LOWER UNIT [Standard rotation (Right-hand) model]

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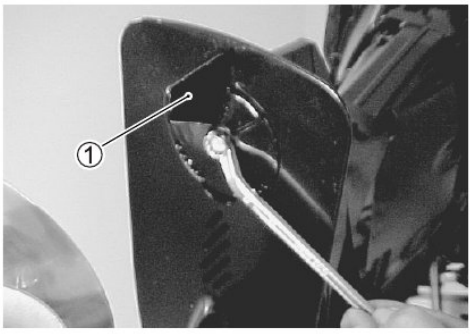
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REMOVAL & DISASSEMBLY

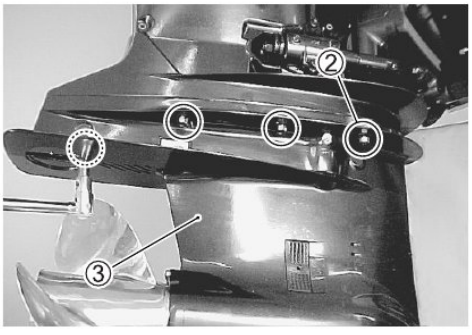
⚠ WARNING

Always disconnect the battery cable, before removing lower unit.

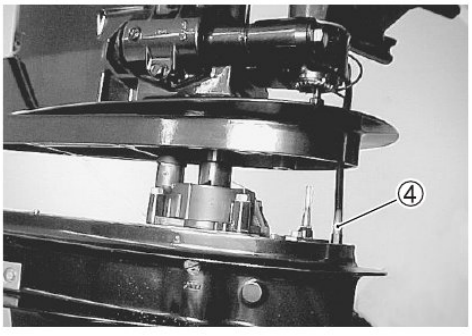
Shift to “NEUTRAL” position.
Remove bolt and trim tab ①.



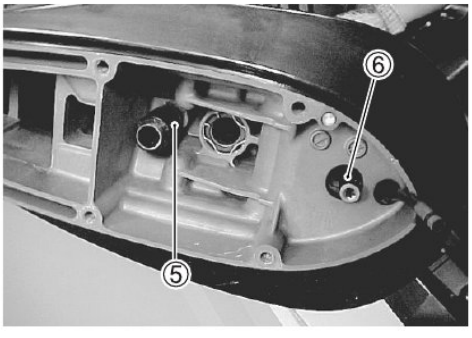
Remove seven (7) bolts ② and separate gearcase ③ from driveshaft housing.



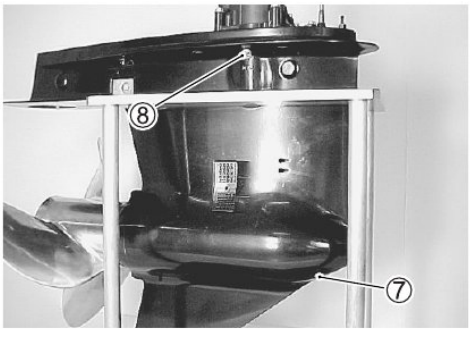
NOTE:
Before gearcase is removed completely, disconnect speedometer pick up tube ④ from gearcase.



Remove water tube spacer ⑤.
Remove clutch rod ⑥ from clutch shaft (if necessary).

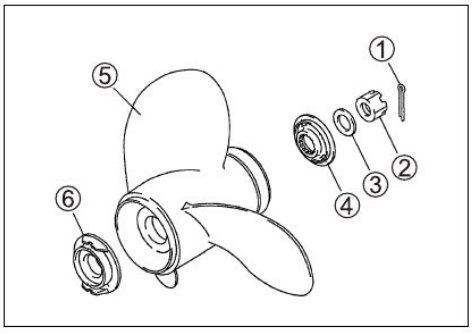


Place a drain pan under oil drain plug.
Remove oil drain plug ⑦ first then oil level plug ⑧ and allow gear oil to drain.
Inspect oil for water, contaminates or metal.



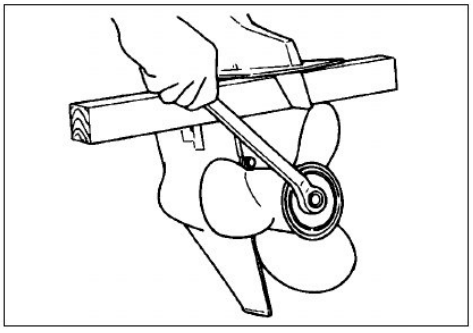
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Remove cotter pin ① from propeller nut and remove propeller nut ②.
Remove washer ③, spacer ④, propeller ⑤ and stopper ⑥ from the propeller shaft.

