



2141 ICON Way, Vacaville, CA 95688 - Tel: 707.564.4000 – www.iconaircraft.com

SERVICE BULLETIN

SB-011118 REV A

DATE ISSUED: 1/11/2018
DATE EFFECTIVE: 1/11/2018
SUPERSEDES NOTICE: SD-062117
SUBJECT: Throttle Cable Assembly Retrofit
AIRCRAFT AFFECTED: **MODEL:** A5
S/N: 00001, 00003 to 00020
REQUIRED ACTION: Retrofit the throttle cable system
TIME OF COMPLIANCE: 1) Within 90 days of issuance or;
2) Prior to next flight - If the throttle cable has been disconnected from the engine throttle body for any reason

PURPOSE:

ICON is committed to designing, manufacturing, delivering, and supporting a high quality Light Sport Aircraft, providing a level of safety well beyond expectations. ICON has experienced reports of throttle assembly damage. ICON has determined that the throttle conduit inner Teflon liner was heat damaged due to its proximity to the #4-cylinder exhaust header. SD-062117-A was released as an interim repair of the throttle assembly; however, an improved design has been developed and extensively tested that corrects susceptibility of the throttle assembly from heat damage or inadvertent damage during maintenance operation. This Service Bulletin supersedes SD-062117-A when implemented.

PARTS LIST:

PART	DESCRIPTION	QTY
ICA012311	BRACKET, THROTTLE CABLE	1
ICA012305	CABLE, THROTTLE	1
ICA012310	ROD END, THREADED, CLEVIS, AN665, SST	1
10F50MTT3	SCREW, MACH TRH, 6LOBE, CRES, 10-32X.500	6
AN315C3R	NUT, HEX, CRES, 10-32RH	1
CN609CR3P	NUT PLATE, TWO LUG, ADH BND, .190-32	4
CN611CR3P	NUT PLATE, ONE LUG, ADH BND, A286, .190-32	2
TY24MX	CABLE-TIE, NYLON 6-6, 30LB, 5.50, TY-RAP	8
CB200	ADHESIVE, ACRYLIC STRUCTURAL, 2 PART, CLICK BOND	A/N
LOCTITE 243	THREADLOCKER, PRIMERLESS, OIL TOL, REMOVABLE MED STR, BLUE	1
MA830	ADHESIVE, METHACRYLATE, 2-PART, PLEXUS MA830	A/N
AN742F3	CLAMP, LOOP, PLAIN, SUPPORT, AIRCRAFT, 3/16	2
CB9120V5	MOUNT, CABLE TIE ANCHOR	A/N
MS20392-2R11	PIN, STR, HEADED, DRILLED SHK, CRES, .188X.344	1
MS24665-151	PIN, COTTER, CRES, .063X.500	1
6271	TERMINAL, CONDUIT, MCFARLANE SLIP FIT	1
NAS1149C0316R	WASHER, FLAT, CRES, .188x.016, PSVT	2
F4TAPE BLACK	TAPE, SELF-FUSING, SILICONE, .02 IN THK, 1 IN WIDE	A/N



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INSTRUCTIONS:

Task Specific Training:

All tasks are to be performed by an ICON Aircraft, Inc. trained mechanic with an Airframe certificate.

1. Remove center console armrest and bucket, remove throttle handle, and throttle bezel in accordance with the most current ICON A5 maintenance manual (ICA000833).

Removal of the throttle conduit (housing)

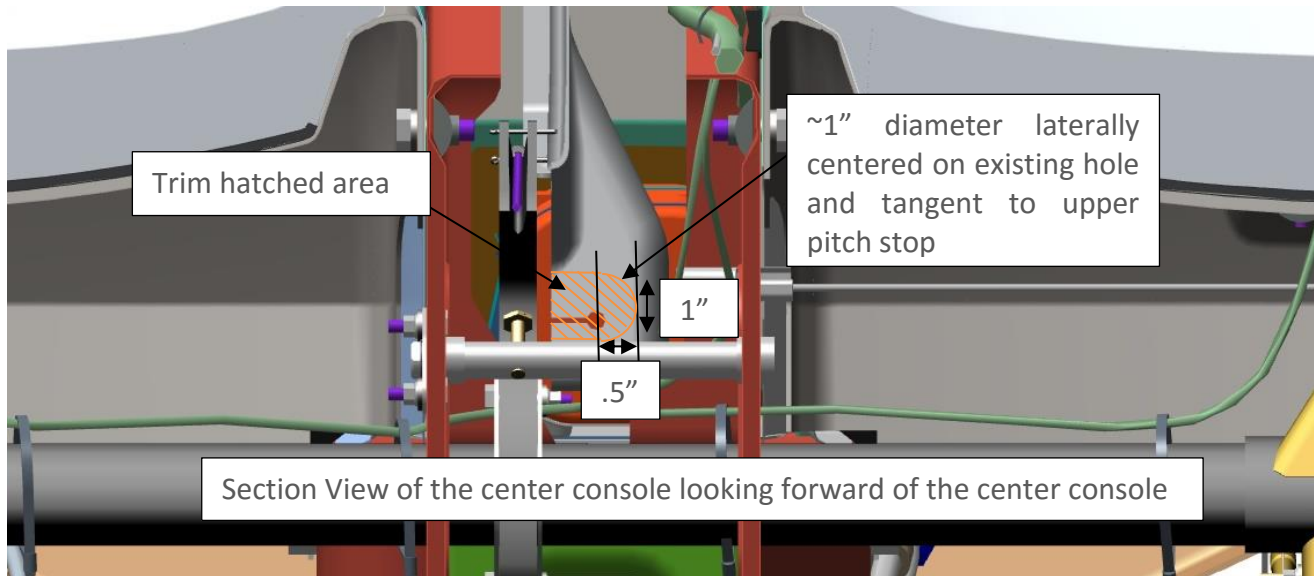
1. It is permissible to gain access to the conduit by removing access panels and parts that have removal instruction/procedures in the latest maintenance manual:
 - a. Remove both seat backs, the procedure can be completed with only the left seat back removed but removal of both is permissible.
 - b. Remove baggage floors.
2. Remove the throttle cable by disconnecting the cable at the engine throttle body and at the throttle lever, then pull the cable out of the conduit through the ELT access panel. Discard cable
3. After the throttle cable is removed. Disconnect the conduit terminal from the engine and the cockpit center section bulkhead.
4. Cut any ty-raps that secure conduit to the fuselage.
5. Through access gained by removing the left seat back, cut and remove the remaining ty-rap on the right-side keel on top of the aft intercoastal.
6. Remove the two p-clamps on the aft fuselage bulkhead behind the baggage compartment (if installed). Retain the p-clamps aft of the fuselage bulkhead (if they were installed).
7. Cut the terminals off the conduit on both ends using a set of side cutters.
8. Spray some soapy water or other rubber safe lubricant at both grommets (at the forward bulkhead and one in the intercostal on the aft center section).
9. Slide the conduit out of the fuselage and discard.

