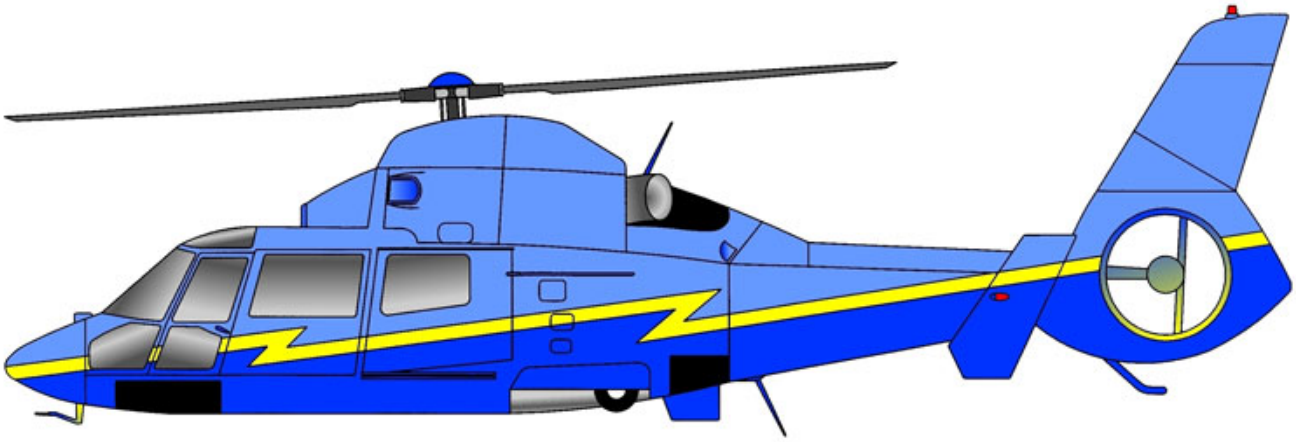
INTEGRATED
Flight Systems

Air Conditioning System



SA365N Series Installation Manual

For IFS Air Conditioning Kit Part Number

365N-00-1
365N-00-2

Document No: INST-365N, Rev: B, Dated November 15, 2013

SEE ECO 0861

Log of Revisions

Revision Letter	Pages Effected	Description of Changes	Date
IR	**All**	**Initial Release**	**06/04/06**
A	**All**	**Reformat and Clarify During Conformity**	**05/18/07**
B	**All**	**Add 365N-00-2 and Reformat**	**11/15/13**

Getting Started

The air conditioning system installation instructions are laid out step-by-step starting with one (1) thru ten (10) for installation and eleven (11) 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 **5.1.1** The "**5**" stands for step 5 the first "**1**" stands for kit 365N-00-1 and the "**1**" stands for direction 1.

Note: If no middle nuber is specified in the step number, then the step pertains to both the 365N-00-1 and 365N-00-2 kits. For example, step 4.1 would be applicable to both kits.

Installation of Aircraft Systems

Example: B. When the parts are called out in a step: **5.1.1**, locate the part and parts that go with this step (5.1.1). The part or parts have a tag with the step number, part number, part name and quanity of parts. It is best to organize your parts by step numbers so they can be drawn from as needed.

Step	**Procedure**	**Mech**	**Insp**
5.1.1	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. (Ref photo 501)		

INTEGRATED Flight Systems

STEP: 5.1.1 **QUANITY**: 1

PART NAME: Aft Evap Doubler

PART NUMBER: 261370

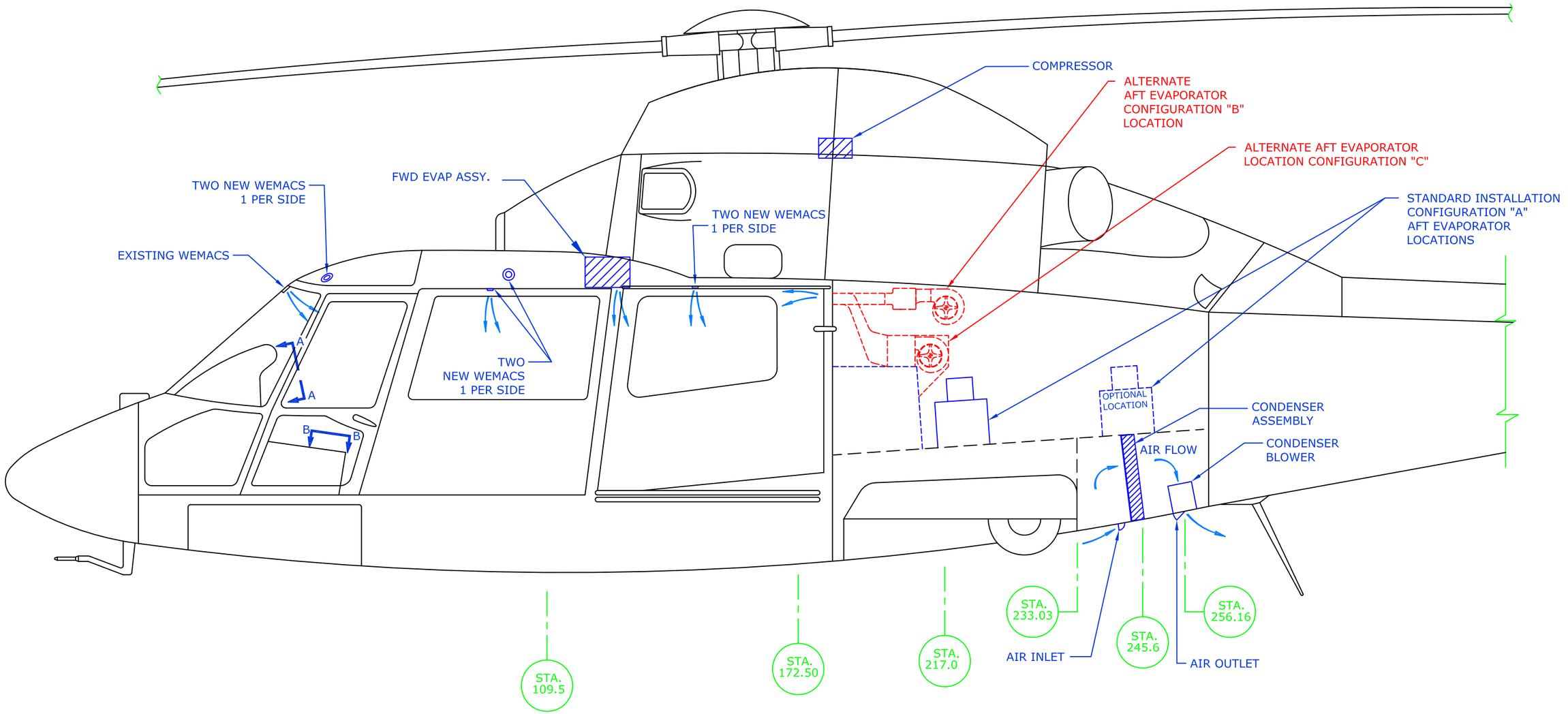
Should you have any questions, problems or need technical support, do not hesitate to call, fax, E-mail, or write us:

Phone: 1 (817) 624-6600 E-Mail: info@integratedflightsys.com
Fax: 1 (817) 624-6603

Tools/Materials Required to Complete the Job

1.	Drill 1/4 or 3/8 Capacity - Straight and 90 degrees
2.	Rivet Gun - #3, #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 inch 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
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
35.	AHC PN: 3601 93 3207
36.	AHC PN: 3601 93 3208
37.	AHC PN: 3601 93 3209

1 KIT INVENTORY
2 AIRCRAFT PRE-INSPECTION
3 AIRCRAFT PREPERATION
4 REMOVAL OF FACTORY COMPONENTS
5 INSTALLATION OF AFT EVAPORATOR
6 INSTALLATION OF CONDENSER
7 INSTALLATION OF FWD EVAPORATOR
8 INSTALLATION OF COMPRESSOR
9 INSTALLATION OF ELECTRICAL
10 INSTALLATION OF HOSES
11 PAPERWORK
12 CONTINUED AIRWORTHINESS
13 WARRANTY/REPAIR
14 TROUBLESHOOTING GUIDE



SA365N

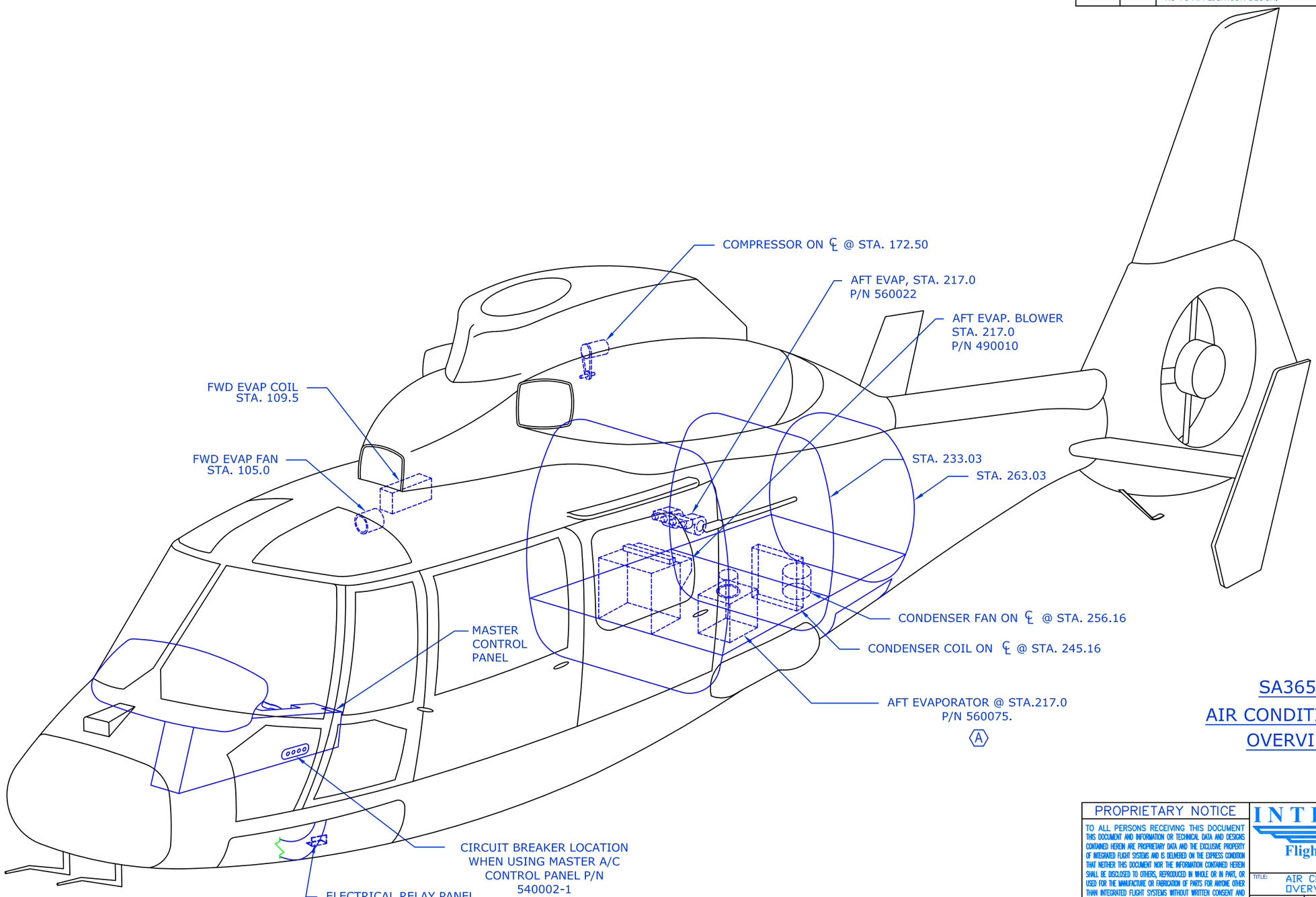
OPTIONS AND CONFIGURATIONS

ITEMS SHOWN IN RED ARE OPTIONAL AS REPLACEMENTS
TO STANDARD INSTALLATION, MAY BE PROVIDED AT EXTRA COST,
HOWEVER, ARE NOT INCLUDED IN STANDARD INSTALLATION.

INTEGRATED Flight Systems
Reno Nevada

TITLE: CONFIGURATIONS AND OPTIONS				
DRAWN BY: JTYE	DATE: 05/18/07	REV: N/A	SCALE: NTS	SHEET: 1 OF 1
APPLICATION: SA365N, N1, N2, N3			DWG NO.: CONFIGS	

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	03/03/06	REDRAWN IN CAD. WAS CAS IS IFS, ADDED OPTIONAL LOCATION FOR AFT EVAP, ADDED OPTIONAL AFT EVAP PN: 560075. ADDED N1, N2, N3 TO APPLICATION BLOCK.	-	JTYE



SA365N
AIR CONDITIONING
OVERVIEW

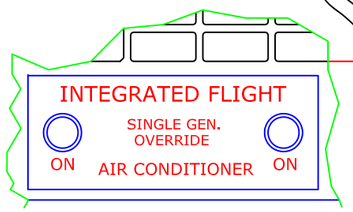
A

INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR CONDITIONING OVERVIEW				
DRAWN BY: BRP	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 1 OF 3
APPLICATION: SA365N, N1. N2, N3			DWG NO.: 1-SA365N	

REVISION RECORD

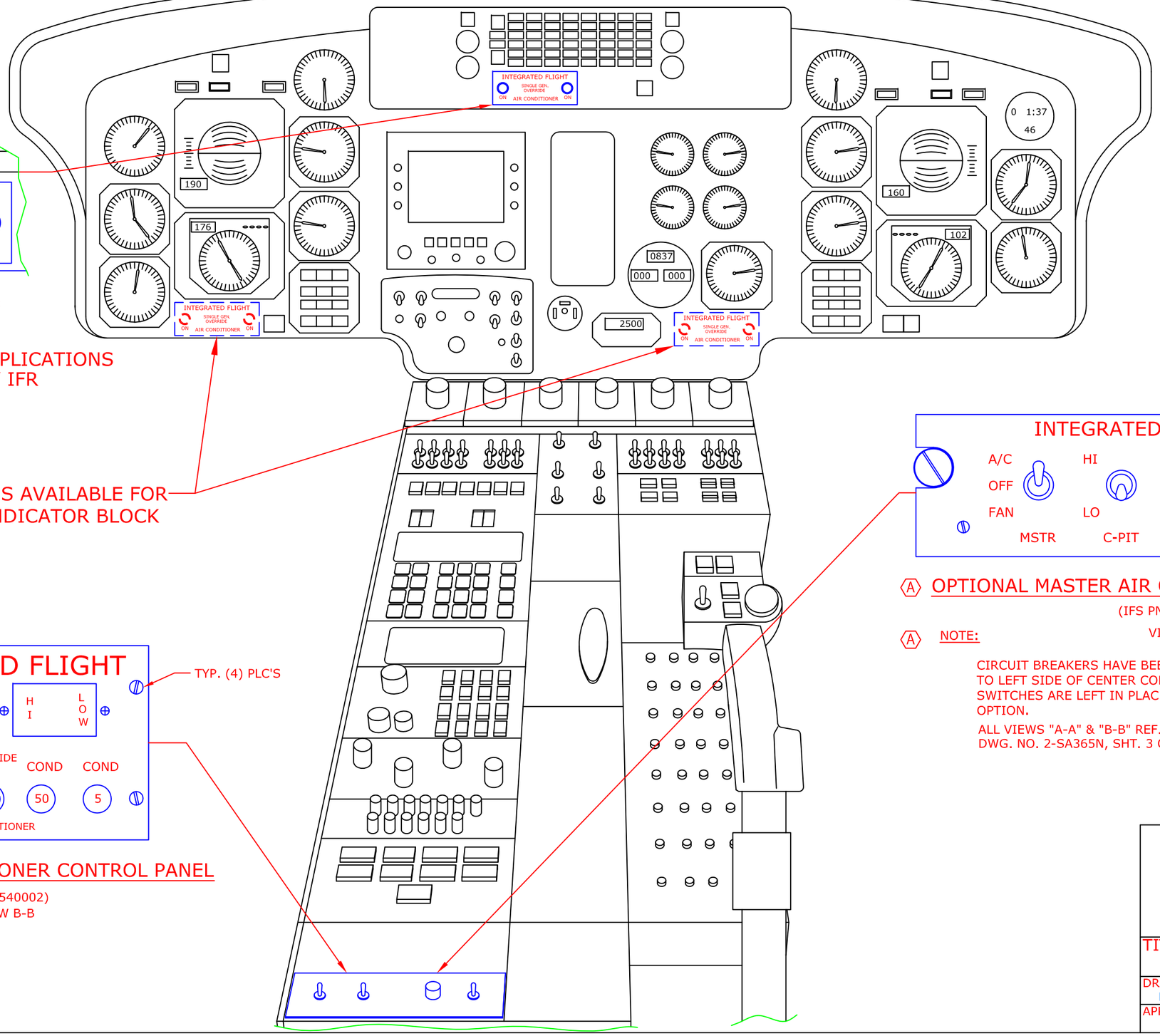
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	03/03/06	RE-DRAWN INTO CAD, WAS CAS, IS NOW IFS. ADDED OPTIONAL SWITCH PANEL ASSY PN: 540002-1. ADDED CIRCUIT BREAKER NOTATION. ADDED N1, N2, N3 TO APPLICATION BLOCK.	---	JTYE
B	05/18/07	CORRECTED P/N CAALOUTS 540000 AND 540000-1, SHOULD BE 540001 AND 540001-1.	---	JTYE



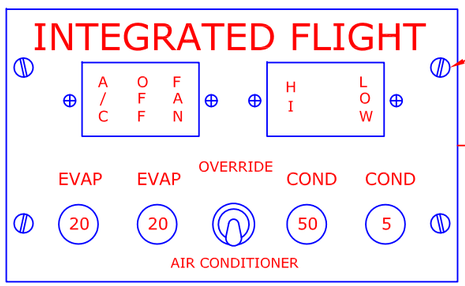
IFS P/N 540001
OR
(B)
(IFS PN: 540001-1)
VIEW A-A

LOCATIONS FOR ALL APPLICATIONS EXCEPT SPERRY IFR

OPTIONAL LOCATIONS AVAILABLE FOR AIR CONDITIONER INDICATOR BLOCK



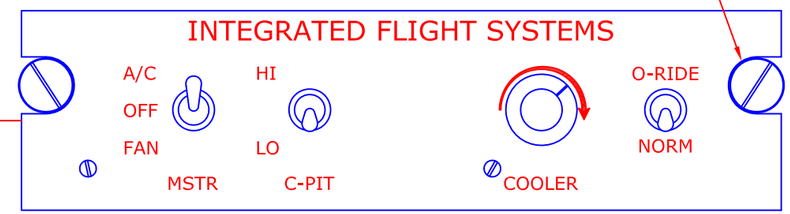
TYP. (2) PLC'S



TYP. (4) PLC'S

MASTER AIR CONDITIONER CONTROL PANEL

(IFS PN: 540002)
VIEW B-B



(A) OPTIONAL MASTER AIR CONDITIONER CONTROL PANEL

(IFS PN: 540002-1)
VIEW B-B

(A) NOTE:

CIRCUIT BREAKERS HAVE BEEN MOVED TO LEFT SIDE OF CENTER CONSOLE, ONLY SWITCHES ARE LEFT IN PLACE W/ THIS OPTION.

ALL VIEWS "A-A" & "B-B" REF. FROM DWG. NO. 2-SA365N, SHT. 3 OF 3.

INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR CONDITIONING OVERVIEW

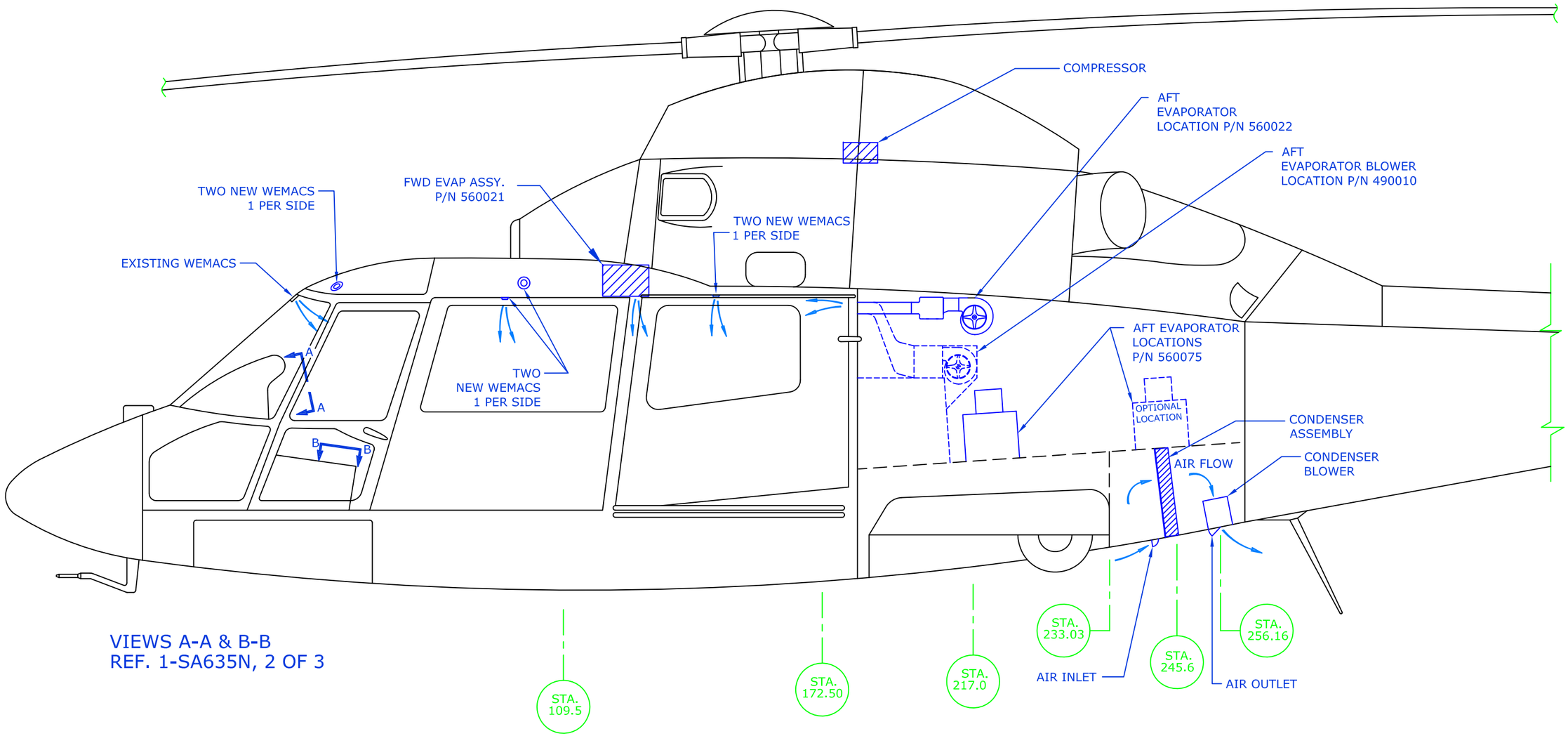
DRAWN BY:	DATE:	REV	SCALE:	SHEET:
BRP	10/15/84	B	NONE	2 OF 3

APPLICATION: SA365N, N1, N2, N3

DWG No. 1-SA365N

REVISION RECORD

DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	03/03/06	REDRAWN IN CAD. WAS CAS IS IFS, ADDED OPTIONAL LOCATION FOR NEW AFT EVAPORATOR PN: 560075. ADDED N1, N2 AND N3 TO APPLICATION BLOCK.	-	JTYE



VIEWS A-A & B-B
REF. 1-SA635N, 2 OF 3

SA365N
CORPORATE INTERIOR

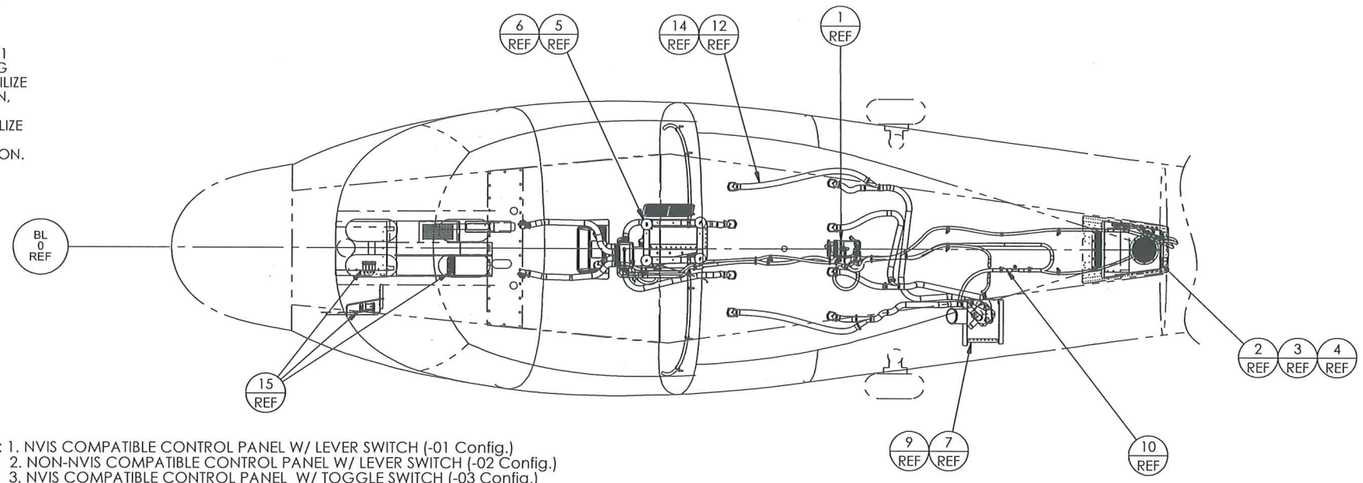
INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR CONDITIONING OVERVIEW				
DRAWN BY: BRP	DATE: 10/18/84	REV: A	SCALE: NTS	SHEET: 3 OF 3
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 1-SA365N	

NOTES:

1. THIS IS A GENERAL LAYOUT DRAWING FOR KIT ORDERING. TO INSTALL SEE INDIVIDUAL INSTALL DRAWINGS. REFERENCE IFS SA365N SERIES INSTALLATION MANUAL.
2. FOR -01 AFT EVAPORATOR INSTALLATION UTILIZE THE CORRESPONDING -01 REFRIGERANT HOSE INSTALLATION, -01 ELECTRICAL PARTS INSTALLATION, & -01 OR -03 AIR DUCTING INSTALLATION. FOR -02 AFT EVAPORATOR INSTALLATION UTILIZE THE CORRESPONDING -02 REFRIGERANT HOSE INSTALLATION, -02 ELECTRICAL PARTS INSTALLATION, & -02 AIR DUCTING INSTALLATION. FOR -03 AFT EVAPORATOR INSTALLATION UTILIZE THE -01 REFRIGERANT HOSE INSTALLATION, -01 ELECTRICAL PARTS INSTALLATION, & -01 OR -03 AIR DUCTING INSTALLATION.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	ADDED NEW CONFIGURATIONS.	S. THORNTON	P. BAN	11/12/2013
B	CHANGED CONFIGURATION LEGEND TO MATCH CONTROL CONFIGURATION DOCUMENT CCT-365N-00-2.	S. THORNTON	K Stn	12/09/2013

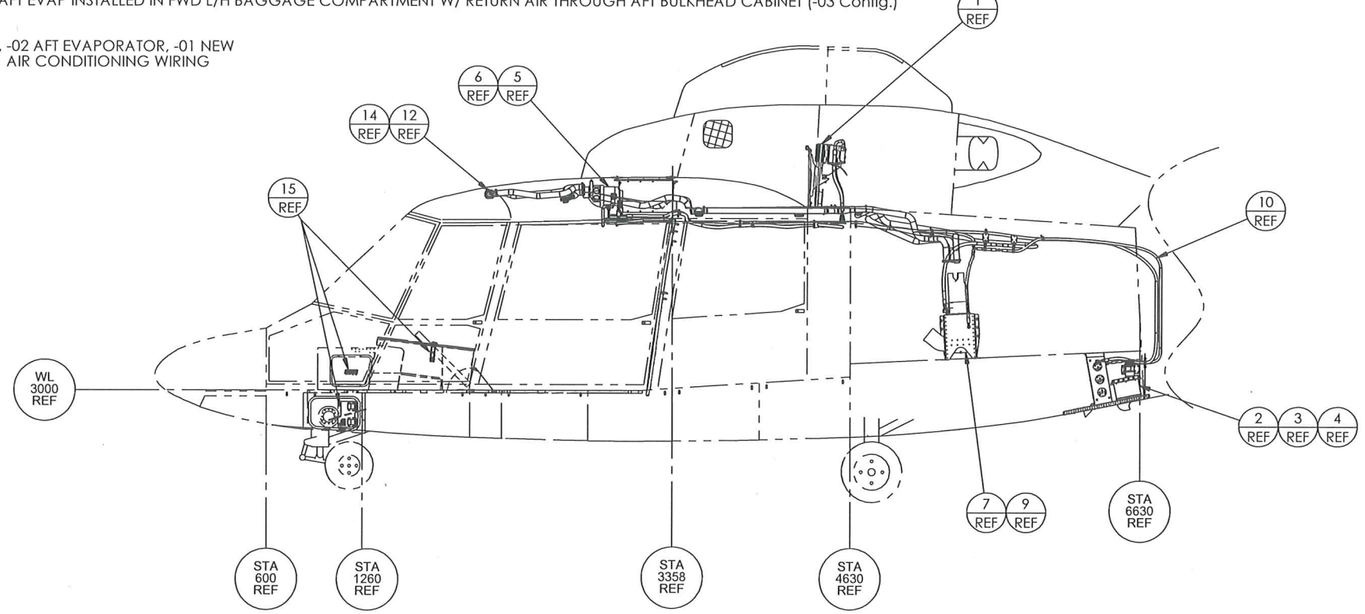


KIT CONFGURATION P/N

365N-00-2-A B C

- C — AIR CONDITIONING WIRING (Dwg: 08-365-21-001):
  1. NVIS COMPATIBLE CONTROL PANEL W/ LEVER SWITCH (-01 Config.)
  2. NON-NVIS COMPATIBLE CONTROL PANEL W/ LEVER SWITCH (-02 Config.)
  3. NVIS COMPATIBLE CONTROL PANEL W/ TOGGLE SWITCH (-03 Config.)
  4. NON-NVIS COMPATIBLE CONTROL PANEL W/ TOGGLE SWITCH (-04 Config.)
- B — CONDENSER INSTALLATION (Dwg: 01-365-21-200):
  1. ACFT W/ NEW INSTALLATIONS (NOT FOR AS 365 N3, S/N: 6967 OR LATER W/ FACTORY AFT AC BELLY PANEL) (-01 Config.)
  2. ACFT W/ EXISTING IFS SYSTEM KITS INSTALLED PRIOR TO 09/2012 (-02 Config.)
  3. FOR AS 365 N3, S/N: 6967 OR LATER W/ FACTORY AFT AC BELLY PANEL (-03 Config.)
- A — AFT EVAPORATOR INSTALLATION (Dwg: 01-365-21-400):
  1. AFT EVAP INSTALLED IN FWD L/H BAGGAGE COMPARTMENT W/RETURN AIR THROUGH LOWER LEFT AFT BULKHEAD (-01 Config.)
  2. AFT EVAP INSTALLED IN AFT BAGGAGE COMPARTMENT (NOT FOR AS 365 N3, S/N: 6967 OR LATER) (-02 Config.)
  3. AFT EVAP INSTALLED IN FWD L/H BAGGAGE COMPARTMENT W/ RETURN AIR THROUGH AFT BULKHEAD CABINET (-03 Config.)

EXAMPLE: 365N-00-2-211 365N-00-2 AIR CONDITIONER KIT, -02 AFT EVAPORATOR, -01 NEW CONDENSER INSTALLATION & -01 AIR CONDITIONING WIRING



QTY	ITEM	PART NUMBER	DESCRIPTION	VENDOR
REF	20	08-365-21-001-04	AIR CONDITIONER WIRING	
REF	19	08-365-21-001-03	AIR CONDITIONER WIRING	
REF	18	08-365-21-001-02	AIR CONDITIONER WIRING	
REF	17	08-365-21-001-01	AIR CONDITIONER WIRING	
REF	16	01-365-21-800-02	ELECTRICAL PARTS INSTALLATION	
REF	15	01-365-21-800-01	ELECTRICAL PARTS INSTALLATION	
REF	14	01-365-21-600-03	AIR DUCTING INSTALLATION	
REF	13	01-365-21-600-02	AIR DUCTING INSTALLATION	
REF	12	01-365-21-600-01	AIR DUCTING INSTALLATION	
REF	11	01-365-21-500-02	REFRIGERANT HOSE INSTALLATION	
REF	10	01-365-21-500-01	REFRIGERANT HOSE INSTALLATION	
REF	9	01-365-21-400-03	AFT EVAPORATOR INSTALLATION	
REF	8	01-365-21-400-02	AFT EVAPORATOR INSTALLATION	
REF	7	01-365-21-400-01	AFT EVAPORATOR INSTALLATION	
REF	6	01-365-21-301-01	OVERHEAD PANEL INSTALLATION	
REF	5	01-365-21-300-01	FWD EVAPORATOR INSTALLATION	
REF	4	01-365-21-200-03	CONDENSER INSTALLATION	
REF	3	01-365-21-200-02	CONDENSER INSTALLATION	
REF	2	01-365-21-200-01	CONDENSER INSTALLATION	
REF	1	01-365-21-100-01	COMPRESSOR INSTALLATION	

365N-00-2 AIR CONDITIONING OVERVIEW
FWD BAGGAGE COMPARTMENT MOUNTED AFT EVAPORATOR

UNLESS OTHERWISE SPECIFIED:

- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

DL-1
NEXT ASSEMBLY

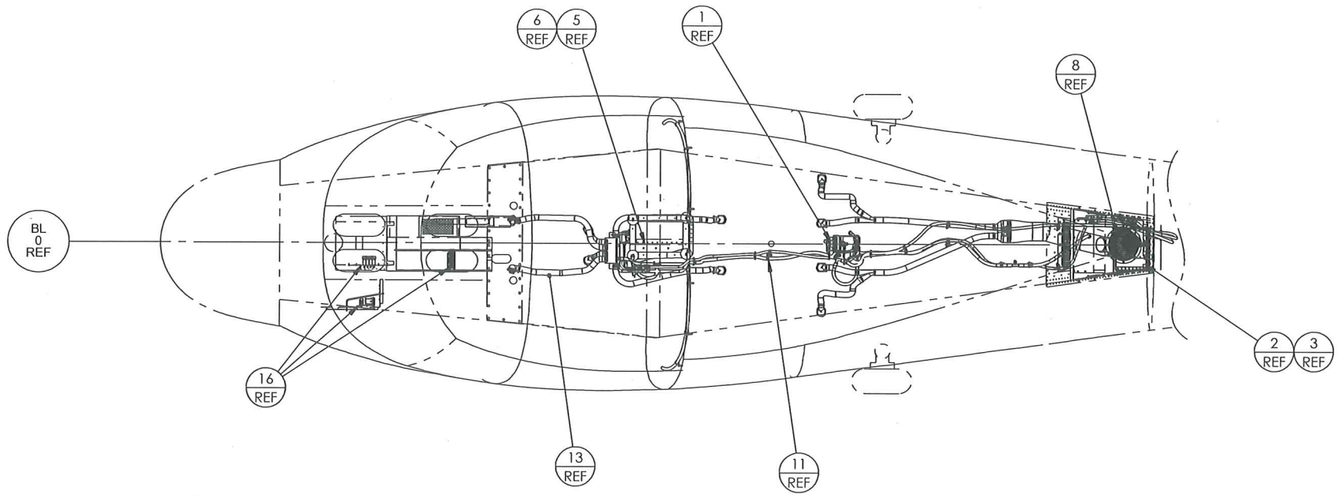
DESIGN: H. Saukkonen	DATE: 02/11/2013	
DRAWN: H. Saukkonen	DATE: 02/11/2013	
CHECKED: J. Krebs	DATE: 02/12/2013	
PROJECT ENG: H. Saukkonen	DATE: 02/12/2013	
APPROVED: P. Ban	DATE: 02/12/2013	

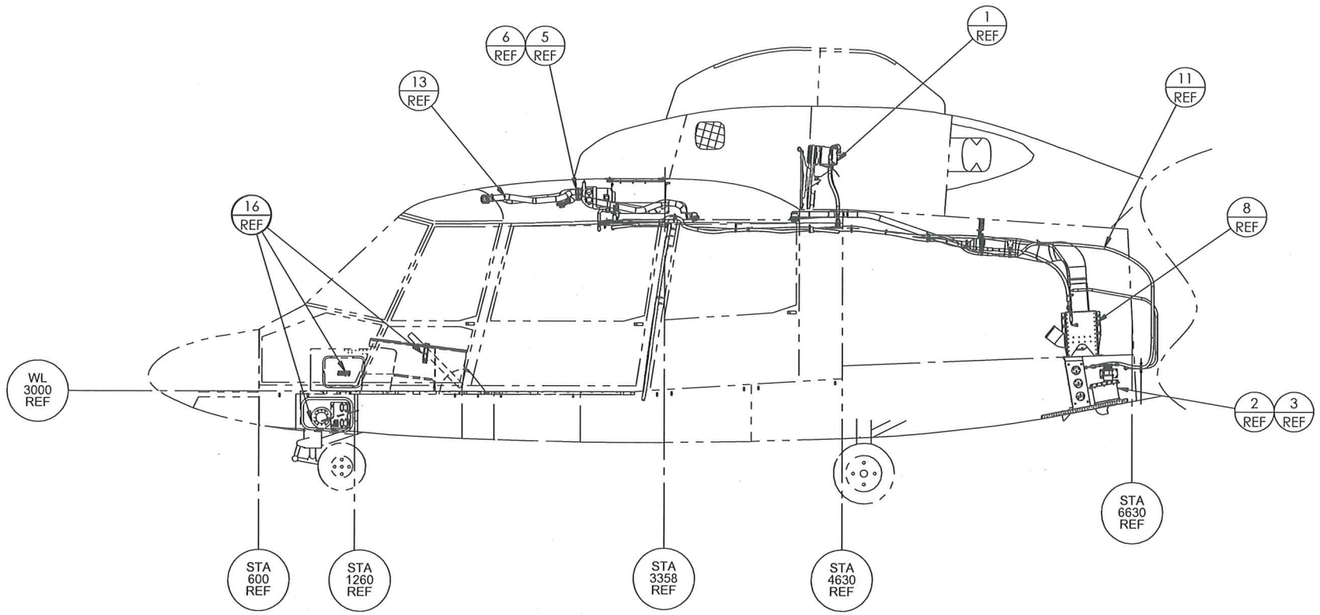
RSG AeroDesign
3900 Falcon Way West
Hangar 16S
Fort Worth, Texas 76106
(817) 625-9000
www.rsgaerodesign.com

TITLE: 365N-00-2 AIR CONDITIONING OVERVIEW

SIZE	CAGE CODE	DWG. NO.	REV
D		365N-00-2	B

SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 2





365N-00-2 AIR CONDITIONING OVERVIEW
AFT BAGGAGE COMPARTMENT MOUNTED AFT EVAPORATOR

RSG AERODESIGN
3900 Falcon Way West
Hangar 16S
Fort Worth, Texas 76106
(817) 625-9000
www.rsgaerodesign.com

TITLE: 365N-00-2 AIR CONDITIONING OVERVIEW

SIZE	CAGE CODE	DWG. NO.	REV
D		365N-00-2	B

SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 2

Step 1
Kit Inventory

PACKING/KIT INVENTORY LIST

Sales Order Number: _____

Shipping Date: _____

Kit S/N Number: _____

Kit Model Number: _____

Customer: _____

Customer PO: _____

Kit Specifics: _____

_____

_____

_____

STEP	PART NAME	PART #	QTY	CK'd	CK'd
5.1.1	EVAPORATOR ASSEMBLY	560075	1		
5.1.3	BOLTS	AN3-6A	4		
5.1.3	WASHER	AN960-10	6		
5.1.3	WASHER	AN970-3	1		
5.1.3	NUT	MS21044-N3	4		
5.1.4	PRC	N/A	1 can		
5.1.4	DRAIN TUBE Ø 1/2" I.D.	090018-1	3'		
5.1.5	DUCT Ø 2" I.D.	60043	24'		
5.1.5	AIR OUTLET ASSEMBLY (EMS Only)	500034	N/A		
5.1.5	BAND CLAMP 3"	60036	6		
5.1.6	DUCT Ø 4" I.D.	60012	8'		
5.1.6	BAND CLAMP 6" in.	60035	2		
5.1.6	RETURN AIR DUCT	250129	1		
5.1.6	RETURN AIR SCREEN OUTLET ASSEMBLY	520118	1		
5.1.6	FOAM INSULATION TAPE	70078	2 boxes		
5.1.6	ALUMINUM FOIL TAPE	70076	1 roll		
5.1.7	AFT EVAPORATOR/BLOWER ASSEMBLY	560022	N/A		
5.1.7	AFT EVAPORATOR SUPPORT	261473	N/A		
5.1.10	BOLT	AN3-5A	N/A		
5.1.10	WASHER	AN960-10	N/A		
5.1.10	NUT	AN365-1032	N/A		
5.1.11	DUCT 2-1/2"	60002	N/A		
5.1.11	DUCT, AIR OUTLET	250131	N/A		
5.1.11	AFT EVAP SUPPLY AIR DBLR	261279	N/A		
5.1.11	AIR OUTLET ASSEMBLY	510455	N/A		
5.1.11	BAND CLAMPS 2.5" in	60036	N/A		
5.1.12	K501 VIRGINIA FOAM INSULATION TAPE	70078	N/A		
5.1.12	ALUMINUM FOIL TAPE	70076	N/A		
5.1.13	DUCT Ø 2" I.D.	60043	N/A		
5.1.13	AIR OUTLET "Y" ASSEMBLY	520029	3		
5.1.14	BAND CLAMPS 1-1/2"	60037	4		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
5.1.17	WEMAC - CLEAR	30009	4		
5.1.17	WEMAC SPACER	260061	4		
5.1.17	SCREW	MS35217-8-8	8		
5.1.17	WASHER	AN960-8	8		
5.1.18	DUCT Ø 1-1/2" I.D.	60000	20'		
6.1.1	DOUBLER, CONDENSER IN/OUT	260065	1		
6.1.7	RIVET	MS20470-4-3	100		
6.1.7	RIVET	MS20470-4-6	100		
6.1.7	RIVET	MS20470-5-6	100		
6.1.7	RIVET	CR3243-4-2	100		
6.1.7	RIVET	CR3243-4-4	100		
6.1.7	RIVET	NAS173885-4	25		
6.1.7	RIVET	NAS173885-6	25		
6.1.11	METAL SET	A-4	1 can		
6.1.13	CONDENSER COIL SUPPORT ANGLE R/H	260068	1		
6.1.13	CONDENSER COIL SUPPORT ANGLE L/H	260069	1		
6.1.14	BOLT	AN3-5A	12		
6.1.14	WASHER	AN960-10	12		
6.1.14	NUT	MS21044-N3	12		
6.1.15	CONDENSER ASSEMBLY	550003	1		
6.1.15	BOLT	AN3-4A	4		
6.1.15	WASHER	AN960-10	4		
6.1.15	NUT	MS21044-N3	4		
6.1.16	CONDENSER CLOSEOUT ASSY	510454	1		
6.1.16	BOLT	AN3-4A	4		
6.1.16	WASHER	AN960-10	4		
6.1.17	CONDENSER BLOWER ASSEMBLY 8"	490011	1		
6.1.17	AIR OUTLET SCOOP	250117	1		
6.1.17	BOLT	AN3-12A	2		
6.1.17	BOLT	AN3-14A	2		
6.1.17	BOLT	AN3-15A	3		
6.1.17	BOLT	AN3-16A	3		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
6.1.17	WASHER	AN960-10	10		
6.1.17	WASHER	AN960-10L	6		
6.1.17	NUT (Alternate: MS21044-N3)	AN365-1032	6		
6.1.18	AIR INLET SCOOP	250116	1		
6.1.18	AIR INLET SCREEN	80013	1		
6.1.18	AIR INLET SCREEN RET ASSY	540006	1		
6.1.18	SCREW	AN525-10R24	16		
6.1.20	WASHER	AN960-10	16		
6.1.20	CLOSEOUT PANEL	260072	1		
6.1.20	RIVET	MS20470AD4-4	50		
6.1.21	RECEIVER DRIER BOTTLE	090016-2	1		
6.1.21	MOUNT, RECEIVER/DRIER	260123	1		
6.1.21	DRIER MOUNT PLATE ASSY	510453	1		
6.1.21	RIVET	CR3243-4-2	30		
6.1.21	BOLT	AN3-12A	2		
7.1.1	FWD EVAPORATOR ASSEMBLY	560021	1		
7.1.4	METAL SET	A-4	1 can		
7.1.5	MOUNTING STRIP ASSEMBLY	510039	1		
7.1.5	MOUNTING STRIP ASSEMBLY	510042	1		
7.1.5	BOLT	AN3-13A	6		
7.1.5	WASHER	AN960-10	6		
7.1.8	DRAIN TUBE Ø 1/2" I.D.	090018-1	20'		
7.1.8	"Y" DRAIN	100181	1		
7.1.10	TEMP. CONTROLLER ASSEMBLY	540140	1		
7.1.10	BOLT	AN3-4A	4		
7.1.10	WASHER	AN960-10	4		
7.1.10	NUT (Alternate: MS21044-N3)	AN365-1032	4		
7.1.14	AIR DISTRIBUTION BOX ASSY	500005	1		
7.1.14	SHUR LOK	NAS1832-3-3	2		
7.1.14	BOLT	AN3-13A	2		
7.1.14	WASHER	AN960-10	2		
7.1.14	K501 VIRGINIA FOAM INSULATION TAPE	70078	6'		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
7.1.16	DUCT Ø 1-1/2" I.D.	60000	20'		
7.1.16	BAND CLAMPS 1-1/2"	60037	12		
7.1.17	WEMAC MODIFIED	030007-1	2		
7.1.17	WEMAC ADAPTER	260062	2		
7.1.17	SCREW	MS35218-8	8		
7.1.17	WASHER	AN960-8	8		
7.1.18	WEMAC - CLEAR	30009	2		
7.1.18	WEMAC SUPPORT ASSEMBLY	520014	2		
7.1.18	DUCT Ø 1-1/2" I.D.	60000	10'		
7.1.18	SCREW	MS35217-8-8	8		
7.1.18	WASHER	AN960-8	8		
7.1.18	NUT	MS21044-N08	8		
7.1.18	FWD EVAPORATOR COVER	250120	N/A		
8.1.5	COMPRESSOR	010001-1	N/A		
8.1.5	"V" BELT	60014	N/A		
8.1.5	COMPRESSOR BRACKET	530027	N/A		
8.1.6	SANDEN 508 COMPRESSOR 12V/24V	010016-0-2	1		
8.1.8	"V" BELT	60044	2		
9.1.1	LIMITER 80 AMP	050015-4	1		
9.1.2	RELAY PANEL ASSEMBLY	510019-1	1		
9.1.2	BOLT	AN3-4A	3		
9.1.2	WASHER	AN960-10	3		
9.1.2	NUT (Alternate: MS21044-N3)	AN365-1032	3		
9.1.4	WIRE HARNESS ASSEMBLY	540141	1		
9.1.7	CONSOLE INDICATOR LIGHT ASSY	540001-1	1		
9.1.9	MSTR A/C CONTROL PANEL ASSY	540002	N/A		
9.1.9	SWITCH PANEL ASSY	540002-1	1		
9.1.9	AFT FAN SWITCH ASSEMBLY	540003	N/A		
9.1.9	AFT EVAP SWITCH ASSEMBLY	540003-1	1		
10.1.2	#8 CUP ASSEMBLY	510021	N/A		
10.1.2	#10 CUP ASSEMBLY	510021-1	N/A		
10.1.3	#8 HOSE ASSY, DECK TO COMP	570007	N/A		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
10.1.3	5/8 x #10 x STRAIGHT FEM. O-RING	100128-O	N/A		
10.1.3	#8 HOSE ASSY DECK TO CONDENSER	570008	1		
10.1.3	5/8 x #10 x 90° FEM O-RING	100126-O	1		
10.1.3	#8 R134a O-RING	90093	2		
10.1.5	#10 HOSE ASSY DECH FITTING TO LP SWITCH AND AFT EVAP	570012	1		
10.1.5	5/8" x #10 x 90° FEM O-RING	100126-O	1		
10.1.5	#10 R134a O-RING	90094	2		
10.1.5	#10 HOSE ASSY AFT EVAP TO SERV PORT	570015	1		
10.1.7	#10 HOSE ASSY FWD TO LOW PRESS SW	570014	1		
10.1.7	#10 R134a O-RING	90094	1		
10.1.8	#6 HOSE ASSY HI PRESS SW TO DRIER/AFT EVAP	570011	1		
10.1.9	#6 HOSE ASSY COND TO DRIER BOTTLE	570010	1		
10.1.9	3/8 x #6 x STRAIGHT FEM O-RING	100134-O	2		
10.1.12	#6 HOSE ASSY FWD EVAP TO HI PRESS SW	570013	1		
10.1.12	#10 x #10 INLINE W/R134a SERVICE PORT	100136	1		
	CIRCUIT BREAKER 50 AMP	050012-9	1		
	CIRCUIT BREAKER 20 AMP (Alt: 050014-4)	050012-4	2		
	CIRCUIT BREAKER 5 AMP (Alt: 050014)	50012	1		
	PLACARD, CIRCUIT BREAKER	120101	1		
	PLACARD, CIRCUIT BREAKER PANEL	120001-1	1		

DRAWING NAME	DRAWING #	QTY	CK'd	CK'd

DRAWING NAME	DRAWING #	QTY	CK'd	CK'd
AIR CONDITIONING OVERVIEW	1-SA365N SH 1 OF 3	1		
AIR CONDITIONING OVERVIEW	1-SA365N SH 2 OF 3	1		
AIR CONDITIONING OVERVIEW	1-SA365N SH 3 OF 3	1		
ELECTRICAL OVERVIEW	2-SA365N SH 1 OF 7	1		
ELECTRICAL ROUTING (SIDE)	2-SA365N SH 2 OF 7	1		
ELECTRICAL ROUTING (TOP)	2-SA365N SH 3 OF 7	1		
ELECTRICAL DIAGRAM	2-SA365N SH 4 OF 7	1		
ELECTRICAL DIAGRAM	2-SA365N SH 5 OF 7	1		
ELECTRICAL INSTALL	2-SA365N SH 6 OF 7	1		
ELECTRICAL INSTALL	2-SA365N SH 7 OF 7	1		
PLUMBING DIAGRAM	3-SA365N SH 1 OF 4	1		
PLUMBING DIAGRAM	3-SA365N SH 2 OF 4	1		
PLUMBING INSTALL	3-SA365N SH 3 OF 4	1		
PLUMBING INSTALL	3-SA365N SH 4 OF 4	1		
FWD EVAPORATOR INSTALL	4-SA365N SH 1 OF 14	1		
FWD EVAPORATOR INSTALL	4-SA365N SH 2 OF 14	1		
FWD EVAPORATOR INSTALL	4-SA365N SH 3 OF 14	1		
FWD EVAPORATOR PHOTOS	4-SA365N SH 4 OF 14	1		
FWD EVAPORATOR INSTALL	4-SA365N SH 5 OF 14	1		
AFT EVAPORATOR INSTALL	4-SA365N SH 6 OF 14	1		
AFT EVAPORATOR INSTALL	4-SA365N SH 7 OF 14	1		
AFT EVAPORATOR INSTALL - EMS	4-SA365N SH 8 OF 14	1		
AFT EVAPORATOR INSTALL - CUSTOM	4-SA365N SH 9 OF 14	1		
AFT EVAPORATOR INSTALL	4-SA365N SH 10 OF 14	1		
AFT EVAPORATOR INSTALL	4-SA365N SH 11 OF 14	1		
AFT EVAPORATOR INSTALL - EMS	4-SA365N SH 12 OF 14	1		
AFT EVAPORATOR INSTALL	4-SA365N SH 13 OF 14	1		
AFT EVAPORATOR INSTALL	4-SA365N SH 14 OF 14	1		

DRAWING NAME	DRAWING #	QTY	CK'd	CK'd
AIR DISTRIBUTION SYSTEM	5-SA365N SH 1 OF 5	1		
AIR DISTRIBUTION SYSTEM	5-SA365N SH 2 OF 5	1		
AIR DISTRIBUTION SYSTEM	5-SA365N SH 3 OF 5	1		
AIR DISTRIBUTION SYSTEM	5-SA365N SH 4 OF 5	1		
AIR DISTRIBUTION SYSTEM	5-SA365N SH 5 OF 5	1		
COMPRESSOR DRIVE INSTALL – 505	6-SA365N SH 1 OF 3	1		
COMPRESSOR DRIVE INSTALL – 508	6-SA365N SH 2 OF 3	1		
COMPRESSOR DRIVE INSTALL - 508	6-SA365N SH 3 OF 3	1		
CONDENSER DOUBLER INSTALL	7-SA365N SH 1 OF 4	1		
CONDENSER DOUBLER INSTALL	7-SA365N SH 2 OF 4	1		
CONDENSER DOUBLER INSTALL	7-SA365N SH 3 OF 4	1		
CONDENSER BLOWER INSTALL	7-SA365N SH 4 OF 4	1		

DOCUMENT NAME	DOCUMENT #	QTY	CK'd	CK'd
INSTALLATION INSTRUCTIONS	INST-365N	1		
SUPPLEMENTAL TYPE CERTIFICATE	SH5832SW	1		
FLIGHT MANUAL SUPPLEMENT	RFM-365N	1		
MASTER PARTS LIST	INST-365N	1		
WARRANTY PAPERWORK	INST-365N	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
01-365-21-400-01 INSTALLATION					
5.2.1	EVAPORATOR PROVISIONS	02-365-21-401-01	1		
5.2.3	FITTING	04-365-21-403-01	1		
5.2.3	DOUBLER	04-365-21-424-01	2		
5.2.3	RIVET	MS20426AD4-()	4		
5.2.5	RIVET	MS20470AD4-()	28		
5.2.4 5.2.13	SCREW	MS27039-1-10	5		
5.2.4 5.2.6	WASHER	NAS1149D0332K	20		
5.2.4	NUTPLATE	MS21075L3N	4		
5.2.4	RIVET	MS20426AD3-()	8		
5.2.5	FLOOR PANEL DOUBLER	04-365-21-407-01	1		
5.2.5	DRAIN HOSE	090018-1	12"		
5.2.5	HOSE CLAMP	5574K13	1		
5.2.6	RETURN AIR VENT ASSEMBLY	03-365-21-402-01	1		
5.2.6	RETURN AIR DUCT	04-365-21-423-01	1		
5.2.6 5.2.13	NUT	MS21042L3	9		
5.2.6	SCREW	MS27039-1-17	8		
5.2.7	4" AIR DUCT	09-365-21-010-01	10'		
5.2.7	HOSE CLAMP	5574K24	2		
5.2.8	EVAPORATOR FAN	09-365-21-307-01	1		
5.2.8	OUTLET DUCT	04-365-21-410-01	1		
5.2.8	SCREW	MS27039-1-12	1		
5.2.8	SCREW	MS27039-1-11	3		
5.2.8	WASHER	NAS1149D0316H	4		
5.2.13	GROUNDING STRAP	M83413/8-A036BB	1		
5.2.13	WASHER	NAS1149F0332P	2		
5.2.13	CABLE MOUNT	CB9120V5	2		
5.2.13	TIEDOWN STRAP	MS3367-1-0	2		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
01-365-21-400-02 INSTALLATION					
5.2.1	EVAPORATOR PROVISIONS	02-365-21-401-01	1		
5.2.3	INSERT	04R0210001-3-9	5		
5.2.4	BOLT	AN3-4A	5		
5.2.4 5.2.6	WASHER	NAS1149D0332K	13		
5.2.5	DRAIN HOSE	090018-1	38"		
5.2.5	GROMMET	9600K58	1		
5.2.5	HOSE CLAMP	5574K13	1		
5.2.6	RETURN FITTING DOUBLER ASSEMBLY	02-365-21-403-01	1		
5.2.6	RETURN DUCT FITTING	04-365-21-435-01	1		
5.2.6	SCREW	MS27039-1-17	4		
5.2.6	RETURN DUCT ANGLE	02-365-21-402-01	2		
5.2.6	RETURN DUCT LOUVER	04-365-21-434-01	1		
5.2.6	SCREW	MS27039-1-04	4		
5.2.6	SCREW	AN525-832R9	4		
5.2.6	THREADED INSERT	NAS1832-3-3	4		
5.2.7	4" AIR DUCT	09-365-21-010-01	10'		
5.2.7	HOSE CLAMP	5574K24	2		
5.2.7	CLAMP	MS21919WDG64	1		
5.2.8	EVAPORATOR FAN	09-365-21-307-01	1		
5.2.9	WASHER	NAS1149D0316H	4		
5.2.9	SCREW	MS27039-1-11	3		
5.2.9	SCREW	MS27039-1-12	1		
5.2.13	GROUNDING STRAP	M83413/8-A036BB	1		
5.2.13	SCREW	MS27039-1-10	1		
5.2.13	WASHER	NAS1149F0332P	2		
5.2.13	NUT	MS21042L3	1		
5.2.13	CABLE MOUNT	CB9120V5	2		
5.2.13	TIEDOWN STRAP	MS3367-1-0	2		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
01-365-21-400-03 INSTALLATION					
5.2.1	EVAPORATOR PROVISIONS	02-365-21-401-01	1		
5.2.3	FITTING	04-365-21-403-01	1		
5.2.3	DOUBLER	04-365-21-424-01	2		
5.2.3	RIVET	MS20426AD4-()	4		
5.2.4	MOUNT PLATE	04-365-21-442-01	1		
5.2.4	SCREW	MS24693-S275	4		
5.2.4 5.2.13	SCREW	MS27039-1-10	5		
5.2.4 5.2.6	WASHER	NAS1149D0332K	12		
5.2.4	NUTPLATE	MS21075L3N	4		
5.2.4	RIVET	MS20426AD3-()	8		
5.2.5	RIVET	MS20470AD4-()	28		
5.2.5	FLOOR PANEL DOUBLER	04-365-21-407-01	1		
5.2.5	DRAIN HOSE	090018-1	16"		
5.2.5	HOSE CLAMP	5574K13	1		
5.2.6	RETURN FITTING DOUBLER ASSEMBLY	02-365-21-403-01	1		
5.2.6	RETURN DUCT ANGLE	02-365-21-402-01	2		
5.2.6	SCREW	MS27039-1-04	4		
5.2.6	SCREW	AN525-832R9	4		
5.2.6	SCREW	MS27039-1-17	4		
5.2.6 5.2.13	NUT	MS21042L3	1		
5.2.6	RETURN DUCT FITTING	04-365-21-434-01	1		
5.2.6	RETURN DUCT LOUVER	04-365-21-435-01	1		
5.2.7	4" AIR DUCT	09-365-21-010-01	10'		
5.2.7	HOSE CLAMP	5574K24	2		
5.2.8	EVAPORATOR FAN	09-365-21-307-01	1		
5.2.8	OUTLET DUCT	04-365-21-410-01	1		
5.2.8	SCREW	MS27039-1-12	1		
5.2.8	SCREW	MS27039-1-11	3		
5.2.8	WASHER	NAS1149D0316H	4		
5.2.13	GROUNDING STRAP	M83413/8-A036BB	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
5.2.13	WASHER	NAS1149F0332P	2		
5.2.13	CABLE MOUNT	CB9120V5	2		
5.2.13	TIEDOWN STRAP	MS3367-1-0	2		
01-365-21-200-01 INSTALLATION					
6.2.1	CONDENSER DOUBLER	04-365-21-209-01	1		
6.2.2 6.2.4 6.2.8 6.2.18	RIVET	MS20470AD4-()	300		
6.2.7 6.2.8 6.2.12	RIVET	CR3213-4-02	100		
6.2.12	LH CONDENSER BLOCK	04-365-21-201-01	1		
6.2.12	RH CONDENSER BLOCK	04-365-21-203-01	1		
6.2.12	RIVET	CR3212-4-05	20		
6.2.12 6.2.15 6.2.19	INSERT	NAS1832-3-4	24		
6.2.13 6.2.16 6.2.19 6.2.21	SCREW	MS27039-1-08	14		
6.2.13 6.2.14 6.2.15 6.2.16 6.2.17 6.2.19 6.2.21	WASHER	NAS1149F0316P	66		
6.2.14	CONDENSER PROVISIONS	02-365-21-201-01	1		
6.2.14 6.2.15 6.2.21	NUTPLATE	MS21075L3N	18		
6.2.14	BOLT	AN3-5A	6		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
6.2.14 6.2.15 6.2.21	RIVET	MS20426AD3-()	36		
6.2.14	SEAL SHIM	04-365-21-225-01	1		
6.2.14	EDGE GRIP SEAL	1120A341	2'		
6.2.15	CONDENSER FAN	09-365-21-202-01	1		
6.2.15	CONDENSER FAN PANEL	04-365-21-210-01	1		
6.2.15	MOUNT RING ASSEMBLY	02-365-21-206-01	1		
6.2.15	BLOWER RETAINER RING	04-365-21-215-01	1		
6.2.15	RETURN AIR SCREEN	04-365-21-218-01	1		
6.2.15	BOLT	AN3-6A	8		
6.2.15	CONDENSER FAN ANGLE	04-365-21-211-01	2		
6.2.15	BOLT	AN3-4A	10		
6.2.16	AIR SCOOP	04-365-21-213-01	1		
6.2.16	SCREW	MS27039-1-22	16		
6.2.16	RETURN AIR SCREEN	04-365-21-217-01	1		
6.2.16	INTAKE RETAINER SUB-ASSEMBLY	03-365-21-203-01	1		
6.2.16	EXHAUST VENT	04-365-21-214-01	1		
6.2.16	HOSECLAMP	5011T43	1		
6.2.17	BOLT	AN3-3A	12		
6.2.18	CLOSEOUT PANEL DOUBLER	04-365-21-219-01	1		
6.2.19	RECEIVER/DRIER BOTTLE PRVNS	02-365-21-202-01	1		
6.2.19	RECIEVER/DRIER BOTTLE	09-365-21-201-01	1		
6.2.20	#6 STRAIT HOSE FITTING	09-365-21-001-03	3		
6.2.20	#6 HOSE	09-365-21-002-05	2'		
6.2.21	JUMPER CABLE ASSEMBLY	M83413-8-A006BB	1		
6.2.22	DOUBLER ASSEMBLY	02-365-21-205-01	1		
6.2.22	SCREW	NAS600-10	4		
6.2.22	WASHER	NAS1149DN416H	4		
6.2.22	DOUBLER ASSEMBLY	02-365-21-204-01	1		
6.2.22	HOSE SPLICE FLANGE	04-365-21-221-01	1		
6.2.22	SCREW	MS27039-0807	4		
6.2.22	WASHER	NAS1149DN816H	4		
6.2.22	GROMMET	MS35489-75	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
6.2.22	GROMMET	MS35489-78	1		
01-365-21-200-02 INSTALLATION					
6.2.12	LH CONDENSER BLOCK	04-365-21-201-01	1		
6.2.12	RH CONDENSER BLOCK	04-365-21-203-01	1		
6.2.12	RIVET	CR3212-4-05	20		
6.2.12 6.2.15 6.2.19	INSERT	NAS1832-3-4	24		
6.2.13 6.2.19 6.2.21	SCREW	MS27039-1-08	14		
6.2.13 6.2.14 6.2.15 6.2.17 6.2.19 6.2.21	WASHER	NAS1149F0316P	50		
6.2.14	CONDENSER PROVISIONS	02-365-21-201-01	1		
6.2.14 6.2.15 6.2.21	NUTPLATE	MS21075L3N	18		
6.2.14	BOLT	AN3-5A	6		
6.2.14 6.2.15 6.2.21	RIVET	MS20426AD3-()	36		
6.2.14	SEAL SHIM	04-365-21-225-01	1		
6.2.14	EDGE GRIP SEAL	1120A341	2'		
6.2.15	CONDENSER FAN	09-365-21-202-01	1		
6.2.15	CONDENSER FAN PANEL	04-365-21-210-01	1		
6.2.15	MOUNT RING ASSEMBLY	02-365-21-206-01	1		
6.2.15	BLOWER RETAINER RING	04-365-21-215-01	1		
6.2.15	RETURN AIR SCREEN	04-365-21-218-01	1		
6.2.15	BOLT	AN3-6A	8		
6.2.15	CONDENSER FAN ANGLE	04-365-21-211-01	2		
6.2.15	BOLT	AN3-4A	10		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
6.2.15	FAN ADAPTER	04-365-21-227-01	1		
6.2.15	BOLT	AN3-14A	6		
6.2.15	WASHER	NAS1149F0332P	12		
6.2.15	NUT	MS21042L3	6		
6.2.17	BOLT	AN3-3A	12		
6.2.19	RECEIVER/DRIER BOTTLE PRVNS	02-365-21-202-01	1		
6.2.19	RECIEVER/DRIER BOTTLE	09-365-21-201-01	1		
6.2.20	#6 STRAIT HOSE FITTING	09-365-21-001-03	1		
6.2.20	#6 45° FEMALE FITTING	RBA1311	2		
6.2.20	#6 HOSE	09-365-21-002-05	2'		
6.2.21	JUMPER CABLE ASSEMBLY	M83413/8-A006BB	1		
6.2.22	DOUBLER ASSEMBLY	02-365-21-205-01	1		
6.2.22	SCREW	NAS600-10	4		
6.2.22	WASHER	NAS1149DN416H	4		
6.2.22	GROMMET	MS35489-75	1		
6.2.22	GROMMET	MS35489-78	1		
01-365-21-200-03 INSTALLATION					
6.2.12	LH CONDENSER BLOCK	04-365-21-201-01	1		
6.2.12	RH CONDENSER BLOCK	04-365-21-203-01	1		
6.2.12	RIVET	CR3212-4-05	20		
6.2.12 6.2.15 6.2.19	INSERT	NAS1832-3-4	24		
6.2.13 6.2.16 6.2.19 6.2.21	SCREW	MS27039-1-08	14		
6.2.13 6.2.14 6.2.15 6.2.16 6.2.17 6.2.19 6.2.21	WASHER	NAS1149F0316P	66		
6.2.14	CONDENSER PROVISIONS	02-365-21-201-01	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
6.2.14 6.2.15 6.2.21	NUTPLATE	MS21075L3N	18		
6.2.14	BOLT	AN3-5A	6		
6.2.14 6.2.15 6.2.21	RIVET	MS20426AD3-()	36		
6.2.14	SEAL SHIM	04-365-21-225-01	1		
6.2.14	EDGE GRIP SEAL	1120A341	2'		
6.2.15	CONDENSER FAN	09-365-21-202-01	1		
6.2.15	MOUNT RING ASSEMBLY	02-365-21-206-01	1		
6.2.15	BLOWER RETAINER RING	04-365-21-215-01	1		
6.2.15	RETURN AIR SCREEN	04-365-21-218-01	1		
6.2.15	BOLT	AN3-6A	8		
6.2.15	CONDENSER FAN SUPPORT PLATE	04-365-21-228-01	1		
6.2.15	CONDENSER FAN ANGLE	04-365-21-211-01	2		
6.2.15	BOLT	AN3-4A	10		
6.2.16	AIR SCOOP	04-365-21-213-01	1		
6.2.16	RETURN AIR SCREEN	04-365-21-217-01	1		
6.2.16	SCREW	MS27039-1-10	16		
6.2.16	INTAKE RETAINER SUB-ASSEMBLY	03-365-21-203-01	1		
6.2.16	EXHAUST VENT	04-365-21-214-01	1		
6.2.16	HOSECLAMP	5011T43	1		
6.2.17	BOLT	AN3-3A	12		
6.2.19	RECEIVER/DRIER BOTTLE PRVNS	02-365-21-202-01	1		
6.2.19	RECIEVER/DRIER BOTTLE	09-365-21-201-01	1		
6.2.20	#6 STRAIGHT HOSE FITTING	09-365-21-001-03	3		
6.2.20	#6 HOSE	09-365-21-002-05	2'		
6.2.21	JUMPER CABLE ASSEMBLY	M83413-8-A006BB	1		
6.2.22	DOUBLER ASSEMBLY	02-365-21-205-01	1		
6.2.22	SCREW	NAS600-10	4		
6.2.22	WASHER	NAS1149DN416H	4		
6.2.22	GROMMET	MS35489-75	1		
6.2.22	GROMMET	MS35489-78	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
01-365-21-300-01 INSTALLATION					
7.2.1	FWD EVAPORATOR ASSEMBLY	02-365-21-302-01	1		
7.2.1	RUBBER PLUG	6448K39	2		
7.2.1	HOSE CLAMP	MS35842-12	2		
7.2.2	RING DOUBLER	04-365-21-303-01	1		
7.2.4 7.2.10	RIVET	CR3213-4-02	16		
7.2.4	SUPPORT ANGLE	04-365-21-304-01	4		
7.2.4	DOUBLER DISC	02-365-21-304-01	3		
7.2.4	DOUBLER	04-365-21-320-01	1		
7.2.4	SCREW	MS27039-1-18	4		
7.2.4	NUT	MS21042L3	1		
7.2.4 7.2.5 7.2.10	WASHER	NAS1149F0332P	11		
7.2.5 7.2.12	SCREW	MS27039-1-09	8		
7.2.5	NUTPLATE	MS21059L3	4		
7.2.5	RIVET	MS20426AD3-5	8		
7.2.6	FWD EVAPORATOR AIR HANDLER	03-365-21-302-01	1		
7.2.9	INSERT	NAS1835-3	2		
7.2.9	MOUNT CLIPS	04-365-21-305-01	2		
7.2.10	SCREW	MS27039-1-06	2		
7.2.12	RETURN AIR LOUVER	04-365-21-322-01	1		
7.2.12	RIVET	CCR264CS-3-03	8		
7.2.12	NUTPLATE	MS21075L3N	4		
01-365-21-301-01 INSTALLATION					
7.2.12	OVERHEAD PANEL ASSEMBLY	02-365-21-305-01	1		
01-365-21-100-01 INSTALLATION					
8.2.1	PULLEY	04-365-21-105-01	1		
8.2.1	BOLT	365A32-2862-20	3		
8.2.3	COMPRESSOR MOUNT BRACKET	04-365-21-107-01	1		
8.2.4	COMPRESSOR ASSEMBLY	02-365-21-101-01	1		
8.2.4	BOLTS	AN5H5A	2		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
8.2.4	WASHER	NAS1149F0516P	2		
8.2.5	COMPRESSOR BELT	09-365-21-102-01	2		
8.2.6	JAM NUT, DRILLED	04-365-21-106-01	2		
8.2.6	TENSION BOLT	CL-31-SSC-S	1		
8.2.7	SAFTEY WIRE	MS20995C32	1		
8.2.8	ADEL CLAMP	MS21919WDG9	2		
8.2.8	TIE WRAP	MS3367-1-0	2		
8.2.9	RING TERMINAL	MS25036-112	1		
01-365-21-800-01/08-365-21-001-XX (-01, -02, -03 OR -04) INSTALLATION					
9.2.1	LIMITER 80 AMP	ANL-80	1		
9.2.2	RELAY PANEL ASSEMBLY	02-365-21-802-01	1		
9.2.2	NUTPLATE	MS21075-3N	4		
9.2.2	RIVET	NAS1097AD3-()	8		
9.2.2	SCREW	MS27039-1-08	4		
9.2.2	WASHER	NAS1149DN832K	4		
9.2.3	WIRE HARNESS ASSEMBLY	08-365-21-102-01	1		
9.2.3	RELAY SOCKETS, TRACK MOUNT	M12883/52-001	3		
9.2.3	RELAY, DPDT, DIN RAIL	M83536/2-028M	3		
9.2.3	DIODE	1N4007	2		
9.2.4	FUSE	AGC-2-R	2		
9.2.4	IN-LINE FUSE HOLDER	01550100Z	2		
9.2.7	BUSBAR	04-365-21-805-01	2		
9.2.7	CIRCUIT BREAKER	MS25244-5	1		
9.2.7	CIRCUIT BREAKER	700-001-40	1		
9.2.7	CIRCUIT BREAKER	MS25244-25	2		
9.2.7	PLACARD	04-365-21-802-01	1		
9.2.7	PLACARD	04-365-21-802-02	1		
9.2.7	PLACARD	04-365-21-802-03	1		
9.2.7	PLACARD	04-365-21-802-04	1		
9.2.7	SCREW	MS27039-0806	2		
9.2.7	WASHER	NAS1149FN816P	4		
9.2.7	NUT	MS21042L3	2		
9.2.8	CONTROL PANEL ASSY	02-365-21-901-XX (-01,-02,-03,OR-04)	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
9.2.11	CONNECTOR, RECEPTACLE	MS3100F20-23S	1		
9.2.11	CONNECTOR, PLUG	MS3106F18-5S	2		
9.2.12	LOW PRESSURE SWITCH	09-365-21-305-01	1		
9.2.12	HIGH PRESSURE SWITCH	09-365-21-306-01	1		
9.2.12	KNIFE DISCONNECT 16-14	32448	4		
9.2.12	KNIFE DISCONNECT 22-16	32446	4		
9.2.12	CONTACT	M39029/22-193	2		
9.2.12	TERMINAL JUNCTION	M81714/65-16-1	1		
01-365-21-800-02/08-365-21-001-XX (-01, -02, -03 OR -04) INSTALLATION					
9.2.1	LIMITER 80 AMP	ANL-80	1		
9.2.2	RELAY PANEL ASSEMBLY	02-365-21-802-01	1		
9.2.2	NUTPLATE	MS21075-3N	4		
9.2.2	RIVET	NAS1097AD3-()	8		
9.2.2	SCREW	MS27039-1-08	4		
9.2.2	WASHER	NAS1149DN832K	4		
9.2.3	WIRE HARNESS ASSEMBLY	08-365-21-102-01	1		
9.2.3	RELAY SOCKETS, TRACK MOUNT	M12883/52-001	3		
9.2.3	RELAY, DPDT, DIN RAIL	M83536/2-028M	3		
9.2.3	DIODE	1N4007	2		
9.2.4	FUSE	AGC-2-R	2		
9.2.4	IN-LINE FUSE HOLDER	01550100Z	2		
9.2.7	BUSBAR	04-365-21-805-01	2		
9.2.7	CIRCUIT BREAKER	MS25244-5	1		
9.2.7	CIRCUIT BREAKER	700-001-40	1		
9.2.7	CIRCUIT BREAKER	MS25244-25	2		
9.2.7	PLACARD	04-365-21-802-01	1		
9.2.7	PLACARD	04-365-21-802-02	1		
9.2.7	PLACARD	04-365-21-802-03	1		
9.2.7	PLACARD	04-365-21-802-04	1		
9.2.7	SCREW	MS27039-0806	2		
9.2.7	WASHER	NAS1149FN816P	4		
9.2.7	NUT	MS21042L3	2		
9.2.8	CONTROL PANEL ASSY	02-365-21-901-XX (-01,-02,-03,OR-04)	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
9.2.11	CONNECTOR, RECEPTACLE	MS3100F20-23S	1		
9.2.11	CONNECTOR, PLUG	MS3106F18-5S	2		
9.2.12	LOW PRESSURE SWITCH	09-365-21-305-01	1		
9.2.12	HIGH PRESSURE SWITCH	09-365-21-306-01	1		
9.2.12	KNIFE DISCONNECT 16-14	32448	4		
9.2.12	KNIFE DISCONNECT 22-16	32446	4		
9.2.12	CONTACT	M39029/22-193	2		
9.2.12	TERMINAL JUNCTION	M81714/65-16-1	1		
01-365-21-500-01 INSTALLATION					
10.2.1	SUPPORT BRACKET	04-365-21-402-01	10		
10.2.1	# 10 FITTING	09-365-21-005-02	1		
10.2.1 10.2.3 10.2.4 10.2.9	SCREW	AN525-10R8	34		
10.2.1 10.2.3 10.2.4	RIVET	MS20470AD4-()	40		
10.2.1 10.2.9	CLAMP	MS21919WDG8	6		
10.2.1	CLAMP	MS21919WDG10	8		
10.2.1	CLAMP	MS21919WDG11	13		
10.2.1 10.2.3 10.2.4 10.2.9	WASHER	NAS1149F0332P	40		
10.2.1 10.2.3 10.2.4 10.2.9	NUT	MS21042L3	55		
10.2.1	EDGING GROMMET	MS21266-4N	4		
10.2.2	#8 HOSE ASSY, FROM COMP	03-365-21-001-01	1		
10.2.2	#8 COMPRESSOR FITTING	04-365-21-102-01	1		
10.2.2	#8 HOSE ASSY, TO COND	03-365-21-011-01	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
10.2.2	NUT	AN924-8D	1		
10.2.2 10.2.3	WASHER	NAS1149D1490H	2		
10.2.2	#8 FITTING	09-365-21-003-01	1		
10.2.3	#10 COMPRESSOR FITTING	04-365-21-101-01	1		
10.2.3	#10 HOSE ASSY, TO COMP	03-365-21-002-01	1		
10.2.3	#10 HOSE ASSY, FROM #10 T FTTING	03-365-21-006-01	1		
10.2.3	NUT	AN924-10D	1		
10.2.3 10.2.4	SUPPORT BRACKET	04-365-21-401-01	2		
10.2.3 10.2.4	HOSE MOUNT BRACKET	04-365-21-502-01	6		
10.2.4 10.2.6	CLAMP	MS21919WDG9	13		
10.2.4	#10 HOSE ASSY, FROM AFT EVAP	03-365-21-010-01	1		
10.2.4	#10 HOSE ASSY, FROM #10 SERVICE PORT	03-365-21-008-01	1		
10.2.5	#6 HOSE ASSY, FROM COND	03-365-21-007-01	1		
10.2.6	#6 HOSE ASSY	03-365-21-005-01	1		
10.2.6	#6 HOSE, TO AFT EVAP	03-365-21-009-01	1		
10.2.7	#10 HOSE ASSY, FROM FWD EVAP	03-365-21-004-01	1		
10.2.8	#6 HOSE ASSY, TO FWD EVAP	03-365-21-003-01	1		
10.2.8	BARBED TEE FITTING	91355K49	2		
10.2.9 7.2.7	DRAIN LINE	09-365-21-007-01	20'		
10.2.9	HOSE CLAMP	MS35842-10	10		
10.2.9	SPACER	NAS43DD-3-32FC	6		
10.2.9	SCREW	MS27039-1-18	6		
01-365-21-500-02 INSTALLATION					
10.2.1	SUPPORT BRACKET	04-365-21-402-01	10		
10.2.1	# 10 FITTING	09-365-21-005-02	1		
10.2.1 10.2.4	SCREW	AN525-10R8	34		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
10.2.1 10.2.4	RIVET	MS20470AD4-()	40		
10.2.1 10.2.9	CLAMP	MS21919WDG8	6		
10.2.1	CLAMP	MS21919WDG10	8		
10.2.1	CLAMP	MS21919WDG11	13		
10.2.1 10.2.4 10.2.9	WASHER	NAS1149F0332P	40		
10.2.1 10.2.4 10.2.9	NUT	MS21042L3	55		
10.2.1	EDGING GROMMET	MS21266-4N	4		
10.2.2	#8 HOSE ASSY, FROM COMP	03-365-21-001-01	1		
10.2.2	#8 COMPRESSOR FITTING	04-365-21-102-01	1		
10.2.2	#8 HOSE ASSY, TO COND	03-365-21-011-01	1		
10.2.2	NUT	AN924-8D	1		
10.2.2	WASHER	NAS1149D1490H	2		
10.2.2	#8 FITTING	09-365-21-003-01	1		
10.2.2	#10 COMPRESSOR FITTING	04-365-21-101-01	1		
10.2.3	#10 HOSE ASSY, TO COMP	03-365-21-002-01	1		
10.2.3	#10 HOSE ASSY, FROM #10 T FTTING	03-365-21-006-01	1		
10.2.3	NUT	AN924-10D	1		
10.2.4 10.2.6	CLAMP	MS21919WDG9	13		
10.2.3 10.2.4	SUPPORT BRACKET	04-365-21-401-01	2		
10.2.4	#10 HOSE ASSY, FROM AFT EVAP	03-365-21-010-01	1		
10.2.4	#10 HOSE ASSY, FROM #10 SERVICE PORT	03-365-21-008-01	1		
10.2.4	HOSE MOUNT BRACKET	04-365-21-502-01	6		
10.2.5	#6 HOSE ASSY, FROM COND	03-365-21-007-02	1		
10.2.6	#6 HOSE ASSY	03-365-21-005-02	1		
10.2.6	#6 HOSE, TO AFT EVAP	03-365-21-009-01	1		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
10.2.7	#10 HOSE ASSY, FROM FWD EVAP	03-365-21-004-01	1		
10.2.8	#6 HOSE ASSY, TO FWD EVAP	03-365-21-003-01	1		
10.2.9 7.2.7	DRAIN LINE	09-365-21-007-01	20'		
10.2.9	HOSE CLAMP	MS35842-10	10		
10.2.9	BARBED TEE FITTING	91355K49	2		
10.2.9	SPACER	NAS43DD-3-32FC	6		
10.2.9	SCREW	MS27039-1-18	6		
01-365-21-600-01 INSTALLATION					
5.2.9	DUCT SPLITTER	04-365-21-601-01	2		
5.2.9	DUCT SPLITTER	04-365-21-602-01	1		
5.2.9 5.2.10	CLAMP	MS21919WDG-25	20		
5.2.10 5.2.12 7.2.11	1 ½" DUCTING	09-365-21-602-01	40'		
5.2.10 5.2.12 7.2.11	HOSE CLAMP	MS35842-12	30		
5.2.10	SUPPORT BRACKET	04-365-21-402-01	10		
5.2.10	SCREW	AN525-10R8	20		
5.2.10 5.2.11	WASHER	NAS1149D0316K	40		
5.2.10	RIVET	MS20470AD4-()	20		
5.2.10 5.2.11	NUT	MS21042L3	45		
5.2.10	TIE WRAP BLOCK	CB3019AA5N	12		
5.2.10	TIE WRAP	63467	100		
5.2.10	EDGE GROMMET	MS21266-4N	10		
5.2.11	AIR VENT	09-365-21-601-01	6		
5.2.11	SCREW	AN525-10R14	24		
01-365-21-600-02 INSTALLATION					
5.2.9	DUCT SPLITTER	04-365-21-601-01	2		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
5.2.9 5.2.12	CLAMP	MS21919WDG-25	20		
5.2.9	5" DUCT SPLITTER	04-365-21-604-01	1		
5.2.9	SUPPORT CLIP ASSY	02-365-21-601-01	1		
5.2.9	SUPPORT CLIP	04-365-21-605-01	1		
5.2.9	BLIND RIVET	CCR274CS-4-02	6		
5.2.9	RIVET	NAS1097AD4-()	4		
5.2.9	SCREW	MS27039-0810	2		
5.2.9	WASHER	NAS1194DN832K	2		
5.2.10	5" DUCTING	09-365-21-604-01	10'		
5.2.10	HOSE CLAMP	MS35842-16	2		
5.2.11	AIR VENT	09-365-21-601-01	4		
5.2.11	SCREW	AN525-10R14	16		
5.2.11 5.2.12	NUT	MS21042L3	45		
5.2.11 5.2.12	WASHER	NAS1149D0316K	40		
5.2.12 7.2.11	1 ½" DUCTING	09-365-21-602-01	40'		
5.2.12	1" DUCTING	05-29804	5'		
5.2.12	REDUCER	04-365-21-606-01	4		
5.2.12 7.2.11	HOSE CLAMP	MS35842-12	24		
5.2.12	SUPPORT BRACKET	04-365-21-402-01	10		
5.2.12	SCREW	AN525-10R8	20		
5.2.12	RIVET	MS20470AD4-()	20		
5.2.12	TIE WRAP BLOCK	CB3019AA5N	12		
5.2.12	TIE WRAP	63467	100		
5.2.12	EDGE GROMMET	MS21266-4N	10		
01-365-21-600-03 INSTALLATION					
5.2.9	DUCT SPLITTER	04-365-21-601-01	2		
5.2.9	DUCT SPLITTER	04-365-21-602-01	1		
5.2.9 5.2.10	CLAMP	MS21919WDG-25	20		

STEP	PART NAME	PART #	QTY	CK'd	CK'd
5.2.10 5.2.12 7.2.11	1 ½" DUCTING	09-365-21-602-01	50'		
5.2.10 5.2.12 7.2.11	HOSE CLAMP	MS35842-12	34		
5.2.10	SUPPORT BRACKET	04-365-21-402-01	10		
5.2.10	SCREW	AN525-10R8	20		
5.2.10 5.2.11	WASHER	NAS1149D0316K	25		
5.2.10	RIVET	MS20470AD4-()	20		
5.2.10 5.2.11	NUT	MS21042L3	25		
5.2.10	TIE WRAP BLOCK	CB3019AA5N	12		
5.2.10	TIE WRAP	63467	100		
5.2.10	EDGE GROMMET	MS21266-4N	10		
5.2.11	AIR VENT ASSEMBLY	02-365-21-602-01	2		

DRAWING NAME	DRAWING #	QTY	CK'd	CK'd
AS365 AIR CONDITIONER OVERVIEW	365N-00-2	1		
COMPRESSOR INSTALLATION	01-365-21-100	1		
CONDENSER INTALLATION	01-365-21-200	1		
FWD EVAPORATOR INSTALLATION	01-365-21-300	1		
OVERHEAD PANEL INSTALLATION	01-365-21-301	1		
AFT EVAPORATOR INSTALLATION	01-365-21-400	1		
REFRIGERANT HOSE INSTALLATION	01-365-21-500	1		
AIR DUCTING INSTALLATION	01-365-21-600	1		
REFRIGERANT SCHEMATIC	01-365-21-700	1		
ELECTICAL PARTS INSTALLATION	01-365-21-800	1		
RELAY BRACKET ASSEMBLY	02-365-21-802	1		
AIR CONDITIONER WIRING	08-365-21-001	1		
WIRE HARNESS ASSEMBLY	08-365-21-102	1		

DOCUMENT NAME	DOCUMENT #	QTY	CK'd	CK'd
INSTALLATION INSTRUCTIONS	INST-365N	1		
SUPPLEMENTAL TYPE CERTIFICATE	SH5832SW	1		
FLIGHT MANUAL SUPPLEMENT	RFM-365N	1		
MASTER PARTS LIST	INST-365N	1		
WARRANTY PAPERWORK	INST-365N	1		
RSG STANDARD PROCESS SPECIFCATION FOR INSERT, HARD-POINT & EDGE FILL INSTALLATION IN HONEYCOMB PANELS	20R00510006	1		
RSG STANDARD FASTENER INSTALLATION	20R00510001	1		
RSG STANDARD WIRING STANDARDS	20R00510008	1		

MAJOR COMPONENTS SERIAL NUMBERS:

CONDENSER BLOWER S/N:_____

FWD EVAPORATOR BLOWER S/N: _____

AFT EVAPORATOR BLOWER S/N:_____

COMPRESSOR S/N: _____

Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 01/30/2013 Reviewed on 01/28/2013

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: 61003 Multi-Coat Blank Aerosol**

· **Article number:** 61003
· **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the preparation** coating

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SEM Products Inc.
1685 Overview Drive
Rock Hill, SC 29730
803 207 8225

· **Information department:**
cust_care@semproducts.com : SEM Products,Inc. 1685 Overview Dr. Rock Hill, SC 29730 : phone 1-800-831-1122, M - TH 7am - 4pm EDT
· **Emergency telephone number:** 24 HR EMERGENCY CHEMTREC 1-800-424-9300

2 Hazards identification

· **Classification of the substance or mixture**

GHS02 Flame

Flam. Aerosol 1 H222 Extremely flammable aerosol.

GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.

· **Label elements**
· **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02, GHS07
· **Signal word** Danger
· **Hazard statements**
H222 Extremely flammable aerosol.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
· **Precautionary statements**

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P251	Pressurized container: Do not pierce or burn, even after use.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405	Store locked up.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122 °F.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 01/30/2013 *Reviewed on 01/28/2013*

Trade name: 61003 Multi-Coat Blank Aerosol

(Contd. of page 1)

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 4
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 4
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**			
67-64-1	acetone	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	60 - 70%
74-98-6	propane	Flam. Gas 1, H220; Press. Gas, H280	13 - 30%
78-93-3	butanone	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	7 - 10%

4 First aid measures

· **Description of first aid measures**
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, sand, extinguishing powder. Do not use water.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.

(Contd. on page 3)

Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 01/30/2013 *Reviewed on 01/28/2013*

Trade name: 61003 Multi-Coat Blank Aerosol

(Contd. of page 2)

· ***Advice for firefighters***
· ***Protective equipment:*** *No special measures required.*

6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures***
Wear protective equipment. Keep unprotected persons away.
· ***Environmental precautions:*** *Do not allow to enter sewers/ surface or ground water.*
· ***Methods and material for containment and cleaning up:***
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
· ***Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· ***Handling:***
· ***Precautions for safe handling***
No special measures required.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· ***Information about protection against explosions and fires:***
Do not spray on a naked flame or any incandescent material.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C, i.e. electric lights. Do not pierce or burn, even after use.

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
Store in a cool location.
Observe official regulations on storing packagings with pressurized containers.
· ***Information about storage in one common storage facility:*** *Not required.*
· ***Further information about storage conditions:***
Keep receptacle tightly sealed.
Do not gas tight seal receptacle.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
· ***Specific end use(s)*** *No further relevant information available.*

8 Exposure controls/personal protection

· ***Additional information about design of technical systems:*** *No further data; see item 7.*

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Trade name: 61003 Multi-Coat Blank Aerosol

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· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-64-1 acetone	
PEL ()	2400 mg/m³, 1000 ppm
REL ()	590 mg/m³, 250 ppm
TLV ()	Short-term value: (1782) NIC-1187 mg/m³, (750) NIC-500 ppm Long-term value: (1188) NIC-475 mg/m³, (500) NIC-200 ppm BEI
74-98-6 propane	
PEL ()	1800 mg/m³, 1000 ppm
REL ()	1800 mg/m³, 1000 ppm
TLV ()	Varies mg/m³, 1000 ppm
78-93-3 butanone	
PEL ()	590 mg/m³, 200 ppm
REL ()	Short-term value: 885 mg/m³, 300 ppm Long-term value: 590 mg/m³, 200 ppm
TLV ()	Short-term value: 885 mg/m³, 300 ppm Long-term value: 590 mg/m³, 200 ppm BEI

· **Ingredients with biological limit values:**	
67-64-1 acetone	
BEI ()	50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)
78-93-3 butanone	
BEI ()	2 mg/L Medium: urine Time: end of shift Parameter: MEK

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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Trade name: 61003 Multi-Coat Blank Aerosol

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· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Aerosol
Color:	According to product specification
· **Odor:**	Characteristic
· **Odour threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	< 0 °C
· **Flash point:**	< 0 °C
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	465 °C
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	In use, may form flammable/explosive vapour-air mixture.
· **Explosion limits:**	
Lower:	1.7 Vol %
Upper:	13.0 Vol %
· **Vapor pressure at 20 °C:**	8300 hPa
· **Density at 20 °C:**	0.7 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.

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· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	100.0 %
VOC content:	245.0 g/l / 2.04 lb/gl
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
67-64-1 acetone		
Oral	LD50	5800 mg/kg (rat)
Dermal	LD50	20000 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.

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Trade name: 61003 Multi-Coat Blank Aerosol

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· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1950
· **UN proper shipping name**	
· **DOT, IATA**	AEROSOLS, flammable
· **ADR**	1950 AEROSOLS
· **IMDG**	AEROSOLS
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	2.1
· **Label**	2.1
· **ADR**	

· **Class**	2 5F Gases

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· **Label**	2.1
· **IMDG, IATA**	
	
· **Class**	2.1
· **Label**	2.1
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	Void
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Gases
· **EMS Number:**	F-D,S-U
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Remarks**	ORM-D 49CFR 173-150,156,306
· **UN "Model Regulation":**	UN1950, AEROSOLS, 2.1

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**

78-93-3	butanone

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

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Trade name: 61003 Multi-Coat Blank Aerosol

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· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**		
67-64-1	acetone	I
78-93-3	butanone	1

· **TLV (Threshold Limit Value established by ACGIH)**		
67-64-1	acetone	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02, GHS07
· **Signal word** Danger
· **Hazard statements**
H222 Extremely flammable aerosol.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P251 Pressurized container: Do not pierce or burn, even after use.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P410+P412 Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122 °F.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Environment protection department.
· **Contact:** Steve Gaver
· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organization
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Name	Phone Number			CHEMTREC
Nu-Calgon Wholesaler, Inc.	(314) 469-7000 / (800) 554-5499			(800) 424-9300
Street Address	**City**	**State**	**Postal Code**	**Last Update**
2008 Altom Court	St. Louis	MO	63146-4151	11/21/12
Product Name	**Product Number**	**Product Use**		**EPA Registration #**
EMKARATE RL 68H	4316-46	Lubricant		N/A

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	% By Wt.	CAS Number	TLV	PEL
Polyol ester	>99	No Data.	No TLV established	No PEL established
antioxidant	<1	No Data.	No TLV established	No PEL established

SECTION 3 – HAZARD IDENTIFICATION

Emergency Overview: Color straw; Form Liquid; Odor mild odor. INHALATION OR INGESTION MAY CAUSE MUCOUS MEMBRANE IRRITATION. EXCESSIVE INHALATION EXPOSURE MAY CAUSE IRRITATION OF RESPIRATORY PASSAGES. MAY CAUSE SLIGHT SKIN IRRITATION. MAY CAUSE EYE IRRITATION REPEATED/PROLONGED CONTACT MAY CAUSE SKIN IRRITATION. Routes of Exposure Eye contact Skin contact Inhalation. Not listed by ACGIH, IARC, NIOSH, NTP OR OSHA.

Potential Health Effects

Eyes: This material may irritate human eyes following contact.

Skin: Short contact periods with human skin are not usually associated with skin irritation. Prolonged contact can result in slight skin irritation. Repeated contact can result in slight skin irritation. This product will probably not be absorbed through human skin.

Ingestion: In humans, irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion of this product.

Inhalation: This material may cause irritation following inhalation. No toxic effects are known to be associated with inhalation of this material.

Chronic Exposure: No Data.

Carcinogenicity: Short term tests and a consideration of the structure have shown that it is unlikely to be a carcinogenic hazard to man.

Medical Conditions Aggravated be Exposure: No Data.

SECTION 4 – FIRST AID MEASURES

Eyes: Immediately flush with plenty of water for at least 15 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

Skin: Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention.

Ingestion: DO NOT INDUCE VOMITING. Give one or two glasses of water to drink and refer to medical personnel or take direction from either a physician or a poison control center. Never give anything by mouth to an unconscious person.

Inhalation: Remove victim to fresh air. If a cough or other respiratory symptoms develop, consult medical personnel.

