MECHANICAL GOVERNOR

DISASSEMBLE:

1. Drain the oil from the engine.
2. Remove any rust, nicks, or burrs from the crankshaft.
3. Remove the four (4) oil cooler screws.
4. Disconnect the wiring from the oil pressure switch.
5. Remove the governor lever from the shaft.
6. Separate the ball joint on the swinging arm.
7. Remove all of the crankcase bolts and slide the crankcase cover off.
8. Discard the crankcase gasket & oil passage o-ring.

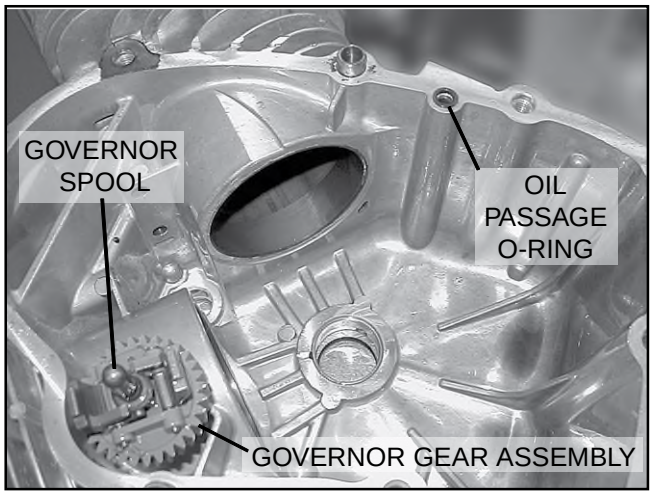

Figure 4-1. Governor Gear Assembly and Spool

GOVERNOR

Both the spool and the flyweights must move freely for the governor to work properly. Check for wear on the spool and flyweights. If wear is noticed, change the governor gear assembly (gear and flyweights), spool, and governor arm. Lubricate all moving parts when reassembling.

GOVERNOR REMOVAL AND INSTALLATION:

1. Leverage gear assembly and governor spool off of governor shaft.
2. Remove any remaining plastic from the notch in the governor shaft.
3. Check that all the governor bearing parts (top plate, bearing, and bottom plate) are on the shaft, and that it moves smoothly. (See Figure 4-2)
4. Slide the new gear assembly and spool onto the governor shaft. Slide until the gear hooks into the notch in the governor shaft. (See Figure 4-2)

