A Textron Company

ALERT SERVICE BULLETIN 407-19-119

10 July 2019

MODEL AFFECTED: **407**

SUBJECT: **AIR COMM CORPORATION AIR CONDITIONER BLOWER MOTOR CONNECTOR**

HELICOPTERS AFFECTED: **Serial number 53000 through 53900, 53911 through 54805, 54807 through 54824, 54826, 54828 through 54832, 54834 through 54839, 54841 through 54845, and 54847.**

[Serial numbers 54806, 54825, 54827, 54833, 54840, 54846, 54848 and subsequent will have the intent of bulletin accomplished prior to delivery.]

COMPLIANCE: See attached Service Bulletin (SB) 407-021219 Revision NC dated February 12, 2019.

DESCRIPTION:

The purpose of this bulletin is to achieve complete distribution of the attached supplier bulletin to the owners/operators currently registered on the Bell technical publications distribution list.
Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

APPROVAL: See attached Service Bulletin (SB) 407-021219 Revision NC dated February 12, 2019.

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Approved for public release.

Service Bulletin 407-021219

Title: SB 407-021219; Bell 407 Air Conditioner Blower Motor Connector

Date: February 12, 2019

Applicability: Bell Helicopter Textron Canada Limited (Bell) Model 407 helicopters equipped with the Air Comm air conditioner systems with any of the following general assembly numbers: 407EC-201-1, 407EC-201-2, 407EC-201-3, 407EC-202-1, 407EC-202-2, 407EC-202-3, 407EC-203-2.

Reference: FAA / STC # SR00222DE, Bell Helicopter 407 Air Conditioning System.

Compliance: Recommended within 20 flight hours.

Supplied Parts:

S-6102EC-2/-4 aft evaporator blowers:
1x ES59112-13 2-pin 12-14 AWG plug assembly
1x ES59112-14 2-pin 12-14 AWG receptacle assembly
1x ES59112-15 4-pin 12-14 AWG plug assembly
1x ES59112-16 4-pin 12-14 AWG receptacle assembly
2x ES59112-37 sealing plug

S-6078EC-10 aft evaporator blower:
1x ES59112-15 4-pin 12-14 AWG plug assembly
1x ES59112-16 4-pin 12-14 AWG receptacle assembly
2x ES59112-37 sealing plug

S-7062EC-1/-2 condenser blowers:
1x ES59112-15 4-pin 12-14 AWG plug assembly
1x ES59112-16 4-pin 12-14 AWG receptacle assembly

Not Supplied: Deutsch HDT-48-00 Crimping tool or equivalent MIL-DTL-22520 Type 1 crimping tool with TH474 Turret
Screwdriver

Revision	Issue Date	Inserted by	Approved by	Description of Changes
NC	2/12/2019	CRP	MFK	Initial Release

A. Discussion

This Service Bulletin offers a guide for determining the connector types used on the aft evaporator blower and instructions for replacing Molex connectors with Deutsch connectors on the aft evaporator blower.

B. Weight & Balance

The weight change due to the installation of these parts would be negligible and no adjustment to the weight and balance of the aircraft is necessary.

C. Approval

The technical aspects of this Service Bulletin are based on FAA approved data.

D. Aft Evaporator Blower Procedure

To perform the aft evaporator blower procedure, follow all instructions in Section D.1.

1. Aft Evaporator Blower and Connector Identification

Locate the aft evaporator blower on the aircraft. Figure 1 shows the general aft evaporator blower location.

Determine if the installed aft evaporator blower is a S-6102EC-2/-4 or a S-6078EC-10. Figure 2 and Figure 3 show the visual differences between the two types of aft evaporator blowers. Figure 2 depicts a S-6102EC-2/-4, while Figure 3 depicts a S-6078EC-10. The aft evaporator blowers may also be identified with a placard showing the part number.

Determine if the aft evaporator blower has a Molex or Deutsch Connector. Figure 2 and Figure 3 identify the location of the connector on the aft evaporator blower. Figure 4 shows the visual differences between the two types of connectors. The left connector (white) depicts a 3-pin Molex connector, while the right connector (green) depicts a 4-pin Deutsch connector.

