

MOWERS

MOWER LEVELING

Set parking brake, start tractor engine and raise mower with lift. Check level of mower, if it needs releveling, proceed as follows:

- Lower mower to the ground.
- Remove clevis pins of leveler rods (A), Figure 8-2.
- If mower was low in front, shorten the leveler rods. If mower was high in front, lengthen the leveler rods.
- Reinstall clevis pins and secure with spring cotters. Securely tighten lock nuts on leveler rod clevises.

Position stop nuts (B) Figure 8-1 on lift links flush with bottom of pivot stud (C). Turn up on the studs until desired height is obtained.

If mower needs leveling from side to side, adjust by turning nut (B) Figure 8-1 either up or down on lift studs (C).

LUBRICATION

The unit has five grease fittings; one on each blade spindle located on the top side of the mower; one on each universal joint. Lubricate grease fittings every 50 hours of operation or once each year, whichever occurs first, with Bolens multi-purpose grease and Bolens grease gun. Oil all linkages, gauge wheels and anti-scalp roller at periodic intervals.

NOTE

The gear case is filled at the factory with 11 oz. (.324 liter) of Bolens gear lube. Remove plug at rear of gear case. Check oil level - oil should be to the level of the plug opening - thereafter check at intervals of every 25 hours of operation to maintain plug level.

GEAR CASE DISASSEMBLY

1. Remove universal joint, R.H. belt cover and remove belt from the gear case.

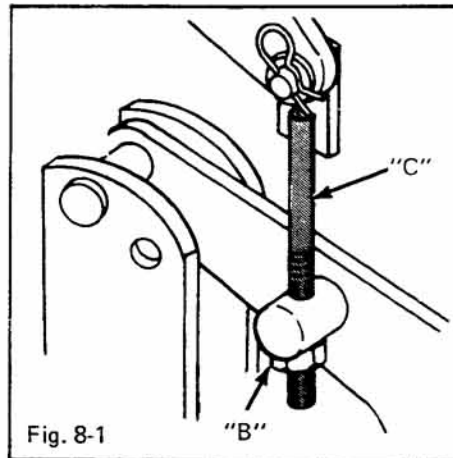


Fig. 8-1

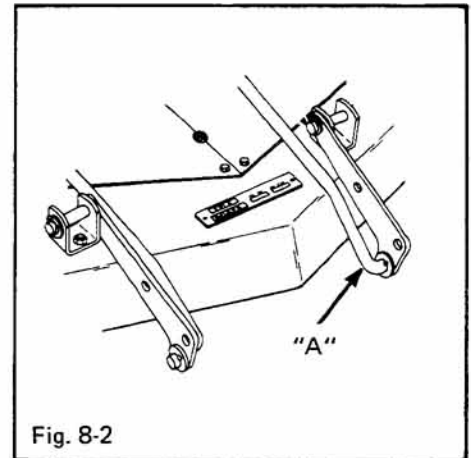


Fig. 8-2

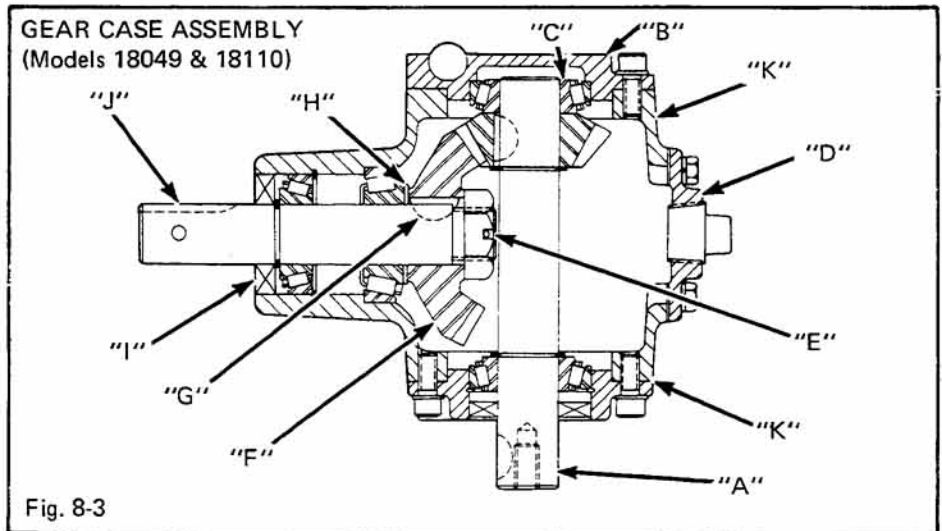


Fig. 8-3

3. Remove the rear plug and drain the oil.
4. Remove drive pulley and woodruff key from output shaft (A). Remove any burrs on end of shaft.
5. Remove cover (B) and roller bearing (C).
6. Slide output shaft assembly out of case.
7. Remove cover (D).
8. Through gear case opening remove cotter pin and nut (E).
9. Slide gear (F) off of input shaft and remove woodruff key (G) and shims (H).
10. Remove oil seal (I) and slide input

shaft (J) out.

