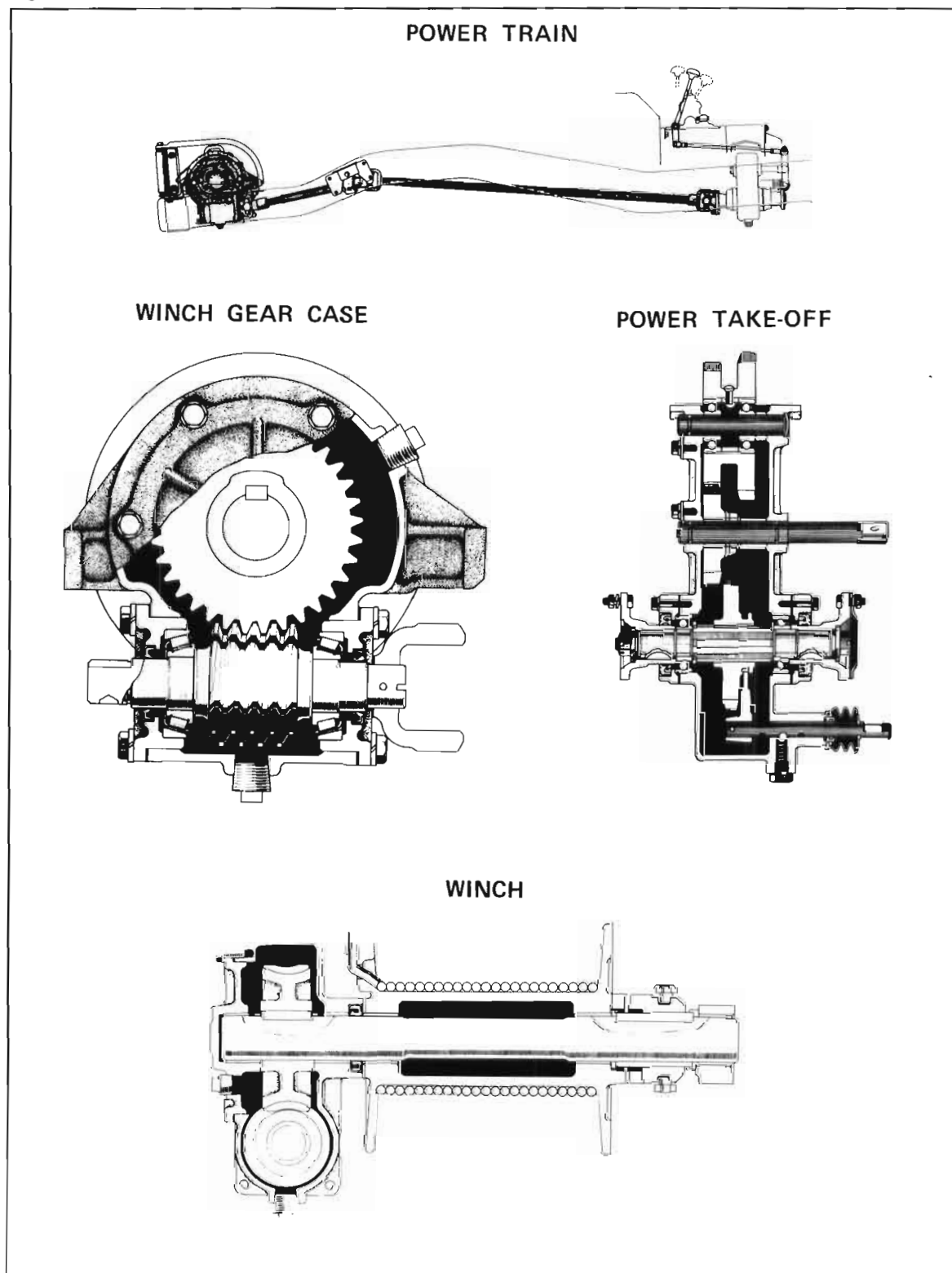


FRONT WINCH

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CUTAWAY VIEW	9- 2
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CUTAWAY VIEW

