

Service Letter
FAA-DER APPROVED

Service Letter: No. 334

Subject: Air Conditioner Compressor / Compressor Mount Up-grade

Date: 1 November, 2000
Rev A, 23 July, 2002
Rev B, 30 December, 2002
Rev C, 8 August 2003
Rev D, 1 October 2003
Rev E, 8 August 2005
Rev F, 1 August 2006
Rev G, 1 December 2006
Rev H, 16 January 2007

Applicability: Bell Helicopter Model 412 EP/HP **Serial No. 36094, 36111, 36114, 36124, 36130**
Equipped with the Air Comm Air Conditioning system 412AC-100.

Reference: F.A.A. / S.T.C. # SR00066DE
Drawing # 412AC-304-1 (412EP/HP).

Compliance: Mandatory, within 100 hours of receipt of this bulletin.

Background: This letter provides the details for the removal and replacement of the existing compressor mount, by a new mount which incorporates a compressor speed reducer. The new mount is a part of the existing FAA-STC approved configuration.

No other details of the air conditioner are changed by this letter.

Approval: The Technical aspects of this Service Letter are FAA / DER approved.

Bill of Materials of Items to be removed:

Item	Part Number	Description / Nomenclature	Remove
	-1	Installation (412HP / 412EP)	-1
1	412AC-3002-1	Mount Assy	1
2	412AC-3012-4	Link Assy	1
3	412AC-3012-12	Sleeve	1
4	412AC-3012-14	Sleeve	1
5	412AC-3012-15	Sleeve	1
6	412AC-3012-16	Sleeve	1
7	412AC-3540-2	Compressor	1
8	412AC-3014-1	Safety Stop	1
9	15542	Belt	1
10	NAS6604-7	Bolt	3
11	AN960-616L	Washer	8
12	AN960-616	Washer	13
13	NAS464-P6LA14	Bolt	2
14	NAS1106-17	Bolt	1
15	NAS1306-70	Bolt	1
16	MS21042L6	Nut	4

Continued

Bill of Materials of items to be **Installed**:

Item	Part Number	Description / Nomenclature	Install
			-1
	-1	Installation (412HP / 412EP)	\
1	412AC-3028-3	Mount Assy	1
2	S-3018EC-3	Link Assy	1
3	412AC-3012-12	Sleeve	1
4	412AC-3012-14	Sleeve	1
5	412AC-3012-15	Sleeve	1
6	412AC-3012-16	Sleeve	1
7	412AC-3542-2	Compressor	1
8	7320	Belt	1
9	7350	Belt	1
10	NAS464-P6LA18	Bolt	3
11	NAS464-P6LA14	Bolt	1
12	AN6-15-S	Bolt	1
13	NAS1306-70	Bolt	1
14	MS21042L6	Nut	4
15	AN960-616L	Washer	6
16	AN960-616	Washer	11
17	412AC-3014-1	Safety Stop	1
18	NAS1149C-616	Washer (Alt. NAS1149C-0632R)	3
19	440-841	#8 O-ring	1
20	440-842	#10 O-ring	1
21	TSE-16-001	Inline Junction	1
22	NAS1306-44	Bolt	1
23	MS14145L6	Nut	1
24	412AC-3016-16	Bolt	1
25	MS509-8	Nut	1
26	AN960C-616	Washer	6
27	AN320-6	Nut	1
28	AN380-3-3	Cotter Pin	1
29	NAS464-P6LA16	Bolt	1

Accomplishment Instructions:

I. Removal:

CAUTION

Refrigeration servicing should be performed by qualified personnel only!

1. Disconnect Compressor Clutch Coil wire from aircraft wiring.

CAUTION

It is recommended that the battery and external power be disconnected before starting work.

2. It will be necessary to evacuate (discharge) the refrigerant from the system to remove and replace the Compressor, and Compressor Mount Assembly.
3. Disconnect the Suction and Discharge Hose Assemblies from the ports located on the Compressor Housing.

NOTE

Cap all lines to prevent dirt, and moisture from entering the system.

