

Service Letter

Subject: Bell 407 Air Conditioner Blower Motor Connector Upgrade.

Date: March 8, 2016

Applicability: Bell Helicopter model 407 Equipped with the Air Comm Corporation 407EC-201, -202, or -203 air conditioner systems

Reference: ACC Service Bulletin SB 407-110414

Discussion:

This Service Letter describes the actions necessary to change the connectors on the air conditioning aft evaporator blower and condenser blower motors regarding the potential issue described in the referenced service bulletin. Note that per SB 407-110414 it is only necessary to change connectors showing indications of an overheated condition although the instructions in this letter provide the information to change all potentially affected connectors.


Approval:

The resultant alterations described in this document have been shown to comply with the applicable Federal Aviation Regulations and are FAA approved.

Weight & Balance:

There is no change in weight and/or balance due to this alteration.

Revision History:

Revision	Issue Date	Inserted By	Approved	Description of Changes
N/C	Nov 11, 2014	JMB	MJK	Initial Release
A	Jan 7, 2015	JMB	MJK	Corrected pin p/n; item 6 in table pg 2 was 03-09-2100 (invalid no.)
B	Feb 9, 2016	JMB	BD	Installation instruct pg 3: corrected crimp tool p/n & description
C	Mar 10, 2016	JMB		Changed instructions on page 4 that wire terminations are to be crimped and soldered.

Bill of Materials:
Aft Evaporator parts to be replaced, 407EC-202 & 407EC-203 kits

Item	Part Number	Description	Quantity
1	03-09-1032	Receptacle (3 pin on main harness)	1
2	02-09-1103	Socket (in item 1 receptacle)	3
3	03-09-2032	Plug (mates w/ item 1 receptacle)	1
4	02-09-2103	Pin (in item 3 plug)	3
5	03-09-2022	Plug (2 pin blower harness)	1
6	02-09-2103	Pin (in item 5 plug)	2
7	03-09-1022	Receptacle (mates w/ item 5 plug)	1
8	02-09-1104	Socket (in item 7 receptacle)	2

Aft Evaporator parts to be replaced, 407EC-620-2 kits:

Item	Part Number	Description	Quantity
1	03-09-2032	Plug (mates w/ item 3 receptacle)	1
2	02-09-2103	Pin (in item 1 plug)	3
3	03-09-1032	Receptacle (on main harness)	1
4	02-09-1103	Socket (in item 3 receptacle)	3

Condenser parts to be replaced:

Item	Part Number	Description	Quantity
1	03-09-2042	Plug (mates w/ item 3 receptacle)	1
2	02-09-2103	Pin (in item 1 plug)	4
3	03-09-1042	Receptacle (on main harness)	1
4	02-09-1103	Socket (in item 3 receptacle)	4

1.0 Rework Instructions

1.1 Aft Evaporator:

Removal:

CAUTION

Disconnect the aircraft battery and external power prior to starting work.

1. Access the aft evaporator assembly, located on the left side above the aft baggage compartment.
2. Locate the 3 pin connector near the resistors on the evaporator (see Figure 1) and mark the white wires "Red" and "Black" as appropriate per figure 2. It may be necessary to remove a portion of the heat shrink covering on the harness.
3. For the 407EC-202 and 407EC-203 kits (with the blower shown in figure 1) cut the wires on the back side of the 4 connectors (2 connector sets) shown in Figure 1. Remove minimal wire length. Remove and discard the connectors w/pins & sockets. For the 407EC-620-2 kits (with the high output blower shown in Figures 3 & 4) remove and discard the 3 pin connector set.

Installation:

Install pins, sockets, plugs, and receptacles onto free ends of wires.

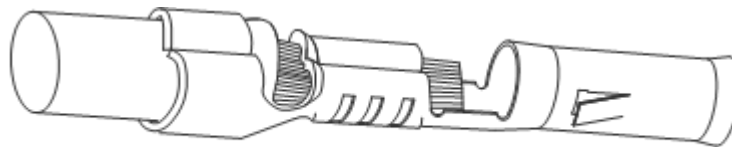
Crimp Molex pins using Molex Corporation Tool #0638111000 (Available thru Molex USA 1-800-786-6539) or equivalent wire terminal crimping tool for Molex 1189, 1190 series terminals (2.36mm / .093" dia).

