

ANNUAL PREVENTIVE MAINTENANCE BULLETIN (CM-13)

The following annual preventive maintenance kits, when used with the preventive maintenance suggested in the Owner's Manual, is recommended to be used once a year to insure trouble-free operation of your outdrive.

The annual preventive maintenance kits, and contents, are listed below for each model outdrive.

Kits for standard Models 80, 81, 82, 83, 84SP and 85SSP.

#	Open Boot	Quan	Shld Boot	Quan	Part Name
1	19-M-5	1	19-M-9	1	Pivot Housing Boot
2	830002	1	830407	2	Pivot Housing Boot Clamp
3	830003	1			Input Front Brg Cap Boot Clamp
4	15-M-1	1	15-M-1	1	Input Front Brg Cap Oil Seal
5	15-M-4	1	15-M-4	1	Input Front Brg Cap "O" Ring
6	810142X	1	810142X	1	Output Shaft Oil Seal Kit
7	15-M-5	1	15-M-5	1	Output Shaft Brg Cap "O" Ring
8	15-M-10	1	15-M-10	1	Input Shaft "O" Ring
9	19-M-3	1	19-M-3	1	Steering Arm Boot
10	7-M-7	1	7-M-7	1	Steering Bracket Gasket
11	830130	1	830130	1	Sacrificial Anode
12	830136	1	830136	1	Sacrificial Anode
13	830139	4	830139	4	Hex Head Bolt

Kits for Models 90/91.

#	Open Boot	Quan	Shld Boot	Quan	Part Name
1	19-M-5	1	19-M-9	1	Pivot Housing Boot
2	830002	1	830407	2	Pivot Housing Boot Clamp
3	830003	1			Pivot Boot Clamp
4	15-M-1	1	15-M-1	1	Oil Seal
5	15-M-4	1	15-M-4	1	"O" Ring
6	19-M-3	1	19-M-3	1	Steering Arm Boot
7	7-M-7	1	7-M-7	1	Steering Bracket gasket
8	830130	1	830130	1	Sacrificial Anode
9	830381	2	830381	2	Sacrificial Anode
10	830139	2	830139	2	Hex Head Bolt
11	830139-1	2	830139-1	2	Hex Head Bolt
12	15-M-38	1	15-M-38	1	Oil Seal
13	15-M-37	1	15-M-37	1	"O" Ring
14	15-M-10	1	15-M-10	1	"O" Ring

MARINE DRIVE SYSTEMS, INC.

ANNUAL PREVENTIVE MAINTENANCE PROCEDURE

UPPER UNIT (ALL MODELS):

1. Remove drive from pivot housing.
2. Remove boot (D-11) Fig. 1
3. Drain oil from unit and discard

4. Remove universal joint from input yoke.
5. Remove input shaft retainer screw and washer.
6. Remove input shaft bearing cup.
7. Press input shaft yoke out of bearing in bearing cap.
8. Using a small punch drive oil seal out from the back side.
9. Install a new seal (L-4) in the bearing cap.
Note: Use sealer on the O.D. of the new seal.
10. Re-assemble bearing cap and input yoke.
11. Replace O-Ring (L-5) located on the bearing cap O.D.
12. Replace input shaft bearing cap and screws on upper housing.

FIGURE 1

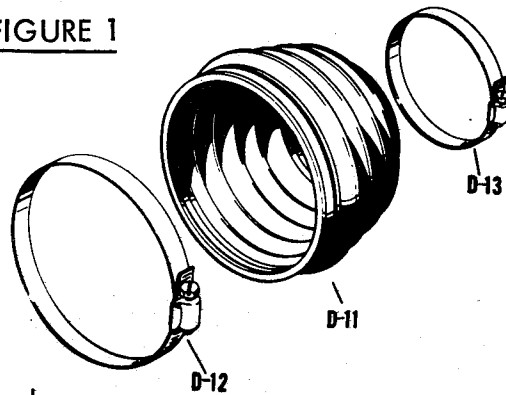
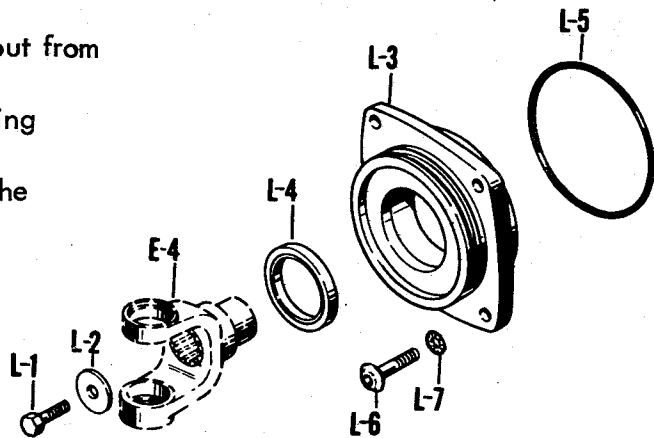
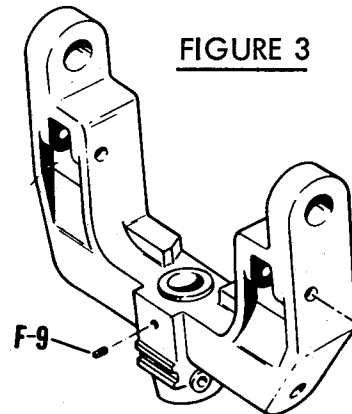


FIGURE 2



13. Lubricate bearings in pivot support yoke.
 - A. Remove plug (F-9) located on the front of the yoke.
 - B. Using a standard grease fitting, fill the bearing cavity with grease.
 - C. Replace plug (F-9) into yoke.
 - D. For units that do not have the above mentioned plug, remove the top screw holding on the reverse latch springs and fill the bearing cavity with grease.
 - E. Replace screw into the yoke.
14. Inspect parting line between upper and lower units for leaks. Replace gasket if any leaks are present.
Note: The presence of oil at the base of the pivot housing yoke indicates a leaking gasket at the parting line.

