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October 2007



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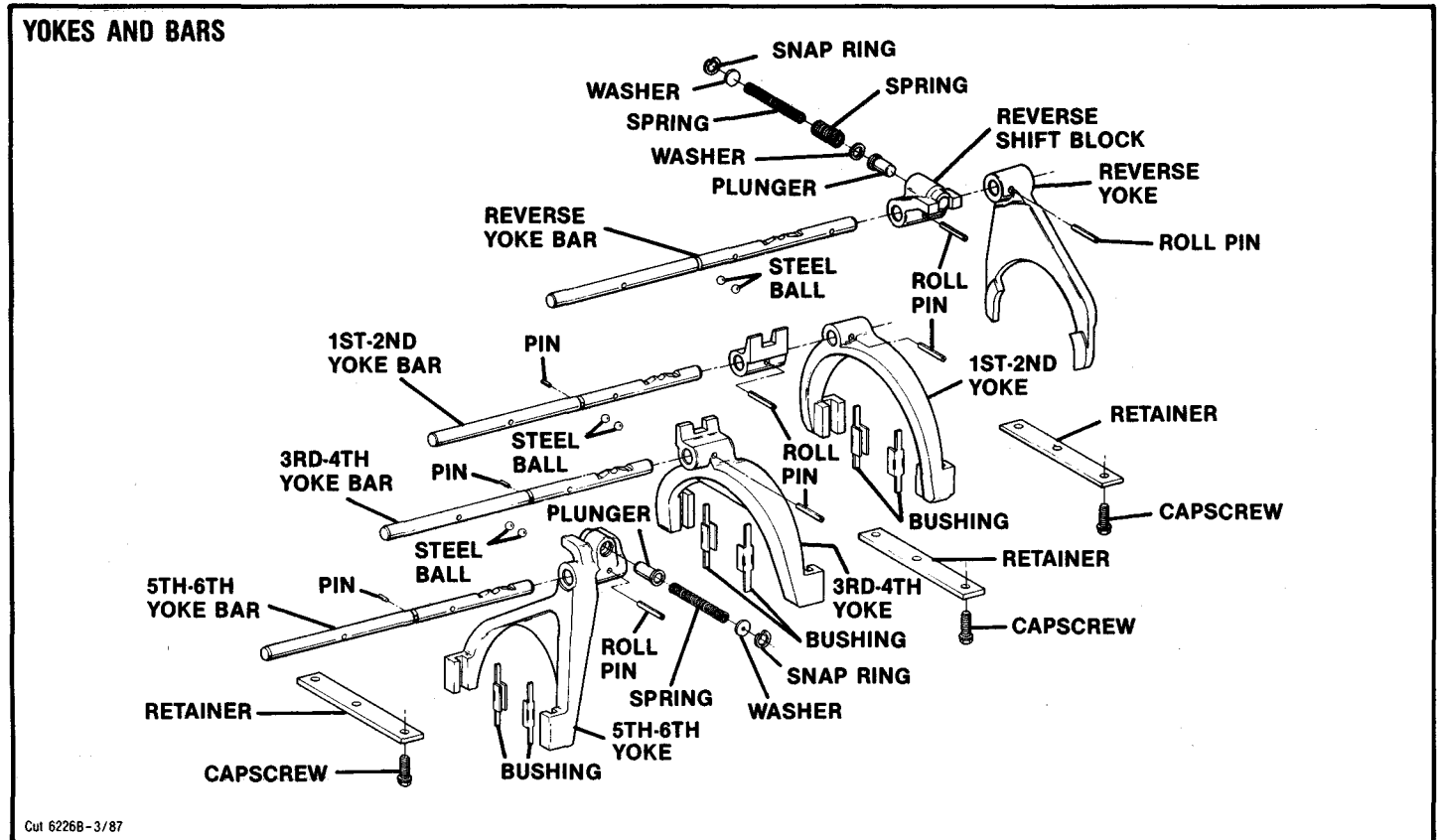
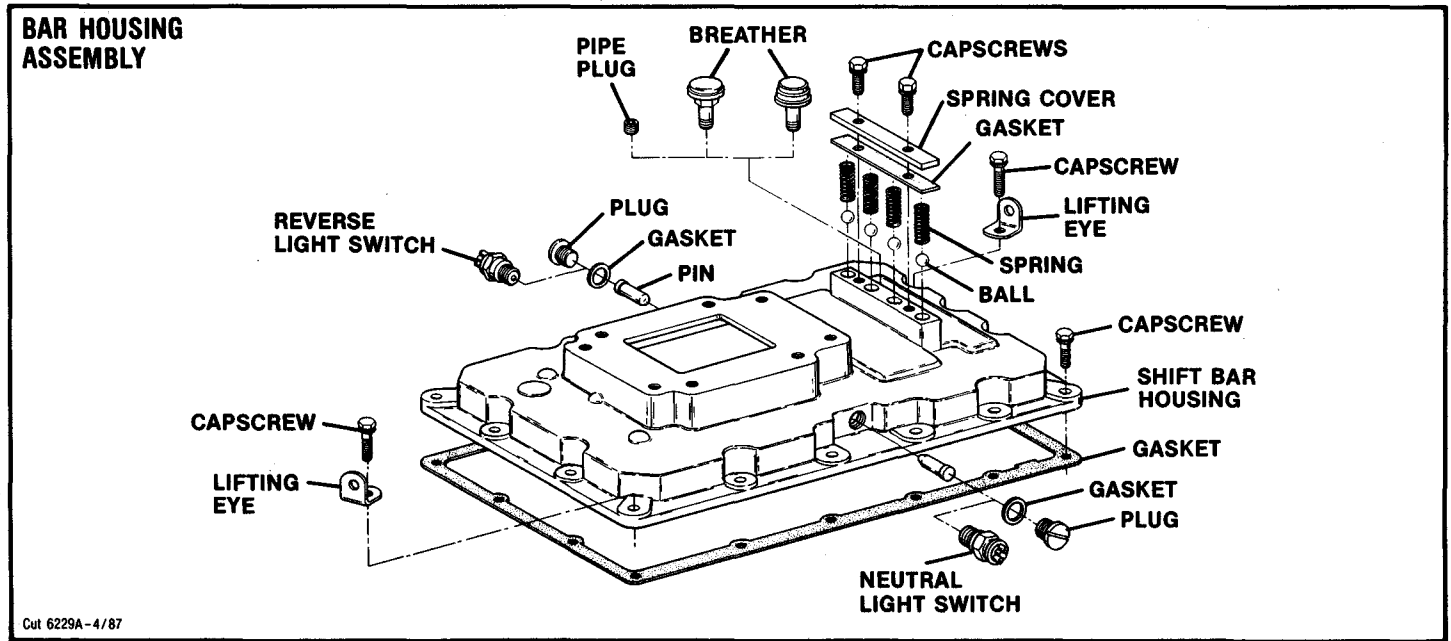


DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS Appendix

SHIFT BAR HOUSING ASSEMBLIES

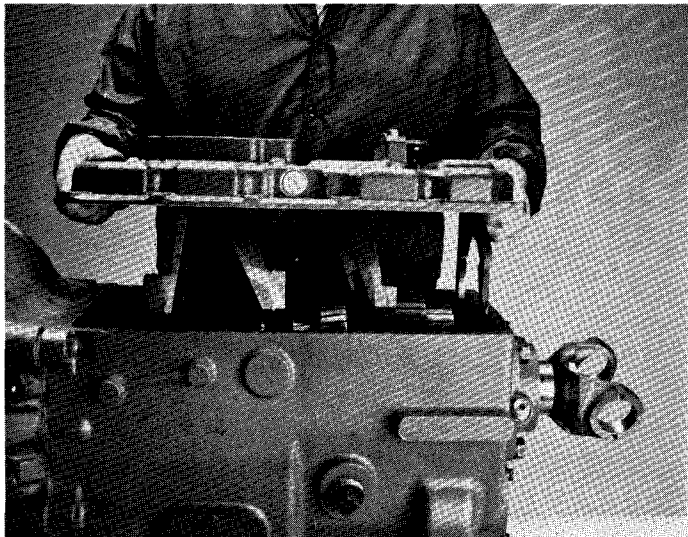
Note: The FS-6106 transmission can be equipped with either a Flat Rail Shift Bar Housing or a *Round Rail Shift Bar Housing*. To identify which type of shift bar housing the transmission is equipped with and the procedure for disassembly and reassembly refer to pages 19, 12 in the FS-6106 Service Manual and the following illustrations to match the drawings to the shift bar housing.

