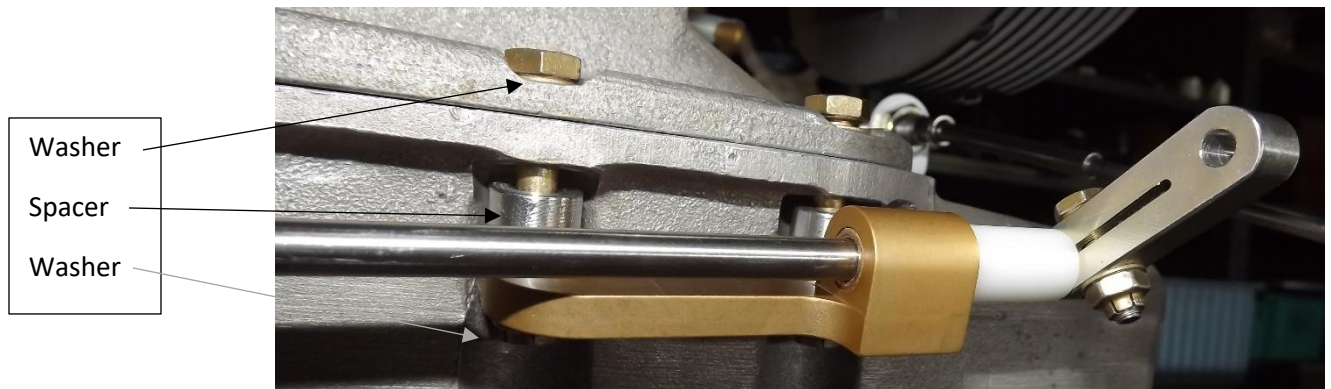


# FM-150C THROTTLE / MIXTURE CABLE LINKAGE INSTALLATION

The jack shaft assembly is pre-assembled with the levers pinned in position as shown.



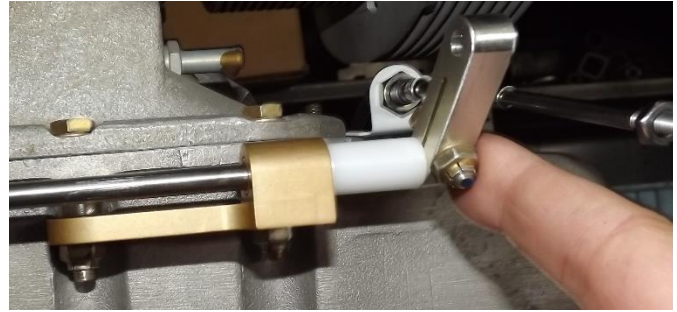
Install an AN960-416L washer on 4 AN4-14A bolts. Place the bolts through the bosses in the oil sump. Place a 5/8" OD X 3/8" thick spacer between the bearing bracket and sump, then a AN-960-416L washer and steel lock nut on the other side of the bearing bracket. Make sure the mixture cable attach lever is pointing up.



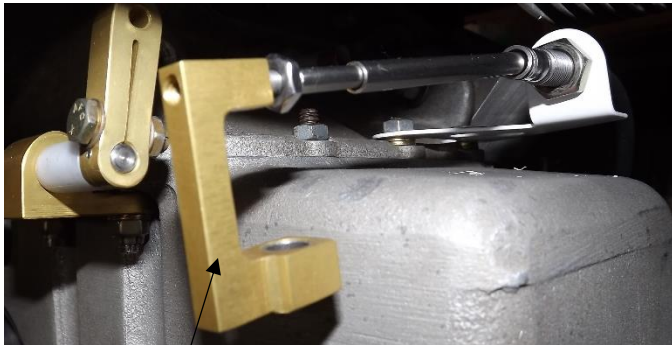
Tighten lock nuts evenly, but before torquing lock nuts ensure the shaft rotates freely. With that in place torque all 1/4" lock nuts to 70-75 in-lbs.



Slide the short Delrin spacer on the opposite end of the jack shaft. Apply some medium grade LOCTITE to the 4-40 cap screw that tightens the split collar. Slide the split collar on the shaft. Hold the lever end against the bearing bracket, slide the Delrin spacer and split collar against the other bearing bracket. Hold very light pressure on the assembly and tighten the split collar cap screw to 10-12 in-lbs. The shaft should rotate freely. .001" to .005" end play is acceptable.