SECTION 5 – FIREFIGHTING MEASURES

Flash Point: 270ºC / 518°F

Autoignition Temp: 410°C/770°F

Hazardous Products of Combustion: No Data.

Flammable Limits in Air: No data.

Extinguishing Media: Water fog, alcohol foam, carbon dioxide, dry chemical.

Fire and Explosion Hazards: None known.

Special Firefighting Procedures: A self contained breathing apparatus and suitable protective clothing must be worn in fire conditions.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Leak: Refer to section 8 for proper personal protective equipment. Contain spill. Soak up material with absorbent and shovel into a chemical waste container. Wash residue from spill area with water containing detergent and flush to a sewer serviced by a permitted wastewater treatment facility.

SECTION 7 – HANDLING AND STORAGE

Handling Procedures and Equipment: Prevent eye contact. Prevent skin contact. Avoid breathing this material. Do not swallow.

Storage Requirements: Store in original containers.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Respiratory protection is not normally needed if controls are adequate.

Eye Protection: Chemical tight goggles.

Protective Clothing: Impervious gloves.

Exposure Guidelines: No ACGIH TLV assigned. Minimize exposure in accordance with good hygiene practice.

Specific Engineering Controls (such as ventilation, enclosed process): Provide adequate ventilation. Eyewash and safety shower easily accessible to the work area.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid	**Freezing Point:** No Data.°C/No Data.°F	**% Volatile by Weight:** No Data.%
Color: straw	**Vapor Density [air =1]:** No Data.	**Evaporation Rate:** No Data.
Odor: No Data.	**Vapor Pressure:** No data.	**Specific Gravity:** 0.977
Boiling Point: No data.°C/No data.°F	**Solubility in Water:** Insoluble	**pH (concentrate):** No data.

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions.

Hazardous Polymerization: Will not occur.

Incompatibilities: Strong oxidizing agents.

Reactive Conditions to avoid: None known.

Decomposition Products: None known.

SECTION 11 – TOXICOLOGICAL INFORMATION

Hazardous Ingredients	CAS #	EINECS #	LD 50 of Ingredient (Specify Species)	LC50 of Ingredient (Specify Species)
No data available on this material.				

SECTION 12 – ECOLOGICAL INFORMATION

Hazardous Ingredients	Aquatic Toxicity Data
No data is available on this product.	

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: Disposal should be in accordance with local, state or national legislation. Container disposal Empty container retains product residue. Observe all hazard precautions. Do not distribute, make available, furnish or reuse empty container except for storage and shipment of original product. Remove all product residue from container and puncture or otherwise destroy empty container before disposal.

SECTION 14 – TRANSPORTATION INFORMATION

Special Shipping Information: Not regulated.

Purview	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT (Land)	Not regulated.			
IMO (Water)	Not regulated.			
ICAO (Air)	Not regulated.			

SECTION 15 – REGULATORY INFORMATION

WHMIS Classification: (Workplace Hazardous Material Information System)	Noncontrolled (Nonhazardous).
SARA Title III: (Superfund Amendments & Reauthorization Act)	No 313-listed chemicals in this product. Immediate Y; Delayed N; Fire N; Pressure N; Reactivity N
OSHA: (Occupational Safety & Health Administration)	Health Hazards: Irritant (eye) Physical Hazards: None
TSCA: (Toxic Substance Control Act)	Compliant.
VOC: (volatile Organic Compounds)	No Data.
CPR: (Canadian Controlled Products Regulations)	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations.
EINECS: (European Inventory of Existing Commercial Chemical Substances)	Compliant.
DSL / NDSL: (Canadian Domestic Substance List)(Non-Domestic Substance List)	No Data.
CERCLA: (Comprehensive Response Compensation & Liability Act)	No Data.
IDL: (Canadian Ingredient Disclosure List)	No Data.
NFPA (HMIS) Rating: (Hazardous Materials Identification System)	Health 1 Flammability 1 Physical Hazards 0 Instability 0

SECTION 16 – OTHER INFORMATION

Kinematic viscosity(40ºC) (mm^2/S) 72.3; Kinematic viscosity (mm^2/s) 9.8cSt @ 100°C; Pour Point (ºF) -38.2 Pour Point (ºC) -39. Density (g/ml) 0.977 @ 15°C

The information contained herein is based on the data available to us and is believed to be correct. However, Nu-Calgon Wholesaler Inc. makes no warranty, expressed, or implied, regarding the accuracy of this data or the results to be obtained from the use thereof. Nu-Calgon Wholesaler Inc. assumes no liability for injury from the use of the product described herin.

Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Scotch-Weld™ High Performance Rubber and Gasket Adhesive 1300L
MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division

ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 07/12/13
Supercedes Date: 05/14/13

Document Group: 10-2797-8

Product Use:

Limitations on Use:	Sale and use severely restricted due to high VOC in CT, DE, ME, MD, NH, NJ, NY, PA, RI, VA, DC, IN, OH, in CA per R-1168.
Specific Use:	Adhesive
Intended Use:	Industrial use

SECTION 2: INGREDIENTS

Ingredient	C.A.S. No.	% by Wt
Petroleum Distillate	64741-84-0	20 - 40
Polychloroprene	9010-98-4	10 - 30
Methyl Ethyl Ketone	78-93-3	10 - 30
Magnesium Resinate	68037-42-3	10 - 20
n-Hexane	110-54-3	5 - 15
Toluene	108-88-3	7 - 13
Cyclohexane	110-82-7	1 - 5
Rosin	8050-09-7	0.1 - 1
Zinc Oxide	1314-13-2	0.1 - 1

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: Yellow, solvent odor.

General Physical Form: Liquid
Immediate health, physical, and environmental hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. May cause allergic skin reaction. May cause target organ effects. Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:
Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact:
Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Prolonged or repeated exposure may cause:
Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

May be absorbed following inhalation and cause target organ effects.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:
Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Prolonged or repeated exposure may cause:
Ocular Effects: Signs/symptoms may include blurred or significantly impaired vision.

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Peripheral Neuropathy: Signs/symptoms may include tingling or numbness of the extremities, incoordination, weakness of the hands and feet, tremors and muscle atrophy.

Olfactory Effects: Signs/symptoms may include decreased ability to detect odors and/or complete loss of smell.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.
Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.
Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.
If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	404 ºC [*Details:* MEK]
Flash Point	-14 ºF [*Test Method:* Closed Cup]
Flammable Limits(LEL)	1.1 % volume
Flammable Limits(UEL)	10.0 % volume
OSHA Flammability Classification:	Class IB Flammable Liquid

5.2 EXTINGUISHING MEDIA
Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard.

6.2. Environmental precautions
For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods
Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill.

Contain spill. Cover spill area with a fire-extinguishing foam. An aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and MSDS. Seal the container.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Contents may be under pressure, open carefully. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Ground containers securely when transferring contents. Wear low static or properly grounded shoes. Avoid breathing of vapors, mists or spray. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Vapors may ignite explosively. May cause flash fire. Prevent build-up of vapors - open all windows and doors. Maintain vapor concentrations below recommended exposure limits. Use only with cross-ventilation. Without adequate ventilation, vapors may settle in low-lying areas. Keep away from heat, sparks, and open flame. Do not smoke or ignite matches, lighters, etc. For industrial or professional use only. Do not breathe vapors. Avoid contact with oxidizing agents.

7.2 STORAGE

Store away from acids. Store away from heat. Store out of direct sunlight. Keep container in well-ventilated area. Keep container tightly closed. Store away from oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Provide appropriate local exhaust ventilation on open containers. Use in an enclosed process area is recommended. Do not use in a confined area or areas with little or no air movement. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact with vapors, mists, or spray.
The following eye protection(s) are recommended: Safety Glasses with side shields
Indirect Vented Goggles
.

8.2.2 Skin Protection

Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.
Gloves made from the following material(s) are recommended: Butyl Rubber
Nitrile Rubber
Polyvinyl Alcohol (PVA)
Polymer laminate
.

8.2.3 Respiratory Protection
Avoid breathing of vapors, mists or spray. Do not breathe vapors.
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

8.2.4 Prevention of Swallowing
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

Ingredient	Authority	Type	Limit	Additional Information
Cyclohexane	ACGIH	TWA	100 ppm	
Cyclohexane	OSHA	TWA	1050 mg/m3	
n-Hexane	ACGIH	TWA	50 ppm	Skin Notation*
n-Hexane	OSHA	TWA	1800 mg/m3	
Methyl Ethyl Ketone	ACGIH	TWA	200 ppm	
Methyl Ethyl Ketone	ACGIH	STEL	300 ppm	
Methyl Ethyl Ketone	OSHA	TWA	590 mg/m3	
Rosin	ACGIH	Limit value not established	None available	Sensitizer; Cntrl all exposr-low as possib
Toluene	ACGIH	TWA	20 ppm	
Toluene	CMRG	STEL	75 ppm	Skin Notation*
Toluene	OSHA	TWA	200 ppm	
Toluene	OSHA	CEIL	300 ppm	
Zinc Oxide	ACGIH	TWA, respirable fraction	2 mg/m3	
Zinc Oxide	ACGIH	STEL, respirable fraction	10 mg/m3	
Zinc Oxide	OSHA	TWA, as fume	5 mg/m3	
Zinc Oxide	OSHA	TWA, respirable fraction	5 mg/m3	
Zinc Oxide	OSHA	TWA, as total dust	15 mg/m3	

* Substance(s) refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Odor, Color, Grade:	Yellow, solvent odor.
General Physical Form:	Liquid
Autoignition temperature	404 ºC [*Details:* MEK]
Flash Point	-14 ºF [*Test Method:* Closed Cup]
Flammable Limits(LEL)	1.1 % volume
Flammable Limits(UEL)	10.0 % volume
Boiling Point	69 ºC

Density	0.854 g/ml
Vapor Density	2.41 [*Ref Std:* AIR=1]
Vapor Pressure	<=124 mmHg [@ 68 ºF]
Specific Gravity	0.854 [*Ref Std:* WATER=1]
pH	*Not Applicable*
Melting point	*Not Applicable*
Solubility in Water	Slight (less than 10%)
Evaporation rate	2.5 [*Ref Std:* ETHER=1]
Hazardous Air Pollutants	<=24.0 % weight [*Test Method:* Calculated]
Volatile Organic Compounds	<=704 g/l [*Details:* EU VOC content]
Kow - Oct/Water partition coef	*No Data Available*
Percent volatile	70 - 80 % weight
VOC Less H2O & Exempt Solvents	<=706 g/l [*Test Method:* calculated SCAQMD rule 443.1]
VOC Less H2O & Exempt Solvents	<=5.89 lb/gal [*Test Method:* calculated SCAQMD rule 443.1]
VOC Less H2O & Exempt Solvents	<=82.5 % [*Test Method:* calculated per CARB title 2]
Viscosity	250 - 1000 centipoise [@ 73.4 ºF]
Solids Content	29.1 %

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
Heat
Sparks and/or flames

10.2 Materials to avoid
Strong oxidizing agents

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.
Combustion products will include HCl. Facility must be capable of handling halogenated materials.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable), D035 (Methyl ethyl ketone)

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14:TRANSPORT INFORMATION

ID Number	UPC	ID Number	UPC
62-1403-5530-6	00-21200-19925-7	62-1403-6530-5	00-21200-19927-1
62-1403-6535-4		62-1403-7530-4	00-21200-19931-8
62-1403-8530-3		62-1403-8531-1	00-21200-19936-3
62-1403-9530-2	00-21200-19937-0		

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS
Contact 3M for more information.

311/312 Hazard Categories:
Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
Toluene	108-88-3	7 - 13
Cyclohexane	110-82-7	1 - 5
n-Hexane	110-54-3	5 - 15

STATE REGULATIONS
Contact 3M for more information.

CALIFORNIA PROPOSITION 65

Ingredient	C.A.S. No.	Classification
Toluene	108-88-3	**Carcinogen
Toluene	108-88-3	*Developmental Toxin

* WARNING: contains a chemical or chemicals which can cause birth defects or other reproductive harm.
** WARNING: contains a chemical which can cause cancer.

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS. Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 2 **Flammability:** 3 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision Changes:
Section 1: Product use information was modified.
Section 2: Ingredient table was modified.

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Revision Number: 002.3

Issue date: 03/20/2013

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: LOCTITE EA 934NA AERO PART A 6OZ KIT known as EA 934NA PART A 6OZ KIT

IDH number: 936936

Product type: Adhesive for the Aerospace Industry

Item number: AA9174312

Region: United States

Company address:
Henkel Corporation
2850 Willow Pass Road
Bay Point, California 94565

Contact information:
Telephone: 925.458.8000 Fax: 925.458.8030
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state: Solid
Color: Gray
Odor: Slight

HEALTH: *2
FLAMMABILITY: 1
PHYSICAL HAZARD: 1
Personal Protection: See MSDS Section 8

WARNING: MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: May cause respiratory tract irritation.
Skin contact: This product may cause irritation to the skin. This product may cause an allergic skin reaction.
Eye contact: This product may cause irritation to the eyes.
Ingestion: Not a relevant route of exposure. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Triglycidyl-p-aminophenol	5026-74-4	30 - 60
Aluminum	7429-90-5	30 - 60
Phenol polymer with formaldehyde, glycidyl ether	28064-14-4	10 - 30
Glass, oxide, chemicals	65997-17-3	5 - 10
Silica, amorphous, fumed, crystal-free	112945-52-5	1 - 5
Treated fumed silica	67762-90-7	1 - 5

4. FIRST AID MEASURES

Inhalation: If inhaled, immediately remove the affected person to fresh air. If symptoms develop and persist, get medical attention.

Skin contact: Remove contaminated clothing and footwear. Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Get immediate medical attention. Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Notes to physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flash point: > 93 °C (> 199.4 °F)

Autoignition temperature: Not determined

Flammable/Explosive limits - lower: Not determined

Flammable/Explosive limits - upper: Not determined

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.

Hazardous combustion products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.

Clean-up methods: Scrape up spilled material and place in a closed container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: For the Part A plus Part B adhesive mixture, follow curing schedule as recommended in product literature. Do not heat Part A at temperatures greater than 80 ºC (176 ºF). This material may self-react at higher temperatures and cause an exotherm. The exotherm has the potential for release of excessive energy and toxic gasses. Empty containers retain product residue, so obey hazard warnings and handle empty containers as if they were full.

Storage: For safe storage, store between 0 °C (32°F) and 5 °C (41°F)
Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Refrigerated storage is recommended to maintain product quality.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Triglycidyl-p-aminophenol	None	None	None	None
Aluminum	1 mg/m3 TWA Respirable fraction.	5 mg/m3 TWA (as Al) Respirable dust. 15 mg/m3 TWA (as Al) Total dust.	None	None
Phenol polymer with formaldehyde, glycidyl ether	None	None	None	None
Glass, oxide, chemicals	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	15 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction.	None	None
Silica, amorphous, fumed, crystal-free	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	20 MPPCF TWA 0.8 mg/m3 TWA	None	None
Treated fumed silica	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	15 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction.	None	None

Engineering controls: Work should be done in an adequately ventilated area (i.e., ventilation sufficient to maintain concentrations below one half of the PEL and other relevant standards). Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination.

Respiratory protection: When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH/MSHA approved respiratory protection must be provided.

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Wear impervious gloves for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid
Color: Gray
Odor: Slight
Odor threshold: Not available.
pH: Neutral
Vapor pressure: Not applicable
Boiling point/range: Not determined
Melting point/ range: Not determined
Specific gravity: 1.55
Vapor density: > 1
Flash point: > 93 °C (> 199.4 °F)
Flammable/Explosive limits - lower: Not determined
Flammable/Explosive limits - upper: Not determined
Autoignition temperature: Not determined
Evaporation rate: Not determined
Solubility in water: Slight
Partition coefficient (n-octanol/water): Not determined
VOC content: < 10 g/l per SCAQMD Rule 1124 [EPA Test Method 24/304-91] (estimated)

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: May occur.

Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

Incompatible materials: Keep away from strong oxidizing agents, strong Lewis or mineral acids.

Conditions to avoid: Avoid mixing resin (Part A) and curing agent (Part B) unless you plan to use immediately. Do not heat mixed adhesive unless curing surfaces to be bonded. Failure to observe these precautions may result in excessive heat build-up causing an exotherm.

11. TOXICOLOGICAL INFORMATION

Product toxicity data: Henkel is not aware of any toxicity data on the specific mixture of chemical components contained in this product.

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Triglycidyl-p-aminophenol	No	No	No
Aluminum	No	No	No
Phenol polymer with formaldehyde, glycidyl ether	No	No	No
Glass, oxide, chemicals	No	No	No
Silica, amorphous, fumed, crystal-free	No	No	No
Treated fumed silica	No	No	No

Hazardous components	Health Effects/Target Organs
Triglycidyl-p-aminophenol	Allergen, Irritant, Mutagen
Aluminum	Central nervous system, Irritant, Lung
Phenol polymer with formaldehyde, glycidyl ether	Irritant, Allergen
Glass, oxide, chemicals	Allergen, Respiratory
Silica, amorphous, fumed, crystal-free	Nuisance dust
Treated fumed silica	Irritant

12. ECOLOGICAL INFORMATION

Ecological information: Toxic to aquatic organisms

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

Hazardous waste number: Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name:	Environmentally hazardous substance, solid, n.o.s. (Triglycidyl-p-aminophenol, Bisphenol-F Epichlorhydrin resin)
Hazard class or division:	9
Identification number:	UN 3077
Packing group:	III

Water Transportation (IMO/IMDG)

Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Triglycidyl-p-aminophenol, Bisphenol-F Epichlorhydrin resin)
Hazard class or division:	9
Identification number:	UN 3077
Packing group:	III
Marine pollutant:	Triglycidyl-p-aminophenol, Bisphenol-F Epichlorhydrin resin
Exceptions:	Classified per IMDG Amendment 34; Effective Jan 1, 2010.

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification:	Epoxy resin (CAS# 5026-74-4).
CERCLA/SARA Section 302 EHS:	None above reporting de minimis
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Aluminum (CAS# 7429-90-5).
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class:	D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Mark Mau, Regulatory Affairs Specialist

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Revision Number: 002.1

Issue date: 02/17/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **LOCTITE EA 934NA AERO PART B 6OZ KIT known as EA 934NA PART B 6OZ KIT**

IDH number: 936937

Product type: Adhesive for the Aerospace Industry

Item number: AB9174313

Region: United States

Company address:
Henkel Corporation
2850 Willow Pass Road
Bay Point, California 94565

Contact information:
Telephone: 925.458.8000 Fax: 925.458.8030
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state: Liquid
Color: Amber
Odor: Ammonia

HEALTH: *3
FLAMMABILITY: 1
PHYSICAL HAZARD: 1
Personal Protection: See MSDS Section 8

DANGER–CORROSIVE!: CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS. MAY CAUSE ALLERGIC SKIN REACTION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: Mists, vapors or liquid may cause severe irritation or burns.

Skin contact: This product is severely irritating to the skin and may cause burns. This product may cause an allergic skin reaction.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Ingestion: Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Amine adduct	Proprietary	60 - 100
2,2'-Iminodi(ethylamine)	111-40-0	10 - 30
Triethylenetetramine	112-24-3	1 - 5

4. FIRST AID MEASURES

Inhalation: If inhaled, immediately remove the affected person to fresh air. If symptoms develop and persist, get medical attention.

Skin contact: Remove contaminated clothing and footwear. Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Get immediate medical attention. Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Notes to physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flash point: > 93 °C (> 199.4 °F)

Autoignition temperature: Not determined

Flammable/Explosive limits - lower: Not determined

Flammable/Explosive limits - upper: Not determined

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.

Hazardous combustion products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.

Clean-up methods: Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: For the Part A plus Part B adhesive mixture, follow curing schedule as recommended in product literature. Do not heat Part B at temperatures greater than 100 °C (212 °F). This material may self-react at higher temperatures and cause an exotherm. The exotherm has the potential for release of excessive energy and toxic gasses. Empty containers retain product residue, so obey hazard warnings and handle empty containers as if they were full. Do not cut, grind, weld, or drill on or near this container.

Storage: For safe storage, store between 0 °C (32°F) and 25 °C (77°F)
Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Amine adduct	None	None	None	None
2,2'-Iminodi(ethylamine)	1 ppm TWA (SKIN)	None	None	None
Triethylenetetramine	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Wear impervious gloves for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Amber
Odor: Ammonia
Odor threshold: Not available
pH: Not determined
Vapor pressure: < 1.0 mm hg (20 °C (68°F))
Boiling point/range: 207 °C (404.6 °F)
Melting point/ range: Not determined
Specific gravity: 0.96
Vapor density: Not determined
Flash point: > 93 °C (> 199.4 °F)
Flammable/Explosive limits - lower: Not determined
Flammable/Explosive limits - upper: Not determined
Autoignition temperature: Not determined
Evaporation rate: Not determined
Solubility in water: Soluble
Partition coefficient (n-octanol/water): Not determined
VOC content: < 10 g/l per SCAQMD Rule 1124 [EPA Test Method 24/304-91] (estimated)

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: May occur.

Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

Incompatible materials: Keep away from strong oxidizing agents, strong Lewis or mineral acids.

Conditions to avoid: Avoid mixing resin (Part A) and curing agent (Part B) unless you plan to use immediately. Do not heat mixed adhesive unless curing surfaces to be bonded. Failure to observe these precautions may result in excessive heat build-up causing an exotherm.

11. TOXICOLOGICAL INFORMATION

Product toxicity data: Henkel is not aware of any toxicity data on the specific mixture of chemical components contained in this product.

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Amine adduct	No	No	No
2,2'-Iminodi(ethylamine)	No	No	No
Triethylenetetramine	No	No	No

Hazardous components	Health Effects/Target Organs
Amine adduct	No Records
2,2'-Iminodi(ethylamine)	Allergen, Irritant, Eyes
Triethylenetetramine	Allergen, Corrosive, Developmental, Irritant, Mutagen

12. ECOLOGICAL INFORMATION

Ecological information: Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

Hazardous waste number: Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Diethylenetriamine, Triethylenetetramine)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

International Air Transportation (ICAO/IATA)

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Diethylenetriamine, Triethylenetetramine)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (Diethylenetriamine, Triethylenetetramine)
Hazard class or division:	8
Identification number:	UN 2735
Packing group:	II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification:	None above reporting de minimus
CERCLA/SARA Section 302 EHS:	None above reporting de minimus
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA 313:	None above reporting de minimus
California Proposition 65:	No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class:	D.2.A, D.2.B, E

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Mark Mau, Regulatory Affairs Specialist

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Corporation has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Corporation's products. In light of the foregoing, Henkel Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

Revision Number: 001.2

Issue date: 02/14/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: LOCTITE EA 9309.3NA AERO PART A 6OZ KIT known as EA 9309.3NA PART A 6 OZ SEMKIT

IDH number: 1041964

Product type: Molding Compound

Item number: AA9354312

Region: United States

Company address:
Henkel Corporation
2850 Willow Pass Road
Bay Point, California 94565

Contact information:
Telephone: 925.458.8000 Fax: 925.458.8030
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

Contains one or more components for which a Toxic Substances Control Act (TSCA) Low Volume Exemption (LVE) applies. See Section 15.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state:	Liquid	**HEALTH:**	*2
Color:	Pink	**FLAMMABILITY:**	1
Odor:	Epoxy	**PHYSICAL HAZARD:**	0
		Personal Protection:	See MSDS Section 8

WARNING: MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: May cause respiratory tract irritation.
Skin contact: This product may cause irritation to the skin. May cause allergic skin reaction.
Eye contact: This product may cause irritation to the eyes.
Ingestion: Not expected under normal conditions of use.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Epoxy resin	Proprietary	60 - 100
Epoxy resin	Proprietary	10 - 30
Modified Epoxy Resin	Unknown	1 - 5
Modified Epoxy Resin	Unknown	1 - 5
Glass, oxide, chemicals	65997-17-3	1 - 5
Treated fumed silica	67762-90-7	1 - 5
Titanium dioxide	13463-67-7	0.1 - 1

4. FIRST AID MEASURES

Inhalation:	If inhaled, immediately remove the affected person to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms develop and persist, get medical attention.
Skin contact:	Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Get immediate medical attention. Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Notes to physician:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flash point:	120 °C (248°F)
Autoignition temperature:	Not applicable
Flammable/Explosive limits - lower:	Not available
Flammable/Explosive limits - upper:	Not available
Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.
Hazardous combustion products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.
Clean-up methods:	Scrape up spilled material and place in a closed container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. Do not take internally.
Storage:	Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Epoxy resin	None	None	None	None
Epoxy resin	None	None	None	None
Modified Epoxy Resin	None	None	None	None
Modified Epoxy Resin	None	None	None	None
Glass, oxide, chemicals	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	None	None	None
Treated fumed silica	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	15 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction.	None	None
Titanium dioxide	10 mg/m3 TWA	15 mg/m3 TWA Total dust.	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Wear impervious gloves for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Pink
Odor: Epoxy
Odor threshold: Not available
pH: Not applicable
Vapor pressure: Not applicable
Boiling point/range: Not applicable
Melting point/ range: Not available
Specific gravity: 1.54
Vapor density: Not applicable
Flash point: 120 °C (248°F)
Flammable/Explosive limits - lower: Not available
Flammable/Explosive limits - upper: Not available
Autoignition temperature: Not applicable
Evaporation rate: Not applicable
Solubility in water: Negligible
Partition coefficient (n-octanol/water): Not available
VOC content: < 10 g/l per SCAQMD Rule 1124 [EPA Test Method 24/304-91] (estimated)

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: May occur.

Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

Incompatible materials: This product may react with strong oxidizing agents.

Conditions to avoid: Keep away from heat, ignition sources and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Epoxy resin	No	No	No
Epoxy resin	No	No	No
Modified Epoxy Resin	No	No	No
Modified Epoxy Resin	No	No	No
Glass, oxide, chemicals	No	No	No
Treated fumed silica	No	No	No
Titanium dioxide	No	Group 2B	No

Hazardous components	Health Effects/Target Organs
Epoxy resin	Allergen, Irritant
Epoxy resin	Allergen, Irritant
Modified Epoxy Resin	No Data
Modified Epoxy Resin	No Data
Glass, oxide, chemicals	Allergen, Respiratory
Treated fumed silica	Irritant
Titanium dioxide	Irritant, Respiratory, Some evidence of carcinogenicity

12. ECOLOGICAL INFORMATION

Ecological information: Toxic to aquatic organisms

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

Hazardous waste number: Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Bisphenol-A Epichlorhydrin resin)
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin)
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
Marine pollutant: Bisphenol-A Epichlorhydrin resin
Exceptions: Classified per IMDG Amendment 34; Effective Jan 1, 2010.

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components of this product are listed on the U.S. Toxic Substances Control Act (TSCA) inventory or are exempt from listing because a Low Volume Exemption (LVE) has been granted in accordance with 40 CFR 723.50.
TSCA 12(b) Export Notification:	None above reporting de minimus
CERCLA/SARA Section 302 EHS:	None above reporting de minimus
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA 313:	None above reporting de minimus
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status:	One or more components are not listed on, and are not exempt from listing on either the Domestic Substances List or the Non-Domestic Substances List.
WHMIS hazard class:	D.2.A, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Mark Mau, Regulatory Affairs Specialist

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Revision Number: 001.1

Issue date: 07/20/2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: LOCTITE EA 9309.3NA AERO PART B 6OZ KIT known as EA 9309.3NA PART B 6 OZ SEMKIT

IDH number: 1041965

Product type: Adhesive for the Aerospace Industry

Item number: AB9354313

Region: United States

Company address:
Henkel Corporation
2850 Willow Pass Road
Bay Point, California 94565

Contact information:
Telephone: 925.458.8000 Fax: 925.458.8030
Emergency telephone: 860.571.5100
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state:	Gel	**HEALTH:**	*2
Color:	Blue	**FLAMMABILITY:**	1
Odor:	Ammoniacal	**PHYSICAL HAZARD:**	1
		Personal Protection:	See MSDS Section 8

DANGER: CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS.
MAY CAUSE ALLERGIC SKIN REACTION.
MAY BE HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN.

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects

Inhalation: Respiratory tract burns.
Skin contact: May cause skin burns. Allergic skin reaction. May be harmful if absorbed through skin.
Eye contact: Possible burns to eyes. Severe eye irritation.
Ingestion: May be harmful if swallowed. Aspiration may occur during swallowing or vomiting, resulting in lung damage.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders. Skin allergies.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	60 - 100
Substituted Piperazine	Proprietary	10 - 30
2,2'-Iminodi(ethylamine)	111-40-0	1 - 5
Silane derivative	Proprietary	1 - 5
Phenol	108-95-2	0.1 - 1

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If symptoms develop and persist, get medical attention.

Skin contact:	Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. If symptoms develop and persist, get medical attention.
Eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion:	Drink water as a precaution. Never give anything by mouth to an unconscious person. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

Flash point:	> 93 °C (> 199.4 °F) ; Estimated
Autoignition temperature:	Not available
Flammable/Explosive limits - lower:	Not determined
Flammable/Explosive limits - upper:	Not determined
Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. Cartridge respirators do not provide adequate protection for fire fighters or exotherm mitigation.
Unusual fire or explosion hazards:	May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.
Hazardous combustion products:	Oxides of carbon and nitrogen, aldehydes, acids and undetermined organics.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Do not allow product to enter sewer or waterways.
Clean-up methods:	Wear suitable protective clothing, gloves and eye/face protection. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal.

7. HANDLING AND STORAGE

Handling:	For the Part A plus Part B adhesive mixture, follow curing schedule as recommended in product literature. Do not heat Part B at temperatures greater than 100 °C (212 °F). This material may self-react at higher temperatures and cause an exotherm. The exotherm has the potential for release of excessive energy and toxic gasses. Empty containers retain product residue, so obey hazard warnings and handle empty containers as if they were full. Do not cut, grind, weld, or drill on or near this container.
Storage:	For safe storage, store between 0 °C (32°F) and 25 °C (77°F) Keep container closed.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	None	None	None	None
Substituted Piperazine	None	None	None	None
2,2'-Iminodi(ethylamine)	1 ppm TWA (SKIN)	None	None	None
Silane derivative	None	None	None	None
Phenol	5 ppm TWA (SKIN)	5 ppm (19 mg/m3) TWA (SKIN)	None	None

Engineering controls: Use local ventilation if general ventilation is insufficient to maintain vapor concentration below established exposure limits.

Respiratory protection: Use a NIOSH approved air-purifying respirator if the potential to exceed established exposure limits exists.

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Gel
Color: Blue
Odor: Ammoniacal
Odor threshold: Not available
pH: Not determined
Vapor pressure: Not determined
Boiling point/range: Not available
Melting point/ range: Not determined
Specific gravity: 1
Vapor density: 8.45
Flash point: > 93 °C (> 199.4 °F) ; Estimated
Flammable/Explosive limits - lower: Not determined
Flammable/Explosive limits - upper: Not determined
Autoignition temperature: Not available
Evaporation rate: Not determined
Solubility in water: Negligible
Partition coefficient (n-octanol/water): Not determined
VOC content: < 10 g/l per SCAQMD Rule 1124 [EPA Test Method 24/304-91] (estimated)

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous reactions: May occur.

Hazardous decomposition products: Oxides of carbon and nitrogen, aldehydes, acids and undetermined organics.

Incompatible materials: Keep away from strong oxidizing agents, strong Lewis or mineral acids.

Conditions to avoid: Avoid mixing resin (Part A) and curing agent (Part B) unless you plan to use immediately. Do not heat mixed adhesive unless curing surfaces to be bonded. Failure to observe these precautions may result in excessive heat build-up causing an exotherm.

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	No	No	No
Substituted Piperazine	No	No	No
2,2'-Iminodi(ethylamine)	No	No	No
Silane derivative	No	No	No
Phenol	No	No	No

Hazardous components	Health Effects/Target Organs
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Corrosive
Substituted Piperazine	Irritant, Corrosive, Allergen
2,2'-Iminodi(ethylamine)	Allergen, Irritant, Eyes
Silane derivative	Irritant, Allergen
Phenol	Blood, Cardiac, Corrosive, Developmental, Eyes, Irritant, Kidney, Liver, Mutagen, Nervous System, Skin, Vascular

12. ECOLOGICAL INFORMATION

Ecological information: Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Diethylene glycol di-(3-aminopropyl) ether, Substituted piperazine)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

International Air Transportation (ICAO/IATA)

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Diethylene glycol di-(3-aminopropyl) ether, Substituted piperazine)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (Diethylene glycol di-(3-aminopropyl) ether, Substituted piperazine)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification: None above reporting de minimus

CERCLA/SARA Section 302 EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health

CERCLA/SARA 313: None above reporting de minimus

California Proposition 65: No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

WHMIS hazard class: D.2.A, D.2.B, E

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Gary Pierson, Manager, Regulatory Affairs

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Material Safety Data Sheet

Date of issue 18 May 2011
Version 4

1 . Product and company identification

Product name : PR-1422 B-1/2 Part A
Code : #3138B
Supplier : PPG Aerospace PRC-DeSoto
12780 San Fernando Road
Sylmar, CA 91342
Emergency telephone number : Information Phone: (818) 240-2060
Emergency Phone: (800) 228-5635
Outside of USA: + (651) 632-9265

2 . Hazards identification

Emergency overview : DANGER!

HARMFUL OR FATAL IF SWALLOWED. CAUSES EYE BURNS. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT AND SKIN IRRITATION. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

Do not breathe vapor or mist. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : Harmful if inhaled. Irritating to respiratory system. Can irritate eyes, nose, mouth and throat. May cause sensitization by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion : Harmful or fatal if swallowed. May cause burns to mouth, throat and stomach.
Skin : Severely irritating to the skin. May cause an allergic skin reaction.
Eyes : Corrosive to eyes. Causes burns.

Over-exposure signs/symptoms

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. NTP, IARC, and OSHA have classified chromium (+6) compounds as carcinogenic. OSHA considers all Cr+6 compounds as potential occupational carcinogens capable of causing lung cancer above the recommended exposure limits.

Medical conditions aggravated by over-exposure : Pre-existing respiratory and skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
N,N-Dimethylacetamide	127-19-5	15 - 40
calcium dichromate	14307-33-6	10 - 30
Kaolin	1332-58-7	3 - 7
Octyl phenol condensed with 20 moles ethylene oxide	9036-19-5	1 - 5
Carbon black	1333-86-4	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6 . Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not breathe vapor or mist. Ingestion of product or cured coating may be harmful. Do not swallow. Do not get in eyes or on skin or clothing. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Vapors are heavier than air and may spread along floors. Empty containers retain product residue and can be hazardous. Do not reuse container. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not store above the following temperature: 120F / 49C.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	PPG
N,N-Dimethylacetamide	TWA	10 ppm S	10 ppm S	10 ppm S	10 ppm S	Not established
	STEL	Not established	Not established	Not established	15 ppm S	Not established
calcium dichromate	TWA	0.05 mg/m³ (measured as Cr) 0.05 MG/M3 TD	5 ug/m³ () 5 mg/m3	0.05 mg/m³ (as Cr)	0.05 mg/m³	Not established
	STEL	Not established	1 mg/10m³ () Z C	Not established	Not established	Not established
Kaolin	TWA	2 mg/m³ R	5 mg/m³ R 15 mg/m³ TD	2 mg/m³ R	10 mg/m³	Not established
	STEL	Not established	Not established	Not established	20 mg/m³	Not established
Carbon black	TWA	3.5 mg/m³	3.5 mg/m³	3.5 mg/m³	3.5 mg/m³	Not established
	STEL	Not established	Not established	Not established	7 mg/m³	Not established

8 . Exposure controls/personal protection

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes : Chemical splash goggles and face shield.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Gloves : nitrile, neoprene

Respiratory : By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: Not applicable. [Product does not sustain combustion.]

Color : Black.

Odor : Not available.

pH : Not available.

Boiling/condensation point : >37.78°C (>100°F)

Melting/freezing point : Not available.

Specific gravity : 1.38

Density (lbs / gal) : 11.52

Vapor pressure : Not available.

Vapor density : Not available.

Volatility : 14.55% (w/w)

Evaporation rate : Not available.

VOC : 41.5 % (w/w)

9 . Physical and chemical properties

Partition coefficient: n-octanol/water : Not available.

% Solid. (w/w) : 85.45

10 . Stability and reactivity

Stability : Stable under recommended storage and handling conditions (see section 7).

Conditions to avoid : No specific data.

Materials to avoid : Reactive or incompatible with the following materials:,acids,oxidizing materials,strong alkalis

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
N,N-Dimethylacetamide	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Dermal	Rabbit	2240 mg/kg	-
	LC50 Inhalation	Rat	2475 ppm	1 hours
Kaolin	LD50 Oral	Rat	>5000 mg/kg	-
Octyl phenol condensed with 20 moles ethylene oxide	LD50 Oral	Rat	3.5 g/kg	-
Carbon black	LD50 Oral	Rat	>15400 mg/kg	-
	LD50 Dermal	Rabbit	>3 g/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Target organs : Contains material which causes damage to the following organs: kidneys, brain, eyes. Contains material which may cause damage to the following organs: lungs, the reproductive system, liver, mucous membranes, upper respiratory tract, skin, central nervous system (CNS), stomach.

Carcinogenicity

Carcinogenicity : Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
N,N-Dimethylacetamide	A4	-	-	-	-	-
calcium dichromate	A1	1	-	+	Proven.	-
Kaolin	A4	-	-	-	-	-
Carbon black	A4	2B	-	+	-	-

Teratogenicity

Teratogenicity : Contains material which may cause birth defects, based on animal data.

12 . Ecological information

Environmental effects : Water polluting material. May be harmful to the environment if released in large quantities.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure

12 . Ecological information

Octyl phenol condensed with 20 moles ethylene oxide	Acute LC50 7200 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	Acute LC50 8600 to 9800 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	Acute EC50 210 ug/L Fresh water	Algae - Green algae - Selenastrum sp.	96 hours

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (calcium dichromate)	9	III	-
IMDG	3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (calcium dichromate). Marine pollutant (calcium dichromate, Octyl phenol condensed with 20 moles ethylene oxide)	9	III	-
DOT	3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (calcium dichromate)	9	III	-

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: calcium dichromate: 1 lb. (0.454 kg);

15 . Regulatory information

United States inventory (TSCA 8b) : Not determined.
Australia inventory (AICS) : Not determined.
Canada inventory (DSL) : Not determined.
China inventory (IECSC) : Not determined.
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : Not determined.
Korea inventory (KECI) : Not determined.

15 . Regulatory information

New Zealand (NZIoC) : Substance Use Restricted

Philippines inventory (PICCS) : Not determined.

United States

United States - TSCA 12(b) - Chemical export notification:

calcium dichromate	Annual notification
N,N-Dimethylacetamide	One time notification

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: N,N-Dimethylacetamide; calcium dichromate; Kaolin; Octyl phenol condensed with 20 moles ethylene oxide

CERCLA: Hazardous substances.: calcium dichromate: 1 lb. (0.454 kg);

SARA 311/312 MSDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
N,N-Dimethylacetamide	**127-19-5**	Y	Y	Y	N	N
calcium dichromate	**14307-33-6**	Y	Y	N	N	N
Kaolin	**1332-58-7**	Y	N	N	N	N
Octyl phenol condensed with 20 moles ethylene oxide	**9036-19-5**	Y	N	N	N	N
Carbon black	**1333-86-4**	N	Y	N	N	N
	Product as-supplied :	Y	Y	N	N	N

SARA 313	Chemical name	CAS number	Concentration
Supplier notification	calcium dichromate	14307-33-6	10 - 30

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Canada

WHMIS (Canada) : Class E: Corrosive liquid. Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 0 **Health** : 3 **Reactivity** : 0

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability** : 0 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability** : 0 **Instability** : 0

Date of previous issue : **5/18/2011.**

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

16 . Other information

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

Material Safety Data Sheet

Date of issue 16 June 2011
Version 2

1 . Product and company identification

Product name : PR-1422 B-1/2 Part B

Code : #4104

Supplier : PPG Aerospace PRC-DeSoto
12780 San Fernando Road
Sylmar, CA 91342

Emergency telephone number : Information Phone: (818) 240-2060
Emergency Phone: (800) 228-5635
Outside of USA: + (651) 632-9265

2 . Hazards identification

Emergency overview : DANGER!

COMBUSTIBLE LIQUID AND VAPOR. CAUSES RESPIRATORY TRACT AND EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF INHALED OR SWALLOWED. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. ASPIRATION HAZARD. CAN ENTER LUNGS AND CAUSE DAMAGE. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Keep away from heat, sparks and flame. Do not swallow. Do not get on skin or clothing. Avoid breathing vapor or mist. Avoid contact with eyes. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : May be harmful if inhaled. Irritating to respiratory system. Can irritate eyes, nose, mouth and throat.

Ingestion : May be harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage.

Skin : Moderately irritating to the skin. May cause an allergic skin reaction.

Eyes : Irritating to eyes.

Over-exposure signs/symptoms

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. **1-component preparations:** formaldehyde is released during curing. Formaldehyde may cause irreversible effects, is irritating to the mucous membranes and may cause skin sensitization.

Medical conditions aggravated by over-exposure : Pre-existing skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
calcium carbonate	471-34-1	10 - 30
proprietary modified polysulfide polymer	Not available.	1 - 5
toluene	108-88-3	1 - 5
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	25068-38-6	0.5 - 1.5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides
halogenated compounds
metal oxide/oxides
Formaldehyde.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6 . Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Use spark-proof tools and explosion-proof equipment. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not swallow. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. Vapors are heavier than air and may spread along floors. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not store above the following temperature: 120F / 49C.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	PPG
calcium carbonate	TWA	10 MG/M3 TD 3 MG/M3 R	5 mg/m³ R 15 mg/m³ TD 5 mg/m3 R 15 mg/m3	Not established	Not established	Not established
toluene	TWA	20 ppm	200 ppm Z	20 ppm	50 ppm S	Not established
	STEL	Not established	500 ppm Z A 300 ppm Z C	Not established	Not established	Not established

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
F = Fume
S = Potential skin absorption
SR = Respiratory sensitization
SS = Skin sensitization
STEL = Short term Exposure limit values

8 . Exposure controls/personal protection

IPEL = Internal Permissible Exposure Limit
OSHA = Occupational Safety and Health Administration.
R = Respirable
Z = OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances
TD = Total dust
TLV = Threshold Limit Value
TWA = Time Weighted Average

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes : Safety glasses with side shields.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Gloves : butyl rubber

Respiratory : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: 70°C (158°F)

Material supports combustion. : Yes.

Color : Brown.

Odor : Not available.

pH : Not available.

Boiling/condensation point : >37.78°C (>100°F)

Melting/freezing point : Not available.

Specific gravity : 1.38

Density (lbs / gal) : 11.52

Vapor pressure : Not available.

Vapor density : Not available.

Volatility : 3% (v/v), 2.28% (w/w)

Evaporation rate : Not available.

VOC : 1.9 % (w/w)

9 . Physical and chemical properties

Partition coefficient: n-octanol/water : Not available.
% Solid. (w/w) : 97.72

10 . Stability and reactivity

Stability : Stable under recommended storage and handling conditions (see section 7).
Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Materials to avoid : Reactive or incompatible with the following materials:,acids,oxidizing materials,strong alkalis
Hazardous decomposition products : Formaldehyde.
Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
calcium carbonate	LD50 Oral	Rat	6450 mg/kg	-
toluene	LD50 Oral	Rat	636 mg/kg	-
	LD50 Dermal	Rabbit	8.39 g/kg	-
	LC50 Inhalation	Rat	49 g/m3	4 hours
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	LD50 Oral	Rat	>2 g/kg	-
	LD50 Dermal	Rabbit	>2 g/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.
Defatting irritant : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Target organs : Contains material which causes damage to the following organs: brain.
Contains material which may cause damage to the following organs: blood, kidneys, the reproductive system, liver, heart, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
toluene	A4	3	-	-	-	-

Developmental effects : Contains material which may cause developmental abnormalities, based on animal data.
Fertility effects : Contains material which may impair female fertility, based on animal data.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
toluene	Acute LC50 5800 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	Acute EC50 6000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	Chronic NOEC 28000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	None.	Not regulated.	None.	-	-
IMDG	None.	Not regulated.	None.	-	-
DOT	None.	Not regulated.	None.	-	-

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: butanone: 5000 lbs. (2270 kg); toluene: 1000 lbs. (454 kg);

15 . Regulatory information

United States inventory (TSCA 8b) : Not determined.
Australia inventory (AICS) : Not determined.
Canada inventory (DSL) : Not determined.
China inventory (IECSC) : Not determined.
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : At least one component is not listed.
Korea inventory (KECI) : Not determined.
New Zealand (NZIoC) : Substance Use Restricted Scientific R&D Filing in place
Philippines inventory (PICCS) : Not determined.

United States

United States - TSCA 5(e) - Substances consent order:
Phenol, polymer with formaldehyde Listed

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: calcium carbonate; toluene
CERCLA: Hazardous substances.: butanone: 5000 lbs. (2270 kg); toluene: 1000 lbs. (454 kg);

SARA 311/312 MSDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
calcium carbonate	471-34-1	N	N	N	N	N
proprietary modified polysulfide polymer	Not available.	Y	N	N	N	N
toluene	108-88-3	Y	Y	Y	N	N
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	25068-38-6	Y	N	N	N	N

15 . Regulatory information

Product as-supplied :	Y	Y	Y	N	N

SARA 313 / Supplier notification	Chemical name	CAS number	Concentration
	toluene	108-88-3	1 - 5

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 2 **Health** : 2 **Reactivity** : 0

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 2 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 2 **Instability** : 0

Date of previous issue : **3/25/2011.**

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

Material Safety Data Sheet

Date of issue 5 July 2013
Version 6

1 . Product and company identification

Product name : PS 890 B 1/2 Part A
Code : PS 890 B 1/2 Part A
Supplier : PPG Aerospace PRC-DeSoto
12780 San Fernando Road
Sylmar, CA 91342
Phone: 818 362 6711
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)

2 . Hazards identification

Emergency overview : DANGER!

OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Keep away from combustible material. Do not breathe vapor or mist. Do not swallow. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : Harmful if inhaled. Severely irritating to the respiratory system. Can irritate eyes, nose, mouth and throat. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion : Harmful or fatal if swallowed.
Skin : Irritating to skin.
Eyes : Irritating to eyes.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
Ingestion : No specific data.
Skin : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness
Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
manganese dioxide	1313-13-9	30 - 60
Terphenyl, hydrogenated	61788-32-7	10 - 30
Zeolites	1318-02-1	5 - 10
Polyphenyls, quater- and higher, partially hydrogenated	68956-74-1	3 - 7
Talc , not containing asbestiform fibres	14807-96-6	1 - 5
carbon black respirable	1333-86-4	1 - 5
magnesium carbonate	546-93-0	1 - 5
terphenyl	26140-60-3	1 - 5
1,3-diphenylguanidine	102-06-7	0.5 - 1.5
bis(piperidinothiocarbonyl) tetrasulphide	120-54-7	0.5 - 1.5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

Flammability of the product : Contact with combustible material may cause fire. This material increases the risk of fire and may aid combustion. In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
sulfur oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Use spark-proof tools and explosion-proof equipment. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not breathe vapor or mist. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from combustible material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Separate from reducing agents and combustible materials. See NFPA 430, Code for the Storage of Liquid and Solid Oxidizers. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	IPEL
manganese dioxide	TWA STEL	0.2 mg/m³ (as Mn) Not established	Not established 5 mg/m³ (as Mn) C	0.2 mg/m³ (as Mn) Not established	0.2 mg/m³ (as Mn) Not established	Not established Not established
Terphenyl, hydrogenated	TWA	0.5 ppm	Not established	0.5 ppm	0.5 ppm	Not established
Talc , not containing asbestiform fibres	TWA	Not established	20 mppcf Z	2 mg/m³ R 2 mg/m³ R	2 mg/m³ R	Not established
carbon black respirable	TWA	3 mg/m³	3.5 mg/m³	3.5 mg/m³	3.5 mg/m³	Not established

8 . Exposure controls/personal protection

	STEL	Not established	Not established	Not established	7 mg/m³	Not established
magnesium carbonate	TWA	Not established	5 mg/m³ R 15 mg/m³ TD	10 mg/m³	10 mg/m³	Not established
	STEL	Not established	Not established	Not established	20 mg/m³	Not established
terphenyl	TWA	Not established	Not established	0.05 mg/m³	Not established	Not established
	STEL	0.53 ppm C	1 ppm C	0.53 ppm C	0.5 ppm C	Not established

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes : Safety glasses with side shields.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Respiratory : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Liquid.
Flash point : Closed cup: Not applicable.
Material supports combustion. : Yes.
Color : Black.
Odor : Not available.
pH : Not available.
Boiling/condensation point : >37.78°C (>100°F)
Melting/freezing point : Not available.
Specific gravity : 1.88
Density (lbs / gal) : 15.69
Vapor pressure : Not available.
Vapor density : Not available.
Evaporation rate : Not available.
VOC : Not available.
Partition coefficient: n-octanol/water : Not available.
% Solid. (w/w) : 100

10 . Stability and reactivity

Stability : The product may not be stable under certain conditions of storage or use.
Conditions to avoid : Drying on clothing or other combustible materials may cause fire. Avoid increased storage temperature. Pressure hazard
Materials to avoid : Reactive or incompatible with the following materials:,combustible materials,organic materials,metals,acids,alkalis,oxidizing materials,reducing materials
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
manganese dioxide	LD50 Oral	Rat	3478 mg/kg	-
Terphenyl, hydrogenated	LD50 Oral	Rat	>10000 mg/kg	-
Zeolites	LD50 Oral	Rat	>5 g/kg	-
carbon black respirable	LD50 Oral	Rat	>15400 mg/kg	-
	LD50 Dermal	Rabbit	>3 g/kg	-
magnesium carbonate	LD50 Oral	Rat	8000 mg/kg	-
terphenyl	LD50 Oral	Rat	1400 mg/kg	-
1,3-diphenylguanidine	LD50 Oral	Rat	323 mg/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Defatting irritant : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Target organs : Contains material which causes damage to the following organs: lungs, skin, central nervous system (CNS).
Contains material which may cause damage to the following organs: blood, kidneys, the nervous system, liver, cardiovascular system, upper respiratory tract, eye, lens or cornea.

11 . Toxicological information

Carcinogenicity

Carcinogenicity : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	NTP	OSHA
Zeolites	-	3	-	-
carbon black respirable	A3	2B	-	-

Carcinogen Classification code:
ACGIH: A1, A2, A3, A4, A5
IARC: 1, 2A, 2B, 3, 4
NTP: Proven, Possible
OSHA: +
Not listed or regulated as a carcinogen: -

Fertility effects : Contains material which may impair male fertility, based on animal data.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	None.	Not regulated.	None.	-	-
IMDG	None.	Not regulated.	None.	-	-
DOT	None.	Not regulated.	None.	-	Reportable quantity 57.671 lbs / 26.183 kg [0.44281 gal / 1.6762 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: sodium hydroxide: 1000 lbs. (454 kg); manganese dioxide; terphenyl: 1 lb. (0.454 kg);

15 . Regulatory information

United States inventory (TSCA 8b) : All components are listed or exempted.
Australia inventory (AICS) : All components are listed or exempted.
Canada inventory (DSL) : All components are listed or exempted.
China inventory (IECSC) : All components are listed or exempted.
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : All components are listed or exempted.
Korea inventory (KECI) : All components are listed or exempted.
New Zealand (NZIoC) : Substance Use Restricted
Philippines inventory (PICCS) : All components are listed or exempted.

United States

SARA 302/304: ethylene oxide; Formaldehyde
CERCLA: Hazardous substances.: sodium hydroxide: 1000 lbs. (454 kg); manganese dioxide; terphenyl: 1 lb. (0.454 kg);

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
manganese dioxide	1313-13-9	Y	Y	N	Y	N
Terphenyl, hydrogenated	61788-32-7	N	N	N	N	N
Zeolites	1318-02-1	Y	N	N	N	N
Polyphenyls, quater- and higher, partially hydrogenated	68956-74-1	N	N	N	N	N
Talc , not containing asbestiform fibres	14807-96-6	Y	N	N	N	N
carbon black respirable	1333-86-4	N	Y	N	N	N
magnesium carbonate	546-93-0	N	N	N	N	N
terphenyl	26140-60-3	N	N	N	N	N
1,3-diphenylguanidine	102-06-7	Y	Y	N	N	N
bis(piperidinothiocarbonyl) tetrasulphide	120-54-7	Y	N	N	N	N
Product as-supplied :		Y	Y	N	Y	N

SARA 313	Chemical name	CAS number	Concentration
Supplier notification	manganese dioxide	1313-13-9	30 - 60
	terphenyl	26140-60-3	1 - 5

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Canada

WHMIS (Canada) : Class C: Oxidizing material. Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 0 **Health** : 3 **Reactivity** : 1

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability** : 0 **Physical hazards** : 1
(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability** : 0 **Instability** : 1

Date of previous issue : **3/18/2013.**

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

Material Safety Data Sheet

Date of issue 5 July 2013
Version 7

1 . Product and company identification

Product name : PS 890 B 1/2 Part B
Code : PS 890 B 1/2 Part B
Supplier : PPG Aerospace PRC-DeSoto
12780 San Fernando Road
Sylmar, CA 91342
Phone: 818 362 6711
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)

2 . Hazards identification

Emergency overview : DANGER!

CAUSES RESPIRATORY TRACT AND EYE IRRITATION. MAY BE HARMFUL IF INHALED OR SWALLOWED. ASPIRATION HAZARD. CAN ENTER LUNGS AND CAUSE DAMAGE. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Do not swallow. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : May be harmful if inhaled. Irritating to respiratory system. Can irritate eyes, nose, mouth and throat.
Ingestion : May be harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage.
Skin : Moderately irritating to the skin.
Eyes : Irritating to eyes.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
Ingestion : Adverse symptoms may include the following:
nausea or vomiting
Skin : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
calcium carbonate	471-34-1	10 - 30
proprietary modified polysulfide polymer	Not available.	3 - 7
titanium dioxide	13463-67-7	1 - 5
toluene	108-88-3	1 - 5
proprietary modified polysulfide polymer	Not available.	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : No specific fire or explosion hazard.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides
halogenated compounds
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6 . Accidental release measures

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	IPEL
calcium carbonate	TWA	10 MG/M3 TD 3 MG/M3 R	5 mg/m³ R 15 mg/m³ TD 5 mg/m3 R 15 mg/m3	Not established	Not established	Not established
titanium dioxide	TWA STEL	10 mg/m³ Not established	15 mg/m³ TD Not established	10 mg/m³ TD Not established	10 mg/m³ (as Ti) 20 mg/m³ (as Ti)	Not established Not established
toluene	TWA STEL	20 ppm Not established	200 ppm Z 500 ppm Z A 300 ppm Z C	20 ppm Not established	50 ppm S Not established	Not established Not established

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
F = Fume
IPEL = Internal Permissible Exposure Limit
OSHA = Occupational Safety and Health Administration.
R = Respirable
Z = OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances
S = Potential skin absorption
SR = Respiratory sensitization
SS = Skin sensitization
STEL = Short term Exposure limit values
TD = Total dust
TLV = Threshold Limit Value
TWA = Time Weighted Average

Consult local authorities for acceptable exposure limits.

8 . Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes : Safety glasses with side shields.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Respiratory : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Solid.

Flash point : Closed cup: 48.89°C (120°F)

Material supports combustion. : Yes.

Color : White.

Odor : Not available.

pH : Not available.

Boiling/condensation point : Not available.

Melting/freezing point : Not available.

Specific gravity : 1.5

Density (lbs / gal) : 12.52

Vapor pressure : Not available.

Vapor density : Not available.

Evaporation rate : Not available.

VOC : 44 g/l

Partition coefficient: n-octanol/water : Not available.

9 . Physical and chemical properties

10 . Stability and reactivity

Stability : Stable under recommended storage and handling conditions (see Section 7).

Conditions to avoid : No specific data.

Materials to avoid : Reactive or incompatible with the following materials:,acids,oxidizing materials,strong alkalis

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
calcium carbonate	LD50 Oral	Rat	6450 mg/kg	-
titanium dioxide	LD50 Oral	Rat	>10 g/kg	-
toluene	LD50 Oral	Rat	636 mg/kg	-
	LD50 Dermal	Rabbit	8.39 g/kg	-
	LC50 Inhalation	Rat	49 g/m3	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Defatting irritant : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Target organs : Contains material which causes damage to the following organs: brain.
Contains material which may cause damage to the following organs: blood, kidneys, lungs, the reproductive system, liver, heart, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Carcinogenicity

Carcinogenicity : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	NTP	OSHA
titanium dioxide	A4	2B	-	-
toluene	A4	3	-	-

Carcinogen Classification code:
ACGIH: A1, A2, A3, A4, A5
IARC: 1, 2A, 2B, 3, 4
NTP: Proven, Possible
OSHA: +
Not listed or regulated as a carcinogen: -

Developmental effects : Contains material which may cause developmental abnormalities, based on animal data.

Fertility effects : Contains material which may impair female fertility, based on animal data.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

12 . Ecological information

Product/ingredient name	Result	Species	Exposure
toluene	Acute LC50 5800 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	Acute EC50 6000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	Chronic NOEC 28000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	None.	Not regulated.	None.	-	-
IMDG	None.	Not regulated.	None.	-	-
DOT	None.	Not regulated.	None.	-	**Reportable quantity** 5579.4 lbs / 2533.1 kg The classification of the product is due solely to the presence of one or more US DOT-listed 'Hazardous substances' that are subject to reportable quantity requirements and only applies to shipments of packages greater than, or equal to, the product reportable quantity. Package sizes less than the product reportable quantity are not regulated as hazardous materials.

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: toluene: 1000 lbs. (454 kg); thiram (ISO): 10 lbs. (4.54 kg);

15 . Regulatory information

United States inventory (TSCA 8b) : Not determined.
Australia inventory (AICS) : Not determined.
Canada inventory (DSL) : Not determined.
China inventory (IECSC) : At least one component is not listed.
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : Not determined.
Korea inventory (KECI) : Not determined.
New Zealand (NZIoC) : Substance Use Restricted
Philippines inventory (PICCS) : Not determined.

United States

SARA 302/304: No products were found.
CERCLA: Hazardous substances.: toluene: 1000 lbs. (454 kg); thiram (ISO): 10 lbs. (4.54 kg);

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
calcium carbonate	471-34-1	N	N	N	N	N
proprietary modified polysulfide polymer	Not available.	Y	N	N	N	N
titanium dioxide	13463-67-7	N	Y	N	N	N
toluene	108-88-3	Y	Y	Y	N	N
proprietary modified polysulfide polymer	Not available.	Y	N	N	N	N
Product as-supplied :		Y	Y	N	N	N

SARA 313	Chemical name	CAS number	Concentration
Supplier notification	toluene	108-88-3	1 - 5

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada

WHMIS (Canada) : Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 2 **Health** : 2 **Reactivity** : 0

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 2 **Physical hazards** : 0
(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

16 . Other information

Health : 2 **Flammability** : 2 **Instability** : 0

Date of previous issue : **3/10/2013.**

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

Step 2
Aircraft Pre-Inspection

Aircraft Pre-Inspection

STEP	PROCEDURE	MECH.	INSP.
2.1	The installing mechanic and the I.A. shall thoroughly examine the kit and determine its compatibility to the aircraft's electrical system and any previously installed equipment, whether factory or STC'd items. The total electrical requirement is approximately 66 amps at 28 VDC.		
2.2	These instructions are intended only to sequence and clarify the Installation Drawings. **In case of a discrepancy, the drawing shall be the authority**.		
2.3	All references are to the **Installation Drawings** unless otherwise specified.		
2.4	Minor installation deviations may be necessary to accommodate placement of equipment due to previously installed items or to comply with AD notes on the aircraft. The **Drawings** are **FAA Approved design data**. **They do not allow for any deviation.** Any deviations required must be cleared and approved by a local FAA official.		
2.5	Prior to beginning installation, these **Installation Instructions** and related **Drawings** should be thoroughly studied. Doing so will alleviate problems arising during installation and eliminate unnecessary hours of labor.		
2.6	Standard aircraft practices should be adhered to as outlined by **FAA Advisory Circular 43.13-1B and 43.13-12A.**		
2.7	Aerospatiale Helicopter Corporation (now Eurocopter Corporation) has indicated that special transmission tools are required to remove item 20 from the MGB on Page 3-5 of Section 3.3.2 of the AHC Maintenance Manual. These tools MUST be procured PRIOR to the start of the installation.		

SPECIAL TOOLS ARE: (A) AHC P/N: 3601 93 3207
(B) AHC P/N: 3601 93 3208
(C) AHC P/N: 3601 93 3209

Step 3
Aircraft Preparation

Aircraft Preparation

STEP	PROCEDURE	MECH.	INSP.
3.0	Remove or disconnect the battery.		
3.1	Remove overhead center cockpit tunnel.		
3.2	Remove forward windshield post cover.		
3.3	Remove left side center door post cover.		
3.4	Remove right side center door post cover.		
3.5	Drop the cabin headliner.		
3.6	Remove forward cabin center overhead panel.		
3.7	Remove aft cabin bulk head cover.		
3.8	Remove forward lower left Insp. panel		
3.9	Remove center lower left Insp. panel.		
3.10	Remove aft lower left Insp. panel.		
3.11	Remove engine cowls		
3.12	Remove forward top nose cowls		
3.13	Remove the right hand transmission cowling.		
3.14	Remove the left hand transmission cowling.		
3.15	Remove aft baggage overhead panels		
3.16	Remove aft center baggage tail boom cover.		
3.16a	Remove aft center floor panel.		

CAUTION: Immediately after removing engine cowling, seal off engine intakes to prevent ingestion of foreign materials.

Step 4
Removal of Factory Installed Components

Removal of Factory Installed Components

For 365N-00-1

STEP	PROCEDURE	MECH.	INSP.
4.1.1	Remove existing (2) two wemacs in cockpit and discard.		
4.1.2	Remove existing (4) four wemacs in cabin and discard.		

Component Installations
for Kit # 365N-00-1

Step 5

Installation of Aft Evaporator

Installation of Aft Evaporator
Kit# 365N-00-1

STEP	PROCEDURE	MECH.	INSP.
5.1.1	For installation of aft evaporator P/N 560022, position aft Evaporator in aft baggage bin as shown in drawing 4-SA365N, 6 of 14.		
5.1.2	Mark and drill mounting holes and drain hole.		
5.1.3	Secure aft evaporator with hardware as shown in drawing 4-SA365N, 7 of 14.		
5.1.4	Install drain hose. Apply PRC around hose and mounting hardware in wheel well.		
5.1.5	Secure 2" inch flexible hose P/N 060043 from kit and connect from aft 5 inch blower assembly, P/N 050143, using the designated hardware. Trim hose to length as required. Install aft evaporator air outlet assy., P/N 500034, per drawing 4-SA365N, sheet 8 of 14.		
5.1.6	Insulate aft supply air duct assembly P/N 250129 and 4 inch flexible duct. Cover with insulation and with foil tape.		
5.1.7	For installation of aft evaporator P/N 560022, position evaporator mount P/N 261473 as shown in drawing 4-SA365N, 11 of 14. Trim as necessary to fit. Clamp in place.		
5.1.8	Set aft Evaporator assembly P/N 560022 on evaporator mount. Position as shown in drawing 4-SA365N, 11 of 14.		
5.1.9	Mark and drill aft evaporator mount P/N 261473.		
5.1.10	Install hardware as shown in drawing 4-SA365N, 11 of 14.		
5.1.11	Secure aft supply air ducts from kit and fit to existing holes in aft cabin wall.		
5.1.12	Insulate the underside of the cabin roof and the inside of both “C” channels from the aft cabin wall forward to the next bulkhead with 1/4" insulation.		
5.1.13	Install (2) two each (one per side) 2.5" flexible duct P/N 060002 into the aft supply air duct assembly.		
5.1.14	Install two (2) each 2” by 1 1/2” by 1 1/2” wyes (one in LH and one in RH duct assembly), P/N 520029.		
5.1.15	From each wye previously installed, connect the 1 1/2” flexible hoses.		

STEP	PROCEDURE	MECH.	INSP.
5.1.16	Route four each 1 1/2" flexible hoses from aft supply air duct "Y" assembly forward through existing lightening holes above aft cabin ceiling to existing aft cabin wemacs 5-SA365N, sheet 4 of 5.		
5.1.17	Remove the four existing air outlets from the ceiling panel of the aft cabin and discard. Install in their place at four each existing locations IFS wemac, P/N 030009 plus adapters P/N 260061 and attaching hardware. The wemac support assembly in each case should point inboard toward the centerline of the aircraft.		
5.1.18	Connect 1 1/2" flexible hose to each wemac support assembly as indicated. Hose length will be trimmed to the minimum acceptable length at the time the ceiling panels are re-installed.		
5.1.19	Drawing 4-SA365N, sheet 12 and 13 of 15 show the return air detail to aft evaporator. Cut 4.5" by 7.5" return air hole in aft cabin bulkhead to match aft evaporator return air duct assembly P/N 250129. De-burr aft cabin wall. Install return air screen retainer assembly, P/N 520118.		

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

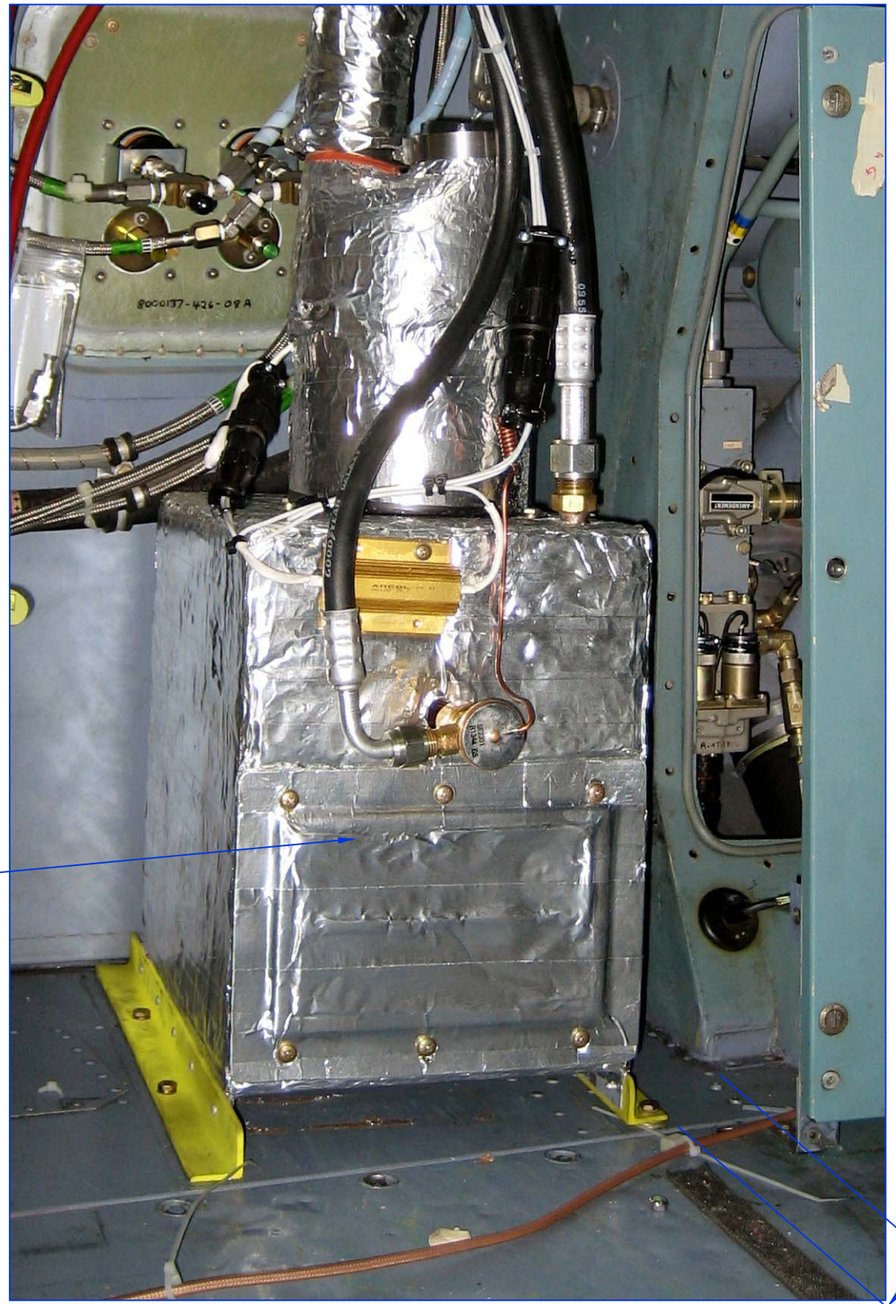

PHOTO "A"

DRILL OUT 4 RIVETS

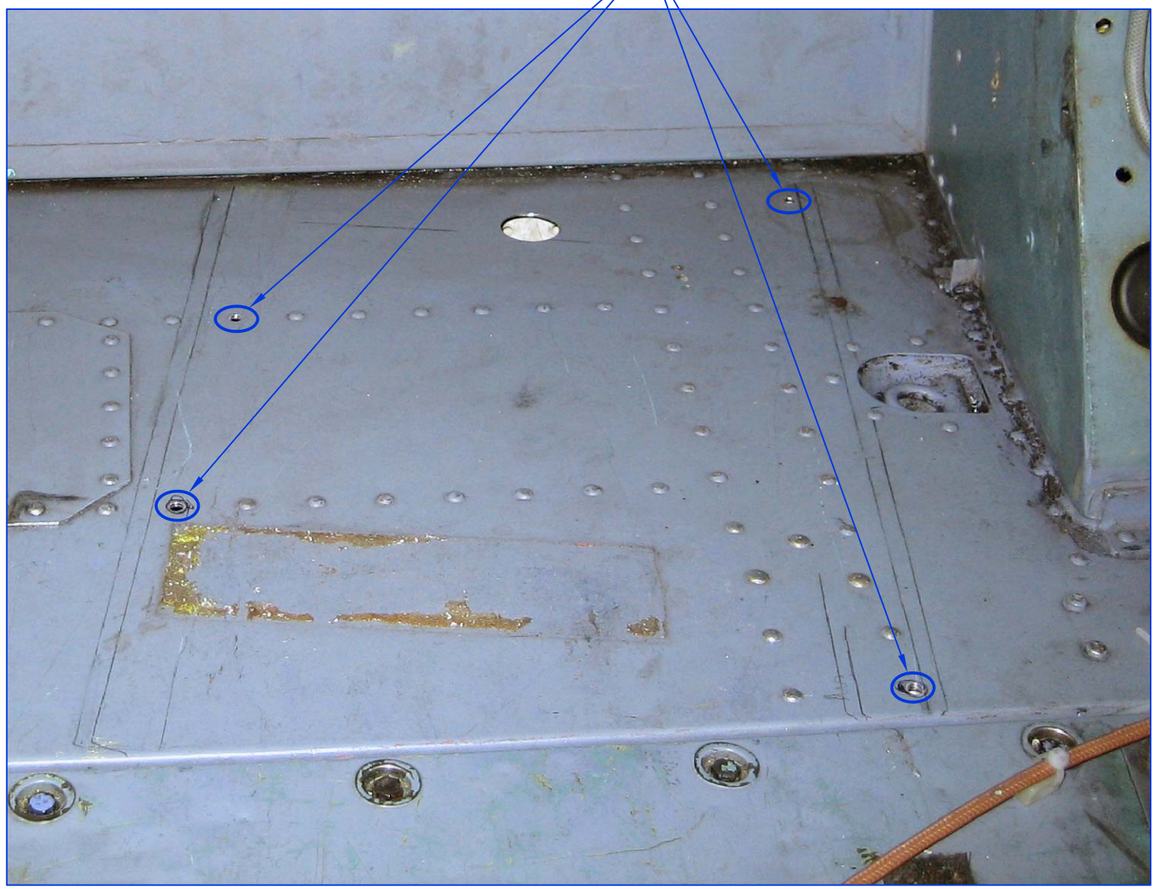

PHOTO "B"

NOTES:

1. POSITION AFT EVAP. ON BAGGAGE BIN FLOOR AS SHOWN. APPROX. 3.4 AS SHOWN IN PHOTO "A".
2. DRAW LINES ON BOTH SIDES OF EVAPORATOR MOUNT ANGLES ON FLOOR. REMOVE EVAPORATOR AS SEEN IN PHOTO "B".
3. CHECK LINES ON FLOOR TO SEE IF PROPER EDGE DISTANCE WOULD BE MAINTAINED ON EVAPORATOR ANGLE. IF NOT, REPOSITION EVAPORATOR AND RE-MARK.
4. DRILL OUT 4 RIVETS AS SHOWN, THEN BACK DRILL TO EVAPORATOR MOUNT ANGLES.

INTEGRATED Flight Systems
Reno Nevada

TITLE: AFT EVAPORATOR INSTALL

DRAWN BY:	DATE:	REV:	SCALE:	SHEET:
JTYE	11/08/05	IR	NTS	6 OF 14

APPLICATION: SA365N, N1, N2, N3

DWG. NO.: 4-SA365N

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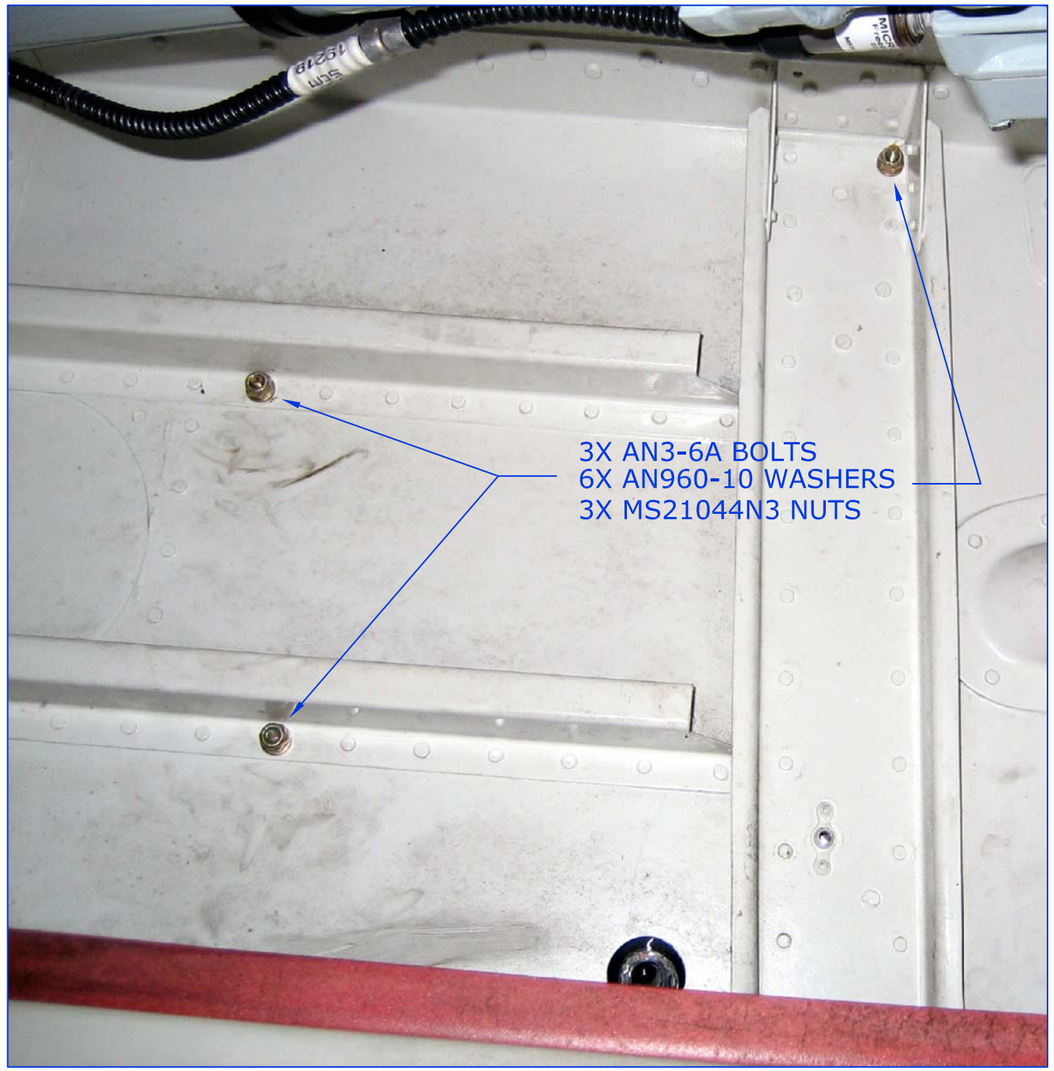

NOTES:

1. BOLT DOWN AFT EVAPORATOR USING:

   4X AN3-6A BOLTS
   7X AN960-10 WASHERS
   4X MS21044N3 NUTS
   1X AN970-4 WASHER (FWD. OUTBOARD BOLT)

INTEGRATED Flight Systems
Reno Nevada

TITLE: AFT EVAPORATOR INSTALL

DRAWN BY:	DATE:	REV.:	SCALE:	SHEET:
JTYE	11/08/05	IR	NTS	7 OF 14

APPLICATION: SA365N, N1, N2, N3

DWG. NO.: 4-SA365N

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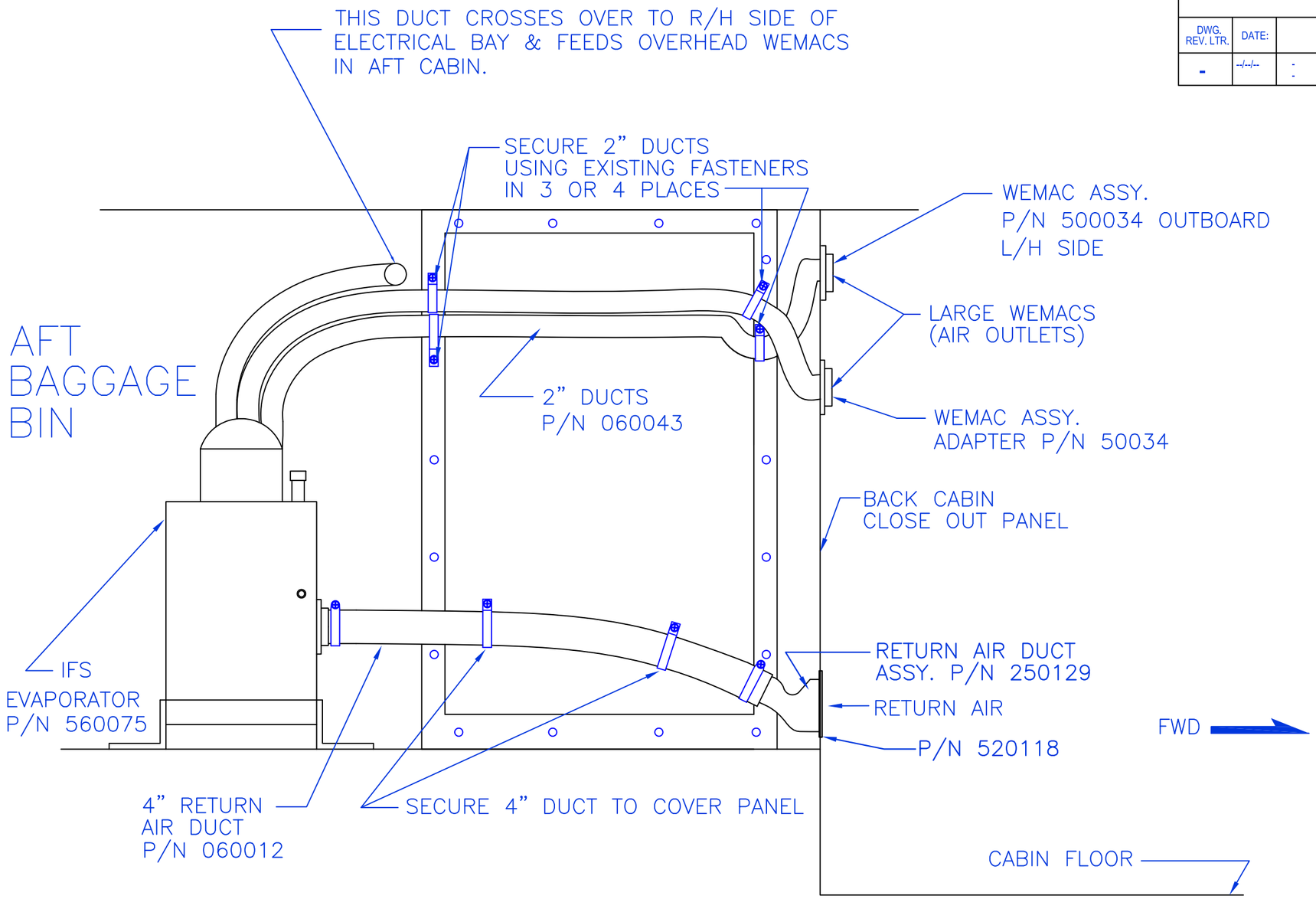

VIEW LOOKING TO LEFT SIDE OF BAGGAGE BIN

E.M.S. DUCTING SHOWN

INTEGRATED Flight Systems Reno Nevada

TITLE: AFT EVAPORATOR INSTALL - EMS				
DRAWN BY: WSA	DATE: 12/05/05	REV.: IR	SCALE: NTS	SHEET: 8 OF 14
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 4-SA365N	

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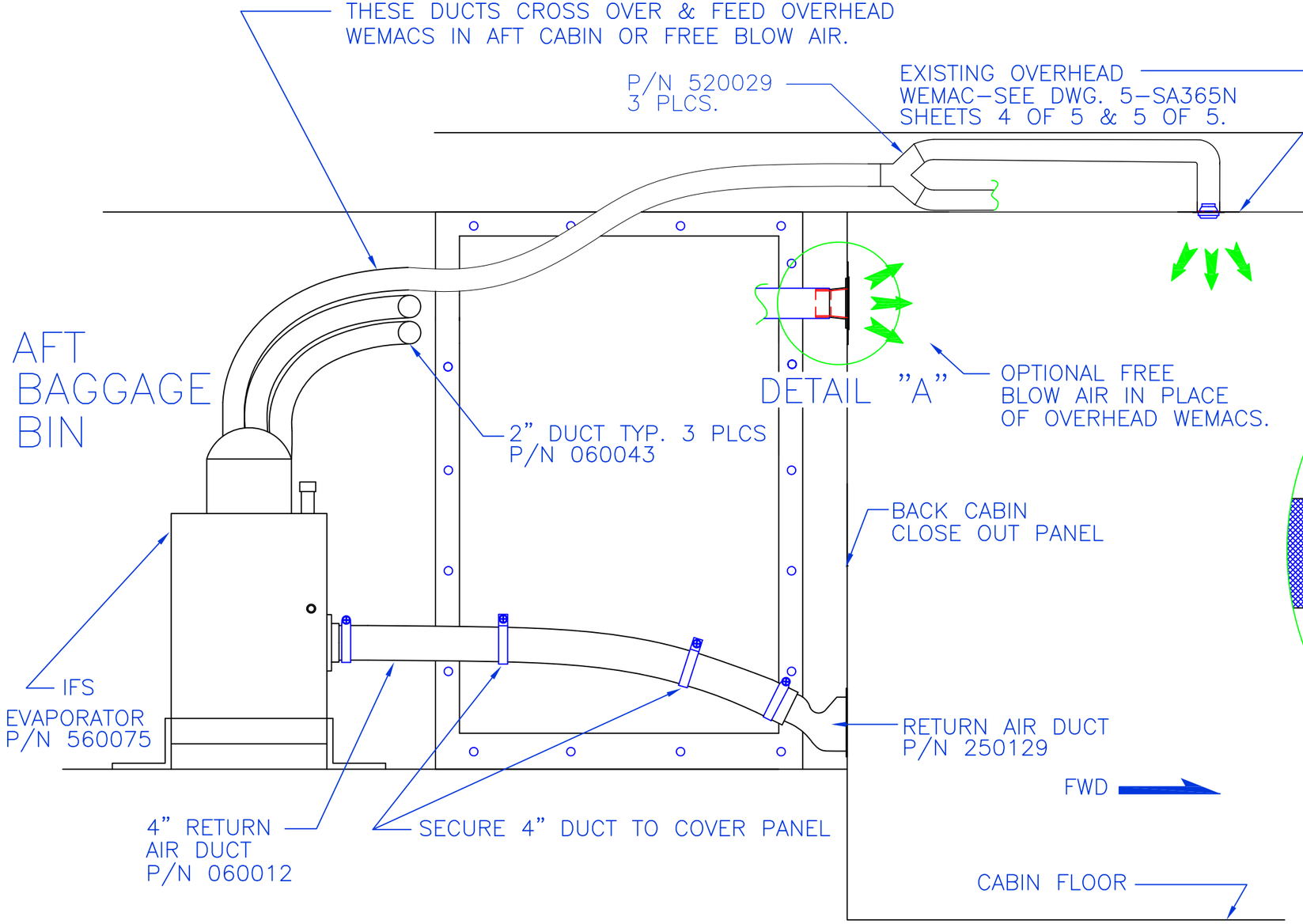
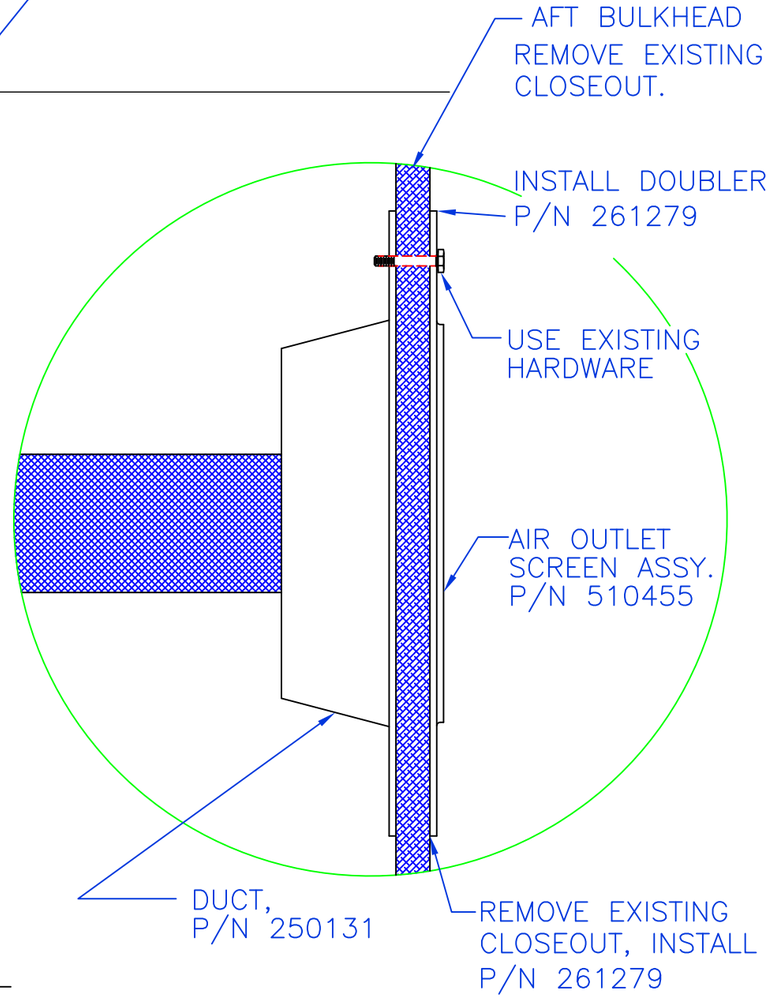


VIEW LOOKING TO LEFT SIDE OF BAGGAGE BIN



DETAIL A

ORIGINAL FACTORY INTERIOR

INTEGRATED Flight Systems
Reno Nevada

TITLE: AFT EVAPORATOR INSTALL - CUSTOM INT.

DRAWN BY:	DATE:	REV:	SCALE:	SHEET:
WSA	12/05/05	IR	NTS	9 OF 14

APPLICATION: SA365N, N1, N2, N3

DWG. NO.: 4-SA365N

REVISION RECORD

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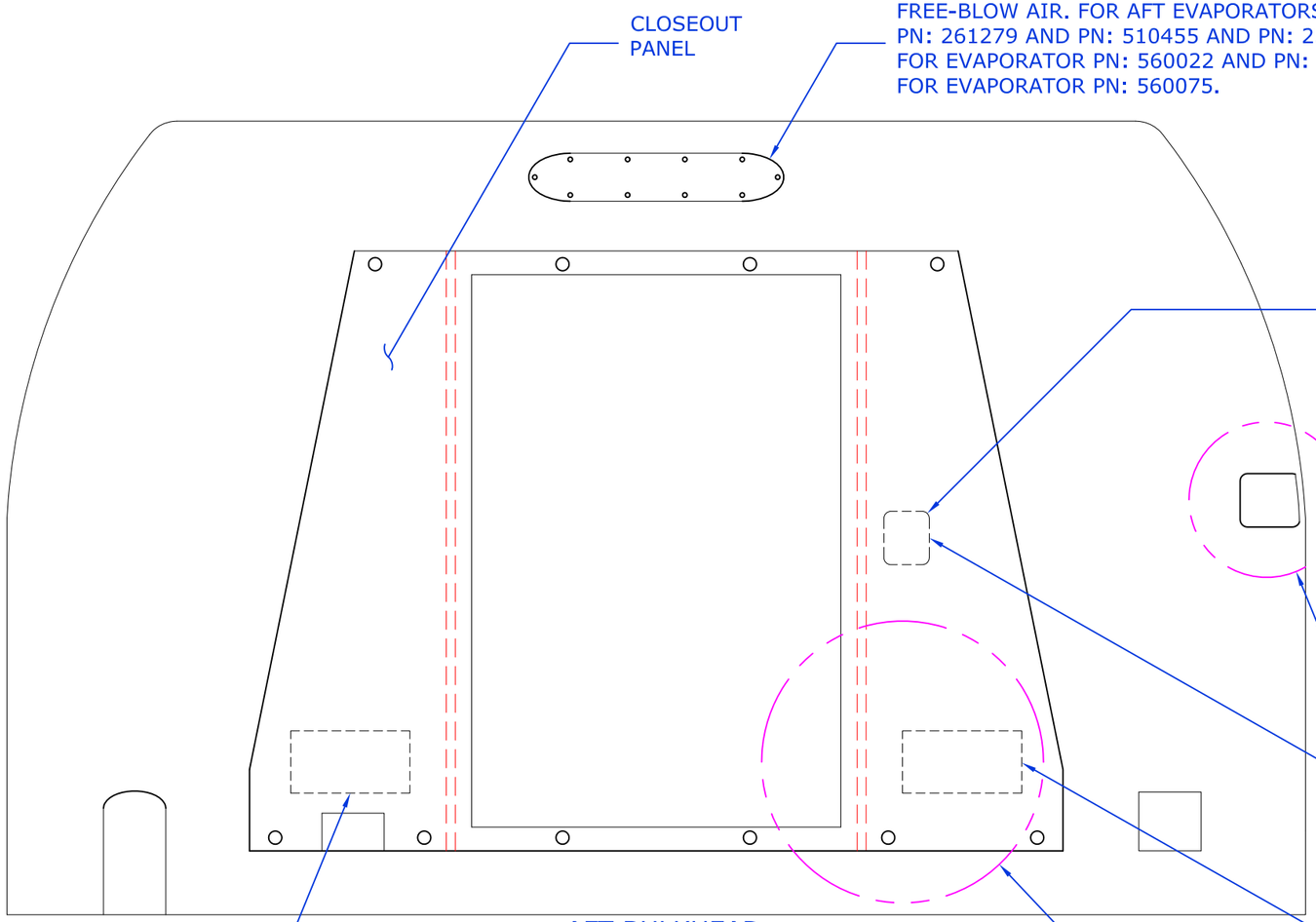
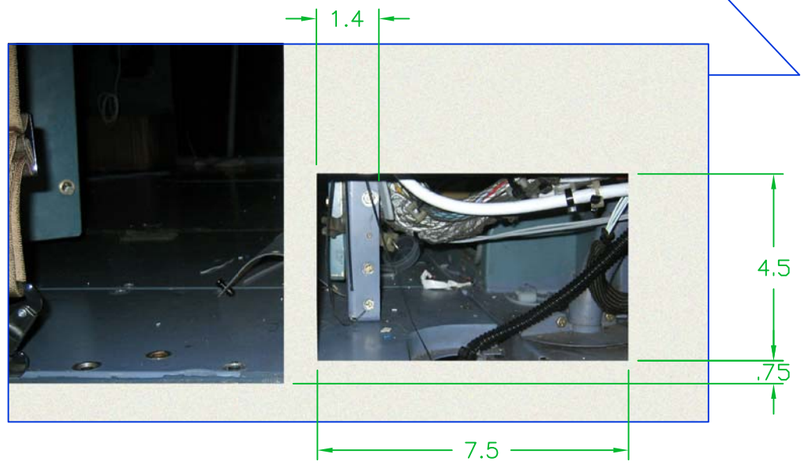




INTEGRATED Flight Systems
Reno Nevada

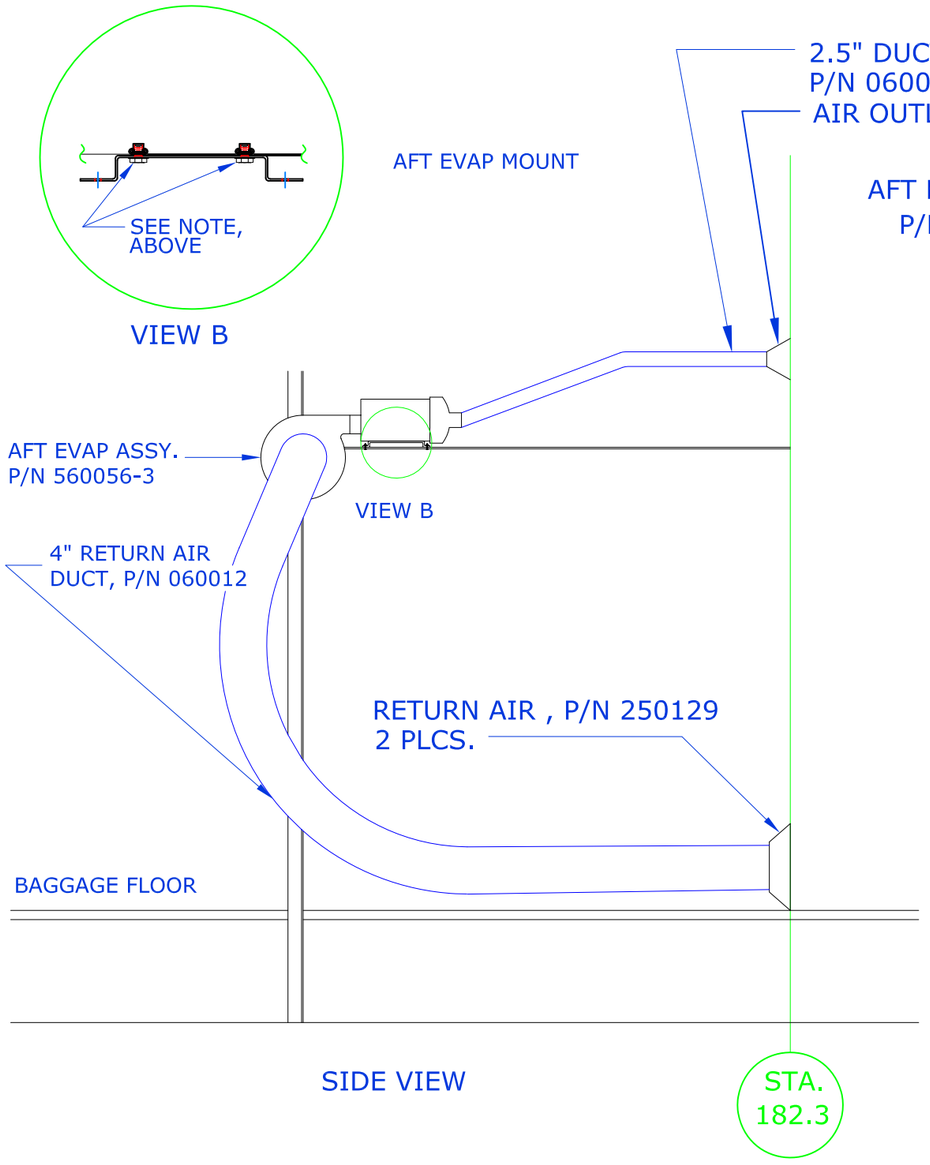
TITLE: AFT EVAPORATOR INSTALL

DRAWN BY:	DATE:	REV	SCALE:	SHEET:
JTYE	03/03/06	IR	NONE	10 OF 14

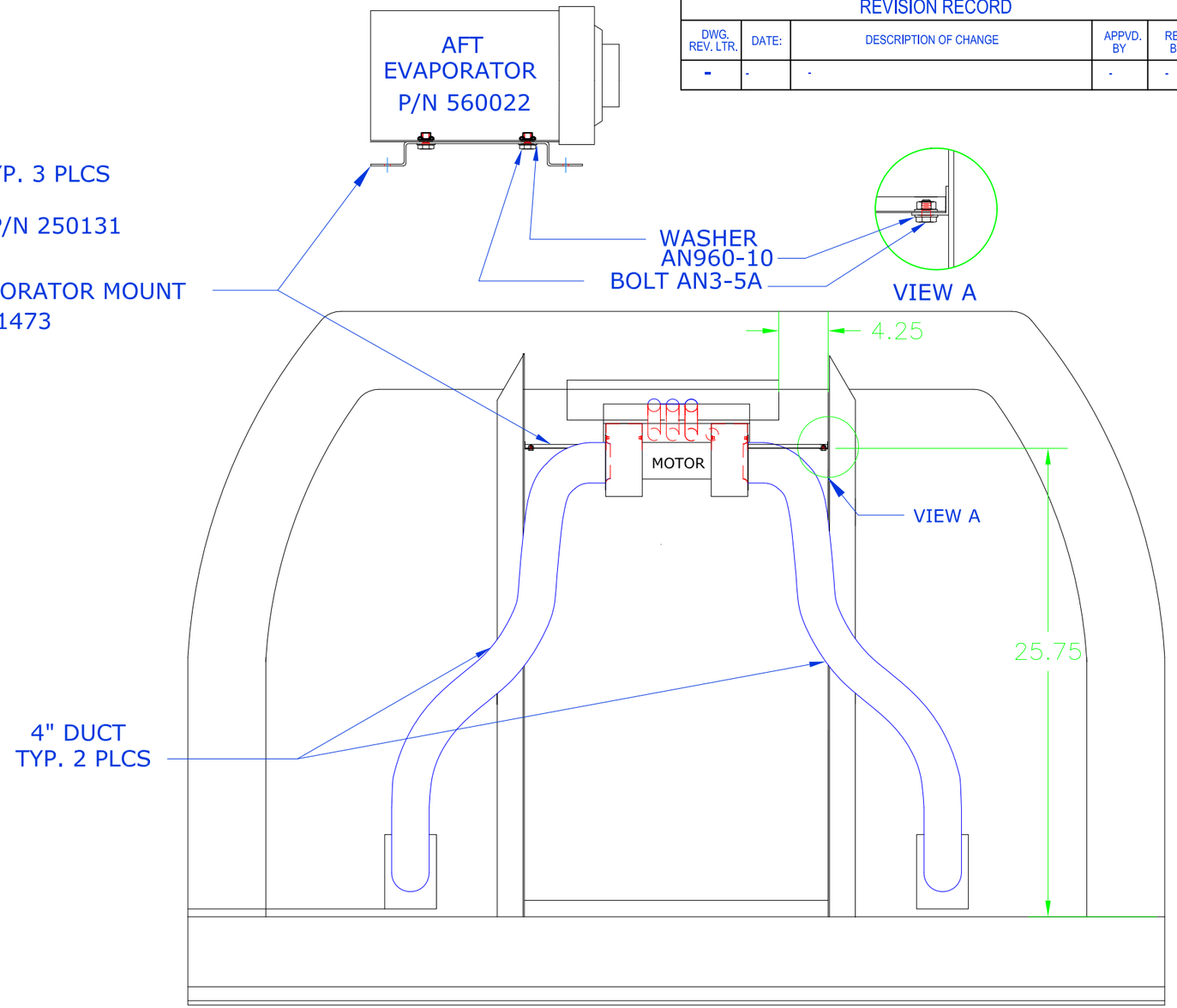
APPLICATION:	DWG No.
SA365N, N1, N2, N3	4-SA365N

NOTE:
POSITION AFT EVAPORATOR, P/N 560056-3 ON HAT SECTION P/N 261473 AS SHOWN. MARK LOCATION OF 4 MOUNTING HOLES IN BOTTOM OF EVAP. ONTO HAT SECTION. SECURE WITH WASHERS AND BOLTS. SEAL WITH PRC AROUND BOLT HEADS & WASHERS.