Fig. 9-1

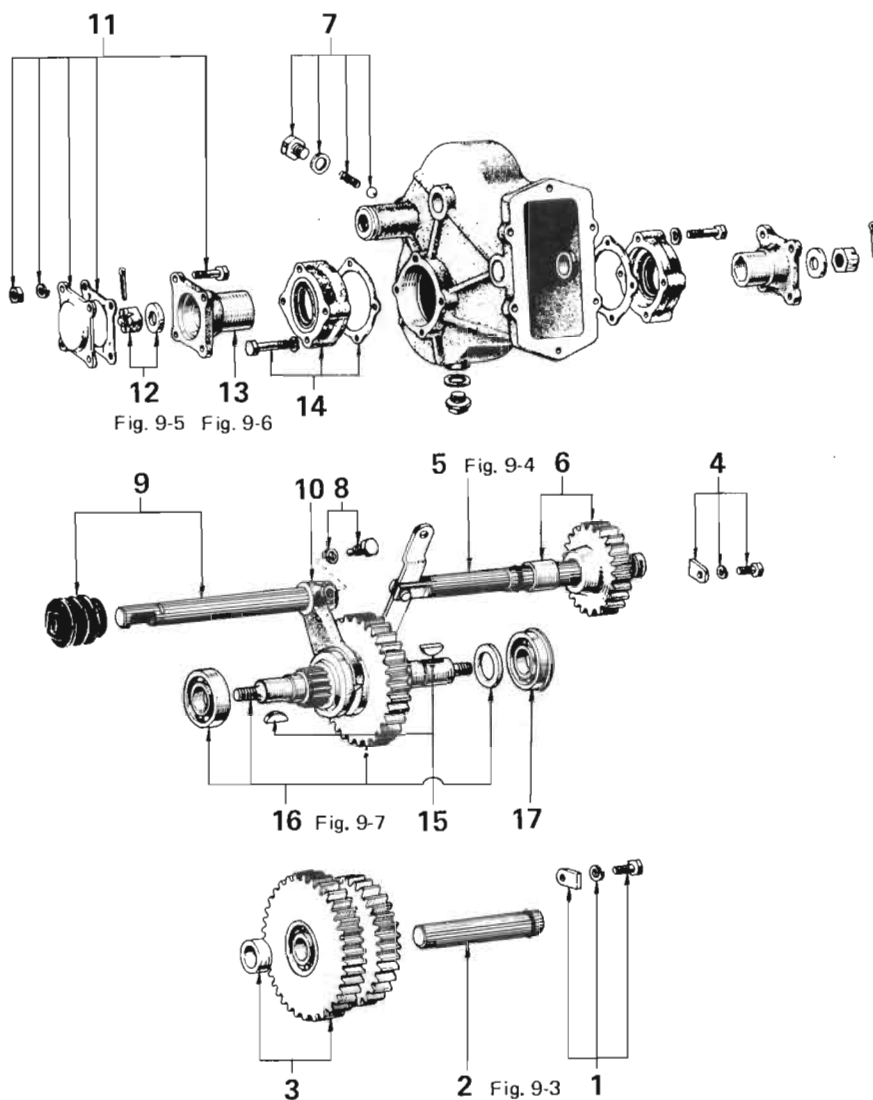


POWER TAKE-OFF

DISASSEMBLY

Dissassemble the parts in the order numbered below.

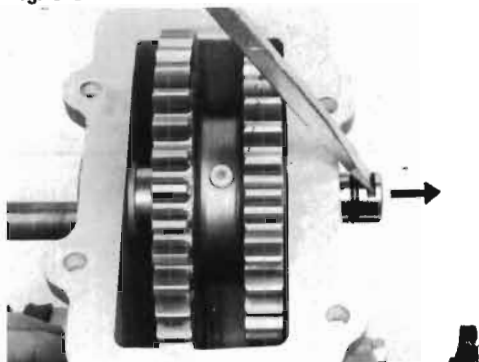
Fig. 9-2



- 1 Lock Plate
- 2 Input Gear Shaft
- 3 Spacer, Input Gear & Bearings
- 4 Lock Plate
- 5 Reverse Idler Shaft Assy.
- 6 Reverse Idler Gear & Spacer
- 7 Lock Ball & Spring
- 8 Lock Bolt
- 9 Fork Shaft & Boot

- 10 Shift Fork
- 11 Retainer Cap
- 12 Nuts & Plates
- 13 Joint Flanges
- 14 Bearing Retainers
- 15 Woodruff Keys
- 16 Output Shaft, Bearing & Spacer
- 17 Bearing

Fig. 9-3

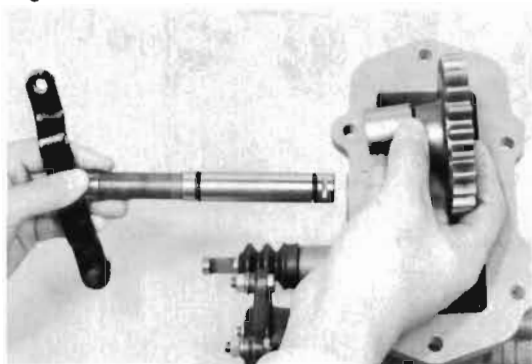


Remove the input gear shaft.

