Engine Speed and Mixture Adjustments

**NOTE**
Starting and operating problems may exist when engines are used at high elevations (over 4,000 feet above sea level). In cases where a fixed main carburetor is used, refer to Bulletin 110 for correction.

Engines which are identified as compliant with CARB (California Air Resources Board) or EPA (US Environmental Protection Agency) regulations can **NOT** be changed from their factory jetting unless specifically authorized.

Before making any speed or carburetor adjustments be sure to adjust the governor and control bracket.

To adjust the speed control bracket, determine whether the carburetor is an adjustable type, then proceed.

Some carburetors may have a choke lever which is operated by the speed control bracket. To adjust the speed control bracket for full choke operation, loosen the speed control bracket mounting bolts and move the speed control lever to the high speed/full choke position. Next, insert a small piece of wire through the hole in the speed control bracket, choke actuating lever, and the choke lever (diag. 23). When all three holes are aligned tighten the mounting bolts.

It may be necessary to preset the carburetor mixture screws.

<table>
<thead>
<tr>
<th>Tecumseh Carburetors</th>
<th>Main Pre-set</th>
<th>Idle Pre-set</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Model</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with float-type</td>
<td>1-1/2 turn</td>
<td>1 turn</td>
</tr>
<tr>
<td>carburetors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with diaphragm-type</td>
<td>1 turn</td>
<td>1 turn</td>
</tr>
<tr>
<td>carburetors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Some speed control brackets are adjusted by loosening the speed control bracket mounting bolts and sliding the bracket all the way to the right and re-tightening the mounting bolts (diag. 24).
**Mixture Adjustment Procedure for Adjustable Carburetors**

Once the speed control bracket is adjusted, the main and idle fuel mixtures can be adjusted. Start the engine and allow it to warm up to normal operating temperature (3 - 5 minutes). Set the speed control to the HIGH or FAST position, then turn the main mixture adjustment screw in (clockwise) slowly until the engine begins to run erratic (lean). Note the position of the screw. Now, turn the screw out (counterclockwise) until the engine begins to run erratic (rich). Turn the screw in (clockwise) midway between these two positions. This will be the best setting.

Set the speed control to the IDLE or SLOW position. Adjust the idle mixture screw following the same procedure used to adjust the main mixture adjustment.

*NOTE*

Some carburetors have fixed main jets. The absence of the adjusting screw indicates a fixed jet and no adjustment is necessary (diag. 25).

After adjusting the fuel mixtures, engine speeds can be adjusted. The correct operating speeds are found on Microfiche card 30 of the Tecumseh Master Parts Manual, or the computer parts look-up program (Parts Manager Pro). On engines with adjustable carburetors (diag. 26 and 27) the high speed adjustment will be in one of two places. The first location is on the speed control lever (diag. 26).

The second is on a bracket located between the blower housing and the speed control (diag. 27). Low speed is adjusted by the throttle crack screw on the carburetor (diag. 26 and 27).

The high speed adjustment screw is located on the speed control lever (diag. 28). Some carburetors are fixed speed and are adjusted by bending the adjusting tab attached to the intake manifold (diag. 30).

After setting the engine speeds recheck the fuel mixtures, then recheck the engine speeds.
Common Engine Speed Controls and Governor Linkages

High Speed Adjustment Screw
Low Speed Adjustment Screw

SPEED ADJUSTMENT TAB
BEND → TO INCREASE SPEED
BEND ← TO DECREASE SPEED

Low Speed Tab
High Speed Tab
High Speed Pin Position
Tool (670326)

DECREASE
INCREASE

TVS, LEV SNAP IN CONTROL

Vertical Engines

Bend Control Bracket to Set RPM

Bend → To Increase Speed
Bend ← To Decrease Speed

Throttle Crack Screw
Idle Mixture Screw
Main Mixture Screw

Governor Adjusting Lever
High Speed Adjustment Screw
Low Speed Adjustment Screw

OV195 Linkage
Common Engine Speed Controls and Governor Linkages - continued

TVS, LEV AND LV ENGINE’S WITH PRIMER STYLE CARBURETOR AND REMOTE SPEED CONTROL

VERTICAL SHAFT ENGINES

NOTE:
ON REMOTE CONTROL THIS WILL NOT BE PRESENT

TYPICAL LATE MODEL LIGHT WEIGHT VERTICAL WITH ADJUSTABLE SPEED CONTROL

For Discount Tecumseh Engine Parts Call 606-678-9623 or 606-561-4983


**VLV Governor and Linkage**

**Static Adjustment - Governor**
With the engine stopped, loosen the screw holding the governor lever to the governor shaft. Push the governor lever up to move the carburetor throttle plate to the wide-open throttle position. Rotate the governor rod in the same direction. Hold the lever and rod in this position while tightening the screw (diag. 38).

**Linkage Installation**
The solid link is always connected from the throttle lever on the carburetor to the lower hole on the governor lever. The shorter bend has to be toward the governor. The governor extension spring is connected with the spring end hooked into the upper hole of the governor lever and the extension end hooked through the speed control lever. To remove the governor spring, carefully twist the extension end counterclockwise to unhook the extension spring at the speed control lever. Do not bend or distort the governor extension spring (diag. 38).

**Speed Controls**
This engine has an adjustable speed control. Never exceed the manufacturer’s recommended speeds. (diag. 39).

*NOTE*
Governor adjustment screw will be a Torx head (T-10).