Install Vans Throttle (VA-173) and Mixture (VA-163) cable brackets as described in Vans document OP-22. Install a 10-32 jam nut on the mixture cable and screw the Mixture Shaft Link on the cable end as shown.



Mixture Shaft Link



Spacer

Install a large area washer on the AN3-11A bolt. Slide the bolt through the Mixture Shaft Link as shown and install the spacer onto the bolt. Check rigging on the mixture cable. Put the mixture cable at about 1/2 its travel. Rig the cable in the middle of the adjustment so that the link has about 2-5 threads showing behind the jam nut. This should put the lever on the jack shaft about vertical. If not, adjust as required. Install the AN3-11A bolt through the lever on the jackshaft. Ensure the spacer stays in the Mixture Shaft Link. Install a AN960-10L washer and steel lock nut on the bolt. Torque lock nut to 20 -25 in-lbs. Ensure that the Mixture Shaft Link moves on the lever. Torque cable jam nut to 20-25 in-lbs. Torque the large jam nuts on the cable 90-100 in-lbs.



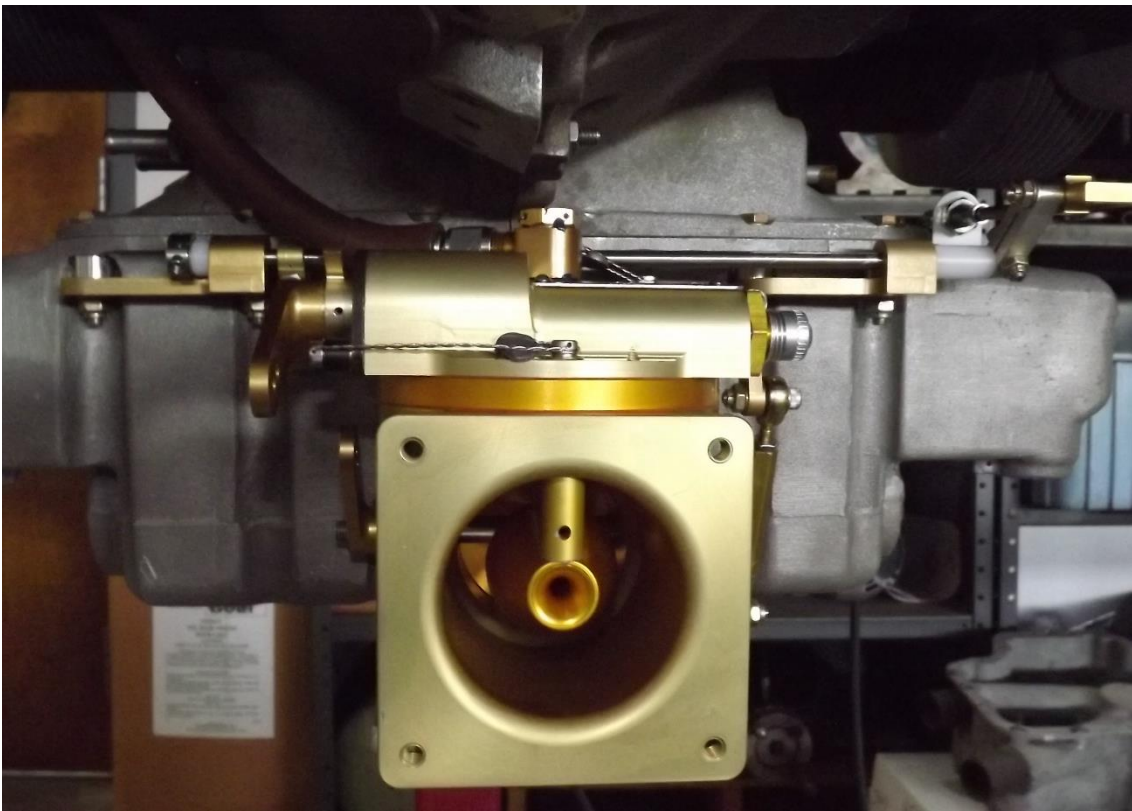
Depending on the flow divider installation, install a 14" to 16" #4 Fire sleeve Teflon hose to the metered outlet on the FM-150C fuel control. Torque the hose B-nut to 45-50 in-lbs.