4. Cut safety wire securing the jam nuts on the 412AC-3012-4 Link Assembly. Back jam nuts off from the turnbuckle portion of the Link Assembly enough to allow the turnbuckle to turn freely. Rotate turnbuckle to reduce the tension on the Compressor Drive Belt.

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5. Remove the NAS6604-7 Bolts (6 Pls) from the 412AC-3500-1 (EP/HP), Drive Pulley Assembly. Separate the Drive Pulley from the Driveshaft and Transmission Input Coupler to allow for the removal of the Compressor Drive Belt. (See Fig. 1-1)

NOTE

The Drive Pulley is a "split" pulley design, and it is not necessary to disassemble the Drive pulley to remove the Drive Belt.

CAUTION

Support the Drive Pulley Assembly in such a manner as not to damage the Transmission Input Coupler when Bolts have been removed.

6. Remove Compressor Drive Belt 15542 from Aircraft.
7. Remove the existing nuts, and AN960-616L Washers (3 Pls) from the 3/8" Studs located at the base of the Compressor Mount. (See Fig 1-1)
8. Remove MS21042L6 Nut (1 Pls) from NAS6606-44 Bolt (1 Pls), 412AC-3012-15 & 412AC-3012-16 Sleeve(s) (1 Pls), and AN960-616 Washer (3 Pls) at the bottom of the 412AC-3013-4 Link Assembly. (See Fig 1-1 & 1-4)

NOTE

Removal of Bolt and attaching hardware will allow for the 412AC-3540-2 Compressor to pivot on the two remaining compressor mounting bolts, providing access to the mounting hardware located on the top of the Compressor Mount Assembly.

9. Remove the existing Nut from the NAS6604-7 Bolt (3 Pls) (HP / EP). (See Fig. 1-1)

CAUTION

Support the Compressor / Compressor Mount Assembly in such a manner as not to allow this Component to damage the mounting studs located at the base of the Compressor Mount when the upper mounting hardware is removed.

10. Remove 412AC-3540-2 Compressor / 412AC-3004 Compressor Mount Assembly from aircraft.

II. Installation:

1. Install the 412AC-3028 Compressor Mount on the studs located at the top of the Transmission Input Quill.

CAUTION

Support the Compressor Mount Assembly in such a manner as not to allow this component to damage the mounting studs prior to installing the upper mounting Hardware.

2. Install NAS464-P6LA18 Bolt (3Pls) (HP/EP), through the holes located on the top of the 412AC-3028 Compressor Mount, and the Main Transmission Case. (See Fig. 1-2)

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NOTE

It is acceptable to elongate the mounting holes in the 412AC-3028-1/-2 Mount Assembly by .040 maximum in the direction of the stud.

NOTE

Add AN960-616 Washers as required to fill (shim) the space between the bottom of the Mount Assembly and the counterbore surface of the Main Transmission Housing.

3. Reinstall existing Nut & Washer on the NAS464-P6LA18 Bolt (3 Pls) (HP/EP), and torque to 95-110 in-lbs.
4. Reinstall existing Nut & AN960-616L Washer(s) (3 Pls) on the Studs at the bottom of the Compressor Mount Assembly. (See Fig. 1-2)

NOTE

There is a maximum of two (2) AN960-616L Washers allowed on each of these Studs.

5. Install the 412AC-3542-2 Compressor on the mounting lugs of the 412AC-3028 Mount Assy. Install hardware in accordance with Fig. 1-3 Compressor Mounting.

NOTE

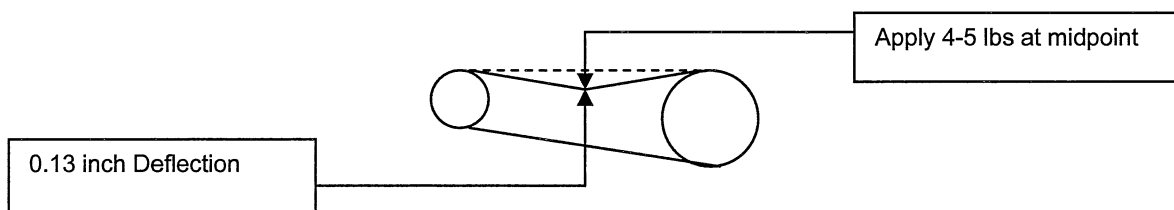
Install hardware finger tight, as you will need to pivot the Compressor Assembly back and forth to install the remainder of the mounting hardware, and to tension the upper belt.