A. Removal and Disassembly Round Rail Design

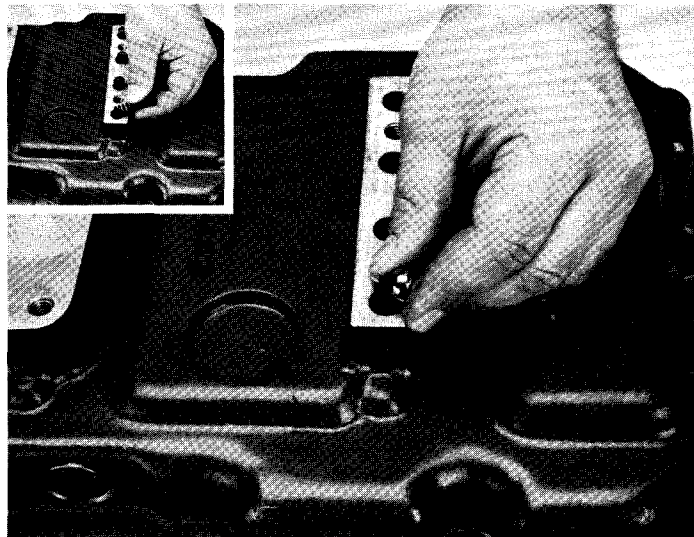


DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

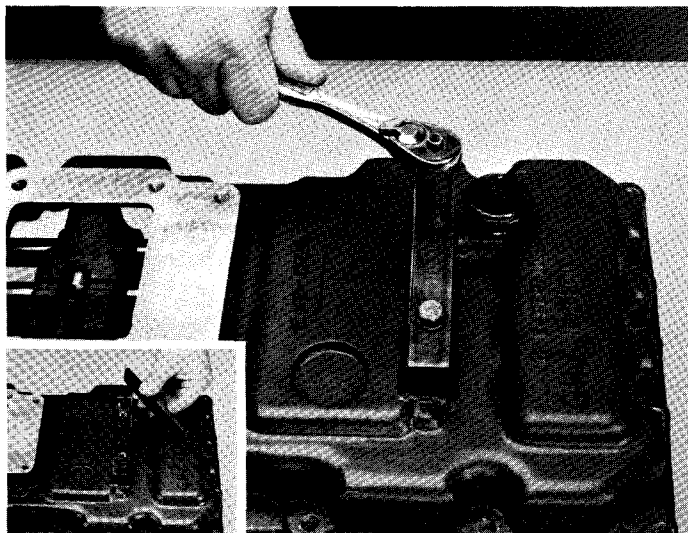
SHIFT BAR HOUSING ASSEMBLY (con't.)



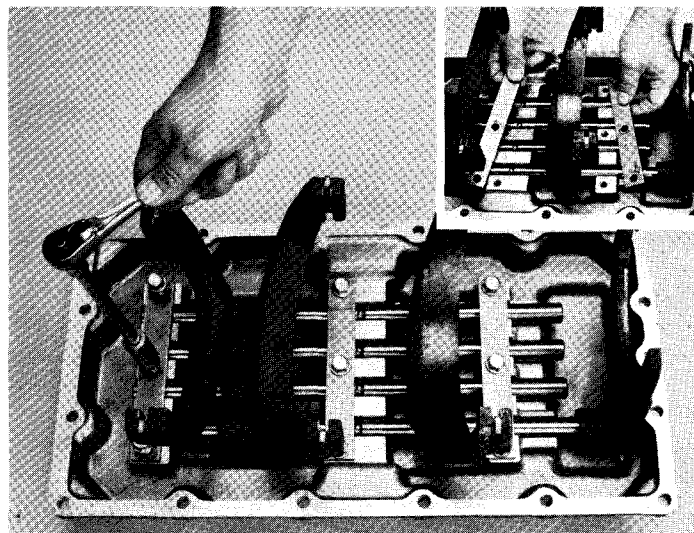
1. Turn out capscrews and lift shift bar housing from case.



3. Tilt the assembly and remove the four sets of tension springs (inset) and balls from bores in top of shift bar housing.



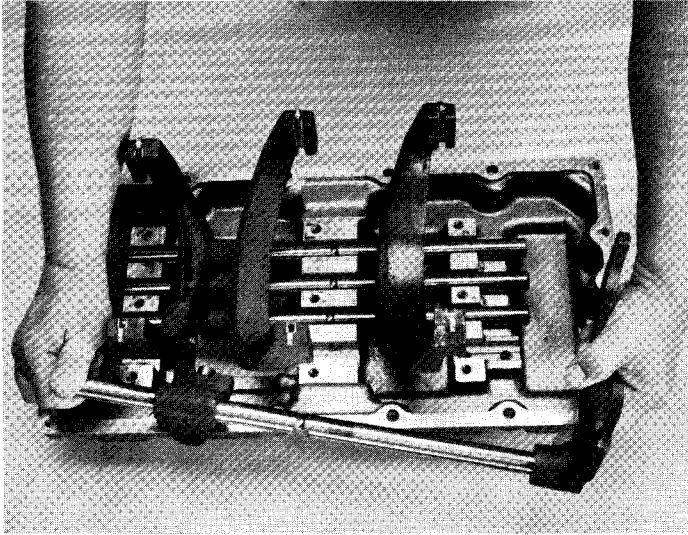
2. Remove the two tension plate cap screws, and the spring cover and gasket (inset).



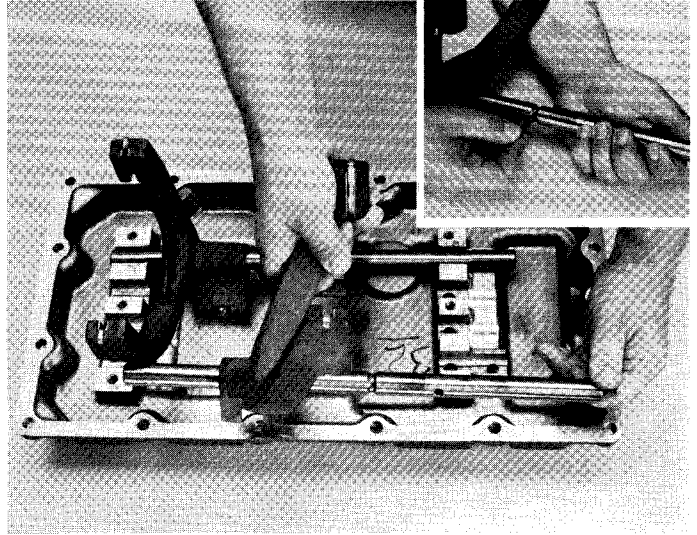
4. Lay shift bar housing on work bench as shown, remove nine cap screws and three retaining plates (inset).

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

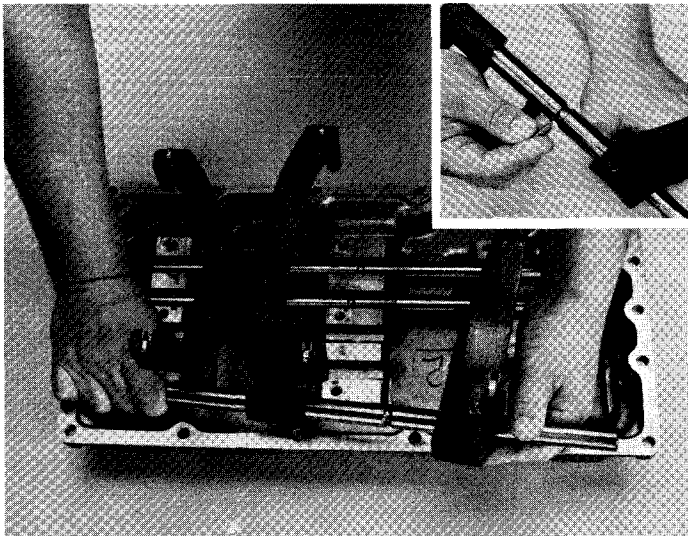
SHIFT BAR HOUSING ASSEMBLY (con't.)



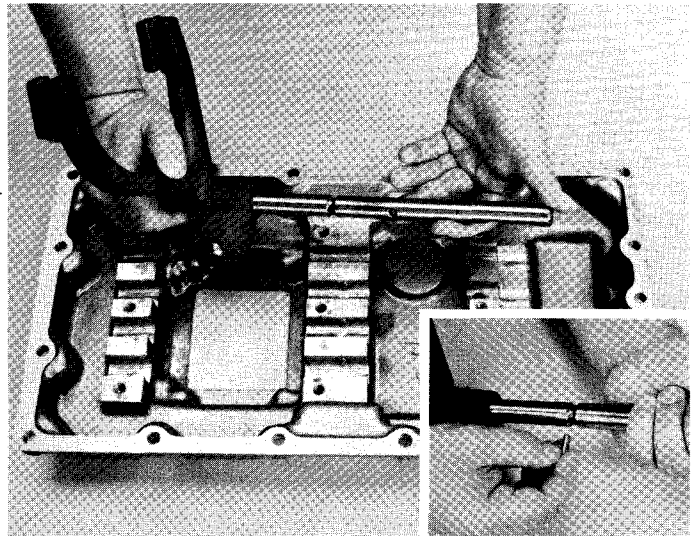
5. Remove the reverse yoke assembly from the shift bar housing.



7. Remove the third-fourth yoke assembly, and interlock pin (inset).



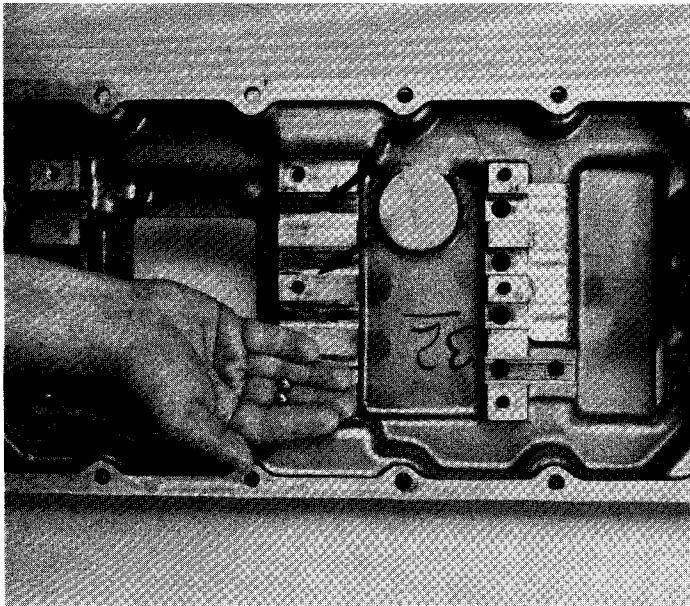
6. Remove the first-second yoke assembly from the shift bar housing and remove the first-second interlock pin (inset), as shown.