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Modification to Airframe:

1. Using a pencil grinder or other suitable tool trim the hatched area of the throttle bracket shown in the graphic and photo below in Figure 1. Clean up the edges of the trimmed area with 100 grit sandpaper.



View looking forward showing a completed trimming of the center console

Figure 1: Details of center console modifications

2. Install a new cable tie anchor (CB9120V5) centered longitudinally on the core and in-line with the throttle cable as shown in the Figure 2 below. Bond the cable tie anchor in accordance with the Click Bond specification CBPS-206E.

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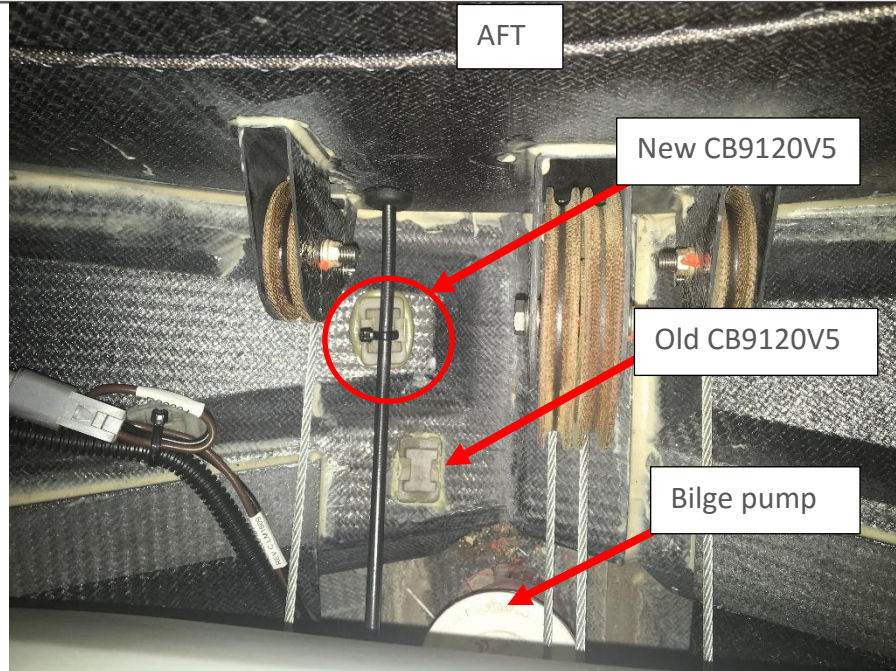
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Figure 2: Placement of additional ty-block

3. Sub assemble ICA012311 throttle cable bracket by bonding two CN611CR3P nut plates into the inside of the throttle cable bracket using CB200 adhesive. Bond the nut plates in accordance with Click Bond specification CBPS-206E. Orient the nut plates as shown in to the diagram in Figure 3 below.

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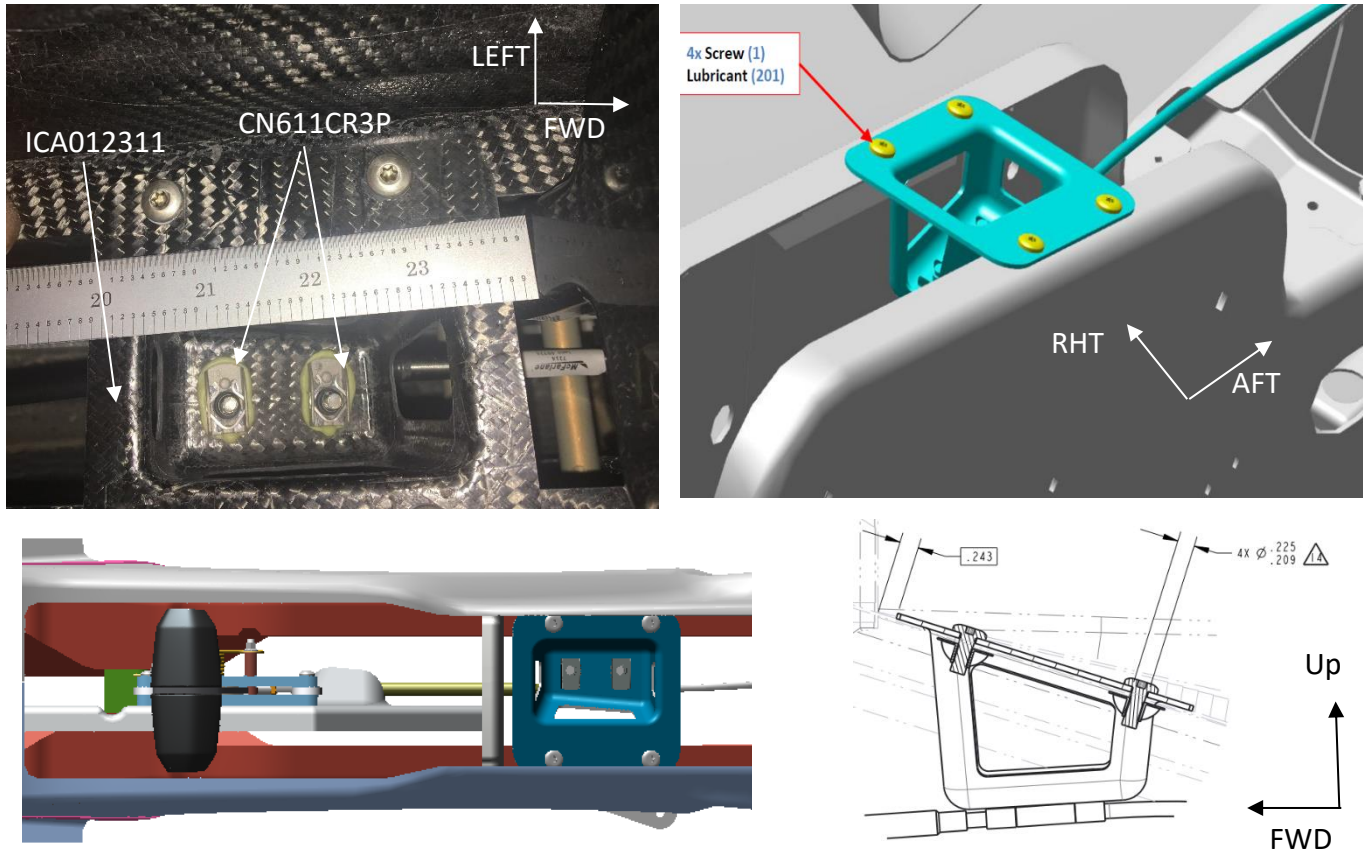