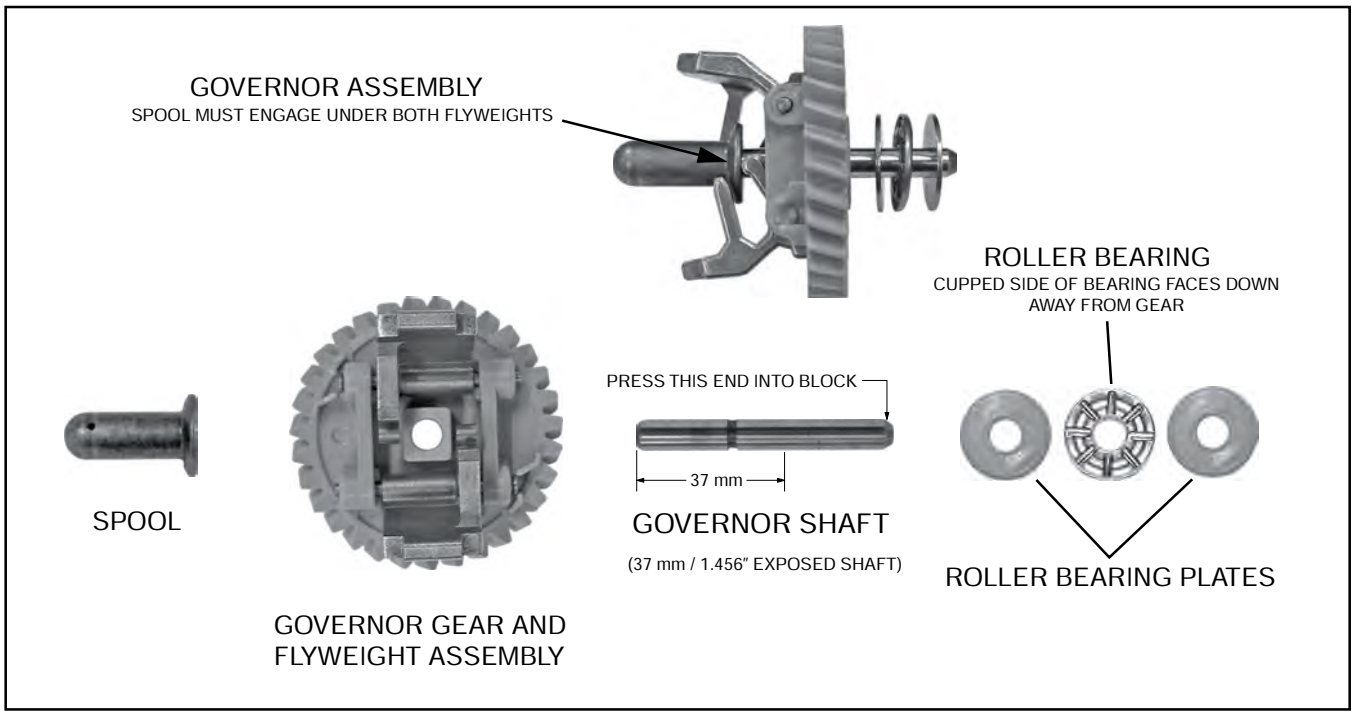

Figure 4-2. Governor Assembly and Components

GOVERNOR ARM

If the governor arm does not move freely, or if the arm feels loose in the bushings, it may need replacing. If wear is noticed, change the governor arm, governor gear assembly (gear and flyweights), spool, and bushings as needed. Lubricate all moving parts when reassembling.

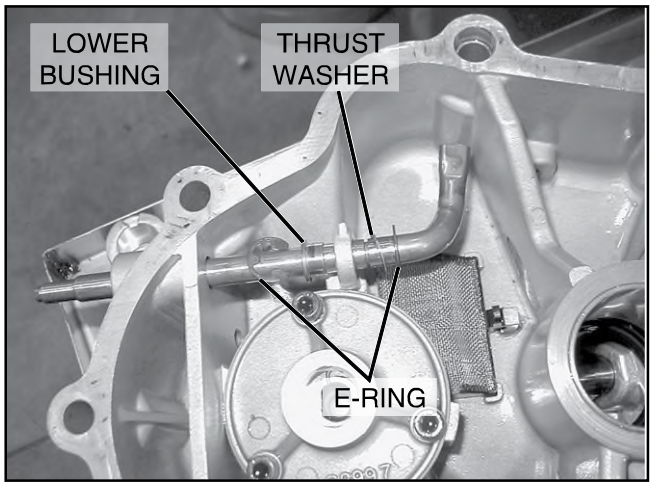

Figure 4-3. Governor Arm Assembly

DISASSEMBLE GOVERNOR ARM:

1. Remove the e-clips.
2. Slide the arm down and out of the bushings.
3. Replace any parts that appear worn.

Note: The lower bushing is a slip fit, and the upper bushing is pressed in.

ASSEMBLE GOVERNOR ARM:

1. Slide the thrust washer part way onto the new governor arm.
2. Insert the governor arm in the lower bushing holder, and slide it part way in.
3. Install lower e-clip on the arm, and slide the thrust washer down to it.
4. Slip the lower bushing part way on to the arm.
5. Slide the arm in until the thrust washer is tight.
6. Slide the lower bushing down and into it's holder, then install the upper e-clip.

ASSEMBLE CRANKCASE COVER:

1. Clean any old gasket material from the crankcase and cover mating surfaces.
2. Be sure that the new oil passage o-ring is in place (see Figure 4-1).