– Note –

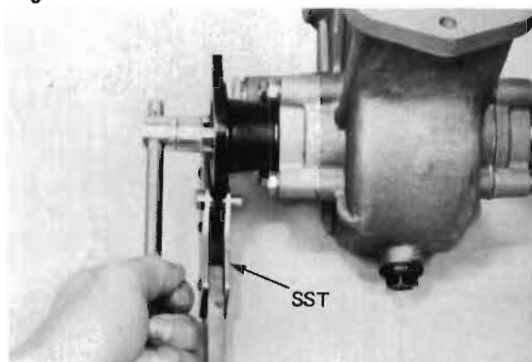
If difficult to remove the shaft, first tap the shaft lightly towards the rear, and remove the expansion plug.

Fig. 9-4



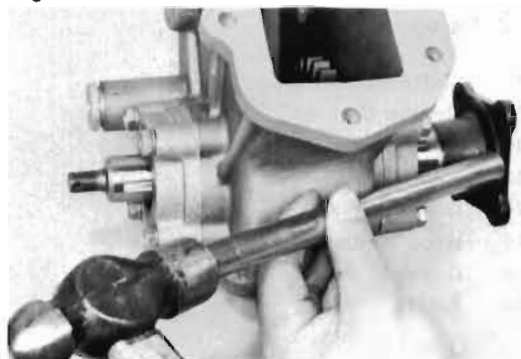
Remove the reverse idler shaft assembly.

Fig. 9-5



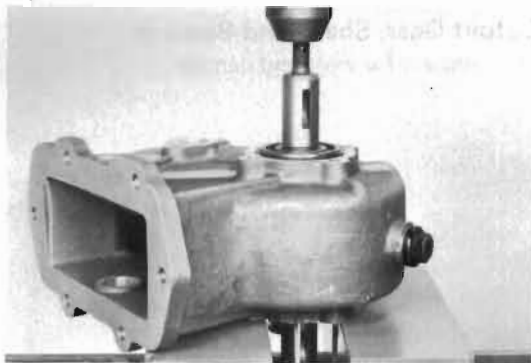
Use SST [09330-00020].

Fig. 9-6



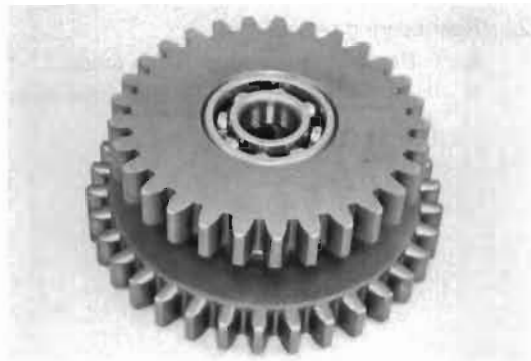
Remove the joint flange by lightly tapping its portion of woodruff key groove.

Fig. 9-7



Remove the output shaft with the rear bearing using a press.

Fig. 9-8



INSPECTION



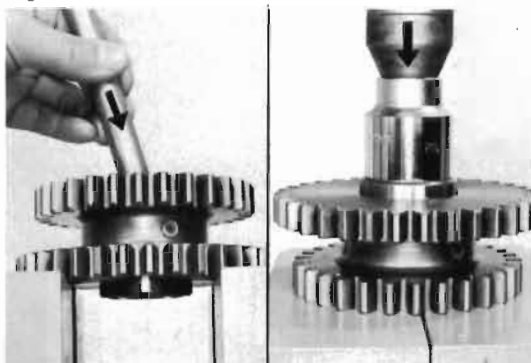
Wash the disassembled parts and inspect them on the following points.

Replace any part found defective.

Input Gear And Bearings

1. Inspect the gears for teeth wear or damage.
2. Inspect the bearings for damage and wear.

Fig. 9-9



3. Bearings replacement.

- a. Remove the bearings with drift pin.
- b. Install the bearings with socket wrench.



Fig. 9-10



Reverse Idler Gear And Shaft

Inspect for wear and damage.

— Note —

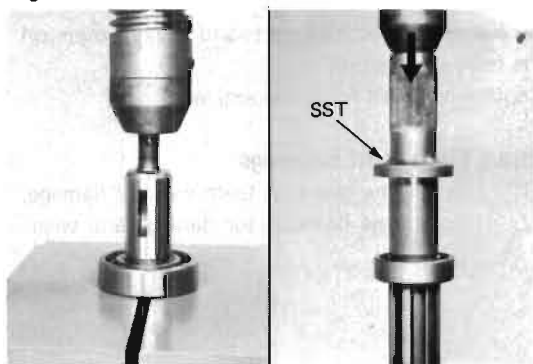
For the bushing replacement, use a socket wrench.