Figure 3: Location of the ICA012311 into the aircraft keel

4. Locate the ICA012311 throttle bracket into the center console. Center the bracket between left and right keel halves and .243" aft the center console aft throttle bulkhead as shown in Figure 3.
5. Once ICA012311 throttle bracket is located, match drill the holes in the bracket to .209-.225" diameter clean up hole edges with light use of 80-100 grit sandpaper.
6. Bond in CN609CR3P nut plates in four places on the bottom side of the left and right keel flange in accordance with Clickbond specification CPBS-206E.

Installation of the throttle conduit

1. Carefully layout the throttle conduit cable ICA012305 and remove the cable out of the conduit, use care to not allow the cable to get contaminated with dirt or dust or inadvertently wipe the lubricant off the cable.
2. Measure and cut the conduit to 112-114" measured from the end of cable where it enters the metal sheath as shown in Figure 4. Cut the conduit at 114" initially then cut it shorter if necessary.
3. Once conduit is cut to size, strip .7" of conduit plastic coating down to the metal on the opposite end of the conduit as shown in Figure 4 for the conduit terminal.

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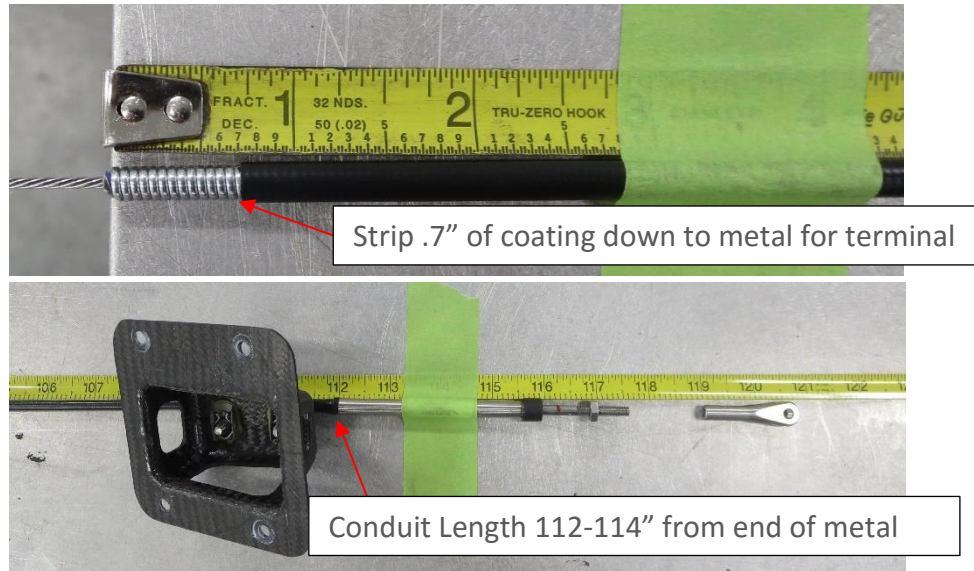


Figure 4: Cable Conduit measurements

4. Sub assemble the bracket to the conduit by attaching the conduit to the throttle bracket using two AN742F3 P-clamps and two 10F50MTT3 screws with NAS1149C0316R washers as shown in Figure 5 below. Ensure that crimped sleeve on the conduit is between the p-clamps Torque fasteners to 26 in-lb. Note: if the P-clamps do not fit perpendicular to throttle conduit because the crimped sleeve is slightly long it is permissible to open up the holes on the bracket slightly to allow the anchor nut to float further.

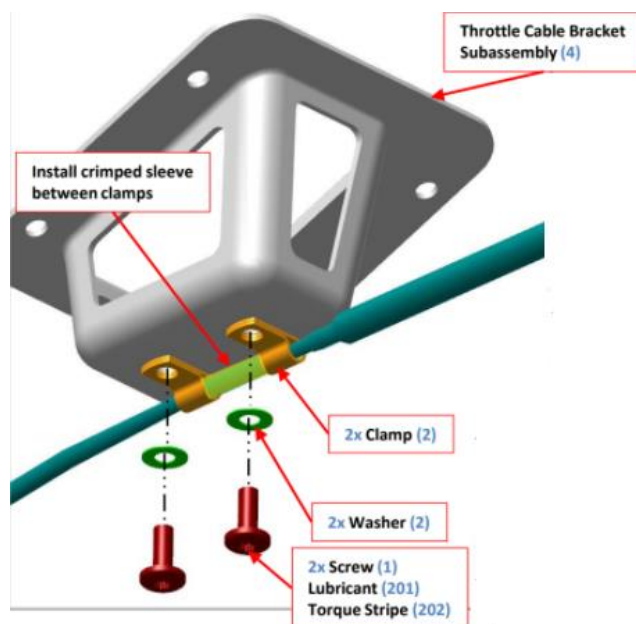


Figure 5: Throttle Bracket Subassembly

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- Starting in the center console, route the conduit aft under the center console bracket through the to the aft intercostal ty-rap block and secure the conduit with a TY24MX ty-rap as shown in the Figure 6.

