

SERVICE BULLETIN



Service Bulletin No.: D42L-79-01 Rev. 3

Date Issued: 07 February 2012

Title: Installation of an External Oil Cooler Scoop

Page: 1 of 12

1. ATA Code: 7900

2. Effectivity: All DA42 aircraft with Transport Canada Civil Aviation (TCCA) STC SA09-54 or Federal Aviation Administration (FAA) STC SA02725NY installed.

3. General: This Service Bulletin gives instructions for the installation of an external oil cooler scoop on the lower cowlings of the DA42 L360 aircraft. Revision 3 adds a drain hole drilled through the NACA Scoop Assembly to permit collected water to drain.

4. Compliance: Compliance with this Service Bulletin is optional.

5. Approval: Engineering data referenced or contained in this Service Bulletin is approved as part of the STC design.

6. Labour: Approximately 9 hours will be required to accomplish this Service Bulletin.

This estimate is for direct labour performed by a technician and it does not include setup, planning, familiarization, cure time, part fabrication or tool acquisition.

7. Material:	Part Number	Description	Qty
	C61-7116-129-001	NACA Scoop Assembly	2
	SSD43SSBS	Rivet, Blind	10
	SSD44SSBS	Rivet, Blind (Optional)	10
	L285	Resin	A/R
	H286	Hardener	A/R
	DA40CPK	Paste Kit	A/R
	C61-7116-128-001	Winter Kit Assembly (Optional)	2
	212-12	CAMLOC Receptacle	4
	CCR244SS3-04	Rivet, Blind	8
	CCR244SS3-05	Rivet, Blind (Optional)	8
	06586	Marine 4000 Adhesive Sealant	A/R

The above materials can be ordered as Kit D42L-79-01.

8. Special Tools: Oil Cooler Scoop Template Tool C61-7116-104-105-11-01

- 9. References:**
- DA42 L360 Aircraft Maintenance Manual (AMM), Document No. D42L-AMM-001 (latest revision)
 - DA42 Series Airplane Maintenance Manual (AMM), Document No. 7.02.01 (latest revision)

10. Accomplishment Instructions:

NOTE: The instructions for the installation of the oil cooler scoop on the lower cowling of the LH engine are given. The instructions for the installation of the oil cooler scoop on the lower cowling of the RH engine are similar.

- 10.1 Remove the LH engine cowlings. Refer to AMM Document No. D42L-AMM-001 Chapter 71-10.

NOTE: The top engine cowling can be put in a safe location off the aircraft as the work required to be done will be on the lower engine cowling.

- 10.2 Put the lower cowling on a satisfactory work surface (reference Figure 1).



Figure 1 - Lower Cowling on Work Surface

- 10.3 Remove the three external vanes from the Oil Cooler NACA duct assembly by cutting and grinding. Make sure that the two outer vanes are trimmed flush with the surface of the cowl and that the middle vane is trimmed flush with the NACA duct ramp surface (reference Figures 2 and 3).

SERVICE BULLETIN



Service Bulletin No.: D42L-79-01 Rev. 3

Date Issued: 07 February 2012

Title: Installation of an External Oil Cooler Scoop

Page: 3 of 12



Figure 2 - NACA Duct Ramp Surface



Figure 3 - NACA Duct Ramp Surface

- 10.4 Hold the Oil Cooler Scoop Template Tool (P/N C61-7116-104-105-11-01) tightly against the surface of the lower cowling assembly. Align the cowling's upper rebate with the rebate in the Template Tool as shown in Figure 4.

