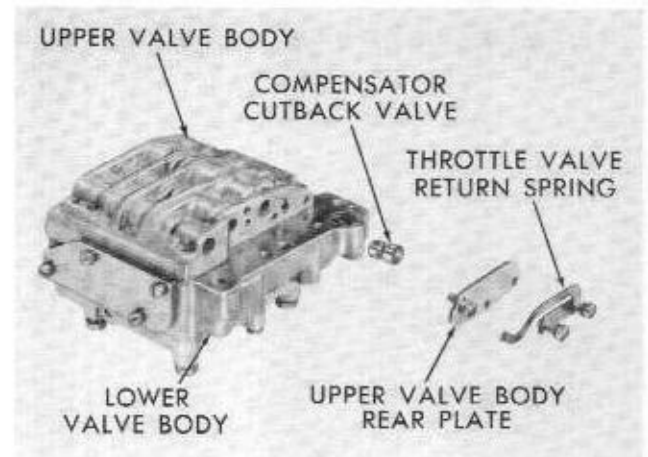


**SECTION THIRTEEN—DISASSEMBLY, INSPECTION, ASSEMBLY, AND INSTALLATION OF CONTROL VALVE BODY,  
AND INSTALLATION OF FLUID SCREEN AND BOTTOM PAN**

**NOTE**

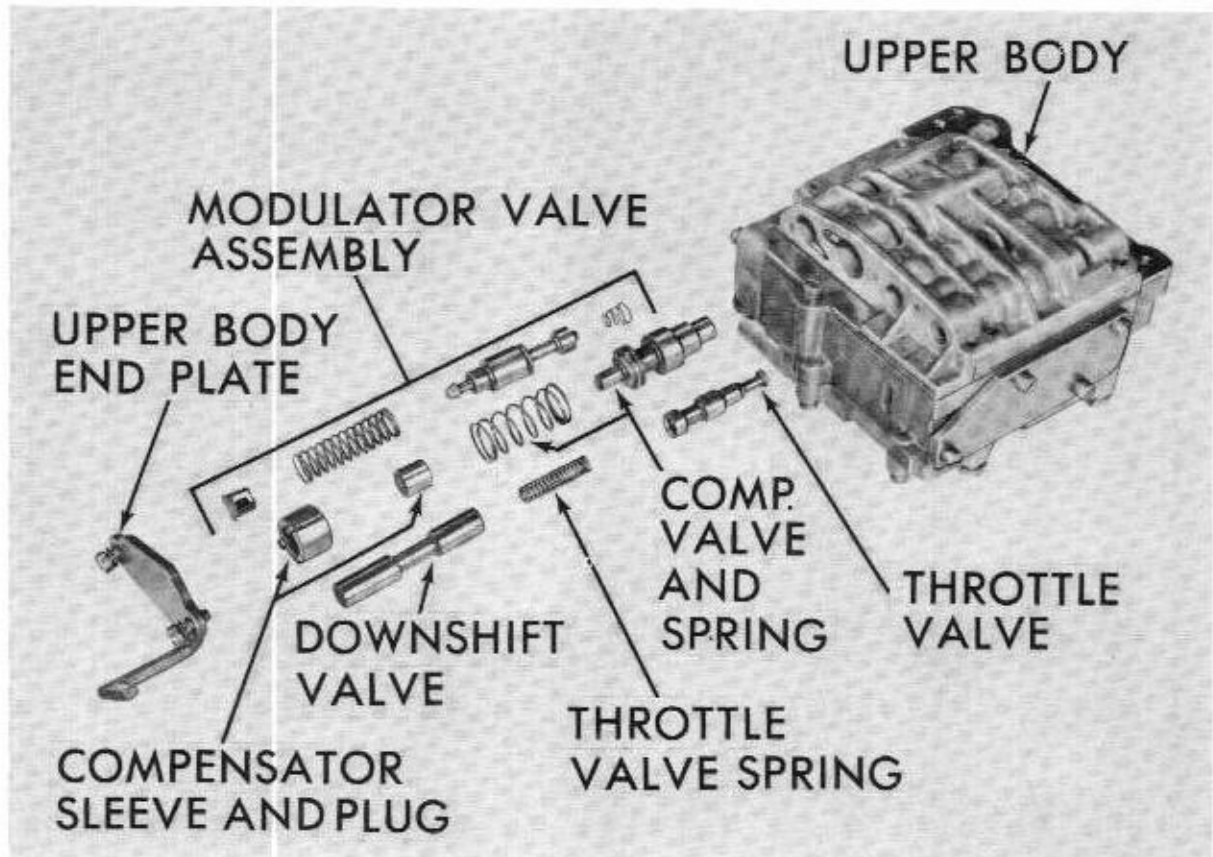
It is suggested that all accessible valves be removed from the control valve assembly before separating the valve bodies -- to enable you to determine whether valves are binding in their bores because of improperly torqued screws or distortion of the bodies.

**A. Disassembly of Control Valve  
(for 1955 through 1957 models)**

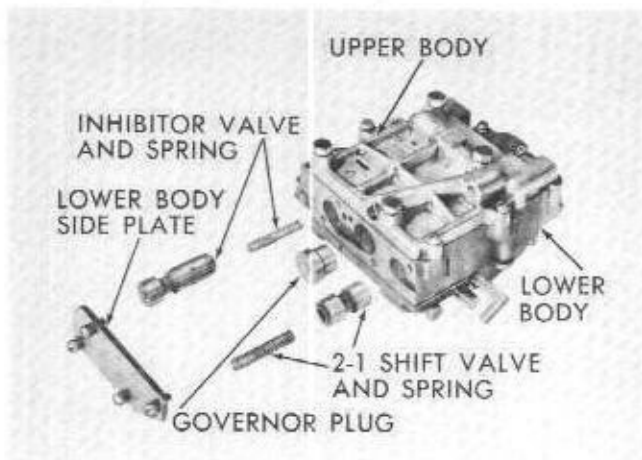


1. Remove the manual valve.

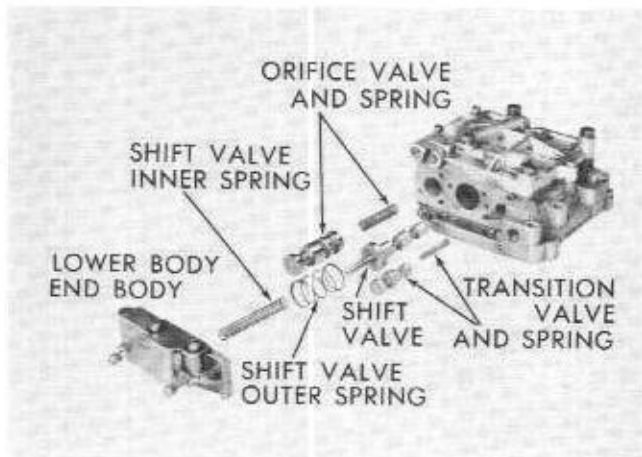
2. Remove the screws that secure the throttle valve return spring and upper body rear plate to the upper valve body, and remove the return spring and plate from the upper valve body. Remove the compensator cutback valve from its bore in the upper valve body.