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



SIDE VIEW



VIEW FORWARD FROM BAGGAGE COMPARTMENT

INTEGRATED Flight Systems
Reno Nevada

TITLE: AFT EVAPORATOR INSTALL

DRAWN BY:	DATE:	REV.:	SCALE:	SHEET:
WSA	03/03/06	IR	NTS	11 OF 14

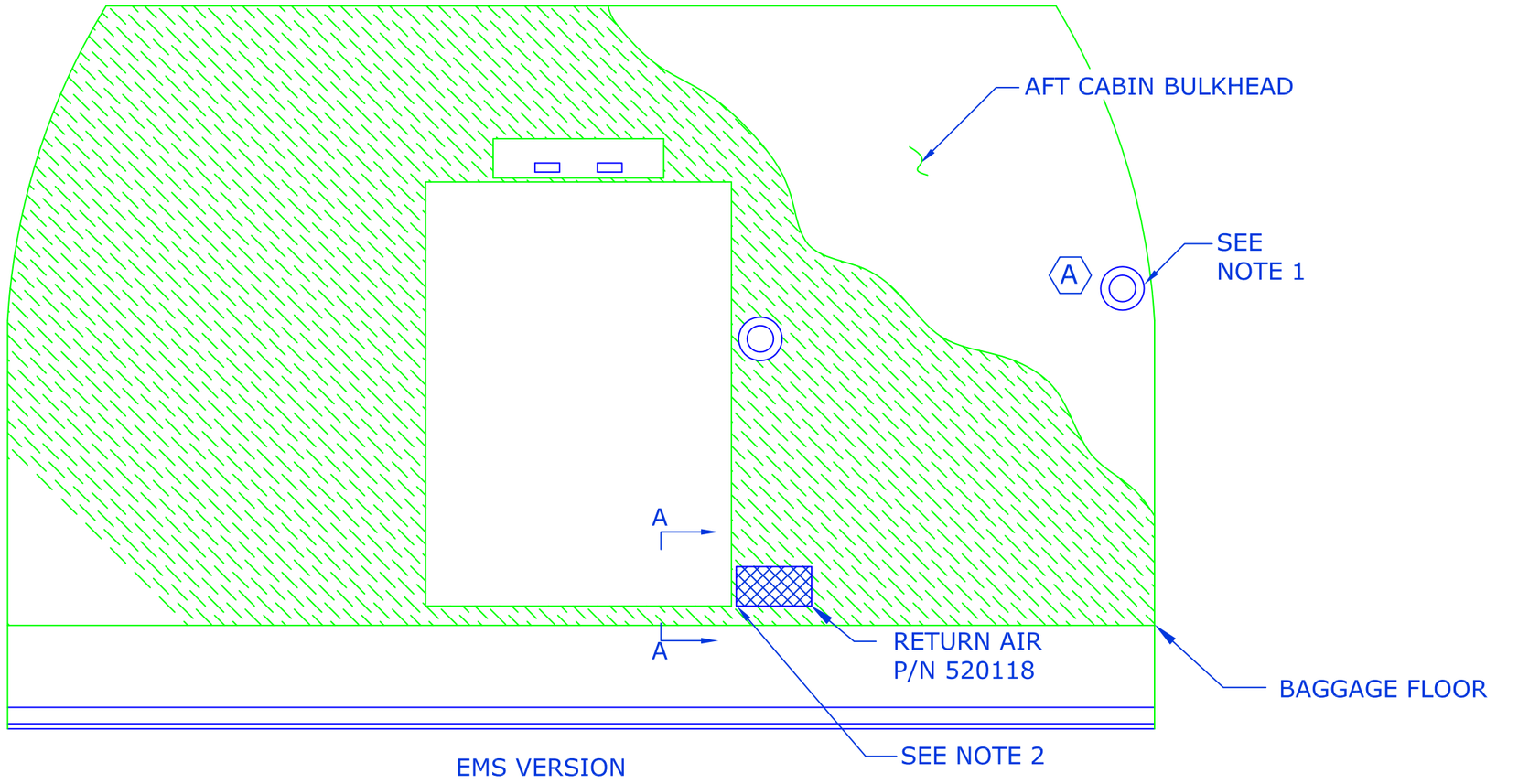
APPLICATION: SA365N, N1, N2, N3
DWG. NO.: 4-SA365N

NOTE:

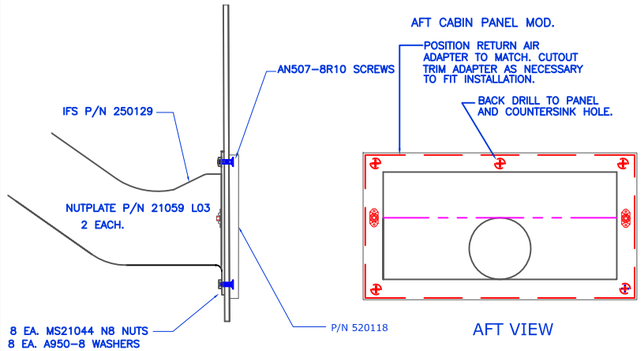
1. REMOVE INSPECTION PLATE, MARK LOCATION ON BACK OF BULKHEAD. CUT A 3-$\frac{1}{4}$" HOLE FOR WEMAC ASSY. (IFS P/N 500034)

2. CUT OUT BULKHEAD COVER PANEL AS SHOWN IN 10 OF 14. PLACE BULKHEAD DECOR PANEL IN PLACE AND MARK ANY ONY OTHER RETURN AIR INLET AND AIR OUTLETS.

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/1/05	WAS CAS, IS IFS. WAS 4 OF 5, IS 12 OF 14. REDRAWN INTO AUTOCAD. ADDED WEMAC TO EXISTING ADDED AIR OUTLETS.	-	WSA



EMS VERSION



AFT VIEW

VIEW A-A

INTEGRATED Flight

TITLE: AFT EVAPORATOR INSTALL - EMS

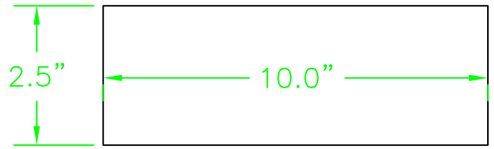
DRAWN BY:	DATE:	REV:	SCALE:	SHEET:
LC	12/15/05	IR	NTS	12 OF 14

APPLICATION: SA365N, N1, N2, N3

DWG. NO.: 4-SA365N

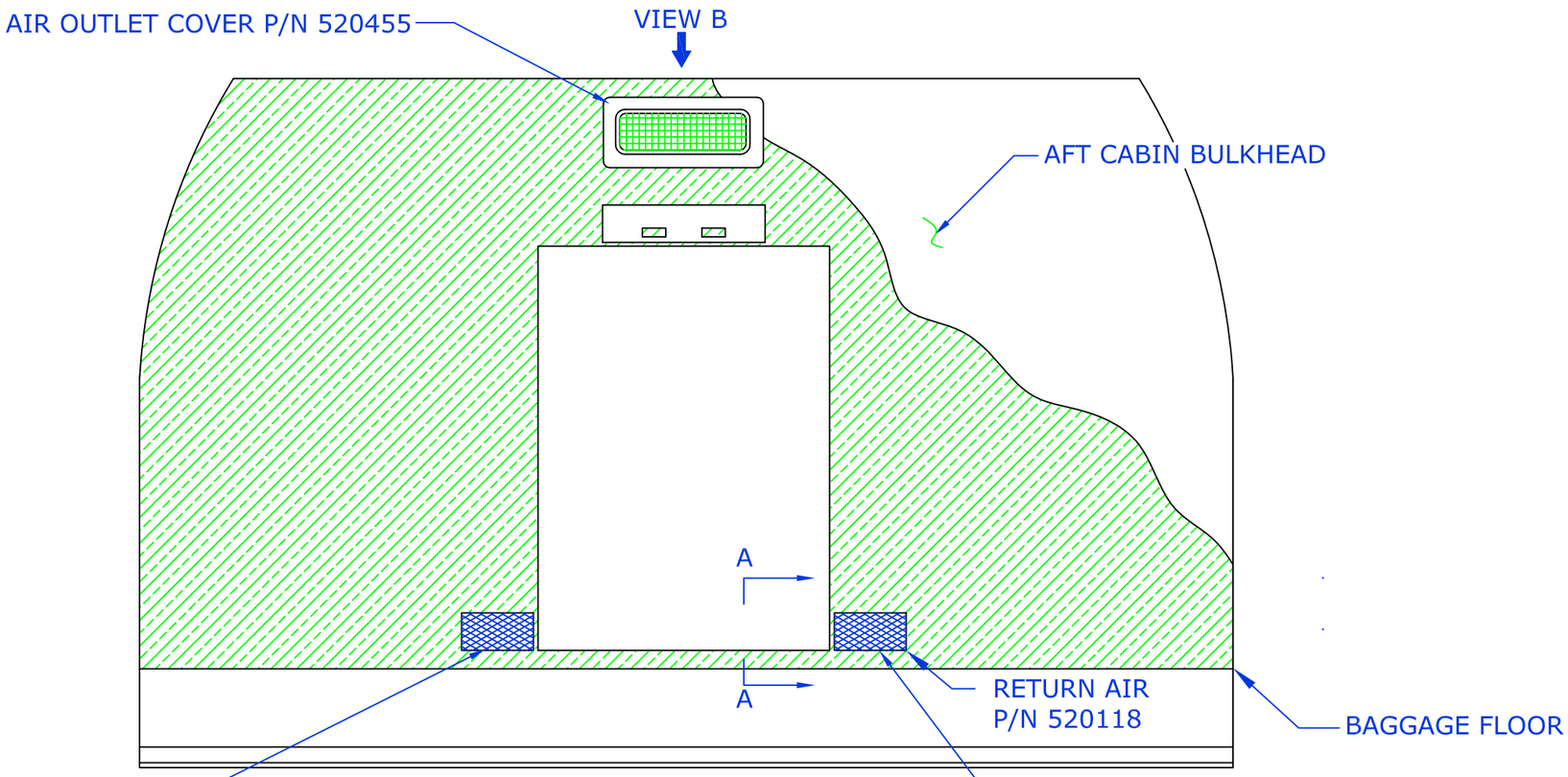
REMOVE EXISTING CLOSEOUT PANEL ON UPPER AFT BULKHEAD COVER, CUT HOLE SIZE AS SHOWN BELOW.

VIEW B-B

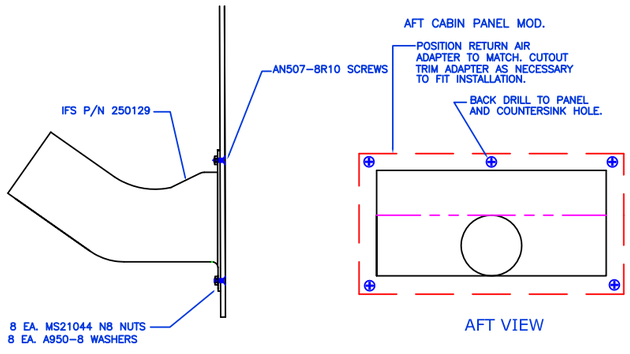


FREE BLOW AIR OUTLET IS USED WITH EVAP ASSY P/N 560022 & CAN ALSO BE USED AS OPTIONAL FREE BLOW W/ AFT EVAP ASSY P/N 560075.

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



AFT CABIN CLOSE–OUT PANEL



VIEW A-A

TWO RETURN AIR OPENINGS ARE USED WITH AFT EVAPORATOR P/N 560022.

CUSTOM INTERIOR

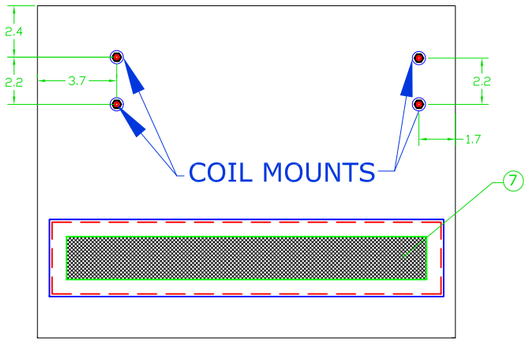
INSIDE CABIN LOOKING AFT

RETURN AIR FOR AFT EVAPORATOR P/N 560075 LOCATED HERE

INTEGRATED Flight Systems Reno Nevada

TITLE: AFT EVAPORATOR INSTALL				
DRAWN BY: LC	DATE: 12/15/05	REV: IR	SCALE: NTS	SHEET: 13 OF 14
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 4-SA365N	

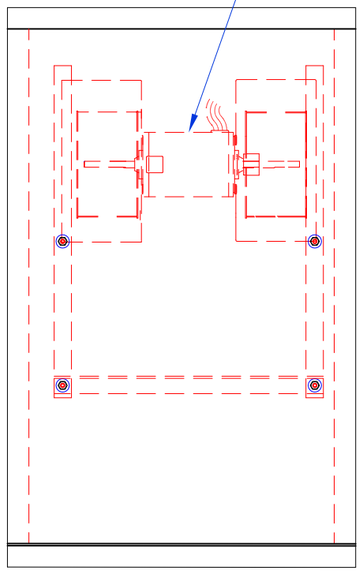
REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	03/03/06	WAS CAS, IS IFS. WAS 5 OF 5, IS 14 OF 14.	-	WSA

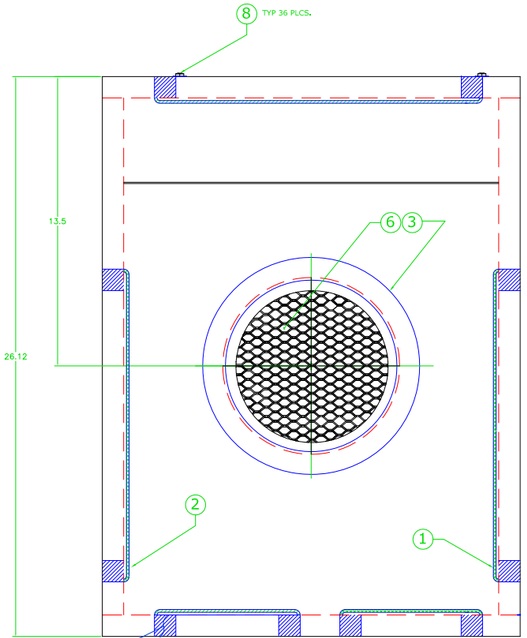


TOP VIEW

NOTE:
1. SECURE ALL SCREENS INSIDE RETAINERS WITH SILICONE PRIOR TO INSTALLATION.
2. PAINT ALL FILLED EDGES BLACK.
3. INSTALL SCREEN INSIDE BOX.
4. ALL SCREEN AREAS ARE FOR RETURN AIR.

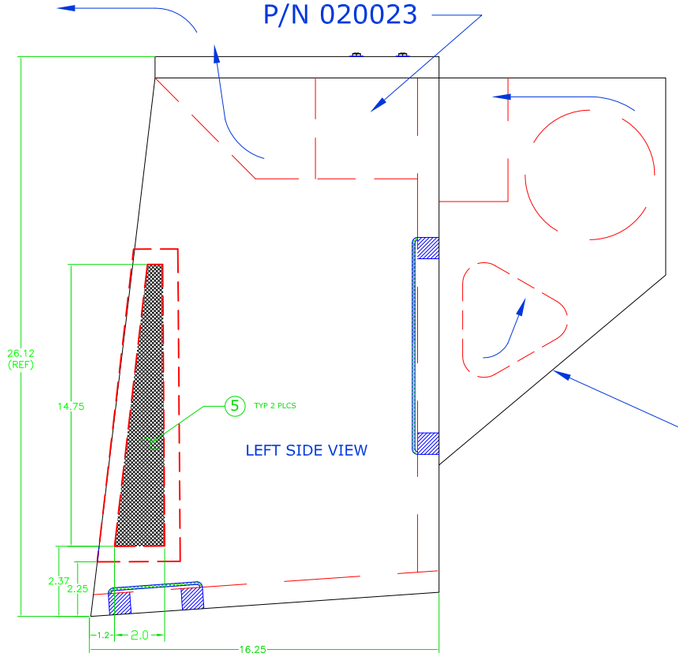
AFT FAN ASSEMBLY
P/N 490010


REAR VIEW



FRONT VIEW

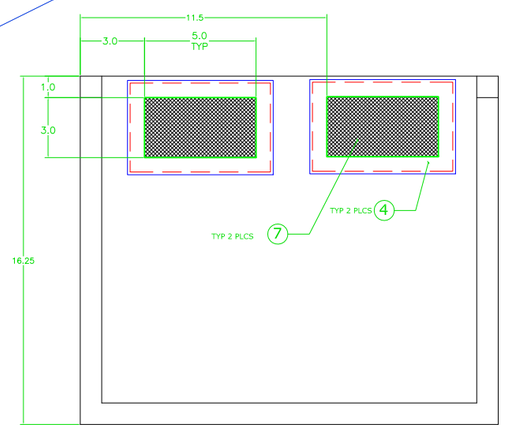
AFT EVAP. COIL
P/N 020023



LEFT SIDE VIEW

3/16" KLEGECELL COVER

REMOVE CORE 1" ALL AROUND, FILL W/A4 METALSET. PAINT EDGE FLAT BLACK, TYP. 6 PLCS



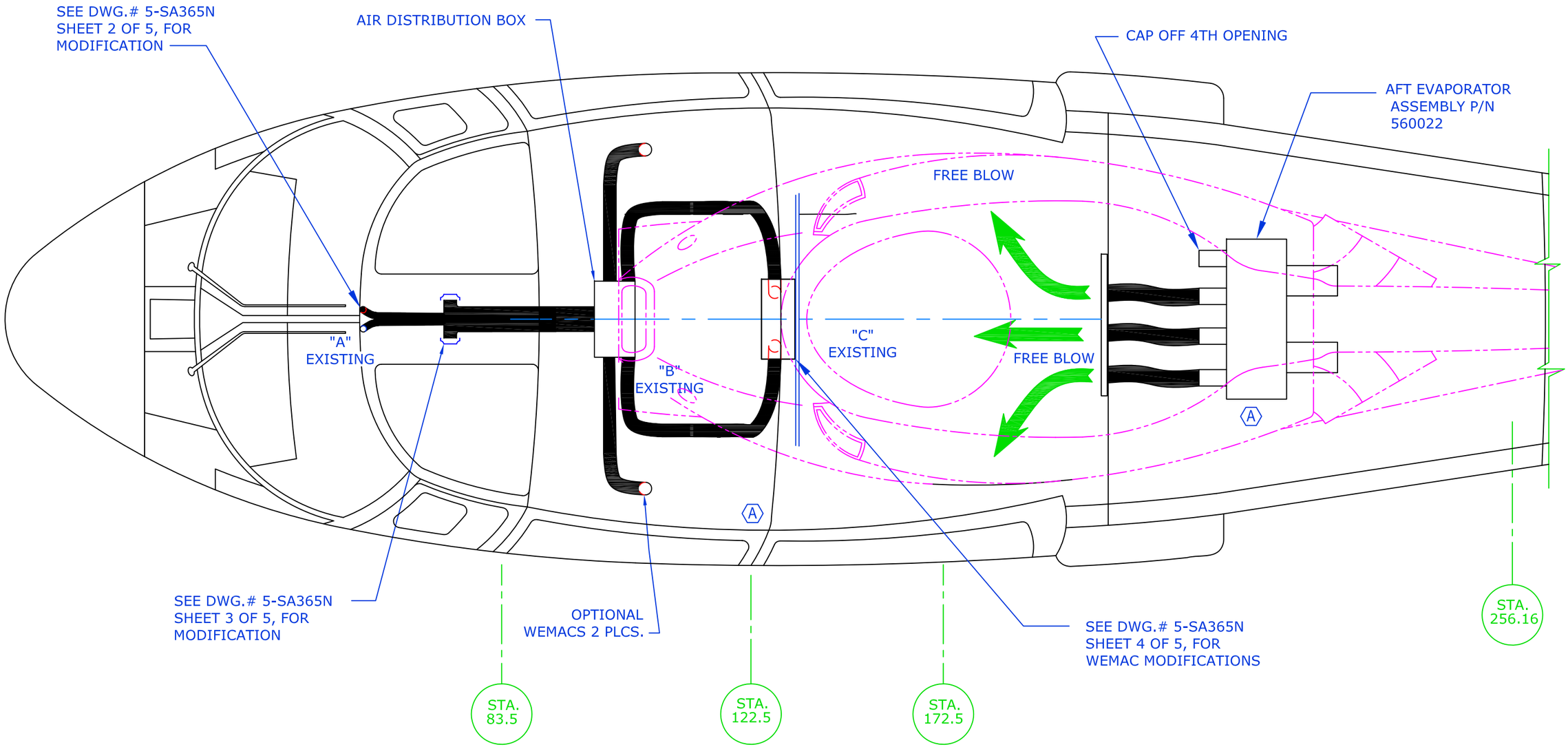
BOTTOM VIEW

QTY.	ITEM	PART NO.	DESCRIPTION
36	8	AN3-8A	BOLT
2	7	080017	SCREEN
1	6	080016	SCREEN
2	5	080015	SCREEN
2	4	250077	SCREEN RETAINER
1	3	250076	SCREEN RETAINER
1	2	250075-2	SCREEN RETAINIER
1	1	250075-1	SCREEN RETAINER

INTEGRATED Flight Systems
Reno Nevada

TITLE: AFT EVAPORATOR INSTALL				
DRAWN BY: WSA	DATE: 03/03/06	REV.: A	SCALE: NTS	SHEET: 14 OF 14
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 4-SA365N	

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/08/05	ADDED AFT EVAP AND OPT. WEMACS, CORRECTED DUCT ROUTING.	-	JTYE



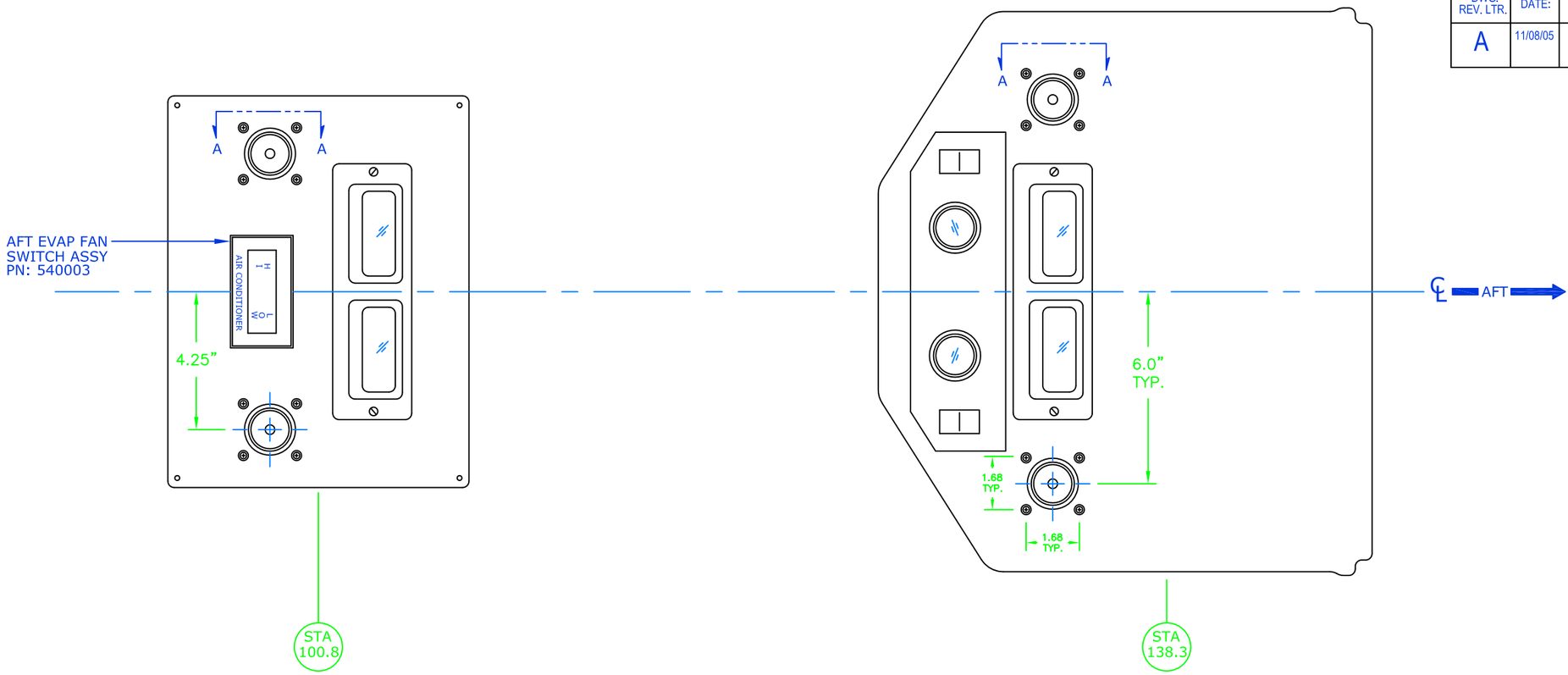
SA365N

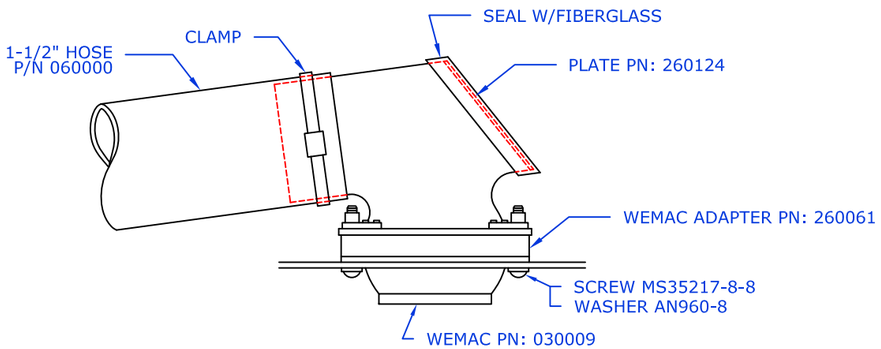
AIR DISTRIBUTION

INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR DISTRIBTION SYSTEM				
DRAWN BY: BRP	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 1 OF 5
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 5-SA365N	

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/08/05	WAS CAS, IS IFS. RE-DRAWN INTO AUTOCAD. REMOVED TEMPERATURE POTENTIOMETER. WAS 4 OF 4, IS 4 OF 5.	-	JTYE



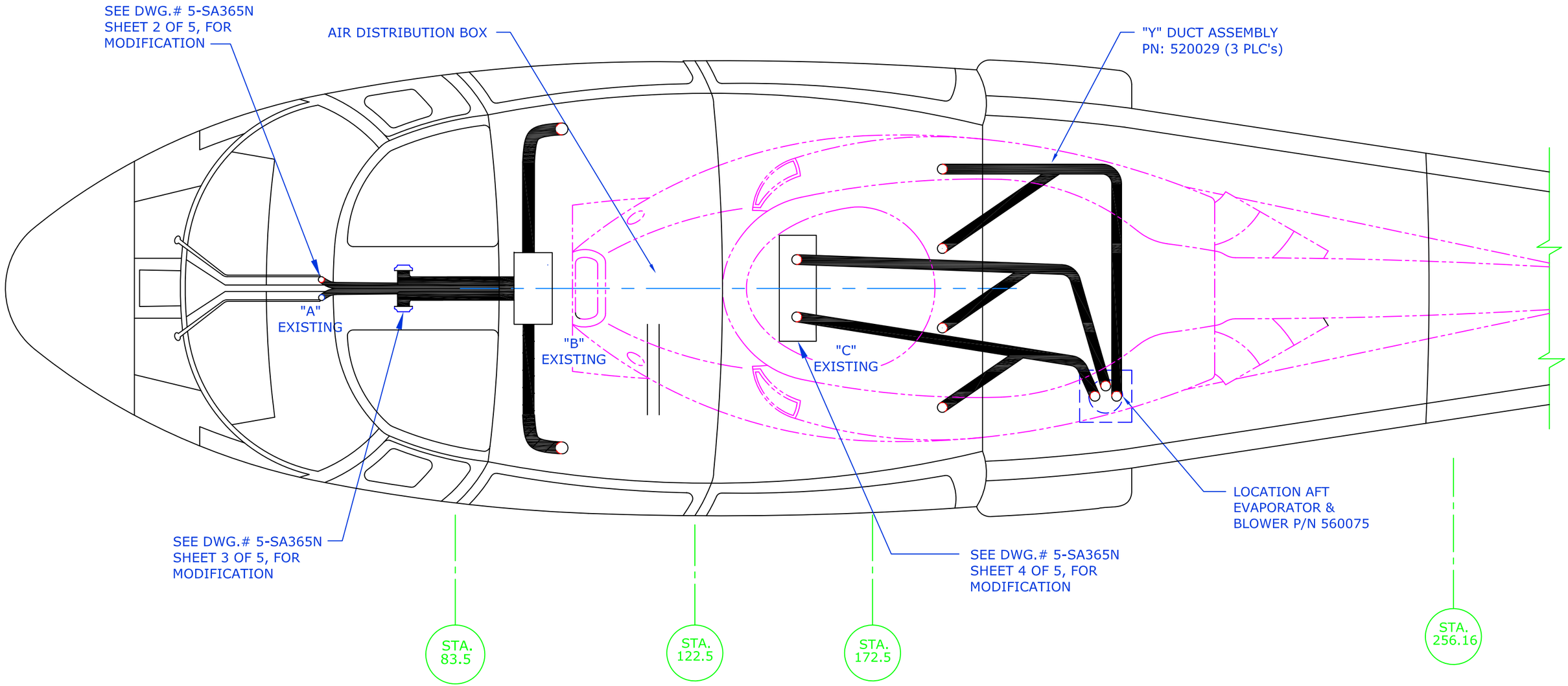


VIEW A-A

INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR DISTRIBUTION SYSTEM				
DRAWN BY: BRP	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 4 OF 5
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 5-SA365N	

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



SA365N

CORPORATE INTERIOR
AND ORIGINAL FACTORY
INTERIOR.

AIR DISTRIBUTION

INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR DISTRIBUTION SYSTEM				
DRAWN BY: SIMMONS	DATE: 03/03/06	REV.: IR	SCALE: NTS	SHEET: 5 OF 5
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 5-SA365N	

Step 6

Installation of Condenser

Installation of Condenser
Kit# 365N-00-1

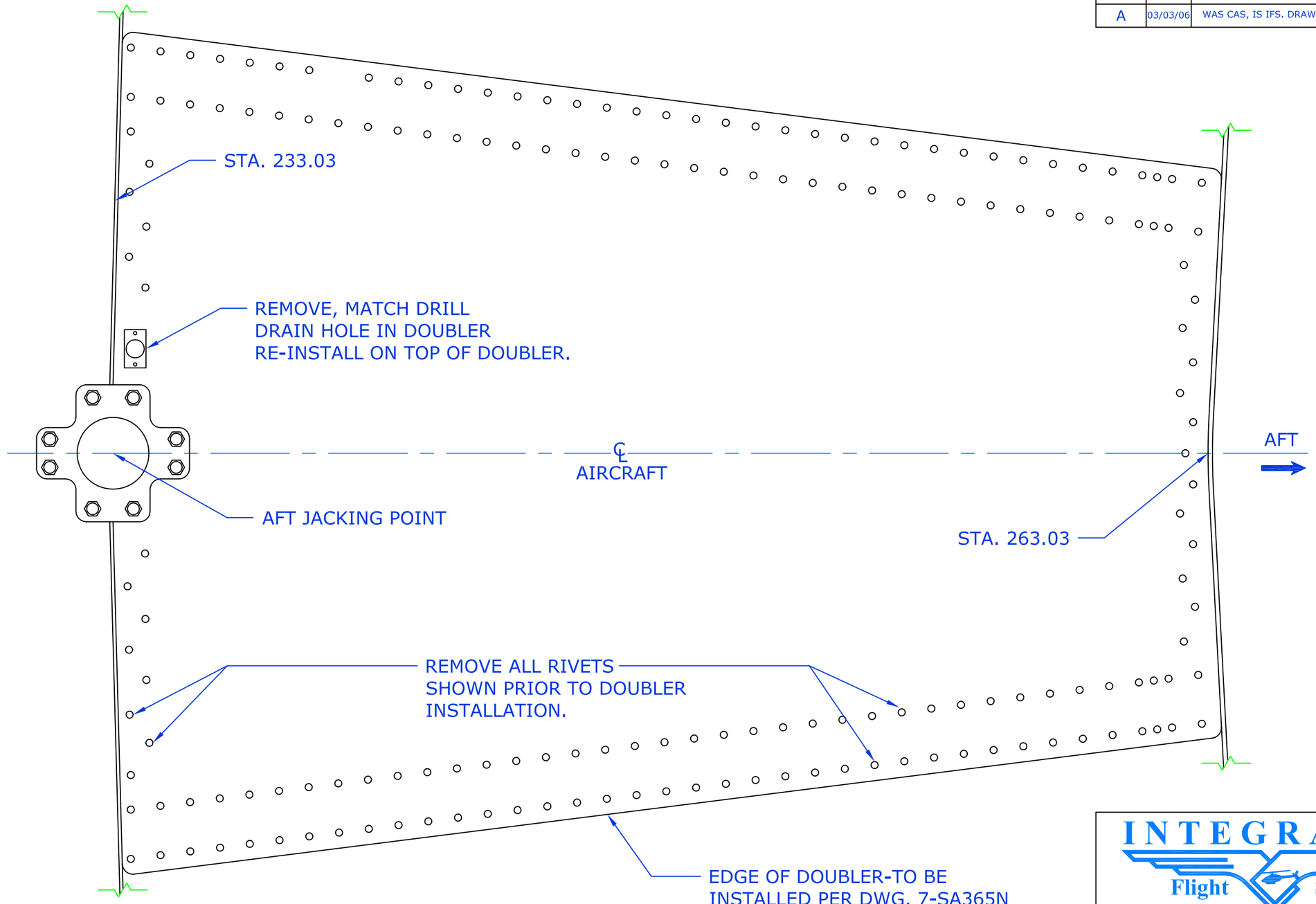
STEP	PROCEDURE	MECH.	INSP.
6.1.1	Trial fit doubler P/N 260065 beginning at station 233.03 (immediately aft of rear jack point) and extending to the next skin line at station 263.03. Drawing 7-SA365N, sheet 1 of 4.		
6.1.2	Drill out and remove all MS20470AD type rivets in the two (2) outer rows on the bottom of the aircraft as shown on drawing 7-SA365N, sheet 1 of 4.		
6.1.3	Remove strobe light from belly of aircraft, (if installed).		
6.1.4	Drill out and remove MS20470AD type rivets to the right of the aft jack point holding the drain plug. Remove drain plug assembly and store. 7-SA365N, sheet 2 of 4.		
6.1.5	Trial fit doubler to aircraft and Cleco in place. Fabricate shim from .040" 2024-T3 aluminum stock to cover remaining portion of jack point. Match drill doubler and shim to allow for reinstallation of previously removed drain plug and jack point.		
6.1.6	De-burr and remove any aluminum shavings from previous operations.		
6.1.7	Apply a thin coat of PRC to inside of doubler and Cleco in place on center line of aircraft beginning on the center line of the aircraft and working in a fore aft direction and then outward in both directions. Install CR3243-X rivets as required. Ensure correct length by using Cherrymax Tool to measure for actual length at each location of rivet to be utilized.		
6.1.8	Upon completion of the Cherrymax rivets in the field pattern, MS20470AD4-X rivets are installed on the inboard row and bucked at each side of the doubler. Cherrymax rivets CR3243-4-X are then installed in the outside row on each side of the doubler.		
6.1.9	Using the doubler as a template, mark the air inlet opening and the air discharge opening for the condenser blower and cut out holes.		
6.1.10	The honeycomb material is next removed 1" out from the inside diameter or surface for each hole in the doubler, between the inner and outer aircraft skins.		
6.1.11	Fill the removed area solid with A-4 Metal Set or Pro-set 175/233. After the filler has cured, the inside of both openings is dressed and all voids filled and smoothed. See Dwg. 7-SA365N, Sheet 3 of 4.		

STEP	PROCEDURE	MECH.	INSP.
6.1.12	The condenser blower assembly, P/N 490011 is obtained from the kit and trial fitted to the inside surface of the aircraft honeycomb. Due to a slight curvature in the aircraft skin, it will be necessary to build up the inside of the aircraft skin with A-4 Metal Set or Pro-set 175/233 to provide for a flat mounting surface for the blower assembly. Upon completion of this step, the condenser blower is temporarily removed while the condenser assembly is trial fitted.		
6.1.13	Trial fit LH and RH support angles, P/N 260069 and 260068, as per drawing 7-SA365N, sheets 3 and 4 of 4. Note that three (3) existing rivets in both the top and bottom will require removal. Trimming of the aft facing angle may be required in order to miss the adjacent rivet. Mark location of support angles and rivets to be removed. Remove angles and drill out rivets. See drawing 7-SA365N, sheets 3 and 4 of 4.		
6.1.14	Angles are refitted and back-drilled from the existing rivet holes. The angles are secured to the aircraft structure with AN3-5A bolts, AN960-10 or 10L washers and MS21044-N3 nuts.		
6.1.15	The condenser coil is next fitted to the support angles. Care must be taken when mounting the coil that the installation bolts, as shown on drawing 7-SA365N (sheet 4 of 4) are not allowed to protrude through the angle and damage any turn bend of the copper tubing at either end of the condenser coil. Utilize AN-3-4A bolts, AN960-10 washers and MS21044-N3 nuts at three (3) places per side to secure the condenser coil to each support angle (LH and RH).		
6.1.16	Complete installation of condenser coil by installing the upper close-out, P/N 510454. Seal close-out to the condenser coil fins. Install one or more layers of foam tape at the top of the coil to provide an airtight seal to the bottom of the baggage floor access panel.		
6.1.17	Reinstall condenser blower assembly, P/N 490011, utilizing the hardware called out on drawing 7-SA365N, sheet 3 of 4. The condenser air outlet scoop, P/N 250117, is installed immediately prior to final installation of the condenser blower.		
6.1.18	Install condenser air inlet scoop, P/N 250116, inlet screen, P/N 080013, and air inlet screen retainer assembly, P/N 540006. Utilize AN525-10R24 screws.		
6.1.19	Seal all perimeter edges of condenser coil and support angles to the aircraft structure on the forward side using PRC or RTV. Also seal the bottom of the coil to the tail boom with PRC or RTV.		

STEP	PROCEDURE	MECH.	INSP.
6.1.20	Install P/N 260072 condenser close out-aft cover over the four (4) aft bulkhead lightening holes. Back drill and rivet the aircraft bulkhead using the close out as a pattern. Use P/N MS20470AD4-X as shown on drawing 7-SA265N, sheet 3 of 4.		
6.1.21	Position Receiver/Drier P/N 090016-2 and bracket P/N 260123 between condenser and aft bulk head approximately as shown in drawing 7-SA365N, sheet 3 of 4. Line up drier inlet parallel with condenser outlet (lower tube), noting that the fore and aft placement is not critical. Mark one (1) bolt hole from bracket onto side wall. Remove and position Mount Plate Assembly P/N 510453 over marked bolt hole and mark 2nd hole. Drill both marked holes out to Ø.25. Position Mount Plate P/N 510453 on other side of wall, line up with two (2) drilled holes and back drill #30 holes, rivet in place using 14x CR3243-4-X rivets, see drawing 7-SA365N, sheets 3 and 4 of 4. Mount drier bottle with bracket P/N 260123. Attach using 2x AN4-12A bolts and 2x AN960-10 washers.		

REVISION RECORD

DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	03/03/06	WAS CAS, IS IFS. DRAWN INTO CAD	---	JTYE



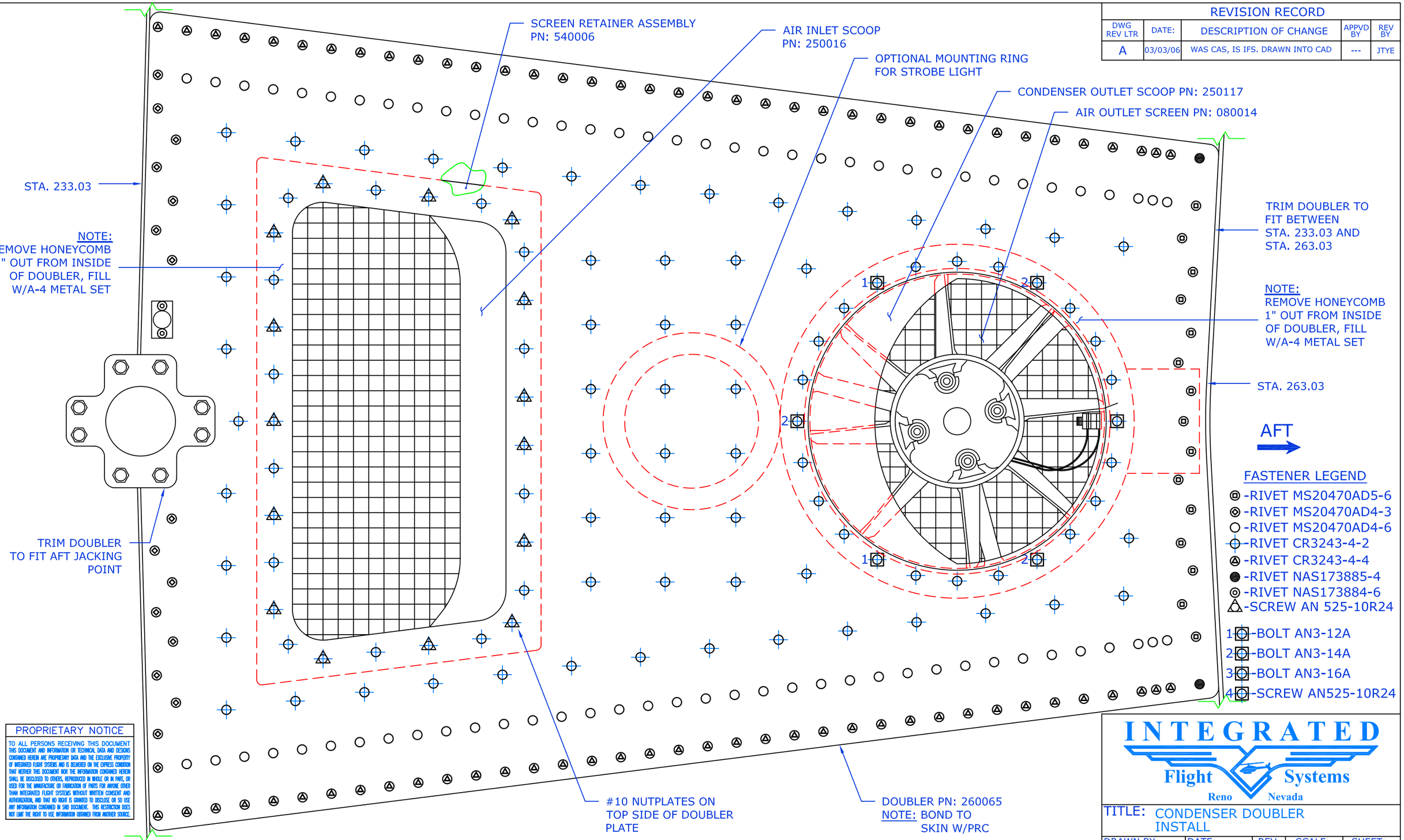
INTEGRATED Flight Systems
Reno Nevada

TITLE: CONDENSER DOUBLER INSTALL

DRAWN BY:	DATE:	REV	SCALE:	SHEET:
BRP	10/15/84	A	NONE	1 OF 4

APPLICATION:	DWG No.
SA365N, N1, N2, N3	7-SA365N

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	03/03/06	WAS CAS, IS IFS. DRAWN INTO CAD	---	JTYE



FASTENER LEGEND

- -RIVET MS20470AD5-6
- -RIVET MS20470AD4-3
- -RIVET MS20470AD4-6
- -RIVET CR3243-4-2
- -RIVET CR3243-4-4
- -RIVET NAS173885-4
- -RIVET NAS173884-6
- -SCREW AN 525-10R24
- 1 -BOLT AN3-12A
- 2 -BOLT AN3-14A
- 3 -BOLT AN3-16A
- 4 -SCREW AN525-10R24

INTEGRATED Flight Systems
Reno Nevada

TITLE: CONDENSER DOUBLER INSTALL

DRAWN BY:	DATE:	REV	SCALE:	SHEET:
BRP	10/15/84	A	NONE	2 OF 4

APPLICATION:	DWG No.
SA365N, N1, N2, N3	7-SA365N

REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	03/03/06	WAS CAS, IS IFS. DRAWN INTO CAD, WAS PN 490001, IS PN 490011.	---	JTYE
B	03/08/07	CHANGED SCREW CALLOUT FROM MS270931-18 TO AN525-10R22		

7.8±.2

BAGGAGE FLOOR

SEAL CLOSEOUT PN: 510454
TO COIL WITH SILICONE

K501 OR EQUIVALENT
1/8" x 2" SEAL STRIP

CONDENSER ASSY. PN: 550003

OTHER SIDE OF BULKHEAD
PN: 510435 DRIER MOUNT
PLATE ASSEMBLY
BACK DRILL #30 HOLES TO
PLATE ATTACH WITH:
14X CR3243-4-2

P/N 090016-2

P/N 260123

AN3-12A BOLT (2 PLC's)
AN960-10 WASHER (2 PLC'S)

FLOW

CLOSE OUT PANEL
PN: 260072 (TYP.)

FWD

SUPPORT ANGLE L.H.
PN: 260069 (SHOWN)
PN: 260068 R.H-OPPOSITE

K501 OR EQUIVALENT
1/8" x 2" SEAL STRIP

PN: 490011
(A)

AN3-4A BOLT (1 PLC)
AN960-10 WASHER (2PLC'S)
AN365-1032 NUT (1 PLC)

BURNISH FOR
ELECTRICAL CONTACT

AFT

PRC BETWEEN
DOUBLER AND BULKHEAD

FILL GAPS BETWEEN SCOOP
AND FLOOR WITH A-4
METAL SET

STA 233.0

DRILL OUT (3) EXISTING
RIVETS TOP AND BOTTOM
(BOTH SIDES), FIT SUPPORT,
BACK DRILL AND SECURE WITH
AN3-5A BOLTS
AN960-10 WASHERS
AN365-1032 NUTS

STA. 263.03

SCREEN RETAINER
PN: 540006

AN3-16A BOLT (1 PLC'S)

AN3-14A BOLT (2 PLC'S)
AN365-1032 NUT (6 PLC'S)

SCREEN
PN: 080013

CONDENSER AIR OUTLET
SCOOP PN: 250117

(B)
AN525-10R22 SCREW
AN960-10L WASHER

AN3-12A BOLT (3 PLC'S)
AN960-10 WASHER (6 PLC'S)
AN365-1032 NUT (3 PLC'S)

LEFT SIDE VIEW

STROBE

AN3-16A BOLT (5 PLC'S)
AN960-10 WASHER (10 PLC'S)
AN365-1032 NUT (5 PLC'S)

11.0±.2

COND. AIR INLET SCOOP
PN: 250116

INTEGRATED Flight Systems
Reno Nevada

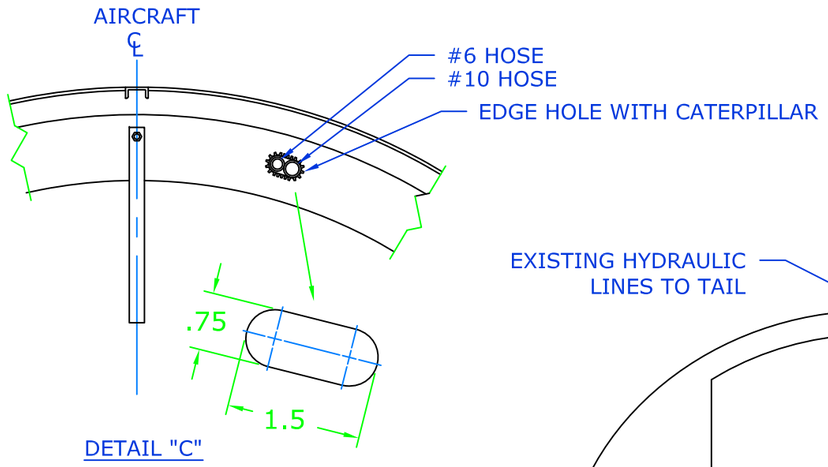
TITLE: CONDENSER BLOWER INSTALL

DRAWN BY:	DATE:	REV	SCALE:	SHEET:
BRP	10/15/84	B	NONE	3 OF 4

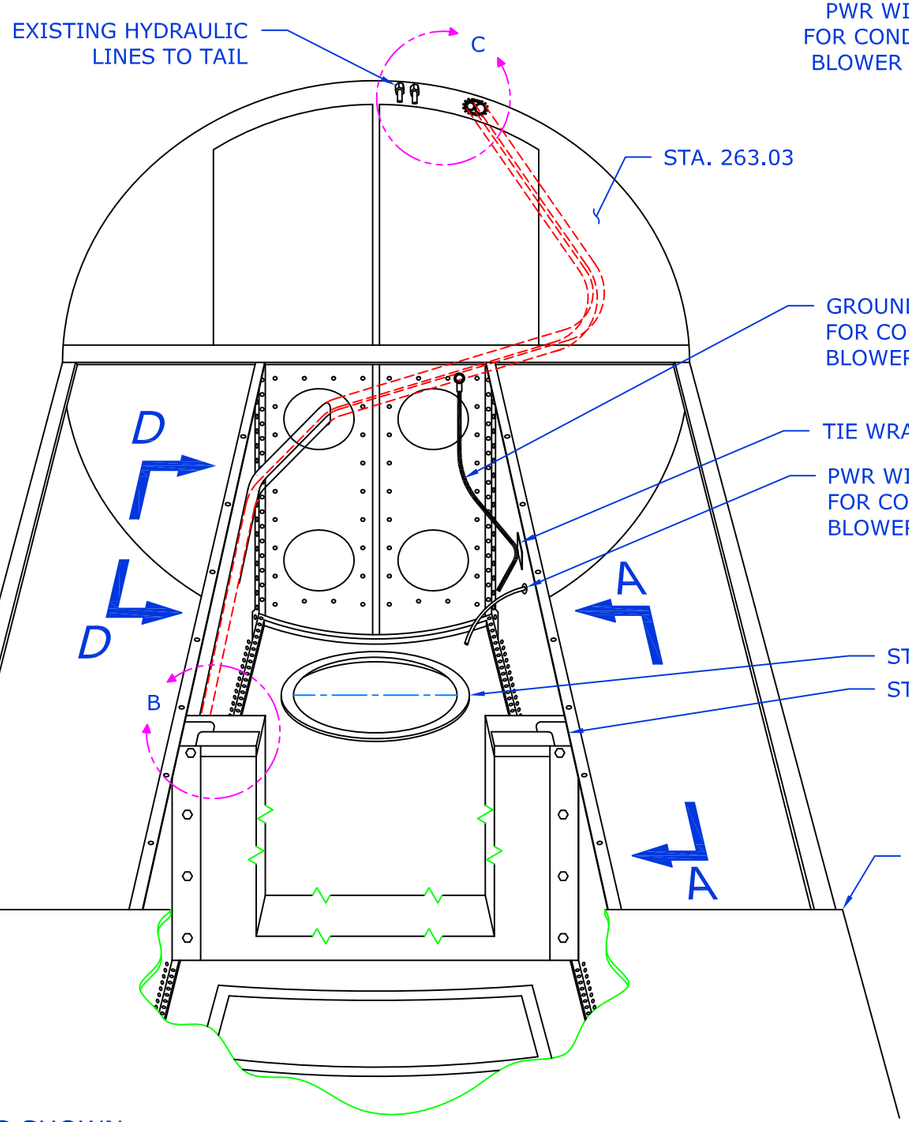
APPLICATION:	DWG No.
SA365N, N1, N2, N3	7-SA365N

A

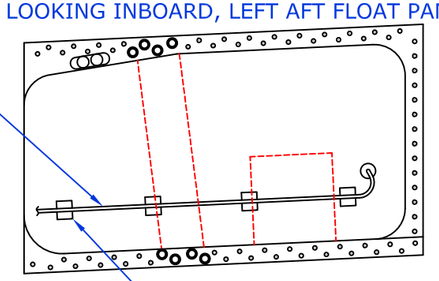
REVISION RECORD				
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	03/03/06	WAS CAS, IS IFS. DRAWN INTO CAD	---	JTYE
B	03/08/07	ADDED HARDWARE CALLOUT DETAIL B	---	JTYE



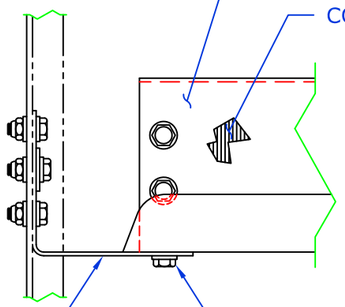
DETAIL "C"



LOOKING INBOARD, LEFT AFT FLOAT PANEL

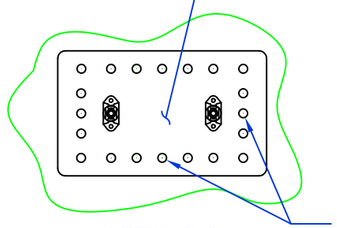


VIEW A-A
SCALE: NONE



SCALE: NONE
TOP VIEW

DETAIL "B"



VIEW D-D

ALIGN PLATE ASSEMBLY AS SHOWN IN DWG 7-SA365N SHEET 3 OF 4.
BACK DRILL #30 HOLES FOR RIVETS
ATTACH USING:
6X CR3243-4-2 RIVETS

NOTE:

AIRCRAFT INSIDE SKIN NOT SHOWN FOR CLARITY.

INTEGRATED Flight Systems
Reno Nevada

TITLE: CONDENSER/BLOWER INSTALL				
DRAWN BY: SIMMONS	DATE: 10/15/84	REV A	SCALE: NONE	SHEET: 4 OF 4
APPLICATION: SA365N, N1, N2, N3			DWG No. 7-SA365N	

Step 7

Installation of Forward Evaporator

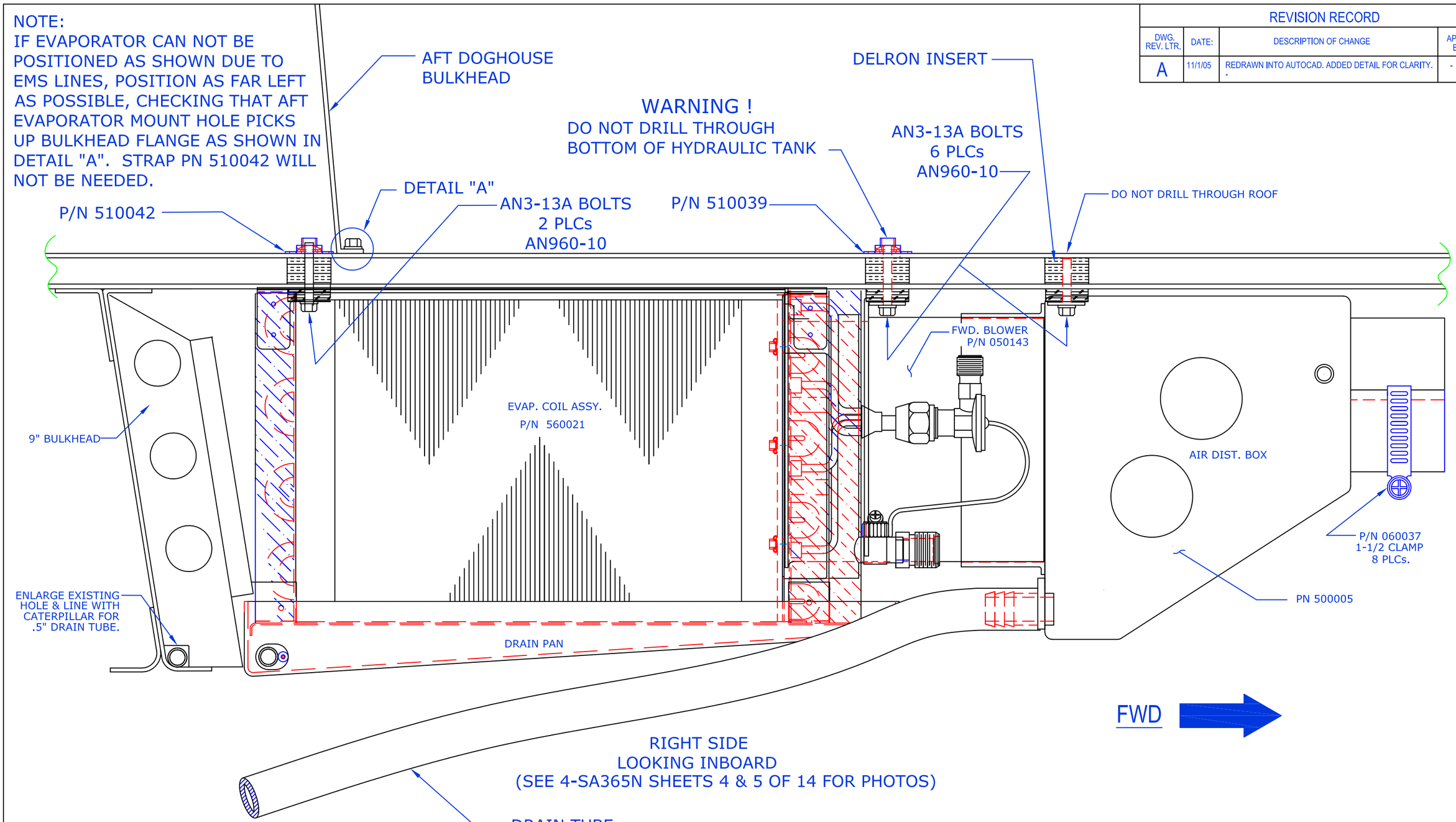
Installation of Forward Evaporator
Kit# 365N-00-1

STEP	PROCEDURE	MECH.	INSP.
7.1.1	Trial fit forward evaporator assembly, P/N 560021, temporarily. Make sure aft mounting holes will not be on edge of upper “dog house” bulkhead mounting flange, see drawing 4-SA365N, sheet 1 of 14, detail “B”. Remove fan assembly if necessary.		
7.1.2	Position and mark the four (4) holes to aircraft upper skin per drawing 4-SA365N, sheet 1 of 14, at both the forward and aft locations.		
7.1.3	Mark fan support bracket to aircraft upper skin, see drawing 4-SA365N, sheet 3 of 14.		
7.1.4	Remove evaporator assembly.		
WARNING REMOVE HYDRAULIC RESERVOIR FROM ROOF OF CABIN TO PREVENT DAMAGE WHEN DRILLING THE MOUNTING HOLES FOR THE FORWARD EVAPORATOR.			
7.1.5	Drill six (6) marked holes, remove 1" diameter of inner core material, and fill with metal set. After setting, re-drill holes. See drawing 4-SA365N Sheet 3 of 4.		
7.1.6	Install forward evaporator assembly with hardware shown.		
7.1.7	Attach refrigerant lines to forward evaporator coil assembly, see drawing 3-SA365N, sheet 2.		
7.1.8	Attach drain line, both sides of forward evaporator drain pan. Do not tie drains into any existing drain lines. See drawing 4-SA365N, Sheet 3 of 14.		
7.1.9	Enlarge existing hole in each bracket outboard of forward evaporator to allow the drain line to pass through. Route the drain line down forward side of the aircraft frame at Station 128.2, through the floor. Install grommet in the outside aircraft skin. Route the drain line from the floor down through the grommet to outside of aircraft.		
7.1.10	Route refrigerant lines together, tie wrap or adel clamp as required.		
7.1.11	Thermostat and cockpit controller assembly switch, P/N 540140 is mounted in the cockpit ceiling. See drawing 4-SA365N, Sheet 3 of 14.		
7.1.12	Re-attach fan to evaporator assembly, P/N 560021 using five (5) each AN3-5A bolts and five (5) each AN960-10 washers.		

STEP	PROCEDURE	MECH.	INSP.
7.1.13	Next, slide Air Distribution Box P/N 500005 into position. Mark the top flanges of the forward fan aft mount assembly with two (2) pilot holes. These will not be drilled through the outer skin of the cabin roof. See drawing 4-SA365N, sheet 2 of 14 and detail A for details.		
7.1.14	Secure forward blower assembly, P/N 050143 (or 050078) and Air Distribution Box P/N 500005. Seal with aluminum tape P/N 070076.		
7.1.15	Attach 12" flexible ducts. Run them from the aluminum 12" tubes to each side of air box, per drawing 5-SA365N, sheet 1 of 5. Four (4) additional 12" flexible ducts will be run from other aluminum 12" tubes mounted to the forward side of the air distribution assembly box to pilot's air supply, See drawing 4-SA365N, sheet 4 of 14.		
7.1.16	Remove existing forward console air outlet assembly per drawing 5-SA365N, sheet 2 of 5. Discard existing wemacs. Install per drawing. These must be capped off either at the fresh air inlet or at the flexible hoses that can supply fresh air to the cockpit/cabin. **The hinged windows in both the pilots and co-pilots door supply fresh air for crew ventilation in accordance with Federal Aviation Administration requirements.**		
NOTE **FAILURE TO BLOCK THE INCOMING FRESH AIR FROM THIS SOURCE WILL DRAMATICALLY DECREASE THE EFFECTIVENESS OF THE SYSTEM.**			
NOTE **AS-365N3 MODELS WITH MOLDED PLASTIC CENTER POST DUCTS WILL NOT REQUIRE REMOVAL. USE THE EXISTING DUCTS AND WEMACS WITH NO FURTHER MODIFICATIONS.**			
7.1.17	Mark and cut new wemac location as shown. Install wemac P/N 030007-1 and duct P/N 060000 with hardware as shown. See DRAWING 5-SA365N, sheet 3 of 5.		

NOTE:
IF EVAPORATOR CAN NOT BE POSITIONED AS SHOWN DUE TO EMS LINES, POSITION AS FAR LEFT AS POSSIBLE, CHECKING THAT AFT EVAPORATOR MOUNT HOLE PICKS UP BULKHEAD FLANGE AS SHOWN IN DETAIL "A". STRAP PN 510042 WILL NOT BE NEEDED.

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/1/05	REDRAWN INTO AUTOCAD. ADDED DETAIL FOR CLARITY. -	-	WSA

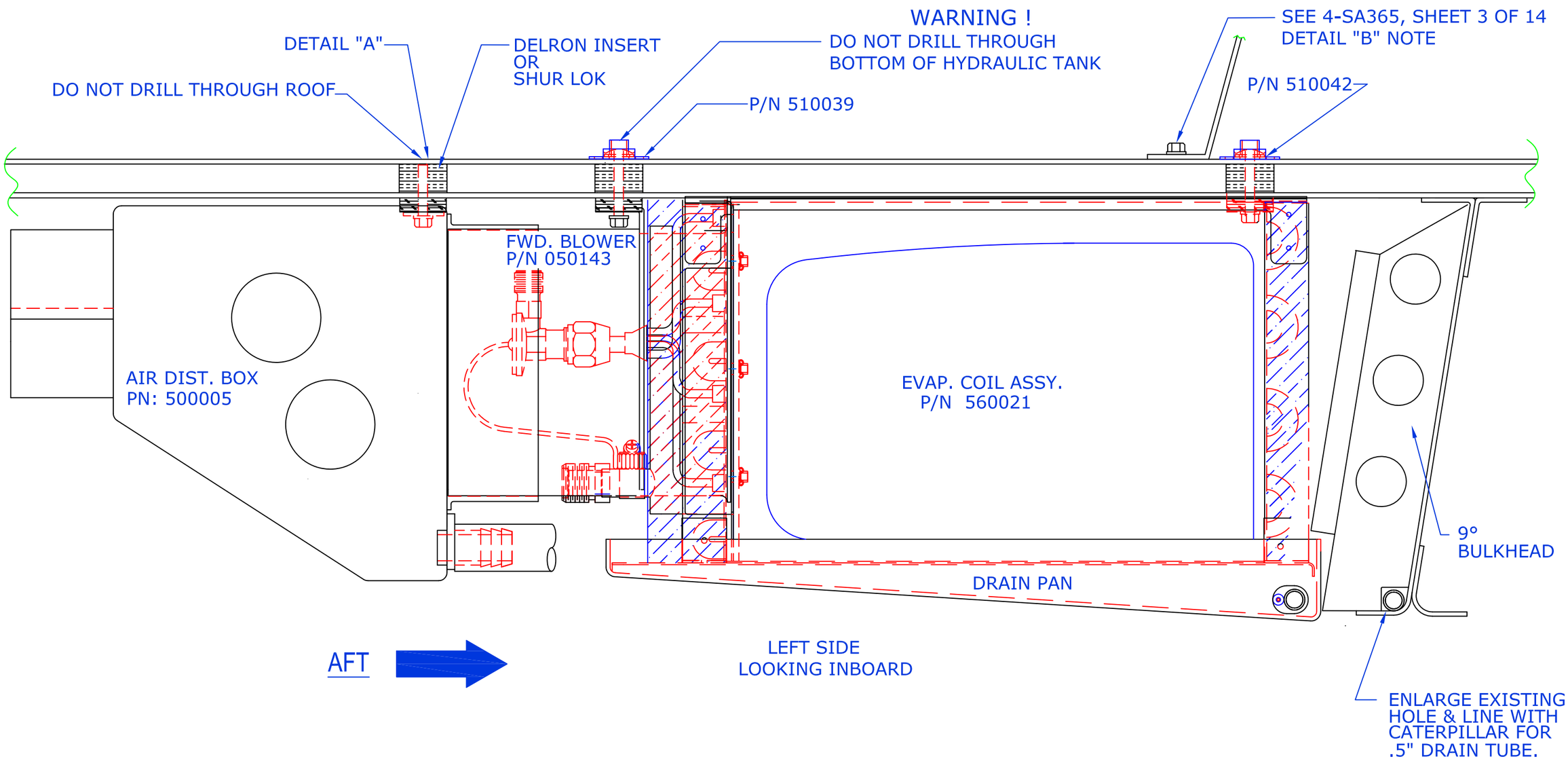


SA-365N
CORPORATE

INTEGRATED Flight Systems
Reno Nevada

TITLE: FWD EVAPORATOR INSTALL					
DRAWN BY: LC	DATE: 10/15/84	REV: IR	SCALE: NTS	SHEET: 1 OF 14	
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 4-SA365N		

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/1/05	REDRAWN INTO AUTOCAD. ADDED DETAIL FOR CLARITY. -	-	WSA



SA-365N

CORPORATE

INTEGRATED Flight Systems
Reno Nevada

TITLE: FWD EVAPORATOR INSTALL				
DRAWN BY: LC	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 2 OF 14
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 4-SA365N	

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/1/05	WAS 3 OF 5, IS 3 OF 14. REDRAWN INTO AUTOCAD. ADDED DETAIL FOR CLARITY, ADDED P/N 540140.	-	WSA

AFT EVAP MOUNT STRIP PN: 510039

SECURE TO AIRCRAFT SKIN WITH EPOXY

FWD EVAP ASSEMBLY

AN3-13A (TYP. 4)

REMOVE CORE Ø1" FILL WITH A-4 METAL SET.

OUTER AIRCRAFT SKIN

INSULATION

WASHERS AN970-4
(SHIM AS REQUIRED TO LEVEL EVAPORATOR ASSEMBLY)

WASHER AN960-3

DETAIL "A" +"B"

REMOVE R.H. HYDRAULIC FLUID RESERVOIR PRIOR TO EVAP. INSTALLATION.

MOUNT ANGLE
P/N 261480 2 PLCS

2X DELRON INSERTS,
2X AN3-3 BOLTS

"A"

"B"

FWD FAN STRAP ASSY. PN: 510042

TEMPERATURE CONTROLLER ASSY.
P/N 540140.
A

½" DRAIN TUBE; NEVER RUN TUBE HIGHER THAN DRAIN NIPPLE. DO NOT KINK HOSE.
(2 PLACES)

AIR DISTRIBUTION BOX
(NOT SHOWN FOR CLARITY)

VIEW LOOKING AFT
AT STA. 128.2

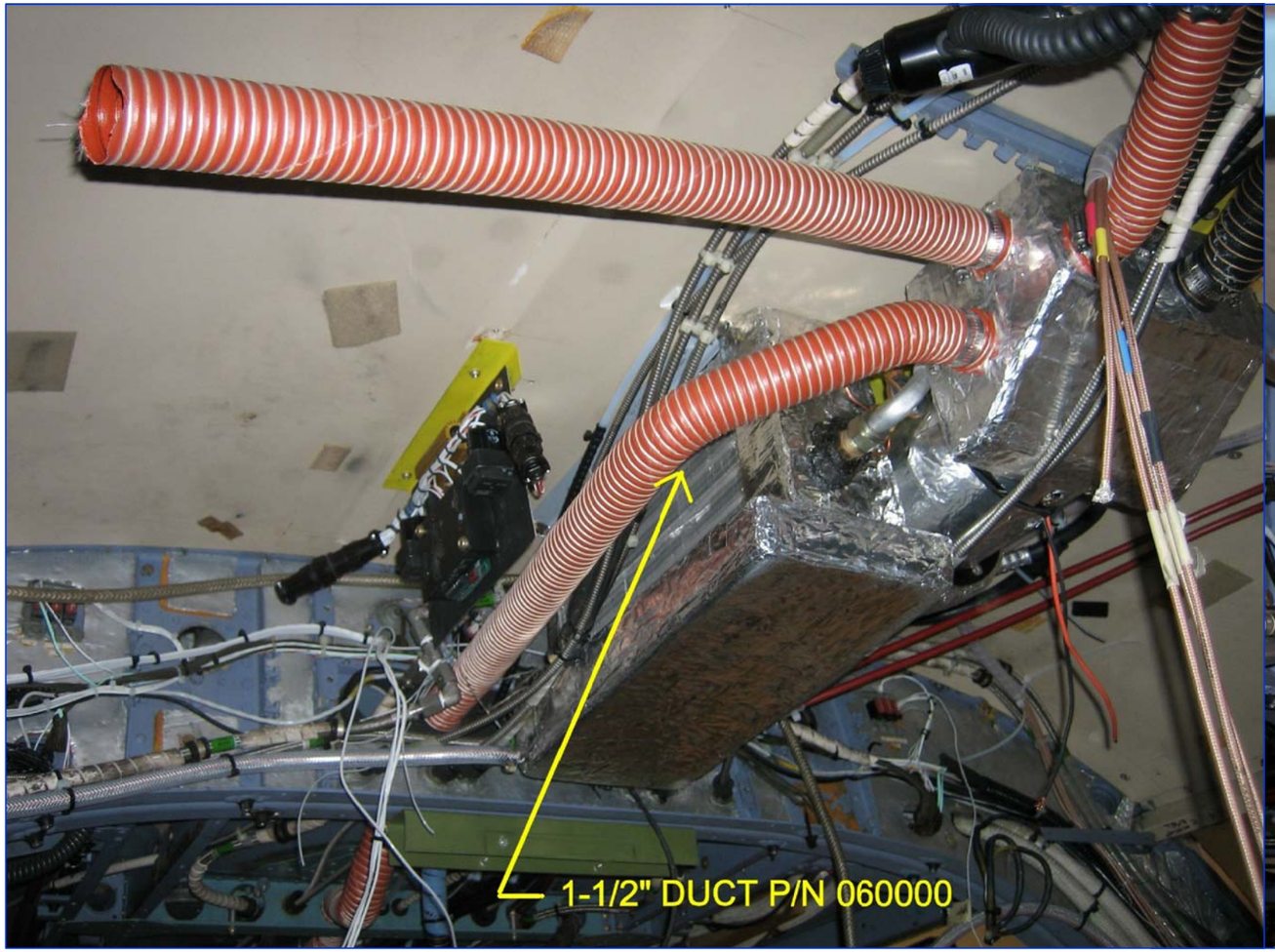
SA-365N

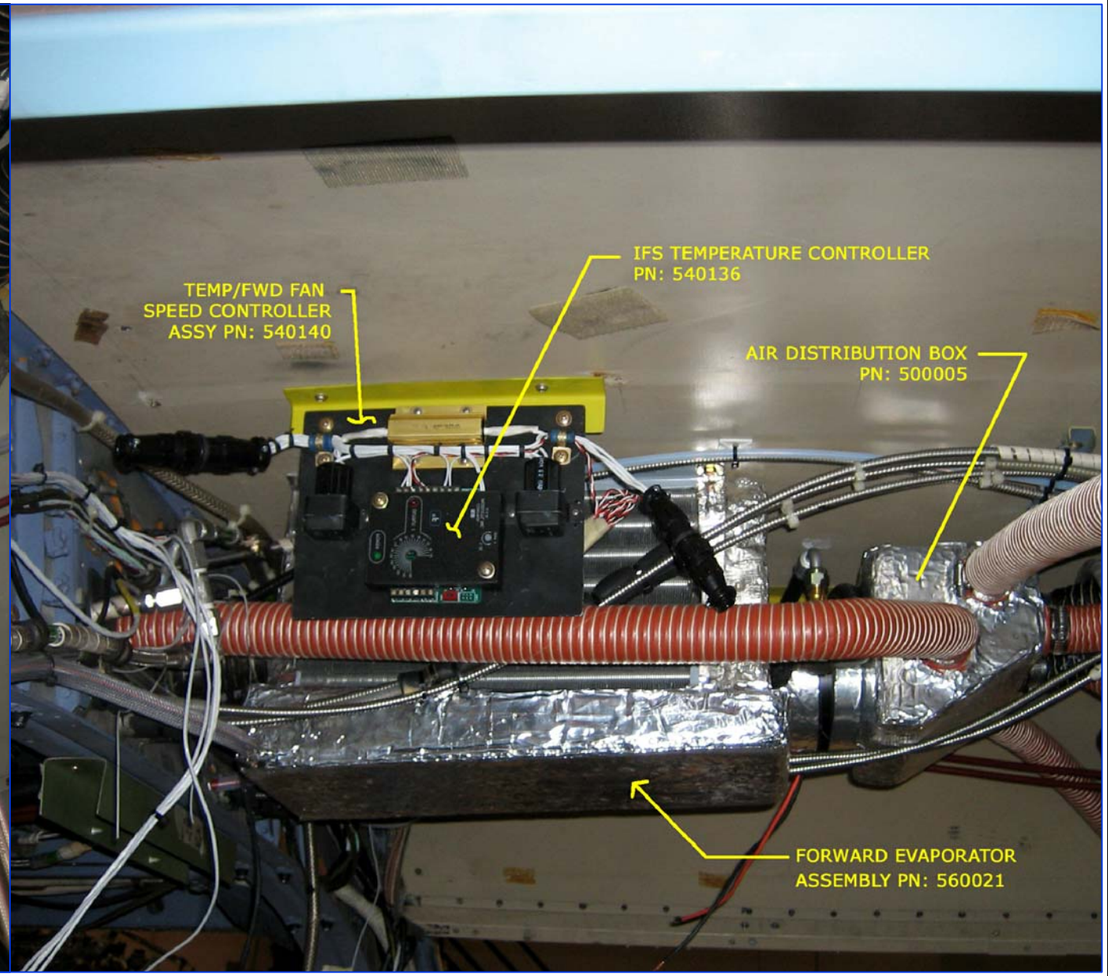
CORPORATE

INTEGRATED Flight Systems
Reno Nevada

TITLE: FWD EVAPORATOR INSTALL				
DRAWN BY: LC	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 3 OF 14
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 4-SA365N	

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



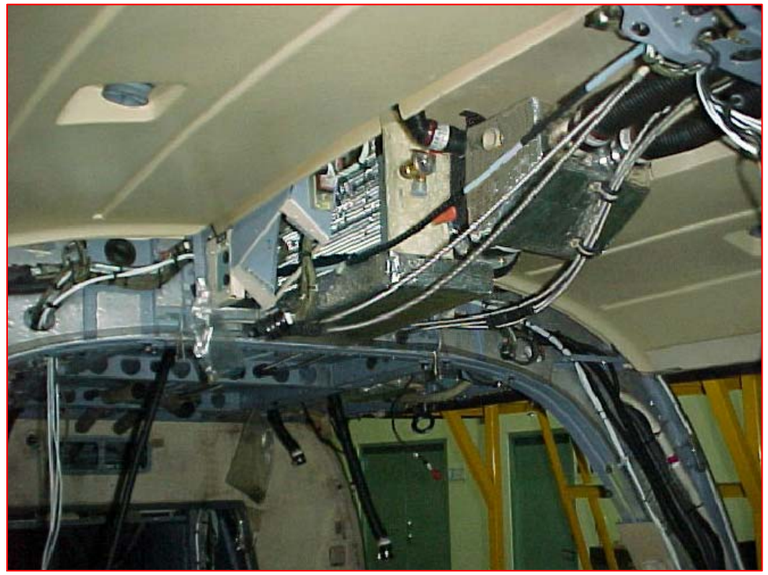


INTEGRATED Flight Systems
Reno Nevada

TITLE: EVAPORATOR PHOTOS				
DRAWN BY: JTYE	DATE: 11/08/05	REV: IR	SCALE: NTS	SHEET: 4 OF 14
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 4-SA365N	

REVISION RECORD

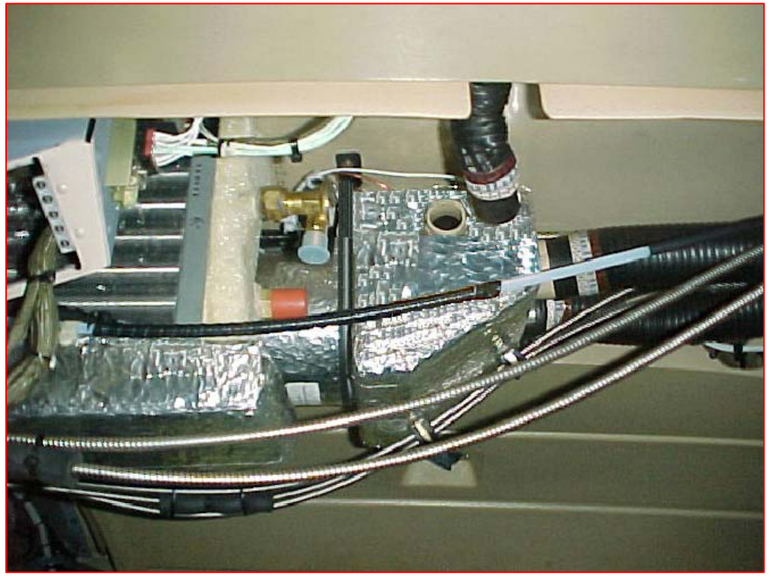
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
A	03/03/06	ORIGINAL DRAWING 5 OF 5 MOVED TO 14 OF 14	---	WSA

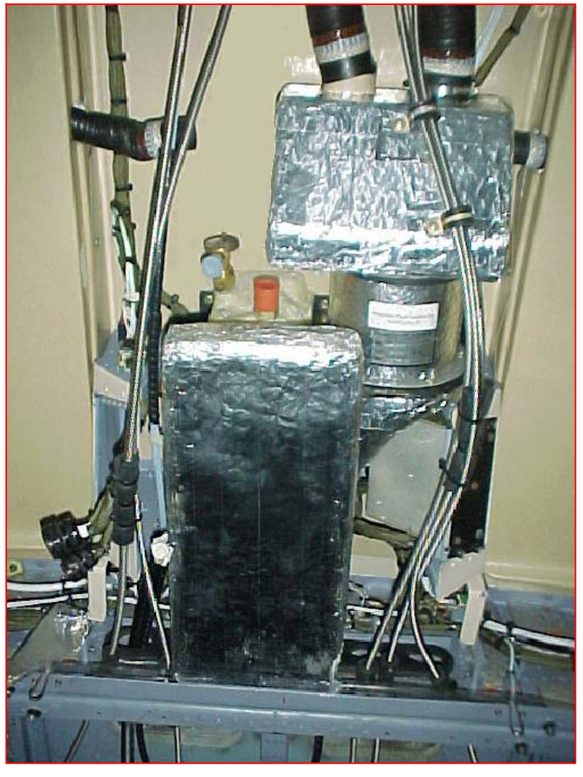


NOTE:

1. REMOVE OLD TUNNEL COVER.
2. INSTALL NEW TUNNEL COVER, P/N 250120.
3. USE EXISTING HARDWARE.

STANDARD INTERIOR VIEWS





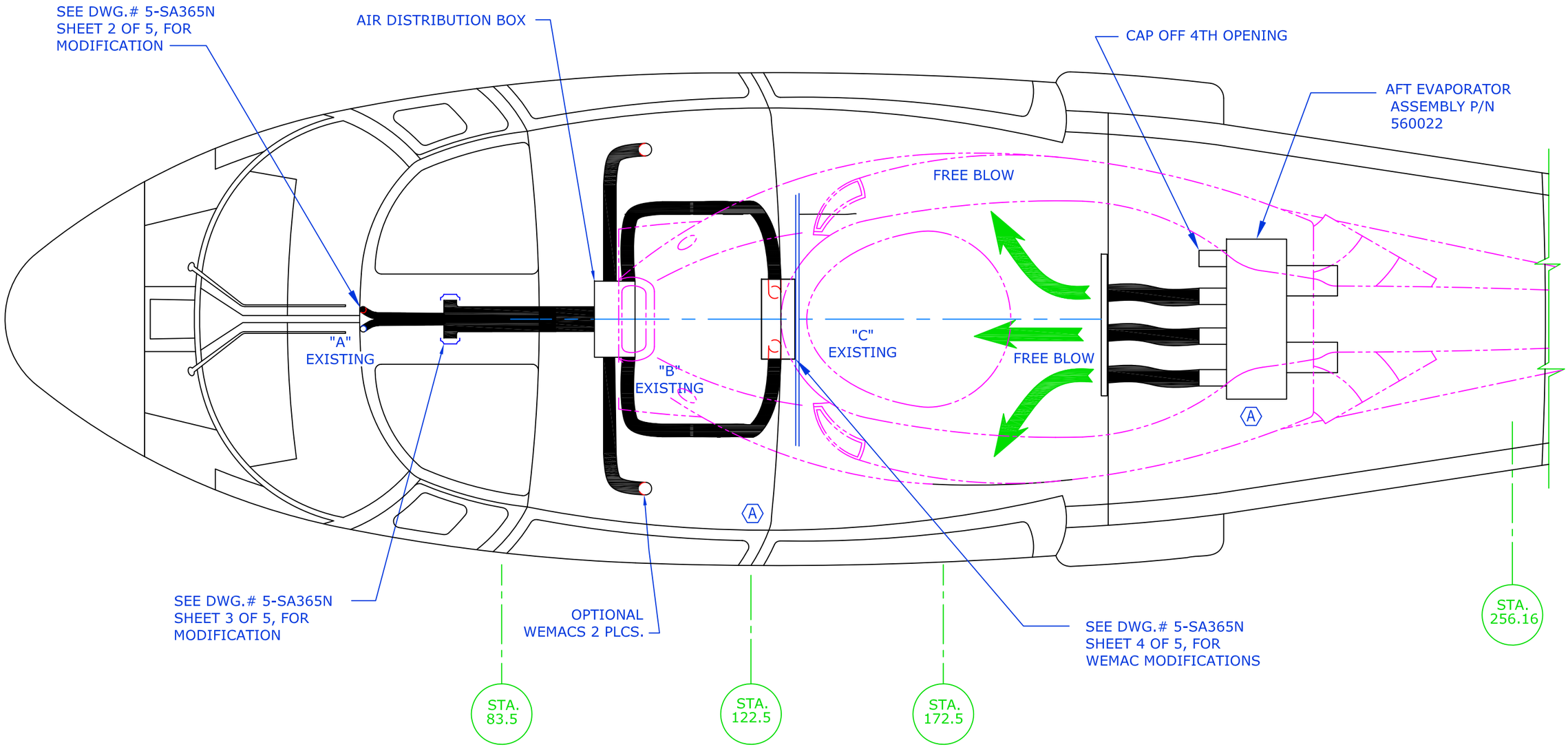
INTEGRATED Flight Systems Reno Nevada

TITLE: FORWARD EVAPORATOR INSTALL

DRAWN BY:	DATE:	REV	SCALE:	SHEET:
JTYE	10/15/84	A	NONE	5 OF 14

APPLICATION:	DWG No.
SA365N, N1, N2, N3	4-SA365N

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/08/05	ADDED AFT EVAP AND OPT. WEMACS, CORRECTED DUCT ROUTING.	-	JTYE



SA365N

AIR DISTRIBUTION

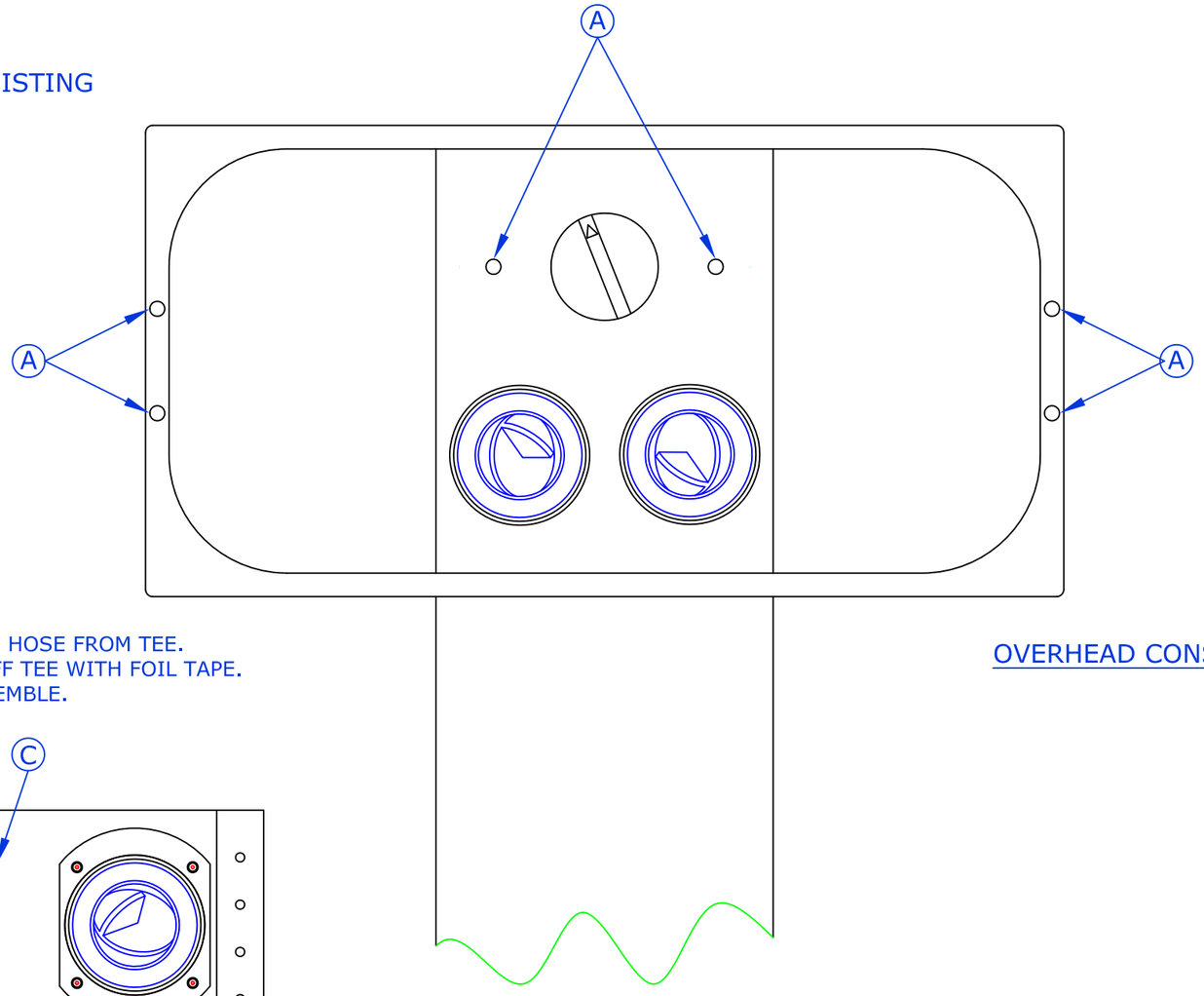
INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR DISTRIBTION SYSTEM				
DRAWN BY: BRP	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 1 OF 5
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 5-SA365N	

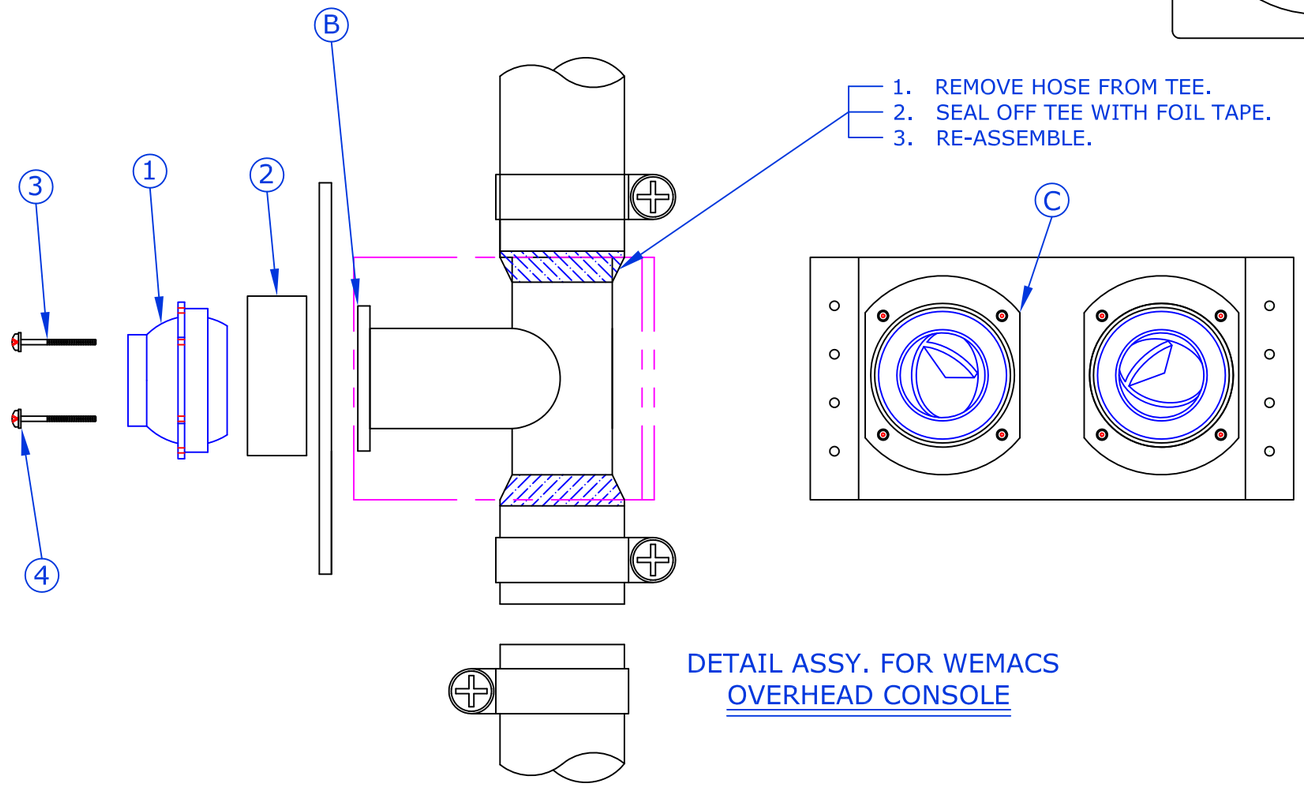
REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/08/05	WAS CAS, IS NOW IFS. WAS 4 OF 4, IS 2 OF 5.	-	JTYE

INSTALLATION NOTES:

2. DISASSEMBLE OVERHEAD CONSOLE GAINING ACCESS TO EXISTING WEMACS. (A)
2. REMOVE AND DISCARD AHC WEMACS.
3. TAP EXISTING WEMAC MOUNTING HOLES (B) TO MATCH 8mm SCREW AHC PN: 22272BC040025L.
4. ROTATE NEW WEMACS 90° (C) AND BACK DRILL TO FIT WEMAC ADAPTER.
5. INSTALL NEW WEMAC AND WEMAC ADAPTER AS SHOWN IN DETAIL BELOW.
6. ASSEMBLE OVERHEAD CONSOLE.