Fig. 9-11

**Output Gear, Shaft And Bearings**

1. Inspect for wear and damage.

Fig. 9-12

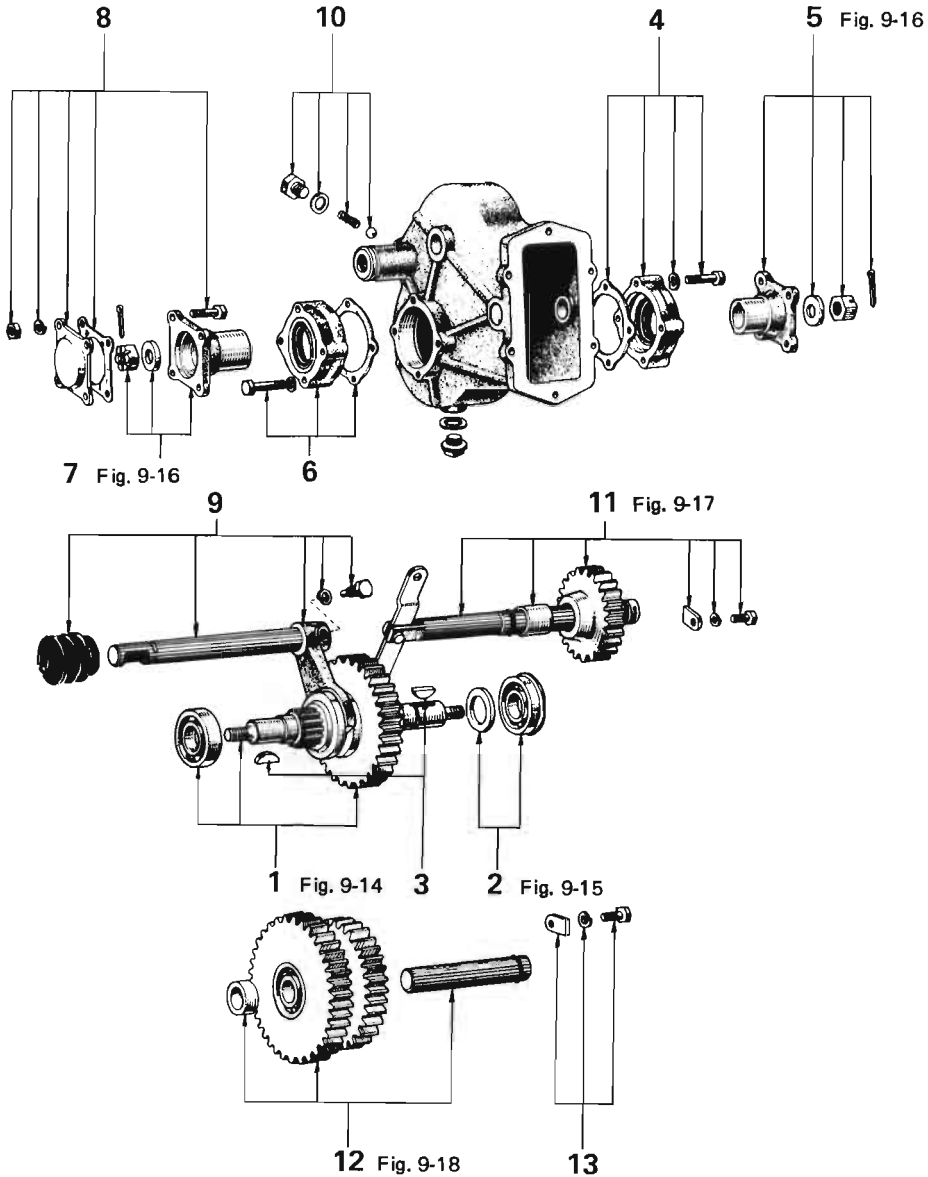


2. Rear bearing replacement.
 - a. Remove the bearing with a press.
 - b. Install the bearing with a press and SST [09325-12010].

ASSEMBLY

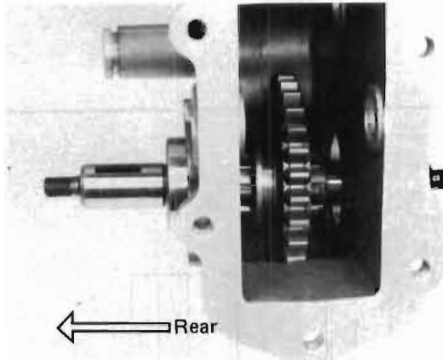
Assemble the parts in the order numbered below.