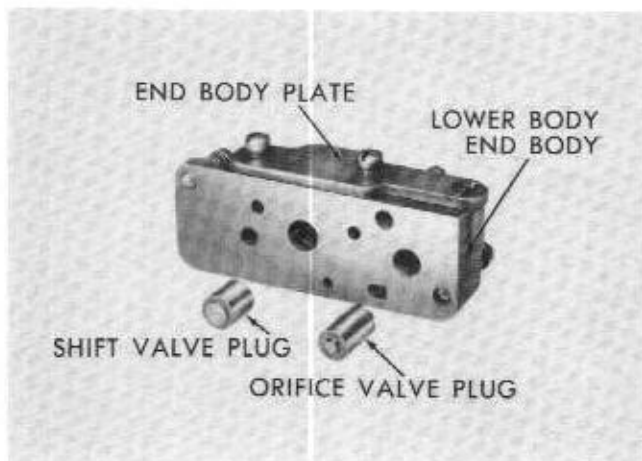
3. Remove the upper body front plate -- being careful to keep the springs from flying out of their bores. Remove the modulator valve assembly, and separate its parts. Remove the compensator sleeve, plug, spring and valve. Remove the downshift valve, the throttle valve spring, and the throttle valve.



4. Remove the lower body side plate. Remove the inhibitor valve and spring, the governor plug, and the 2-1 shift valve spring and valve.

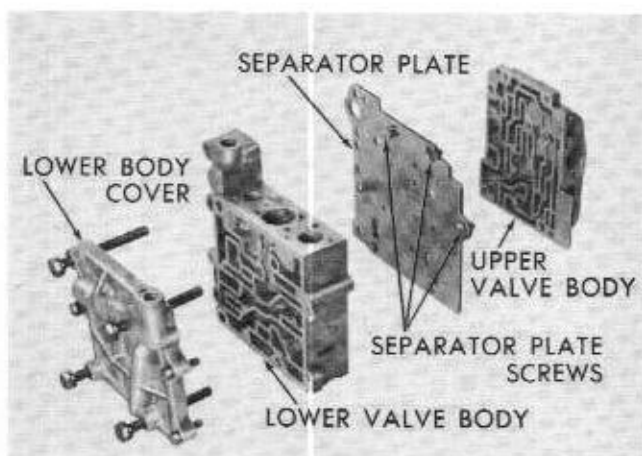


5. Remove the lower body end body -- being careful not to let springs or valves fly out of the lower body. Remove the orifice valve and spring; the shift valve inner and outer springs and shift valve; and the transition valve and spring.

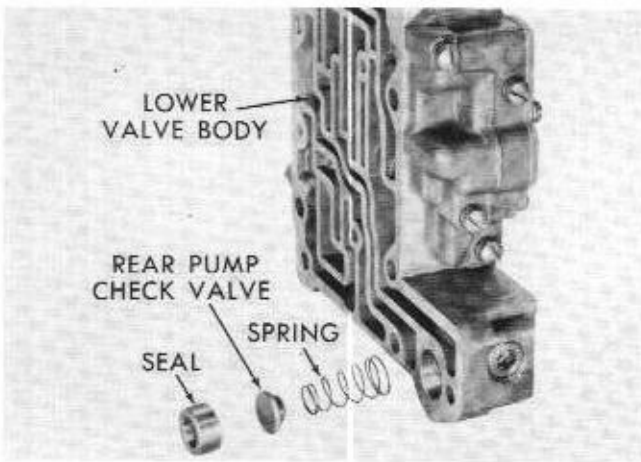


6. Remove the shift valve plug and the orifice valve plug from the end body. Remove the end body plate.

**NOTE** There are no valves under the end body plate, which is removed only to insure proper cleaning and inspection of passages.

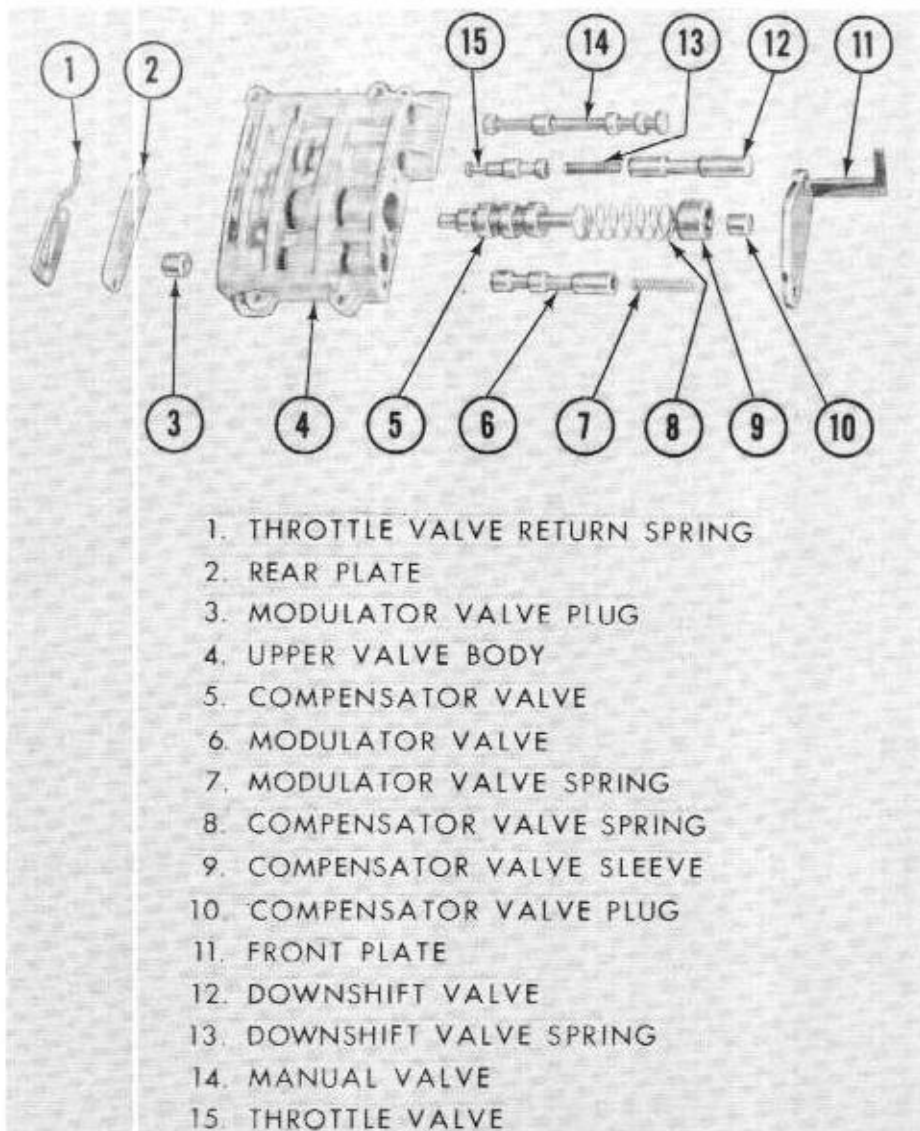


7. Remove the screws that secure the lower body cover to the lower valve body, and remove the cover. Remove the separator plate screw, and separate the bodies. Remove the two screws that secure the separator plate to the upper valve body, and remove the plate.