1. If the connector used is a Deutsch connector, no connector replacements are necessary.
2. If the connector used is a Molex connector, for replacement instructions:
    a. Proceed to Section D.2 if the aircraft has a S-6102EC-2/-4 blower.
    b. Proceed to Section D.3 if the aircraft has a S-6078EC-10 blower.
3. Mark on the aft evaporator blower using indelible ink “MODIFIED PER SB 407-021219”.

After all inspections are completed and any connectors have been replaced, mark in the aircraft logbook that SB 407-021219 has been completed.

2. S-6102EC-2/-4 Blower Connector Replacement Procedure

Perform the following steps to replace the Molex connectors with Deutsch connectors:

1. Remove the aft evaporator blower per the Instructions for Continued Airworthiness.
2. Follow the instructions in Section D.4 for replacing the following connectors (refer to Figure 2 for connector locations, Table 1 for pin orientation, and the Instructions for Continued Airworthiness for applicable wiring diagram):
    a. 3-wire connection
        i. Aircraft side: use ES59112-15 plug assembly and ES59112-37 sealing plug
        ii. Blower side: use ES59112-16 receptacle assembly and ES59112-37 sealing plug
    b. 2-wire connection
        i. Motor side: use ES59112-14 plug assembly
        ii. Resistor plate side: use ES59112-13 receptacle assembly
3. Install the aft evaporator blower in the aircraft per the Instructions for Continued Airworthiness.

Table 1: S-6102EC-2/-4 Connector Pin Reference

Molex	Deutsch	Pin Reference
3-wire Pin 1[1]	ES59112-15/-16 Pin 1	White lead from near side of resistor to low
3-wire Pin 2[1]	ES59112-15/-16 Pin 4	Red lead from far side of resistor to high
3-wire Pin 3[1]	ES59112-15/-16 Pin 3	Black lead from 2-wire connector to ground
2-wire Pin 1[1]	ES59112-13/-14 Pin 1	Orange lead from motor to black lead from resistor plate
2-wire Pin 2[1]	ES59112-13/-14 Pin 2	Black lead from motor to red lead from resistor plate

1: For purposes of this guide, pin numbering on a Molex connector starts from the side of the connector that is not peaked

3. S-6078EC-10 Blower Connector Replacement Procedure

Perform the following steps to replace the Molex connectors with Deutsch connectors:

1. Remove the aft evaporator blower per the Instructions for Continued Airworthiness.
2. Follow the instructions in Section D.4 for replacing the following connectors (refer to Figure 3 for connector location, Table 2 for pin orientation, and the Instructions for Continued Airworthiness for applicable wiring diagram):
    a. 3-wire connection
        i. Aircraft side: use ES59112-15 plug assembly
        ii. Blower side: use ES59112-16 receptacle assembly
3. Install the aft evaporator blower in the aircraft per the Instructions for Continued Airworthiness.

Table 2: S-6078EC-10 Connector Pin Reference

Molex	Deutsch	Pin Reference
3-wire Pin 1[1]	ES59112-15/-16 Pin 1	White lead from resistor to low
3-wire Pin 2[1]	ES59112-15/-16 Pin 4	Red lead from motor to high
3-wire Pin 3[1]	ES59112-15/-16 Pin 3	Black lead from motor to ground

1: For purposes of this guide, pin numbering on a Molex connector starts from the side of the connector that is not peaked

4. General Connector Replacement Procedure

Perform the following steps to replace an existing Molex connector with a supplied Deutsch connector:

1. Remove each contact from the Molex connector by inserting a screwdriver into the connector per Figure 5 to unlock to the contact.
2. Remove the contact from each wire.
3. Crimp each wire with the supplied contact using a Deutsch HDT-48-00 Crimping tool or equivalent MIL-DTL-22520 Type 1 crimping tool and a TH474 Turret.
4. Insert each contact into the supplied plug/receptacle per Figure 6.
5. Insert a ES59112-37 sealing plug into the plug/receptacle for any unused pins.
6. Insert the supplied wedge lock plug into the plug/receptacle per Figure 6.

E. Condenser Blower Procedure

To perform the condenser blower procedure, follow all instructions in Section E.1.

1. Condenser Blower and Connector Identification

Locate the condenser blower on the aircraft. Figure 1 shows the general condenser blower location.