OVERHEAD CONSOLE



DETAIL ASSY. FOR WEMACS
OVERHEAD CONSOLE

QTY	ITEM	DESCRIPTION	STOCK SIZE	MATERIAL DESCRIPTION	MATERIAL SPEC.	FINISH
8	4	MS35218-8	#8 SCREW			
8	3	AN960-8	#8 WASHER			
2	2	260062	WEMAC ADAPTER			
2	1	030007-1	MOD. WEMAC			

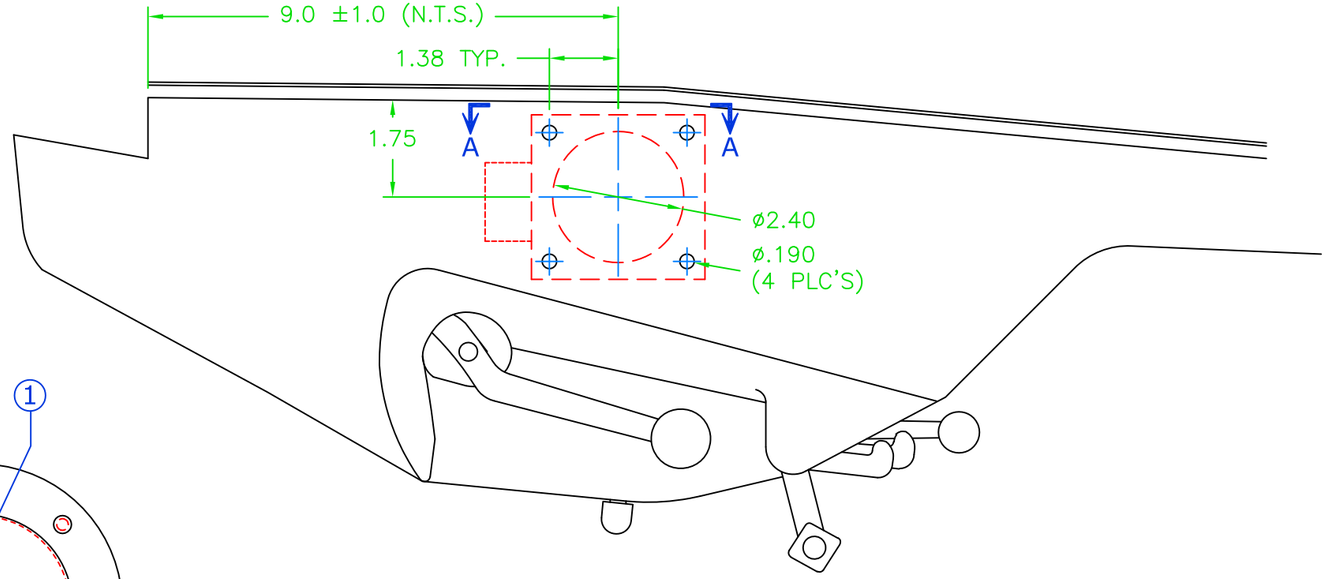
INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR DISTRIBUTION SYSTEM					
DRAWN BY: BRP	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 2 OF 5	
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 5-SA365N		

NOTE:

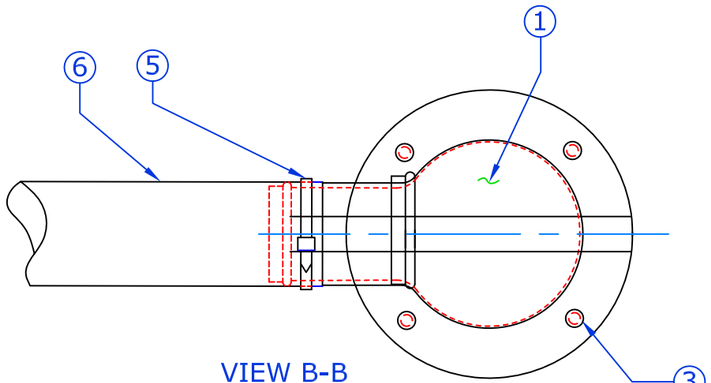
1. REMOVE OVERHEAD CONTROL PANEL.
2. MARK & CUT 2.4" DIA. HOLE.
3. POSITION WEMAC AS SHOWN AND BACK DRILL 4 MOUNTING HOLES.

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	11/08/05	RE-DRAWN INTO AUTOCAD. WAS CAS, IS NOW IFS. WAS 3 OF 4, IS NOW 3 OF 5. ADDED VIEW B-B.	-	JTYE

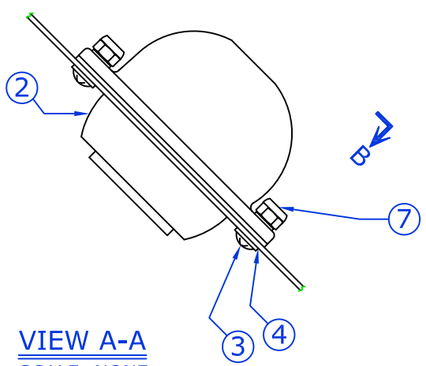


FORWARD

OVERHEAD PANEL



VIEW B-B
SCALE: NONE



VIEW A-A
SCALE: NONE

NOTE:

THIS INSTALLATION TYPICAL BOTH SIDES - ALL INTERIORS.

QTY	ITEM	DESCRIPTION	STOCK SIZE	MATERIAL DESCRIPTION	MATERIAL SPEC.	FINISH
8	7	MS20144-N08	NUT 8-32			
2	6	060000	DUCT, 1-1/2"			
2	5	1/4" x 8"	TIE WRAP			
8	4	AN960-8	WASHER			
8	3	MS35217-8-8	SCREW			
2	2	030009	WEMAC			
2	1	520014	WEMAC DUCT, 90°			

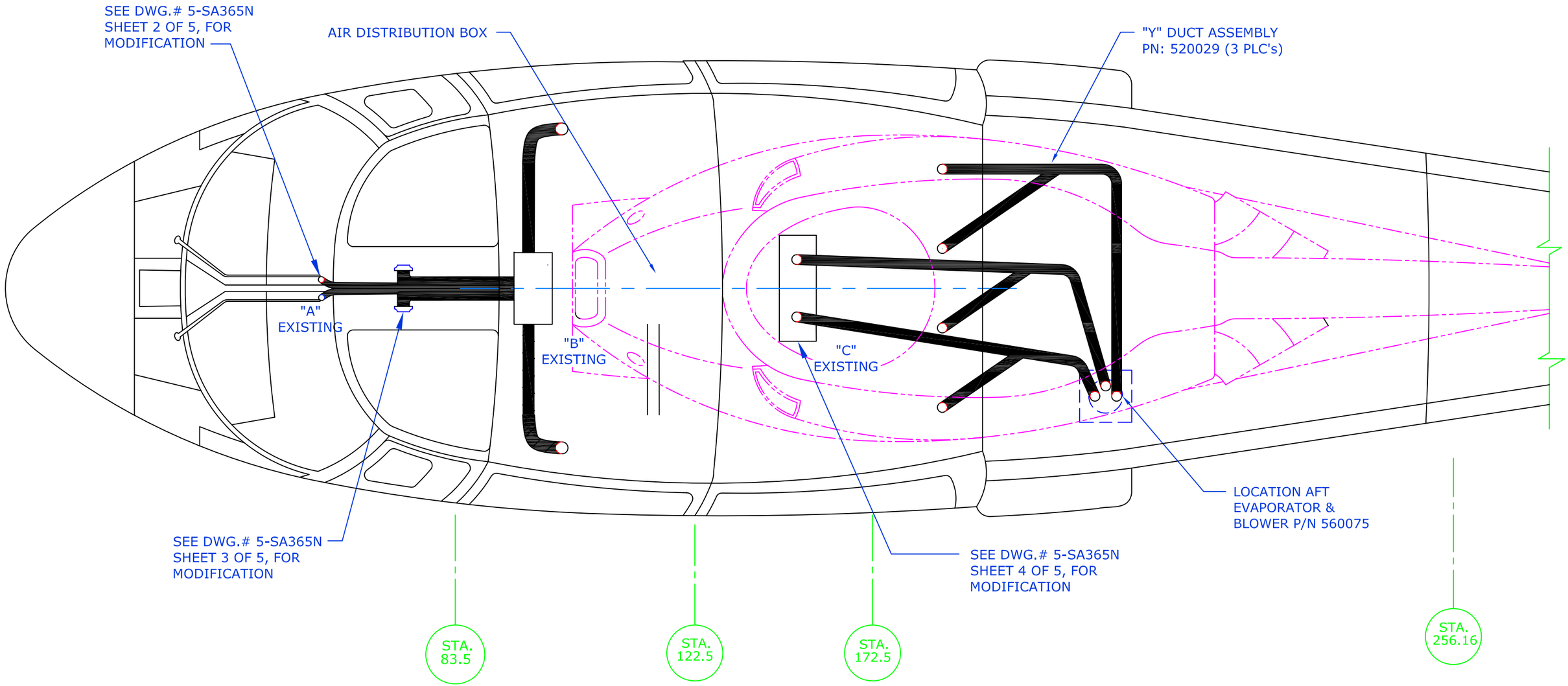
INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR DISTRIBUTION SYSTEM

DRAWN BY:	DATE:	REV:	SCALE:	SHEET:
BRP	10/15/84	A	NTS	3 OF 5

APPLICATION: SA365N, N1, N2, N3
DWG. NO.: 5-SA365N

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



SA365N

CORPORATE INTERIOR
AND ORIGINAL FACTORY
INTERIOR.

AIR DISTRIBUTION

INTEGRATED Flight Systems
Reno Nevada

TITLE: AIR DISTRIBUTION SYSTEM				
DRAWN BY: SIMMONS	DATE: 03/03/06	REV.: IR	SCALE: NTS	SHEET: 5 OF 5
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 5-SA365N	

Step 8

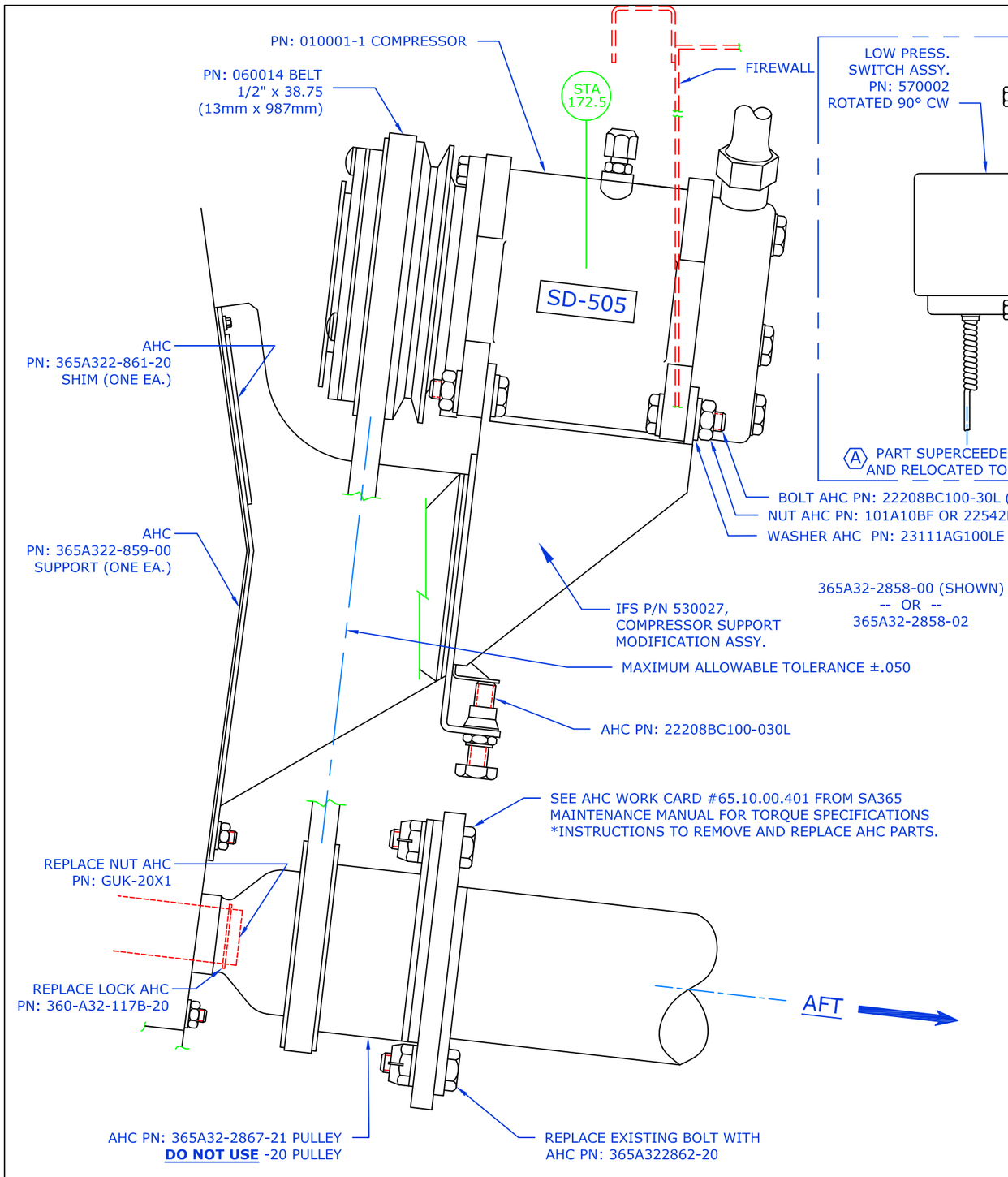
Installation of Compressor

Installation of Compressor
Kit# 365N-00-1

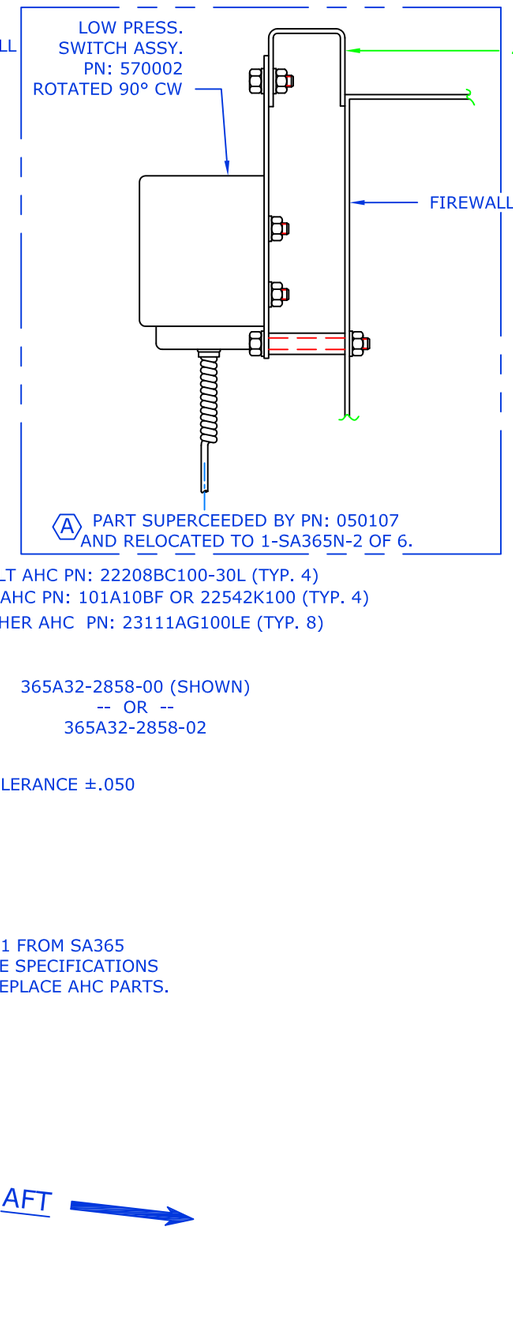
STEP	PROCEDURE	MECH.	INSP.
8.1.1	Locate AHC (Eurocopter) P/N 365A32-2859-02 support and AHC (Eurocopter) P/N 365A32-2861-20 (or -21) shim from the kit or from AHC directly, as applicable.		
8.1.2	**TAIL ROTOR SHAFT DISASSEMBLY AND REINSTALLATION:** Consult AHC (Eurocopter) Maintenance Repair Manual for all instruction regarding removal, installation of components and re-installation of tail rotor shaft. Using special AHC tools, remove retaining nut and lock (page 1-5) Section 63.20.00.702. Pull front flange. Use new AHC bolts three (3) each P/N 365A32-2862-20. NOTE: Due to the installation of the pulley, new bolts are installed in the opposite direction from those removed. The bolts called out to be installed in the opposite direction and as part of the pulley installation MUST be utilized. NO OTHER BOLTS ARE TO BE SUBSTITUTED FOR THIS ITEM. Original nuts and washers are reused. Torque to AHC (Eurocopter) factory specifications.		
8.1.3	Remove the three (3) each metric nuts and washers that match the holes in the shim at the top of the support and the two (2) each metric nuts and washers that match the location of the holes in the lower portion of the support.		
8.1.4	Install the support and shim over the studs on the aft side of the transmission immediately above the previously installed AHC (Eurocopter) supplied pulley. Replace washers and nuts and tighten to AHC (Eurocopter) factory specifications. See drawing 6-SA365N, sheet 1 of 3 for SD505 instructions, sheet 2 of 3 for 5HC14 (508 style) instructions.		
8.1.5	When Compressor P/N 010001 is installed, mount the compressor to the IFS modified mount bracket, P/N 530027. See drawing 6-SA365N, sheet 1 of 3.		
8.1.6	When Compressor P/N 010016-O-2 is installed, mount the compressor to the French compressor support, P/N F0210 356A32-2858-00 (or -02). See drawing 6-SA365N, sheet 2 and 3 of 3.		
8.1.7	The compressor and supports are then mounted to the mating support using the AHC bolts, P/N 22208BC100-024L and washer, P/N 23111AG100LE, three (3) each.		

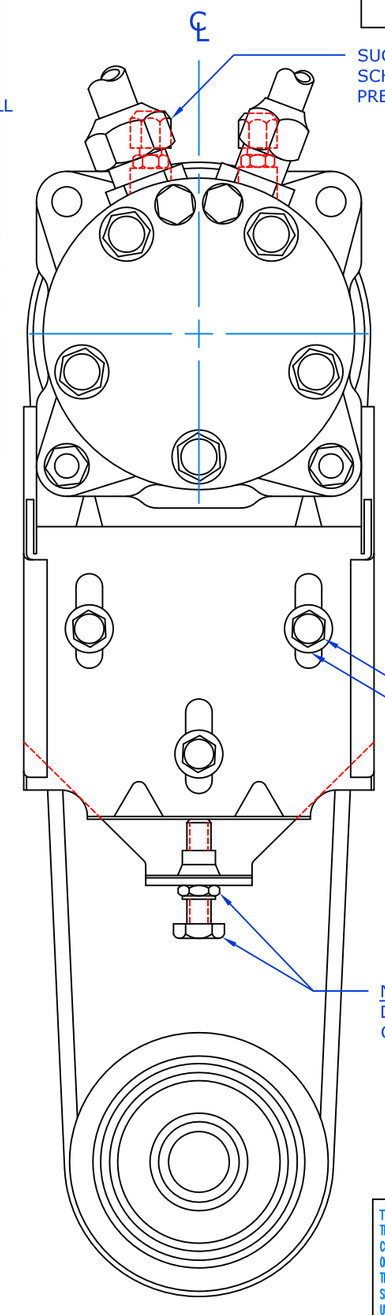
STEP	PROCEDURE	MECH.	INSP.
8.1.8	When Compressor P/N 010001 is installed, Drive Belt P/N 060014 is installed into the drive pulley groove and into the aft groove of the compressor. When Compressor P/N 010016-O-2 is installed, Drive Belt P/N 060044 is installed into the drive pulley groove and into the aft groove of the compressor.		
8.1.9	One (1) each AHC (Eurocopter) P/N 22208BC100-040L, bolt and P/N 22435BC100L nut is secured from the kit and installed. This bolt is used as the belt tensioning device. The nut is utilized as a jam nut to prevent the bolt from backing out.		
8.1.10	Tension belt to 50 pounds. Check vertical tolerance alignment between drive and driven pulley to installation drawing. Safety wire belt tensioning bolt. See drawing 6-SA365N sheets 1 or 2 of 3.		
8.1.11	Install two (2) each MS21919-DG8 Adel clamps at both the top and bottom of the area immediately forward of the compressor support. Install spare belt through the Adel clamps forward of compressor and free from all rotating components.		

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	03/03/06	RE-DRAWN IN CAD, ROTATED AUX VIEW OF REAR TO 90° TO AVOID CONFUSION. CHANGED TITLE BLOCK. ADDED NOTATION SUPERCEDING LOW PRESSURE SWITCH ASSEMBLY PN: 570002.	-	JTYE



LEFT SIDE VIEW





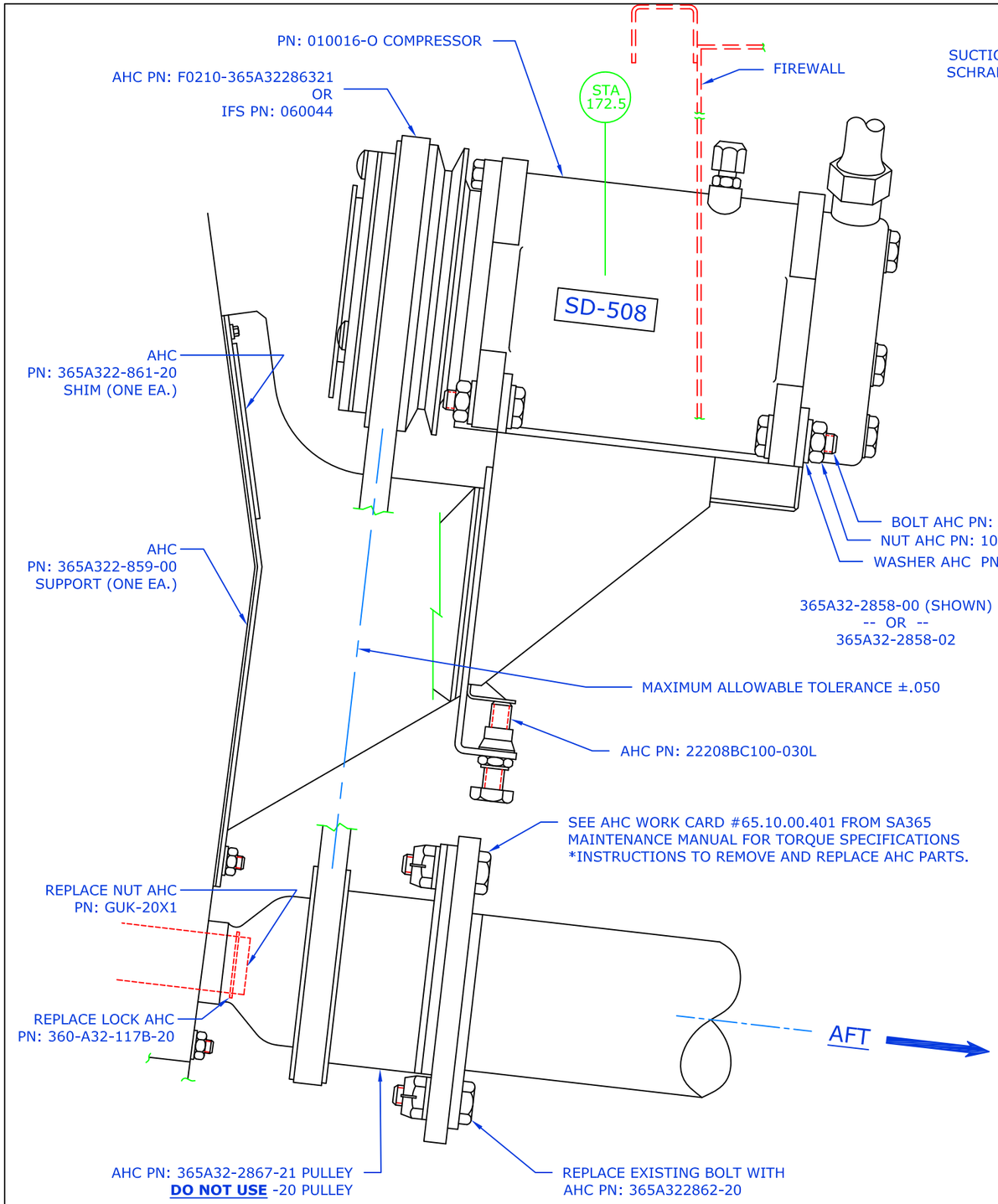
Ⓐ REAR VIEW

NOTE:
RE-DRAWN FOR CLARITY FROM
SOCIETE NATIONALE INDUSTRIELLE
AEROSPATIALE DIVISION HELICOPTERS
DRAWING #365A-32-2860
DATED 2/1/81
FOR AMS 265B COMPRESSOR UNIT

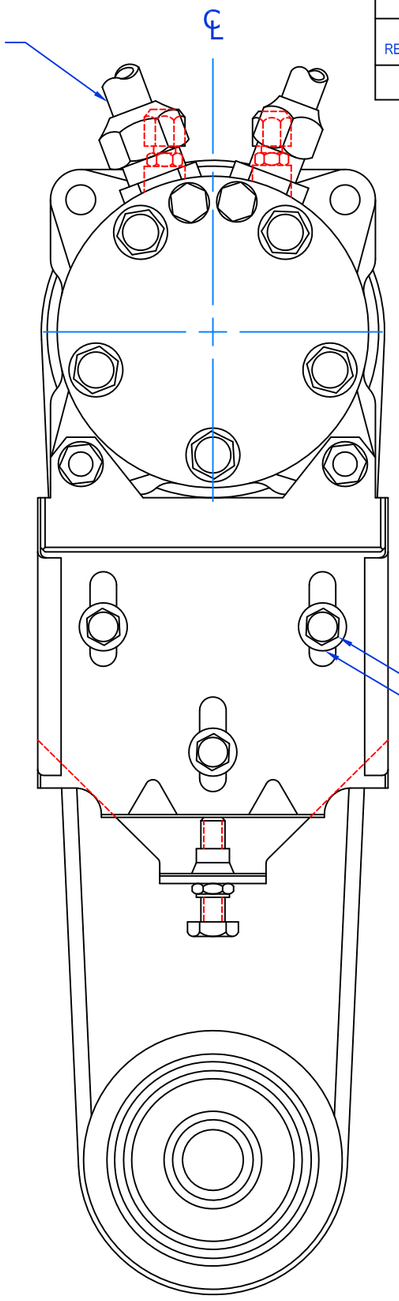
INTEGRATED Flight Systems
Reno Nevada

TITLE: COMPRESSOR DRIVE INSTALL 505					
DRAWN BY: BRP	DATE: 10/15/84	REV.: A	SCALE:	SHEET: 1 OF 3	
APPLICATION: SA365N, N1, N2, N3				DWG. NO.: 6-SA365N	

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



LEFT SIDE VIEW



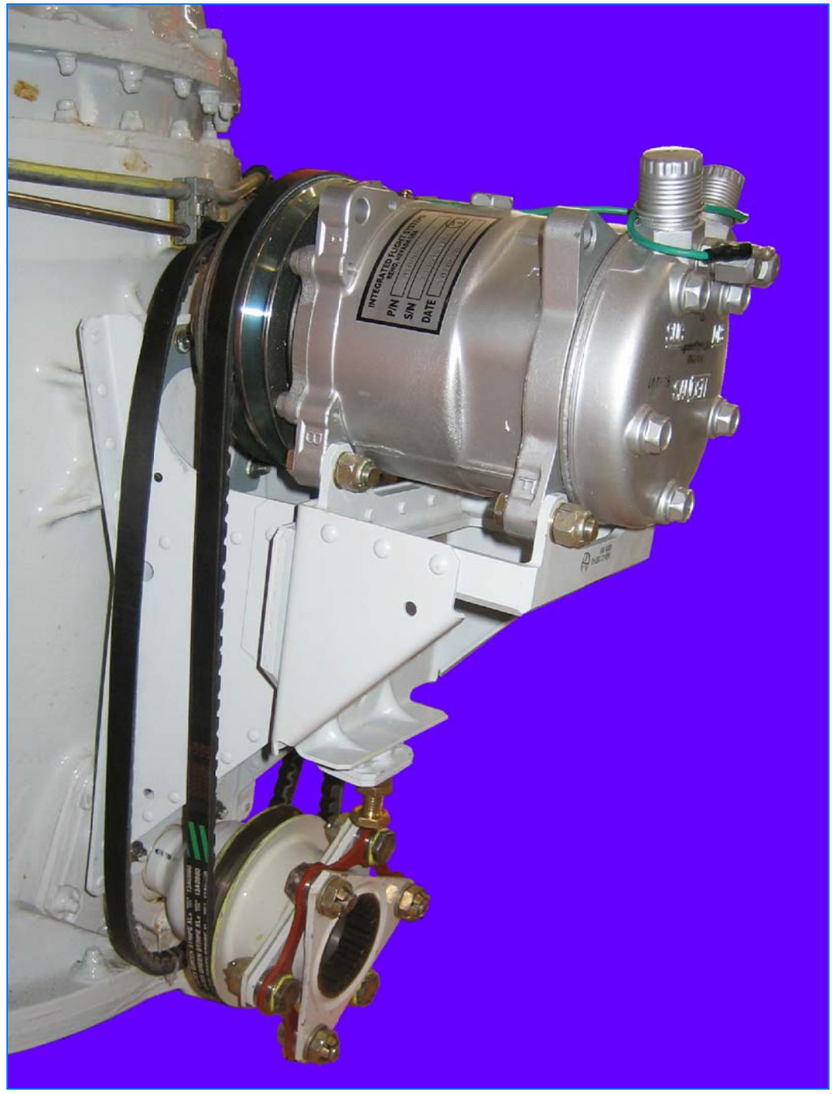
REAR VIEW

NOTE:
RE-DRAWN FOR CLARITY FROM
SOCIETE NATIONALE INDUSTRIELLE
AEROSPATIALE DIVISION HELICOPTERS
DRAWING #365A-32-2860
DATED 2/1/81
FOR AMS 265B COMPRESSOR UNIT

INTEGRATED Flight Systems
Reno Nevada

TITLE: COMPRESSOR DRIVE INSTALL 508				
DRAWN BY: JTYE	DATE: 03/03/06	REV: IR	SCALE: NONE	SHEET: 2 OF 3
APPLICATION: SA365N, N1, N2, N3			DWG. NO: 6-SA365N	

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



INTEGRATED Flight Systems
Reno Nevada

TITLE: COMPRESSOR DRIVE INSTALL 508

DRAWN BY:	DATE:	REV	SCALE:	SHEET:
JTYE	03/03/06	IR	NONE	3 OF 3

APPLICATION:	DWG No.
SA365N, N1, N2, N3	6-SA365N

Step 9

Installation of Electrical

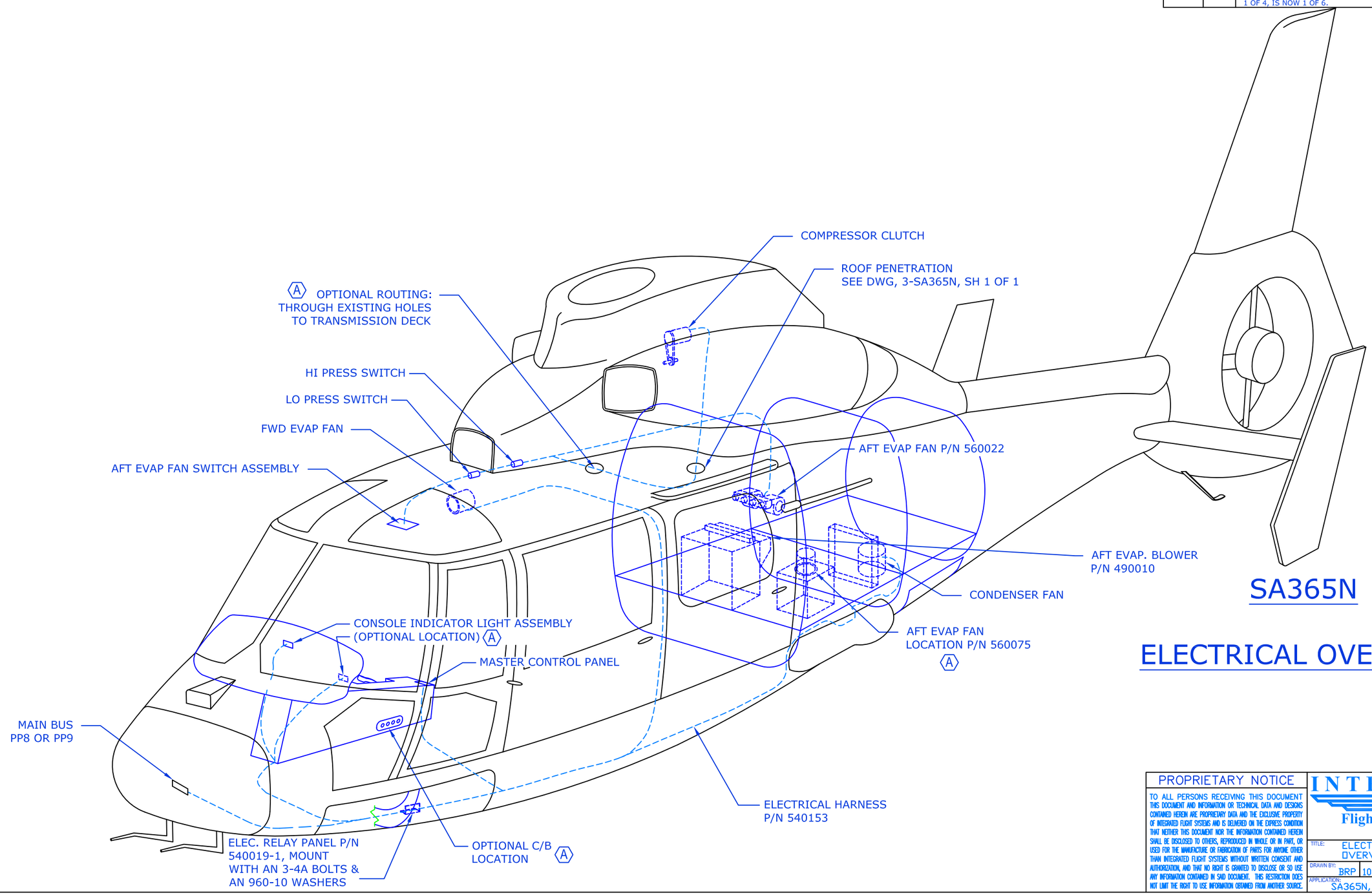
Installation of Electrical
Kit# 365N-00-1

NOTE
GROUNDING OF ALL REQUIRED ITEMS IS EXTREMELY IMPORTANT. BURNISH PAINT FROM SURFACES. SECURE TERMINAL, TIGHTEN BOLT/NUT, AND CORROSION PROOF ENTIRE AREA.

STEP	PROCEDURE	MECH.	INSP.
9.1.1	Install 80 Amp Limiter AHC P/N 1540-80A, IFS P/N 050015-4 (ANL-80) Limiter at aircraft bus P8 or P9. See drawing 2-SA365N, sheet 6 of 7.		
9.1.2	Install Master Aircraft Electrical Relay Panel, P/N 540001-1 at station 29.5 on left side of aircraft per drawing 2-SA365N, sheet 1 of 7.		
9.1.3	Route #6 wire forward and to the right from master aircraft electrical relay panel at station 29.5 to the newly installed 80 amp limiter. Connect to limiter.		
9.1.4	Route #10 condenser wire aft along with all other #14 wire per wiring routing drawings. See drawing 2-SA365N, sheet 7 of 7.		
9.1.5	Route #20 Auto Load Shed control wires to 14P and 15P. Located aft of main Generator Relays. See drawing 2-SA365N, sheet 6 of 7.		
9.1.6	Route #20 wires through nose and up to the forward side of general area of the pilots Caution Capsule Panel. See drawing 1-SA365N, sheet 2 of 3.		
9.1.7	Locate and drill holes for Blue and Amber lights, using the placard removed from the outside light assembly, P/N 540001-1 as a guide. See drawing 1-SA365N, sheet 2 of 3.		
9.1.8	Install indicator lights and placard. Secure all wiring installed. See drawing 1-SA365N, sheet 2 of 3.		
9.1.9	Install Master Air Conditioner Control Panel using four (4) each Dzus to connect panel assembly, P/N 540002, and two (2) each Dzus for optional panel P/N 540002-1, to aft portion of radio console. Spiral wrap wire bundle below panel to prevent chaffing. See drawing 1-SA365, sheet 2 of 3 for details.		
9.1.10	Route harness, P/N 540153 from Master Air Conditioner control panel, outboard and aft to forward side of left doorpost. Route up door post behind the decor panel. Route CP101 to the top of the Control Panel. Route CP102 from the Temperature Control Panel to the Forward Evaporator Fan. Route CP106 from the Resistor to the Aft Evaporator Fan.		

STEP	PROCEDURE	MECH.	INSP.
9.1.11	Route wire bundle up and aft through existing lighting holes. Route CP104 and CP105 aft through the cabin overhead. Route CP104 to the Aft Evaporator from the Switch. Route CP105 through the aft cabin wall to the Aft Evaporator.		
9.1.12	Connect cannon plugs from each wire bundle to corresponding cannon plug diagram 2-SA365N, sheet 5 of 7.		
9.1.13	Route IFS 107D20 Wire to high pressure safety switch, low pressure switch, and then to compressor clutch paralleling the route of the #8 or #10 refrigerant hoses to upper transmission deck.		
9.1.14	Route #10 wire along the left side of the aircraft per 2-SA365N, sheet 1, 2, and 3 of 4. See section A-A and B-B, on sheet 2 of 4 for details. Install wire to the positive lead of the condenser blower. Ground the blower as shown on drawing 7-SA365N, sheet 3 of 4.		
9.1.15	**Intentionally left blank**		
9.1.16	Complete connection of evaporator blowers and aft cabin speed control switch wiring after installation of those components.		
9.1.17	Complete installation of forward evaporator speed control switch and thermostat assembly, P/N 540140 after evaporator installation of the blower has been completed. See drawing 4-SA365N, sheet 4 of 14.		

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	03/03/06	REDRAWN IN CAD. WAS CAS IS IFS. ADDED OPTIONAL LOCATION FOR AFT EVAP., C/B AND CONSOLE LIGHT ASSY. ADDED OPTIONAL ROUTING. RELOCATED HI & LO PRESS SWITCHES. ADDED N1, N2, N3 TO APPLICATION BLOCK. WAS 1 OF 4, IS NOW 1 OF 6.	-	JTYE



SA365N

ELECTRICAL OVERVIEW

INTEGRATED Flight Systems
Reno Nevada

TITLE: ELECTRICAL OVERVIEW				
DRAWN BY: BRP	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 1 OF 7
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 2-SA365N	

REVISION RECORD

DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	03/03/06	REDRAWN IN CAD. WAS CAS, IS IFS, ADDED ALTERNATE LOCATION FOR AFT EVAPORATOR. ADDED P/N: 560075. ADDED N1, N2, N3. WAS 2 OF 4, IS NOW 2 OF 6.	-	JTYE

RELAY PANEL ASSEMBLY

4.7

.85

NO. 7 DRILL TYP. (3)
MATCH DRILL TO ASSY. NO. 540019-1.
MOUNT WITH AN3-4A BOLTS
AN365-1032 NUTS.

DETAIL "A"
VIEW LOOKING AFT
NO SCALE

STA. 139.0

HIGH PRESS. SW. PN: 090004
LOW PRESS. SW. PN: 050107

FWD. EVAP. MOTOR
PN: 050143

AFT FAN SWITCH ASSY.
PN: 540003-1

COMPRESSOR
SD508 PN: 010016-O
SD505 PN: 010001-1

AFT
EVAPORATOR
LOCATION
P/N 560022

AFT
EVAPORATOR BLOWER
LOCATION P/N 490010

AFT EVAPORATOR
LOCATIONS. P/N 560075

CONDENSER
COIL
PN: 550003

CONDENSER
BLOWER
PN: 490001

P/N 120201 PLACARD
P/N 050012-9 50 C/B
P/N 050012-4 20 C/B
P/N 050012 5C/B

C/B LOCATION
WHEN CONTROL PANEL
P/N 540002-1 IS USED.

SEE
DWG. 1-SA365N
SHEET 2 OF 6

A

A

ROUTE WIRE UP FWD
SIDE OF DOOR

HYDRAULIC TUBING

B

A

B

A

6 WIRE

MAIN BUSS
PP8 OR PP9

AHC FUSE PN: 1540-80A
OR
ANL-80 LIMITER
IFS PN: 050015-4.

RELAY PANEL ASSY.
PN: 510019-1
STA. 29.5
SEE DETAIL "A"

WIRE HARNESS ASSY.
PN: 540153

TIE WRAP (TYP. 12)
INSIDE WHEEL WELL
SEE DETAIL "C".

STA. 233.03

STA. 245.6

STA. 256.16

AIR INLET SCOOP
PN: 250116

AIR OUTLET SCOOP
PN: 250117

TIE WRAP

TIE MOUNT

TIE WRAP

DETAIL "C"
TYPICAL

HYDRAULIC TUBING

NO. 10 WIRE INSIDE PLASTIC
TUBING TO CONDENSER
BLOWER.

TIE WRAP

EXISTING ELECTRICAL
CABLE

SECTION "A-A"

TIE WRAP

SECTION "B-B"

INTEGRATED Flight Systems
Reno Nevada

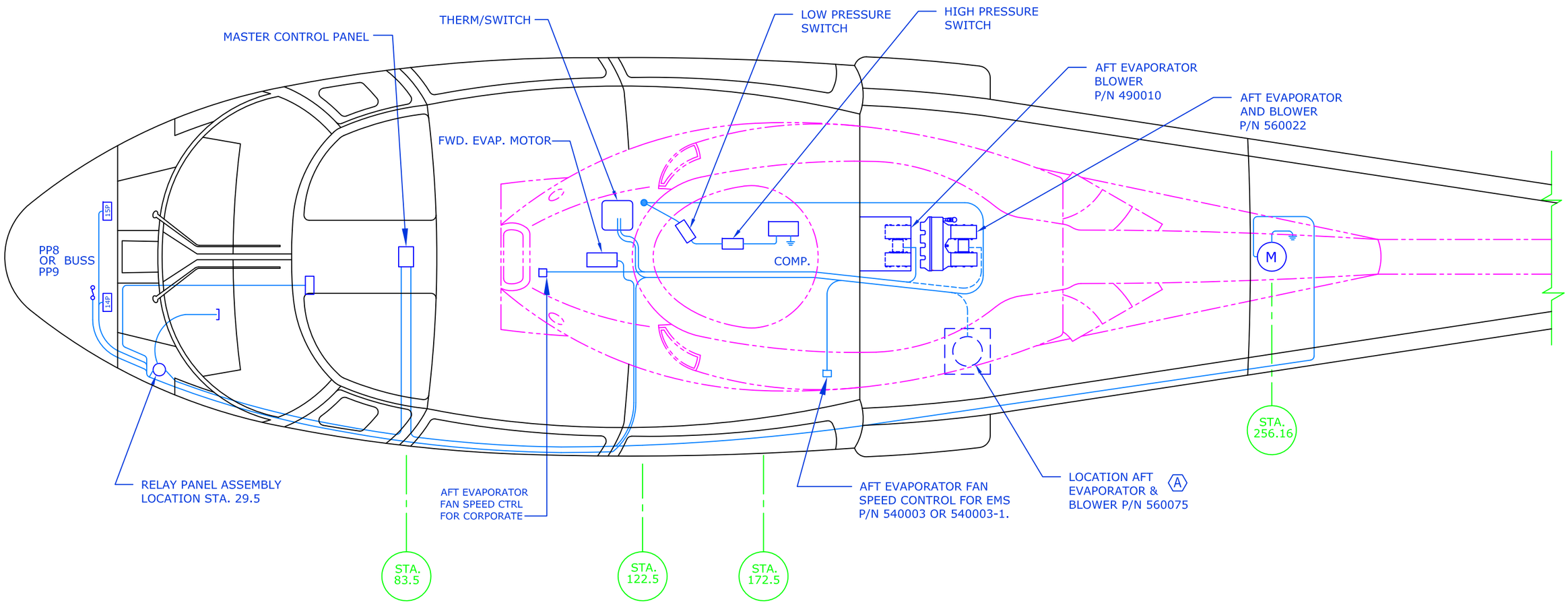
TITLE: ELECTRICAL ROUTING SIDE

DRAWN BY:	DATE:	REV.:	SCALE:	SHEET:
BRP	10/15/84	A	NTS	2 OF 7

APPLICATION: SA365N, N1, N2, N3

DWG. NO.: 2-SA365N

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	03/03/06	REDRAWN IN CAD. WAS CAS IS NOW IFS, ADDED OPTIONAL LOCATIONS FOR AFT EVAPORATORS. ADDED AFT EVAPORATOR PN: 560075. DRAWING # WAS 3 OF 4, IS NOW 3 OF 6. ADDED N1, N2, N3 TO APPLICATION BLOCK.	-	JTYE



SA365N

ELECTRICAL ROUTING

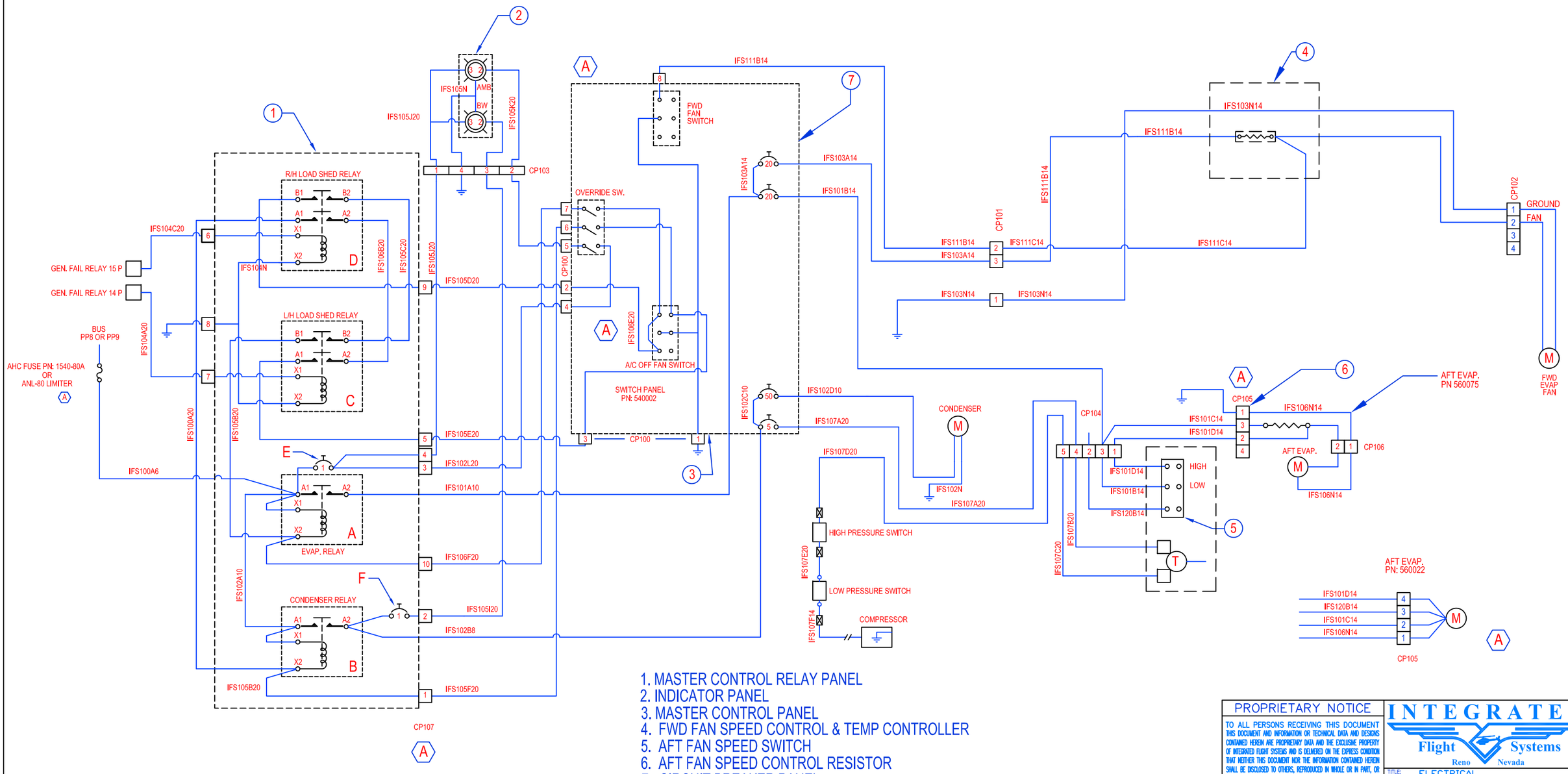
INTEGRATED Flight Systems
Reno Nevada

TITLE: ELECTRICAL ROUTING TOP				
DRAWN BY: BRP	DATE: 10/15/84	REV.: A	SCALE: NTS	SHEET: 3 OF 7
APPLICATION: SA365N, N1, N2, N3			DWG.NO.: 2-SA365N	

NOTE:
1. ALL WIRES SHALL BE MIL-W-22759/16.
2. ALL WIRES 20 AWG UOS.
3. HEAT SHRINK AS REQUIRED AT CANNON PLUGS, JUNCTIONS AND TO ANCHOR EXPANDO SLEEVE.

REVISION RECORD				
DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	03/03/06	REDRAWN IN CAD, WAS CAS, IS IFS, ADDED N1,N2,N3. ADDED WIRE NOS., ADDED CP 100, 101, 102,103,104, 105 & 106. ADDED NEW TEMPERATURE CONTROLLER. ADDED LETTER IDENTIFICATION TO RELAYS.	-	WSA

WIRING DIAGRAMS FOR SWITCH PANEL ASSY. PN: 540002



1. MASTER CONTROL RELAY PANEL
2. INDICATOR PANEL
3. MASTER CONTROL PANEL
4. FWD FAN SPEED CONTROL & TEMP CONTROLLER
5. AFT FAN SPEED SWITCH
6. AFT FAN SPEED CONTROL RESISTOR
7. CIRCUIT BREAKER PANEL

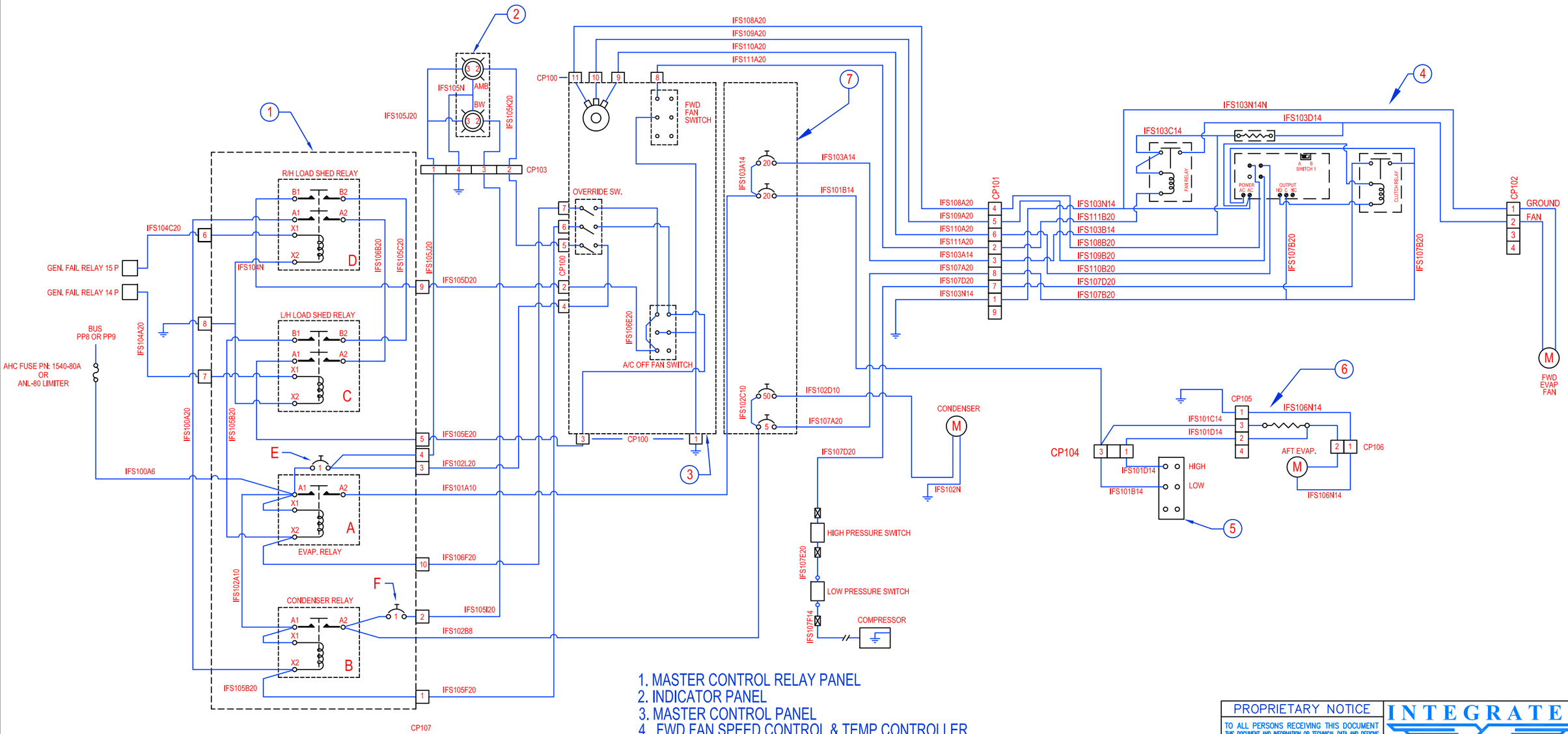
INTEGRATED Flight Systems
Reno Nevada

TITLE: ELECTRICAL DIAGRAM				
DRAWN BY: BRP	DATE: 10/15/84	REV: A	SCALE: NTS	SHEET: 4 OF 7
APPLICATION: SA365N, N1, N2, N3			DWG. NO.: 2-SA365N	

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

NOTE:
1. ALL WIRES SHALL BE MIL-W-22759/16.
2. ALL WIRES 20 AWG UOS.
3. HEAT SHRINK AS REQUIRED AT CANNON PLUGS, JUNCTIONS AND TO ANCHOR EXPANDO SLEEVE.

WIRING DIAGRAMS FOR SWITCH PANEL ASSY PN: 540002-1



1. MASTER CONTROL RELAY PANEL
2. INDICATOR PANEL
3. MASTER CONTROL PANEL
4. FWD FAN SPEED CONTROL & TEMP CONTROLLER
5. AFT FAN SPEED SWITCH
6. AFT FAN SPEED CONTROL RESISTOR
7. CIRCUIT BREAKER PANEL

INTEGRATED Flight Systems
Reno Nevada

TITLE: ELECTRICAL DIAGRAM				
DRAWN BY: BRP	DATE: 03/03/06	REV: IR	SCALE: NTS	SHEET: 5 OF 7
APPLICATION: SA365N, N1, N2, N3			DWG NO.: 2-SA365N	

REVISION RECORD

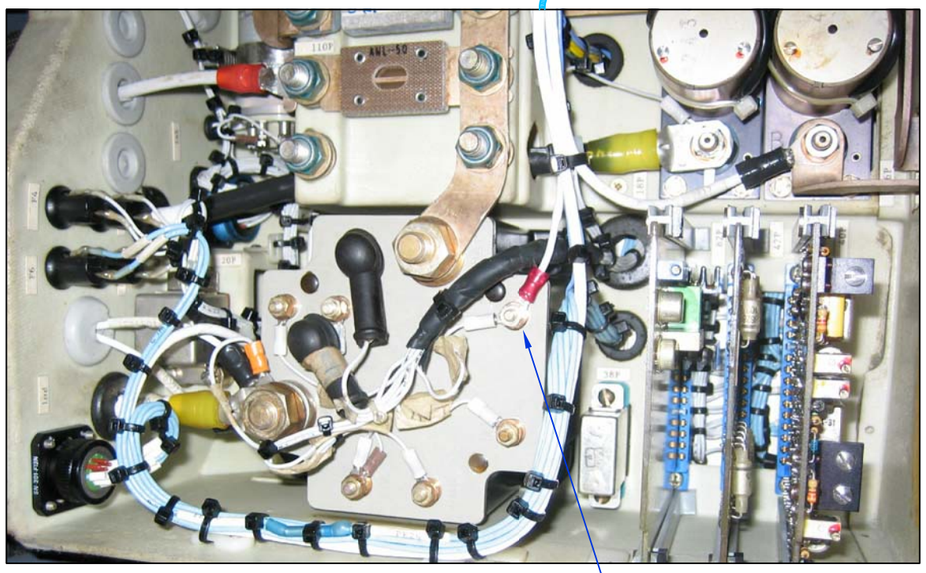
DWG REV LTR	DATE:	DESCRIPTION OF CHANGE	APPVD BY	REV BY
-	--/--/--	-	-	-

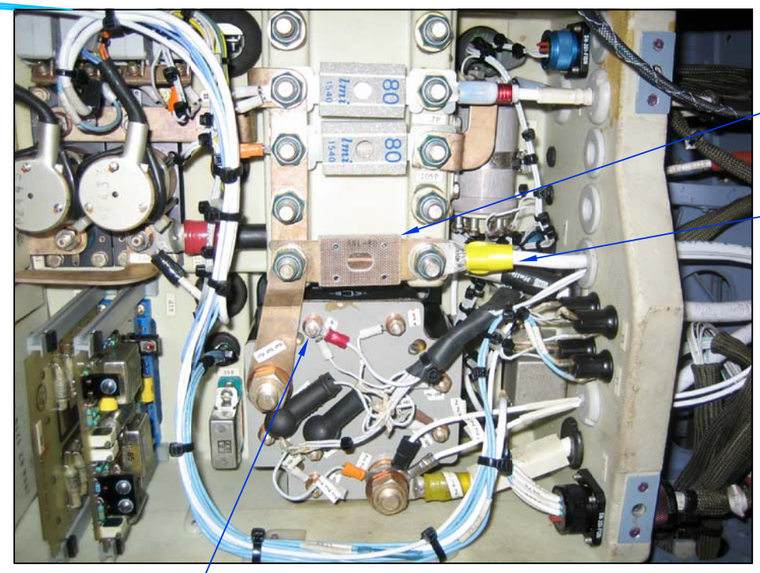
WIRE HARNESS RUN TO GEN. FAIL RELAYS AND MAIN BUSS.

RELAY PANEL ASSEMBLY
PN: 540019-1

WIRE HARNESS TO BOTH EVAPORATORS, COMPRESSOR AND CONDENSER.

WIRE HARNESS RUN TO C/B, CONTROL PANEL AND INDICATOR LIGHTS.





ANL-80
FUSE

BUSS PP8 OR PP9
CONNECT FOR
AIR CONDITIONING.

RIGHT GENERATOR
FAIL RELAY 14P.

LEFT GENERATOR
FAIL RELAY 15P.

INTEGRATED Flight Systems
Reno Nevada

TITLE: ELECTRICAL INSTALL

DRAWN BY:	DATE:	REV	SCALE:	SHEET:
JTYE	03/03/06	IR	N/A	6 OF 7

APPLICATION:	DWG No.
SA365N, N1, N2, N3	2-SA365N

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

CONDENSER WIRE FOLLOWS EXISTING WIRE RUN IN LEFT GEAR WELL.

LEFT GEAR WELL

CONDENSER WIRE COMING FROM LEFT GEAR WELL

LEFT COMPARTMENT

CONDENSER WIRE RUN

CONDENSER WIRE RUN

CONDENSER WIRE COMING FROM LEFT COMPARTMENT

INTEGRATED Flight Systems
Reno Nevada

TITLE: ELECTRICAL INSTALL				
DRAWN BY: JTYE	DATE: 03/03/06	REV IR	SCALE: NONE	SHEET: 7 OF 7
APPLICATION: SA365N, N1, N2, N3			DWG No. 2-SA365N	

Step 10

Installation of Hoses

Installation of Hoses
Kit# 365N-00-1

CAUTION
ALL HOSES RUNNING THROUGH BULKHEADS/LIGHTNING HOLES MUST BE PROTECTED AGAINST CHAFFING BY USING SUITABLE TIE WRAPS, SPIRAL WRAPS, AND/OR STAND-OFFS.

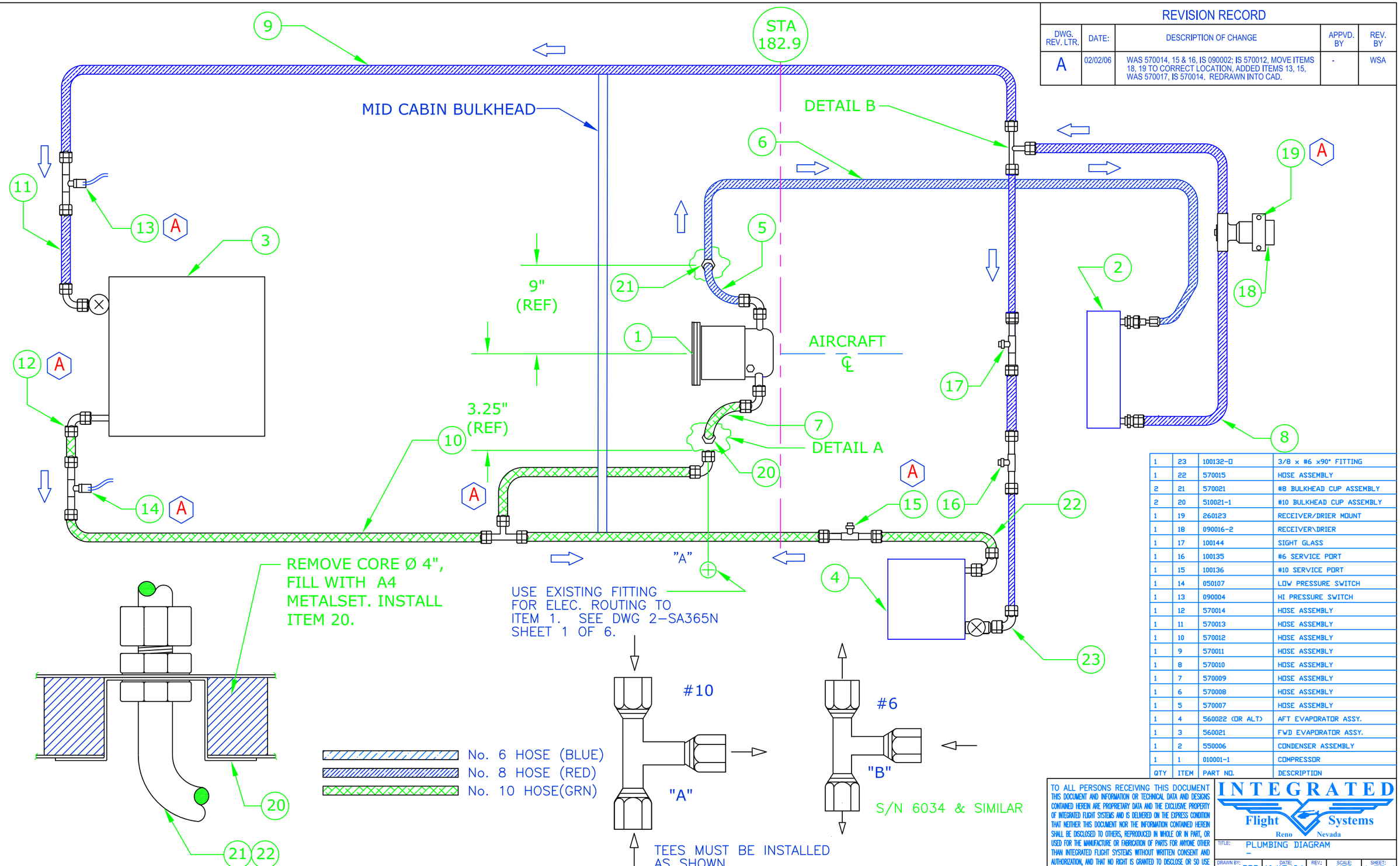
STEP	PROCEDURE	MECH.	INSP.
10.1.1	If running hoses through upper transmission deck, use following. If running hoses through existing holes, skip steps 10.1.2, 10.1.3 and 10.1.5. Secure #6, #8 and #10 hose and fittings from kit.		
10.1.2	If hose routing method will be through the transmission deck, install P/N 510021-1 and 570021, cup assemblies through aircraft roof in the locations shown on drawing 3-SA365N, sheet 1 of 1. IFS P/N 570021 is fitted in the right side of the aircraft and IFS P/N 510021-1 to the left side of the aircraft. The size hole for each bulkhead fitting is of a different size. Check before final install.		
10.1.3	If hose routing method will be through the transmission deck, install the #8 hose P/N 570007 from discharge side of compressor to the bulkhead fitting at the roof, See drawing 3-SA365N, sheet 1 of 4. Cut to length and install a straight # 8 fitting. Install the 90 degree #8 hose fitting on hose assembly, P/N 570008 under the bulkhead fitting. Route hose aft through existing lightening holes in the top of the cabin and top of the baggage compartment. Route the #8 hose down the aft side of the rear baggage bulkhead to the condenser fitting. Cut hose to length and install #8 fitting.		
10.1.4	Install the #8 Hose Assembly P/N 570008 from compressor down RH side of transmission deck, forward to existing bulkhead holes into cabin, see drawing 3-SA365N, sheet 2 of 4. Now route #8 hose under cabin roof to tail boom to condenser. See drawing 3-SA365N, sheets 2 thru 4 of 4.		

STEP	PROCEDURE	MECH.	INSP.
10.1.5	Install the #10 hose assembly P/N 570012 from the middle of the TEE, just forward of the 9° bulkhead aft and up through the cabin roof to the previously installed bulkhead fitting and cup assembly, P/N 510021-1. Cut to length and install a 90° #10 fitting, per drawing 3-SA365N, sheet 1 of 4. The longer hose on the TEE is run parallel to the #8 hose through the lightening holes in the same manner as the #8 hose to an area immediately past station 182.3, the aft cabin wall. The #10 hose is routed across the baggage bin ceiling to the #10 service port hose assembly, P/N 100136. Attach P/N 570015 to condenser and route to service port assembly then cut both hoses to length and install service port. Adel clamps are butterflied to the hose. Stand offs and Adel clamps may be required to prevent chaffing.		
10.1.6	**Intentionally left blank.**		
10.1.7	The other end of the #10 hose is run from the ATee@ installed forward to the 9° bulkhead to the #10 low pressure service tap, located on the forward evaporator hose assembly, P/N 570014. Cut 570012 to length and crimp.		
10.1.8	The #6 hose assembly, P/N 570011 with slight glass fitting, is run to forward of the forward evaporator along the right center of the aircraft through existing lightening holes to the Low Pressure Switch/hose attached to the forward evaporator. The #6 hose with no fitting on it is routed generally parallel to the #8 hose previously installed below the aircraft roof and aft to the receiver drier. These two hoses may be secured by using butterfly Adel clamps and/or other type standoffs. A #6 hose from the remaining side of the Tee (with service port) is routed down to the aft evaporator and cut to length and connected at the expansion valve with a 90° fitting. See drawing 3-SA365N, sheet 3 of 4.		
10.1.9	From the receiver/drier, hose assembly P/N 570010 is routed to the condenser. Cut to length and install a straight #6 fitting. See drawing 3-SA365N, sheet 3 of 4.		
10.1.10	Route the #6 hose from the side of the receiver/drier (do not open at receiver/drier at this time) to the condenser fitting P/N 100133-O. See drawing 7-SA365N, sheet 3 and 4 of 4.		
10.1.11	Prior to tightening all metal hose fittings to steel or brass connections, apply refrigerant oil supplied with the kit to all metal surfaces.		
10.1.12	Connect/tighten all refrigerant lines at all components except receiver/drier.		

STEP	PROCEDURE	MECH.	INSP.
10.1.13	**Intentionally left blank.**		
10.1.14	Attach a drum of R-134a refrigerant and blow out all lines. Remove rubber plugs from both sides of the receiver/drier, noting correct flow of refrigerant through receiver/drier. This must always be the last item connected to the hoses.		

REVISION RECORD

DWG. REV. LTR.	DATE:	DESCRIPTION OF CHANGE	APPVD. BY	REV. BY
A	02/02/06	WAS 570014, 15 & 16, IS 090002; IS 570012, MOVE ITEMS 18, 19 TO CORRECT LOCATION, ADDED ITEMS 13, 15, WAS 570017, IS 570014. REDRAWN INTO CAD.	-	WSA



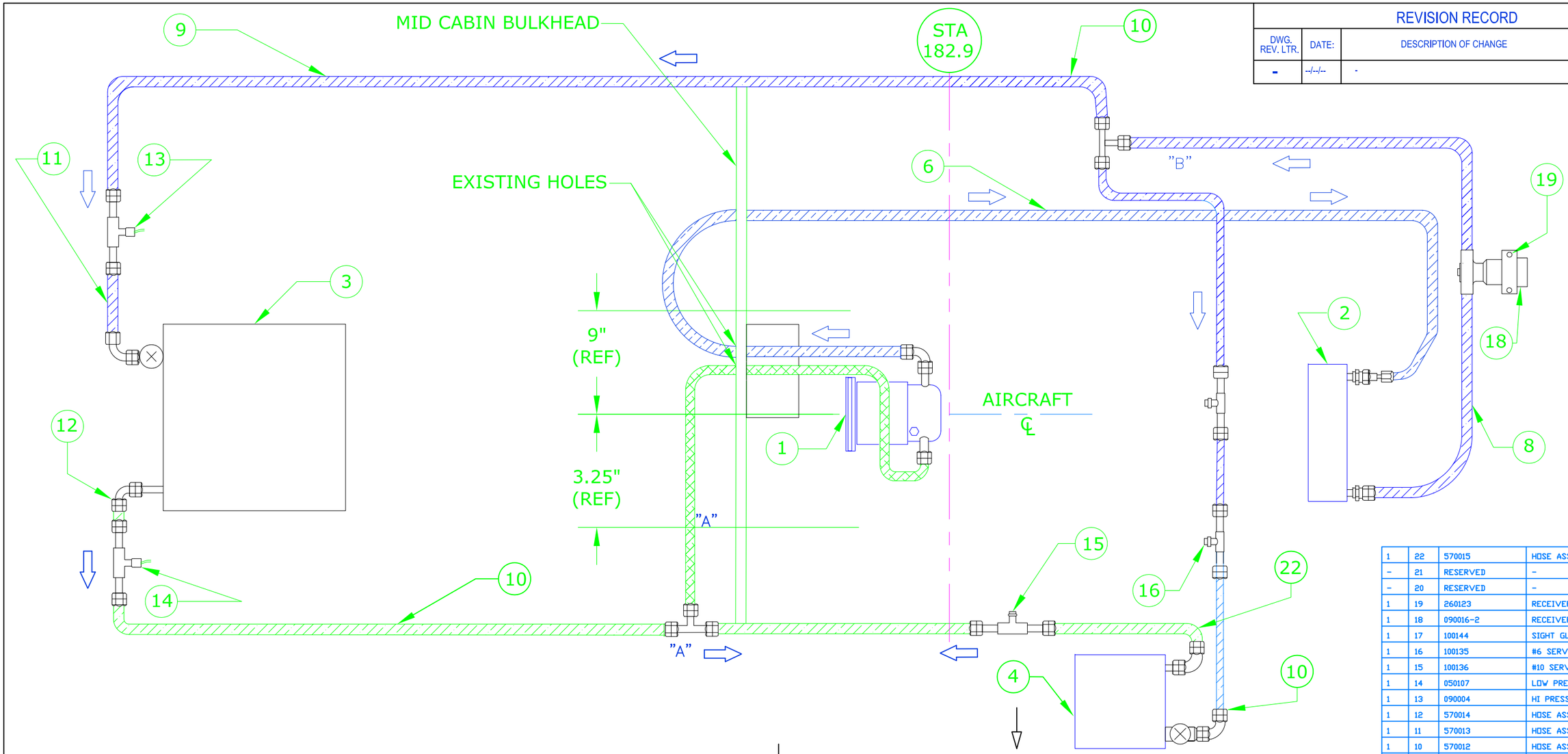
QTY	ITEM	PART NO.	DESCRIPTION
1	23	100132-□	3/8 x #6 x90° FITTING
1	22	570015	HOSE ASSEMBLY
2	21	570021	#8 BULKHEAD CUP ASSEMBLY
2	20	510021-1	#10 BULKHEAD CUP ASSEMBLY
1	19	260123	RECEIVER/DRIER MOUNT
1	18	090016-2	RECEIVER\DRIER
1	17	100144	SIGHT GLASS
1	16	100135	#6 SERVICE PORT
1	15	100136	#10 SERVICE PORT
1	14	050107	LOW PRESSURE SWITCH
1	13	090004	HI PRESSURE SWITCH
1	12	570014	HOSE ASSEMBLY
1	11	570013	HOSE ASSEMBLY
1	10	570012	HOSE ASSEMBLY
1	9	570011	HOSE ASSEMBLY
1	8	570010	HOSE ASSEMBLY
1	7	570009	HOSE ASSEMBLY
1	6	570008	HOSE ASSEMBLY
1	5	570007	HOSE ASSEMBLY
1	4	560022 (OR ALT)	AFT EVAPORATOR ASSY.
1	3	560021	FWD EVAPORATOR ASSY.
1	2	550006	CONDENSER ASSEMBLY
1	1	010001-1	COMPRESSOR

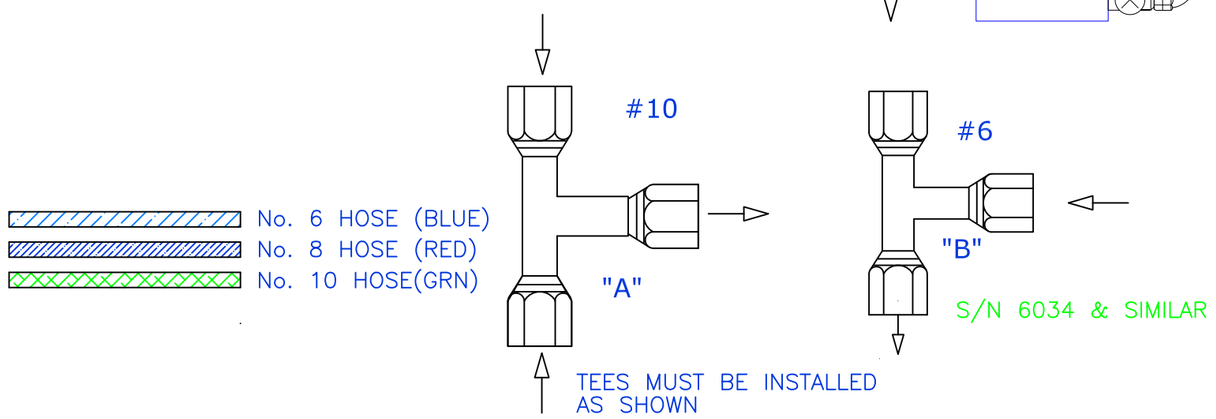
INTEGRATED Flight Systems
Reno Nevada

TITLE: PLUMBING DIAGRAM
-

DRAWN BY:	DATE:	REV:	SCALE:	SHEET:
BRP	10/15/84	A	NTS	1 OF 4

APPLICATION: SA365N, N1, N2, N3
DWG. NO.: 3-SA365N





No. 6 HOSE (BLUE)
No. 8 HOSE (RED)
No. 10 HOSE(GRN)

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

QTY	ITEM	PART NO.	DESCRIPTION
1	22	570015	HOSE ASSEMBLY
-	21	RESERVED	-
-	20	RESERVED	-
1	19	260123	RECEIVER/DRIER MOUNT
1	18	090016-2	RECEIVER\DRIER
1	17	100144	SIGHT GLASS
1	16	100135	#6 SERVICE PORT
1	15	100136	#10 SERVICE PORT
1	14	050107	LOW PRESSURE SWITCH
1	13	090004	HI PRESSURE SWITCH
1	12	570014	HOSE ASSEMBLY
1	11	570013	HOSE ASSEMBLY
1	10	570012	HOSE ASSEMBLY
1	9	570011	HOSE ASSEMBLY
1	8	570010	HOSE ASSEMBLY
-	7	RESERVED	-
1	6	570008	HOSE ASSEMBLY
-	5	RESERVED	-
1	4	560022 (OR ALT.)	AFT EVAPORATOR ASSY.
1	3	560021	FWD EVAPORATOR ASSY.
1	2	550006	CONDENSER ASSEMBLY
1	1	010001-1	COMPRESSOR

INTEGRATED Flight Systems
Reno Nevada

TITLE: PLUMBING DIAGRAM

DRAWN BY:	DATE:	REV:	SCALE:	SHEET:
WSA	03/03/06	IR	NTS	2 OF 4

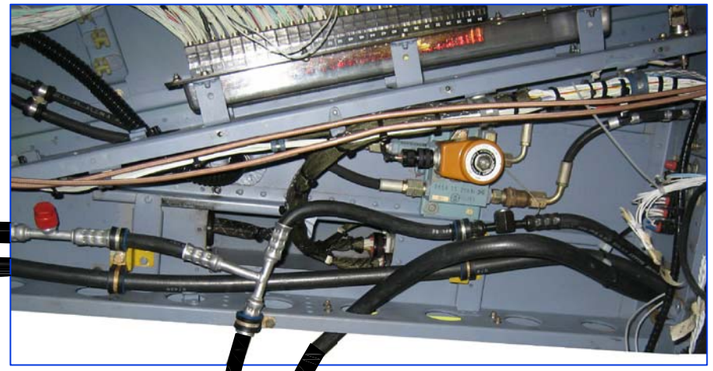
APPLICATION: SA365N, N1, N2, N3
DWG. NO.: 3-SA365N

REVISION RECORD

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

P/N 570012
HOSE ASSY.

P/N 570008
HOSE ASSY.



VIEW LOOKING UP

P/N 570012
HOSE ASSY.

P/N 570015
HOSE ASSY.

FORWARD

VIEW LOOKING AFT

P/N 570012
HOSE ASSY.

VIEW LEFT SIDE AFT BAGGAGE BIN

INTEGRATED Flight Systems
Reno Nevada

TITLE: PLUMBING INSTALL

DRAWN BY:	DATE:	REV	SCALE:	SHEET:
JTYE	03/03/06	IR	NONE	3 OF 4

APPLICATION:	DWG No.
SA365N, N1, N2, N3	3-SA365N

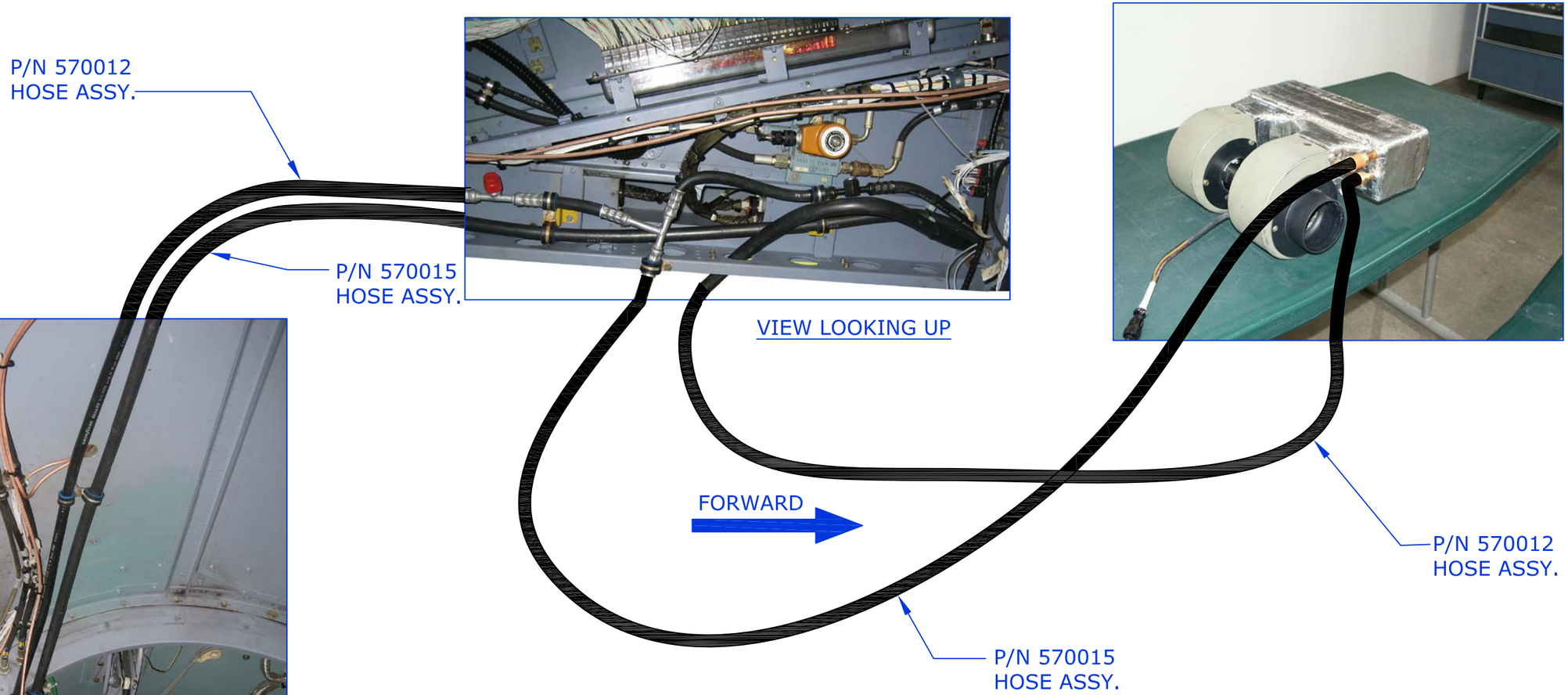
REVISION RECORD

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

VIEW LOOKING AFT

VIEW LOOKING UP

VIEW LEFT SIDE AFT BAGGAGE BIN



INTEGRATED Flight Systems
Reno Nevada

TITLE: PLUMBING INSTALL				
DRAWN BY: JTYE	DATE: 03/03/06	REV IR	SCALE: NONE	SHEET: 4 OF 4
APPLICATION: SA365N, N1, N2, N3			DWG No. 3-SA365N	

Component Installations
for Kit # 365N-00-2

Step 5

Installation of Aft Evaporator

Installation of Aft Evaporator
Kit# 365N-00-2

STEP	PROCEDURE	MECH.	INSP.
5.2.1	For installation of Aft Evaporator Provisions P/N 02-365-21-401-01, position Aft Evaporator Provisions as shown in drawing 01-365-21-400.		
5.2.2	Mark and drill mounting holes and drain holes, see drawing 01-365-21-400.		
5.2.3	For -01 & -03 aft evaporator installation: Install Doublers P/N 04-365-21-424-01 (2) & Fitting P/N 04-365-21-403-01 using rivets P/N MS20426AD4-(). For-02 Aft Evaporator Installation: Install Inserts P/N 04R02140001-3-9 (5), hardpoint & edge fill.		
5.2.4	For -01 aft evaporator installation: Secure Aft Evaporator Provisions screws P/N MS27039-1-10, washers P/N NAS1149D0332K, rivets P/N MS20426AD3-() & nutplates P/N MS21075L3N. For -02 aft evaporator location per sales order: Secure aft evaporator with bolts P/N AN3-4A & washers P/N NAS1149D0332K. For -03 aft evaporator installation: Secure mount plate, P/N 04-365-21-438-01 using screws P/N MS27039-1-10, washers P/N NAS1149D0332K, rivets P/N MS20426AD3-() & nutplates P/N MS21075L3N, while aligning pilot hole with one of the drilled out holes on the A/C. Locate an edge using Section AG-AG of drawing 01-365-21-400. Match drill the other three holes. Secure the aft evaporator provision, 02-365-21-401-01 to the mount plate, using screw P/N MS24693-S275 after match drilling to helicoil inserts on mount plate.		

STEP	PROCEDURE	MECH.	INSP.
5.2.5	For -01 & -03 aft evaporator installation: Install Floor Panel Doubler P/N 04-365-21-407-01 using sealant P/N PR-1422 B-1/2 and rivets P/N MS20470AD4-(). Install drain hose P/N 090018-1, use 5574K13 hose clamp to attach to aft evaporator provisions. For -02 aft evaporator installation: Drill 1.25" hole in evaporator housing and 1.0" hole in ACFT access panel. Hardpoint & edge fill hole in access panel. Install drain hose P/N 090018-1, use 5574K13 hose clamp to attach to aft evaporator provisions and install grommet 9600K58.		
5.2.6	For -01 aft evaporator installation: Cut out the 7.78" X 4.78" and 6" diameter details through existing ACFT structure, reference drawing 01-365-21-400. Install Return Air Vent Assembly P/N 03-365-21-402-01 and Return Air Duct P/N 04-365-21-423-01, using nuts P/N MS21042L3, screws P/N MS27039-1-17 and P/N NAS1149D0332K. Install all inserts and fasteners per drawing specifications using EA934NA adhesive. For -02 aft evaporator installation: Cut out 4" diameter hole to the existing ACFT structure and edge fill. Install Return Fitting Doubler Assembly P/N 02-365-21-403-01 and Return Duct Fitting P/N 04-365-21-435-01 using screws P/N MS27039-1-17 and washers NAS1149D0332K. Install Return Duct Angle Assemblies P/N 02-365-21-402-01 and Return Duct Louver P/N 04-365-21-434-01 using screws P/N MS27039-1-04, screws AN525-832R9, washers P/N NAS1149D0332K and inserts NAS1832-3-3. Install all inserts and fasteners per drawing specifications using EA934NA adhesive. For -03 aft evaporator installation: Cut out 4" diameter hole to the existing ACFT structure and edge fill. Install Return Fitting Doubler Assembly P/N 02-365-21-403-01 and Return Duct Fitting P/N 04-365-21-435-01 using screws P/N MS27039-1-17 and washers NAS1149D0332K. Install Return Duct Angle Assemblies P/N 02-365-21-402-01 and Return Duct Louver P/N 04-365-21-434-01 using screws P/N MS27039-1-04, screws AN525-832R9, and washers P/N NAS1149D0332K. Install all fasteners per drawing specifications using EA934NA adhesive.		

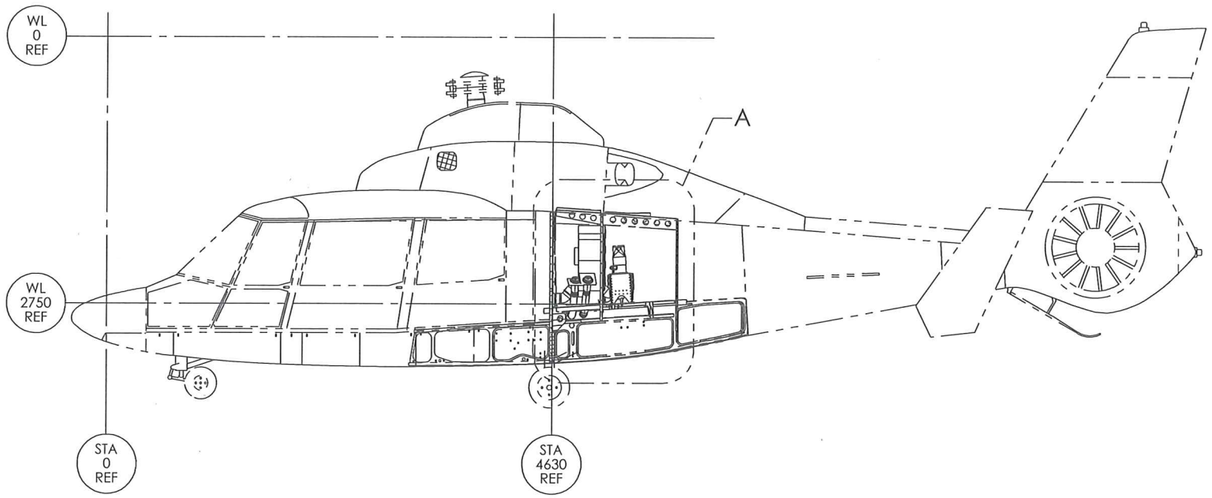
STEP	PROCEDURE	MECH.	INSP.
5.2.7	For -01 & -03 aft evaporator location: Install 4 inch Air Duct P/N 09-365-21-010-01 from aft evaporator provisions to return air duct using 5574K24 hose clamps. For -02 aft evaporator location: Install 4 inch Air Duct P/N 09-365-21-010-01 from aft evaporator provisions to return duct fitting using 5574K24 & MS21919WDG64 hose clamps.		
5.2.8	For -01 aft evaporator location: Attach the 09-365-21-307-01 Evaporator Fan & Ground Strap P/N M83413/8-A036BB to the 02-365-21-401-01 Aft Evaporator Provisions using the MS27039-1-11 and MS27039-1-12 Screws and NAS1149D0316H Washers. Install the 04-365-21-410-01 Outlet Duct to the Evaporator Fan using PR-1422 B-1/2. For -02 aft evaporator location: Attach the 09-365-21-307-01 Evaporator Fan & Ground Strap P/N M83413/8-A036BB to the 02-365-21-401-01 Aft Evaporator Provisions using the MS27039-1-11 and MS27039-1-12 Screws and NAS1149D0316H Washers.		
5.2.9	For -01 and -03 aft evaporator location: Locate Duct Splitters P/N 04-365-21-601-01 & P/N 04-365-21-602-01 for best fit. Install to bulkhead using clamps P/N MS21919WDG-25 support brackets P/N 04-365-21-402-01, screws P/N AN525-10R8, rivets P/N MS20470AD4-(), nuts P/N MS21042L3, washers P/N NAS1149D0316K, grommets P/N MS21266-4N and adhesive 1300L. (Alternate: use Ty wrap P/N 63467 and Ty wrap block CB3019AA5N). See drawing 01-365-21-600. For -02 aft evaporator locations: Locate Duct Splitter P/N 04-365-21-601-01 and install to bulkhead using MS21919WDG-25, support brackets P/N 04-365-21-402-01, screws P/N AN525-10R8, rivets P/N MS20470AD4-(), nuts P/N MS21042L3, washers P/N NAS1149D0316K, grommets P/N MS21266-4N and adhesive 1300L. (Alternate: use Ty wrap P/N 63467 and Ty wrap block CB3019AA5N). Locate 5” Duct Splitter P/N 04-365-21-604-01 for best fit. Install to bulkhead using Support Clip Assy P/N 02-365-21-601-01, Support Clip P/N 04-365-21-605-04, blind rivets P/N CCR274CS-4-02, screws P/N MS27039-0810, rivets NAS1097AD4-() and washers P/N NAS1149DN832K. Rivet locations are picked up from existing pattern. See drawing 01-365-21-600.		

STEP	PROCEDURE	MECH.	INSP.
5.2.1 0	For -01 and -03 aft evaporator location: Secure Ducts P/N 09-365-21-602-01 with hose clamp P/N MS 35842-12 to Outlet duct of Aft Evaporator Provision. Route to Duct Splitters, use hose clamps to install .See drawing 01-365-21-600. For -02 aft evaporator location: Secure Duct P/N 09-365-21-604-01 from kit with hose clamp P/N MS35842-16 to blower motor of Aft Evaporator Provisions. See drawing 01-365-21-600. Route to 5" Splitter, use hose clamps MS35842-16 to install. (Permissible to use Reducer P/N 04-365-21-606-01 & 1" cat tubing P/N 05-29804 to accommodate space constrains within acft.)		
5.2.11	For -01 aft evaporator location: Install two forward Air Vents(2) P/N 09-365-21-601-01 and four(4) aft Air Vents to the cabin ceiling using screws P/N AN525-10R14, nuts MS21042L3 and washers P/N NAS1149D0316K. See drawing 01-365-21-600. For -02 aft evaporator location: Install four(4) 09-365-21-601-01 aft Air Vents to the cabin ceiling using screws P/N AN525-10R14, nuts MS21042L3 and washers P/N NAS1149D0316K. See drawing 01-365-21-600. For -03 aft evaporator location: Install two forward Air Vents(2) P/N 02-365-21-602-01 to the cockpit ceiling using screws P/N AN525-10R14, nuts MS21042L3 and washers P/N NAS1149D0316K. See drawing 01-365-21-600.		
5.2.12	From each Air Vents previously installed, connect the 1 1/2" flexible hoses P/N 09-365-21-602-01 using hose clamps P/N MS35842-12. See drawing 01-365-21-600.		
5.2.13	Install M83413/8-A036BB grounding strap with MS27039-1-10 screw, NAS1149F0332P washers and MS21042L3 nut. Encapsulate bonded connections with PR-1422 B-1/2 sealant and secure grounding strap with CB9120V5 cable mounts and MS3367-1-0 tie downs as required. Verify electrical bond with ohmmeter to drawing requirements. See drawing 01-365-21-400.		

