



**Lycoming Thunderbolt 540
Cold Air Cable Bracket Kit
Installation Manual**

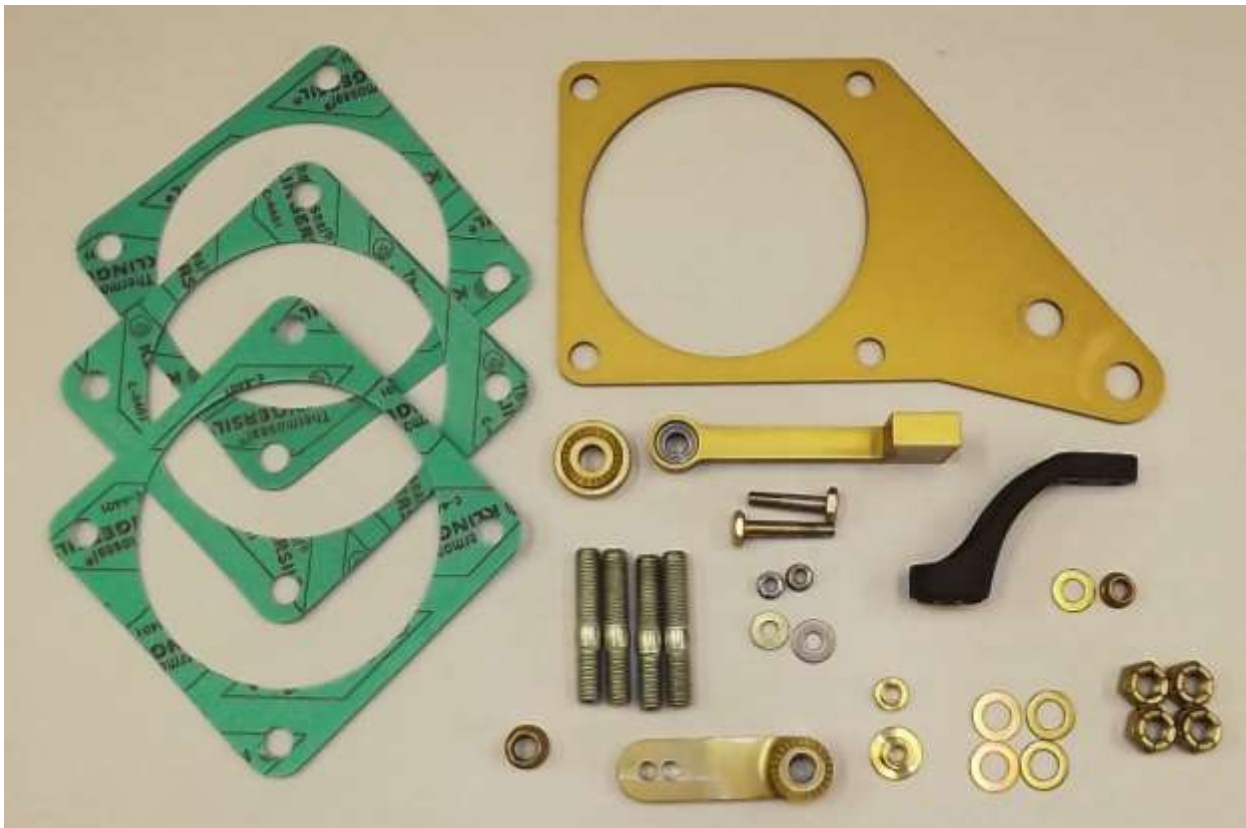
540TMBKIT

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WARNING!!!

All of Airflow Performance, Inc. products are EXPERIMENTAL. It is the responsibility of the installer to ensure that all installation procedures in this manual are performed in accordance with AC43-13 Acceptable Methods, Techniques and Practices. This includes ensuring standard torque values are used on all installation hardware provided with this kit. Improper use, modification or failure to properly lockwire can or will cause engine failure to the extent that damage, injury or death may occur. Airflow Performance, Inc. will not be held liable for any damages that occur due to incorrect installation or incorrect use of hardware. If you have any questions regarding the proper use of any of these parts, consult a qualified mechanic.