11. Replace all worn parts.

GEAR CASE ASSEMBLY

1. If required, remove and replace any bearings and oil seals.
2. Insert input shaft (J) through bearings.
3. Slide shims (H) on shaft and install woodruff key (G).
4. Install gear (F) and secure using nut (E) and cotter pin.
5. Install output shaft (A) assembly and bearing into case.
6. Install cover (B).

MOWERS

7. Check backlash between gears.
Shim, if required, to achieve a maximum of .006" (0.15 mm) backlash. Check backlash by holding shaft (A) and turning shaft (J). If gear moves hard, remove some shims (H). If loose, shim at points (H) and (J).

9. Secure cover (D).

10. Fill gear case with 11 oz. (0.32 liter) of EP90 gear lube.

11. Install drive pulley to output shaft.

12. Reinstall gear case to mower.

13. Install belt and belt cover.

SPINDLE REMOVAL AND DISASSEMBLY (Figure 8-4 and 8-5)

1. Remove belt covers.

2. Remove belt from spindle.

3. Remove top pulley (A).

4. Remove two bolts securing cutting blade.

5. Remove 4 bolts (B) holding spindle assembly and remove spindle assembly from mower deck.

6. Remove shaft assembly from spindle housing.

SPINDLE ASSEMBLY (Figure 8-4)