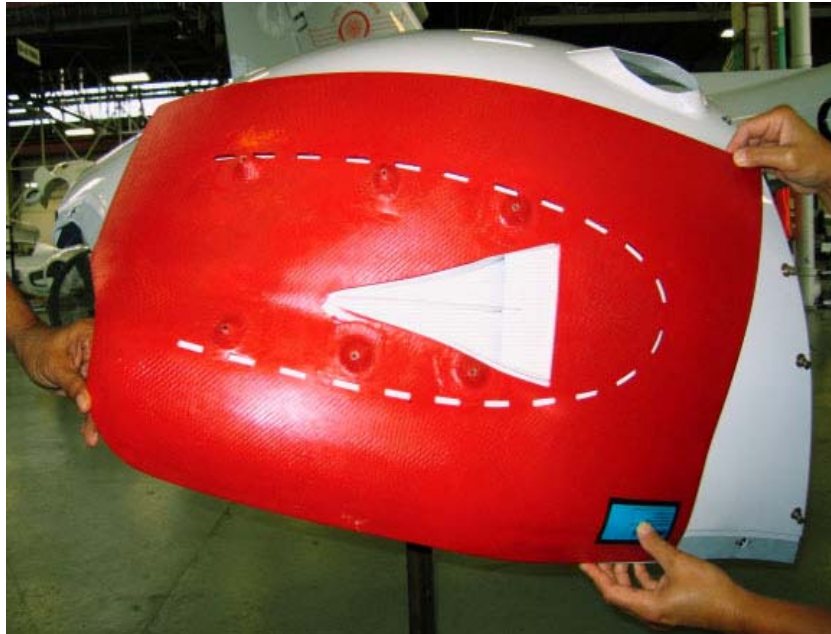


Figure 4 - Oil Cooler Scoop Template Tool

- 10.5 Mark out the NACA aft lip area for removal as indicated in Figure 5.

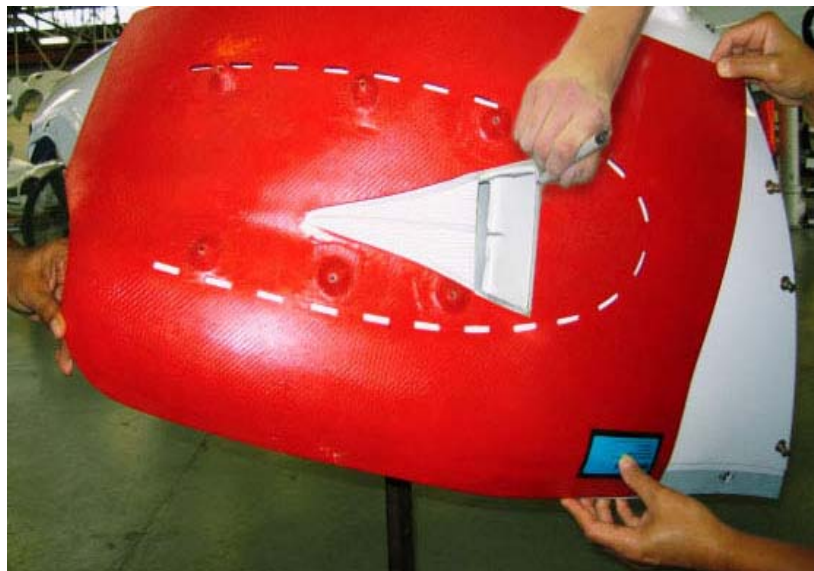


Figure 5 - Oil Cooler Scoop Template Tool

- 10.6 Use a small rotary grinder or equivalent to remove the NACA aft lip (reference Figures 6 and 7).



Figure 6 - Removal of the NACA Aft Lip



Figure 7 - Removal of the NACA Aft Lip

- 10.7 Remove the remaining aft lip structure. Make sure that the remaining structure is trimmed flush with the surface of the cowl (reference Figures 8 and 9).



Figure 8 - Trim Flush with the Surface of the Cowl



Figure 9 - Trim Flush with the Surface of the Cowl

- 10.8 Carry out instruction steps 10.1 through 10.7 for the RH engine lower cowling.