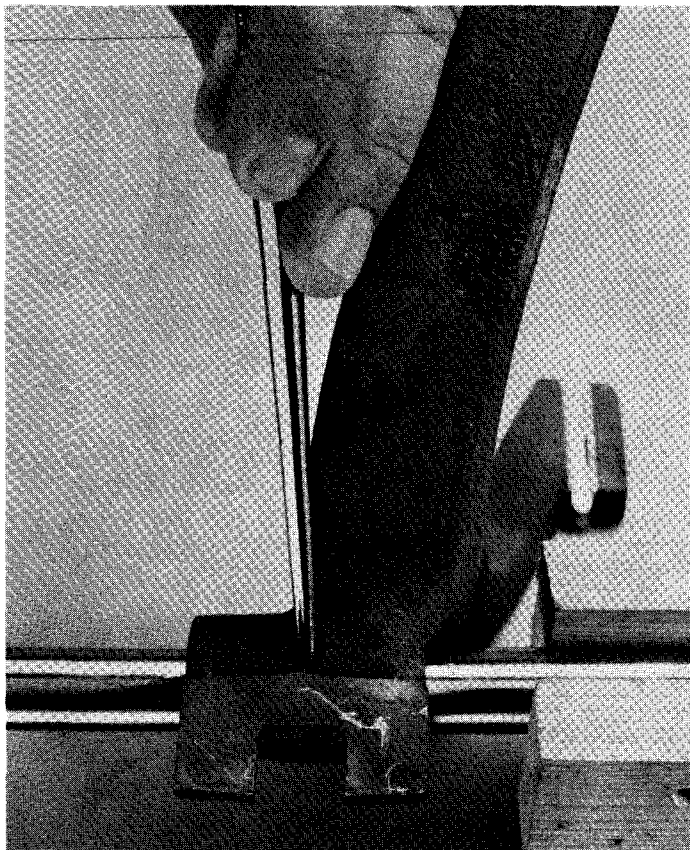
8. Remove the fifth-sixth yoke assembly, and interlock pin (inset).

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

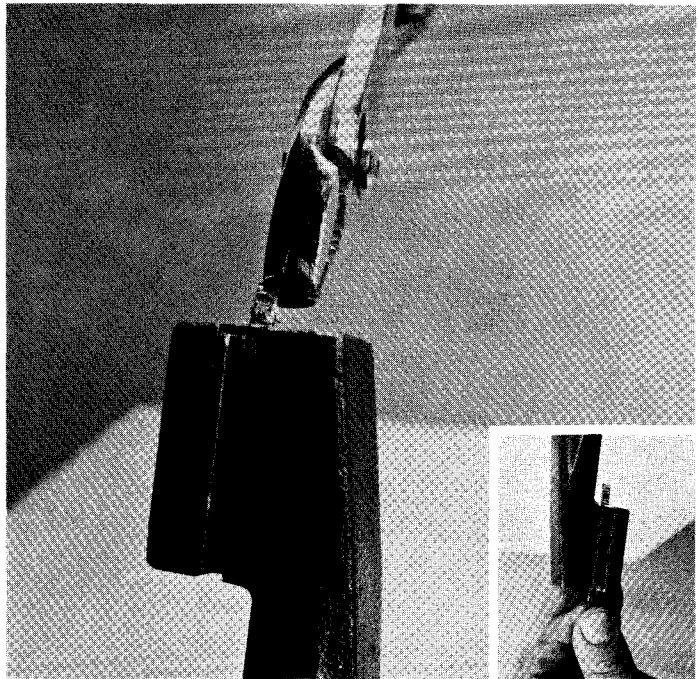
SHIFT BAR HOUSING ASSEMBLY (con't.)



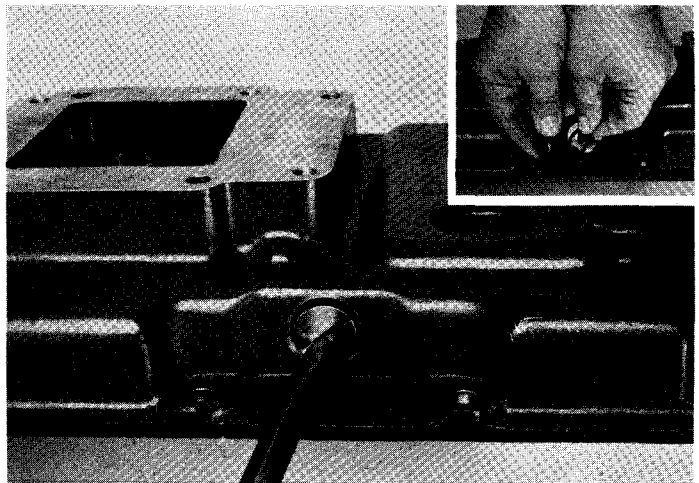
9. Remove the six interlock balls from the cross-bores of the shift bar housing.



10. If it is necessary to replace yoke or shift blocks, secure shift rail in a vice equipped with brass jaws or wood blocks. Drive the retention/roll pin from yoke and yoke bar as shown.



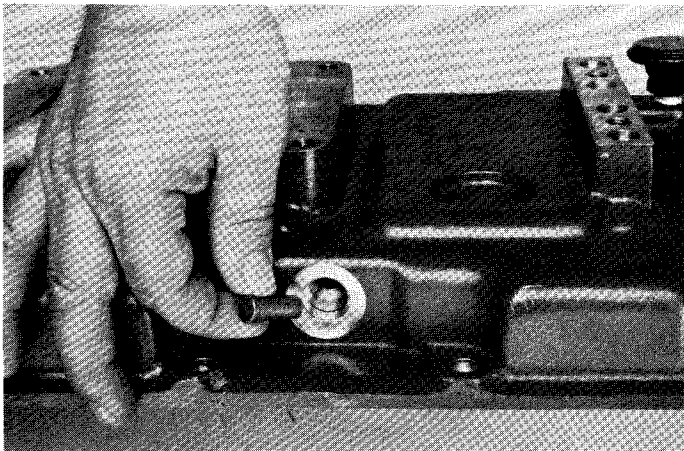
11. If necessary the shift yoke bushings can be removed. Use pliers to bend the bushing tabs straight then pull the bushings from the yoke slot (inset).



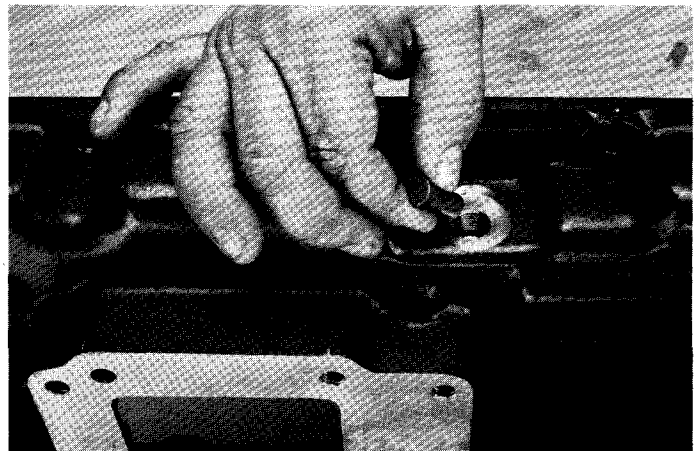
12. Loosen the neutral light switch/or plug. Remove the neutral light switch or plug and gasket from the housing (inset).

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

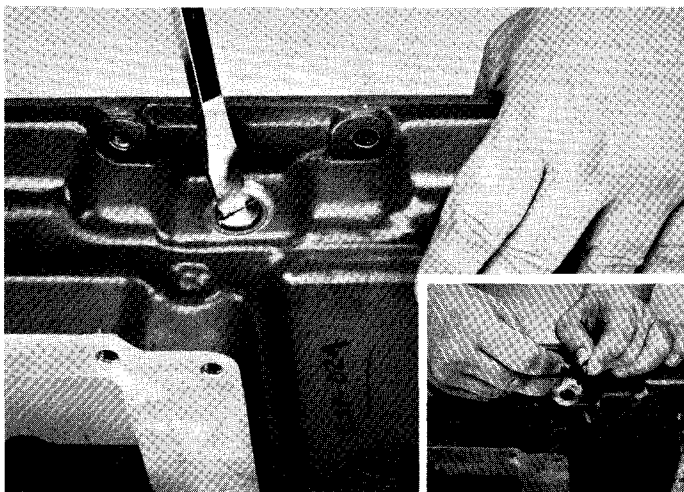
SHIFT BAR HOUSING ASSEMBLY (con't.)