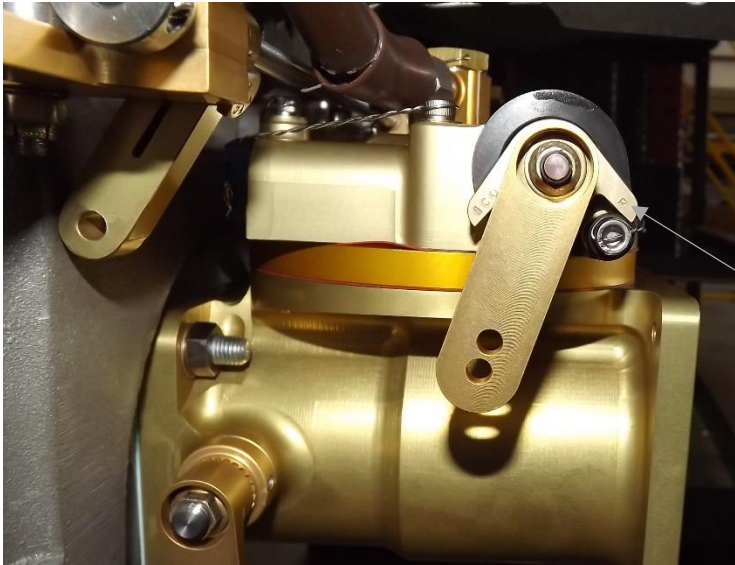


**NOTE:** If additional clearance for the hose is required, install a hose with a 45 degree end that attaches to the fuel control or install a swivel 45 fitting between the fuel control outlet fitting and the hose.

Install a gasket and the FM-150C on the sump, with regulator up. Install 5/16" plain washer, lock washer and nut or plain washer and steel lock nut on fuel control mounting flange. Torque to 110-115 in-lbs.

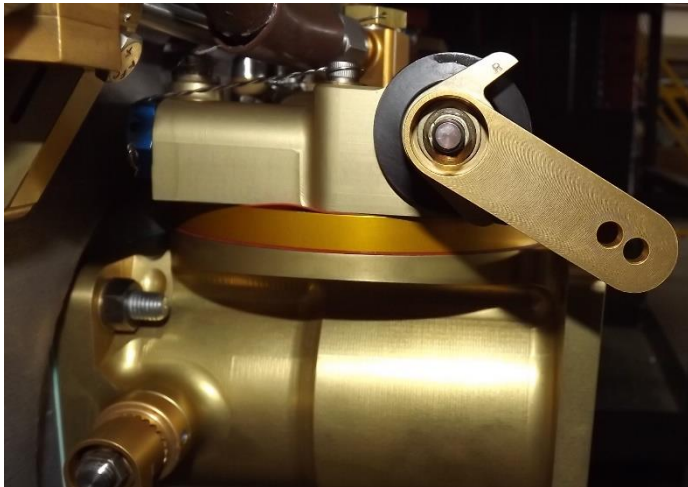
**NOTE:** If a B&C starter is used the starter may need to be removed to facilitate installing the fuel control. SkyTec NL starters will not fit this installation.





Position the mixture lever in the 6:30 position as shown. Holding the stop lever and mixture lever in place and engaged to the teeth, tighten the 1/4-28 steel lock nut to 45-50 in-lbs.