Note: Early serial numbered aircraft don't have a removeable center console bracket as shown below. If the aircraft has a removeable bracket, ensure there is a plastic edging grommet installed between the conduit and bracket to avoid a chafing condition.

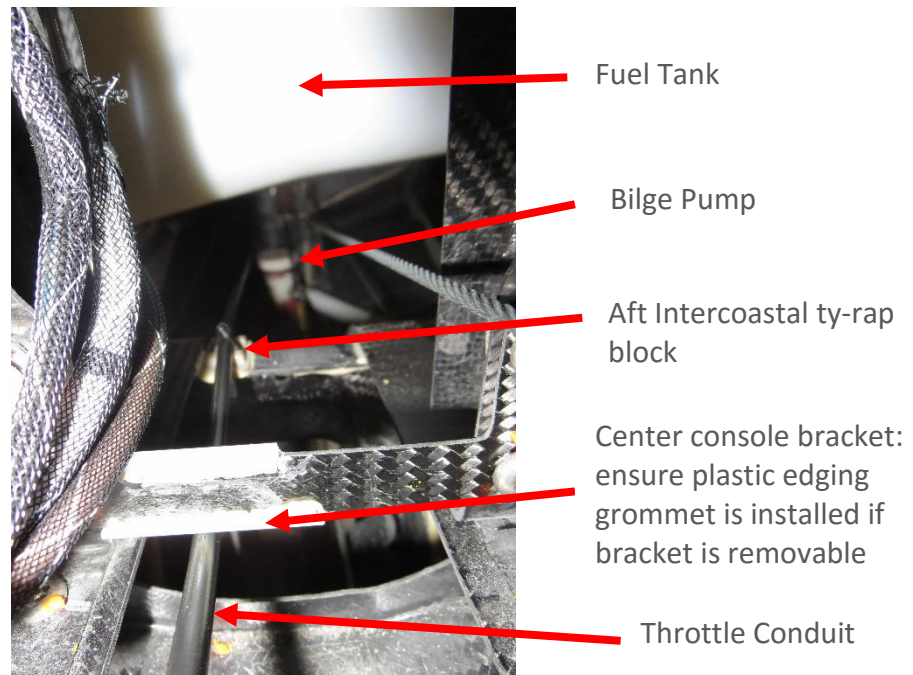
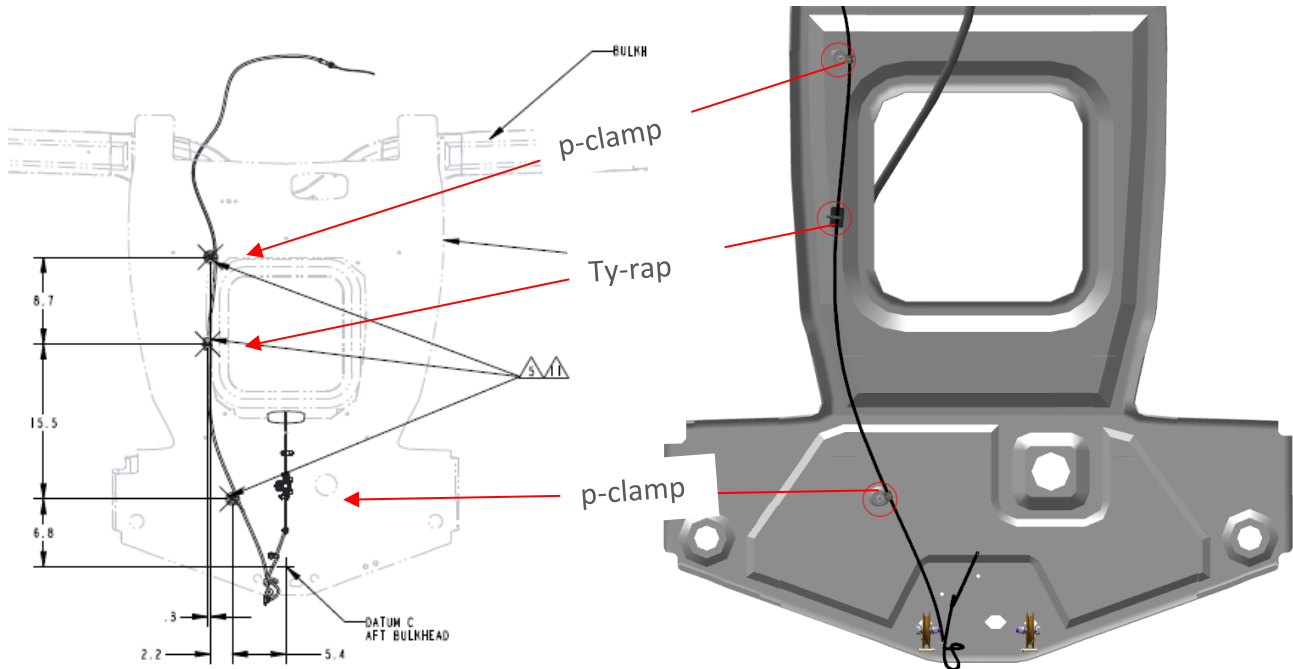


Figure 6: View Looking aft inside the center console

- When routing the conduit under the fuel tank ensure the conduit doesn't become wrapped or entangled with any flight control cables. Adjust as necessary to ensure the conduit passes cleanly between the center section intercostal and the forward bulkhead.
- Secure the conduit to the newly placed ty-rap block using a TY24MX ty-rap.
- Route the remaining conduit through the forward main fuselage bulkhead underneath the main landing gear actuator and up the right side of the aft main bulkhead up through the forward side of the right-side firewall access hole as shown the Figure 7 below. **Note:** Some aircraft don't have p-clamps as shown but instead installed are ty-wrap blocks. Either configuration is acceptable if the conduit is secure in all the locations shown with either a p-clamp or TY24MX ty-rap.