- 10.9 Prepare and paint the exposed composite surface. Refer to AMM Document No. 7.02.01 Chapter 51-20.
- 10.10 Install the modified LH engine lower cowling assembly on the aircraft.
- 10.11 Install the Oil Cooler Scoop Template Tool (P/N C61-7116-104-105-11-01) onto the lower cowling assembly. Align the cowling's upper rebate with the rebate in the Locating Tool.
- 10.12 Hold the Oil Cooler Scoop Template Tool tightly against the surface of the lower cowling and drill the six 3.2 mm (1/8 inch) holes defined by the drill bushings.
- 10.13 Hold the Oil Cooler Scoop Template Tool tightly against the surface of the lower cowling. Use a felt tip marker to mark the paint that needs to be removed from the cowling surface for bonding of the scoop.
- CAUTION:** WORK CAREFULLY TO REMOVE THE PAINT ONLY. DO NOT REMOVE OR DAMAGE THE UNDERLYING COMPOSITE MATERIAL.
- 10.14 Remove the paint within the lines. Make sure that there is sufficient paint removed so that the scoop's flange will bond completely to the exposed composite material.
- 10.15 Hold the NACA Scoop Assembly (P/N C61-7116-129-001) provided tightly in place within the removed paint lines and back drill the six 3.2 mm (1/8 inch) holes into the scoop flange. Use Cleco fasteners to hold the NACA Scoop Assembly tightly in place after each hole is drilled (reference Figure 10).

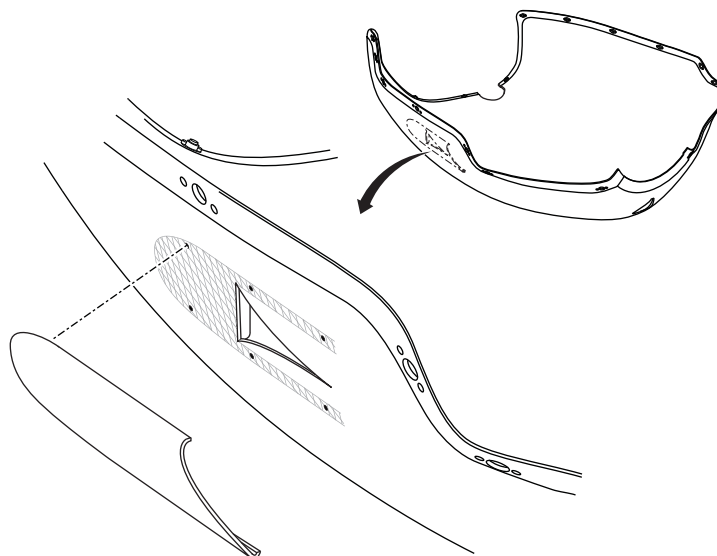


Figure 10 - Installation of NACA Scoop Assembly

10.16 With the NACA Scoop Assembly tightly in place, use a felt tip marker to mark the lowest point on the scoop where water would collect.

10.17 Remove the NACA Scoop Assembly.

10.18 Drill a 5.0 mm drain hole through the NACA Scoop Assembly at the marked lowest point (reference Figure 11).

NOTE: This will permit the water that collects in the NACA Scoop Assembly to drain.

