. Transom surfaces not parallel: Inner and outer transom surfaces must be parallel within 1/4", or undue stress is placed on the universal joint and gimbal housing ball bearing.
5. Universal joint rough: To correct, disassemble and install new universal cross and bearing assembly.

## B. STORING STERN DRIVE UNITS - WARNING:

(For Page 18 of General Information Section I)

Despite warnings in the Owners Guide and in Service Bulletins, we still receive reports of stern drive units being stored in the tilt-up position. As stated in our warnings, the bellows may become "set" and result in premature failure.

Recently we received several reports of another type of damage which occurred from this malpractice. The units were stored in the open, uncovered, and exposed to the weather, and in the tilt-up position. Rain and snow entered thru the jet-prop exhaust opening and filled the exhaust cavity of the gear housing. The water then froze and cracked the gear housing.

Failures of this type are not covered by warranty.

C. OIL CONTAMINATION - 4 & 6-CYLINDER ENGINES

(This Information Is Included in Service Bulletin No. 20, Section XII, as Paragraph B and Is Meant to Serve as a Reminder.)

We have received several reports of excessive time spent to locate the source of difficulty when water is detected in the combustion chamber or crankcase oil. Check the inner water jacket cover of the exhaust manifold for possible leaks, then check the cylinder head, cylinder gasket and cylinder block.

D. RECOMMENDED "X" DIMENSION

(For Page 3 of Installation Section II)

Recommended "X" dimension for MerCruiser I & II Stern Drive Units will vary according to boat length. See charts below for maximum performance.

MERCUISEUR IA-IB-IC  
TRANSON PLATES

Transom Angle	"X" Dimension for Locating Template*
10°	13-1/2"
11°	13-5/8"
12°	13-3/4"
13°	13-7/8"
14°	14"
15°	14-1/8"
16°	14-5/16"

NOTE: This location of template will place cavitation plate of MerCruiser IA-IB-IC flush with boat bottom.

\*Boats which operate at 25 MPH or more at full throttle should use "X" dimension shown in chart. Boats which operate at 15 to 25 MPH should use "X" dimension X" (6.350mm) less than that shown in chart. Boats which operate at less than 15 MPH at full throttle should use "X" dimension 1/4" less than that shown in chart.

MERCUISEUR II 0° AND 8° TO 20° TRANSON PLATES

Transom Angle	"X" Dimension for Locating Template					
	Boats up to 25' in Length: Anti-Cavitation Plate 1/2" above Boat Bottom		Boats 25' and Over in Length: Anti-Cavitation Plate Flush with Boat Bottom		All House Boats & Heavy Duty Applications: Anti-Cavitation Plate 1" Below Boat Bottom ‡	
	0° Transom Plate	8° to 20° Tran. Pl.	0° Transom Plate	8° to 20° Tran. Pl.	0° Transom Plate	8° to 20° Tran Plate
0°	13-11/16"		13-3/16"		12-3/16"	
1°	13-13/16"		13-5/16"		12-5/16"	
2°	13-7/8"		13-3/8"		12-3/8"	
3°	13-15/16"		13-7/16"		12-7/16"	
4°	14-1/16"		13-9/16"		12-9/16"	
5°	14-1/8"		13-5/8"		12-5/8"	
6°	14-1/4"		13-3/4"		12-3/4"	
7°	14-3/8"		13-7/8"		12-7/8"	
8°	14-1/2"	13-7/16"	14"	12-15/16"	13"	11-15/16"
9°		13-5/8"		13-1/8"		12-1/8"
10°		13-3/4"		13-1/4"		12-1/4"
11°		13-7/8"		13-3/8"		12-3/8"
12°		14"		13-1/2"		12-1/2"
13°		14-1/8"		13-5/8"		12-5/8"
14°		14-5/16"		13-3/4"		12-3/4"
15°		14-1/2"		13-15/16"		12-15/16"
16°		14-11/16"		14-1/8"		13-1/8"
17°		14-7/8"		14-5/16"		13-5/16"
18°		15-1/16"		14-1/2"		13-1/2"
19°		15-1/4"		14-11/16"		13-11/16"
20°		15-1/2"		14-7/8"		13-7/8"

‡ Dimension for both standard lower unit and heavy duty (2:1 ratio) lower unit

METRIC CHART

25'	=	7.62m
15-1/2"	=	39.370cm
15-1/4"	=	38.735cm
15-1/16"	=	38.259cm
14-7/8"	=	37.783cm
14-11/16"	=	37.306cm
14-5/8"	=	37.148cm
14-1/2"	=	36.830cm
14-3/8"	=	36.513cm
14-5/16"	=	36.354cm
14-1/8"	=	35.873cm
14-1/16"	=	35.719cm
14"	=	35.560cm
13-15/16"	=	35.401cm
13-7/8"	=	35.243cm
13-13/16"	=	35.084cm
13-3/4"	=	34.925cm
13-11/16"	=	34.766cm
13-5/8"	=	34.608cm
13-9/16"	=	34.449cm
13-1/2"	=	34.290cm
13-7/16"	=	34.131cm
13-3/8"	=	33.973cm
13-5/16"	=	33.814cm
13-1/4"	=	33.655cm
13-3/16"	=	33.496cm
13-1/8"	=	33.338cm
13"	=	33.020cm
12-15/16"	=	32.861cm
12-7/8"	=	32.703cm
12-3/4"	=	32.545cm
12-5/8"	=	32.386cm
12-9/16"	=	32.228cm
12-1/2"	=	31.750cm
12-7/16"	=	31.591cm
12-3/8"	=	31.433cm
12-5/16"	=	31.274cm
12-1/4"	=	31.115cm
12-3/16"	=	30.956cm
12-1/8"	=	30.798cm
11-15/16"	=	30.639cm
11"	=	25.400mm
1/2"	=	12.700mm