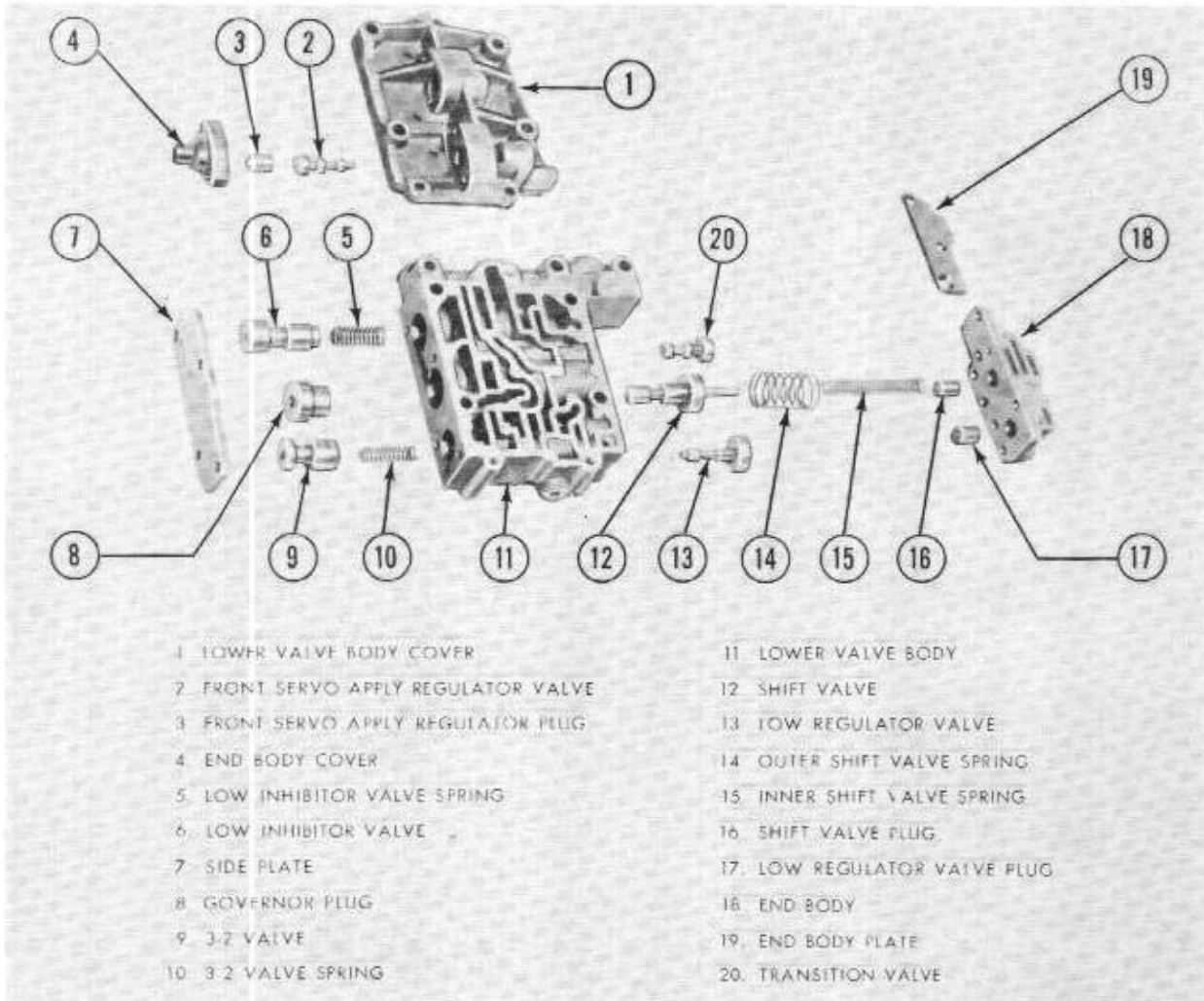


8. Remove the rear pump check valve assembly from the lower valve body.

**NOTE** The procedures given above apply specifically to 1955 through 1957 control valve assemblies. However, except for slight variations, they also apply to 1951-1954 control valve assemblies. The two pictures below show the valves in the 1951-1954 models.



1951-1954 upper valve body.

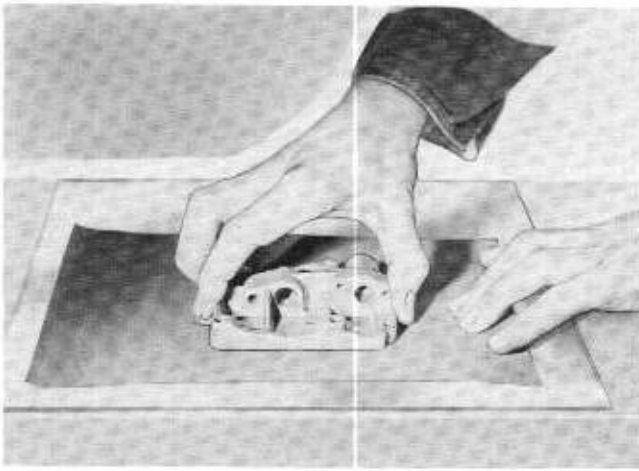


1951-1954 lower valve body.

### B. Inspection of Control Valve Assembly

**NOTE** Thoroughly clean all parts in clean solvent and blow dry.

1. Inspect the lower valve body bores for scores.
2. Check all passages for obstructions.
3. Inspect the check valve for free movement.



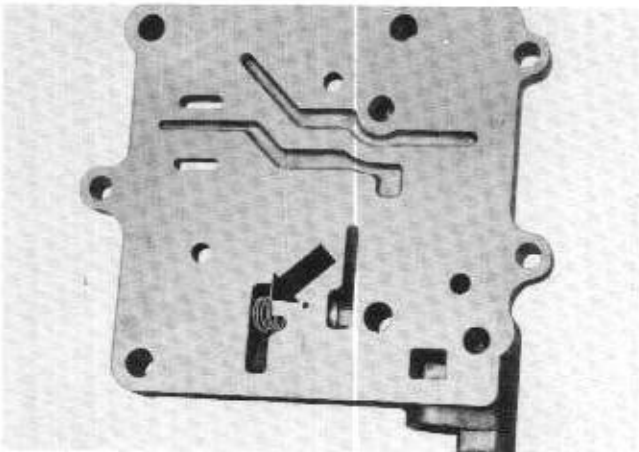
4. Check all mating surfaces for burrs and flatness.