1. Place bearing (C) on shaft assembly.

2. Place spacer (D) on shaft assembly.

3. Place shaft assembly in spindle housing.

4. Place other bearing (E) on shaft assembly.

5. Place spindle housing assembly on mower deck and secure. Torque four (4) bolts (B) to 250 in. lbs. (28 Nm).

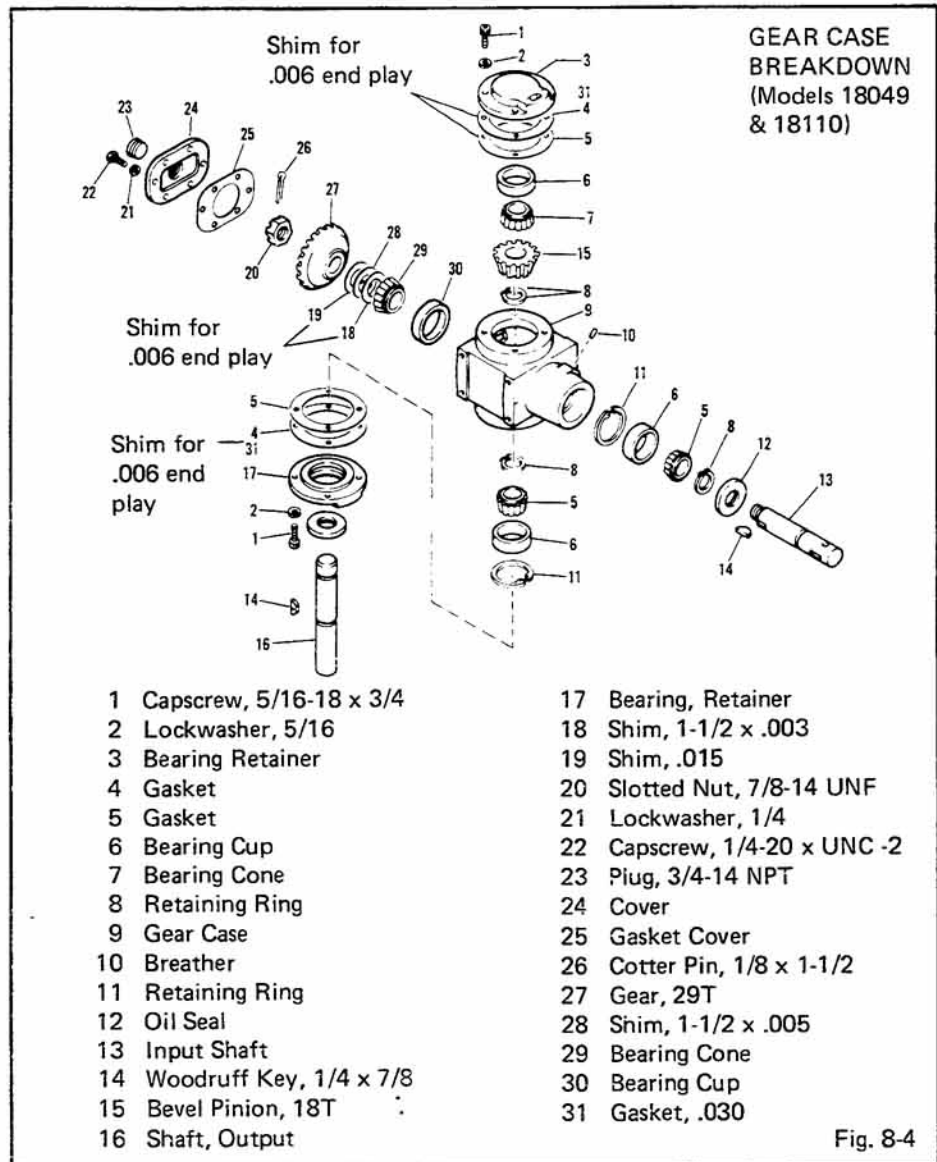


Fig. 8-4

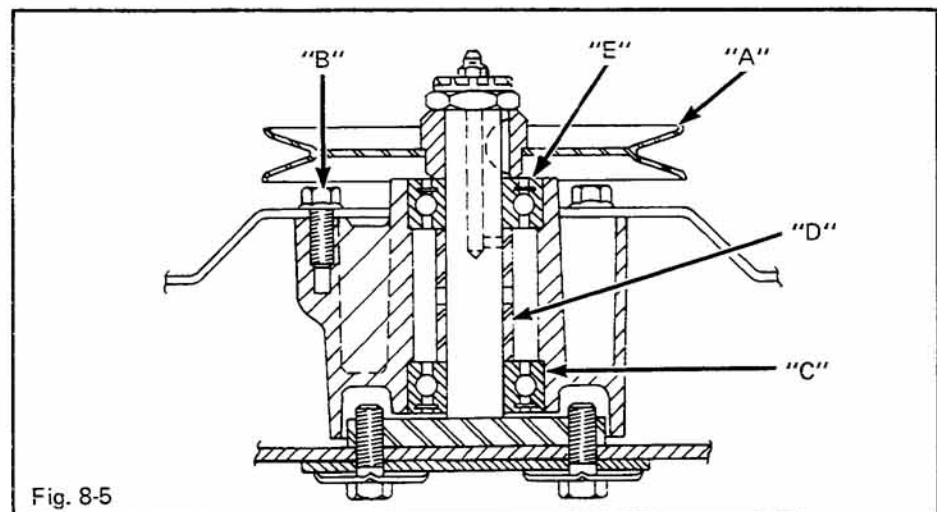


Fig. 8-5

MOWERS

6. Assemble spindle sheave (A). Secure nut and torque to 90 ft. lbs. (122 Nm).

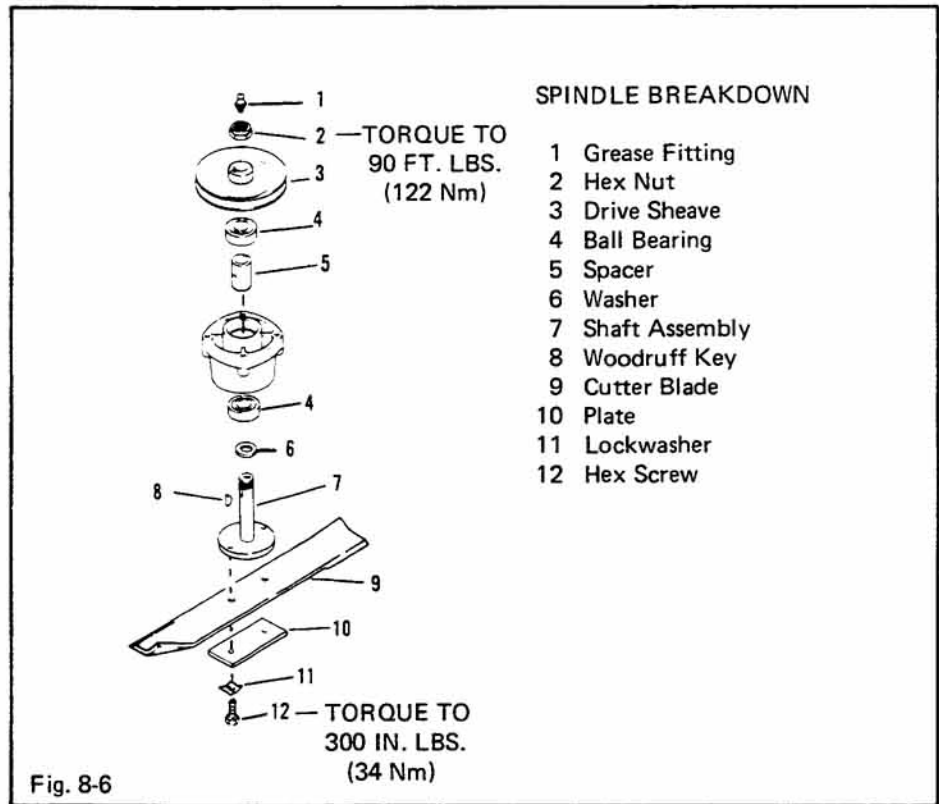
7. Assemble blade, spacer and bolts with lockwashers.