The Conductor Crimp should not have excessive extrusions (flashing)

The insulation crimp (strain relief) should grip the insulation without cutting through it.

Wearing leather work gloves, perform non-destructive pull test. Wire should not dislodge from conductor crimp under normal hand pressure. (Approx. 10lbs.)

Finished crimp should resemble drawing below.



Post-rework Inspection

After completing 10 flight hours re-inspect the connectors to verify the integrity of the crimps.

1.2 Condenser:

Removal:

CAUTION

Disconnect the aircraft battery and external power prior to starting work.

1. Access the condenser assembly, located below the aft cargo compartment. See Figure 5.
2. Locate the 4 pin connector on the blower harness.
3. Identify the wires and remove both the plug and receptacle.

Installation:

Install the supplied pins, sockets, plugs, and receptacles onto free ends of wires.

Because of the 12 ga. wires used on this blower connector the terminals are to be crimped and soldered.

Post-rework Inspection

After completing 10 flight hours re-inspect the connectors to verify the integrity of the crimps.

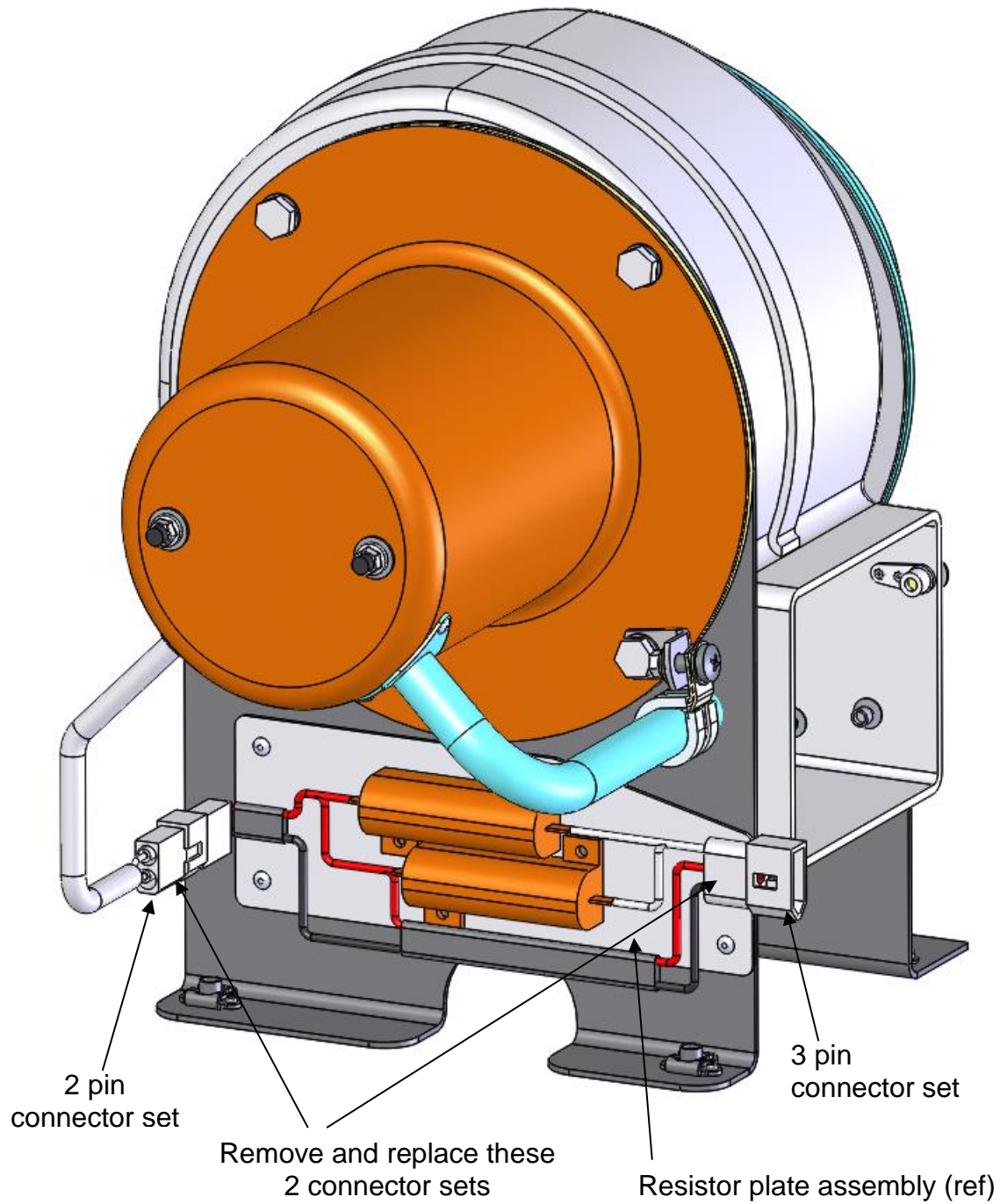


Figure 1 Blower Assembly S-6102EC-4 used in the 407EC-202-1,-2,-3 and 407EC-203-2 AC kits

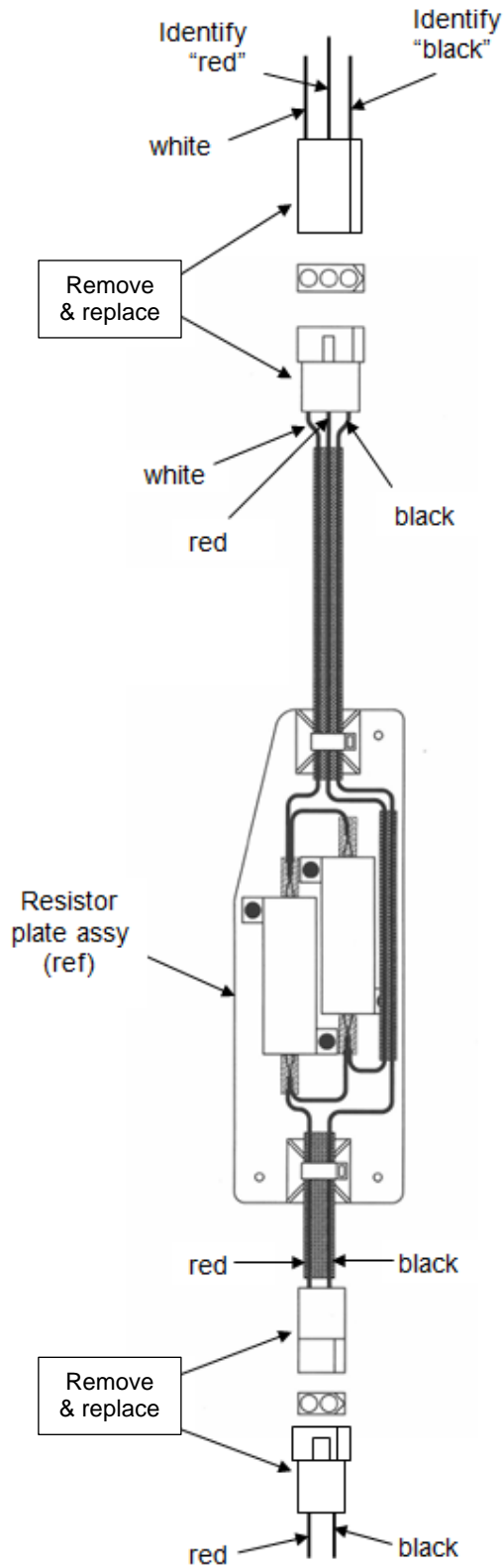
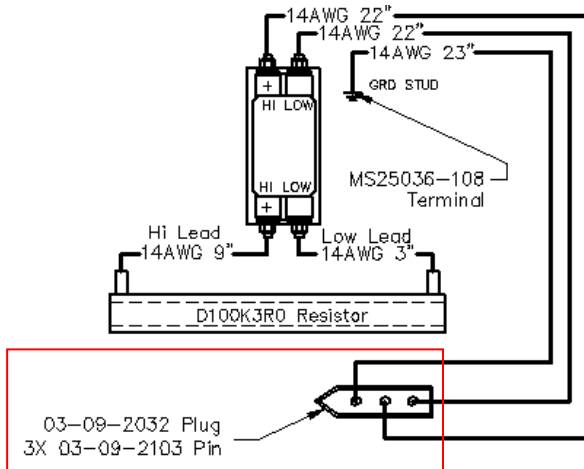


