



390 Throttle/Mixture Cable Bracket Kit Installation Manual

**Airflow Performance Inc.
111 AIRFLOW DRIVE
SPARTANBURG, SC 29306
864-576-4512**

(Fax) 864-576-0201

info@airflowperformance.com

airflowperformance.com

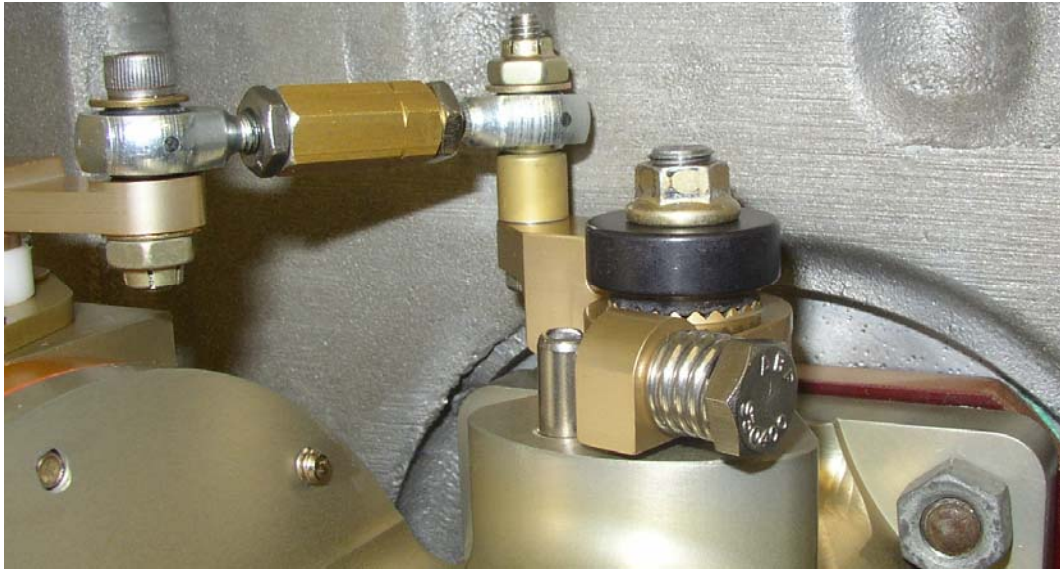
WARNING!!!

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.

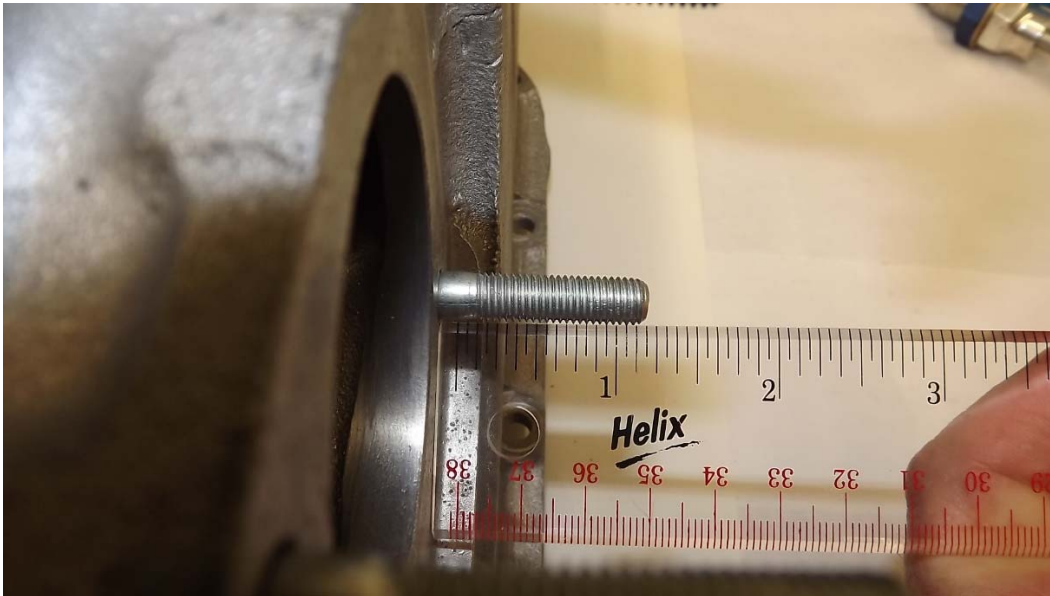
Advisory

It will be necessary to “mock-up” or “dry fit” this kit before installation. This kit was designed using a Lycoming Thunderbolt IO-390 engine or Lycoming Thunderbolt IO-360-M1B engine with Van’s supplied cables on an RV-14. To obtain correct rigging, slight installation modifications (i.e. 180-degree rotation of cable brackets, installation of cable brackets in alternate holes) may be necessary due to interference caused by exhaust pipes.