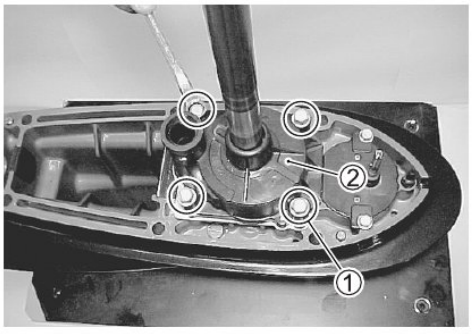


⚠ WARNING

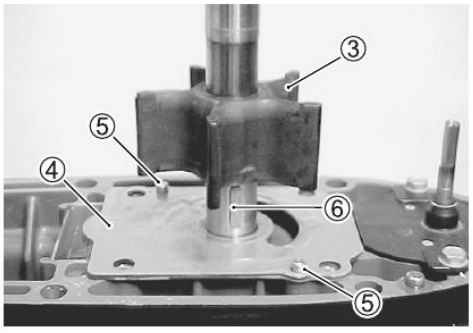
To prevent injury from propeller blades, wear gloves and place a block of wood between the anti-cavitation plate and the propeller blade tips to lock the propeller in place before attempting to remove propeller nut.



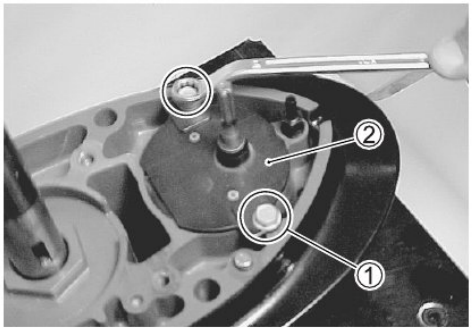
Loosen four (4) bolts ①, then remove water pump case ②.



Remove impeller ③, impeller key ⑥, pump under plate ④ and dowel pins ⑤.
Keep impeller key ⑥ for reuse and discard the plate gasket.

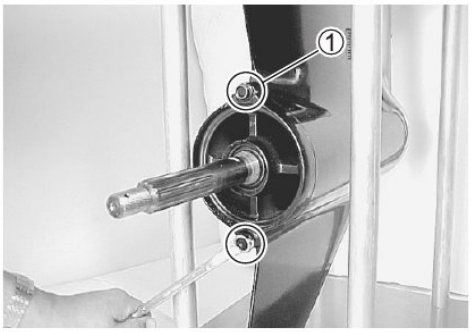


Remove two (2) bolts ① and shift rod guide housing assembly ②.



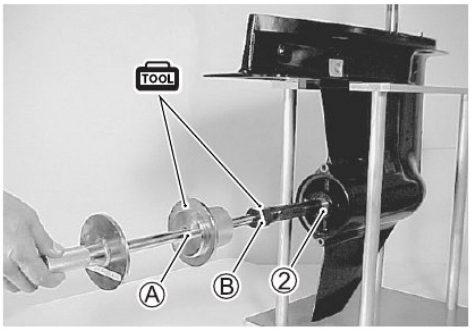
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Remove two (2) bolts ① securing the propeller shaft bearing housing to the gearcase.



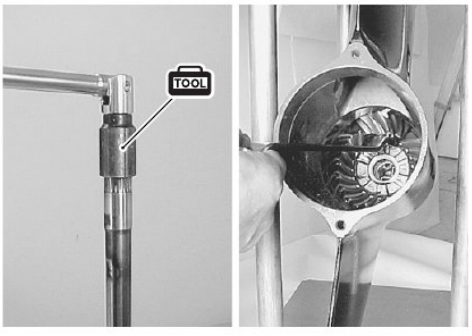
Using special tools, pull out the propeller shaft bearing housing.
Remove the propeller shaft and bearing housing assembly ②.