**NOTE** Satisfactory results can be obtained by using a pane of glass and a sheet of crocus cloth.

5. Inspect all plugs and valves for burrs and scores.

**NOTE** It is permissible to use crocus cloth to polish valves -- but use care to avoid rounding sharp edges of valves and plugs.

6. Inspect all springs for distortion.
7. Check the valves and plugs for free movement in their respective bores. The valves and plugs, when dry, must fall, of their own weight, into their respective bores.
8. Inspect fluid passages in the end body for obstructions.
9. Inspect the plug bores for scores.



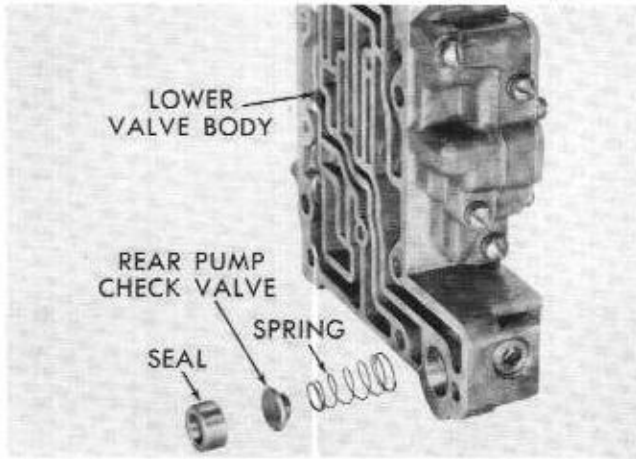
10. Check to make sure the rear servo check valve in the lower body cover is properly seated (1955-1957 models only).

**NOTE** The manual valve can be serviced separately. If any of the other valves are damaged, the entire control valve assembly must be replaced.

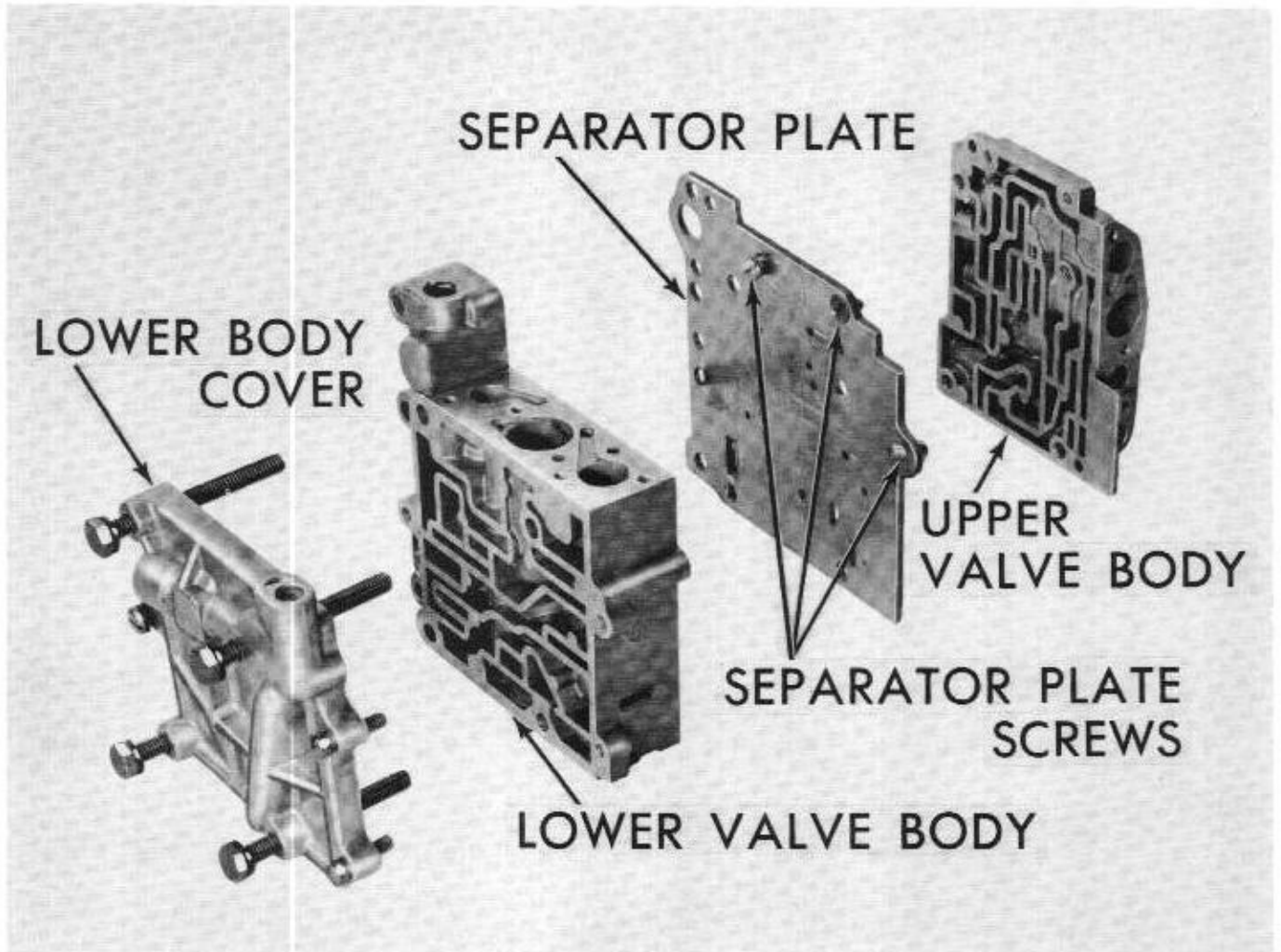
### C. Assembly of Control Valve (for 1955-1957 models)

**NOTE** The assembly procedures below apply specifically to 1955-1957 control valve assemblies. However, they basically apply also to 1951-1954 models. For variations refer to the pictures on pages 152 and 153.

**CAUTION** Use care when installing valves and plugs in their bores. Rotate plugs and valves when placing them in their bores to avoid gouging the soft metal castings.



1. Install the rear pump check valve assembly in its bore in the lower valve body.

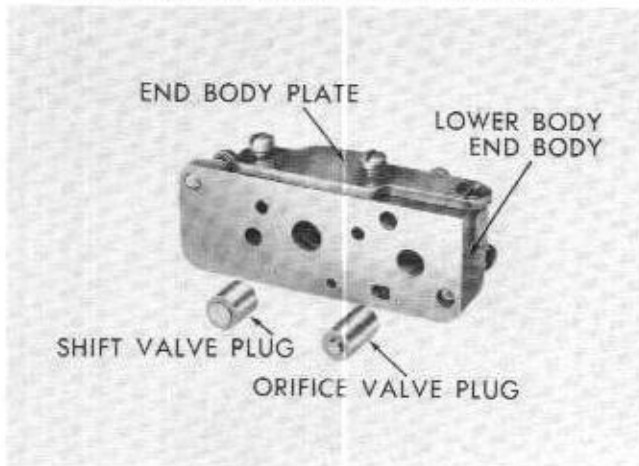


2. Install and secure the separator plate on the upper body with two screws (one flat head screw and one cap screw). Do not tighten these two screws now.
3. Place the lower body cover on the lower valve body, and secure it with three cap screws.