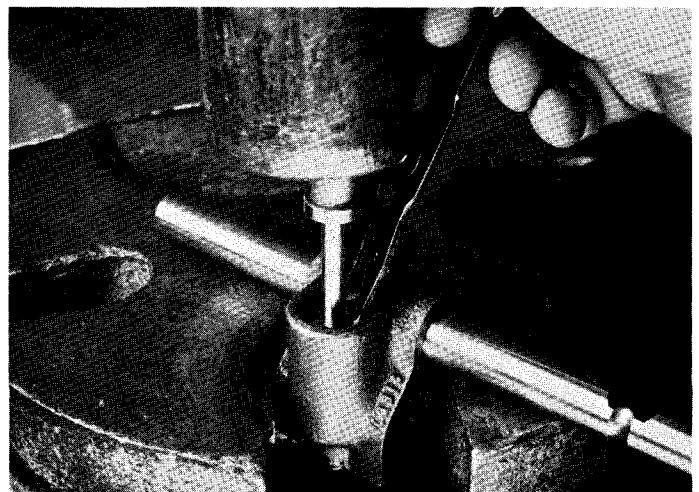
13. Remove the pin from the neutral light switch bore. **Note:** The neutral light switch pin and the reverse light switch pin are not interchangeable.



15. Remove the pin from the reverse light switch bore.



14. Loosen the reverse light switch/or plug. Remove the light switch/or plug and gasket from the housing (inset).



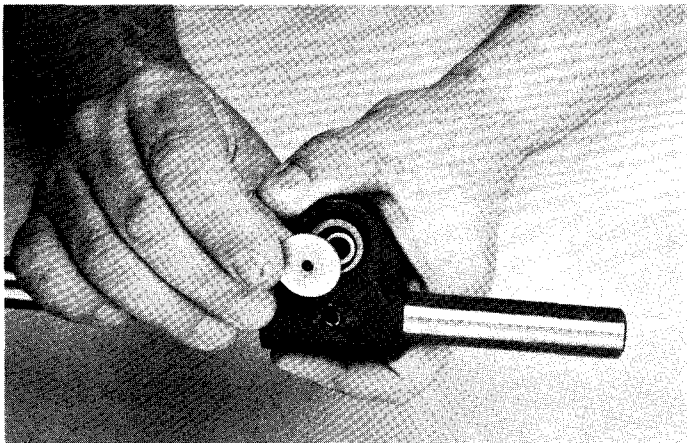
16. If the removal of reverse plunger is necessary, secure the shift rail and yoke in an Arbor press.

CAUTION THE SNAP RING AND RETAINER PLATE ARE UNDER SPRING TENSION.

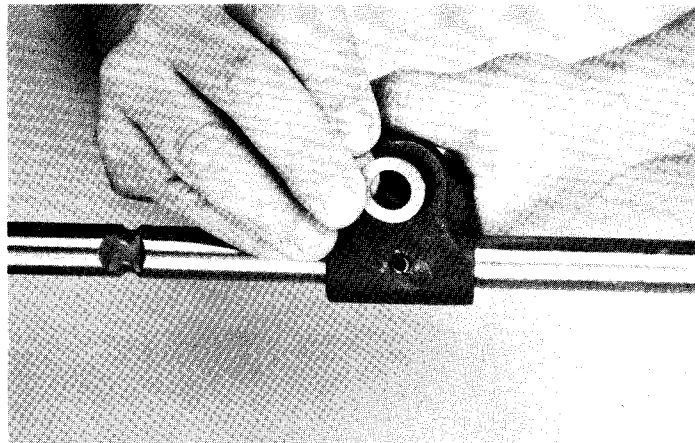
Depress the reverse plunger spring and remove the snap ring.

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

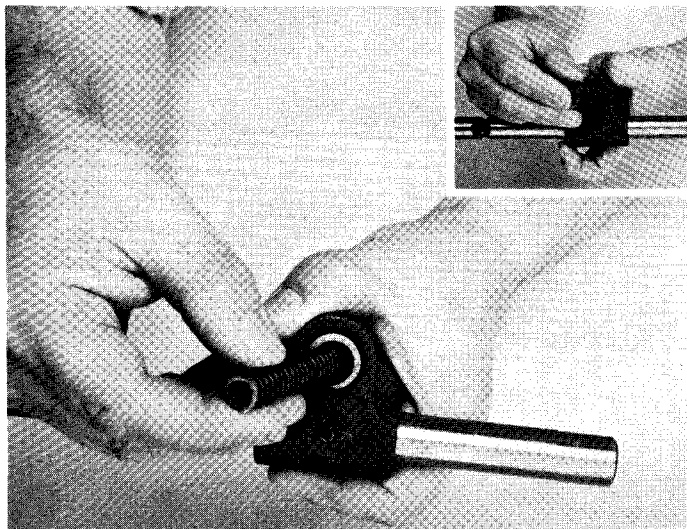
SHIFT BAR HOUSING ASSEMBLY (con't.)



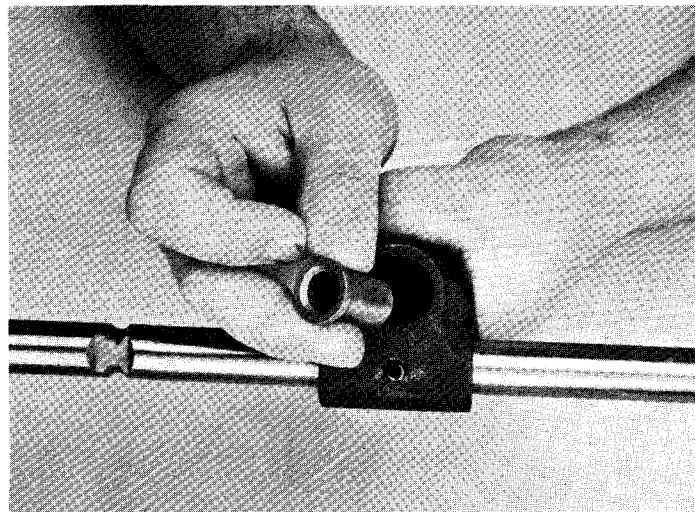
17. Remove the retaining plate.



19. Remove the reverse plunger washer.



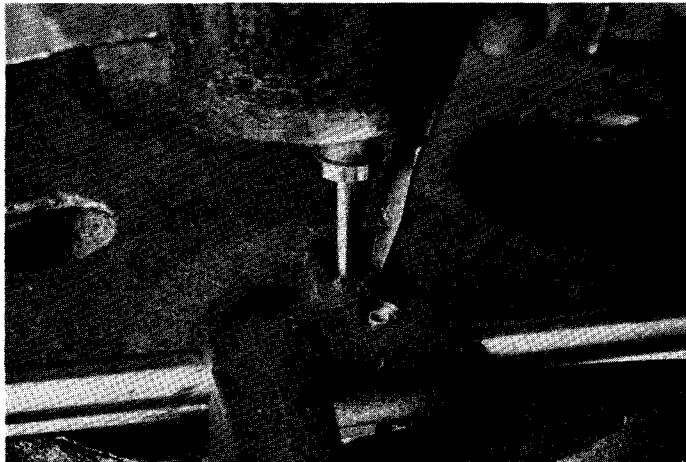
18. Remove the inner reverse plunger spring, then remove the outer plunger spring (inset). **Note:** The reverse and neutral plunger springs are not interchangeable. Keep them separated.



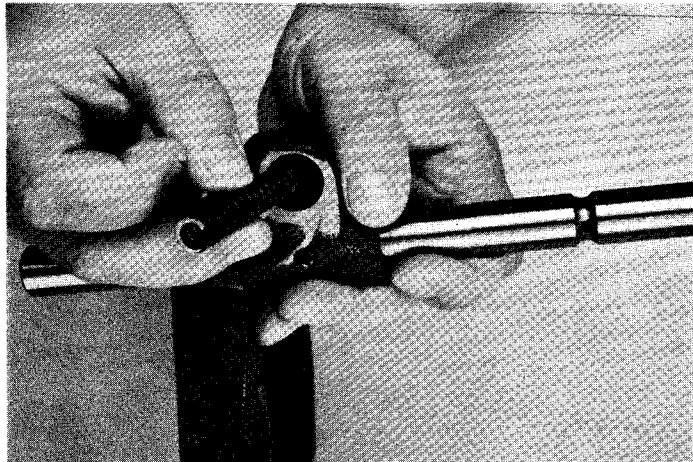
20. Remove the reverse plunger.

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

SHIFT BAR HOUSING ASSEMBLY (con't.)



21. If the removal of neutral plunger is necessary, secure the fifth-sixth shift yoke assembly in an Arbor press.

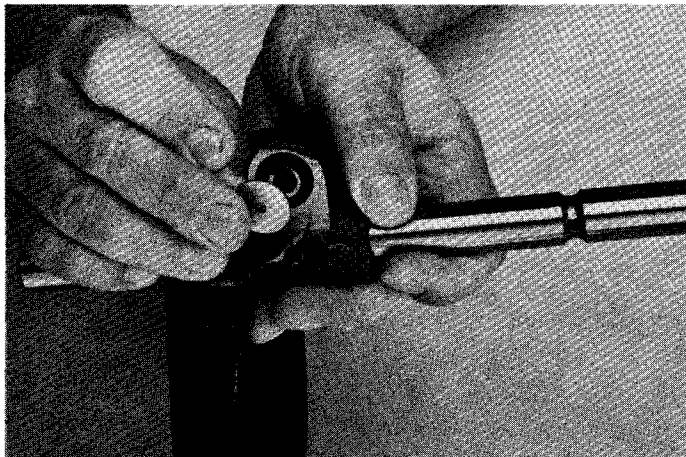


23. Remove the neutral plunger spring. **Note:** The neutral and reverse plunger springs are not interchangeable. Keep them separate.

