

# ENGINE - GAS (AIR-COOLED) TESTS AND ADJUSTMENTS

## Tests and Adjustments

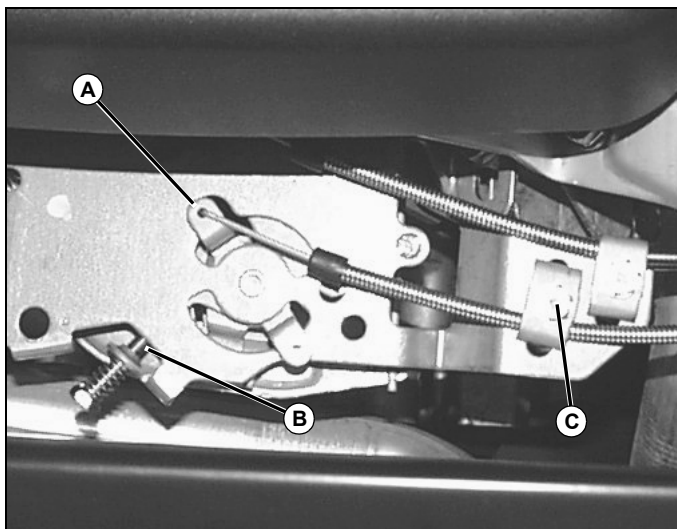
### Throttle Cable Adjustment

#### Reason:

To make sure the throttle cable moves the throttle and choke control lever through its full range of movement.

#### Procedure:

1. Set the throttle lever in the slow idle position. Check that the throttle control lever (A) contacts the idle speed adjustment screw (B) at the slowest throttle lever setting.



MX11694

2. If the throttle control lever (A) is not touching the screw (B) at the slowest setting, loosen the throttle cable clamp (C). Pull throttle cable to left. When the control lever contacts the control plate idle adjustment screw, retighten the cable clamp.
3. Set the throttle lever to the fastest idle position. Check that the throttle control lever is advancing to the full open position.
4. If the control lever is not advancing to the full open position, loosen the cable clamp and readjust the cable.
5. If the cable cannot be adjusted to obtain the full open throttle lever position at fastest idle, while maintaining contact with the adjustment screw at lowest idle position, it will be necessary to adjust the control plate idle speed adjustment screw.
6. Turn the idle adjustment screw (B) clockwise until it contacts the throttle control lever when set in the slow idle position. After completing the idle screw adjustment, check to make certain the motor is maintaining a 1550 RPM governed low idle setting. Follow the Low Idle Speed Adjustment sequence in this chapter if corrections are necessary.

### Choke Adjustment

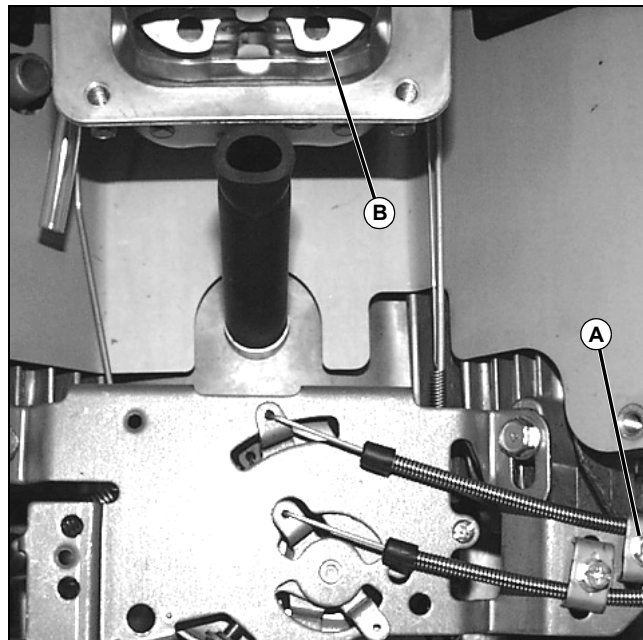
#### Reason:

To make sure the choke plate is fully closed when the choke lever is in the full choke position. Correct adjustment also makes sure choke is completely open in the fast idle position.