Determine if the condenser blower has a Molex or Deutsch Connector. Figure 7 identifies the location of the connector on the condenser blower. Figure 4 shows the visual differences between the two types of connectors. The left connector (white) depicts a 3-pin Molex connector, while the right connector (green) depicts a 4-pin Deutsch connector.

1. If the connector used is a Deutsch connector, no connector replacements are necessary.
2. If the connector used is a Molex connector, for replacement instructions proceed to Section E.2.
3. Mark on the condenser blower using indelible ink “MODIFIED PER SB 407-021219”.

After all inspections are completed and any connectors have been replaced, mark in the aircraft logbook that SB 407-021219 has been completed.

2. S-7062EC-1/-2 Blower Connector Replacement Procedure

Perform the following steps to replace the Molex connectors with Deutsch connectors:

1. Remove the condenser blower per the Instructions for Continued Airworthiness.
2. Follow the instructions in Section D.4 for replacing the following connectors (refer to Figure 7 for connector locations, Table 3 for pin orientation, and the Instructions for Continued Airworthiness for applicable wiring diagram):
    a. 4-wire connection
        i. Aircraft side: use ES59112-15 plug assembly
        ii. Blower side: use ES59112-16 receptacle assembly
3. Install the condenser blower in the aircraft per the Instructions for Continued Airworthiness.

Table 3: S-7062EC-1/-2 Connector Pin Reference

Molex	Deutsch	Pin Reference
4-wire Pin 1[1]	ES59112-15/-16 Pin 1	White or yellow lead from actuator to relay #6
4-wire Pin 2[1]	ES59112-15/-16 Pin 2	Red lead from actuator to relay #3
4-wire Pin 3[1]	ES59112-15/-16 Pin 3	Blue lead from blower motor to relay #4
4-wire Pin 4[1]	ES59112-15/-16 Pin 4	Black lead from blower motor to ground

1: For purposes of this guide, pin numbering on a Molex connector starts from the side of the connector that is not peaked

