MERCURY OUTBOARDS service bulletin

NUMBER: 84-14

CIRCULATE TO:
SERVICE MANAGER ☐
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MECHANICS ☐
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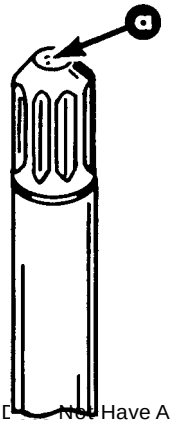
A. New Gear Housing Assembly - 1985 Model V175 and V200
B. Special Tools Available - 1985 Model V175 and V200 Gear Housing Assembly

A. NEW GEAR HOUSING ASSEMBLY - 1985 MODEL V175 and V200

A new gear housing assembly is now being used on 1985 Model V175 and V200 outboards. The new housing can be distinguished from the old one by the fact that it does not have a preload pin at the top of the drive shaft. (Figure 1)



a - Drive Shaft Does Not Have A Preload Pin

Figure 1. Gear Housing Identification

FEATURES

The gear housing has been completely redesigned for extended drive life. Listed following are some of the major changes: (Figure 2)

- **Gears** - The spiral angle of the gear teeth (a) have been reversed and higher strength steel has been utilized for increased load carrying capacity.
- **Drive Shaft Bearing/Retainer** - A new bearing (b) is being used to handle the upward force generated by the new gear design. Bearing is pressed onto the drive shaft with the taper upward (opposite of the old housing). A threaded retainer (c) is used to secure the bearing outer race in the gear housing.
- **Reverse Gear Thrust Ring** - A steel ring (d) is used to precisely position the reverse gear
- **Forward Gear/Propeller Shaft Bearing** - A closer fit bearing (e) is now employed to reduce gear deflection under high loads.
- **Drive Shaft/Pinion Bearing** - The lower portion of the drive shaft (f) has been enlarged and a larger pinion bearing (g) has been utilized to reduce gear and shaft deflection. The preload pin has been removed from the top of the drive shaft as upward movement is now controlled by the threaded retainer. The number of splines between the drive shaft and the pinion gear has been increased from 11 to 13.
- **Water Pump Base** - A new water pump base (h) has been used to provide clearance for the oil circulation passage. This base utilizes a new gasket and "O" ring.

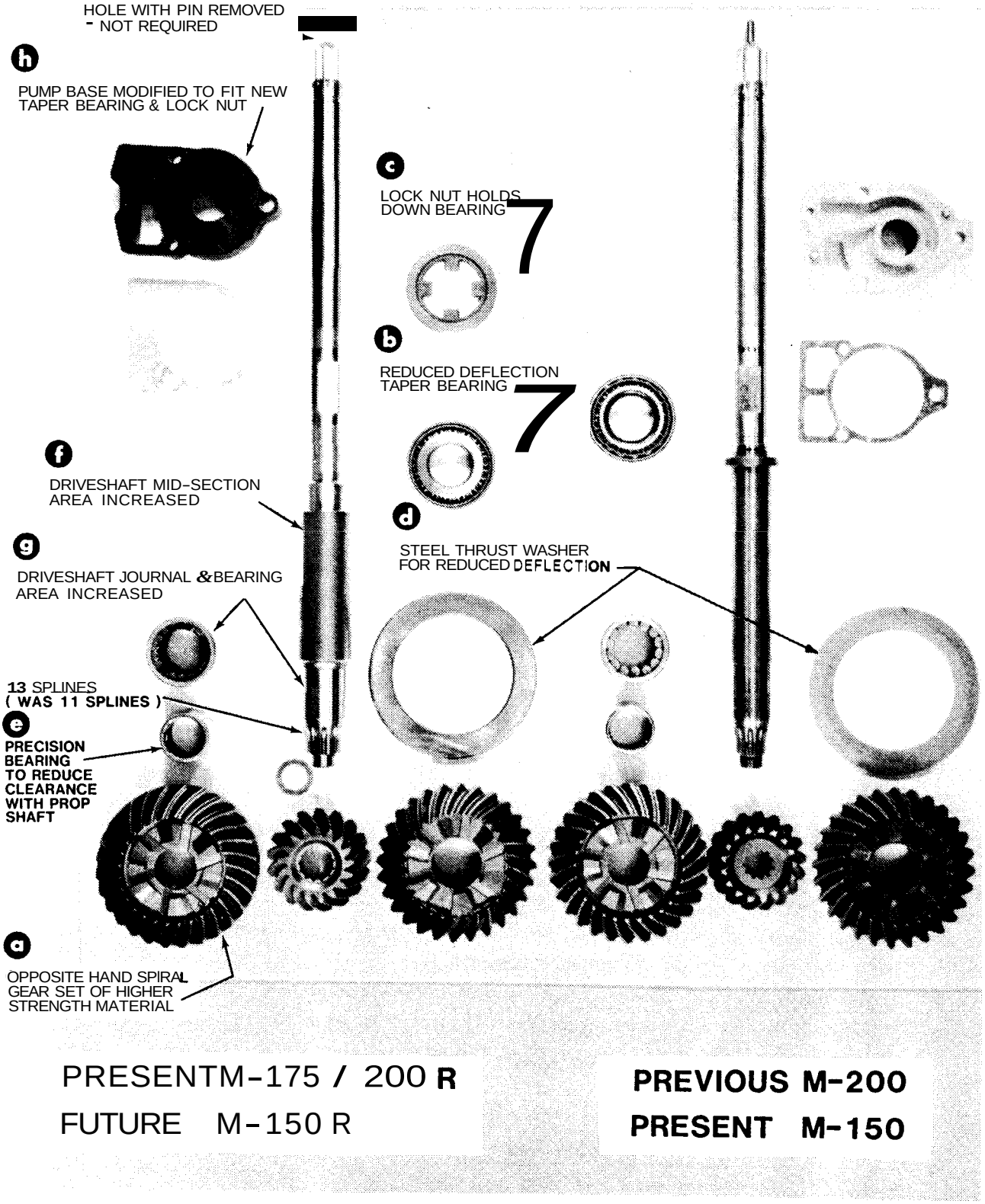
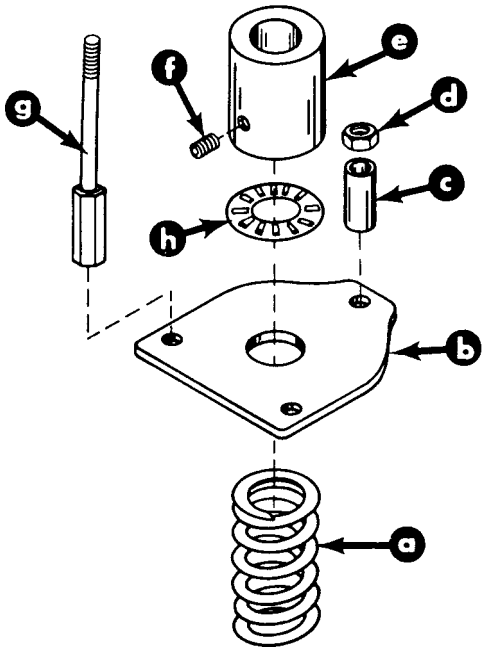