#### Procedure:

**NOTE: Adjust throttle cable before adjusting choke.**

1. Remove air cleaner assembly.



MX11695

2. Move choke lever forward to full choke position. Check that the choke butterfly (B) in the carburetor is fully closed.
3. If adjustment is necessary, loosen the choke cable clamp (A). Move the cable to obtain a fully closed position. Retighten the cable clamp.
4. Release the choke lever and make certain the return spring on the governor control plate is returning the choke butterfly to the fully open position.
5. Reinstall the air cleaner assembly and check the choke operation while starting the machine.

# ENGINE - GAS (AIR-COOLED) TESTS AND ADJUSTMENTS

## Governor Adjustment

### Reason:

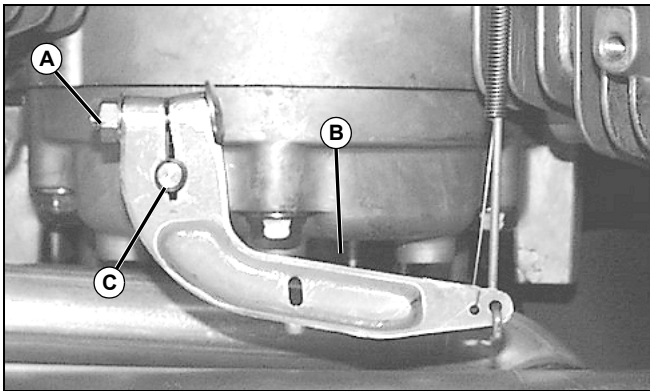
To make sure the governor shaft contacts the flyweight plunger when the engine is stopped.

**NOTE: Adjust throttle cable before adjusting governor linkage.**

### Procedure:

**NOTE: It is not necessary to remove the throttle or choke cables from the governor plate assembly to reach the governor arm. The governor plate can be swung away with the cables installed when accessing the governor arm components.**

1. Remove governor plate assembly.



MX11696

2. Loosen nut (A) holding the governor arm (B) to the governor shaft.
3. Turn the governor arm full counterclockwise and hold.
4. Turn the governor shaft (C) full counterclockwise and hold.
5. Tighten nut.

## Low Idle Speed Adjustment

### Reason:

To set engine slow idle mixture rpm.

### Equipment:

- JTO5719 Photo Tachometer

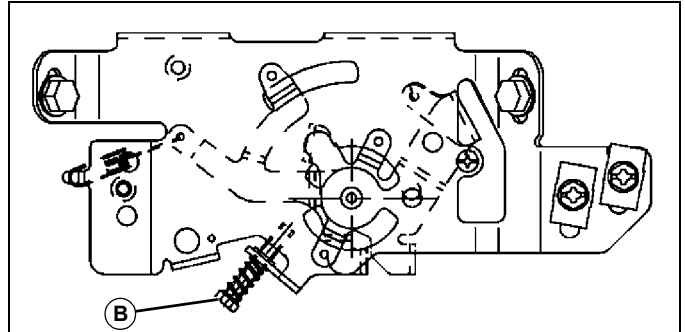
### Procedure:

1. Disconnect all external loads from engine.
2. Put reflective tape on blower housing screen.
3. Start and run engine at medium idle for five minutes.



**CAUTION: Avoid Injury! Engine will be HOT. Be careful not to burn skin.**

4. Move throttle lever to idle position. Hold the throttle lever on the carburetor in the closed position (turn governor arm clockwise all the way).
5. Adjust the low idle speed screw (A) until the engine idles at 1450 rpm (carburetor idle rpm). Use the photo tachometer to check engine rpm at the blower housing screen.



MX11674

6. Release the throttle lever and adjust the low idle speed set screw (B) on the control plate to obtain a 1550 rpm governed low idle speed.

## High Idle Speed Adjustment

### Reason:

To set engine high idle mixture and rpm.

### Equipment:

- JTO5719 Photo Tachometer
- 6 mm bolt or 1/4" drill bit.