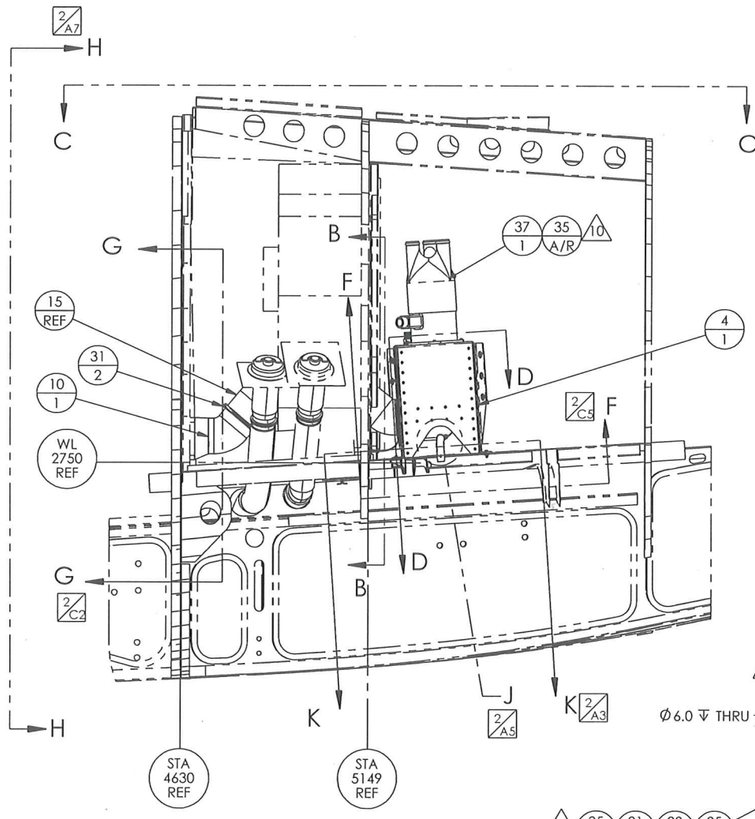
NOTES:

1. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. FOR PLUMBING, REFERENCE RSG AERODESIGN DOCUMENT NUMBER 01-365-21-700 REFRIGERANT SYSTEM SCHEMATIC.
3. PERMISSIBLE TO TRIM AWAY OUTBD SIDE OF EXISTING A/C COVER PANEL AS REQ'D FOR DUCT PASS-THROUGH.
4. BURNISH AND BOND MATING SURFACES. SEAL TERMINAL RING AND FASTENER WITH ITEM 35, SEALANT, IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510008.
5. INSTALL INSERTS, HARDPOINT & EDGE FILL IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510006.
6. ENSURE THAT GROUNDING LOCATION DOES NOT INTERFERE WITH LANDING GEAR OPERATION.
7. MARK Ø4.0 HOLE CUT OUT BY LOCATING ITEM.
8. INSTALL AS REQUIRED TO SECURE GROUNDING STRAP. MAXIMUM TYPICAL SPACING OF 24".
9. PERMISSIBLE TO TRIM MOUNTING ANGLES OF ITEM 4, AFT EVAPORATOR PROVISIONS, TO ENSURE NO INTERFERENCE WITH EXISTING HARDWARE ON ADDITIONAL FUEL BAY COVER.
10. FAYING SURFACE SEAL BETWEEN ITEM 37, OUTLET DUCT, & ITEM 38, EVAPORATOR FAN.

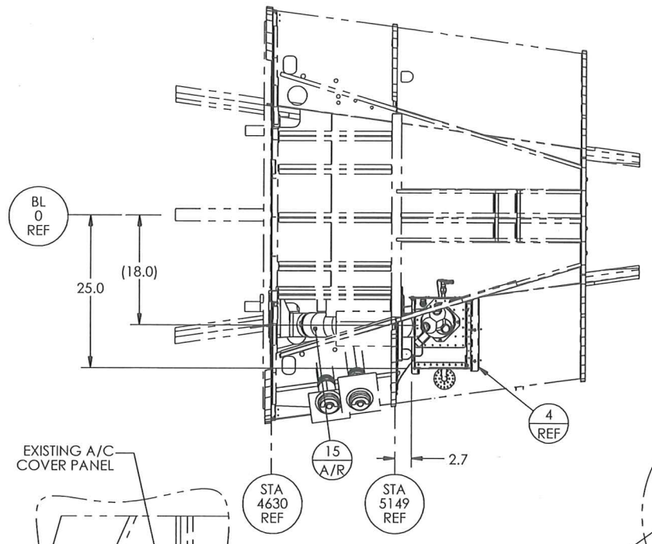
REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO 01-365-21-400NC1	C. Wells	P. Ban	9/12/2012
B	INCORPORATED ECO 01-365-21-400A 1	B. Witherspoon	P. Ban	02/14/2013
C	INCORPORATED ECO # 01-365-21-400B 1	H. Saukkonen	R. Ban 10/25/13	



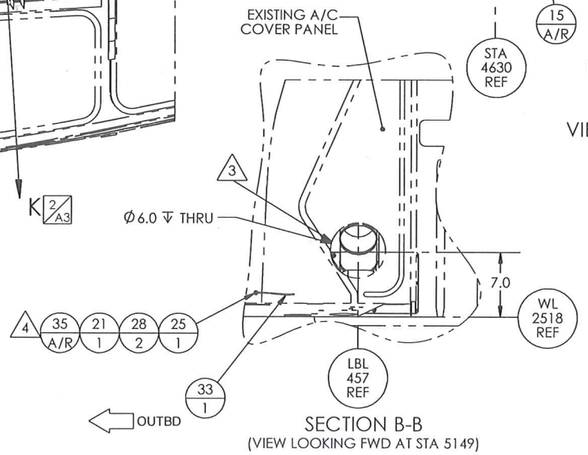
-01 AFT EVAPORATOR INSTALLATION



DETAIL A



VIEW C-C



SECTION B-B
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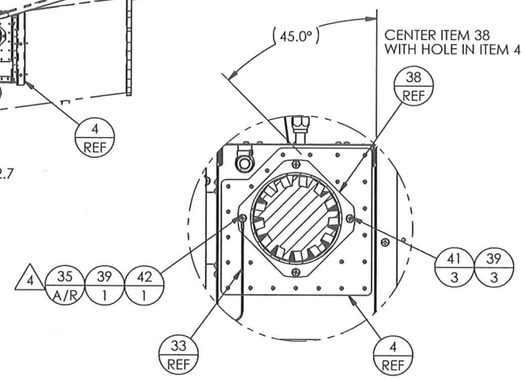


SECTION D-D

4			45	MS24693-S275	SCREW	
1			44	04-365-21-442-01	MOUNT PLATE	
4		4	43	MS20426AD4-( )	RIVET	
1	1	1	42	MS27039-1-12	SCREW	
3	3	3	41	MS27039-1-11	SCREW	
2	2	2	40	MS3367-1-0	TIEDOWN STRAP	
4	4	4	39	NAS1149D0316H	WASHER	
REF	REF	REF	38	09-365-21-307-01	BLOWER MOTOR	
1		1	37	04-365-21-410-01	OUTLET DUCT	
A/R	A/R		36	EA934NA	ADHESIVE	HYSOL
A/R	A/R	A/R	35	PR-1422 B-1/2	SEALANT	
2	2	2	34	CB9120V5	CABLE MOUNT	CLICK BOND
1	1	1	33	M83413/8-A036BB	GROUNDING STRAP	MIL-DTL-83413/8
	5		32	04R02140001-3-9	INSERT	RSG AERODESIGN
2	2	2	31	5574K24	HOSE CLAMP	MCMASTER CARR
1	1	1	30	5574K13	HOSE CLAMP	MCMASTER CARR
	4		29	NAS1832-3-3	THREADED INSERT	
2	2	2	28	NAS1149F0332P	WASHER	
12	13	20	27	NAS1149D0332K	WASHER	
4	4	8	26	MS27039-1-17	SCREW	
5	1	5	25	MS27039-1-10	SCREW	
4	4		24	MS27039-1-04	SCREW	
	1		23	MS21919WDG64	CLAMP	
4		4	22	MS21075L3N	NUTPLATE	
1	1	9	21	MS21042L3	NUT	
28		28	20	MS20470AD4-()	RIVET	
8		8	19	MS20426AD3-()	RIVET	
4	4		18	AN525-832R9	SCREW	
	5		17	AN3-4A	BOLT	
	1		16	9600K58	GROMMET	MCMASTER CARR
10'	10'	10'	15	09-365-21-010-01	4" AIR DUCT	
16"	38"	12'	14	090018-1	1/2" DRAIN HOSE	RSG PRODUCTS
1	1		13	04-365-21-435-01	RETURN DUCT FITTING	
1	1		12	04-365-21-434-01	RETURN DUCT LOUVER	
2		2	11	04-365-21-424-01	DOUBLER	
		1	10	04-365-21-423-01	RETURN AIR DUCT	
1		1	9	04-365-21-407-01	FLOOR PANEL DOUBLER	
1		1	8	04-365-21-403-01	FITTING	
		1	7	03-365-21-402-01	RETURN AIR VENT ASSEMBLY	
1	1		6	02-365-21-403-01	RETURN FITTING DOUBLER ASSEMBLY	
2	2		5	02-365-21-402-01	RETURN DUCT ANGLE ASSEMBLY	
1	1	1	4	02-365-21-401-01	AFT EVAPORATOR PROVISIONS	
--			3	-03	AFT EVAPORATOR INSTALLATION	
	--		2	-02	AFT EVAPORATOR INSTALLATION	
		--	1	-01	AFT EVAPORATOR INSTALLATION	
-03	-02	-01	ITEM	PART NUMBER	DESCRIPTION	VENDOR

UNLESS OTHERWISE SPECIFIED:

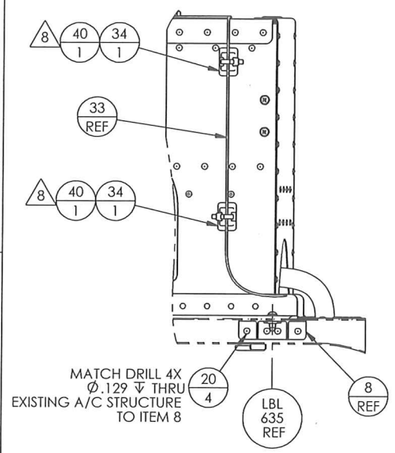
- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

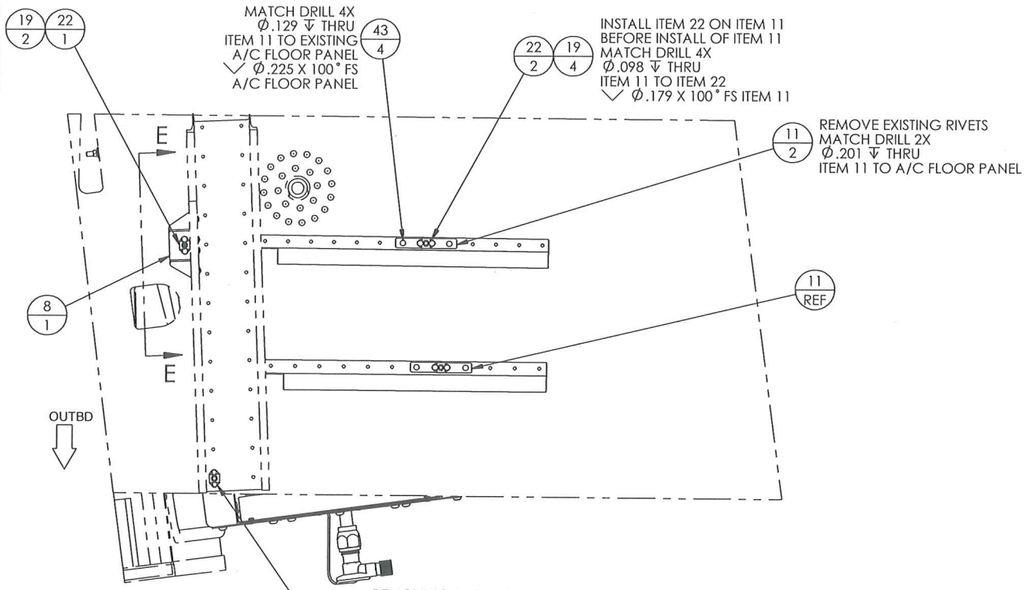
HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

365N-00-2
NEXT ASSEMBLY

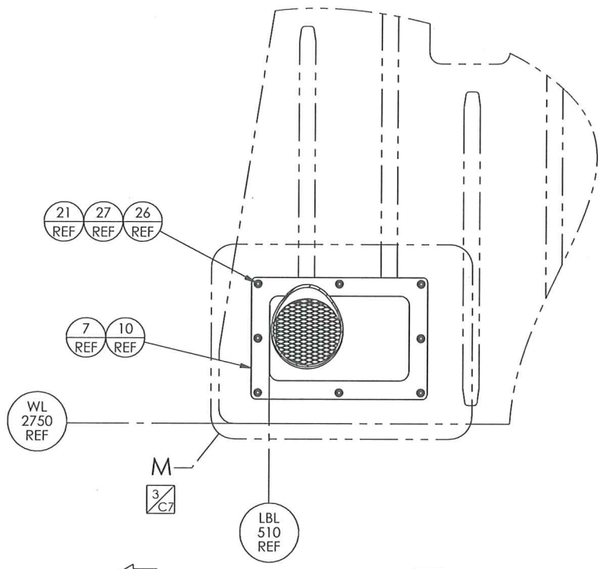
DESIGN: R. Latham	DATE: 03/01/2011	RSG AERODESIGN	3900 Falcon Way West Hangar 16S Fort Worth, Texas 76106 (817) 625-9000 www.rsgaerodesign.com
DRAWN: C. Wells	DATE: 01/17/2012	TITLE: AFT EVAPORATOR INSTALLATION	
CHECKED: P. Ban	DATE: 03/05/2012		
PROJECT ENG: J. Krebs	DATE: 03/05/2012	SIZE: D	CAGE CODE: DWG. NO. 01-365-21-400 REV C
APPROVED: P. Ban	DATE: 03/05/2012	SCALE: NONE N/A	SHEET 1 OF 8



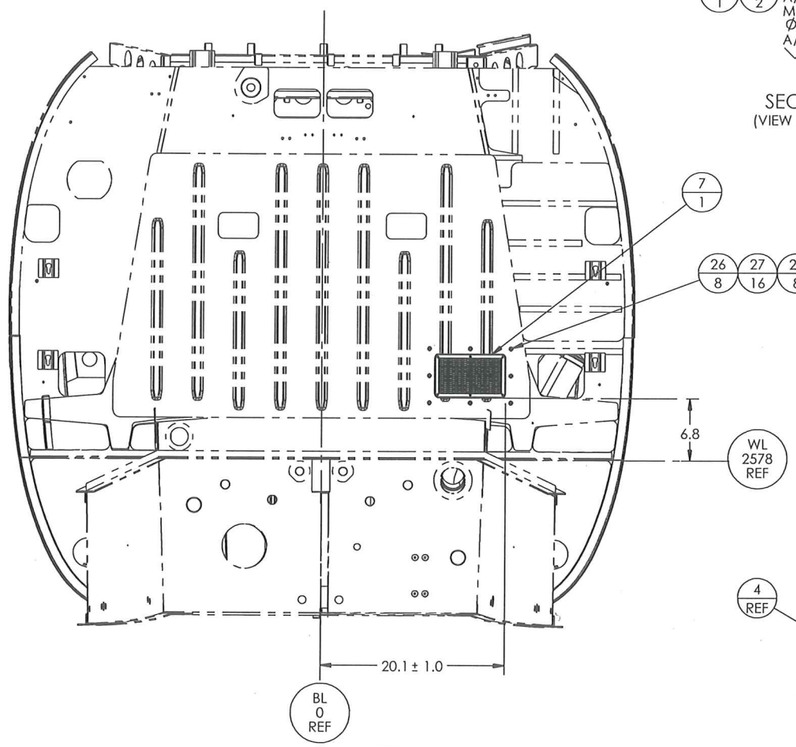
SECTION E-E
(ROTATED 90° CW
VIEW LOOKING AFT)



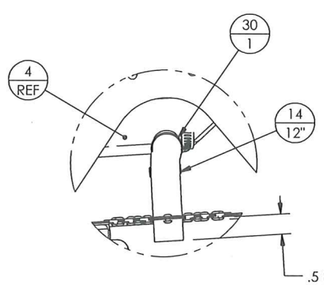
SECTION F-F [1/B7]
(VIEW LOOKING UP)



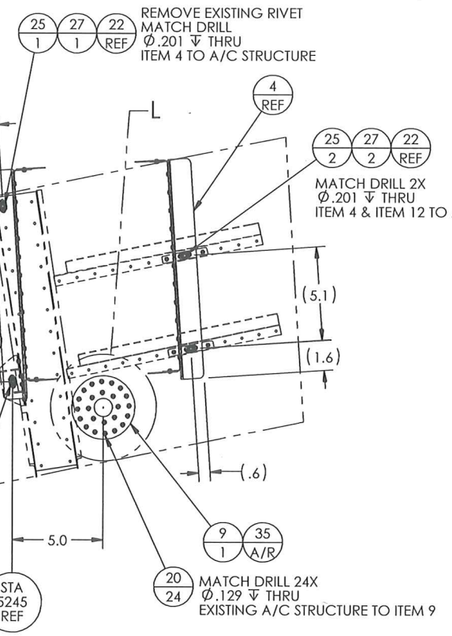
SECTION G-G [1/A8]
(VIEW LOOKING FORWARD AT STA 4630)



SECTION H-H [1/C8]



DETAIL J [1/A7]



SECTION K-K [1/A7]
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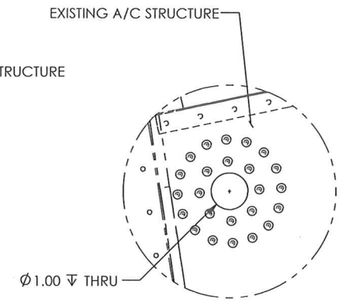

DETAIL L
A/C CUTOUT
(ITEM REMOVED FOR CLARITY)

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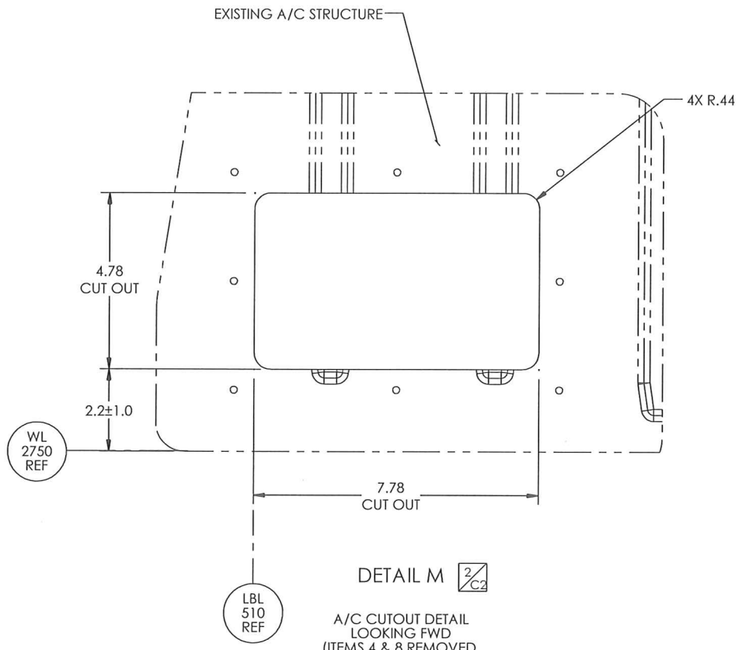
TITLE:
AFT EVAPORATOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-400	C

SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 8



DETAIL M 2/C2

A/C CUTOUT DETAIL
LOOKING FWD
(ITEMS 4 & 8 REMOVED
FOR CLARITY)

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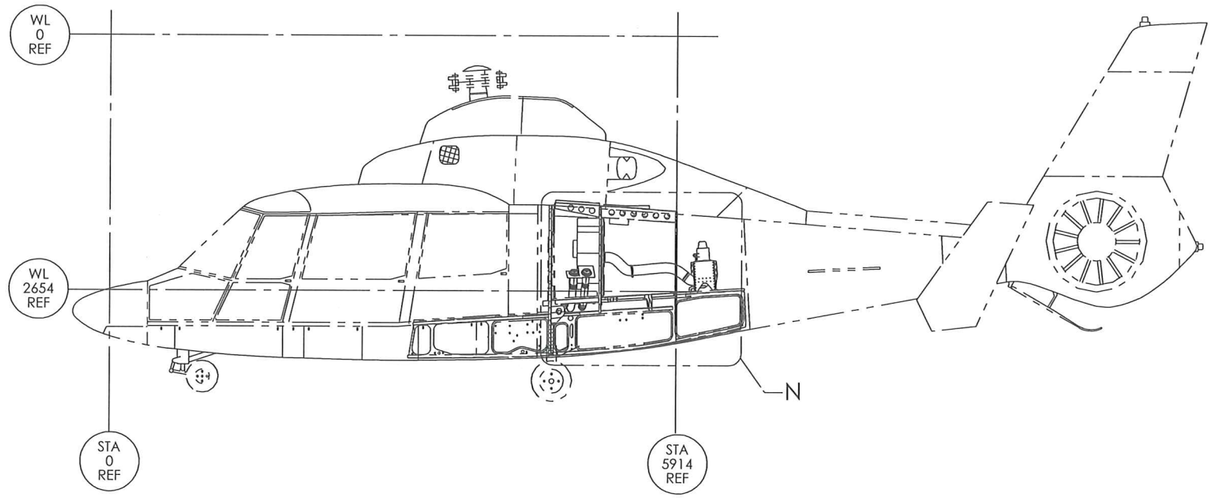
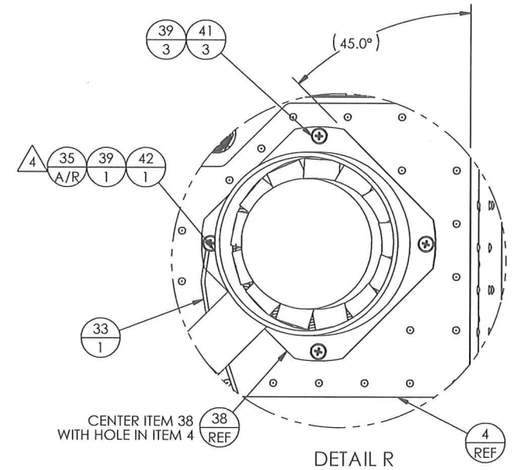
TITLE:
AFT EVAPORATOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-400	C

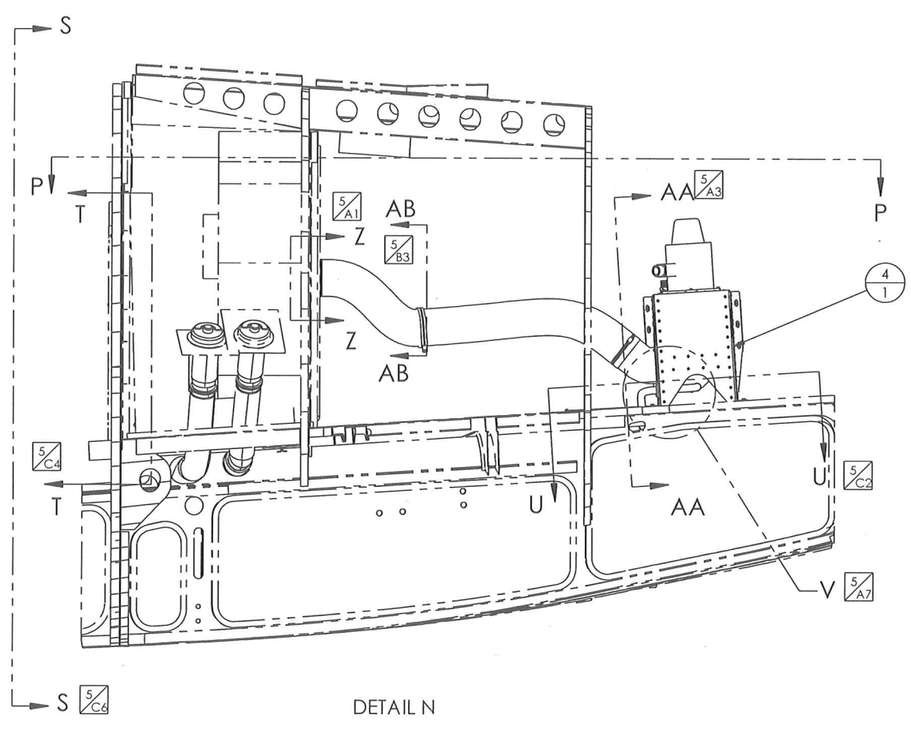
SCALE: NONE | WEIGHT: N/A | SHEET 3 OF 8



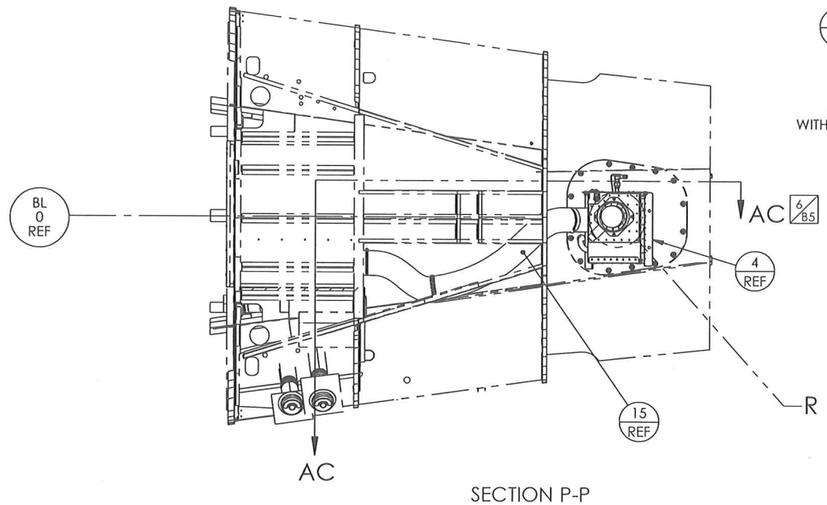
-02 AFT EVAPORATOR INSTALLATION



DETAIL R



DETAIL N



SECTION P-P

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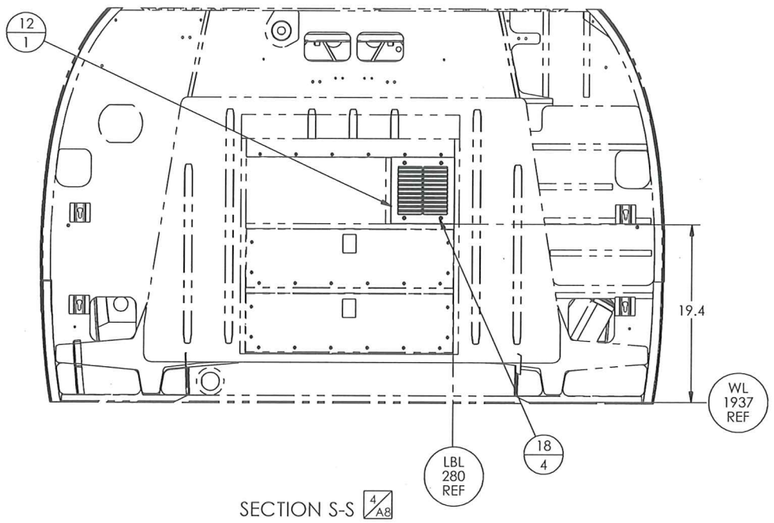
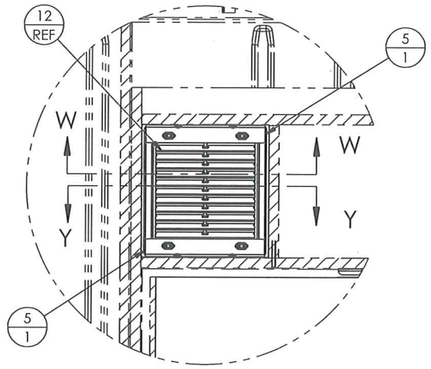
TITLE: AFT EVAPORATOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-400	C

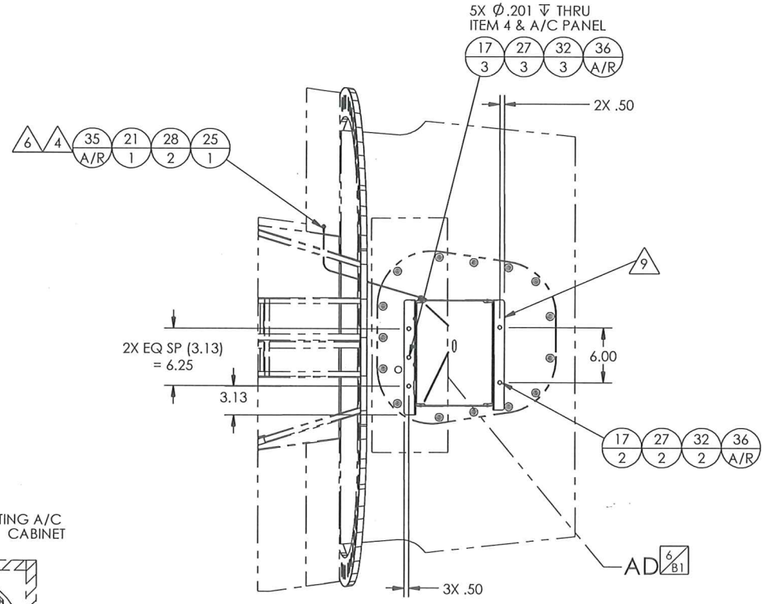
SCALE: NONE | WEIGHT: N/A | SHEET 4 OF 8



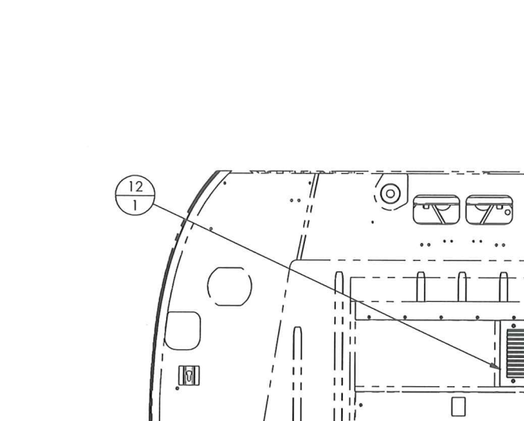
SECTION S-S 4/A8



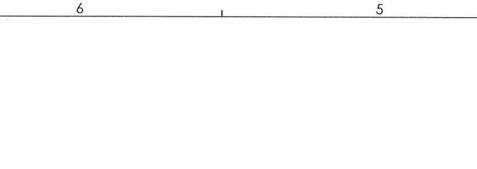
SECTION T-T 4/B8



SECTION U-U 4/B5



DETAIL V 4/A5



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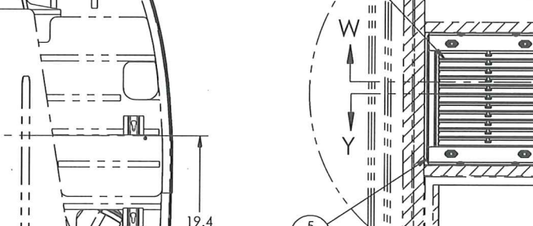

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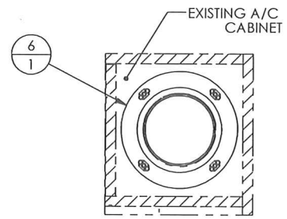
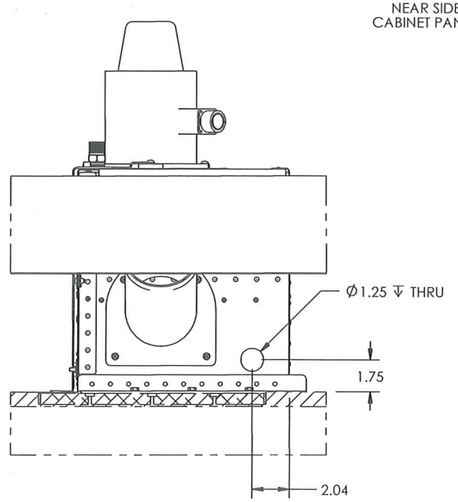
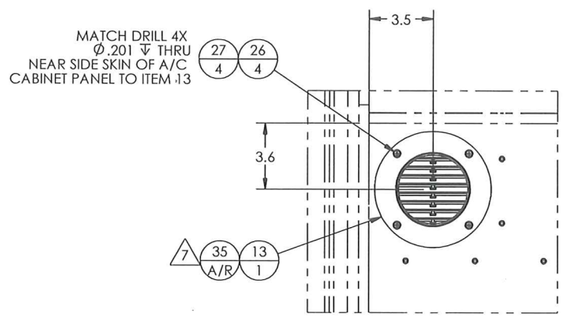


SECTION Z-Z 4/B7



SECTION AA-AA 4/B6

(ITEM 15 & 16 REMOVED FOR CLARITY)



SECTION AB-AB 4/B7

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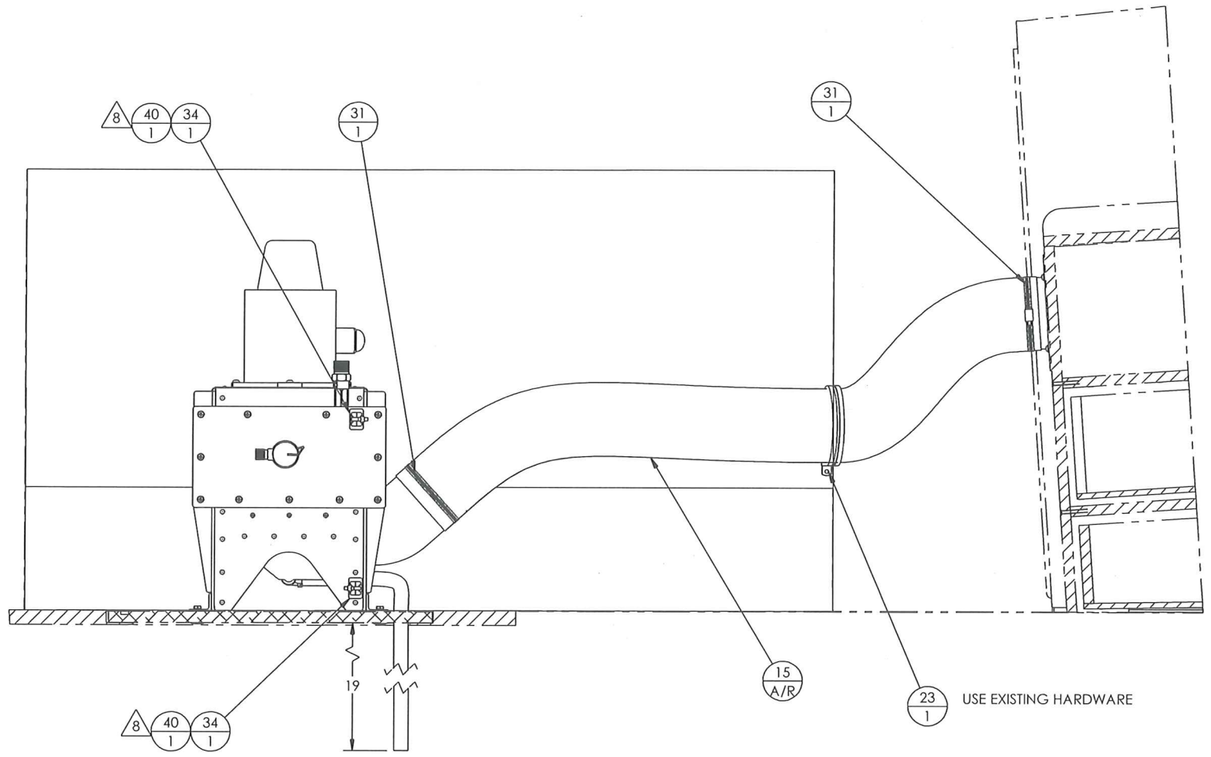
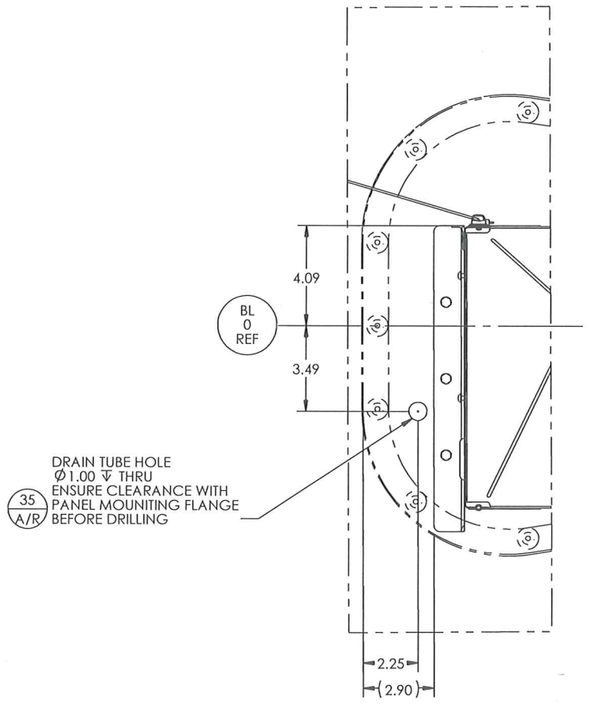
TITLE:
AFT EVAPORATOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-400	C

SCALE: NONE | WEIGHT: N/A | SHEET 5 OF 8



SECTION AC-AC 4/B2



DETAIL AD 5/C1

PROPRIETARY:

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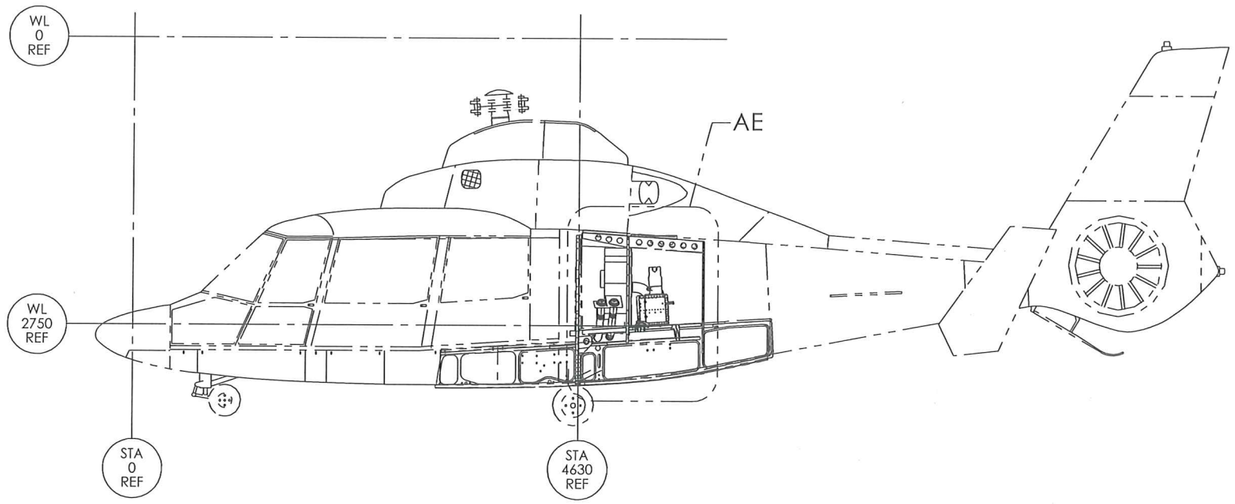
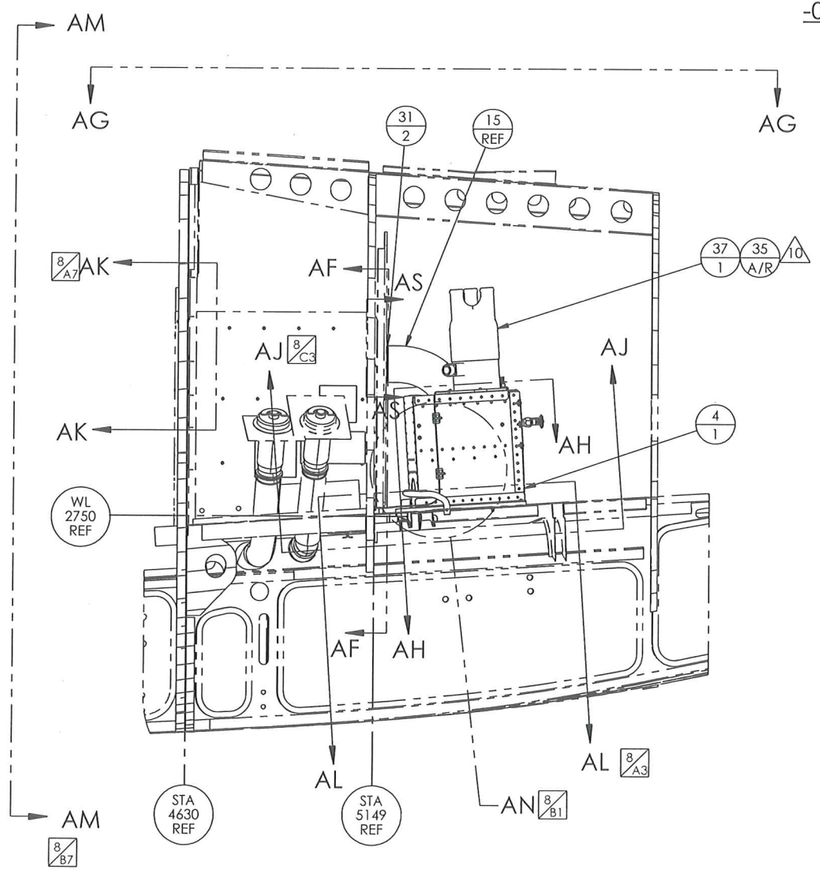
TITLE: AFT EVAPORATOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-400	C

SCALE: NONE | WEIGHT: N/A | SHEET 6 OF 8

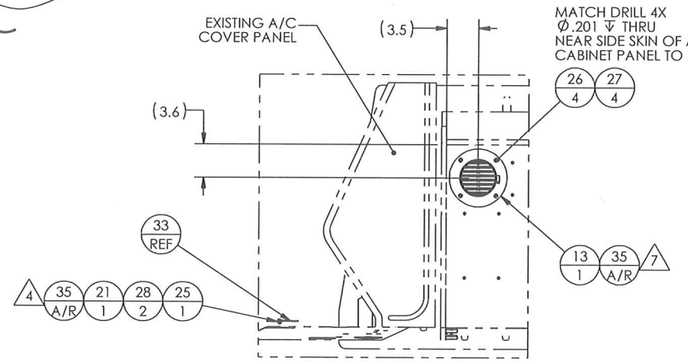


-03 AFT EVAPORATOR INSTALLATION



DETAIL AE

SECTION AG-AG



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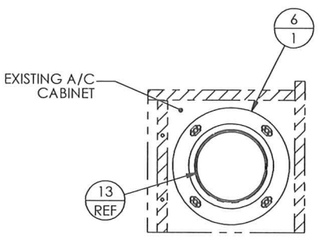

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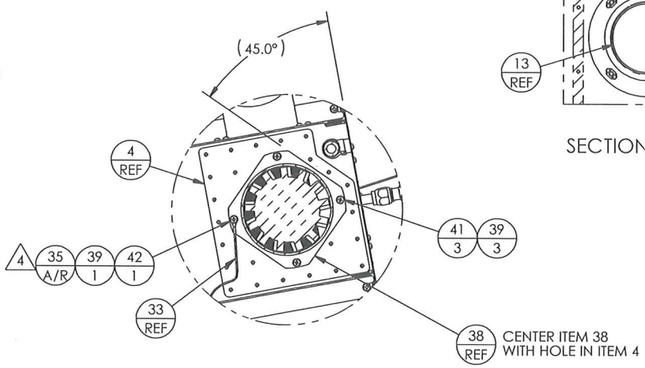


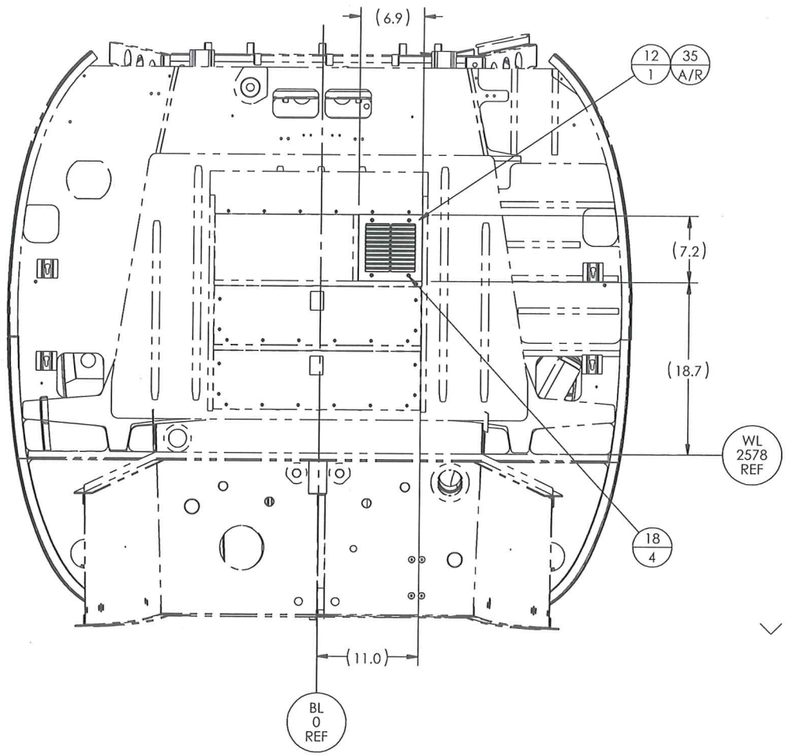
SECTION AH-AH

RSG AERODESIGN
3900 Falcon Way West
Hangar 16S
Fort Worth, Texas 76106
(817) 625-9000
www.rsgaerodesign.com

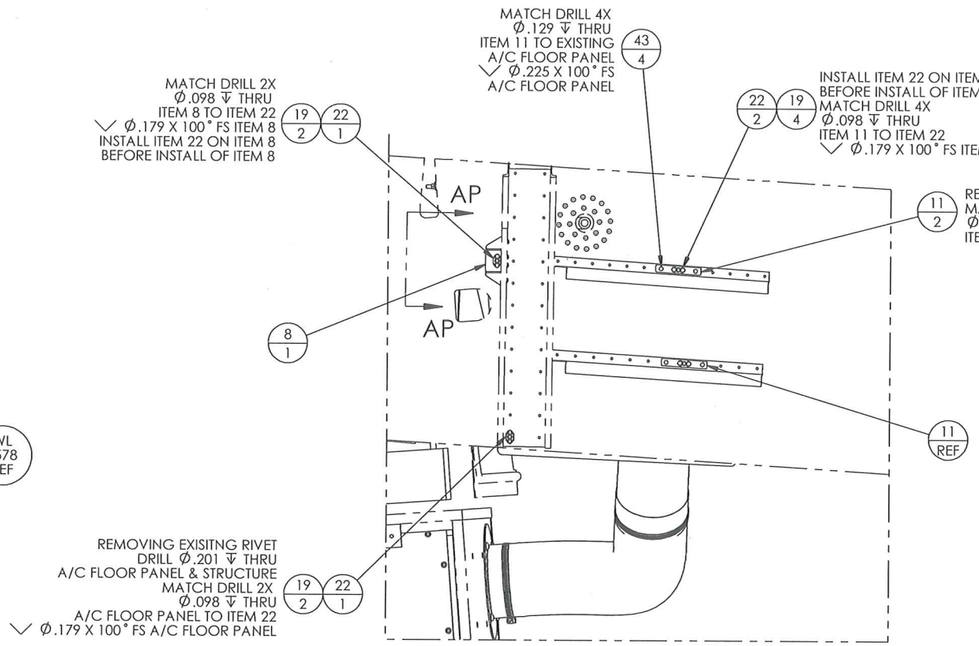
TITLE: AFT EVAPORATOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-400	C

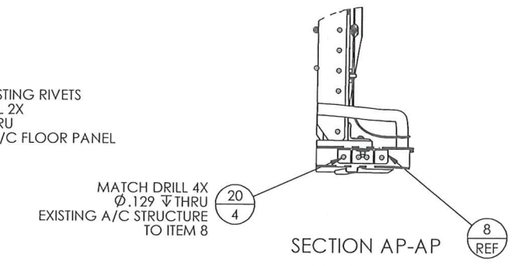
SCALE: NONE | WEIGHT: N/A | SHEET 7 OF 8



SECTION AM-AM 7/A8

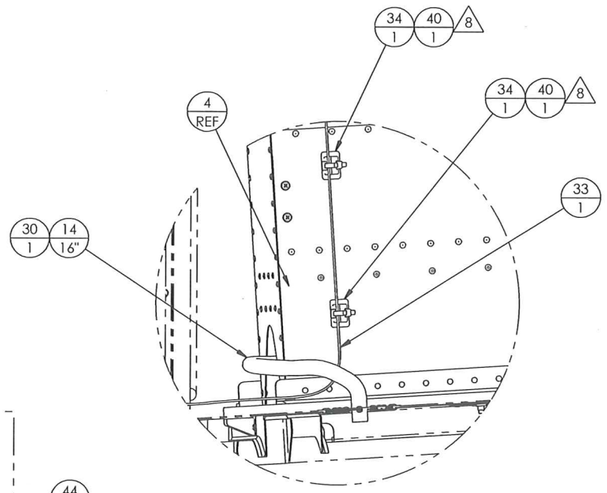


SECTION AJ-AJ 7/B6

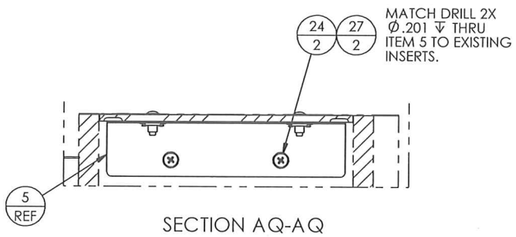


SECTION AP-AP

(ROTATED 90° CW
VIEW LOOKING AFT)



DETAIL AN 7/A6



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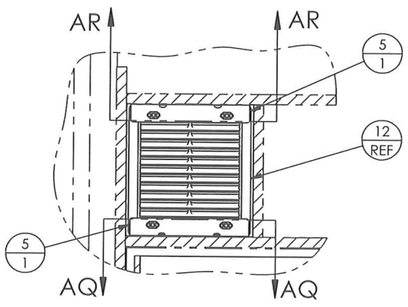
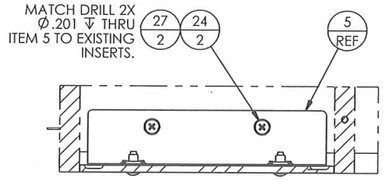
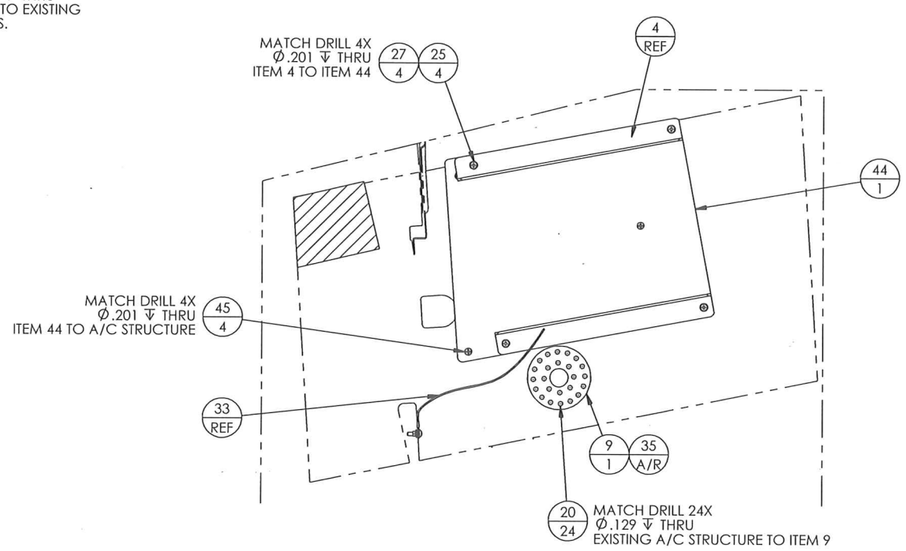


SECTION AK-AK 7/B8



SECTION AR-AR



SECTION AL-AL 7/A6

RSG AERODESIGN
3900 Falcon Way West
Hangar 16S
Fort Worth, Texas 76106
(817) 625-9000
www.rsgaerodesign.com

TITLE: AFT EVAPORATOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-400	C
SCALE: NONE	WEIGHT: N/A	SHEET 8 OF 8	

Step 6

Installation of Condenser

Installation of Condenser
Kit# 365N-00-2

STEP	PROCEDURE	MECH.	INSP.
6.2.1	For -01 Condenser Installation: Trial fit Condenser Doubler P/N 04-365-21-209-01 beginning at station 5919.0 (immediately aft of rear jack point) and extending to the next skin line at station 6680.0. Reference drawing 01-365-21-200. This step is for 01-365-21-200-01 configuration with no previous IFS air conditioning kit installed. For -02 Condenser Installation: The lower aircraft skin doubler, intake vent and condenser fan exhaust vent will be re-used for this installation from the previous installation. **Remove all other components.** For -03 Condenser Installation: The existing skin doubler that is pre-installed will be used. IAW Section U-U of DWG 01-365-21-200, mark the air inlet opening and the air discharge opening for the condenser blower		
6.2.2	For -01 Condenser Installation: Drill out and remove all MS20470AD type rivets in the two (2) outer rows on the bottom of the aircraft as shown on drawing 01-365-21-200. For -03 Condenser Installation: Remove the doubler plate. Save all existing hardware for re-installation.		
6.2.3	For -01 Condenser Installation: Remove strobe light from belly of aircraft, (if installed).		
6.2.4	For -01 Condenser Installation: Drill out and remove MS20470AD type rivets to the right of the aft jack point holding the drain plug. Remove drain plug assembly and re-install after all other steps are complete.		
6.2.5	For -01 Condenser Installation: Trial fit doubler to aircraft and cleco in place. Fabricate shim from .040” 2024-T3 aluminum stock to cover remaining portion of jack point. Match drill doubler and shim to allow for reinstallation of previously removed drain plug and jack point.		
6.2.6	For -01 Condenser Installation: De-burr and remove any aluminum shavings from previous operations.		
6.2.7	For -01 Condenser Installation: Apply a thin coat of P/S 890 adhesive to inside of doubler. Cleco in place beginning on the center line of the aircraft and working in a fore and aft direction, and then outward in both directions. Install CR3213-4-02 rivets as required. Ensure correct length by using Cherrymax Tool to measure for actual length at each location of rivet to be utilized.		

STEP	PROCEDURE	MECH.	INSP.
6.2.8	For -01 Condenser Installation: Upon completion of the Cherrymax rivets in the field pattern, MS20470AD4-() rivets are installed on the inboard row and bucked at each side of the doubler. Cherrymax rivets CR3243-4-02 are then installed in the outside row on each side of the doubler.		
6.2.9	For -01 Condenser Installation: Using the doubler as a template, mark the air inlet opening and the air discharge opening for the condenser blower and cut out holes. For -03 Condenser Installation: Cut out holes for the air inlet opening and air discharge opening for condenser blower. Install doubler using existing hardware while applying a thin layer of sealant, P/N: PR-1422 B-1/2.		
6.2.10	For -01 Condenser Installation: The honeycomb material is next removed 1” out from the inside diameter or surface for each hole in the doubler, between the inner and outer aircraft skins.		
6.2.11	For -01 Condenser Installation: Fill the removed area solid with EA934NA per RSG AeroDesign document number 20R00510006. After the filler has cured, the inside of both openings is dressed and all voids filled and smoothed.		
6.2.12	Trial fit LH and RH Condenser Blocks, P/N 04-365-21-201-01 and P/N 04-365-21-203-01.Remove exiting rivets on top and bottom. Mark location of Condenser Blocks and rivets to be removed. Remove Condenser Blocks and drill out rivets. Insert NAS1832-3-4 inserts. See drawing 01-365-21-200. Replace previously removed rivets with P/N CR3212-4-05 as required.		
6.2.13	Condenser Blocks are fitted and back-drilled from existing rivet holes. The Condenser Blocks are secured to aircraft structure with four (4) MS27039-1-08 screws and four (4) NAS1149F0316P washers on each side.		
6.2.14	The Condenser Provisions P/N 02-365-21-201-01 is fitted to the additional fuel bay. Care must be taken to ensure that the bolts used to hold the Condenser Provisions do not interfere with and damage the copper tubes and fins in the condenser coil. Utilize AN3-5A bolts, MS20426AD3-() rivets, MS21075L3N nutplates and NAS1149F0316P washer at three (3) places per side to secure the Condenser Provisions and Seal Shim 04-365-21-225-01 to each Condenser Block. Ensure seal is made with top and bottom the Condenser Provisions by using Edge Grip Seal 1120A341.		

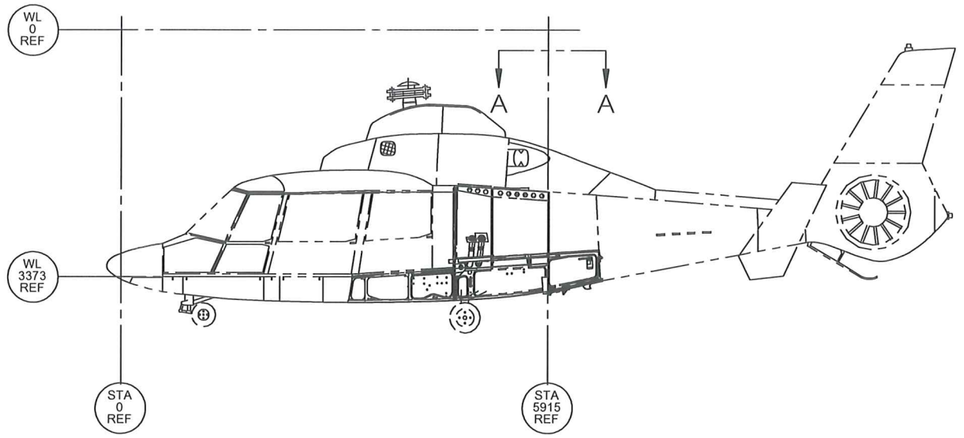
STEP	PROCEDURE	MECH.	INSP.
	For -01 and -02 Condenser Installation: Install Condenser Fan P/N 09-365-21-202-01, to Condenser Fan Panel P/N 04-365-21-210-01, Mount Ring Assy 02-365-21-206-01 and Blower Retainer Ring P/N 04-365-21-215-01 (sandwich the Return Air Screen P/N 04-365-21-218-01 between Condenser Fan Panel and Blower Retainer Ring) utilizing bolts P/N AN3-6A and washers NAS1149F0316P. Clamp Condenser Fan Angles P/N 04-365-21-211-01 to the Condenser Fan Panel P/N 04-365-21-210-01. Use the assembly to mark hole locations for Condenser Fan Angles. Remove the assembly and drill all holes. Install Inserts P/N NAS1832-3-4. Attach condenser fan angles to Condenser Fan Panel utilizing AN3-4A bolts, MS20426AD3-() rivets, MS21075L3N nutplates and NAS1149F0316P washers. See drawing 01-365-21-200-01.		
6.2.15	For -02 Condenser Evaporator location: Install the Fan Adapter 04-365-21-227-01 using EA934NA adhesive, AN3-14A bolts, NAS1149F0332P washers and MS21042L3N nuts. Use this as the guide for locating the Condenser Fan Angle Mounting holes.		
	For -03 Condenser Installation: Install Condenser Fan P/N 09-365-21-202-01, to Condenser Fan Support Plate P/N 04-365-21-228-01, Mount Ring Assy 02-365-21-206-01 and Blower Retainer Ring P/N 04-365-21-215-01 (sandwich the Return Air Screen P/N 04-365-21-218-01 between Condenser Fan Support Plate and Blower Retainer Ring) utilizing bolts P/N AN3-6A and washers NAS1149F0316P. Clamp Condenser Fan Angles P/N 04-365-21-211-01 to the Condenser Fan Support Plate P/N 04-365-21-228-01. Use the assembly to mark hole locations for Condenser Fan Angles. Remove the assembly and drill all holes. Install Inserts P/N NAS1832-3-4. Attach condenser fan angles to Condenser Fan Support Plate utilizing AN3-4A bolts, MS20426AD3-() rivets, MS21075L3N nutplates and NAS1149F0316P washers. See drawing 01-365-21-200-01.		

STEP	PROCEDURE	MECH.	INSP.
6.2.16	For -01 and -03 Condenser Installation: Install Air Scoop, P/N 04-365-21-213-01, Return Air Screen, P/N 04-365-21-217-01, and Intake Retainer Sub-assembly, P/N 03-365-21-203-01. Utilize MS27039-1-08 screws (for -01 configuration utilize MS27039-1-22 screws when installing install air scoop; and for -03 configuration utilize MS27039-1-10 to install intake air scoop) and NAS1149F0316P washers. Install the Exhaust Vent 04-365-21-214-01 to the Condenser fan and secure using hose clamp 501143.		
6.2.17	Attach the fan shelf assembly created in step 6.2.15 to the fuel bay by attaching the Condenser Fan Angles with AN3-3A bolts and NAS1149F0316P washers at the previously installed insert locations.		
6.2.18	For -01 Condenser Installation: Install P/N 04-365-21-219-01 Closeout Panel Doubler over the four (4) aft bulkhead lightening holes. Back drill and rivet the aircraft bulkhead using the close out as a pattern. Use P/N MS20470AD4-() as shown on drawing 01-365-21-200.		
6.2.19	Position Receiver/Dryer Bottle Prvns P/N 02-365-21-202-01 between condenser and aft bulk head approximately as shown in drawing 01-365-21-200. Line up drier inlet with condenser outlet (lower tube), noting that the fore and aft placement is not critical. Ensure refrigerant hose routing can be achieved prior to drilling. Mark bolt holes from Receiver/Dryer Bottle Prvn onto side wall. Remove and install NAS1832-3-4 inserts over marked bolt holes. Attach Receiver/Dryer Bottle Prvn using MS27039-1-08 screws and NAS1149F0316P washers. Attach the 09-365-21-201-01 Receiver/Drier Bottle to the mount.		
6.2.20	For -01 and-03 Condenser Installation: Crimp the two (2) hose fittings 09-365-21-001-03 to refrigerant hose 09-365-21-002-05 after verifying that it can be installed between the condenser coil and outlet port and the receiver/drier bottle inlet. For -02 Condenser Installation: Crimp the hose fittings 09-365-21-001-03 and RBA1311 to refrigerant hose 09-365-21-002-05 after verifying that it can be installed between the condenser coil and outlet port and the receiver/drier bottle inlet. Install the hose assembly to the condenser outlet, but do not attach to the Receiver/Drier Bottle until the refrigerant routing is completed. **Ensure that the inlet and outlet of the Receiver/Drier Bottle remain capped to ensure that air is not introduced into it.**		

STEP	PROCEDURE	MECH.	INSP.
6.2.21	Install the Jumper Cable Assembly M83413/8-A006BB with screw MS37039-1-08, washer NAS1149F0316P, nutplate MS21075L3N and MS20426AD3-() rivets on the Condenser Fan Panel and Closeout Panel Doubler. Ensure bond meets drawing requirements.		
6.2.22	Drill the 1.313” diameter hole as shown on Sheet 3 View H-H. Install the Doubler Assembly 02-365-21-205-01 and use NAS600-10 Screws and NAS1149DN416H Washers to attach the ACF3J1 connector. For -02 Condenser Installation: Drill the 1.13” and .89” diameter holes as shown on Sheet 3 View H-H. Install the Doubler Assembly 02-365-21-204-01 and use MS2739-0807 Screws and NAS1149DN816H Washers to attach the 04-365-21-221-01 Hose Split Flange. Ensure that the #6 refrigerant hose can be properly routed to the receiver/drier bottle outlet before drilling. Install grommets MS35489-75 and MS35489-78.		

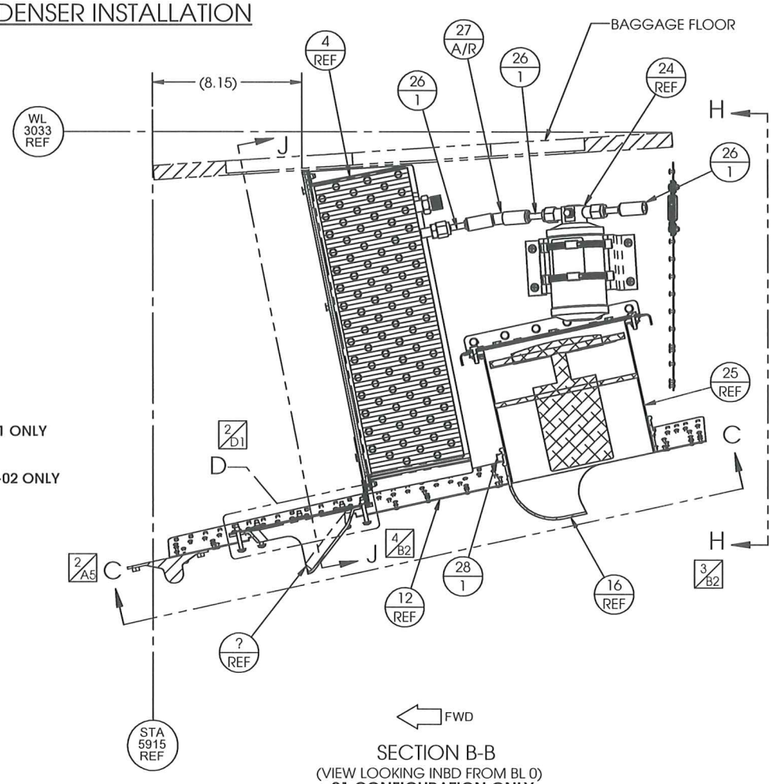
NOTES:

1. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. INSTALL INSERTS IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510006.
3. PRIOR TO INSTALLING ITEM 12, LOCALLY REMOVE FINISH AND ALODINE CONTACT SURFACE OF ACFT SKIN IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510004
4. FORM ITEM 12 TO MATCH ACFT CONTOUR PRIOR TO INSTALLING RIVETS AND ACFT SKIN CUTOUT.
5. FAYING & FILLET SEAL ITEM 12 TO ACFT SKIN USING ITEM 56.
6. INSTALL ALL RIVETS THRU ACFT SKIN WET USING ITEM 56.
7. PERMISSIBLE TO USE CR3213-4 RIVETS IN LIEU OF MS20470AD4 RIVETS IN AREAS INACCESSIBLE DUE TO HONEYCOMB PANEL IN INSTALL AREA.
8. NOTE REMOVED.
9. PRIOR TO INSTALLING ITEM 25, BOND ITEM 8 TO BOTTOM FLANGE USING ITEM 53.
10. TERMINATE ITEM 33 JUMPER CABLE ASSEMBLY AS SHOWN IN DETAIL E, VIEW H-H, DETAIL W, & VIEW Y-Y. BURNISH & BOND MATING SURFACES. SEAL TERMINAL RINGS AND FASTENERS WITH ITEM 55 IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510008.
11. REFERENCE RSG AERODESIGN DOCUMENT 08-365-21-100 FOR WIRING DIAGRAM.
12. REFERENCE RSG AERODESIGN DOCUMENT 01-365-21-700 FOR REFRIGERANT SYSTEM SCHEMATIC.
13. INSTALL NUTPLATES PER MS21075L3N NUTPLATE HOLE PATTERN DETAIL SHOWN ON SH 4 & 8.
14. INSTALL ITEMS 26, 27 & 48 PER CRIMP DETAIL SHOWN ON SHT 4 & 8.
15. PAINT ITEMS 12, 15 & 16, AND INSTALLATION HARDWARE ON THE EXTERIOR TO MATCH ACFT COLOR IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510007.
16. FOR ACFT WITH INTEGRATED FLIGHT SYSTEMS AIR CONDITIONING KITS INSTALLED PRIOR TO SEPTEMBER 2012, UTILIZE THE -02 CONFIGURATION FOR INSTALLATION. REFER TO IFS DWG 7-SA365N FOR PREVIOUS INSTALLATION.
17. REMOVE EXISTING RIVETS, MATCH DRILL ITEMS 10 & 11. REPLACE WITH SAME OR 1 SIZE LARGER RIVET.
18. TRIM ITEMS 10 & 11 TO FIT AS REQUIRED ON LOWER EDGE.
19. EXISTING RIVETS MAY INTERFERE WITH ITEM 10 & 11 SITTING FLUSH AGAINST PANEL. REMOVE AND REPLACE RIVETS WITH ITEM 57 AS REQUIRED. ⌵ Ø.225 X 100°.
20. FOR ACFT SA365N3 SN 6967 OR LATER, UTILIZE THE -03 INSTALLATION CONFIGURATION.
21. REMOVAL OF EXISTING DOUBLER ON OUTER LOWER SURFACE OF ACFT MAY BE NECESSARY TO PREFORM CUT-OUTS. RE-INSTALL DOUBLER PER MANUFACTURERS INSTRUCTIONS WHEN COMPLETE.

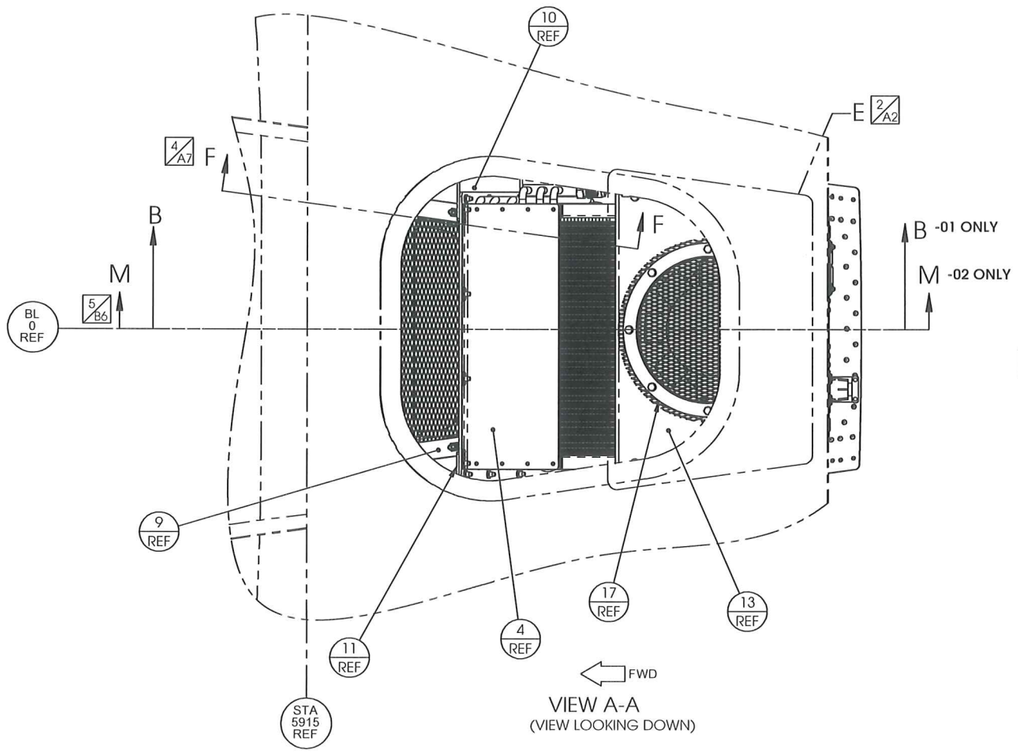


REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO 01-365-21-200NC1	C. Wells	P. Ban	09/12/2012
B	INCORPORATED ECO 01-365-21-200A1	B. Witherspoon	P. Ban	02/13/2013
C	INCORPORATED ECO 01-365-21-200B1	H. Saukkonen	P. Ban	03/04/2013
D	INCOPORAED ECO 01-365-21-200C1.	H. Saukkonen	P. Ban	03.27.13

-01 CONDENSER INSTALLATION



SECTION B-B
(VIEW LOOKING INBD FROM BL 0)
-01 CONFIGURATION ONLY



VIEW A-A
(VIEW LOOKING DOWN)

		16	60	MS27039-1-22	SCREW	
16			59	MS27039-1-10	SCREW	
1			58	04-365-21-228-01	CONDENSER FAN SUPPORT PLATE	
20	20	20	57	CR3212-4-05	RIVET	
A/R		A/R	56	P/S 890	SEALANT, CLASS B, TYPE II	PRO SEAL
A/R	A/R	A/R	55	PR-1422 B-1/2	SEALANT	PRO SEAL
		300	54	MS20470AD4-()	RIVET	
A/R	A/R	A/R	53	EA934NA	ADHESIVE	HYSOL
		100	52	CR3213-4-02	RIVET	
2'	2'	2'	51	1120A341	EDGE GRIP SEAL	MCMASTER
			50			
REF	REF	REF	49	MS3100F20-23S	CONNECTOR, RECEPTACLE	
	2		48	RBA1311	#6 45° FEMALE FITTING	RSG PRODUCTS
24	24	24	47	NAS1832-3-4	INSERT	
	12		46	NAS1149F0332P	WASHER	
66	50	66	45	NAS1149F0316P	WASHER	
		4	44	NAS1149DN816H	WASHER	
4	4	4	43	NAS1149DN416H	WASHER	
4	4	4	42	NAS600-10	SCREW	
1	1	1	41	MS35489-78	GROMMET	
1	1	1	40	MS35489-75	GROMMET	
12	12	12	39	AN3-3A	BOLT	
14	14	14	38	MS27039-1-08	SCREW	
		4	37	MS27039-0807	SCREW	
18	18	18	36	MS21075L3N	NUTPLATE	
	6		35	MS21042L3	NUT	
36	36	36	34	MS20426AD3-()	RIVET	
1	1	1	33	M83413/8-A006BB	JUMPER CABLE ASSY	
	6		32	AN3-14A	BOLT	
8	8	8	31	AN3-6A	BOLT	
6	6	6	30	AN3-5A	BOLT	
10	10	10	29	AN3-4A	BOLT	
1		1	28	5011T43	HOSE CLAMP	MCMASTER
2'	2'	2'	27	09-365-21-002-05	#6 HOSE	
3	1	3	26	09-365-21-001-03	#6 STRAIGHT FITTING	
REF	REF	REF	25	09-365-21-202-01	CONDENSER FAN	
1	1	1	24	09-365-21-201-01	RECEIVER/DRYER BOTTLE	
	1		23	04-365-21-227-01	FAN ADAPTER	
1	1	1	22	04-365-21-225-01	SEAL SHIM	
		1	21	04-365-21-221-01	HOSE SPLIT FLANGE	
		1	20	04-365-21-219-01	CLOSEOUT PANEL DOUBLER	
1	1	1	19	04-365-21-218-01	RETURN AIR SCREEN	
1		1	18	04-365-21-217-01	RETURN AIR SCREEN	
1	1	1	17	04-365-21-215-01	BLOWER RETAINER RING	
1		1	16	04-365-21-214-01	EXHAUST VENT	
1		1	15	04-365-21-213-01	AIR SCOOP	
2	2	2	14	04-365-21-211-01	CONDENSER FAN ANGLE	
	1	1	13	04-365-21-210-01	CONDENSER FAN PANEL	
		1	12	04-365-21-209-01	CONDENSER DOUBLER	
1	1	1	11	04-365-21-203-01	CONDENSER BLOCK	
1	1	1	10	04-365-21-201-01	CONDENSER BLOCK	
1		1	9	03-365-21-203-01	INTAKE RETAINER SUB-ASSEMBLY	
1	1	1	8	02-365-21-206-01	MOUNTING RING ASSEMBLY	
1	1	1	7	02-365-21-205-01	DOUBLER ASSEMBLY	
		1	6	02-365-21-204-01	DOUBLER ASSEMBLY	
1	1	1	5	02-365-21-202-01	RECEIVER/DRYER BOTTLE PRVNS	
1	1	1	4	02-365-21-201-01	CONDENSER PROVISIONS	
--			3	-03	CONDENSER INSTALLATION	
	--		2	-02	CONDENSER INSTALLATION	
		--	1	-01	CONDENSER INSTALLATION	
-03	-02	-01	ITEM	PART NUMBER	DESCRIPTION	VENDOR

UNLESS OTHERWISE SPECIFIED:

- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

365N-00-2
NEXT ASSEMBLY

DESIGN: R. Latham	DATE: 03/01/2011	
DRAWN: H. Saukkonen	DATE: 01/20/2012	
CHECKED: P. Ban	DATE: 03/05/2012	
PROJECT ENG: J. Krebs	DATE: 03/05/2012	
APPROVED: P. Ban	DATE: 03/05/2012	

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TITLE: CONDENSER INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-200	D

SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 8

81X Ø.128 THRU ACFT SKIN
LOCATE PER ITEM 12
PILOT HOLES
(6)(7) 56 A/R 52 A/R 54 A/R

12 1 56 A/R (3)(4)(5)
PERMISSIBLE TO TRIM ITEM 12 TO FIT BETWEEN STA 5919 AND STA 6680 ENSURE EDGE DISTANCE ON RIVET HOLES.

AFTER ITEM 12 IS FORMED TO ACFT CONTOUR AND INSTALLED, CUTOUT ACFT SKIN TO MATCH ITEM 12 OUTLET OPENING.

45 16 60 16
16X Ø.201 THRU
ACFT SKIN, LOCATE
PER ITEM 12 PILOT HOLES

(6)(7) 55 A/R 52 A/R 54 A/R
PICK UP EXISTING RIVET LINES, MATCH DRILL ITEM 12 TO ACFT RIVET PATTERN

REMOVE AND RE-INSTALL AFTER ITEM 12 IS INSTALLED.

REMOVE JACK POINT. CUT SHIM FROM .040 2024-T3 AL TO MATCH SHAPE OF JACK POINT ON THE FWD SIDE OF ITEM 12. MATCH DRILL ITEM 12 TO JACK POINT. RE-INSTALL AFTER ITEM 12 IS ATTACHED

25 REF (9)

54 A/R

18 REF

? ?

16 1

AFTER ITEM 12 IS FORMED TO ACFT CONTOUR AND INSTALLED, CUTOUT ACFT SKIN TO MATCH ITEM 12 INLET OPENING.

STA 5919 REF

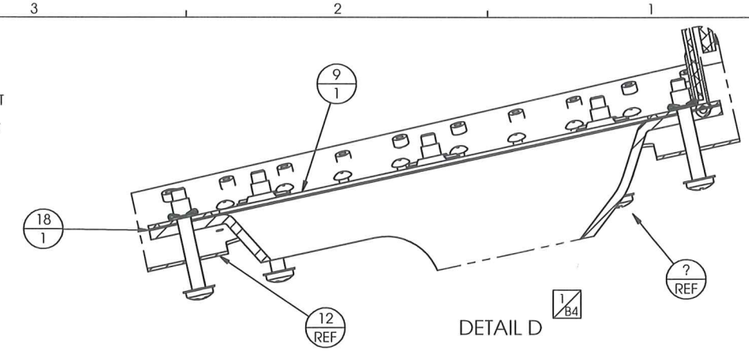
23.1

STA 6680.0 REF

FWD

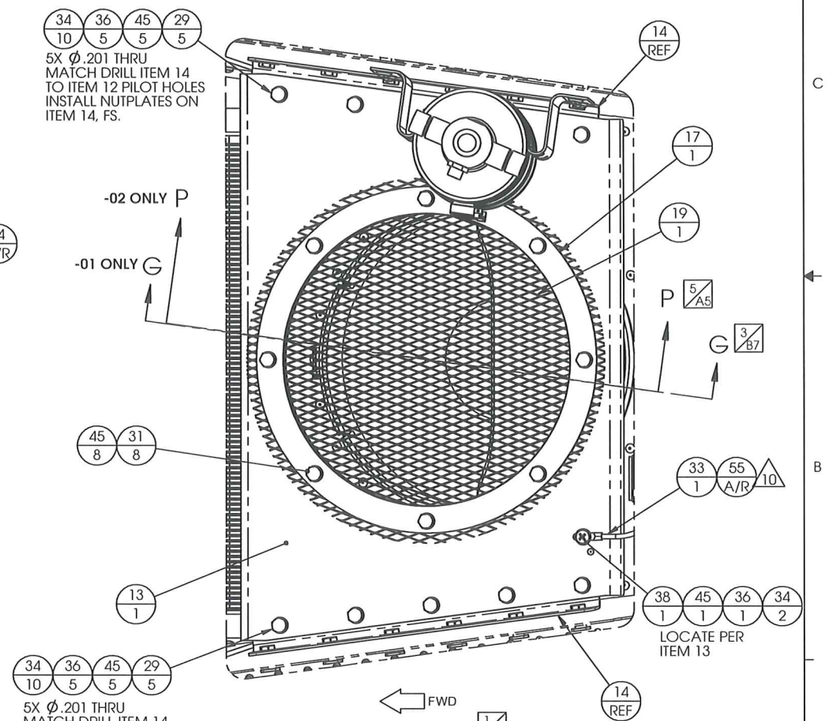
VIEW C-C 1/B5

(VIEW ROTATED 12° CW)
-01 CONFIGURATION ONLY



DETAIL D 1/B4

34 10 36 5 45 5 29 5
5X Ø.201 THRU
MATCH DRILL ITEM 14
TO ITEM 12 PILOT HOLES
INSTALL NUTPLATES ON
ITEM 14, FS.



DETAIL E 1/B5

(ACFT FLOOR PANEL REMOVED FOR CLARITY)

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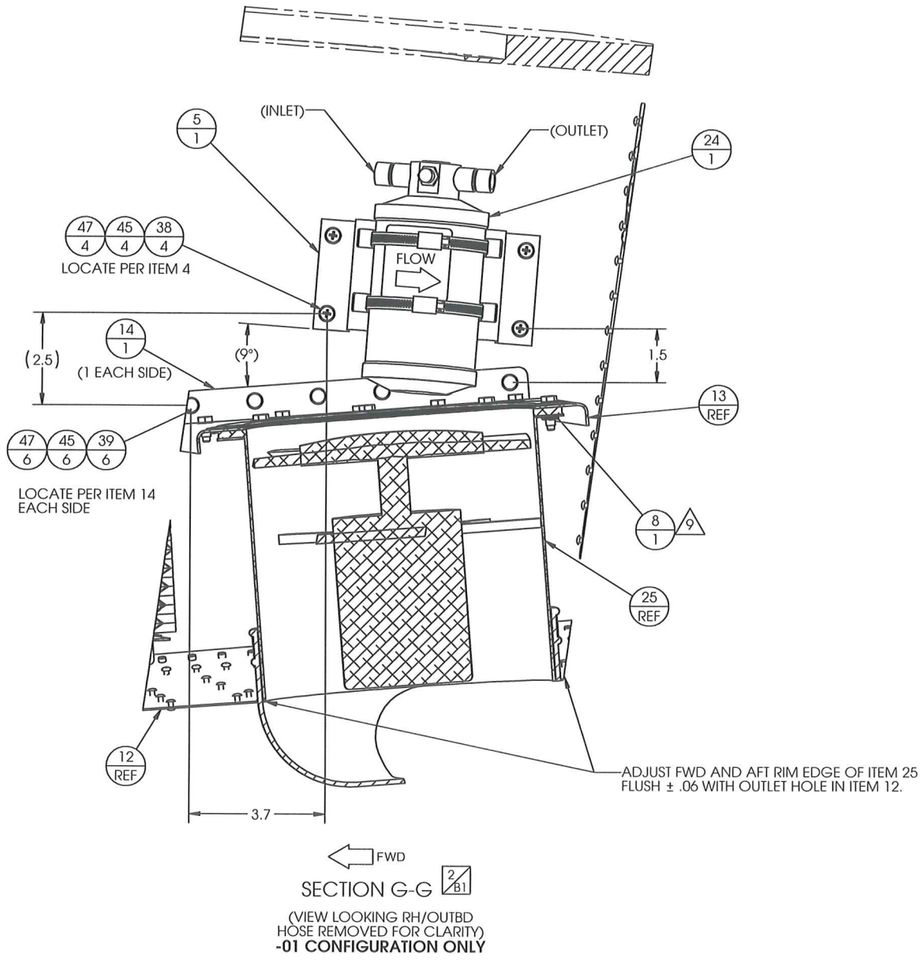
TITLE: CONDENSER INSTALLATION

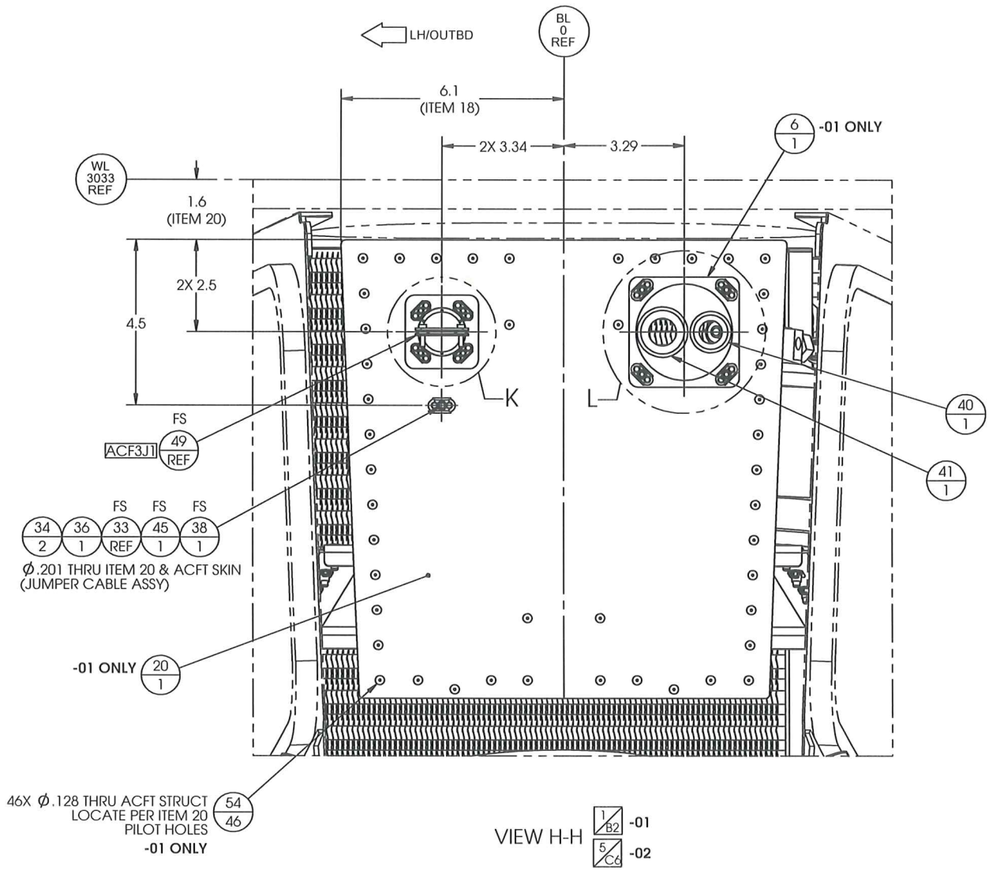
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-200	D

SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 8



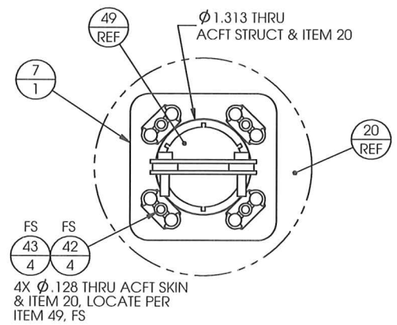
SECTION G-G 2/B1

(VIEW LOOKING RH/OUTBD
HOSE REMOVED FOR CLARITY)
-01 CONFIGURATION ONLY

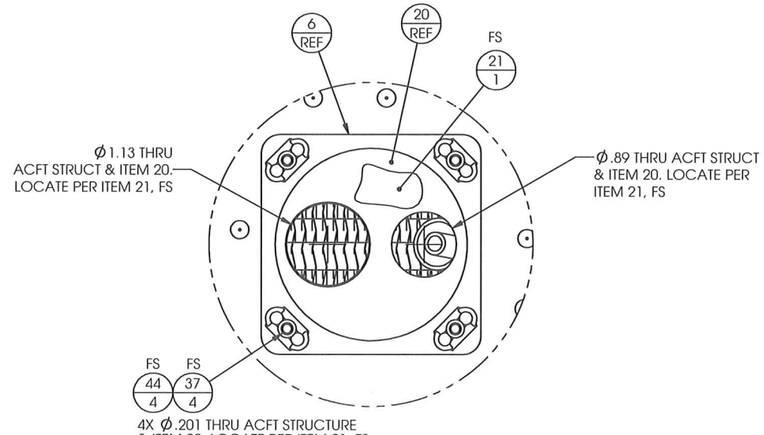


VIEW H-H 1/B2 -01, 5/C6 -02

(VIEW LOOKING FWD FROM STA 6629)



DETAIL K



DETAIL L

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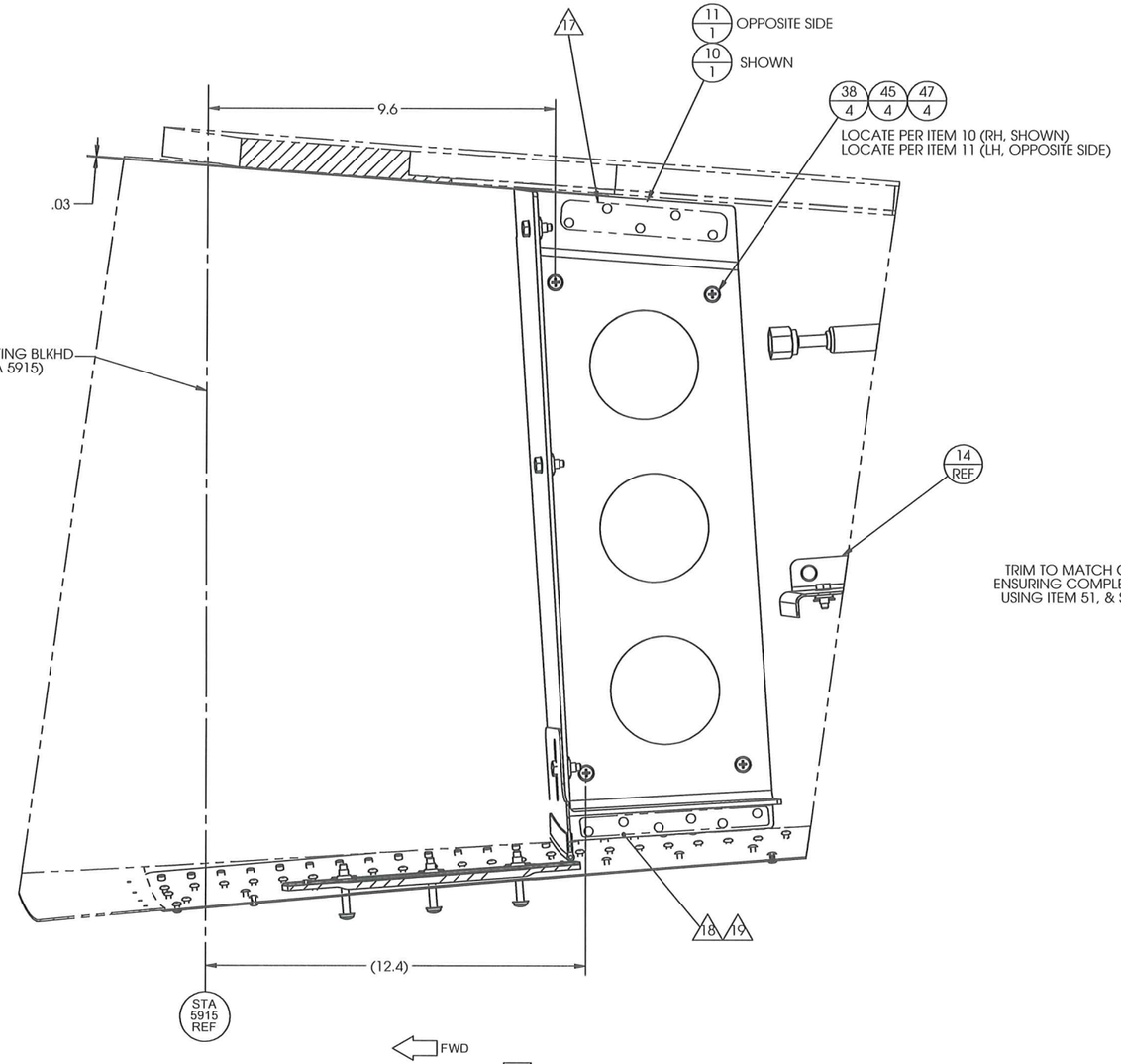
TITLE: CONDENSER INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-200	D

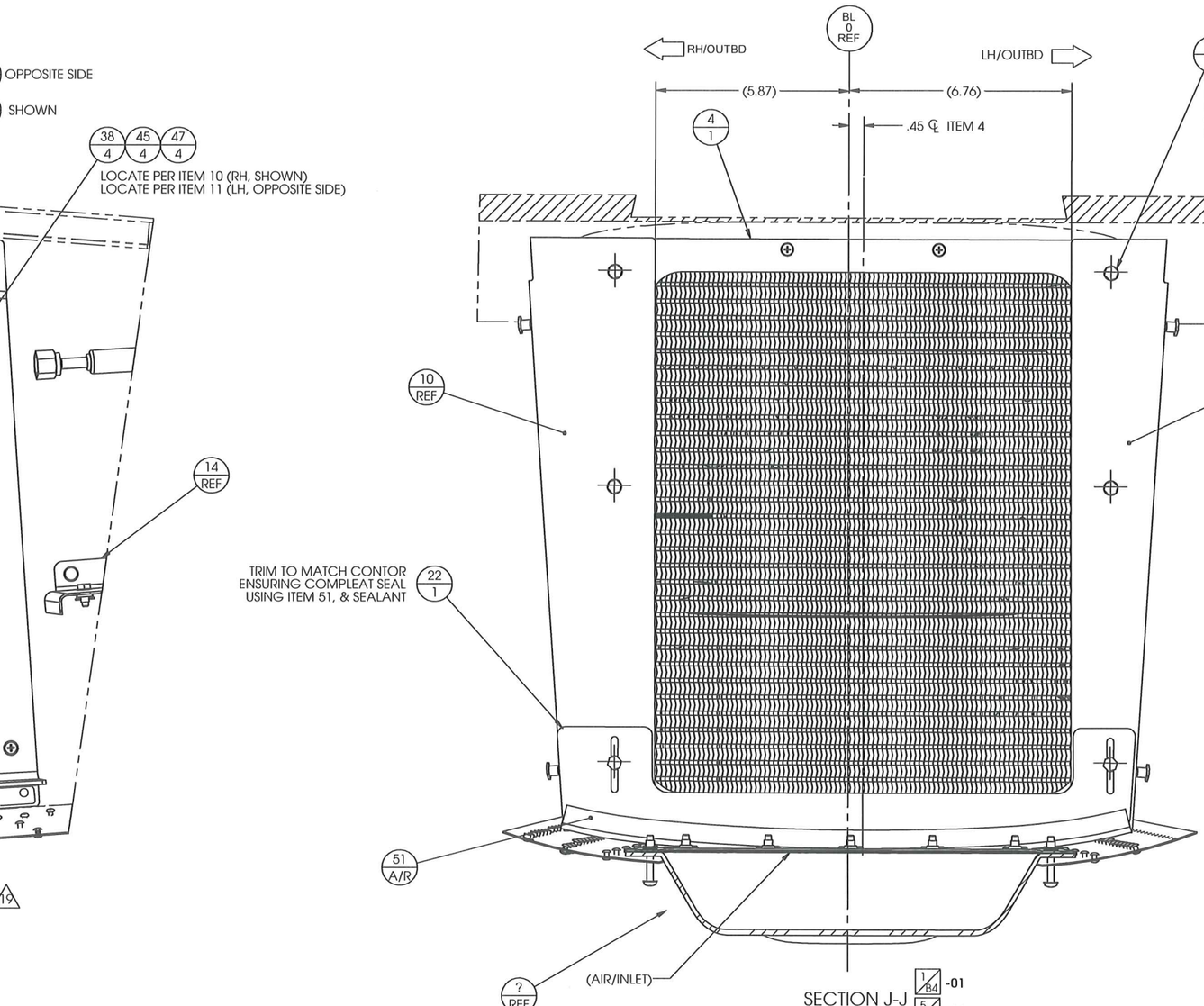
SCALE: NONE | WEIGHT: N/A | SHEET 3 OF 8



FWD

SECTION F-F [1/B8]

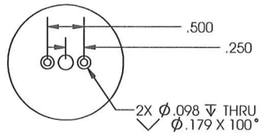
(VIEW LOOKING OUTBD)
(ITEM 3 NOT SHOWN
FOR CLARITY)



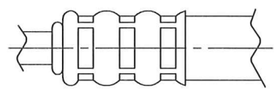
-01 CONFIGURATION
ONLY

SECTION J-J [1/B4] -01 [5/C7] -02

(VIEW LOOKING AFT)



MS21075L3 NUTPLATE
HOLE PATTERN



CRIMP DETAIL

(TYP ALL ENDS)
(USE ATCO CRIMPER
P/N 3700 OR EQUIVALENT
WITH #6, #8 OR #10 DIES
FOR APPROPRIATE SIZE HOSE.)