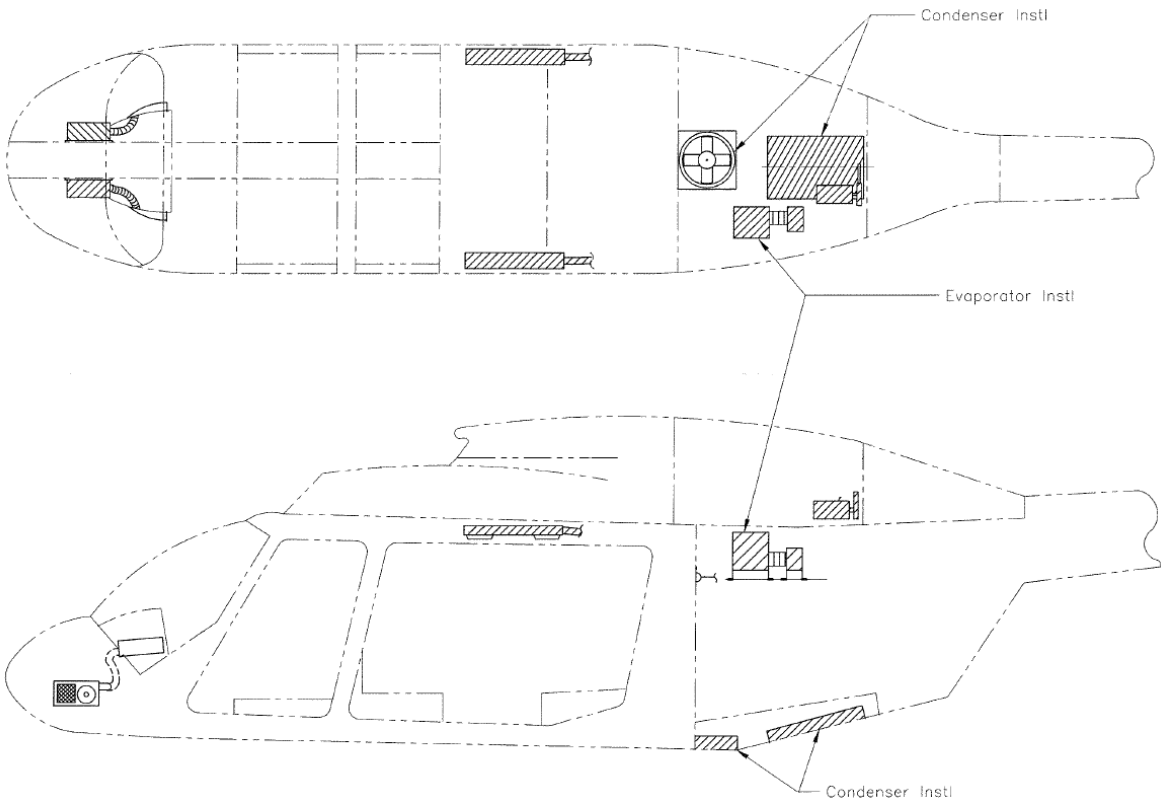

Figure 1: Aft Evaporator/Condenser Blower Assembly Locations

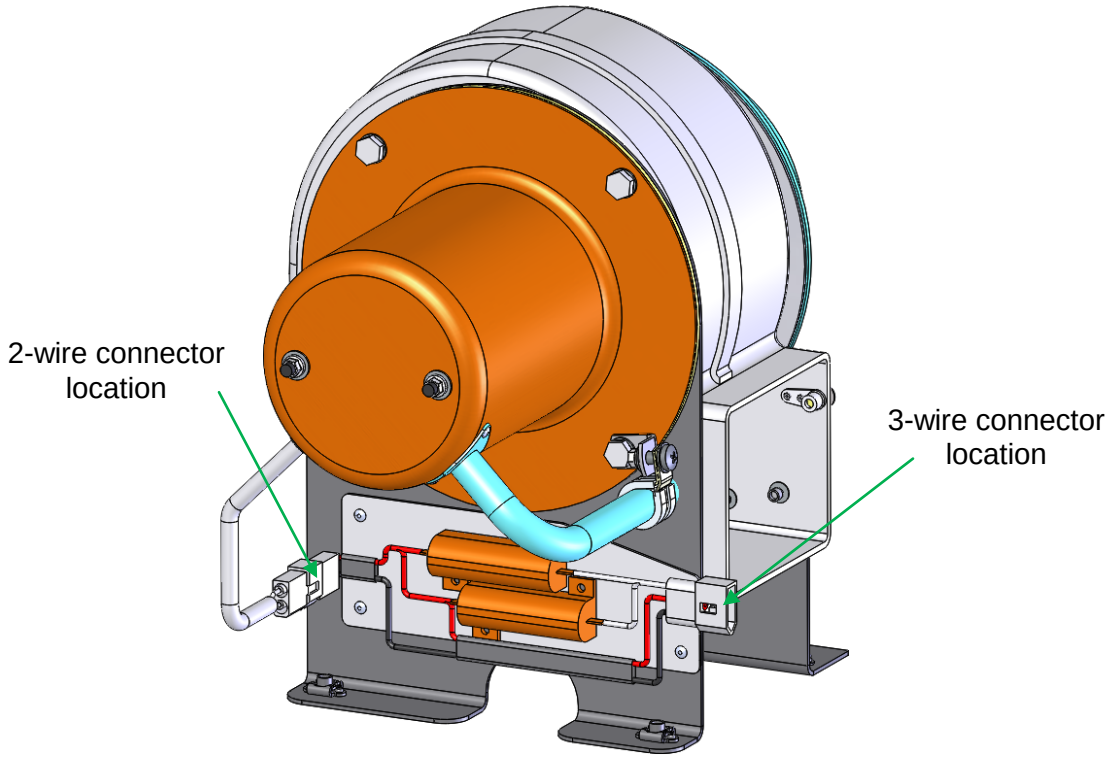

Figure 2: S-6102EC-2/-4 Aft Evaporator Blower