6. Install the S-3018EC-3 Link Assembly & Sleeves, 412AC-3014-1 Safety Stop, and mounting hardware in accordance with Figures, Fig. 1-2, Fig. 1-4, & Fig. 1-5. Torque all hardware 95-110 in-lbs.
7. Separate the Drive Pulley from the Drive Shaft / Input Quill, and install the 7350 Belt on the Drive Pulley Assembly.
8. Install NAS6604-7 Bolts (6 Pls) Reinstall existing Nuts & Washers, and torque per BHT 412 Maintenance Manual.
9. Loosen AN6C-10A Bolts (4 Pls) on the face of the 412AC-3016-1 Shaft Assembly (See Fig. 1-5)
10. Using the Lower Belt Tension Bolt (See Fig. 1-3 & 1-4) lower the 412AC-3016-1 Shaft Assembly to it's full down position, and install the 7350 Belt on the forward (larger) pulley. (See Fig. 1-2).
11. Using the Lower Belt Tension Bolt, tension the 7350 Belt to 55 lbs.

NOTE

The use of a Belt Tension Gauge is recommended to insure the correct tensioning of the Compressor Drive Belts. (Kent-Moore BT3373F or Equivalent)

The Alternate method of determining the correct Belt tension is as follows.
Apply 4-5 lbs of pressure to the midpoint of the Belt to produce a 0.13 inch deflection.



Continued

12. Torque AN6C-10A Bolts (4 Pls) 95-110 in-lbs., and tighten the Jam Nut on the Lower Belt Tension Bolt down to the top of the 412AC-3028 Compressor Mount. (See Fig 1-3)
13. Safety the Lower Belt Tension Bolt and Jam Nut using .032 inch Safety Wire.
14. Install 7320 Belt (HP/EP) 7312 (SP) on the Aft (Smaller) pulley of the 412AC-3016-1 Shaft Assembly, and the Aft pulley groove of the 412AC-3542-2 Compressor Assembly. (See Fig 1-2)
15. Using the S-3018EC-3 Link Assembly tension the 7320 Belt (HP/EP) 7312 (SP) to 55 lbs.

NOTE

The use of a Belt Tension Gauge is recommended to insure the correct tensioning of the Compressor Drive Belts. (Kent-Moore BT3373F or Equivalent)

(See alternate Method of determining the correct Belt Tension Page 4 of 10)

NOTE

The Upper and Lower Belt tension should be checked, and re-adjusted, (if necessary) after the first two hours of operation for newly installed belts.

16. Tighten the Jam Nuts against the Turnbuckle of the S-3018EC-3 Link Assembly, and safety the Jam Nuts to the Turnbuckle using .032 inch Safety Wire.
17. Torque NAS464-P6LA14 & NAS1106-17 Bolts to 95-110 in-lbs (See Fig 1-3)
18. Replace the 440-841 #8 O-ring (1 Pls) to Discharge Hose, and 440-842 #10 O-ring (1 Pls) to Suction Hose Assemblies, and reinstall Hoses to their respective Compressor Ports. Torque #8 Fitting 40-45 in-lbs. & #10 Fitting 50-55 in-lbs.
19. Charge the system with 6.25 lbs (2.8 kg.) of R134a Refrigerant.

CAUTION

Refrigerant servicing should be preformed by qualified personnel only!

20. Perform a leak test of the refrigerant fittings that were removed, using a R134a compatible Electronic Leak Detector.

NOTE

Identification and elimination of system fitting leaks is extremely important to insure the trouble free operation of this system.

21. Reconnect the Compressor Clutch Wire to the aircraft electrical system using the TSE-16-001 Inline Junction.
22. Perform a maintenance operational check of the air conditioner system.

III. Weight and Balance:

This change adds an additional 7.6 lbs at station 115 (874 in-lbs) to the Compressor Installation.

