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PR-505AC-910M

Rev. B

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Component Servicing Instructions

For

BELL Model 505 Series Helicopters

Air Conditioning System

REVISION HISTORY

Revision	Date	Detail of Changes	By
N/C	07/27/16	Original	JT
A	04/25/2018	Added 5/8 fitting to Table 3 Torque Chart, SECO Seals Torque Chart to reference section.	LS
B	03/20/2020	Updated Table 3 Torque Chart values on 1/2" and 5/8" tube to match Installation Instructions	ZA

Revision Control Procedure

Current revisions to this document are available at www.paravion.com. Before using, ensure this manual is current. **Do not use this manual if later approved revisions are available.**

LIST OF EFFECTIVE PAGES

PAGE NO.	REVISION	DATE	PAGE NO.	REVISION	DATE
Cover	B	03/20/2020	7	B	03/20/2020
i	B	03/20/2020			
ii	B	03/20/2020			
iii	B	03/20/2020			
iv	B	03/20/2020			
1	B	03/20/2020			
2	B	03/20/2020			
3	B	03/20/2020			
4	B	03/20/2020			
5	B	03/20/2020			
6	B	03/20/2020			

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1 INTRODUCTION

This document is to be used as a guide for the servicing of air conditioning components in the Bell 505 series helicopters. These instructions are intended to supplement and aid interpretation of the information contained on the installation drawings and installation instructions. Additional information required for operation and maintenance of the air conditioning system are included in the PR-505AC-120M Instructions for Continued Airworthiness (ICA).

2 COMPONENT REPLACEMENT:

2.1 CONDENSER FAN REPLACEMENT

See Figures 1 and 2 for assembly details of condenser assembly and Section 4 for reference documents.

1. Remove fuselage cowlings aft of baggage compartment to gain access to condenser installation.
2. Recover refrigerant from the system as detailed in the installation instructions.
3. Referencing installation drawings, disconnect electrical plug and ground, remove and cap plumbing lines from condenser.

NOTE: It is recommended that the receiver/drier bottle be replaced whenever the plumbing system is opened to the atmosphere.

4. Remove condenser attachment bolts, slide condenser forward to clear frame support tabs and lower condenser out through bottom of the airframe.
5. With condenser supported on a suitable work bench, cut safety wire from the attachment hardware on the sides of the assembly. Remove bolts and set aside.
6. Remove the fan and support box from the condenser coil and outlet plenum.
7. Remove fan attachment hardware and set aside. Note orientation of fan on box for correct reassembly.
8. Install fan to support box in reverse order of disassembly.
9. Torque attachment hardware 20-25 in-lb.
10. Reassemble fan and support box to coil and outlet plenum assembly.

11. Torque attachment hardware 50-70 in-lb. and safety wire in pairs per BHT-ALL-SPM 8-27 THRU 8-29. Reuse or replace poly tube on safety wire for chafe protection.
12. Install condenser per current revision of the installation drawing.
13. Complete plumbing and electrical connections per current revisions of the installation drawings.

NOTE: SECO seals must be replaced after each use.

14. Test fan operation, if fan operates properly continue with the next steps, otherwise refer to the troubleshooting section of this ICA and correct the problem.
15. Charge system with refrigerant and operate the system per installation instructions.
16. If system functions normally, record work performed in the aircraft records. If system malfunctions, refer to troubleshooting procedures in the ICA to correct problems.