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Either Configuration is Acceptable

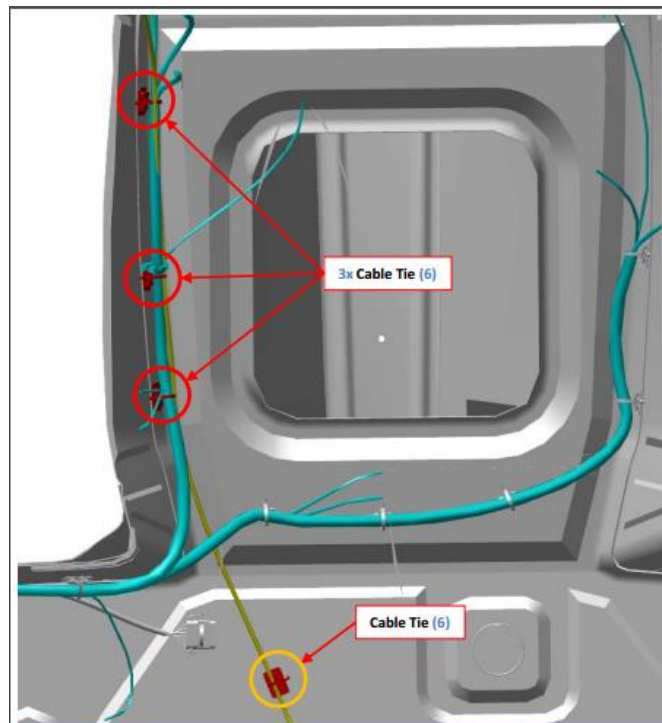


Figure 7: Securing locations on the aft fuselage bulkhead (either configuration is acceptable)

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9. On the firewall side, ensure the conduit is biased to the most forward side of the firewall access hole. Then route the conduit as shown in the photo below. Add F4TAPE to the engine mount and secure throttle cable using a TY24MX ty rap as shown in Figure 8.

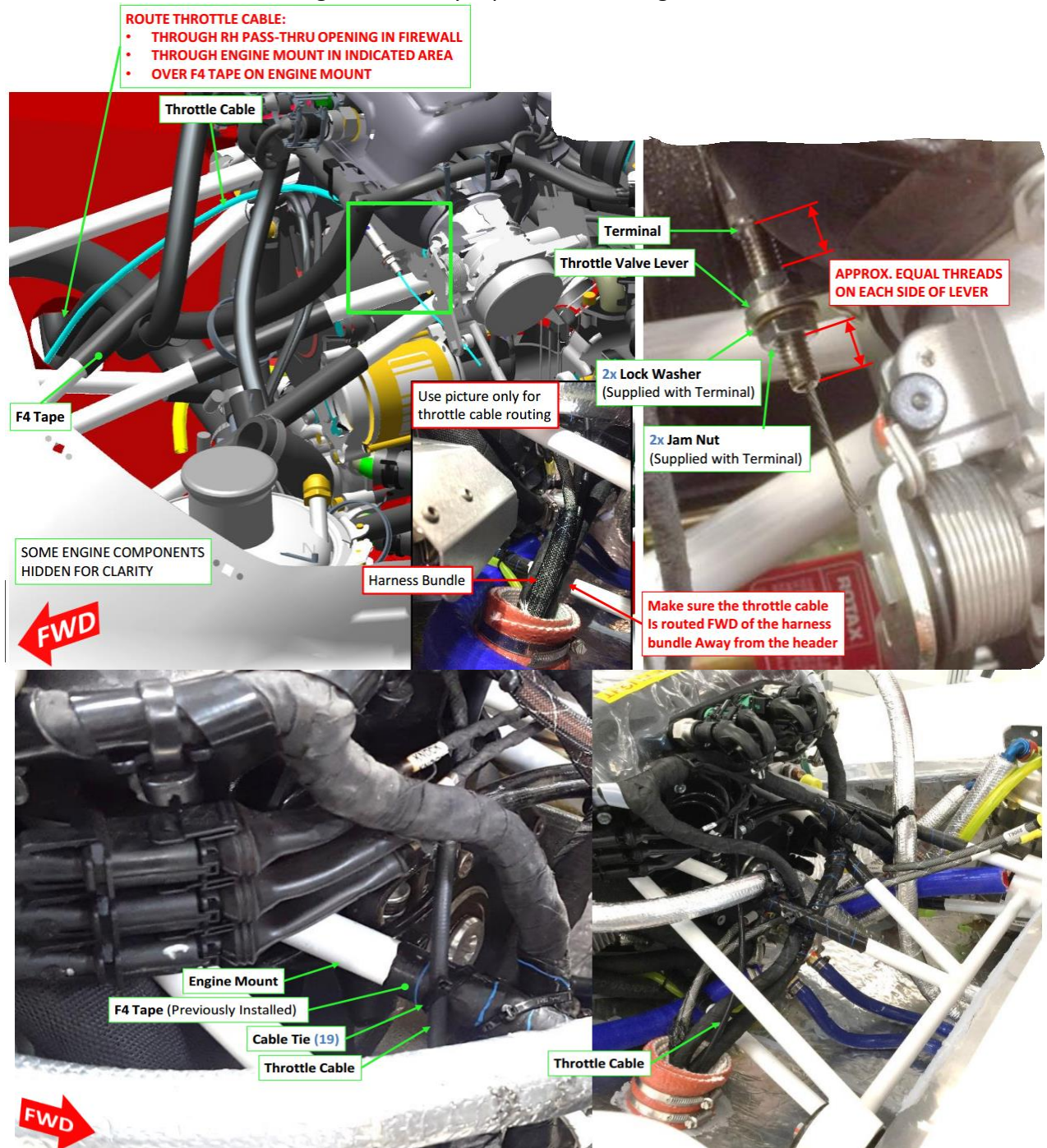


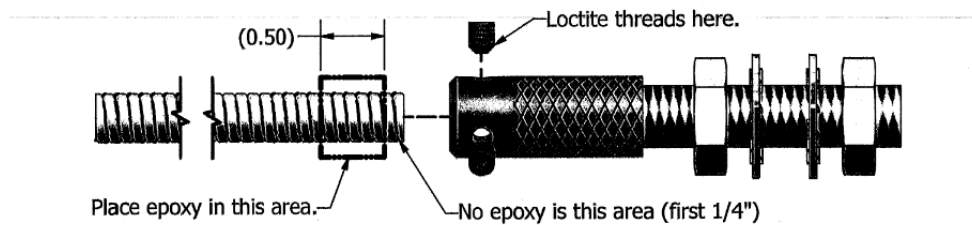
Figure 8: Firewall side routing of the throttle cable conduit.