Fig. 9-13



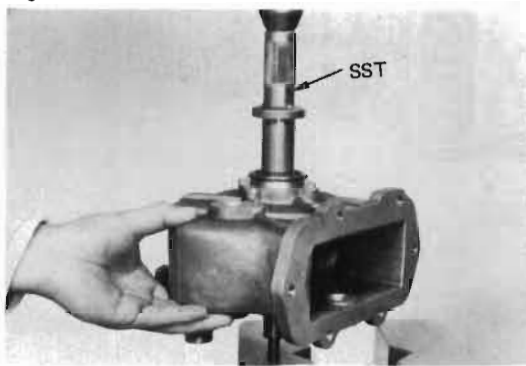
- | | | | |
|---|------------------------|----|------------------------------------|
| 1 | Output Shaft & Bearing | 8 | Retainer Cap |
| 2 | Spacer & Bearing | 9 | Shift Fork, Shaft & Boot |
| 3 | Woodruff Keys | 10 | Lock Ball & Spring |
| 4 | Bearing Retainer | 11 | Reverse Idler Gear, Spacer & Shaft |
| 5 | Joint Flange | 12 | Input Gear & Shaft |
| 6 | Bearing Retainer | 13 | Lock Plate |
| 7 | Joint Flange | | |

Fig. 9-14



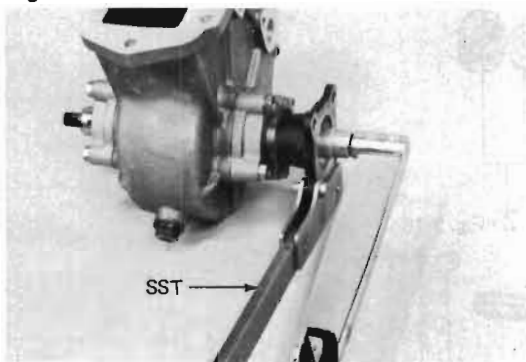
Position the output gear into the case with the shift fork groove towards the rear.

Fig. 9-15



Install the bearing with a press and SST [09325-12010].

Fig. 9-16

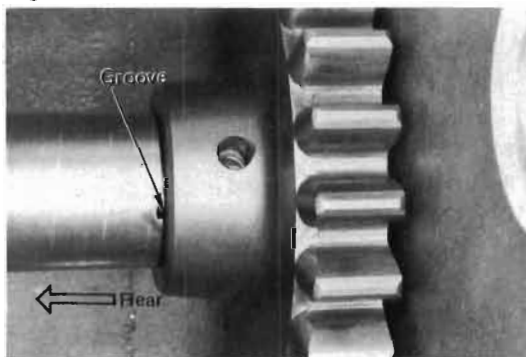


Using SST [09330-00020] to keep the output shaft from turning, tighten the nut.

Tightening torque

1.5 – 2.2 kg-m (10.9 – 15.9 ft-lb)

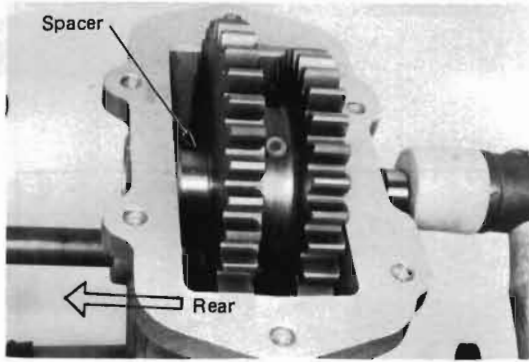
Fig. 9-17



Place the reverse idler gear and the idler gear spacer into the case with the gear hub to the rear side.

The spacer should be installed between the gear hub and the case.

Fig. 9-18



Place the input gear into the case with the larger gear towards the rear, and mesh with the reverse idler gear. Install the spacer.

WINCH

DISASSEMBLY

Dissassemble the parts in the order numbered below.