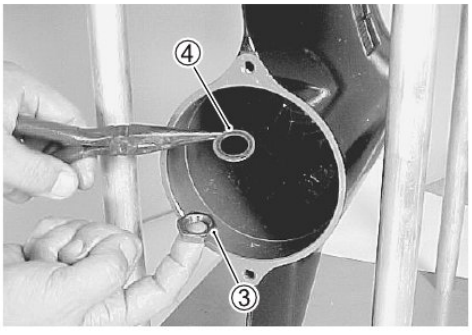
09930-30102: Ⓐ Sliding hammer
09930-30161: Ⓑ Propeller shaft remover



Hold the pinion nut securely, then fit special tool to the driveshaft and loosen the pinion nut.
Remove pinion nut ③ and washer ④.

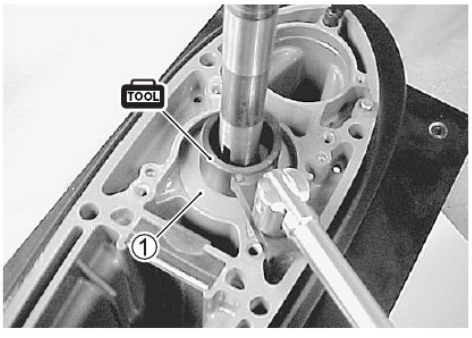
09921-29410: Driveshaft holder





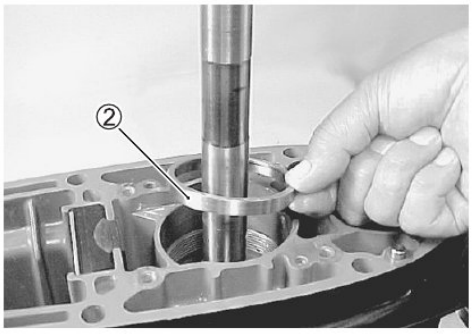
Use special tool to unscrew driveshaft oil seal housing ①, then remove oil seal housing from drive shaft.

09926-29310: Driveshaft housing remover



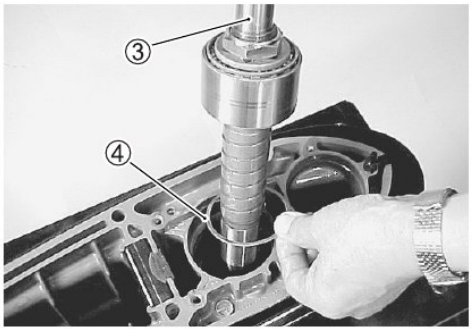
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Remove driveshaft bearing spacer ②.

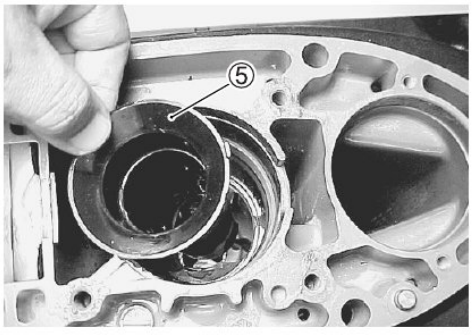


Slowly lift out driveshaft assembly ③.
Remove the pinion shim ④.

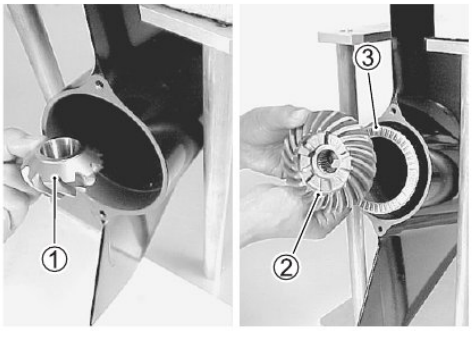
NOTE:
The driveshaft pinion gear bearing contains 28 loose roller bearings. Account for all roller bearings on disassembly.



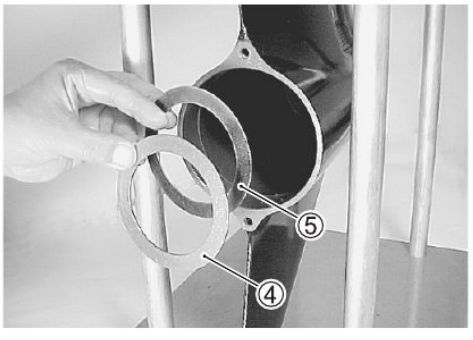
Remove the driveshaft collar ⑤.