8. Torque bolts to 300 in. lbs. (34 Nm).

LUBRICATION

There are three grease fittings on the mower; one on top of each blade spindle. Lubricate these grease fittings after every 100 hours of operation with FMC Bolens multi-purpose grease and grease gun.

Frequently lubricate the linkage, gauge rollers and other pivot points with a few drops of lubricating oil, especially on mower after washing out.



SNOW THROWER

LUBRICATION

The gear case is filled at the factory to filler hole level with SAE 90 gear lubricant. Check oil level before using the snow caster and every 6 hours of operation thereafter. Add lubricant as needed to maintain filler hole level.

CHAIN TENSION

The chain is properly adjusted when it has approximately 1/8" (3 mm) of slack. A chain too loose is inclined to jump and too tight a chain will cause excessive wear of chain and sprockets.

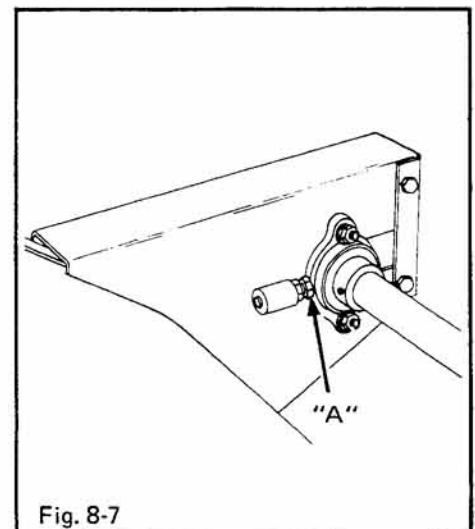
To adjust chain tension, first loosen the bearing and the eath

the gear box assembly. Next, loosen the two carriage bolts which mount the self-aligning bearing to the rotor housing, as shown in Figure 8-7. Then loosen the hex nut and adjust the hex head adjusting screw (A) to position sprocket to the desired chain tension.

IMPORTANT

Be sure to move the gear case and the sprocket an equal distance to maintain proper alignment of the chain on the sprocket.

Tighten the two carriage bolts which mount the bearing and the four cap screws under the gear box.



SNOW THROWER

CHAIN REMOVAL

1. Remove rear guard (A).
2. Relieve tension on chain by loosening screw (B).
3. Locate connector link in chain and disconnect.

CHAIN INSTALLATION

1. Secure chain to sprockets with connector link.
2. Adjust screw (B) to supply tension to the chain.

AUGER REMOVAL

1. Remove chain as described above.
2. Remove end bearings (C) from each end. A wheel puller may be required to remove bearings.

AUGER REINSTALLATION

1. Coat shaft ends of auger with loctite Grade D.
2. Install new or old bearings to shaft and secure to housing.
3. Install chain.

GEAR CASE REMOVAL

1. Remove cover (D), Figure 8-8.
2. Loosen hub (E) from gear case shaft by unscrewing set screws.
3. Remove universal joint.
4. Remove the (4) screws (F) under the housing and remove the gear case.