Mixture Stop Lever  
against full rich stop

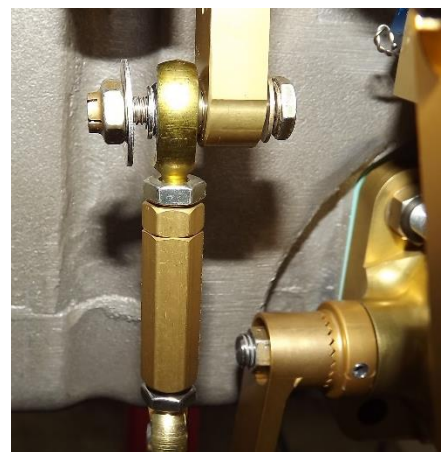


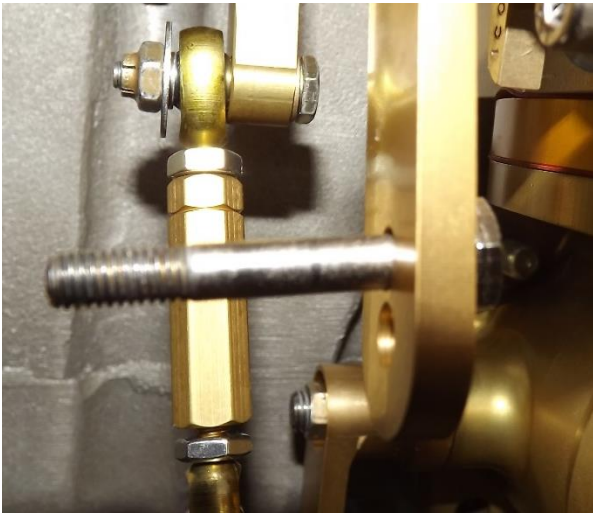
Mixture Control in ICO  
position



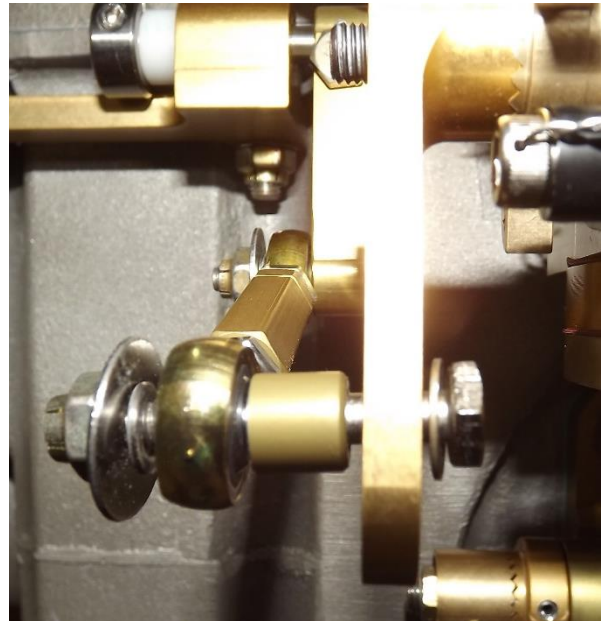
Screw the mixture linkage assembly together. The groove on the end of the link denotes left hand thread.

Install a AN3-10A bolt with AN960-10L washer through the shaft lever. Then install the left-hand side of the linkage rod end, small area washer, large area washer and steel lock nut as shown. Torque the lock nut to 20-25 in-lbs.

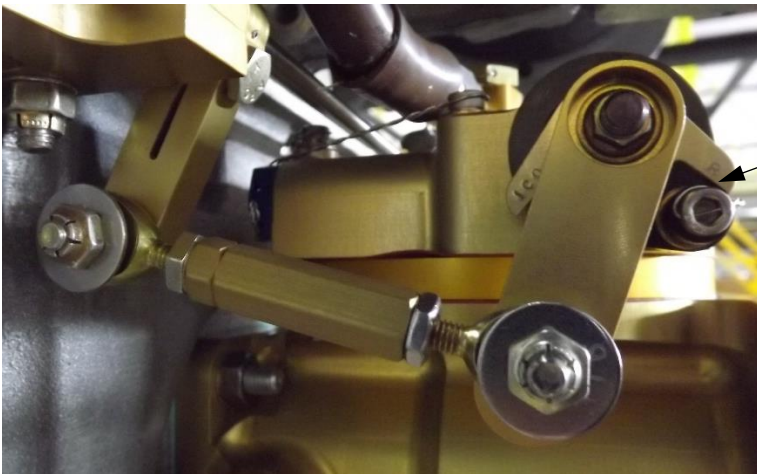




Insert a AN3-12A bolt with AN960-10L washer through the inboard hole on the mixture lever.

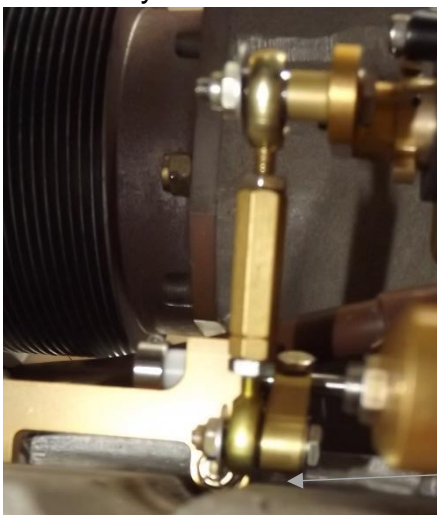


Install a .350 spacer (P/N 1010117) on the bolt as shown, then the mixture linkage rod end, small area washer, large area washer and steel lock nut as shown. Torque lock nut to 20-25 in-lbs.