Remove the pinion gear ①.
Remove the forward gear ② and thrust bearing ③.



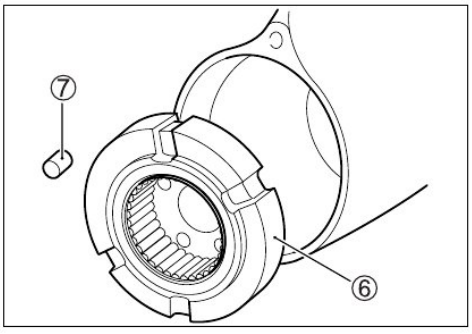
Remove the bearing thrust washer ④ and back-up shim ⑤.



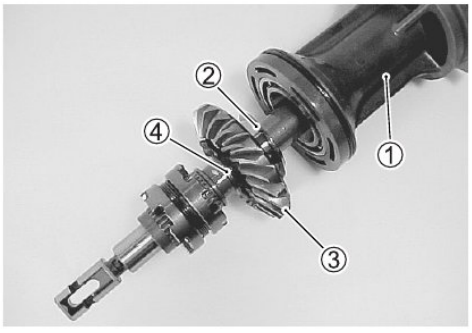
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Remove the forward gear bearing housing ⑥.
Account for dowel pin ⑦.

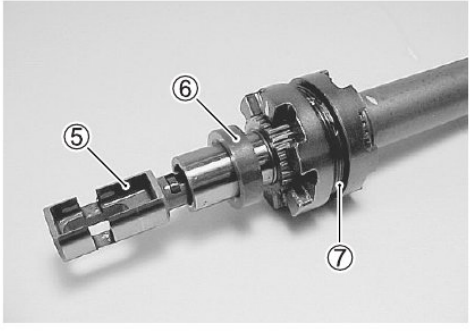
NOTE:
The forward gear radial bearing contains 35 loose roller bearing. Account for all roller bearings on disassembly.



Disassembly of propeller shaft components
Slide propeller shaft away from reverse gear ③ and bearing housing assembly ①.
Account for the reverse gear back-up shim ② and reverse gear thrust washer ④.

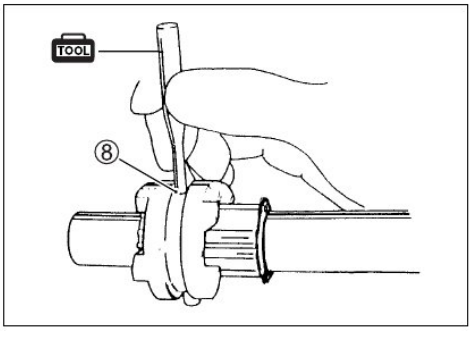


To disassemble propeller shaft components, refer to following:
(a) Remove horizontal slider ⑤ and forward gear thrust washer ⑥.
(b) Remove spring ⑦ from clutch dog shifter.

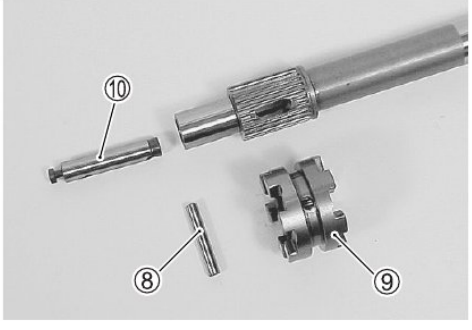


(c) Use special tool to push the dog pin ⑧ out of the clutch dog shifter.

09922-89810: Shift pin remover

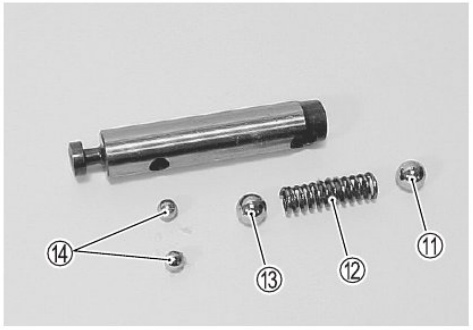


(d) Remove clutch dog shifter ⑨ and connector pin ⑩ from propeller shaft.



