



SERVICE INSTRUCTION

SI0027 Rev B

Page 1 of 7

EFFECTIVE DATE: This SERVICE INSTRUCTION is effective **November 5th, 2012**

SUBJECT: *Cabin Heat Retrofit Kit*

MODELS AFFECTED: *CC11-160 (S/N 11-00093 through 11-00236)*

CONTINUED INSPECTION: *100 Hour/Condition Inspection*

PURPOSE: *To Improve Cabin Heating.*

PARTS LIST: *See Page 2 for Parts List*



SERVICE INSTRUCTION

SI0027 Rev B

Page 2 of 7

PARTS LIST:

<u>PART</u>	<u>DESCRIPTION</u>	<u>-001</u>	<u>-003</u>
AN340-6	Plain Nut	3	3
AN363-632	High Temp Nut	9	9
AN507C632R8	Countersunk Screw	9	9
AN526C632R12	Truss Head Screw	1	1
AN960-6	Washer	11	11
AN960-10	Washer	5	5
HDW-A3236-012-935	Countersunk washer	3	3
HDW-S4R.25TA	#4 Sheet Metal Screw	3	-
HDW-100-215	Hose Clamp (2 3/16 – 2 3/4)	6	6
HDW-3720	Hose Clamp	8	8
PC53026-001	Cabin Heat Air Inlet Insert	1	-
PC53027-001	Inlet Cover	1	-
PC53018-001	Cabin Heat Inlet Insert	-	1
RM0006-002	2.5" SCAT	27"	27"
SC57330-001	Cabin Heat Collector	2	2
SC57350-003	Cabin Heat Control Box Assembly	1	1
Template 1	Template-Firewall Holes	1	1
Template 2	Template-Cowling Holes	1	-
PARTS PROVIDED BY CUSTOMERS:			
RM0013-002 (p/n 81409)	26C High Temp RTV	AR	AR
RM1075-00X	Cable Ties, Heat Stabilized	AR	AR
RM9017-001 (Univair Chafe WC06)	Chafe Tape	AR	AR
131-Z (<i>optional</i>)	Z-Lite Bondo	-	AR
RM3733-001 (p/n 21307)	Glass Fiber Cloth per AMS-C-9084	-	AR
RM7800-001 (hexion 752-4483/8533)	Fire Retardant Polyester Resin per MIL-R-21607	-	AR

INSTRUCTIONS:

1. Remove engine cowling. (Refer to 6.3.14 of the CC11-160 Aircraft Maintenance Manual)
2. Remove cabin heat collectors from the right side exhaust pipes by removing the hose clamps holding the SCAT to the collectors and the hose clamps around the collectors. Gently open the collectors enough to slip them off of the exhaust pipes. Save the hose clamps from around the collectors to use later in the installation of 2-1/2 scat tube.
3. Disconnect the cabin heat cable from the arm on the cabin heat box by removing the nuts and washers, then slide the loop on the end of the cable off of the arm. Leave the cable clamped in place on the firewall at this time.
4. Remove the cabin heat box from the firewall by removing the 4 screws and nuts through the firewall.

NOTE: Some aircraft have a composite exit fairing attached to the bottom of the firewall and boot cowl. This fairing will need to be permanently removed for installation of the new cabin heat box. The removal of this fairing may result in slightly higher engine temperatures if cowl flaps are not installed.

5. Using the Template 1, layout and drill three #28 mounting holes in the firewall for the new cabin heat box. See Figure 1.

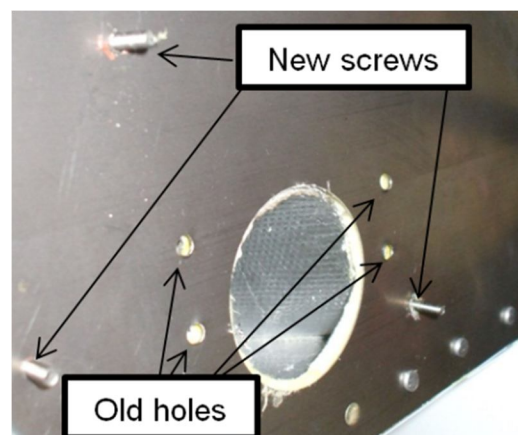


Figure 1

6. Apply a small bead of High Temp RTV around the perimeter of the round hole in the Cabin Heat Box (SC57350-003) (Figure 2), then mount the cabin heat box to the firewall using (3) AN507C632R8 screws, (3) HDW-A3236-012-935 countersunk washers, (3) AN960-6 flat washers and (3) AN363-632 high temp nuts. The screws should point towards the engine with the countersunk washers under the heads of the screws.