The following instructions pertain to installation of an FM-300B or FM-300R fuel control to a Lycoming Thunderbolt 540 with cold air induction.

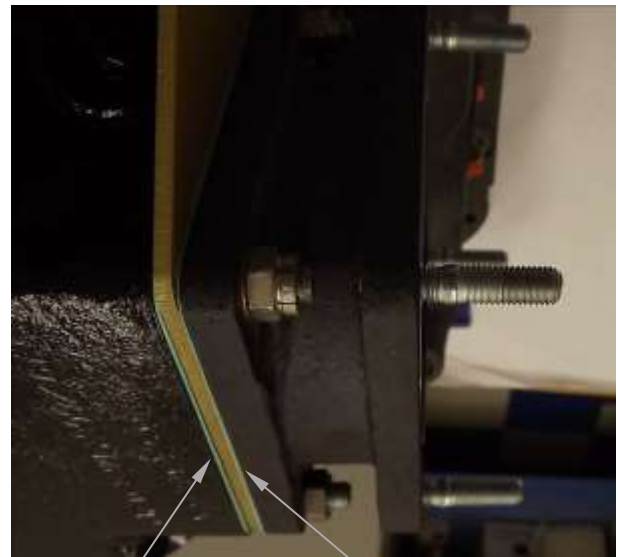


Bracket Installation

Prior to installing the bracket on the sump, ensure that the studs extend approximately 1" from the front of the sump. This may require the installation of longer studs in the sump. Install the Throttle Mixture Cable Bracket, P/N 2090266, as shown with one FM-300 Gasket, P/N 1030060, in between the bracket and the induction sump.



Install another FM-300 Gasket on the bracket, then install the FM-300 Adapter, P/N 3030121, **(SEE NOTE BELOW)** and secure using 4 AN960-516L washers and MS21045-5 Lock Nuts provided. Torque 5/16 lock nuts to 110-115 in-lbs.



Gasket

Gasket

NOTE: The FM-300 Adapter, P/N 3030121 should have been supplied by Lycoming with your Thunderbolt Engine. If your engine is not equipped with this part, please contact Airflow Performance to purchase one. This adapter is required to install this Bracket Kit.

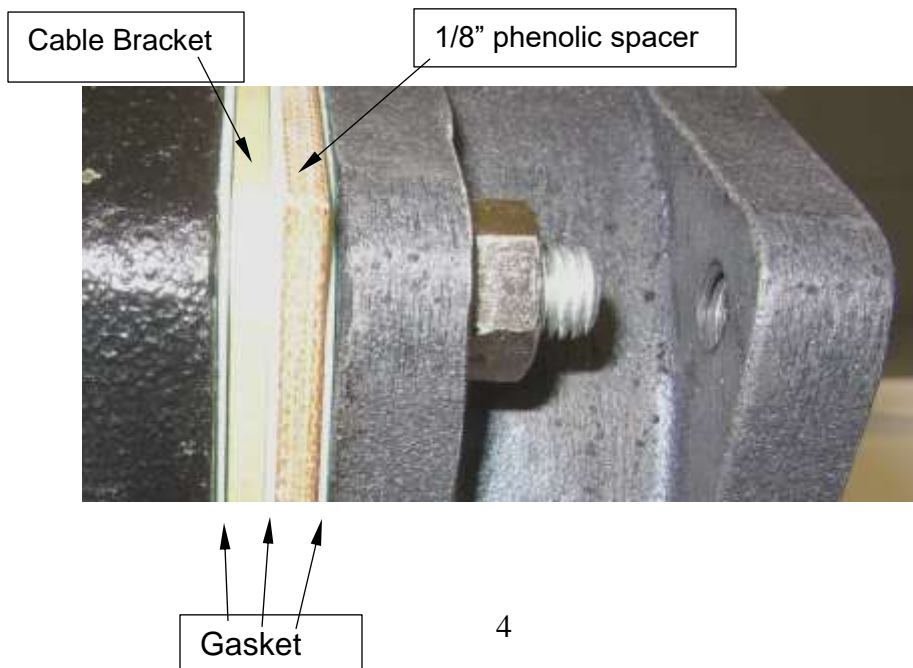
NOTE: If using the 4-degree FM-300 Adapter P/N 3090085 an additional 1/8" phenolic Spacer will be required if mounting the FM-300R fuel control. This is to provide clearance for the adjustable main jet to the sump face. If mounting the FM-300B no additional spacer is required.