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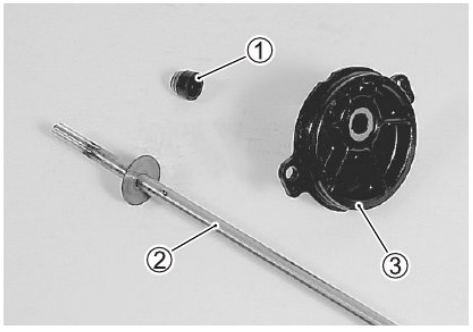
(e) Remove large detent ball ⑪, detent spring ⑫, large detent ball ⑬ and two (2) small detent balls ⑭ from connector pin.



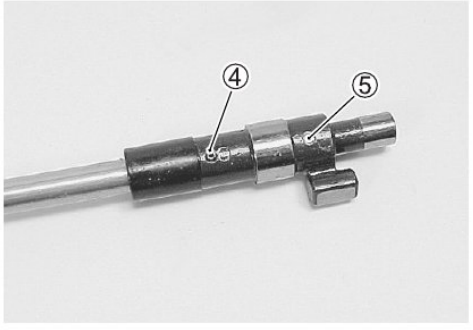
Disassembly of shift rod components

(a) Remove dust seal ①.

(b) Slide shift rod ② out of shift rod guide housing ③.



(c) Remove pin ④ and shifter yoke ⑤.

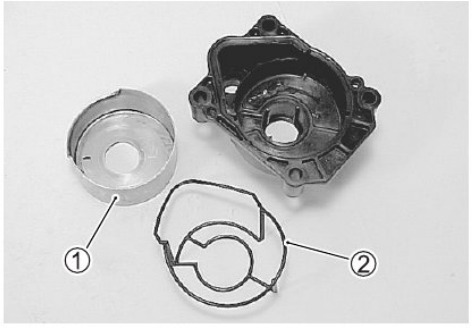


Disassembly of water pump case

Remove inner sleeve ① and rubber seal ring ②.

NOTE:

To facilitate the removal of inner sleeve from the pump case, warm up the entire case using a heater like hair dryer.



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INSPECTION

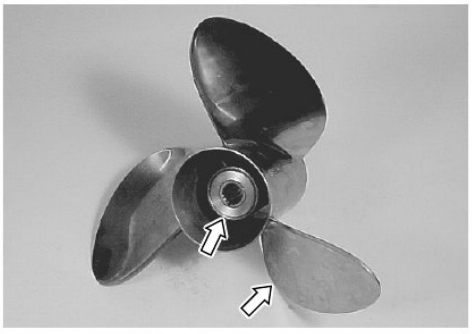
NOTE:
If any component is worn excessively, cracked, defective or damaged in any way, it must be replaced.

NOTE:
Thoroughly wash all metal components with cleaning solvent and dry with compressed air.

⚠ WARNING

Wear safety grasses when using compressed air.

PROPELLER



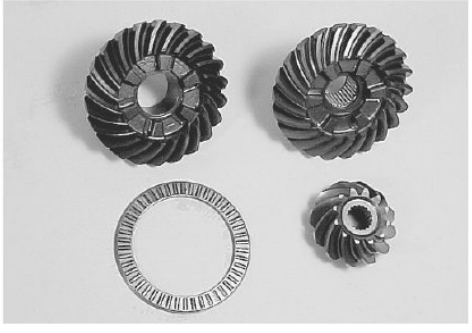
- Inspect propeller for bent, chipped or broken blades.
  Replace or repair propeller if in damaged condition.
- Inspect propeller bush splines. Replace or repair propeller if splines are worn or damaged.
- Inspect propeller bush for deterioration or slipping.
  Replace if necessary.

GEARCASE



- Inspect the gearcase. Replace if cracked, damaged or other abnormal condition.
- Visually check the pinion bearing. Replace gearcase if pitted, noisy, rough or other abnormal condition.

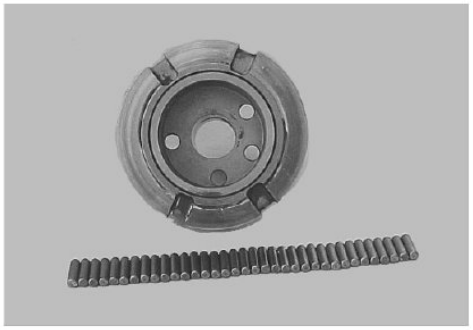
GEARS/BEARING



- Inspect forward, reverse and pinion gear teeth and engaging dogs.
  Replace gears if damaged, worn or other abnormal condition.
- Inspect propeller shaft forward bearing, forward gear thrust bearing.
  Replace bearing if pitted, noisy, rough or other abnormal condition.