GEAR CASE INSTALLATION

1. Position gear case in hub (E) and secure case to the housing using screws (F) removed earlier.

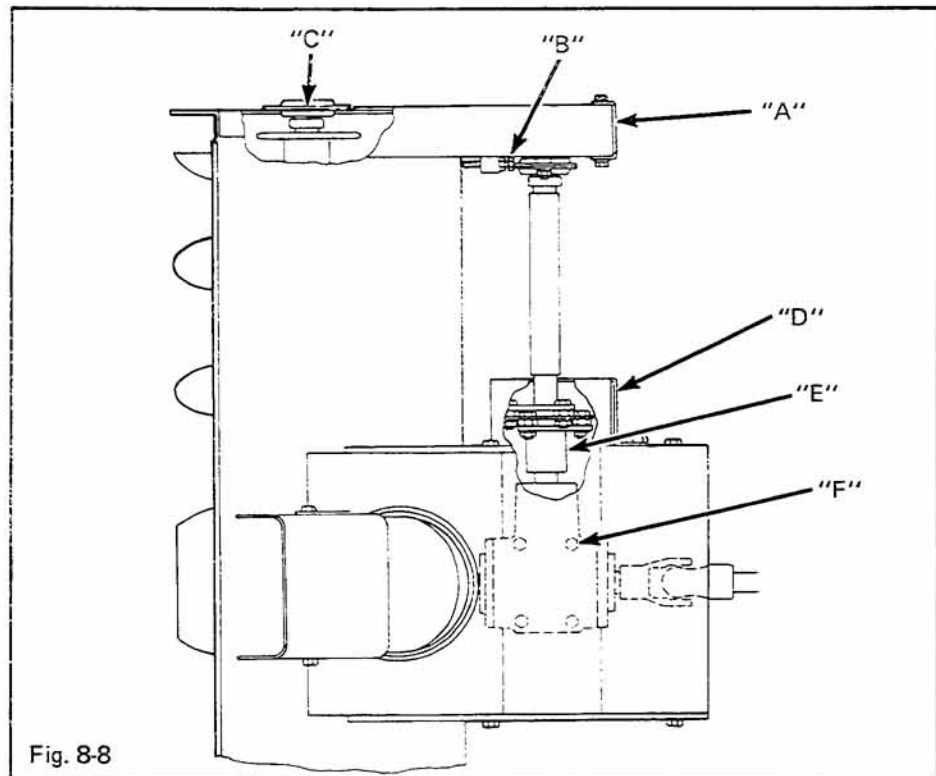


Fig. 8-8

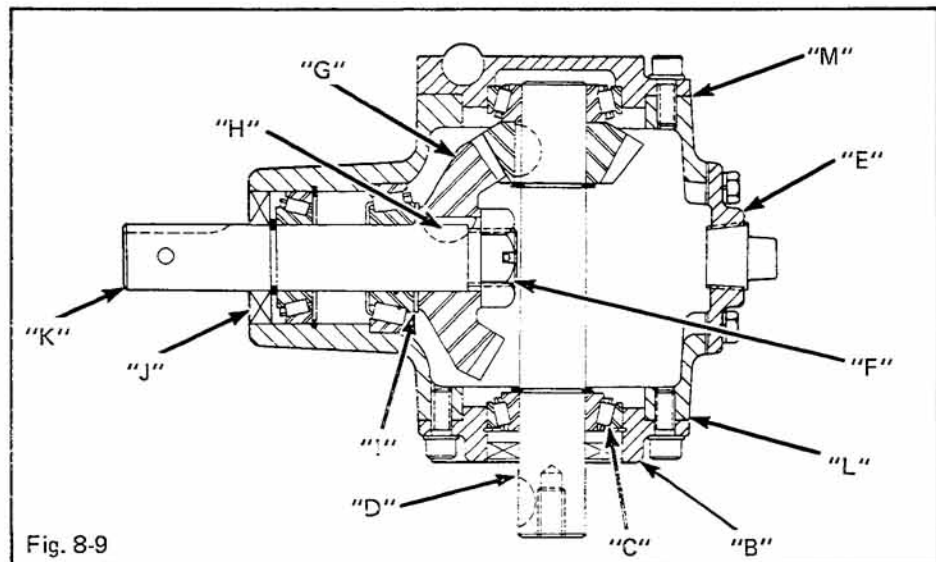


Fig. 8-9

4. Secure universal shaft to gear case shaft.

GEAR CASE DISASSEMBLY

1. Remove the rear plug and drain the oil.
2. Remove cover (B) and roller bearing (C).

3. Slide output shaft (D) assembly out of case.

4. Remove cover (E).

5. Through gear case opening, remove cotter pin and nut (F).

6. Slide gear (G) off of input shaft and remove woodruff key (H) and shims (I).

SNOW THROWER

7. Remove oil seal (J) and slide input shaft (K) out.

8. Replace all worn parts.

GEAR CASE ASSEMBLY

1. If required, remove and replace any bearings and oil seals.

2. Insert input shaft (K) through bearings.

3. Slide shims (I) on shaft and install woodruff key (H).

4. Install gear (G) and secure using nut (F) and cotter pin.

5. Install output shaft (D) assembly and bearing into case.

6. Install cover (B).

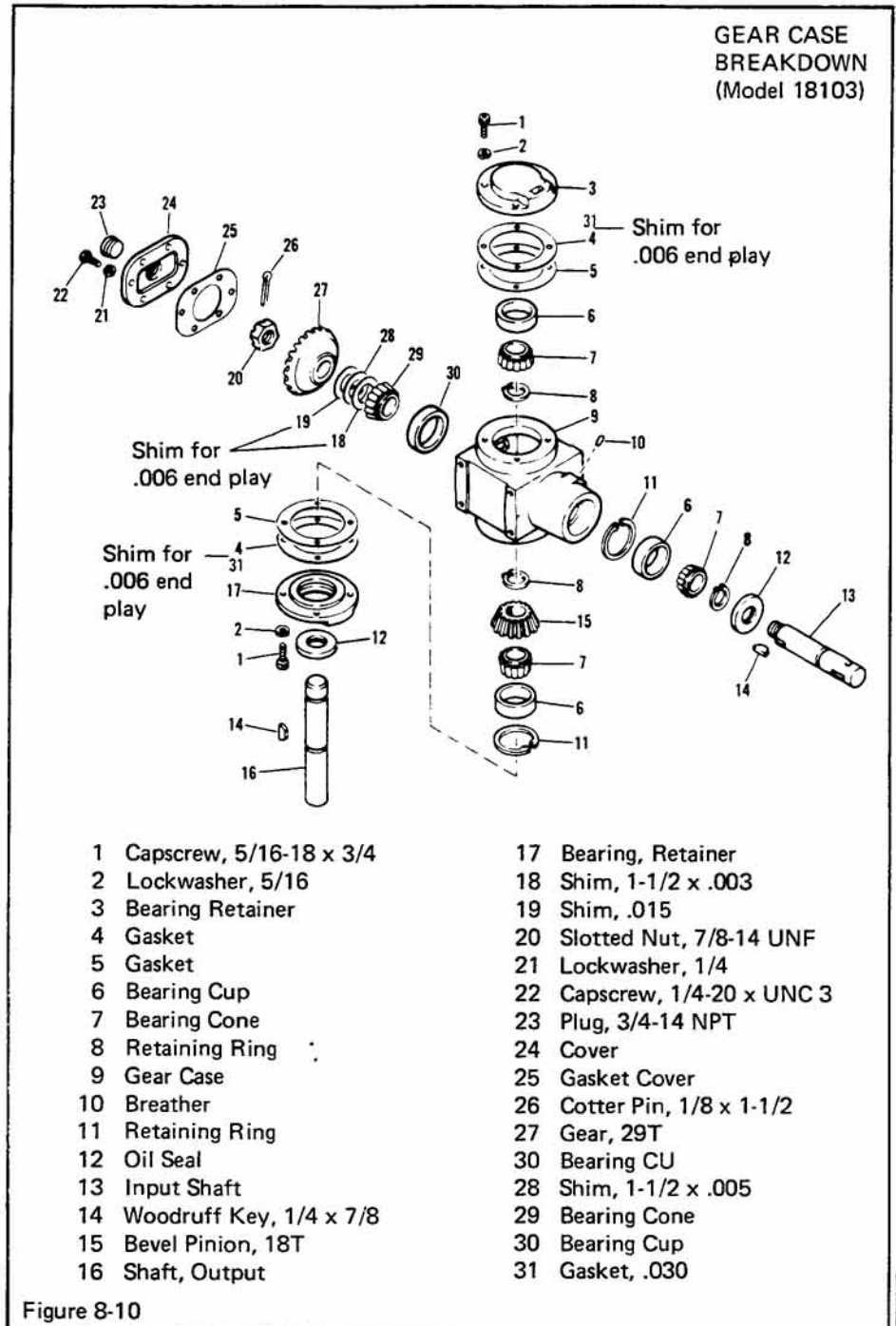
7. Check end play of shafts. If required, add or remove shims at points (L) or (M). Check backlash between gears. If gears move hard, remove required shims from point (M) and add at point (L). If gears are loose, remove shims at point (L) and add at points (M). See parts list for shim numbers.

