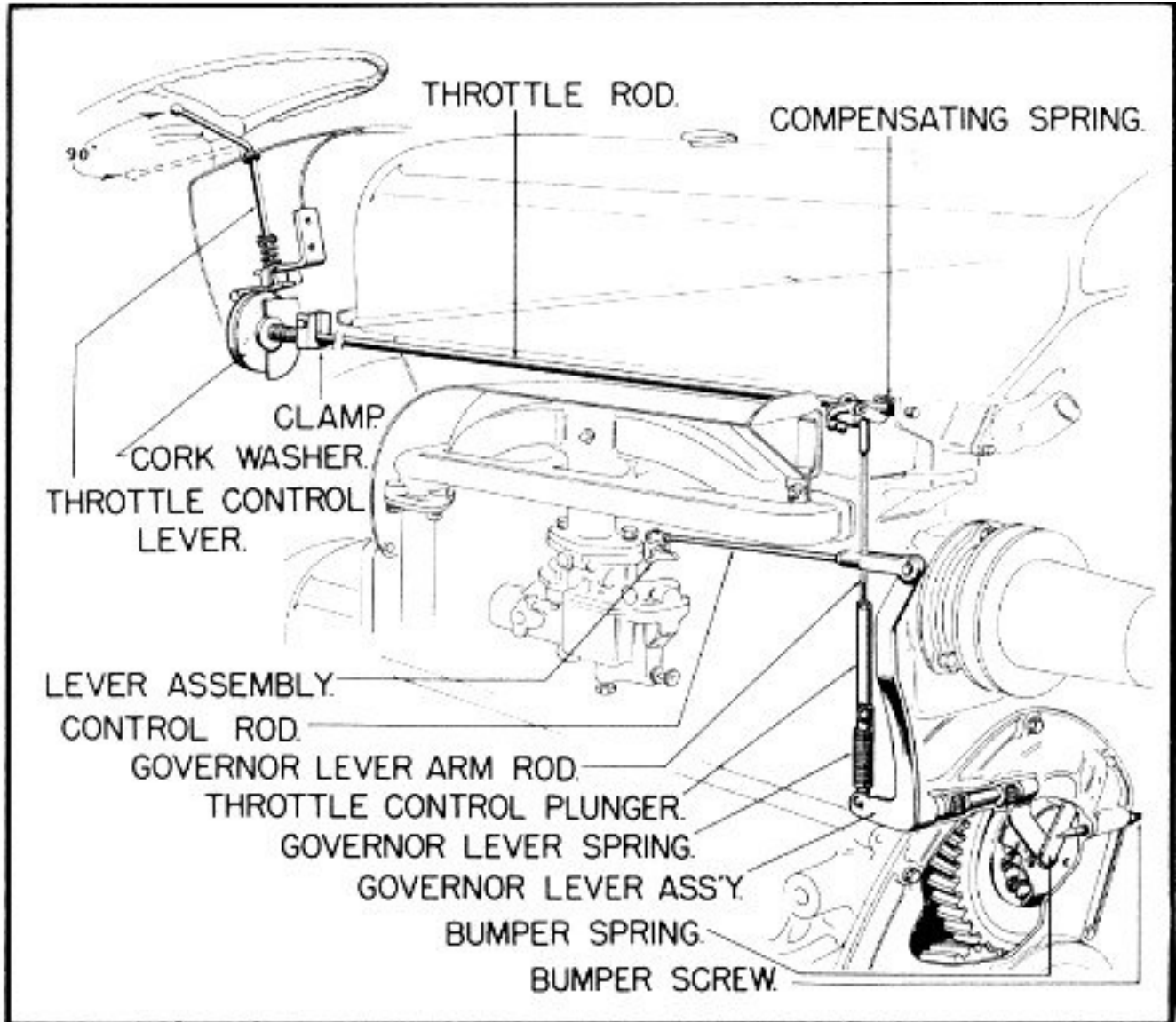


## ADJUSTING THE GOVERNOR AND THROTTLE LINKAGE OF YOUR FERGUSON TRACTOR



*NOTE: these procedures are for tractors with Continental gasoline engines. Procedures for those with Standard gasoline or diesel engines may vary somewhat. Check your owners manual for variations.*

### CHECKING GOVERNOR ACTION

1. Start engine and allow it to reach operating temperature. Make sure that the carburetor is properly adjusted and that the low and high idle speeds are set properly.
2. Set throttle for 1,000 RPM. Check with tractormeter, hand-held tach, or dwell-tach tester.
3. Set brakes.
4. Shift to the highest gear.
5. While leaning over to the right so that the governor lever movement can be observed, gently release the clutch. The governor lever should immediately pull the control rod forward if the governor is correctly adjusted and there is no binding in the linkage.
6. If the governor is inoperative at 1000 RPM, the bumper

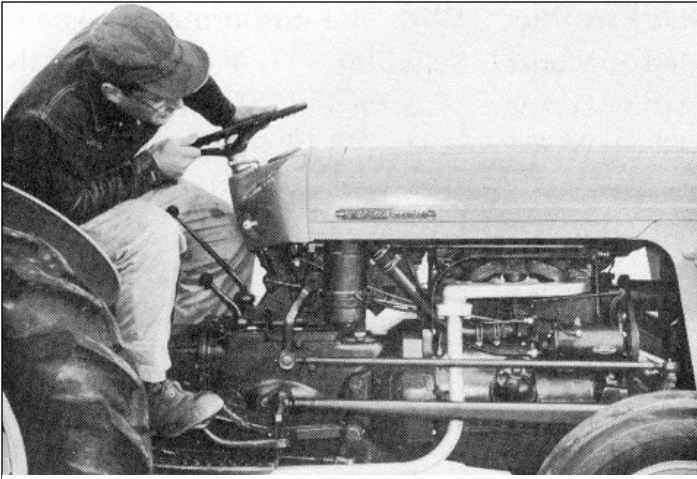
screw should be backed out to make sure it does not contact the bumper spring. Then repeat Steps 1-5.