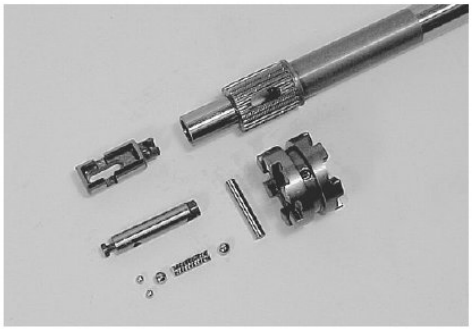
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FORWARD GEAR BEARING HOUSING



- Inspect forward gear bearing housing.
  Replace if cracked, damaged or other abnormal condition.
- Visually check bearing. Replace if pitted, rough or other abnormal condition.

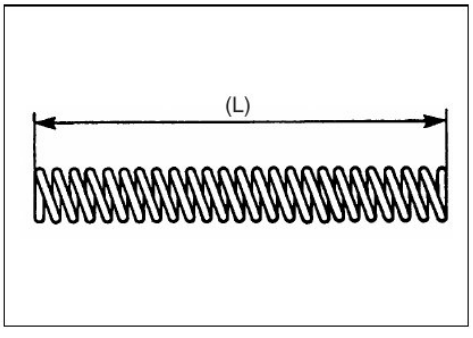
PROPELLER SHAFT COMPONENTS



- Inspect horizontal slider and connector pin.
  Replace if worn, damaged or other abnormal condition.
- Inspect clutch dog shifter. Replace if chipped, worn, damaged or other abnormal condition.
- Inspect dog pin. Replace if bent, worn or other abnormal condition.
- Inspect detent balls. Replace if wear, damage or other abnormal condition.



- Inspect propeller shaft/splines. Replace if worn, twisted, damaged or other abnormal condition.



- Check detent spring by measuring its free length. If free length is not within specifications, replace detent spring.

Detent spring free length (L)
Standard: 27.8 mm (1.09 in)
Service limit: 25 mm (0.98 in)

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PROPELLER SHAFT BEARING HOUSING

- Inspect housing. Replace if cracked, damaged or other abnormal condition.
- Inspect reverse gear bearing. Replace bearing if pitted, noisy, rough or other abnormal condition.
- Check condition of oil seal and O-ring.
  Replace oil seal and O-ring if nicked, cut, worn or other abnormal condition.





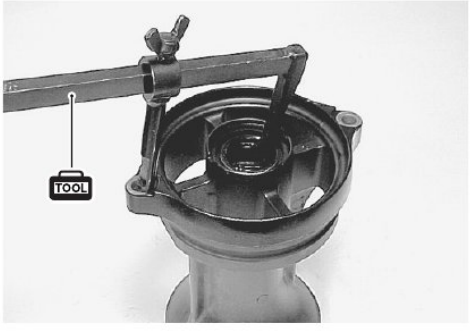
Replacing propeller shaft oil seal

1. Extract seals ① with oil seal remover.

TOOL 09913-50121: Oil seal remover

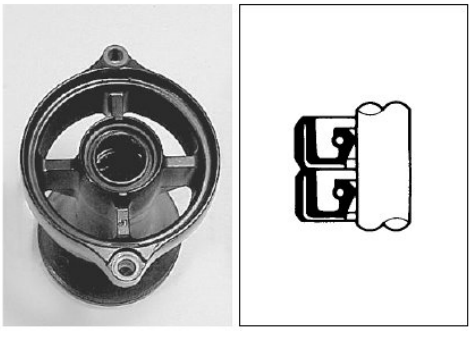
CAUTION

Do not reuse oil seal once removed.
Always use new oil seal.



2. Apply Water Resistant Grease to the inner circumference of the housing.
3. Using an oil seal installer, drive the two oil seals (one at a time) into the propeller shaft bearing housing.
   The lipped portion of the seal must face towards the propeller.
   Apply Water Resistant Grease to the seal lips.

W/R G's 99000-25160: SUZUKI WATER RESISTANT GREASE



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