Figure 2 Resistor Plate Assembly



Wiring Schematic

Figure 3 Blower Assembly wiring schematic

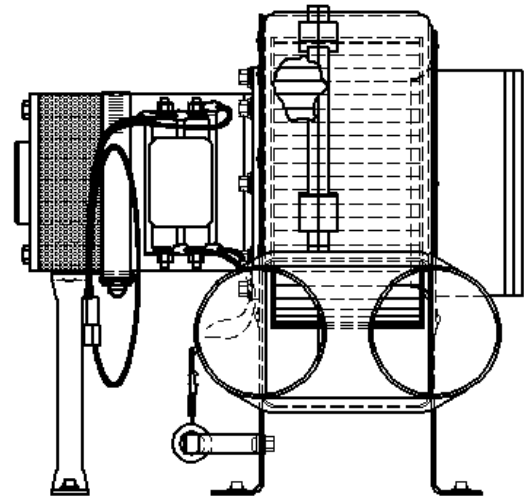
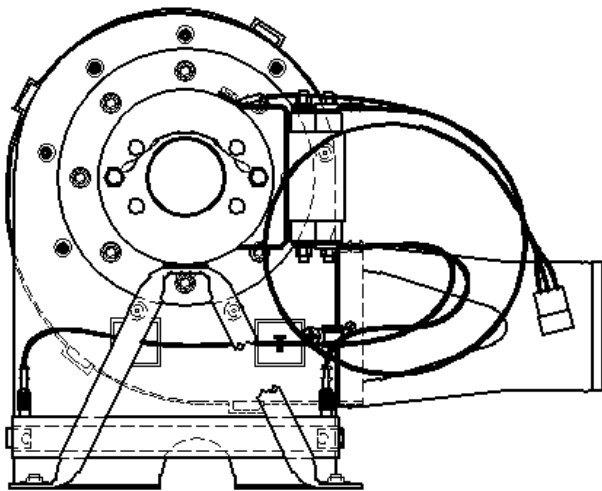
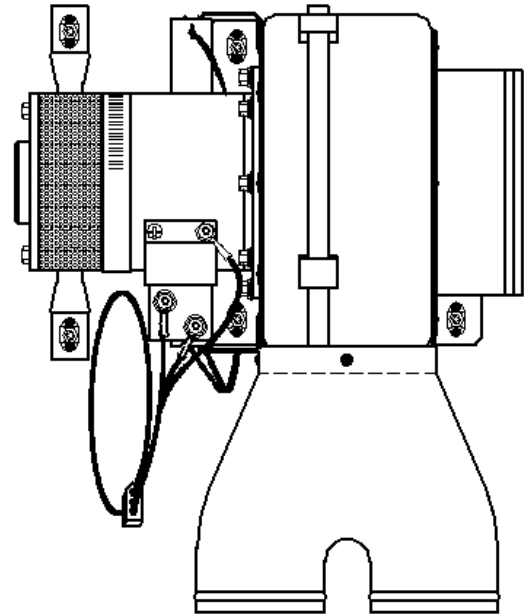