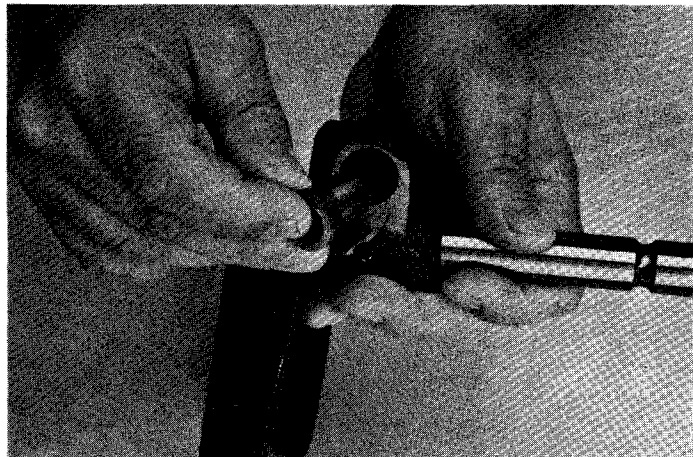
CAUTION

THE SNAP RING AND RETAINER PLATE ARE UNDER SPRING TENSION.

Depress the neutral plunger spring and remove the snap ring.



22. Remove the retaining plate.

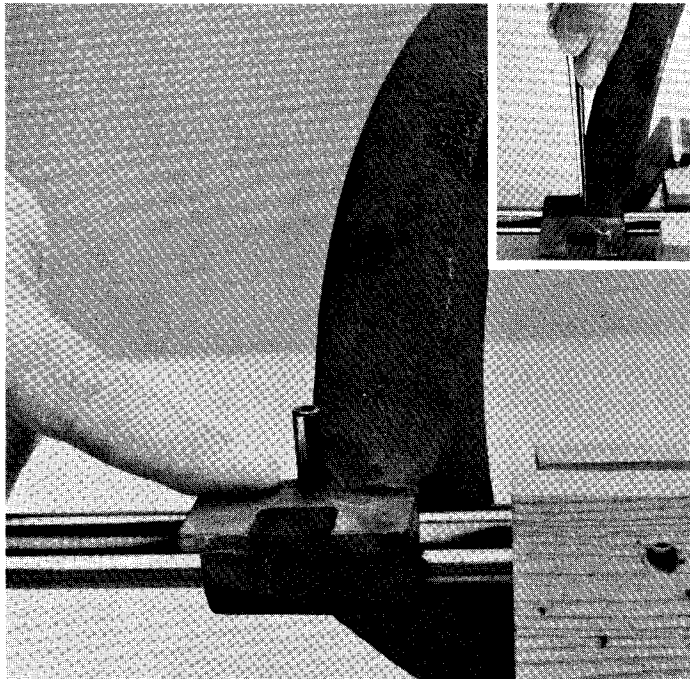


24. Remove the neutral plunger.

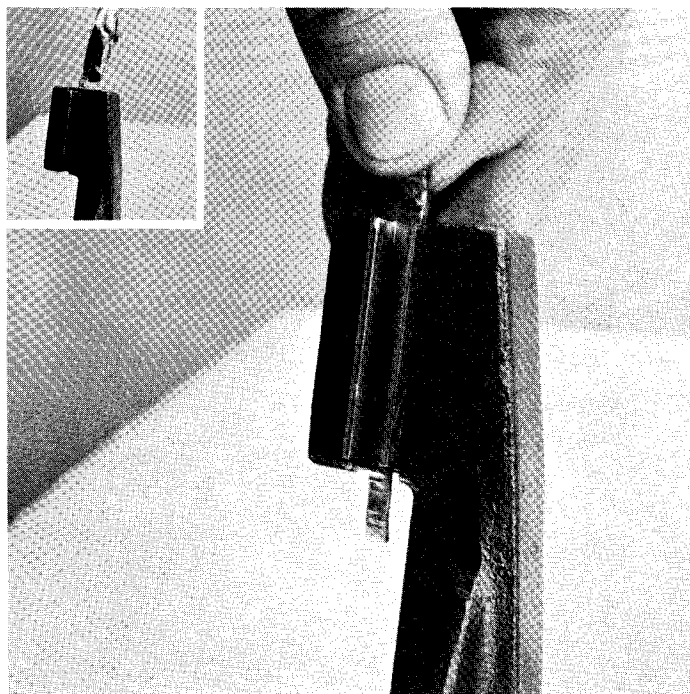
DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

SHIFT BAR HOUSING ASSEMBLY (con't.)

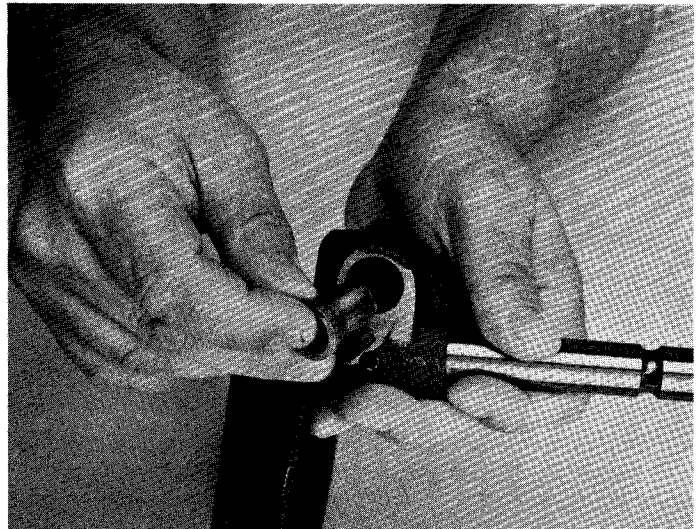
B. Reassembly Round Rail Shift Bar Housing.



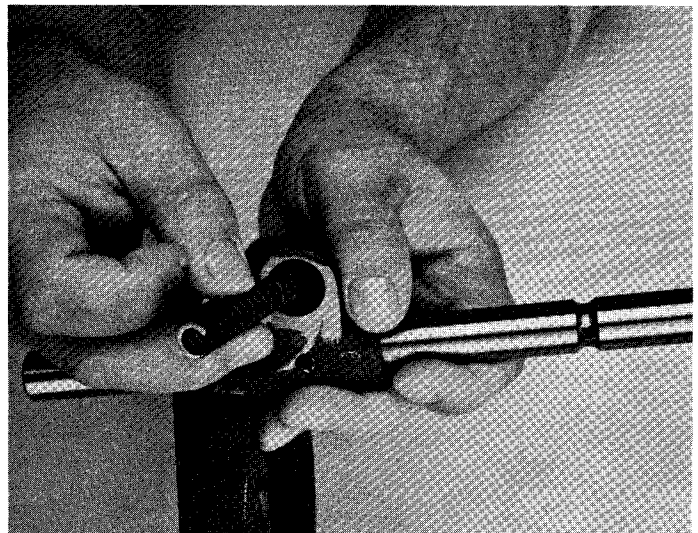
1. If previously removed install yoke and shift block on yoke bar. Secure assembly in a vise with soft jaws or wood blocks. Align holes in shift yoke or shift block and insert lock pin. Drive lock pin flush with shift yoke (inset).



2. If previously removed install new shift yoke bushings in slot of first-second, third-fourth or fifth-sixth shift yoke. Seat bushing in slot and bend bushing tabs over to secure (inset).



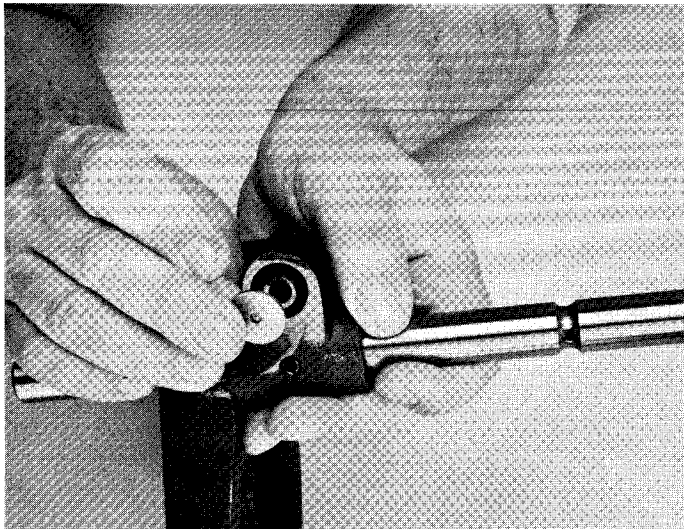
3. If neutral plunger was removed, install neutral plunger in fifth-sixth shift yoke.



