

**Service Kit**

**FAA-DER APPROVED**

**Subject:** Conversion of the Air Comm Corporation 407EC-202-1 Single LH Fwd Evap or 407EC-202-3 Single RH Fwd Evap Air Conditioning System to 407EC-202-2 Dual Fwd Evap Air Conditioning System.

**Date:** August 21, 2006

**App:** \_\_\_\_\_

**Applicability:** All Bell Model 407 Helicopters equipped with the ACC 407EC-202-1 or -3 Air Conditioning System (with Torq-Lok)

**Reference:** 407EC-502-1/-2 Plumbing Installation Drawing.  
407EC-802-1/-2 Electrical Install Drawing.  
407EC-602-1/-2 Installation – Single Fwd Evap.  
407EC-614-1 Installation – Dual Fwd Evap.  
Air Conditioner Service Manual 407EC-200M-2.

**Purpose:** This Service Kit allows the owner/operator to modify their ACC 202-1 or 202-3 system to a 202-2 system when greater cooling capacity is desired.

**Discussion:** This kit is intended to provide the necessary components and instructions to modify a Bell 407 with an existing ACC 407EC-202-1 or -3 (Single Fwd Evaporator) air conditioning system to a 407EC-202-2 (Dual Fwd Evaporator) system. The Bill of Materials is broken down into two lists. One for operators wanting to install a Right Hand Forward Evaporator, and one for operators wanting to install a Left Hand forward Evaporator. Upon completion of this Service Kit the affected aircraft will comply with ACC Drawing 407EC-202-2 which is approved under STC SR00222DE.

**Bill of Material:**

**The BOM has been divided into two sections.**

**-1:** For the conversion of Helicopters with 407EC-202-1 LH Fwd Evap, (Torq-Lok) to 407EC-202-2 Dual Fwd Evaps (Torq-Lok)

**-2:** For the conversion of Helicopters with 407EC-202-2 RH Fwd Evap, (Torq-Lok) to 407EC-202-2 Dual Fwd Evaps (Torq-Lok)

**Instructions:**

1. Before starting the installation of this kit, ensure that you have all of the parts that are listed in the correct Bill of Materials. Make sure that all of the documents listed in the "**Reference**" section are on hand.
2. Install the forward Evaporator Assembly by following instructions contained on drawing 407EC-602.
3. Install ES72210-10 Adapter on existing Fwd Evaporator.
4. It will be necessary to evacuate (discharge) the refrigerant from the system to change the plumbing to the forward evaporator assemblies. Instructions for servicing of the system are found in Chapter 5 of the AIR CONDITIONER SERVICE MANUAL 407EC-200M-2. Remove the two hoses from the existing Fwd Evaporator and install S-5016EC-1/-2 Y-Fittings between the two Fwd Evaporators. Connect the two hoses S-5056EC-3/-4 between the Y-Fittings and the S-5018EC-T4/T5 Tubes.

**CAUTION**

Refrigerant servicing should only be performed by qualified personnel!

5. When connecting the refrigeration lines, use new O-Rings lubricated with Polyester Oil. Torque the refrigerant line connections to 30 – 35 inch lbs (3.4-4.0 Nm) for the #6 fitting, and 40 – 45 inch lbs (4.6-5.1 Nm) for the #8 fitting.

**CAUTION**

Always use a back up wrench when removing, or installing refrigerant line fittings.

**NOTE**

An electronic leak detector should be used any time a component is replaced or the system has been opened, to insure trouble free operation of the air conditioner system.

6. Install S-2514EC-1 Terminal on BHT P/N 407-030-202 bracket at STA. 21.50 as shown on drawing 407EC-802 Sheet 7.
7. Wire both Fwd Evaporators per drawing 407EC-802 Sheet 10. Find existing wires (ACCA2D12 & ACCA3D12) from Fwd Evaporator to relay panel. Run these two wires from S-2514EC-8 Relay Panel to TB3, cut to length and install one 6C109 terminal on each wire. Install new wires (ACCA1G12, ACCA1F12, ACCA2G12 & ACCA2F12 from TB3 to Fwd Evaporators. Install Pins (03-09-1103) and Receptacle (02-09-1032) to connect to Fwd Evaporators. Make connections at TB3 per drawing 407EC-802 Sheet 10.
8. Replace 20 AMP Circuit Breaker in S-2514EC-3 Circuit Breaker Panel with the 25 AMP Circuit Breaker supplied in the Kit.
9. Perform a function test of both Fwd Evaporator Blowers and correct any discrepancies.
10. Service system with R34a according to Chapter 5 of the AIR CONDITIONER SERVICE MANUAL 407EC-200M-2.

**NOTE**

An electronic leak detector should be used any time a component is replaced or the system has been opened, to insure trouble free operation of the air conditioner system.