Remove the existing Throttle Lever from the throttle stop side of the fuel control. Install a Throttle Shaft Spacer P/N 1090128, make sure teeth are engaged properly with throttle stop lever and torque the lock nut to 50-60 in-lbs. Do not use a washer under the lock nut.



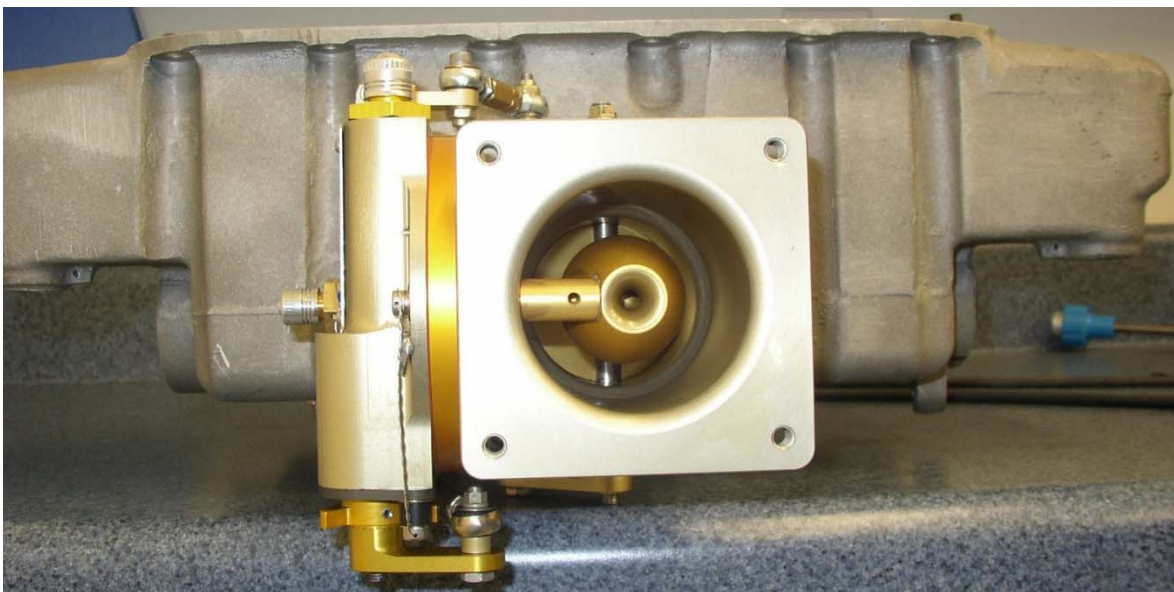
Remove existing studs from the sump and install the provided 5/16-2 Studs ST-18, P/N HW-1904. Spray studs with Loctite Primer SF 7471 and allow to dry. Apply Loctite 620 to threads prior to installing the studs. The studs should extend approximately 1.19"-1.4" from the front of the sump when properly installed.



Install the provided FM-100 Gasket, P/N 1010059, 5/16" Phenolic Spacer, P/N 1090277 and another gasket, P/N 1010059.



With the studs, gaskets and phenolic spacer installed, mount the FM-150 Fuel Control to the sump as shown. Secure the fuel control to the sump using AN960-516L washers and 5/16 Locknuts, P/N MS21045-5 provided. Torque 5/16 lock nuts to 110-115 in-lbs.



NOTE:

There will be very little clearance between the idle linkage rod end and the sump with the Fuel Control properly installed. This is normal and not cause for alarm.