4. Install neutral plunger spring in shift yoke.

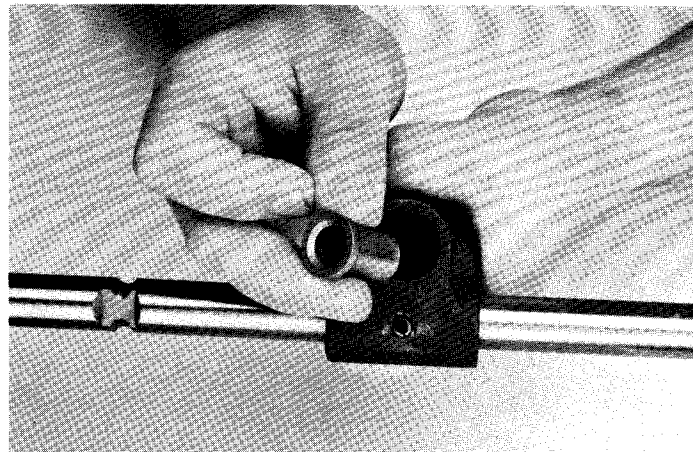
DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

SHIFT BAR HOUSING ASSEMBLY (con't.)

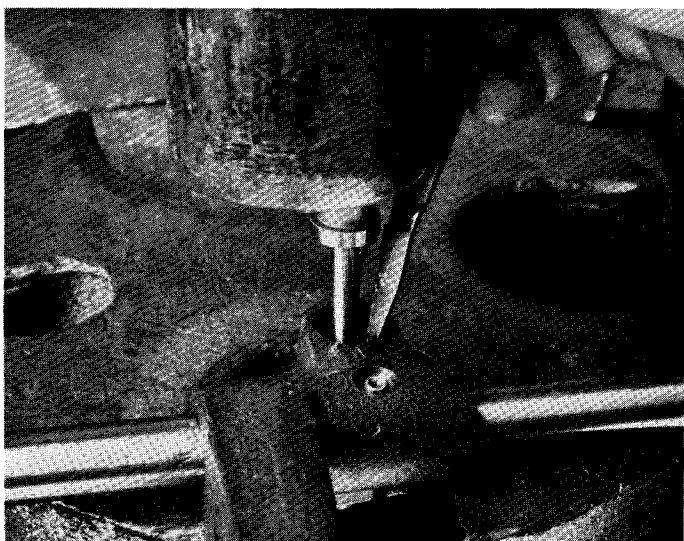


5. Install neutral retaining washer.

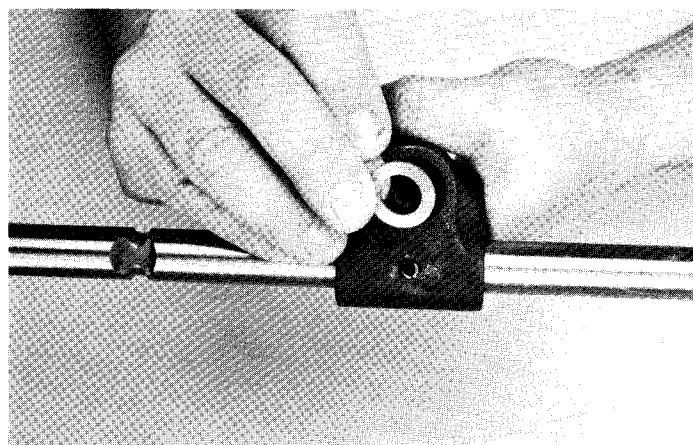
CAUTION THE SNAP RING AND RETAINER WILL BE UNDER SPRING TENSION AS INSTALLED.



7. If reverse plunger was removed, install reverse plunger in reverse shift yoke.



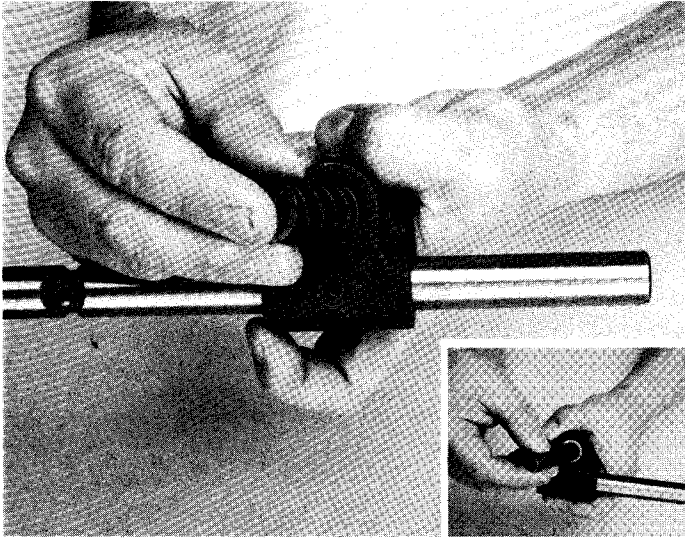
6. Place shift yoke in hand press. Depress retaining washer and spring and install the snap ring.



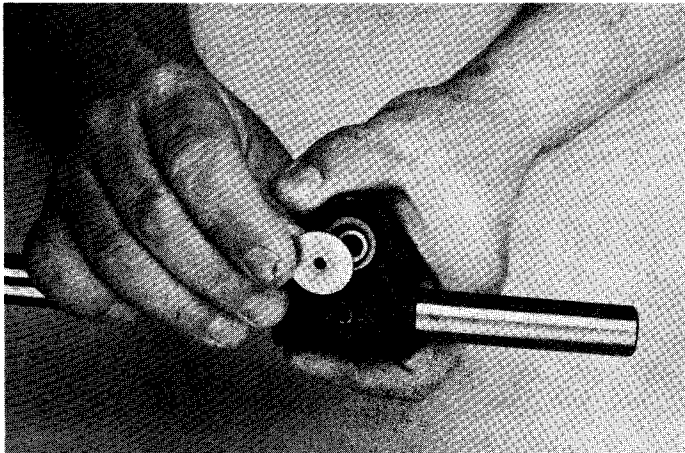
8. Install reverse plunger washer.

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

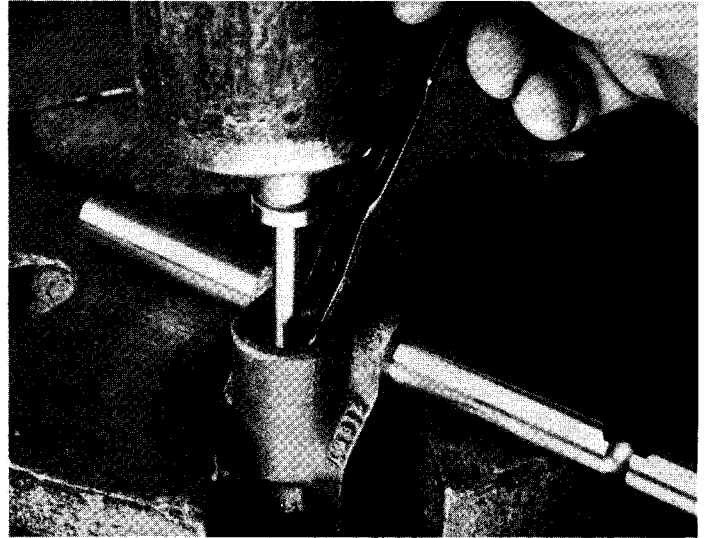
SHIFT BAR HOUSING ASSEMBLY (con't.)



9. Install outer reverse plunger spring. Install inner reverse plunger spring (inset).



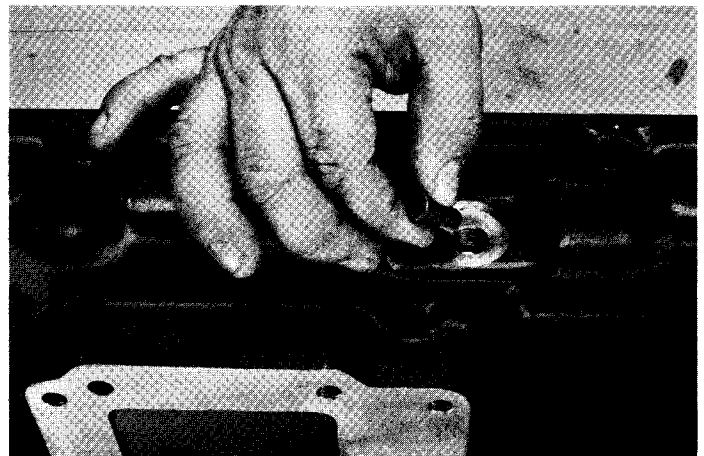
10. Install reverse plunger retaining washer.



11. Place the shift yoke in a hand press. Depress retaining washer and spring and install the snap ring.

CAUTION

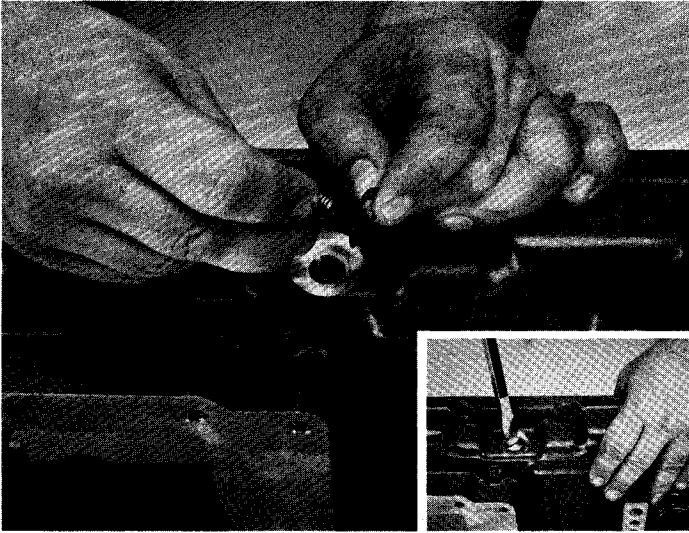
THE SNAP RING AND RETAINER WILL BE UNDER SPRING TENSION AS INSTALLED.