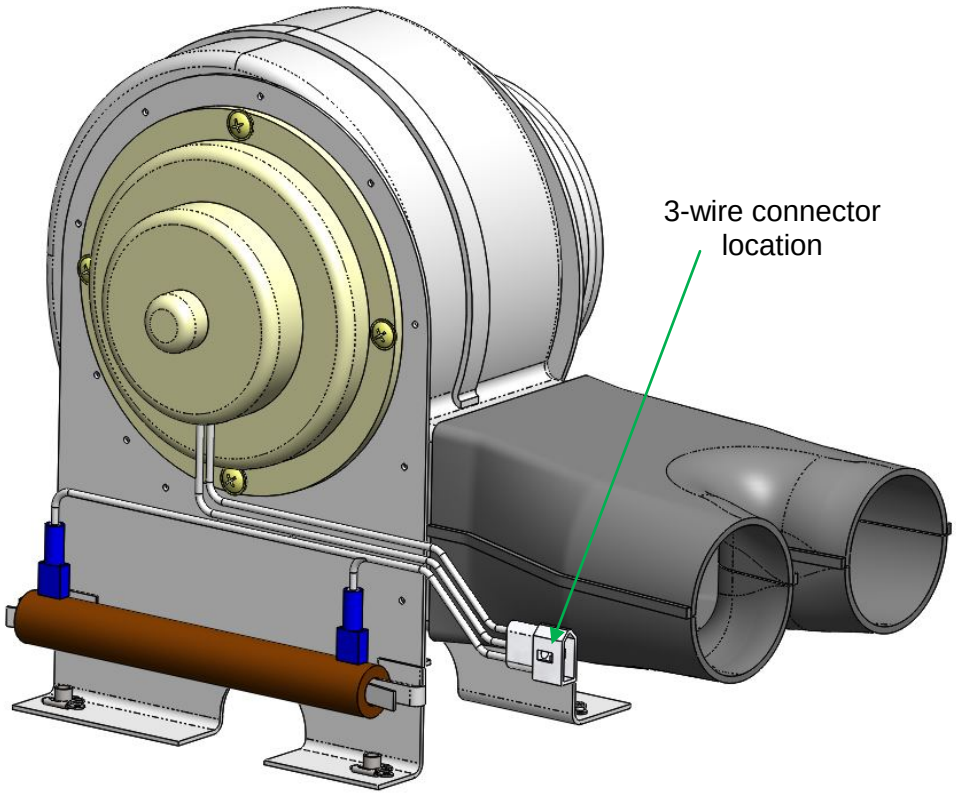

Figure 3: S-6078EC-10 Aft Evaporator Blower

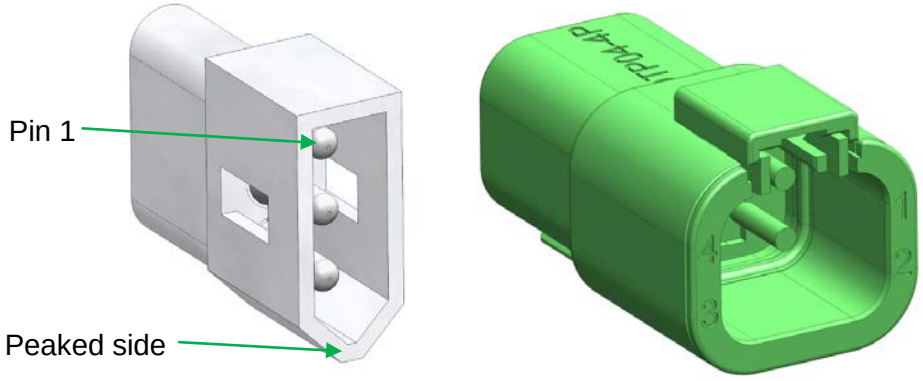

Figure 4: Connector Types

Figure 5: Molex pin removal