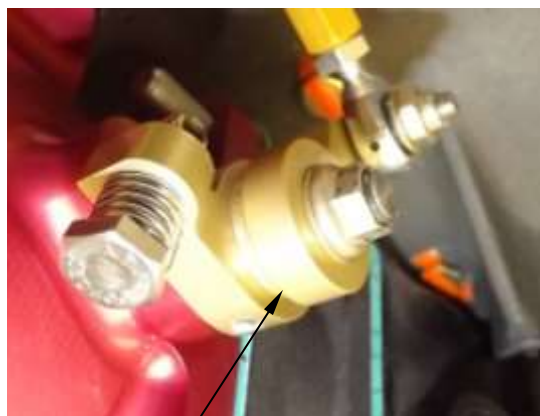
For installing the 4-degree adapter when using the FM-300R fuel control the stud length from the sump should be approximately 1 1/8 " .



Install a gasket the cable bracket another gasket the 1/8" phenolic spacer P/N 1090277 and one more gasket then the 4 degree adapter. Secure with 4 AN960-516L washers and 4 MS21045-5 Lock Nuts. Torque 5/16 lock nuts to 110-115 in-lbs.



Remove Throttle Lever from Throttle Stop Lever and install Throttle Shaft Spacer, P/N 1090128. Secure with one MS21042-5 Lock Nut, do not use a washer under lock nut. Torque Lock Nut on Throttle Shaft Spacer to 110-115 inch pounds. Install Straight Throttle Lever to opposite side throttle shaft using one AN960-516L Washer and one MS21042-5 Lock Nut. Do not torque the lock nut currently. Leave the lever loose for rigging purposes.



P/N 1090128



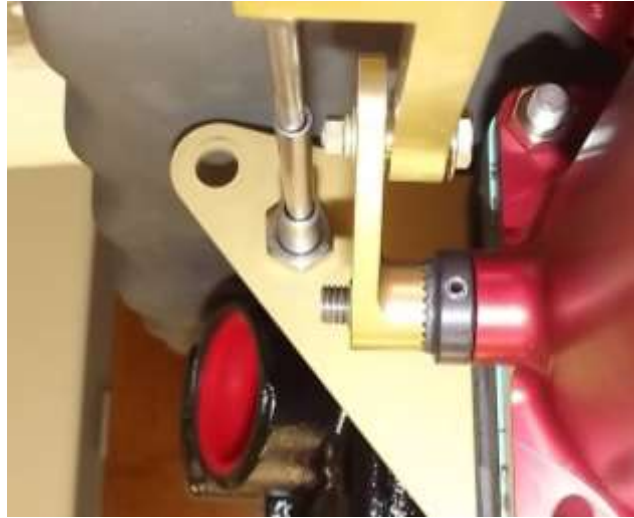
P/N 2090269

Install FM-300 Gasket, P/N 1030060, and Fuel Control on adapter and secure using 4 AN960-516L washers and 5/16 Locknuts, P/N MS21045-5, provided. Torque 5/16 lock nuts to 110-115 in-lbs.