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10. Terminate the conduit on the engine side using MA830 plexus adhesive for the epoxy and Loctite 243 on threads of the set screws as shown in Figure 9 below:

Installation Instructions For McFarlane P/N 6271 Slip Fit Terminal Assembly



The following installation options are available:

Permanent:

1. Apply a small amount of epoxy adhesive to the conduit in the indicated area above (do not apply epoxy to the first 1/4" of the conduit).
2. Using a rotating motion, insert the conduit fully into the slip fit terminal, wipe off any excess exposed epoxy.
3. Apply a small amount of thread locking adhesive to the indicated end of the set screws.
4. Tighten set screws until the screw bottoms out on the conduit, then add an additional 1/4 turn.
5. Before adhesive and epoxy cures, check cable function to ensure free movement and adjust set screws as necessary.
6. Allow adhesive and epoxy to cure completely before installation of the control.

Figure 9: Installation Instruction for 6271 Slip fit terminal Assembly

11. Final install the throttle bracket into the keel by installing four 10F50MTT3 torque fasteners to 26 in-lb.

Installation of throttle cable

1. Carefully insert the previously set a side throttle cable through the ELT access panel and into the conduit. Do not allow the cable to touch surfaces where it could gather dirt or dust. Use care not to permanently deform the cable during the installation process. The cable should easily route through the conduit. If the cable stops and can't be easily pushed/routed through without excessive twisting or shoving, then the conduit needs to be replaced.
2. Secure the conduit terminal at the engine throttle body as shown in Figure 8 above.
3. Install clevis rod end onto throttle cable.
 - a. Run AN315C3R nut onto threaded end of throttle cable in keel.
 - b. Run ICA012310 rod end onto threaded end of throttle cable.
 - c. Position throttle quadrant lever all the way FWD against the full throttle handle stop.
 - d. Align clevis end of rod end with hole in throttle quadrant lever.

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- e. Measure the distance shown (between the end of the throttle cable guide tube end and beginning of threads on throttle cable). Adjust rod end as required to achieve the required measurement of .375". NOTE: Ensure the rubber grommet/seal on the end of the guide tube is installed and seated fully on the guide tube or the .375" measurement will be incorrect.

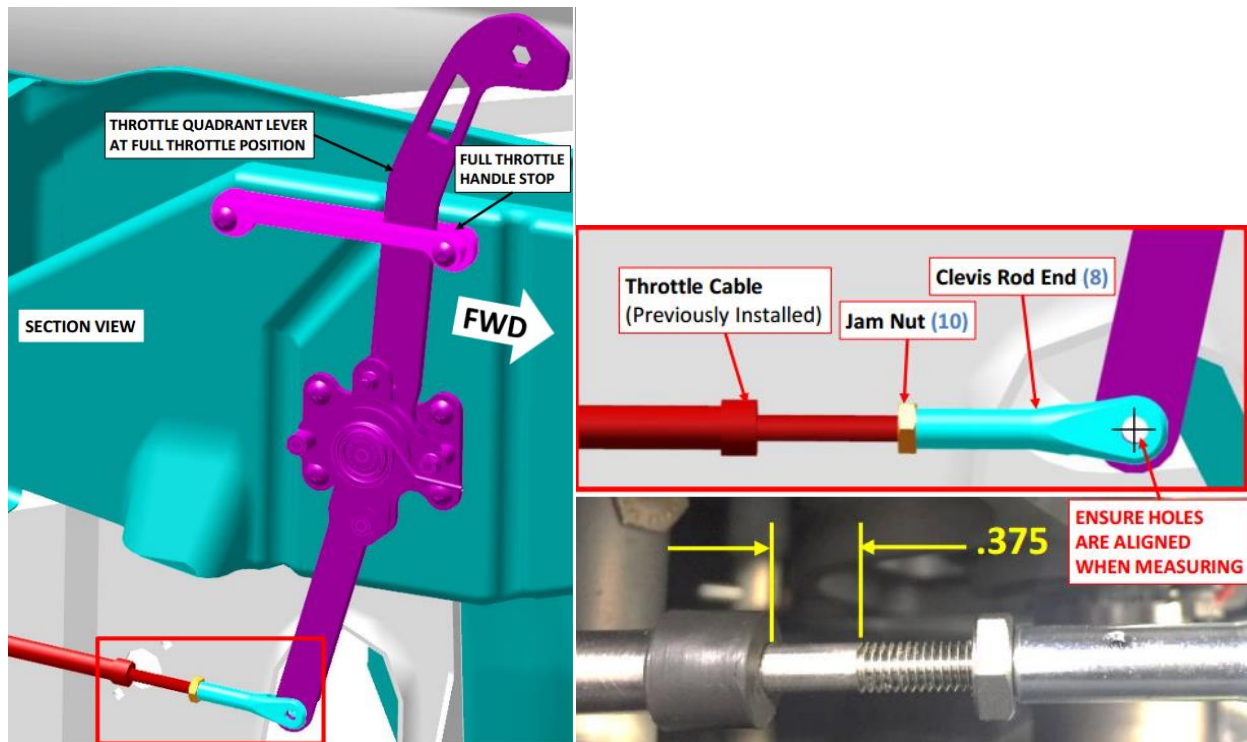


Figure 10

- f. Fit check the clevis rod end to throttle quadrant lever with MS20392-2R11 pin,
- g. Verify measurement is still $.375 \pm .125$ with handle at full throttle position.
- h. Remove the rod end from the throttle lever to tighten jam nut against rod end and torque to 20-25 in-lb. Apply torque stripe.
- i. Final attachment of the rod end to throttle quadrant lever using the MS20392-2R11 pin, NAS1149C0316R washer, and MS24665-151 cotter pin. Bend cotter pin around clevis pin according to standard practice.