Figure 1 - Condenser Assembly

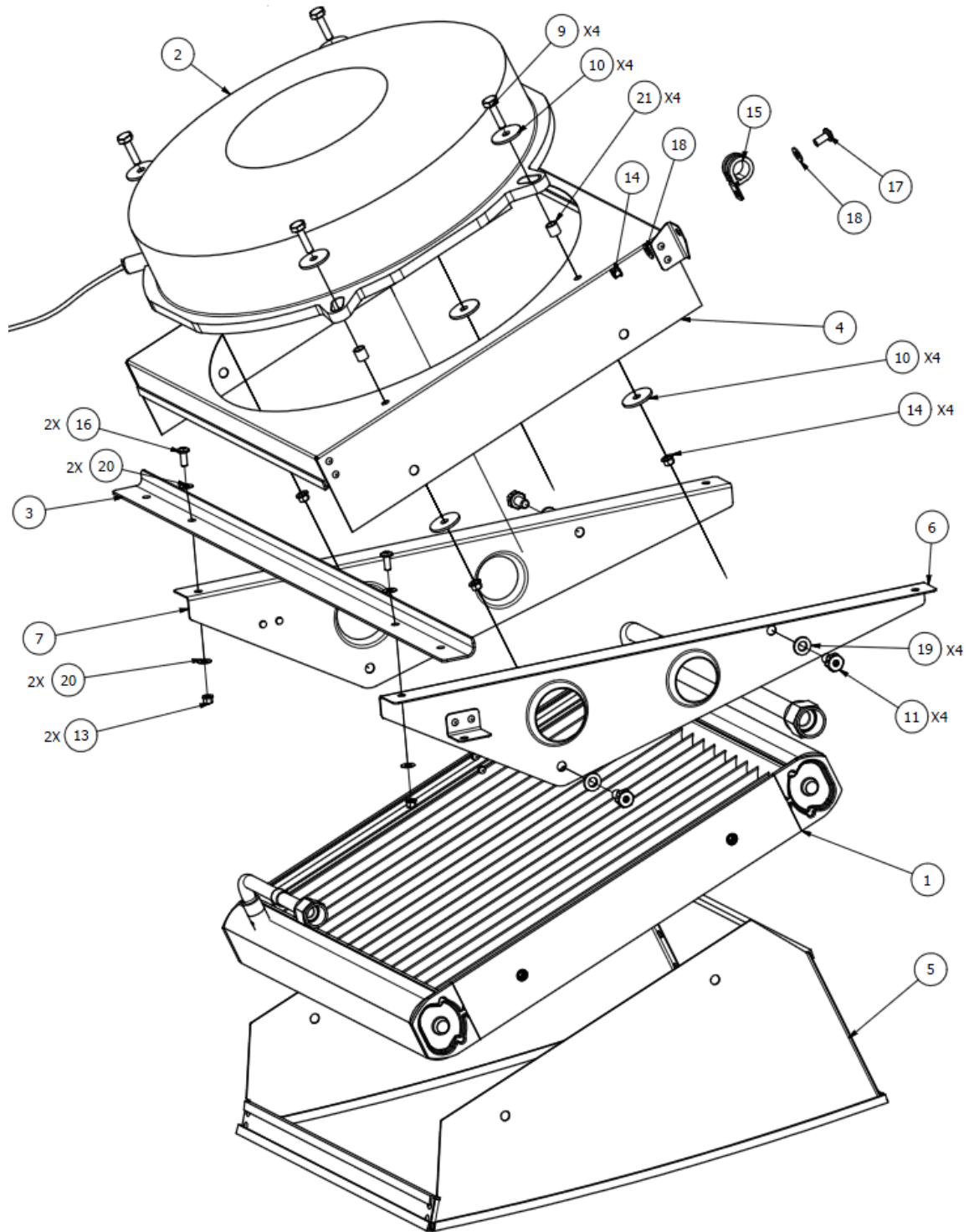


Figure 2 – Condenser Assembly Parts List

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	505AC-2300-010	CONDENSER COIL ASSY
2	1	505AC-2300-020	CONDENSER FAN ASSY
3	1	505AC-2300-110	CONDENSER FORWARD BRACKET
4	1	505AC-2300-120	CONDENSER PLENUM BOX ASSY
5	1	505AC-2300-121	CONDENSER PLENUM ASSY
6	1	505AC-2300-122	CONDENSER LEFT SIDE ASSY
7	1	505AC-2300-123	CONDENSER RIGHT SIDE ASSY
8	1	505AC-6120-1	LABEL
9	4	AN3-6A	BOLT
10	8	AN970-3	WASHER
11	4	MS20074-04-03	BOLT
12	2	MS20470AD3-3-5	RIVET
13	2	MS21042L08	LOCKING NUT
14	5	MS21042L3	NUT
15	1	MS21919WDG8	ADEL CLAMP
16	2	MS27039-0806	SCREW
17	1	MS27039-1-06	SCREW
18	2	NAS1149C0332R	WASHER
19	4	NAS1149C0463R	WASHER
20	4	NAS1149CN816R	WASHER
21	4	NAS43DD3-20	SPACER