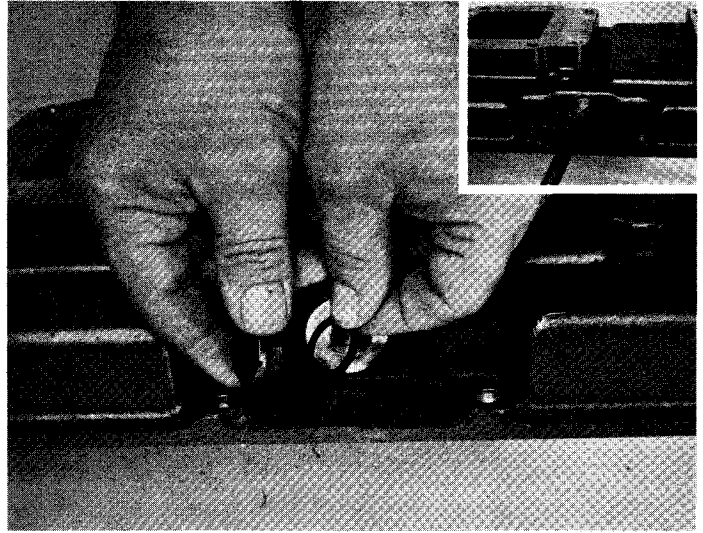
12. Install the reverse light switch pin in the shift bar housing.

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

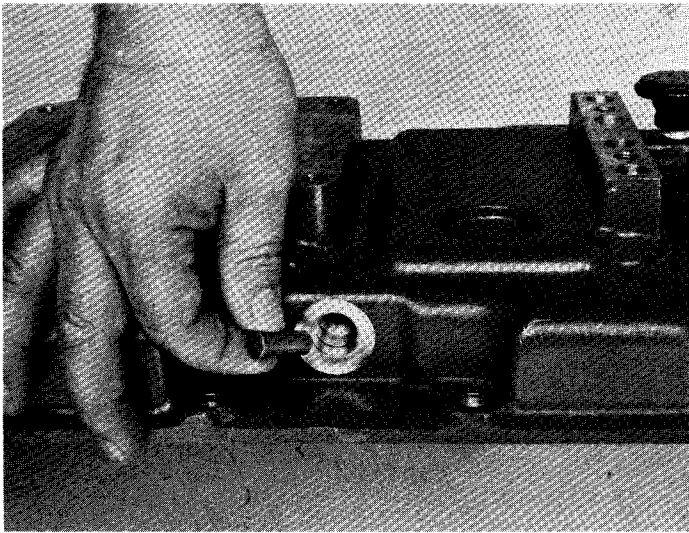
SHIFT BAR HOUSING ASSEMBLY (con't.)



13. Install reverse light switch or plug and gasket in shift bar housing. Tighten reverse light switch or plug (inset).



15. Install the neutral light switch or plug and gasket in shift bar housing. Tighten neutral light switch or plug in shift bar housing (inset).



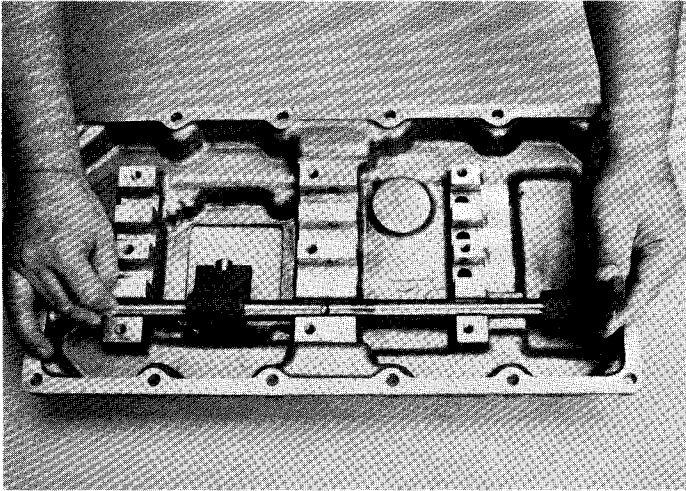
14. Install the neutral light switch pin in the shift bar housing.



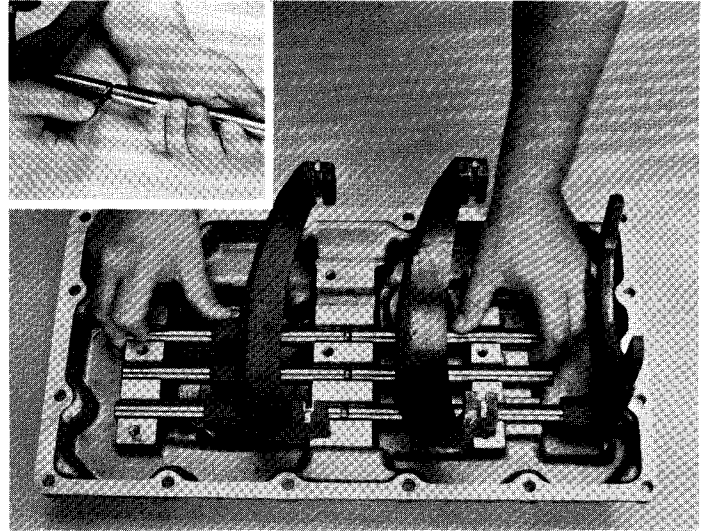
16. Install interlock balls in the shift bar housing in the following sequence: position two interlock balls in the first-second crossbore; third-fourth crossbore; and the fifth-sixth crossbore.

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

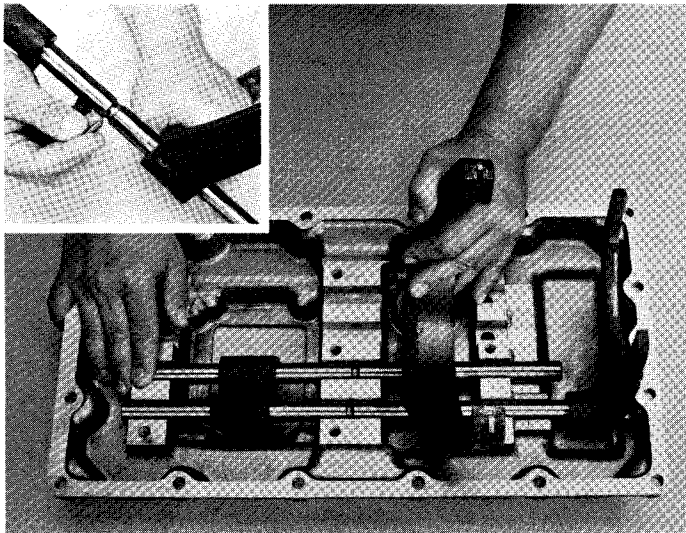
SHIFT BAR HOUSING ASSEMBLY (con't.)



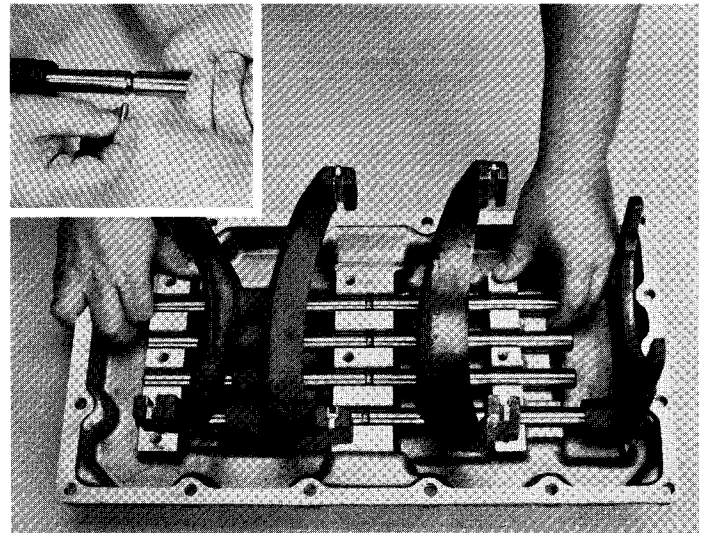
17. Place shift bar housing on a work bench as shown, and install the reverse yoke assembly in position as shown.



19. Install interlock pin in the third-fourth yoke and rail assembly (inset). Position the assembly in shift bar housing.