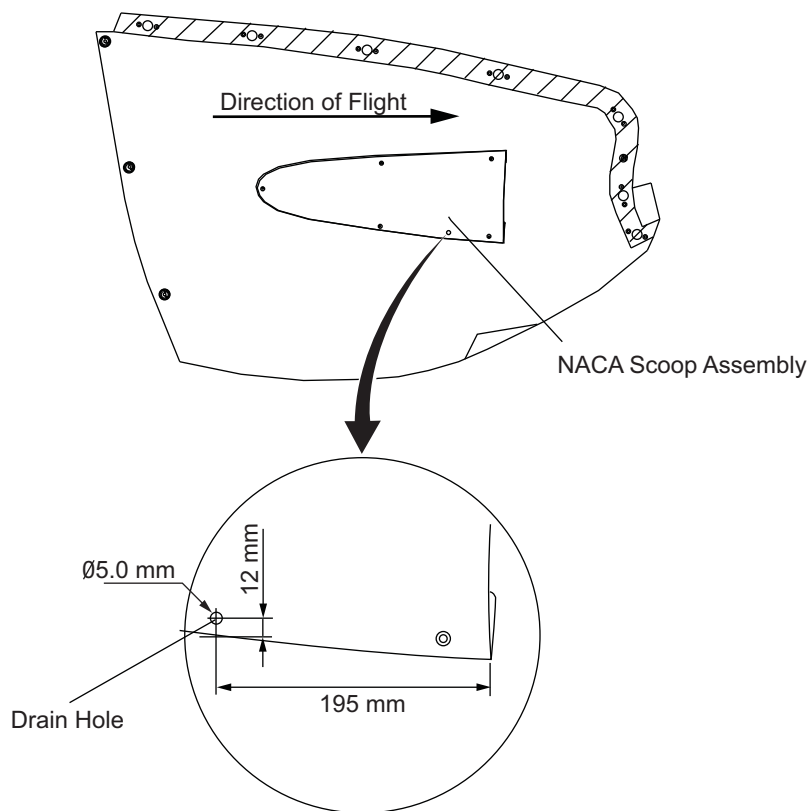


Figure 11 - Drain Hole in the NACA Scoop Assembly

10.19 Do a final fit of the NACA Scoop Assembly before bonding.

10.20 Prepare the lower cowling surface for bonding by sanding the bonding surface with 120 grit sandpaper.

CAUTION: DO NOT PERMIT THE ISOPROPYL ALCOHOL TO FLASH DRY ON THE BONDING SURFACE. WIPE THE ISOPROPYL ALCOHOL DRY IMMEDIATELY. THIS WILL PREVENT SURFACE CONTAMINATION ON THE BONDING SURFACE.

10.21 Wipe the sanded surface clean with isopropyl alcohol.

10.22 Prepare the NACA Scoop Assembly for bonding.

10.23 Remove the peel ply from the flange areas.

10.24 Do instruction steps 10.10 through 10.20 for the RH engine lower cowling.

NOTE: Bonding surface must remain clean until bonding operation is completed. Also bonding should be performed within two hours of bonding preparation.

10.25 Mix the resin. Refer to AMM Document No. 7.02.01 Chapter 51-30.

10.26 Mix the bonding paste. Refer to AMM Document No. 7.02.01 Chapter 51-20.

10.27 Brush the bonding surface on the LH and RH engine lower cowlings and the NACA Scoop Assembly flanges with a light coat of the mixed resin.

10.28 Apply mixed bonding paste to the NACA Scoop Assembly flanges and align the NACA Scoop Assembly within the Locating Tool.

NOTE: To prevent voids, apply the bonding paste so that it is peaked at the center of the flange.

NOTE: Use Cleco fasteners to secure the NACA Scoop Assembly onto the lower cowling.

10.29 Remove the Cleco fasteners, one at a time. Install blind rivets (P/N SSD43SSBS) provided in place of each Cleco fastener removed.

NOTE: Optional blind rivet P/N SSD44SSBS can be used in place of blind rivet P/N SSD43SSBS.

10.30 Clean the excess paste from around the bond (from both inside and outside of the NACA Scoop Assembly).

10.31 Do a pre-cure and post cure of the NACA Scoop Assembly. Refer to AMM Document No. 7.02.01 Chapter 51-20.

SERVICE BULLETIN



Service Bulletin No.: D42L-79-01 Rev. 3

Date Issued: 07 February 2012

Title: Installation of an External Oil Cooler Scoop

Page: 10 of 12

- 10.32 Apply line tape 2-3 mm on either side of the bond seam. Seal the bond seam between the NACA Scoop Assembly and the lower cowling with Marine 4000. Remove excess Marine 4000 and contour to finish.

Installation of the Winter Kit:

NOTE: Installation of the Winter Kit is optional.
Carry out steps 10.30 to 10.39 if the Winter Kit is installed.
If the Winter Kit is not installed, go to step 10.40.

- 10.33 Fit/align the Winter Kit Assembly against the top forward edge of the NACA Scoop Assembly (reference Figure 12). Outline the two CAMLOC wing stud holes onto the lower cowling.

NOTE: It will be necessary to remove the two CAMLOC wing studs from the Winter Kit assembly before locating the holes in the lower cowling.

