



Air Conditioning System Installation Manual

For



350-00-031-HP Law Enforcement Version

(Revised 26 March 2014 Rev: F)

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RECORD OF REVISIONS

Revision	Description	Date	Revised By
IR	Initial Release	8 August 2007	IFS
A	Added Basic Configuration	29 June 2008	IFS
A	Added New Doublers	29 June 2008	IFS
B	Removed Basic Config.	2 Jan 2009	IFS
C	Updated continued airworthiness	21 August 2009	IFS
D	Added AEC Improvements	4 Nov 2009	IFS
E	Revised Compressor Install	5 Feb. 2010	IFS
F	Updated Kit Inventory List	26 March 2014	RSG

LIST OF EFFECTIVE PAGES

Rev	Section	Pgs	Description	Date
F	1	Insert	Updated Kit Inventory List	3/26/2014
C	1	Insert	Revised Parts Listing	11/04/09
IR	2	1-4	Initial Release	08/08/06
IR	3	1-3	Initial Release	08/08/06
IR	4	1-2	Initial Release	08/08/06
A	5	1-5	Added Resistor Mnt Assy Stp. 5.17	9/13/09
IR	6	1-5	Initial Release	08/08/06
B	7	1-2	Revised to Corp. Only	11/04/09
A	8	1-5	Revised Instructions	02/05/10
IR	9	1-2	Initial Release	08/08/06
IR	10	1-3	Initial Release	08/08/06
IR	11	1-2	Initial Release	08/08/06
C	12	1-12	Refrigerant charge changed	09/21/09
A	13	1-5	Revised Parts List	08/08/06
C	14	1-6	Warranty Revised	11/04/09
A	15	Insert	Troubleshooting Revised	01/29/09

Getting Started

The air conditioning system installation instructions are laid out step-by-step starting with one (1) thru nine (9) for installation and ten (10) thru fifteen (15) for care and airworthiness, the instructions are designed to be easy – to – use.

The example below is designed to give you a basic overview of how the steps work.

Example: A. In the step below there is a number **5.1** The “**5**” stands for step 5 and the “**1**” stands for direction 1.

Installation of Aircraft Systems

Example: B. When the parts are called out in a step: **5.1**, locate the part and parts that go with this step (5.1). It is best to organize your parts by step numbers so they can be drawn from as needed.

5.1	Position the aft evaporator doubler, P/N 261370, on the upper transmission deck per the dimensions shown on drawing number 4-1EC130. Mark and remove all existing rivets, bolts, and nut plates to allow the doubler to sit flat on deck.		

Should you have any questions, problems or need technical support, do not hesitate to call, fax, E-mail, or write us:

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E-Mail: info@rotorcraftservices.com

Integrated Flight Systems
REQUIRED TOOLS – AS350 Air-Conditioning

Tools Required to Complete the Job

1.	Drill ¼ or 3/8 Capacity / Straight and 90 degrees
2.	Rivet Gun - #4 & #5 Rivet Set
3.	Blind Rivet Puller
4.	Assorted Drill Bits - 40, 30, 10, ¼, & 21
5.	Standard Wrenches - ¼, 1-¼
6.	Metric Wrenches - 5mm to 19mm
7.	Standard Sockets - ¼ to ¾ cap Ratchet & Extensions
8.	Metric Sockets - 5mm to 19mm
9.	Torque Wrench (For Coupling) 200 <u>inch</u> lbs
10.	Rotary File (Die Grinder)
11.	Drum Sander
12.	Hole Finder - #30 & #10
13.	Cleco - #30, #21 & #40
14.	C-Clamps – Vise Grip Clamps
15.	Wire Cutters
16.	Phillips Screw Driver
17.	Torque-Bite (For Belly Pan) Pan American Tool 170-10 & 170-8 Power Torque
18.	Common Screw Drivers
19.	Cape Chisel
20.	Center Punch

Integrated Flight Systems
REQUIRED TOOLS – AS350 Air-Conditioning

21.	6oz Ballpeen Hammer for Removing Rivets
22.	Assorted Bucking Bars
23.	Safety Wire .032
24.	Wire Twisters
25.	Steel Ruler
26.	Spring scale
27.	Adjust Wrench Cap 1-1/2
28.	Vacuum Pump
29.	Gauge Manifold
30.	Nitrogen
31.	R-134A
32.	Blocks for Supporting Forward Engine
33.	Vacuum Cleaner
34.	Rivnut Puller



Step 1

Kit Inventory

P/N 350-00-031-HP

Law Enforcement Version

(Rev. F)

March 7, 2014



Integrated Flight Systems Vapor Cycle Air Conditioning System
Kit Part Number: 350-00-031-HP Law Enforcement Version Rev F

RECORD OF REVISIONS

Revision	Description	Date	Revised By
IR	Initial Release	22 December 2008	IFS
A	Rev. Per 8110 Appv.	23 March 2009	IFS
B	Separated Pulley and Comp. Config.	25 Aug. 2009	IFS
C	Incorporated AEC Improvements	04 Nov. 2009	IFS
D	Removed Flat Belt/Compressor	02 Feb 2010	IFS
E	Corrected Screw Callout Step 5.10/5.17	03 May 2010	IFS
F	Part Number Corrections	07 March 2014	RSG

LIST OF EFFECTIVE PAGES

Rev	Pgs	Description	Date
A	6	Added RH Air Exit Doubler PN: 261100-1	04/23/09
A	6	Added LH Air Exit Doubler PN: 261101-1	04/23/09
A	6	LH Strap PN: 261511	04/23/09
A	6	Added RH Strap PN: 261512	04/23/09
A	6	Added Filler PN: 261512	04/23/09
A	6	Added Rivets PN: MS20470E5-6	04/23/09
A	6	Added Rivets PN: MS20470E5-7	04/23/09
A	8	Removed (Ester Oil), added PN: (Alt: 590008-1) to SD-507 Comp. Assy.	04/23/09
A	8	Changed Part Name "Belt" to "Flat Belt", added PN: (Alt: 060005, Groove Belt)	04/23/09
B	8	Separated Alternate configuration Parts and Numbers to different rows, ship per customer choice	08/25/09
C	5	Resistor Mount Assy. added 510463	11/04/09
C	6	Air Inlet Doubler R.H. added 261013-2	11/04/09
D	8	Removed P/N's 590008 and 060018-1	02/02/10
E	5	MS35206-244 is now MS35206-230	03/05/10
E	4	AN525-10R6 is now AN525-10R7	03/05/10
F	4	Caterpillar Grommet is GM1	03/07/14
F	4	ABA4-4 is now AD44ABS	03/07/14
F	5	490017-1 is now 490017-1-02	03/07/14
F	8	IFS-350/130-507 is now 350-11-031-02	03/07/14
F	9	Added Hose Disconnect Bracket p/n 04-130-21-107-01	03/07/14
F	10	SW44 is now 050020-12	03/07/14



Kit Configuration Inventory List: 350-00-031-HP Law Enforcement Version

Customer Information

Sales Order Number:

Shipping Date:

Customer:

Customer P.O. Number:

Notes:

Kit Specifics

Kit S/N:

Condenser Blower S/N:

Condenser Blower S/N:

Aft Evaporator Blower S/N:

Compressor S/N:



Integrated Flight Systems Vapor Cycle Air Conditioning System
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Kit Configuration Inventory List

STEP	PART NAME	PART NUMBER	QTY	CHK'D BY	VERF'D BY
5.1	Aft Evaporator Fan Doubler	260328-1	1		
5.4	Rivets	MS20470AD4-4	100		
5.4	Rivets	MS20470AD4-5	25		
5.4	Rivets	MS20426AD-4-4	15		
5.4	Rivets	CR3243-4-03	2		
5.4	Caterpillar Grommet	1/16" I.D.	18" in		
5.5	Aft Evaporator Assembly	560010-O-5	1		
5.5	Bolt	AN3-5A	4		
5.5	Washer	AN960-10	4		
5.6	Doubler, Return Air	260322-1	1		
5.8	Angle	260322-2	1		
5.8	Rivets	MS20470AD4-3	25		
5.8	Rivets	CR3243-4-03	25		
5.8	Rivets	CR3243-4-04	25		
5.8	Rivets	MS20470AD4-4	10		
5.8	Rivets	MS20426AD4-4	10		
5.9	Return Air Screen	080022-1	1		
5.9	Chrome Screw	050020-4	4		
5.9	Chrome Washer	050020-5	4		
5.10	Angle Return Air Connector Assembly	510261	1		
5.10	Rivets	AD44ABS	15		
5.10	Screw	AN525-10R7	2		
5.10	Return Air Cover Connector	250166	1		
5.11	Return Air Duct	250149	1		

Kit Configuration Inventory List



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STEP	PART NAME	PART NUMBER	QTY	CHK'D BY	VERF'D BY
5.15	Rivnut	A10K80	3		
5.15	Screws	AN525-10R6	3		
5.15	Screws	AN525-10R10	4		
5.15	Clip Nut	RM52LHA4972-10-02	4		
5.16	Aluminum Foil Tape	070076	30' ft.		
5.16	Cork Insulation Tape	070078-0	6' ft.		
5.17	Aft Evaporator Fan Assembly* (Brushless)	490017-1-02	1		
5.17	Aft Evaporator Fan Assembly* (Brushed)	490017-1	1		
5.17	Bolt	AN3-5A	5		
5.17	Washer	AN960-10	5		
5.17	Resistor Assembly	540020	1		
5.17	Resistor Mount Assembly	510463	1		
5.17	Rivet	CR3243-4-02	6		
5.17	Screw	MS35206-230	4		
5.17	Washer	AN960-6	4		
5.18	Aft Transition Elbow Assembly	520036-3	1		
5.20	Bolt	AN3-6A	6		
5.20	Nut	MS21044N3	6		
5.20	Washer	AN960-10	12		
5.20	Transition Elbow Strap	261299	1		
5.21	6" Band clamp	060035	2		
5.21	Ø5.0" Duct 25" Long	060004	25" in		
5.21	Insulation Foam Tape	070078	20' ft.		
5.22	Air Duct Closure Assembly	510092	1		
5.23	Hose Doubler, Baggage Comp.	260369	1		
5.23	Rivets	MS20470AD4-4	10		



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STEP	PART NAME	PART NUMBER	QTY	CHK'D BY	VERF'D BY
6.2	Air Inlet Doubler L.H.	261013	1		
6.2	Air Inlet Doubler R.H.	261013-2	1		
6.7	Stringer	261012	4		
6.8	Rivets	MS20470AD4-3	160		
6.8	Rivets	MS20470AD4-4	160		
6.8	Rivets	MS20470AD4-5	160		
6.10	Strap	261014	2		
6.10	Screen	080040	2		
6.10	Screw	AN525-832R8	12		
6.10	Washer	AN960-8	18		
6.10	Nuts	MS21044N08	6		
6.10	Rivnut	MS27130-A13K	6		
6.11	R.H. Air Exit Doubler (Alt: 261100)	261100-1	1		
6.11	L.H. Air Exit Doubler (Alt: 261101)	261101-1	1		
6.11	L.H. Strap	261511	1		
6.11	R.H. Strap	261512	1		
6.11	Filler	261513	4		
6.11	UPPER FILLER STRIP	261094	2		
6.11	LOWER FILLER STRIP	261095	2		
6.11	ANGLE, UPPER, R.H.	261096	1		
6.11	ANGLE, UPPER, L.H.	261097	1		
6.11	ANGLE, LOWER, R.H.	261098	1		
6.11	ANGLE, LOWER, L.H.	261099	1		
6.11	Rivets	MS20470AD5-3	25		
6.11	Rivets	MS20470AD5-4	40		
6.11	Rivets	MS20470AD5-5	40		
6.11	Rivets	MS20470AD5-6	20		
6.11	Rivets	MS20470AD4-3	40		
6.11	Rivets	MS20470AD4-4	60		
6.11	Rivets	MS20470AD4-5	60		
6.11	Rivets	MS20470E5-6	70		
6.11	Rivets	MS20470E5-7	70		



Kit Configuration Inventory List

STEP	PART NAME	PART NUMBER	QTY	CHK'D BY	VERF'D BY
6.12	Channel, Support, Forward	261080	1		
6.13	Channel, Support, Aft	261081	1		
6.14	Bolts	AN4-5A	8		
6.14	Washer	AN960-416	16		
6.14	Nuts	MS21044N4	8		
6.15	Condenser Assembly	550022	1		
6.16	Bolt	AN3-5A	4		
6.16	Washer	AN960-10	8		
6.16	Nut	MS21044N3	4		
6.17	Air Exit Collar	250324	2		
6.17	Screw	AN525-832R12	8		
6.17	Washer	AN960-8	16		
6.17	Nut	MS21044N08	8		
6.17	Screen	080039	2		
6.19	.25" Heat Shrink	070077	24" in		
6.20	Ø5.0" Duct 8" Inches Long	060004	2		
6.20	Band Clamp 6"	060035	4		
6.21	Close out Panel	250301	1		



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STEP	PART NAME	PART NUMBER	QTY	CHK'D BY	VERF'D BY
7.3	Forward Evaporator Assembly	560025-O	1		
7.4	Nut Plate	MS21059-L3	1		
7.4	Rivet	CCR264SS3-3	3		
7.5	Doubler	260373-1	1		
7.5	Rivets	CR3243-4-03	18		
7.7	½" Drain Hose	090018-1	10'-0"		
7.7	Grommet	MS35489-135	1		
7.8	Bolt	AN3-4A	4		
7.8	Washer	AN960-10	4		
7.8	Band Clamp 1"	060037	1		
7.8	Nut	MS21044N3	3		
7.9	Air Outlet Assembly	510259-1	1		
7.9	Air Outlet Assembly	500018-2	1		
7.9	Screw	AN525-10R10	1		
7.9	Screw	AN525-10R8	2		
7.9	Washer	AN970-3	3		
7.9	Rivet	CR3243-4-04	3		
7.9	3" Band Clamp	060036	5		
7.9	Cat Tubing 2-1/2"	060025	10'-0"		
8.5	4 Groove Belt	060005	2		
8.9	Compressor Bracket Kit (See pg 13)	350-11-031-02	1		
8.10	SD-507 Compressor Assy. (Grooved)	590008-1	1		



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STEP	PART NAME	PART NUMBER	QTY	CHK'D BY	VERF'D BY
9.2	Electrical Box	540028-C-1-A	1		
9.2	Bolt	AN3-4A	3		
9.2	Washer	AN960-10	3		
9.3	Washer	AN960-10	8		
9.3	Nuts	MS21044N3	4		
9.3	Screws	AN525-10R8	4		
9.4	Tie Wrap	10" Length Min.	200		
9.4	Tie Block	ZZCR4HM	25		
9.4	Butt Splice	AP320562	2		
9.4	Ring Terminal	AP320563	2		
9.4	Knife Splice	050020-6	2		
9.4	Ring Terminal	050020-8	2		
9.4	Knife Splice	050020-2	6		
9.4	Electrical Harness	540044-3	1		
9.5	Harness Assembly	540045-1	1		
9.5	Ring Terminal	050020-9	1		
9.7	Aft Switch Assembly	540089	1		
10.3	Hose Assy Fwd Evap to Aft. Evap To Comp	570087-O-A	1		
10.3	#10 "O" Ring	090094	3		
10.3	Adel Clamp	MS21919WDG12	6		
10.3	Nut	MS21044N3	6		
10.3	Screw	AN525-10R10	6		
10.3	Washer	AN960-10	12		
10.3	Hose Disconnect Bracket	04-130-21-107-01	2		



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Kit Configuration Inventory List

STEP	PART NAME	PART NUMBER	QTY	CHK'D BY	VERF'D BY
10.4	Hose Assy. #6 Fwd. Evap. To Drier	570072-O-A	1		
10.4	#6 "O" Ring	090092	2		
10.4	Adel Clamp	MS21919WDG10	6		
10.4	Nut	MS21044N3	6		
10.4	Screw	AN525-10R10	6		
10.4	Washer	AN960-10	12		
10.6	Hose Assembly #8 Comp. Discharge	570070-O-A	1		
10.6	#8 "O" Ring	090093	3		
10.6	Adel Clamp	MS21919WDG11	4		
10.6	Nut	MS21044N3	4		
10.6	Screw	AN525-10R10	4		
10.6	Washer	AN960-10	8		
10.6	Hose Assembly #6 Condenser to Drier	570067-"O"-A	1		
10.6	#6 "O" Ring	090092	3		
10.6	Adel Clamp	MS21919WDG10	4		
10.6	Nut	MS21044N3	4		
10.6	Screw	AN525-10R10	4		
10.6	Washer	AN960-10	8		
10.7	Receiver/Drier Bottle "O" Type	090016-5	1		
10.7	Band Clamp 3"	060036	1		
10.7	Rec/Drier Mount Bracket	260123-2	1		
10.7	Bolt	AN3-5A	2		
10.7	Nut	MS21044N3	2		
10.7	Washer	AN960-10	4		
10.9	Low Pressure Switch	050107	1		
10.9	High Pressure Switch	090004	1		
	Spiral Wrap Ø3/4"	050020-12	12' ft.		
	Touch up Paint (Teal)	070003	1		



DRAWING LIST

DRAWING NAME	DRAWING #	QTY	CHK'D BY	VERF'D BY
AIR CONDITIONING OVERVIEW	1-5-AS350	1		
ELECTRICAL ROUTING	2-5-AS350	1		
ELECTRICAL DIAGRAM	2-16-AS350	1		
ELECTRICAL DIAGRAM	2-25-AS350	1		
PLUMBING DIAGRAM	3-5-AS350	1		
PLUMBING DIAGRAM	3-15-AS350	1		
AFT EVAPORATOR INSTALL, SHEET 1 of 2	4-3-AS350	1		
AFT EVAPORATOR INSTALL, SHEET 2 of 2	4-3-AS350	1		
AFT EVAPORATOR INSTALL	4-13-AS350	1		
FORWARD EVAPORATOR INSTALL	4-21-AS350	1		
AIR DISTRIBUTION	5-24-AS350	1		
AIR DISTRIBUTION	5-12-AS350	1		
AIR DISTRIBUTION	5-21-AS350	1		
COMPRESSOR INSTALLATION	6-2-AS350	1		
COMPRESSOR INSTALLATION	6-12-AS350	1		
COMPRESSOR INSTALLATION	6-21-AS350	1		
COMPRESSOR INSTALLATION*	6-3-AS350*	1*		
COMPRESSOR INSTALLATION*	6-13-AS350*	1*		
COMPRESSOR INSTALLATION*	6-22-AS350*	1*		
CONDENSER INSTALL	7-22-AS350	1		
L.H. AIR EXIT DOUBLER INSTALL	7-23-AS350	1		
R.H. AIR EXIT DOUBLER INSTALL	7-24-AS350	1		
INSTALLATION, AIR INLET DBLR L.H.	7-25-AS350	1		
INSTALLATION, AIR INLET DBLR R.H.	7-26-AS350	1		
INSTALLATION, AIR INLET DBLR L.H.	7-28-AS350	1		
INSTALLATION, AIR INLET DBLR R.H.	7-29-AS350	1		

* Indicates drawings required for newer Gimble Housing design



DOCUMENT LIST

DOCUMENT DESCRIPTION	LOCATION	QTY	CHK'D BY	VERF'D BY
KIT CONFIGURATION INVENTORY LIST (IFS 33.41)	SECTION 1	1		
MAT'L SAFETY DATA SHEETS	SECTION 1	1 EA.		
AIRCRAFT PRE-INSPECTION	SECTION 2	1		
AIRCRAFT PREPERATION	SECTION 3	1		
REMOVAL OF FACTORY INSTALLED COMPONENTS	SECTION 4	1		
INSTALLATION OF AFT EVAPORATOR	SECTION 5	1		
INSTALLATION OF CONDENSER	SECTION 6	1		
INSTALLATION OF FORWARD EVAPORATOR	SECTION 7	1		
INSTALLATION OF COMPRESSOR	SECTION 8	1		
INSTALLATION OF ELECTRICAL	SECTION 9	1		
INSTALLATION OF HOSES	SECTION 10	1		
STC# SH3509SW	SECTION 11	1		
WEIGHT AND BALANCE	SECTION 11	1		
RFMS FOR AS350B, BA, B1, B2, B3, C, D AND D1	SECTION 11	1 EA.		
FOREIGN APPVS, CANADIAN, ANAC AND EASA	SECTION 11	1 EA.		
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS	SECTION 12	1		
MASTER PARTS LIST	SECTION 13	1		
ILLUSTRATED PARTS CATALOG	SECTION 13	1		
WARRANTY AND REPAIR	SECTION 14	1		
TROUBLE SHOOTING GUIDE	SECTION 15	1		
AIR CONDITIONING PERFORMANCE CHECK	SECTION 15	1		



Integrated Flight Systems Vapor Cycle Air Conditioning System
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COMPRESSOR BRACKET INSTALLATION KIT
IFS PN: IFS-350-11-031-02

ITEM DESCRIPTION	Part Number	QTY	Comment
COMPRESSOR MOUNT BRACKET	04-130-21-101-01	1	
COMPRESSOR MOUNT TENSION BOLT	04-130-21-102-01	1	
JAM NUT DRILLED	04-130-21-104-01	2	
COMPRESSOR CLAMP	04-130-21-105-01	2	
BUSHING, SD 507	261007	2	
COMPRESSOR STAND OFF	300067-1	1	
SHIM	300363-2	2	Alternate (261155)
THREADED ROD END	2434K39	1	
PIN	300095	1	
STRAP HOUSING	530100-1	1	
WASHER	NAS1149D0416H	1	Or NAS Hardware equivalent
WASHER	NAS1149D0632H	6	Or NAS Hardware equivalent
WASHER	NAS1149D0532H	2	Or NAS Hardware equivalent
WASHER	AN960-416	4	Alternate (AN960-416L)
WASHER	AN960-516L	1	Alternate (AN960-516)
WASHER	AN960-616L	2	Alternate (AN960-616)
NUT	MS21042-L5	2	Alternate (MS20364-524C)
NUT	MS21042-L4	2	Alternate (AN365-424)
NUT	MS21042L6	4	Or NAS Hardware equivalent
BOLT	AN4-5A	1	Or NAS Hardware equivalent
BOLT	AN4-14A	2	Or NAS Hardware equivalent
BOLT	AN5-34A	1	Or NAS Hardware equivalent
BOLT	AN6-13A	2	Or NAS Hardware equivalent
BOLT HEX DRIVE	AN6-12	1	Or NAS Hardware equivalent
BOLT	AN6-33A	1	Or NAS Hardware equivalent

Step 2

Aircraft Pre-Inspection

Integrated Flight Systems
AIRCRAFT PRE-INSPECTION – AS350 Air Conditioning

Aircraft Pre-Inspection

STEP	PROCEDURE	MECH	INSP
2.1	Inspect the aircraft for other kits and Modifications that may effect the installation of The air conditioning kit.		
2.2	Inspect the airframe structure for any obvious Structural damage or corrosion.		
2.3	Repair discrepancies that are found prior to Installation of kit.		
2.4	Inspect aircraft paperwork for damage history that may effect the installation of this kit.		

General Safety Instructions

PROCEDURE
<u>WARNING:</u> Always handle the refrigerant fluids carefully.
<u>WARNING:</u> Do not mix other refrigerant fluids with the R134a. Do not use refrigerant canned for pressure-operated accessories (such as boat air horns). This refrigerant is not pure and will cause malfunctions in the system.
<u>WARNING:</u> When the system must be opened to do maintenance, before you do the work, you must drain the air conditioning system.
<u>WARNING:</u> When you open the system, you must collect the refrigerant in accordance with Federal and Local regulations.
<u>WARNING:</u> When the R134a is used in normal conditions, it is not flammable. Do not use it near a source of heat to prevent the risk of separation of the vapors.
<u>WARNING:</u> Avoid skin and eye contact with R-134a. The liquid R-134a, at normal atmospheric temperatures evaporates so quickly that it will freeze anything it comes in contact with.
<u>WARNING:</u> Wear safety goggles when servicing any part of the refrigerant system.
<u>WARNING:</u> Never heat a R-134a supply cylinder to produce additional pressure or attempt to empty the container completely.
<u>WARNING:</u> Insure adequate ventilation when servicing the refrigerant system.
<u>WARNING:</u> If the R-134a and lubrication oil are mixed with water they make hydrochloric acid. This will cause corrosion of the system components.

General Safety Instructions

PROCEDURE
<u>WARNING:</u> You must replace the filter drier each time you open the system.
<u>WARNING:</u> Comply with the regulations in force in the country where the aircraft is operated when working on the air conditioning system.
<u>WARNING:</u> Only use nitrogen or Alcohol to clean the system components.
<u>WARNING:</u> Always keep the R-134a supply cylinder in an upright position when admitting refrigerant into the system. If a cylinder is on its side or upside down, liquid will enter the R-134a system and cause damage to the compressor.

Step 3

Aircraft Preparation

Integrated Flight Systems
AIRCRAFT PREPARATION – AS350 Air Conditioning

Aircraft Preparation

STEP	PROCEDURE	MECH	INSP
3.0	Remove or disconnect the battery.		
3.1	Remove pilot and co-pilots doors.		
3.2	Remove right rear door as needed.		
3.3	Remove rear seats.		
3.4	Remove co-pilot anti-torque pedals.		
3.5	Drop the cabin headliner.		
3.6	Remove the two side screws from both sides of the glare shield.		
3.7	Remove back wall covering.		
3.8	Remove the right side baggage door.		
3.9	Remove the forward closeout panel in the right hand baggage compartment.		
3.10	Access panel Aft of landing light.		
3.11	Remove the right hand transmission cowling.		
3.12	Remove the left hand transmission cowling.		
3.13	Remove lower nose right window.		
3.14	Remove the front belly cowling.		
3.15	Remove the center belly cowling.		
3.15a	Remove the right middle belly cowling.		
3.15b	Lower the rear belly cowling.		

Integrated Flight Systems
AIRCRAFT PREPARATION – AS350 Air Conditioning

Aircraft Preparation

STEP	PROCEDURE	MECH	INSP
3.16	Remove the cargo net from the rear baggage compartment. (If installed)		
3.17	Remove the rear cargo compartment floor.		
3.18	Remove the electrical compartment cover. NOTE: Determine location for air conditioning power hook up. Reinstall cover to prevent FOD.		
3.19	Remove the rear cargo compartment forward floor panel.		
<u>NOTE:</u> After installation of system, a thorough inspection of all areas affected must be performed to determine security component installations and workman-ship standards prior to reassembly of aircraft and return to service by a qualified individual.			

Step 4

Removal of Factory Installed Components

Integrated Flight Systems
REMOVAL OF FACTORY INSTALLED COMPONENTS – AS350 Air Conditioning

Removal of Factory Installed Components

STEP	PROCEDURE	MECH	INSP
4.1	Unbolt oil cooling fan and shroud tiewrap to transmission.		
4.2	Disconnect oil cooler assembly from aft cabin wall and the wrap to transmission. Do not disconnect oil lines.		
4.3	Remove fresh air duct between oil cooler and discard.		
4.4	Remove aft right side seat mount bracket for installation of doubler. Ref 5-21-AS350		
4.5	(Intentionally left Blank)		
4.6	Remove warning horn forward of co-pilots feet. Hold for reinstallation.		
4.7	Remove NR digital indicator box forward of co-pilots feet. Hold for reinstallation.		
4.8	Remove glare shield.		
4.9	Remove T4 correction chart holder. Hold for reinstallation.		

Step 5

Installation of Aft Evaporator

Integrated Flight Systems
INSTALLATION OF AFT EVAPORATOR – AS350 Air Conditioning

Installation of Aft Evaporator

STEP	PROCEDURE	MECH	INSP
5.1	Remove Right Hand Transmission Cowling Forward latch. (See photo 1). Hold for reinstallation. Position the aft evaporator doubler P/N 260328-1 on the upper transmission deck per drawing 4-3-AS350 sheet 1 of 2. Mark around doubler and remove all existing rivets, bolts, and nut plates to allow the doubler to sit flat on deck.		
5.2	Drill through deck using pilot holes in doubler. Back drill the doubler from existing holes in the deck.		
5.3	Mark and cut openings in the transmission deck using doubler P/N 260328-1 as a template.		
5.4	Install aft evaporator doubler P/N 260328-1 on right hand upper transmission deck in accordance with drawing 4-3-AS350 sheet 1 of 2 using rivets as shown. Re-install Right Hand Transmission Cowling Forward latch as shown in drawing 4-3-AS350 sheet 1 of 1.		
5.5	Next temporarily install Aft evaporator assembly P/N 560010-“O”-5 with 4 ea. AN3-5A bolts and 4 ea. AN960-10 washers per drawing 4-13-AS350.		
5.6	Position return air doubler P/N 260322-1 against aft cabin bulk head as shown in drawing 5-21-AS350 trace outline on bulkhead. Remove doubler and drill out rivets inside trace.		
5.7	Reposition doubler P/N 260322-1. Back drill all holes and Clelo in place. Using doubler as guide pen route out return air hole.		
5.8	Remove doubler, clean holes. Install doubler P/N 260322-1 and angle P/N 260322-2 rivet in place per drawing 5-21-AS350. NOTE: Two different situations, requiring different doublers are utilized depending on the type and location of the aft seat harness reel (if installed). See drawing for specifics.		

Integrated Flight Systems
INSTALLATION OF AFT EVAPORATOR – AS350 Air Conditioning



PHOTO 1

Integrated Flight Systems
INSTALLATION OF AFT EVAPORATOR – AS350 Air Conditioning

Installation of Aft Evaporator

STEP	PROCEDURE	MECH	INSP
5.9	Install return air screen P/N 080022-1 as per drawing 5-21-AS350.		
5.10	<p>Locate “Return Air Connector” P/N 250166. Trial fit to the aft side of the cabin wall, immediately in front of the aft evaporator. The open side of the connector must face aft. Slide the connector upward until it contacts the forward side of the evaporator. Mark with a pencil, the inside of the connector position on to the evaporator. Remove the connector and evaporator. Reference drawing 4-13-AS350.</p> <p>Draw a line one (1) inch above the lower/forward face of the evaporator case. Trial fit “Return Air Connector” to the evaporator, ensuring that the flanges of the connector DO NOT go past the inboard/outboard sides of the evaporator.</p> <p>Confirm the pencil lines. Remove the connector. Cut out the area within the pencil lines, leaving the one (1) inch lower lip on the evaporator case as a drain seal.</p> <p>NOTE: ENSURE DURING DRILLING THAT THE COIL INSIDE THE CASE IS NOT DAMAGED.</p> <p>Seal and secure the Return Air Duct Connector PN: 250166 with pop rivets to the Evaporator PN: 560010-O-5 case per drawing 4-13-AS350. Next install the connector angle assembly P/N 501261, per drawing 4-3-AS350 Sheet 1 of 2 and 4-13-AS350. This holds the upper part of the return air duct.</p>		
5.11	Position the aft evaporator return air duct P/N 250149 in the right side baggage compartment as shown on drawing 4-13-AS350. Use the return air opening to locate the return air duct. Trim the return air duct as required to fit.		
5.12	Remove the access panel from the outboard side of the aft evaporator P/N 560010-O-5.		
5.13	Temporarily install the aft evaporator, P/N 560010-O-5 using 4 each, AN3-5A, bolts and AN960-10, washers.		

Integrated Flight Systems
INSTALLATION OF AFT EVAPORATOR – AS350 Air Conditioning

Installation of Aft Evaporator

STEP	PROCEDURE	MECH	INSP
5.14	Locate and drill the holes for mounting the aft evaporator return air duct connector P/N 250166.		
5.15	Attach Return Air Duct P/N 250149 per drawings 4-3- AS350 sheet 1 of 2 and 4-13-AS350.		
5.16	<u>SEAL THE EVAPORATOR TO THE RETURN AIR DUCT WITH ALUMINUM FOIL TAPE IFS</u> PN: 070076 as required by reaching through the outboard opening in the evaporator. Re-install the aft evaporator access panel.		
5.17	Install the Aft Evaporator Fan Assembly, P/N 490017-1, using five each AN3-5A bolts, and 5 ea. AN960-10 washers. Attach Resistor Mount Assembly P/N 510463 and Resistor Assembly P/N 540020 per drawing 4-3-AS350 Sheet 2 of 2.		
5.18	Locate Transition Elbow P/N 520036-3. This will be mounted on upper Aft Cabin Wall on transmission side. See drawing 4-3-AS350 Sheets 1 and 2. Remove oil coolers from upper deck dog house. (Do Not Disconnect oil Lines) Position as to be able to modify Aft cabin wall. Do Not Re-install until step 5.22.		
5.19	Mark hole to be cut out in aft cabin wall per drawing 4-3-AS350 Sheet 1 of 2. Be careful not to but the cabin air duct bonded to aft cabin wall. Drill a couple of # 40 holes to see if you clear duct.		
5.20	Cut out hole and mount elbow as shown in drawing No. 4-3-AS350 Sheet 1 and 2 of 2.		
5.21	Install a 5-inch flex duct (25”in) long from the aft evaporator fan assembly to the aft air distribution elbow end with two each 6” band clamps P/N 060035. Insulate the duct with foam tape P/N 070078 and wrap with aluminum tape P/N 070076.		
5.22	Modify over head wemac’s as shown in drawing 5-12-AS350 if S/N 1302 or lower. Remove existing spacer air duct between oil coolers. Install new Air Duct Closure Assembly PN: 510092 using existing hardware. Re-nstall oil cooler assembly. Ref. Dwg. 5-12-AS350.		
5.23	Install hose doubler P/N 260369 per drawing 3-5-AS350.		

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	11/06/01	CONVERTED TO AUTOCAD		-
B	01/03/07	ADDED SHEET 2 OF 2 TO INCLUDE SLOTTING INFORMATION FOR B3		JTYE
C	02/23/09	REVISED TITLE BLOCK. SHEET 1 AND 2 NOW ONE FILE. ADDED RESISTOR MOUNT ASSEMBLY, P/N: 510463.		DWE

SEE ECO 0204
ECO 0324

AFTER B3, S/N: 3322, REMOVE GROMMET IN P/N 520036-3. CUT OUT OPENING TO 1.6 X 7.2 OR TO MATCH DUCT OPENING AS IN VIEW C-C. ROUTE PUSH/PULL CABLES AND ELECTRICAL HARNESS TO LEFT AND TIE WRAP TOGETHER.

B SLOT THE TRANSITION ELBOW AS REQUIRED, TYP. B3 MODELS (SEE PAGE 2 OF 2 FOR ALTERNATE INSTALL.) SLIDE TRANSITION ELBOW OVER CABLES AND PLACE ELBOW IN POSITION AGAINST AFT CABIN WALL. BACK DRILL 6 EACH MOUNTING HOLES. REMOVE AND SEAL FLANGE TO AFT CABIN WALL WITH P.R.C. OR EQUIVALENT. REINSTALL DUCT TO AFT CABIN WALL USING HARDWARE CALLED OUT.

USING STRAP, P/N 261299 SANDWICH DUCT TO AFT CABIN WALL BY USING TOP AND TOP/LEFT HAND MOUNTING HOLES AS SHOWN.

REINSTALL GROMMET AND COVER ENTIRE AREA WITH FOIL TAPE.

AFT. TRANSITION ELBOW ASSY. 520036-3. ON FINAL INSTALLATION, SEAL FLANGE TO AFT CABIN WALL WITH P.R.C. OR EQUIVALENT.

6" BAND CLAMP
TYP. 2

AFT EVAP. FAN ASSY.
P/N 490017 OR -1

BOLT AN3-5A (TYP. 9)
WASHER AN960-10 (TYP. 9)

REINSTALL (2)
EXISTING BOLTS

EXISTING DOOR LATCH. REMOVE BEFORE INSTALLING DOUBLER. INSTALL NEW CR3243-4-3 CHERRYMAX RIVETS THRU OUT BOARD SIDE OF LATCH.

CONNECT DUCT TO EVAP. USING CONNECTOR ANGLE ASSY. P/N 510261 TO INSIDE RETURN AIR DUCT P/N 250149 ATTACH ANGLE ASSY. TO EVAP. W/ ABA4-4 RIVETS AND RETURN AIR DUCT W/ AN525-10R7 SCREWS.

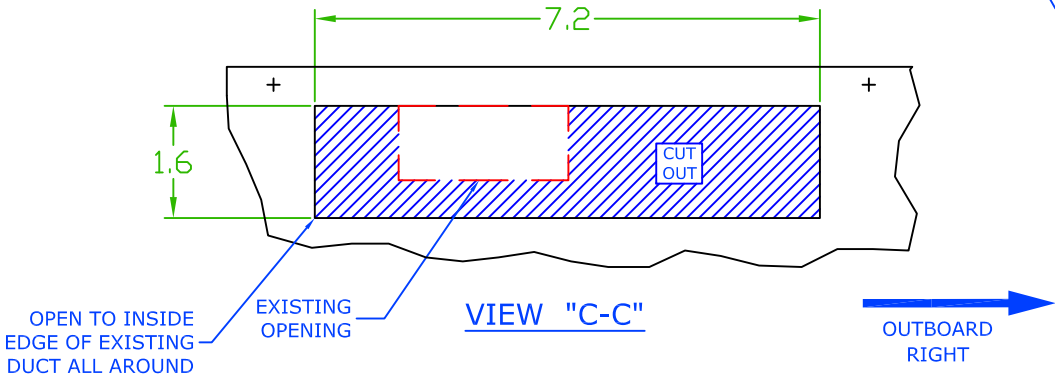
TRIM LIP OF FUEL TANK ACCESS COVER TO CLEAR R.A. DUCT.

BACK DRILL FROM INSIDE CABIN (4 PL), INSTALL CLIP NUT P/N RM52LHA4972-10-02

- MS20470AD-4-X (FIELD)
- ⊗ MS20470AD-4-X (REPLACES EXIST. RIVETS)
- ⊙ MS20426AD-4-X (CSK. AT TOP SURFACES)
- ⊗ .228 DIA HOLE #1 DRILL (FOR AN 3-5A BOLT)
- EXISTING

NOTE:
RIVET LENGTH MAYBE DETERMINED UPON INSTALLATION. INTERCHANGEABILITY BETWEEN MS20470AD-4-X RIVETS AND CR3242-4-X RIVETS IS APPROVED.

AFT SIDE CABIN WALL



RESISTOR ASSY
P/N 540020

RESISTOR MOUNT ASSY.
P/N: 510463

RIVET CR3243-3-2

SCREW MS35206-230 (4)
WASHER AN960-6 (4)

DOUBLER
P/N 260328-1

LINE HOLE W/
CATERPILLAR GROMMET
BOND TO METAL

BACK DRILL HOLES THRU
THE DECK TO .228 #1 DRILL (TYP. 9)

VIEW LOOKING DOWN AT TRANSMISSION DECK

FORWARD
OUTBOARD

AN3-6A (BOLTS) 6 EA.
MS21044-N3 (NUT) 6 EA.
AN960-10 (WASHERS) 12 EA.
TRANSITION ELBOW STRAP P/N 261299
FOR USE IF ELBOW IS SLOTTED. B
SEE PAGE 2 OF 2 FOR ALTERNATE INSTALL.

PUSH PULL CABLES
ELECTRICAL HARNESS
(NEW LOCATION)

TRIM BOTTOM LIP ON DOGHOUSE
COWLING, AS REQUIRED, TO
CLEAR TRANSITION ELBOW

INSULATE DUCT WITH:
PN: 070078 FOAM INSULATION TAPE
PN: 070076 ALUMINUM FOIL TAPE

RESISTOR ASSEMBLY PN: 540020
RESISTOR MOUNT ASSEMBLY
P/N: 510463
INSTALL PER DETAIL "A" C
SHEET 2 OF 2

AFT EVAP. ASSY.
P/N: 560010-0"-5

ROUTE DRAIN TUBE
FROM EVAP. DOWN
THRU DOUBLER, AND
TIE WRAP TO LANDING
GEAR TUBE

DRILL (3PL)
AND INSTALL
A10K80
RIVNUT

SCREW AN525-10R6 3 @ O.B. SIDE

SCREW AN525-10R10 4 @ I.B. SIDE

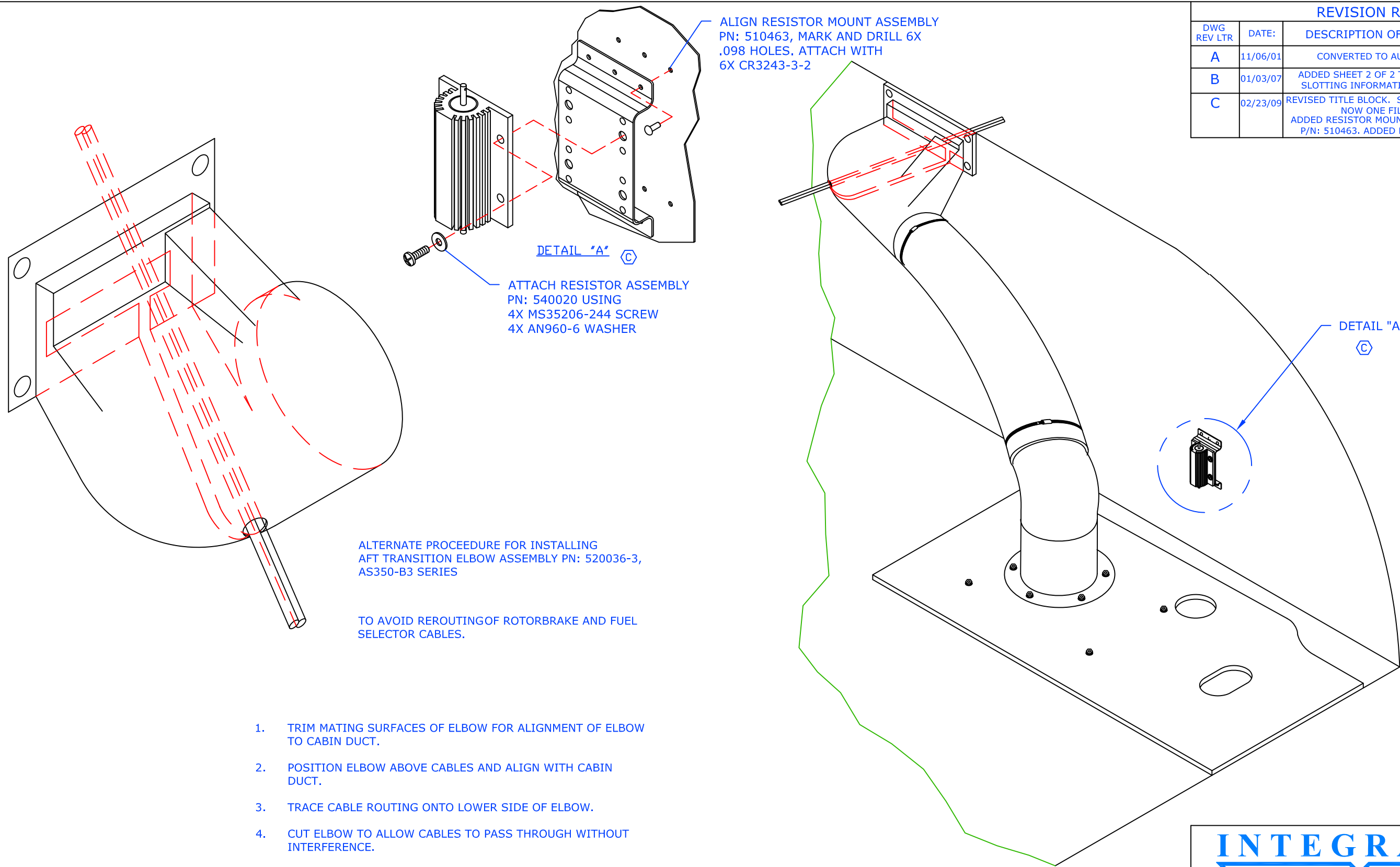
CUT DUCT TO MATCH
DOOR SUPPORT ROD
NOTCH



TITLE: AFT EVAPORATOR
INSTALL

DRAWN BY: JDS	DATE: 11/06/01	REV C	SCALE: NONE	SHEET: 1 OF 2
APPLICATION: AS350 SERIES			DWG No. 4-3-AS350	

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	11/06/01	CONVERTED TO AUTOCAD	-	-
B	01/03/07	ADDED SHEET 2 OF 2 TO INCLUDE SLOTING INFORMATION FOR B3	-	JTYE
C	02/23/09	REVISED TITLE BLOCK. SHEET 1 AND 2 NOW ONE FILE. ADDED RESISTOR MOUNT ASSEMBLY, P/N: 510463. ADDED DETAIL "A".	-	DWE



1. TRIM MATING SURFACES OF ELBOW FOR ALIGNMENT OF ELBOW TO CABIN DUCT.
2. POSITION ELBOW ABOVE CABLES AND ALIGN WITH CABIN DUCT.
3. TRACE CABLE ROUTING ONTO LOWER SIDE OF ELBOW.
4. CUT ELBOW TO ALLOW CABLES TO PASS THROUGH WITHOUT INTERFERENCE.
5. OPEN AFT END OF CUT TO APPROX 1" AND INSTALL GROMMET.
6. INSTALL ELBOW TO CABIN AFT WALL PER STANDARD INSTALLATION INSTRUCTIONS.
7. SEAL OPENINGS BOTH INSIDE AND OUT WITH ALUMINUM FOIL, SEAL AREA BETWEEN CABLES AND GROMMET WITH SEALING CORK PN: 070078-6 OR PROSEAL 890 TO ENSURE THAT ELBOW IS AIR TIGHT.

Ⓢ



TITLE: AFT EVAPORATOR
INSTALL

DRAWN BY: JTYE	DATE: 05/27/04	REV C	SCALE: NONE	SHEET: 2 OF 2
APPLICATION: AS350 SERIES			DWG No. 4-3-AS350	



Engineering Change Order

ECO No.
0204

Drawing Number	Revision	Drawing Title
4-3-AS350	C	AFT EVAPORATOR INSTALLATION
4-1-EC130	B	AFT EVAPORATOR INSTALLATION
261585	NC	RESISTOR MOUNT

Reason for Change: Rivet callout on drawings not correct. Screw length is incorrect.