3 TORQUE VALUES

Table 3 - Torque Chart, Flared Fitting Nuts

TUBE SIZE (IN.)	FITTING TORQUE (IN.-LB.) WITH SECO 7 SEAL
1/4	40-65
3/8	75-125
1/2	275-300
5/8	275-350

NOTE: For flared nuts installed with conical seal washers (SECO seal), apply the recommended installation torque, wait 15 seconds, then again apply the same torque value to the nut.

Table 4 - Torque Values (in-lbs)

CAUTION THE FOLLOWING TORQUE VALUES ARE DERIVED FROM OIL FREE CADMIUM PLATED THREADS.				
	TORQUE LIMITS RECOMMENDED FOR INSTALLATION (BOLTS LOADED PRIMARILY IN SHEAR)		MAXIMUM TORQUE LIMITS	ALLOWABLE TIGHTENING
Thread Size	Tension type nuts MS20365 and AN310 (40,000 psi in bolts)	Shear type nuts MS20364 and AN320 (24,000 psi in bolts)	Nuts MS20365 and AN310 (90,000 psi in bolts)	Nuts MS20364 and AN320 (54,000 psi in bolts)
FINE THREAD SERIES				
8-36	12-15	7-9	20	12
10-32	20-25	12-15	40	25
1/4-28	50-70	30-40	100	60
5/16-24	100-140	60-85	225	140
3/8-24	160-190	95-110	390	240
7/16-20	450-500	270-300	840	500
1/2-20	480-690	290-410	1100	660
9/16-18	800-1000	480-600	1600	960
5/8-18	1100-1300	600-780	2400	1400
3/4-16	2300-2500	1300-1500	5000	3000
7/8-14	2500-3000	1500-1800	7000	4200
1-14	3700-5500	2200-3300*	10,000	6000
1-1/8-12	5000-7000	3000-4200*	15,000	9000
1-1/4-12	9000-11,000	5400-6600*	25,000	15,000
COARSE THREAD SERIES				
8-32	12-15	7-9	20	12
10-24	20-25	12-15	35	21
1/4-20	40-50	25-30	75	45
5/16-18	80-90	48-55	160	100
3/8-16	160-185	95-100	275	170
7/16-14	235-255	140-155	475	280
1/2-13	400-480	240-290	880	520
9/16-12	500-700	300-420	1100	650
5/8-11	700-900	420-540	1500	900
3/4-10	1150-1600	700-950	2500	1500
7/8-9	2200-3000	1300-1800	4600	2700
<p>The above torque values may be used for all cadmium-plated steel nuts of the fine or coarse thread series which have approximately equal number of threads and equal face bearing areas. * Estimated corresponding values.</p>				

Reference AC43.13-1B Table 7-1 Recommended Torque Values

4 REFERENCES

FAA Advisory Circular AC43.13-1B Table 7-1 Recommended Torque Values

Paravion Technology Inc. Installation Drawings:

505AC-230 Condenser Installation

505AC-540 Plumbing Installation

505AC-601 Electrical Installation

Paravion Technology Inc. reports:

505AC-120M Instructions for Continued Airworthiness (ICA)

505AC-900M Installation Instructions

Bell Helicopter Textron Model 505 Maintenance Manuals

Bell Helicopter Textron BHT-SPM-ASS Standard Practices manual

Bell Helicopter Textron BHT-ELEC-SPM Electrical Standard Practices Manual

SECO Seals Torque Recommendations Chart