8. Install oil seal (J).

9. Secure cover (E).

10. Fill gear case with 11 oz. (0.32 liter) of EP90 gear lube.

11. Install gear case to housing.



TILLERS

GEAR CASE REMOVAL

1. Remove tiller from tractor.
2. Remove cover.
3. Remove R.H. and L.H. supports (A).
4. Remove depth shoe (B).
5. Remove tiller tines from gear case shafts by either loosening nuts (C) through hole (D) or by removing tine hubs (E) to loosen nuts.

GEAR CASE REINSTALLATION

1. Reverse the above procedure.
2. Torque nuts (C) to 90 ft. lbs. (122 Nm).

GEAR CASE DISASSEMBLY (Figure 8-12)

1. Remove cover side of case and wood-ruff key in tine shaft.
2. Remove screws and lock washers securing the case and cover together. Lift cover (A) off.
3. Remove chain connector link from chain.

4. Disassemble and remove any damaged parts. End play should not exceed .003" (0.07 mm). If required, shim at point (E).

GEAR CASE ASSEMBLY

1. See Figures 8-12 and 8-13 for assembly.
2. Before assembling oil seal (B) check end play of input shaft (C) and gear (D).
3. Check backlash of gears. If gears move hard, remove required shims at point (F) and add shims at point (E). If gears are loose, remove shims at point (E) and add shims at point (F). See parts list for shim numbers.