Description of Change:

- 4-3-AS350 and 4-1-EC130, sheet 1 of 2:
Was: CR3243-3-2, Is: CR3243-4-2
- 4-3-AS350 and 4-1-EC130, sheet 2 of 2:
Was: MS35206-244 Screw, Is: MS35206-230.
- 4-3-AS350, sheet 2 of 2:
Callout Was: "See 3-4-AS350 (SH 1 of 1)
View D-D for location"


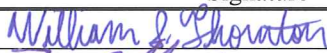

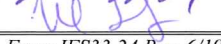
Callout Is: "See 3-4-AS350 (SH 1 of 1) or
See 3-5-AS350 (SH 1 of 1)
View D-D for location"
- Drawing 261585:
Was: 10 #40 holes

Is now: 4 #40 holes and 6 #30 holes

----- LAST ITEM -----

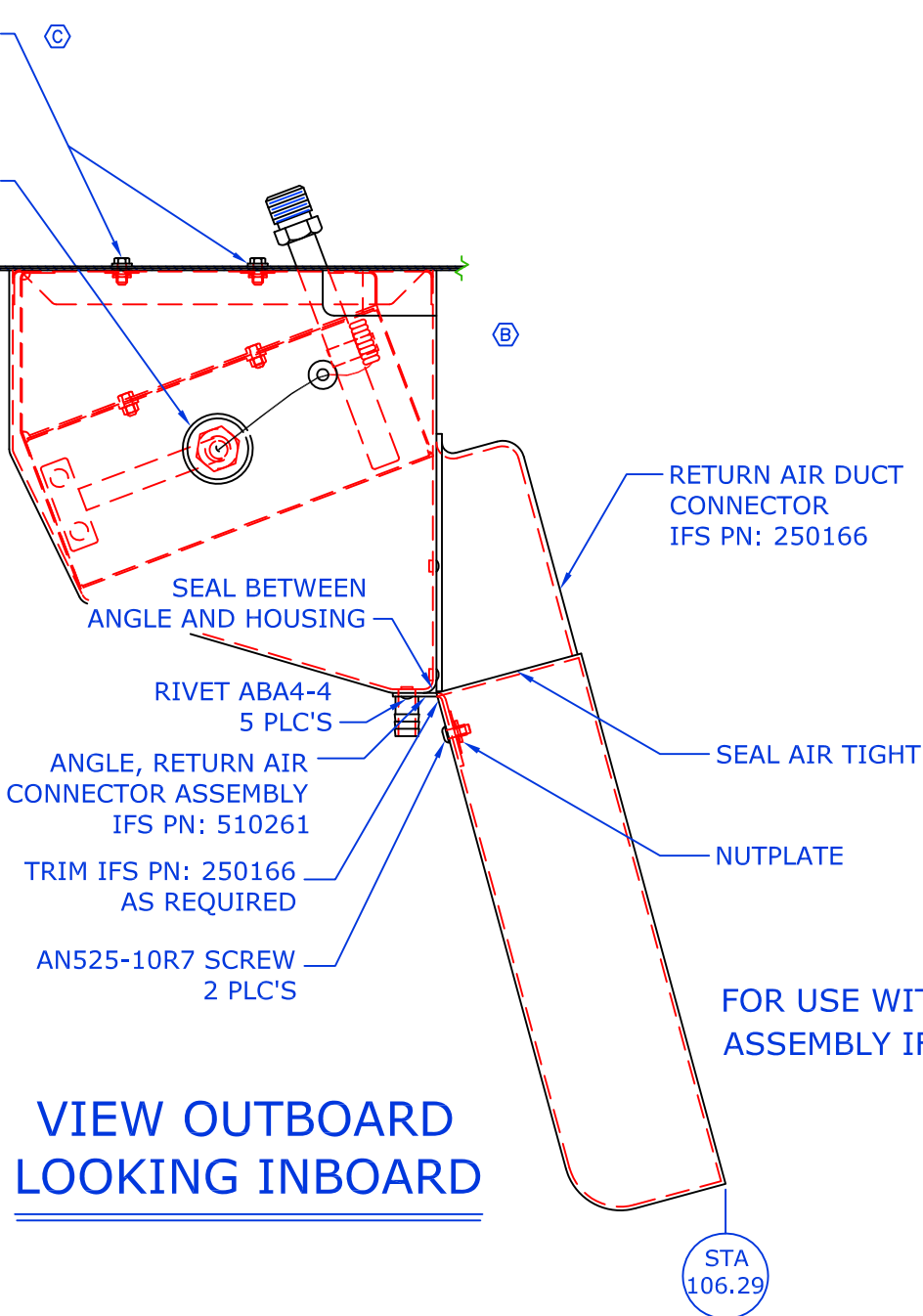
Engineering Review Board Approval

Signature	Stamp	Date	Comment
	ERB02	11/17/09	
	MRB06	11/17/09	
	MRB05	11/17/09	

		Engineering Change Order		ECO No. 0324	
Drawing Number		Revision	Drawing Title		
4-3-AS350 Sheet 1 of 2		C	AFT EVAPORATOR INSTALL		
Reason for Change: FOD note missing information					
Description of Change:					
<p>FOD Note</p> <p>Was: SEE 3-4-AS350 (SH 1 of 1) VIEW D-D FOR LOCATION</p> <p>Is: FOR (-011) KIT SEE 3-4-AS350 VIEW D-D FOR LOCATION FOR (-031) KIT SEE 3-5-AS350 VIEW D-D FOR LOCATION</p> <p>----- LAST ITEM -----</p>					
Engineering Review Board Approval					
Signature		Stamp	Date	Comment	
		ERB01	08/30/2011	Un-incorporated ECO	
		P016	8/30/2011		
		P015	8/30/2011		

INSTALLATION INSTRUCTIONS:

- 1 AFT EVAPORATOR AND RETURN AIR DUCT INSTALLATION:
- 2 TEMPORARILY INSTALL EVAPORATOR ASSEMBLY, P/N 560010-"O"-5 UNDER NEWLY INSTALLED DOUBLER WITH 4X AN3-5A BOLTS AND 4X AN960-10 WASHERS AS SHOWN.
- 3 LOCATE "RETURN AIR CONNECTOR" P/N 250166. TRIAL FIT TO THE AFT SIDE OF THE CABIN WALL, IMMEDIATELY IN FRONT OF THE AFT EVAPORATOR. THE OPEN SIDE OF THE CONNECTOR MUST FACE AFT. SLIDE THE CONNECTOR UPWARD UNTIL IT CONTACTS THE FORWARD SIDE OF THE EVAPORATOR. MARK WITH A PENCIL, THE INSIDE OF THE CONNECTORS POSITION ON TO THE EVAPORATOR. REMOVE THE CONNECTOR AND EVAPORATOR. NOTE: THIS HOLE MAY ALREADY EXIST IF IFS HAS TEST RUN SYSTEM AT IT'S LOCATION.
- 4 LOCATE A LINE ONE (1) INCH ABOVE THE LOWER/FORWARD FACE OF THE EVAPORATOR. TRIAL FIT CONNECTOR TO THE EVAPORATOR, ENSURING THAT THE FLANGES OF THE CONNECTOR DO NOT GO PAST THE INBOARD/OUTBOARD SIDES OF THE EVAPORATOR.
- 5 CONFIRM THE PENCIL LINES. REMOVE THE CONNECTOR. CUT OUT THE AREA WITHIN THE PENCIL LINES, LEAVING THE ONE (1) INCH LOWER LIP ON THE EVAPORATOR AS A DRAIN SEAL. SEAL AND SECURE WITH RIVETS, THE CONNECTOR TO THE EVAPORATOR PER THE DRAWING.
- 6 TRIAL FIT RETURN AIR DUCT P/N 250149. BACK DRILL FROM INSIDE THE CABIN AT FOUR PLACES, EQUALLY SPACED, AT INBOARD EDGE OF RETURN AIR DUCT FLANGE. DRILL THREE PLACES, EQUALLY SPACED, ON OUTBOARD EDGE OF RETURN AIR DUCT FLANGE, THROUGH FLANGE INTO AIRCRAFT BOX SECTION.
- 7 REMOVE DUCT AND INSTALL THREE EACH A10K80 RIVNUTS UNDER OUTBOARD FLANGE LOCATION, INTO AIRCRAFT BOX SECTION. INSTALL FOUR EACH CLIPNUTS, P/N RM52LHA4972-
ⓑ 10-02, (ALT. PN: SL215-3-1 OR 130062), ONTO INBOARD FLANGE OF RETURN AIR DUCT. INSTALL RETURN AIR DUCT WITH SEVEN EACH AN525-10R10 SCREWS (FOUR FROM INSIDE CABIN FOR CLIPNUTS), USING K501 TAPE UNDER BOTH DUCT FLANGES AS SEALANT.



VIEW OUTBOARD LOOKING INBOARD

- 8 CONNECT RETURN AIR DUCT TO AFT EVAPORATOR USING ANGLE, RETURN AIR CONNECTOR ASSEMBLY, P/N 510261. USE POP RIVETS, NUTPLATES AND SCREWS. SEAL ANGLE TO RETURN AIR DUCT AND AFT EVAPORATOR HOUSING.
- 9 INSTALL DRAIN LINE AND ROUTE AS SHOWN IN DRAWING 4-3-AS350 SHEET 1 OF 2. SECURE DRAIN LINE WITH ADEL CLAMPS OR TIE WRAPS AND ROUTE TO A LOCATION OUTBOARD OF THE BELLY PANEL. TIE WRAP TO LANDING GEAR CROSS MEMBER ON AFT SIDE.

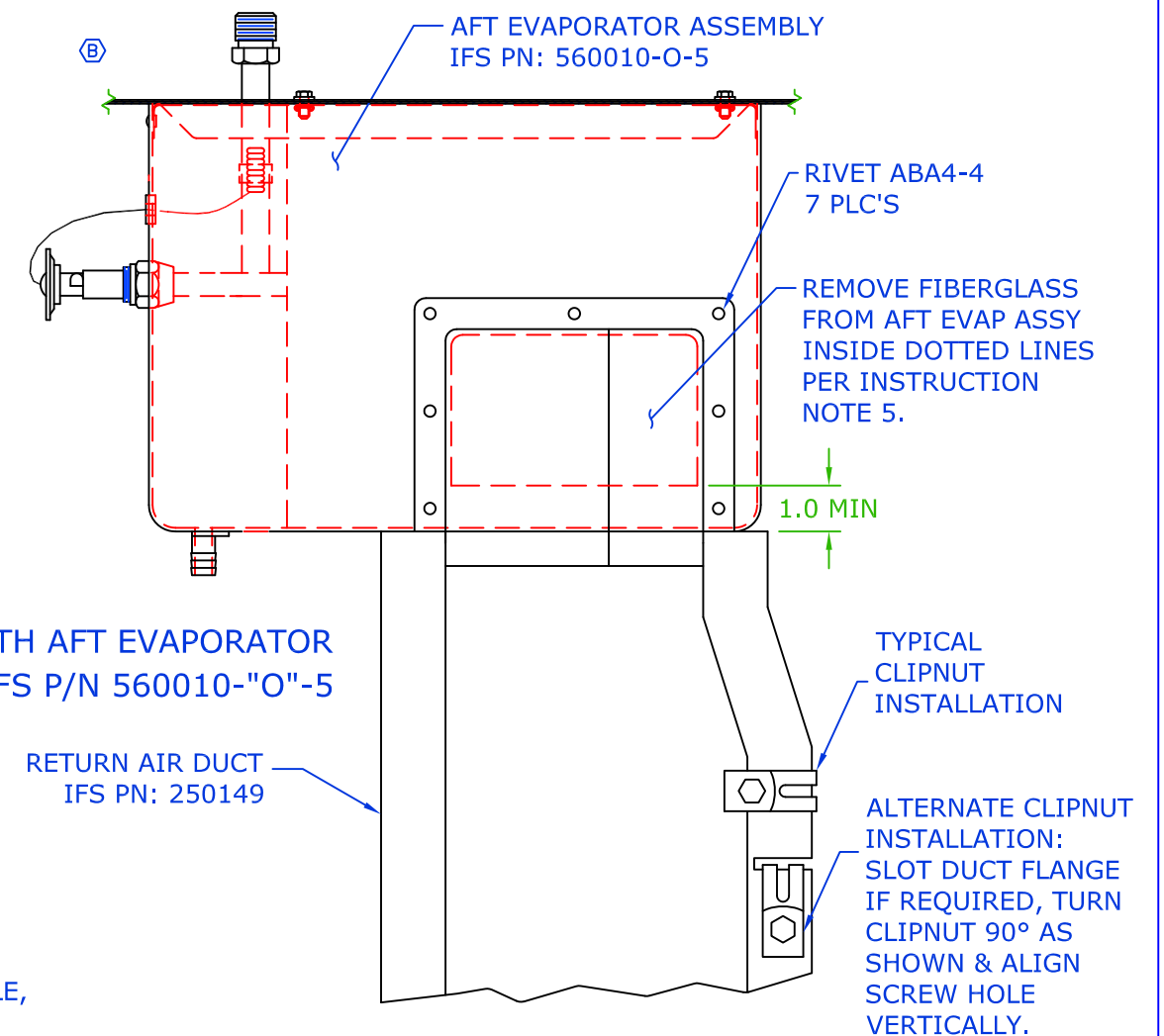
NOTE: ENSURE THAT DRAIN LINE IS NOT CRIMPED WHEN BELLY PANEL IS RE-INSTALLED.

CAUTION: BE SURE THAT THE DRAIN LINE IS PROPERLY SECURED AND LONG ENOUGH SO THAT CONDENSATION DOES NOT FLOW FROM THE LINE, AFT INTO THE BAGGAGE COMPARTMENT.

REVISION RECORD

DWG REV	LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A		11/07/01	CONVERTED TO AUTOCAD		
B		01/03/07	CORRECTED SENSING BULB POSITION TO MATCH MFG DWGS. REMOVED NOTES CONCERNING SENSING BULB ATTACHMENT, IT IS NOW INSTALLED AT THE ASSEMBLY STAGE, ADDED ALT. CLIPNUT PN'S SL215-3-1 OR 130062 CHANGED FONT, ADDED DETAILS TO VIEWS TO SHOW INSTALLED. REVISED TITLE BLOCK.		JTYE

NOTE: ENSURE THAT DRILLING DOES NOT HIT COIL



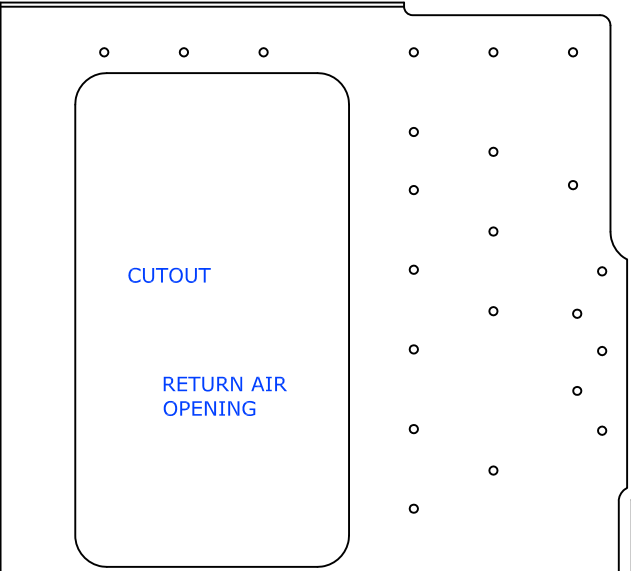
VIEW LOOKING AFT



TITLE: AFT EVAPORATOR INSTALL

DRAWN BY: TMUZZY	DATE: 11/07/01	REV B	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 4-13-AS350	

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	03/27/91	TITLE BLOCK WAS CAS, IS NOW IFS		
B	11/15/95	ADD REEL HARNESS		
C	08/16/00	REVISED DWG No. WAS 5-AS350 SHEET 3 OF 3		
D	04/12/02	COMPUTERIZED		
E	04/16/02	ADDED 260322, OPTIONAL.		
F	01/03/07	CORRECTED PN'S, ADDED PHOTO AND TRIMMING NOTATION. REVISED TITLE BLOCK.		JTYE

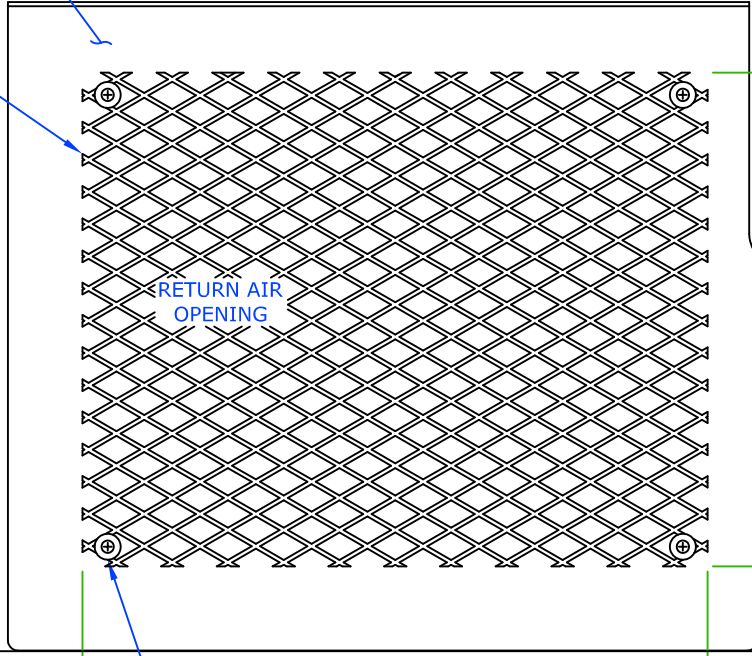


STEP 2
MATCH DRILL DOUBLER
TO AIRFRAME & AIRFRAME
TO DOUBLER
RIVET IN PLACE

STEP 3
NOTE: ADD SCREEN SCREWS
& SEAL EDGES

260322 (OPTIONAL) IF INERTIA
WHEEL IS NOT IN THE WAY

EXPANDED ALUMINUM
SCREEN PN 080022



CHROME SHEET METAL SCREW(4)
CHROME DECOR WASHER(4)

NOTE: STEPS #1 & #2 PERTAIN TO
BOTH DOUBLER INSTALLATIONS

STEP 1

NOTE: CUT OPENING IN INTERIOR
AFT BULKHEAD PANEL TO
MATCH RETURN AIR DOUBLER



OUTBOARD, RIGHT

EXPANDED ALUMINUM
SCREEN PN: 080022-1

DOUBLER, RETURN AIR PN: 260322-1

ANGLE PN: 260322-2

AFT BULKHEAD, MATCH DRILL NEW RIVET
HOLES TO DOUBLER AND ANGLE.

AIRCRAFT

NOTE

1. REMOVE REEL
2. TRIAL FIT DOUBLER ASSY
3. FIT REEL TO DOUBLER ASSY
IN SAME LOCATION AS
PREVIOUSLY MOUNTED
4. INSTALL DOUBLER ASSY
& SCREEN
5. INSTALL REEL, TRIMMING
AFT TURNED LIP OF DOUBLER
UNDER HARNESS, AS NECESSARY,
FOR CLEARANCE
6. IF NUTPLATES(TYP 4)ARE NOT
INSTALLED, ADD PN MS21059-L3
ON AFT SIDE OF WALL

CABIN FLOOR

CHROME SHEET METAL SCREW(4)
CHROME DECOR WASHER(4)

INSTALL HARDWARE
PER AEC KIT

TRIM OR ADJUST AS REQUIRED
TO ACHIEVE BEST FIT.

AFT CABIN BULKHEAD
VIEW LOOKING AFT AT STA 106.29

RIVET LEGEND

- -MS20470 AD4(IN NEW HOLE)
- ⊗ -CR 3243-4(IN NEW HOLE)
- ⊙ -CR 3243-4(IN EXISTING HOLE)
- -MS20426AD4-X(FLUSH RIVET)

NOTE: INTERCHANGEABILITY BETWEEN MS20470 AD RIVETS
& CR 3243 RIVETS ALLOWABLE, DIA AND LENGTH
MAY BE DETERMINED BY THE INSTALLER

F

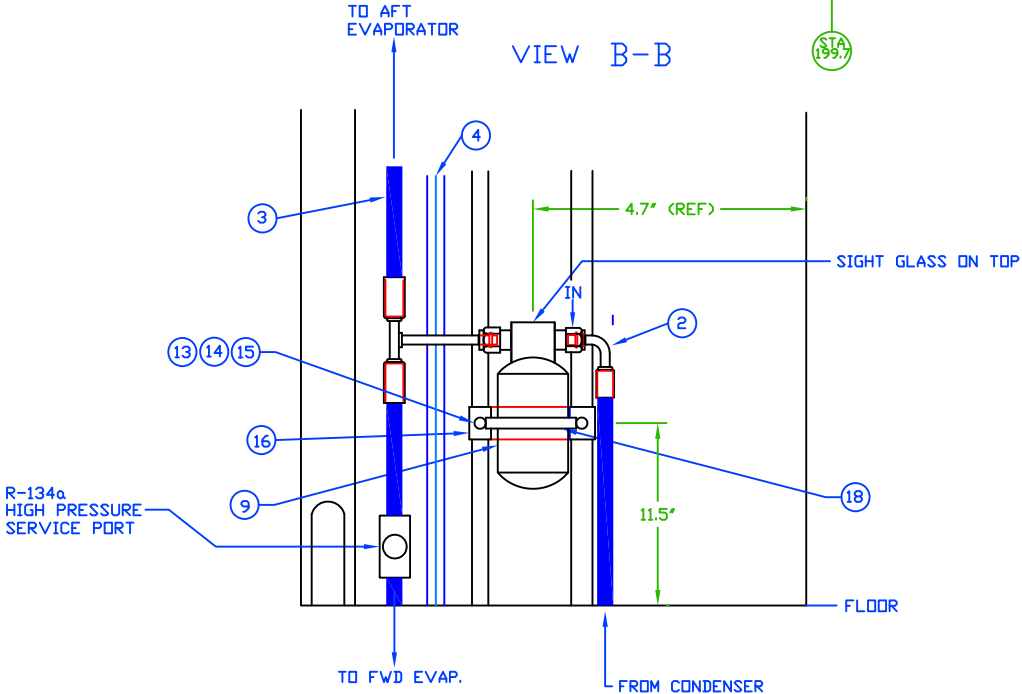
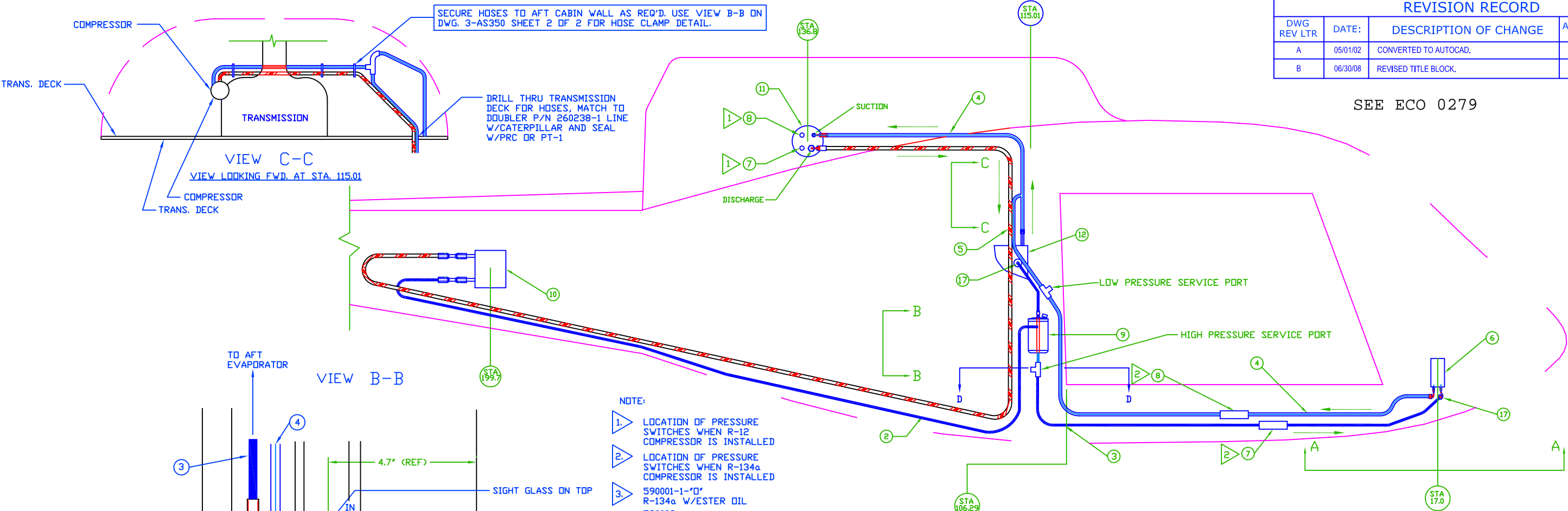


TITLE: AIR
DISTRIBUTION

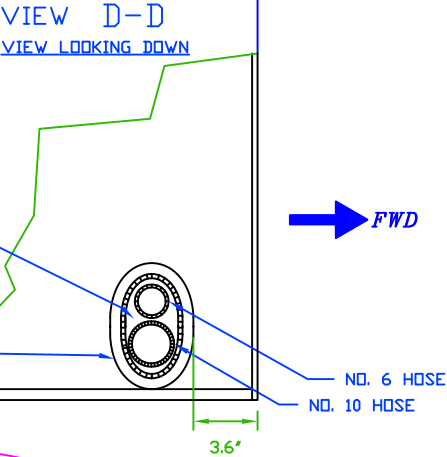
DRAWN BY: BP	DATE: 04/12/85	REV F	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 5-21-AS350	

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	05/01/02	CONVERTED TO AUTOCAD.		
B	06/30/08	REVISED TITLE BLOCK.	MLD	JTYE

SEE ECO 0279



- NOTE:
1. LOCATION OF PRESSURE SWITCHES WHEN R-12 COMPRESSOR IS INSTALLED
 2. LOCATION OF PRESSURE SWITCHES WHEN R-134a COMPRESSOR IS INSTALLED
 3. 590001-1-"D" R-134a W/ESTER OIL
590008 R-134a W/ESTER OIL
590001 (NO LONGER USED) R-12 FLARE
590001-"D" (NO LONGER USED) R-12 "D" RING
590001-2-"D" (NO LONGER USED) R-134a W/SP-20 OIL



NOTE:

ALTERNATE HOSE:
1991-ON NEOPRENE BARRIER TYPE

- | | |
|----------------|-----------------------------|
| #6 P/N 090078 | BASIC
PRODUCT
IFS P/N |
| #8 P/N 090079 | |
| #10 P/N 090080 | |

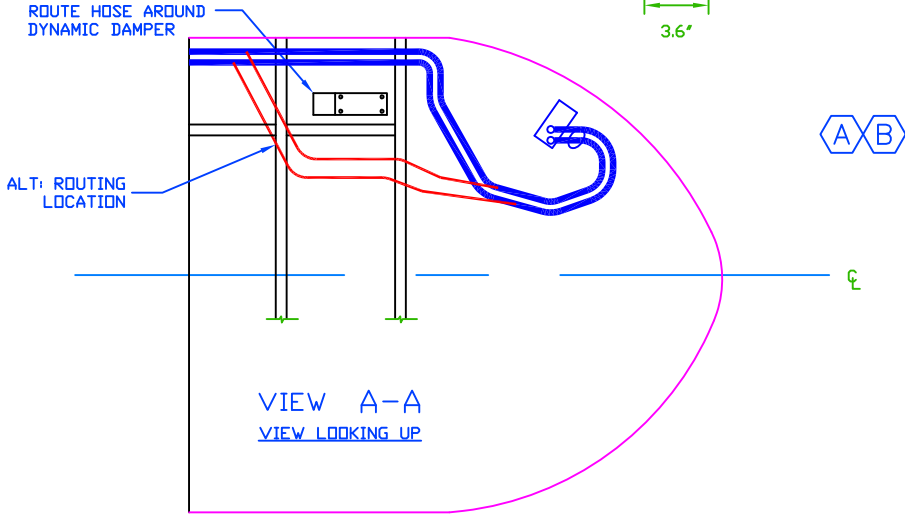
FERRULES FOR ABOVE

- | | |
|----------------|-----------------------------|
| #6 P/N 090081 | BASIC
PRODUCT
IFS P/N |
| #8 P/N 090082 | |
| #10 P/N 090083 | |

1995-ON NEOPRENE
REDUCED BARRIER TYPE

- | |
|----------------|
| #6 P/N 090089 |
| #8 P/N 090090 |
| #10 P/N 090091 |

MUST USE ATCO REDUCED
BARRIER TYPE FITTINGS
& ATCO CRIMPER P/N 3700
OR MASTERCOD P/N 71500



1	18	060036	3 INCH BAND CLAMP
2	17	090002-O	EXPANSION VALVE
1	16	260123-2	RECEIVER DRIER MOUNT
2	15	MS21044-N3	NUT
4	14	AN960-10	WASHER
2	13	AN3-5A	BOLT
1	12	560010-O-5	AFT EVAPORATOR
1	11	590008	COMPRESSOR 24 VDC R-134a O-RING
1	10	5500022	CONDENSER
1	9	090016-5	RECEIVER DRIER BOTTLE
1	8	050107	LOW PRESSURE SWITCH
1	7	090004	HIGH PRESSURE SWITCH
1	6	560025-O	FORWARD EVAPORATOR
1	5	570070-O-A	HOSE ASSY COMPRESSOR TO CONDENSER
1	4	570087-O-A	HOSE ASSY FWD EVAPORATOR TO AFT EVAPORATOR
1	3	570072-O-A	HOSE ASSY. AFT EVAP TO FWD. EVAP TO REC/DRIER
1	2	570067-O-A	HOSE ASSY. COND. TO REC./DRIER
QTY	ITEM	PART NUMBER	DESCRIPTION

#10 HOSE		<div> <div>INTEGRATED</div> <div>Flight Systems</div> </div>			
#8 HOSE					
#6 HOSE					
		TITLE: PLUMBING DIAGRAM			
		DRAWN BY: N.DEAN	DATE: 11/01/99	REV B	SCALE: NONE
		APPLICATION: AS350		SHEET: 1 OF 1	
				DWG No. 3-5-AS350	



Engineering Change Order

ECO No.
0279

Drawing Number	Revision	Drawing Title
3-5-AS350	B	Plumbing Diagram

Reason for Change: To add O-Rings to B.O.M. & added alternate compressor assembly to Item 11.

Description of Change:

1. Added item 19: 090092, #6 O-Ring, Qty. 5
2. Added item 20: 090093, #8 O-Ring, Qty. 3
3. Added item 21: 090094, #10 O-Ring, Qty. 3
4. Item 11 description Was: COMPRESSOR 24 VDC R-134a O-RING
Is: COMPRESSOR 24 VDC R-134a O-RING (590008-1 GROOVED)

----- LAST ITEM -----

Engineering Review Board Approval

Signature	Stamp	Date	Comment
	ERB02	06/08/11	
	MRB05	06/08/11	
	MRB06	06/08/11	

Step 6

Installation of Condenser

Installation of Condenser

STEP	PROCEDURE	MECH	INSP
6.1	Remove “tail boom closeout panel” and discard.		
6.2	Prepare to install Air Inlet Doubler L.H. P/N 261013 on the lower right side of the tail boom and Air inlet Doubler R.H. P/N 261013-2 on the lower right side of the tailboom. Secure doublers and Drawings 7-25 and 26-AS350. NOTE: ALWAYS INSTALL R.H. doubler prior to installing the L.H.		
6.3	Locate station lines 5683 and 5932 on the tail boom. Align the TOP of the inside of the R.H. doubler cut out with the skin lap on the tail boom. Note that the doubler has a taper to it, being wider at the front than at the rear. Tape doubler in place and draw the outline of the inner and outer shape onto the tail boom.		
6.4	Ensure that the doubler will cover all the rivets shown on the install Drawing, both existing and the new rivets that will be added. Adjust as required to maintain 2D edge distance (twice the diameter of hole, from center of hole to edge).		
6.5	Remove stringers on the inside of the tail boom (Drawing 7-22-AS350 within the area of the doubler by drilling out the supporting rivets. These stringers WILL NOT be reused. Drill out all rivets within the area of the doubler.		
6.6	Locate doubler on tail boom as in 6.3. Tape in place. Back drill existing rivet holes to doubler. Cleco doubler in place after first few holes have been drilled. Start a center line and work towards outer edge of doubler.		
6.7	Lay out staggered rows of new rivets around the outer edge of the doubler. Ensure 2D edge distance. Drill through doubler and airframe skin. Remove doubler and deburr all holes. Fit stringers, P/N 261012 and back drill to match skin (see Drawing 7-22-AS350).		
6.8	Rivet doubler in place. Remove airframe skin to the inside edge of the doubler. Deburr, remove any shavings or debris.		
6.9	Install L.H. doubler of the same part number in the same manner as above, ensuring that the widest part of the doubler faces forward.		

Integrated Flight Systems
INSTALLATION OF CONDENSER – AS350 Air Conditioning

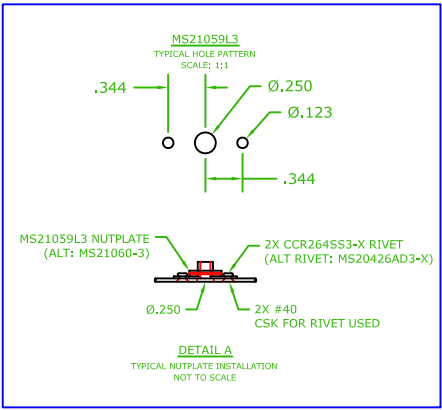
Installation of Condenser

STEP	PROCEDURE	MECH	INSP
6.10	<p>Install air inlet screens. Note that R.H. screen is mounted with a strap containing rivnuts, using screws to make that screen removable. This allows accessibility to the tail boom.</p> <p>NOTE: SOME LATE MODEL HELICOPTERS HAVE EUROCOPTER CORPORATION INSTALLED ACCESS DOORS (with screens) ON THE L.H. SIDE, JUST ABOVE WHERE THE IFS DOUBLERS AND SCREENS ARE USUALLY FITTED. THIS AREA MAY BE USED IN LIEU OF THE IFS DOUBLER/SCREEN, FOR AN AIR INTAKE.</p>		
6.11	Lay out and install L.H. and R.H. Air Exit doublers, screens and Air Exit Collars in the same manner as the Air Inlets per Drawings 7-23-AS350 and 7-24-AS350.		
6.12	Position condenser support, channel, forward P/N 261080 five (5) inches above the aft baggage floor (as measured from the floor to the top of the channel) per 7-22-AS350. Level channel and re-check measurements. Clamp in place.		
6.13	Position condenser support, channel, aft P/N 261081 aft of the next frame in tail boom. Level to support, channel, forward and clamp in place.		
6.14	Ensure that both channels are equally spaced off the center line of the airframe and that the pre-drilled mounting holes in the channels allow a minimum of 2D edge distance in the frames they are to be mounted to. Scribe through the holes in both channels to the airframe. Remove channels and drill all right (8) mounting holes, Deburr.		
6.15	Mount the aft and forward channels using the specified hardware. Remove 5" Blowers and temporarily install condenser assembly P/N 550022 in place and note any areas of interference.		
6.16	Mark two (2) hole locations in condenser, at each lower outboard corner. Centering on top flange of mounting channel. Drill holes (Drawing 7-22-AS350). Place AN3-5A bolt in hole until trial fitting is complete.		
6.17	Temporarily mount both condenser blowers and ensure alignment with each air exit collar, P/N 250324. Remove blowers and condenser until refrigerant hoses have been connected and leak tested.		

Integrated Flight Systems
INSTALLATION OF CONDENSER – AS350 Air Conditioning

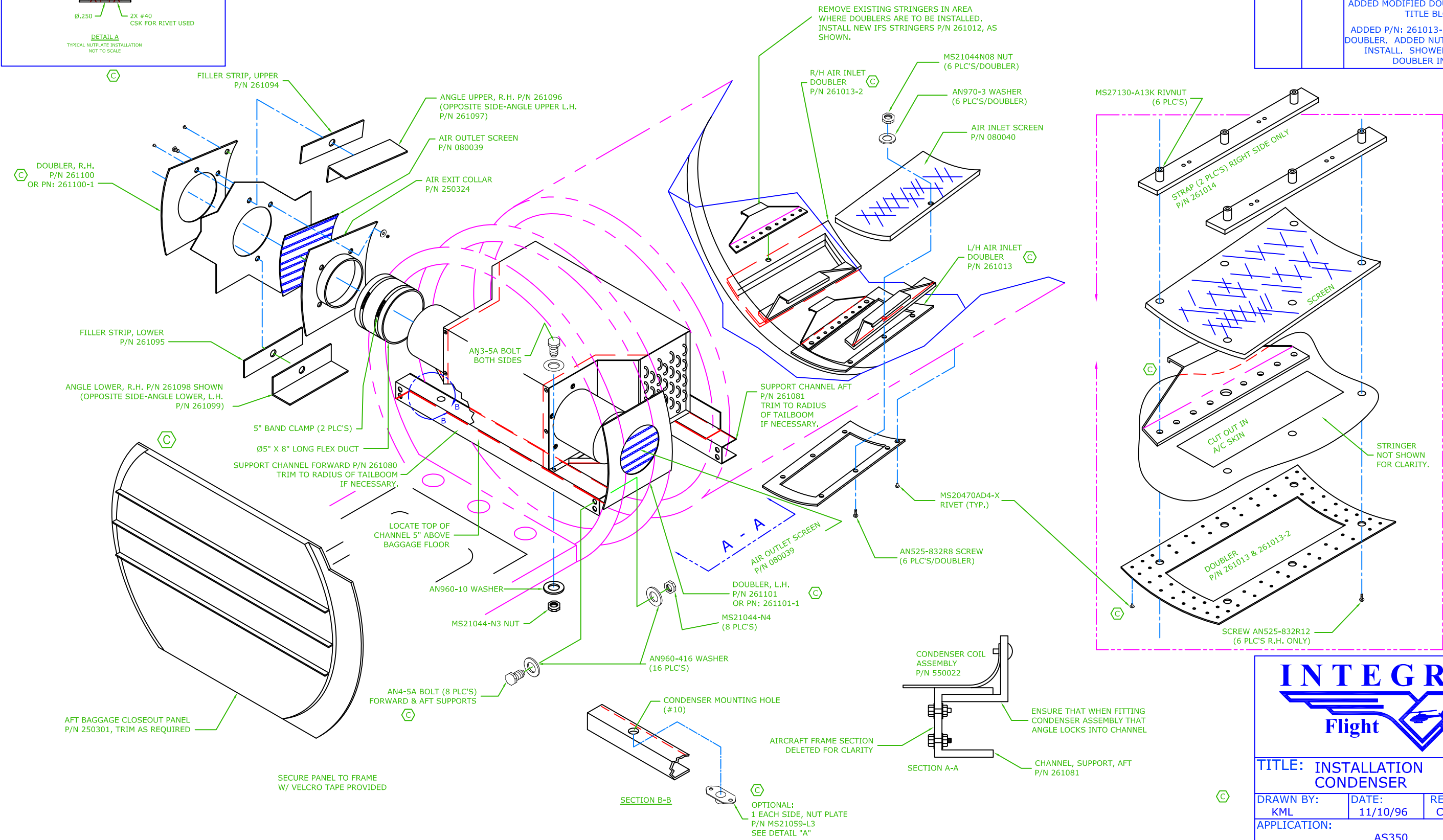
Installation of Condenser

STEP	PROCEDURE	MECH	INSP
6.18	Reinstall the condenser after all hoses have been connected and leak tested.		
6.19	Install dual condenser blowers P/N 050143. Use one mounting screw as ground for each blower.		
6.20	Fit condenser air exit flex duct over blower and onto air exit collar. Install band clamps to secure flex duct.		
6.21	Install Baggage Compartment Close Out Panel P/N 250301 per drawing 7-22-AS350.		



SEE ECO 0280

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	08/16/00	CONVERTED INTO AUTOCAD, REVISED DRAWING NO. WAS 7-AS355, SHEET 1 OF 5.		
B	06/27/02	REDRAWN INTO AUTOCAD, REVISED TITLE BLOCK		
C	02/14/09	CORRECTED DIMENSION CALLOUTS FOR Ø 5" X 8" LONG FLEX DUCT. SPECIFIED BOLT SIZE, WAS AN5-A, IS NOW AN4-5A. ADDED MODIFIED DOUBLERS. REVISED TITLE BLOCK. ADDED P/N: 261013-2; R/H AIR INLET DOUBLER. ADDED NUTPLATE FOR COND. INSTALL. SHOWED RIVETS FOR DOUBLER INSTALL.	MLD	DWE



INTEGRATED
Flight Systems

**TITLE: INSTALLATION
CONDENSER**

DRAWN BY: KML	DATE: 11/10/96	REV C	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 7-22-AS350	



Engineering Change Order

ECO No.
0280

Drawing Number	Revision	Drawing Title
7-22-AS350	C	Installation Condenser

Reason for Change: To increase length of screw at doubler.

Description of Change: Was: AN525-832R8, Is: AN525-832R10

Was:

AN525-832R8

Is:

AN525-832R10



AN525-832R8 SCREW
(6 PLC'S/DOUBLER)

AN525-832R10 SCREW
(6 PLC'S/DOUBLER)

----- LAST ITEM -----

Engineering Review Board Approval

Signature	Stamp	Date	Comment
	ERB02	05/04/11	
	MRB05	05/04/11	
	MRB06	05/04/11	

BAGGAGE DOOR
RIVET LINE.

RIVET LEGEND:

- MS20470AD5-X RIVET EXISTING
- ⊙ MS20470AD5-X RIVET
- MS20470AD4-X RIVET
- MS20470AD4-X RIVET

BAGGAGE DOOR OPENING

FWD

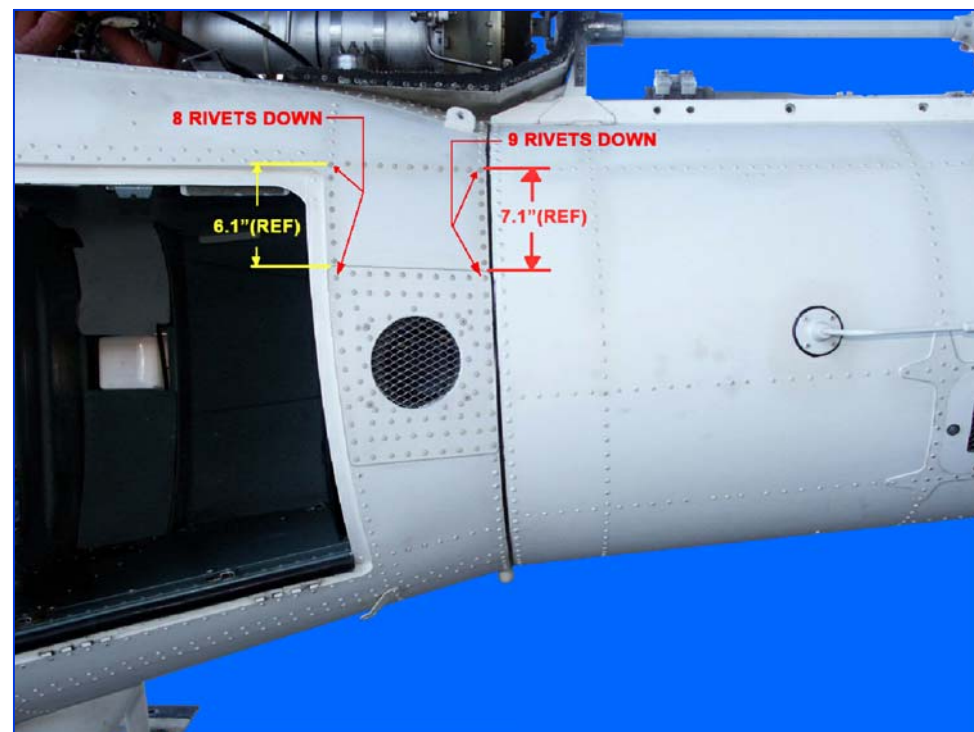
UPPER ANGLE PN: 261097
UPPER FILLER PN: 261094

REMOVE EXISTING ROW OF RIVETS
UNDER DOUBLER VERTICALLY.

FIT DOUBLER THEN BACK DRILL.

DRILL AND INSTALL FIELD RIVETS.

AN525-832R12
SCREW
(4 PLC's)



6.1
(REF)

8 RIVETS DOWN

9 RIVETS DOWN

EXISTING RIVETS

NOTES:

1. IF A STRAP TYPE DOUBLER HAS BEEN INSTALLED BY THE MANUFACTURER AT THE SPLICE POINT BETWEEN THE FUSELAGE AND TAILBOOM, SEE IFS DRAWING 7-29-AS350 FOR INSTALLATION OF THIS DOUBLER
2. IF STROBE POWERPACK IS IN THE 3 O'CLOCK POSITION, RELOCATE TO THE 2 O'CLOCK POSITION.
3. RIVET LENGTHS MAYBE DETERMINED UPON INSTALLATION, INTERCHANEABILITY BETWEEN MS20470AD RIVET AND CR3234 OR CR3243 RIVETS IS APPROVED

REMOVE EXISTING
ROW OF RIVETS
UNDER DOUBLER
VERTICALLY.

FIT DOUBLER
THEN BACK DRILL.

DRILL AND
INSTALL FIELD
RIVETS.

L.H. AIR EXIT
DOUBLER
PN: 261101
(ALT: 261101-1)

LOWER ANGLE PN: 261098
LOWER FILLER PN: 261095

STA. 4923

AFT

REVISION RECORD

DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	08/16/00	CONVERTED INTO AUTOCAD, REVISED DRAWING NO. WAS 7-AS355, SHEET 3 OF 5.		
B	04/03/02	REMOVED AS355 NOTES. REMOVED LINEAR DIMENSIONS FOR PLATE ALIGNMENT. ADDED RIVET COUNT FOR PLATE ALIGNMENT. REVISED TITLE BLOCK.		
C	01/03/07	CHANGED RIVET COUNT. ADDED REFERENCE DIMENSIONS FOR PLATE ALIGNMENT. ADDED NOTES 3 - 12.		JTYE
D	06/30/08	ADDED NEW NOTE 1., RENUMBERED FOLLOWING NOTES. ADDED ALT. DOUBLER PN: 261101-1. REVISED TITLE BLOCK.		JTYE

NOTES CONT:

4. LOCATE EXISTING RIVET PATTERN AS SHOWN AND POSITION DOUBLER.
5. MARK AROUND DOUBLER, REMOVE DOUBLER AND REMOVE ANY RIVETS INSIDE MARKING.
6. RE-POSITION DOUBLER, BACK DRILL DOUBLER AND CLECO IN PLACE.
7. CUT OUT CENTER HOLE.
8. MARK OUT 8 RIVET LOCATIONS EQUALLY SPACED IN LINE WITH TOP FWD AND AFT EXISTING RIVETS.
9. NOTE: IF ANY EXISTING HOLE PATTERNS EXIST UNDER THE DOUBLER, USE THESE AS PATTERN FOR ADDED ROWS IN THE FOLLOWING STEPS.
10. ADD A 2nd ROW OF 8 RIVETS EQUALLY SPACED APPROX. 1" DOWN IN LINE WITH FWD AND AFT EXISTING RIVETS. (IF THERE IS AN EXISTING ROW, USE THIS ROW AND EXTRA RIVETS). ALSO DRILL UPPER ANGLE PN: 261096 AND FILLER PN: 261094.
11. MARK OUT 7 RIVET LOCATIONS EQUALLY SPACED ON BOTTOM ROW IN LINE WITH BOTTOM FWD AND AFT EXISTING RIVETS.
12. ADD 2nd ROW OF 8 EQUALLY SPACED RIVETS APPROX. 1" UP. ALSO DRILL IN LOWER ANGLE PN: 261098 AND FILLER PN: 261095.
13. ADD 3rd ROW OF 7 EQUALLY SPACED RIVETS .8" UP.



TITLE: L.H. AIR EXIT
DOUBLER INSTALL

DRAWN BY: KML	DATE: 11/10/96	REV D	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 7-23-AS350	

REMOVE EXISTING BRACKET
FILL HOLES WITH
RIVETS AS SHOWN

EXISTING RIVETS

UPPER ANGLE PN: 261096
UPPER FILLER PN: 261094

REMOVE EXISTING ROW OF
RIVETS UNDER DOUBLER
VERTICALLY.

FIT DOUBLER THEN BACK
DRILL.

DRILL AND INSTALL
FIELD RIVETS.



EXISTING RIVETS

REMOVE EXISTING
ROW OF RIVETS
UNDER DOUBLER
VERTICALLY.

FIT DOUBLER THEN BACK
DRILL.

DRILL AND INSTALL
FIELD RIVETS.