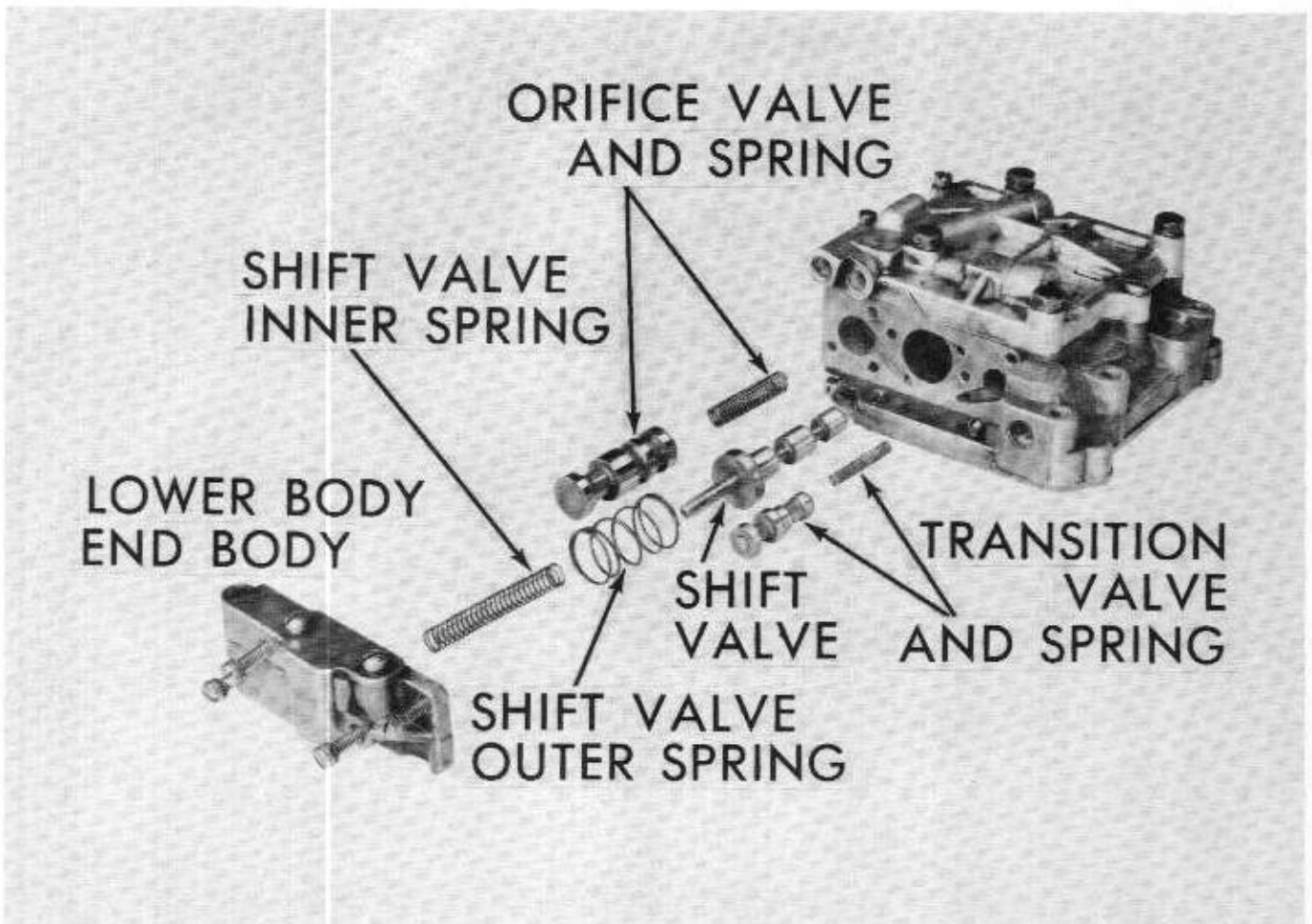
4. Install the lower valve body on the upper valve body, and install the four hex head cap screws. Torque the screws 4 to 6 foot-pounds.

**CAUTION** Do not torque the cover screws beyond 4 to 6 foot-pounds, for over-tightening them can easily distort the valve body and cause valves and plugs to stick.