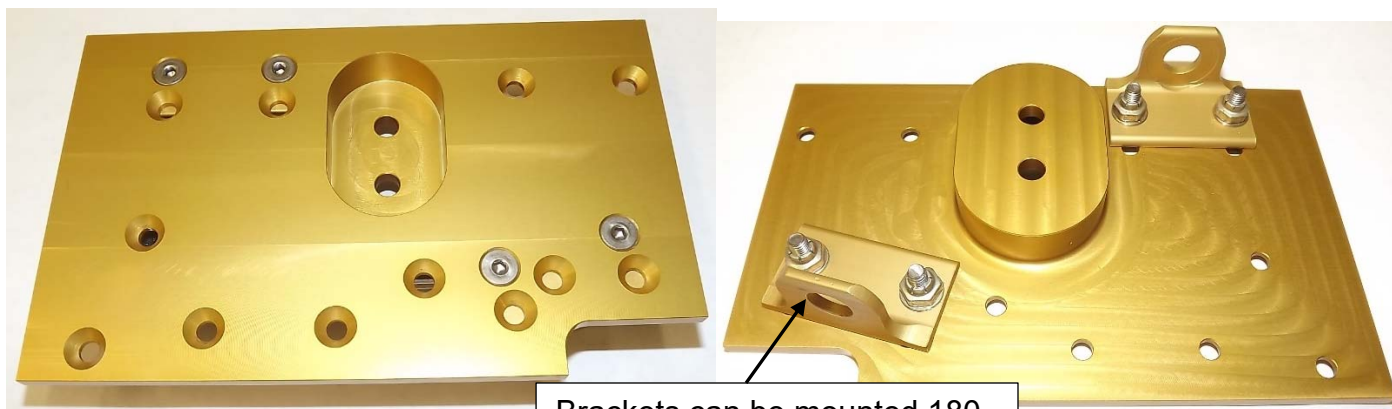


NOTE:

To ensure correct cable rigging, different installations may require that the cable brackets be installed differently than what is shown below. (Refer to advisory statement in the front of this manual.) Trial fit these parts for correct cable rigging before permanently installing the locking hardware.

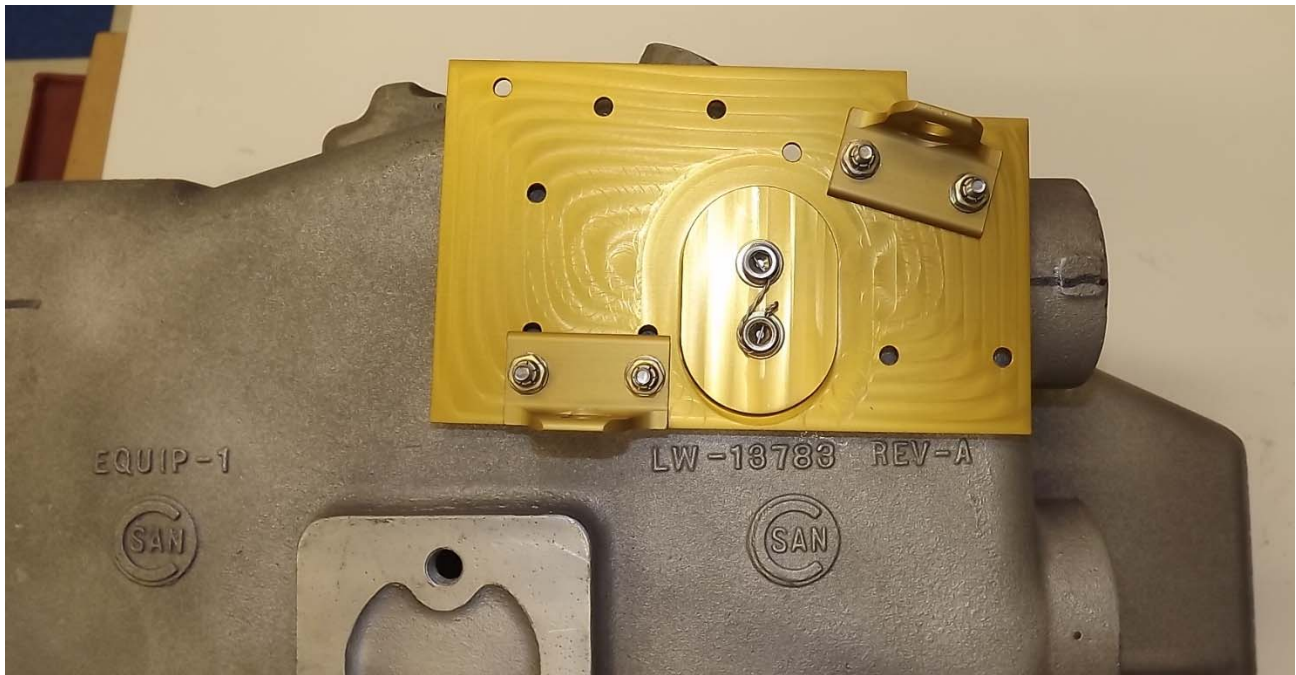
Install the 2 Cable Brackets, P/N 1090274 as shown using the 4 10-32 x $\frac{3}{4}$ Flat Head screws, P/N HW-0706-SS and 4 10-32 Locknuts, P/N MS21045-3 provided with AN960-10L washers. Torque 10-32 lock nuts to 25-30 in-lbs.