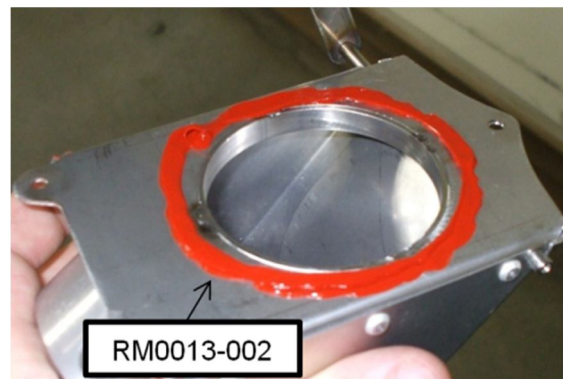


Figure 2

NOTE: A small cut in the tips of the screws passing through the firewall may help by allowing the screw to be held in place with a flat bladed screwdriver on the engine side of the firewall.

7. Install AN526C632R12 on arm of control box with an AN340-6 nut. Remove the nut holding the last cable clamp. Add 3 AN960-10 washers under the clamp and reinstall the clamp. Pull the housing through the other clamps on the firewall to get enough length to slip the loop in the wire over the stud (AN526C632R12) on the arm of the control box (Figure 3). Put one AN960-6 washer, the loop on the wire, a second AN960-6 washer, and then two AN340-6 nuts over the stud in the arm. The second of the two nuts acts as a jam nut. The wire loop should be able to rotate on the stud in the arm as the arm moves. Adjust the position of the cable housing in the last clamp on the firewall to ensure full travel of the door in the cabin heat control box. Install spiral wrap over cable housing where housing passes by the lower edge of the firewall.

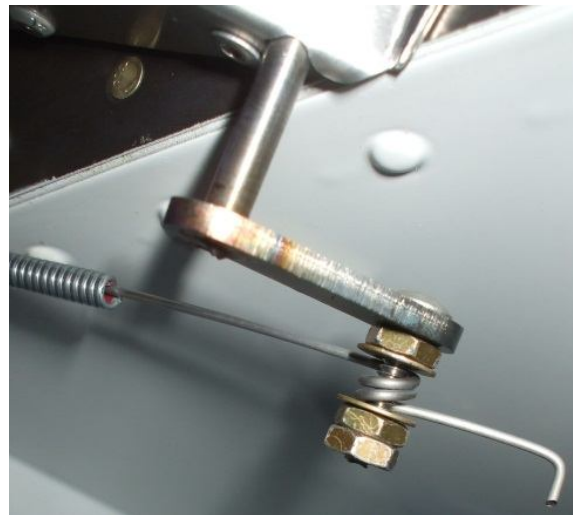


Figure 3

8. Install the new collectors (SC57330-001) by opening them up by hand just enough to slip them over the #1 and #3 exhaust pipes (Figure 4). Position the collectors on the straight section of each pipe and start two hose clamps (HDW-3720) on each collector (to reduce weight, two lightweight hose clamps are daisy-chained together to function as a single clamp). Connect the two collectors together with a piece of SCAT (RM0006-002) approx. 2 1/2" long and two hose clamps (HDW-100-215). Tighten all of the hose clamps while paying attention to how the ends of the collectors are lining up as well as the opening down the side of each collector. Do not over tighten the clamps. They should be just tight enough that the gaps on the end caps are gone and you cannot move the collector on the pipe.