5. Install the separator plate screw that goes into the lower valve body, and tighten all three separator plate screws.

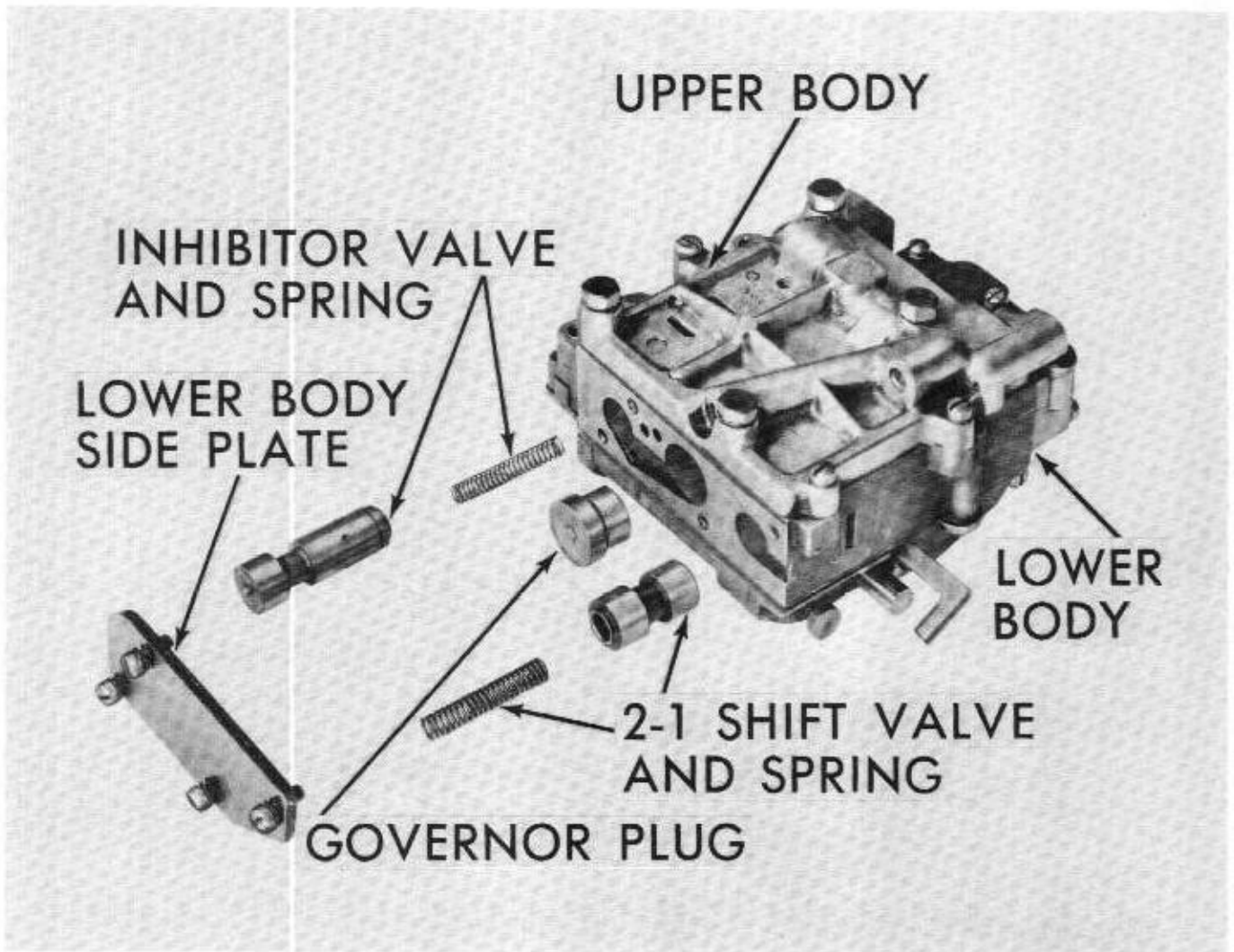


6. Install the end body plate on the lower body end body, and secure it with two cap screws and one flat head screw. Install the shift valve plug and the orifice valve plug.

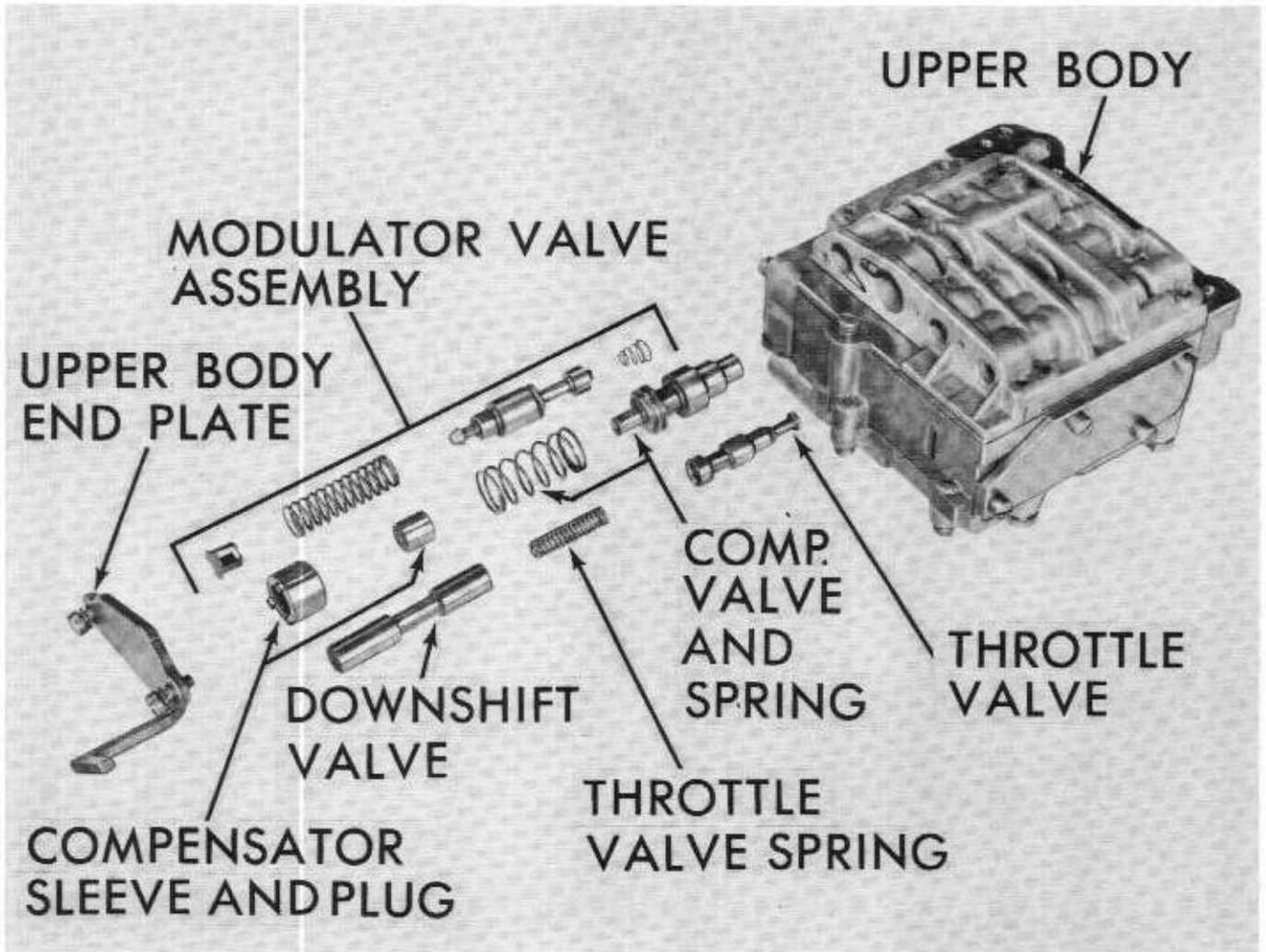




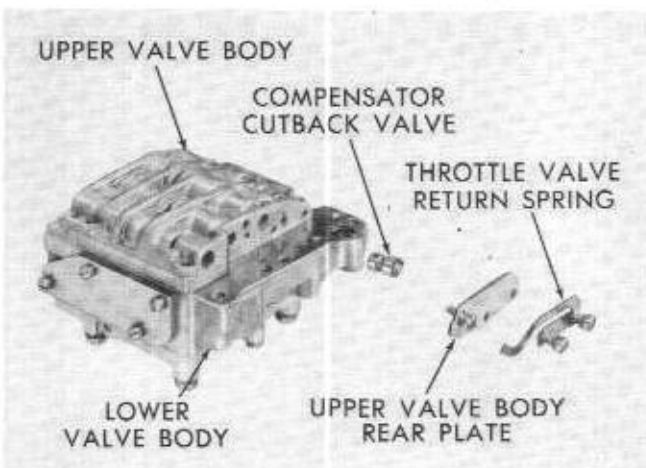
7. Install the transition valve and transition valve spring; the shift valve, shift valve inner spring and shift valve outer spring; the orifice valve spring and orifice valve in their bores in the lower body. Install the lower body end body on the lower valve body, and secure it with four cap screws.



