

Service Letter: 454

Date: March 23, 2020

Title: Improved Cabin Heat

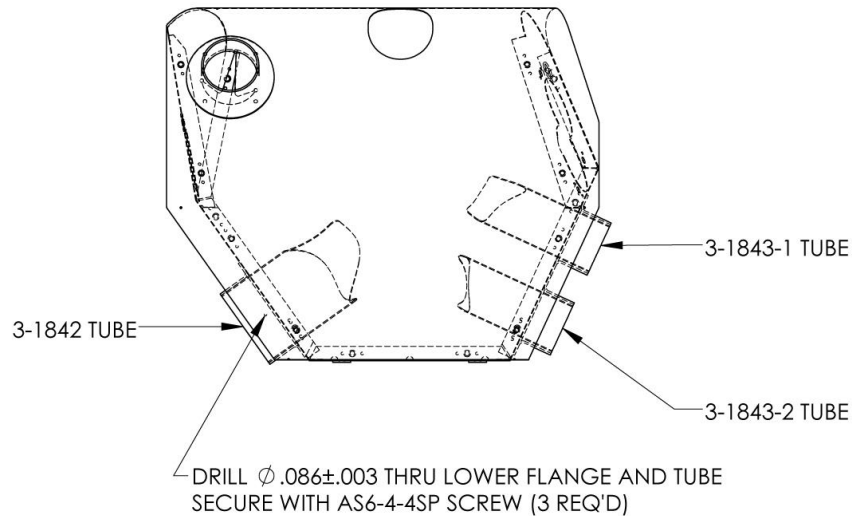
Models: 8KCAB (AEIO-390-A1B6 engine, serial numbers 1185-2020 and prior)  
8GCBC (IO-390-A1B6 engine, serial numbers 602-2020 and prior)

Description: Limited cabin heat has been reported during cold weather operation. Improved temperature can be accomplished in two stages. The addition of insert tubes and shroud seals contribute equally to increased output.

During 75% cruise the original configuration provides a 110°F temperature rise; the modified assembly provides a 150°F rise. Cabin heat is influenced by mixture setting (EGT) and airflow (less flow results in increased temperatures). Power setting of 55% to 65% are recommended for maximum cabin heat.

#### Addition of Insert Tubes:

1. Open left and right cowl doors (8 camlocks).
2. Remove cable ties securing landing light harness to lower cowl (2 ties, left side).
3. Remove lower cowl (15 screws).
4. Remove scat tubes from exhaust shroud (3 clamps).
5. Remove lower shroud screws (8 screws) to access interior of shroud.
6. Insert 3-1842, 3-1843-1, and 3-1843-2 tubes into flanges as shown in figure 1. Tubes to be snug in flanges and positioned ¼ inch away from the exhaust tubes (trim insert tubes for clearance as required). Drill  $\varnothing.098\pm.003$  hole thru flange and insert tubes (drill from bottom). Secure insert tubes in flange with #4 x ¼ PK screw (1 screw per tube).



**Figure 1, Insert Tubes**

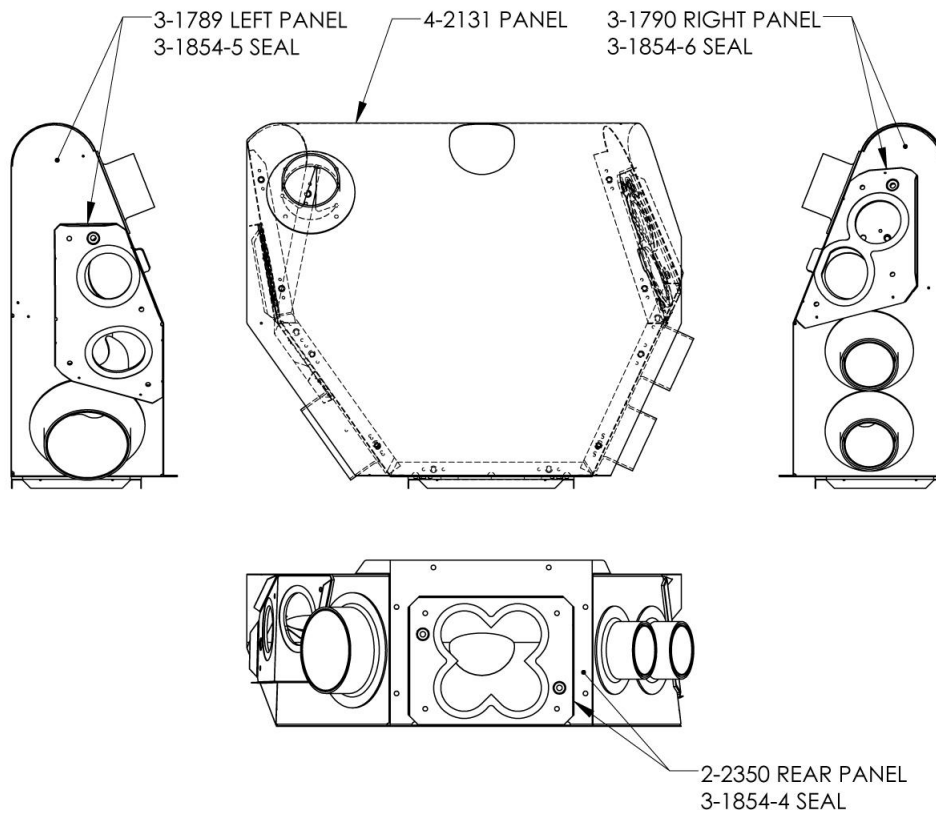
7. Reinstall lower shroud panel (8 screws) and scat tubes (3 clamps)
8. Reinstall lower cowl in accordance with AMM. Secure landing light wires with VUVT-06M or equivalent cable ties (2 each required). Close left and right side cowl door (8 camlocks).

**Table I: Parts Required for Insert Tubes**

Part Number	Description	Quantity
3-1842	Insert Tube - Front Heat	1
3-1843-1	Insert Tube - Rear Heat	1
3-1843-2	Insert Tube - Right Inlet	1
AS6-4-4SP	#4 x 1/4 PK Screw	3
VUVT-06M	Cable Tie	2

Addition of Shroud Seals and Insert Tubes:

1. Remove and disassemble exhaust and shroud per the AMM.
2. Replace 3-1791 shroud with revision A or later approved revision (component parts of the shroud are shown in figure 2 to aid with assembly). Discard original shroud components.



**Figure 2, Shroud Seals**

3. Assemble shroud and exhaust per service letter 451 and the AMM. Refer to figure 2 for the location of shroud components.
4. Install exhaust on engine per the AMM.
5. Install 3-1842, 3-1843-1, and 3-1843-2 insert tubes as described in prior section.

**Table II: Parts Required for Installation of Replacement Shroud**

Part Number	Description	Quantity
3-1791	Shroud Assembly (revision A or later)	1

Inspection of Insert Tubes and Seals: Inspect at every 100-hour or annual inspection

1. Inspect condition and security of shroud seals. It is acceptable for the Nomex seals to discolor; a gap of up to .063 inches between the seal and exhaust tube is also acceptable.
2. Remove lower shroud screws (8 screws) to access interior of shroud.
3. Remove scat tube from shroud flanges (3 clamps).
4. Inspect 3-1842, 3-1843-1, and 3-1843-2 tubes for condition and security (heat damage, cracking, looseness in flange, presence of #4 x 1/4 PK screw).
5. Reinstall lower shroud panel (8 screws) and scat tubes (3 clamps).
6. Inspect other exhaust and shroud components per the AMM and Service Letter 451.