Mixture Stop lever against full rich stop.

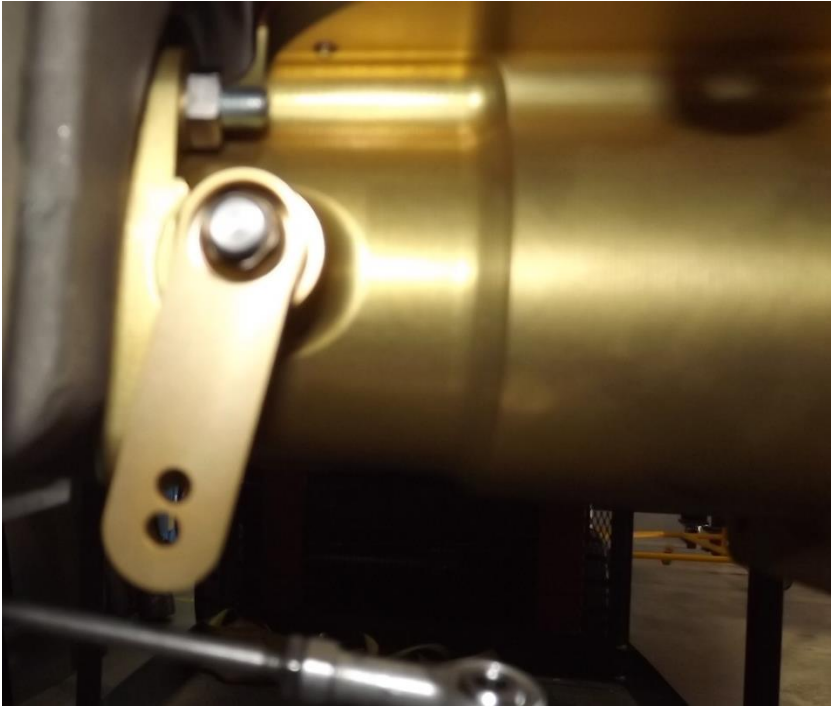
With the mixture control against the full rich stop adjust the linkage to put the jack shaft lever approximately 1/8" to 1/16" from the sump.



Set linkage to allow 1/8" to 1/16" clearance from lever to sump with mixture control at full rich.

Check operation of mixture control by actuating the cockpit controls. Ensure the stop lever hits the full rich and ICO stop. Verify smooth operation. If actuation is correct torque linkage jam nuts to 20-25 in-lbs.

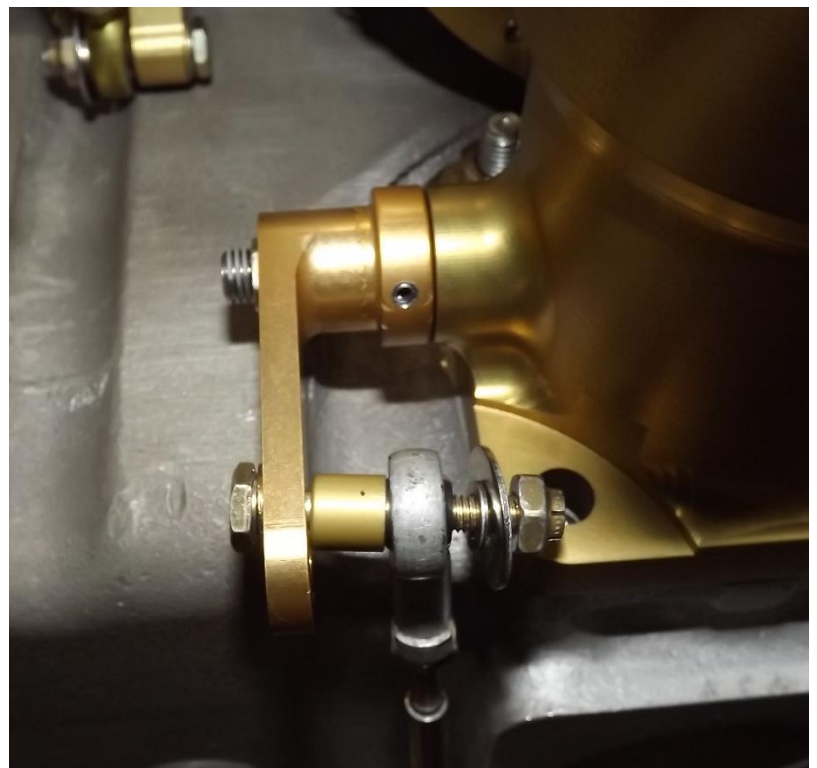
NOTE: Some installations using a quadrant for the cockpit controls may require a shorter mixture lever to get full actuation from full rich to ICO. If a shorter lever is required order P/N 2090230.