This must be completed prior to installing the Throttle Mixture Plate on the sump.

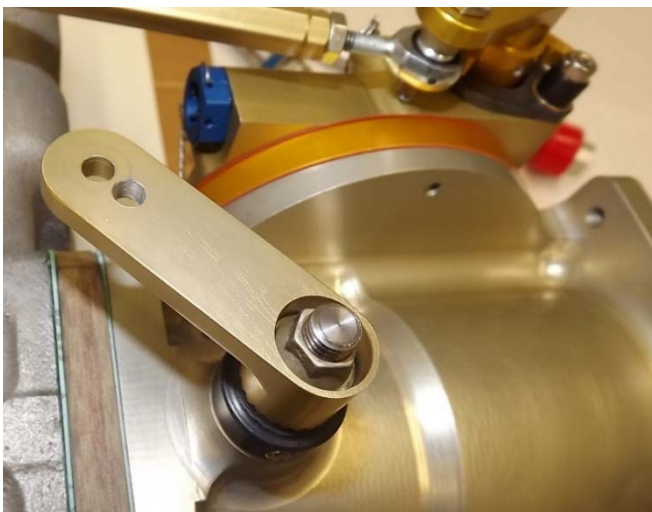


Brackets can be mounted 180 degrees from position shown to fit installation requirements

Install the 390 Throttle Mixture Bracket, P/N 3090120 on sump as shown. Secure the bracket with the two 1/4-20 x 3/4" screws, P/N HW-0344-SSD provided. Torque cap screws 35-40 in-lbs. Lock wire the screws in accordance with AC43-13.



Install the straight Throttle Lever, P/N 2090257 provided with the kit on the opposite side of the throttle shaft. Position the lever as shown with the throttle closed. Depending on control used (push pull cable or quadrant), the lever may require slight adjustment from the position shown. The inside hole on the lever may be used to provide more throttle travel. Ensure teeth are engaged properly. Use one AN960-516L Washer and one MS21045-5 Locknut to secure the lever to the throttle shaft. Torque the 5/16 lock nut to 50-60 in-lbs.

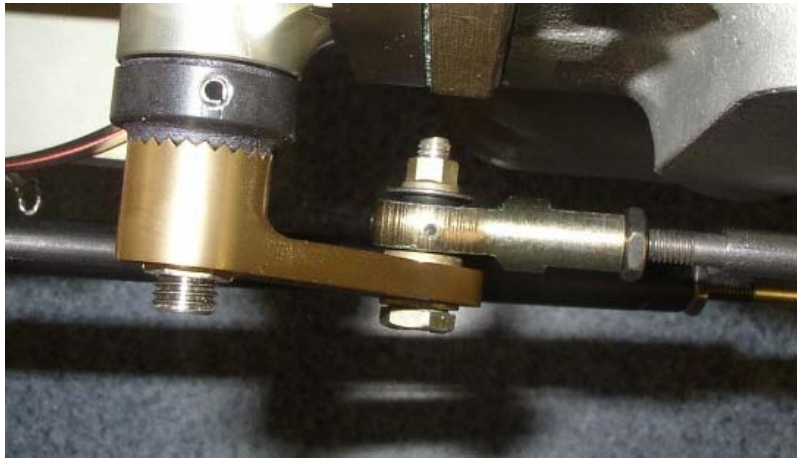


Attach the Throttle Cable to the cable bracket as shown. Use the jam nuts to secure the cable in place. **Depending on rigging, your installation may differ slightly from the picture below.**