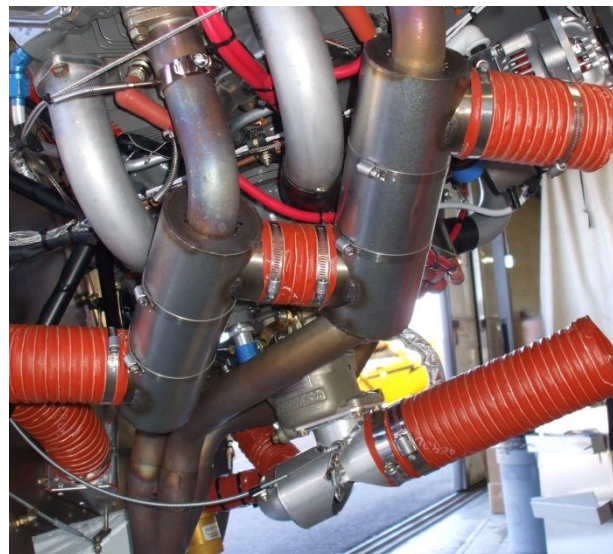


Figure 4

9. Clamp a piece of SCAT (RM006-002) approx. 20" long to the inlet on the new cabin heat control box and route it to the outlet of the collector on the #3 exhaust collector going above/behind the lower right tube on the engine mount (Figure 5). Wrap the engine mount with 1-2 layers of silicone chafe tape and secure the SCAT to the engine mount with cable ties. Ensure the SCAT does not contact any wires or control cables. Secure using cable ties as needed.

**For S/N 11-00225 – 11-00236, skip to step 13*

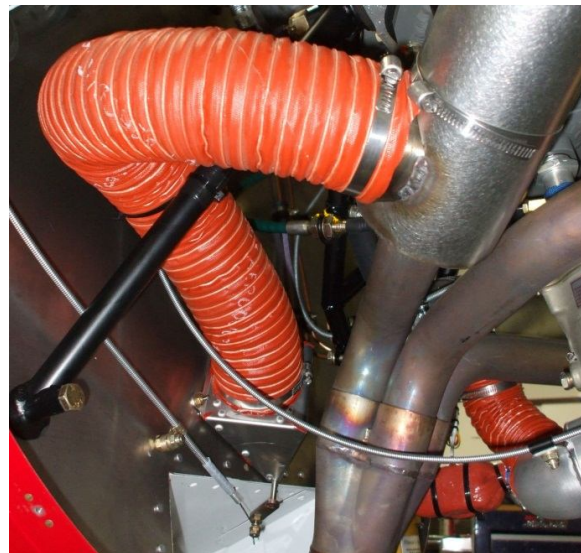


Figure 5

10. Using Template 2, layout and cut a hole in the right forward area of the lower cowling for the cabin heat air inlet insert (PC53026-001). Match drill #30 holes to the cowling using the insert as a jig and cleco clamps to hold it in place as you drill.

11. Remove the clecos, clean off any dust from drilling and cutting then screw the insert to the lower cowling using (6) AN507C632R8, (6) AN960-6 and (6) AN363-632.

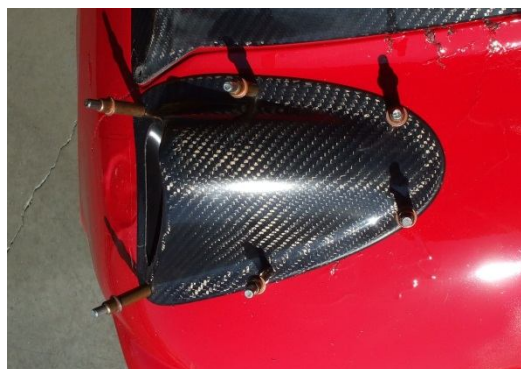


Figure 6

12. Block off old inlet by installing Inlet Cover (PC53027-001). Position cover in place and match drill engine baffle with a small holes (#50). Install using (3) #4 sheet metal screws (HDW-S4R.25TA). (Figure 7)

**For S/N 11-00093 – 11-00224, skip to step 16*



Figure 7

13. Remove the currently installed Cabin Heat Inlet Insert from the Lower Cowl. This may require a combination of cutting, grinding and sanding to completely remove the part and produce a suitable mating surface (Figure 8) for the new Cabin Air Inlet Insert (PC53018-001). The aft end of Insert will point slightly up and outboard when seated properly.