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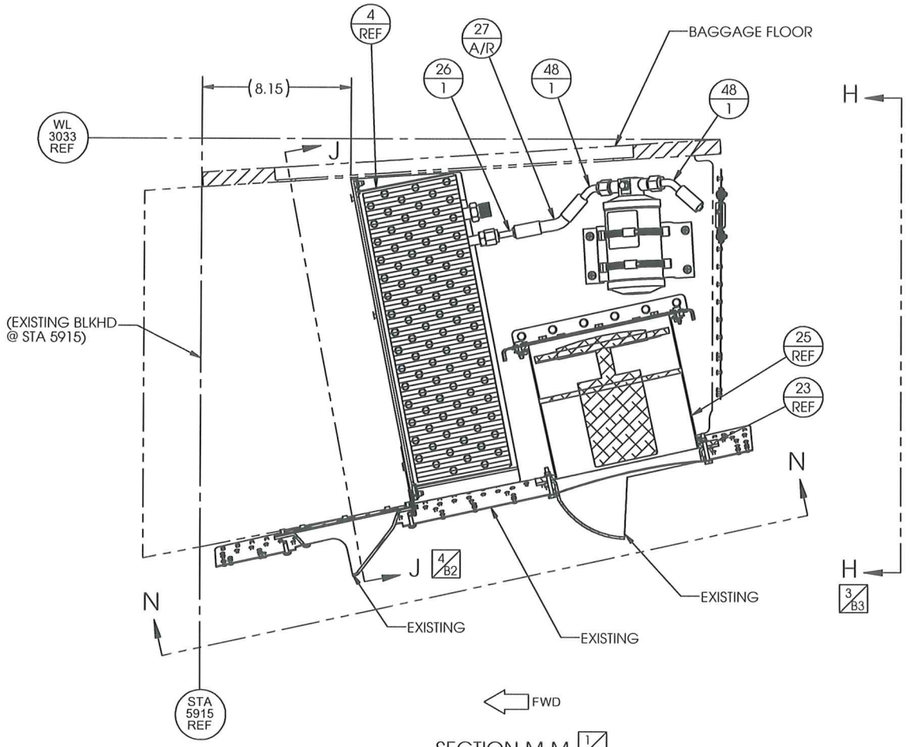
TITLE: CONDENSER INSTALLATION

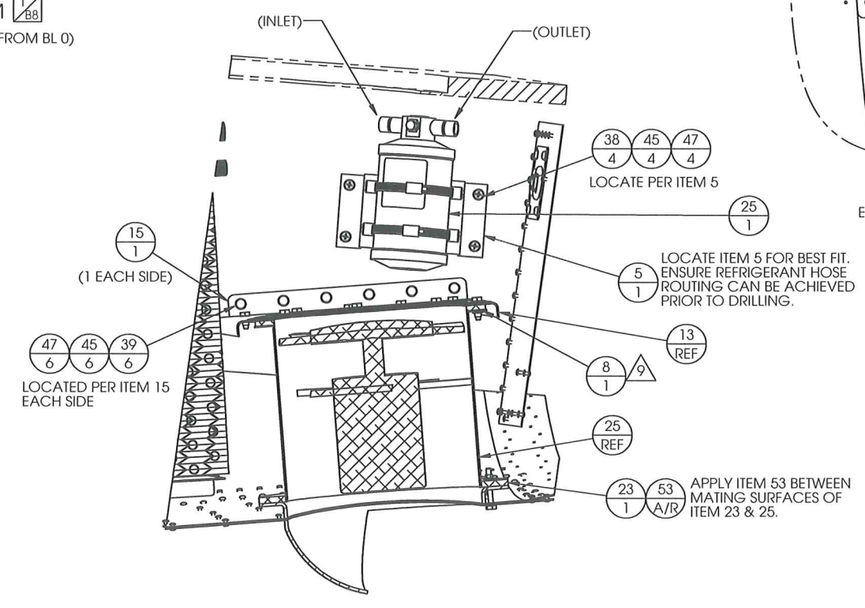
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-200	D

SCALE: NONE | WEIGHT: N/A | SHEET 4 OF 8



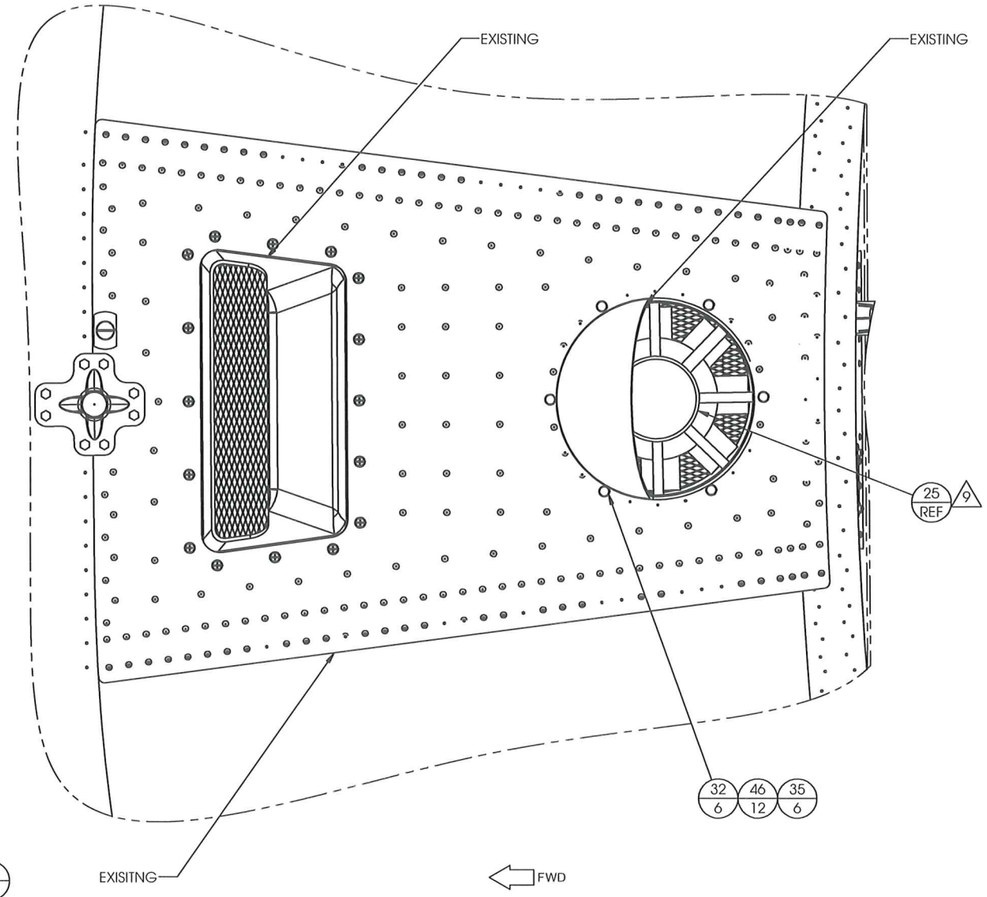
SECTION M-M 1/B8

(VIEW LOOKING INBD FROM BL 0)



SECTION P-P 2/B1

(VIEW LOOKING RH/OUTBD)
HOSE REMOVED FOR CLARITY



VIEW N-N 1/B5

(VIEW ROTATED 12° CW)

-02 CONDENSER INSTALLATION 16

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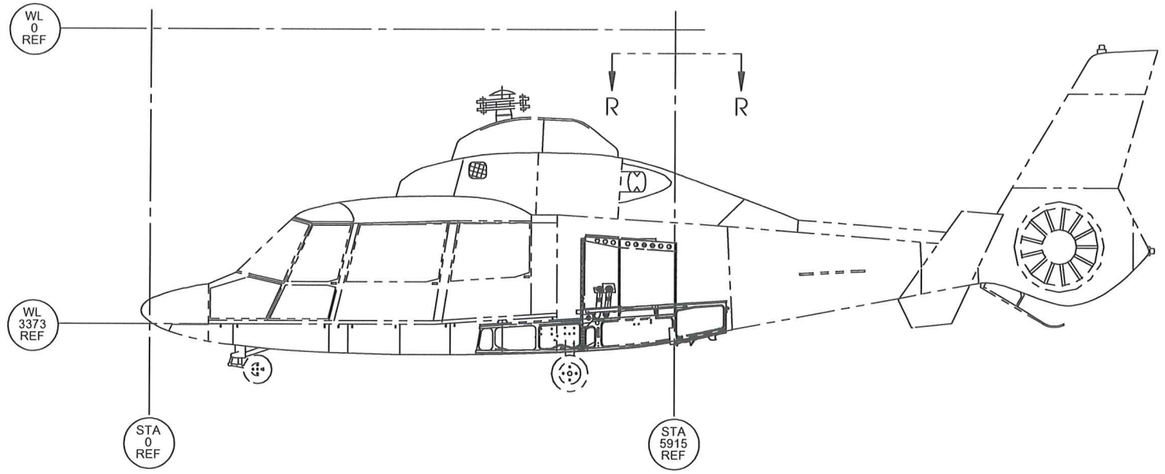
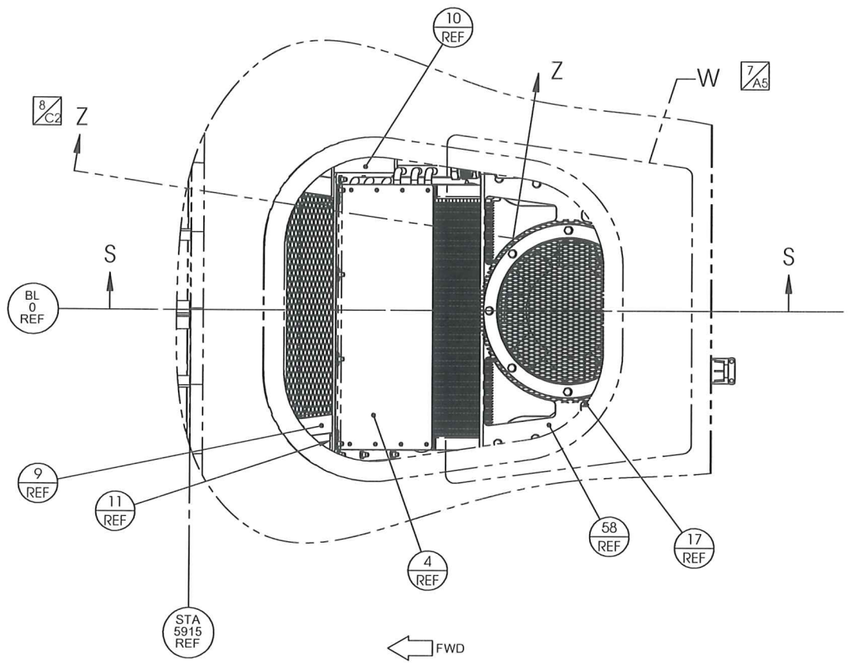
TITLE: CONDENSER INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-200	D

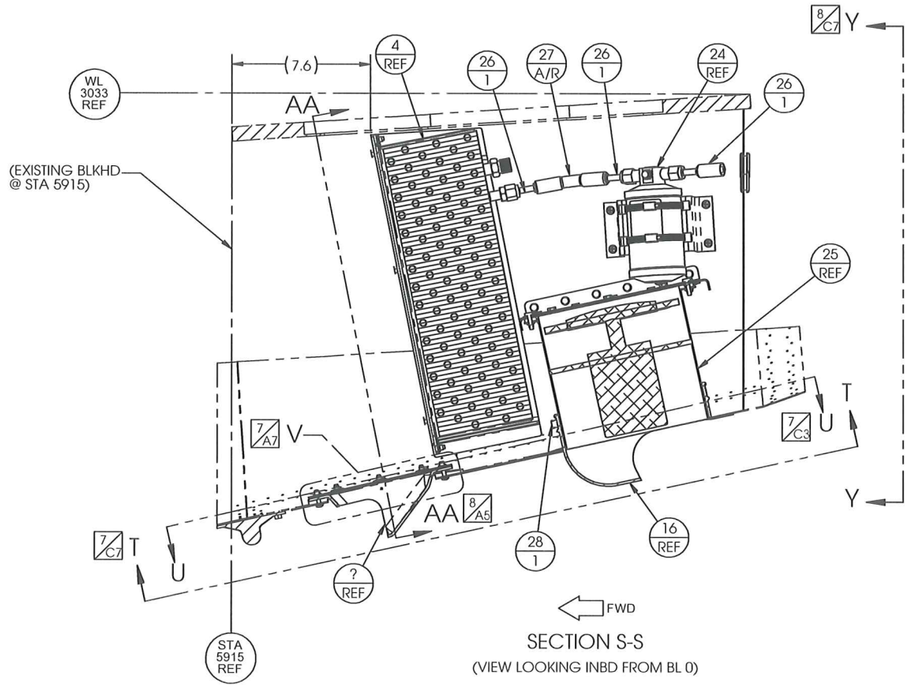
SCALE: NONE | WEIGHT: N/A | SHEET 5 OF 8



-03 CONDENSER INSTALLATION 20



VIEW R-R
(VIEW LOOKING DOWN)



SECTION S-S
(VIEW LOOKING INBD FROM BL 0)

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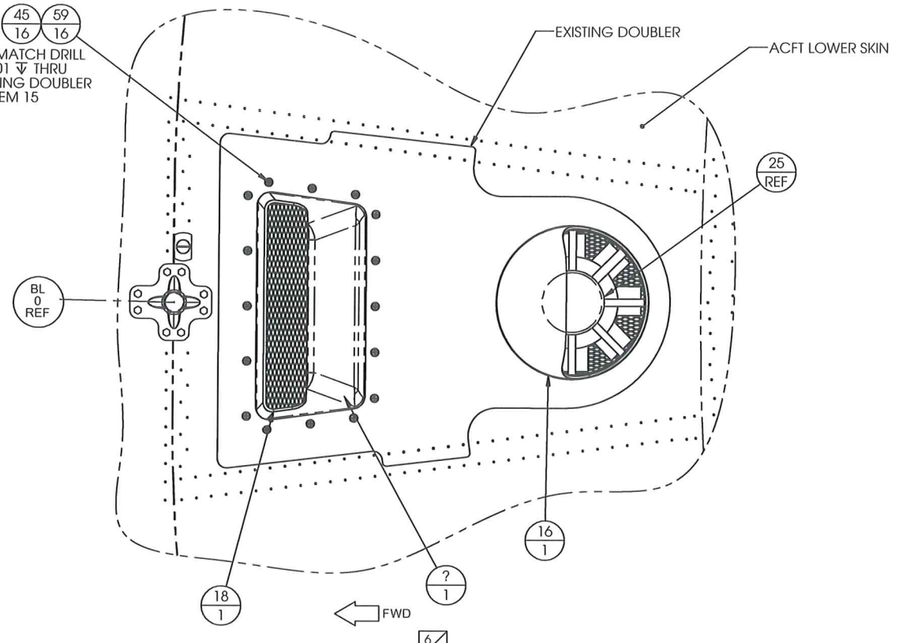
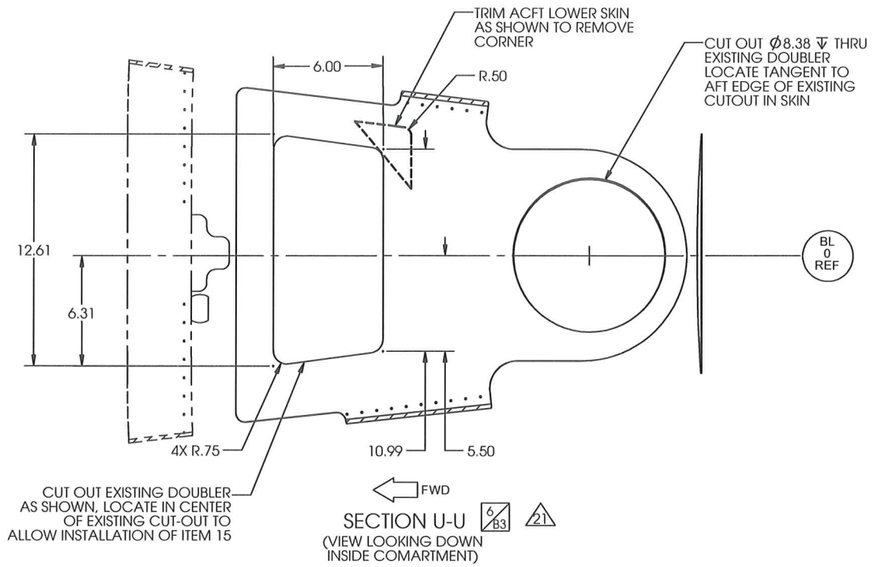
TITLE: CONDENSER INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-200	D

SCALE: NONE | WEIGHT: N/A | SHEET 6 OF 8

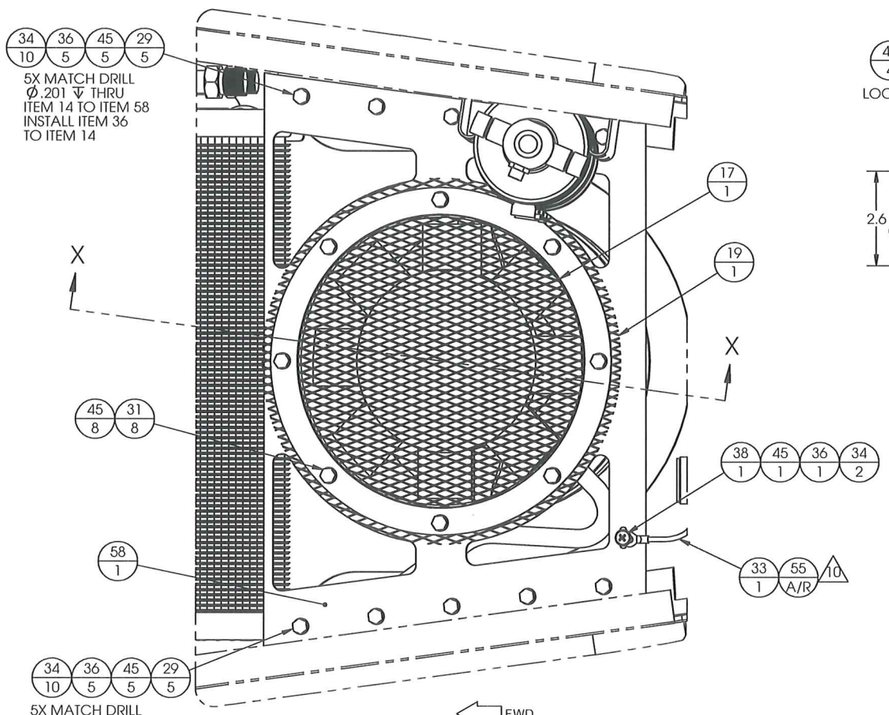


VIEW T-T 6/A5

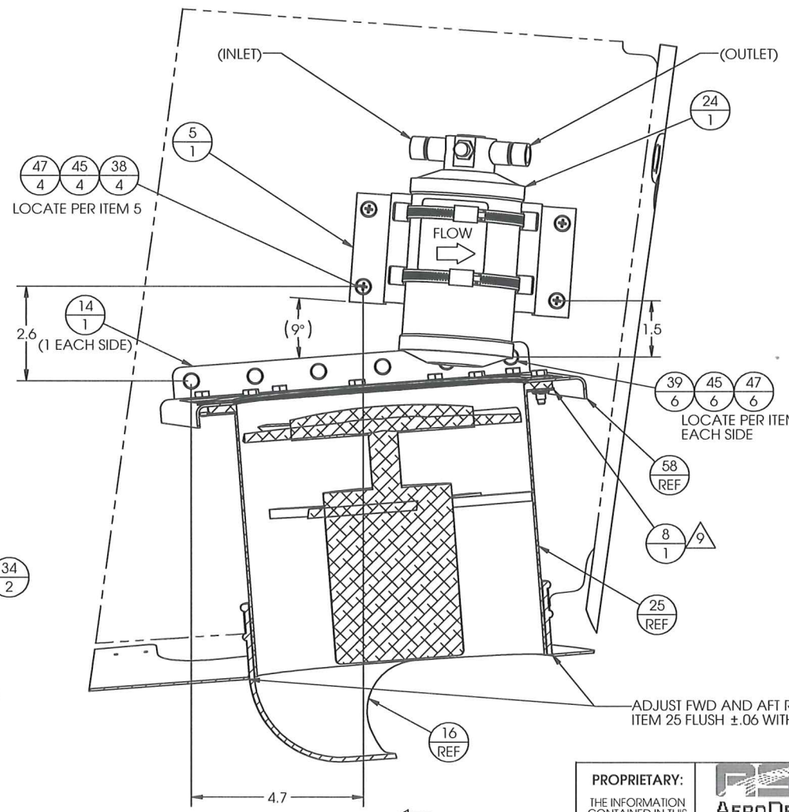


SECTION U-U 6/B3 21
(VIEW LOOKING DOWN
INSIDE COMARTMENT)

DETAIL V 6/B4



DETAIL W 6/B6
(ACFT FLOOR PANEL
REMOVED FOR CLARITY)



SECTION X-X
(VIEW LOOKING RH/OUTBD
HOSE REMOVED FOR CLARITY)

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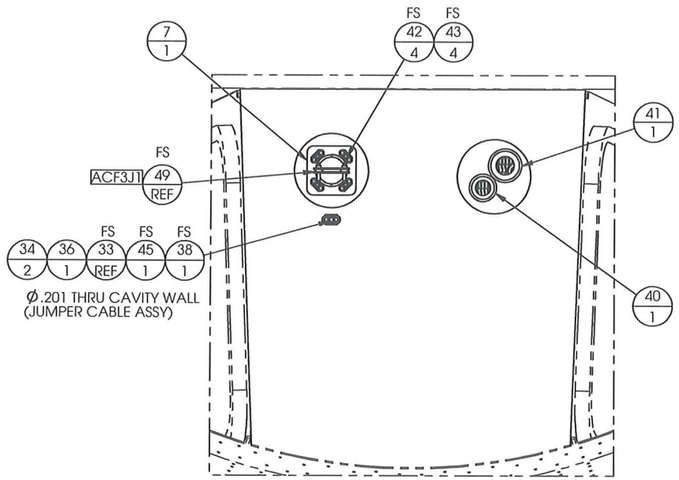
TITLE: CONDENSER INSTALLATION

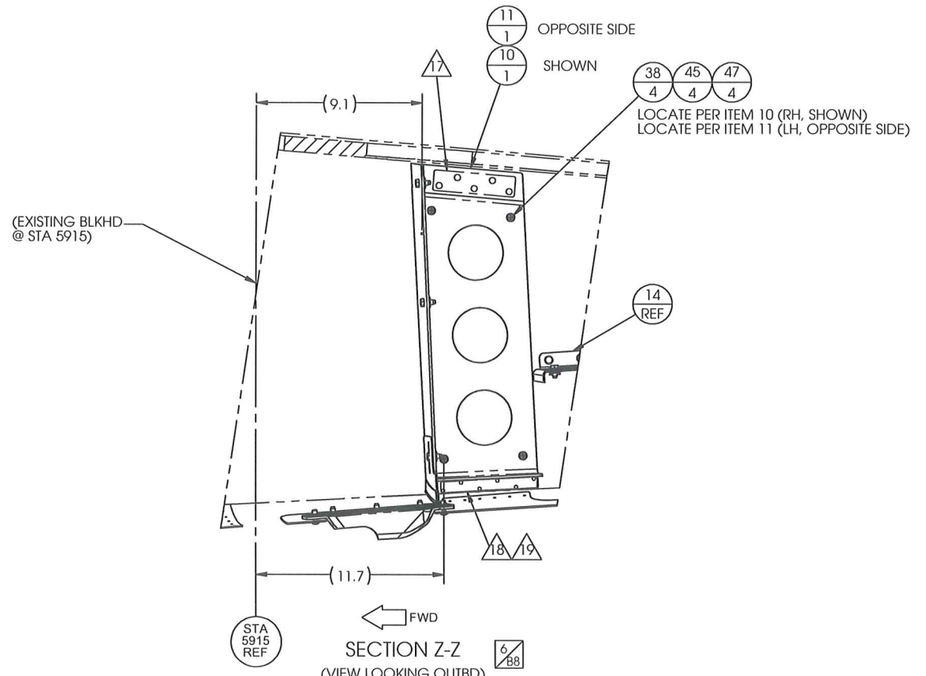
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-200	D

SCALE: NONE | WEIGHT: N/A | SHEET 7 OF 8



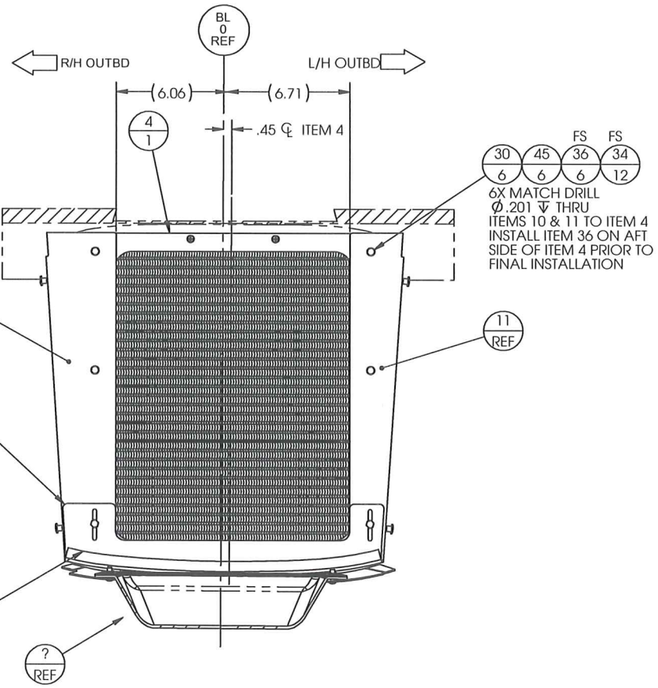
VIEW Y-Y 6/C3

(VIEW LOOKING FWD FROM STA 6629)



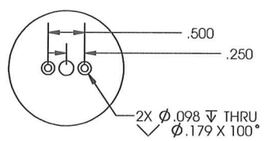
SECTION Z-Z 6/B8

(VIEW LOOKING OUTBD)
(ITEM 4 NOT SHOWN
FOR CLARITY)

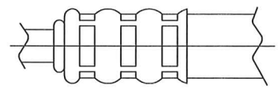


SECTION AA-AA 6/A4

(VIEW LOOKING AFT)



MS21075L3 NUTPLATE
HOLE PATTERN



CRIMP DETAIL

(TYP ALL ENDS)
(USE ATCO CRIMPER
P/N 3700 OR EQUIVALENT
WITH #6, #8 OR #10 DIES
FOR APPROPRIATE SIZE HOSE.)

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TITLE: CONDENSER INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-200	D

SCALE: NONE | WEIGHT: N/A | SHEET 8 OF 8

Step 7

Installation of Forward Evaporator

Installation of Forward Evaporator
Kit# 365N-00-2

STEP	PROCEDURE	MECH.	INSP.
7.2.1	Install the 6448K39 Rubber Plug with the MS35842-12 Hose Clamp to the 02-365-21-302-01 Fwd Evaporator Assembly. Trial fit Fwd Evaporator Assembly temporarily. Make sure aft mounting holes will not be on edge of upper "dog house" bulkhead mounting flange.		
7.2.2	Position Ring Doubler 04-365-21-303-01 and mark ten (10) holes for rivets and four (4) for through bolts to aircraft upper skin per drawing 01-365-21-300.		
WARNING REMOVE HYDRAULIC RESERVOIR FROM ROOF OF CABIN TO PREVENT DAMAGE WHEN DRILLING THE MOUNTING HOLES FOR THE FORWARD EVAPORATOR.			
7.2.3	Drill marked holes for through bolts and hardpoint, see drawing 01-365-21-200. Match drill holes for rivets.		
7.2.4	Install Ring Doubler to the ACFT skin utilizing adhesive P/N EA9309.3NA, rivets P/N CR321-4-04. Install Support Angles P/N 04-365-21-304-01 to the Ring Doubler by first installing Doubler Disc P/N 02-365-21-304-01 and 04-365-21-320-01 Doubler to the ACFT skin utilizing adhesive P/N EA9309.3NA and then installing screws P/N MS27039-1-18 and washers P/N NAS1149F0332P and nut MS21042L3. See drawing 01-365-21-300.		
7.2.5	Install Fwd Evaporator Assembly P/N 02-365-21-302-01 with hardware shown in 01-365-21-300 drawing.		
7.2.6	Install the Fwd Evaporator Air Handler 03-365-21-302-01 with PR-1422 B-1/2 to the 02-365-21-302-01 Fwd Evaporator Assembly.		
7.2.7	Attach refrigerant lines to forward evaporator coil assembly; see drawing 01-365-21-500.Attach drain line, both sides of forward evaporator drain pan. Do not tie drains into any existing drain lines. Route drain lines down Fwd side of acft bulkhead as shown on drawing 01-365-21-500.		

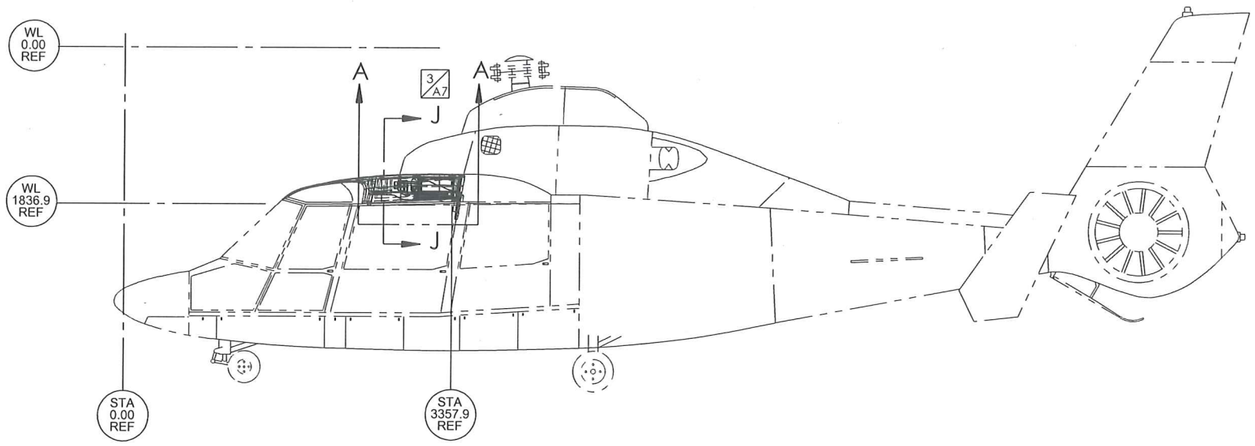
STEP	PROCEDURE	MECH.	INSP.
7.2.8	Route refrigerant lines together, tie wrap or adel clamp as required.		
7.2.9	Mark the Mount Clips P/N 04-365-21-305-01 that attach to the 03-365-21-302-01 Air Handler with two (2) pilot holes on the ACFT. These will not be drilled through the outer skin of the cabin roof. See drawing 01-365-21-300 for location. Install inserts P/N NAS1835-3.		
7.2.10	Install Mark Mount Clips to aircraft upper skin and to the Fwd Evaporator Air Handler using CR3213-4-04 rivets, MS27039-1-06 screws and NAS1149F0332P washers. See drawing 01-365-21-300.		
7.2.11	Attach 1 1/2” flexible ducts with MS35842-12 Hose Clamps. Run them from the two mid cabin vents to each side of Fwd Evaporator Air Handler, per drawing 01-365-21-600. Four (4) additional 1 1/2” flexible ducts will be run from other 11/2” tubes mounted to the forward side of the Fwd Evaporator Air Handler to pilot’s air supply, see drawing 01-365-21-600. Tie into existing air vents. Block all fresh air intake into the modified air conditioning system either at the connections to the existing vents, or at the fresh air inlet, to ensure proper system performance.		
	NOTE **FAILURE TO BLOCK THE INCOMING FRESH AIR FROM THIS SOURCE WILL DRAMATICALLY DECREASE THE EFFECTIVENESS OF THE SYSTEM.**		
	NOTE **AS-365N3 MODELS WITH MOLDED PLASTIC CENTER POST DUCTS WILL NOT REQUIRE REMOVAL. USE THE EXISTING DUCTS AND WEMACS WITH NO FURTHER MODIFICATIONS.**		
7.2.12	If Aircraft is **NOT** a SA365 N3 SN:6967 or later then: Perform the required cut out for the 04-365-21-322-01 Air Return Louver in the overhead panel as shown on 01-365-21-300 and install with AE9309.3NA adhesive, MS27039-1-09 screws, CCR264CS-3-03 rivets and MS21075L3N nutplates.		

STEP	PROCEDURE	MECH.	INSP.
7.2.12	If Aircraft is SA365 N3 SN: 6967 or later then: Install new overhead panel, P/N: 02-365-21-305-01 per Dwg 01-365-21-301, replacing existing overhead panel using existing hardware. Trim panel as necessary. Trim holes for existing A/C vents as necessary, and install air vents.		

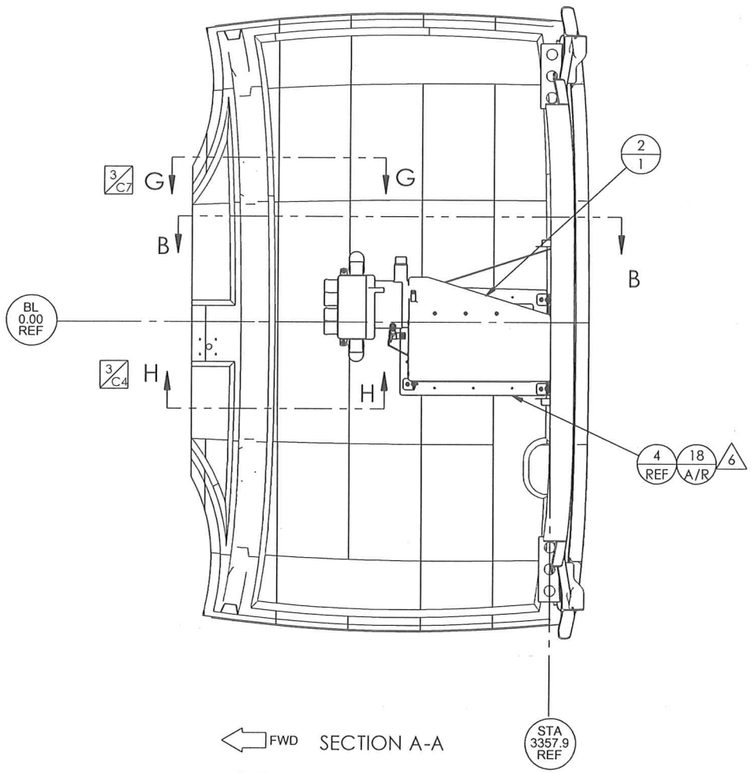
NOTES:

1. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. INSTALL ITEM 12, NUTPLATES AS SHOWN IN REFERENCE DETAIL.
3. HARD-POINT IAW RSG AERODESIGN DOCUMENT 20R00510006.
4. BOND ITEM 3 TO AIRCRAFT SKIN AT INSTALLATION USING ITEM 18.
5. BOND ITEM 6 TO ITEM 2 USING ITEM 18.
6. BOND ITEM 4 TO AIRCRAFT SKIN USING ITEM 18.
7. USE EXISTING HARDWARE ON FRAME TO MOUNT GROUNDING STRAP ON ITEM 2. BURNISH AND BOND MATING SURFACES. SEAL TERMINAL RING AND FASTENER WITH ITEM 19 IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510008.
8. INSTALL BLIND INSERTS IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510006.
9. ALTERNATE PART NUMBER:
   1. ITEM 16: 5574K16, MCMASTER CARR.
10. BOND ITEM 21 TO ACFT SKIN AT INSTALLATION USING ITEM 18.
11. TRIM ITEM 20 AS NECESSARY.
12. USE ITEMS 10, 23 & 24 FOR ALTERNATE INSTALLATION OF ITEM 7.
13. ROUTE ROTOR BRAKE CABLE THROUGH HOLE.
14. FAYING SURFACE SEAL BETWEEN ITEMS 20 & 2.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO# 01-365-21-300NC1	C. Green	P. Ban	09/07/2012
B	INCORPORATED ECO# 01-365-21-300A 1.	H. Saukkonen	P. Ban	02/14/2013
C	INCORPORATED ECO# 01-365-21-300B 1.	H. Saukkonen	P. Ban	03/04/2013
D	INCORPORATED ECO# 01-365-21-300C1.	S. THORNTON	RJB	05.9.13

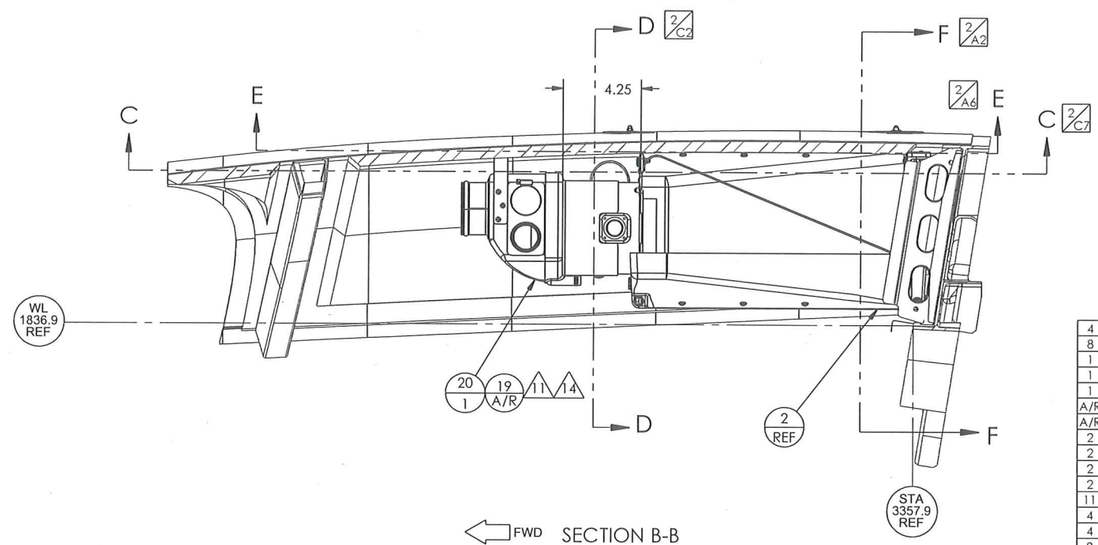


-01 FWD EVAPORATOR INSTALLATION



FWD SECTION A-A

(INTERIOR PANELS REMOVED FOR CLARITY)



FWD SECTION B-B

(INTERIOR PANELS REMOVED FOR CLARITY)

QTY	ITEM	PART NUMBER	DESCRIPTION	VENDOR
4	24	MS21075L3N	NUTPLATE	
8	23	CCR264CS-3-03	RIVET	
1	22	MS21042L3	NUT	
1	21	04-365-21-320-01	DOUBLER	
1	20	03-365-21-302-01	FWD EVAPORATOR AIR HANDLER	
A/R	19	PR-1422 B-1/2	SEALANT	PROSEAL
A/R	18	EA9309.3NA	ADHESIVE	HYSOL
2	17	6448K39	RUBBER PLUG	
2	16	MS35842-12	HOSE CLAMP	
2	15	NAS1835-3	INSERT	
2	14	MS27039-1-06	SCREW	
11	13	NAS1149F0332P	WASHER	
4	12	MS21059L3	NUTPLATE	
4	11	MS27039-1-18	SCREW	
8	10	MS27039-1-09	SCREW	
8	9	MS20426AD3-5	RIVET	
16	8	CR3213-4-02	RIVET	
1	7	04-365-21-322-01	RETURN AIR LOUVER	
2	6	04-365-21-305-01	MOUNT CLIP	
4	5	04-365-21-304-01	SUPPORT ANGLE	
1	4	04-365-21-303-01	RING DOUBLER	
3	3	02-365-21-304-01	DOUBLER DISC	
1	2	02-365-21-302-01	FWD EVAPORATOR ASSEMBLY	
–	1	-01	FWD EVAPORATOR INSTALL	

UNLESS OTHERWISE SPECIFIED:

- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

365N-00-2
NEXT ASSEMBLY

DESIGN: R. Latham	DATE: 05/20/2011	
DRAWN: H.Saukkonen	DATE: 01/17/2012	
CHECKED: J. Krebs	DATE: 03/21/2012	
PROJECT ENG: J. Krebs	DATE: 03/23/2012	
APPROVED: P. Ban	DATE: 08/30/2012	

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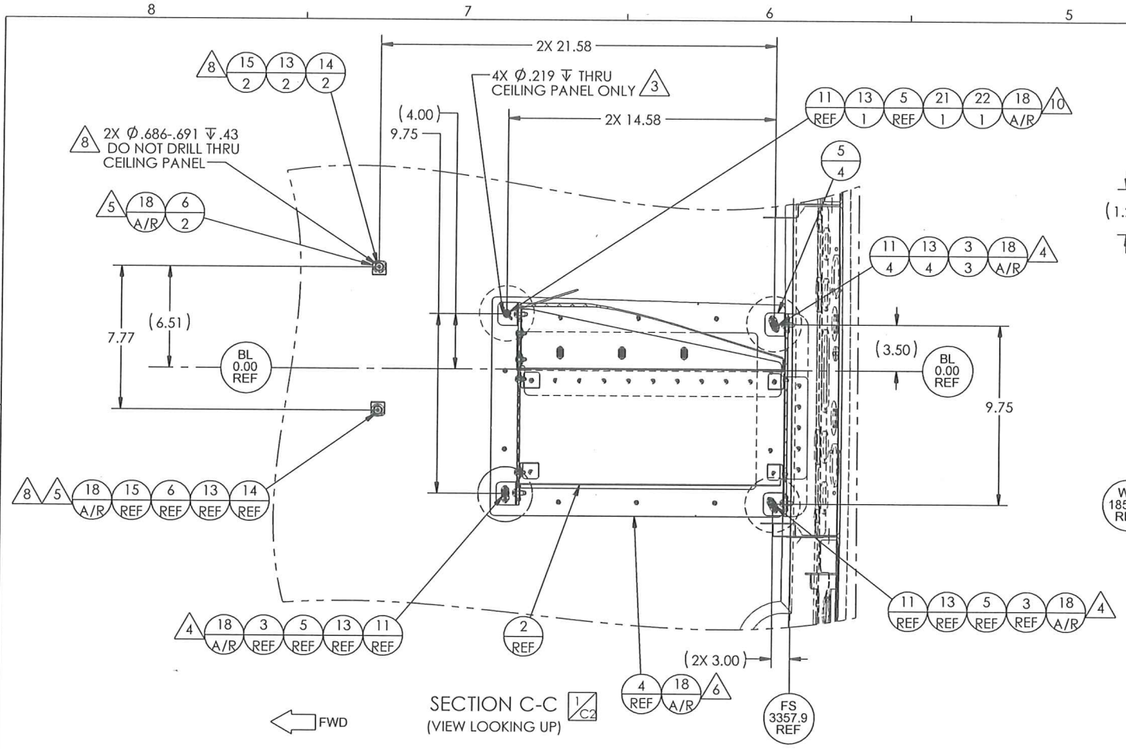
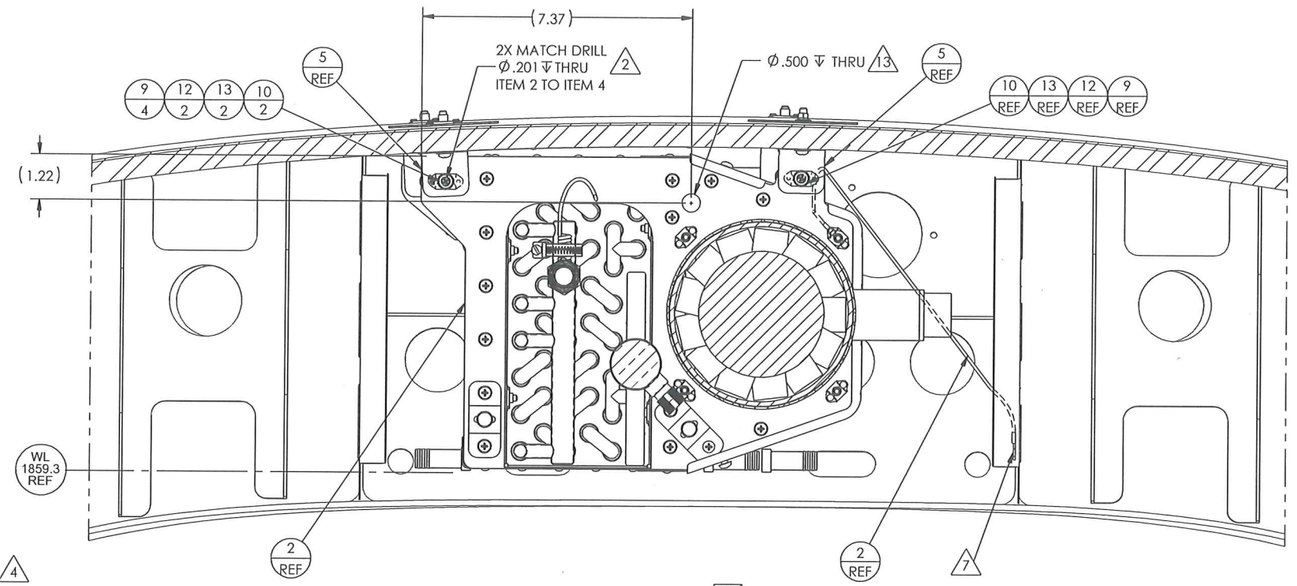
TITLE: FWD EVAPORATOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-300	D

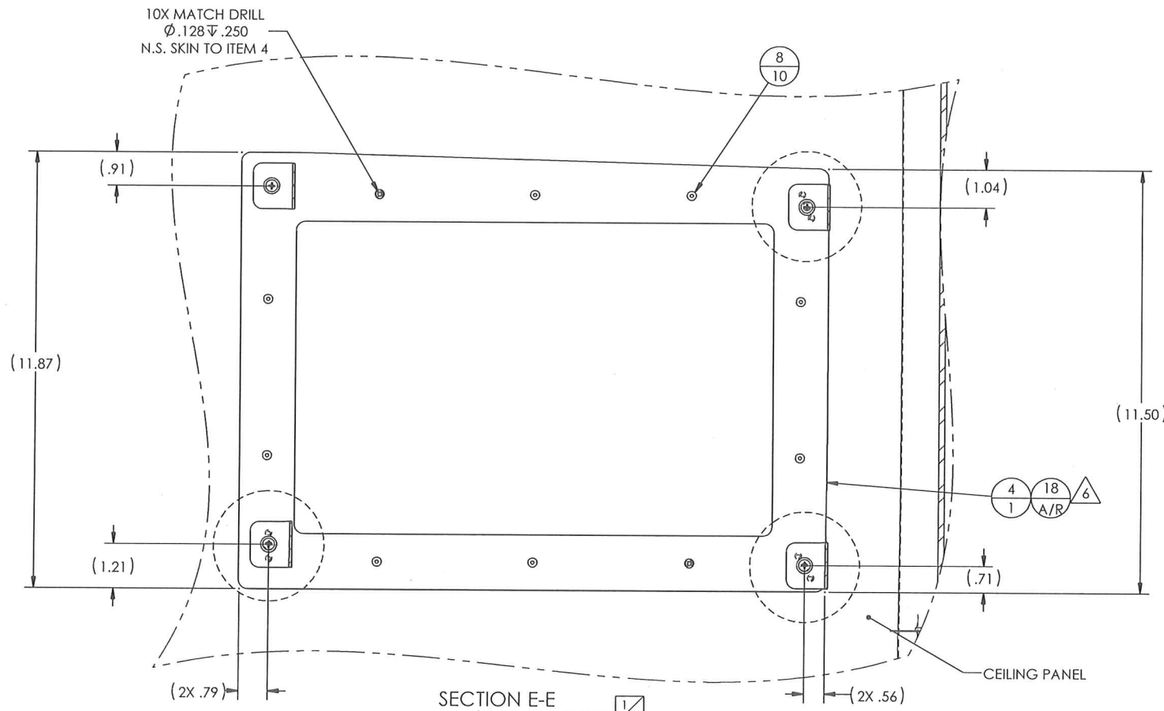
SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 3



SECTION C-C (VIEW LOOKING UP) 1/C2



SECTION D-D 1/C4
(INTERIOR PANELS REMOVED FOR CLARITY)



SECTION E-E (VIEW LOOKING UP) 1/C2
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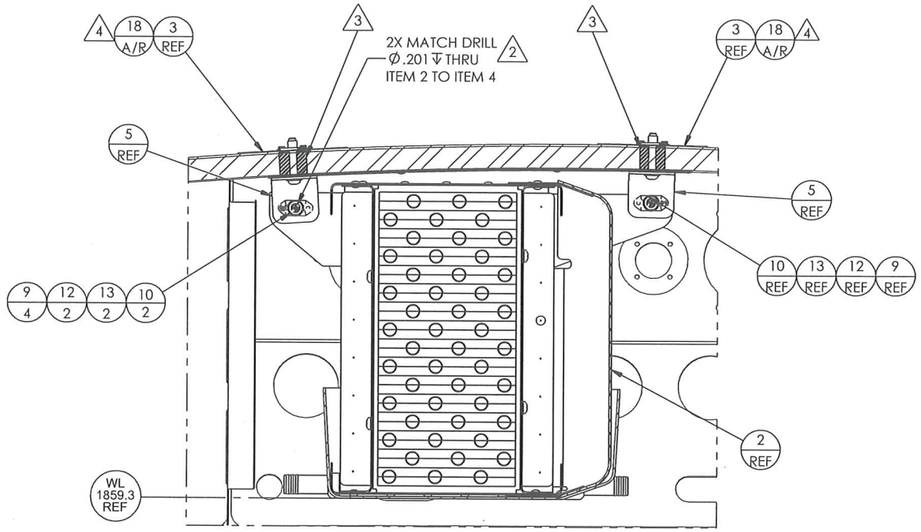
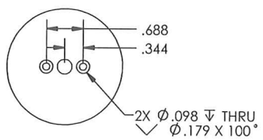


1/C3
(INTERIOR PANELS REMOVED FOR CLARITY)



MS21059-3 NUTPLATE
HOLE PATTERN 2

PROPRIETARY:

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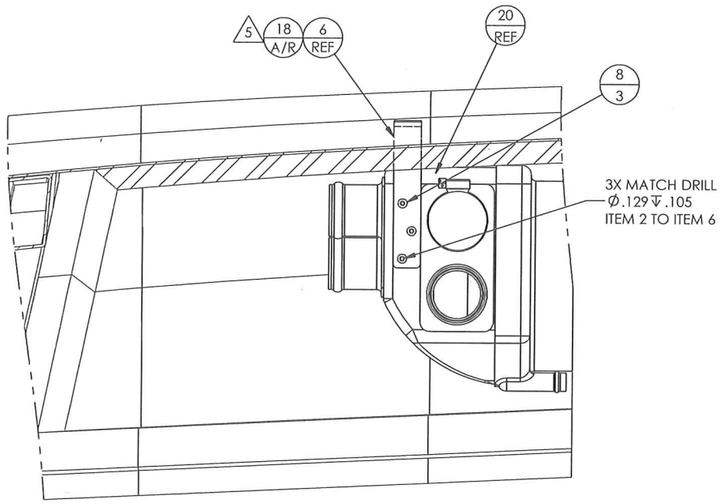
TITLE: FWD EVAPORATOR INSTALLATION

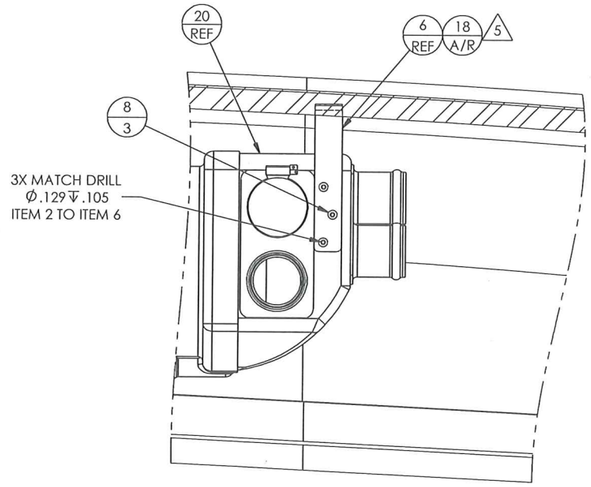
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-300	D

SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 3



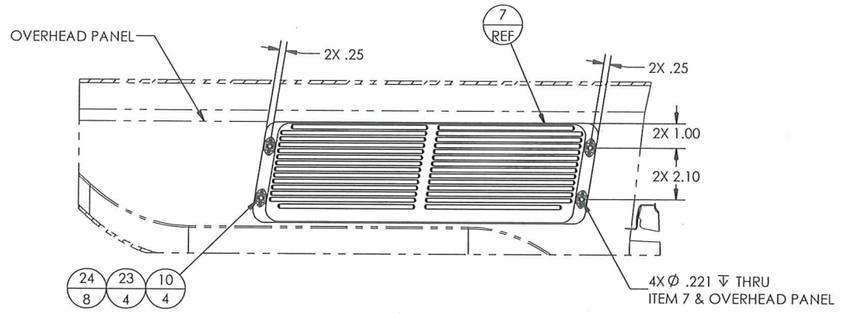
SECTION G-G 1/B8

(INTERIOR PANELS REMOVED)



SECTION H-H 1/B8

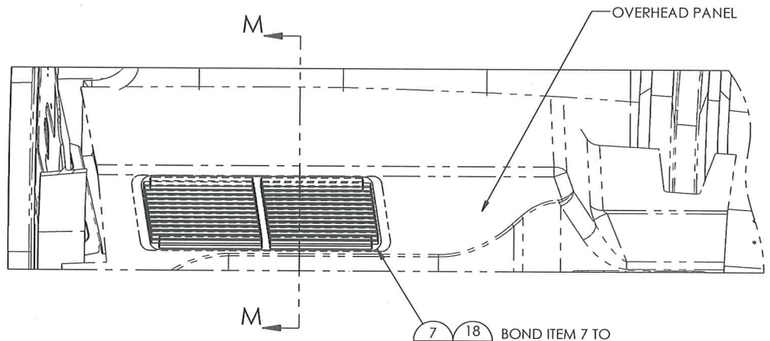
(INTERIOR PANELS REMOVED)



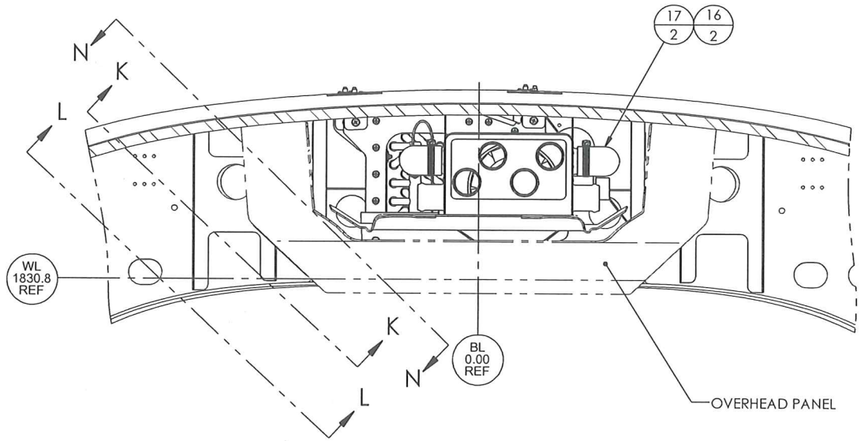
SECTION N-N

(ALTERNATE INSTALLATION METHOD FOR ITEM 7, RETURN AIR LOUVER)

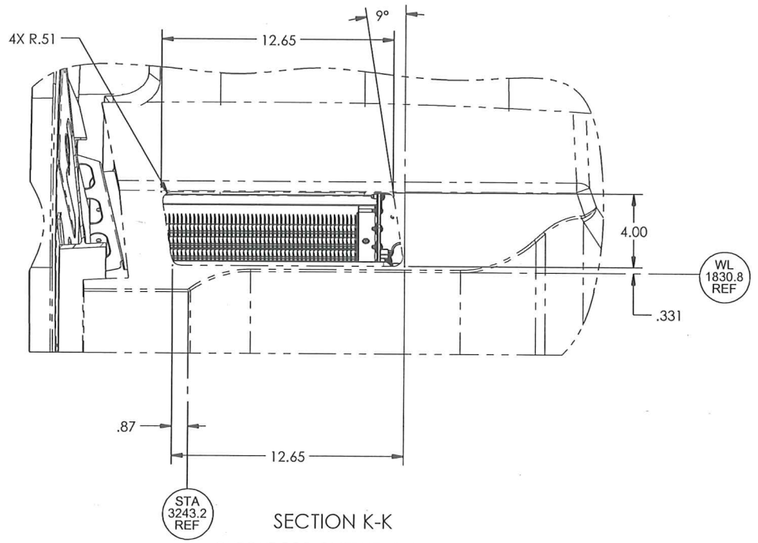
(VIEW LOOKING OUTBD)



SECTION L-L



SECTION J-J 1/D5

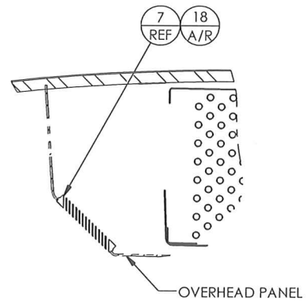


SECTION K-K

CUTOUT FOR OVERHEAD PANEL

(VIEW ROTATED)

(ITEM 7 REMOVED)



SECTION M-M

(NOTE ORIENTATION OF ITEM 7)

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TITLE: FWD EVAPORATOR INSTALLATION

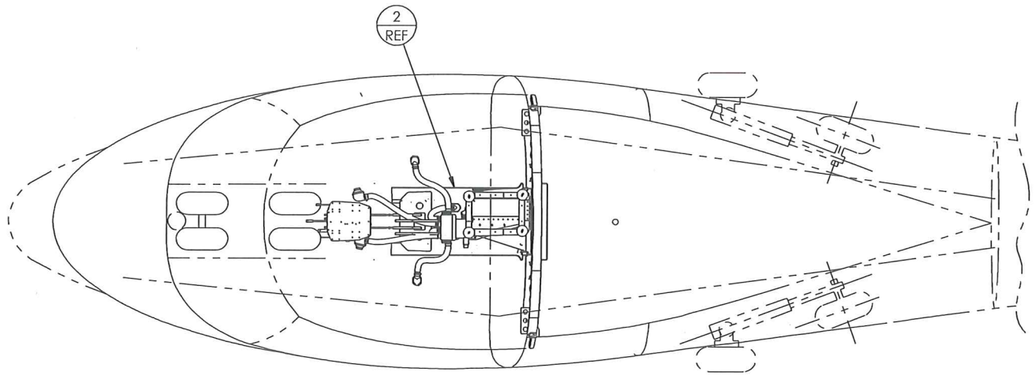
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-300	D

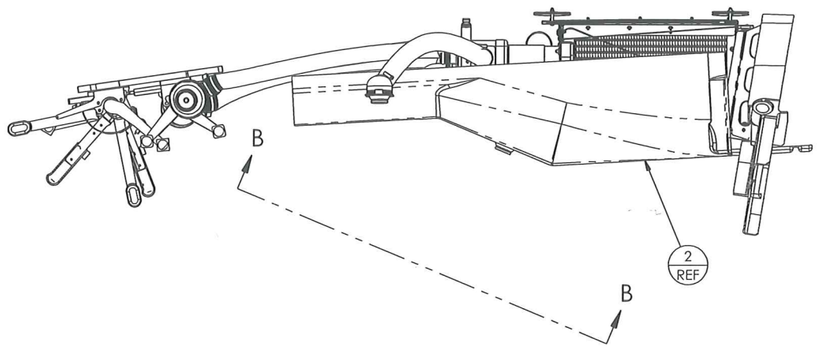
SCALE: NONE | WEIGHT: N/A | SHEET 3 OF 3

NOTES:

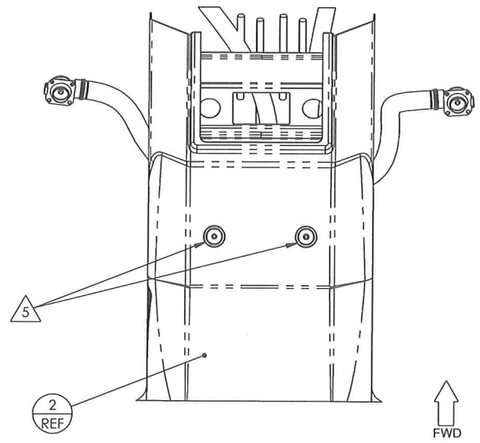
1. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. REMOVE AND REPLACE EXISTING OVERHEAD PANEL WITH ITEM 2, OVERHEAD PANEL ASSEMBLY.
3. MATCH DRILL ITEM 2, OVERHEAD PANEL ASSEMBLY, WITH EXISTING HOLES & USE EXISTING HARDWARE FOR INSTALLATION.
4. TRIM ITEM 2, OVERHEAD PANEL ASSEMBLY, AS NECESSARY.
5. REMOVE EXISTING AIR OUTLET VENTS & REINSTALL ON NEW OVERHEAD PANEL ASSEMBLY.
6. THIS INSTALL IS ONLY USED IN SA365 N3 SN: 6967 OR LATER AIRCRAFT.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE

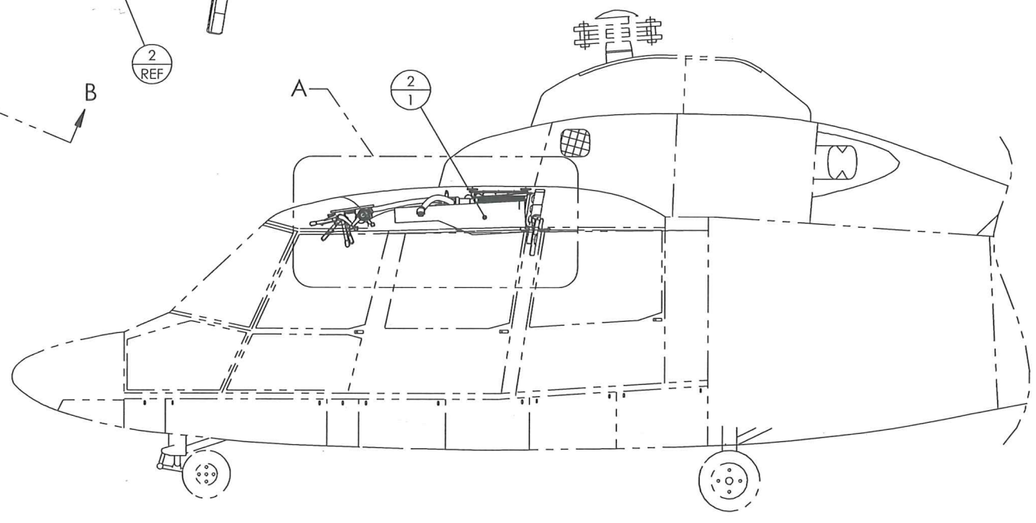




DETAIL A



SECTION B-B



-01 OVERHEAD PANEL INSTALLATION

QTY	ITEM	PART NUMBER	DESCRIPTION	VENDOR
1	2	02-365-21-305-01	OVERHEAD PANEL ASSEMBLY	
--	1	-01	OVERHEAD PANEL INSTALL	

UNLESS OTHERWISE SPECIFIED:

- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROJECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

365N-00-2
NEXT ASSEMBLY

DESIGN: A. Markkassery	DATE: 10/03/2013	
DRAWN: A. Markkassery	DATE: 10/03/2013	
CHECKED: S. Thornton	DATE: 10/04/2013	
PROJECT ENG: S. Thornton	DATE: 10/04/2013	
APPROVED:	DATE: 10.07.13	

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TITLE: OVERHEAD PANEL INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-301	NC

SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 1

Step 8

Installation of Compressor

Installation of Compressor
Kit# 365N-00-2

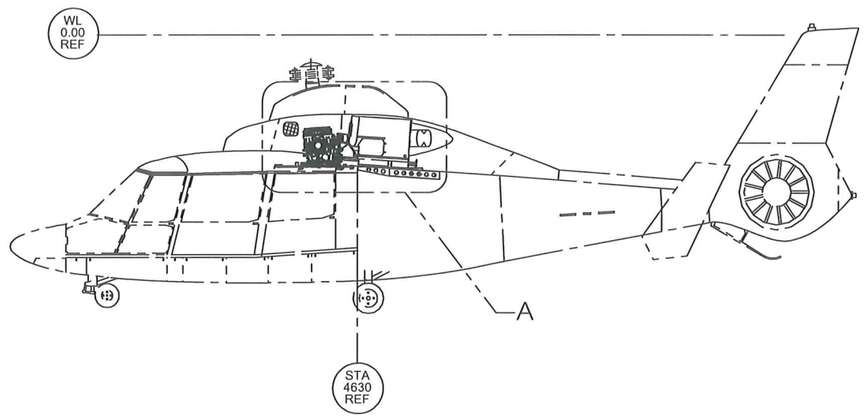
STEP	PROCEDURE	MECH.	INSP.
	TAIL ROTOR SHAFT DISASSEMBLY AND REINSTALLATION: Consult AHC (Eurocopter) Maintenance Repair Manual for all instruction regarding removal, installation of components and re-installation of tail rotor shaft. Using special AHC tools, remove retaining nut and lock (page 1-5) Section 63.20.00.702. Pull front flange. **Prior to re-installation of the tail rotor shaft, position both of the compressor belts in place.**		
8.2.1	Use new AHC bolts three (3) each P/N 365A32-2862-20. If new AHC 360-A32-1178-20 Lock or 365A32-7124-20 Nut (ALT P/N GUK-20X1) is required per the AHC Manual, they can be purchased from RSG Products. NOTE: Due to the installation of the pulley P/N 04-365-21-105-01, new bolts are installed in the opposite direction from those removed. The bolts called out to be installed in the opposite direction and as part of the pulley installation MUST be utilized. NO OTHER BOLTS ARE TO BE SUBSTITUTED FOR THIS ITEM. Original nuts and washers are reused. Torque to AHC (Eurocopter) factory specifications.		
8.2.2	Remove the six (6) each metric nuts and washers that match the holes in the shim at the top of the support and the two (2) each metric nuts and washers that match the location of the holes in the lower portion of the support.		
8.2.3	Install Compressor Mount Bracket P/N 04-365-21-107-01 to the MGB housing utilizing existing hardware. Torque fasteners to Eurocopter specifications.		
8.2.4	The Compressor Assembly P/N 02-365-21-101-01 is mounted to the Compressor Mount Bracket P/N 04-365-21-107-01 using bolt, P/N AN5H5A and washer, P/N NAS1149F0516P, two (2) each.		
8.2.5	When Compressor Assembly P/N 02-365-21-101-01 is installed, Compressor Belt P/N 09-365-21-102-01 is installed into the drive pulley groove and into the aft groove of the compressor.		
8.2.6	Install the Tension Bolt P/N CL-31-SSC-S and two (2) Jam Nut Drilled P/N 04-365-21-106-01 nut. The bolt is used as the belt tensioning device. The nuts are utilized to prevent the bolt from backing out.		

STEP	PROCEDURE	MECH.	INSP.
8.2.7	Tension belt to F=30-50 LBS. Check vertical tolerance alignment between drive and driven pulley to installation drawing. Safety wire belt tensioning bolt and the two AN5H5A bolts from step 8.2.4. See drawing 01-365-21-100.		
8.2.8	Install two (2) each MS21919WDG9 adel clamps at both the top and bottom of the Compressor Mount Bracket as shown in the installation drawing, picking up existing hardware. Install spare belt through the adel clamps forward of compressor and free from all rotating components. Remove slack from spare belt by using two (2) MS3367-1-0 Tie Wraps in center of the belt.		
8.2.9	Replace existing ring terminal with MS25036-112. Attach ground to existing hardware on acft firewall. Ensure ground meets drawing requirements and seal terminal ring and fastener with PR 1440 B 1/2 Sealant.		

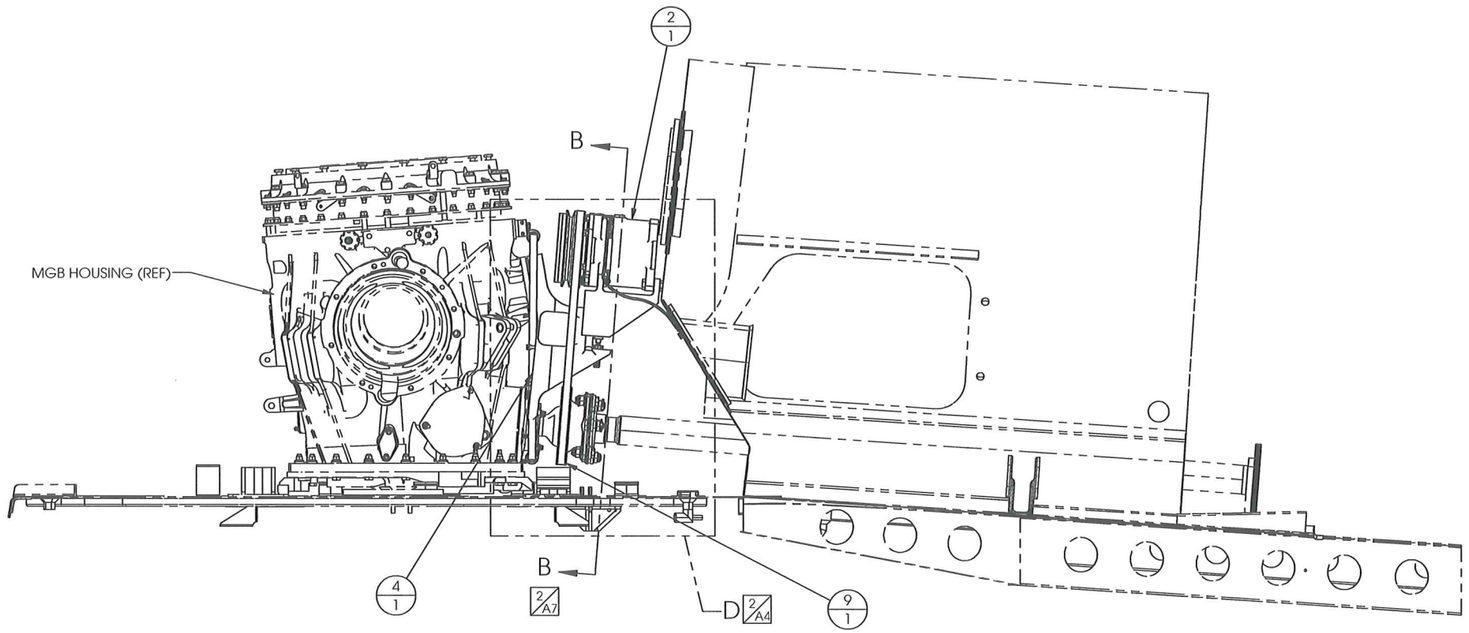
NOTES:

1. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. USE EXISTING HARDWARE ON THE MGB HOUSING TO INSTALL. TORQUE FASTENERS TO EUROCOPTER SPECIFICATIONS.
3. SEE EUROCOPTER WORK CARDS FROM SA365 N3 MAINTENANCE MANUAL CHAPTERS 63.20 MAIN GEAR BOX & 65.11 TAIL ROTOR DRIVE FOR INSTRUCTIONS TO DISSASSEMBLE AND REINSTALL THE TAIL ROTOR SHAFT ASSEMBLY.
4. DUE TO INSTALLATION OF ITEM 9, ITEM 8, BOLTS ARE INSTALLED IN THE OPPOSITE DIRECTION OF THOSE REMOVED. ORIGINAL NUTS AND WASHERS ARE REUSED. TORQUE FASTENERS TO EUROCOPTER SPECIFICATIONS.
5. ENSURE PLANAR TOLERANCE BETWEEN THE TAIL ROTOR AND COMPRESSOR PULLEY CENTERLINES IS ±.020 INCHES. ALIGNMENT CAN BE ADJUSTED BY CHANGING THE WASHER STACKUP BETWEEN THE COMPRESSOR AND SUPPORT BRACKET IN ITEM 2.
6. USE ITEM 6 TO TENSION THE BELT (ITEM 5) TO F= 30-50 LBS. TIGHTEN BOTH NUTS (ITEMS 3) AGAINST FLANGE OF ITEM 4. SAFETY WIRE ITEMS 10 USING ITEM 15 IAW MS33540. THEN TIGHTEN ITEMS 3 & SAFETY WIRE TOGETHER USING ITEM 15 IAW MS33540
7. REPLACE EXISTING RING TERMINAL WITH ITEM 17 FOR USE WITH # 10 HARDWARE. USE EXISTING HARDWARE ON FIREWALL TO MOUNT GROUNDING STRAP ON ITEM 2. SEAL TERMINAL RING AND FASTENER WITH ITEM 16 IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510008.
8. REPLACE EXISTING SCREW ON THE MGB HOUSING WITH THE SAME TYPE, ONE DASH NUMBER LONGER. TORQUE FASTENER TO EUROCOPTER SPECIFICATIONS.
9. ALTERNATE P/N FOR ITEM 9 IS 09-365-21-103-01.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO# 01-365-21-100NC1.	C. GREEN	P. BAN	09/07/2012
B	INCORPORATED ECO# 01-365-21-100A1.	C. WELLS	P. BAN	02/12/2013
C	INCORPORATED ECO# 01-365-21-100B1.	H. SAUKKONEN	P. BAN	03/04/2013
D	ADDED NOTE 9 AND CHANGE P/N FOR ITEM 9.	S. THORNTON	R. LUNA	11/15/2013
E	ADDED TO NOTE 7 & ADDED ITEM 17. CHANGED ITEM 16 PART NUMBER.	S. THORNTON	R. Luna	12/12/13



-01 COMPRESSOR INSTALLATION



DETAIL A
(SOME A/C STRUCTURE REMOVED FOR CLARITY)

QTY	ITEM	PART NUMBER	DESCRIPTION	VENDOR
1	17	MS25036-112	RING TERMINAL	
A/R	16	PR 1440 B 1/2	SEALANT	PPG AEROSPACE
A/R	15	MS20995C32	SAFETY WIRE	
2	14	NAS1149F0516P	WASHER	
2	13	MS3367-1-0	TIE WRAP	
2	12	MS21919WDG9	CLAMP	
	11			
2	10	AN5H5A	BOLT	
1	9	09-365-21-103-01	PULLEY	
3	8	365A32-2862-20	BOLT	EUROCOPTER
	7			
1	6	CL-31-SSC-S	TENSION BOLT	CARR LANE
2	5	09-365-21-102-01	COMPRESSOR BELT	
1	4	04-365-21-107-01	COMPRESSOR MOUNT BRACKET	
2	3	04-365-21-106-01	JAM NUT, DRILLED	
1	2	02-365-21-101-01	COMPRESSOR ASSEMBLY	
--	1	-01	COMPRESSOR INSTALLATION	

UNLESS OTHERWISE SPECIFIED:

- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

365N-00-2
NEXT ASSEMBLY

DESIGN: R. Latham	DATE: 03/01/2011	
DRAWN: H.Saukkonen	DATE: 01/20/2012	
CHECKED: P. Ban	DATE: 03/05/2012	
PROJECT ENG: J. Krebs	DATE: 03/05/2012	
APPROVED: P. Ban	DATE: 03/05/2012	

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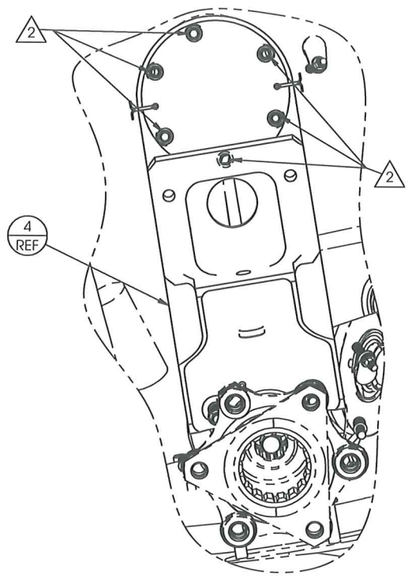
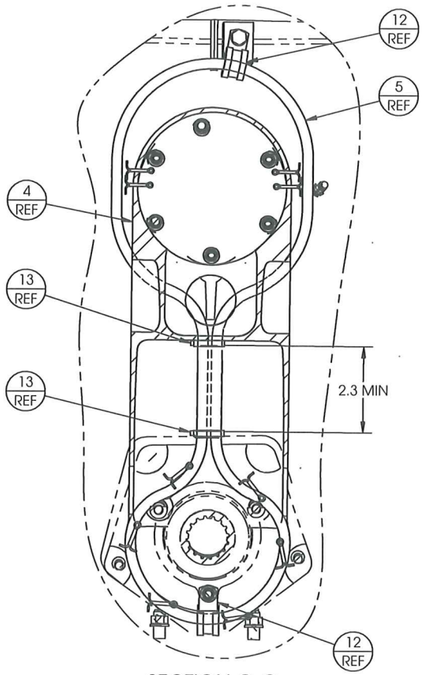
TITLE: COMPRESSOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-100	E

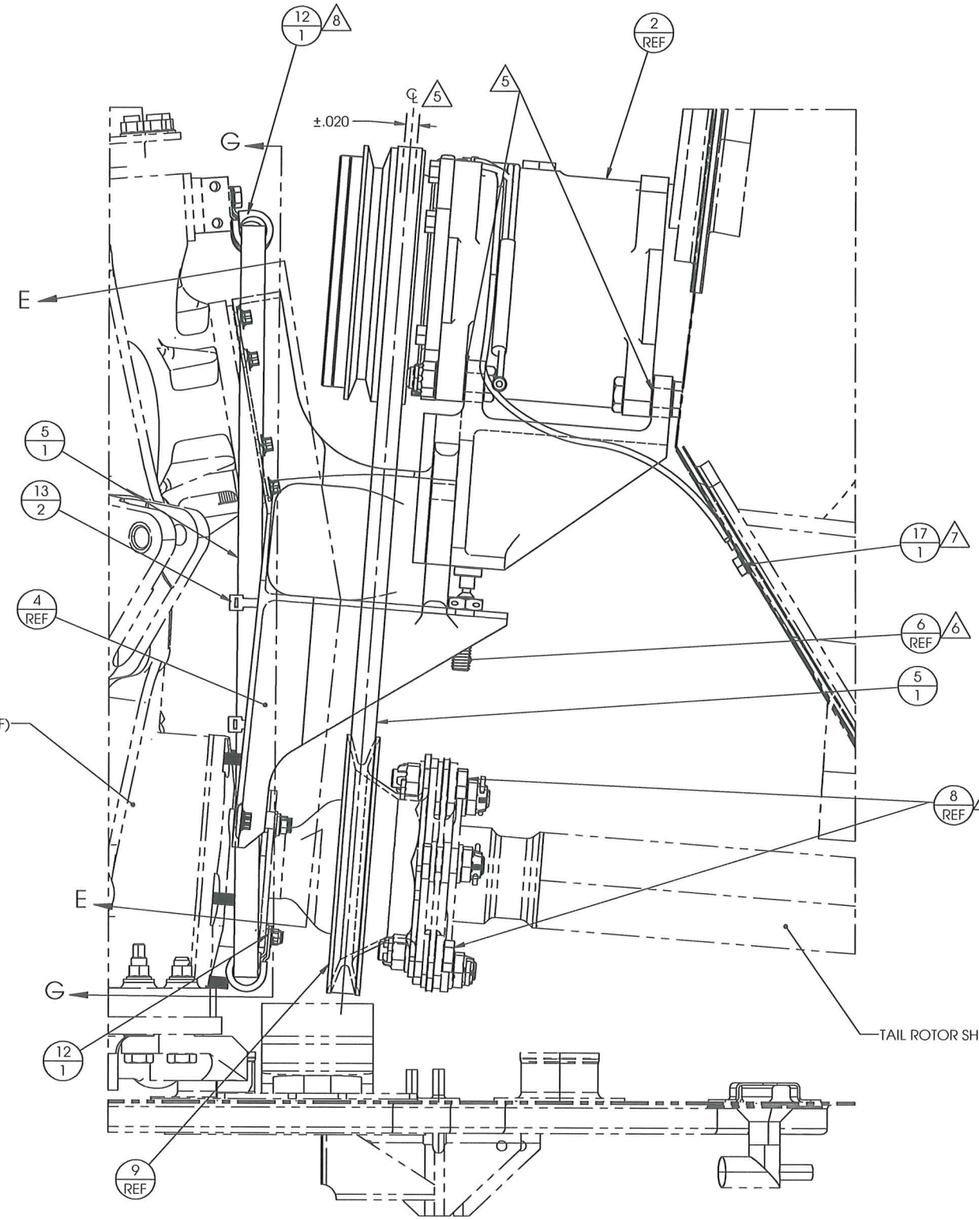
SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 2



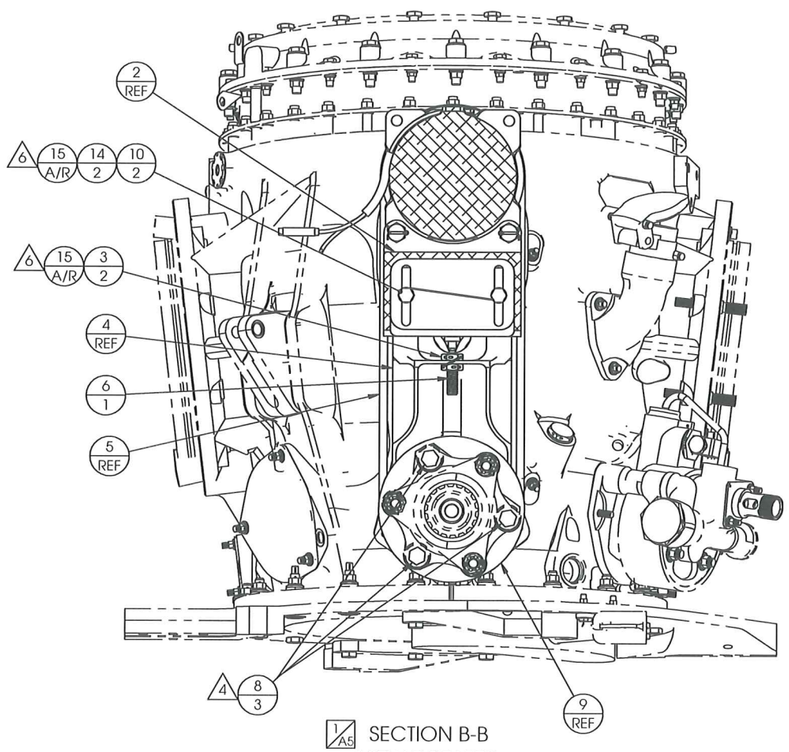
SECTION E-E



SECTION G-G



DETAIL D 1/A5



1/A5 SECTION B-B
VIEW ROTATED

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Fort Worth, Texas 76106
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TITLE: COMPRESSOR INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-100	E

SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 2

Step 9

Installation of Electrical

Installation of Electrical Kit# 365N-00-2

NOTE
GROUNDING OF ALL REQUIRED ITEMS IS EXTREMELY IMPORTANT. BURNISH PAINT FROM SURFACES. SECURE TERMINAL, TIGHTEN BOLT/NUT, AND CORROSION PROOF ENTIRE AREA

STEP	PROCEDURE	MECH.	INSP.
9.2.1	**Secure all wires to current acft wire bundles when possible for routing.** Install Current Limiter, 80 amp P/N ANL-80 at aircraft bus PP9. See drawings 08-365-21-001 and 01-365-21-800.		
9.2.2	Install Relay Bracket Assembly P/N 02-365-21-802-01 using required hardware per drawing 01-365-21-800. Route H10A6 forward and to the right from evap relay (ACK2) Relay Bracket Assembly to the newly installed 80 amp limiter. Connect to limiter.		
9.2.3	Secure wire harness P/N 08-365-102-01 using existing wire bundle as required. Terminate the wires to relay bracket, P/N: M12883/52-001, per drawings 08-365-21-001 and 08-365-21-102. Install relays, P/N: M83536/2-028M. Install Diode, P/N: 1N4007, per drawing 08-365-21-001.		
9.2.4	Route wires to generator fail relays 14P and 15P. See drawing 08-365-21-001. Located at 1 alpha panel. Install in-line fuse holder, P/N 01550100Z and fuse, P/N AGC-2-R IAW view B-B and view C-C.		
9.2.5	Route wire H32A20 and H36A22 to existing 36 alpha dimming panel.		
9.2.6	Locate and drill holes for CB panel circuit breakers, see drawings 08-365-21-002 and 01-365-21-800.		
9.2.7	Install circuit breakers (ACCB4, ACCB3, ACCB2 and ACCB1) into bus bar P/N 04-365-21-805-01. Install bus bar hardware. See drawing 01-365-21-800. Secure all wiring installed. See drawing 08-365-21-001.		

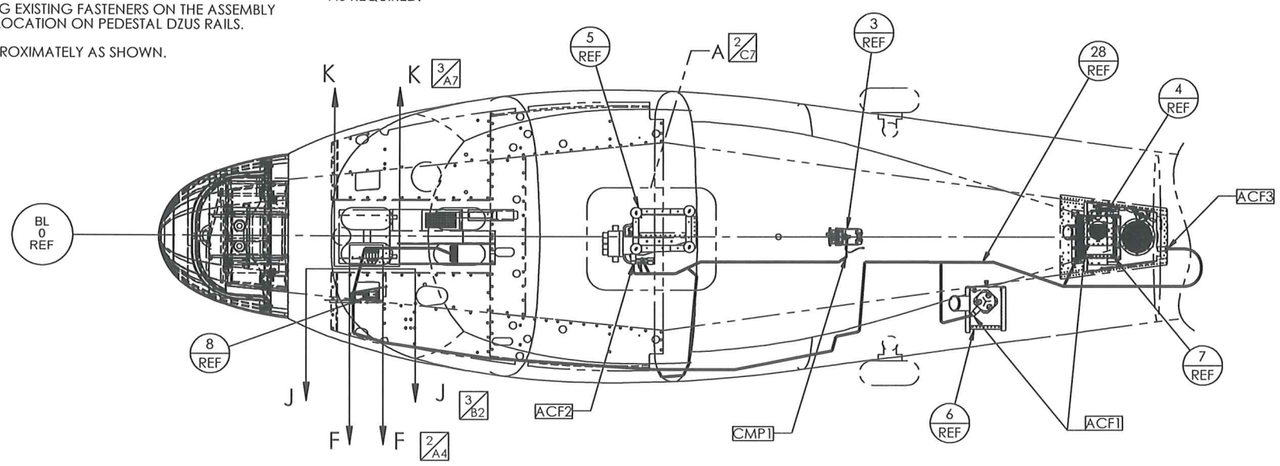
STEP	PROCEDURE	MECH.	INSP.
9.2.8	Install Control Panel Assy P/N 02-365-21-901-XX to unused location on pedestal Dzus rails, using the four (4) Dzus fasteners existing on the Control Panel Assy. Route wires (H27A20, H28A20, H29A20 and H30A20) to Relay Bracket Assembly. Route wire H20A20 to the CB panel. See drawing 08-365-21-001.		
9.2.9	Route harness, P/N 08-365-21-102-01 from Control Panel Assy (ACP1), outboard and aft to forward side of left doorpost. Route up door post behind the decor panel. Route wire bundle to the Forward Evaporator Fan P/N 09-365-21-307-01 (ACF2).		
9.2.10	Route wire bundle up and aft through existing lighting holes. Route wire bundle to Aft Evaporator Fan P/N 09-365-21-307-01 (ACF1) from the Switch. See drawing 08-365-21-001.		
9.2.11	Terminate connectors, P/N's: MS3106F18-5S and MS3100F20-23S, at the locations as shown on drawing 08-365-21-001. Connect connectors from each wire bundle to corresponding connectors shown on drawing 08-365-21-001.		
9.2.12	Install High Pressure Safety Switch P/N 09-365-21-306-01 and Low Pressure Switch P/N 09-365-21-305-01. Route H41A20 wire to high pressure safety switch, low pressure switch, and then to compressor clutch ACK5. Terminate at low pressure switch and high pressure switch using knife disconnects P/N's: 32446 and 32448, IAW drawing 08-365-21-001. Terminate at ACK5 using contact and terminal junction P/N's: MS3100F20-23S and MS3106F18-5S. Use existing wire bundle when securing wire harness as required.		
9.2.13	Route wire along the left side of the aircraft per 01-365-21-800. Install H22A10 wire to the positive lead of the condenser blower (ACF3). Ground the condenser blower as shown on drawing 01-365-21-200.		
9.2.14	Complete connection of evaporator blowers and aft-cabin speed control switch wiring after installation of those components.		
9.2.15	Complete installation of forward evaporator speed control switch after evaporator installation of the blower has been completed.		