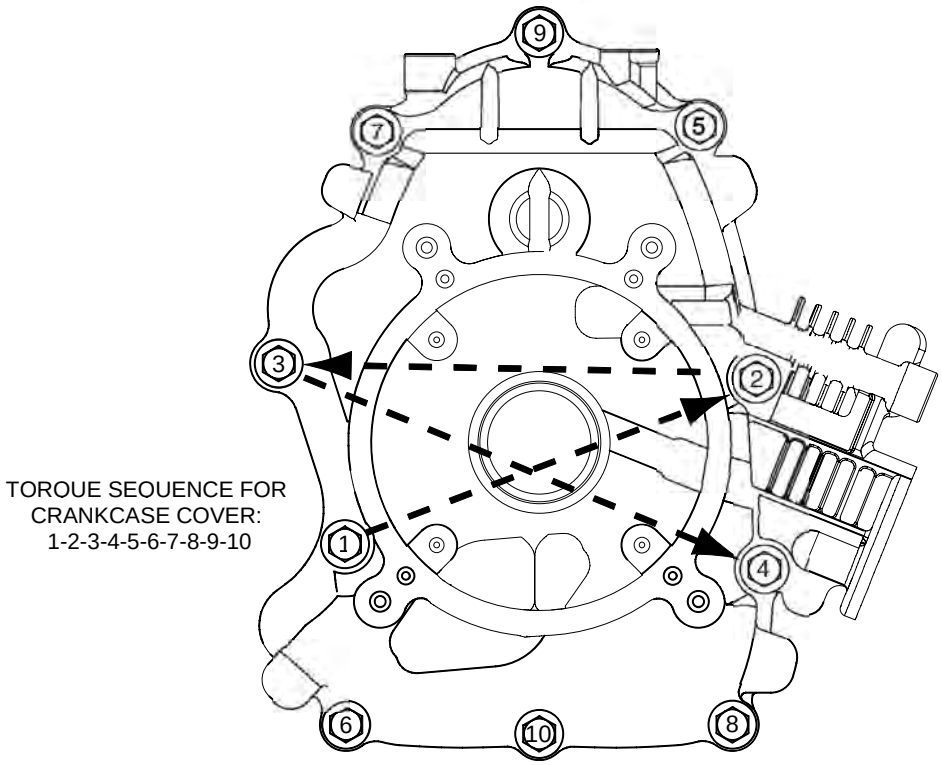

Figure 4-4. Crankcase Bolt Torque Sequence

3. Put a new gasket on the crankcase.

Note: On vertical shaft engines, align the camshaft drive and oil pump gerotor.

4. Slide the crankcase cover back on the crankcase.

Note: Hold the governor arm in the counter-clockwise position while installing.

5. Start all of the crankcase bolts, and then torque them to 47.5 Nm (35 ft. lbs.), following the proper torque sequence (see Figure 4-4).
6. Reconnect the ball joint on the swing arm.
7. Place the governor lever on the governor arm. Place the governor spring in the 4th hole out.
8. Perform a static governor adjustment (see below).
9. Reconnect the wires to the oil pressure switch.
10. Reattach the oil cooler to the blower housing.

STATIC GOVERNOR ADJUSTMENT

Determine which version of governor linkage is installed on the engine. Refer to Figures 4-5 (earlier version) and 4-6 (later version).

1. Loosen the clinching screw on the governor lever.
2. Rotate the governor arm clockwise and hold governor lever in WOT (Wide Open Throttle) position.
3. While holding this position, torque the clinching screw to 11.3 Nm (100 in. lbs.).
4. Check to make sure that the throttle travels from WOT to IDLE. If it doesn't, the governor needs to be reset again.

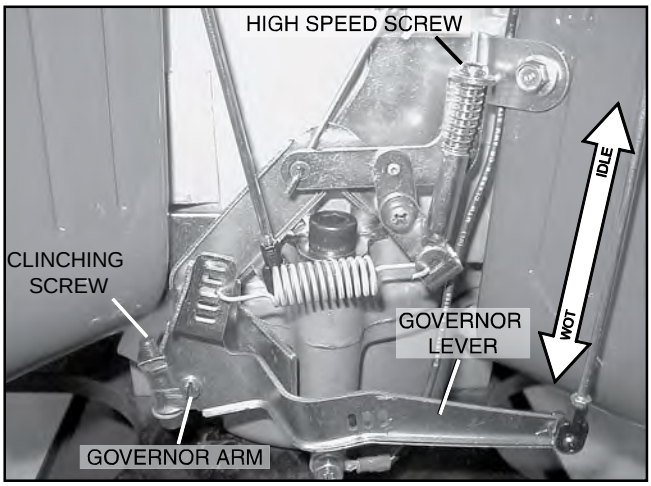

Figure 4-5. Static Governor Adjustment

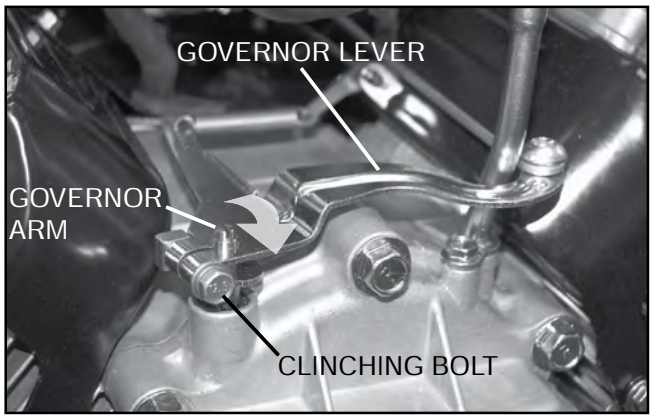

Figure 4-6. Static Governor Adjustment (Later Version)

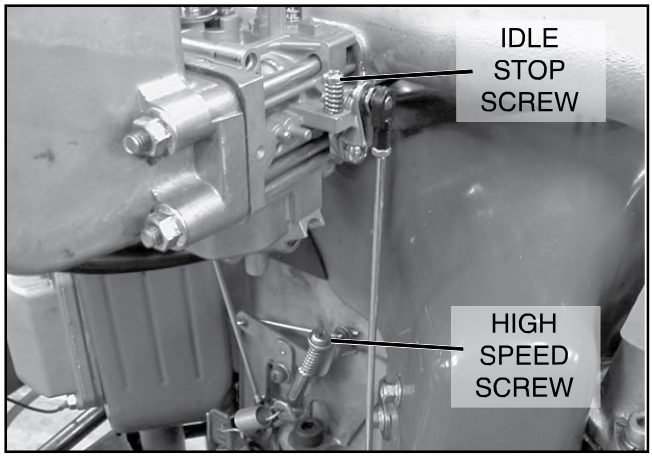

Figure 4-7. Dynamic Governor Adjustment (Earlier Version)