Fig. 9-19

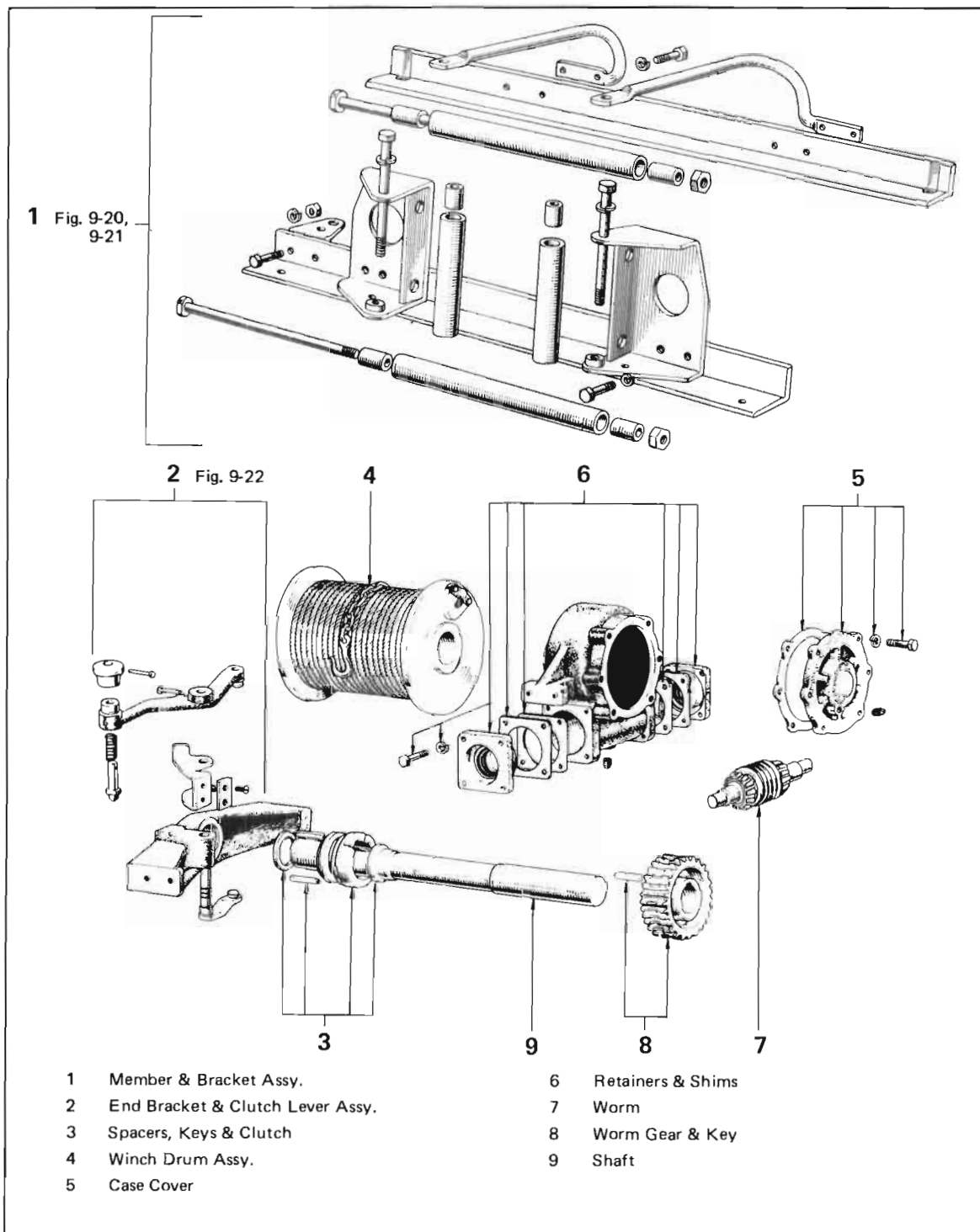
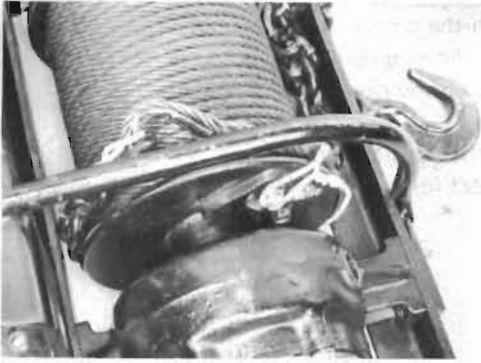


Fig. 9-20



Keep the wire rope end tied together with a wire as shown in the photo.

Fig. 9-21



Remove the front and rear base members, and the roller bracket supports.

Fig. 9-22



Remove the winch end bracket assembly.

Fig. 9-23

**INSPECTION**

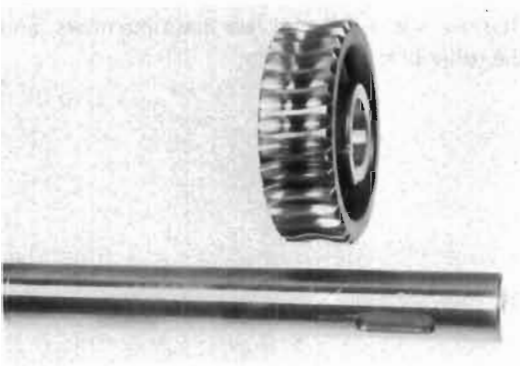
Wash the disassembled parts and inspect them on the following points.