AN525-832R12
SCREW
(4 PLC's)

EXISTING RIVETS

R.H. AIR EXIT
DOUBLER
PN: 261100
(ALT: 261100-1)

LOWER ANGLE PN: 261098
LOWER FILLER PN: 261095

EXISTING RIVETS

AFT

REVISION RECORD

DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	08/16/00	CONVERTED INTO AUTOCAD, REVISED DRAWING NO. WAS 7-AS355, SHEET 3 OF 5.		
B	04/03/02	REMOVED AS355 NOTES. REMOVED LINEAR DIMENSIONS FOR PLATE ALIGNMENT. ADDED RIVET COUNT FOR PLATE ALIGNMENT. REVISED TITLE BLOCK.		
C	01/03/07	REMOVED RIVET COUNT. ADDED REFERENCE PHOTO FOR PLATE ALIGNMENT.		JTYE
D	06/30/08	ADDED NEW NOTE 1., RENUMBERED FOLLOWING NOTES. ADDED ALT. DOUBLER PN: 261100-1. REVISED TITLE BLOCK.		JTYE

NOTES:

1. IF A STRAP TYPE DOUBLER HAS BEEN
INSTALLED BY THE MANUFACTURER AT THE
SPLICE POINT BETWEEN THE FUSELAGE AND
TAILBOOM, SEE IFS DRAWING 7-28-AS350 FOR
INSTALLATION OF THIS DOUBLER
2. RIVET LENGTHS MAYBE DETERMINED UPON
INSTALLATION, INTERCHANEABILITY BETWEEN
MS20470AD RIVET AND CR3234 OR CR3243
RIVETS IS APPROVED

FWD

RIVET LEGEND:

- MS20470AD5-X RIVET EXISTING
- MS20470AD5-X RIVET
- MS20470AD4-X RIVET
- MS20470AD4-X RIVET



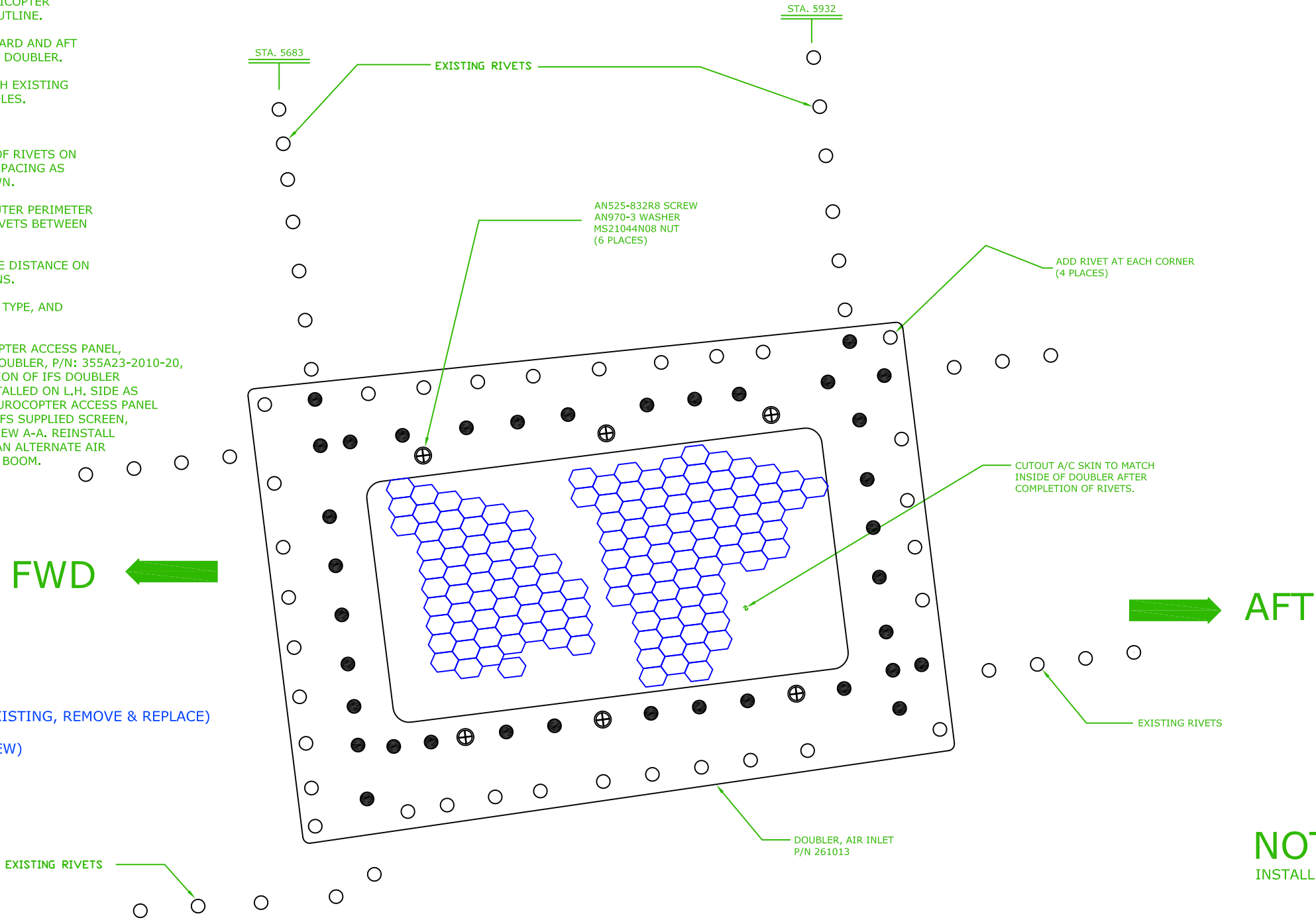
TITLE: R.H. AIR EXIT
DOUBLER INSTALL

DRAWN BY: CS	DATE: 11/10/95	REV D	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 7-24-AS350	

DOUBLER INSTALL

1. LOCATE DOUBLER ON TAIL BOOM, EQUALLY BETWEEN FRAMES.
ENSURE THAT INNER, TOP EDGE OF DOUBLER CUT OUT IS PARALLEL TO HELICOPTER SKIN LAP. TRACE DOUBLER OUTLINE.
2. REMOVE ALL RIVETS IN FORWARD AND AFT VERTICAL ROWS COVERED BY DOUBLER.
3. BACK DRILL DOUBLER TO BOTH EXISTING VERTICAL ROWS OF RIVET HOLES.
4. CLECO DOUBLER IN PLACE.
5. ADD TOP AND BOTTOM ROW OF RIVETS ON INNER PERIMETER ON SAME SPACING AS VERTICAL ROWS OR AS SHOWN.
6. ADD NEW RIVETS AROUND OUTER PERIMETER OF DOUBLER, STAGGERING RIVETS BETWEEN INNER ROW.
7. MAINTAIN 2.0 DIAMETER EDGE DISTANCE ON ALL RIVETS, AT ALL LOCATIONS.
8. SEE LEGEND FOR RIVET SIZE, TYPE, AND LOCATION.
- A9. WHEN AN AMERICAN EUROCOPTER ACCESS PANEL, P/N: 355A23-2010-21, AND DOUBLER, P/N: 355A23-2010-20, IS INSTALLED THE INSTALLATION OF IFS DOUBLER P/N: 261012, CANNOT BE INSTALLED ON L.H. SIDE AS SHOWN. MODIFY AMERICAN EUROCOPTER ACCESS PANEL P/N: 355A23-2010-21 USING IFS SUPPLIED SCREEN, P/N: 080040, AS SHOWN IN VIEW A-A. REINSTALL MODIFIED ACCESS PANEL AS AN ALTERNATE AIR INTAKE ON LEFT SIDE OF TAIL BOOM.

- C RIVET LEGEND:
- MS20470AD4-X RIVET (EXISTING, REMOVE & REPLACE)
- MS20470AD4-X RIVET (NEW)



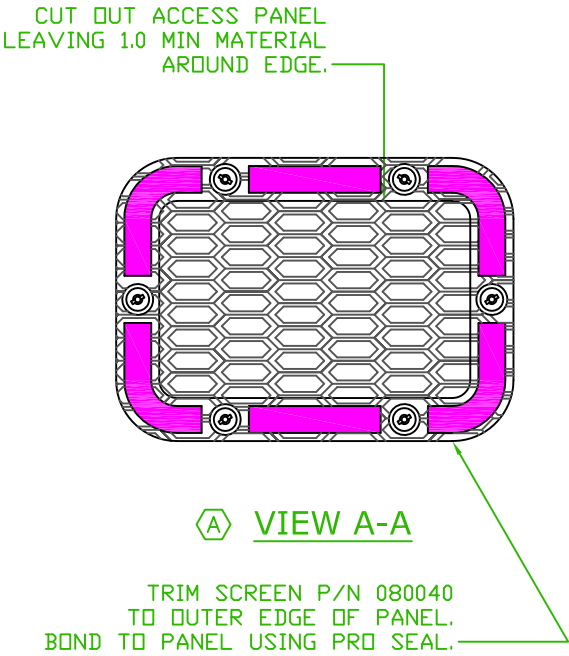
AIR INLET DOUBLER, L.H.

NOTE: RIVET LENGHTS MAYBE DETERMINED UPON INSTALLATION, INTERCHANGEABILITY BETWEEN MS20470AD RIVET AND CR3242 OR CR3243 RIVETS IS APPROVED.

REVISION RECORD

DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	08/16/00	REVISED DRAWING. WAS DRAWING NO. 7-AS355 SH 4 OF 5. ADDED NOTE 9. ADDED VIEW A-A.		
B	06/15/03	CONVERTED TO AUTOCAD, CHANGED TITLE BLOCK.		JTYE
C	02/14/09	CORRECTED RIVET LEGEND, REVISED TITLE BLOCK.	MLD	JTYE

SEE ECO 0281



NOTE

INSTALL R.H. DOUBLER BEFORE L.H.

C B



TITLE: INSTALLATION
AIR INLET DOUBLER L.H.

DRAWN BY: CS	DATE: 11/10/96	REV C	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 7-25-AS350	



Engineering Change Order

ECO No.
0281

Drawing Number	Revision	Drawing Title
7-25-AS350	C	Installation Air Doubler L.H.

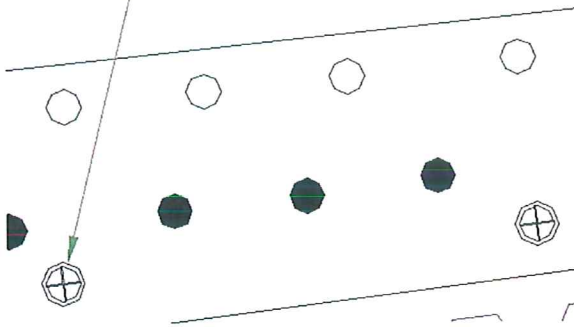
Reason for Change: To increase length of screw at doubler.

Description of Change: Was: AN525-832R8, Is: AN525-832R10

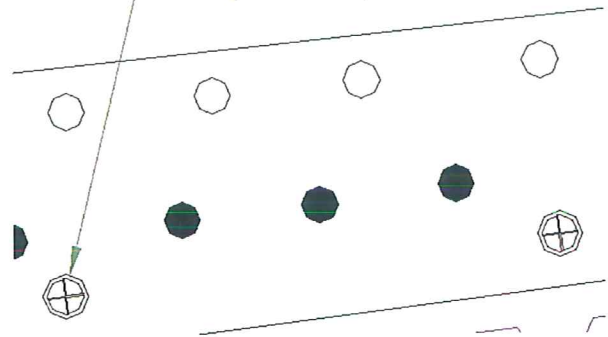
Was:

Is:

AN525-832R8 SCREW
AN970-3 WASHER
MS21044N08 NUT
(6 PLACES)



AN525-832R10 SCREW
AN970-3 WASHER
MS21044N08 NUT
(6 PLACES)



----- LAST ITEM -----

Engineering Review Board Approval

Signature	Stamp	Date	Comment
<i>David Eidman</i>	ERB02	05/04/11	
<i>Scott Cain</i>	MRB05	05/04/11	
<i>Paula Lopez</i>	MRB06	05/04/11	

DOUBLER INSTALL

1. LOCATE DOUBLER ON TAIL BOOM, EQUALLY BETWEEN FRAMES. ENSURE THAT INNER, TOP EDGE OF DOUBLER CUT OUT IS PARALLEL TO HELICOPTER SKIN LAP. TRACE DOUBLER OUTLINE.
2. REMOVE ALL RIVETS IN FORWARD AND AFT VERTICAL ROWS COVERED BY DOUBLER.
3. BACK DRILL DOUBLER TO BOTH EXISTING VERTICAL ROWS OF RIVET HOLES.
4. CLECO DOUBLER IN PLACE.
5. ADD TOP AND BOTTOM ROW OF RIVETS ON INNER PERIMETER ON SAME SPACING AS VERTICAL ROWS OR AS SHOWN.
6. ADD NEW RIVETS AROUND OUTER PERIMETER OF DOUBLER, STAGGERING RIVETS BETWEEN INNER ROW.
7. MAINTAIN 2.0 DIAMETER EDGE DISTANCE ON ALL RIVETS, AT ALL LOCATIONS.
8. SEE LEGEND FOR RIVET SIZE, TYPE, AND LOCATION.

RIVET DESIGNATIONS
TYP. 36 PLACES

AFT

EXISTING RIVETS

AN525-832R8 SCREW
TYP. 6 PLACES

RIVET LEGEND:

- MS20470AD4-X RIVET (EXISTING, REMOVE & REPLACE)
- MS20470AD4-X RIVET (NEW)

STA. 5932

EXISTING RIVETS

STA. 5683

STRINGER
P/N 261012
2 PLACES

ADD RIVET AT
EACH CORNER
(4 PLACES)

SKIN LAP (REF.)

R/H AIR INLET DOUBLER
P/N 261013-2

FWD

CUTOUT A/C SKIN TO MATCH
INSIDE OF DOUBLER AFTER
COMPLETION OF RIVETS.

NOTE:

INSTALL R.H. DOUBLER BEFORE L.H.

AIR INLET DOUBLER, R.H.

NOTE: RIVET LENGTHS MAYBE DETERMINED UPON INSTALLATION, INTERCHANGEABILITY BETWEEN MS20470AD RIVET AND CR3242 OR CR3243 RIVETS IS APPROVED.

C B A

REVISION RECORD

DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	08/16/00	REVISED DRAWING NO., WAS 7-AS 355 SHEET 5 OF 5.		-
B	08/16/00	CONVERTED TO AUTOCAD, CHANGED TITLE BLOCK.		-
C	02/14/09	CHANGED P/N: 261013 TO 261013-2. UPDATED TITLE BLOCK. CORRECTED RIVET LEGEND. CHANGED RIVET DESIGNATIONS ON DOUBLER INSTALL. REVISED TITLE BLOCK.		DWE



TITLE: INSTALLATION AIR INLET DOUBLER, R.H.				
DRAWN BY: KML	DATE: 11/10/96	REV C	SCALE: NTS	SHEET: 1 OF 1
APPLICATION: AS350/355			DWG No. 7-26-AS350	



Engineering Change Order

ECO No.
0282

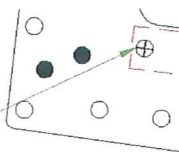
Drawing Number	Revision	Drawing Title
7-26-AS350	C	Installation Air Doubler, R.H.

Reason for Change: To increase length of screw at doubler.

Description of Change: Was: AN525-832R8, Is: AN525-832R10

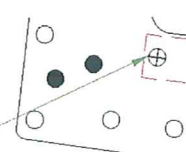
Was:

AN525-832R8 SCREW
TYP. 6 PLACES



Is:

AN525-832R10 SCREW
TYP. 6 PLACES



----- LAST ITEM -----

Engineering Review Board Approval

Signature	Stamp	Date	Comment
<i>David E. [Signature]</i>	ERB02	05/04/11	
<i>Scott [Signature]</i>	MRB05	05/04/11	
<i>Travis [Signature]</i>	MRB06	05/04/11	

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY

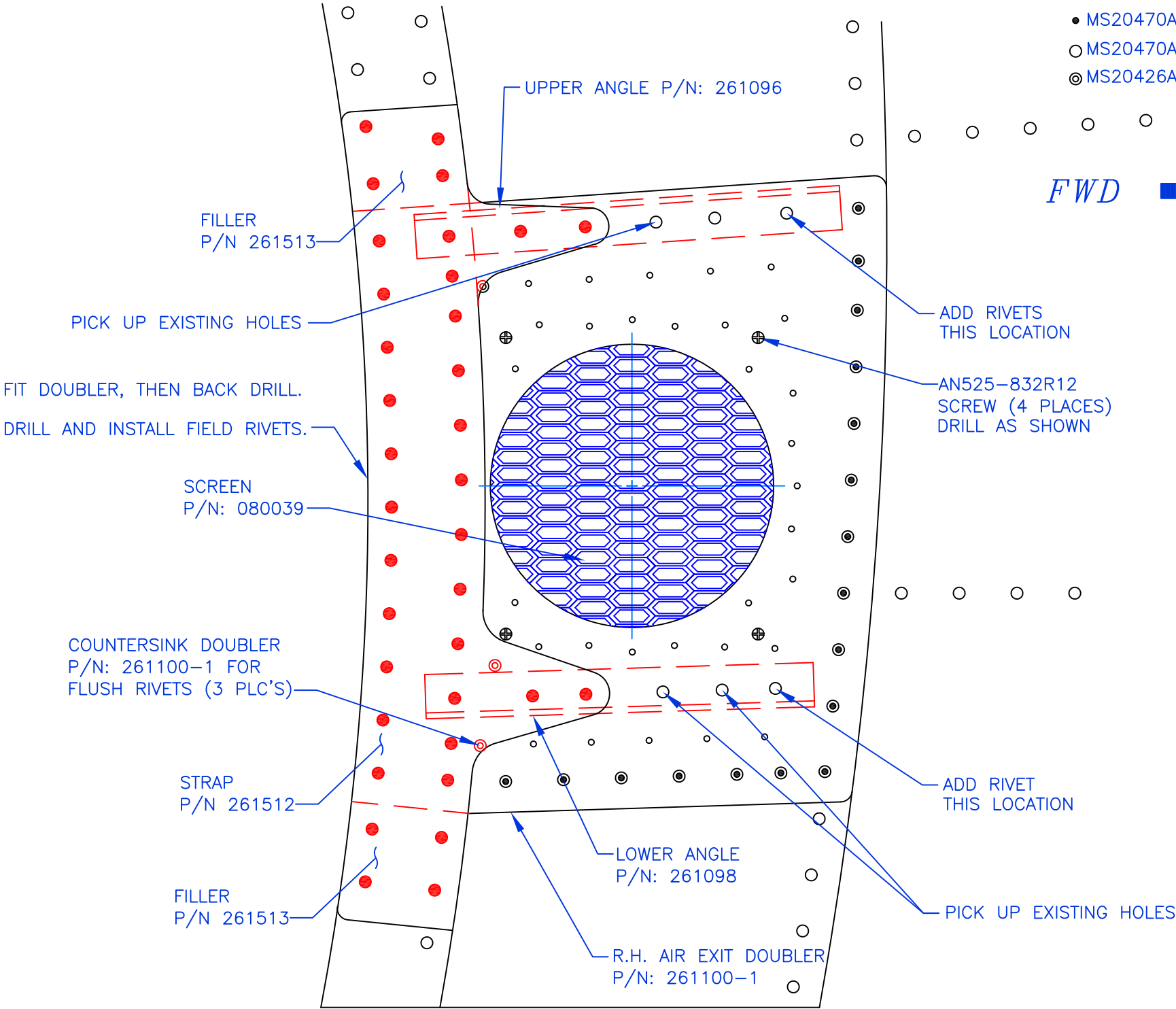
RIVET LEGEND

- MS20470E-X RIVET
ALT: MS20470D-X RIVET
- ⊙ MS20470AD5-X RIVET
- MS20470AD4-X RIVET
- MS20470AD4-X RIVET
- ⊙ MS20426AD4-X RIVET

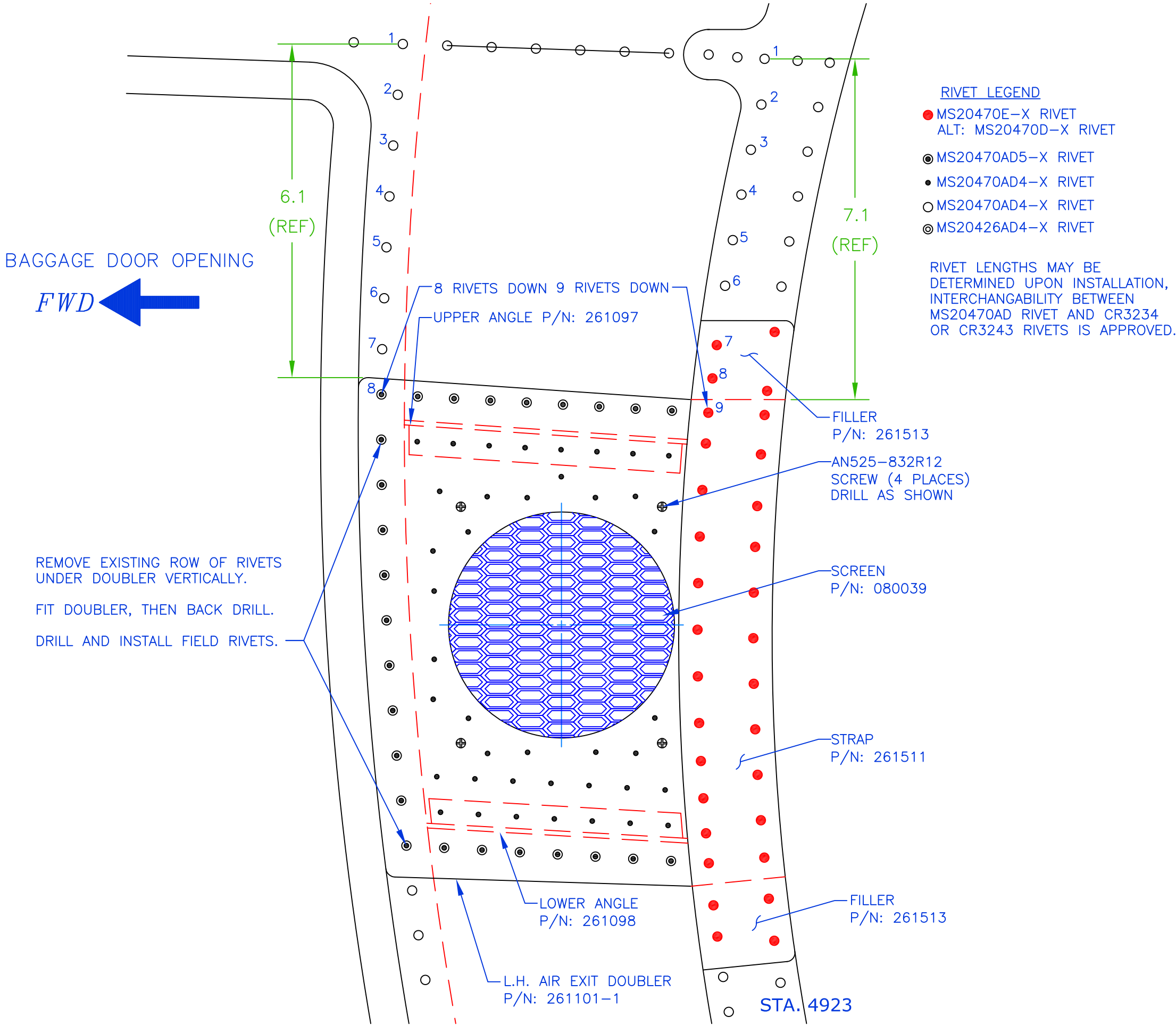
RIVET LENGTHS MAY BE DETERMINED UPON INSTALLATION, INTERCHANGABILITY BETWEEN MS20470AD RIVET AND CR3234 OR CR3243 RIVETS IS APPROVED.

NOTE:

1. THIS INSTALLATION IS APPLICABLE TO AIRCRAFT WITH STRAP TYPE DOUBLERS AT THE SPLICE POINT BETWEEN THE FUSELAGE AND TAILBOOM.
2. REMOVE EXISTING STRAP. DISCARD.
3. REMOVE EXISTING BRACKET INSIDE AND DISCARD.
4. LOCATE EXISTING RIVET PATTERN AS SHOWN AND POSITION DOUBLER.
5. MARK AROUND DOUBLER, REMOVE DOUBLER AND REMOVE ANY RIVETS INSIDE MARKING.
6. RE-POSITION DOUBLER, BACK DRILL DOUBLER AND CLECO IN PLACE.
7. CUT OUT CENTER HOLE. TRIM DOUBLER AS NECESSARY TO FIT.
8. ALSO DRILL UPPER ANGLE P/N: 261096 AND DRILL IN LOWER ANGLE P/N: 261098
9. INSTALL NEW STRAP P/N 261512 IN SAME LOCATION OVER NEW DOUBLER.
10. TRIM LENGTHS AS NECESSARY.
11. SEAL AROUND DOUBLERS WITH PRC.




TITLE: R.H. AIR EXIT DOUBLER INSTALL				
DRAWN BY: MGV	DATE: 10/18/07	REV	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 7-28-AS350	



REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY

- NOTE:
- THIS INSTALLATION IS APPLICABLE TO AIRCRAFT WITH STRAP TYPE DOUBLERS AT THE SPLICE POINT BETWEEN THE FUSELAGE AND TAILBOOM.
 - REMOVE EXISTING STRAP. DISCARD.
 - IF STROBE POWERPACK IS IN THE THREE O'CLOCK POSITION, RE-LOCATE TO THE 2 O'CLOCK POSITION.
 - LOCATE EXISTING RIVET PATTERN AS SHOWN AND POSITION DOUBLER.
 - MARK AROUND DOUBLER, REMOVE DOUBLER AND REMOVE ANY RIVETS INSIDE MARKING.
 - RE-POSITION DOUBLER, BACK DRILL DOUBLER AND CLECO IN PLACE.
 - CUT OUT CENTER HOLE. TRIM DOUBLER AS NECESSARY TO FIT.
 - ALSO DRILL UPPER ANGLE P/N: 261097 AND DRILL IN LOWER ANGLE P/N: 261098
 - INSTALL NEW STRAP P/N 261511 IN SAME LOCATION OVER NEW DOUBLER.
 - TRIM LENGTHS AS NECESSARY.
 - SEAL AROUND DOUBLERS WITH PRC.



TITLE: L.H. AIR EXIT DOUBLER INSTALL

DRAWN BY: MGV	DATE: 10/18/07	REV	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 7-29-AS350	

Step 7

Installation of Forward Evaporator

Integrated Flight Systems
INSTALLATION OF FORWARD EVAPORATOR – AS350 Air Conditioning

Installation of Forward Evaporator

STEP	PROCEDURE	MECH	INSP
7.1	Relocate NR digital indicator. Higher 12” min., and aft of pitot static lines, using assisting hardware. See note C on drawing 4-21-AS350.		
7.2	Relocate warning horn up and forward as required.		
7.3	Position forward evaporator assembly, P/N 560025-O, as shown in drawing 4-21-AS350. Mark rivets to be drilled out and existing bolts that will be used to mount evaporator. Also mark location on inboard forward mount hole on floor as shown in note B on drawing 4-21-AS350.		
7.4	Remove and drill out rivets and marked hole. Install nut plate on evaporator.		
7.5	Position doubler P/N 260373-1 as shown in drawing 4-21-AS350, drill and install as shown. Cut out center. Line hole with Caterpillar, bond to edge of metal.		
7.6	Do not install evaporator until Freon lines are connected.		
7.7	Install drain line from the evaporator out through the cabin floor. The existing hole normally found in the aircraft skin (right forward side) can be utilized. Cutting of the aircraft skin will not usually be required. “IF” no vacant hole is found, locate and drill a hole according to the detail “A” on drawing 4-21-AS350. Secure drain line and cut off at a negative angle.		
7.8	When connecting Freon lines, make sure you install sensing bulb on #10 line. Wrap cork tape around fittings. See drawing 4-21 AS350 “Expansion Valve Detail”. After all lines are attached install Fwd Evaporator with hardware per drawing 4-21-AS350.		
7.9	For mounting forward outlet assemblies, make a template marking the shape of the shape of the housing assembly and 3 mount holes. Position template on glare shield as shown in drawing 5-24-AS350. Drill hole and install with hardware as shown, P/N 500018-2 and P/N 510259-1.		

FWD. EVAPORATOR

NOTE:
IF EXISTING GROMMET
IS NOT AVAILABLE, INSTALL
NEW GROMMET MS35489-135
2" AFT OF EXISTING FOR A/C DRAIN.

NOTE:
RELOCATE WARNING HORN UP
& FORWARD, AS REQUIRED

REVISION RECORD

DWG REV	LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A		05/27/91	REPOSITIONED EVAPORATOR AND LINES. ADDED DETAIL "A" AND NOTES. TITLE BLOCK WAS "CAS" IS NOW "IFS". WAS 2 OF 2, IS NOW 3 OF 3	MD	
B		11/15/99	ADDED NUTPLATE AND NOTE.	JHK	
C		01/25/99	SEE NR NOTE.	JHK	
D		08/16/00	REVISED DRAWING NUMBER, WAS 4-AS350 SHEET 3 OF 3. IS NOW 4-21-AS350	JHK	
E		04/12/02	COMPUTERIZED, CHANGED TITLE BLOCK		JDB
F		01/03/07	CORRECTED FWD EVAP PN: 560025-1-O TO 560025-O. REVISED TITLE BLOCK.	IFS	JTYE

DRAIN TUBE

45°

1.00

CUT DRAIN TUBE
AS SHOWN

A

DETAIL A
FORWARD

FWD

RIVET CR 3243-4-3 (TYP. 16)

LINE W/"CATERPILLAR", BOND TO
METAL

DOUBLER P/N 260373-1

CP 104

DRAIN TUBE SEE DETAIL "A"

FORWARD EVAPORATOR
ASS'Y. P/N 560025-"O"
DELETED FOR CLARITY

SENSING BULB

B

STAINLESS
STEEL CLAMP

INSULATION
DELETED
FOR CLARITY

EVAP

EXPANSION VALVE

EXPANSION VALVE DETAIL
SCALE: NONE
INSULATE SENSION BULB BEFORE
CHARGING WITH REFRIGERENT.

INSTALL EVAP TEMPORALLY AND
LOCATE FWD INBOARD NUTPLATE
LOCATION. REMOVE EVAP AND
INSTALL NUTPLATE MS21059L3
W/2 EA. RIVET CCR264SS3-3

B

USE 5TH
BOLT FROM
CORNER 12"

INSTALL W/EXISTING AIRCRAFT FASTENER

C

NOTE: B3 ONLY
RELOCATE NR DIGITAL INDICATOR MOUNTED
NEAR FLOOR, ON RIGHT SIDE OF CONSOLE
PANEL UP 12.0" MIN. FROM FLOOR AND AFT
OF PITOT STATIC LINES USING EXISTING HARDWARE.
REROUTE NR WIRE TO ACCOMODATE NEW NR LOCATION.

VIEW LOOKING DOWN AT COCKPIT
FLOOR FORWARD OF PILOT'S SEAT

FWD

OUTBD

DRILL OUT EXISTING ACH RIVETS &
ENLARGE HOLE TO #10
INSTALL W/AN3-4A BOLTS(3)
AN960-10 WASHERS(6)
MS21044-N3 NUTS(3)

EXTREMELY
IMPORTANT !!

FAILURE TO SECURE EXPANSION VALVE
SENSING BULB, TIGHTLY, TO THE
RETURN LINE HOSE FITTING (#10)
WITH A STAINLESS STEEL CLAMP
(AND INSULATE SENSING BULB & LINE)
WILL DRAMATICALLY DECREASE THE
PERFORMANCE OF THE AFT
EVAPORATOR (NOT FORWARD)

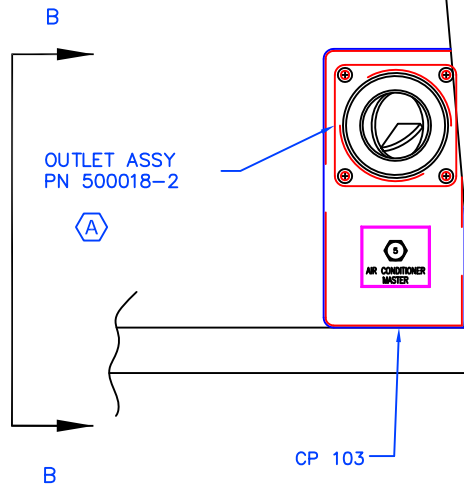
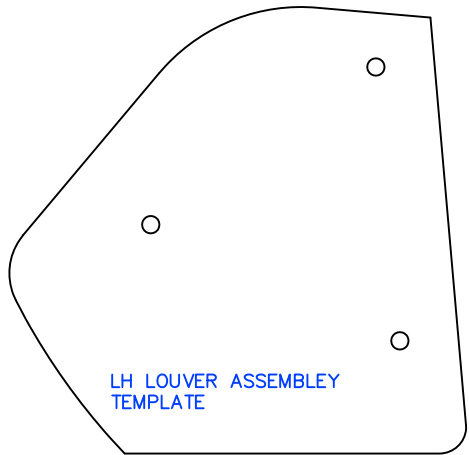
INTEGRATED
Flight Systems

TITLE: FORWARD EVAPORATOR
INSTALL

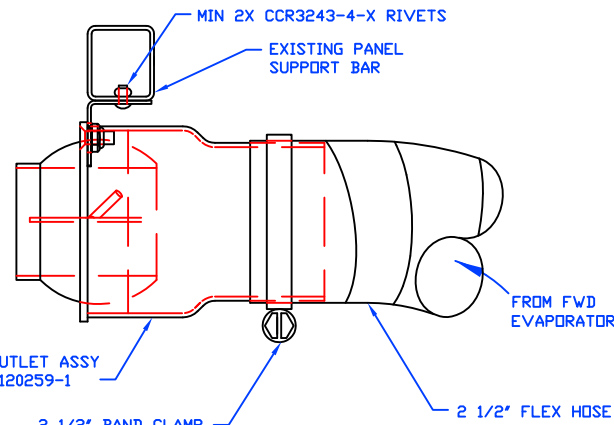
DRAWN BY: JEL	DATE: 06/20/85	REV F	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 4-21-AS350	

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	06/30/08	CHANGED L/H AIR OUTLET FROM 500018-1 TO 500018-2. CORRECTED APPEARANCE, REVISED TITLE BLOCK.		JTYE

- REFERENCE ONLY(3 PLCS)
- 1 COPY TEMPLATE
 - 2 TAPE TEMPLATE INSIDE ACTUAL PART LH
 - 3 LOCATE HOLES IN COPY TO ACTUAL HOLES IN CLIP NUT, USE ACTUAL HOLES IN PART TO LOCATE & MOUNT COMPONENTS



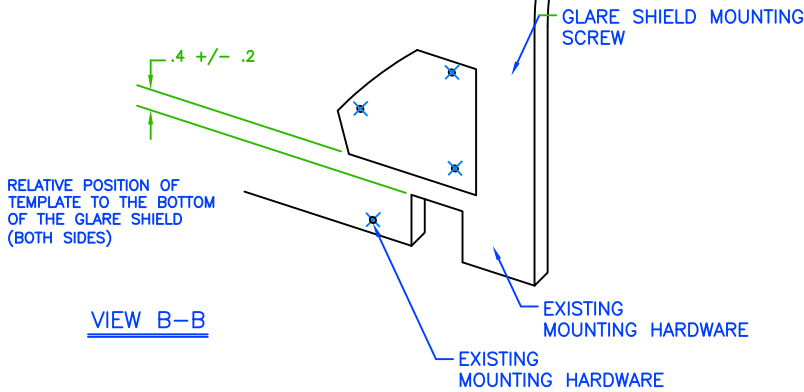
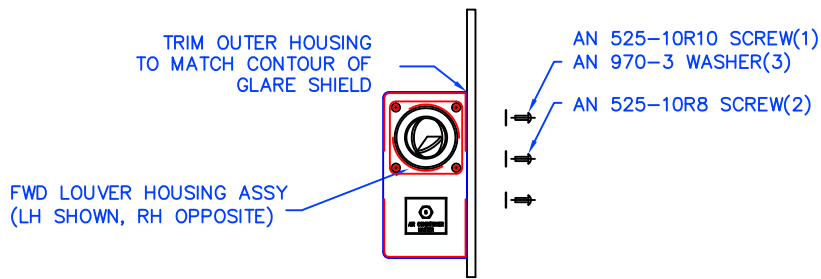
AIR OUTLET INSTALLATION
VIEW LOOKING FORWARD AT INSTRUMENT PANEL



VIEW A-A

SUPPORT BAR

CP 102
RH AIR OUTLET ASSEMBLY
IFS PN 510259-1

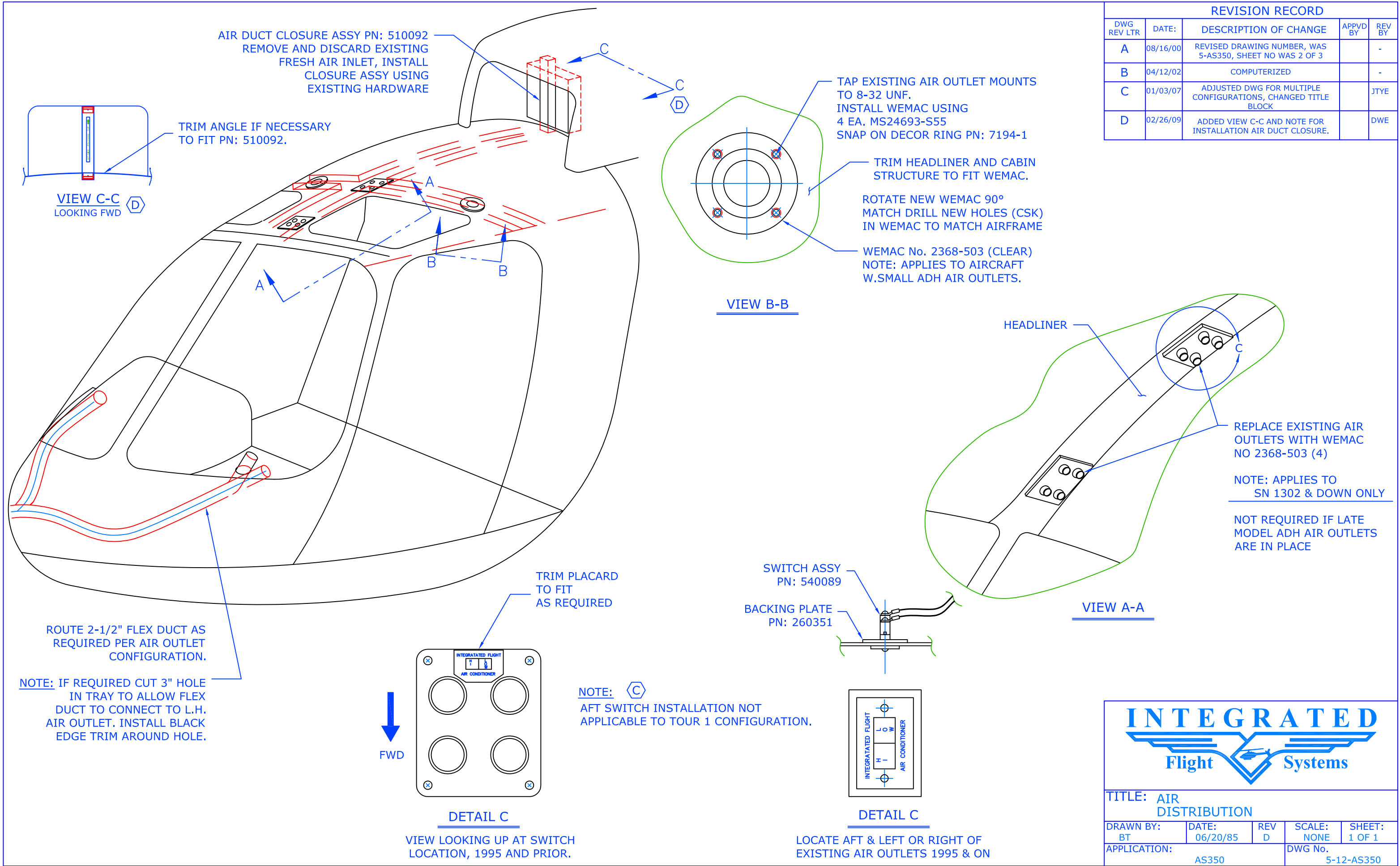


UTILIZED WITH:
LAW ENFORCEMENT



TITLE: AIR
DISTRIBUTIOIN

DRAWN BY: JTYE	DATE: 07/05/02	REV A	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 5-24-AS350	



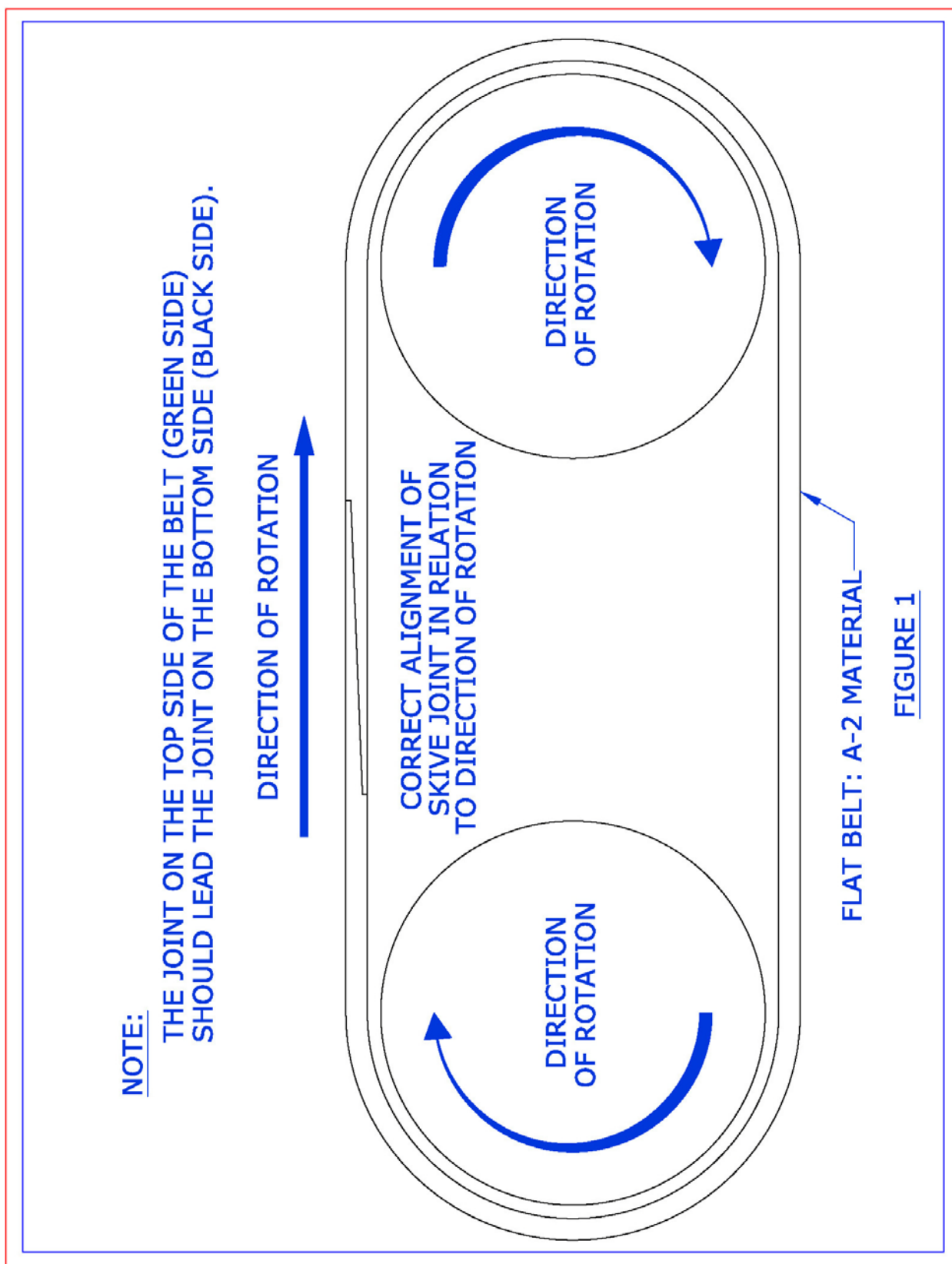
Step 8

Installation of Compressor

Installation of Compressor

STEP	PROCEDURE	MECH	INSP
8.0	NOTE: MUST BE PERFORMED IN ACCORDANCE WITH CURRENT EUROCOPTER TECHNICAL DATA.		
8.1	Place a support on the transmission deck to support the engine drive while the shaft is disconnected for belt installation.		
8.2	Remove the cotter pins from the four pins holding the “Gimble Ring” at the Thomas coupling.		
8.3	Slide the “Gimble Ring” aft to gain access to the Thomas coupling.		
8.4	Remove the 6 bolts and Thomas coupling connecting the drive shaft and shift slightly aft.		
8.5	Install two (2) Compressor Drive belts		
8.6	Reassemble the Thomas coupling per AEC Specifications. Torque and Safety Coupling!! Torque Mark all bolts.		
8.7	Secure 1 belt to the outside of the drive shaft cover for a spare and slip one through the housing and over the drive pulley. NOTE: THE CURRENT BELT P/N 060018-1 HAS A SPECIFIC DIRECTION OF ROTATION. (See figure 1, page 3) NOTE: THE CURRENT BELT P/N 060005 HAS NO SPECIFIC DIRECTION OF ROTATION.		