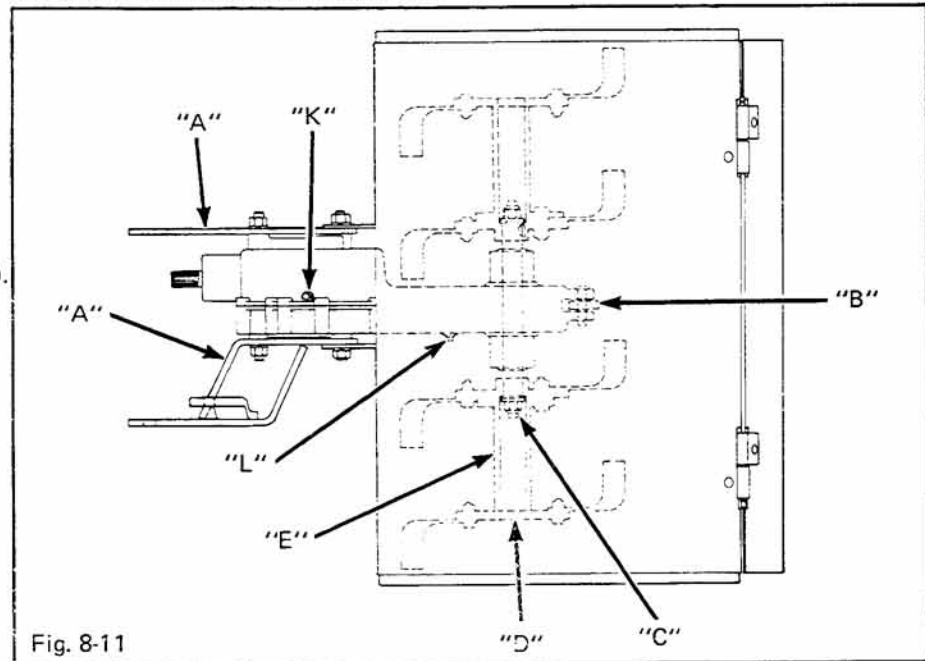
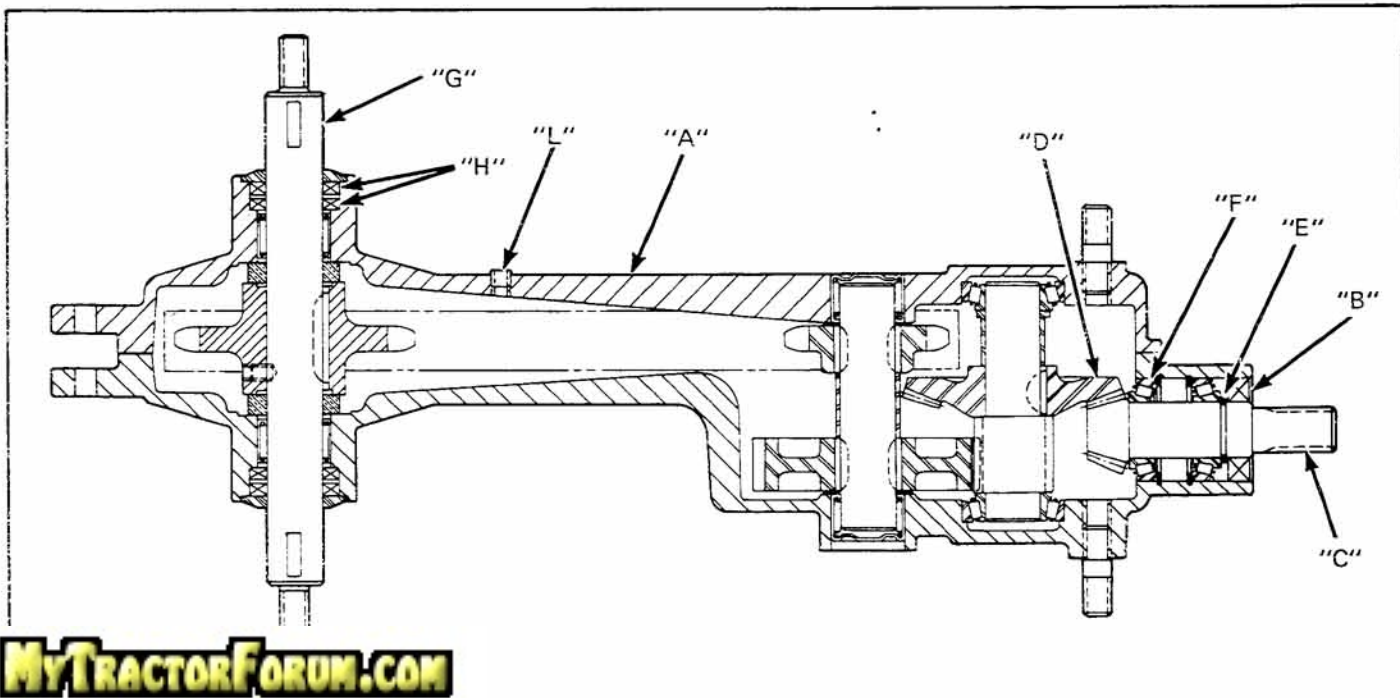