Hold the throttle at the idle position. Position the throttle lever on the teeth so that the lever does not contact the sump. Make sure the teeth are fully engaged and tighten the 5/16-24 steel lock nut to 50-60 in-lbs.

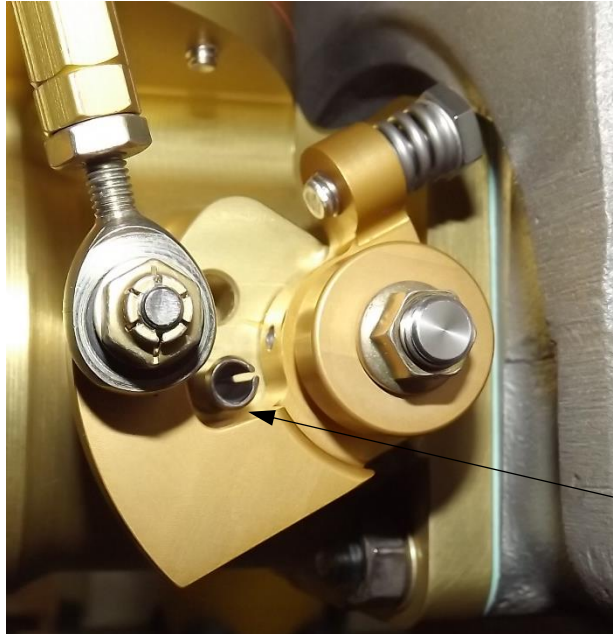
Insert a AN3-12A bolt with AN960-10L washer through the inboard hole on the throttle lever as shown. Install a .350 spacer (P/N 1010117) on the bolt as shown, then the mixture linkage rod end, small area washer, large area washer and steel lock nut as shown. Torque lock nut to 20-25 in-lbs.

Note: the outboard hole in the throttle lever may be used for cables that give adequate travel.



Check the rigging on the throttle cable. The control must go against the idle stop pin.

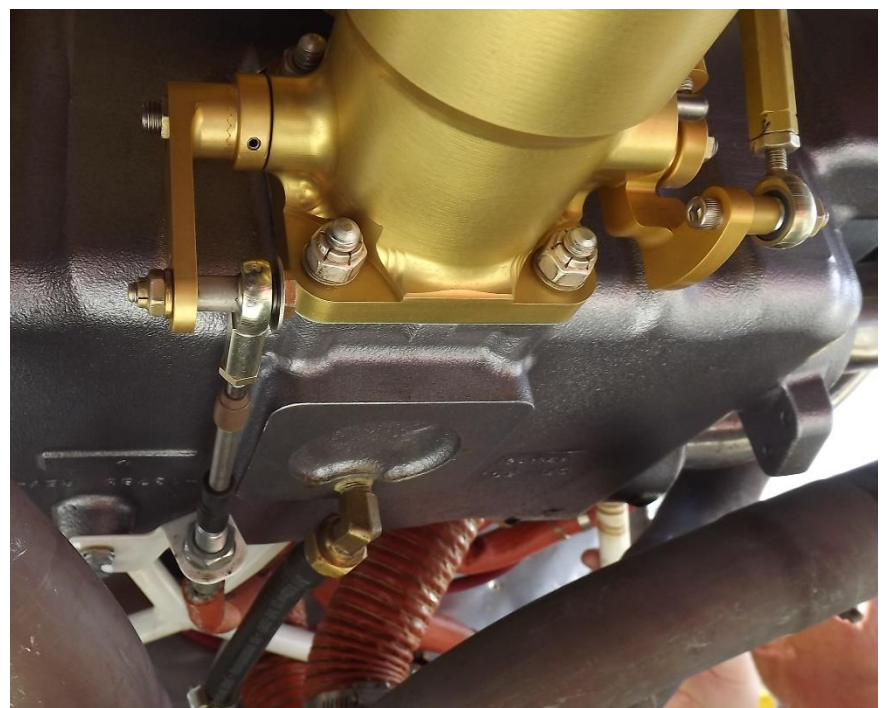
At wide open throttle, it is preferred to have 1/32" to 1/16" clearance between the throttle stop lever and stop pin.