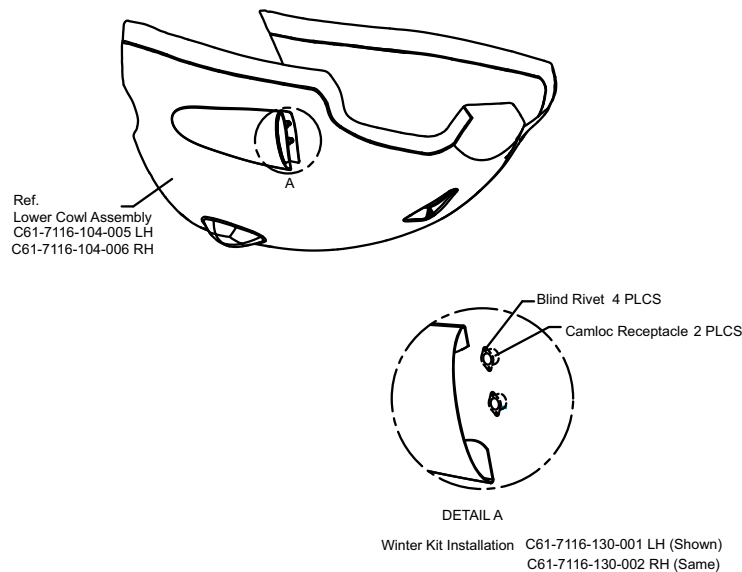


Figure 12 - Winter Kit Assembly Fit

SERVICE BULLETIN



Service Bulletin No.: D42L-79-01 Rev. 3

Date Issued: 07 February 2012

Title: Installation of an External Oil Cooler Scoop

Page: 11 of 12

- 10.34 Locate the center of each outlined hole on the engine lower cowling and drill a 3.2 mm (1/8 inch) pilot hole.
- 10.35 Drill the pilot holes to increase the size to 11 mm (11/64 inch).
- 10.36 Use the CAMLOC retaining stud to hold the CAMLOC receptacle tightly to the lower cowling. Put the rivet holes on the CAMLOC receptacle vertically.
- 10.37 Mark the rivet holes, remove the CAMLOC retaining stud and CAMLOC receptacle and drill two 2.4 mm (3/32 inch) holes at the marked locations.
- 10.38 Attach the CAMLOC receptacle to the lower cowling using Cleco fasteners.
- 10.39 Remove the Cleco fasteners, one at a time. Install blind rivets (P/N CCR244SS3-04) provided in place of each Cleco fastener, as they are removed.

NOTE: Optional blind rivet P/N CCR244SS3-05 can be used in place of blind rivet P/N CCR244SS3-04.
- 10.40 Test fit the Winter Kit Assembly.
- 10.41 Install the LH and RH top cowlings. Refer to AMM Document No. D42L-AMM-001, Chapter 71-10.
- 10.42 Insert Supplement S3 (Winterization Kit) into the Airplane Flight Manual (AFM) DA42L-AFM-002.
- 10.43 Make a log book entry that this Service Bulletin has been incorporated.

11. Weight and Balance: Make the following adjustments to the aircraft weight and balance.

ITEM	WEIGHT	ARM
LH/RH NACA SCOOP ASSEMBLY	+0.8 KG (+1.76 lbs)	1.6 m (62.96 inches)

Table 1 - Weight and Balance

12. Availability: Contact Diamond Aircraft Industries Inc.

13. Electrical Load Data: There is no impact to the electrical load.

14. Credit: None.

SERVICE BULLETIN



Service Bulletin No.: D42L-79-01 Rev. 3

Date Issued: 07 February 2012

Title: Installation of an External Oil Cooler Scoop

Page: 12 of 12

To obtain satisfactory results, procedures specified in this service bulletin must be accomplished in accordance with accepted methods and current government regulations. Diamond Aircraft Industries Inc. cannot be responsible for the quality of work performed in accomplishing the requirements of this service bulletin. Diamond Aircraft reserves the right to void continued warranty coverage in the area affected by this service bulletin if it is not incorporated.

If you no longer own the aircraft to which this service bulletin applies, please forward it to the current owner and send the name of the current owner to Diamond Aircraft Industries Inc. at the address below.

Diamond Aircraft Industries Inc. 1560 Crumlin Sideroad, London, Ontario, Canada N5V 1S2

Customer Support: Phone: (519) 457-4041 Fax: (519) 457-4045 E-mail: custsupp@diamondair.com

Technical Publications: Phone: (519) 457-4030 Ext. 3173 E-mail: techpubs@diamondair.com

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