Replace any part found defective.

Worm And Bearing

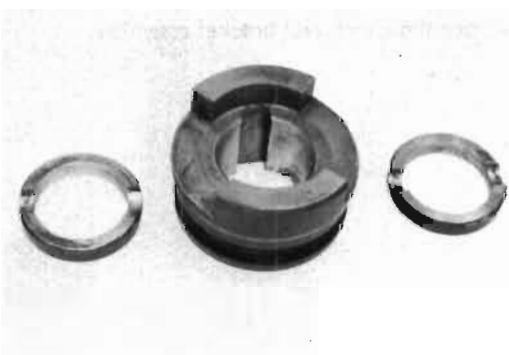
Inspect for wear and damage.

Fig. 9-24

**Worm Gear And Shaft**

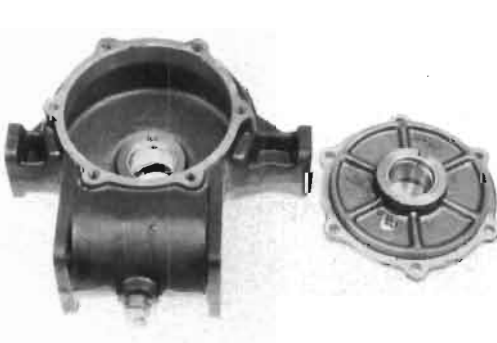
Inspect for wear and damage.

Fig. 9-25

**Clutch And Spacer**

Inspect for wear and damage.

Fig. 9-26

**Gear Case And Cover**

Inspect for cracks and the bushing wear.

ASSEMBLY

Assemble the parts in the order numbered below.

Fig. 9-27

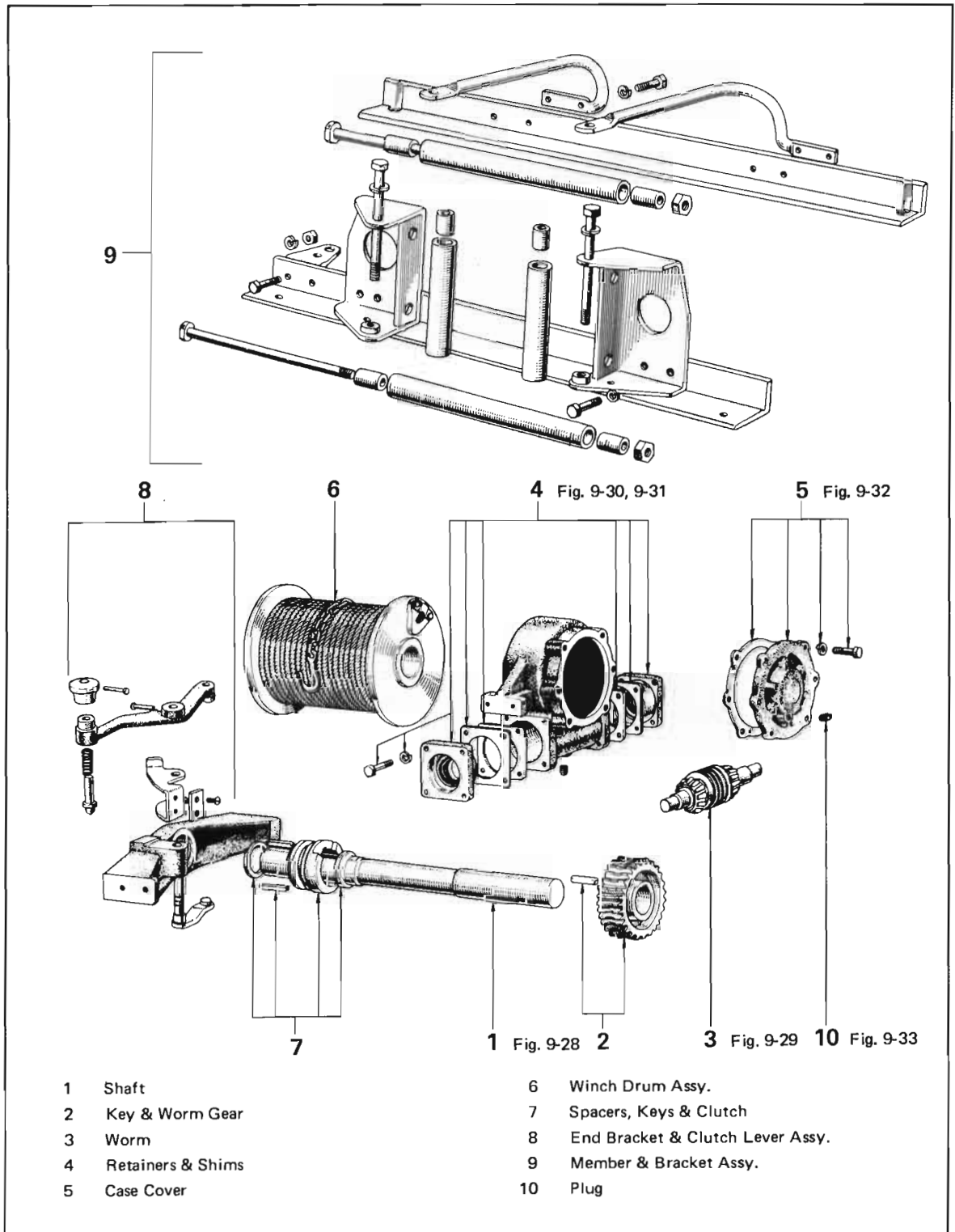
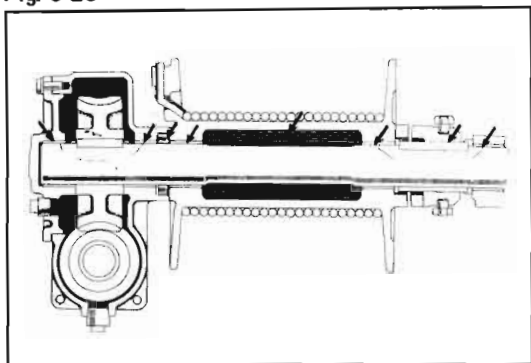