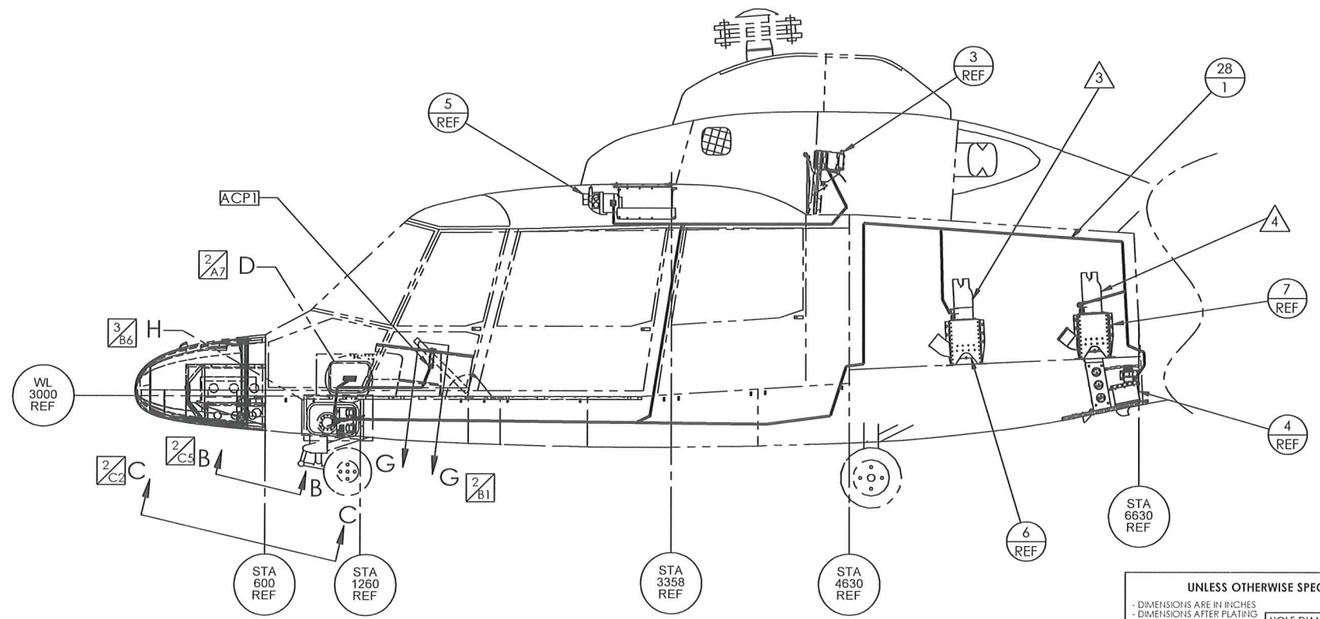
NOTES:

1. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. REFERENCE RSG AERODESIGN DOCUMENT NUMBER 08-365-21-001 FOR WIRING DIAGRAM.
3. AFT EVAPORATOR LOCATION FOR -01 & -03 INSTALLATION.
4. AFT EVAPORATOR LOCATION FOR -02 INSTALLATION.
5. USE GENERAL INSTALLATION INFORMATION ON SHEET 4 WHEN SECURING WIRE HARNESSES AS REQUIRED.
6. INSTALL WIRING IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510008.
7. INSTALL USING EXISTING FASTENERS ON THE ASSEMBLY TO UNUSED LOCATION ON PEDESTAL DZUS RAILS.
8. LOCATE APPROXIMATELY AS SHOWN.
9. REFERENCE 01-365-21-500 REFRIGERANT HOSE INSTALLATION & 01-365-21-700 AIR CONDITIONER REFRIGERANT SYSTEM SCHEMATIC.
10. THIS CONTROL PANEL ASSEMBLY IS AVAILABLE WITH NVIS OR NON-NVIS BACKLIGHTING & LEVER OR TOGGLE SWITCHES WITH PART NUMBERS:
    a) NVIS WITH LEVER SWITCHES: 02-365-21-901-01
    b) NON-NVIS WITH LEVER SWITCHES: 02-365-21-901-02
    c) NVIS WITH TOGGLE SWITCHES: 02-365-21-901-03
    d) NON-NVIS WITH TOGGLE SWITCHES: 02-365-21-901-04

    CAUTION: NVIS BACKLIGHTED OVERLAYS HAVE ITAR LIMITATIONS FOR EXPORT.
11. USE EXISTING WIRE BUNDLES WHEN SECURING WIRE HARNESSES AS REQUIRED.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO 01-365-21-600NC1	C. WELLS	P. BAN	02/12/2013
B	INCORPORATED ECO 01-365-21-600A1.	H. SAUKKONEN	P. BAN	04/17/2013
C	INCORPORATED ECO 01-365-21-600B1.	H. SAUKKONEN	P. BAN	10.16.13





-01 ELECTRICAL PARTS INSTALLATION 3

-02 ELECTRICAL PARTS INSTALLATION 4

REF	REF	30	AGC-2-R	FUSE	BUSSMAN
REF	REF	29	01550100Z	IN-LINE FUSE HOLDER	LITTLEFUSE
1	1	28	08-365-21-102-01	WIRE HARNESS ASSEMBLY	
4	4	27	NAS1149FN816P	WASHER	
4	4	26	NAS1149DN832K	WASHER	
8	8	25	NAS1097AD3-()	RIVET	
4	4	24	MS21075L08N	NUTPLATE	
2	2	23	MS21042L3	NUT	
4	4	22	MS27039-0816	SCREW	
2	2	21	MS27039-0806	SCREW	
REF	REF	20	09-365-21-306-01	HIGH PRESSURE SWITCH	
REF	REF	19	09-365-21-305-01	LOW PRESSURE SWITCH	
REF	REF	18	MS25244-5	CIRCUIT BREAKER	
REF	REF	17	700-001-40	CIRCUIT BREAKER	EATON
REF	REF	16	MS25244-25	CIRCUIT BREAKER	
REF	REF	15	ANL-80	CURRENT LIMITER, 80 AMP	COOPER/BUSSMAN
2	2	14	04-365-21-805-01	BUS BAR	
1	1	13	04-365-21-802-04	PLACARD	
1	1	12	04-365-21-802-03	PLACARD	
1	1	11	04-365-21-802-02	PLACARD	
1	1	10	04-365-21-802-01	PLACARD	
1	1	9	02-365-21-901-XX	CONTROL PANEL ASSEMBLY	
1	1	8	02-365-21-802-01	RELAY BRACKET ASSEMBLY	
REF		7	01-365-21-400-02	AFT EVAPORATOR INSTALLATION	
	REF	6	01-365-21-400-01	AFT EVAPORATOR INSTALLATION	
REF	REF	5	01-365-21-300-01	FWD EVAPORATOR INSTALLATION	
REF	REF	4	01-365-21-200-01	CONDENSER INSTALLATION	
REF	REF	3	01-365-21-100-01	COMPRESSOR INSTALLATION	
--		2	-02	ELECTRICAL PARTS INSTALLATION	
--	--	1	-01	ELECTRICAL PARTS INSTALLATION	
-02	-01	ITEM	PART NUMBER	DESCRIPTION	VENDOR

9 10

UNLESS OTHERWISE SPECIFIED:
- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

365N-00-2
NEXT ASSEMBLY

DESIGN: R. Latham	DATE: 05/20/2011	
DRAWN: B. Witherspoon	DATE: 08/21/2012	
CHECKED: P. Ban	DATE: 09/11/2012	
PROJECT ENG: H. Saukkonen	DATE: 09/11/2012	
APPROVED: P. Ban	DATE: 09/11/2012	

RSG AERODESIGN
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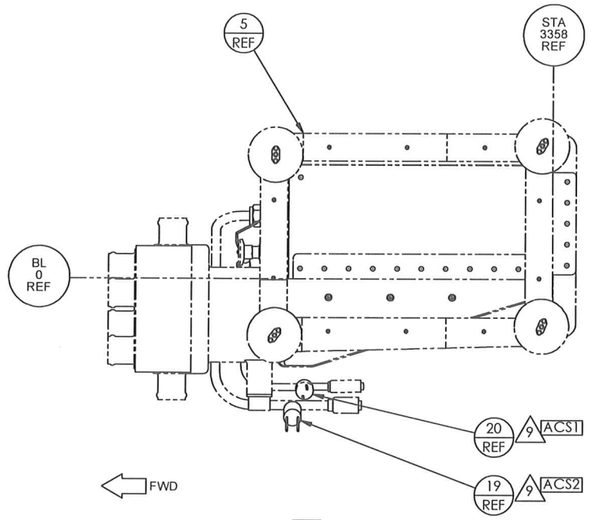
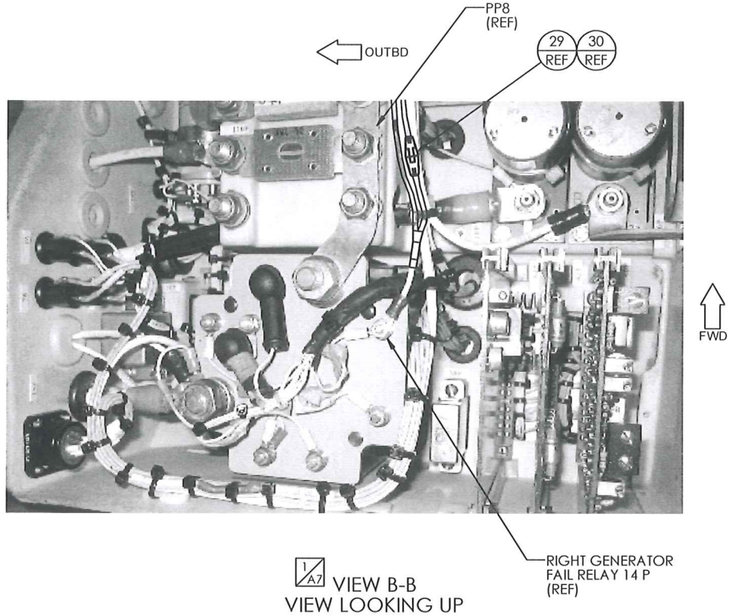
TITLE: ELECTRICAL PARTS INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-800	C

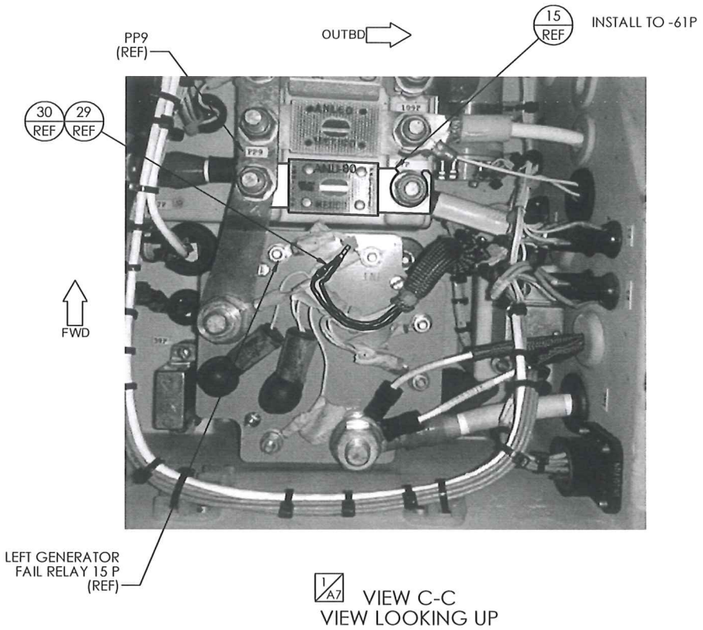
SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 4



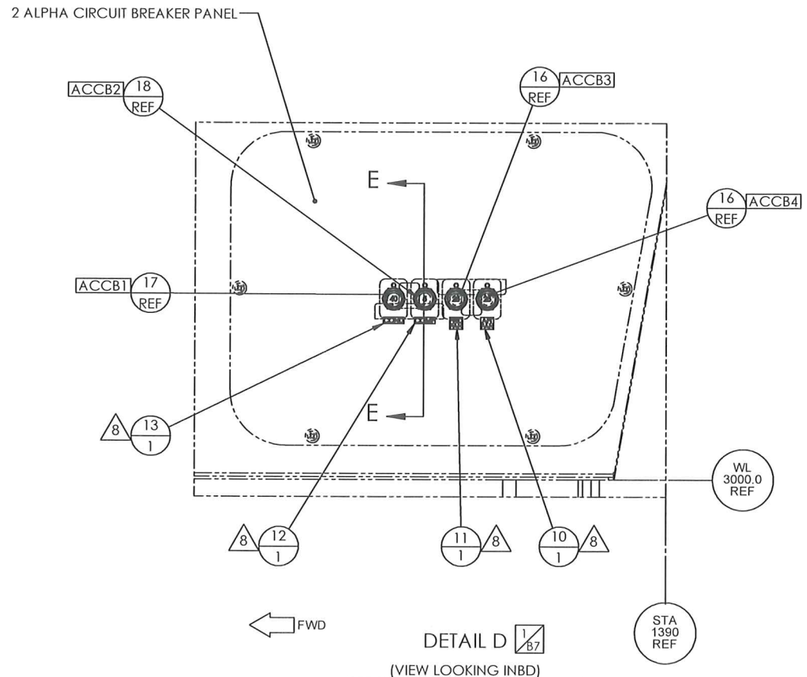
1/D6 DETAIL A
(VIEW LOOKING DOWN)



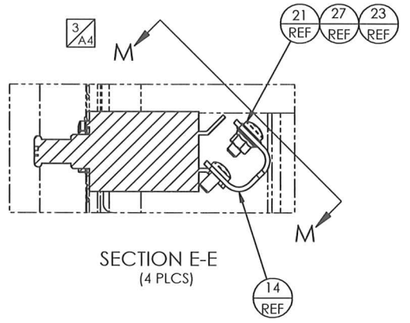
1/A7 VIEW B-B
VIEW LOOKING UP



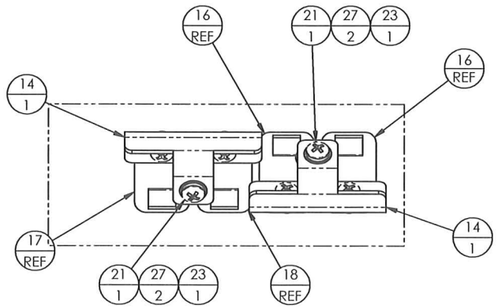
1/A7 VIEW C-C
VIEW LOOKING UP



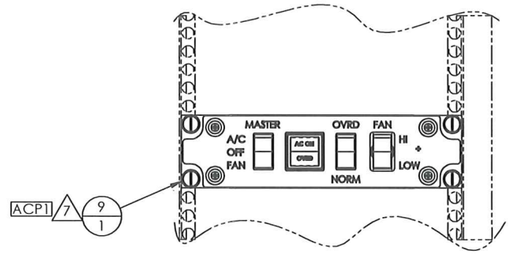
DETAIL D 1/B7
(VIEW LOOKING INBD)
(SEE SECTION K-K FOR HOLE DETAIL)



SECTION E-E
(4 PLCS)



SECTION F-F 1/C7



SECTION G-G 1/A6
(VIEW LOOKING DOWN AT PEDESTAL)

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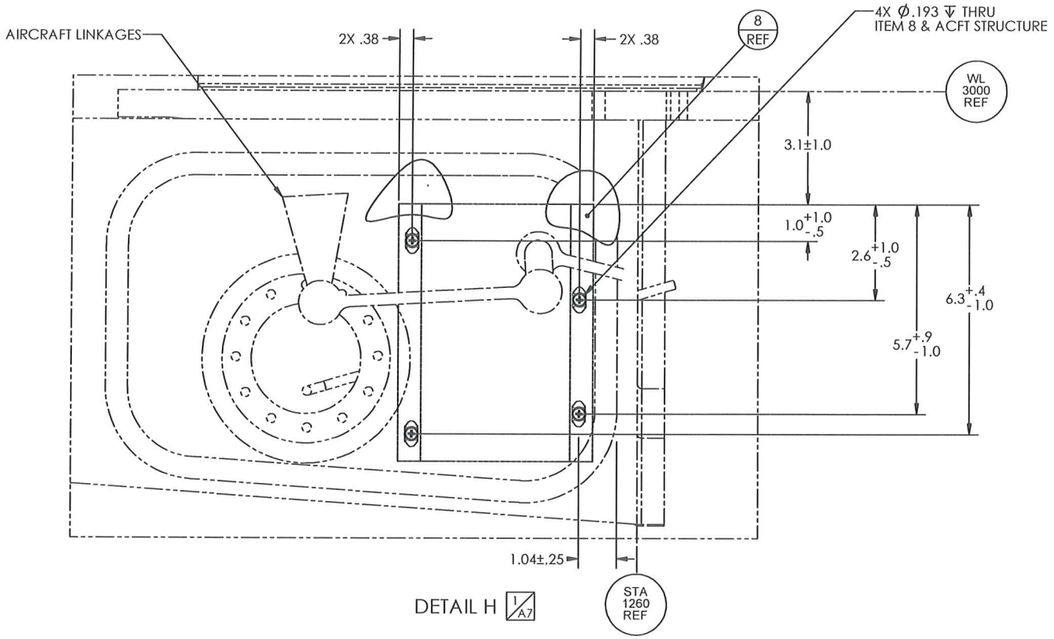
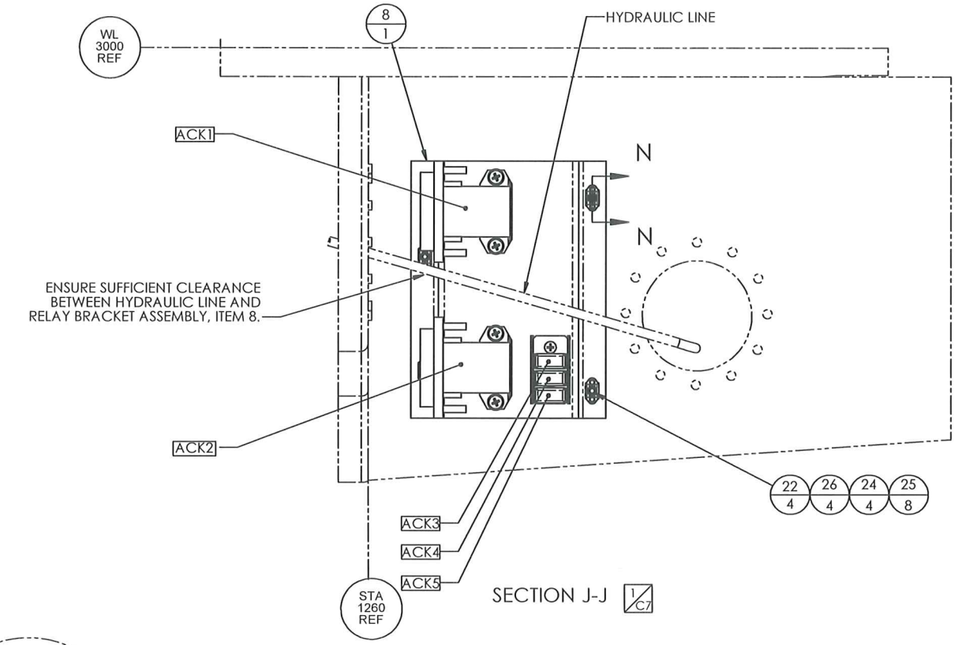
TITLE: ELECTRICAL PARTS INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-800	C

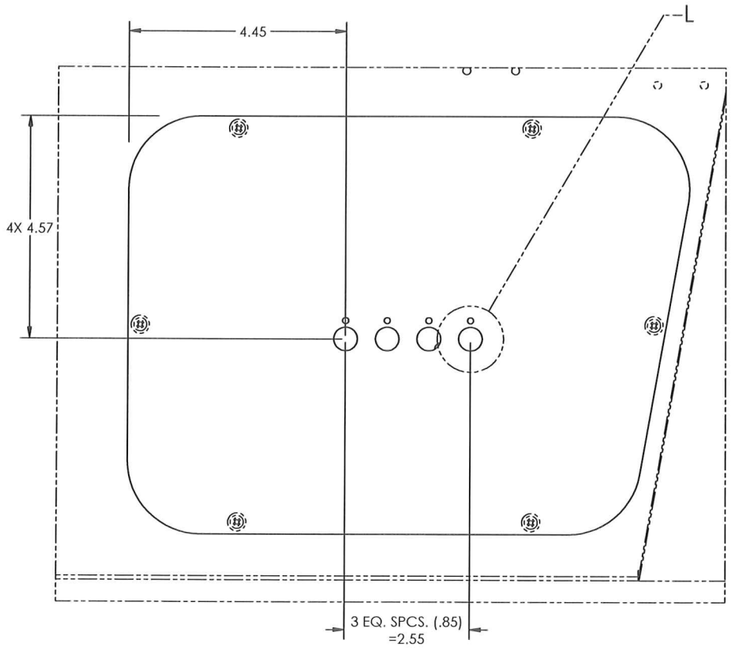
SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 4



DETAIL H (1/A7)

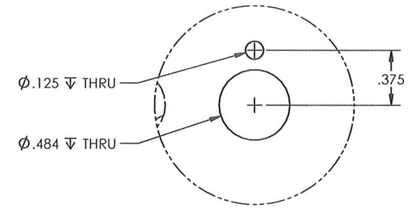


SECTION J-J (1/C7)

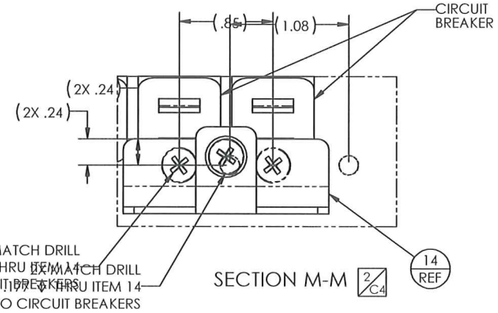


SECTION K-K (1/C7)

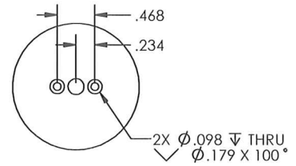
(ITEMS 16, 17, & 18 REMOVED FOR CLARITY)



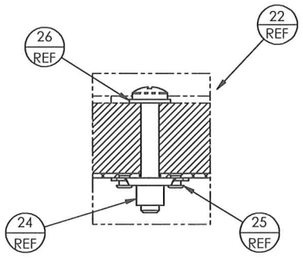
DETAIL L
(4 PLCS)



SECTION M-M (2/C4)



MS21075L08N NUTPLATE
HOLE PATTERN



SECTION N-N

RSG AERODESIGN
3900 Falcon Way West
Hangar 165
Fort Worth, Texas 76106
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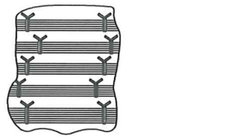
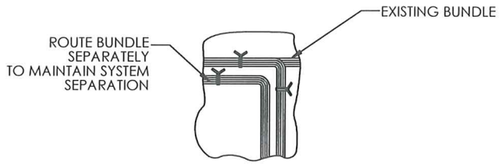
TITLE: ELECTRICAL PARTS INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-800	C

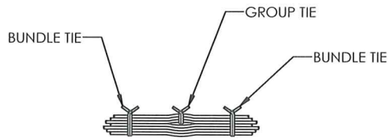
SCALE: NONE | WEIGHT: N/A | SHEET 3 OF 4



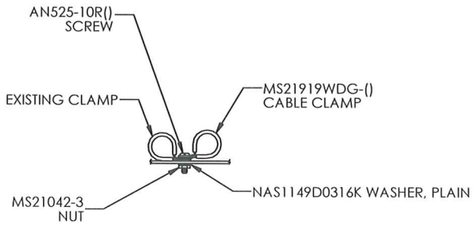
ROUTE WIRING BUNDLE IN CONJUNCTION
WITH EXISTING WIRE BUNDLES WHERE APPLICABLE

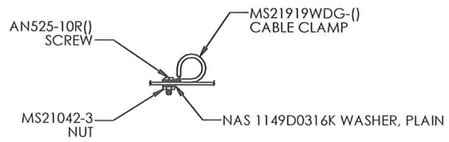


GENERAL ROUTING

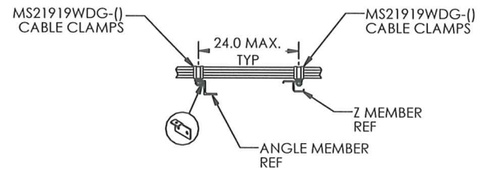


GROUP & BUNDLE TIES

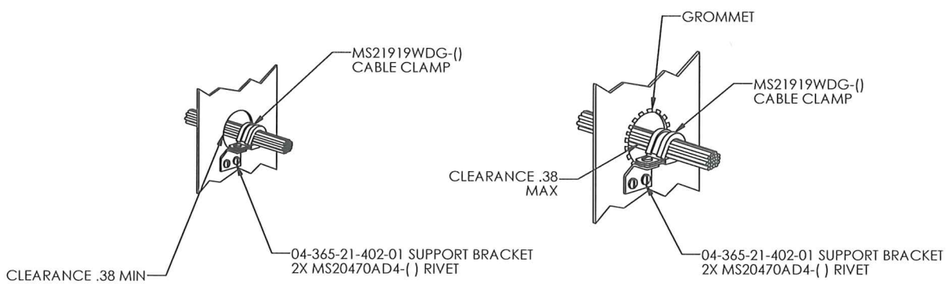




TYPICAL MOUNTING HARDWARE
FOR MS21919WDG-() CABLE CLAMPS

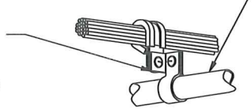


INSTALLING CABLE CLAMPS TO STRUCTURE



CLAMP AT A BULKHEAD HOLE

1. WIRING MUST BE ROUTED ABOVE COMBUSTIBLE FLUID OR OXYGEN LINES AND EQUIPMENT WITH A MINIMUM OF 6 IN. SEPARATION.
2. WHEN ITEM 1 IS NOT PRACTICAL, WIRING MUST BE ROUTED SO THAT IT DOES NOT RUN PARALLEL TO COMBUSTIBLE FLUID OR OXYGEN LINES.
3. A MINIMUM OF 2 INCHES MUST BE MAINTAINED BETWEEN WIRING AND COMBUSTIBLE FLUID OR OXYGEN LINES AND EQUIPMENT EXCEPT WHEN THE WIRE IS POSITIVELY CLAMPED TO MAINTAIN A MINIMUM OF .50 IN. SEPARATION. WHEN WIRING FLUID MUST BE CONNECTED DIRECTLY TO FLUID-CARRYING EQUIPMENT
4. CLAMPS INSTALLED ON FLUID LINES SHOULD NOT BE USED AS A MEANS TO SUPPORT WIRE BUNDLES.
5. ADDITIONAL CLAMPS SHOULD BE INSTALLED TO SUPPORT THE WIRE BUNDLE AND THESE CLAMPS FASTENED TO THE SAME STRUCTURE USED TO SUPPORT THE FLUID LINES TO PREVENT RELATIVE MOTION.



SEPARATION OF WIRES FROM PLUMBING LINES

GENERAL INSTALLATION INFORMATION

RSG AERODESIGN
3900 Falcon Way West
Hangar 16S
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(817) 625-9009
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TITLE: ELECTRICAL PARTS INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-800	C

SCALE: NONE | WEIGHT: N/A | SHEET 4 OF 4

NOTES:

1. UNSHIELDED WIRE IS M22759/16; UNSHIELDED HIGH TEMP WIRE IS M22759/8. TWISTED SHIELDED WIRES ARE M27500-xx-TGXT14 (xx INDICATES AWG, X NUMBER OF CONDUCTORS). SUFFIX OF EACH WIRE NUMBER INDICATES WIRE AWG.

2. WIRE SPLICES LOCATED NO MORE THAN 4 INCHES FROM CONNECTOR USING M81824/1-X SPLICES.

3. ALL DIODES ARE 1N4007; ALL JUMPERS ARE 22 AWG, UNLESS OTHERWISE SPECIFIED.

4. WIRE LEGEND:
   NEW: ————————————
   EXISTING OR DUPLICATED FROM ANOTHER DRAWING: ___ ___ ___ ___ ___ ___ ___ ___

5. ⏚ INDICATES: AIRFRAME GROUND, KEEP GROUND WIRE AS SHORT AS POSSIBLE.

△6 EXISTING WIRES; FOR FURTHER WIRING INFORMATION, REFERENCE THE EUROCOPTER AS365 AIRCRAFT WIRING DIAGRAM MANUAL (WDM), CHAPTER 24, SECTION 30 FOR 365 VERSIONS N THROUGH N3, AS APPLICABLE.

△7 OVERRIDE/NORMAL SWITCH AND MASTER SWITCH IN AIR CONDITIONER CONTROL PANEL TO BE INSTALLED WITH PIN 3 ON THE BOTTOM.

△8 IF CONNECTOR 6, POSITION A14 IS BEING USED, CONNECTORS 3 THROUGH 8, POSITION A7, A12, A13, A14 B7, B13 OR B14 MAY BE USED.

△9 IF CONNECTOR 6, POSITION A4 IS BEING USED, CONNECTORS 3 THROUGH 8, POSITION A1, A2, A3, A4, A17 A18, A19, A20, B1, B2, B3, B4, B17, MAY BE USED.

△10 CONNECT TO LIGHTING POWER CARD 49L OR 50L, PEDESTAL DIMMER OUTPUT. WIRE H46A20 MAY BE CONNECTED TO 10Δ1 OR 10Δ2 PINS THAT ARE CONNECTED TO 49L CARD B OR 50L CARD B PINS 8 THROUGH 21. WIRE H46A20 MAY ALSO BE CONNECTED TO 10Δ1 OR 10Δ2 PINS COMMON TO 49L CARD A OR 50L CARD A PINS 5 THROUGH 14.

△11 THE CONTROL PANEL ASSEMBLY IS AVAILABLE WITH NVIS OR NON-NVIS BACKLIGHTING & LEVER OR TOGGLE SWITCHES WITH PART NUMBERS AS FOLLOWS:

NVIS COMPATIBLE WITH LEVER SWITCHES IS PART NUMBER	02-365-21-901-01
NON-NVIS COMPATIBLE WITH LEVER SWITCHES IS PART NUMBER	02-365-21-901-02
NVIS COMPATIBLE WITH TOGGLE SWITCHES IS PART NUMBER	02-365-21-901-03
NON-NVIS COMPATIBLE WITH TOGGLE SWITCHES IS PART NUMBER	02-365-21-901-04

CAUTION: NVIS COMPATIBLE BACKLIGHTED OVERLAYS HAVE ITAR LIMITATIONS FOR EXPORT. NVIS COMPATIBLE NOTATION DOES NOT IMPLY NOR CONSTITUTE ANY APPROVAL FOR NVIS CERTIFICATION. WIRING FOR ALL CONTROL PANEL PART NUMBERS IS THE SAME.

△12 HI-LO FAN SPEED SWITCH IN AIR CONDITIONER CONTROL PANEL TO BE INSTALLED WITH PIN 1 ON THE BOTTOM.

13. ROUTE AND SUPPORT WIRING HARNESS IN ACCORDANCE WITH AC43.13-1B, CHAPTER 11 SECTION 8, PARAGRAPH 11-96.

14. CLAMP WIRING HARNESS IN ACCORDANCE WITH AC 43.13-1B, CHAPTER 11, SECTION 11, PARAGRAPH 11-146.

15. CLAMP AND ROUTE WIRES AROUND MOVABLE CONTROLS IN ACCORDANCE WITH AC 43.13-1B, CHAPTER 11, SECTION 9, PARAGRAPH 11-125.

16. WIRING AND HARNESS TO BE SEPARATED IN ACCORDANCE WITH AC 43.13-1B, CHAPTER 11, SECTION 8, PARAGRAPHS 11-105 AND 11-106.

17. INSTALL SERVICE LOOPS AT HARNESS TERMINATIONS IN ACCORDANCE WITH AC 43.13-1B, CHAPTER 11, SECTION 9, PARAGRAPH 11-139.

18. INSTALL GROUNDING CONNECTIONS AND BONDING IN ACCORDANCE WITH AC43.13-1B, CHAPTER 11, SECTION 15, PARAGRAPH 11-186 AND 11-189.

19. PERFORM WIRING HARNESS INSTALLATION IN ACCORDANCE WITH RSG WIRING STANDARDS DOCUMENT 20R00510008.

REVISION

REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO 08-365-21-100NC1	R. LUNA	R. LUNA	08/22/2012
B	INCORPORATED ECO 08-365-21-001A1	A. SHI	R. LUNA	11/13/2012
C	INCORPORATED ECO 08-365-21-001B1	H. SAUKKONEN	R. LUNA	02/25/2013
D	INCORPORATED ECO 08-365-21-001C1	R. LUNA	R. LUNA	04/12/2013
E	INCORPORATED ECO 08-365-21-001D1	S. CURTIS	R. Luna 11/5/13	

-04	-03	-02	-01	ITEM	PART NUMBER	DESCRIPTION	MANUFACTURER
REF				43	02-365-21-901-04	CNTL PNL ASSY, TOGGLE, NON-NVIS	RSG
	REF			42	02-365-21-901-03	CNTL PNL ASSY, TOGGLES, NVIS	RSG
REF	REF			41	7301K2ZQE	SWITCH, 3PDT	C & K
REF	REF			40	7303SYZQE	SWITCH, TOGGLE, 3PDT, CNTR OFF	C & K
REF	REF			39	7101SYZQE	SWITCH, TOGGLE, SPDT	C & K
		REF		38	02-365-21-901-02	CTL PANEL ASSY,ROCKERS, NON-NVIS	RSG
1	1	1	2	37	AGC-2-R	FUSE	BUSSMAN
2	2	2	2	36	01550100Z	IN-LINE FUSE HOLDER	LITTLEFUSE
REF	REF	REF	REF	35	04-365-21-805-01	BUS BAR	RSG
REF	REF	REF	REF	34	M83413/8-A022BB	GROUND WIRE	
REF	REF	REF	REF	33	M83413/8-A036BB	GROUND WIRE	
REF	REF	REF	REF	32	M83413/8-A006BB	GROUND WIRE	
REF	REF	REF	REF	31	M83413/8-A014AB	GROUNDING STRAP	
1	1	1	1	30	09-365-21-305-01	LOW PRESSURE SWITCH	RSG
1	1	1	1	29	09-365-21-306-01	HIGH PRESSURE SWITCH	RSG
2	2	2	2	28	1N4007	DIODE	
				27			
1	1	1	1	26	ANL-80	CURRENT LIMITER, 80 AMP	COOPER / BUSSMAN
2	2	2	2	25	MS25244-25	CIRCUIT BREAKER, 25 AMP	KLIXON
REF	REF	REF	REF	24	02-365-21-101-01	COMPRESSOR ASSEMBLY	RSG
1	1	1	1	23	09-365-21-307-01	EVAPORATOR FAN	RSG
1	1	1	1	22	09-365-21-202-01	CONDENSER FAN	RSG
			REF	21	02-365-21-901-01	CONTROL PANEL ASSY, NVIS	RSG
REF	REF	REF	REF	20	D38999/20WE26PN	RECEPTACLE	
REF	REF	REF	REF	19	M85049/38-17W	CIRCULAR MIL /BACKSHELL	
REF	REF	REF	REF	18	D38999/26WE26SN	STRAIGHT PLUG	
4	4	4	4	17	32448	KNIFE DISCONNECT 16-14	
4	4	4	4	16	32446	KNIFE DISCONNECT 22-16	
2	2	2	2	15	M39029/22-193	CONTACT	
1	1	1	1	14	M81714/65-16-1	TERMINAL JUNCTION	
1	1	1	1	13	MS3100F20-23S	CONNECTOR, RECEPTACLE	
2	2	2	2	12	MS3106F18-5S	CONNECTOR, PLUG	
REF	REF	REF	REF	11	18-200	ANNUNCIATOR SOCKET	
REF	REF	REF	REF	10	LED-40-17-BB-E0PX7	ANNUNCIATOR	AEROSPACE OPTICS
REF	REF	REF	REF	9	M12883/53-001	MOUNTING TRACK, RELAY	
3	3	3	3	8	M12883/52-001	RELAY SOCKETS, TRACK MOUNT	
3	3	3	3	7	M83536/2-028M	RELAY,DPDT, DIN RAIL	
REF	REF	REF	REF	6	MS24166-D2	RELAY, 50A, 28VDC COIL	
1	1	1	1	5	MS25244-5	CIRCUIT BREAKER, 5	
1	1	1	1	4	700-001-40	CIRCUIT BREAKER, 40 AMP	EATON
		REF	REF	3	7101J25ZQE2	SWITCH, SPDT	C & K
		REF	REF	2	7301J21ZGE22	SWITCH	C & K
		REF	REF	1	7303J21ZQI22	SWITCH, 3PDT	C & K
--					02-365-21-901-04 CONTROL PNL	TOGGLE, NON-NVIS COMPATIBLE	
	--				02-365-21-901-03 CONTROL PNL	TOGGLE, NVIS COMPATIBLE	
		--			02-365-21-901-02 CONTROL PNL	LEVERS, NON-NVIS COMPATIBLE	
			--		02-365-21-901-01 CONTROL PNL	LEVERS, NVIS COMPATIBLE	

AIRCRAFT MAKE/MODEL: AS365

DL-1

NEXT ASSEMBLY

DESIGN: R. LUNA	DATE: 12/09/10	
DRAWN: H.SAUKKONEN	DATE: 02/09/12	
CHECKED: A.SHI	DATE: 02/09/12	
PROJECT ENG: R.LUNA	DATE: 02/09/12	
APPROVED: R.LUNA	DATE: 03/06/12	

RSG AERODESIGN
3900 Falcon Way West
Hangar 165
Fort Worth, Texas 76106
(817) 625-9000
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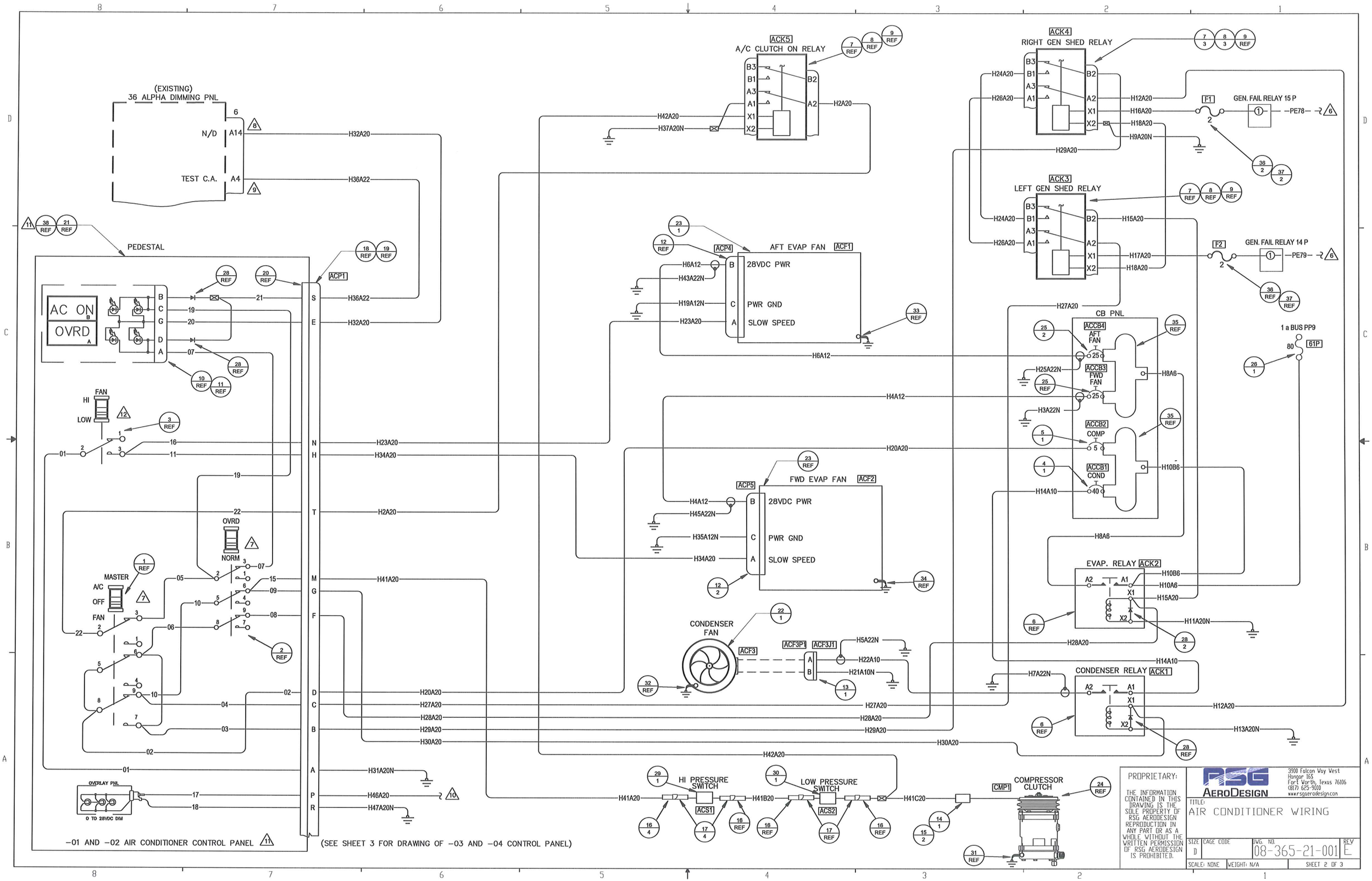
TITLE: AIR CONDITIONER WIRING

SIZE	CAGE CODE	DWG. NO.	REV
D		08-365-21-001	E

SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 3



PROPRIETARY:

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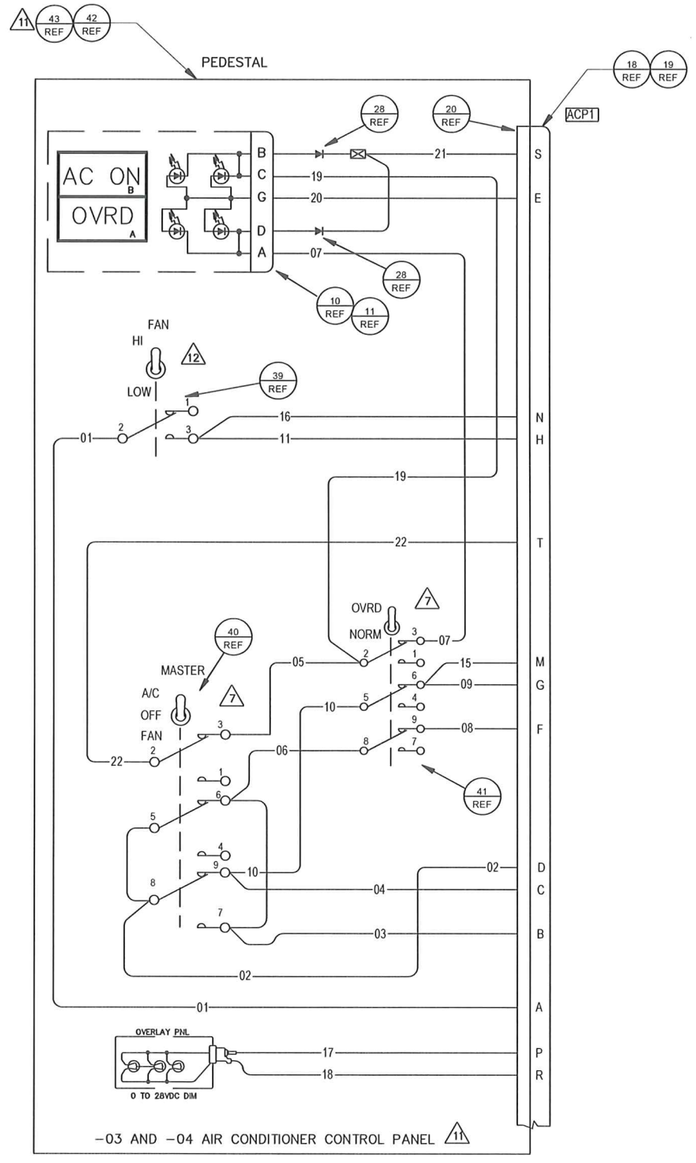
TITLE: AIR CONDITIONER WIRING

SIZE	CAGE CODE	DWG. NO.	REV
D		08-365-21-001	E
SCALE: NONE	WEIGHT: N/A	SHEET 2 OF 3	



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TITLE:
AIR CONDITIONER WIRING

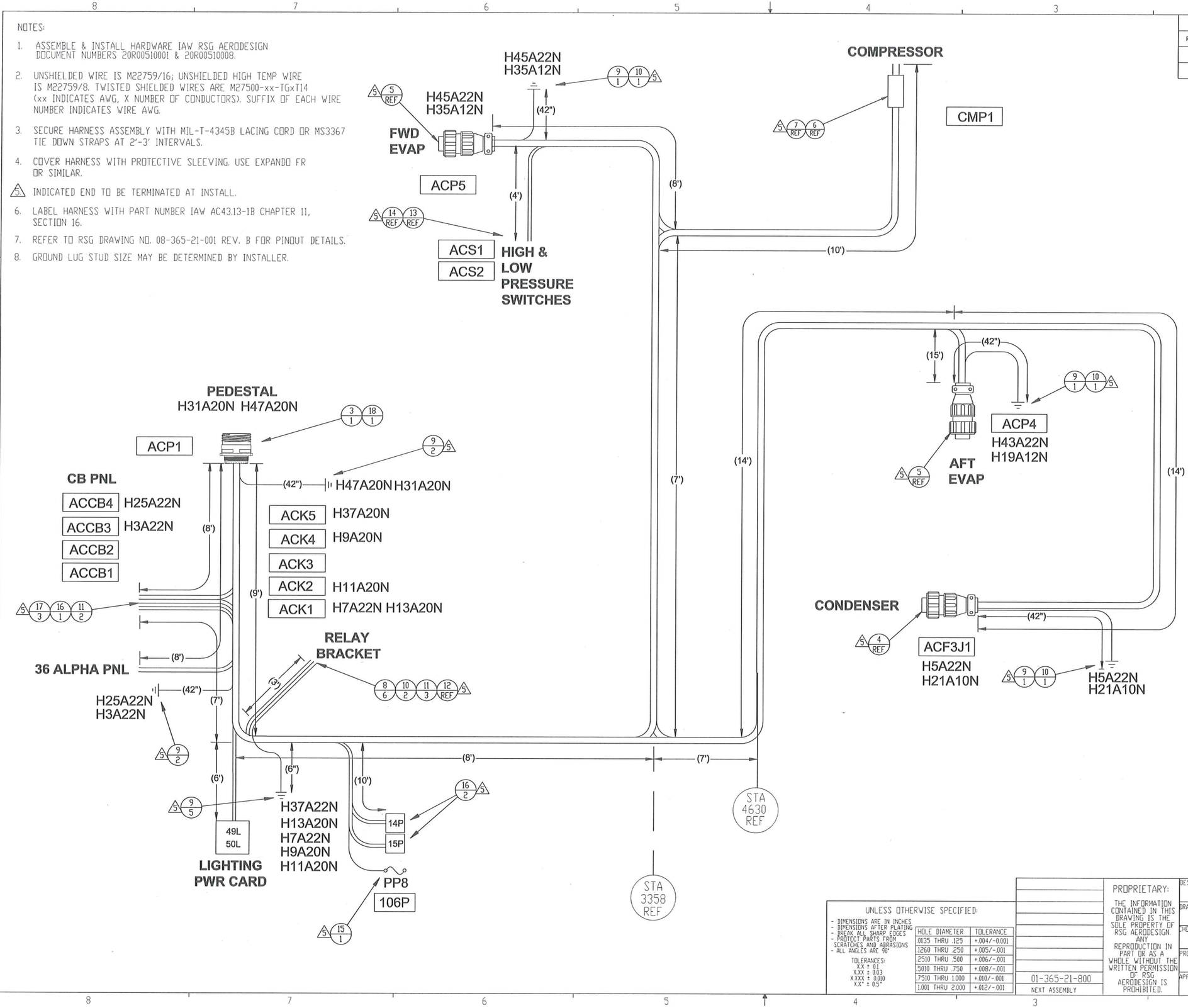
SIZE	CAGE CODE	DWG. NO.	REV
D		08-365-21-001	E

SCALE: NONE | WEIGHT: N/A | SHEET 3 OF 3

NOTES:

1. ASSEMBLE & INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBERS 20R00510001 & 20R00510008.
2. UNSHIELDED WIRE IS M22759/16; UNSHIELDED HIGH TEMP WIRE IS M22759/8. TWISTED SHIELDED WIRES ARE M27500-xx-TGxT14 (xx INDICATES AWG, X NUMBER OF CONDUCTORS). SUFFIX OF EACH WIRE NUMBER INDICATES WIRE AWG.
3. SECURE HARNESS ASSEMBLY WITH MIL-T-4345B LACING CORD OR MS3367 TIE DOWN STRAPS AT 2'-3' INTERVALS.
4. COVER HARNESS WITH PROTECTIVE SLEEVING. USE EXPANDO FR OR SIMILAR.
5. INDICATED END TO BE TERMINATED AT INSTALL.
6. LABEL HARNESS WITH PART NUMBER IAW AC43.13-1B CHAPTER 11, SECTION 16.
7. REFER TO RSG DRAWING NO. 08-365-21-001 REV. B FOR PINOUT DETAILS.
8. GROUND LUG STUD SIZE MAY BE DETERMINED BY INSTALLER.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO 08-365-21-102NC1	B.Witherspoon	R. Luna	12/04/2012
B	INCORPORATED ECO 08-365-21-102A1	B.Witherspoon	RER	2/12/13



WIRE LENGTH TABLE				
WIRE P/N	FROM	TO	WIRE #	LENGTH (REF)
M22759/16-20-9	ACP1	GND	H31A20N	3.5'
M22759/16-20-9	ACP1	GND	H47A20N	3.5'
M22759/16-20-9	ACP1	ACK5	H2A20	12'
M22759/16-22-9	ACP1	36 ALPHA	H36A22	8'
M22759/16-20-9	ACP1	36 ALPHA	H32A20	8'
M22759/16-20-9	ACP1	ACP4	H23A20	53'
M22759/16-20-9	ACP1	ACP5	H34A20	32'
M22759/16-20-9	ACP1	49L OR 50L	H46A20	15'
M22759/16-20-9	ACP1	32446 DISC.	H41A20	36'
M22759/16-20-9	ACP1	ACCB2	H20A20	8'
M22759/16-20-9	ACP1	ACK3	H27A20	12'
M22759/16-20-9	ACP1	ACK2	H28A20	12'
M22759/16-20-9	ACP1	ACK4	H29A20	12'
M22759/16-20-9	ACP1	ACK1	H30A20	12'
M27500-12-TG1T14	ACCB4	ACP4	H6A12	51'
M27500-12-TG1T14	ACCB3	ACP5	H4A12	30'
M22759/16-6-9	BUS BAR 1	ACK2	H8A6	10'
M22759/16-10-9	ACCB1	ACK1	H14A10	10'
M22759/16-6-9	BUS BAR 2	ACK2	H10B6	10'
M22759/16-20-9	ACK5	32446 DISC.	H42A20	30'
M22759/16-20-9	ACK5	GND	H37A20N	3.5'
M22759/16-20-9	ACK4	ACK1	H12A20	1'
M22759/16-20-9	ACK4	15P	H16A20	13'
M22759/16-20-9	ACK3	ACK2	H15A20	1'
M22759/16-20-9	ACK3	14P	H17A20	13'
M22759/16-6-9	ACK2	106P	H10A6	13'
M27500-10-TG1T14	ACK1	ACF3J1	H22A10	46'
M22759/16-22-9	ACK1	GND	H7A22N	3.5'
M22759/16-20-9	ACK1	GND	H13A20N	3.5'
M22759/16-12-9	ACP4	GND	H19A12N	3.5'
M22759/16-10-9	ACF3J1	GND	H21A10N	3.5'
M22759/16-20-9	ACK4	ACK3	H18A20	1'
M22759/16-20-9	ACK4	ACK3	H26A20	1'
M22759/16-20-9	ACK4	ACK3	H24A20	1'
M22759/16-22-9	ACP5	GND	H45A22N	3.5'
M22759/16-12-9	ACP5	GND	H35A12N	3.5'
M22759/16-22-9	ACP4	GND	H43A22N	3.5'
M22759/16-20-9	ACK4	GND	H9A20N	3.5'
M22759/16-22-9	ACF3J1	GND	H5A22N	3.5'
M22759/16-20-9	ACK2	GND	H11A20N	3.5'
M22759/16-22-9	ACCB4	GND	H25A22N	3.5'
M22759/16-22-9	ACCB3	GND	H3A22N	3.5'
M22759/16-20-9	32446	32446	H41B20	6'
M22759/16-20-9	32446	M81714	H41C20	24'

ITEM	QTY	PART NUMBER	DESCRIPTION	VENDOR
1	18	M85049/38-17W	CIRCULAR MIL/BACKSHELL	
3	17	MS25036-156	LUG 12-10 AWG, #8 STUD	
3	16	MS25036-149	LUG 22-18 AWG, #8 STUD	
1	15	MS25036-121	LUG 22-18 AWG, 5/16 STUD	
REF	14	32448	KNIFE DISCONNECT 16-14	
REF	13	32446	KNIFE DISCONNECT 22-16	
REF	12	M39029/101-553	CONTACT	
5	11	MS25036-119	LUG 6 AWG, #10 STUD	
5	10	MS25036-112	LUG 12-10 AWG, #10 STUD	
12	9	MS25036-103	LUG 22-18 AWG, #10 STUD	
6	8	MS25036-102	LUG 22-18 AWG, #6 STUD	
REF	7	M81714/65-16-1	TERMINAL JUNCTION	
REF	6	MS39029/22-193	CONTACT	
REF	5	MS3106F18-5S	CONNECTOR, PLUG	
REF	4	MS3100F20-23S	CONNECTOR, RECEPTACLE	
1	3	D38999/26WE26SN	STRAIGHT PLUG	
--	1	-01	WIRE HARNESS ASSEMBLY	

UNLESS OTHERWISE SPECIFIED:
- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± .01
X.XX ± .003
X.XXX ± .0010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

01-365-21-800
NEXT ASSEMBLY

DESIGN: B.Witherspoon	DATE: 09/07/2012	
DRAWN: H.Saukkonen	DATE: 09/07/2012	
CHECKED: R. Luna	DATE: 09/14/2012	
PROJECT ENG: H.Saukkonen	DATE: 09/14/2012	
APPROVED: R. Luna	DATE: 09/18/2012	

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TITLE: WIRE HARNESS ASSEMBLY

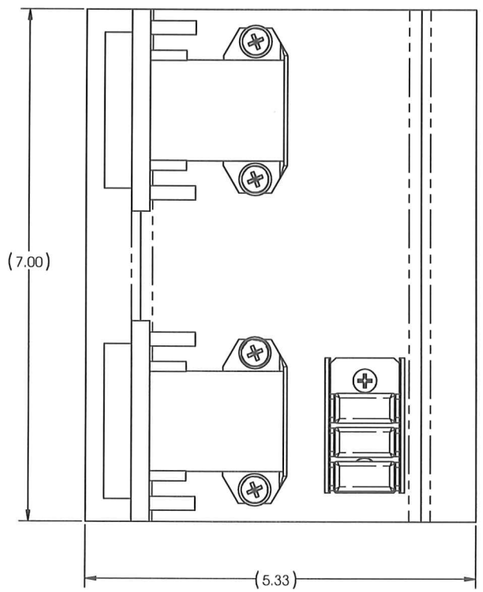
SIZE	CAGE CODE	DWG. NO.	REV
D		08-365-21-102	B

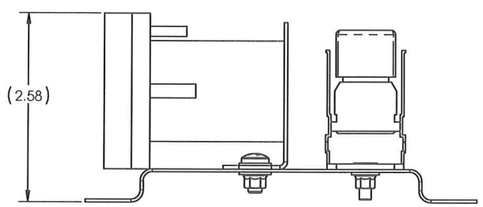
SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 1

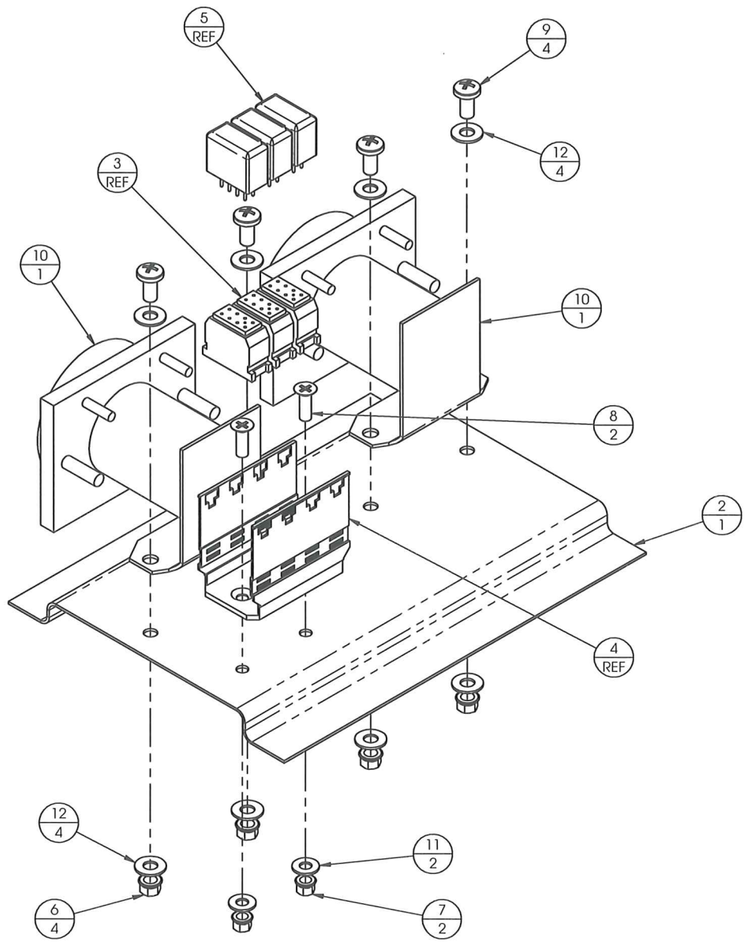
REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE

NOTES:

1. ASSEMBLE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
3. REFERENCE RSG AERODESIGN DOCUMENT NUMBER 08-365-21-100, AIR CONDITIONER WIRING.
4. TOUCH UP PRIME IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510002.
5. IDENTIFY & MARK ASSEMBLY IAW RSG AERODESIGN DOCUMENT NUMBER 20R00110001. LOCATION, CHARACTER HEIGHT & PROCESS AS REQUIRED. MARK IN CONTRASTING COLOR.







QTY	ITEM	PART NUMBER	DESCRIPTION	VENDOR
--	1	-01	RELAY BRACKET ASSEMBLY	
REF	3	M12883/52-001	RELAY SOCKET	
1	2	04-365-21-804-01	RELAY HAT BRACKET	
1	4	M12883/53-001	MOUNTING TRACK	
REF	5	M83536/2-028M	RELAY	
4	6	MS21042L3	NUT	
2	7	MS21042L08	NUT	
2	8	MS24693-S50	SCREW	
4	9	MS27039-1-06	SCREW	
2	10	MS24166-D2	RELAY	
2	11	NAS1149DN832K	WASHER	
8	12	NAS1149D0332K	WASHER	

-01 RELAY BRACKET ASSEMBLY

UNLESS OTHERWISE SPECIFIED:

- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROJECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

01-365-21-800
NEXT ASSEMBLY

DESIGN: B. Witherspoon	DATE: 08/15/2012	
DRAWN: B. Witherspoon	DATE: 08/24/2012	
CHECKED: J. Krebs	DATE: 08/29/2012	
PROJECT ENG: H. Saukkonen	DATE: 09/12/2012	
APPROVED:	DATE: 9.12.12	

RSG AERODESIGN
3900 Falcon Way West
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Fort Worth, Texas 76106
(817) 625-9000
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TITLE: RELAY BRACKET ASSEMBLY

SIZE	CAGE CODE	DWG. NO.	REV
D		02-365-21-802	NC

SCALE: NONE | WEIGHT: 1.62lb | SHEET 1 OF 1

Step 10

Installation of Hoses

Installation of Hoses
Kit# 365N-00-2

CAUTION
ALL HOSES RUNNING THROUGH BULKHEADS/LIGHTNING HOLES MUST BE PROTECTED AGAINST CHAFFING BY USING SUITABLE TIE WRAPS, SPIRAL WRAPS, AND/OR STAND-OFFS.

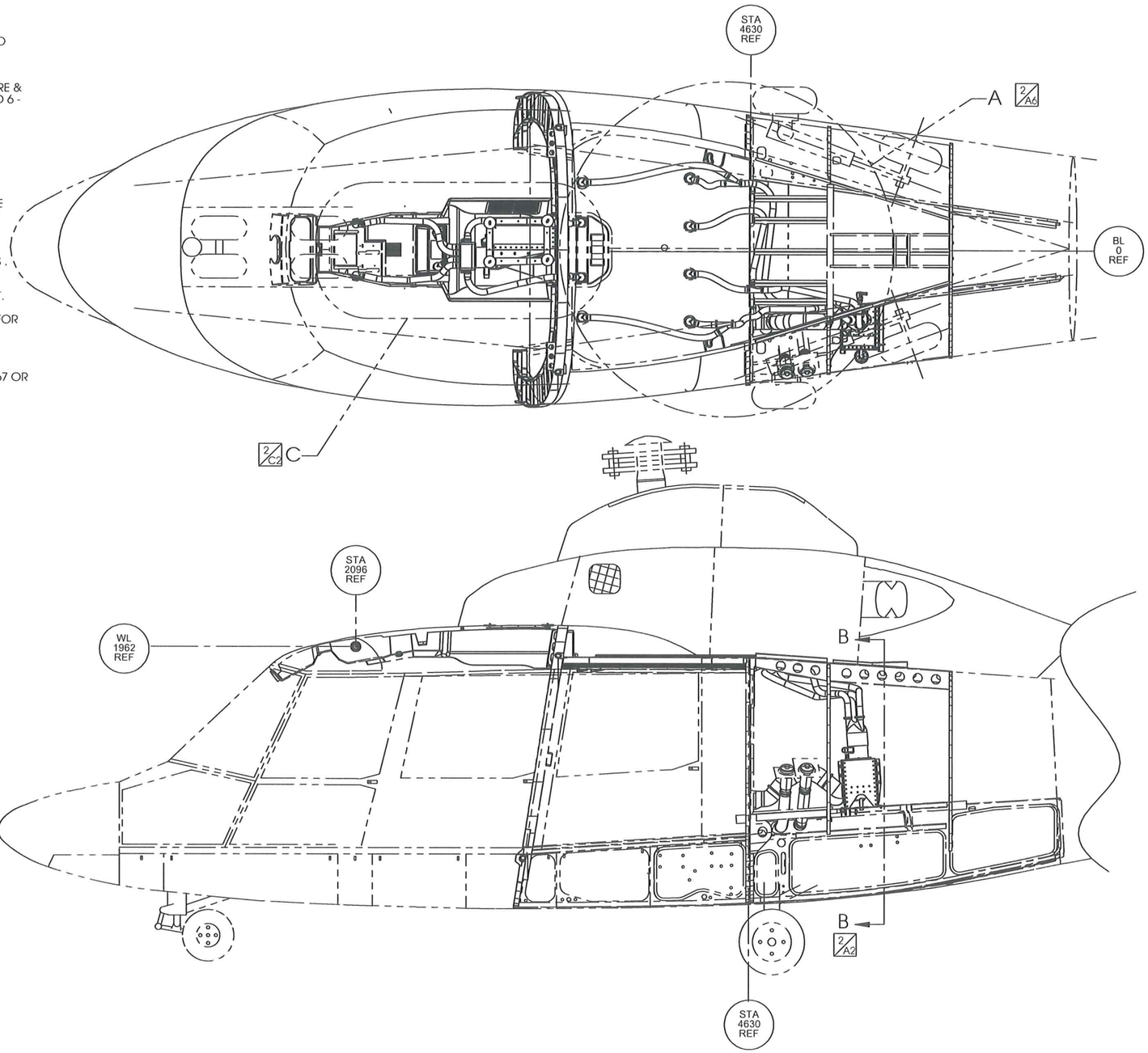
STEP	PROCEDURE	MECH.	INSP.
10.2.1	Install all hoses and hardware per general installation information on sheet 11 in drawing 01-365-21-500, unless otherwise specified. **Cut hoses to length for best fit.**		
10.2.2	Install the #8 Hose Assy, From Comp P/N 03-365-21-001-01 from discharge side of compressor using the 04-365-21-102-01 #8 Compressor Fitting to the bulkhead fitting at the roof, see drawing 01-365-21-500. Install the #8 Hose Assy, From Comp P/N 03-365-21-011-01 under the bulkhead fitting. Route hose aft through existing lightening holes in the top of the cabin and top of the baggage compartment. Route the assembly down the aft side of the rear baggage bulkhead to the condenser fitting. Install #8 fitting P/N 09-365-21-003-01.		
10.2.3	Install the #10 Hose Assy, To Comp P/N 03-365-21-002-01 from inlet side of compressor using the 04-365-21-101-01 #8 Compressor Fitting to the bulkhead fitting at the roof, see drawing 01-365-21-500. Install the #10 Hose Assy, From #10 T Fitting P/N 03-365-21-006-01 to the bulkhead fitting and secure with 04-365-21-401-01 Support Bracket and hardware shown in drawing 01-365-21-500.		
10.2.4	Install #10 Hose Assy, From Aft Evap P/N 03-365-21-010-01 and #10 Hose Assy, From #10 Service Port P/N 03-365-21-008-01 as shown in 01-365-21-500 drawing. Secure to the aft bulkhead using Support Brackets P/N 04-365-21-401-01 and appropriate hardware as shown in 01-365-21-500 drawing.		
10.2.5	For -01 aft evaporator location: Install #6 Hose Assy, From Cond P/N 03-365-21-007-01 to the bulkhead parallel to the #10 Hose Assy, To Cond and route the assembly down the aft side of the rear baggage bulkhead to the condenser fitting. Cut hose to length and install #6 fitting P/N 09-365-21-001-03. For -02 aft evaporator location: Install #6 Hose Assy, From Cond P/N 03-365-21-700-02 to #6 condenser fitting P/N 09-365-21-001-03. Follow the same procedure as above.		

STEP	PROCEDURE	MECH.	INSP.
10.2.6	For -01 aft evaporator location: Install #6 Hose Assy, P/N 03-365-21-005-01 from #6 Hose Assy, From Cond. Install #6 Hose Assy, To Aft Evap P/N 03-365-21-009-01 to expansion valve in -01 After Evaporator Installation. For -02 aft evaporator location: T off from condenser line and install P/N 03-365-21-009-01 to expansion valve in -02 After Evaporator Installation. Install #6 Hose Assy P/N 03-365-21-005-02 from the aft T and secure to the aft bulkhead using appropriate hardware as shown in 01-365-21-500 drawing.		
10.2.7	Install #10 Hose Assy, From Fwd Evap P/N 03-365-21-004-01 to the T fitting on the #10 Hose assy, From #10 T fitting.		
10.2.8	Install #10 Hose Assy, From Fwd Evap P/N 03-365-21-003-01 to the T fitting P/N 91355K49 on the #10 Hose assy, From #10 T fitting. Secure at the T fitting using Support Bracket 04-365-21-401-01 and required hardware.		
10.2.9	Install drain hose P/N 09-365-21-007-01 from Fwd Evaporator. See drawing 01-365-21-500.		
10.2.10	Prior to tightening all metal hose fittings to steel or brass connections, apply refrigerant oil supplied with the kit to all metal surfaces.		
10.2.11	Connect/tighten all refrigerant line, leaving the connections to the Receiver/Drier Bottle at the Condenser location until last.		

NOTES:

1. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. LOCATE DUCT SPLITTERS FOR BEST FIT, & INSTALL TO BULKHEAD USING MS21919WDG-25 CLAMPS (REFERENCE SHEET 8).
3. ROUTE DUCTING FOR BEST FIT THROUGH STRUCTURE & SECURE USING MS21919WDG-25 CLAMPS SPACED 6 - 12 INCHES APART (REFERENCE SHEET 8).
4. ALTERNATE MCMASTER P/N FOR ITEMS 28 & 29:
   1. ITEM 28: 5574K16
   2. ITEM 29: 5574K27
5. ⌀1.75 ↧ THRU CABIN OVERHEAD PANEL.
6. USE EXISTING AIR VENTS FOR INSTALLATION WHERE POSSIBLE. ADDITIONAL UNUSED VENTS ARE TO BE DISCONNECTED BEHIND ACFT PANELING.
7. PERMISSIBLE TO MOVE FORWARD OR AFT TO ACCOMIDATE EXISTING INSTALLED COMPONENTS .
8. INSTALL ITEMS 32 & 33 AS NECESSARY TO ACCOMODATE SPACE CONSTRAINS WITHIN ACFT.
9. PREMISSIBLE TO USE ITEMS 34 & 35 AS ALTERNATE FOR ITEM 23, CLAMP TO ACCOMODITE SPACE CONSTRAINS WITHIN ACFT.
10. RELOCATE EXISTING AIR VENTS TO LOCATIONS SHOWN. ONLY APPLICABLE FOR SA365 N3, SN 6967 OR LATER AIRCRAFT WITH AFTERMARKET CENTERLINE CABIN OVERHEAD PANEL INSTALLED. OTHERWISE LEAVE VENTS IN EXISTING LOCATIONS.
11. RELOCATE THESE 2 EXISTING AIR VENTS TO NEW OVERHEAD PANEL. SEE DRAWING NUMBER 01-365-21-301.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO 01-365-21-600NC1	C. Wells	P. Ban	09/12/2012
B	INCORPORATED ECO 01-365-21-600A1	C. WELLS	P. Ban	02/13/2013
C	INCORPORATED ECO 01-365-21-600B1	H. Saukkonen	P. Ban	03/04/2013
D	INCORPORATED ECO 01-365-21-600C1	S. THORNTON	K. Ban	5/9/2013



9	12	12	12	35	CB3019AA5N	TY WRAP BLOCK	CLICKBOND
	100	100	100	34	63467	TY WRAP	RSG PRODUCTS
8		5'		33	05-29804	1" CAT DUCTING	AIRCRAFT SPRUCE
		4		32	04-365-21-606-01	REDUCER	
	A/R	A/R	A/R	31	1300L	ADHESIVE	3M
	10	10	10	30	MS21266-4N	GROMMET	
		2		29	MS35842-16	HOSE CLAMP	
	34	24	30	28	MS35842-12	HOSE CLAMP	
		2		27	NAS1149DN832K	WASHER	
	25	40	40	26	NAS1149D0316K	WASHER	
		4		25	NAS1097AD4-()	RIVET	
		2		24	MS27039-0810	SCREW	
	20	20	20	23	MS21919WDG-25	CLAMP	
	25	45	45	22	MS21042L3	NUT	
	20	20	20	21	MS20470AD4-()	RIVET	
		16	24	20	AN525-10R14	SCREW	
	20	20	20	19	AN525-10R8	SCREW	
		6		18	CCR274CS-4-02	BLIND RIVET	CHERRY
		10'		17	09-365-21-604-01	DUCT	
	50'	40'	40'	16	09-365-21-602-01	DUCT	
		4	6	15	09-365-21-601-01	AIR VENT	
		1		14	04-365-21-605-01	SUPPORT CLIP	
		1		13	04-365-21-604-01	5" SPLITTER	
	1		1	12	04-365-21-602-01	DUCT SPLITTER	
	2	2	2	11	04-365-21-601-01	DUCT SPLITTER	
	10	10	10	10	04-365-21-402-01	SUPPORT BRACKET	
	2			9	02-365-21-602-01	AIR VENT ASSEMBLY	
		1		8	02-365-21-601-01	SUPPORT CLIP ASSY	
	REF			7	01-365-21-400-03	AFT EVAPORATOR INSTALLATION	
		REF		6	01-365-21-400-02	AFT EVAPORATOR INSTALLATION	
			REF	5	01-365-21-400-01	AFT EVAPORATOR INSTALLATION	
	REF	REF	REF	4	01-365-21-300-01	FWD EVAPORATOR INSTALLATION	
	--			3	-03	AIR DUCTING INSTALLATION	
		--		2	-02	AIR DUCTING INSTALLATION	
			--	1	-01	AIR DUCTING INSTALLATION	
	-03	-02	-01	ITEM	PART NUMBER	DESCRIPTION	VENDOR

-01 AIR DUCTING INSTALLATION

UNLESS OTHERWISE SPECIFIED:

- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROJECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

365N-00-2
NEXT ASSEMBLY

DESIGN: R. Latham	DATE: 05/20/2011	
DRAWN: C. Wells	DATE: 01/18/2012	
CHECKED: P. Ban	DATE: 03/05/2012	
PROJECT ENG: J. Krebs	DATE: 03/05/2012	
APPROVED: P. Ban	DATE: 03/05/2012	

RSG AERODESIGN
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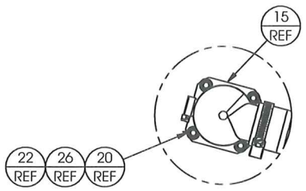
Hangar 16S
Fort Worth, Texas 76106
(817) 625-9000
www.rsgaerodesign.com

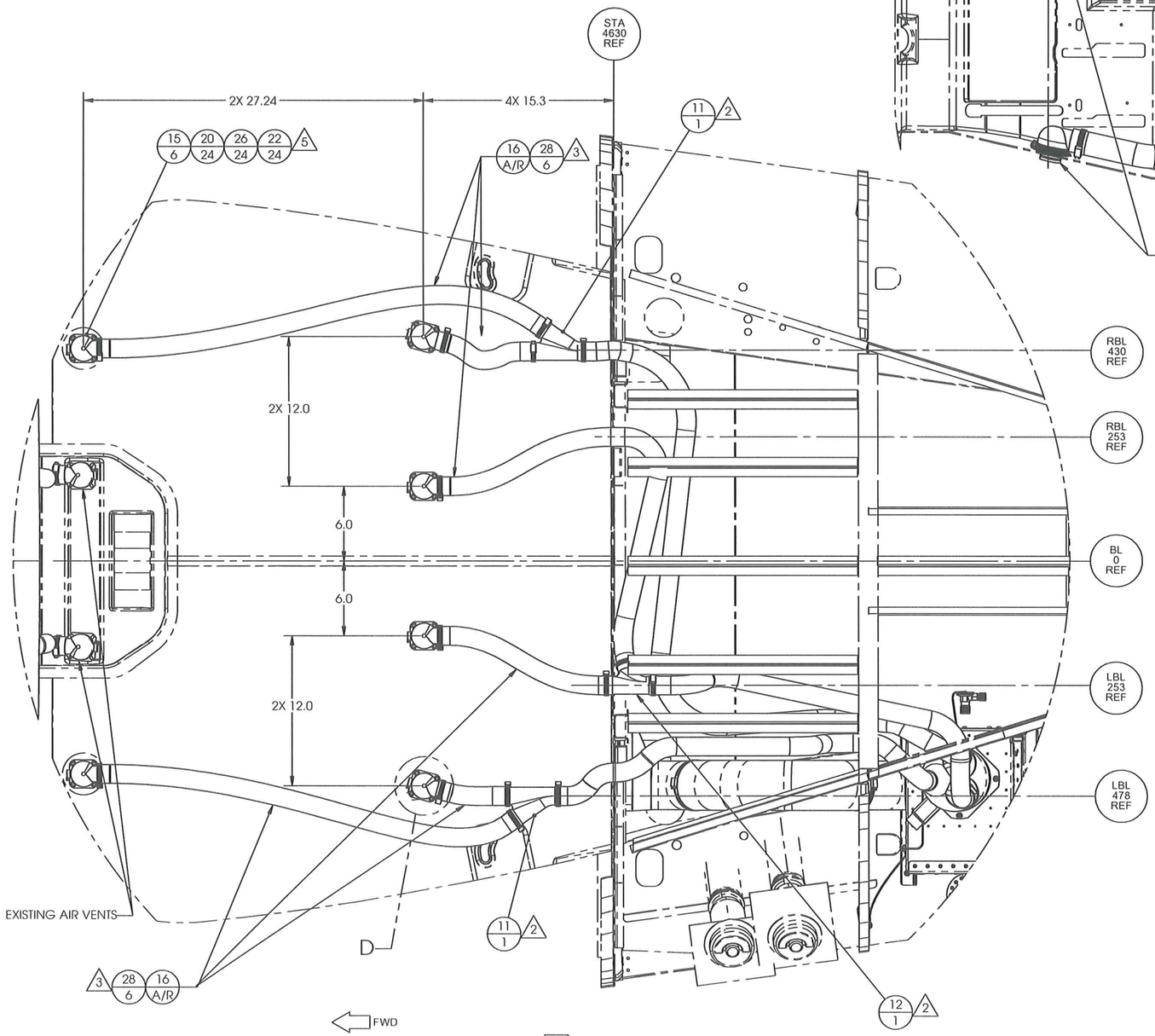
TITLE: AIR DUCTING INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-600	D

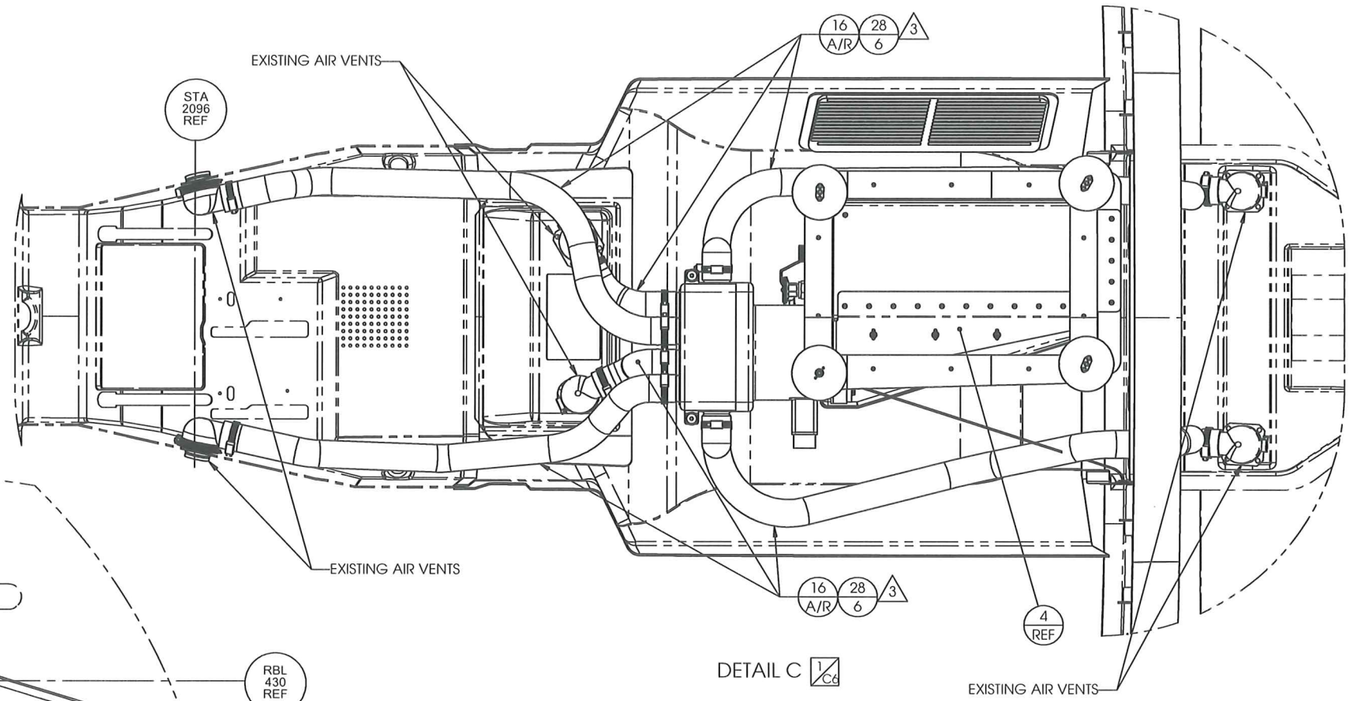
SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 8



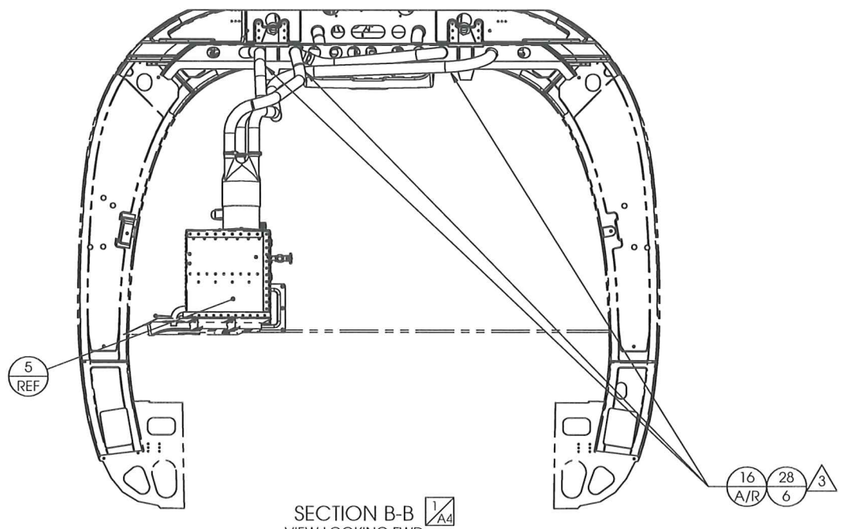
DETAIL D
(6 PLCS)



DETAIL A 1/D3
(VIEW LOOKING DOWN)



DETAIL C 1/C4



SECTION B-B 1/A4
VIEW LOOKING FWD

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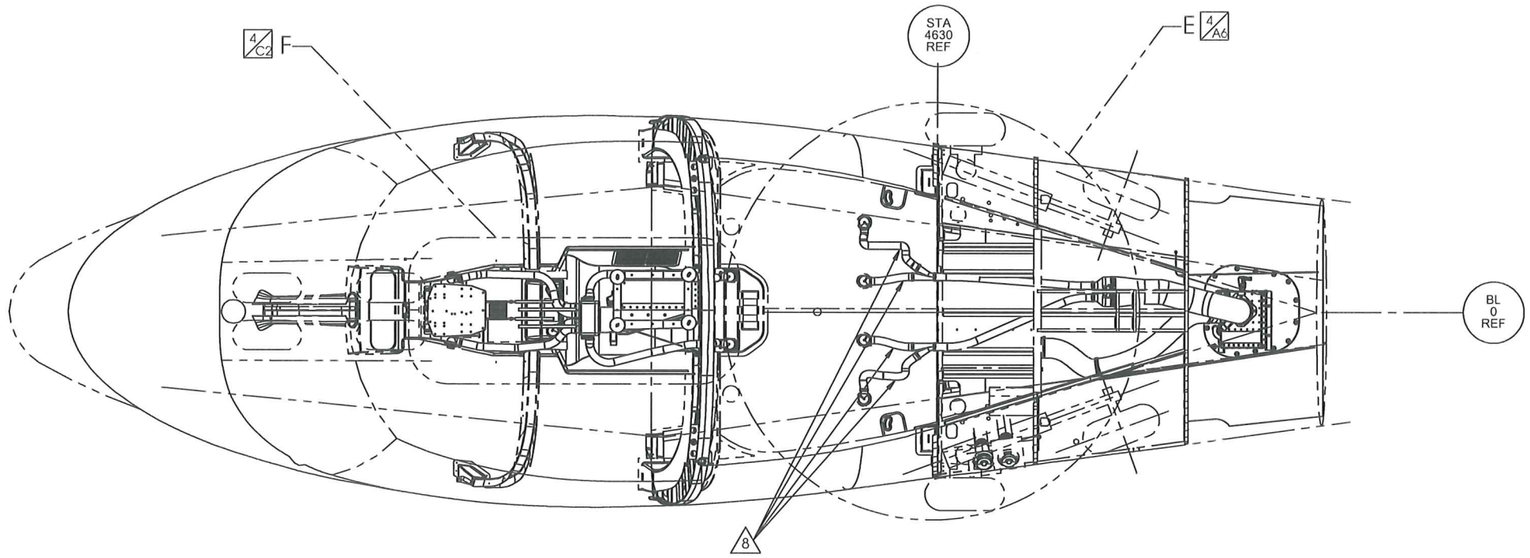
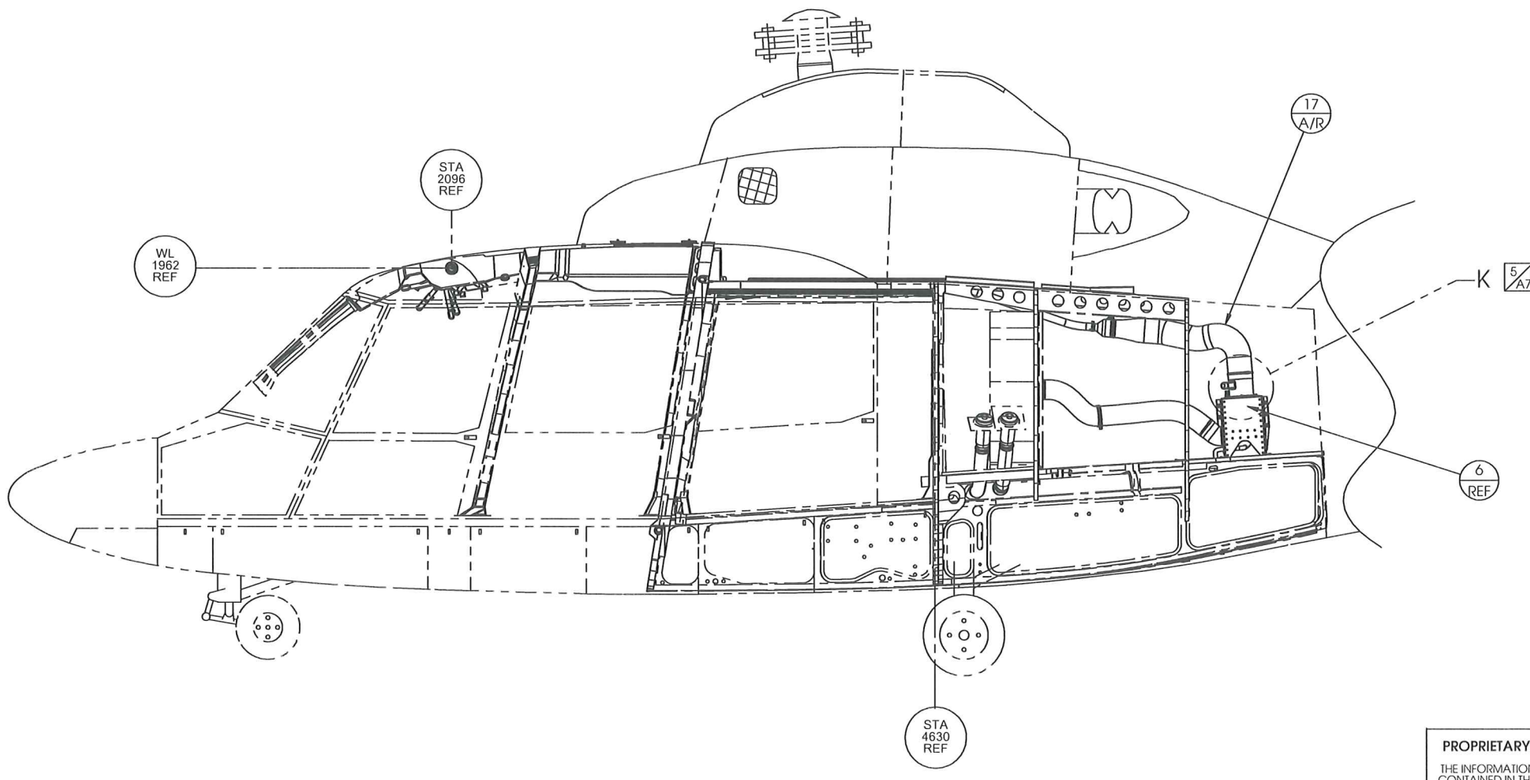
TITLE:
AIR DUCTING INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-600	D

SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 8





-02 AIR DUCTING INSTALLATION

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Fort Worth, Texas 76106
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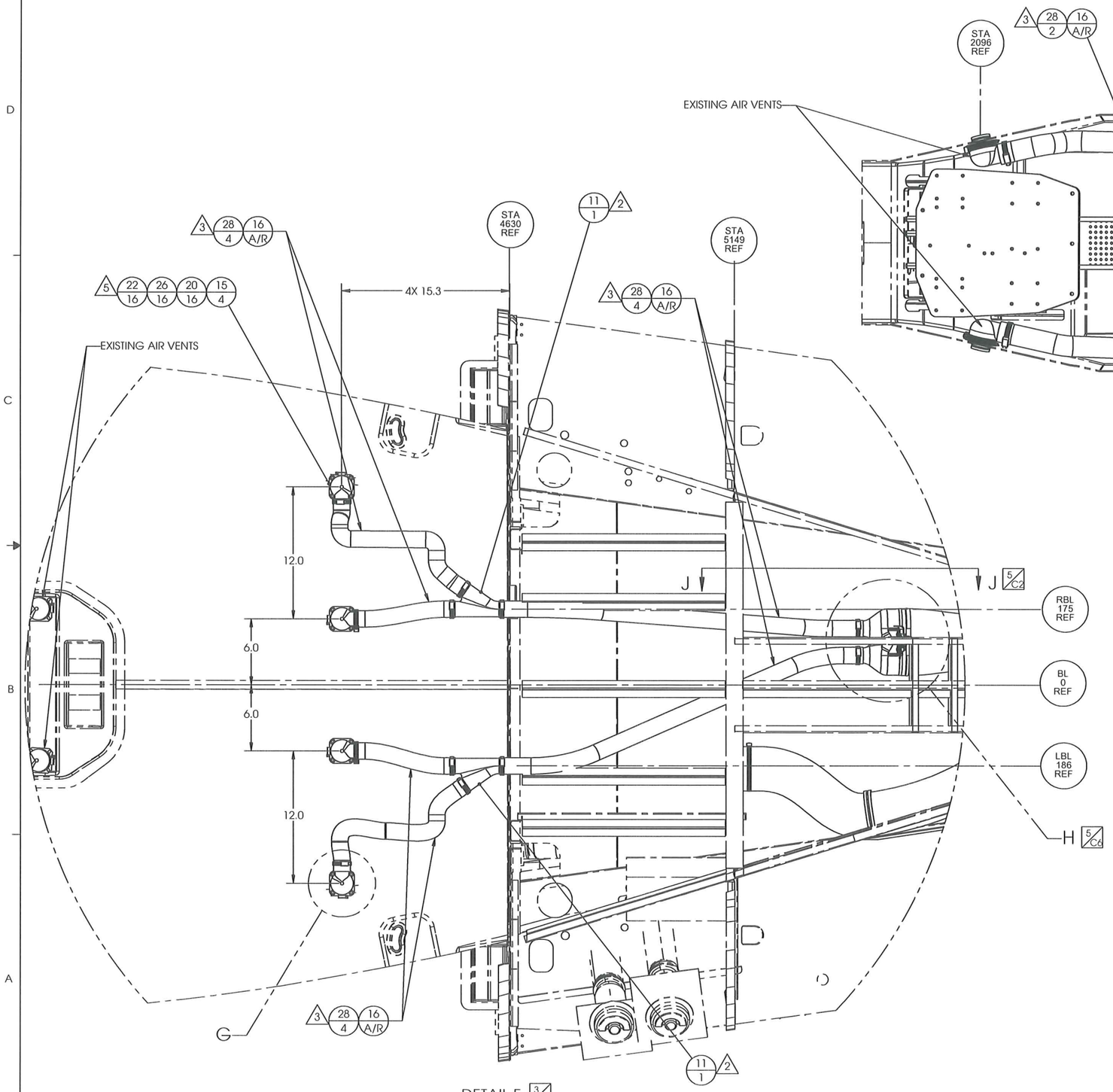
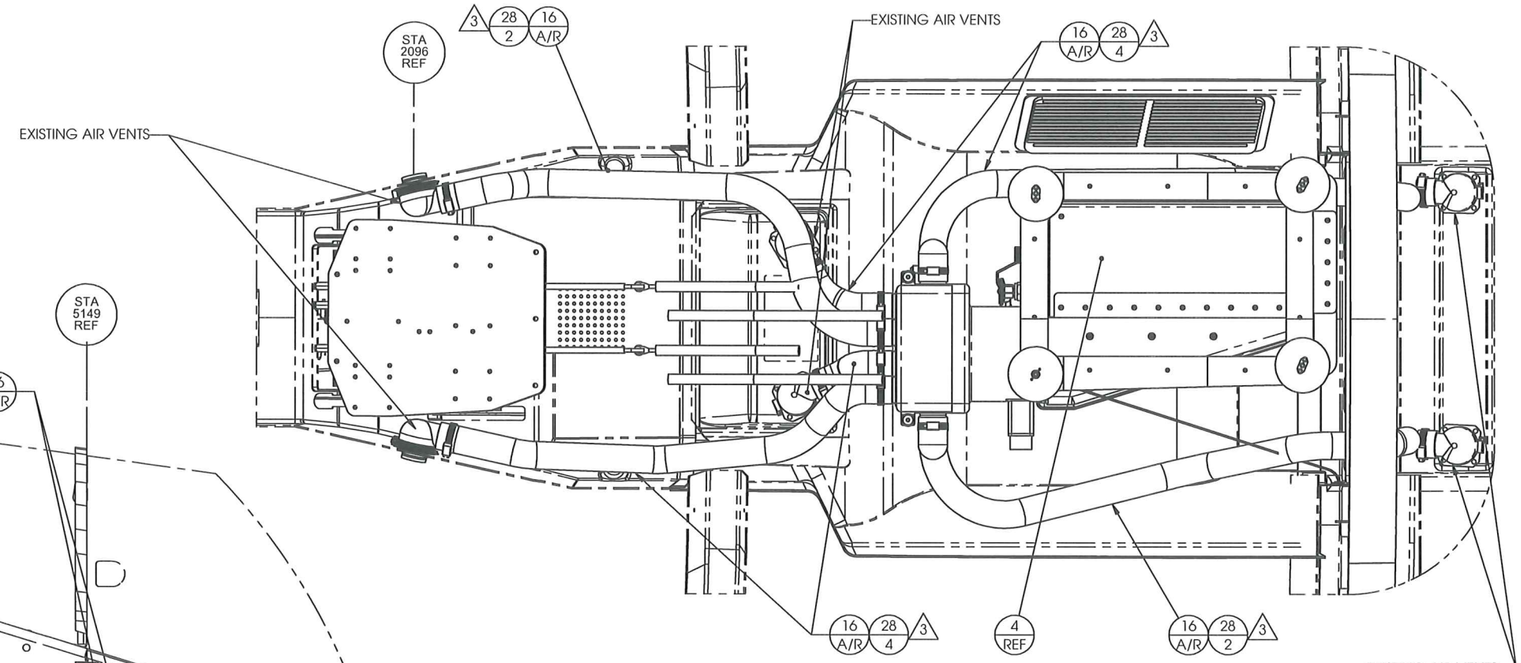
TITLE: AIR DUCTING INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-600	D

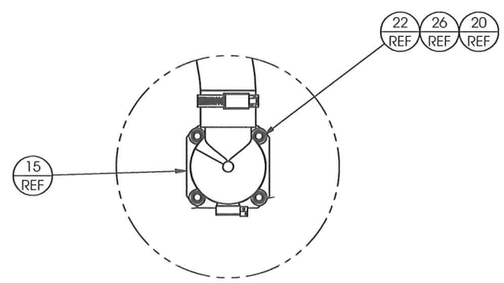
SCALE: NONE | WEIGHT: N/A | SHEET 3 OF 8



DETAIL E



DETAIL F



DETAIL G
(4 PLCS)

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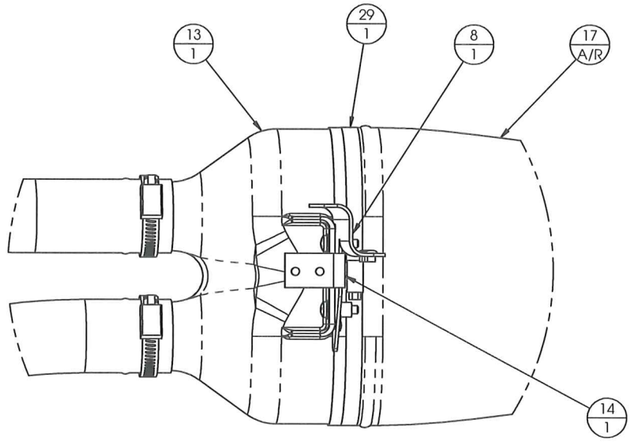
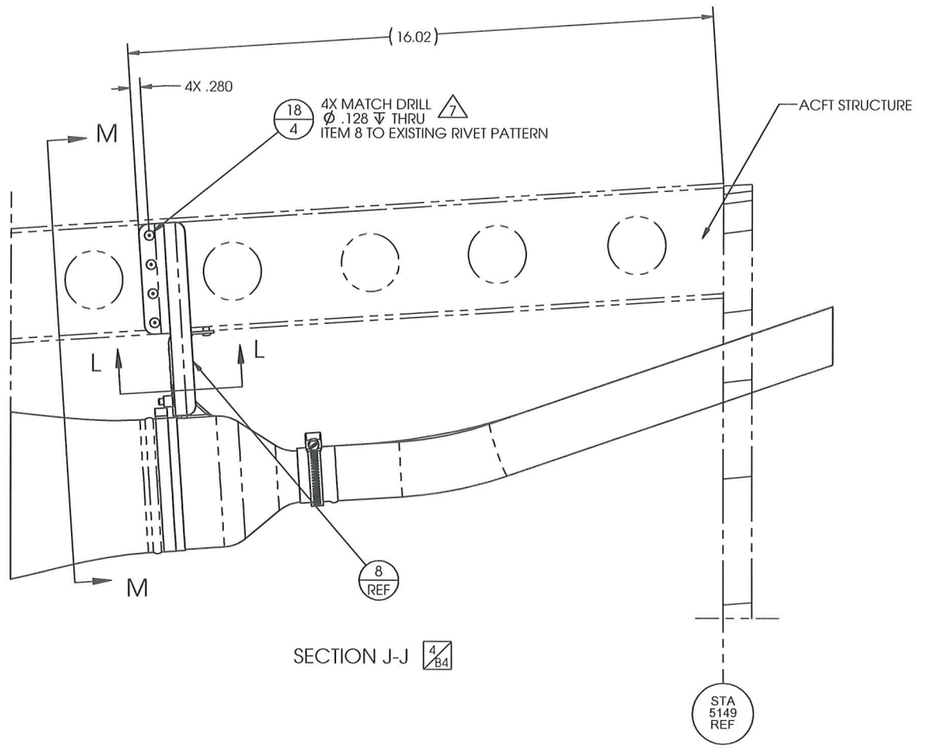
TITLE: AIR DUCTING INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-600	D