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4. Attach throttle cable to engine as follows and shown in Figure 11 and 12 below:
 - a. Move throttle handle to FULL OPEN THROTTLE position (against FWD stop).
 - b. Back off handle .100" from FWD stop

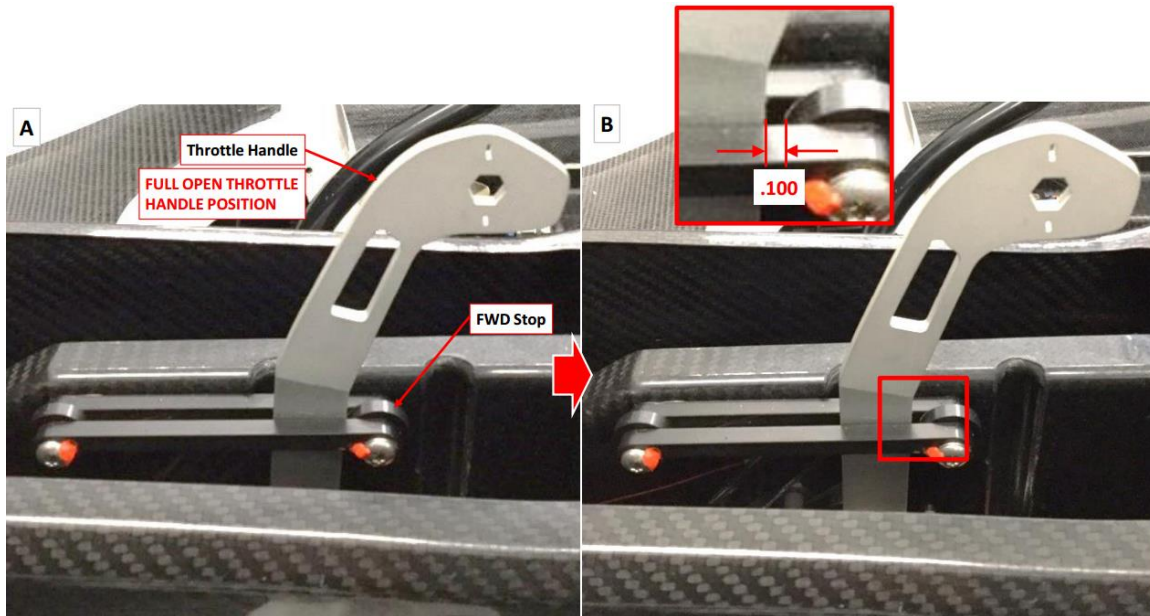


Figure 11: Throttle Cable Rigging

- c. On engine side, at throttle lever, thread cable through the hole in the cable fixation screw.
- d. Pull cable tight to remove any slack.
- e. Attach screw to throttle lever as shown in Figure 12 with included bushing, washer, and nut.
- f. With cable pulled tight, tighten cable fixation fastener.
- g. Ensure bushing bears against washer on opposite side of throttle lever (not clamping throttle lever), allowing the cable fixation fastener to rotate freely.

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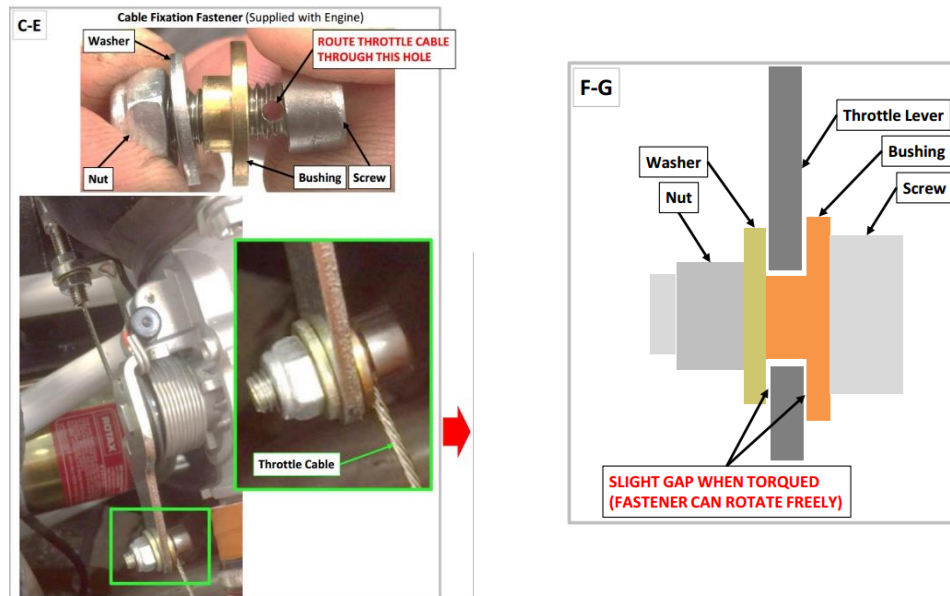
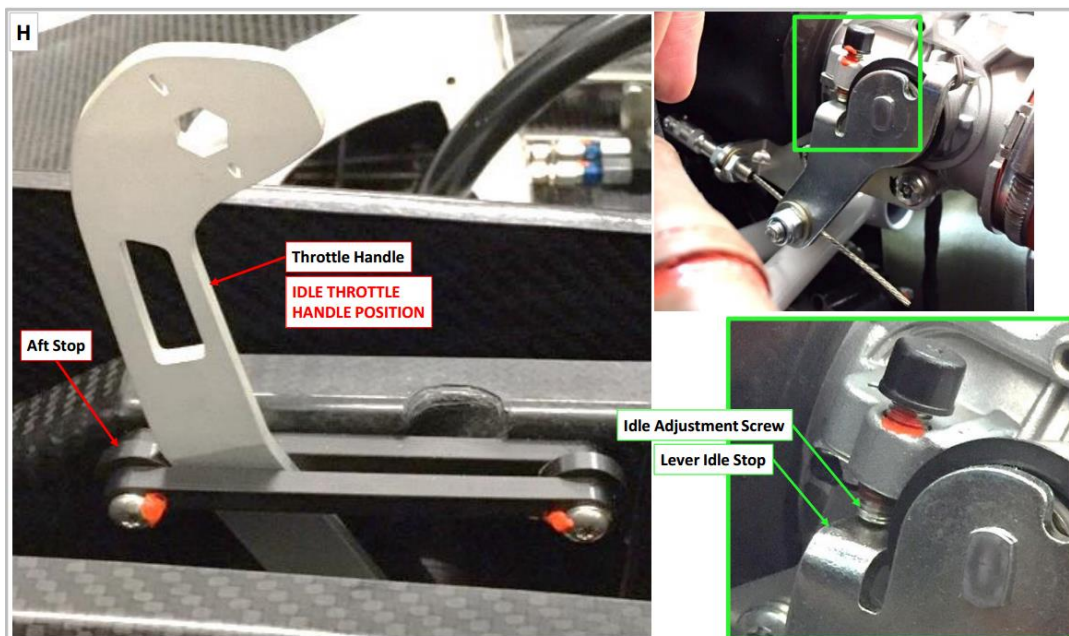