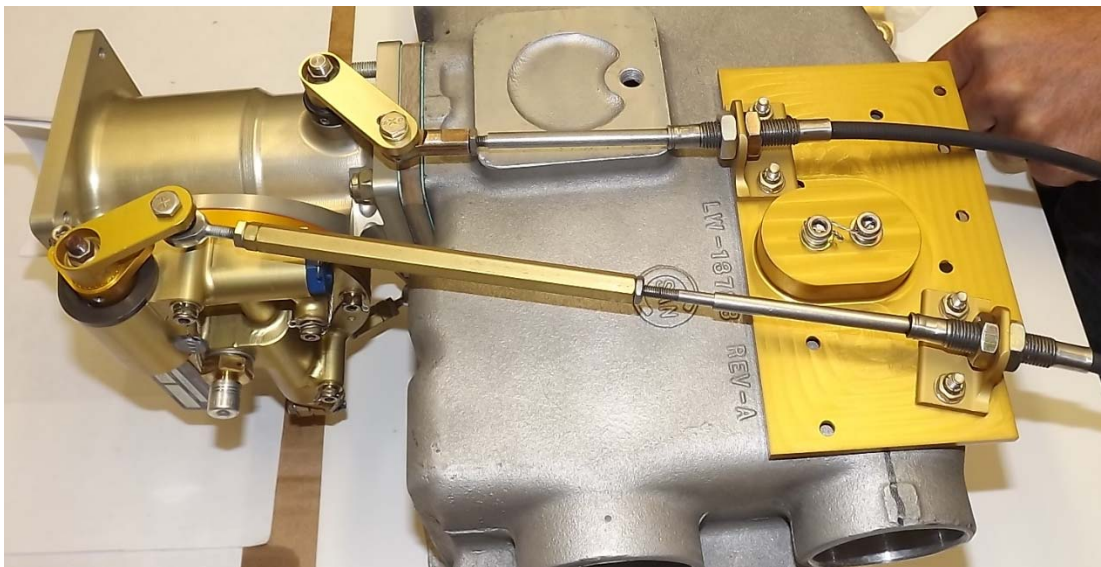
Install the jam nut and rod end bearing on the cable. Connect the rod end and cable to the throttle lever using the AN3-7A bolt provided with the kit and 1 standard thickness washer, P/N AN960-10 either side of the lever. Install the thin large area washer next to the lock nut. Secure the bolt in place using the MS21042-3 lock nut. Torque lock nut to 25-30 in-lbs.





Adjust cable to insure full travel of the throttle. At the WOT position the throttle does not have to hit the stop hard. 1/16" clearance is preferred so that the throttle stop lever does not get worn out.