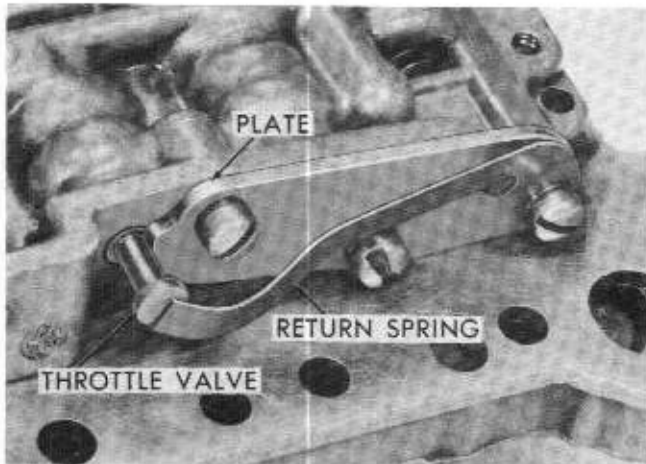
8. Install the 2-1 shift valve in the body, and install the 2-1 shift valve spring in the valve. Install the governor plug, inhibitor valve spring, and inhibitor valve in the body. Install the side plate, securing it with four cap screws.



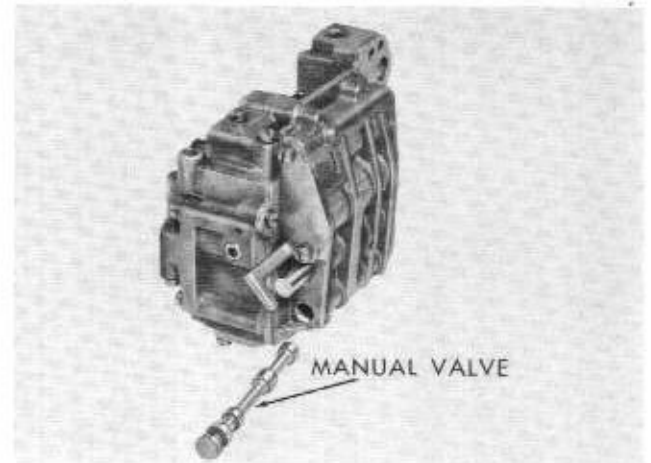
9. Assemble the modulator valve assembly and install it in the upper valve body. Install the compensator valve and compensator valve spring. Install the compensator plug in the compensator sleeve, and install the sleeve in the body with its smooth end in. Install the throttle valve, throttle valve spring, and downshift valve in the upper valve body, and install the upper body front plate, securing it with two cap screws.



10. Install the compensator cutback valve in its bore in the upper valve body. Install the upper body rear plate, and secure it with one cap screw next to the throttle valve. Install the throttle valve return spring, and secure it and the plate with the remaining two cap screws.

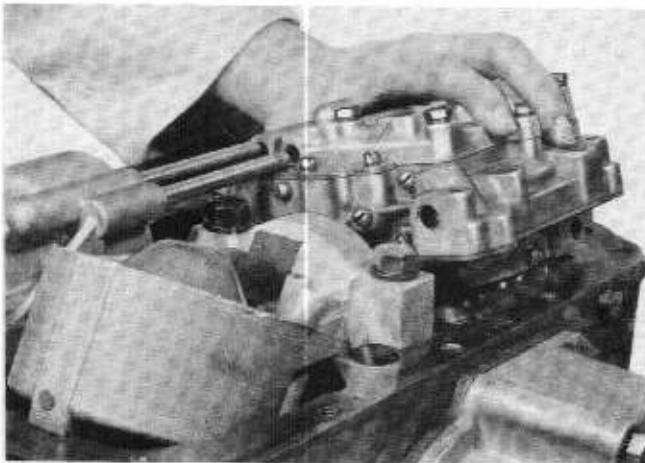


**NOTE** Install the upper body rear plate with its one end under the end land of the throttle valve.

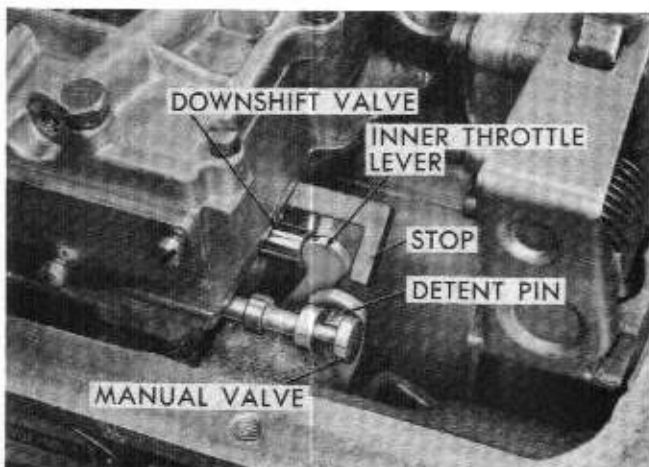


11. Install the manual valve.

**D. Installation of control valve assembly, adjustment of bands, air check of servos, and installation of screen and pan**



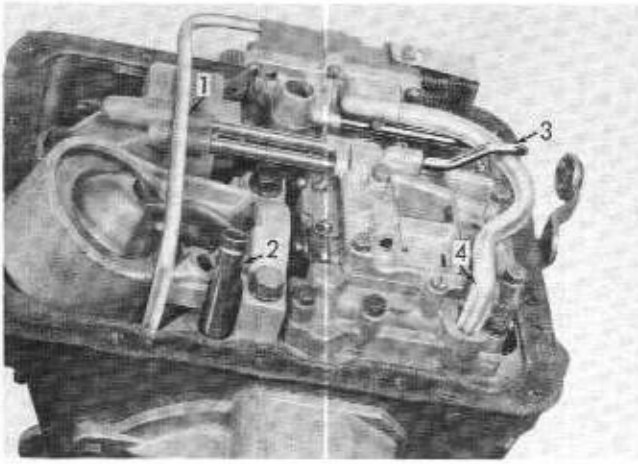
1. Install the control valve assembly, sliding it on the servo tubes.



**CAUTION** When installing the control valve, make sure the pin in the manual detent lever is in the groove in the end of the manual valve, and that the inner throttle lever is between the throttle lever stop and the downshift valve. Install the three control valve bolts, but do not tighten them at this time.