FIGURE 3



LOWER UNIT (MODELS 80 & 81):

15. Replace output shaft oil seal (M-15).

A. Remove bearing cap screws.

B. Remove bearing cap.

Note: Hold output shaft in position while the bearing cap is off to keep the stem gear from falling out of position.

16. Remove seal (M-15) and bearing cup (M-20) out of bearing cap.

Note: To remove oil seal (M-15) use a small punch through the holes provided on the rear of bearing cap.

17. Install the new seal (M-15) into bearing cap using a sealer on the O.D. of the seal.

18. Install the bearing cup back into the bearing cap.

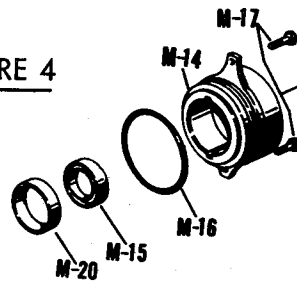
Note: Inspect this bearing cup for damage before re-using.

19. Replace bearing cap O-Ring (M-16).

20. Grease oil seal and O-Ring (M-16 & M-15).

21. Re-assemble output shaft bearing cap to lower unit.

FIGURE 4



LOWER UNIT (MODEL 91):

22. Replace output shaft O-Ring (M-24).

A. Remove bearing cap screws.

B. Remove bearing cap.

23. Replace output shaft oil seal (M-23)

A. Remove both lower anode screws.

B. Remove both lower anodes.

C. Remove oil seal (M-23).

Note: To remove oil seal (M-23), it will be necessary to drill two holes in the metal portion of the seal. Install two sheet metal screws in these holes and pry the oil seal out.

24. Clean the oil seal "seat" surface on the bearing cap.

25. Apply grease in the cavity between the two oil seal lips on the oil seal.

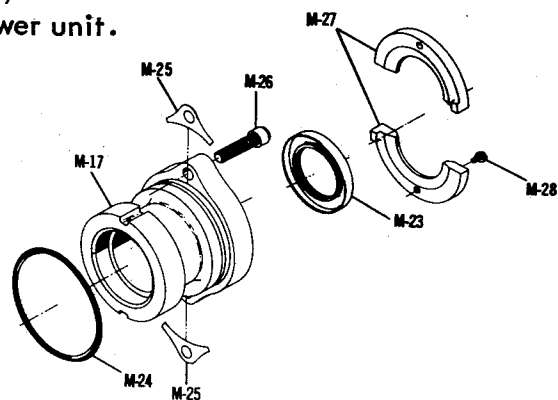
26. Install the new oil seal (M-23) using a sealer on the O.D. of the seal.

27. Install the new anodes on the bearing cap with the new anode screws.

28. Grease O-Ring (M-24) and O.D. of bearing cap.

29. Install bearing cap in lower unit, using the same amount of shims (M-25) under each bolt (M-26). Torque bolts to 105 ± lbs. ft.

FIGURE 5



COMPLETE DRIVE (ALL MODELS):

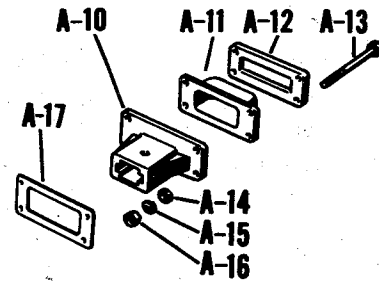
30. Rotate unit by hand, making sure all parts are free.
Note: Touch-up paint on unit.
31. Clean universal joint assembly and assemble to input yoke.
32. Remove O-Ring 15M10 located on splined end of joint assembly and replace with new O-Ring.
33. Check pivot housing bearings.

34. Replace steering arm boot, (A-11) and gasket (A-17) located on transom mount.

35. Inspect all steering linkage, and ball joints. Replace if necessary.
36. Lubricate ball joints on steering linkage.
37. Lubricate universal joint spline and O-Ring.
38. Secure new boot 19M5 to unit bearing cap over universal joint using a new clamp (D-13).

39. Assemble unit to pivot housing.
40. Secure front of boot to pivot housing using new clamp (D-12) Fig. 1.
41. Replace anode 830130 on support yoke using new screws 830139.
42. Replace anode 380136 on cavitation plate using new screws 830139.
43. Fill unit with new E.P. 90 oil to proper level.
44. Re-connect steering linkage.
45. Inspect propeller for damage or out of balance condition.
Note: A damaged propeller can harm your unit if used.

FIGURE 6



BULLETIN CM-13