Fig. 8-11

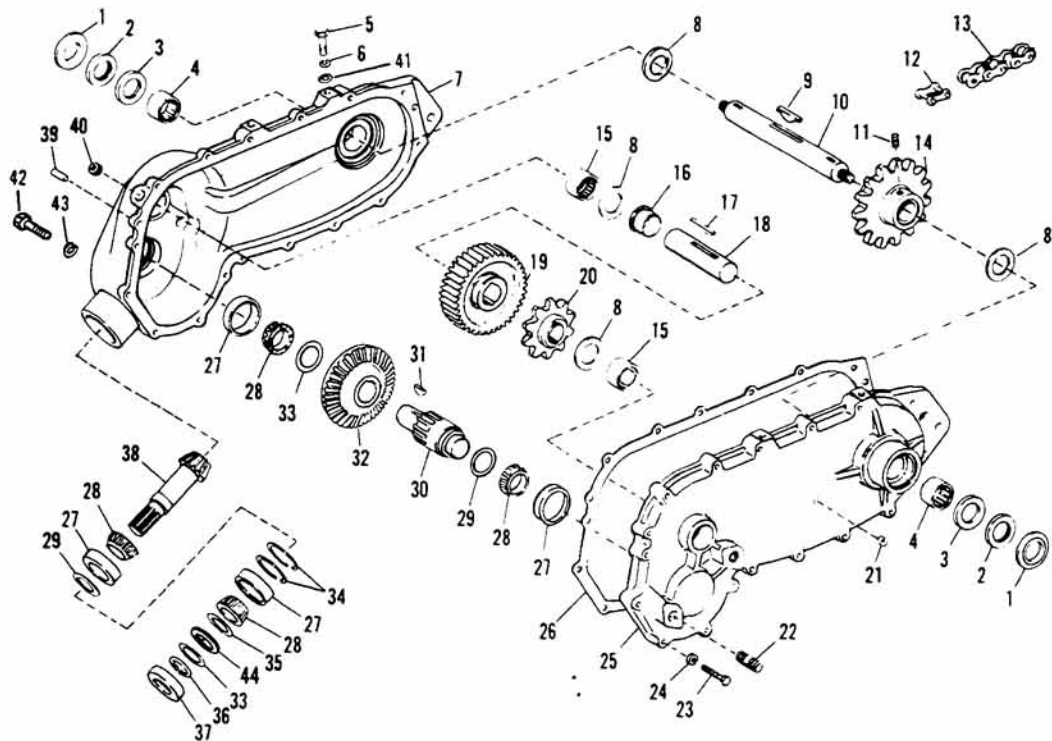


TILLERS

4. Assemble oil seal (B).

5. If tine shaft (G) is to be reassembled, pack grease between seals (H). Also, apply grease to exposed shaft (G).

6. With the gear case on a flat surface, fill case through either the top plug hole (K) Figure 8-11 or side hole (L) to hole (L) level with EP90 gear lube.



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|-------------------------------|--|--------------------------------------|
| 1 Seal Washer | 17 Special Key, 5/16 x 1/4 | 32 Bevel Gear, 40 Tooth |
| 2 Oil Seal | 18 Shaft | 33 Shim |
| 3 Oil Seal | 19 Gear, 39 Tooth | 34 Retaining Ring |
| 4 Needle Bearing | 20 Sprocket, 10 Tooth | 35 Shim |
| 5 Capscrew | 21 Pipe Plug, 1/8 | 36 Retaining Ring |
| 6 Lockwasher | 22 Stud, 5/8 | 37 Oil Seal |
| 7 Tiller Case | 23 Hex Head Capscrew,
5/16-18 x 1-3/4 | 38 Pinion, 13 Tooth |
| 8 Thrust Washer | 24 Lockwasher, 5/16 | 39 Drive Pin |
| 9 Hi-Pro Key, 5/16 x 5/16 x 2 | 25 Gear Case Cover | 40 Pipe Plug |
| 10 Tine Shaft | 26 Gasket | 41 Flat Washer, 1/2 |
| 11 Set Screw, 3/8-16 x 1/2 | 27 Bearing Cup | 42 Hex Head Cap Screw,
5/8-11 x 2 |
| 12 Roller Chain Connector | 28 Bearing Cone | 43 Lockwasher, 5/8 |
| 13 Roller Chain 1 Inch Pitch | 29 Shim | 44 Thrust Washer (5) |
| 14 Sprocket - 15 Tooth | 30 Pinion & Shaft | NI Gear Lube, EP90 |
| | 31 Woodruff Key | |