

12-36. Engine controls of the push-pull type include the throttle, mixture control, propeller pitch control and carburetor heat control. Most engine controls are equipped with position-locking devices which prevent vibration-induced "creeping" of the controls.

12-37. RIGGING ENGINE CONTROLS.

12-38. When adjusting any engine control, it is important to check that the control slides smoothly throughout its full travel, that it locks securely if equipped with a locking device, and the arm or lever which it operates moves through its full arc of travel.

INDUCTION AIR CONTROL RIGGING:

- Loosen the clamp securing the control to the bracket on the airbox.
- Push control full in, then pull it out approximately 1/8 inch for cushion.
- Shift the control housing in its clamp so that the air valve lever is full forward, with valve seating inside the airbox. Tighten clamp in this position.
- Pull the control out and check that the air valve inside the airbox seats in the opposite direction.
- Check that the bolt and nut at the air valve lever secure the control wire and that the bolt will swivel in the lever.
- Bend the wire tip 90° to prevent it from being withdrawn if the attaching nut should become loose.
- When installing a new control, it may be necessary to shorten the wire and/or control housing.
- The air valve must seat in both positions and the control should have approximately 1/8 inch cushion at the instrument panel when pushed full in.

THROTTLE CONTROL RIGGING:

NOTE

Before rigging the throttle control on aircraft with the type control shown in figure 12-3, check that staked connection (4) between rigid conduit (2) and flexible conduit (3) is secure. If any indications of looseness or breakage is apparent, replace the throttle control before continuing.

- Pull throttle control out (idle) and remove the throttle knob.
- Screw jamb nut (7) all the way down (clockwise) and reinstall the throttle knob. Screw the knob securely against the jamb nut. Do NOT back the jamb nut out. This will prevent bottoming and possible damage to the stacked connection.
- Disconnect the throttle control at the engine, push the control in until jamb nut hits friction lock (6) while the friction lock is loose, then pull the control out approximately 1/8 inch for cushion.
- Tighten friction lock (6), being careful not to change the position of the throttle.
- Move the throttle arm on the carburetor to full open, adjust end of control to fit, and connect to arm on carburetor.
- Release friction lock and check for full travel of arm on carburetor. If further adjustment is required,

make all adjustments at the carburetor end of control. Do NOT change jamb nut (7) setting.

- Push mixture control full in, unlock, and pull it out approximately 1/8 inch for cushion.
- Loosen the clamp securing the control to the engine.
- Shift the control housing in its clamp so that the mixture arm on the carburetor is full open. Tighten the clamp in this position.
- Unlock and pull mixture control full out. Check that mixture arm on the carburetor is full closed.
- Check that the bolt and nut at the mixture arm on the carburetor secure the control wire and that the bolt will swivel in the arm.
- Bend the wire tip 90° to prevent it from being withdrawn if the attaching nut should become loose.
- When installing a new control, it may be necessary to shorten the wire and/or control.
- The mixture arm on the carburetor must contact the stops in each direction, and the control should have approximately 1/8 inch cushion when pushed full in.

12-39. IDLE SPEED AND MIXTURE ADJUSTMENT should be accomplished after the engine has been warmed up sufficiently. Since idle rpm may be affected by idle mixture adjustment it may be necessary to readjust the idle rpm after setting the mixture correctly.

- Set the throttle stop screw to obtain between 500 and 600 rpm, with throttle control pulled full out.

NOTE

The idle speed may vary between different aircraft models, and between different engines

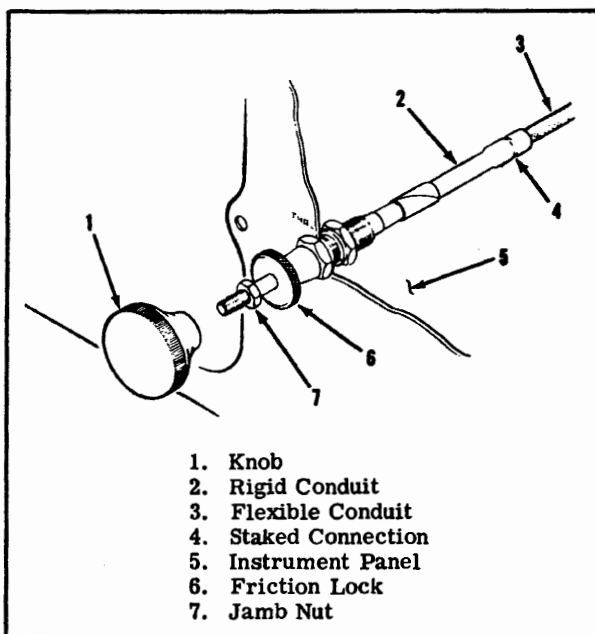


Figure 12-3. Throttle Control