Integrated Flight Systems
INSTALLATION OF COMPRESSOR – AS350 Air Conditioning

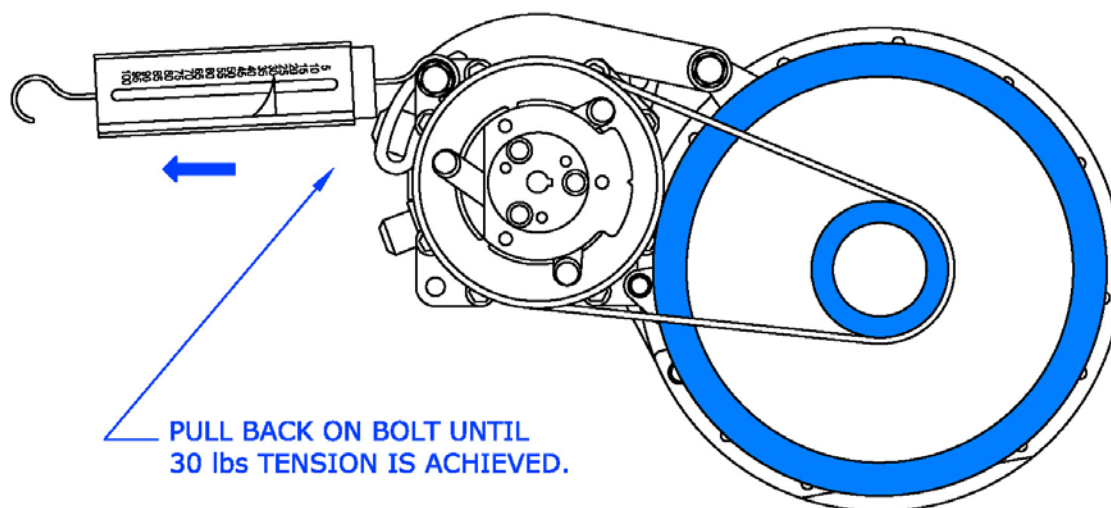


Integrated Flight Systems
INSTALLATION OF COMPRESSOR – AS350 Air Conditioning

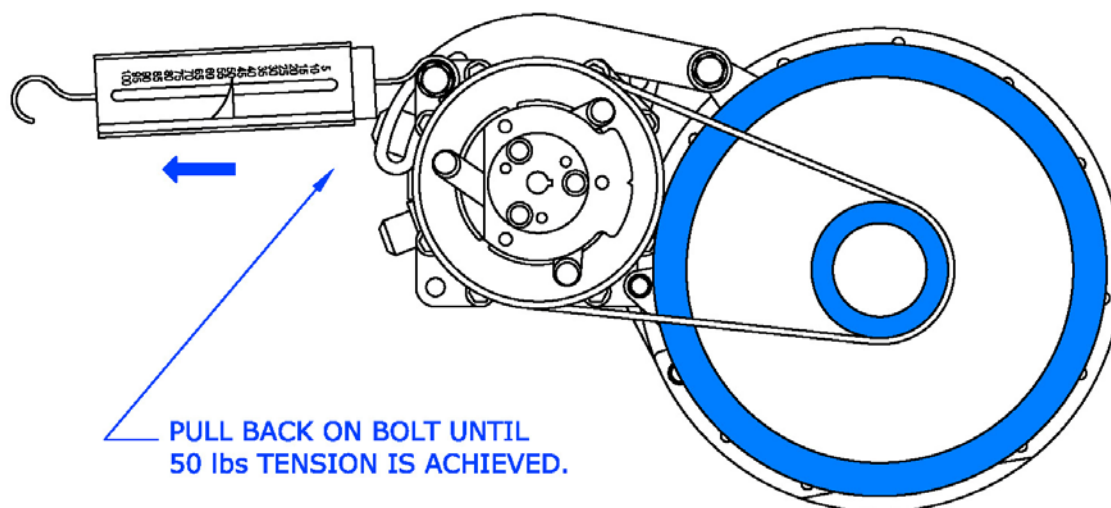
Installation of Compressor

STEP	PROCEDURE	MECH	INSP
8.8	Install the “Gimble Ring” pins and cotter pins. Remove supports.		
8.9	Installation of Bracket Kit P/N IFS-350/130-507 in accordance with: 6-2-AS350, 6-12-AS350 and 6-21-AS350 or 6-3-AS350, 6-13-AS350 and 6-22-AS350.		
8.10	Install the Forward Compressor Bracket, Compressor Standoffs and Compressor per Drawings: 6-2-AS350, 6-12-AS350 and 6-21-AS350 or 6-3-AS350, 6-13-AS350 and 6-22-AS350		
8.11	Install the compressor drive belt on the drive pulley and the compressor clutch pulley. Tighten bolts at the adjustment arm assuring the belt proper amount of tension. Tighten the lower forward mounting bolt.		
8.12	This tension may be performed by either pull scale. (See Belt Tension Recommendation)		
8.13	50/30 lbs pull tension at tension adjustment bolt should provide adequate belt tension. (See figure 2, page 5)		
<p style="text-align: center;"><u>BELT TENSION RECOMMENDATION:</u></p> <p style="text-align: center;">FLAT BELT IFS P/N 060018-1_____TENSION TO 50lbs</p> <p style="text-align: center;">GROOVED BELT IFS P/N 060005_____TENSION TO 30lbs</p>			

Integrated Flight Systems
INSTALLATION OF COMPRESSOR – AS350 Air Conditioning



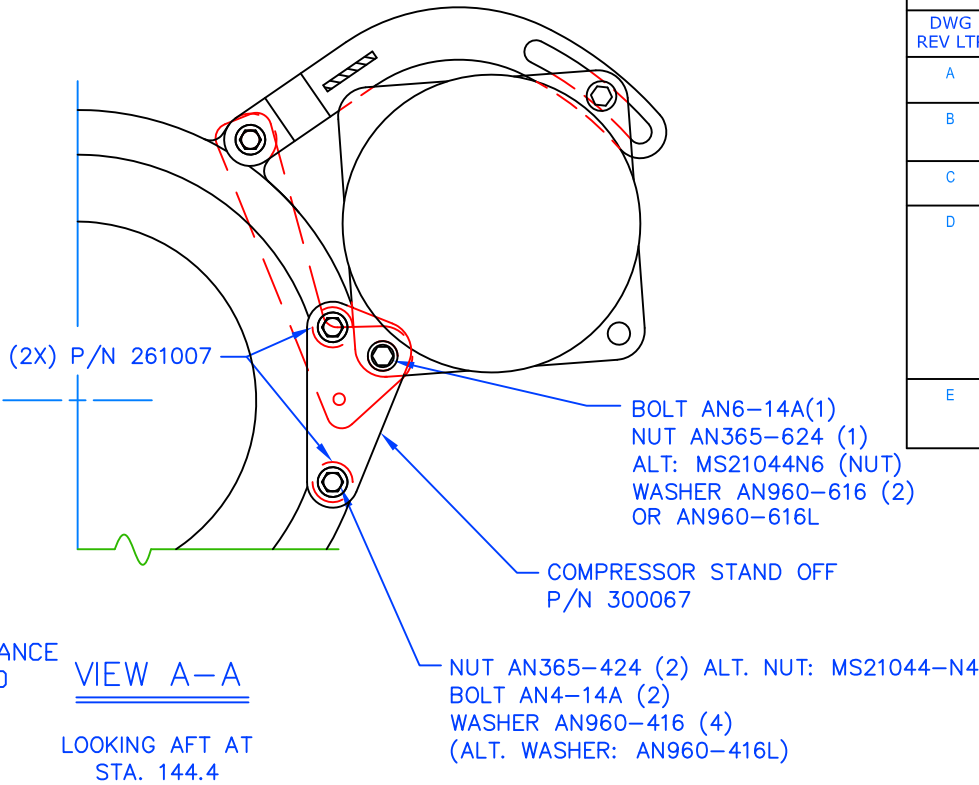
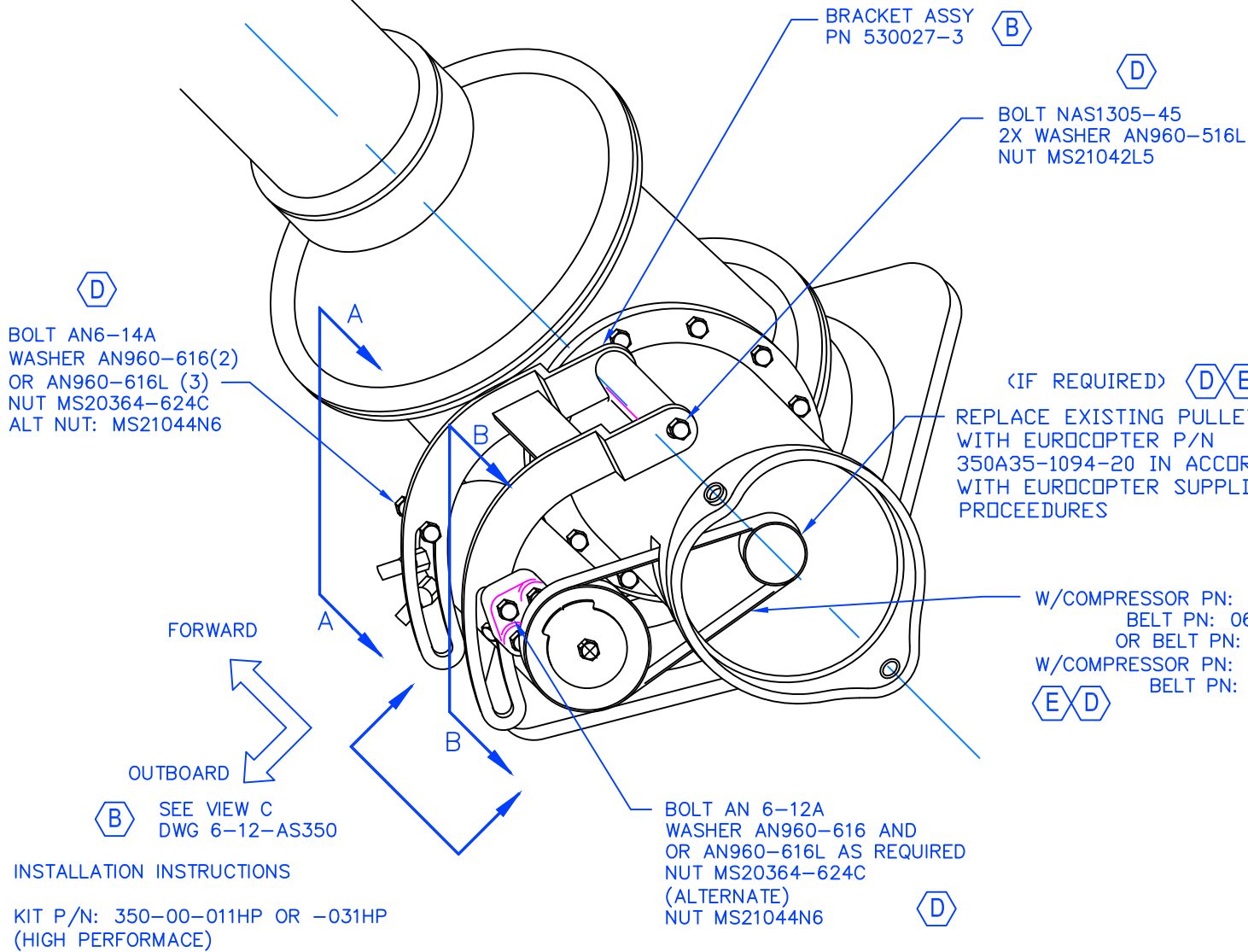
060005 GROOVED BELT



060018-1 FLAT BELT

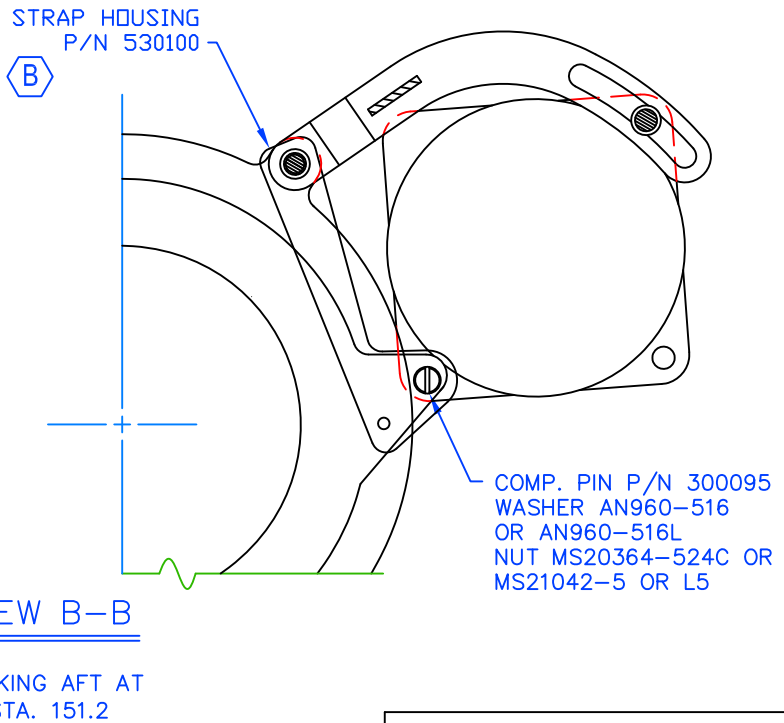
FIGURE 2

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	08/16/00	REVISED DRAWING NUMBER, WAS 6-AS350 SHEET NUMBER WAS 1 OF 3.	-	-
B	04/15/02	COMPUTERIZED, CHANGED TITLE BLOCK TO PAG. ADDED VIEW OF P/N 530100. CHANGED 530027-1 TO 530027-3.	-	-
C	07/15/02	CHANGED PN: 261008 TO 2X PN: 261007, REVISED TITLE BLOCK.	-	-
D	01/30/06	CHANGED BOLT, NAS1305-44 TO NAS1305-45 FOR EXTRA LENGTH. ADDED BELT PN 060018-1 TO ADDRESS LENGTH ISSUE. CHANGED NO. OF WASHERS. ADDED "AS REQUIRED" TO WASHER NOTATION. ADDED COMPRESSOR PN: 590008-1 ADDED BELTS PN's 060005 AND 060006 FOR ALT. COMPRESSOR INSTALLATION. ADDED NOTATION TO CHANGE PULLEY ON TAIL ROTOR DRIVE SHAFT. REVISED APPLICABLE NOTATION.	-	JTYE
E	06/30/08	AEC PN: 350A351094 IS NOW PN: 350A35-1094-20. CORRECTED TO MATCH AEC IPC. REMOVED BELT PN: 060006, CORRECTED NOTE 2 TO MATCH. REVISED TITLE BLOCK.	-	JTYE



UTILIZED WITH:

1. AS 350 WITH OLDER
TRANSMISSION HOUSING
DESIGN.



- 1) THE ABOVE TWO (2) KITS UTILIZE THE SANDEN SD-507 COMPRESSOR IFS PN: 590008 OR COMPRESSOR PN: 590008-1 IN LIEU OF THE SANDEN SD-505 IFS P/N: 590001-1-"O". AN INCREASE OF 2 CUBIC INCHES IN DISPLACEMENT IS ACHIEVED. BOTH UNITS HAVE THE SAME "FOOT PRINT". HOWEVER, THE SD-507 IS SLIGHTLY LONGER.
- 2) THE SAME BELT P/N's: 060018 OR 060018-1 ARE UTILIZED IN THIS INSTALLATION WITH COMPRESSOR PN: 590008. BELT PN's: 060005 WILL BE UTILIZED WITH COMPRESSOR PN: 590008-1.
- 3) THE SAME COMPRESSOR MOUNT ASSEMBLY P/N: 530027-3, PIN P/N: 300095, AND COMPRESSOR STAND OFF P/N: 300067 ARE UTILIZED IN THIS INSTALLATIONS.
- 4) THE AFT, INBOARD COMPRESSOR MOUNTING POINT IS RELOCATED FORWARD BY PLACING TWO ALUMINUM "BUSHINGS", P/N: 2610007 BETWEEN THE "STAND OFF" P/N: 300067 AND THE TRANSMISSION HOUSING. TWO (2) EACH AN4-15A BOLTS MUST BE UTILIZED IN LIEU OF THE AN4-11A FORMERLY USED.
- 6) THE FORWARD, UPPER INBOARD COMPRESSOR EAR IS ALIGNED WITH THE COMPRESSOR UNIT ASSEMBLY BY PLACING A "BUSHING", P/N 261008 BETWEEN THE AFT SIDE OF THE EAR AND THE MOUNT ASSEMBLY.
- 7) AN6-12A BOLTS ARE USED TO ENSURE BELT TENSION IN THE SAME MANNER AS WITH THE SD-505 COMPRESSOR. A MINIMUM THREAD PROTRUSION ON THE FORWARD UPPER BOLT REQUIRES THAT A STEEL SELF LOCKING NUT P/N: MS20364-624C MUST BE UTILIZED.

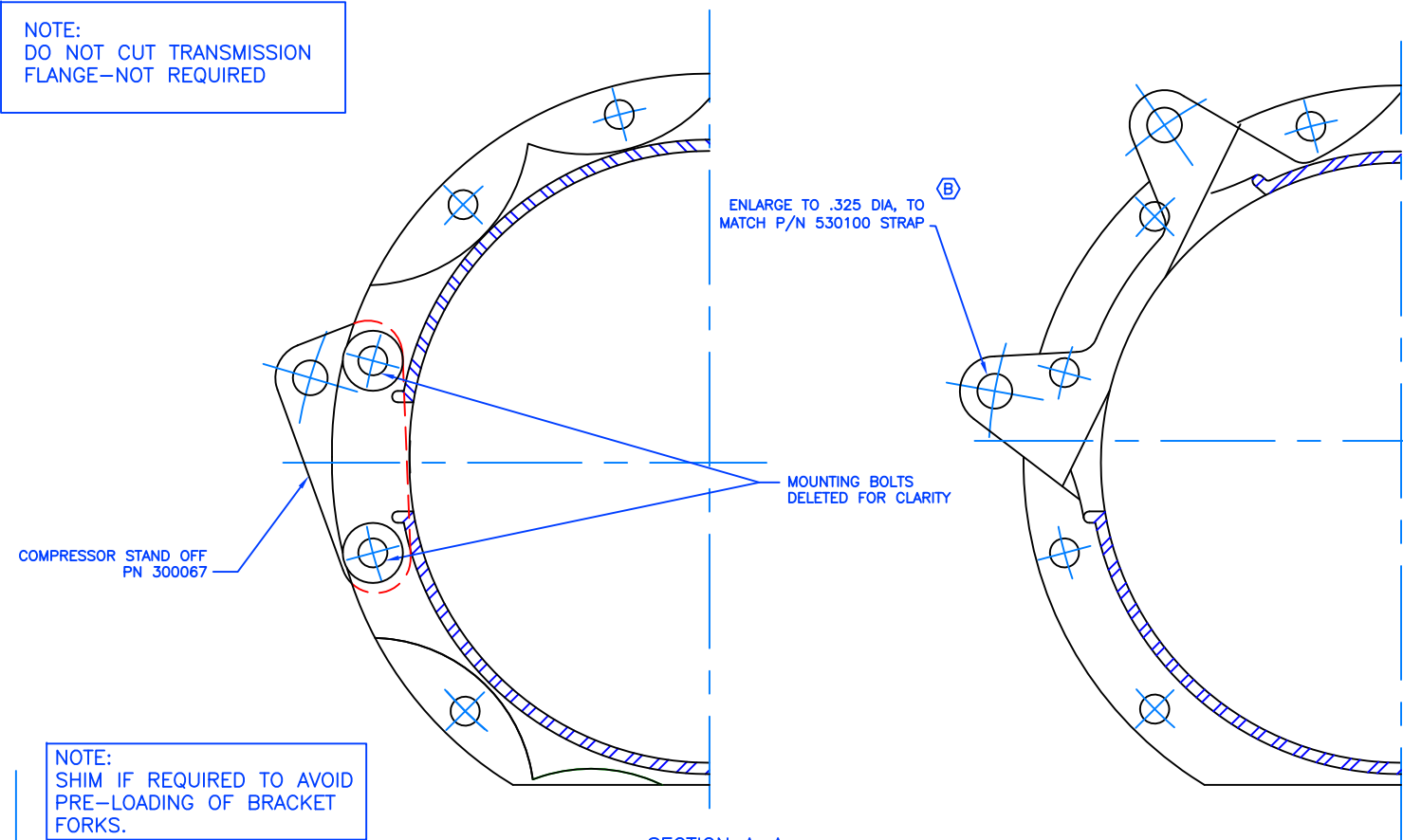
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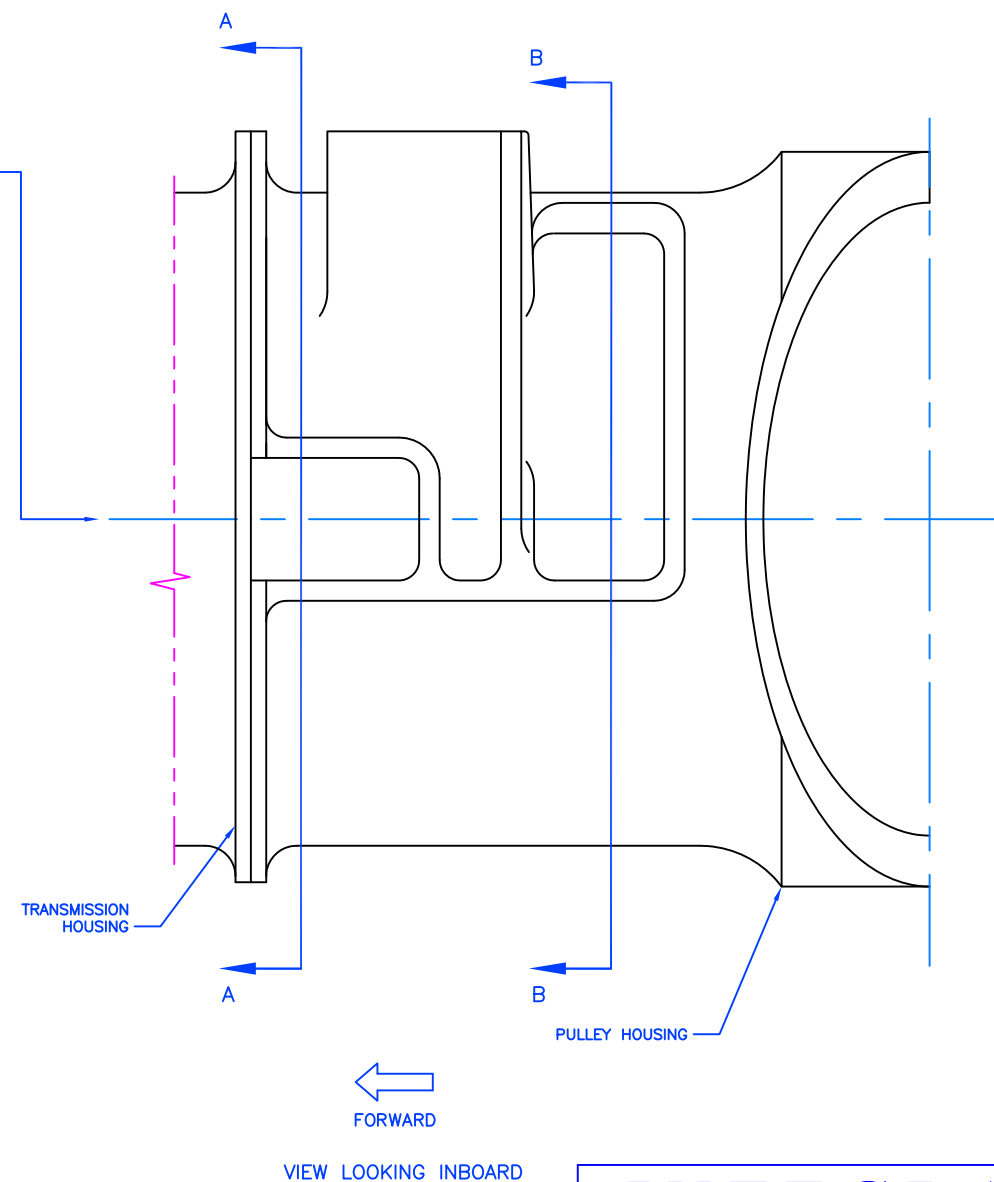
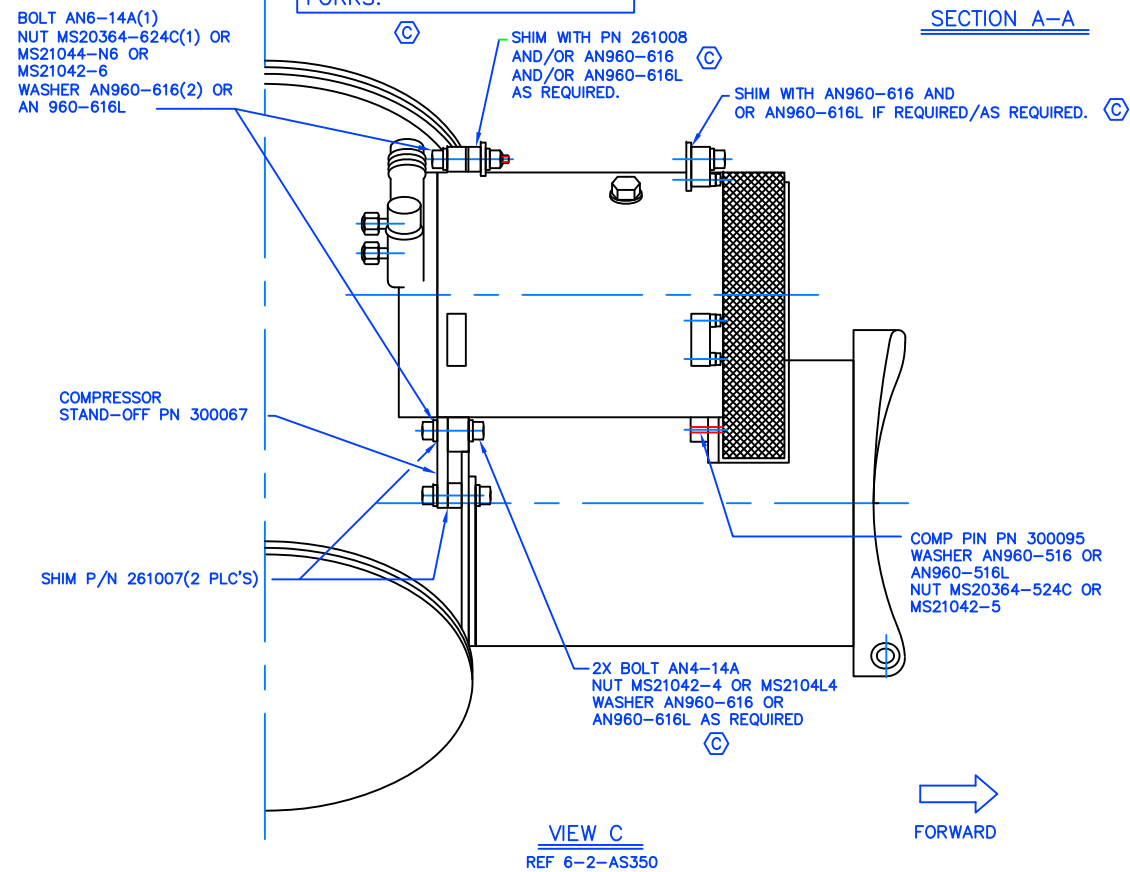
TITLE: COMPRESSOR
INSTALLATION

DRAWN BY: BRP	DATE: 11/10/96	REV E	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 6-2-AS350	

NOTE:
DO NOT CUT TRANSMISSION
FLANGE—NOT REQUIRED



NOTE:
SHIM IF REQUIRED TO AVOID
PRE-LOADING OF BRACKET
FORKS.



REVISION RECORD

DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	08/16/00	REVISED DRAWING NUMBER, WAS 6-AS350, SHEET No. WAS 2 OF 3.	-	-
B	04/16/02	COMPUTERIZED, CLARIFIED NOTE, REVISED TITLE BLOCK	-	-
C	01/30/06	CHANGED NOTES, ADDED PRELOAD NOTE. ADDED SHIMMING NOTES.	-	JTYE
D	06/30/08	REVISED TITLE BLOCK.	-	JTYE

INTEGRATED
Flight Systems

TITLE: COMPRESSOR INSTALLATION				
DRAWN BY: BT	DATE: 11/10/96	REV D	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 6-12-AS350	

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	08/16/00	REDRAWN INTO AUTOCAD, REVISED DRAWING No. WAS 6-AS350; SHEET No. WAS 3 OF 3. ADDED ITEMS 6 TO "INSTRUCTIONS". CHANGED "CASING" TO "HOUSING". ADDED VIEW A, B AND C.	-	-
B	05/08/02	REVISED TITLE BLOCK. CHANGED 530027-2 TO 530027-3. CONVERTED TO AUTOCAD.	-	-
C	01/30/06	CHANGED NAS1305-44 BOLT TO NAS1305-45 FOR LENGTH.	-	JTYE

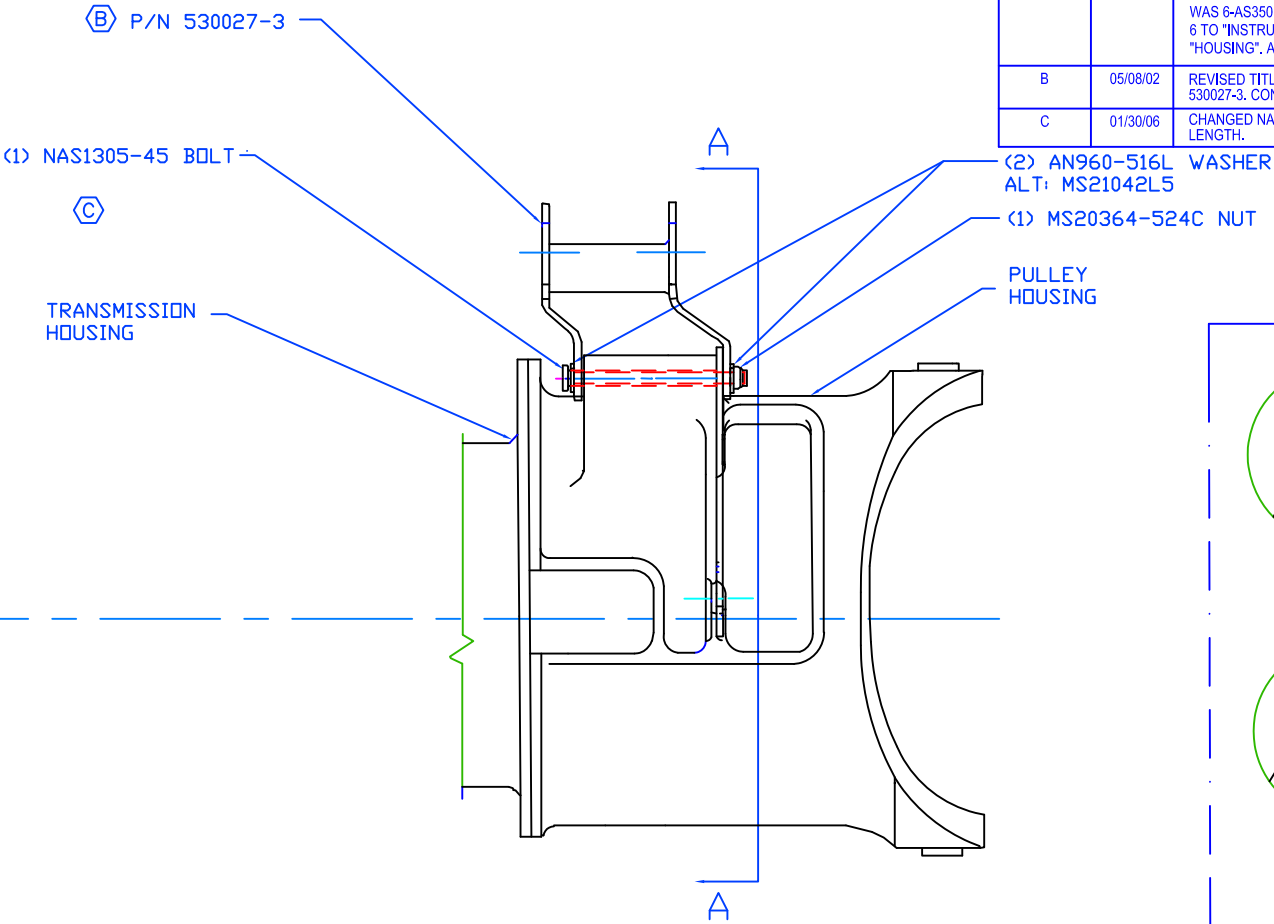
NOTE:
COMPRESSOR REMOVED
FOR CLARITY

AFTER P/N 530100 IS
LOCATED, BACKDRILL #10
HOLE INTO HOUSING,
INSTALL HARDWARE:
AN3-5A BOLT (1)
AN960-10L WASHER (2)
MS21042-L3 NUT (1)

REMOVE TOP OF EAR,
AS NECESSARY, TO ENSURE
P/N 530100 SEATS FLUSH
AGAINST RECESS IN THE
GIMBLE HOUSING

P/N 530100 IS
LOCATED BETWEEN
GIMBLE HOUSING
& P/N 530027-3

SECTION A-A



INSTALLATION INSTRUCTIONS

KIT P/N: 350-00-01, -011, -031, -011HP, AND -031HP

- 1) THE ABOVE KITS UTILIZE THE SANDEN SD-505 OR SD-507 COMPRESSOR (SEE DRAWING 350-00-011HP OR -031HP FOR DETAILS OF SD-507 INSTALLATION).
- 2) IN EARLY 1997 IT WAS NOTICED BY AMERICAN EUROCOPTER AND LATER EUROCOPTER CANADA, LTD. THAT A FEW AS350 MODELS WERE ARRIVING WITH A DIFFERENT "ENGINE TO MAIN GEAR BOX COUPLING CASING", COMMONLY CALLED A "HOUSING", INSTALLED. THE PART NUMBER SHOWN IN THE EUROCOPTER IPC WAS: 350A35-1104-03. THIS COMPONENT HAS "EARS" EXTENDING OFF THE "HOUSING", ON BOTH SIDES, 37 mm IN LENGTH (SEE VIEW "A")

THE NEW "HOUSING" PART NUMBER IS 350A08-1635-21. IT HAS ONE EAR ON THE LEFT SIDE THAT IS ONLY 25 mm LONG. (SEE VIEW "B")

THE 25 mm LONG EAR WILL NOT ALLOW AN INTEGRATED FLIGHT SYSTEMS, INC. SD-505 OR SD-507 COMPRESSOR TO BE INSTALLED IN IT'S USUAL LOCATION.
- 3) THE "LOGICAL ANSWER" WAS TO LOCATE THE "MOUNTING POINT" OF THE COMPRESSOR(S) SO THAT A DIFFERENT LENGTH BELT, ETC. WOULD NOT BE REQUIRED.

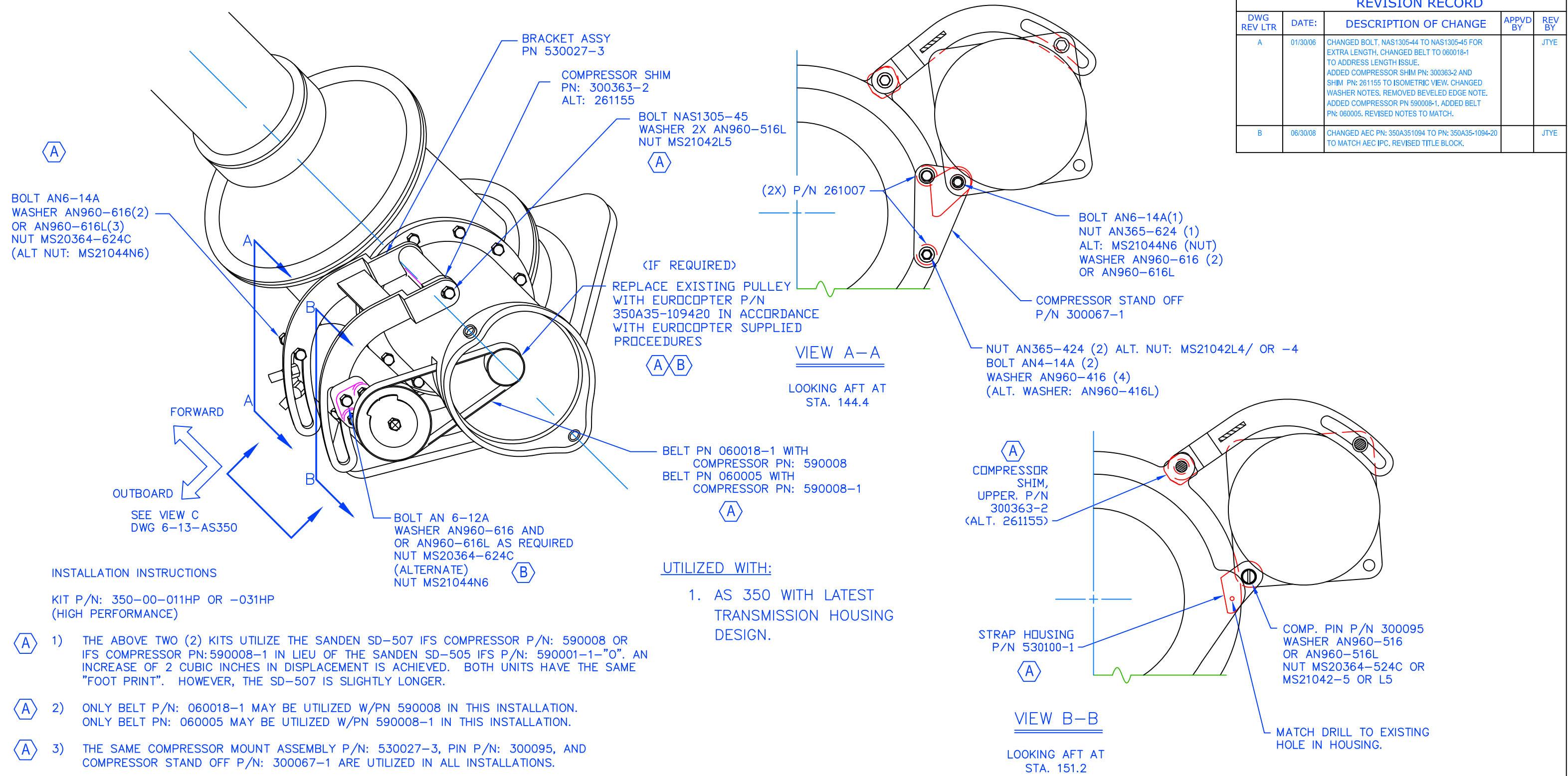
- 4) ONLY TWO (2) PART CHANGES WERE REQUIRED TO ALLOW ITEM 3 TO OCCUR.
a.) COMPRESSOR MOUNT ASSEMBLY 530027-1 WAS CHANGED TO -2 (.125" WIDER AT THE TOP MOUNTING POINT).
b.) A NEW COMPONENT, NOT PREVIOUSLY USED, "STRAP, HOUSING MOD. ASSEMBLY", P/N: 530100 IS UTILIZED TO LOCATE THE COMPRESSOR MOUNTING POINT BACK TO IT'S ORIGINAL LOCATION.
c.) A AN3-5A BOLT AND ASSOCIATED HARDWARE SECURES THE "STRAP" TO THE "HOUSING".
- 5) IN SOME CASES IT MAY BE NECESSARY TO REMOVE A SMALL AMOUNT OF MATERIAL FROM THE OUTER EDGE OF THE 25 mm EAR TO ALLOW THE "NEW" IFS COMPONENT TO LAY IN IT'S PROPER LOCATION. THIS IS DUE TO THE "SHIM" WELDED ON THE FORWARD SIDE OF THE COMPONENT WHICH ALLOWS ALIGNMENT TO THE COMPRESSOR EAR. ANY PAINT REMOVED FROM THE "HOUSING" EAR MUST BE TOUCHED UP BEFORE INSTALLING THE IFS PARTS.
- 6) IF AERO AIRE OR OTHER SIMILAR TYPE A/C COMPRESSOR HAS BEEN PREVIOUSLY INSTALLED PER VIEW "B" OR "C", IT MAY BE NECESSARY TO FOLLOW THE STEPS IN ITEM 5 FOR CORRECT CLEARANCE.

VIEW LOOKING INBOARD
FORWARD




TITLE: COMPRESSOR INSTALLATION				
DRAWN BY: KLM	DATE: 11/10/96	REV D	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 6-21-AS350	

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	01/30/06	CHANGED BOLT, NAS1305-44 TO NAS1305-45 FOR EXTRA LENGTH. CHANGED BELT TO 060018-1 TO ADDRESS LENGTH ISSUE. ADDED COMPRESSOR SHIM PN: 300363-2 AND SHIM PN: 261155 TO ISOMETRIC VIEW. CHANGED WASHER NOTES, REMOVED BEVELED EDGE NOTE. ADDED COMPRESSOR PN 590008-1. ADDED BELT PN: 060005. REVISED NOTES TO MATCH.		JTYE
B	06/30/08	CHANGED AEC PN: 350A35-1094 TO PN: 350A35-1094-20 TO MATCH AEC IPC. REVISED TITLE BLOCK.		JTYE



- 1) THE ABOVE TWO (2) KITS UTILIZE THE SANDEN SD-507 IFS COMPRESSOR P/N: 590008 OR IFS COMPRESSOR PN:590008-1 IN LIEU OF THE SANDEN SD-505 IFS P/N: 590001-1-"O". AN INCREASE OF 2 CUBIC INCHES IN DISPLACEMENT IS ACHIEVED. BOTH UNITS HAVE THE SAME "FOOT PRINT". HOWEVER, THE SD-507 IS SLIGHTLY LONGER.
- 2) ONLY BELT P/N: 060018-1 MAY BE UTILIZED W/PN 590008 IN THIS INSTALLATION. ONLY BELT PN: 060005 MAY BE UTILIZED W/PN 590008-1 IN THIS INSTALLATION.
- 3) THE SAME COMPRESSOR MOUNT ASSEMBLY P/N: 530027-3, PIN P/N: 300095, AND COMPRESSOR STAND OFF P/N: 300067-1 ARE UTILIZED IN ALL INSTALLATIONS.
- 4) THE AFT, INBOARD COMPRESSOR MOUNTING POINT IS RELOCATED FORWARD BY PLACING TWO ALUMINUM "BUSHINGS", P/N: 2610007 BETWEEN THE "STAND OFF" P/N: 300067-1 AND THE TRANSMISSION HOUSING. TWO (2) EACH AN4-15A BOLTS MUST BE UTILIZED IN LIEU OF THE AN4-11A FORMERLY USED.
- 6) THE FORWARD, UPPER INBOARD COMPRESSOR EAR IS ALIGNED WITH THE COMPRESSOR UNIT ASSEMBLY BY PLACING A "BUSHING", P/N 261008 BETWEEN THE AFT SIDE OF THE EAR AND THE MOUNT ASSEMBLY.
- 7) AN6-12A BOLTS ARE USED TO ENSURE BELT TENSION IN THE SAME MANNER AS WITH THE SD-505 COMPRESSOR. A MINIMUM THREAD PROTRUSION ON THE FORWARD UPPER BOLT REQUIRES THAT A STEEL SELF LOCKING NUT P/N: MS20364-624C MUST BE UTILIZED.

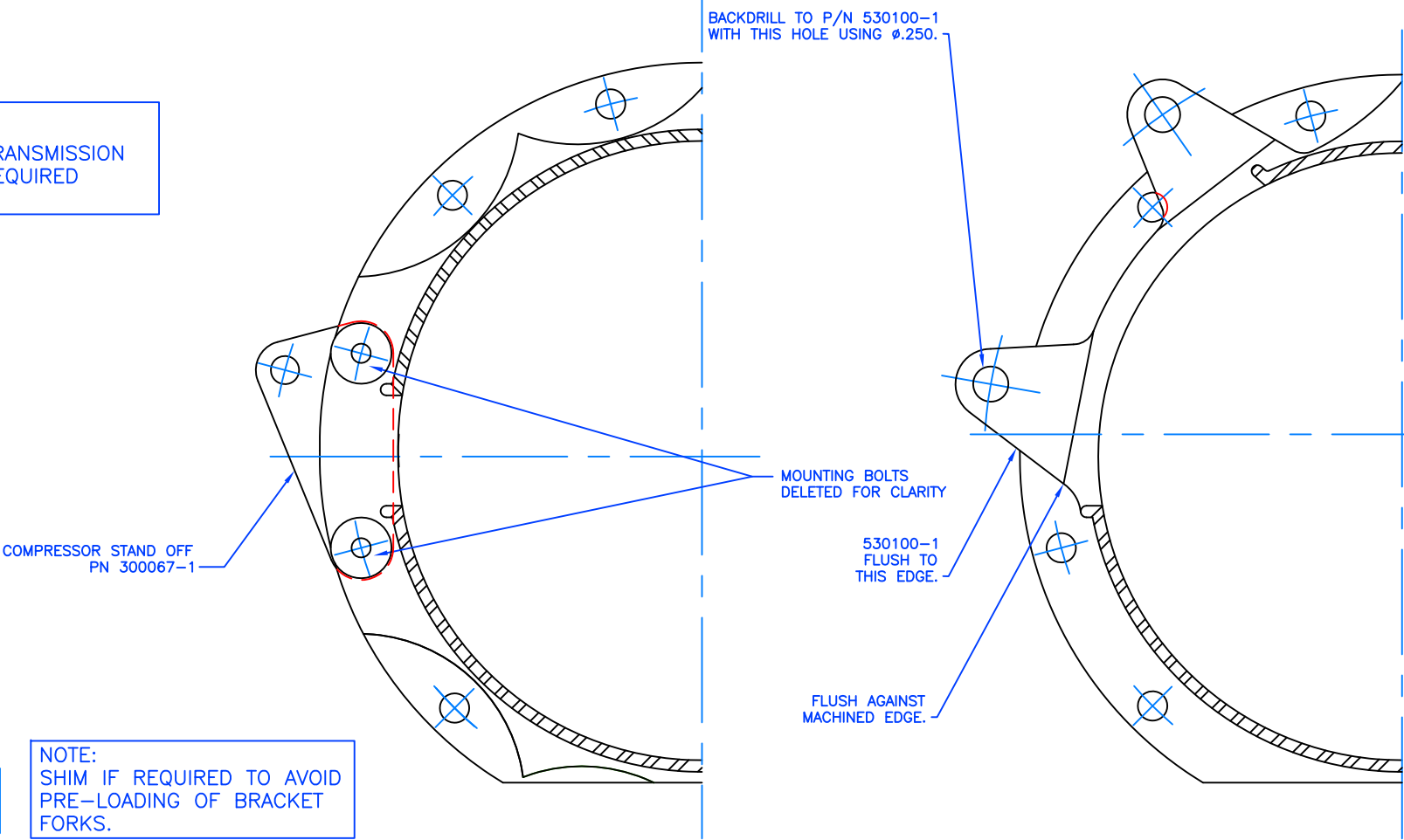


**TITLE: COMPRESSOR
INSTALLATION**

DRAWN BY: JTYE	DATE: 11/10/96	REV B	SCALE: NTS	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 6-3-AS350	

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	01/30/06	CHANGED WASHER NOTES FOR PRE-LOADING OF BRACKET	-	JTYE
B	06/30/08	REVISED TITLE BLOCK.	-	JTYE

NOTE:
DO NOT CUT TRANSMISSION
FLANGE—NOT REQUIRED



NOTE:
SHIM IF REQUIRED TO AVOID
PRE-LOADING OF BRACKET
FORKS.

BOLT AN6-14A(1)
NUT MS20364-624C(1) OR
MS21044-N6 OR
MS21042-6
WASHER AN960-616(2) OR
AN 960-616L

SHIM WITH PN 261008
AND/OR AN960-616
AND/OR AN960-616L
AS REQUIRED.

SHIM WITH AN960-616 AND
OR AN960-616L IF REQUIRED/AS REQUIRED.

COMPRESSOR
STAND-OFF PN 300067-1

SECTION A-A

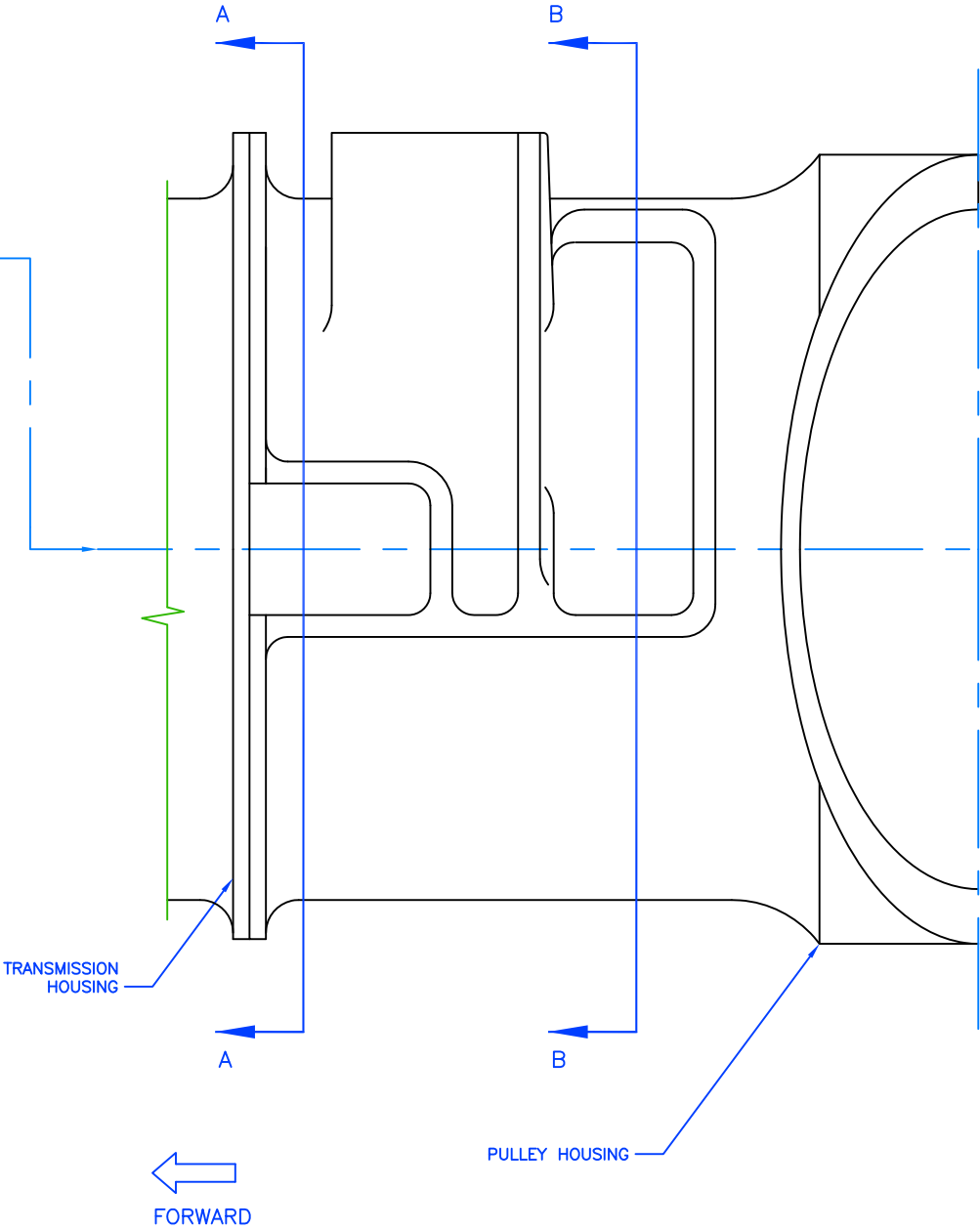
SECTION B-B

SHIM P/N 261007(2 PLC'S)

2X BOLT AN4-14A
NUT MS21042-4 OR MS21042L4
WASHER AN960-616 OR
AN960-616L AS REQUIRED

COMP PIN PN 300095
WASHER AN960-516 OR
AN960-516L
NUT MS20364-524C OR
MS21042-5

UTILIZED WITH:
1. AS 350 WITH LATEST TRANSMISSION HOUSING DESIGN.