Figure 8

14. Clean all mating surfaces of Cowl and the new Insert and set Insert inside the inlet pocket of the cowl.

15. Secure Insert to Cowl with 1 ply of Glass Fiber Cloth (RM3733-001 or equivalent) and Fire Retardant Polyester Resin (RM7800-001 or equivalent). Allow resin to fully cure per product specification. **Bondo may be used to assist in initially securing Insert in place, and sticking Fiber Cloth to components.* (see Figure 9 for completed installation)

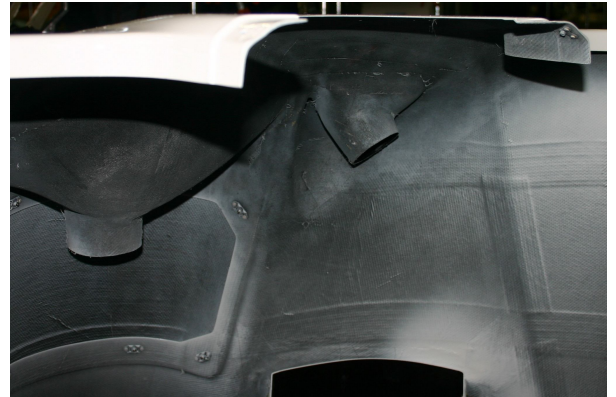


Figure 9

16. Install the lower cowling with 1-2 screws on each side and check for interference between any parts on the engine and the cowling and cowl flaps. If there is inadequate clearance the inner part of the cowl flaps may need to be trimmed.

17. Remove lower cowling, install a piece of 2.5" SCAT approximately 4 ½" long on the inlet of the collector on cylinder #1 using hose clamp HDW-100-215 (Figure 10). Put a second hose clamp over the SCAT but do not tighten it.



Figure 10

18. Install the cowling in the reverse order it was removed in step 1. When hooking up the SCAT to the carburetor air box also hook up the SCAT from the collector on the #1 exhaust pipe. Use the second hose clamp in step 17 to secure it to the inlet on the cowling.