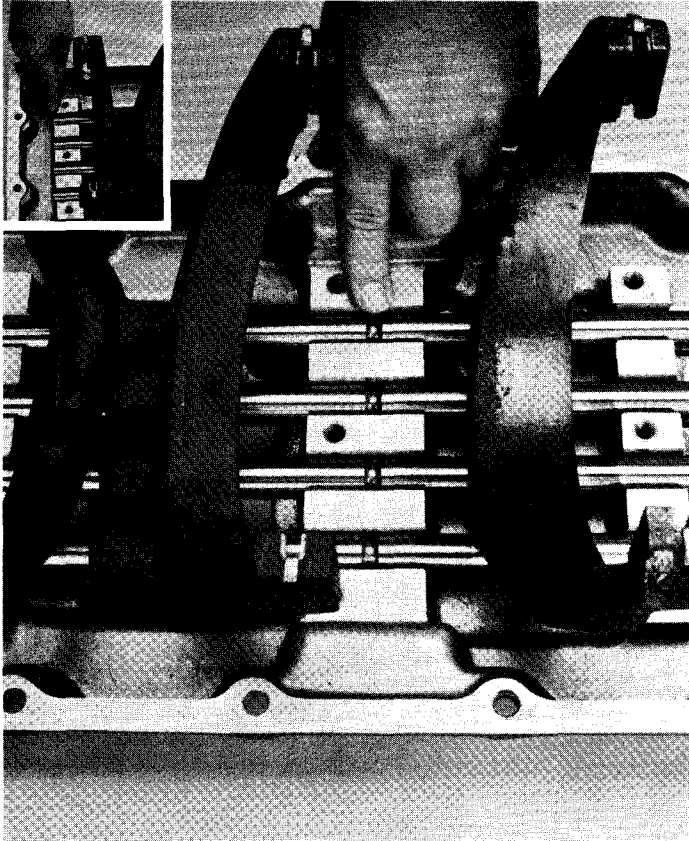
18. Install interlock pin in the first-second yoke assembly (inset). Position first-second yoke and rail assembly in shift bar housing.



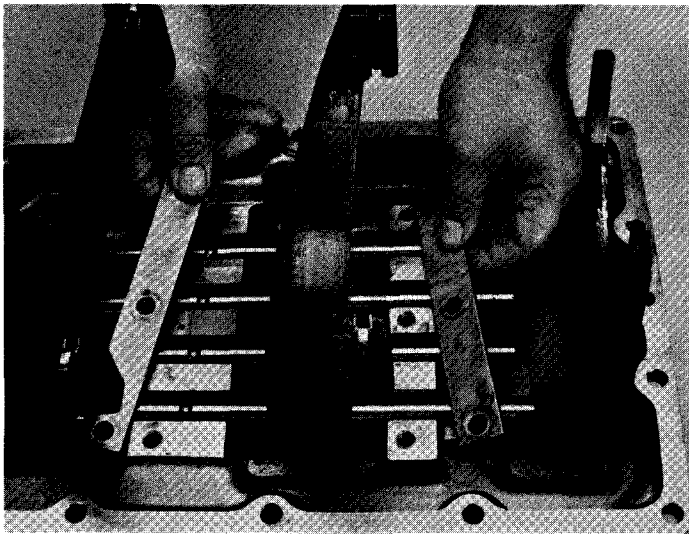
20. Install interlock pin in the fifth-sixth yoke assembly (inset). Position the assembly in shift bar housing.

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

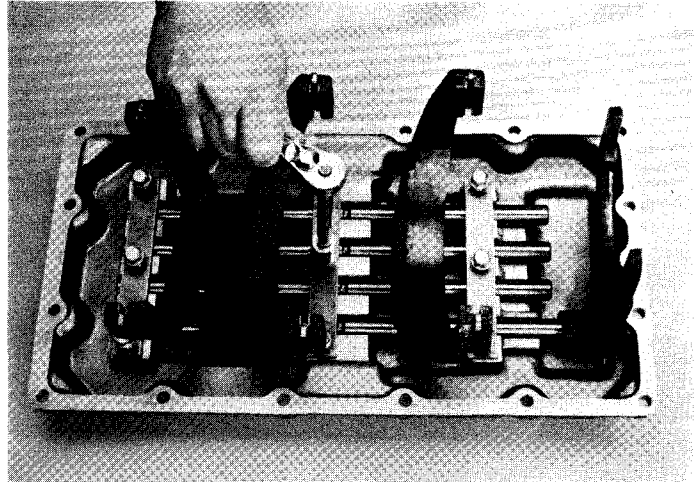
SHIFT BAR HOUSING ASSEMBLY (con't.)



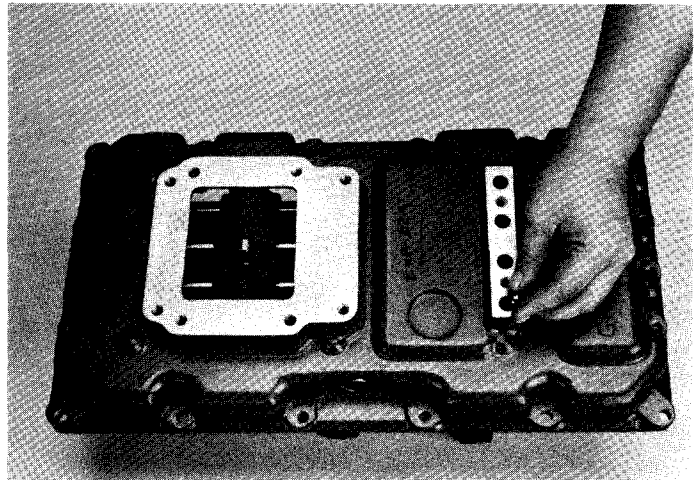
21. Make sure all yoke assemblies are in the neutral position as shown (inset) and interlock pins are aligned to interlock ball crossbores.



22. Position the three retainer plates in shift bar housing.



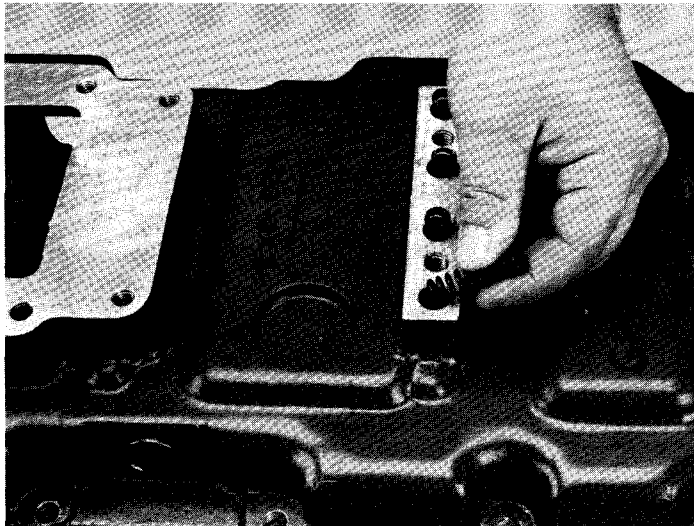
23. Install nine capscrews in shift bar housing as shown and tighten to the recommended torque.



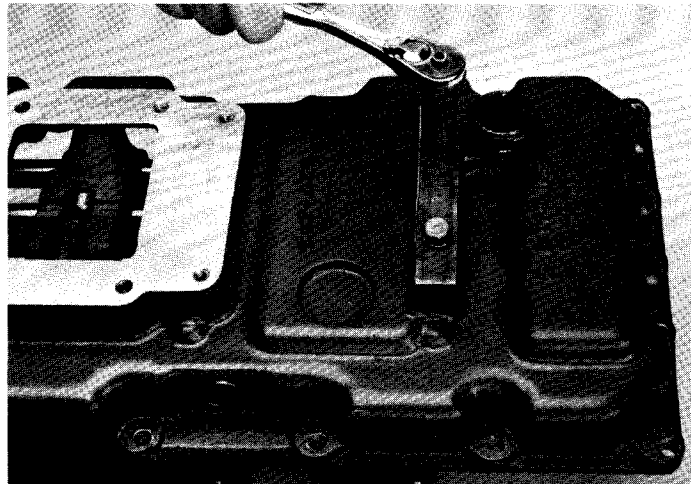
24. Position shift bar housing as shown and install four interlock balls.

DISASSEMBLY AND REASSEMBLY SHIFTING CONTROLS

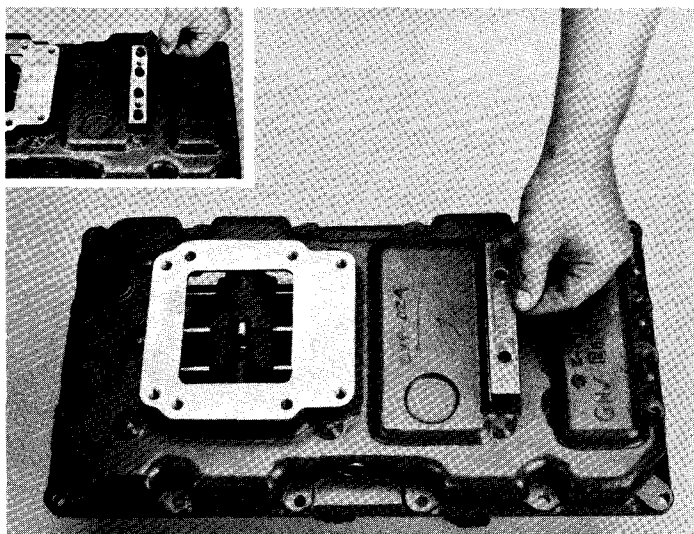
SHIFT BAR HOUSING ASSEMBLY (con't.)



25. Install the four interlock springs.



27. Install two cap screws and tighten to recommended torque.



26. Install gasket (inset) and retainer plate.

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parts@eprogear.com

906 W. Gore St.

Orlando, FL 32805