Fig. 9-28



Apply multipurpose grease on all bushings, shaft and the clutch mechanism when assembling, and pack multipurpose grease into the drum to about three-fourth of the drum volume.

Fig. 9-29



Place the worm into the case with the straight pin hole towards the rear.

Fig. 9-30

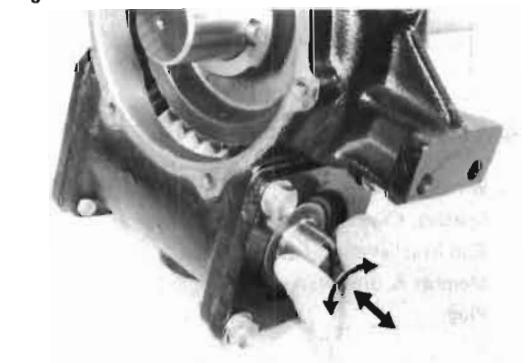


Install the worm bearing retainers with the adjusting shims and tighten the bearing retainer attaching bolts to 1.9 – 3.1 kg-m (14 – 22 ft-lb) torque.

– Note –

Apply liquid sealer onto the gasket surfaces to prevent oil leak.

Fig. 9-31



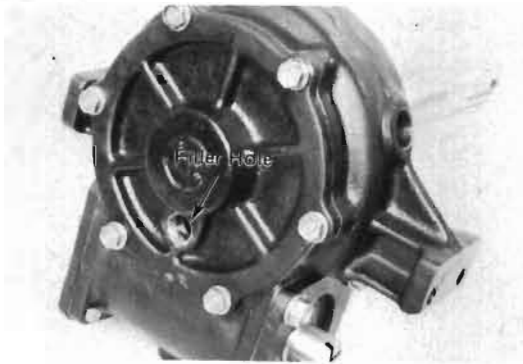
Rotate the worm, and check the condition for looseness or tightness, and also rock the worm to-and-fro, and check the worm end play. The worm end play should be zero and it should rotate smoothly.

Adjusting Shim Thickness

Part No.	Thickness mm (in.)
38123-60010	0.228 (0.009)
38124-60010	0.5 (0.020)

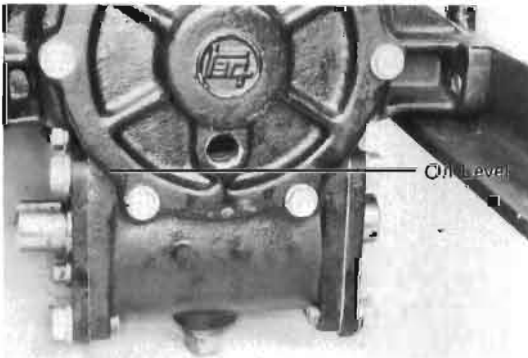
If necessary, adjust the worm bearing pre-load by selecting the adjusting shims to obtain the proper condition.

Fig. 9-32



Install the case cover with its filler hole positioned downward.

Fig. 9-33



Fill the gear case with gear oil.

Gear case oil capacity

0.6 liter (US qt. 0.6, Imp.qt. 0.5)

Type SAE 90, API GL-4