Figure 4 Blower Assembly S-6078EC-15 used in 407EC-620-2 AC kits

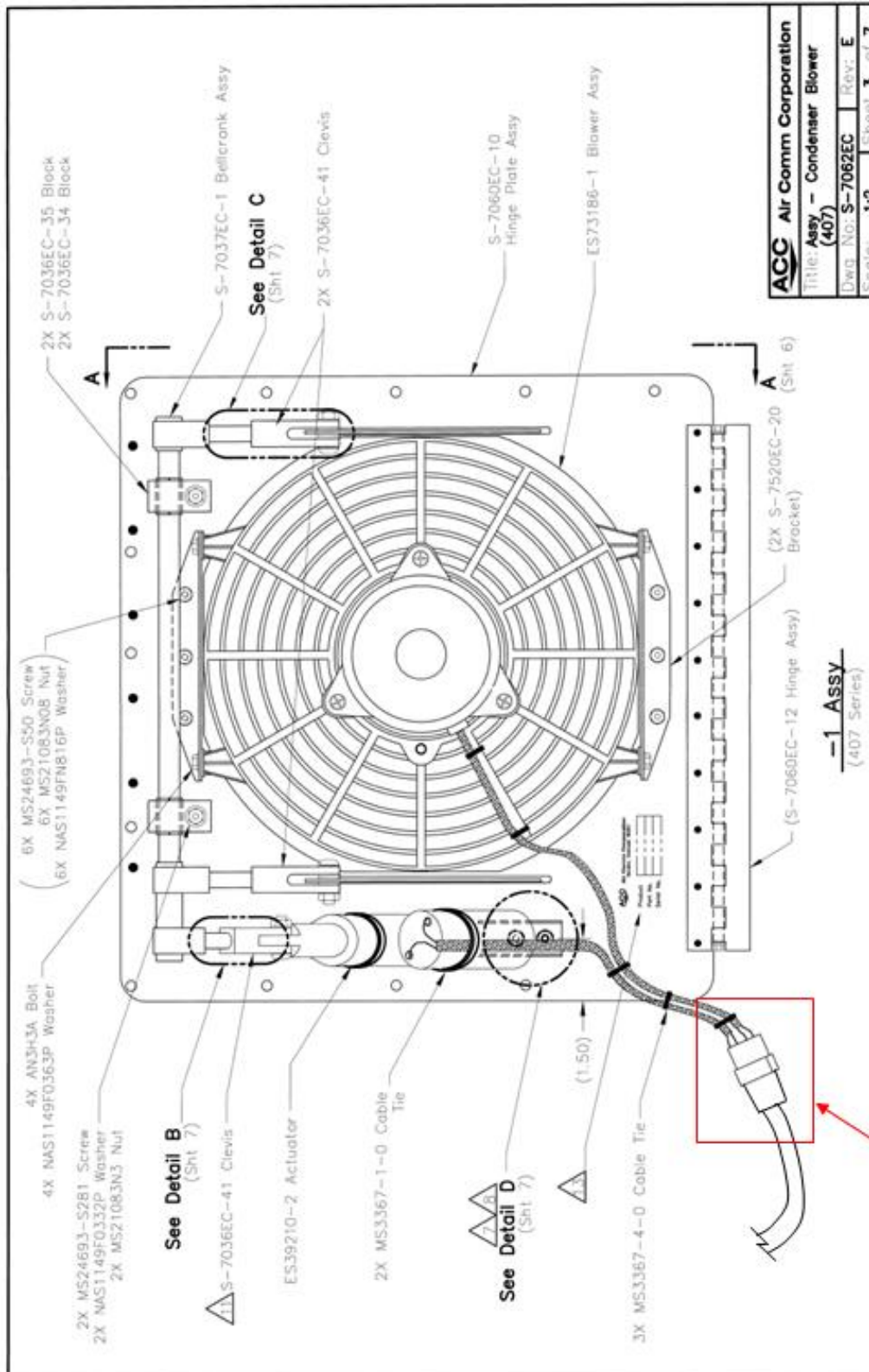


Figure 5. S-7062EC -1, -2 Blower Assembly
Used on 407EC-702, -704 Condenser Assembly

Remove & replace per instructions