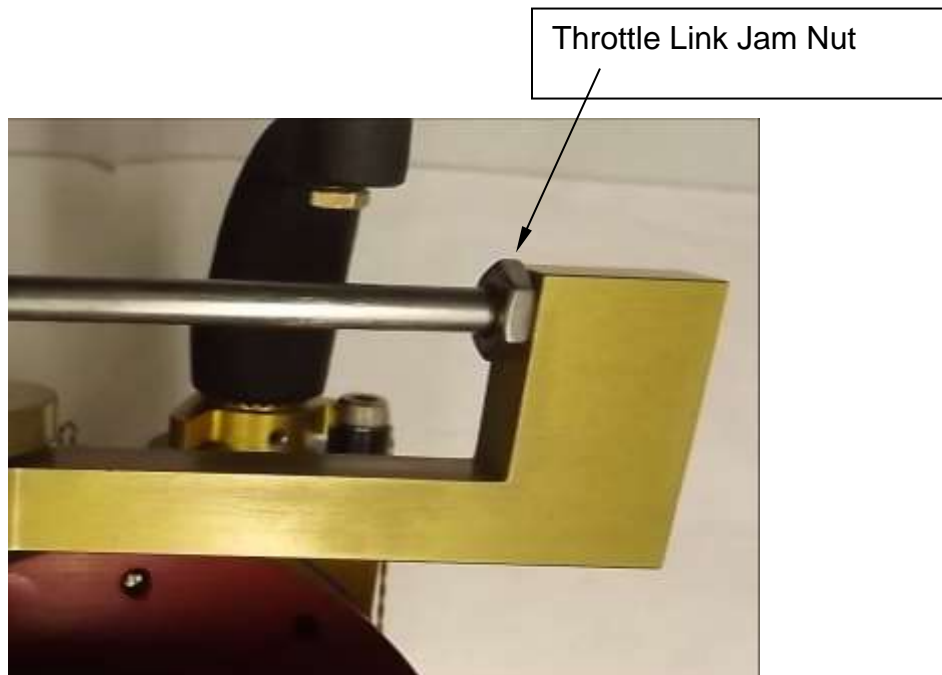


Throttle Cable and Cable Link Installation

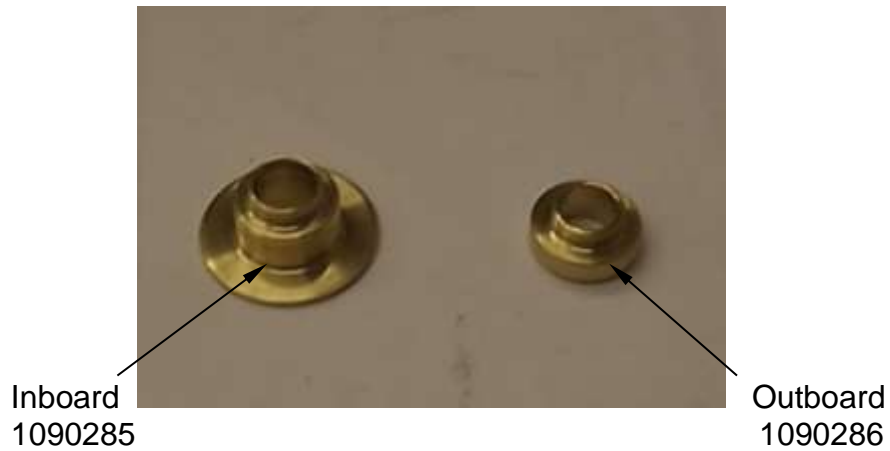
Once the Fuel Control is installed, install one jam nut on the throttle cable and route it through the inboard hole on the cable bracket. After this is completed, install the other jam nut loosely.