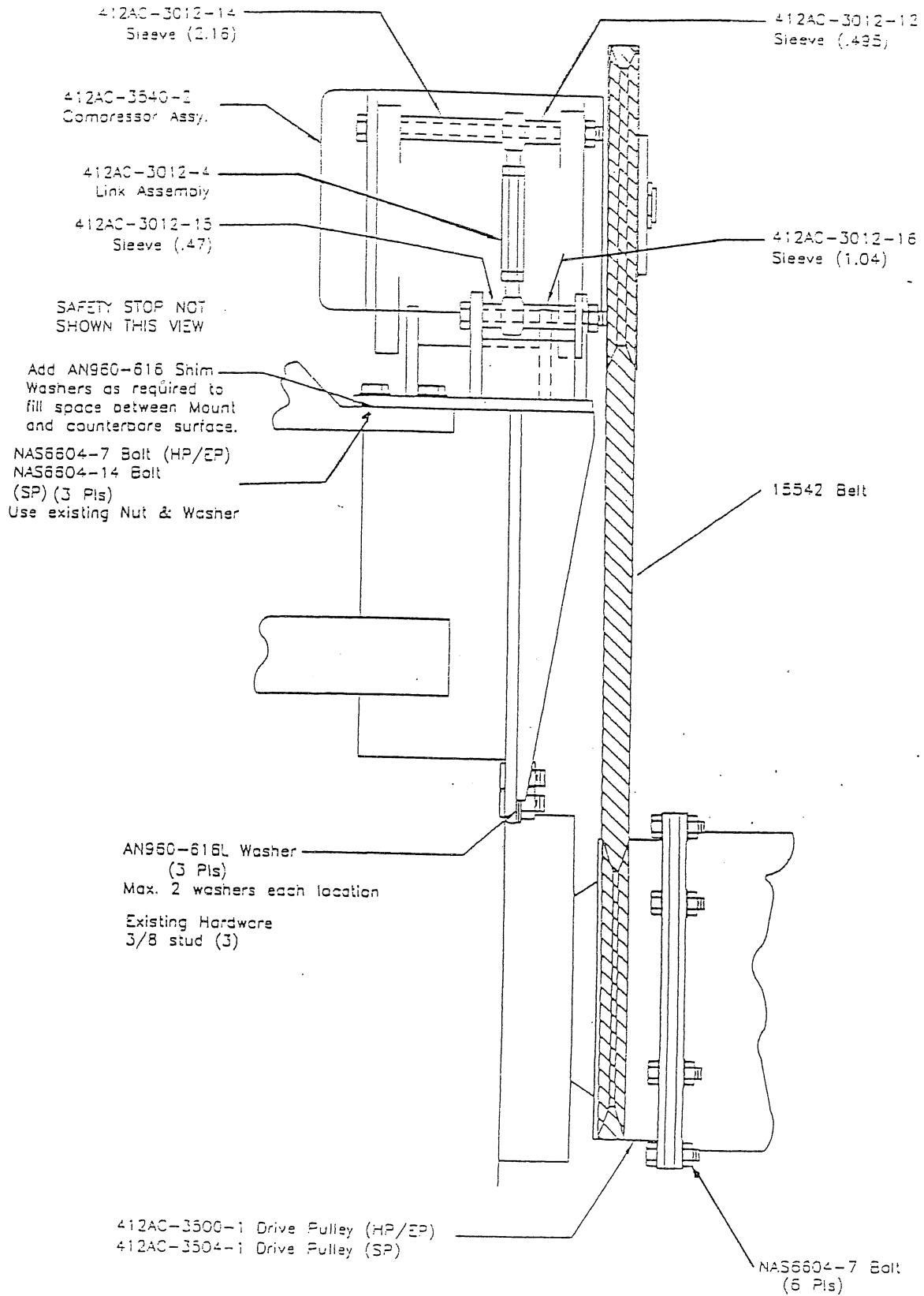


Fig. 1-1 Existing Compressor / Compressor Mount Installation
 (View Looking Inboard from Aircraft Left)