**Fixed Speed**
High speed governor adjustment is accomplished by bending a tab to increase and decrease engine R.P.M. (diag. 40).
Medium Frame Vertical Shaft Engines
To adjust high speed on an up/down control (diag. 41) bend the adjustment tab. Low speed is adjusted by a screw at the bottom of the control bracket. Both the governor override system and the up/down speed control have a governed idle. On these systems it is important to also adjust the throttle crack screw. To adjust the throttle crack screw use your finger to hold the throttle shutter tight against the throttle crack screw and adjust the engine speed to approximately 600 R.P.M. less than the recommended low speed.

The idle speed is adjusted by turning the idle speed screw clockwise to increase engine R.P.M. and counterclockwise to decrease R.P.M. Use tool part #670326 to adjust the high speed engine R.P.M. Place the slotted end of the tool onto the adjustment tab and bend the tab to the left (toward the spark plug end) to increase engine R.P.M. (diag. 42).

NOTE
Be sure that the throttle cable has full travel from wide open throttle to full choke. Hard Starting could result if the cable is not properly adjusted to allow for full choke.
Governor Override System for TVM170, 195 and 220 Engines (diag. 47)

This system will be found starting on 1985 production models and will not retrofit onto older engines. It is designed to allow the governor to regulate the low and high speeds of the engine. The high speed is adjusted at the top screw of the override lever; to increase R.P.M. turn the screw in (clockwise), to decrease R.P.M. turn the screw out or counterclockwise (diag. 47).
Engine Speed Controls and Governor Linkages - continued

Horizontal Shaft Engines

Horizontal Lightweight

Idler Speed Crack Screw
High Speed RPM Adjustment Screw

Lightweight R.V. Type

Idler Speed Crack Screw
High Speed RPM Adjustment Screw

Small Frame Governed Idle

Idler Speed Crack Screw
High Speed RPM Adjustment Screw
Idler Mixture Screw
Main Mixture Screw

Constant Speed Applications

Idler Speed Crack Screw
Idler Mixture
Main Mixture
High Speed RPM Adjustment Screw

Horizontal Medium Frame

Idler Speed Crack Screw
High Speed RPM Adjustment Screw
Idler Mixture Screw

Horizontal Medium Frame

Spring
Bolt Speed Adjustment
Nut
Lever Assy

For Utility Applications

For 60 Hz Generator Applications Only
For HM80 50 Hz Generator Applications Only
For HM100 50 Hz Generator Applications Only

HM / OHM, LH, OV

For Discount Tecumseh Engine Parts Call 606-678-9623 or 606-561-4983

www.mymowerparts.com
Engine Speed Controls and Governor Linkages - continued

Horizontal Shaft Engines

---

![IDLE SPEED CRACK SCREW](image1)

**HIGH SPEED RPM ADJUSTMENT SCREW**

**MEDIUM FRAME**

---

![GOVERNED IDLE LINK AND ADJUSTMENT](image2)

**HIGH SPEED ADJUSTMENT**

**BEND TO ADJUST SPEED**

**DECREASE**

**INCREASE**

**OHH - OH195 REMOTE & MANUAL**

---

![GOVERNOR SPRING](image3)

**GOVERNOR SPRING**

**GOVERNED IDLE LINK**

**OHH - OH195 RV CONTROL**

---

![GOVERNED HIGH SPEED ADJUST](image4)

**GOVERNED IDLE TAB**

**INCORRECT BUSHING INSTALLATION DEEP SIDE HERE**

**OHH - OH195 FIXED SPEED**

---

![GOVERNED IDLE SCREW](image5)

**OHSK / OHM, OV318, OV358 CONTROL**

---

![GOVERNED HIGH SPEED ADJUST](image6)

**T-10 (TORX)**

**GOVERNED IDLE SCREW**

**OHH - OH195 FIXED SPEED**

---

For Discount Tecumseh Engine Parts Call 606-678-9623 or 606-561-4983

www.mymowerparts.com
**Engine Speed Adjustments**

**8-18 HP, Cast Iron**

**Governor Adjustment for Horizontal Engines**

Move the remote controls to the RUN position.
Loosen Screw "A".
Pivot plate "B" counterclockwise and hold.
Move lever "C" to left.
Tighten screw "A" securely.

When the governor is properly set the carburetor throttle lever will be in a wide open position when the controls are set for starting.

The governor spring is to be anchored in the bottom center hole (D) of plate "B". Do not stretch or cut the governor spring. Above adjustments will correct any variations in governor control (diag. 64).

**WARNING** To avoid serious injury, and engine or equipment damage, DO NOT exceed the factory recommended R.P.M. engine speed. Doing so can be dangerous and will VOID THE ENGINE WARRANTY.

**NOTE**

Factory recommended R.P.M. engine speed specifications can be located on microfiche card #30 or the computerized parts look-up system.

1. **Setting Variable Speed Adjusting Screw.** Before attaching the bowden wire, set the engine for maximum R.P.M. (See Mfg. specifications) with engine running. Use a good tachometer. Move lever "A" clockwise until lower end strikes the adjusting screw at position "1" (diag. 65).

Loosen lock nut on adjusting screw and turn in to decrease R.P.M. Turn out to increase R.P.M.

2. **Adjusting Fixed Speed.** The fixed speed adjusting screw is the optional position "2". Adjust it by starting the engine, then loosening the locknut. Turn the screw in to increase R.P.M. and out to decrease R.P.M.