## Chapter IV

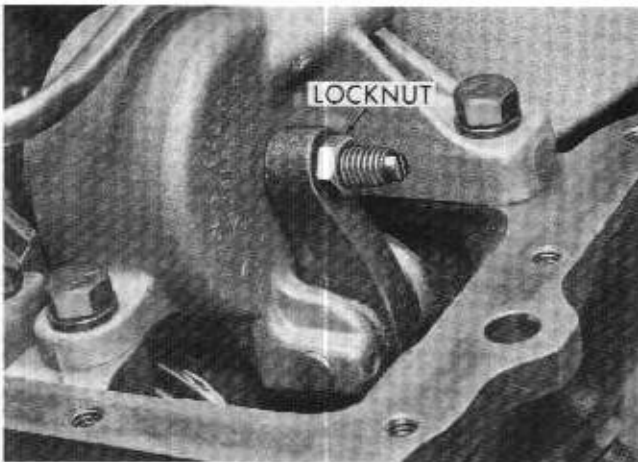
### Section THIRTEEN



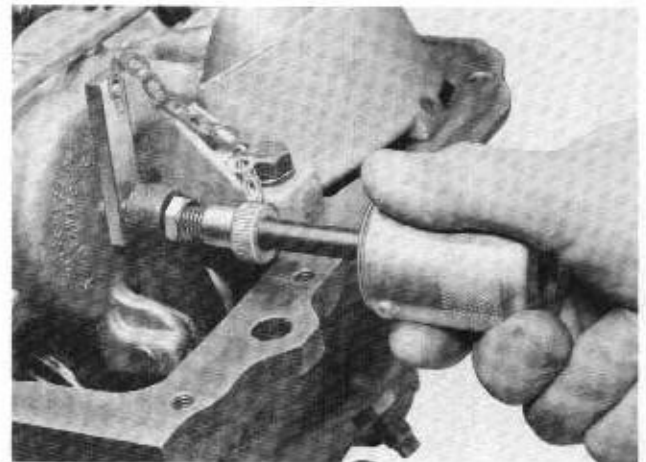
2. Install the control pressure tube (4) into the valve body and regulator. Install the compensator tube (3) into the valve body and regulator. Install the lubrication tube (1) into the rear pump and regulator body. Install a new seal ring on the rear pump intake tube, and install the tube (2).

3. Torque the control valve body attaching bolts 8 to 10 foot-pounds.

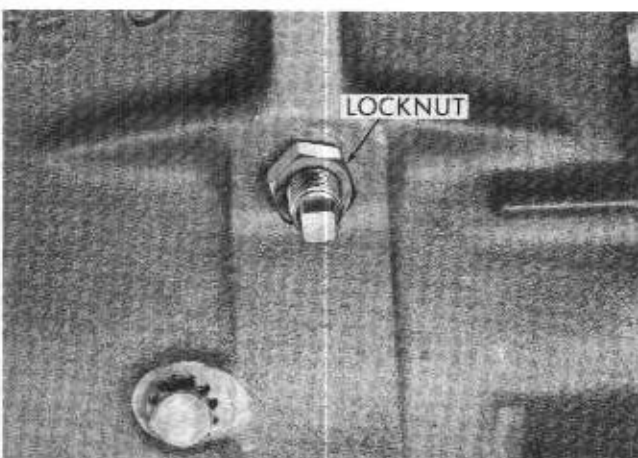
4. Torque the front servo attaching bolts (or bolt) 30 to 35 foot-pounds.



5. Loosen the adjusting screw locknut two full turns, using a 9/16 inch wrench.



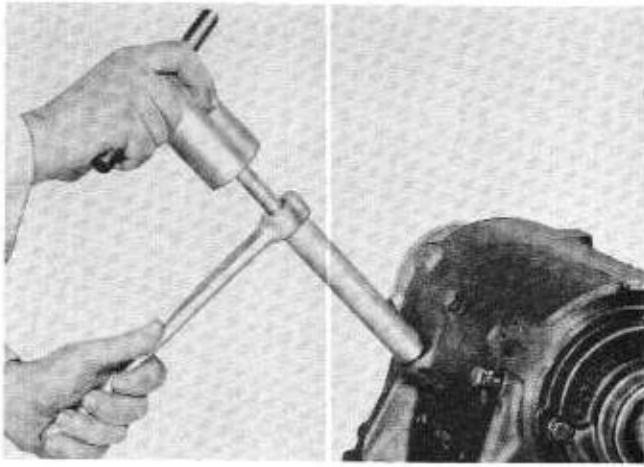
6. Insert the gage block between the servo piston stem and the adjusting screw, and tighten the adjusting screw until the adjusting wrench overruns. Back off the adjusting screw one complete turn, and remove the gage block. Hold the adjusting screw in position, and tighten the locknut -- torquing it 20 to 25 foot-pounds.



7. Loosen the rear band adjusting screw locknut three full turns -- using the tool shown below.

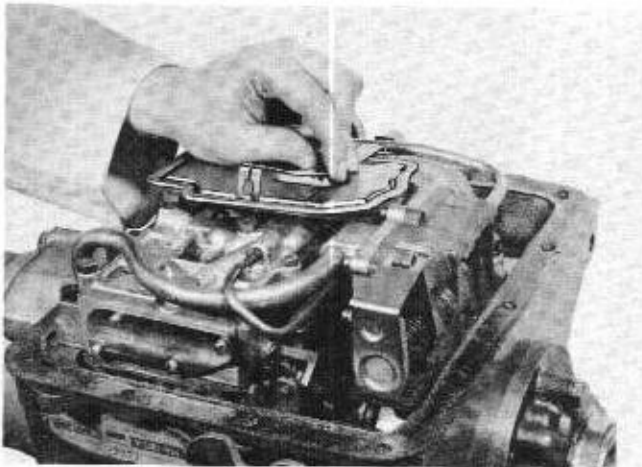
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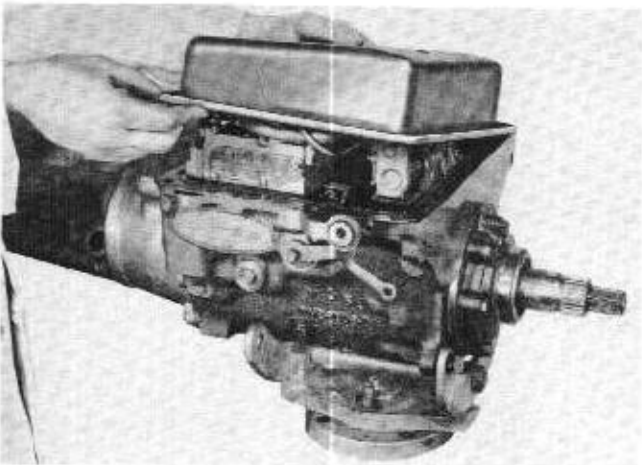
8. Then, using the "T" handle of the adjusting tool, tighten the adjusting screw until the wrench overruns. Back off the adjusting screw 1-1/2 turns. While holding the adjusting screw in its setting with the "T" handle tighten the locknut with the "L" handle. Torque the locknut 35 to 40 foot-pounds.

9. Remove the control valve assembly as described before.
10. Air check the clutches, servos, and governor as described on page 59.
11. Install the control valve assembly as described before.



12. Install the fluid screen, and secure it with the retainer.

**NOTE** Some models do not have this retainer.



13. Install the bottom oil pan using a new gasket. Torque the bolts 10 to 13 foot-pounds.