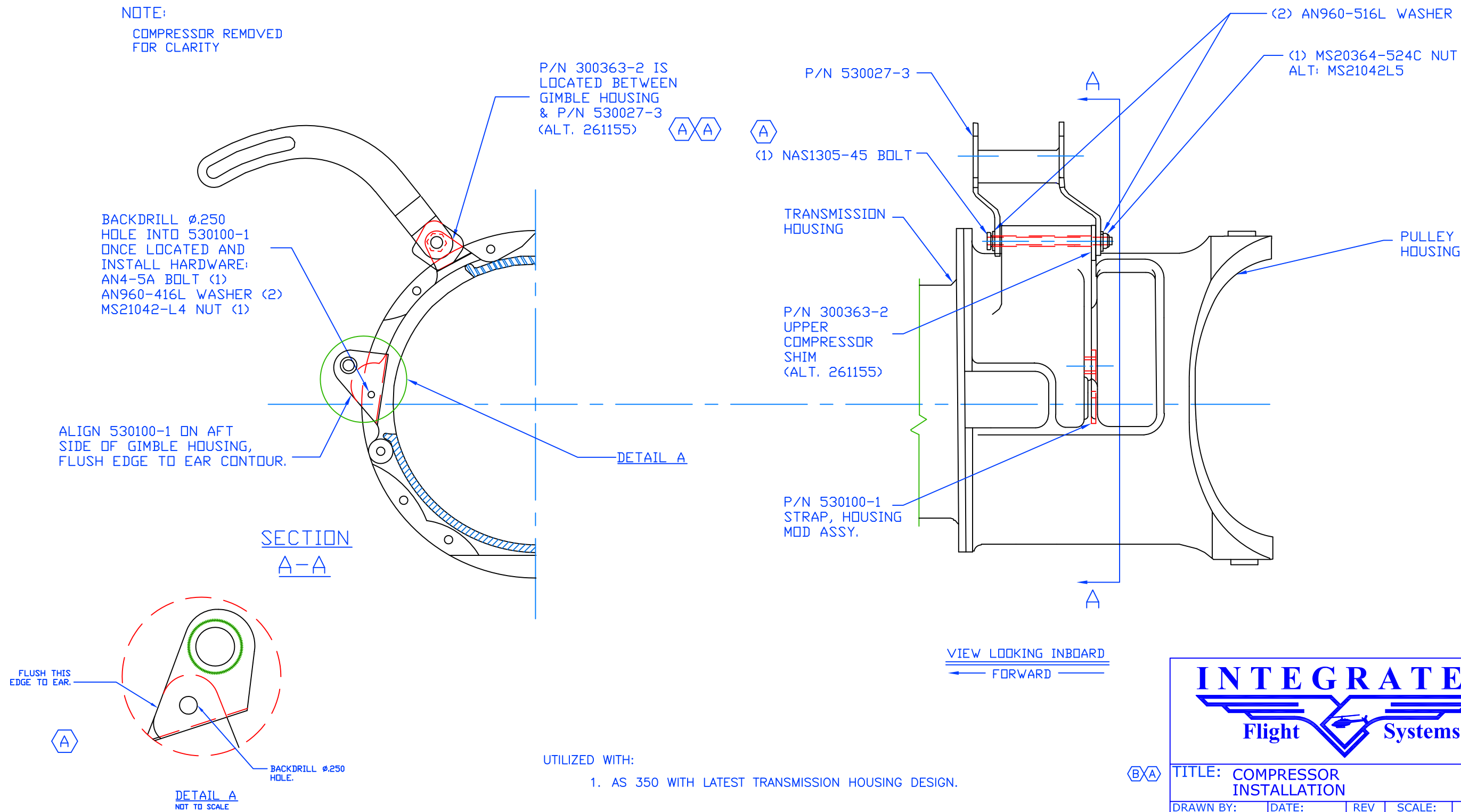
TITLE: COMPRESSOR
INSTALLATION

DRAWN BY: JTYE	DATE: 05/28/03	REV B	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 6-13-AS350	

VIEW C
REF 6-3-AS350



REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	01/30/06	CHANGED NAS1305-44 BOLT TO NAS1305-45 FOR LENGTH, ADDED ALT. COMPRESSOR SHIMS, REMOVED BEVELED EDGE NOTATION FOR ALIGNMENT.	-	JTYE
B	06/30/08	REVISED TITLE BLOCK.	-	JTYE



TITLE: COMPRESSOR INSTALLATION				
DRAWN BY: JTYE	DATE: 05/28/03	REV B	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: AS350			DWG No. 6-22-AS350	

Step 9

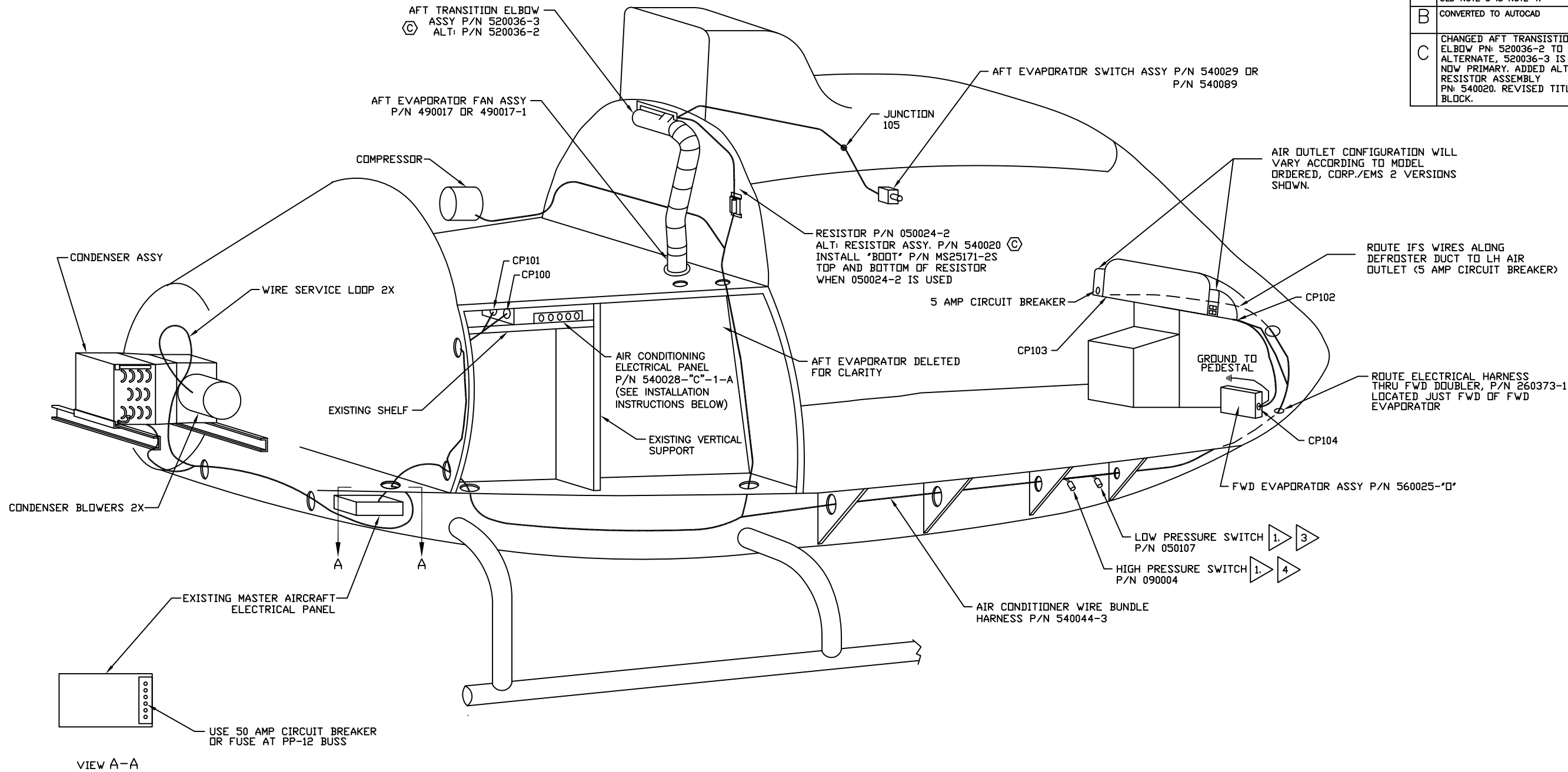
Installation of Electrical

Integrated Flight Systems
INSTALLATION OF ELECTRICAL – AS350 Air Conditioning

Installation of Electrical

STEP	PROCEDURE	MECH	INSP
9.1	Remove Battery Closeout panel. Re-position existing DZUS Receptacle Bracket on top of shelf, °180 to face down below shelf. Relocate Ng fuse on shelf (if installed) to existing hole near bottom of vertical channel. Relocate existing DZUS receptacle on the vertical support member 2” inches down, in order for upper shelf to clear when lowered for electrical panel installation/removal. Remove the (4) rivets that attach to the right end of the shelf to the vertical support member and enlarge the rivet holes on both the shelf and the vertical member to accept #10 hardware		
9.2	Locate the electrical box, P/N 540028-C-1-A, on the support shelf and match drill three each #10 holes per drawing 2-5-AS350. Install the electrical box using three ea. AN3-4A Bolts, 3 ea. AN960-10 Washers.		
9.3	Re-attach shelf using 4 ea. AN525-10R8 Screws, 8 ea. AN960-10 Washers and 4 ea. MS21044-N3 Nuts per drawing 2-5-AS350.		
9.4	Install and route the electrical harness: P/N 540044-3, per drawings 2-5-AS350, 2-16-AS350 and 2-25-AS350.		
9.5	Install and route electrical harness P/N 540045-1 using 1 ea. 8 x #10 Ring Terminal and ANL-50 Limiter (not incl.).		
9.6	(Reserved)		
9.7	Install aft switch assembly P/N 540089 per drawings 5-12-AS350, 2-5-AS350, 2-16-AS350 and 2-25-AS350		

REV.	DESCRIPTION	DATE	APPV.	C
A	REVISED DRAWING NUMBER, WAS 2-AS 350; SHEET NUMBER WAS 1 OF 3; ADDED INSTALLATION INSTRUCTIONS FOR ELECTRICAL PANEL ASSEMBLY. ADDED NEW NOTE 2. OLD NOTE 2 IS NOTE 3. OLD NOTE 3 IS NOTE 4.	08/16/00		
B	CONVERTED TO AUTOCAD	4/26/01		
C	CHANGED AFT TRANSITION ELBDW PN: 520036-2 TO ALTERNATE, 520036-3 IS NOW PRIMARY. ADDED ALT. RESISTOR ASSEMBLY PN: 540020. REVISED TITLE BLOCK.	04/09/09		



INSTALLATION INSTRUCTIONS FOR ELECTRICAL PANEL ASSEMBLY:

- REMOVE BATTERY CLOSEOUT PANEL. REPOSITION EXISTING DZUS RECEPTACLE BRACKET ON TOP OF SHELF, 180 DEGREES TO FACE DOWN BELOW SHELF.
- RELOCATE N₉ FUSE ON SHELF (IF INSTALLED) TO EXISTING HOLE NEAR BOTTOM OF VERTICAL CHANNEL. RELOCATE EXISTING DZUS RECEPTACLE ON THE VERTICAL SUPPORT MEMBER 2 INCHES DOWN, IN ORDER FOR UPPER SHELF TO CLEAR WHEN LOWERED FOR ELECTRICAL BOX INSTALLATION/REMOVAL.
- REMOVE THE (4) RIVETS THAT ATTATCH TO THE RIGHT END OF SHELF TO VERTICAL SUPPORT MEMBER. ENLARGE RIVET HOLES ON FRONT END OF SHELF AND VERTICAL SUPPORT TO ACCOMMODATE #10 FASTNERS. LOCATE ELECTRICAL PANEL ON SHELF AND BACK DRILL THREE (3) EACH #10 HOLES TO MATCH NUT PLATE ON BOTTOM OF ELECTRICAL PANEL ASSEMBLY.
- ATTATCH ELECTRICAL PANEL ASSEMBLY TO SHELF USING AN3-4A BOLT AND AN960-10 WASHER, IN THREE (3) PLACES.
- REATTACH END OF SHELF TO VERTICAL SUPPORT USING AN525-10R8 SCREW, AN960-10 WASHER, AND MS21044-N3 NUT IN FOUR (4) PLACES.
- CUT CLOSEOUT PANEL LEVEL WITH THE TOP OF THE UPPER SHELF. RELOCATE DZUS FASTENERS TO MATCH NEW LOCATION OF DZUS RECEPTICALS. REINSTALL CLOSEOUT PANEL.

NOTE:
USE EXISTING LIGHTENING HOLES ONLY FOR ALL ROUTING OR SECURE WIRES TO EXISITNG BUNDLES OR REFRIGERATION HOSE USING TY-WRAPPS, STAND-OFFS, AND SPACER BLOCKS AS REQUIRED.

- LOCATION OF PRESSURE SWITCHES WHEN R-134_a IS UTILIZED.
- ON B3 MODELS IFS WIRE ROUTING MUST BE ACCORDANCE WITH THIS DRAWING.
- INSTALL IFS104C14 TO LOW PRESSURE SWITCH. (BLUE LEADS)
- INSTALL IFS108B20 AND IFS108D20 TO HIGH PRESSURE SWITCH. (BLACK LEADS)

DUAL CONDENSER BLOWER
AFT MOUNTED

INTEGRATED FLIGHT SYSTEMS

DATE: 11/10/96	APPROVED BY:	SHEET: 1 OF 1	SIZE: D	DRAWN BY: MAH
SCALE: 1/8				

ELECTRICAL ROUTING

APPLICATION: AS350	DRAWING NUMBER: 2-5-AS350
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REV.	DESCRIPTION	DATE	APPV.	E
A	ADDED ALTERNATE BLOWER, IFS P/N 050143. EVAP BREAKER WAS 15 AMP, IS 20 AMP. ADDED NOTES 4, 5, & 6. CHANGED LOCATION OF "LOW" SWITCH. WAS PP-2, IS PP-12.	05/10/99		
B	REVISED DRAWING NUMBER, WAS 2-AS 350; SHEET NUMBER WAS 2 OF 3. CHANGED NOTE 1. NOTE 2 WAS NOTE 5. NOTE 3 WAS NOTE 6 ADDED NOTE 4. DELETED NOTE 2. ADDED ALTERNATE BLOWER P/N 050180.	08/16/00		
C	CONVERTED TO AUTOCAD	03/18/01		
D	ADDED ALTERNATE RESISTOR ASSY PN: 540020. IS SAME RESISTOR WITH PRE INSTALLED AND LABELED LEADS. REDRAWN TO REFLECT AS350 INSTALLATION, PREVIOUSLY DRAWN FOR AS355. CHANGED TITLE BLOCK.	01/03/07		
E	REMOVED ALTERNATE BLOWER P/N 050180, ADDED LISTING OF INTERCHANGEABLE BLOWERS. ADDED JUMPER CONFIGURATION NOTATION. REVISED TITLE BLOCK.	03/31/09		

NOTE:

- (B)

1

ALL WIRE MIL-W-22759/16.
ALL WIRE 14ga UNLESS OTHERWISE SPECIFIED.
- (B)

2

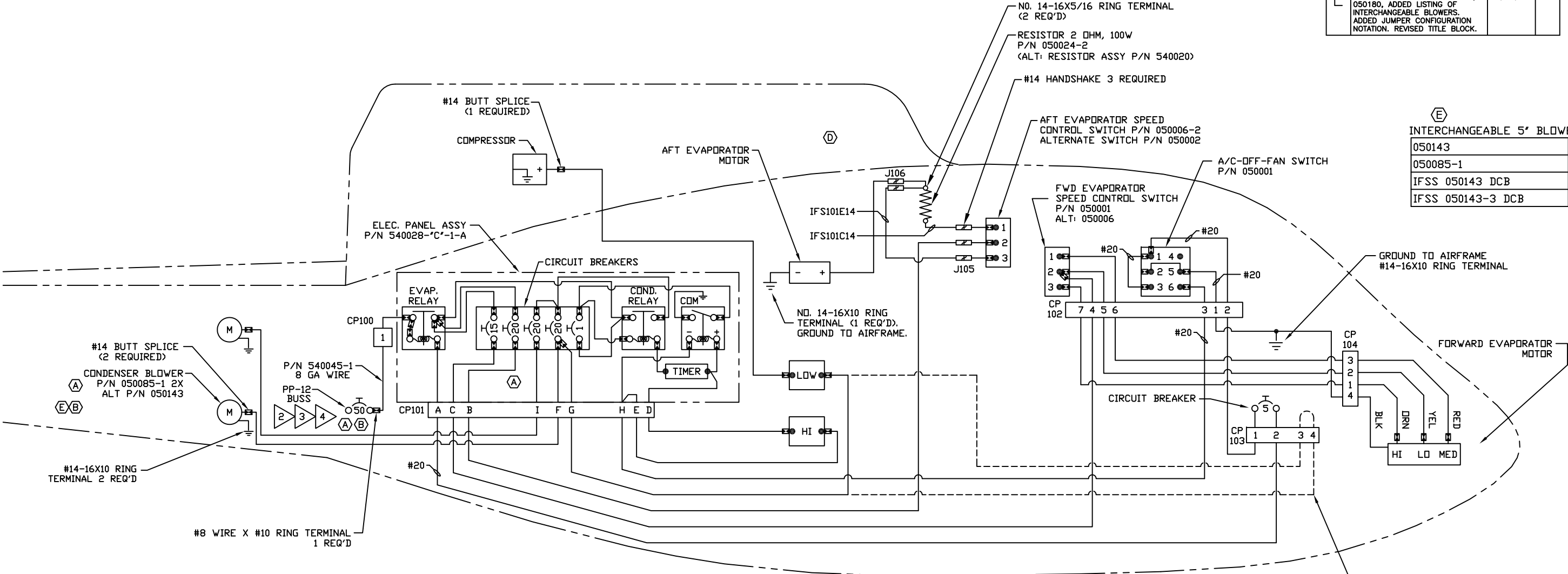
FUSES MAY BE USED, P/N 100FU01-050 (50AMP).
- (B)

3

LOCATE #8 WIRE AT T4, T5, T6, OR T7 (INSTALL 50AMP FUSE IF NOT PRESENT, SEE NOTE 2).
- (B)

4

WHEN ALL EUROCOPTER FUSES OR C/B LOCATIONS ARE UTILIZED, A "AUX" CURRENT LIMITER BASE P/N FU1541-501, BRACKET/SUPPLY BAR AND CURRENT LIMITER MAY BE INSTALLED AT F9 OR F10 PER EUROCOPTERS COMPONENT MAINTENANCE MANUAL. IFS P/N FOR LIMITER BASE IS 050023. IFS P/N FOR LIMITER, 50 AMP IS 050015-2.



(E)

INTERCHANGEABLE 5' BLOWERS	
050143	
050085-1	
IFSS 050143 DCB	
IFSS 050143-3 DCB	

AS350
ELECTRICAL WIRING DIAGRAM
DUAL CONDENSER BLOWERS

DUAL CONDENSER BLOWERS
AFT MOUNTED

INTEGRATED FLIGHT SYSTEMS

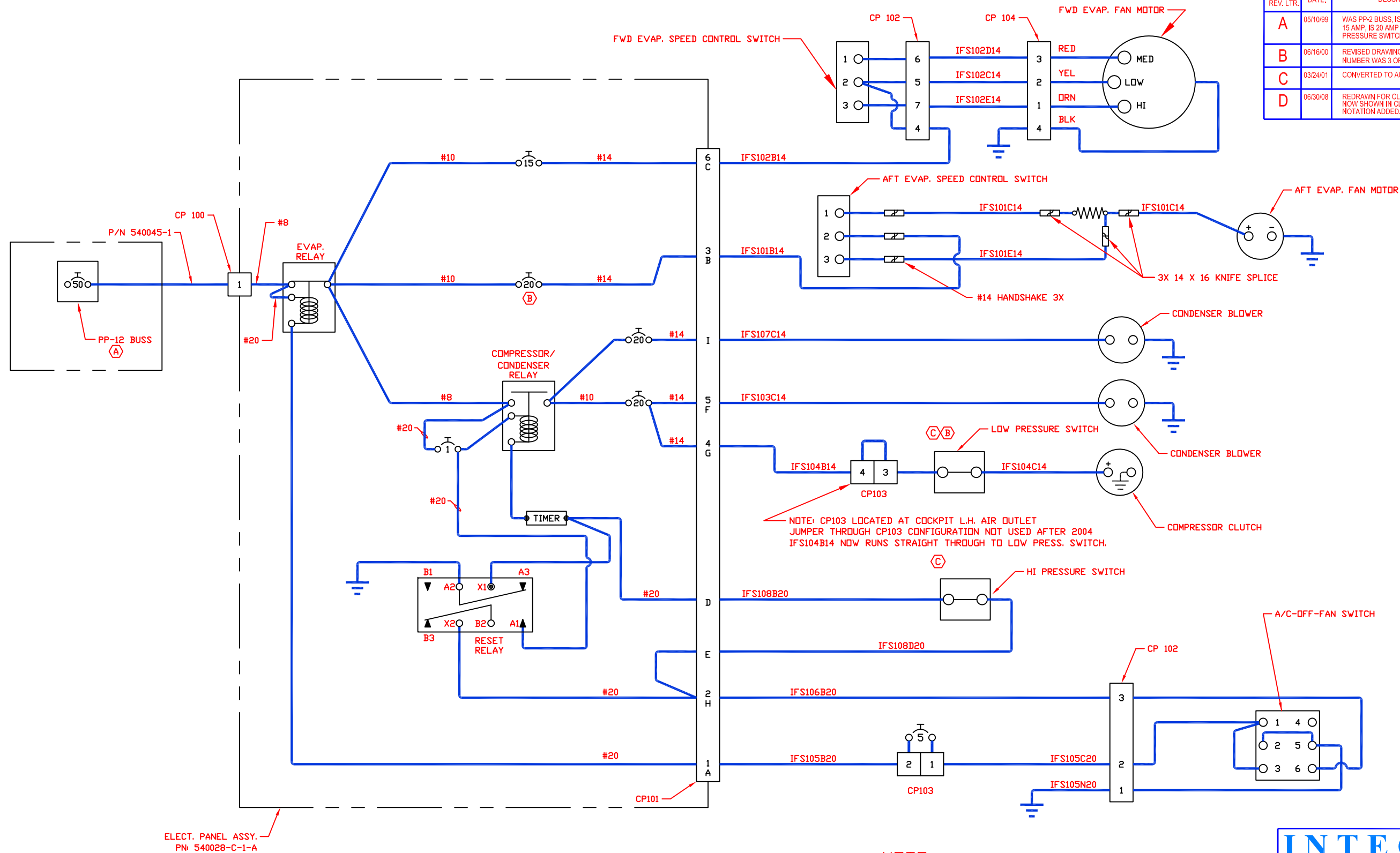
DATE: 11/10/96	APPROVED BY:	SHEET: 1 OF 1	SIZE: D	DRAWN BY: MAH
SCALE: N/A				

TITLE:
ELECTRICAL DIAGRAM

APPLICATION: AS350	DRAWING NUMBER: 2-16-AS350
--------------------	----------------------------

(E)(B)(C)

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	05/10/99	WAS PP-2 BUSS, IS PP-12BUSS. EVAP BREAKER WAS 15 AMP. IS 20 AMP CHANGED LOCATION FO LOW PRESSURE SWITCH.		
B	06/16/00	REVISED DRAWING NUMBER WAS 2-AS350 SHEET NUMBER WAS 3 OF 3.		
C	03/24/01	CONVERTED TO AUTOCAD.		
D	06/30/08	REDRAWN FOR CLARITY. PRESSURE SWITCHES NOW NOW SHOWN IN CLOSED POSITION. CP103 JUMPER NOTATION ADDED. REVISED TITLE BLOCK.	MLD	JTYE



AS350
ELECTRICAL WIRING DIAGRAM
DUAL CONDENSER BLOWER

NOTE:
1. SEE 2-5-AS350 SH 1 OF 1 FOR WIRE SPLICE LOC.
2. WIRE SPEC: MIL-W-22759/16
WIRE NO. IFS XXX X XX
GROUP
SEQUENCE (N INDICATES GROUND)
GAUGE

(C)(D)

INTEGRATED
Flight Systems

TITLE: ELECTRICAL
DIAGRAM

DRAWN BY: MAH DATE: 11/10/96 REV.: D SCALE: NTS SHEET: 1 OF 1

APPLICATION: AS350 DWG. NO.: 2-25-AS350

Step 10

Installation of Hoses

Integrated Flight Systems
INSTALLATION OF HOSES – AS350 Air Conditioning

Installation of hoses

STEP	PROCEDURE	MECH	INSP
10.1	Review Install Drawings 3-5-AS350 and 3-15-AS350.		
10.2	<u>WARNING: Before connecting hoses, be sure all fittings have R134 approved “O” Rings installed.</u>		
10.3	Route evaporator return line hose assembly #10 suction hose (tee fitting above deck), P/N 570087-O-A from the upper transmission deck down through the right side baggage compartment, through the existing opening in the baggage compartment floor, under the floor forward to the forward evaporator. The short length of hose connects to the Aft evaporator return fitting above the transmission deck. The longer length above the transmission deck is routed against the cabin back wall to the compressor suction fitting located on the left side of the transmission.		
10.4	Route the evaporator expansion valve supply line high pressure hose assembly #6, P/N 570072-O-A from the baggage department down through the existing opening in the baggage compartment floor, under the floor forward to the forward evaporator. The tee fitting connects to the “out” or supply fitting on the dryer bottle. The short length to the evaporator.		
10.5	Clamp the sensing bulb,(coil on the end of the expansion valve) to the return hose fitting (#10 large line) with a 1-inch band clamp. Assure the fitting is clean where the coil is clamped. Insulate the sensing bulb completely with cork tape, P/N 070078-0, PER DRAWING NO. 4-21-AS350		
10.6	Route THE CONDENSER SUPPLY LINE HOSE ASSEMBLY #8, P/N 570070-O-A from the compressor discharge fitting against the cabin back wall to the right side of the transmission deck. Route down the same opening in the transmission deck as the return hose was routed. Connect to condenser. Route hose assembly #6, P/N 570067-O-A, along beside #8 line as shown in Drawing No. 3-5-AS350.		

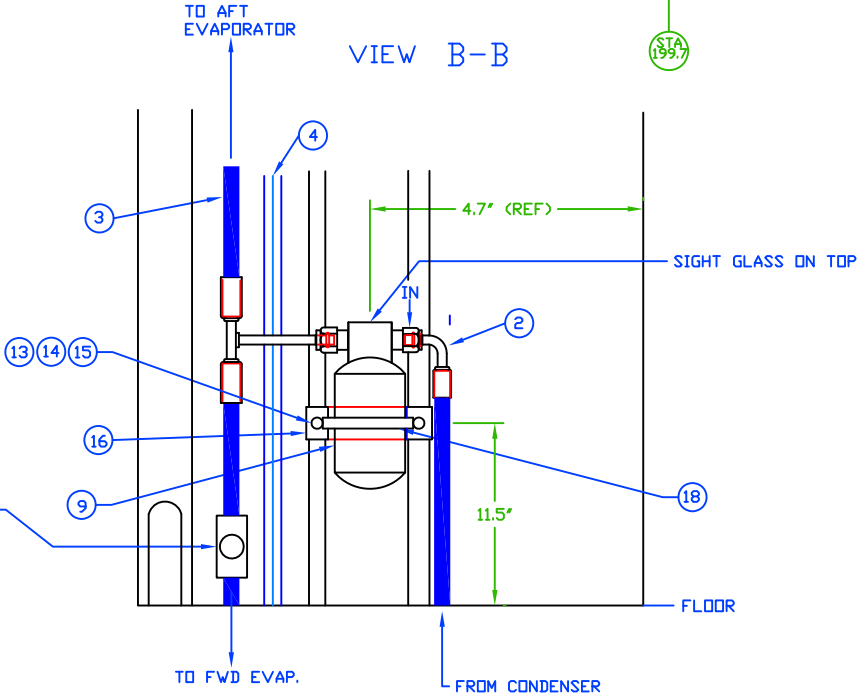
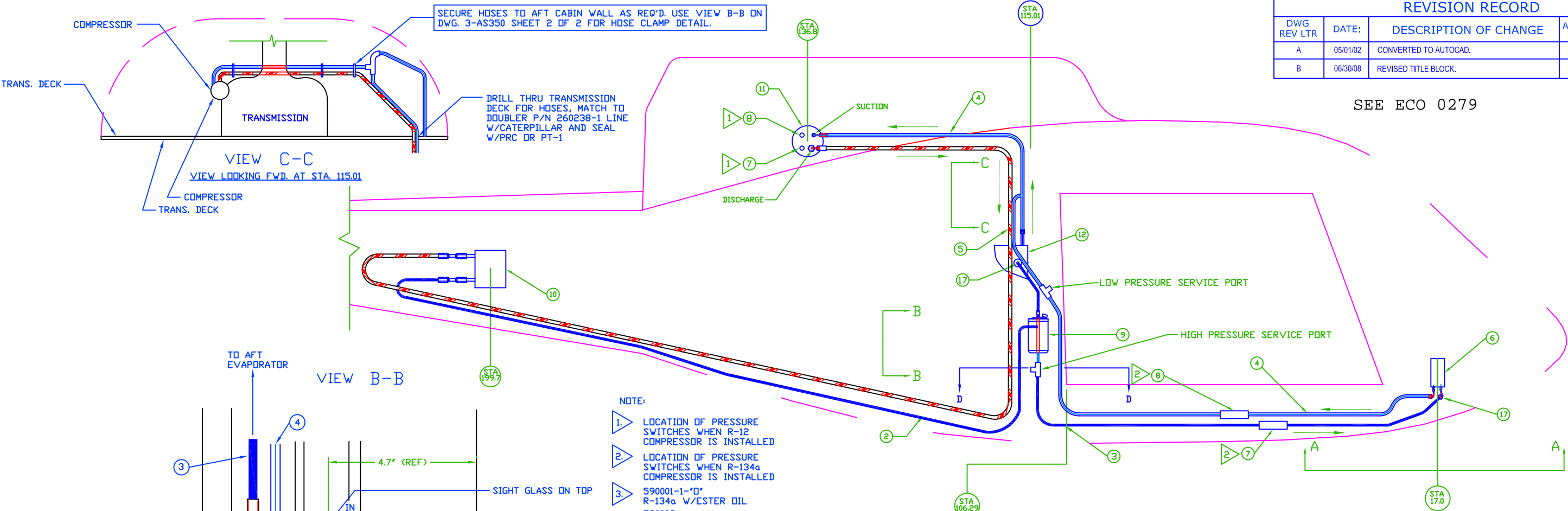
Integrated Flight Systems
INSTALLATION OF HOSES – AS350 Air Conditioning

Installation of Hoses

STEP	PROCEDURE	MECH	INSP
10.7	Install drier mount bracket, P/N 260123-2 per Drawing No. 3-5-AS350 and drier bottle, P/N 090016-5.		
10.8	Do not connect drier bottle up until all lines are connected and you are ready to vacuum down system.		
10.9	Connect high and low pressure switches. Be sure to connect the correct wire to each switch. Low pressure SW. P/N 050107, High pressure switch, P/N 90004.		

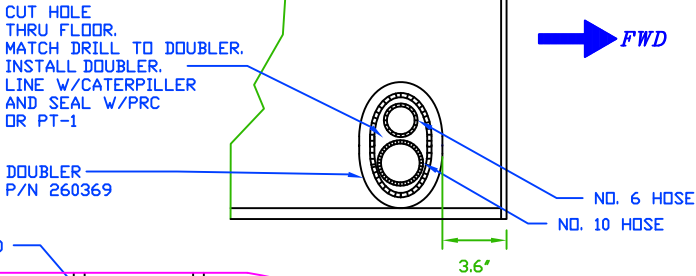
REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	05/01/02	CONVERTED TO AUTOCAD.		
B	06/30/08	REVISED TITLE BLOCK.	MLD	JTYE

SEE ECO 0279



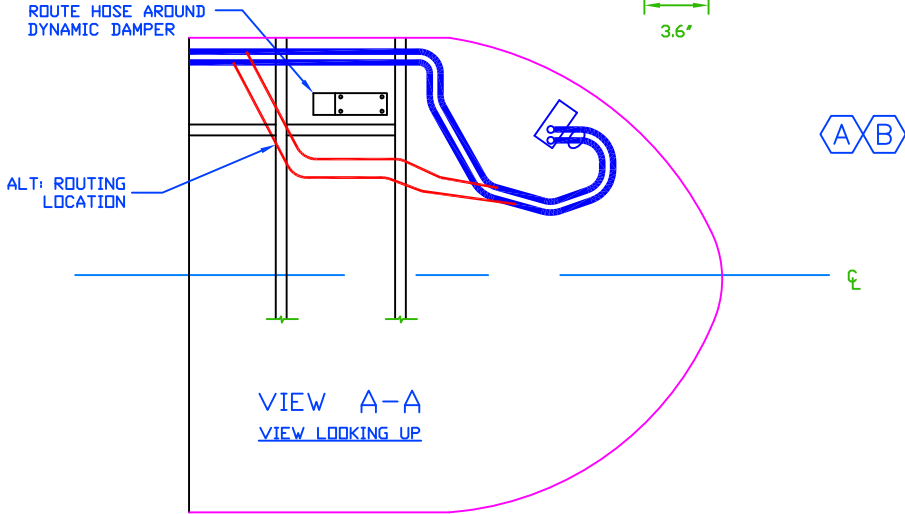
- NOTE:
1. LOCATION OF PRESSURE SWITCHES WHEN R-12 COMPRESSOR IS INSTALLED
 2. LOCATION OF PRESSURE SWITCHES WHEN R-134a COMPRESSOR IS INSTALLED
 3. 590001-1-"D" R-134a W/ESTER OIL
590008 R-134a W/ESTER OIL
590001 (NO LONGER USED) R-12 FLARE
590001-"D" (NO LONGER USED) R-12 "D" RING
590001-2-"D" (NO LONGER USED) R-134a W/SP-20 OIL

VIEW D-D
VIEW LOOKING DOWN



NOTE:

ALTERNATE HOSE:		1995-ON NEOPRENE REDUCED BARRIER TYPE	
#6 P/N 090078	BASIC	#6 P/N 090089	
#8 P/N 090079	PRODUCT	#8 P/N 090090	
#10 P/N 090080	IFS P/N	#10 P/N 090091	
FERRULES FOR ABOVE		MUST USE ATCO REDUCED BARRIER TYPE FITTINGS & ATCO CRIMPER P/N 3700 OR MASTERCOD P/N 71500	
#6 P/N 090081	BASIC		
#8 P/N 090082	PRODUCT		
#10 P/N 090083	IFS P/N		

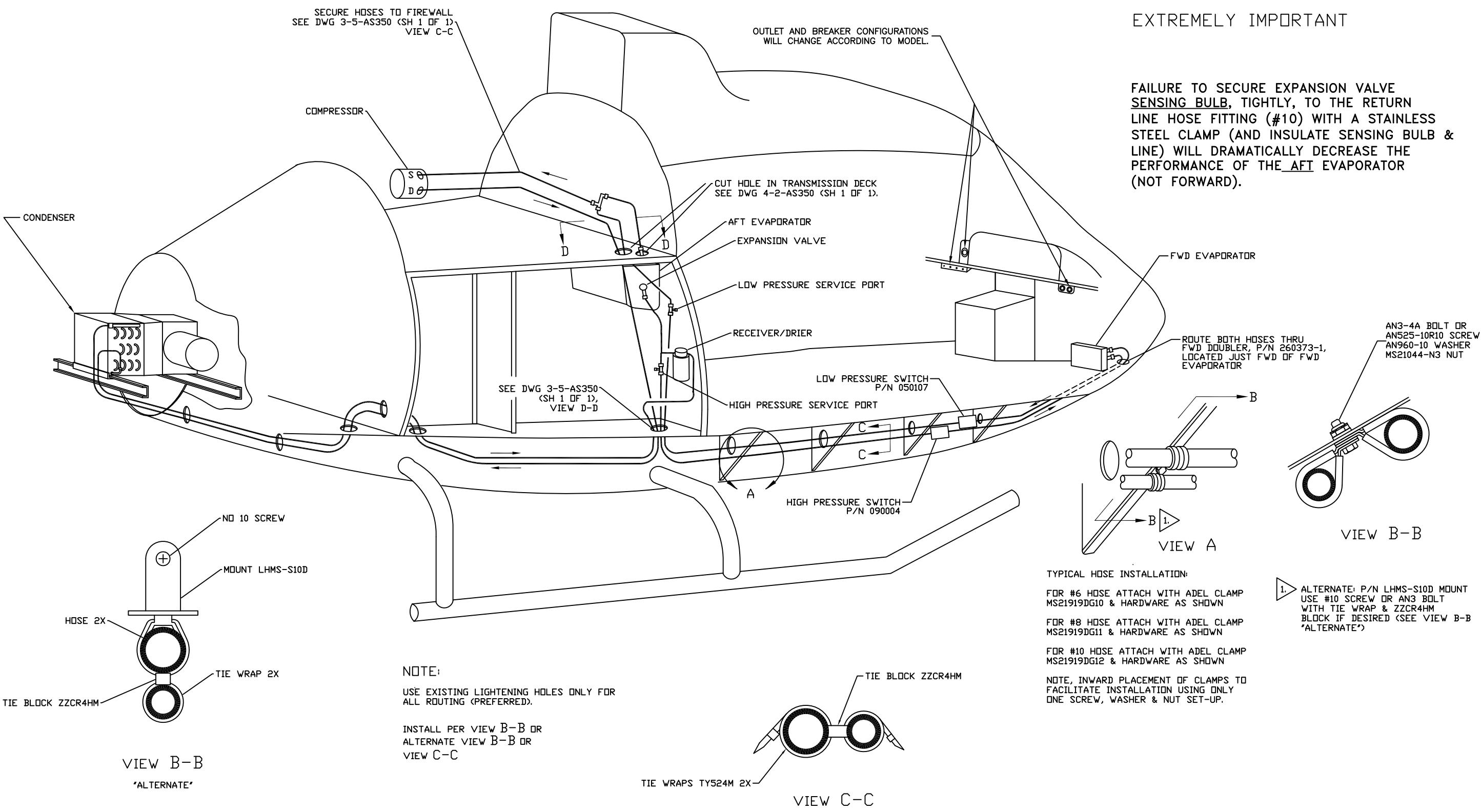


1	18	060036	3 INCH BAND CLAMP
2	17	090002-O	EXPANSION VALVE
1	16	260123-2	RECEIVER DRIER MOUNT
2	15	MS21044-N3	NUT
4	14	AN960-10	WASHER
2	13	AN3-5A	BOLT
1	12	560010-O-5	AFT EVAPORATOR
1	11	590008	COMPRESSOR 24 VDC R-134a O-RING
1	10	5500022	CONDENSER
1	9	090016-5	RECEIVER DRIER BOTTLE
1	8	050107	LOW PRESSURE SWITCH
1	7	090004	HIGH PRESSURE SWITCH
1	6	560025-O	FORWARD EVAPORATOR
1	5	570070-O-A	HOSE ASSY COMPRESSOR TO CONDENSER
1	4	570087-O-A	HOSE ASSY FWD EVAPORATOR TO AFT EVAPORATOR
1	3	570072-O-A	HOSE ASSY. AFT EVAP TO FWD. EVAP TO REC/DRIER
1	2	570067-O-A	HOSE ASSY. COND. TO REC./DRIER
QTY	ITEM	PART NUMBER	DESCRIPTION

#10 HOSE		<div> <div>INTEGRATED</div> <div>Flight Systems</div> </div>			
#8 HOSE					
#6 HOSE					
		TITLE: PLUMBING DIAGRAM			
		DRAWN BY: N.DEAN	DATE: 11/01/99	REV B	SCALE: NONE
		APPLICATION: AS350		SHEET: 1 OF 1	
				DWG No. 3-5-AS350	

REV.	DESCRIPTION	DATE	APPV.
A	CONVERTED TO AUTOCAD	05/06/02	
B	REVISED TITLE BLOCK.	09/09/09	

B



EXTREMELY IMPORTANT

FAILURE TO SECURE EXPANSION VALVE SENSING BULB, TIGHTLY, TO THE RETURN LINE HOSE FITTING (#10) WITH A STAINLESS STEEL CLAMP (AND INSULATE SENSING BULB & LINE) WILL DRAMATICALLY DECREASE THE PERFORMANCE OF THE AFT EVAPORATOR (NOT FORWARD).

NOTE:
USE EXISTING LIGHTENING HOLES ONLY FOR ALL ROUTING (PREFERRED).

INSTALL PER VIEW B-B OR ALTERNATE VIEW B-B OR VIEW C-C

TYPICAL HOSE INSTALLATION:
FOR #6 HOSE ATTACH WITH ADEL CLAMP MS21919DG10 & HARDWARE AS SHOWN
FOR #8 HOSE ATTACH WITH ADEL CLAMP MS21919DG11 & HARDWARE AS SHOWN
FOR #10 HOSE ATTACH WITH ADEL CLAMP MS21919DG12 & HARDWARE AS SHOWN
NOTE, INWARD PLACEMENT OF CLAMPS TO FACILITATE INSTALLATION USING ONLY ONE SCREW, WASHER & NUT SET-UP.

1. ALTERNATE: P/N LHMS-S10D MOUNT USE #10 SCREW OR AN3 BOLT WITH TIE WRAP & ZZCR4HM BLOCK IF DESIRED (SEE VIEW B-B "ALTERNATE")

INTEGRATED FLIGHT SYSTEMS

DATE: 11/01/99 APPROVED BY: SHEET: 1 OF 1 SIZE: D DRAWN BY: MAH

TITLE: PLUMBING ROUTING

APPLICATION: AS350 DRAWING NUMBER: 3-15-AS350



Engineering Change Order

ECO No.
0279

Drawing Number	Revision	Drawing Title
3-5-AS350	B	Plumbing Diagram

Reason for Change: To add O-Rings to B.O.M. & added alternate compressor assembly to Item 11.

Description of Change:

1. Added item 19: 090092, #6 O-Ring, Qty. 5
2. Added item 20: 090093, #8 O-Ring, Qty. 3
3. Added item 21: 090094, #10 O-Ring, Qty. 3
4. Item 11 description Was: COMPRESSOR 24 VDC R-134a O-RING
Is: COMPRESSOR 24 VDC R-134a O-RING (590008-1 GROOVED)

----- LAST ITEM -----

Engineering Review Board Approval

Signature	Stamp	Date	Comment
	ERB02	06/08/11	
	MRB05	06/08/11	
	MRB06	06/08/11	

Step 11

Paperwork

Integrated Flight Systems
PAPERWORK – AS350 Air Conditioning
DETAILED WEIGHT AND BALANCE DATA

FOR

INTEGRATED FLIGHT SYSTEMS

FREON AIR CONDITIONING

UNIT INSTALLED IN A

TYPICAL HELICOPTER, MODEL AS350 B, BA, B1, B2, B3, C, D OR D1

PERTAINS TO KIT #350-00-031

ITEM	WEIGHT	ARM	MOMENT
Forward Evaporator Assembly	10.00	19.00	190.00
Forward Air Outlets	4.00	31.32	125.28
Aft Evaporator and Return Air	9.00	120.00	1080.90
Aft Evaporator Blower	6.00	120.85	725.10
Condenser Assy. & Mount w/ Dual condenser blowers	28.20	201.80	5690.76
Compressor and Mount	15.00	147.80	2217.00
Electrical Relay Panes	4.0	153.70	614.80
Refrigerant, Hoses and Fittings	9.00	76.90	692.10
<hr/>			
Sub Total: (Air Conditioner)	85.20	133.05	11,335.94

Engine Oil

Transmission Oil

Pilots (2)

Fuel

FAA APPROVED DATA

United States of America
Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate

Number SH3509SW

This certificate issued to

Integrated Flight Systems, Inc.
3900 Falcon Way West, Hangar 16S
Fort Worth, TX 76106

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

Original Product -- Type Certificate Number : H9EU

Make : Eurocopter France

Model : AS-350 B, B1, B2, B3, BA, C, D, D1; EC130B4

Description of Type Design Change: Installation of a Single and Dual Condenser Blower Air Conditioning System in accordance with Integrated Flight Systems (IFS) Master Drawing List (MDL), Document No. DL-9 (Vapor Cycle Air Conditioning System with Belt Driven Compressor Utilizing Refrigerant R134a), Rev. R, dated 8/30/2010, or later FAA approved revision.

(See continuation sheet 3 of 3)

Limitations and Conditions:

The installer must determine whether this design change is compatible with previously approved modifications. If the holder agrees to permit another person to use this certificate to alter a product, the holder must give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application : September 10, 1984

Date reissued : April 30, 1991; August 22, 2001; October 23, 2008

Date of issuance : September 20, 1985

Date amended : February 11, 1999;
February 9, 2009; February 23, 2009;
November 5, 2010



By direction of the Administrator

John Hardie
(Signature)

James A. Richmond, Acting Manager
Rotorcraft Certification Office
Southwest Region

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate
(Continuation Sheet)

Number SH3509SW

Date of Issuance: September 20, 1985

Date Amended: November 5, 2010

Description of Type Design Change (Continued):

FAA approved helicopter Flight Manual Supplement (FMS) dated 6/26/85, or later FAA approved revision is required for Models AS350B, C, D, and D1. Model AS350B1, requires FAA approved helicopter FMS dated 10/27/8, or later FAA approved revision. Model AS350B2 requires FAA approved Helicopter FMS dated 4/30/91, or later FAA approved revision. Model AS350BA requires FAA approved helicopter FMS dated 5/15/92, or later FAA approved revision. Model AS350B3 requires FAA approved Helicopter FMS dated 2/8/99, or later FAA approved revision. Model EC130B4 requires FAA approved Helicopter FMS dated 2/6/04, or later FAA approved revision.

Instructions for Continued Airworthiness, IFS Document No. IFSE-0007, Rev. C, dated 8/12/2010, or later revision is required.

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.



Transport
Canada
Civil Aviation

Transports
Canada
Aviation Civile

Suite 620
800 Burrard Street
Vancouver, B.C.
V6Z 2J8

Your file Votre référence

Our file Notre référence
P-03-0350

July 8, 2003

Integrated Flight Systems, subsidiary
of Platinum Aviation Group, Inc.
4655 Aircenter Circle
Reno, Nevada 89502

Attn: Mr. Leroy Aday, President

Subject: Acceptance of FAA STCs SH3509SW and SH5947SW

Dear Mr. Aday:

This letter is in response to your application for Canadian acceptance of FAA STCs SH3509SW and SH5947SW, submitted to our office June 13, 2003, by the FAA Los Angeles Aircraft Certification Office.

In accordance with current Transport Canada policy concerning review of FAA-issued STCs for non-US state-of-design Normal Category rotorcraft, both STCs have been accepted in Canada without having to issue corresponding Canadian certificates.

Both FAA STC's will be entered into the national index of STCs that have been reviewed and accepted by Transport Canada for installation on Canadian-registered aeronautical products.

This letter confirms formal acceptance of the referenced STC by Transport Canada.

If you have any questions concerning this matter, I can be contacted by telephone at (604) 666-5269.

Yours truly,

David Bafia

For Regional Manager,
Aircraft Certification

Canada 



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

CERTIFICADO DE HOMOLOGAÇÃO SUPLEMENTAR DE TIPO

(Supplemental Type Certificate)

NÚMERO 2006S12-08
(Number)

Este certificado, emitido com base na Lei nº 7565 "Código Brasileiro de Aeronáutica", de 19 de dezembro de 1986,
(This certificate, issued in the basis of the Law No. 7565 "Código Brasileiro de Aeronáutica", dated 19 December 1986,

é conferido ao (à): Integrated Flight Systems Corp.
is granted to:)

4607 B. Aircenter Circle
Reno, Nevada 89502
USA

por ter a modificação ao projeto de tipo do produto abaixo citado, observadas as limitações e condições
(for having the change to the type design of the product mentioned below, with the limitations and conditions therefor as)

especificadas, satisfeito aos requisitos de aeronavegabilidade aplicáveis.
(specified hereon, met the applicable airworthiness requirements.)