7. If the governor action is still unsatisfactory, check external governor linkage for binding and proper adjustment.
8. If governor action is responsive, check top engine speed.

### CHECKING TOP ENGINE SPEED

1. Open hand throttle fully and note top speed, which should be about 2,200-2,250 RPM.
2. If not, loosen the U-bolt at the front end of the throttle rod and turn assembly on throttle rod until correct speed is obtained.
3. If surging is experienced, the bumper screw must be turned in until it touches the bumper spring.

*Caution: do not turn bumper screw in any further than necessary to stop surging as it deadens governor action at slower speeds.*



*Observing the action of the governor.*

## **SURGING**

Surging is the result of either wear or binding. Therefore, to obtain efficient operation, the cause of surging should be determined and eliminated.

## **CORRECTING LINKAGE BINDING**

To check exterior governor linkage for binding, open and close the throttle control lever and note the following points of potential binding and correct if necessary:

1. **Clamp Striking Battery.** On some models the clamp at the rear of the throttle rod may catch on the battery. Adjust the clamp as necessary.
2. **Governor spring and engine block.** Move the U-bolt assembly forward on the throttle rod, being careful to avoid interference between the compensating spring and the water outlet elbow housing.
3. **Throttle and governor arm.** Insert the tractor wrench or a heavy screwdriver behind the bottom of the vertical part of the governor lever assembly and bend it outward until any binding is eliminated.
4. **Vertical arm of governor lever and fan belt.** The control rod (governor lever to carb) should be shortened to prevent any interference.
5. **Governor lever shaft and front cover housing.** Remove governor lever spring from slot in the throttle control plunger and move lever back and forth to check for binding. Binding may be due to dirt or a damaged shaft. The latter requires removing the front cover of the governor to correct.
6. **Compensating spring or top of governor lever arm rod and water elbow housing.** Move U-bolt assembly back on throttle rod until the binding is eliminated. Then recheck Step 2 above.
7. **Throttle control rod clevis pin and governor arm.** Loosen locknut and retighten, holding clevis in a position where no binding occurs.
8. **Cotter pin on carburetor end of throttle control rod and throttle lever assembly.** Cotter pin should be installed from the top of the throttle control rod with the pin wrapped neatly around the throttle control rod.

## **ADJUSTING THE LINKAGE**

1. **Low idle speed.** Check the engine idling speed by disconnecting the throttle control rod from the governor assembly lever. Start engine, *taking precautions to hold the*

*throttle control rod in an idle position when starting engine.* If this precaution is not taken, the engine will speed beyond its normal maximum RPM. Hold throttle control rod against the carburetor idling stop and adjust idling speed screw until 450-500 engine RPM is obtained.

2. **Compensating spring link.** Place the throttle lever in idling position (just short of the forward stop). Check to see if the compensating spring link just touches the throttle rod. If it is not, loosen the U-bolt and rotate it on the throttle rod until the compensating link just touches the throttle rod. Then retighten the U-bolt.
3. **Governor lever arm rod.** Check to see if the governor lever arm rod is long enough so that the throttle control plunger contacts the horizontal arm of the governor lever and holds the control rod against the idle stop. If not, remove the governor lever spring and loosen the lock nut on the governor lever arm rod. Adjust the length of the rod until it contacts the arm of the governor lever and holds the control rod against the idle stop.
4. **Governor lever spring.** With the engine not running and the throttle control lever in the slowest idle position, check the top loop of the governor lever spring to see that it rests with slight pressure against the bottom of the slot in the governor lever arm rod. If it floats freely in the middle of the slot, the spring is either too long or has been stretched and a new spring should be installed.
5. **Carburetor control rod.** With the engine not running and the throttle control lever at the full throttle position, examine the clevis joining the carburetor control rod to the governor lever assembly. The clevis pin and the joint should float free and have no binding. Binding can be caused by excess paint in the clevis holes or by the control rod being too short. Remove paint if necessary. It should be possible to flex the governor lever assembly forward about 1/32" by finger pressure. If the arm is solid and immovable, it is a sure indication that the rod is too short. With the throttle still in full, open position, remove the cotter key and clevis pin and adjust the clevis so that its hole overlaps the hole in the governor arm assembly by 1/32". It should then be necessary to move the control rod slightly toward the rear of the tractor in order to insert the clevis pin through it and the governor lever arm.

## **RECHECKING GOVERNOR ACTION**

If no external binding is present and the governor is still inoperative at 1000 RPM, the difficulty probably results from the governor bumper spring extending too far away from the cover assembly. This can be checked by disconnecting the governor lever spring from the governor lever assembly and pushing the governor lever assembly to the idle position. If while in this position, a spring action is noted, the governor bumper spring extends out too far and must be bent in towards the cover. This will require removing the front governor cover.

## **RECHECK FOR SURGE**

The governor bumper screw should be left out of contact with the bumper spring unless surging occurs. In this event, the engine should be run at full-throttle and the bumper screw turned in until the RPM just starts to increase. Tighten the lock nut to hold this position.

*Adapted from Ferguson Shop Manuals*