Figure 12: Throttle attachment at engine throttle body.

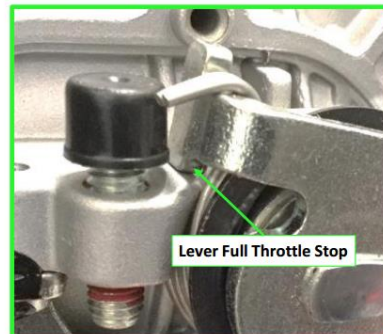
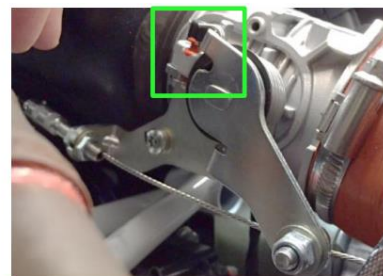
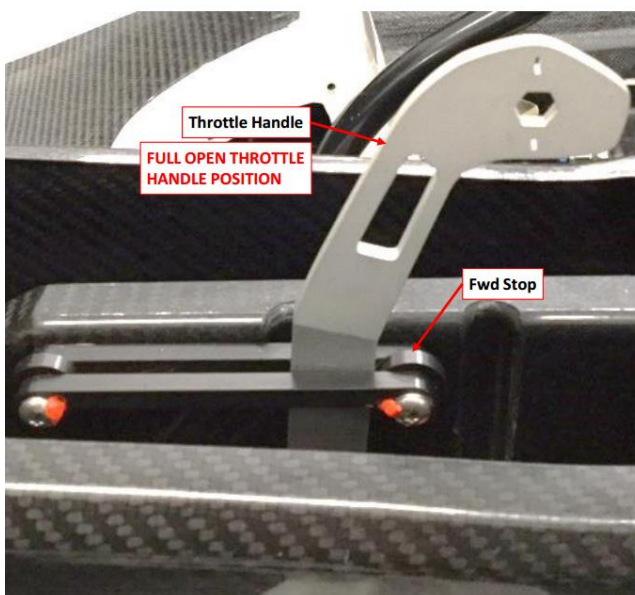
- h. (This step requires 2 technicians – one at handle, one at engine). In cockpit, retract throttle handle to contact aft stop (idle position). At engine, ensure lever idle stop contacts idle adjustment screw **at the same time or just before** the throttle handle contacts the aft stop. Adjust the position of cable in cable fixation fastener as required.



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- i. (This step requires 2 technicians – one at handle, one at engine). In cockpit, move throttle handle to full throttle position (FWD stop). At engine, ensure the lever full throttle stop contacts the throttle body before the throttle handle contacts the FWD stop. Adjust position of cable in cable fixation fastener as required.
- j. When cable adjustment is complete, torque cable fixation fastener to 35±5 in-lb. Apply torque stripe. Do not over tighten and ensure the cable fixation fastener can still rotate on the throttle lever of the throttle body once torqued.



CAUTION: DO NOT DAMAGE THE BUSHING BY OVER TORQUEING CABLE FIXATION SCEW

5. Trim the excess end of the throttle cable to .75-1.00" from throttle body fixation fastener.
6. Move the throttle to full and idle several times watching how the cable enters the conduit near the throttle lever especially at full throttle. Any tendency for the throttle cable to buckle or kink is unacceptable and must be troubleshoot. This may mean replacement of the conduit. The throttle should be able to move through the normal range of motion with no kinking tendencies. If the kinking tendency should occur after new conduit installation, contact ICON customer service and support for assistance.
7. Re-install the ELT in accordance with the latest maintenance manual.

Reassembly:

1. Reinstall the center console armrest and bucket, throttle handle, throttle bezel, both seat backs and baggage floors in accordance with the most current ICON A5 maintenance manual (ICA000833)
2. Perform engine run and verify normal throttle operation from full throttle to idle throttle.



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WARRANTY:

ICON Certified Service Providers: Please submit an invoice for warranty reimbursement of 16 labor hours upon completion. Please reference service bulletin number SB-011118.

Make the following logbook entry:

“Service Bulletin SB-011118 has been complied with and reported to ICON Aircraft Customer Support. This service bulletin supersedes SD-062117”.

If you need assistance relocating your A5 to your home base or temporary storage arrangements, please contact ICON Aircraft and ask for Customer Service and Support.

If you are no longer owner/operator of this aircraft, please forward this information to the present owner/operator and notify ICON Aircraft, Owners Center at:

ICON Aircraft
2141 ICON Way
Vacaville, CA 95688
(855) FLY-ICON or (707) 564-4000
support@iconaircraft.com

Please include the aircraft registration number, serial number, your name, and if known the contact information of the new owner/operator.



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SAFETY DIRECTIVE APPROVAL


Bret Davenport

Flight Sciences Manager

1/11/2018

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