Produto Original - Número do Certificado de Tipo: 84 (FN 157).
(Original Product - Type Certificate No:)

Fabricante: Eurocopter France.
(Manufacturer:)

Modelo(s): AS 350 B.
(Model(s):)

DESCRIÇÃO DA MODIFICAÇÃO AO PROJETO DE TIPO:
(Description of Type Design Change:)

Installation of a Belt-Driven Freon Air Conditioning System in accordance with Integrated Flight Systems Drawing List No. DL-9 (single Condenser blower), Rev. J, dated 5 Dec. 2003, or later approved revision or Drawing List No. DL-9-1 (Dual Condenser blower), Rev. NC, dated 1 Jan. 1992, or later approved revision.

This CHST validates in Brazil the STC # SH3509SW, issued by FAA (USA).

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

See continuation sheet for applicable data.

DATAS:
(Dates of:)

Do Requerimento: 28 Aug. 2006
(Application:)

Da emissão: 13 Dec. 2006
(Issue:)

Da reemissão:
(Reissue:)


CLÁUDIO PASSOS SIMÃO

Gerente Geral, Certificação de Produtos Aeronáuticos
(Manager, Aeronautical Products Certification)


MILTON ZUANAZZI
Diretor-Presidente
(Director President)



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL

Folha de Continuação ao
(Continuation Sheet to)

CERTIFICADO DE HOMOLOGAÇÃO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO 2006S12-08
(Number)

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

- I. The approval of this type design change should not be extended to other aircraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in Type Design, will introduce no adverse effect upon the airworthiness of that aircraft.
- II. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.
- III. This installation is approved only for VFR operations.
- IV. Operation must be performed in accordance with the FAA approved Helicopter Flight Manual Supplement (FMS), Rev. B, dated 30 Apr. 1991, or later approved revision.
- V. For the Instructions for Continued Airworthiness, see the Operators Manual supplied with the Air Conditioning Kits.
- VI. A copy of this Certificate and the Supplement referred on item IV above shall be maintained as part of the permanent records of the modified aircraft.

----- END -----

Lawyer JP



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

CERTIFICADO DE HOMOLOGAÇÃO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO 2006S12-09
(Number)

Este certificado, emitido com base na Lei nº 7565 "Código Brasileiro de Aeronáutica", de 19 de dezembro de 1986,
(This certificate, issued in the basis of the Law No. 7565 "Código Brasileiro de Aeronáutica", dated 19 December 1986,

é conferido ao (à): Integrated Flight Systems Corp.
is granted to:)

4607 B. Aircenter Circle
Reno, Nevada 89502
USA

por ter a modificação ao projeto de tipo do produto abaixo citado, observadas as limitações e condições
(for having the change to the type design of the product mentioned below, with the limitations and conditions therefor as)

especificadas, satisfeito aos requisitos de aeronavegabilidade aplicáveis.
(specified hereon, met the applicable airworthiness requirements.)

Produto Original - Número do Certificado de Tipo: 8812 (ANAC).
(Original Product - Type Certificate No:)

Fabricante: Eurocopter France.
(Manufacturer:)

Modelo(s): AS 350 B1, AS 350 B2, AS 350 B3, AS 350 BA and.
(Model(s):) EC 130 B4.

DESCRIÇÃO DA MODIFICAÇÃO AO PROJETO DE TIPO:
(Description of Type Design Change:)

Installation of a Belt-Driven Freon Air Conditioning System in accordance with Integrated Flight Systems Drawing List No. DL-9 (single Condenser blower), Rev. J, dated 5 Dec. 2003, or later approved revision or Drawing List No. DL-9-1 (Dual Condenser blower), Rev. NC, dated 1 Jan. 1992, or later approved revision.

This CHST validates in Brazil the STC # SH3509SW, issued by FAA (USA).

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

See continuation sheet for applicable data.

DATAS:
(Dates of:)

Do Requerimento: 28 Aug. 2006
(Application:)

Da emissão: 13 Dec. 2006
(Issue:)

Da reemissão:
(Reissue:)

CLÁUDIO PASSOS SIMÃO
Gerente Geral, Certificação de Produtos Aeronáuticos
(Manager, Aeronautical Products Certification)

MILTON ZUANAZZI
Diretor-Presidente
(Director President)



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL

Folha de Continuação ao
(Continuation Sheet to)

CERTIFICADO DE HOMOLOGAÇÃO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO 2006S12-09
(Number)

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

- I. The approval of this type design change should not be extended to other aircraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in Type Design, will introduce no adverse effect upon the airworthiness of that aircraft.
- II. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.
- III. This installation is approved only for VFR operations.
- IV. Operation must be performed in accordance with the FAA approved Helicopter Flight Manual Supplement (FMS), as applicable:
 - Model AS 350 B1, requires FMS, Rev. A, dated 30 Apr. 1991 or later FAA approved revision;
 - Model AS 350 B2, requires FMS, Rev. NC, dated 30 Apr. 1991 or later FAA approved revision;
 - Model AS 350 B3, requires FMS, Rev. NC, dated 8 Feb. 1999 or later FAA approved revision;
 - Model AS 350 BA, requires FMS, Rev. NC, dated 15 May 1992 or later FAA approved revision;
 - Model EC 130 B4, requires FMS, Rev. NC, dated 6 Feb. 2004 or later FAA approved revision.
- V. For the Instructions for Continued Airworthiness, see the Operators Manual supplied with the Air Conditioning Kits.
- VI. A copy of this Certificate and the Supplement referred on item IV above shall be maintained as part of the permanent records of the modified aircraft.

-----END-----

Lawson *[Signature]*



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

CERTIFICADO DE HOMOLOGAÇÃO SUPLEMENTAR DE TIPO

(Supplemental Type Certificate)

NÚMERO
(Number)

2006S12-10

Este certificado, emitido com base na Lei nº 7565 "Código Brasileiro de Aeronáutica", de 19 de dezembro de 1986,
(This certificate, issued in the basis of the Law No. 7565 "Código Brasileiro de Aeronáutica", dated 19 December 1986,

é conferido ao (à): Integrated Flight Systems Corp.

(is granted to:)

4607 B. Aircenter Circle

Reno, Nevada 89502

USA

por ter a modificação ao projeto de tipo do produto abaixo citado, observadas as limitações e condições
(for having the change to the type design of the product mentioned below, with the limitations and conditions therefor as)

especificadas, satisfeito aos requisitos de aeronavegabilidade aplicáveis.
(specified hereon, met the applicable airworthiness requirements.)

Produto Original - Número do Certificado de Tipo: 8001 (ANAC).

(Original Product - Type Certificate No:)

Fabricante: Helicópteros do Brasil S/A.
(Manufacturer:)

Modelo(s): HB-350B.
(Model(s):)

DESCRIÇÃO DA MODIFICAÇÃO AO PROJETO DE TIPO: (Description of Type Design Change:)

Installation of a Belt-Driven Freon Air Conditioning System in accordance with Integrated Flight Systems Drawing List No. DL-9 (single Condenser blower), Rev. J, dated 5 Dec. 2003, or later approved revision or Drawing List No. DL-9-1 (Dual Condenser blower), Rev. NC, dated 1 Jan. 1992, or later approved revision.

This CHST validates in Brazil the STC # SH3509SW, issued by FAA (USA).

LIMITAÇÕES E CONDIÇÕES: (Limitations and Conditions:)

See continuation sheet for applicable data.

DATAS: (Dates of:)

Do Requerimento: 28 Aug. 2006
(Application:)

Da emissão: 13 Dec. 2006
(Issue:)

Da reemissão:
(Reissue:)

CLÁUDIO PASSOS SIMÃO

Gerente Geral, Certificação de Produtos Aeronáuticos
(Manager, Aeronautical Products Certification)

MILTON ZUANAZZI

Diretor-Presidente
(Director President)



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL

Folha de Continuação ao
(Continuation Sheet to)

CERTIFICADO DE HOMOLOGAÇÃO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO 2006S12-10
(Number)

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

- I. The approval of this type design change should not be extended to other aircraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in Type Design, will introduce no adverse effect upon the airworthiness of that aircraft.
- II. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.
- III. This installation is approved only for VFR operations.
- IV. Operation must be performed in accordance with the FAA approved Helicopter Flight Manual Supplement (FMS), Rev. B, dated 30 Apr. 1991, or later approved revision.
- V. For the Instructions for Continued Airworthiness, see the Operators Manual supplied with the Air Conditioning Kits.
- VI. A copy of this Certificate and the Supplement referred on item IV above shall be maintained as part of the permanent records of the modified aircraft.

-----END-----

Paulo *P*



SUPPLEMENTAL TYPE CERTIFICATE

EASA.IM.R.S.01243

This certificate, established in accordance with Regulations (EC) No 1592/2002 and (EC) No 1702/2003 and issued to:

Integrated Flight Systems Corp.
4607 B Aircentre Circle
Reno
Nevada 89502
USA

certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable type certification basis and environmental protection requirements when operated within the conditions and limitations specified below:

Original Product Type Certificate number: *EASA TCDS EASA.R.008*

Manufacturer: *Eurocopter*

Model: *AS 350 B, B1, B2, B3, BA, D, EC130B4*

Original STC Number: *SH3509SW*

Description of Design Change:

Installation of a Belt Driven Freon Air Conditioning System (FAA STC SH3509SW).



Associated Technical Documentation:

- DL-9 rev A dated 12 Sept 1985 – Drawing List, Single Condenser Blower
- DL-9-1 rev N/C dated 10 Jan 1992 – Drawing List, Dual Condenser Blowers
- Models AS350B & D, FMS dated 26 June 1985 or later approved revision
- Model AS 350B1, FMS dated 27 October 1988 or later approved revision
- Model AS350B2, FMS dated 30 April 1991 or later approved revision
- Model AS350BA, FMS dated 15 May 1992 or later approved revision
- Model AS350B3, FMS dated 8 February 1999 or later approved revision
- Model EC130B4, RFM-130-00-031HP rev Original dated 6 February 2004 or later approved revision

Limitations and Conditions:

1. VFR Operations only
2. This STC is approved only for the product configuration as defined in the approved design data referred to in the paragraphs "Description" and "Associated Technical Documentation". Compatibility with other aircraft/engine configurations shall be determined by the installer.

This certificate shall remain valid unless otherwise surrendered or revoked.

For the European Aviation Safety Agency,
Date of Issue: 26 April 2007

Massimo Mazzoletti
Certification Manager
Rotorcraft, Balloons & Airships

FLIGHT MANUAL
SUPPLEMENT
FOR
AS350B, C, D AND D1

INTEGRATED FLIGHT SYSTEMS, INC.
POST OFFICE BOX 25687
COLORADO SPRINGS, CO 80936

FAA APPROVED

HELICOPTER FLIGHT MANUAL SUPPLEMENT

FOR

AEROSPATIALE HELICOPTER CORPORATION


MODEL: AS350 B,C,D,D1

Registration No. _____

Serial No. _____

This supplement must be attached to the DGAC/FAA approved Rotorcraft Flight Manual, dated June 7, 1978, when an Integrated Flight Systems, Inc. air conditioning system is installed in accordance with STC No. SH3509SW. The information contained herein supplements or supersedes the basic Rotorcraft Flight Manual only in those areas listed. For limitations, procedures and performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

FAA APPROVED:


for Michael H. Borfitz,
Supervisor, Denver Aircraft
Certification Field Office
2390 Sycrause
Denver, Colorado 80207

Date: June 26, 1985

Revision: April 30, 1991

MODEL AS350 B,C,D,D1
FLIGHT MANUAL SUPPLEMENT

LOG OF REVISIONS

Original.....

Dated: June 26, 1985

<u>PAGE</u>	<u>REVISION NO.</u>	<u>FAA APPROVED</u>	<u>INITIAL</u>
1 thru 8	original	June 26, 1985	Itg
1 thru 2	"A" reissued	Oct. 27, 1988	Itg
Company name was: Consolidated Aire Systems			
Company name is: Av-Aire Corporation			
1 thru 2	"B" reissued	April 30, 1991	Itg
Company name was: Av-Aire Corporation			
Company name is: Integrated Flight Systems, Inc.			

NOTE: Revised portions of affected pages are identified by a vertical black line in the margin adjacent to the change.

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1.0 OPERATING LIMITATIONS

- The air conditioning system must be "OFF" during engine start.
- Operation of the air conditioning system is prohibited if the generator is inoperative.
- "MAG compass deviation may be excessive with air conditioner or fan - ON". Turn air conditioner "OFF" to read mag compass.
- The air conditioning system must be turned "OFF" during take-off, approach and landing above 7000 feet density altitude.
- The air conditioning system must be turned "OFF" to obtain the FAA approved Rotorcraft Flight Manual performance above 7000 feet density altitude.

2.0 NORMAL PROCEDURES

2.1 GROUND OPERATION

- Air conditioning system operation: The air conditioning control switches are located to the right of the instrument console.
- To turn air conditioner "ON" - Move switch to "A/C".
- To turn air conditioner "OFF" - Move switch to OFF".
- For air circulation without cooling - Move switch to "FAN".
- Select desired blower speed.

2.2 NORMAL PROCEDURES

GROUND AND FLIGHT OPERATIONS

- Ventilation Control - As desired
(Close for cockpit/cabin cooling)
- Air conditioning Control Switch - As desired.
- Air conditioning Fan Speed Control Switch - As desired.

3.0 EMERGENCY PROCEDURES

3.1 EMERGENCY PROCEDURES

- In the event of an engine failure, turn air conditioner "OFF".
- In the event of electrical power failure, turn air conditioner "OFF".

3.2 EXCESSIVE TEMPERATURE, FIRE, SMOKE

In the event of any of the following, turn air conditioner "OFF":

1. Cabin or other fire
2. Presence of smoke

4.0 PERFORMANCE:

The air conditioning system must be turned "OFF" to obtain FAA approved Rotorcraft Flight Manual performance above 7000 feet density altitude.

A.0 SYSTEM AND DESCRIPTION

The air conditioning installation consists of a belt driven vapor cycle (freon) air-conditioning system.

The air conditioning system provides for cabin comfort during all operations both on the ground and in flight. During ground operations when the engine is running, cooling may be provided. Controls for the air conditioning system are to the right of the instrument panel. Two switches are provided. The Master Control Selector consists of a rocker type switch, labeled "A/C", "OFF", and "FAN". Selecting the "A/C" position turns on the system's dual evaporator fans, dual condenser blowers, and belt driven compressor. The second rocker switch provides for "HIGH", "LOW", AND "MED" evaporator fan speed selection for the cockpit. Another evaporator fan speed switch is located in the aft cabin. It provides two speed selections. Thermostatic temperature control is not provided. A 5 amp circuit breaker below the left air outlet disconnects power to all relays.

A high pressure safety switch, located on the condenser or compressor, disengages the compressor and stops operation of the system in the event of excessive freon pressure. This can occur due to failure of the condenser blowers or restricted air intake. The switch will automatically reset itself and the system will cycle on again when the pressures are reduced below a predetermined point.

The evaporator fan system may be used anytime air circulation is desired. This is accomplished by placing the selector switch in the "FAN" position.

System electrical protection is provided by 2 each 15 amp and 2 each 20 amp circuit breakers. Labeled CONDENSER FAN and EVAPORATOR FANS, in the Air Conditioning Electrical Control Panel. This panel is located in the right side baggage compartment above the battery.

A-1 ELECTRICAL LOADING

The maximum electrical requirements of the air conditioning system are as follows:

Condenser Blowers	2 each @ 13 amps = 26 amps
Compressor	1 each @ 2 amps = 2 amps
Evaporator Fan	1 each @ 7 amps = 7 amps
Evaporator Fan	1 each @ 13 amps = <u>13 amps</u>
TOTAL	48 amps

A-2 WEIGHT AND BALANCE

Weight and Balance must be computed with air conditioning system installed. Approximate air conditioning weight is 80 pounds. See Installation Instructions supplied with kit for actual weight.

FLIGHT MANUAL
SUPPLEMENT
FOR
AS350BA

INTEGRATED FLIGHT SYSTEMS, INC.
POST OFFICE BOX 25687
COLORADO SPRINGS, CO 80936

FAA APPROVED

HELICOPTER FLIGHT MANUAL SUPPLEMENT

FOR

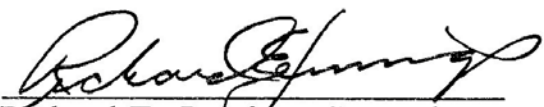
AEROSPATIALE HELICOPTER CORPORATION

MODEL: AS350BA

Registration No. _____

Serial No. _____

This supplement must be attached to the DGAC/FAA approved Rotorcraft Flight Manual, dated March 11, 1992 when an Integrated Flight Systems, Inc. air conditioning system is installed in accordance with STC No. SH3509SW. The information contained herein supplements or supersedes the basic Rotorcraft Flight Manual only in those areas listed. For limitations, procedures and performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

FAA APPROVED: 
Richard E. Jennings, Supervisor
Denver Aircraft Certification
Field Office
Northwest Mountain Region
Denver, Colorado 80207

Date: May 15, 1992

Page 1 of 8

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A.1	Electrical Loading	8
A.2	Weight & Balance	8

1.0 GENERAL

The installation consists of a belt driven vapor-cycle (freon) air conditioning system.

2.0 OPERATING LIMITATIONS

- The air conditioning system must be "OFF" during engine start.
- Operation of the air conditioning system is prohibited if the generator is inoperative.
- "MAG compass deviation may be excessive with air conditioner or fan - ON". Turn air conditioner "OFF" to read mag compass.
- The air conditioning system must be turned "OFF" during take-off, approach and landing above 7000 feet density altitude.
- The air conditioning system must be turned "OFF" to obtain the FAA approved Rotorcraft Flight Manual performance above 7000 feet density altitude.

3.0 EMERGENCY PROCEDURES

3.1 EMERGENCY PROCEDURES

- In the event of an engine failure, turn air conditioner "OFF".
- In the event of electrical power failure, turn air conditioner "OFF".

3.2 EXCESSIVE TEMPERATURE, FIRE, SMOKE

In the event of any of the following, turn air conditioner "OFF":

1. Cabin or other fire
2. Presence of smoke

4.0 NORMAL PROCEDURES

2.1 GROUND OPERATION

- Air conditioning system operation: The air conditioning control switches are located to the right of the instrument console.
- To turn air conditioner "ON" - Move switch to "A/C".
- To turn air conditioner "OFF" - Move switch to "OFF".
- For air circulation without cooling - Move switch to "FAN".
- Select desired blower speed.

2.2 NORMAL PROCEDURES

GROUND AND FLIGHT OPERATIONS

- Ventilation Control - As desired
(Close for cockpit/cabin cooling)
- Air conditioning Control Switch - As desired.
- Air conditioning Fan Speed Control Switch - As desired.

5.0 PERFORMANCE:

The air conditioning system must be turned "OFF" to obtain FAA approved Rotorcraft Flight Manual performance above 7000 feet density altitude.

A.0 SYSTEM AND DESCRIPTION

The air conditioning installation consists of a belt driven vapor cycle (freon) air-conditioning system.

The air conditioning system provides for cabin comfort during all operations both on the ground and in flight. During ground operations when the engine is running, cooling may be provided. Controls for the air conditioning system are to the right of the instrument panel. Two switches are provided. The Master Control Selector consists of a rocker type switch, labeled "A/C", "OFF", and "FAN". Selecting the "A/C" position turns on the system's dual evaporator fans, dual condenser blowers, and belt driven compressor. The second rocker switch provides for "HIGH", "LOW", AND "MED" evaporator fan speed selection for the cockpit. Another evaporator fan speed switch is located in the aft cabin. It provides two speed selections. Thermostatic temperature control is not provided. A 5 amp circuit breaker below the left air outlet disconnects power to all relays.

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System electrical protection is provided by 2 each 15 amp and 2 each 20 amp circuit breakers. Labeled CONDENSER FAN and EVAPORATOR FANS, in the Air Conditioning Electrical Control Panel. This panel is located in the right side baggage compartment above the battery.

A-1 ELECTRICAL LOADING

The maximum electrical requirements of the air conditioning system are as follows:

Condenser Blowers	2 each @ 13 amps = 26 amps
Compressor	1 each @ 2 amps = 2 amps
Evaporator Fan	1 each @ 7 amps = 7 amps
Evaporator Fan	1 each @ 13 amps = <u>13 amps</u>
TOTAL	48 amps

A-2 WEIGHT AND BALANCE

Weight and Balance must be computed with air conditioning system installed. Approximate air conditioning weight is 80 pounds. See Installation Instructions supplied with kit for actual weight.

FLIGHT MANUAL
SUPPLEMENT
FOR
AS350B1

INTEGRATED FLIGHT SYSTEMS, INC.
POST OFFICE BOX 25687
COLORADO SPRINGS, CO 80936

FAA APPROVED

HELICOPTER FLIGHT MANUAL SUPPLEMENT

FOR

AEROSPATIALE HELICOPTER CORPORATION

MODEL: AS350B1

Registration No. _____

Serial No. _____

This supplement must be attached to the DGAC/FAA approved Rotorcraft Flight Manual, dated February 13, 1987 when an Integrated Flight Systems, Inc. air conditioning system is installed in accordance with STC No. SH3509SW. The information contained herein supplements or supersedes the basic Rotorcraft Flight Manual only in those areas listed. For limitations, procedures and performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

FAA APPROVED:

for David T. Grossman
Michael H. Borfitz,
Supervisor, Denver Aircraft
Certification Field Office
2390 Sycrause
Denver, Colorado 80207

Date: October 27, 1988

REVISION: April 30, 1991

MODEL AS350B1
FLIGHT MANUAL SUPPLEMENT

LOG OF REVISIONS

Original.....

Dated: October 27, 1988

<u>PAGE</u>	<u>REVISION NO.</u>	<u>FAA APPROVED</u>	<u>INITIAL</u>
1 thru 7	original	October 27, 1988	dy
1 thru 2	"A" reissued	April 30, 1991	dy
Company name was: Av-Aire Corporation			
Company name is: Integrated Flight Systems, Inc.			

NOTE: Revised portions of affected pages are identified by a vertical black line in the margin adjacent to the change.

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1.0 GENERAL

The installation consists of a belt driven vapor-cycle (freon) air-conditioning system.

2.0 OPERATING LIMITATIONS

- The air conditioning system must be "OFF" during engine start.
- Operation of the air conditioning system is prohibited if the generator is inoperative.
- "MAG compass deviation may be excessive with air conditioner or fan - ON". Turn air conditioner "OFF" to read mag compass.
- The air conditioning system must be turned "OFF" during take-off, approach and landing above 7000 feet density altitude.
- The air conditioning system must be turned "OFF" to obtain the FAA approved Rotorcraft Flight Manual performance above 7000 feet density altitude.

3.0 EMERGENCY PROCEDURES

3.1 EMERGENCY PROCEDURES

- In the event of an engine failure, turn air conditioner "OFF".
- In the event of electrical power failure, turn air conditioner "OFF".

3.2 EXCESSIVE TEMPERATURE, FIRE, SMOKE

In the event of any of the following, turn air conditioner "OFF":

1. Cabin or other fire.
2. Presence of smoke

4.0 NORMAL PROCEDURES

4.1 GROUND OPERATION

- Air conditioning system operation: The air conditioning control switches are located to the right of the instrument console.
- To turn air conditioner "ON" - Move switch to "A/C".
- To turn air conditioner "OFF" - Move switch to "OFF".
- For air circulation without cooling - Move switch to "FAN".
- Select desired blower speed.

4.2 NORMAL PROCEDURES

GROUND AND FLIGHT OPERATIONS

- Ventilation Control - As desired
(Close for cockpit/cabin cooling)
- Air conditioning Control Switch - As desired.
- Air conditioning Fan Speed Control Switch - As desired.

5.0 PERFORMANCE:

The air conditioning system must be turned "OFF" to obtain FAA approved Rotorcraft Flight Manual performance above 7000 feet density altitude.

A.0 SYSTEM AND DESCRIPTION

The air conditioning installation consists of a belt driven vapor cycle (freon) air-conditioning system.

The air conditioning system provides for cabin comfort during all operations both on the ground and in flight. During ground operations when the engine is running, cooling may be provided. Controls for the air conditioning system are to the right of the instrument panel. Two switches are provided. The Master Control Selector consists of a rocker type switch, labeled "A/C", "OFF", and "FAN". Selecting the "A/C" position turns on the system's dual evaporator fans, dual condenser blowers, and belt driven compressor. The second rocker switch provides for "HIGH", "LOW", AND "MED" evaporator fan speed selection for the cockpit. Another evaporator fan speed switch is located in the aft cabin. It provides two speed selections. Thermostatic temperature control is not provided. A 5 amp circuit breaker below the left air outlet disconnects power to all relays.

A high pressure safety switch, located on the condenser or compressor, disengages the compressor and stops operation of the system in the event of excessive freon pressure. This can occur due to failure of the condenser blowers or restricted air intake. The switch will automatically reset itself and the system will cycle on again when the pressures are reduced below a predetermined point.

The evaporator fan system may be used anytime air circulation is desired. This is accomplished by placing the selector switch in the "FAN" position.

System electrical protection is provided by 2 each 15 amp and 2 each 20 amp circuit breakers. Labeled CONDENSER FAN and EVAPORATOR FANS, in the Air Conditioning Electrical Control Panel. This panel is located in the right side baggage compartment above the battery.

A-1 ELECTRICAL LOADING

The maximum electrical requirements of the air conditioning system are as follows:

Condenser Blowers	2 each @ 13 amps = 26 amps
Compressor	1 each @ 2 amps = 2 amps
Evaporator Fan	1 each @ 7 amps = 7 amps
Evaporator Fan	1 each @ 13 amps = <u>13 amps</u>
TOTAL	48 amps

A-2 WEIGHT AND BALANCE

Weight and Balance must be computed with air conditioning system installed. Approximate air conditioning weight is 80 pounds. See Installation Instructions supplied with kit for actual weight.

FLIGHT MANUAL
SUPPLEMENT
FOR
AS350B2

INTEGRATED FLIGHT SYSTEMS, INC.
POST OFFICE BOX 25687
COLORADO SPRINGS, CO 80936

FAA APPROVED
HELICOPTER FLIGHT MANUAL SUPPLEMENT
FOR
AEROSPATIALE HELICOPTER CORPORATION

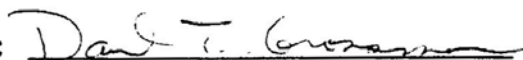
MODEL: AS350B2

Registration No. _____

Serial No. _____

This supplement must be attached to the DGAC/FAA approved Rotorcraft Flight Manual, dated June 8, 1990 when an Integrated Flight Systems, Inc. air conditioning system is installed in accordance with STC No. SH3509SW. The information contained herein supplements or supersedes the basic Rotorcraft Flight Manual only in those areas listed. For limitations, procedures and performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

FAA APPROVED:


for Michael H. Borfitz,
Supervisor, Denver Aircraft
Certification Field Office
2390 Sycrause
Denver, Colorado 80207

Date: April 30, 1991

LOG OF REVISIONS

Original.....

Dated: April 30, 1991

<u>PAGE</u>	<u>REVISION NO.</u>

NOTE: Revised portions of affected pages are identified by a vertical black line in the margin adjacent to the change.

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1.0 GENERAL

The installation consists of a belt driven vapor-cycle (freon) air-conditioning system.

2.0 OPERATING LIMITATIONS

- The air conditioning system must be "OFF" during engine start.
- Operation of the air conditioning system is prohibited if the generator is inoperative.
- "MAG compass deviation may be excessive with air conditioner or fan - ON". Turn air conditioner "OFF" to read mag compass.

3.0 EMERGENCY PROCEDURES

3.1 EMERGENCY PROCEDURES

- In the event of an engine failure, turn air conditioner "OFF".
- In the event of electrical power failure, turn air conditioner "OFF".

3.2 EXCESSIVE TEMPERATURE, FIRE, SMOKE

In the event of any of the following, turn air conditioner "OFF":

1. Cabin or other fire.
2. Presence of smoke

4.0 NORMAL PROCEDURES

4.1 GROUND OPERATION

- Air conditioning system operation: The air conditioning control switches are located to the right of the instrument console.
- To turn air conditioner "ON" - Move switch to "A/C".
- To turn air conditioner "OFF" - Move switch to "OFF".
- For air circulation without cooling - Move switch to "FAN".
- Select desired blower speed.

4.2 NORMAL PROCEDURES

GROUND AND FLIGHT OPERATIONS

- Ventilation Control - As desired
(Close for cockpit/cabin cooling)
- Air conditioning Control Switch - As desired.
- Air conditioning Fan Speed Control Switch - As desired.

5.0 PERFORMANCE:

The air conditioning system must be turned "OFF" to obtain FAA approved Rotorcraft Flight Manual performance above 7000 feet density altitude.

A.0 SYSTEM AND DESCRIPTION

The air conditioning installation consists of a belt driven vapor cycle (freon) air-conditioning system.

The air conditioning system provides for cabin comfort during all operations both on the ground and in flight. During ground operations when the engine is running, cooling may be provided. Controls for the air conditioning system are to the right of the instrument panel. Two switches are provided. The Master Control Selector consists of a rocker type switch, labeled "A/C", "OFF", and "FAN". Selecting the "A/C" position turns on the system's dual evaporator fans, dual condenser blowers, and belt driven compressor. The second rocker switch provides for "HIGH", "LOW", AND "MED" evaporator fan speed selection for the cockpit. Another evaporator fan speed switch is located in the aft cabin. It provides two speed selections. Thermostatic temperature control is not provided. A 5 amp circuit breaker below the left air outlet disconnects power to all relays.

A high pressure safety switch, located on the condenser or compressor, disengages the compressor and stops operation of the system in the event of excessive freon pressure. This can occur due to failure of the condenser blowers or restricted air intake. The switch will automatically reset itself and the system will cycle on again when the pressures are reduced below a predetermined point.

The evaporator fan system may be used anytime air circulation is desired. This is accomplished by placing the selector switch in the "FAN" position.

System electrical protection is provided by 2 each 15 amp and 2 each 20 amp circuit breakers. Labeled CONDENSER FAN and EVAPORATOR FANS, in the Air Conditioning Electrical Control Panel. This panel is located in the right side baggage compartment above the battery.

A-1 ELECTRICAL LOADING

The maximum electrical requirements of the air conditioning system are as follows:

Condenser Blowers	2 each @ 13 amps = 26 amps
Compressor	1 each @ 2 amps = 2 amps
Evaporator Fan	1 each @ 7 amps = 7 amps
Evaporator Fan	1 each @ 13 amps = <u>13 amps</u>
TOTAL	48 amps

A-2 WEIGHT AND BALANCE

Weight and Balance must be computed with air conditioning system installed. Approximate air conditioning weight is 80 pounds. See Installation Instructions supplied with kit for actual weight.

FLIGHT MANUAL
SUPPLEMENT
FOR
AS350B3

**INTEGRATED FLIGHT SYSTEMS, INC.
MEADOW LAKE AIRPORT
8345 BLUE GILL DRIVE
FALCON, CO 80831**

FAA APPROVED

HELICOPTER FLIGHT MANUAL SUPPLEMENT

FOR


EUROCOPTER HELICOPTER CORPORATION

MODEL: AS350B3

REGISTRATION NO.: _____

SERIAL NO.: _____

This supplement must be attached to the DGAC/FAA approved Rotorcraft Flight Manual May 7, 1998 when an Integrated Flight Systems, Inc., air conditioning system is installed in accordance with Supplemental Type Certificate number SH3509SW. The information contained herein supplements the basic Rotorcraft Flight Manual only in those areas listed. For limitations, procedures, and performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

FAA APPROVED: 
Mr. Carl Mittag
Manager, Southwest Region
Certification Office ASW-170
Ft. Worth, Texas 76193-170

DATE: FEB 08 1999

Page 1 of 7

Integrated Flight Systems, Inc.
Meadow Lake Airport
8345 Blue Gill Dr.
Falcon, CO 80831

Rotorcraft Flight Manual
Supplement for AS350B3
Air Conditioning

MODEL AS350B3

LOG OF REVISIONS

Original. . .

Dated: _____

<u>PAGE</u>	<u>REVISION NO.</u>
1 thru 7	Original

NOTE: Revised portions of affected pages are identified by vertical black line in the margin adjacent to the change.

FAA APPROVED: **FEB 08 1999**

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1.0 GENERAL

The installation consists of a belt drive vapor-cycle air conditioning system.

2.0 OPERATING LIMITATIONS

- The air conditioning system must be "OFF" during engine start.
- Operation of the air conditioning system is prohibited if the total electrical load will exceed 150 amps, continuous or if generator is inoperative.
- "MAG" compass deviation may be excessive with air conditioner or fans - "ON". Turn air conditioner "OFF" to read MAG compass.

3.0 EMERGENCY PROCEDURES

3.1 EMERGENCY PROCEDURES

- In the event of an engine failure, turn air conditioner "OFF".
- In the event of electrical power failure, turn air conditioner "OFF".

3.2 EXCESSIVE TEMPERATURE, FIRE, SMOKE

In the event of any of the following, turn air Conditioner "OFF":

1. Cabin or other fire.
2. Presence of smoke.

4.0 **NORMAL PROCEDURES**

4.1 **Ground Operation**

- Air conditioning system operation: The air conditioning control switches are located to the right of the instrument console.
- To turn air conditioner "OFF" - Move switch To "AC".
- For air circulation without cooling - Move switch to "FAN".
- Select desired blower speed.

4.2 **Normal Procedures**

GROUND AND FLIGHT OPERATIONS

- Ventilation Control - As desired (Close for cockpit/cabin cooling)
- Air conditioning Control Switch - As desired.
- Air conditioning Fan Speed Control Switch - As desired.

5.0 **PERFORMANCE**

The air conditioning system must be turned "OFF" to obtain FAA approved Rotorcraft Flight Manual performance above 7,000 feet density altitude.

A.0 SYSTEM AND DESCRIPTION

The air conditioning installation consists of a belt driven vapor cycle (freon) air-conditioning system.

The air conditioning system provides for cabin comfort during all operations both on the ground and in flight. During ground operations when the engine is running, cooling may be provided. Controls for the air conditioning system are to the right of the instrument panel. Two switches are provided. The Master Control Selector consists of a rocker type switch, labeled "A/C", "OFF", and "FAN". Selecting the "A/C" position turns on the system's dual evaporator fans, dual condenser blowers, and belt driven compressor. The second rocker switch provides for "HIGH", "LOW", AND "MED" evaporator fan speed selection for the cockpit. Another evaporator fan speed switch is located in the aft cabin. It provides two speed selections. Thermostatic temperature control is not provided. A 5 amp circuit breaker below the left air outlet disconnects power to all relays.

A high pressure safety switch, located on the condenser or compressor, disengages the compressor and stops operation of the system in the event of excessive freon pressure. This can occur due to failure of the condenser blowers or restricted air intake. The switch will automatically reset itself and the system will cycle on again when the pressures are reduced below a predetermined point.

The evaporator fan system may be used anytime air circulation is desired. This is accomplished by placing the selector switch in the "FAN" position.

System electrical protection is provided by 2 each 15 amp and 2 each 20 amp circuit breakers. Labeled CONDENSER FAN and EVAPORATOR FANS, in the Air Conditioning Electrical Control Panel. This panel is located in the right side baggage compartment above the battery.

A-1 ELECTRICAL LOADING

The maximum electrical requirements of the air conditioning system are as follows:

Condenser Blowers	2 each @ 13 amps = 26 amps
Compressor	1 each @ 2 amps = 2 amps
Evaporator Fan	1 each @ 7 amps = 7 amps
Evaporator Fan	1 each @ 13 amps = <u>13 amps</u>
TOTAL	48 amps

A-2 WEIGHT AND BALANCE

Weight and Balance must be computed with air conditioning system installed. Approximate air conditioning weight is 80 pounds. See Installation Instructions supplied with kit for actual weight.

FAA APPROVED: **FEB 08 1999**

Step 12

Continued Airworthiness

Integrated Flight Systems
CONTINUED AIRWORTHINESS – AS350 Air Conditioning

General Description	
12.0	The Integrated Flight Systems air conditioning covered by this report for the Eurocopter Helicopter Corporation, Model AS350 consists of five major components. This kit is universal, as it can be used in various configurations “Corporate, Utility tour or EMS”.
12.1	The belt driven compressor P/N 590008 with Belt P/N 060018-1 or P/N 590008-1 with Belt P/N 060005, is located immediately aft and to the left of the main transmission installed on a provided Bracket P/N 530027-3.
12.2	Aft evaporator is mounted in the right side baggage compartment with a 5” Vane Axial Blower P/N 050143 directly above on the main transmission deck. Expansion Valve P/N 090002-O, Resistor Assembly P/N 540020.
12.3	Forward evaporator P/N 560025-O is located directly in front of copilot pedals attached to the floor support with bolts. Expansion Valve P/N 090002-O, Fan Motor P/N 050052-1.
12.4	The condenser coil assembly P/N 550022 is mounted to the rear of the aft baggage area is attached to the existing aircraft frames by aluminum channels. The entire coil is wrapped with a sheet metal enclosure. Dual 5” inch diameter vane axial blowers P/N 050143 pull air through air inlet doublers in the bottom of the tail boom and exhausts the air out the 5” diameter holes on either side of the aircraft. The inlets and outlets have protective screens installed.
12.5	Electrical harness and hoses provide component connections and control from switch panel located near the instrument panel. A/C-Off-Fan Switch P/N 050001, Main Fuse ANL-50 (located in main power box aft baggage area).
12.6	It is assumed by the following instructions that the personnel engaged in Charging, Servicing or Maintenance of the system will be accomplished by either an experienced air conditioning mechanic under the supervision of a qualified A & P mechanic or an A & P mechanic possessing good air conditioning skills.
12.7	Prior to charging the system with R-134a, the evaporator fan/blower and condenser blower should be checked for operation and direction of airflow. This is most easily done by utilizing a GPU unit for electrical power. Since the compressor is belt driven only by those maintenance and operational functions that are electrically powered may be checked either in the hanger or on the ramp without running the engine.

Integrated Flight Systems
CONTINUED AIRWORTHINESS – AS350 Air Conditioning

PROCEDURE	
12.8	<p>After the GPU is connected to the aircraft and the Aircraft Master Switch is “On”, the air conditioning system may be turned “On”. Place the rocker switch on the Master Air Conditioning Control Panel to “A/C”. It does not cause the compressor to run or refrigerant to be pumped. All evaporator blowers and the forward evaporator fan should start immediately. The 7” condenser blower and clutch will not engage until after approximately 4 seconds after evaporator fan start.</p> <p>NOTE: SYSTEM MUST HAVE MINIMUM 30 PSI CHARGE.</p>
12.9	<p>Check airflow of each evaporator fan/blower. Determine that air is coming out of the cockpit and the cabin air outlets.</p>
12.10	<p>Check airflow into and out of condenser air openings.</p>
12.11	<p>All evaporators fan/blower, condenser blowers, and controls are 28 volt DC.</p>

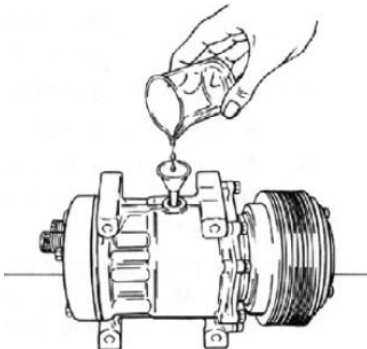
Charging Refrigerant (R-134a) Into System

PROCEDURE	
12.12	<p><u>DANGER:</u> R-134a, particularly liquid R-134a should never be allowed to come in contact with the eyes or skin. Under normal conditions, R134a as a gas or vapor is an inert substance and non-poisonous. A flame type leak detector should <u>never be used</u> because of the danger of fire or explosion around an aircraft. Several electronic leak detectors are available on the market.</p>
12.13	<p>Never heat a cylinder of R-134a to produce additional pressure or to squeeze that last bit of refrigerant from the cylinder. If the cylinder has become cooled to the point where additional refrigerant cannot be obtained from it, the only approved method is to place the entire cylinder in a container of warm water. Do Not Exceed 120 Degrees Fahrenheit.</p>
12.14	<p>Never attempt to repair a leak requiring brazing or soldering within the aircraft structure as fire or explosion can result. Remove the entire assembly from the aircraft to a safe location before attempting such a procedure.</p>

Charging Refrigerant (R-134a) Into System

PROCEDURE	
12.15	Should R-134a come in contact with the eyes or the skin, Do Not attempt first aid beyond the immediate washing of the eye or skin with clear water. A doctor should be contacted immediately for diagnosis and treatment even though the injury may be considered slight. REPEAT – DO NOT attempt first aid for this condition.
12.16	The charging of the system should not be attempted unless qualified individuals are present. The refrigerant used in this system is R-134a. No other refrigerant is to be considered. Normal safety practices, such as wearing of gloves and the use of goggles should be utilized as R134a could freeze the eyeball instantly were it to come in contact with the eye. Also, frostbite could occur to areas of the skin if R-134a were allowed to come in contact.
12.17	Charging of the system is a simple procedure whether initial or recharging after leakage repair. A set of refrigerant gauges with a minimum of three hoses should be connected to the high side and low side service ports provided.
12.18	The system is made up of two evaporator assemblies. One is mounted above the floor, forward of the pilot's feet. The other is located in the top/forward area of the right side baggage compartment. The compressor for this system is located aft and to the left of the main transmission. Service ports are provided in the right side baggage compartment. The high side and low side service ports are readily accessible.

Oil Charging: R-134a Refrigerant

PROCEDURE	
12.19	Prior to the use of R-134a refrigerant, R-12 refrigerant was used in all IFS systems. THE PROPERTIES OF R-134A REFRIGERANT AND THE VARIOUS TYPES OF OIL USED WITH R-12 REFRIGERANT ARE COMPLETELY DIFFERENT.
12.20	Prior to charging each newly installed system with R-134a, obtain FOUR (4) ounces (118.29 ml) of ESTER type oil as shown on the compressor label. This oil should be added to the compressor prior to charging the system. Do not add additional oil if replacing a compressor in an existing system.
12.20a	Remove the oil filler plug and charge the compressor with the additional four (4) ounces of oil. Oil must be of the same type shown on the compressor label. (See fig. 1)
12.20b	Re-install oil plug. Seat and O-ring must be clean and not damaged. Torque to 11-18 ft-lb (15-25 N·m, 150-200 kgf·cm)
 <p>fig. 1</p>	
12.21	The Sanden compressor in this application uses a100 viscosity, 500 SUS @ 100° F “ESTER” (Polyolester) type oil. No other type oil can be utilized, especially “PAG” (Polyalkylene Glycol) types.

Initial Charging

PROCEDURE	
12.22	Tighten any leaking connections or make repairs as necessary to eliminate leaks. Shut off and disconnect hose from the refrigerant cylinder. Connect the hose to a regulator mounted on a cylinder of dry nitrogen. Purge the regulator to center manifold hose. Close low side valve (left) at manifold. Failure to do so can cause pressure to flow to the low side (left) gauge. Failure of gauge can result.
12.23	After the system has been rechecked with the leak detector and it is determined that no leaks exist, disconnect the charging hose from the manifold set to the cylinder of nitrogen. Open the valves allowing the R-134a and nitrogen within the system to be collected into an EPA approved recycling unit (expelling of refrigerant is illegal).
12.24	Connect a vacuum pump to the center manifold hose. Open both valves and evacuate the system for a minimum of twenty minutes. After twenty minutes of vacuum at sea level. (NOTE: For each 1,000 foot rise in altitude above sea level, a decrease below 30” of vacuum of 1” per one thousand feet rise in altitude will occur).

Adding R-134a Refrigerant To The System

PROCEDURE	
12.25	Close both the manifold valves and connect the center charging hoses to a cylinder of R-134a. Open the valves of the cylinder. Purge the charging hose by loosening it at the charging manifold's center hose. ONLY THE HIGH SIDE VALVE OF THE CHARGING MANIFOLD MAY NOW BE OPENED.
12.26	The combination of the vacuum still existing and the pressure in the R-134a cylinder transfers the R-134a from the cylinder into the system, on the high side only , without the compressor running. If a scale is available, the cylinder may be pre-weighted and 2.0 pounds of refrigerant R-134a added to the system . No additional refrigerant should be added after the system is in operation. Close manifold.
12.27	The system is now ready for operation. This must be performed on the flight line with the engine at 100%. As soon as the "A/C" Master Control Switch is turned to "A/C" all 28VDC evaporator fans will immediately begin operations.
12.28	<p>If, after the system has been in the "A/C" mode for a least 2 minutes and cooling is not being accomplished, then check all circuit breakers.</p> <p>Determine that 28 VDC power is available for control circuitry. Check operations of the relays and contacts.</p>

Adding R-134a Refrigerant To The System

PROCEDURE	
12.29	<p><u>When servicing by weight Steps 12.29 and 12.30 should be utilized.</u></p> <p>After the compressor has come on line, the entire system is operational. (In 82° or lower, the reading on the gauge should not be allowed to go below 10 PSI, as the low-pressure safety switch will disconnect the electrical power to the compressor clutch if allowed to open. Open or close the cylinder valve as required to monitor the flow of R-134a from the cylinder into the low side of the system to stop low side from cycling.</p> <p>Continue charging until you have 2.0 lbs. or the high gauge reads 280 psi, whichever comes first.</p> <p>THE REFRIGERANT CHARGE SHOULD NOT EXCEED 2.5 POUNDS AT THIS TEMPERATURE OR LOWER.</p>
12.30	<p>If the outside air temperature is 83° degrees Fahrenheit or more, the maximum amount of R-134a in the system is 2.0 lbs.</p> <p>THE REFRIGERANT CHARGE SHOULD NOT EXCEED 2.0 POUNDS AT THIS TEMPERATURE OR HIGHER.</p>
12.31	<p><u>When servicing by best performance use step 12.31</u></p> <p>The optimum method for best performance is to use at least two mechanical thermometers and place them near the return air and the discharge air of each evaporator. R-134a can then be added or deleted as required, until the highest T.D. is noted per the paragraph below. At that time, the correct amount of refrigerant is installed. At any time the high pressure gauge reaches 280 psi, stop servicing. Do not exceed 3.0 lbs of refrigerant.</p> <p><u>Note:</u> If aircraft is being operated at a higher O.A.T. then when serviced, some refrigerant may need to be removed to maintain a high pressure of 280 psi or lower.</p>

Adding R-134a Refrigerant To The System

PROCEDURE	
12.32	The test sheet enclosed should be completed noting the average cabin temperature, the temperature on the return or entering air to all evaporators and the discharge air from the evaporators at the nearest point. If a Temperature Differential (T.D.) of less than 20 degrees Fahrenheit with a humidity of 30% or less is recorded through the evaporators at sea level, the system should be considered as having possible defects, which will need investigation. At altitudes above sea level, less than 20 degrees Fahrenheit temperature difference may be recorded at humidity of 30% or less. This is due to less dense air moving more rapidly through the evaporators.

Effect of Humidity on T.D.

PROCEDURE	
12.33	<p>It should be noted that in measurements taken and entered on a test sheet that similar measurements made at a later date, when the humidity is considerably higher, would dramatically change the T.D.</p> <p>The higher the humidity as compared to a previous T.D. reading taken with a low humidity, will result in a lower T.D. The reason for this lower T.D. measurement is that when a test is performed at lower humidity, only “SENSIBLE HEAT” is being removed. With higher humidity, a different condition exists. It requires that “LATENT HEAT” containing moisture borne heat must be removed prior to the removal of the sensible heat.</p>
12.34	If the system is found to be completely empty of R-134a, a set of charging gauges should be connected to both high and low side service ports and to a cylinder of R-134a. Purge the charging hoses from the cylinder to the service ports with R-134a vapor. Open both the low and high side charging valves and allow pressure from the cylinder to equalize through the system until at least 50 PSI is noted. Utilizing an electronic leak detector, check all fittings on the system to determine the point of leakage. Any fitting indicating an oily or dirty condition is a prime suspect.

Recharging the System

PROCEDURE	
12.35	After the leaks have been found and corrected, connect a vacuum pump to the system and evacuate the system for a minimum of 20 minutes from both the high and low sides. If the system has been allowed to become contaminated, then the receiver/drier is to be replaced.
12.36	It is always good air conditioning practice to replace the receiver/drier whenever it is suspected that moisture has contaminated the system.
12.37	The balance of the recharging procedure is exactly the same as pointed out previously under the Charging Operation . A judgment must be made as to the amount of oil, if any, lost at the point of leakage. Additional oil may be required to be added to the system. If the refrigerant has been expelled rapidly by the rupture of a line or similar situation then two (2) ounces of refrigerant oil of the type previously specified should be applied to the system at this time and immediately prior to charging of the system with R-134a. No oil should be added for any other reason. Too much oil in the system will degrade air conditioning performance.