11. Record the installation of Service Kit, SK-407EC-502-1, in the aircraft permanent Log Book.

**Section -1**

**-1: Bill of Materials: for Helicopters presently equipped with  
407EC-202-1 (LH Fwd Evap only)**

Item	Part Number	Description	Qty
1.	S-5016EC-1	Y-Fitting (#6)	1
2.	S-5016EC-2	Y-Fitting (#8)	1
3.	S-5056EC-3	Hose (#6)	1
4.	S-5056EC-4	Hose (#8)	1
5.	S-2514EC-1	Terminal Assy	1
6.	S-6116EC-4	Evaporator (RH)(Torq-Lok)	1
7.	S-6066EC-5	Drain Tube	1
8.	S-6066EC-8	Drain Tube	1
9.	S-6066EC-9	Drain Tube	1
10.	S-6530EC-2	Support (RH)	1
11.	S-6530EC-6	Splice (RH)	1
12.	S-6530EC-8	Support (RH)	1
13.	S-6530EC-9	Baffle	1
14.	S-6530EC-12	T Bracket (RH)	1
15.	S-6530EC-14	Doubler	1
16.	S-6530EC-16	Z Bracket (RH)	1
17.	S-6530EC-18	Clip (RH)	1
18.	S-6530EC-30	Template	1
19.	S-6534EC-1	Bracket	2
20.	S-6534EC-2	Bracket	1
21.	S-6534EC-3	Bracket	1
22.	S-6534EC-4	Bracket	1
23.	S-9280EC-3	Angle (Alt: MS9592-24)	2
24.	ES32070-1	Plug	1
25.	ES39350-4	1/4 " Dia Spiral Wrap	10"
26.	ES39350-2	1/8" Dia Spiral Wrap	6"
27.	ES44012-2	O-Ring (Face Seal, #6~Black)(2-012-N1173)	3
28.	ES44012-3	O-Ring (Face Seal, #8~Black)(2-014-N1173)	3
29.	ES48150-1	Drain Hose, Ø3/8"	20"
30.	ES49008-1	Tee	2
31.	ES72210-10	Adapter	1
32.	ES94002-1	Polyester Oil (Texaco or Eq.)	8 oz

**-1: Bill of Materials: for Helicopters presently equipped with  
407EC-202-1 (LH Fwd Evap only)**

Item	Part Number	Description	Qty
33.	AN3-4	Bolt	4
34.	AN3-4A	Bolt	5
35.	AN3-5A	Bolt	2
36.	A3135-017-24A	Washer	16
37.	AN364-632	Nut (Alt: MS21042-L06)	16
38.	AN525-832-R8	Screw (Alt: MS27039-08-08)	1
39.	AN525-10R8	Screw (Alt: MS27039-1-08)	6
40.	AN525-10R10	Screw (Alt: MS27039-1-10)	2
41.	AN525-10R12	Screw (Alt: MS27039-1-12)	1
42.	AN960-6L	Washer (Alt: NAS1149FN632P)	16
43.	AN960-10L	Washer (Alt: NAS1149F0332P)	10
44.	AN960JD8	Washer (Alt: NAS1149DN632K)	2
45.	AN960JD10L	Washer (Alt: NAS1149D.316K)	12
46.	MS21266-1N	Grommet	24"
47.	MS14105-25	Circuit Breaker (Alt: 2TC2-25)	1
48.	MS20426AD3-3	Rivet	4
49.	MS20426AD3-4	Rivet	16
50.	MS20426AD4-4	Rivet	8
51.	MS20470AD4-4	Rivet	34
52.	MS20470AD4-5	Rivet	8
53.	MS21042L3	Nut	8
54.	MS21042L08	Nut	1
55.	MS21059L3	Nutplate	5
56.	MS21071L3	Nutplate (Alt: MS21061L3)	2
57.	MS21075L3	Nutplate	2
58.	MS21919WCH2	Clamp (Alt:30-185-2)	2
59.	MS21919WCH3	Clamp	1
60.	MS21919WCH6	Clamp	1
61.	MS21919WCH8	Clamp	1
62.	MS24693-S50	Screw	2
63.	MS24693-S52	Screw	2
64.	MS27039-1-07	Screw	4

**-1: Bill of Materials: for Helicopters presently equipped with  
407EC-202-1 (LH Fwd Evap only)**

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty</b>
65.	MS35190-240	Screw	16
66.	MS35489-11	Grommet	3
67.	M22759/41-12-9	Wire	144"
68.	NAS1097AD4-5	Rivet	4
69.	CT7B	Tywrap	5
70.	CT11B	Tywrap	4
71.	CTM-2MB	Mount (Hi line)	4
72.	03-09-1032	Receptacle	2
73.	02-09-1103	Pin	6
74.	6C109	Terminal	6