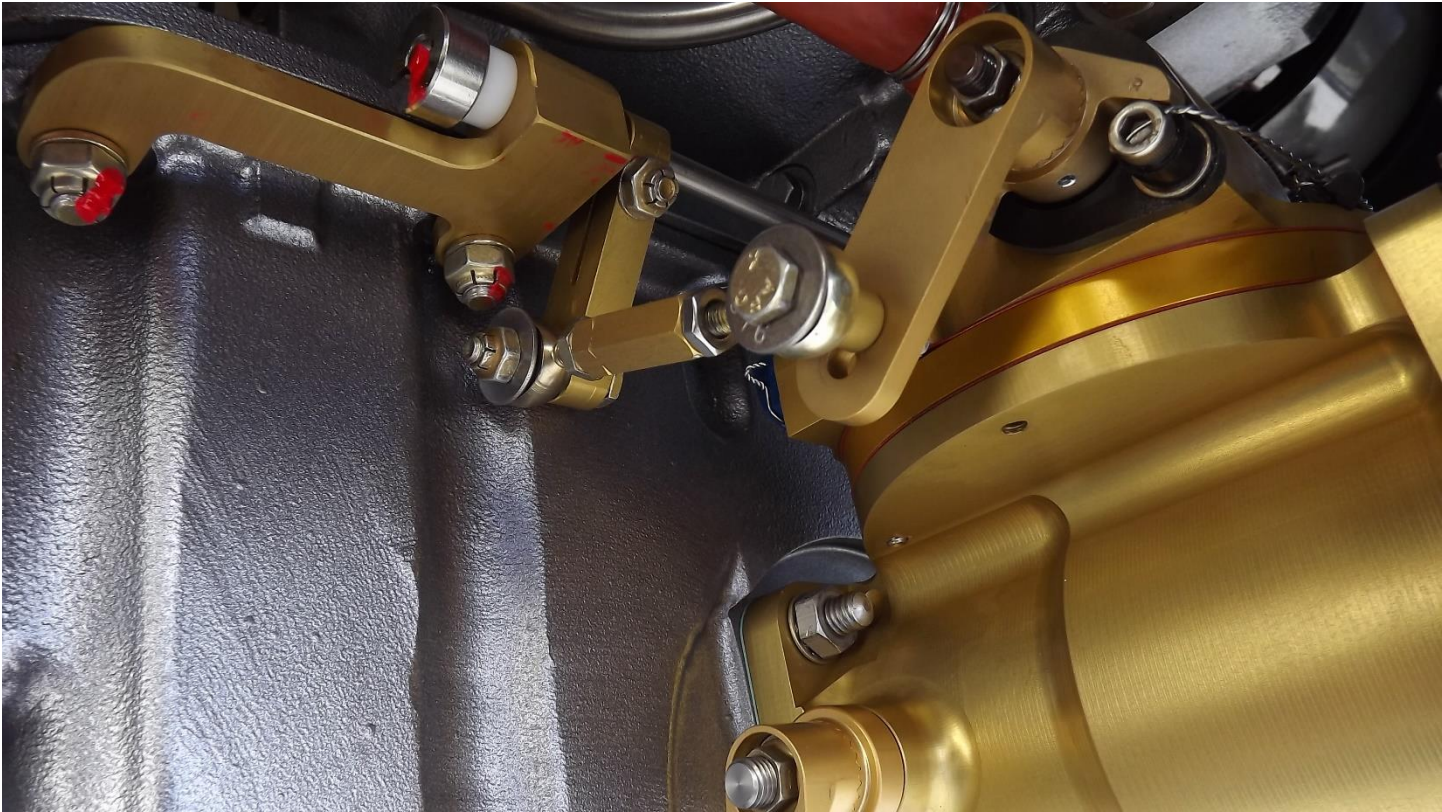


1/32" to 1/16" clearance between stop lever and stop pin acceptable at wide open throttle

Torque throttle cable jam nuts to 90-100 in-lbs. Torque jam nut on rod end to 20-25 in-lbs.

Customer installation.





Customer installation.