Airworthiness Maintenance
(To Accomplish Continued Airworthiness)

PROCEDURE	
12.38	<p>An Integrated Flight Systems unit is designated to be as maintenance free as possible. It incorporates in the design components that have proven themselves to be highly reliable after more than fifteen (15) years in the selection process.</p> <p>“IN GENERAL” the IFS air conditioning system is “on an as required” maintenance schedule.</p> <p>Few components require specific hours of in Service Inspections or Time Life replacement of components for: Continued Airworthiness”. It is suggested that at each periodic inspection, whether at 50 or 100 hour intervals, at least a visual inspection be accomplished to the following items; to fulfill with inspection criteria – per Appendix D, Far-43; Para A, Para B, 2, Para C, 1, 7, Para D, 2, 7, 9, and Para F, G, I, 2, 3, and J.</p> <ol style="list-style-type: none">1. Compressor2. Compressor Clutch Bearing3. Compressor Mount4. Refrigerant Hose and Fittings5 Evaporator Fans and Mountings6 Condenser Blowers and Mountings7 Condenser/Evaporator Coils8 Belts
12.39	<p>In addition to the above inspection, the compressor should be inspected for a true turning and free clutch. One mechanic should turn the main rotor blade while another observes the belt and clutch faceplate. Turn system to “A/C” and check magnetic operation of clutch plate. An independent #14 wire may be necessary from the compressor to an airframe ground in order to ensure that the clutch engages in a positive manner.</p>
12.40	<p>Bolts are firmly attached.</p>

Integrated Flight Systems
CONTINUED AIRWORTHINESS – AS350 Air Conditioning

PROCEDURE	
12.41	<p>Clutch Bearing Inspection:</p> <p>Due to different climatic conditions, a set time to inspect for re-greasing of the clutch bearings is difficult to establish. Some Operators inspect and grease at scheduled times. Others operate on condition. It is not mandatory to grease the bearing. If the bearing is greased use a hypodermic needle, without removing the bearing using 3 to 5cc of Mobil 25 grease. This has proven to be satisfactory when performed at regularly scheduled inspections of 500 hours. Some operators flying as much as 200 hours per month have found that re-greasing can occur at more than 500 hour intervals, provided they DO NOT OVER PACK THE BEARING. 100% capacity packing of the bearing can cause a failure to occur in 1 to 1 ½ hours.</p>
12.42	Belt tension and inspection.
12.43	<p>Clutch Bearing Grease:</p> <p>NOTE: Sanden compressors are supplied with at least 3 different manufacturers bearings. Consultation with these suppliers has resulted in the following findings.</p> <ol style="list-style-type: none"> 1. <u>“OVERPACKING”</u> of bearing can cause premature bearing failure. 2. All bearings being supplied in new compressors will be PACKED with manufacturers grease. 3. IFS recommends that Mobil 28 continue to be used in the “FIELD” to repack bearings in moderate climates. DO NOT OVER PACK! <p>“IF” another grease is selected, the bearing should have all the grease removed prior to installing another type of grease. This is true EVEN IF THE NEW GREASE MEETS THE SAME MIL-SPEC.</p>

Integrated Flight Systems
CONTINUED AIRWORTHINESS – AS350 Air Conditioning

PROCEDURE	
12.43 (cont.)	<p>NOTICE: ALTERNATE GREASE FOR EXTREME CLIMATES.</p> <p>5. IFS has determined that in extremely hot climates (100 degrees Fahrenheit or higher) that it is desirable to use LUBRIPLATE type GR-132 grease. This product will endure a temperature of 430 degrees Fahrenheit.</p>
12.44	Inspect hoses for general condition, cuts or swelling. Replace as required. Security of clamps and Anti-chaff material.
12.45	<p>Aft evaporator motor has two (2) removable brushes. Inspect every 200 hours. Detach elbow from top of blower assembly. Remove brushes one (1) at a time. Note position relative to curvature of armature. Inspect brush for wear. Replace if brush is 5/16" or less. Install new brushes and run at 12 VDC (utilizing an independent power source).</p> <p>Until seating occurs on 70% of the surface (this should be accomplished with motor assembly removed from aircraft). This action will greatly enhance brush life. Reconnect wires to aircraft system and reinstall insulated duct. Run both of the blower/fans in the "FAN" position and perform visual inspection of the assemblies to see that foreign materials have not been ingested into the blower/fan, which might cause blade damage. The blower/fan should also be run at the various speeds available to check the motor operation.</p>
12.46	<p>Condenser Blower: P/N 050084-4 of -6 (contains same motor). Two (2) brushes are located under caps on each side of the motor. Inspect brushes every 300 hours. Replace brush with 5/16" or less. Remove, replace, and run in as called out in Section 12.45.</p> <p>NOTE: TAKE CARE WHEN INSTALLING BRUSHES THAT BRAIDED POSITIVE LEAD DOES NOT CONTACT HOUSING, CAUSING A SHORT.</p>
12.47	The fins of the condenser coil, as well as the evaporator coil, should be checked for cleanliness and that they are straight. If damage has occurred to the fins, a fin comb should be utilized to put them in like new condition.

Step 13

Parts Break Down

MASTER PARTS LIST

IN

ALL AS350 SERIES

FOR

KIT # 350-00-031-HP

with

**AFT MOUNTED CONDENSER
(DUAL CONDENSER BLOWERS)**

**"ESTER OIL EQUIPPED COMPRESSOR"
Model: SD-507**

**Revised: November 4, 2009
 August 28, 2006
 February 1, 2002
 March 1, 2001
 August 6, 2001**

MASTER PARTS LIST

AS350 SERIES

11/04/09

KIT #350-00-031HP

SINGLE CONDENSER BLOWER

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART #</u>
1.	BELT - FLAT	060018-1 060018 (Alt)
	BELT - GROOVED	060005
2.	SD-507 COMPRESSOR ASSEMBLY COMPLETE W/ FLAT PULLEY, 24 VDC COIL (FOR USE WITH R-134a ONLY, "ESTER oil equipped)	590008
	SD-507 COMPRESSOR ASSEMBLY COMPLETE W/ GROOVED PULLEY, 24 VDC COIL (FOR USE WITH R-134a ONLY, "ESTER oil equipped)	590008-1

COMPRESSOR PARTS

FOR: SD-507 W/ 5.0" CLUTCH

3.	BEARING (ONLY): SD-507 COMPRESSOR W/ 5.0" CLUTCH	010011
4.	24 VDC COIL (GREEN WIRE)	050033

Integrated Flight Systems
Parts Break Down – 350-00-031 Air Conditioning

COMPRESSOR PARTS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART #</u>
5.	IFS PULLEY (FLAT)	300355
	(Alt)	300355-2
	IFS PULLEY (GROOVED)	300396
6.	PULLEY FACE PLATE 5.0" (A6H)	010013
7.	PULLEY FACE PLATE 5.0" (A3G/A2Y)	010015

EVAPORATOR BLOWER PARTS

8.	5" VANE AXIAL BLOWER ASSY. (SINGLE FLANGE W/NYLON BLADE) For: AFT EVAPORATOR BLOWER ASSY. IFS P/N 490017-1	050143
9.	MOTOR: 5" VANE AXIAL BLOWER	050145
10.	NYLON BLADE AND HUB ASSY. FITS 5" VANE AXIAL BLOWER,	580000
11.	BRUSHES (2 EACH)/MOTOR	050031
12.	MOTOR, FORWARD EVAPORATOR 24VDC, single shaft, right hand	050052-1
13.	WHEEL, FORWARD EVAPORATOR, fan, metal, CC rotation, 5/16" bore	040004-8

DUAL CONDENSER BLOWER PARTS

14.	5" VANE AXIAL BLOWER ASSY. (SINGLE FLANGE W/NYLON BLADE) For: AFT EVAPORATOR BLOWER ASSY. IFS P/N 490017-1	050143
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Integrated Flight Systems
Parts Break Down – 350-00-031 Air Conditioning

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART #</u>
15.	MOTOR: 5" VANE AXIAL BLOWER	050145
16.	NYLON BLADE AND HUB ASSY. FITS 5" VANE AXIAL BLOWER,	580000
17.	BRUSHES (2 Brush motor)	050031
18.	(INTENTIONALLY BLANK)	
19.	(INTENTIONALLY BLANK)	
<u>MISC. PARTS</u>		
20.	RECEIVER/DRIER 1991 & ON - "O" RING TYPE	090016-5
21.	EXPANSION VALVE 1992 & ON - FWD. AND AFT EVAP. "O" RING TYPE	090002-"O"
22.	HIGH PRESSURE SAFETY SWITCH (ALL YEARS)	090004
23.	LOW PRESSURE SAFETY SWITCH 1991 & ON - NON-ADJUSTABLE (7 OUT/22 IN)	050107

Integrated Flight Systems

Pressure Switch Identification

for all

vapor cycle air conditioning kits

using R-134a

Low Pressure Switch: IFS P/N 050107

Leads are: **BLUE** in color

Mfg. P/N on switch: 20PS003MA022C007C

Opens: 7PSI Closes: 22 PSI

High Pressure Switch: IFS P/N 090004

Leads are: **BLACK** in color

Mfg. P/N on switch: 20PS002MB375K265K

Opens: 375 PSI Closes: 265 PSI

ALT. Mfg. P/N on switch: 20PS104MB350K250K

Opens: 350 PSI Closes: 250 PSI

IFS P/N 090004 (Both Types)

Step 14

Warranty/Repair



Standard Terms and Conditions of Sale

1. Terms of Payment: Unless prior arrangements are made to establish credit terms RSG Products Inc., all sales are prepaid in full prior to shipment. Payment may be made via cash, check or electronic transfer to RSG Products Inc. prior to delivery.

2. Buyer's Deposit: A 50% deposit is required to process an order for an air conditioning kit. The deposit is non-refundable and will be applied to the final price of the kit.

3. Taxes / Other Charges: Prices of the specified products are exclusive of all city, state, federal and international taxes, duties, levies or charges of any kind, including, without limitation, taxes on manufacture, sales, receipts, gross income, occupation, use and similar taxes or other charges. Whenever applicable, any taxes or other charges shall be added to the invoice as a separate charge to be paid by Buyer.

4. Shipment and Packaging: All products will be suitably packed, marked and shipped F.O.B. RSG Products Inc. Fort Worth Texas, in accordance with standard packaging procedures.

5. Delays: RSG Products Inc. will not be liable for any delay in the performance of orders or contracts, or in the delivery or shipment of goods, or for any damages suffered by Buyer by reason of such delays.

6. Technical Advice: RSG Products Inc. technical support staff is available for telephone consultation concerning the products it manufactures; however, RSG Products does not warrant or guarantee such advice.

7. Aircraft Variation: Due to aircraft manufacturing variations, alterations and other factors, there are differences between aircraft of a certain make and model. Because of these variations, RSG Products Inc. does not guarantee that Buyer has purchased the correct product or that a specified product will fit the intended aircraft. Further, RSG Products does not guarantee the number of labor hours required to install its products.

8. Returns: All sales are final unless a return is approved at the sole discretion of RSG Products Inc. If RSG Products Inc. does agree to accept a return, a twenty percent (20%) restocking fee will be charged. All items returned to RSG Products Inc. must be sent freight prepaid and must have a return material authorization (RMA) number clearly marked on the shipping container.

9. No Fault Found: If items are sent to RSG Products Inc. for evaluation and no problem is found, or if Buyer elects not to make the required repairs, then Buyer shall be responsible for the payment of \$250 evaluation fee.

10. Certificate of Conformity: RSG Products Inc. will provide a Certificate of Conformity with each product assuring that the product has been manufactured according to its approved design drawings. Any additional assurances or certifications shall be at the expense of Buyer and shall be added to the invoice as a separate charge to be paid by Buyer.

11. Failed Products: Should any product prove defective, RSG Products Inc. will either replace the item or adjust the matter fairly and promptly, but under no circumstances shall RSG Products be liable for consequential or other damages, losses, or expenses in connections with or by reason of the use or liability to use products purchased for any purpose.

12. Patents: Buyer shall hold RSG Products Inc. harmless from, and release and not make claim or suit against RSG Products because of any suits, claims, losses, or other liability made against, or suffered by, Buyer arising from any claim of, or infringement of, patent, copyright, trademark, or other proprietary right, at common law, or claim of unfair trade or of unfair competition, resulting from, or occasioned by Buyer's use, possession, sale, or delivery of the products sold to Buyer by RSG Products Inc.

13. Warranty Registration and Claims: The terms RSG Products Inc. Limited Warranty is written on the Warranty Registration Card and published on the RSG Products Inc., website www.integratedflightsys.com. The registration form must be completed and returned to RSG Products Inc. upon receipt of a product. The completed form may be faxed to +1 817 624 6601. Failure to complete the Warranty Registration Card may result in denial of a claim. In order to process a warranty claim, call RSG Products Inc. at +1 817-624 6600 or fax +1 817 624 6601. A Warranty Claim without a Return Material Authorization (RMA) Number will cause delays and a possible denial of the claim.



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14. Acceptance: This is not a firm offer and may be changed or revoked at any time. Acceptance of this offer is expressly limited to the exact terms contained herein, or as may be changed by a prior written contract between the Buyer and RSG Products Inc., and any attempt to alter or omit any of such terms shall be deemed a rejection and a counteroffer.



Warranty Terms

RSG Products Inc., warrants that each of its Air Conditioning Systems (the "Equipment") shall be free from defects in material and workmanship under normal use and service until one year after its date of sale if, and only if, installation, maintenance and operation of the Equipment is in accordance with the specifications and instructions provided by RSG Products Inc. and no substitute parts are installed in accordance with the specifications and instructions provided by RSG Products Inc. and no substitute parts are installed in the equipment without the prior written authorization from RSG Products Inc.. For the Equipment, the warranty period is 12 months or 1,000 hours, whichever comes first, from the date of sale. In the case of new spare parts, this warranty is further limited to a period of six (6) months from the date of sale. In the case of overhauled products, this warranty is further limited to a period of three (3) months from the date of sale. In the case of repaired products, this warranty is further limited to a period of thirty (30) days from the date of sale and applies only to the parts used for the repair. Any claims under this warranty shall be made to RSG Products Inc., 3900 Falcon Way West Hanger 16S, Fort Worth, Texas 76106, USA. Warranty is not valid unless the enclosed Registration Card is completed and returned to RSG Products Inc. prior to any claim. The Warranty Claim Form must be completed and returned with the Equipment. All claims shall be handled according to standard warranty repair procedures.

Limitations & Exclusions. This warranty shall not apply to any Equipment repaired or altered outside the Rotorcraft Services Inc. Service Department unless express prior written authorization is granted; nor shall this warranty apply to any Equipment that has been subjected to misuse or accident, as determined solely by Rotorcraft Services Inc. The sole responsibility and liability of RSG Products Inc. and your exclusive remedy under any claim arising out of, connected with, or resulting from this sale or the performance or breach or any condition of warranty there under, or from the manufacture, delivery, or use of the Equipment shall be the repair or replacement of defective equipment upon return of the defective equipment to RSG Products Inc. with transportation, customs and any applicable import duties prepaid and provided that an inspection by RSG Products Inc. discloses that the equipment is defective and covered by this warranty. RSG Products Inc. shall not be liable for any labor or other charges necessary to remove or reinstall the Equipment. In no event, whether as a result of a breach of contract, warranty, tort (including negligence) or otherwise, shall RSG Products Inc. be liable for any special, consequential, incidental or penal damages or expenses including but not limited to loss of profit, goodwill or revenues, loss of use of the Equipment or any associated equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities or services, down time, or costs or claims of third parties for such damages or expenses.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OR REMEDIES WHETHER WRITTEN, ORAL, IMPLIED OR STATUTORY, ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF DEALING OR USAGE OF TRADE ARE HEREBY EXPRESSLY DISCLAIMED AND EXCLUDED.

Acceptance of the Equipment by you shall constitute your acknowledgement and acceptance of the terms, provisions, limitations and exclusions set forth herein. Such term, provisions, limitations and exclusions shall not be modified, deleted or supplemented. In a case where the purchaser has negotiated warranty terms by express written agreement with RSG Products Inc. as to certain equipment, the terms of that agreement shall supersede the warranty.



WARRANTY REGISTRATION FORM

DATE: _____

CUSTOMER NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE NUMBER: (____) _____ FAX NUMBER: (____) _____

COMPONENT NAME: _____

PART NUMBER: _____ SERIAL NUMBER: _____

TYPE AIRCRAFT: _____ N#: _____ S/N: _____

AIR CONDITIONING INSTALLATION DATE: _____

AIR CON. INSTALLATION COMPANY: _____

DATE INSTALLED: _____ T.T AT INSTALLATION: _____

COPY OF T.T. LOG BOOK ENTRY OF A/C INSTALL SIGN OFF. ☐

This Form Must be received from the Owner of the Aircraft for the warranty to be active.

Warranty period extends from Date of Purchase for a period of one year or 1000 hours

Subject to the limitations identified in the attached Warranty Terms; effective 22 February 2007

**PLEASE REVIEW THE ATTACHED WARRANTY POLICY
PRIOR TO SUBMITTING THIS REGISTRATION FORM.**



WARRANTY CLAIM FORM

DATE: _____ RMA# _____

CUSTOMER NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE NUMBER:(____) _____ FAX NUMBER:(____) _____

COMPONENT NAME: _____

PART NUMBER: _____ SERIAL NUMBER: _____

TYPE AIRCRAFT: _____ N#: _____ S/N: _____

AIR CONDITIONING INSTALLATION DATE: _____

AIR CON. INSTALLATION COMPANY: _____

DATE INSTALLED: _____ T.T AT INSTALLATION: _____

DATE REMOVED: _____ T.T AT REMOVAL: _____

REASON FOR RETURNING COMPONENT: _____

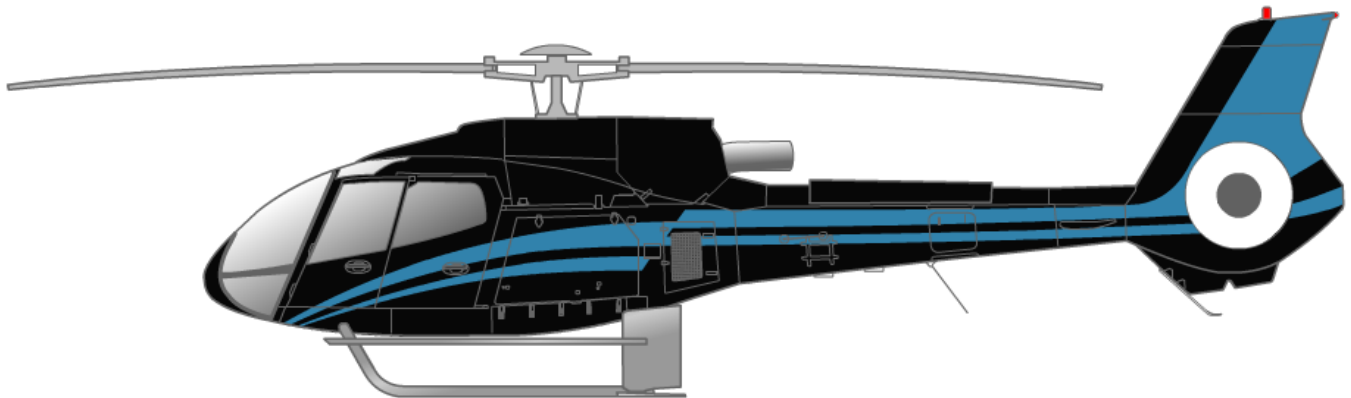
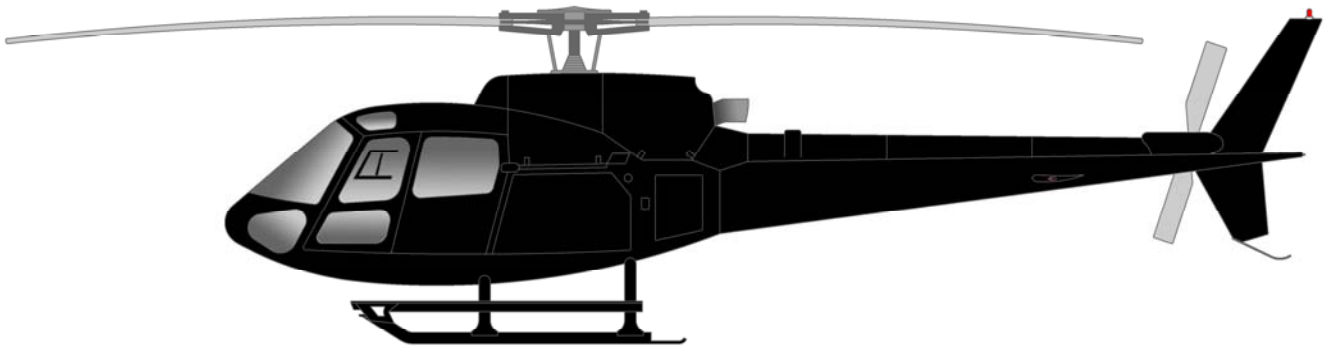
For Company use only

Date Received: _____

Warranty Accepted: ____YES ____NO

Disposition of component: _____

Comments: _____



Servicing and Trouble Shooting Guide
AS350 (Series) and EC130 B4
Air Conditioning System

TROUBLESHOOTING YOUR AIR CONDITIONING SYSTEM

The following consists of some basic information on Freon System Operation.

We should probably define “cold”. Actually, for our purpose, “cold” is a relative term. Your air conditioner should produce air (measured at the duct) that is:

- • 36° to 50° F at 70° ambient temperature.
- • 40° to 52° F at 80° ambient temperature.
- • 46° to 60° F at 90° ambient temperature.
- • 50° to 75° F at 100° ambient temperature.

An Empty System

If the system is empty, the search for leaks should begin with a good visual check. Is it a fast leak or a slow leak? When was the system last charged? If it's a newly installed and filled system, then look for obvious leaks like a chaffed, punctured or ruptured hose, or a loose fitting. (See the recharge and leak testing section for hints on charging new systems.)

Freon leaks can be very tough to find. Freon is colorless, odorless, heavier than air, and it evaporates as soon as it hits the atmosphere. The only helpful thing about it is the fact that the oil carried with the refrigerant, so any sizable leak will leave a trail of oil at the offending hose or fitting. It will often just be a dark area, and the amount of oil might be slight. But if you find an air conditioning fitting with an oily residue and the area around it is dry, you've probably found your leak. A good electron detector can verify your visual diagnosis.

Because the system carries the oil in suspension with the refrigerant, any sizable leak will leak oil as well as refrigerant. Very slow leaks will usually only vent refrigerant and not oil, but a fast leak like a ruptured hose or a very loose fitting, will leak the refrigerant so fast that the oil is carried out of the system as well. If your system has suffered a major leak, be sure to check the oil level in the compressor before refilling the system.

Troubleshooting

Trouble: **Low or partial refrigerant charge**

Symptoms:

- Insufficient cooling
- Low-side pressure too low
- High-side pressure too low
- Receiver/drier sight glass shows a stream of bubbles
- Air in ducts only slightly cool

Cause: The system is low on refrigerant, probably caused by a leak.

Correction: Find and fix the leak. If there was a loss of oil, be sure to check the compressor oil level. Evacuate and recharge.

A System Full of Refrigerant

First, you should double-check all the obvious things (i.e. the compressor clutch, the belt tension, and the operation of the evaporator blower). Next, establish some baseline conditions for your testing: run aircraft, high blower and coldest thermostat setting, doors and windows closed, ambient temperature of 70° F or above.

Situations do occur where the system is full of refrigerant, yet the sight glass remains cloudy. The first thing to consider is whether the receiver/drier is installed backwards. Be sure the line from the condenser goes to the port marked "in" on the receiver/drier. The other condition that might give you a cloudy glass (on a full system) is a restriction in the liquid line from the condenser to the receiver/drier. On some new receiver/driers the filter screen could be pushed up so the bottom of the screen is blocking the liquid pickup tube. You will have to cut open the receiver-drier to confirm your diagnosis.

You should test next for a system that is overcharged. If the sight glass is clear, but the high- and low pressure gauge readings are high (300 or more on the high side, 50 or more on the low side), disconnect the compressor clutch. (Note that on HFC-134A systems, milky is the normal look for a correctly charged system.) The refrigerant should foam and then settle away from the glass in less than forty-five seconds. If the sight glass remains clear for more than forty-five seconds you have an overcharged condition and will have to remove Freon.

Trouble: Excessive moisture in the system

Symptoms:

- Insufficient cooling during hottest part of the day or during extended flying.
- Low-side pressure normal, though it may be too low or even a vacuum
- High-side pressure normal, though it may be low-at the same time low side is low
- Receiver-drier sight glass may show tiny bubbles
(*Note:* This could be a tough call with HFC-134A since the sight glass is always milky).
- Air in the ducts is usually cold, but becomes warm when pressure reading drop

Cause: Excessive moisture in the system. The drying agent in the receiver-drier is saturated with moisture, which is released to the system when outside temperature increased. Moisture in the system collects and freezes on the expansion valve, stopping the flow of refrigerant.

Correction: Suck all the CFC-12 from the system. Replace or rebuild the receiver-drier. Evacuate and recharge.

Trouble: Air in the system

Symptoms:

- Insufficient cooling
- Low-side pressure normal, but does not drop when the clutch cycles
- High-side pressure high
- Receiver/drier sight glass shows occasional bubbles (Note again that with HFC-134A the sight glass should be milky when the system is fully charged.)
- Air in ducts only slight cool

Cause: Refrigerant contains non-condensable in the form of air and moisture.

Correction: Leak test, watch for bad compressor seals. Drain the system. Repair leaks as needed. Replace or rebuild the receiver-drier. Check the compressor oil. Evacuate and recharge.

Trouble: Condenser malfunction or system overcharge

Symptoms:

- No cooling
- Low-side pressure too high
- High-side pressure too high
- Receiver/drier sight glass may show occasional bubbles
- Liquid line very hot
- Air in ducts is warm

Cause: The condenser is not function properly because of high head pressure. System may be overcharged.

(**Note:** Technicians will have to be especially careful to avoid overcharging HFC-134A systems. Because the sight glass is hard to read and the volume given is slightly lower with HFC-134A).

NOTE:

Cloudy Sight Glass

A cloudy sight glass indicates a system that is only partially full of refrigerant (with a few exceptions). A perfectly clear sight glass (use a light to get a good look) means the system is either full or empty. Note, with HFC-134A the glass appears milky when properly charged, and may show occasional bubbles.

AS350 Trouble Shooting Guide



1. System has no electrical power to air conditioner master control box:
 - A) Check 50 amp circuit breaker or fuse in aircraft electrical bus.
2. System has power but will not turn on:
 - A) Check 5 amp circuit breaker on switch assembly.
 - B) Check ground lead on cannon plug 102 wire IFS105N20.
 - C) Check evaporator fan relay in air conditioner master control box.
3. Forward evaporator fan will not turn on, but aft fan runs:
 - A) Check 20 amp circuit breaker in master electrical box.
 - B) Check ground wire from evaporator motor.
 - C) AS350 disconnect CP104 and check for power on pin 2. On AS350 or EC130 B4 by checking ground lead from master switch.
 - 1) If you have power, your motor is bad.
 - 2) If no power, disconnect CP101 cannon plug and check continuity from pin 6/c on CP101 to cannon plug CP104 pin 2. If no power, check cannon plugs and switch.
 - D) EC130 B4 check for power on wire IFS 101C14 at resistor assembly P/N 540020 if no power, trace through the fan switch for power.
4. Aft evaporator fan will not run, but forward evaporator runs:
 - A) Check 20 amp circuit breaker on master electrical box.
 - B) Check ground wire from fan.
 - C) Check Brushes.
 - D) AS350 check for power on wire IFS 101C14 at resistor assembly P/N 540020 or resistor P/N 050024-2 (parts are two way interchangeable).
 - 1) If you have power, your motor is bad.
 - 2) If no power trace through fan switch for power.
 - 3) If no power disconnect cannon plug CP101 and check continuity from pin 3/B of CP101 to wire IFS101C14 on resistor with fan switch on "Low".
 - E) EC130 B4 check for power on wire IFS 101C14 at resistor assembly P/N 540020.
 - 1) If you have power your motor is bad.
 - 2) If no power trace through fan switch for power.
 - 3) If no power disconnect cannon plug CP101 and check continuity from pin 3/B of CP101 to pin 4 of cannon plug 102.

5. Condenser fan/fans do not operate:

- A) Check 20 amp circuit breaker.
- B) Check 1 amp circuit breaker.

- 1) If popped, reset.
 - a) Check brushes.
 - b) Check power.
 - c) Check ground.
 - d) Check fins for blockage in air condenser assembly.
- 2) Run air conditioning system.
 - a) Check pressures, If pressure is running higher than normal, then continue with b), ect...
 - b) System may be over-serviced.
 - c) System may be contaminated by improper Freon or a mix of Freon's.

- 1) **NOTE:** This has happened more than once. The service carts are great for servicing systems, but there is a danger in its misuse. Untrained operators or an individual who wants to service his car, truck, motor home or even his room A/C can pump down their system into your tank. It can have any number of different Freon's. It could also be contaminated by a failed compressor, dryer bottle, wrong oil or any number of things. This has happened to a company with brand new equipment just 3 weeks old. There were large warning signs on this service cart, designated HELICOPTER SERVICE ONLY. They had one for ground equipment. All of the mechanics were well trained except for the management, janitors and their family members of the company. It can happen to any operator.

6. Compressor clutch does not engage, but air conditioner fans work.

- A) Check clutch for power.

- 1) If power, clutch coil may be bad or air gap in clutch face may be too excessive.
- 2) If NO power check system for total Freon loss.
- 3) If system is serviced and still no Power and you have an optional temperature controller, you can bypass by jumping pins 3 and 4 on CP102 to check if faulty.

7. System not cooling:

- A) Check that air condenser fan/fans are blowing.
- B) Check clutch engagement. Is clutch staying engaged or cycling? Check belt tension.
- C) Check to see if air condenser coil is free from debris and fins are clean and not rolled over blocking air flow.
- D) Check evaporator return air inlets, that they are not blocked and fins are clean and not rolled over blocking airflow.
- E) Put gauges on system. Run system and check pressures also measure Delta temperature from both evaporators. (Measure inlet temperature and outlet temperature to get Delta. This is a must, do not rely on just using your hand and guessing).
- F) Check sight glass.

(NOTE: There are several ways to service Freon systems:

- 1) Service system to a clear sight glass R12.
Note: On 134a systems the sight glass appears milky when properly charged, though there may be occasional bubbles in the sight glass.
- 2) Service system by weight. If you have a service station or scale, you can add the proper amount by weight.

82° F or higher service with 2.0 lbs max Freon.

Below 82° F service with 2.5 lbs max Freon.

- 3) The optimum method for best performance is to use at least two mechanical thermometers and place them near the return air and the discharge air of each evaporator. R-134a can then be added or deleted as required, until the highest T.D. is noted per the paragraph below. At that time, the correct amount of refrigerant is installed. At any time the high pressure gauge reaches 280 psi, stop servicing. Do not exceed 3.0 lbs of refrigerant..
- 4) Service according to a standard pressure temperature chart.)

8. One evaporator is cooling, one is not.

- A) One expansion valve may be blocked from contamination.
- B) One expansion valve may be locked full open.
(NOTE: The one valve that is full open is causing the problem. It may make it seem like the other valve is bad and not working.)
- C) One of the sensing bulbs on expansion valves may become loose from suction side of coil. Also check to see if sensing bulb is mounted to the correct evaporator tube. The bulb should be mounted at 9 or 3 o'clock position.
- D) Hose may be crimped, kinked or have a fitting bent over blocking flow.

AS350 Trouble Shooting Guide



- E) (**NOTE:** The recommended fix is to pump down system. Change BOTH expansion valves and dryer bottle. Make sure to mount sensing bulb on suction side of coil and when possible at 9 or 3 o'clock position on tube. Re-service system.)

9. Compressor clutch failure:

- A) Low Freon in system. This causes the system to low pressure out through the low pressure switch. It will cycle the clutch on and off until it heats up causing the coil to overheat and fail, or heat up the bearing to the point the grease will liquefy and run out. This will add to the heat and help fail coil or bearing.
- B) Air gap on clutch may have changed.
- C) Coil may have weakened.
- D) Bearing may have failed, causing clutch to slip and fail coil.

NOTE: If ongoing maintenance is not maintained on compressor clutch bearing as prescribed in IFS maintenance manual, bearing may fail.

10. Compressor failed:

- A) Loss of oil or insufficient oil.
- B) Low Freon in system, causing insufficient flow of oil lubricant.
- C) Contamination in system.
- D) Compressor bearing failed.
- E) Over servicing of system to the point of liquid lock.

(**NOTE:** This has happened.)

11. Compressor belt failure:

- A) Low Freon in system. Cause: low pressure switch to cycle the clutch on and off excessively.
- B) Insufficient belt tension.
- C) Clutch bearing dragging or failing. This causes excessive belt slipping.
- D) Over service of system.
- E) Air gap excessive, causes clutch to slip heating pulley. This will stretch belt making it slip.

12. Air conditioner runs, but pops 1 amp circuit breaker:

- A) Check condenser fan or fans for operation.
- B) Check blockage of air flow in and out of condenser.
- C) Check coil to see if fins are clean or rolled over.
- D) Check for over service of Freon.
- E) Put gauges on and run system.
 - 1) Is system popping 1 amp circuit breaker at 350 or higher?
 - a. If not change high pressure switch.
- F) Check expansion valves and make sure sensing bulbs are mounted to suction lines.
 - 1) Measure Delta of both evaporators.
 - a. If Delta is over 32° F expansion valve may not be working. If expansion valve is not throttling it will dump too much Freon. This can add excessive heat to condenser and can also freeze up coil.
 - 2) If Delta is below 14° F. Change valves, they may be blocked internally.

13. Fresh air supply valve inoperable. EC130 B4 only

A) If valve fails to open.

- 1) Check 2 ½ amp CB
- 2) Check for power at wire IFS 104V20
 - a. If power, check for power on wire IFS 104E20
 1. If no power motor/controller is bad
 2. If power trace back to source
 - b. If no power check continuity to Pin 1 on cannon plug CP101.
 - c. If no continuity check low pressure switch for ON.

B) If valve fails to close

- 1) Check for power on wires at valve IFS 104V20 and IFS 104E20
 - a. If power, both motor /controller is bad.
 - b. If no power on wire IFS 104V20.
 - a. Check 2 ½ amp CB.
 - b. Check to see if low pressure switch is open.
 - c. Check continuity from valve wire IFS 104V20 to Pin 1 on cannon plug CP101.

NOTE:

When running in “A/C” mode and you switch straight to “OFF” the Fresh Air Valve will stay in the closed position. You will need to switch to the “Fan” position to reset the Fresh Air valve to the open position.

14. Blower Motor Brush Inspection

- A) Ø 5.0” Blower motors have brushes 13/16” long. Brushes should be inspected every 200 hours. When brushes wear down to 5/16”, replace them.
- B) Ø 7.0” 2 Brush Blower motors have brushes 3/4” long. They should be inspected every 300 hours. These brushes should be replaced at 1/2” or less.
- C) Ø 7.0” 4 Brush Blower motors have brushes 9/16” long. They should be inspected every 300 hours. These brushes should be replaced at 5/16” or less.

MANUFACTURERS NOTICE

THE BRUSHES IN THESE FAN MODELS ARE DESIGNED AND MANUFACTURED TO PROVIDE 500 HOURS OF SERVICE LIFE.

BRUSHES ARE A WEAR ITEM AND REQUIRE REGULAR INSPECTION AND MAINTENANCE! SINCE BRUSH LIFE VARIES GREATLY FOR EACH APPLICATION OR INSTALLATION, WE RECOMMEND INSPECTION AT REGULAR INTERVALS, SPECIFICALLY:

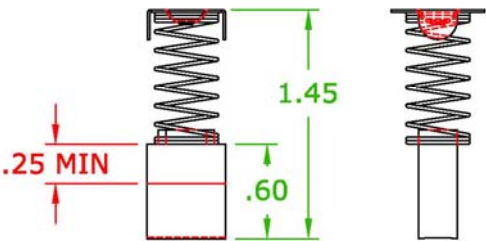
IN ORDER TO KEEP YOUR WARRANTY IN EFFECT FOR THE FULL TERM OF THE WARRANTY

- A.) IFS PN: 050143 5" BLOWER MOTORS HAVE BRUSHES .75" LONG. BRUSHES MUST BE INSPECTED EVERY 200 HOURS AND REPLACED WHEN WEAR IS DOWN TO .30" OR LESS.
 - a. SEE CHART "C". BRUSH PN: 050031
- B.) IFS PN: 050084-6 7" - 2 BRUSH BLOWER MOTORS HAVE BRUSHES .90" LONG. BRUSHES MUST BE INSPECTED EVERY 300 HOURS AND REPLACED WHEN WEAR IS DOWN TO .40" OR LESS.
 - a. SEE CHART "D". BRUSH PN: 050038
- C.) IFS PN: 050084 7"- 4 BRUSH BLOWER MOTORS HAVE BRUSHES .60" LONG. BRUSHES MUST BE INSPECTED EVERY 300 HOURS AND REPLACED WHEN WEAR IS DOWN TO .25" OR LESS.
 - a. SEE CHART "A". BRUSH PN: 420A-20
- D.) IFS PN: 630000 7"- 4 BRUSH BLOWER MOTORS HAVE BRUSHES .53" LONG. BRUSHES MUST BE INSPECTED EVERY 300 HOURS AND REPLACED WHEN WEAR IS DOWN TO .25" OR LESS.
 - a. SEE CHART "B". BRUSH PN: 610000-8
- E.) IFS PN: 640000 7"- 4 BRUSH BLOWER MOTORS HAVE BRUSHES .53" LONG. BRUSHES MUST BE INSPECTED EVERY 300 HOURS AND REPLACED WHEN WEAR IS DOWN TO .25" OR LESS.
 - a. SEE CHART "B". BRUSH PN: 610000-8

NOTICE

A

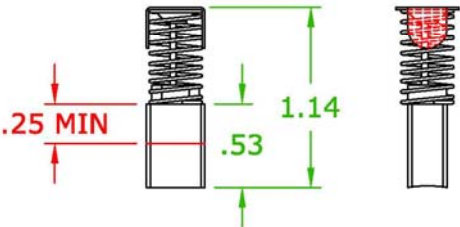
7" IFS MOTOR PN: 050084
FAN MODEL NO.: M6921N-9A)
(ALT: M6921N-9B)



"DYNAMIC" BRUSH 420A-20

B

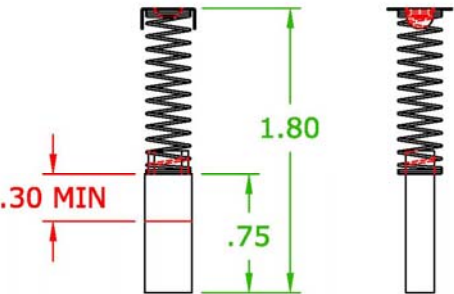
7" IFS MOTOR PN: 630000
7" IFS MOTOR PN: 640000



"AMPFLOW" BRUSH 610000-8

C

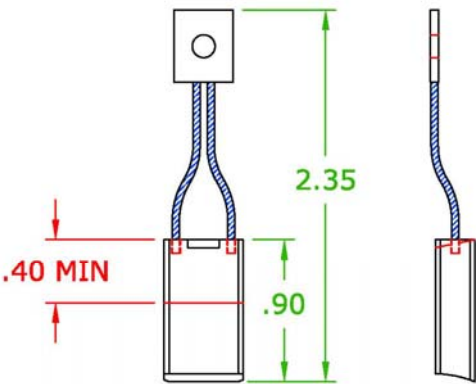
5" INCH IFS MOTOR PN: 050143



5" BRUSH 050031

D

7" INCH IFS MOTOR PN: 050084-6

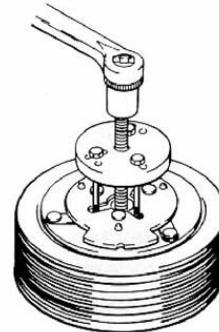
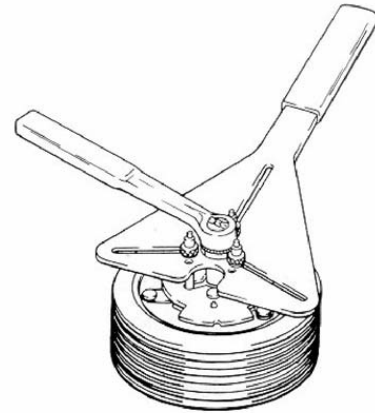


"ENVIRO" BRUSH 050038

SERVICE OPERATIONS CLUTCH

14.1 Armature Assembly Removal

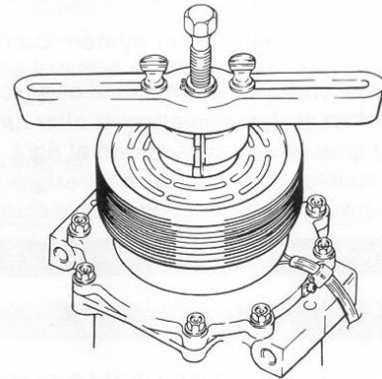
1. If armature dust cover is present, remove the 3 or 6 bolts holding it in place and remove cover. If auxiliary sheet metal pulley is present, remove the screws holding it in place. Then remove pulley.
2. Insert pins of armature plate spanner into threaded holes of armature assembly.
3. Hold armature assembly stationary while removing retaining nut with 3/4", 19mm, or 14mm socket wrench, as appropriate.
4. Remove armature assembly using puller. Thread 3 puller bolts into the threaded holes in the armature assembly. Turn center screw clockwise until armature assembly comes loose.
5. If shims are above shaft key, remove them now. If shims are below shaft key, the key and bearing dust cover (if present) must be removed before the shims can be removed.
6. Remove bearing dust cover (if present). Use caution to prevent distorting cover when removing it.
7. Remove shaft key by tapping loose with a flat blade screwdriver and hammer.
8. Remove shims. Use a pointed tool and a small screwdriver to prevent the shims from binding on the shaft.



SERVICE OPERATIONS - CLUTCH

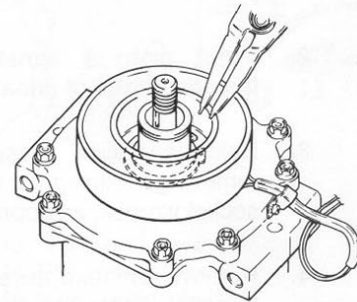
14.2. Rotor Assembly Removal

1. If bearing dust cover has not been removed, remove it now. See step 6 of Section 14.1, for Armature Assembly Removal.
2. If internal snap ring for bearing is visible above the bearing, remove it with internal snap ring pliers.
3. Remove rotor snap ring.
4. Remove shaft key.
5. Remove rotor pulley assembly:
 - Insert the lip of the jaws into the snap ring groove
 - Place rotor puller shaft protector (Puller set) over the exposed shaft.
 - Align thumb screws to puller jaws and finger tighten.
 - Turn puller center bolt clockwise using a socket wrench until rotor pulley is free.



14.3 Field Coil Assembly Removal

1. Loosen lead wire clamp screw with #2 Phillips screwdriver until wire(s) can be slipped out from under clamp.
2. Undo any wire connections on the compressor which would prevent removal of the field coil assembly.
3. Remove snap ring.
4. Remove the field coil assembly.

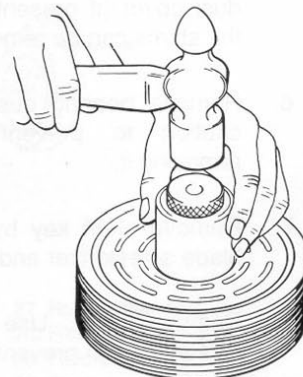


14.4 Field Coil Assembly Installation

Reverse the steps of Section 14.3. Protrusion on underside of coil ring must match hole in front housing to prevent movement and correctly locate lead wire(s).

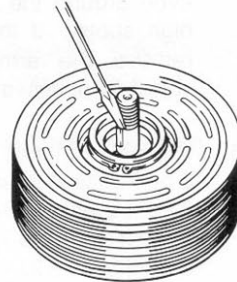
14.5 Rotor Assembly Installation

1. Place compressor on support stand, supported at rear end of compressor. If the compressor must be clamped in a vice, clamp only on the mounting ears, never on the body of the compressor.
2. Set rotor squarely over the front housing boss.
3. Place the rotor installer ring into the bearing bore. Ensure that the edge rests only on the inner race of the bearing, not on the seal, pulley, or outer race of the bearing.



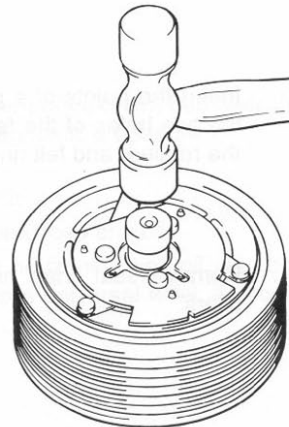
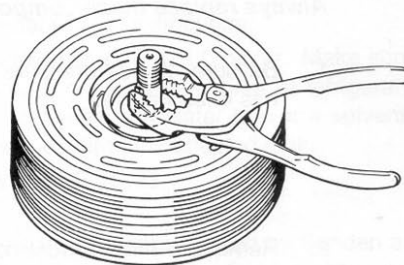
SERVICE OPERATIONS - CLUTCH

4. Place the driver into the ring and drive the rotor down onto the front housing with a hammer or arbor press. Drive the rotor against the front housing step. A distinct change of sound can be heard when using a hammer to install the rotor.
5. Reinstall rotor bearing snap ring, if it has been removed, with internal snap ring pliers.
6. Reinstall rotor retaining snap ring with external snap ring pliers. If a bevel is present on the snap ring, it should face up (away from the body of the compressor).
7. Reinstall rotor bearing dust cover (if present) by gently tapping it into place.