HOLE WITH PIN REMOVED - NOT REQUIRED
h
PUMP BASE MODIFIED TO FIT NEW TAPER BEARING & LOCK NUT
c
LOCK NUT HOLDS DOWN BEARING
b
REDUCED DEFLECTION TAPER BEARING
f
DRIVESHAFT MID-SECTION AREA INCREASED
d
STEEL THRUST WASHER FOR REDUCED DEFLECTION
g
DRIVESHAFT JOURNAL & BEARING AREA INCREASED
13 SPLINES (WAS 11 SPLINES)
e
PRECISION BEARING TO REDUCE CLEARANCE WITH PROP SHAFT
a
OPPOSITE HAND SPIRAL GEAR SET OF HIGHER STRENGTH MATERIAL
PRESENTM-175 / 200 R
FUTURE M-150 R
PREVIOUS M-200
PRESENT M-150

Figure 2.

B. SPECIAL TOOLS AVAILABLE - 1985 MODEL V175 and V200 GEAR HOUSING ASSEMBLY

Three new tools are required to service the gear housing.

- **Drive Shaft Bearing Preload Tool, 91-44307A1 (Figure 3)** - Applies upward pressure on the drive shaft to seat the bearing when checking pinion gear height and gear backlash. An adaptor stud is included for mounting the dial indicator when checking backlash.
- **Drive Shaft Bearing Retainer Tool, 91-43506 (Figure 4)** - Required for removing and installing the threaded retainer. Retainer must be torqued to 100 lbs. ft. (136 N.m).
- **Pinion Nut Adaptor Wrench, 91-61067A2 (Figure 5)** - Mav be used to aid removing and installing pinion nut. This tool will work on older units as well.



a - Spring
b - Plate
c - Spacer (3)
d - Nut (3)
e - Collar
f - Set Screw
g - Adaptor Stud
h - Thrust Bearing

Figure 3. Drive Shaft Bearing Preload Tool 91-44307A1

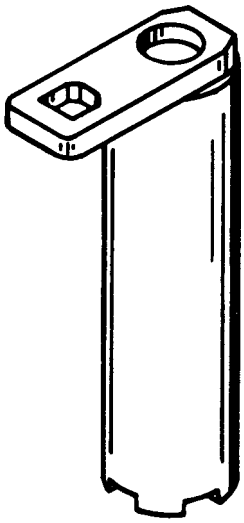


Figure 4. Drive Shaft Bearing Retainer Tool 91-43506

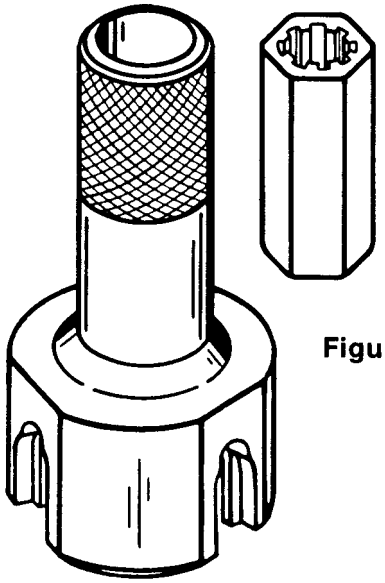


Figure 5. Pinion Nut Adaptor Wrench 91-61067A2