### Procedure:



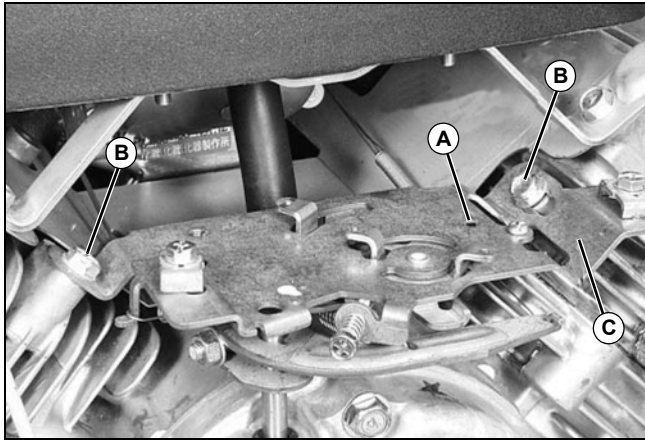
**CAUTION: Avoid Injury! Always keep hands clear of moving parts.**

1. Move throttle lever to the high idle position.

**IMPORTANT: Avoid damage! Do not adjust high idle speed with air cleaner removed.**

2. Match the lever hole on the governor control plate with the panel hole (A) and insert the bolt or drill bit.

# ENGINE - GAS (AIR-COOLED) TESTS AND ADJUSTMENTS



MX11675

3. Loosen the two M6 control panel mounting bolts (B) enough to allow the control panel to move.
4. Slide the control panel up or down in the slot at the right side (C) to set the idle speed.
5. Use a photo tachometer to check engine rpm at the blower housing screen.
6. Set the high idle speed at 3600 RPM and tighten the M6 mounting bolts to 5.9 Nm (52 lb-in.).
7. Remove the bolt or drill bit from the panel hole.
8. Recheck the idle speed and readjust if necessary.

### Specifications:

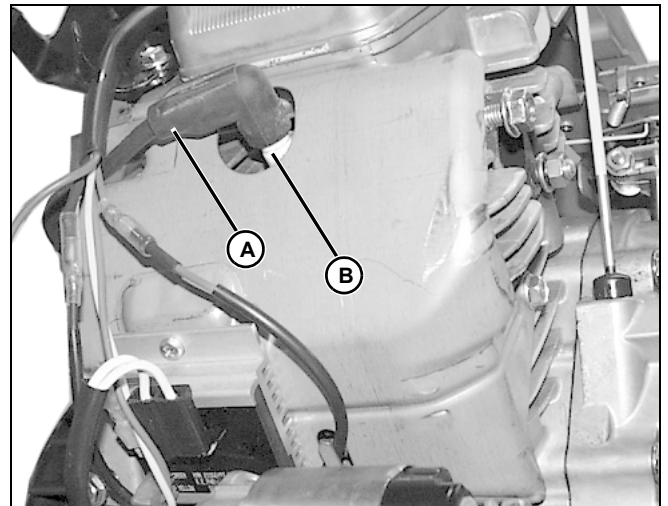
High idle setting .....	3600 rpm
Carburetor idle setting .....	1450 rpm
Governed idle setting .....	1550 rpm

**NOTE:** For high altitude operation above 4000 feet, use high altitude carburetor kit, to prevent over rich fuel mixture and black exhaust smoke.

## Compression Test

### Reason:

To determine the condition of pistons, rings, cylinder walls and valves.



MX11780

### Procedure:

1. Adjust valve clearance to 0.075 – 0.125 mm (0.003 – 0.005 in.) with engine at top dead center (TDC) compression stroke. Engine must be “cold” (shop temperature, 60 – 86°F (16 – 30°C)).
2. Run engine until it reaches operating temperature.
3. Remove both spark plugs (B) and ground leads (A) to block or use spark testers.
4. Put throttle lever in fast idle (wide open) position. Choke must be properly adjusted and fully open. Air filter must be clean.

**IMPORTANT: Avoid damage! DO NOT overheat starting motor during test. Starter duty is 5 seconds on, 10 seconds off.**

5. Attach compression gauge to engine, and crank hot engine until highest compression reading is obtained.
6. Record pressure readings for each cylinder.

### Specifications:

**Minimum Compression .....** 390 kPa (57 psi)

### Results:

- If pressure readings are above specification, adjust valves and check fuel and intake air systems. Check exhaust for restriction.
- If pressure readings are below specification, squirt clean engine oil into cylinders and repeat test.



**Suggest:**

**If the above button click is invalid.**

**Please download this document**

**first, and then click the above link**

**to download the complete manual.**

**Thank you so much for reading**