19. Perform a ground run on the engine. Shut down and inspect engine compartment for leaks.



SERVICE INSTRUCTION

SI0027 Rev B

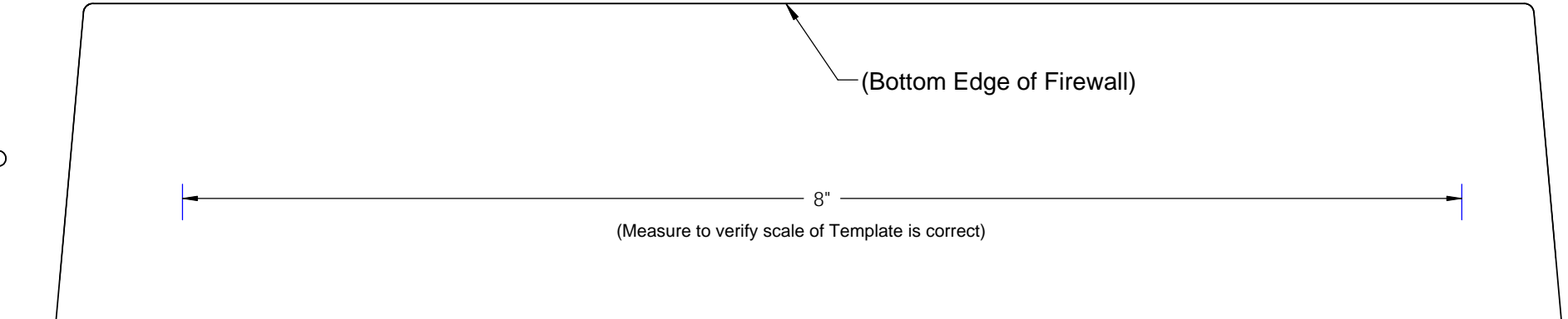
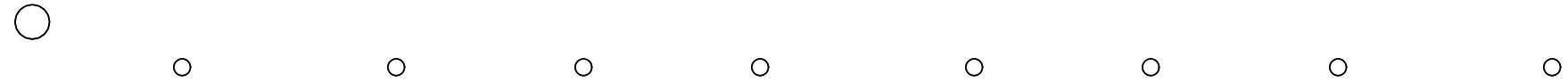
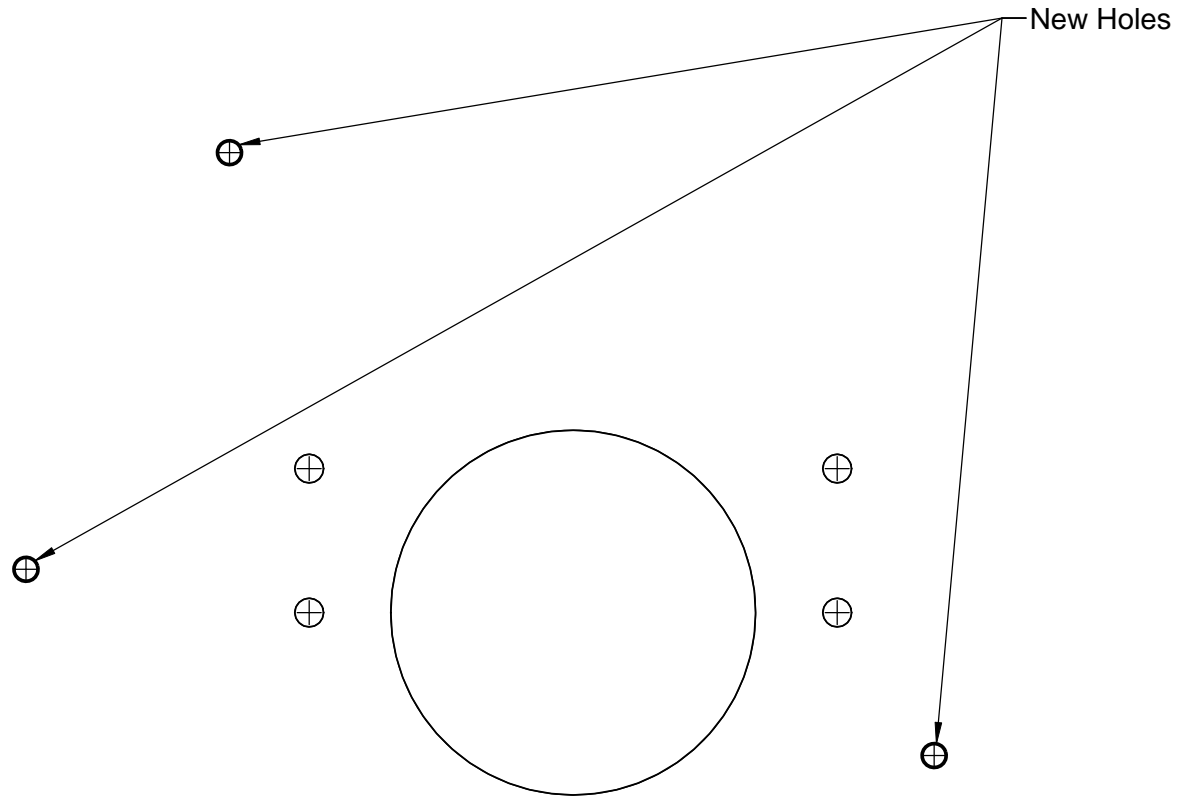
Page 7 of 7

FORMS AND DOCUMENTATION:

1. Make entry in aircraft log book indicating that cabin heat ducting has been modified in accordance with this Service Instruction.
2. Fill out Provided MRA and return copy to Cub Crafters, Inc.
Cub Crafters, Inc.
1918 S. 16th Avenue
Yakima, WA 98903
3. Use data below to update Weight and Balance Record in POH.

	Wt (lb)	Arm (in)	Moment
Original Cabin Heat (S/N 11-00093 – 11-00224)	-2.14	21.36	-45.64
Original Cabin Heat (S/N 11-00225 – 11-00226)	-2.28	20.43	-46.6
Retrofit Cabin Heat	2.72	20.03	54.39

Firewall Drill Template



Cowl Cut Template

1. Verify scale of template by measuring 6" reference line at bottom of sheet
2. Cut out cross hatched sections of sheet.
3. Place template against lower right section of cowl and align with edge of Air Filter Retainer recess in cowl.
4. Trace cut-out onto cowl.