14.6 Armature Assembly Installation

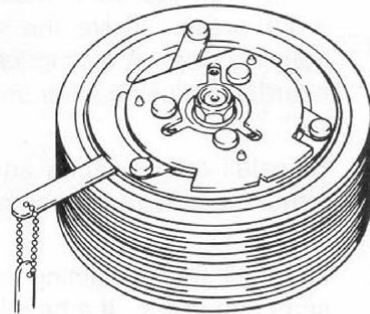
1. Install shaft key with pliers.
2. Install clutch shims. NOTE: Clutch air gap is determined by shim thickness. When installing a clutch on a used compressor, try the original shims first. When installing a clutch on a compressor that has not had a clutch installed before, first try 0.04", 0.02", and 0.004" (1.0, 0.5, 0.1 mm) shims.
3. Align keyway in armature assembly to shaft key. Using driver and a hammer or arbor press, drive the armature assembly down over the shaft until it bottoms on the shims. A distinct sound change will be noted if driving with a hammer.
4. Replace retaining nut and torque to specification.
1/2-20: 20-25 ft•lb (27-34 N•m, 270-350 kg•cm)
M8: 11-15 ft•lb (15-21 N•m, 150-210 kg•cm)



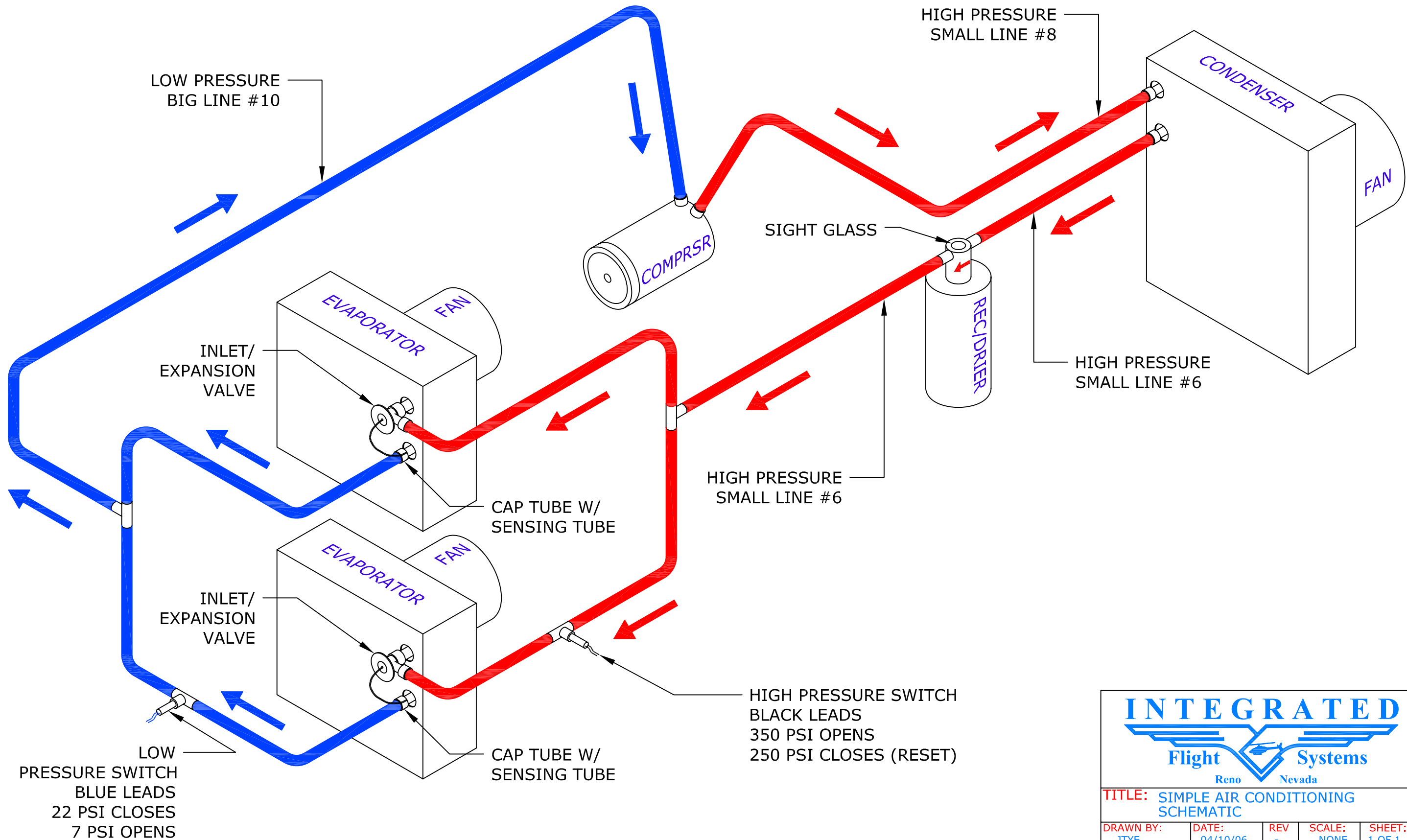
SERVICE OPERATIONS - CLUTCH


5. Check air gap with a feeler gauge. Specification is 0.011" - 0.019" (0.3 - 0.5mm). If gap is not even around the clutch, gently tap down at the high spots. If the overall gap is out of spec., remove the armature assembly and change shims as necessary.
6. Replace armature dust cover (if used) and torque 3 or 6 bolts to specification below.
3 - 1/4-20 bolts (SD-5): 2-4 ft•lb
(2-5 N•m, 25-50 kgf•cm)
6 - M5 bolts (SD-7): 5-8 ft•lb
(7-11 N•m, 70-110 kgf•cm)

Note: Over torque of SD508/5H14 dust cover bolts will cause air gap to become out of spec.



REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY





INTEGRATED
Flight Systems
Reno Nevada

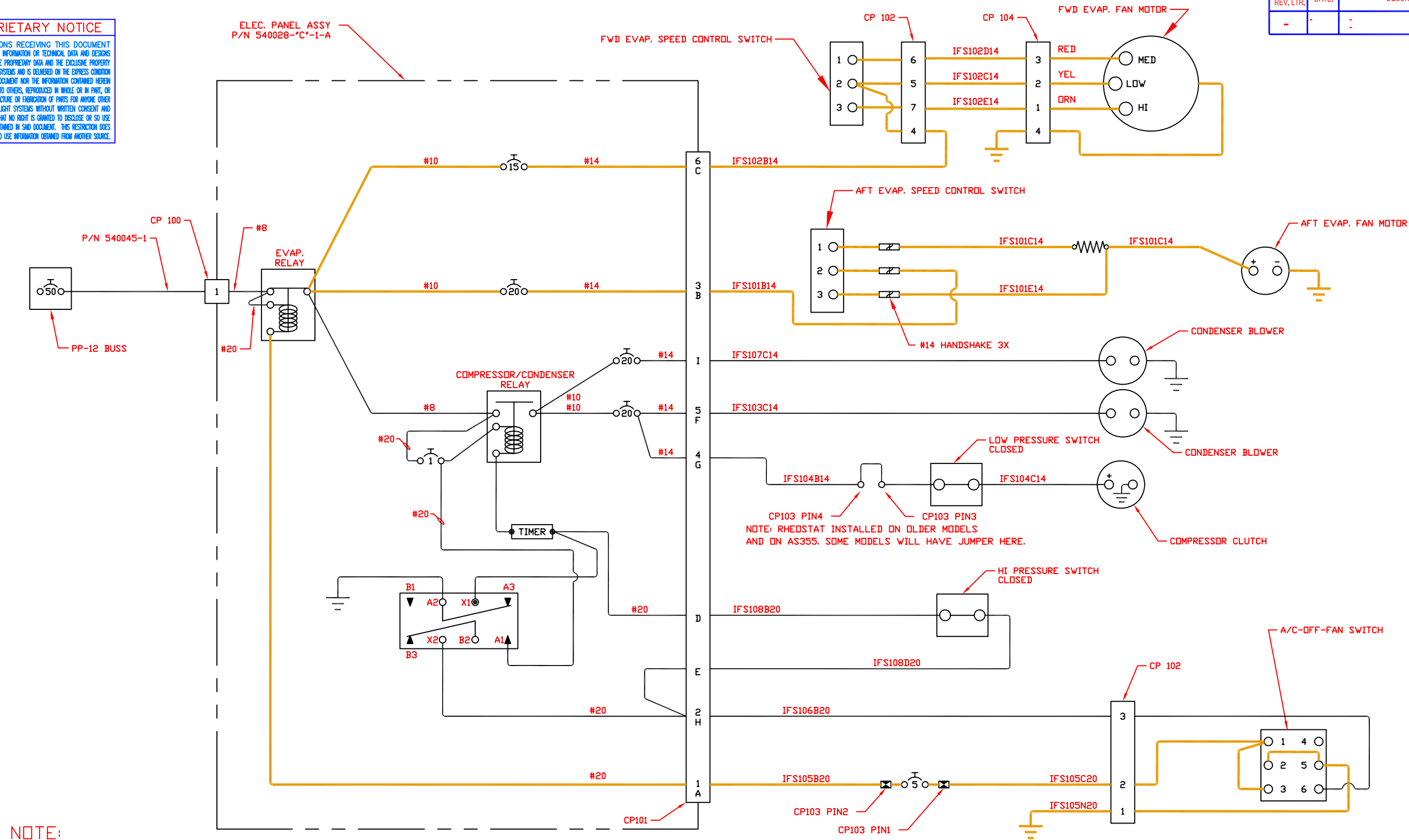
TITLE: SIMPLE AIR CONDITIONING SCHEMATIC

DRAWN BY: JTye	DATE: 04/10/06	REV: -	SCALE: NONE	SHEET: 1 OF 1
APPLICATION: N/A			DWG No. A/C SCHEMATIC	

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REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
-	-	-	-	-



NOTE:

1. DRAWING SHOWN WITH SYSTEM SERVICED WITH FREON.
2. THE "A/C", "OFF", "FAN" SWITCH IS SELECTED TO FAN.
3. THE "ORANGE" LINES SHOW THE FAN CIRCUIT.

AS350
ELECTRICAL WIRING DIAGRAM
DUAL CONDENSER BLOWER

NOTE:

1. SEE 2-5-AS350 SH 1 OF 1 FOR WIRE SPLICE LOC.
2. WIRE SPEC: MIL-W-22759/16
WIRE NO. IFS XXX X XX

GROUP
SEQUENCE (N INDICATES GROUND)
GAUGE

INTEGRATED
Flight Systems
Reno Nevada

TITLE: ELECTRICAL DIAGRAM

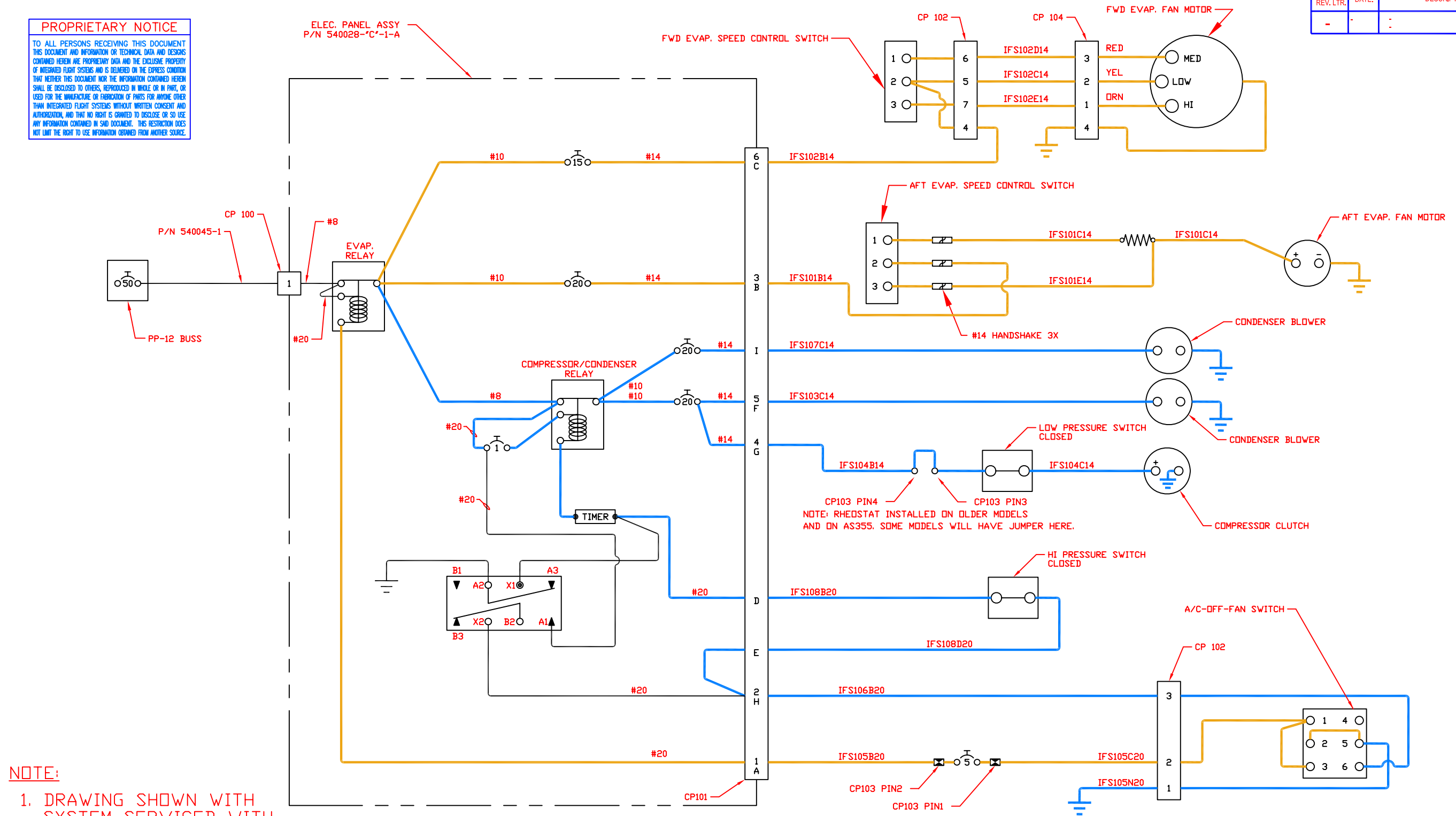
DRAWN BY: JTye DATE: 0202/05 REV: IR SCALE: NTS SHEET: 1 OF 1
APPLICATION: AS350 DWG. NO.: DIAGRAM 1

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REVISION RECORD

DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
-	-	-	-	-



NOTE:

- DRAWING SHOWN WITH SYSTEM SERVICED WITH FREON.
- THE "A/C", "OFF", "FAN" SWITCH IS SET TO "A/C". THIS WILL TURN ON THE EVAPORATOR FANS, (ORANGE LINES), THE CONDENSER FANS AND COMPRESSOR CLUTCH, (BLUE LINES).

AS350
ELECTRICAL WIRING DIAGRAM

DUAL CONDENSER BLOWER

NOTE:

- SEE 2-5-AS350 SH 1 OF 1 FOR WIRE SPLICE LOC.
- WIRE SPEC: MIL-W-22759/16
WIRE NO. IFS XXX X XX

GROUP
SEQUENCE (N INDICATES GROUND)
GAUGE

INTEGRATED
Flight Systems
Reno Nevada

TITLE: ELECTRICAL DIAGRAM

DRAWN BY: JTye DATE: 0202/05 REV: IR SCALE: NTS SHEET: 1 OF 1
APPLICATION: AS350 DWG. NO.: DIAGRAM 2

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REVISION RECORD

DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
-	-	-	-	-

ELEC. PANEL ASSY
P/N 540028-C-1-A

FWD EVAP. SPEED CONTROL SWITCH

CP 102

CP 104

FWD EVAP. FAN MOTOR

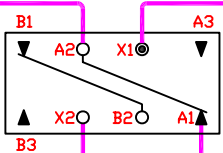
P/N 540045-1
PP-12 BUSS

CP 100

EVAP. RELAY

COMPRESSOR/CONDENSER RELAY

TIMER



AFT EVAP. SPEED CONTROL SWITCH

AFT EVAP. FAN MOTOR

CONDENSER BLOWER

CONDENSER BLOWER

LOW PRESSURE SWITCH CLOSED

HI PRESSURE SWITCH OPEN

CP 102

A/C-OFF-FAN SWITCH

NOTE:

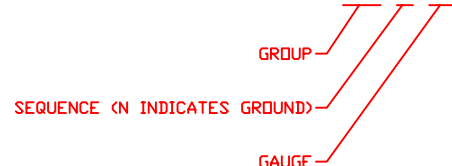
- DRAWING SHOWN WITH SYSTEM SERVICED WITH FREON, AND HIGH PRESSURE SWITCH OPEN.
- PINK LINES INDICATE THE CIRCUIT THAT IS ACTIVATED WHEN THE HIGH PRESSURE SWITCH OPENS.
- THE RESET RELAY CLOSSES AND RUNS THE CURRENT TO GROUND OPENING THE 1 AMP CIRCUIT BREAKER. ORANGE LINES INDICATE THAT THE EVAPORATOR FANS ARE ON.

AS350 ELECTRICAL WIRING DIAGRAM

DUAL CONDENSER BLOWER

NOTE:

- SEE 2-5-AS350 SH 1 OF 1 FOR WIRE SPLICE LOC.
- WIRE SPEC: MIL-W-22759/16
WIRE NO. IFS XXX X XX



INTEGRATED

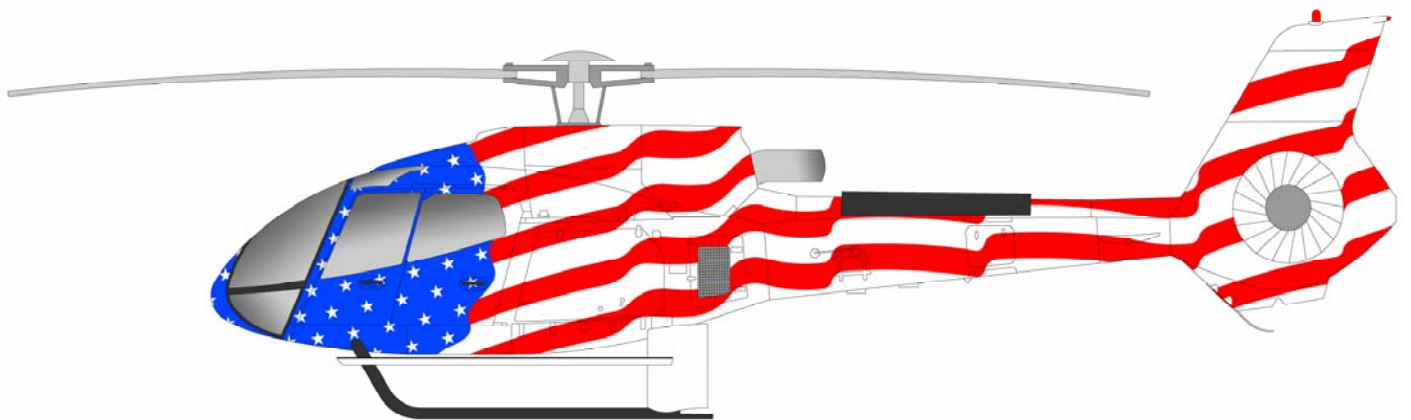
Flight Systems

Reno Nevada

TITLE: ELECTRICAL DIAGRAM #3

DRAWN BY: JTye DATE: 0202/05 REV: IR SCALE: NTS SHEET: 1 OF 1

APPLICATION: AS350 DWG. NO.: DIAGRAM 3



Air Conditioning Performance Test Procedure

(22 September 2006)



Integrated Flight Systems



Air Conditioning Performance Test Sheet

After Servicing, Please FAX to IFS at (775) 826-8895

1. Work Order No. _____

2. Aircraft Reg. No. _____

3. Page _____ of _____

Description of work performed: _____

System Type:

R-12 ☐

R-134a ☐

System Evacuated and Freon Recycled:

Yes ☐

No ☐

Amount Recovered: _____ lbs. oz.

Evacuated Time: _____

Amount Charged: _____ lbs. oz.

Hold Time: _____

Amount to be charged to Customer: _____ lbs. oz.

Ground Run Performed at Flight Idle

Time	OAT	Humidity Hi / Low	High PSI (Red)	Low PSI (Blue)	FWD Evap Inlet Temp	Outlet Temp	Delta	Aft Evap Inlet Temp	Outlet Temp	Delta	Freon Added	Freon Removed	Cond Inlet Temp	Cond Outlet Temp	Delta	Cabin Temp Front	Cabin Temp Back
Startup																	
5 min																	
10 min																	
15 min																	
Test Flight 10 min																	
Test Flight 20 min																	

Additional Notes: _____



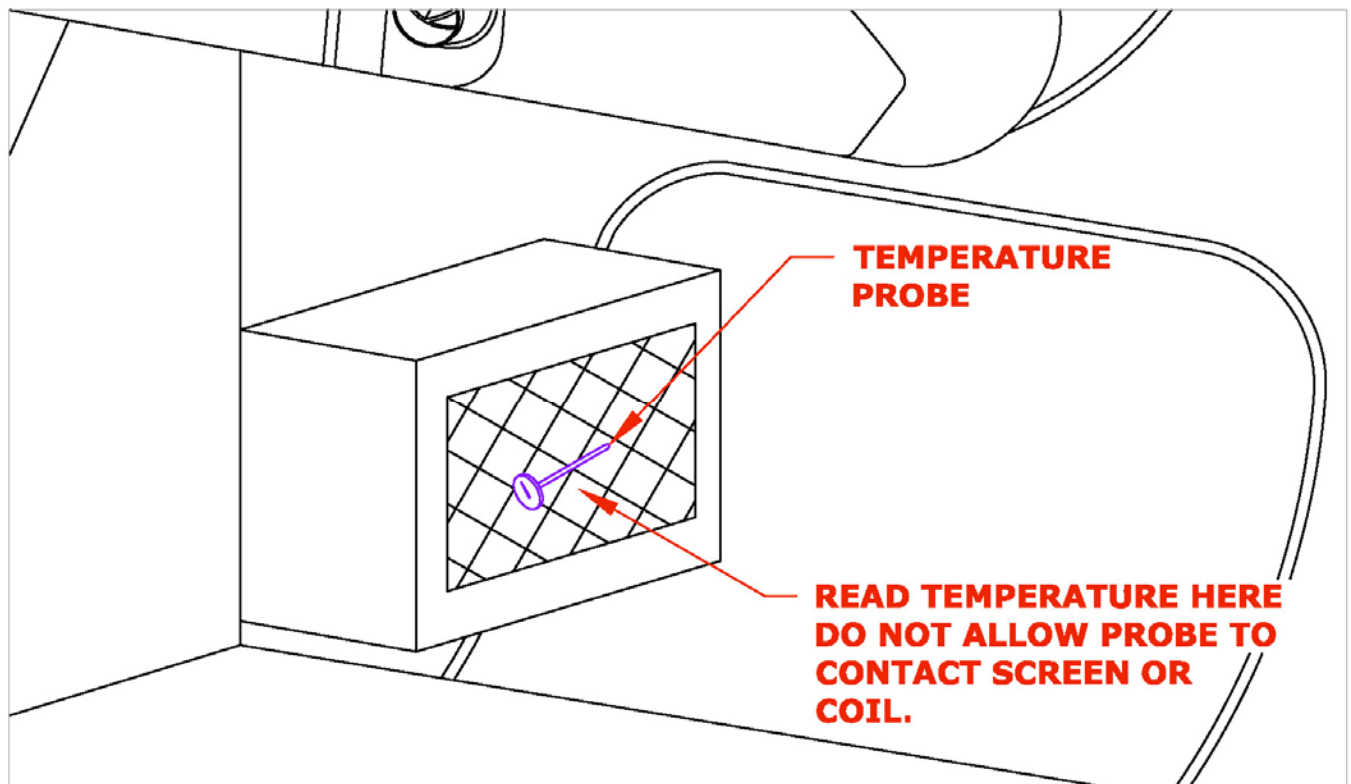
Integrated Flight Systems

Air Conditioning Testing Procedure

These testing procedures are to be done at completion of installation or whenever you have a problem with the air conditioning system. The information you gather on this test sheet after a new installation will be your "Baseline". This information should be retained for future reference.

Definitions:

1. OAT – Outside Air Temperature.
2. Humidity – High is 50% or higher.
Low is 0% to 50%.
3. High PSI (Red) – The reading on the high pressure gauge.
4. Low PSI (Blue) – The reading on the low pressure gauge.
5. Fwd Evap Inlet Temp – This is the temperature reading taken just in front of the forward evaporator inlet screen. (Do not allow temperature probe to contact screen or coil)



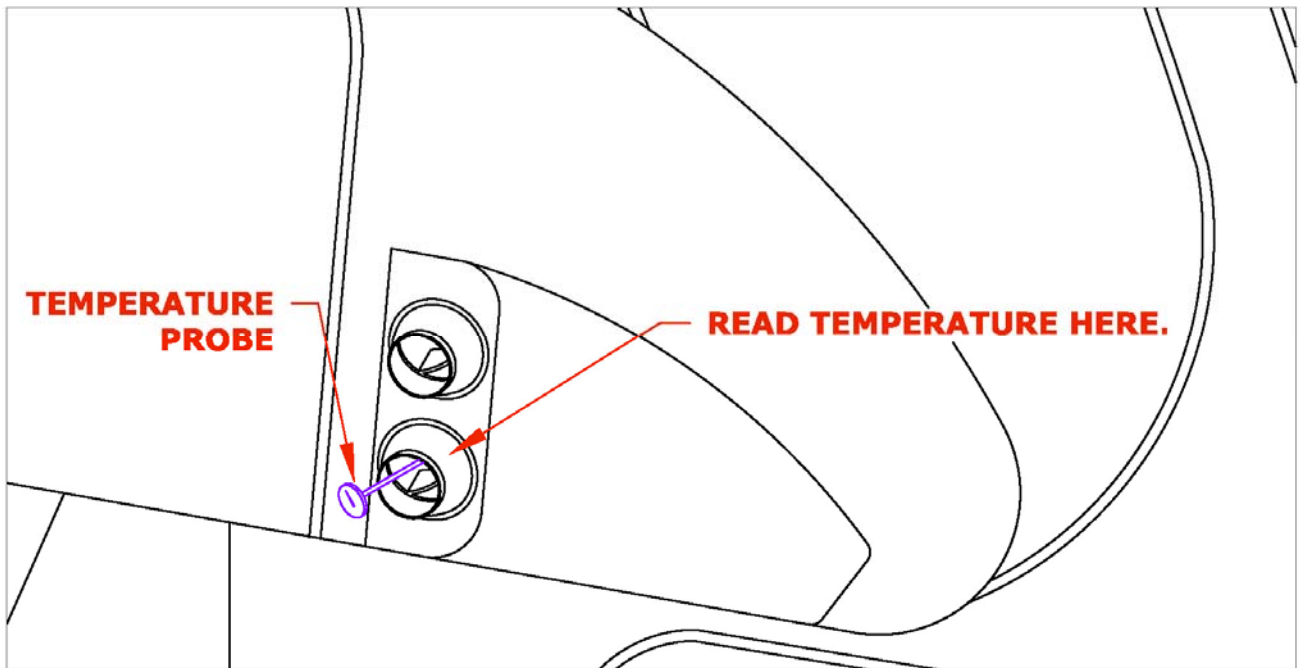
EC130 B4 Shown. Other Aircraft Similar

"We Cool the World"...



Integrated Flight Systems

6. Outlet Temp – The temperature of the air exiting the Louver or wemac. Insert probe into wemac. Insert probe into wemac.



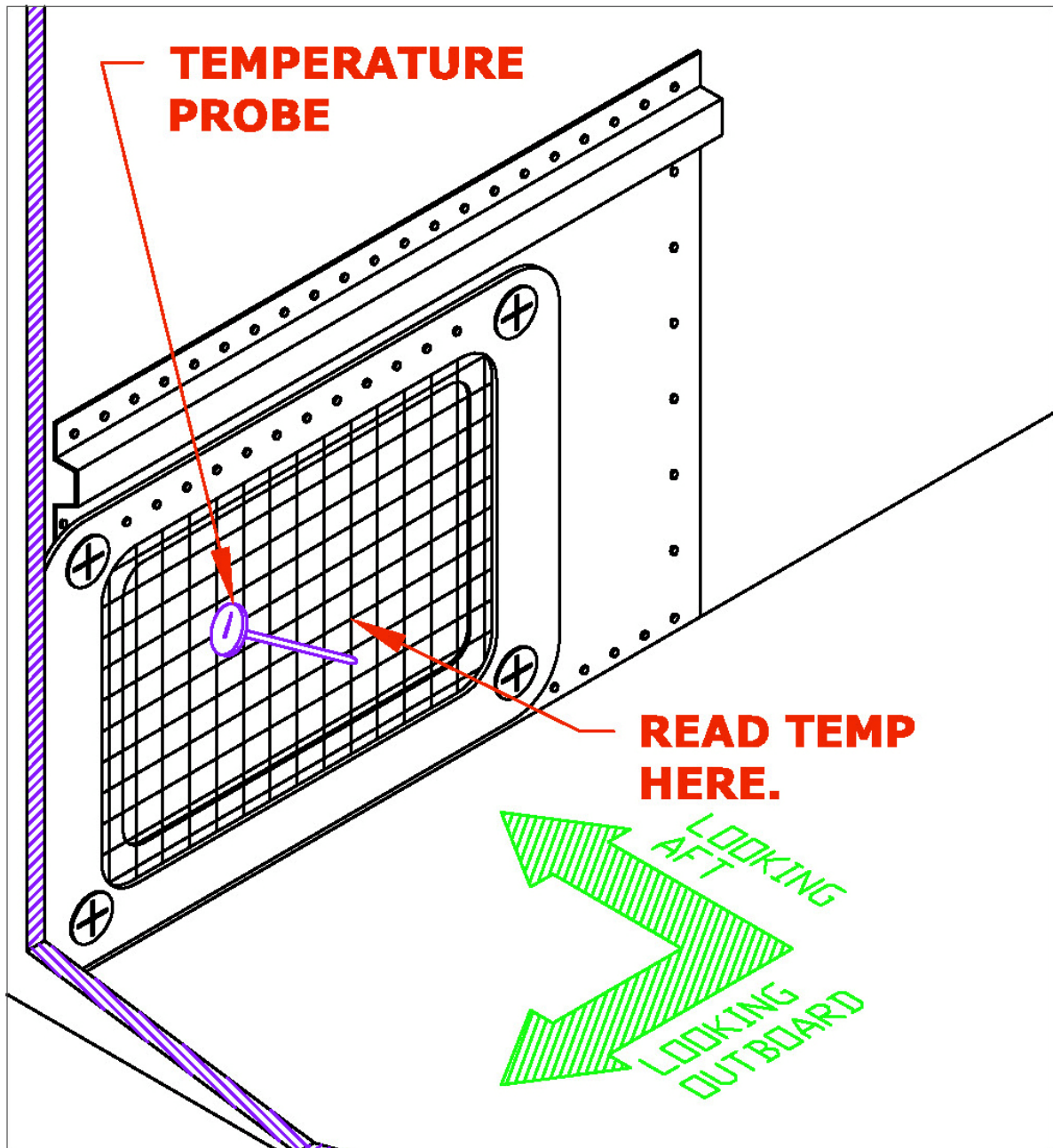
EC130 B4 Shown. Other Aircraft Similar

7. Temp. Delta – The temperature differential between the measurement taken at the outlet, subtracted from the measurement taken at the evaporator intake.



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8. Aft Evap Inlet Temp – This temperature is taken just in front of the return air inlet screen.

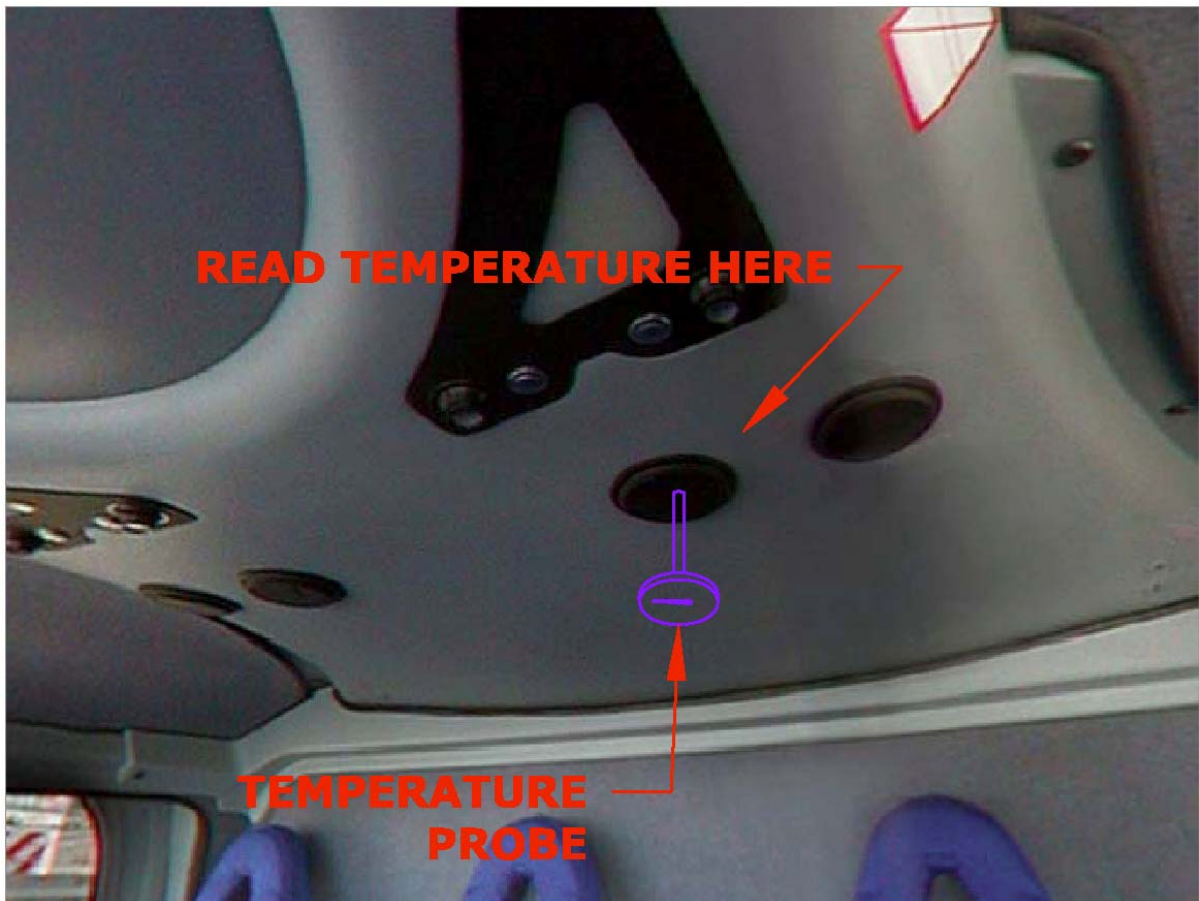


EC130 B4 Shown. Other Aircraft Similar



Integrated Flight Systems

9. Outlet Temp. – Place temperature probe in overhead wemac as shown.



EC130 B4 Shown. Other Aircraft Similar

10. Temp Delta – Subtract return air inlet temperature from overhead outlet temperature. The difference is the "Delta".



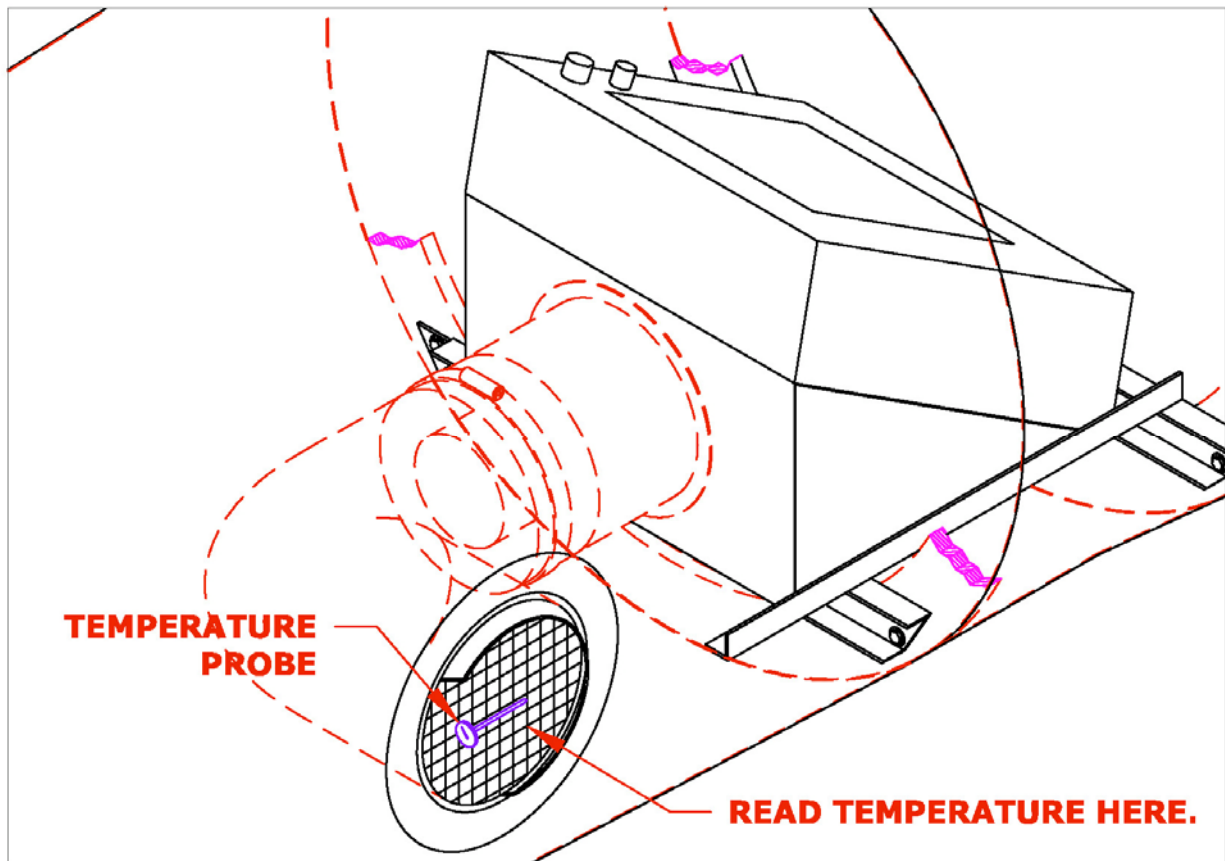
-
- READ TEMPERATURE HERE
DO NOT ALLOW PROBE TO
CONTACT SCREEN OR
COIL.**
- TEMPERATURE
PROBE**

“We Cool the World”...



Integrated Flight Systems

13. Cond Outlet Temp – Taken at the condenser air outlet/exhaust as shown.



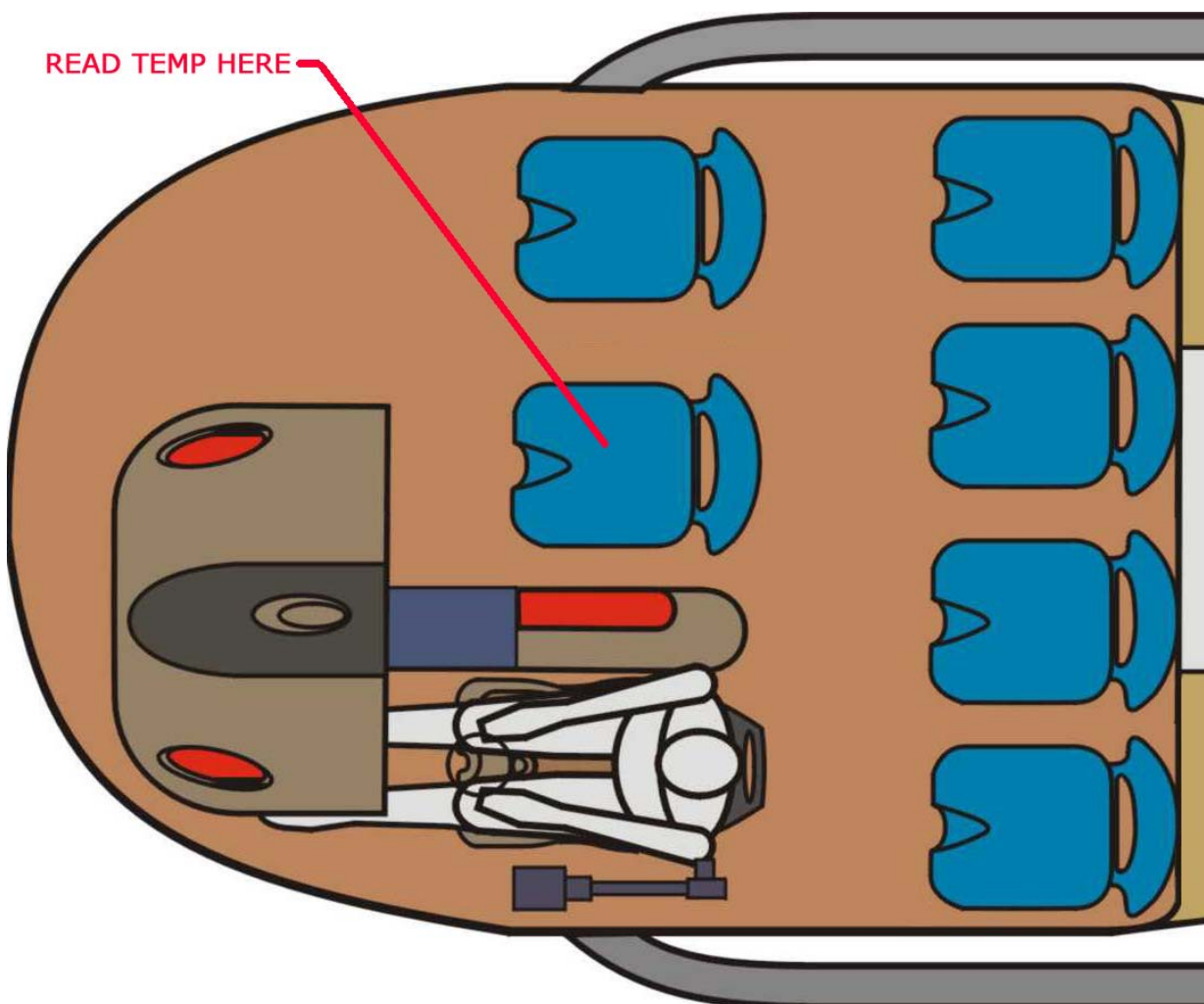
EC130 B4 Shown. Other Aircraft Similar

14. Temp Delta – Subtract the intake temperature from the exhaust temperature. This is the "Delta".



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15. Cabin Temp Front – Temperature where shown.

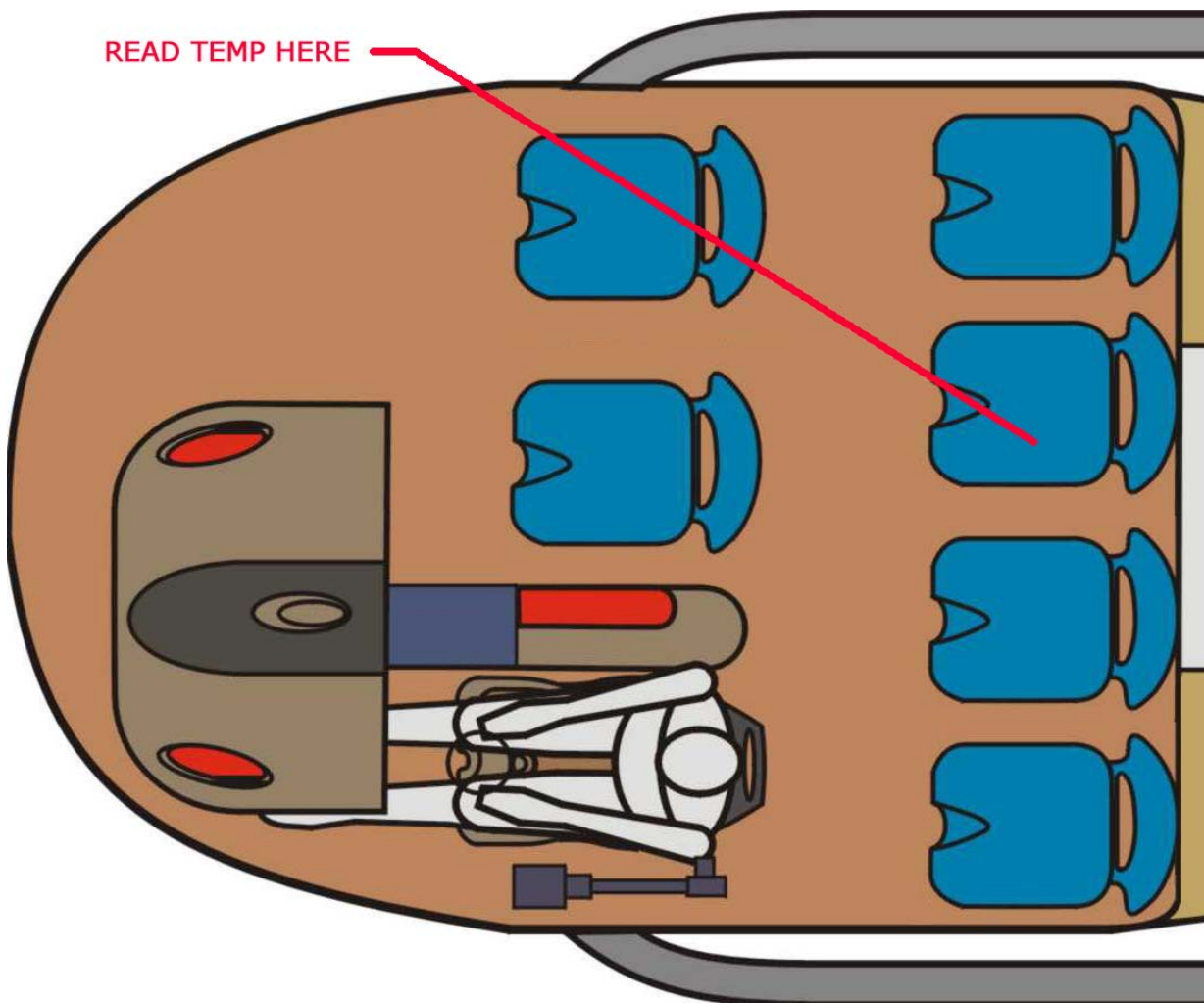


EC130 B4 Shown. Other Aircraft Similar



Integrated Flight Systems

16. Cabin Temp Back – Temperature where shown.

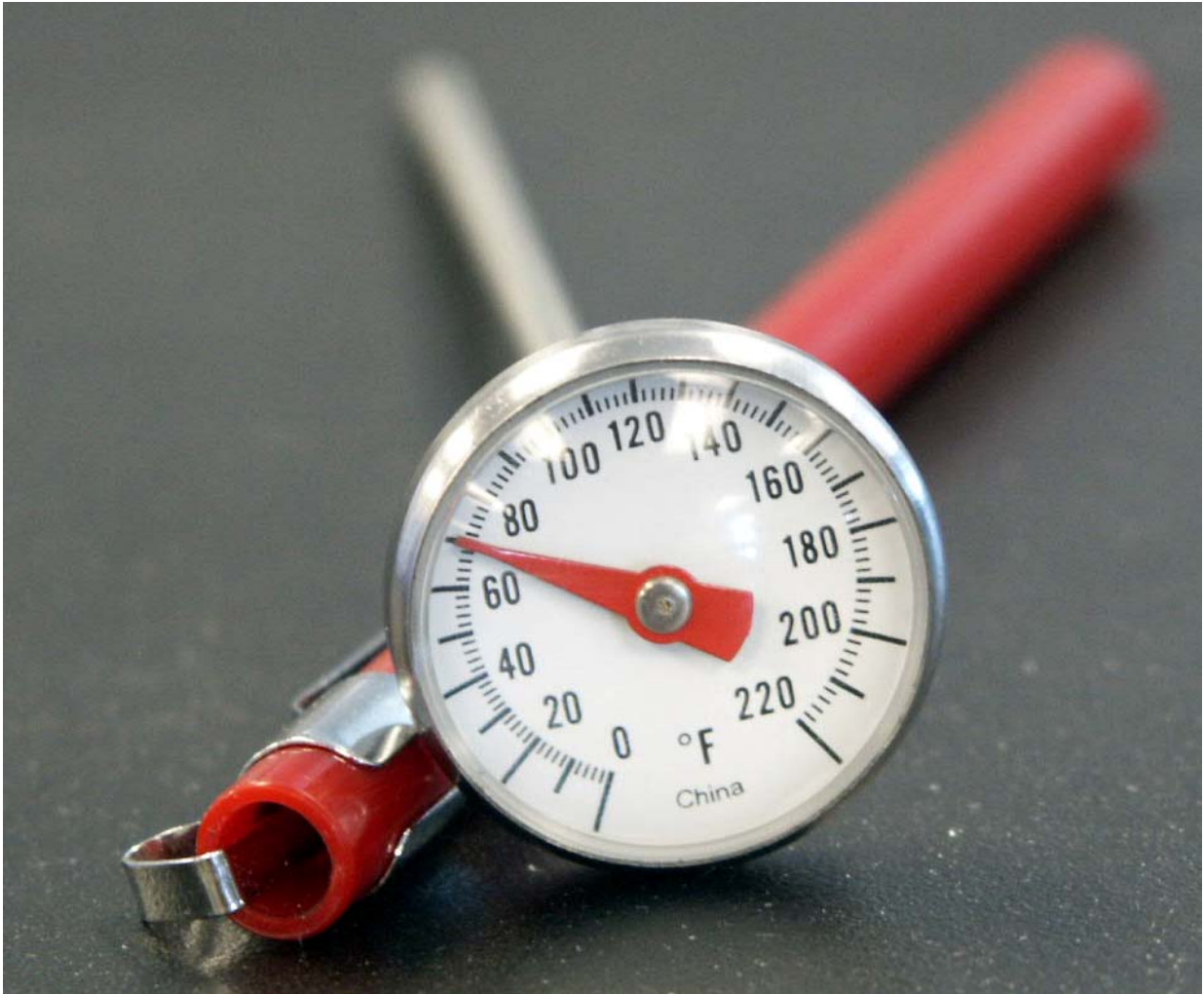


EC130 B4 Shown. Other Aircraft Similar



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17. Recommended Temperature Probe – Shown.



A minimum of two probes will be required.