DYNAMIC GOVERNOR ADJUSTMENT

1. Start engine and allow to warm up for 5 minutes.
2. Move speed control lever to slow speed position and hold throttle lever against idle stop screw (see Figure 4-7).
3. Adjust stop screw to maintain 1800 RPM idle.
4. Slowly move speed control lever to high-speed position. Do not exceed 3800 RPM (see Figures 4-7 or 4-10 depending on governor version).

Note: On the later governor version, insert an allen wrench or similar object into the hole in the control panel behind the speed control lever. This acts as a temporary stop during adjustment.

Note: The high-speed screw may need adjusting to reach the speed control stop without exceeding 3800 RPM.

5. With the speed control in the high-speed position, adjust the high-speed screw to obtain the desired engine speed (see Figures 4-7 or 4-10 depending on governor version).

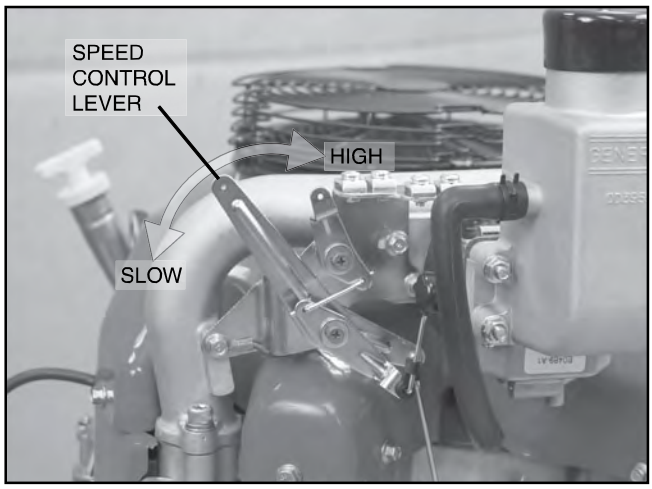

Figure 4-8. Dynamic Governor Adjustment (Vertical Shaft)

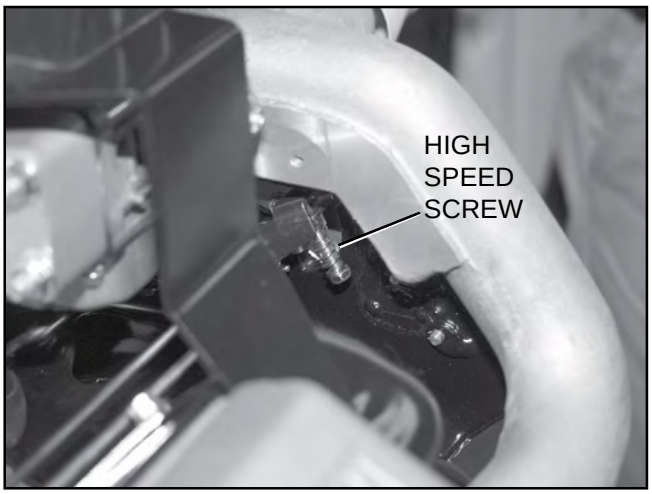

Figure 4-10. Dynamic Governor Adjustment (Horizontal Shaft)

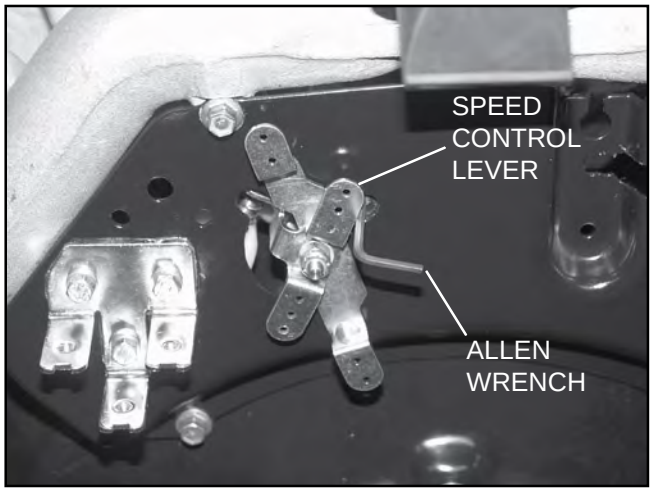

Figure 4-9. Dynamic Governor Adjustment (Horizontal Shaft)