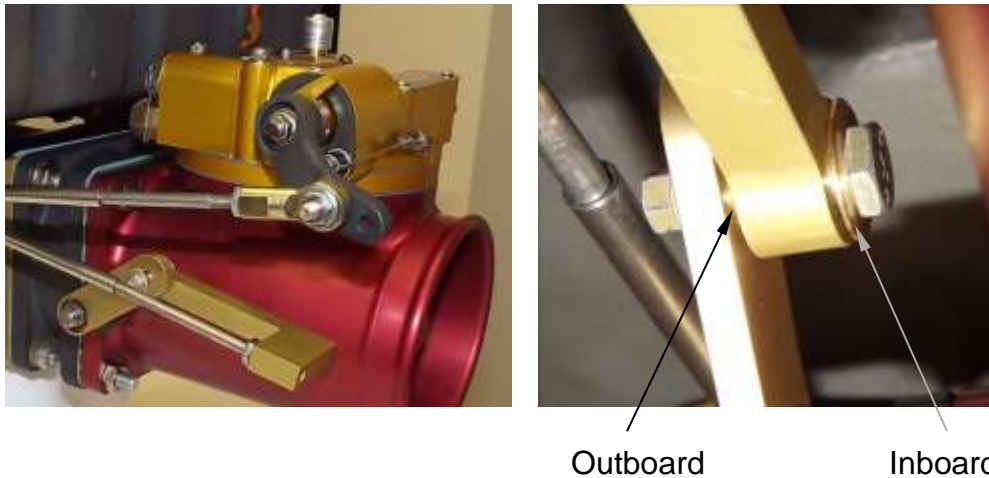
Install the 10-32 Jam Nut and Throttle Cable Link, P/N 1090280, onto the threaded end of the throttle cable.



With the Throttle Cable Link installed on the Throttle Cable, secure it to the inboard side of the Straight Throttle Lever using the supplied hardware. Care must be taken to ensure that the Bearing Link Spacers are installed correctly.



The Inboard Bearing Link Spacer (large area flange), P/N 1090285, must be installed under the AN3-7A Bolt head closest to the Fuel Control with the Outboard Bearing Link Spacer, P/N 1090286, installed closest to the Straight Throttle Lever. Note: there is no washer under the AN3-7A bolt head.



With the Bearing Link Spacers in place, secure the Throttle Cable Link to the Straight Throttle Lever using the AN3-7A Bolt, AN960-10L Washer and MS21042-3 Lock Nut. Torque Lock Nut to 25-30 inch pounds.



Throttle Stop Lever shown at idle position

Rig the throttle to give a cushion at idle. At WOT the throttle stop lever does not have to hit the stop pin hard.

It is preferred that at WOT there is approximately 1/16" between the throttle stop lever and the pin. This keeps the throttle stop lever from wearing out. This will not affect WOT performance. Torque Lock Nut on straight throttle lever to 110-115 inch pounds.

Once the Throttle Cable Link is secured to the Straight Throttle Lever and proper rigging is verified, tighten the Throttle Cable jam nuts on the bracket to 90-100 inch pounds and the Throttle Cable Link jam nut to 20-25 inch pounds.



When correctly installed, the Throttle Cable Link assembly should look similar to the picture above.



There will be less than 1/8" clearance between the end of the AN-3 Bolt and the Throttle Cable upon assembly. This is normal and not cause for alarm.

Mixture Cable Installation

Install the Offset Mixture Lever, P/N 2090156, on the mixture control shaft and secure using the AN960-416L Washer and MS21042-4 Lock Nut provided. Leave the Lock Nut loose.



Next, install one 11/16" Jam Nut on the Mixture Control Cable and pass it through the outboard hole in the Cable Bracket. Then, install the other 11/16" Jam Nut on the Mixture Cable. Leave both Jam Nuts loose until you are ready to complete control rigging.



With the Mixture Control Cable in place, install a 10-32 Jam Nut onto the threaded end of the cable, then install the threaded Rod End. Leave the Jam Nut loose until correct rigging is achieved. Secure the Rod End to the Offset Mixture Lever using the AN3-10A Bolt, AN960-10 Washer, HW-1303-SS Large Area Washer and MS21042-3 Lock Nut provided. Note: There is no washer under the bolt head.



When rigged correctly, you should have full stop to stop movement of the Mixture Lever. This may dictate that you use the inboard hole on the Mixture Lever. Once correct rigging is complete, torque the 10-32 Jam Nut to 20-25 inch pounds. The Mixture Cable jam nuts should be torqued to 90-110 inch pounds. Torque the MS21042-4 Lock Nut on the Offset Mixture Lever to 25-30 inch pounds.

Final Assembly