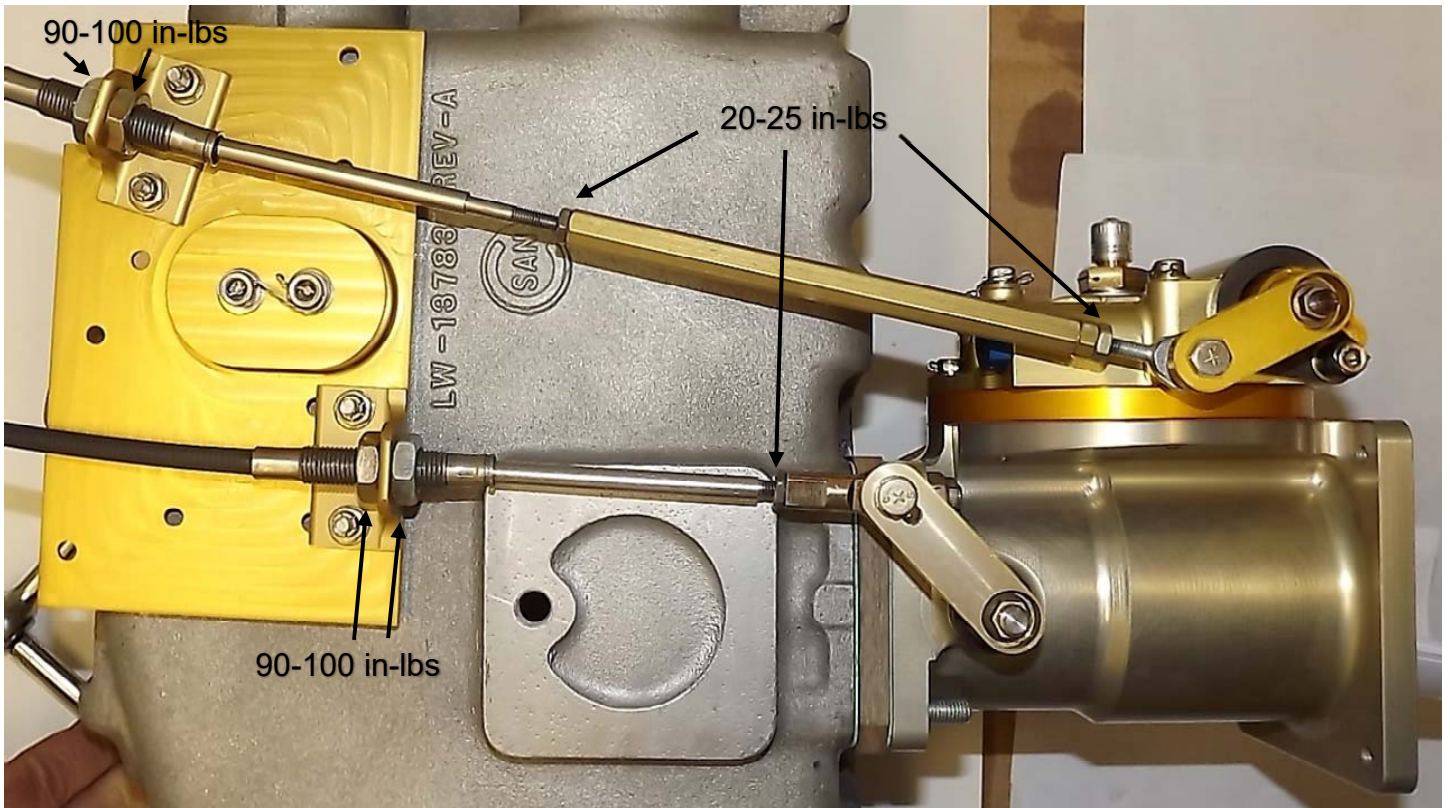
Install the mixture control cable in the cable bracket as shown. Use the jam nuts to secure the cable in place. Attach the 5.5" Link to the cable end and secure with the jam nut. Install the left-hand rod end to the "grooved" end of the 5.5" Link and secure with the LH jam nut, P/N HW-0902-N, provided. **Depending on rigging, your installation may differ slightly from the picture below.**



Position mixture control lever to ensure correct rigging and operation. Attach the rod end to the mixture lever using the AN3-10A bolt provided (there is no washer between the head of the bolt and the lever). Install the .19" spacer between the rod end and lever. Install the thin large area washer between the rod end and lock nut and secure. Torque lock nut to 25-30 in-lbs.



Ensure cable rigging is correct to allow complete travel from Full Rich to ICO (Idle Cut Off).



After cable rigging is verified, torque 11/16" cable jam nuts to 90-100 in-lbs. Torque 10-32 rod end jam nuts to 20-25 in-lbs.

AIRFLOW PERFORMANCE, INC.**111 Airflow Drive****Spartanburg, SC 29306****(864) 576-4512 Phone****(864) 576-0201 Fax****390 Throttle Mixture Bracket Cables under Sump**
FM-150 with Vans cables

<u>Qty</u>	<u>P/N</u>	<u>Description</u>
		P/N 390MTHDKT
1	2090269	Lever Drilled .316
1	MS21042-5	5/16-24 Lock Nut
5	AN-960-516L	5/16 Washer
1	1090128	Throttle Shaft Spacer
2	HW-0344-SSD	1/4-20 X 3/4 SHCS Drilled SS
2	AN960-416L	Washer
4	HW-1904	5/16 X 2 Stud ST-18
4	MS21045-5	5/16 Lock Nut
2	1090274	Cable Bracket
1	3090120	390 Throttle Mixture Bracket
4	HW-0706-SS	10-32 X 3/4 Flat HD SHS SS
4	MS21045-3	10-32 Lock Nut
2	MS21042-3	10-32 Lock Nut
1	AN3-10A	Bolt
1	AN3-7A	Bolt
2	HW-1303-SS	Large Area Washer
1	AN960-10	Washer
1	1090276	.19 Spacer
1	1090272	5.5 Link
1	HW-3102	LH Rod End
1	HW-0902-N	LH Jam Nut
6	AN960-10L	Washer
2	1010059	FM-100 Gasket
1	1090279	5/16 Phenolic Spacer