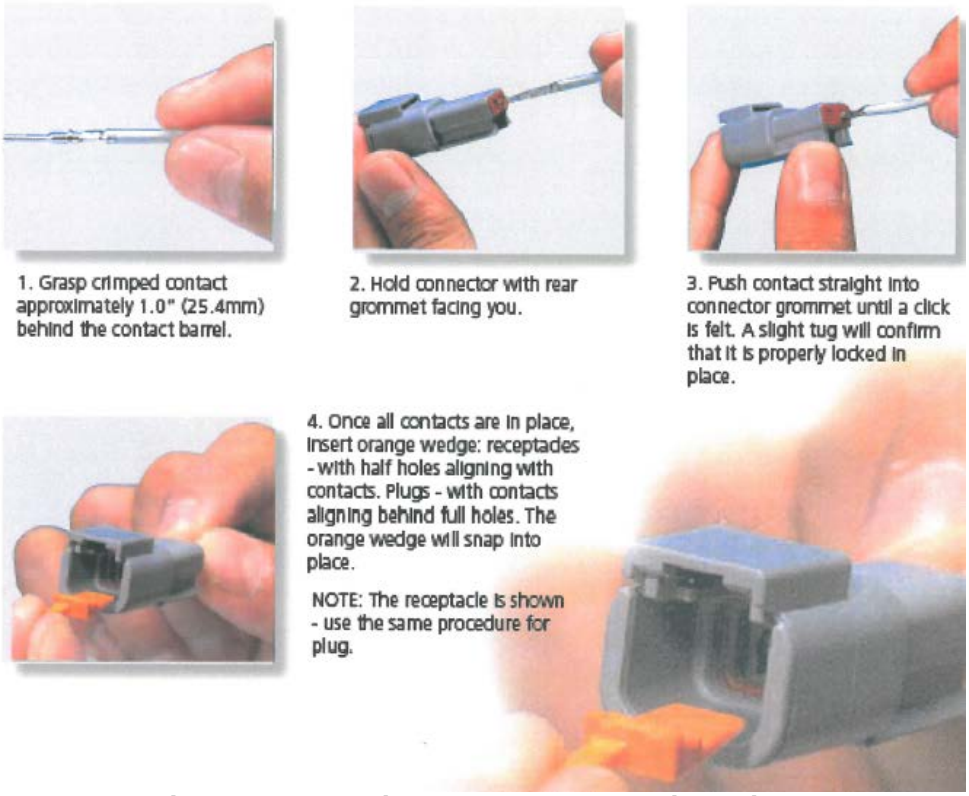

Figure 6: Deutsch connector contact insertion

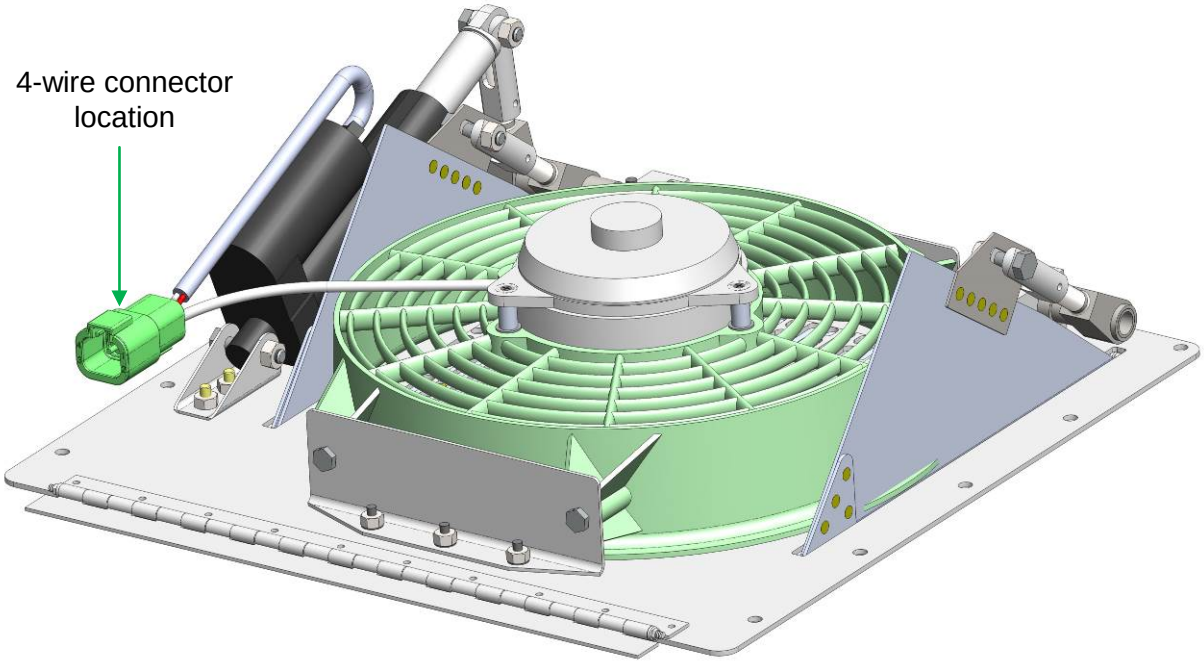

Figure 7: S-7062EC-1/-2 Condenser Blower