**Section -2**

**-2: Bill of Materials: for Helicopters presently equipped with  
407EC-202-2 (RH Fwd Evap only)**

Item	Part Number	Description	Qty
1.	S-5016EC-1	Y-Fitting (#6)	1
2.	S-5016EC-2	Y-Fitting (#8)	1
3.	S-5056EC-3	Hose (#6)	1
4.	S-5056EC-4	Hose (#8)	1
5.	S-2514EC-1	Terminal Assy	1
6.	S-6116EC-3	Evaporator (LH)(Torq-Lok)	1
7.	S-6066EC-5	Drain Tube	1
8.	S-6066EC-8	Drain Tube	1
9.	S-6066EC-9	Drain Tube	1
10.	S-6530EC-1	Support (LH)	1
11.	S-6530EC-5	Splice (LH)	1
12.	S-6530EC-31	Support Assy, Aft (LH)	1
13.	S-6530EC-9	Baffle	1
14.	S-6530EC-13	T Bracket (LH)	1
15.	S-6530EC-15	Z Bracket (LH)	1
16.	S-6530EC-19	Clip (LH)	1
17.	S-6530EC-30	Template	1
18.	S-6534EC-1	Bracket	1
19.	S-6534EC-2	Bracket	2
20.	S-6534EC-3	Bracket	1
21.	S-9280EC-3	Angle (Alt: MS9592-24)	2
22.	ES32070-1	Plug	1
23.	ES39350-4	1/4 " Dia Spiral Wrap	10 "
24.	ES39350-2	1/8" Dia Spiral Wrap	6"
25.	ES44012-2	O-Ring (Face Seal,#6~Black)(2-012-N1173)	3
26.	ES44012-3	O-Ring (Face Seal,#8~Black)(2-014-N1173)	3
27.	ES48150-1	Drain Hose, Ø3/8"	20"
28.	ES49008-1	Tee	2
29.	ES72210-10	Adapter	1
30.	ES94002-1	Polyester Oil (Texaco or Eq.)	8 oz
31.	AN3-4	Bolt	4

**-2: Bill of Materials: for Helicopters presently equipped with  
407EC-202-2 (RH Fwd Evap only)**

Item	Part Number	Description	Qty
32.	AN3-4A	Bolt	5
33.	AN3-5A	Bolt	2
34.	A3135-017-24A	Washer	16
35.	AN364-632	Nut (Alt: MS21042-L06)	16
36.	AN525-832-R8	Screw (Alt: MS27039-08-08)	1
37.	AN525-10R8	Screw (Alt: MS27039-1-08)	6
38.	AN525-10R10	Screw (Alt: MS27039-1-10)	
39.	AN525-10R12	Screw (Alt: MS27039-1-12)	
40.	AN960-6L	Washer (Alt: NAS1149FN632P)	16
41.	AN960-10L	Washer (Alt: NAS1149F0332P)	10
42.	AN960JD8	Washer (Alt: NAS1149DN632K)	2
43.	AN960JD10L	Washer (Alt: NAS1149D.316K)	12
44.	MS21266-1N	Grommet	24"
45.	MS14105-25	Circuit Breaker	1
46.	MS20426AD3-3	Rivet	4
47.	MS20426AD3-4	Rivet	16
48.	MS20426AD4-4	Rivet	8
49.	MS20470AD4-4	Rivet	29
50.	MS20470AD4-5	Rivet	8
51.	MS21042L3	Nut	8
52.	MS21042L08	Nut	1
53.	MS21059L3	Nutplate	5
54.	MS21071L3	Nutplate (Alt: MS21061L3)	2
55.	MS21075L3	Nutplate	2
56.	MS21919WCH2	Clamp (Alt:30-185-2)	2
57.	MS21919WCH3	Clamp	1
58.	MS21919WCH6	Clamp	1
59.	MS21919WCH8	Clamp	1
60.	MS24693-S50	Screw	2
61.	MS24693-S52	Screw	2
62.	MS27039-1-07	Screw	4
63.	MS35190-240	Screw	16



**-2: Bill of Materials: for Helicopters presently equipped with  
407EC-202-2 (RH Fwd Evap only)**

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty</b>
63.	MS35489-11	Grommet	3
64.	M22759/41-12-9	Wire	144"
65.	NAS1097AD4-5	Rivet	4
66.	NAS10970AD4-4	Rivet	1
67.	CT7B	Tywrap	5
68.	CT11B	Tywrap	4
69.	CTM-2MB	Mount (Hi line)	4
70.	03-09-1032	Receptacle	2
71.	02-09-1103	Pin	6
72.	6C109	Terminal	6