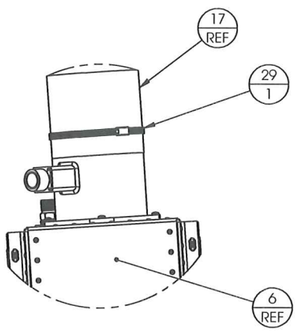
SCALE: NONE | WEIGHT: N/A | SHEET 4 OF 8



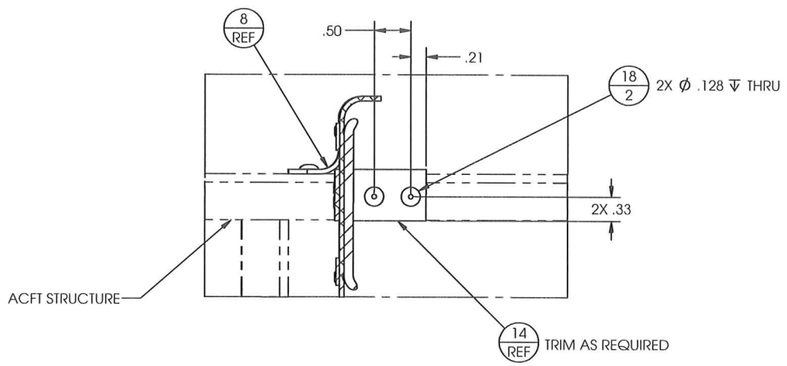
DETAIL H [4/B4]



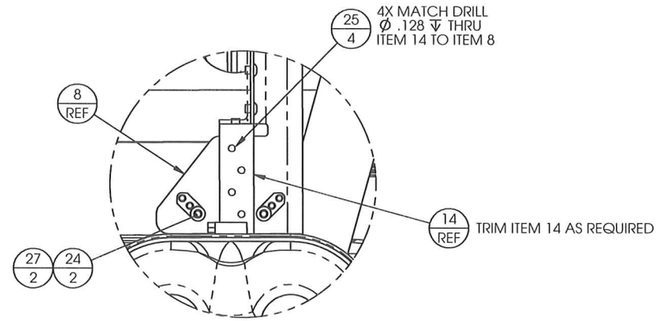
SECTION J-J [4/B4]



DETAIL K [3/B2]



SECTION L-L



SECTION M-M

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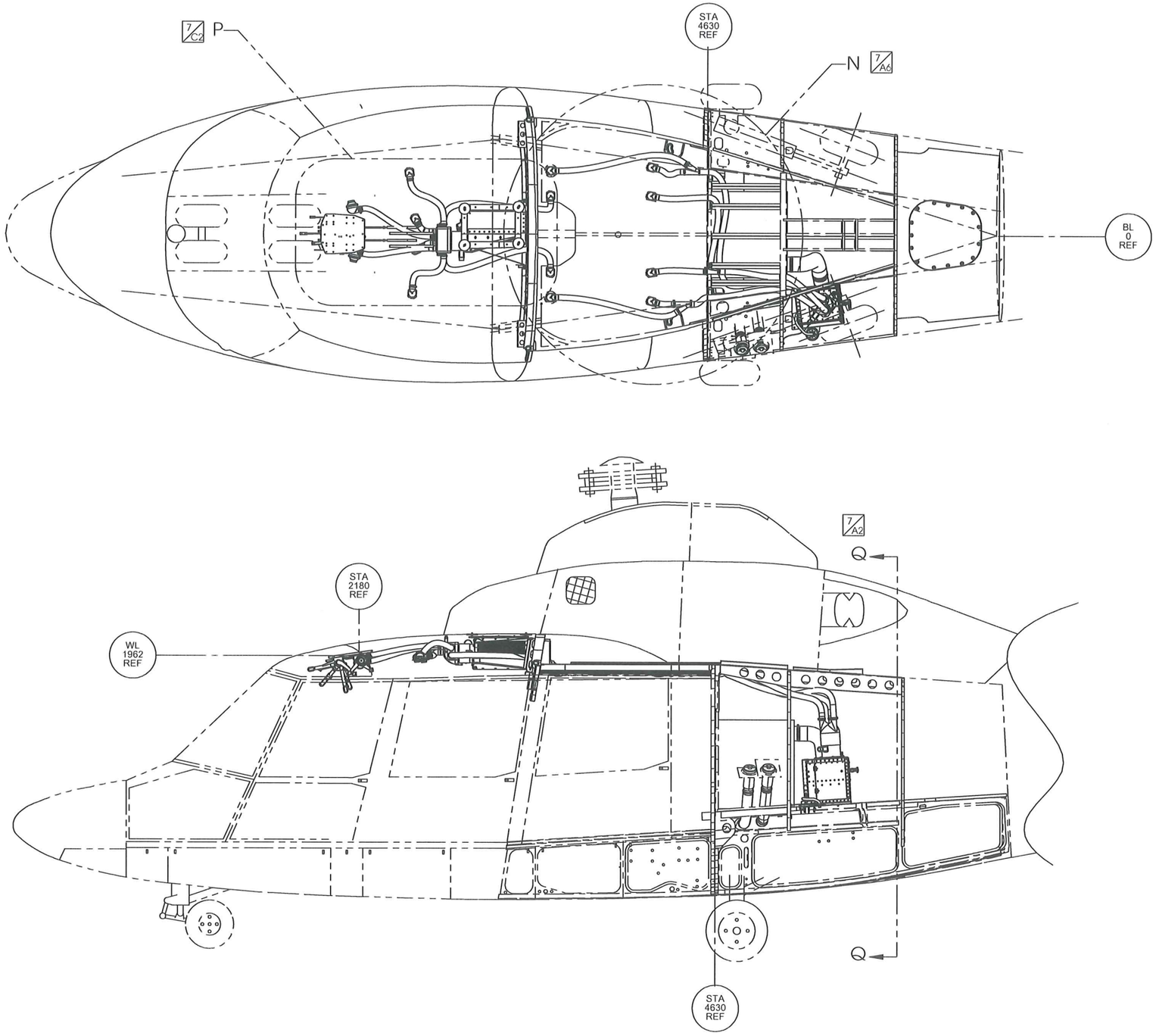
TITLE: AIR DUCTING INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-600	D

SCALE: NONE | WEIGHT: N/A | SHEET 5 OF 8



-03 AIR DUCTING INSTALLATION

RSG AERODESIGN
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Fort Worth, Texas 76106
(817) 625-9000
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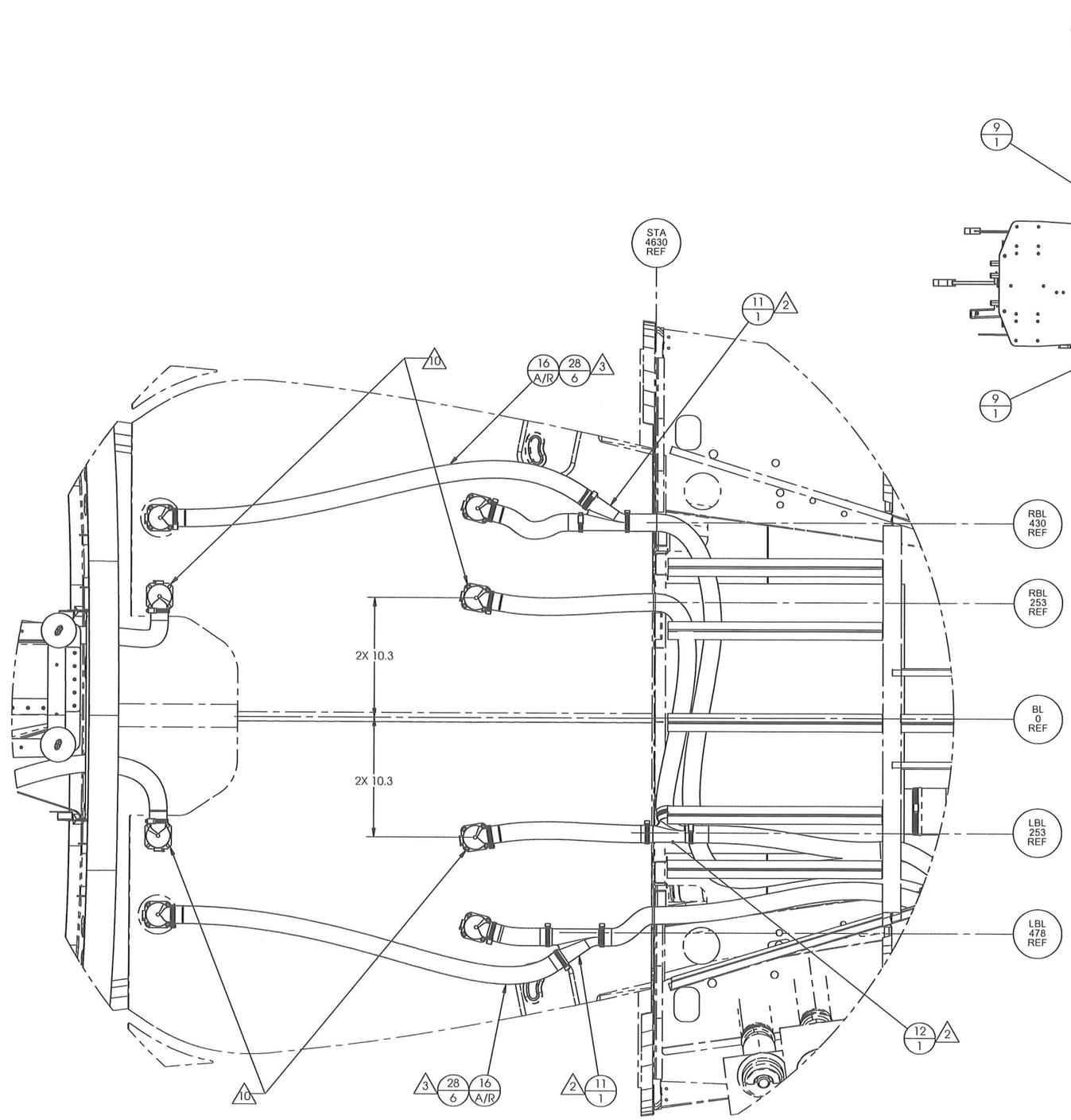
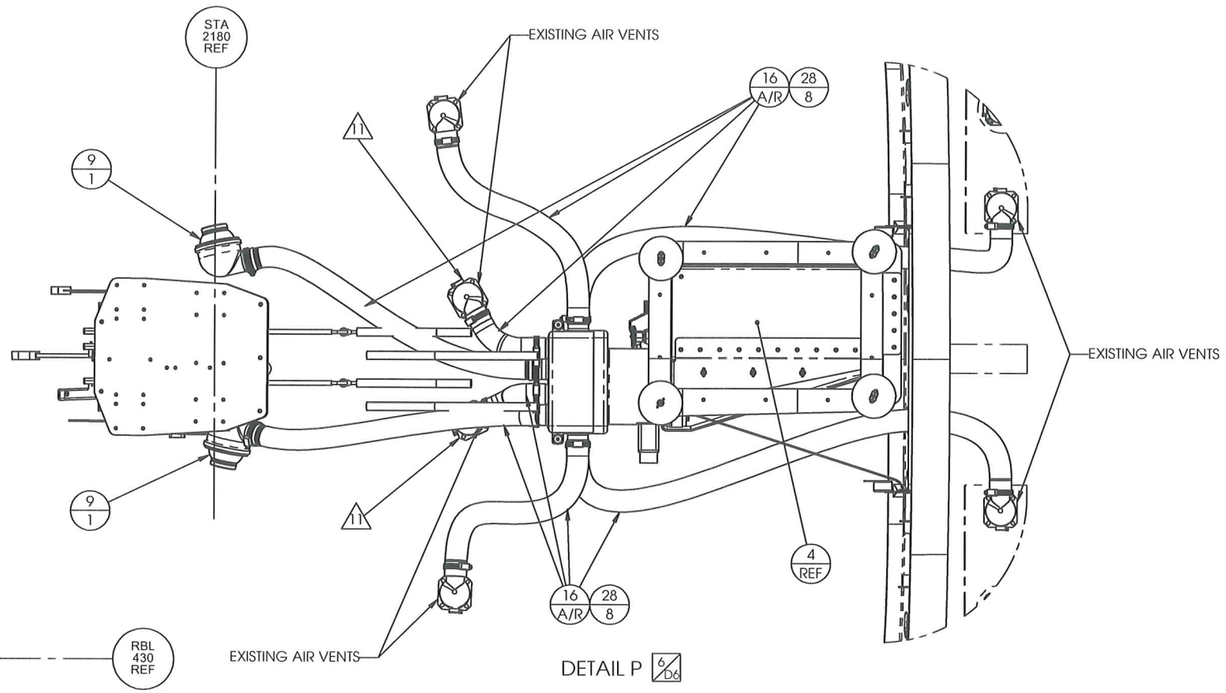
TITLE: AIR DUCTING INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-600	D

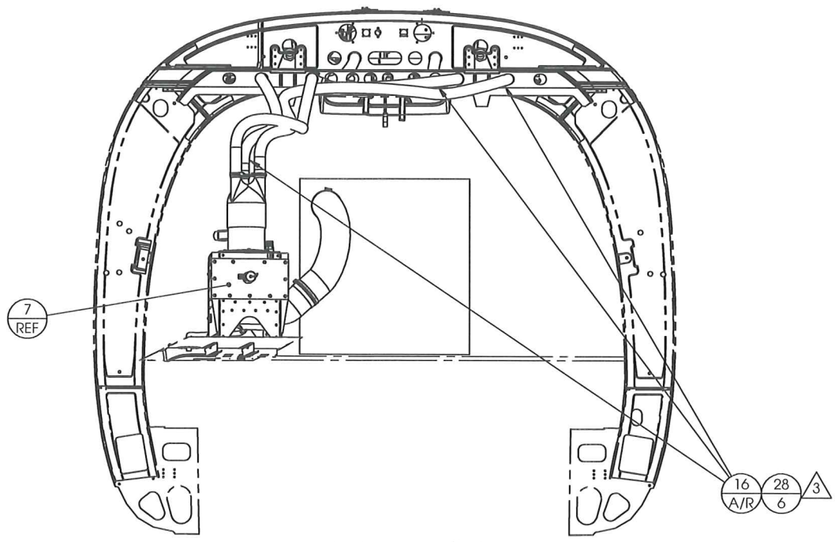
SCALE: NONE | WEIGHT: N/A | SHEET 6 OF 8



DETAIL N
(ALL AIR VENTS EXISTING)



DETAIL P 6/D6



SECTION Q-Q 6/C3

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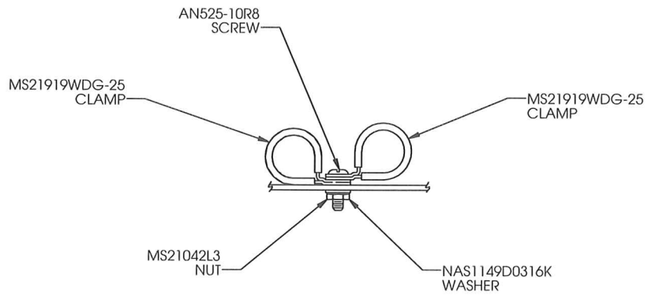
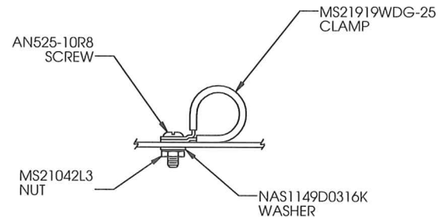
TITLE: AIR DUCTING INSTALLATION

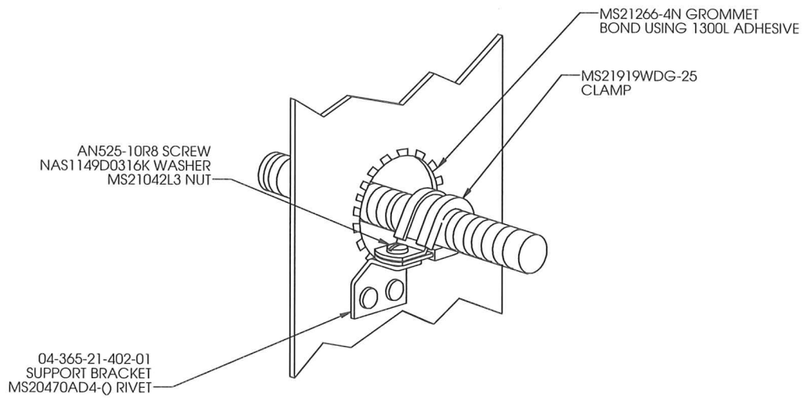
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-600	D

SCALE: NONE | WEIGHT: N/A | SHEET 7 OF 8



TYPICAL MOUNTING HARDWARE
FOR MS21919WDG-25 CLAMPS





CLAMP AT A BULKHEAD HOLE
USING AN ANGLE BRACKET WITH TWO
POINT FASTENING

GENERAL INSTALLATION INFORMATION

RSG AERODESIGN
3900 Falcon Way West
Hangar 16S
Fort Worth, Texas 76106
(817) 625-9000
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TITLE: AIR DUCTING INSTALLATION

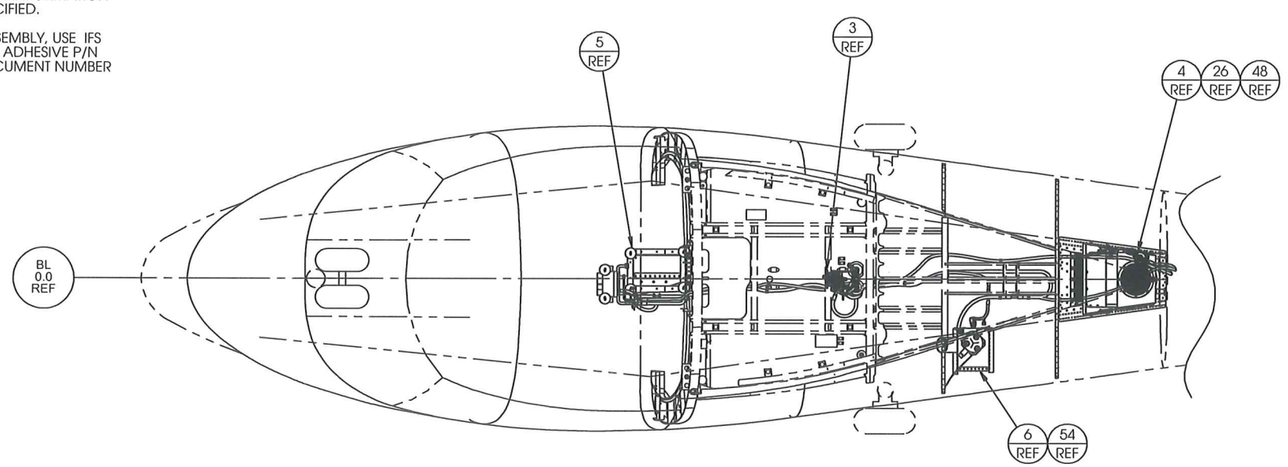
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-600	D

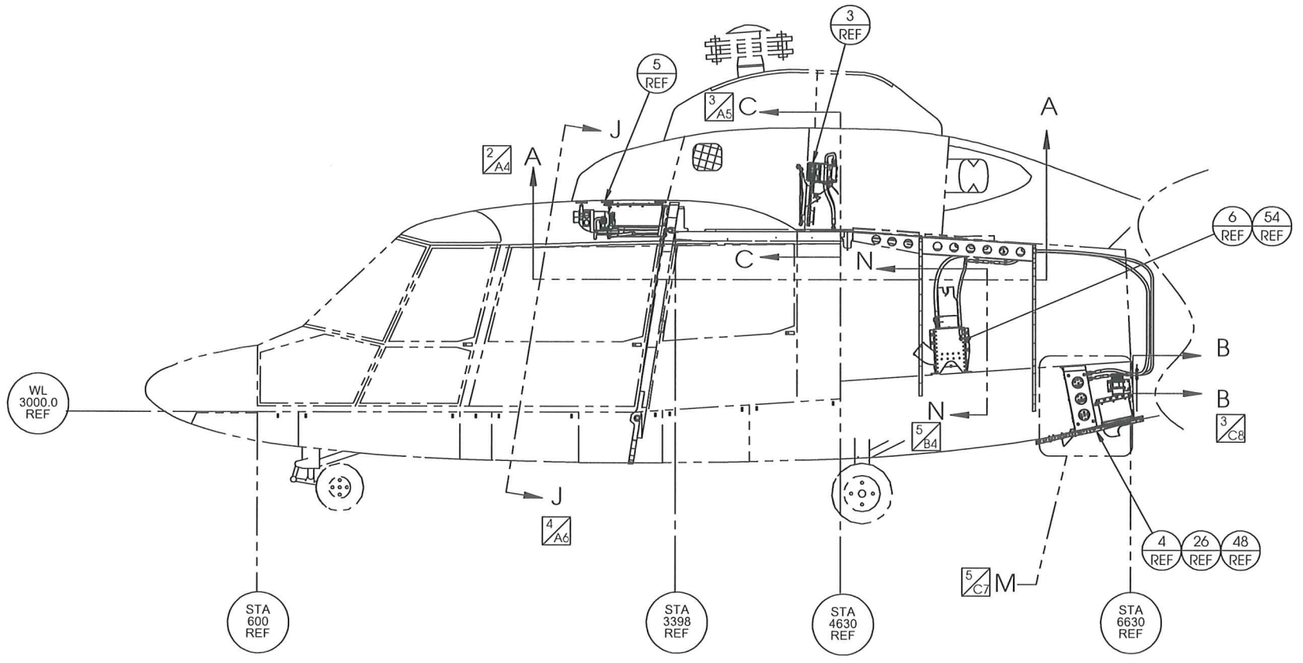
SCALE: NONE | WEIGHT: N/A | SHEET 8 OF 8

NOTES:

1. INSTALL HARDWARE IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510001.
2. REFERENCE RSG AERODESIGN DRAWING NUMBER 01-365-21-700 FOR REFRIGERANT SYSTEM SCHEMATIC.
3. LOCATE APPROXIMATELY AS SHOWN IN PARENT VIEW.
4. INSTALL USING GENERAL INSTALLATION INFORMATION ON SHEET 11, UNLESS OTHERWISE SPECIFIED.
5. FOR ACFT WITHOUT EXISTING CUP ASSEMBLY, USE IFS CUP P/N 510020. BOND USING HYSOL ADHESIVE P/N EA934NA IAW RSG AERODESIGN DOCUMENT NUMBER 20R00510006.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO# 01-365-21-500NC1.	H.SAUKKONEN	P. BAN	10/11/2012
B	INCORPORATED ECO# 01-365-21-500A1.	C. WELLS	P. BAN	02/12/2013
C	INCORPORATED ECO# 01-365-21-500B1.	C. WELLS	P. BAN	03/04/2013
D	INCORPORATED ECO# 01-365-21-500C1.	S. THORNTON	P.B	5.9.13





1	1	55	09-365-21-005-02	# 10 FITTING	
	REF	54	01-365-21-400-03	AFT EVAPORATOR INSTALLATION	
6	6	53	MS27039-1-18	SCREW	
6	6	52	MS21919WDG8	CLAMP	
8	8	51	MS21919WDG10	CLAMP	
13	13	50	MS21919WDG11	CLAMP	
REF		49	01-365-21-400-02	AFT EVAPORATOR INSTALLATION	
REF	REF	48	01-365-21-200-03	CONDENSER INSTALLATION	
A/R	A/R	47	1300L	ADHESIVE	3M
REF	REF	46	09-365-21-201-01	RECEIVER/DRYER BOTTLE	
6	6	45	NAS43DD-3-32FC	SPACER	
10	10	44	MS35842-10	HOSE CLAMP	
2	2	43	NAS1149D1490H	WASHER	
REF	REF	42	MS35489-78	GROMMET	
REF	REF	41	MS35489-75	GROMMET	
4	4	40	MS21266-4N	EDGING GROMMET	
55	55	39	MS21042L3	NUT	
1	1	38	AN924-8D	NUT	
1	1	37	AN924-10D	NUT	
40	40	36	NAS1149F0332P	WASHER	
13	13	35	MS21919WDG9	CLAMP	
40	40	34	MS20470AD4-( )	RIVET	
34	34	33	AN525-10R8	SCREW	
10	10	32	04-365-21-402-01	SUPPORT BRACKET	
2	2	31	91355K49	BARBED TEE FITTING	
REF	REF	30	09-365-21-306-01	HIGH PRESSURE SWITCH	
REF	REF	29	09-365-21-305-01	LOW PRESSURE SWITCH	
20'	20'	28	09-365-21-007-01	DRAIN LINE	
1	1	27	09-365-21-003-01	# 8 FITTING	
REF	REF	26	01-365-21-200-02	CONDENSER INSTALLATION	
6	6	25	04-365-21-502-01	HOSE MOUNT BRACKET	
2	2	24	04-365-21-401-01	SUPPORT BRACKET	
REF	REF	23	04-365-21-221-01	HOSE SPLIT FLANGE	
1	1	22	04-365-21-102-01	# 8 COMPRESSOR FITTING	
1	1	21	04-365-21-101-01	# 10 HOSE FITTING	
1	1	20	03-365-21-011-01	# 8 HOSE ASSY, TO COND	
1	1	19	03-365-21-010-01	# 10 HOSE ASSY, FROM AFT EVAP	
1	1	18	03-365-21-009-01	# 6 HOSE ASSY, TO AFT EVAP	
1	1	17	03-365-21-008-01	# 10 HOSE ASSY, FROM # 10 SERVICE PORT	
1		16	03-365-21-007-02	# 6 HOSE ASSY, FROM COND	
	1	15	03-365-21-007-01	# 6 HOSE ASSY, FROM COND	
1	1	14	03-365-21-006-01	# 10 HOSE ASSY, FROM # 10 T FITTING	
1		13	03-365-21-005-02	# 6 HOSE ASSY	
	1	12	03-365-21-005-01	# 6 HOSE ASSY	
1	1	11	03-365-21-004-01	# 10 HOSE ASSY, FROM FWD EVAP	
1	1	10	03-365-21-003-01	# 6 HOSE ASSY, TO FWD EVAP	
1	1	9	03-365-21-002-01	# 10 HOSE ASSY, TO COMP	
1	1	8	03-365-21-001-01	# 8 HOSE ASSY, FROM COMP	
REF	REF	7	02-365-21-204-01	DOUBLER ASSEMBLY	
	REF	6	01-365-21-400-01	AFT EVAPORATOR INSTALLATION	
REF	REF	5	01-365-21-300-01	FWD EVAPORATOR INSTALLATION	
REF	REF	4	01-365-21-200-01	CONDENSER INSTALLATION	
REF	REF	3	01-365-21-100-01	COMPRESSOR INSTALLATION	
--		2	-02	REFRIGERANT HOSE INSTALLATION	
	--	1	-01	REFRIGERANT HOSE INSTALLATION	
-02	-01	ITEM	PART NUMBER	DESCRIPTION	VENDOR

-01 REFRIGERANT HOSE INSTALLATION

UNLESS OTHERWISE SPECIFIED:
- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRAICHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005/-.001
.2510 THRU .500	+.006/-.001
.5010 THRU .750	+.008/-.001
.7510 THRU 1.000	+.010/-.001
1.001 THRU 2.000	+.012/-.001

365N-00-2
NEXT ASSEMBLY

DESIGN: R. Latham	DATE:	05/20/2011
DRAWN: H.Saukkonen	DATE:	01/17/2012
CHECKED: J. Krebs	DATE:	03/23/2012
PROJECT ENG: J. Krebs	DATE:	09/12/2012
APPROVED: P. Ban	DATE:	09/12/2012

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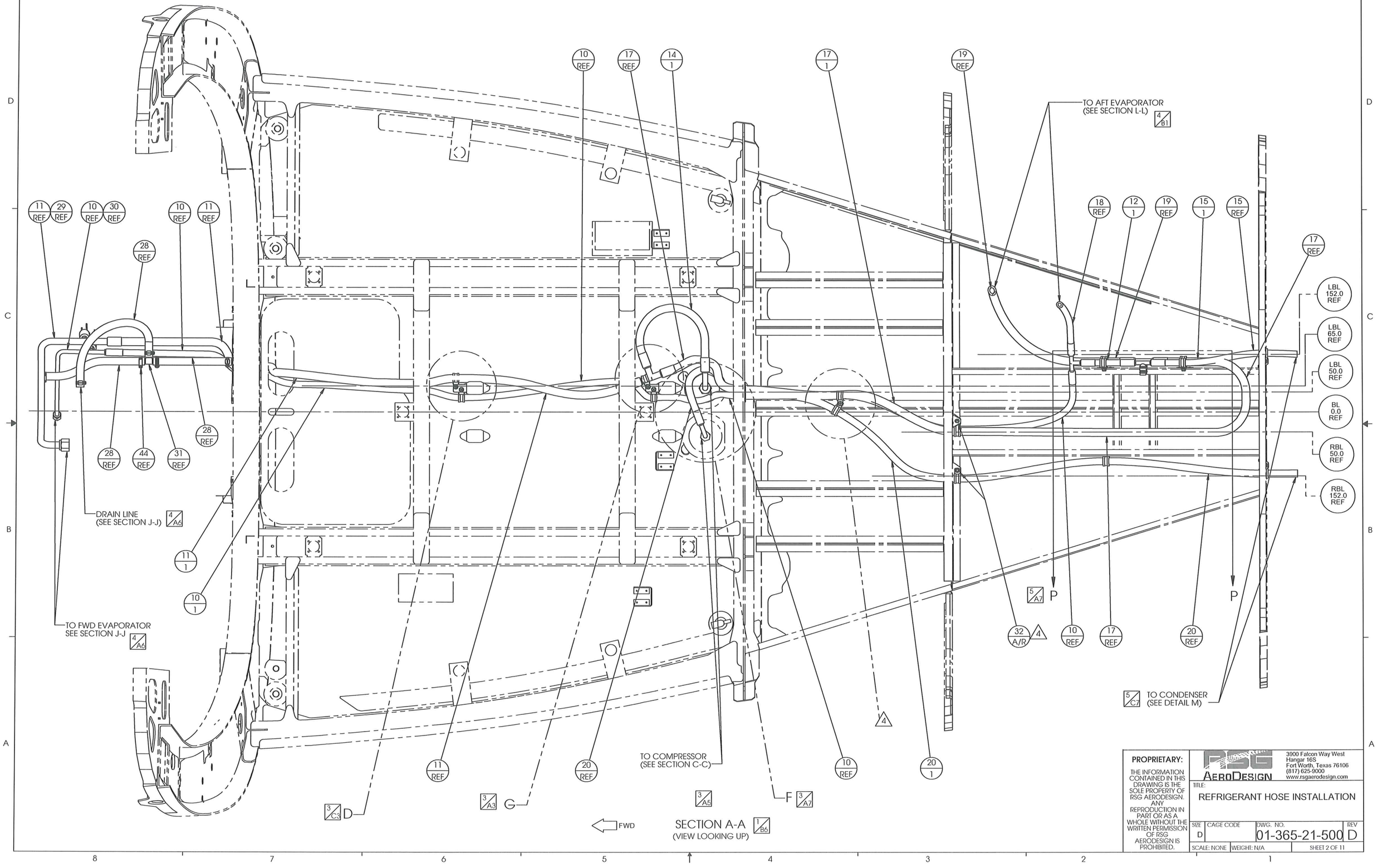
TITLE: REFRIGERANT HOSE INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 11



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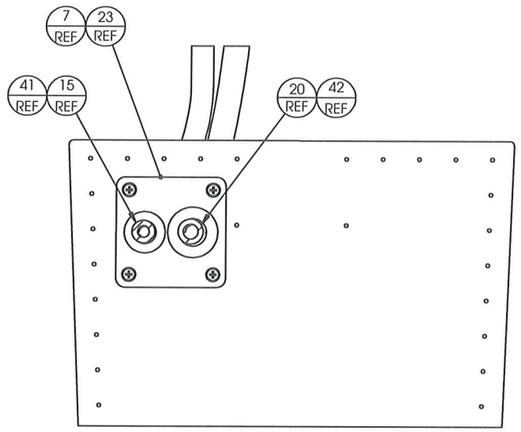
TITLE: REFRIGERANT HOSE INSTALLATION

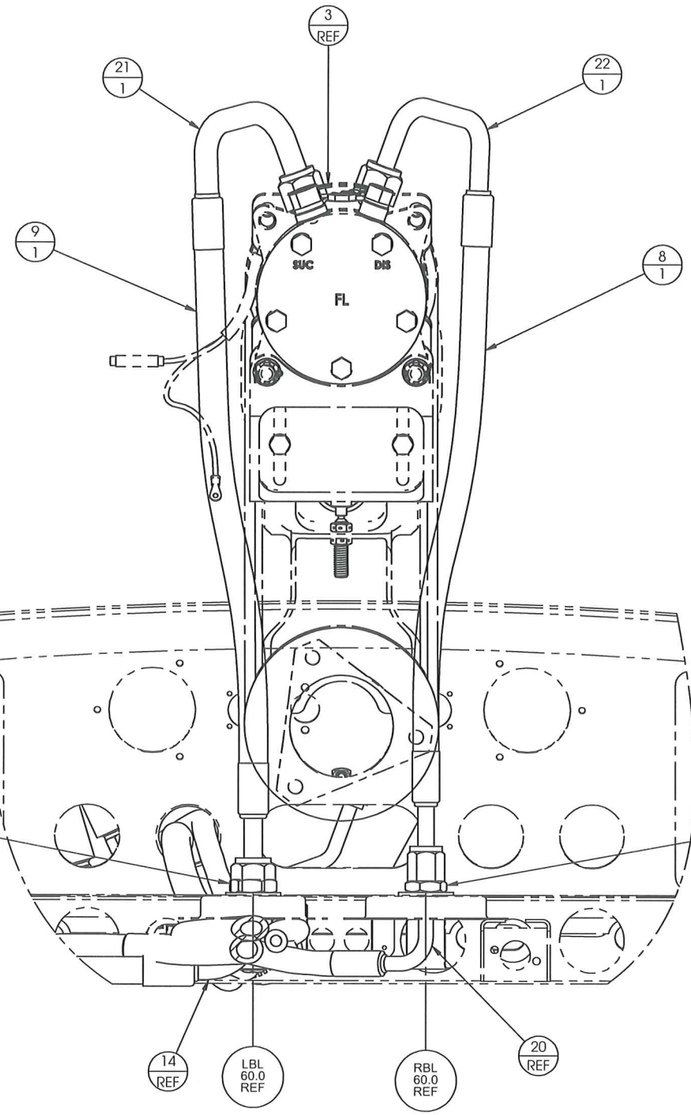
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 11



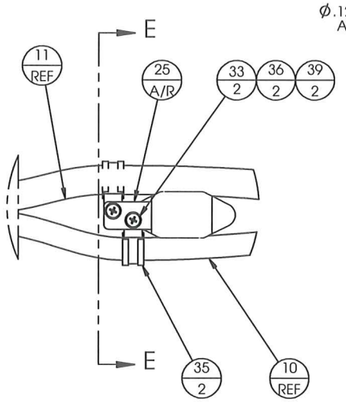
1/B3 SECTION B-B

(VIEW LOOKING AFT AT STA 6630)

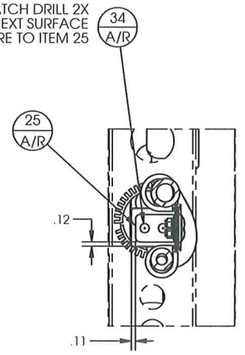


1/B5 SECTION C-C

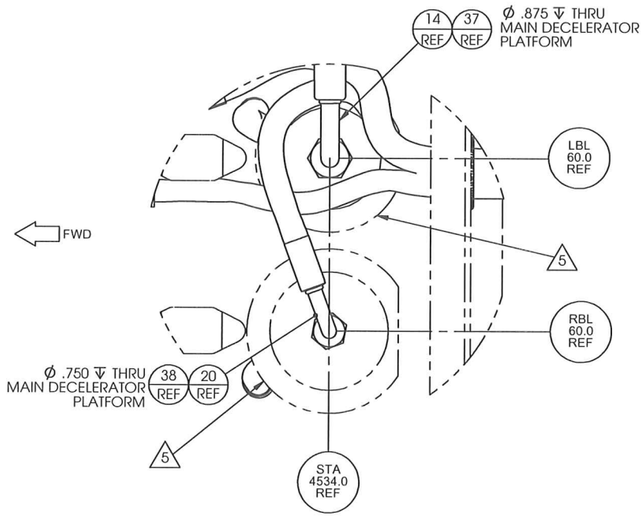
(VIEW LOOKING FORWARD AT STA 4630)



2/A7 DETAIL D 4

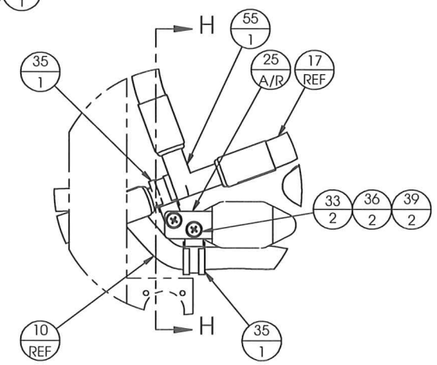


SECTION E-E

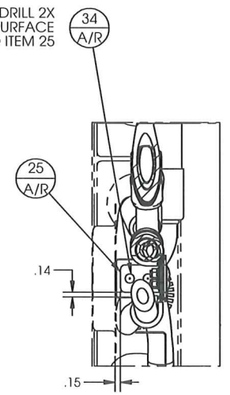


2/A4 DETAIL F

(VIEW LOOKING UP)



2/A6 DETAIL G 4



SECTION H-H

RSG AERODESIGN
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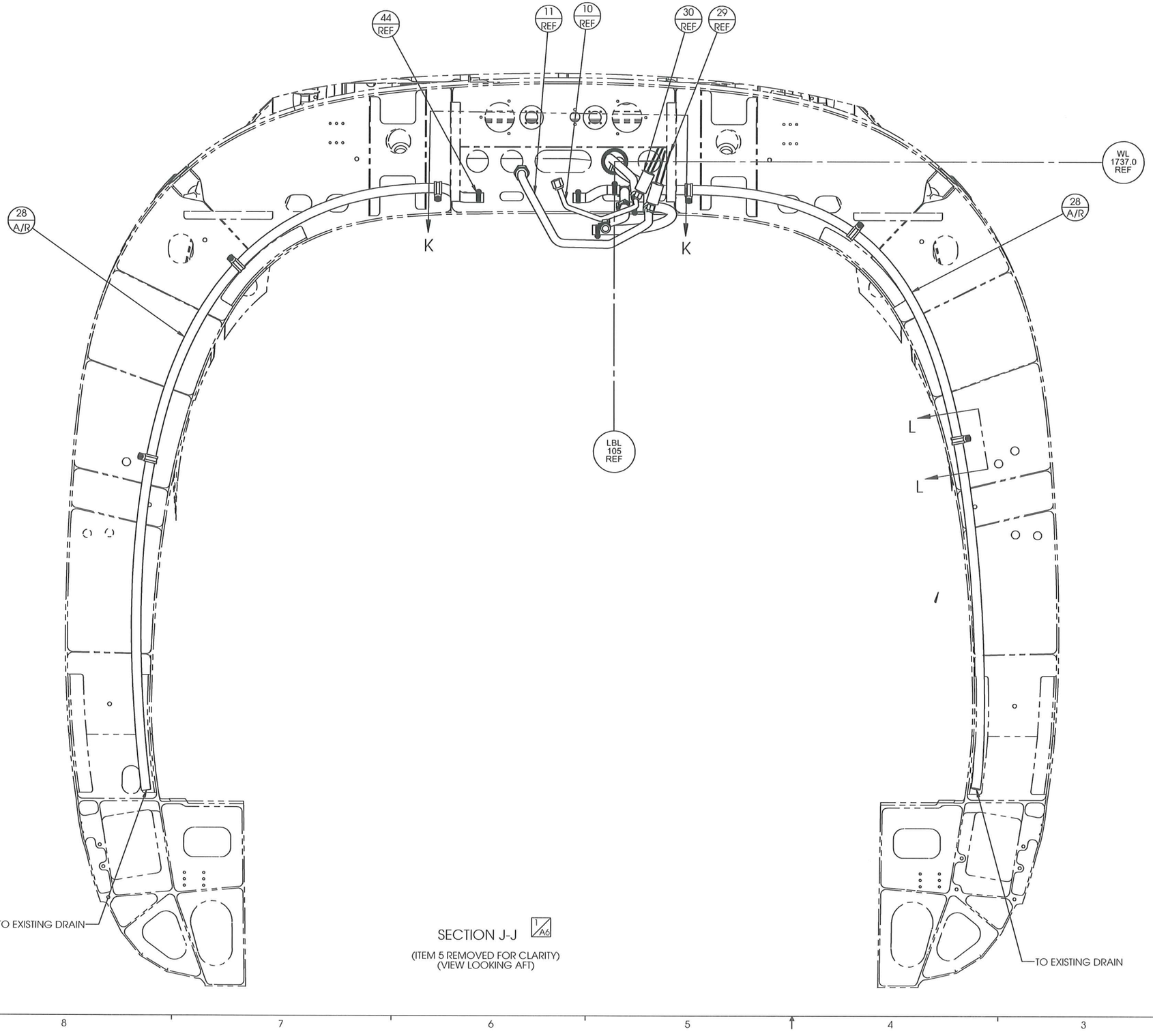
Hangar 16S
Fort Worth, Texas 76106
(817) 625-9000
www.rsgaerodesign.com

TITLE: REFRIGERANT HOSE INSTALLATION

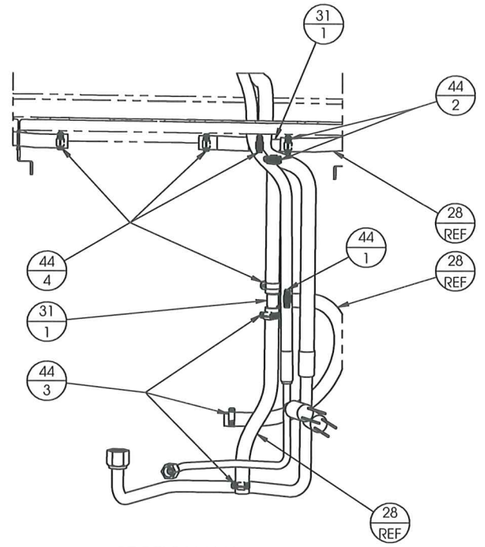
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 3 OF 11

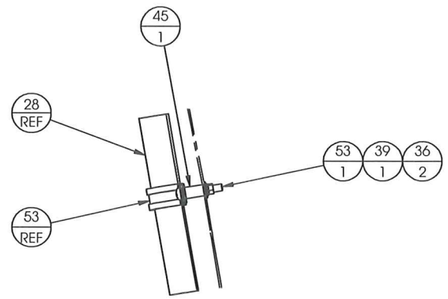


SECTION J-J (1/A6)

(ITEM 5 REMOVED FOR CLARITY)
(VIEW LOOKING AFT)



SECTION K-K



SECTION L-L (3)
(6 PLCS)

PROPRIETARY:

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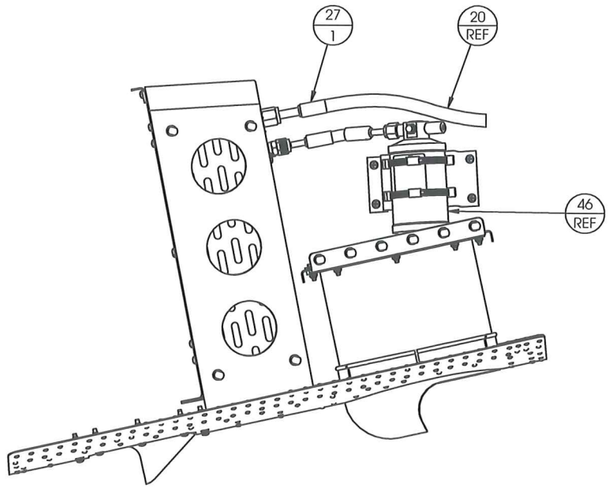
TITLE: REFRIGERANT HOSE INSTALLATION

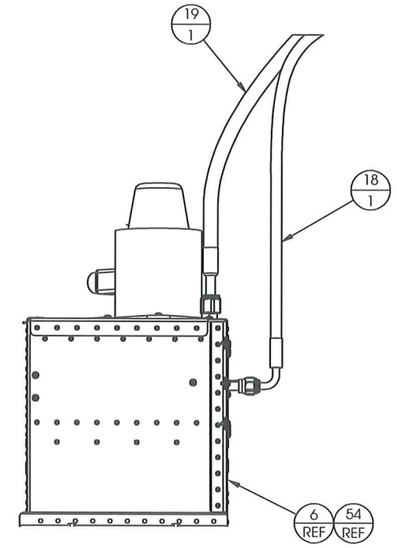
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 4 OF 11



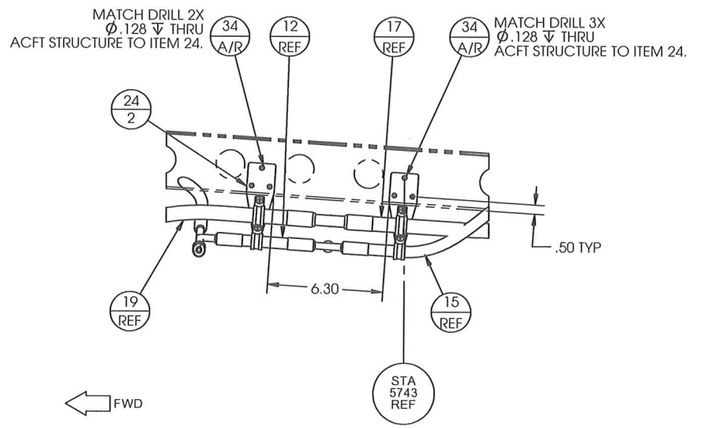
FWD

1/A4 DETAIL M



1/B4 SECTION N-N

(VIEW LOOKING FORWARD AT -01 AFT EVAPORATOR INSTALLATION)
(VIEW LOOKING AT SIDE OF -03 AFT EVAPORATOR INSTALLATION)



FWD

2/B2 SECTION P-P

(VIEW LOOKING INBOARD)

RSG AERODESIGN
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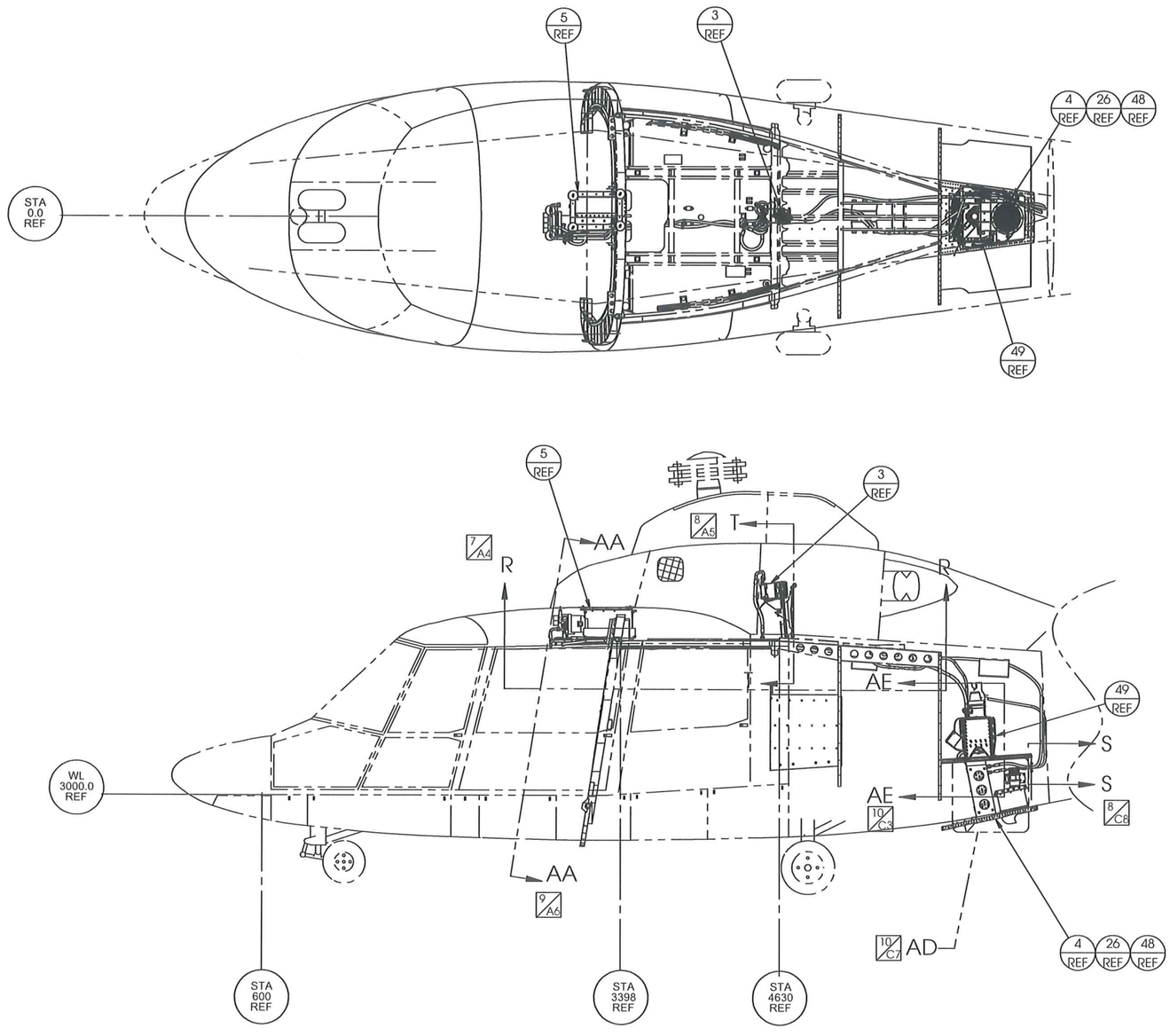
TITLE: REFRIGERANT HOSE INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 5 OF 11



-02 REFRIGERANT HOSE INSTALLATION

RSG AERODESIGN
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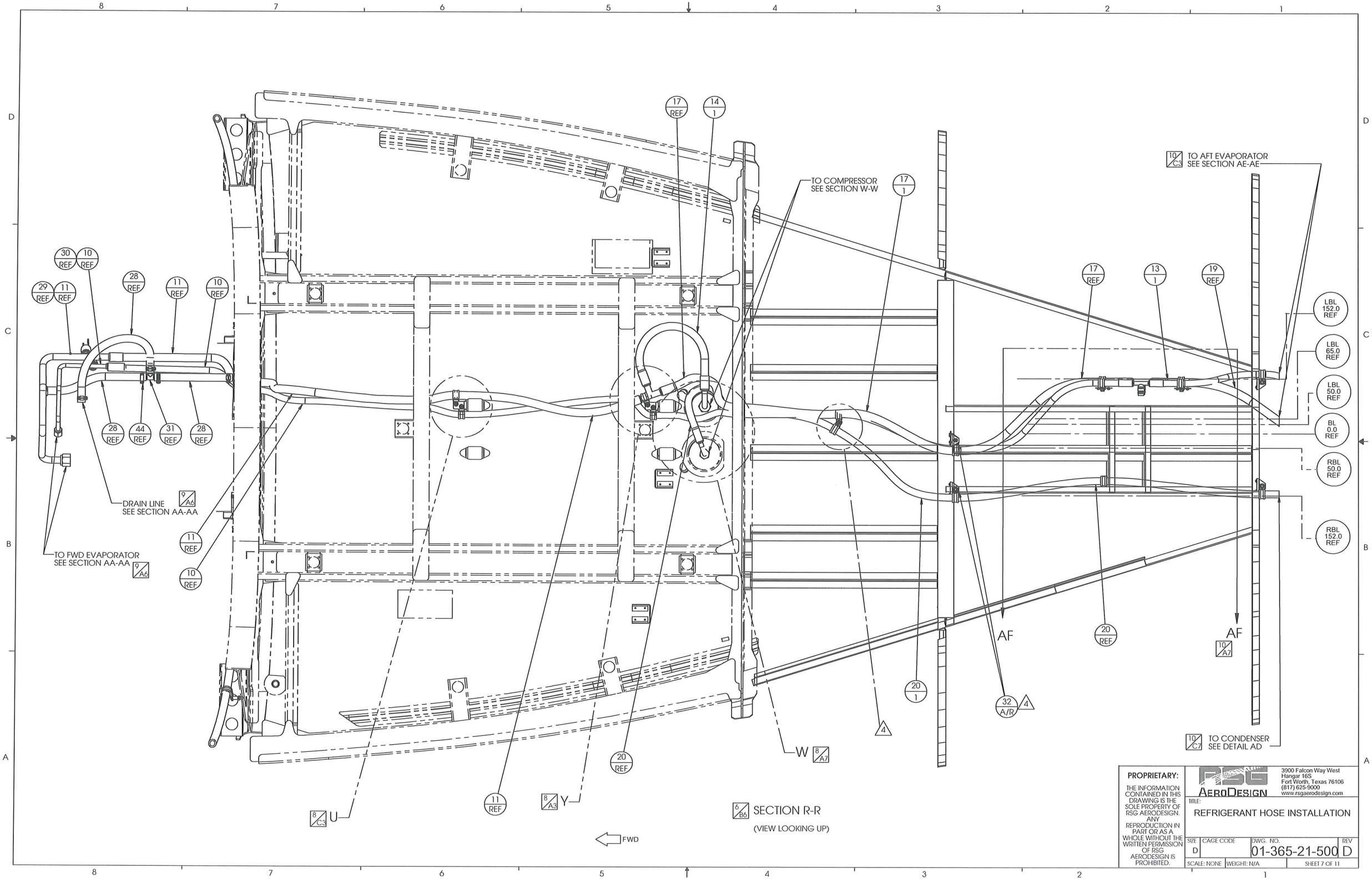
TITLE: REFRIGERANT HOSE INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 6 OF 11



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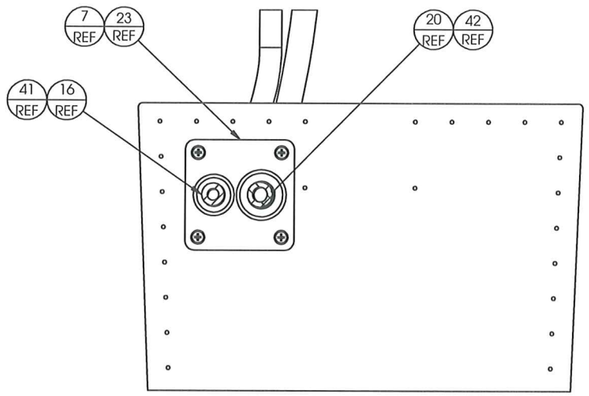
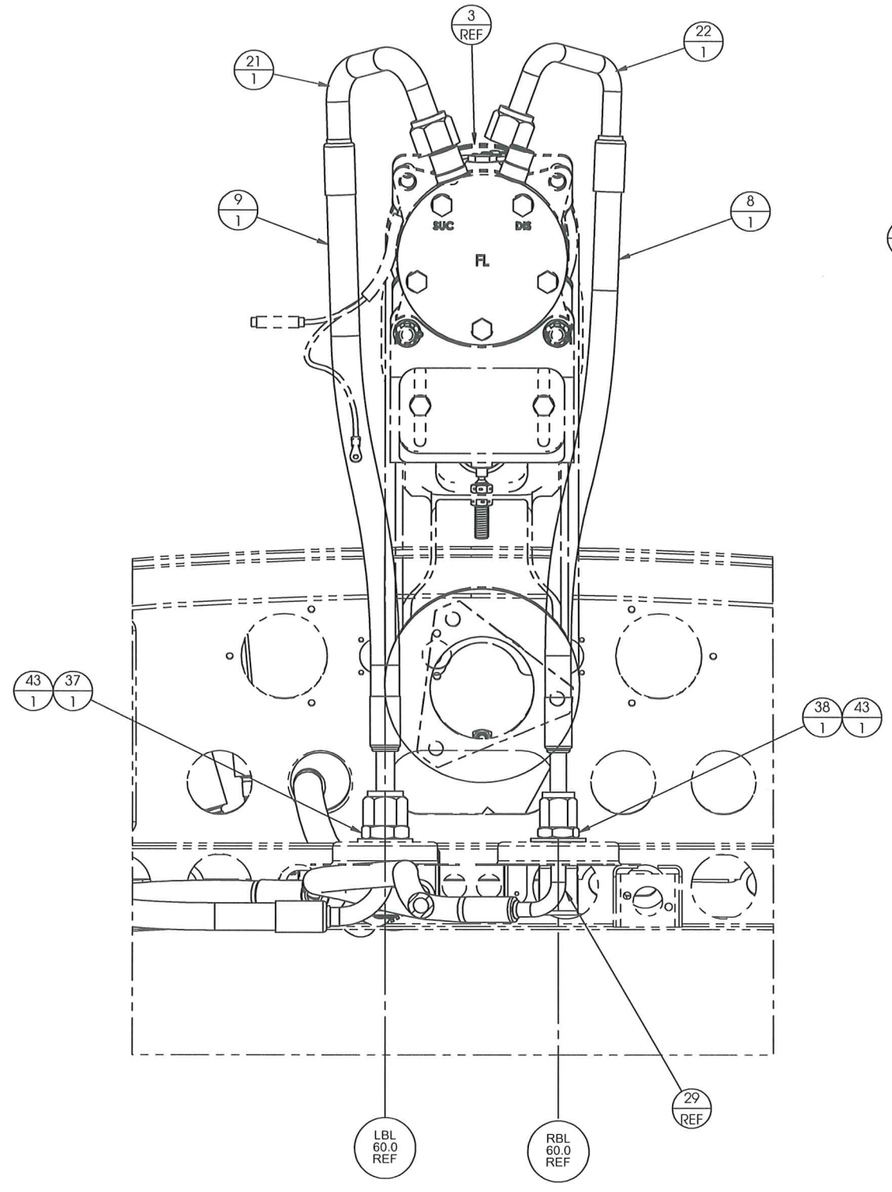
TITLE: REFRIGERANT HOSE INSTALLATION

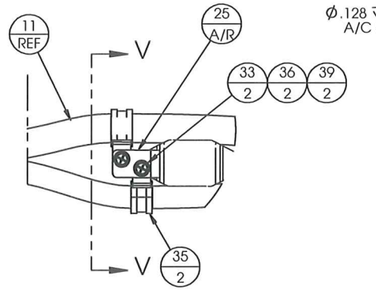
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 7 OF 11

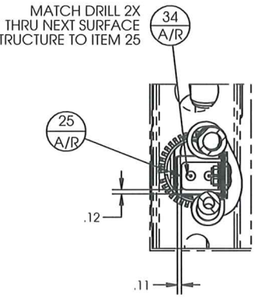


6/B3 SECTION S-S
(VIEW LOOKING AFT AT STA 6630)

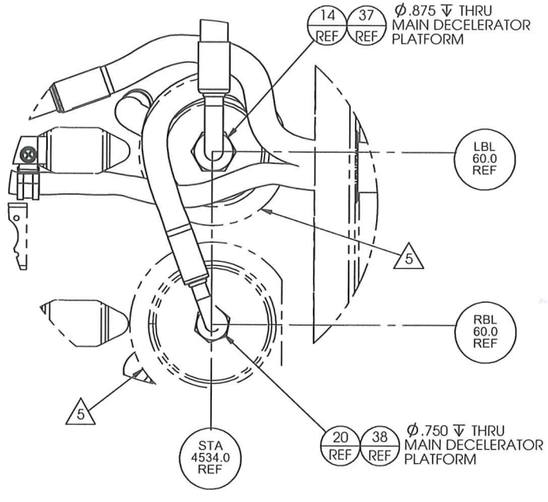




7/A7 DETAIL U

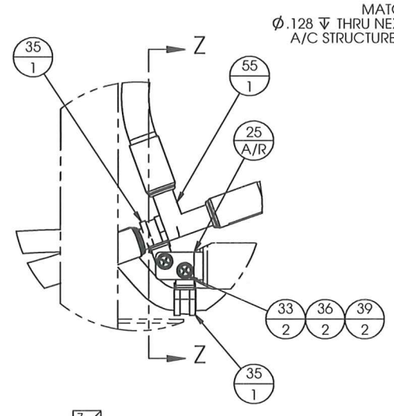


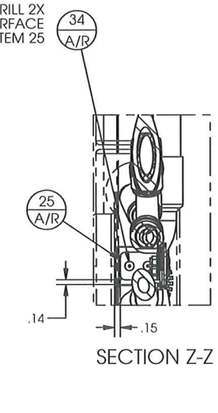
SECTION V-V



7/A4 DETAIL W

6/C5 SECTION T-T





SECTION Z-Z

7/A5 DETAIL Y

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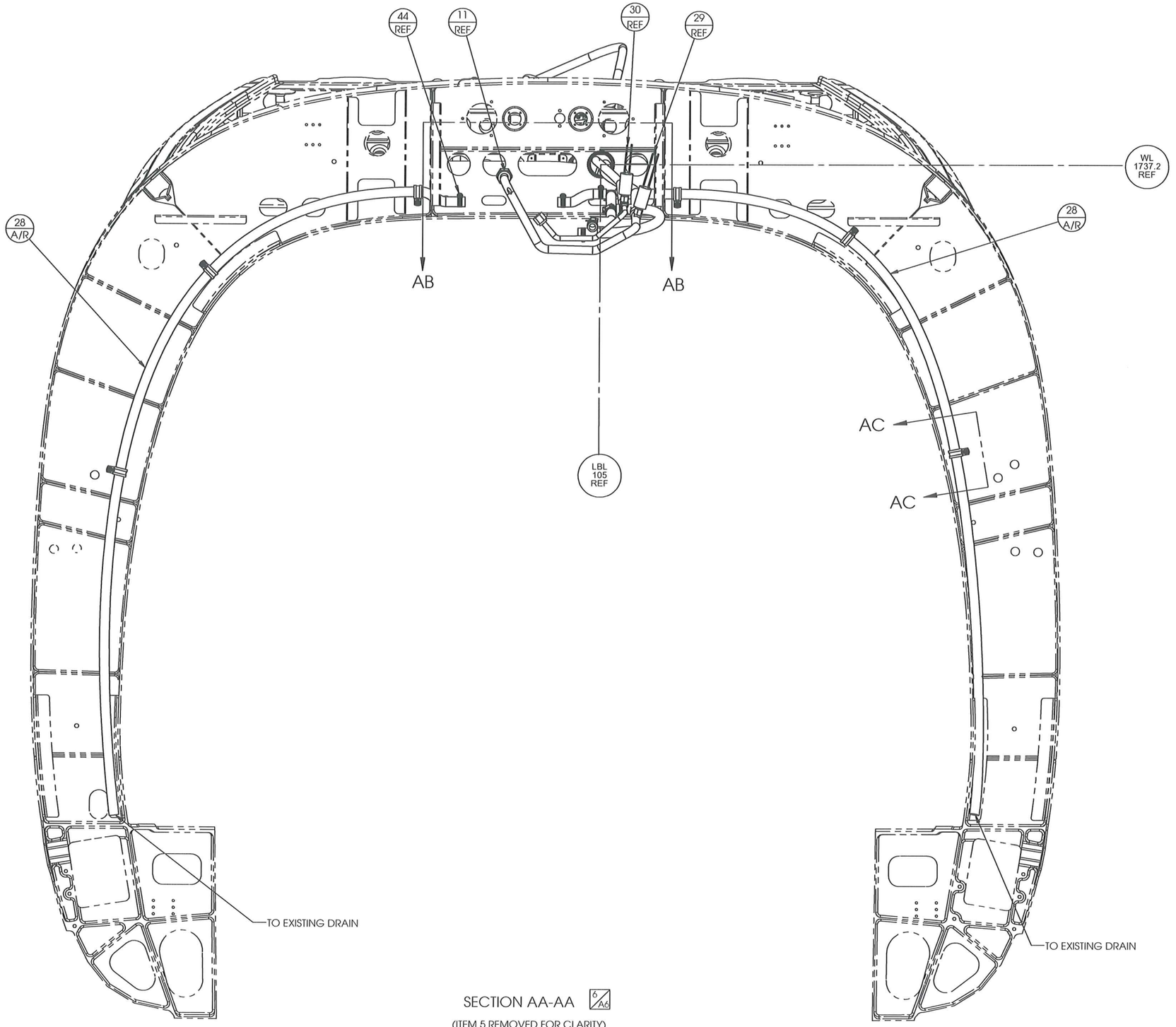
TITLE: REFRIGERANT HOSE INSTALLATION

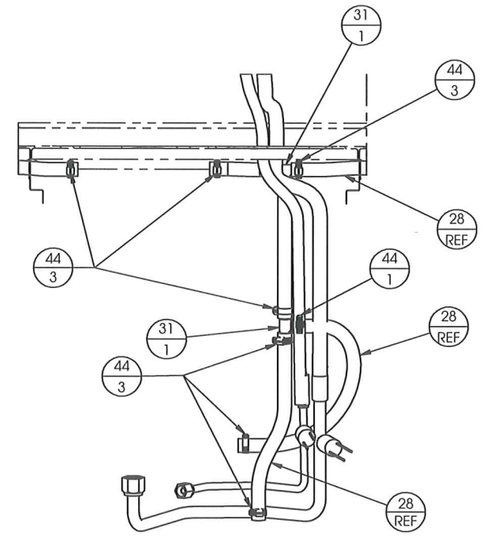
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 8 OF 11

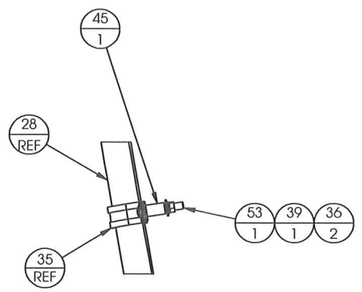


SECTION AA-AA 6/A6

(ITEM 5 REMOVED FOR CLARITY)
(VIEW LOOKING AFT)



SECTION AB-AB



SECTION AC-AC △3

(6 PLCS)

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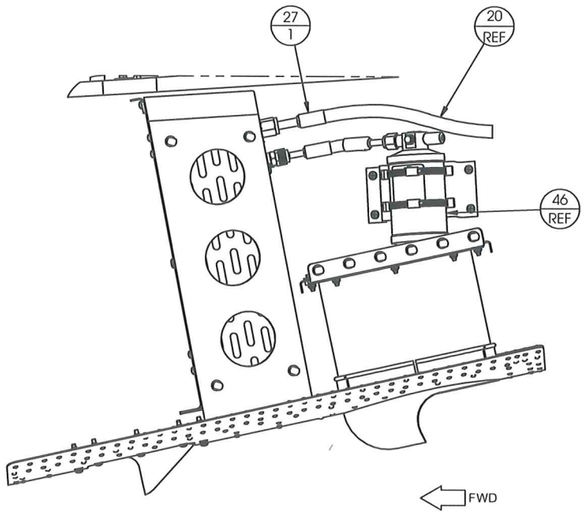
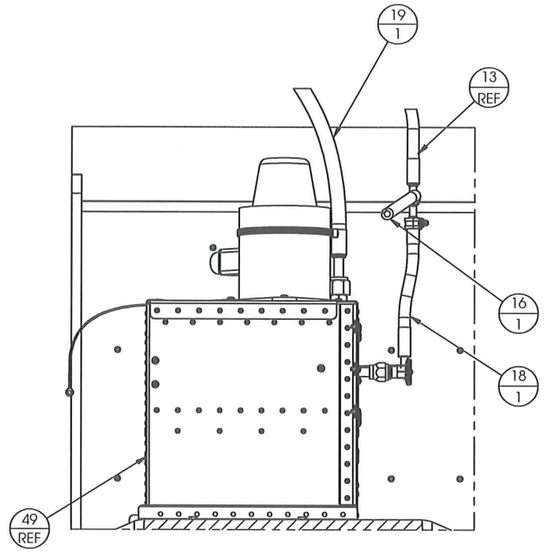
TITLE: REFRIGERANT HOSE INSTALLATION

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 9 OF 11

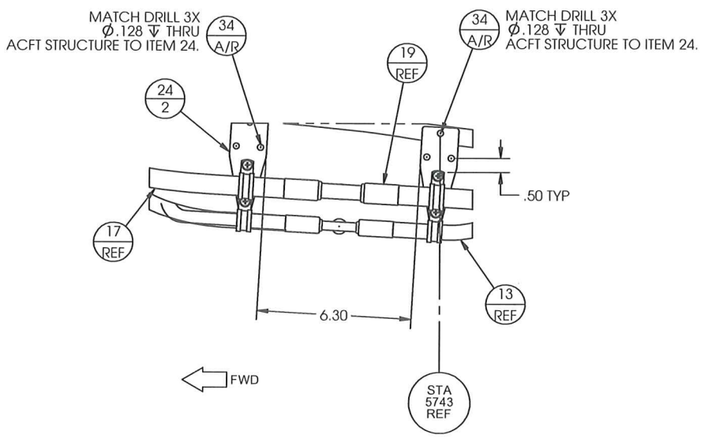


6/A4 DETAIL AD



SECTION AE-AE

(VIEW LOOKING FORWARD AT AFT EVAPORATOR INSTALLATION)



7/B1 SECTION AF-AF

(VIEW LOOKING INBOARD)

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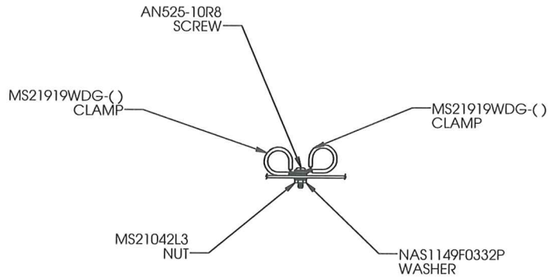
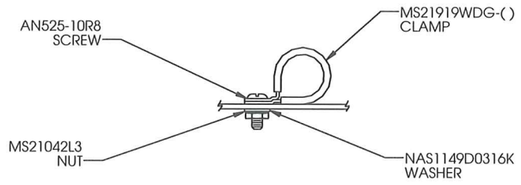
TITLE: REFRIGERANT HOSE INSTALLATION

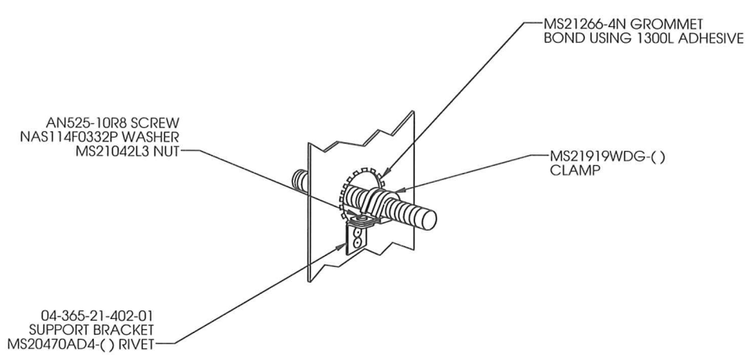
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 10 OF 11

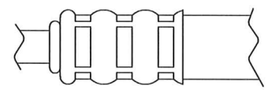


TYPICAL MOUNTING HARDWARE
FOR MS21919WDG-( ) CLAMPS.





CLAMP AT A BULKHEAD HOLE
USING AN ANGLE BRACKET WITH TWO
POINT FASTENING.



CRIMP DETAIL

(TYP ALL ENDS USE ATCO CRIMPER P/N
3700 OR EQUIVALENT WITH #6, #8 OR #10
DIES FOR APPROPRIATE SIZE HOSE.)

GENERAL INSTALLATION INFORMATION

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(817) 625-9000
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TITLE: REFRIGERANT HOSE INSTALLATION

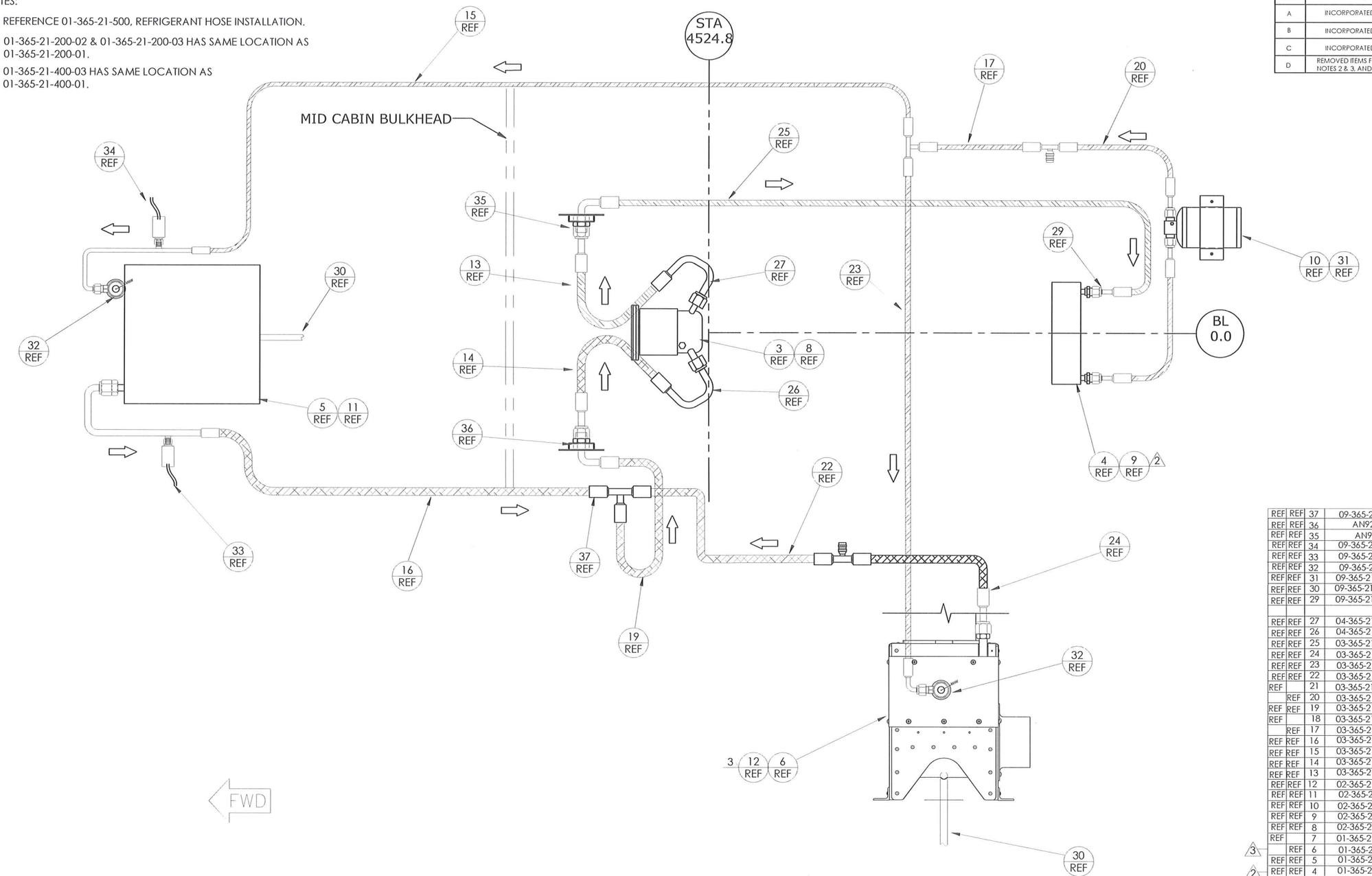
SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-500	D

SCALE: NONE | WEIGHT: N/A | SHEET 11 OF 11

NOTES:

1. REFERENCE 01-365-21-500, REFRIGERANT HOSE INSTALLATION.
2. 01-365-21-200-02 & 01-365-21-200-03 HAS SAME LOCATION AS 01-365-21-200-01.
3. 01-365-21-400-03 HAS SAME LOCATION AS 01-365-21-400-01.

REVISION				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
A	INCORPORATED ECO# 01-365-21-700NC1	H.SAUKKONEN	P. BAN	09/11/2012
B	INCORPORATED ECO# 01-365-21-700A1	C. WELLS	P. BAN	02/12/2013
C	INCORPORATED ECO# 01-365-21-700B1	H. SAUKKONEN	K. SHERIDAN	03/29/2013
D	REMOVED ITEMS FROM BOM. ADDED FLAG NOTES 2 & 3, AND ITEM 37.	S. THORNTON	P.Ban	11.12.13



-01 AIR CONDITIONER REFRIGERANT SYSTEM SCHEMATIC

		ITEM	PART NUMBER	DESCRIPTION	VENDOR
REF	REF	37	09-365-21-005-02	#10 FITTING	
REF	REF	36	AN924-10D	TUBE NUT	
REF	REF	35	AN924-8D	TUBE NUT	
REF	REF	34	09-365-21-306-01	HIGH PRESSURE SWITCH	
REF	REF	33	09-365-21-305-01	LOW PRESSURE SWITCH	
REF	REF	32	09-365-21-304-01	EXPANSION VALVE	
REF	REF	31	09-365-21-201-01	RECEIVER/DRYER BOTTLE	
REF	REF	30	09-365-21-007-01	DRAIN LINE	
REF	REF	29	09-365-21-003-01	#8 FITTING	
REF	REF	27	04-365-21-102-01	#8 COMPRESSOR FITTING	
REF	REF	26	04-365-21-101-01	#10 COMPRESSOR FITTING	
REF	REF	25	03-365-21-011-01	#8 HOSE ASSY, TO COND	
REF	REF	24	03-365-21-010-01	#10 HOSE ASSY, FROM AFT EVAP	
REF	REF	23	03-365-21-009-01	#6 HOSE ASSY, TO AFT EVAP	
REF	REF	22	03-365-21-008-01	#10 HOSE ASSY, FROM #10 SERVICE PORT	
REF		21	03-365-21-007-02	#6 HOSE ASSY, FROM COND	
	REF	20	03-365-21-007-01	#6 HOSE ASSY, FROM COND	
REF	REF	19	03-365-21-006-01	#10 HOSE ASSY, #10 T FITTING TO #10 FITTING	
REF		18	03-365-21-005-02	#6 HOSE ASSY	
	REF	17	03-365-21-005-01	#6 HOSE ASSY	
REF	REF	16	03-365-21-004-01	#10 HOSE ASSY, FROM FWD EVAP	
REF	REF	15	03-365-21-003-01	#6 HOSE ASSY, TO FWD AVAP	
REF	REF	14	03-365-21-002-01	#10 HOSE ASSY, TO COMP	
REF	REF	13	03-365-21-001-01	#8 HOSE ASSY, FROM COMP	
REF	REF	12	02-365-21-401-01	AFT EVAP PROVISIONS	
REF	REF	11	02-365-21-302-01	FORWARD EVAP ASSEMBLY	
REF	REF	10	02-365-21-202-01	RECEIVER/DRYER BOTTLE PROVISIONS	
REF	REF	9	02-365-21-201-01	CONDENSER PROVISIONS	
REF	REF	8	02-365-21-101-01	COMPRESSOR PROVISIONS	
REF		7	01-365-21-400-02	AFT EVAP INSTALLATION	
3	REF	6	01-365-21-400-01	AFT EVAP INSTALLATION	
REF	REF	5	01-365-21-300-01	FORWARD EVAP INSTALLATION	
2 REF	REF	4	01-365-21-200-01	CONDENSER INSTALLATION	
REF	REF	3	01-365-21-100-01	COMPRESSOR INSTALLATION	
--		2	-02	AC REFRIG SYSTEM SCHEMATIC	
	--	1	-01	AC REFRIG SYSTEM SCHEMATIC	

UNLESS OTHERWISE SPECIFIED:

- DIMENSIONS ARE IN INCHES
- DIMENSIONS AFTER PLATING
- BREAK ALL SHARP EDGES
- PROTECT PARTS FROM SCRATCHES AND ABRASIONS
- ALL ANGLES ARE 90°

TOLERANCES:
X.X ± 0.1
X.XX ± 0.03
X.XXX ± 0.010
X.X° ± 0.5°

HOLE DIAMETER	TOLERANCE
.0135 THRU .125	+.004/-0.001
.1260 THRU .250	+.005-0.001
.2510 THRU .500	+.006/-0.001
.5010 THRU .750	+.008/-0.001
.7510 THRU 1.000	+.010/-0.001
1.001 THRU 2.000	+.012/-0.001

DL-1
NEXT ASSEMBLY

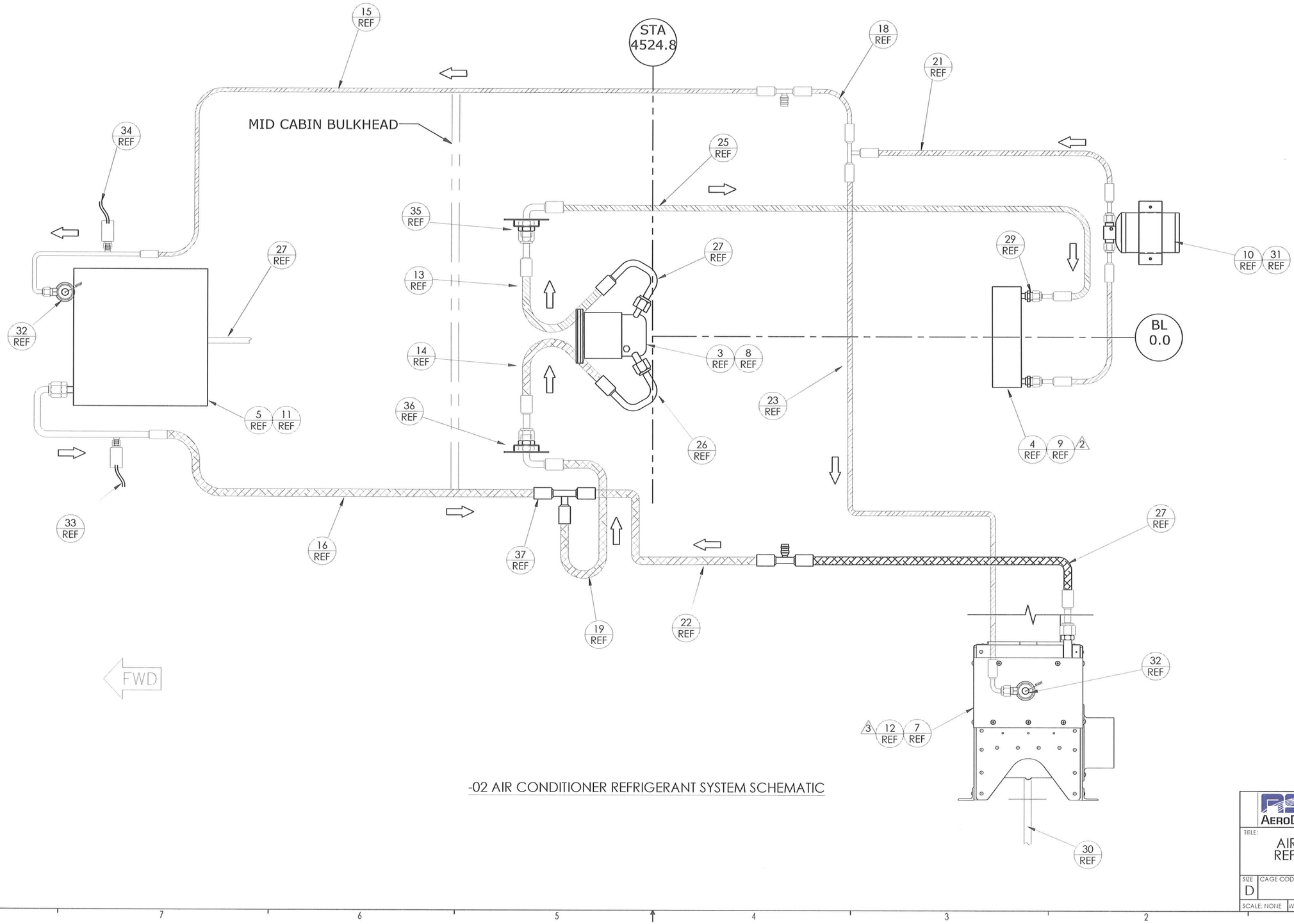
DESIGN: J. KREBS	DATE: 03/28/2011	
DRAWN: H.SAUKKONEN	DATE: 01/19/2012	
CHECKED: J. KREBS	DATE: 03/05/2012	
PROJECT ENG: J. KREBS	DATE: 03/05/2012	
APPROVED: P.BAN	DATE: 03/05/2012	

RSG AERODESIGN
3900 Falcon Way West
Hanger 16S
Fort Worth, Texas 76106
(817) 625-9000
www.rsgaerodesign.com

TITLE: AIR CONDITIONER REFRIGERANT SYSTEM SCHEMATIC

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-700	D

SCALE: NONE | WEIGHT: N/A | SHEET 1 OF 2



-02 AIR CONDITIONER REFRIGERANT SYSTEM SCHEMATIC

RSG AeroDesign
3900 Falcon Way West
Hanger 16S
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www.rsgaerodesign.com

TITLE: AIR CONDITIONER REFRIGERANT SYSTEM SCHEMATIC

SIZE	CAGE CODE	DWG. NO.	REV
D		01-365-21-700	D

SCALE: NONE | WEIGHT: N/A | SHEET 2 OF 2

Step 11
Paperwork

DETAILED HELICOPTER WEIGHT & BALANCE DATA
FOR
INTEGRATED FLIGHT SYSTEMS, INC.
FREON AIR CONDITIONING
UNIT INSTALLED IN A
TYPICAL HELICOPTER, MODEL SA365N, N1, N2, N3

PERTAINS TO KIT # 365N-00-1

* Original Configuration (MDL Rev. IR) with Aft Evaporator mounted at FS 192.3

ITEM	WEIGHT (pounds)	ARM (inches)	MOMENT (lb.-in.)
Electrical Relay Panel	1.25	29.5	37
Master Air Conditioning Control Panel	1.0	83.5	84
Wiring	4.0	107.5	430
Forward Evaporator	7.0	135.7	950
Aft Evaporator	7.0	192.3	1346
Forward Evaporator Blower	9.0	145.2	1307
Aft Evaporator Blower	8.0	203.3	1626
Refrigeration Plumbing	15.0	157.5	2363
Compressor and Mount	16.0	172.5	2760
Condenser Coil and Mounting	22.0	245.16	5394
Condenser Doubler	2.0	248.03	496
Condenser Blower and Scoop	12.75	256.16	3266
Miscellaneous Hardware	10.0	157.0	1570
Subtotal	115.0	188.08	21629

* Updated Configuration (MDL Rev. A and on) with Aft Evaporator mounted at FS 217.0

ITEM	WEIGHT (pounds)	ARM (inches)	MOMENT (lb.-in.)
Electrical Relay Panel	1.5	29.5	44
Master Air Conditioning Control Panel	1.0	83.5	84
Wiring	10.0	107.5	1075
Forward Evaporator	9.0	135.7	1221
Aft Evaporator	11.0	217.0	2387
Forward Evaporator Blower	3.8	122.1	464
Aft Evaporator Blower	3.8	217.0	825
Refrigeration Plumbing	15.0	157.5	2363
Compressor and Mount	21.5	172.5	3709
Condenser Coil and Mounting	23.0	245.16	5639
Condenser Doubler	2.0	249.5	499
Condenser Blower and Scoop	11.5	256.16	2946
Miscellaneous Hardware	10.0	157.0	1570
Subtotal	123.1	185.43	22826

* Updated Configuration (MDL Rev. A and on) with Aft Evaporator mounted at FS 245.0

ITEM	WEIGHT (pounds)	ARM (inches)	MOMENT (lb.-in)
Electrical Relay Panel	1.5	29.5	44
Master Air Conditioning Control Panel	1.0	83.5	84
Wiring	10.0	107.5	1075
Forward Evaporator	9.0	135.7	1221
Aft Evaporator	11.0	245.0	2695
Forward Evaporator Blower	3.8	122.1	464
Aft Evaporator Blower	3.8	245.0	931
Refrigeration Plumbing	15.0	157.5	2363
Compressor and Mount	21.5	172.5	3709
Condenser Coil and Mounting	23.0	245.16	5639
Condenser Doubler	2.0	249.5	499
Condenser Blower and Scoop	11.5	256.16	2946
Miscellaneous Hardware	10.0	157.0	1570
Subtotal	123.1	188.79	23240

PERTAINS TO KIT # 365N-00-2

* New Configuration (MDL Rev. C and on) with Aft Evaporator mounted at FS 217.0

ITEM	WEIGHT (pounds)	ARM (inches)	MOMENT (lb.-ins)
Electrical Relay Panel	1.6	46.1	74
Air Conditioning Control Panel	1.0	68.9	69
Wiring	9.4	117.0	1100
Forward Evaporator	11.6	135.7	1575
Aft Evaporator	11.2	211.0	2364
Forward Evaporator Blower	6.5	122.1	794
Aft Evaporator Blower	6.5	211.0	1372
Refrigeration Plumbing	15.0	157.5	2363
Compressor and Mount	19.9	172.5	3433
Condenser Coil and Mounting	19.5	245.16	4781
Condenser Doubler	2.0	249.5	499
Condenser Blower and Scoop	10.6	256.16	2716
Miscellaneous Hardware	10.0	157.0	1570
Subtotal	124.8	181.97	22710

* New Configuration (MDL Rev. C and on) with Aft Evaporator mounted at FS 245.0

ITEM	WEIGHT (pounds)	ARM (inches)	MOMENT (lb.-ins)
Electrical Relay Panel	1.6	46.1	74
Air Conditioning Control Panel	1.0	68.9	69
Wiring	9.4	117.0	1100
Forward Evaporator	11.6	135.7	1575
Aft Evaporator	11.2	245.0	2744
Forward Evaporator Blower	6.5	122.1	794
Aft Evaporator Blower	6.5	245.0	1593
Refrigeration Plumbing	15.0	157.5	2363
Compressor and Mount	19.9	172.5	3433
Condenser Coil and Mounting	19.5	245.16	4781
Condenser Doubler	2.0	249.5	499
Condenser Blower and Scoop	10.6	256.16	2716
Miscellaneous Hardware	10.0	157.0	1570
Subtotal	124.8	186.79	23311

* New Configuration (MDL Rev. C and on) with Aft Evaporator with mount plate mounted at FS 245

ITEM	WEIGHT (pounds)	ARM (inches)	MOMENT (lb.-ins)
Electrical Relay Panel	1.6	46.10	74
Air Conditioning Control Panel	1.0	68.90	69
Wiring	9.4	117.00	1100
Forward Evaporator	11.6	135.70	1575
Aft Evaporator	11.2	245.00	2744
Aft Evaporator Mount Plate	2.7	245.00	662
Forward Evaporator Blower	6.5	122.10	794
Aft Evaporator Blower	6.5	245.00	1593
Refrigeration Plumbing	15.0	157.50	2363
Compressor and Mount	20.4	172.50	3519
Condenser Coil and Mounting	19.5	245.16	4781
Condenser Doubler	2.0	249.50	499
Condenser Blower and Scoop	10.6	256.16	2716
Miscellaneous Hardware	10.0	157.00	1570
Subtotal	128.0	187.96	24059

United States of America

Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SH5832SW

This certificate issued to

Integrated Flight Systems
1900 Flightline Drive
Suite 3
Lincoln, CA 95648

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 29* *of the* Federal Aviation *Regulations.*
*Certification basis is set forth in Type Certificate Data Sheet H10EU.

Original Product -- Type Certificate Number : H10EU

Make : Aerospatiale

Model : SA-365N, SA-365N1, SA-365N2, SA-365N3

Description of Type Design Change:
Installation of freon air conditioning system with belt driven compressor in accordance with Integrated Flight Systems (formerly Consolidated Aire Systems) Drawing List Report Number DL-1, Revision -, dated November 1, 1984, or later FAA approved revision.

Limitations and Conditions:
FAA Approved Rotorcraft Flight Manual Supplement dated November 28, 1984, or later FAA approved revision is required. 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 12, 1984

Date of issuance : November 28, 1984

Date reissued : 1/19/1989; 2/24/1997; 1/18/2000; 8/22/2001; 8/21/2007; 4/16/2009; 8/26/2011

Date amended : August 21, 2007

By direction of the Administrator

(*Signature*)
James A. Richmond, Acting Manager,
Rotorcraft Certification Office,
Southwest Region

(*Title*)

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

This certificate may be transferred in accordance with FAR 21.47.

Step 12
Continued Airworthiness

General: The following is the Maintenance Manual for the IFS Air Conditioning Kit Part Number 365N-00-1. Following the Maintenance Manual is the FAA Approved Instructions for Continued Airworthiness.

Maintenance Manual MM-365N

STEP	PROCEDURE	MECH.	INSP.
12.0	**Kit #365N-00-1 and Kit# 365N-00-2** are applicable to all models of the SA365 series helicopter unless special mission components have been installed on the helicopter, which could preclude installation of some air conditioning components. It is a **NEW kit only** in respect that the refrigerant utilized has been changed from R-12 (a CFC) to R-134a (non-CFC type). The changes required are as follows: This kit is compatible with utility, corporate, and EMS configuration. Minor changes may be required to the air conditioning system for EMS or corporate.		
12.1	The condenser coil assembly is mounted under the baggage floor. It is attached to the existing aircraft frames by aluminum angles provided by IFS. The entire coil is sealed at the bottom, both sides, and the top to provide an airtight plenum. A single eight-inch diameter vane axial blower pulls air through the air inlet on the bottom of the helicopter, through the condenser and exhausts the air out of the 8" round air outlet. The inlet and outlet openings have a protective screen mounted. Both openings are provided with an inlet and outlet air scoop The vane axial blower used on the **condenser** is 8" in diameter. It is purchased under IFS P/N: 490011. For# 365N-00-2 applicable condenser P/N is 09-365-21-202-01		
12.2	The rear evaporator assembly consists of an evaporator coil and expansion valve. The coil is mounted to sheet metal components inside a metal case with a drain tube. The entire assembly mounts to the aft baggage bin floor or in the optional fuel cell bay with a series of bolts and nuts fastened to a metal angle. Flexible ducting allows the cooled air to flow from the evaporator/blower into - in the overhead air distribution system or optional free blow.		
12.3	Return air is drawn from the cabin through a screened opening, past the rear bulkhead and directly into the evaporator. No relocation of any cabin appointments is required.		
12.4	The forward evaporator/blower is mounted to the aircraft's roof. The entire evaporator assembly is attached to IFS supplied angles for mounting. A 5" blower assembly draws air through the evaporator coil and into an insulated air distribution box. Distribution is then by way of six (6) each of 1 1/2"		

STEP	PROCEDURE	MECH.	INSP.
	flexible hoses to the wemac type air outlets in the cockpit with options for (4) more outlets.		
12.5	The Cabin Environment Control Panel may consist of one or more arrangements. The control Panels consist of an aluminum plate, with a Gravoply overlay, located at the aft end of the radio console.		
12.6	The Sanden (formerly Sankyo) SD-505 compressor is mounted on a series of brackets, supplied by Eurocopter, which are attached to the aft side of the transmission. These components are DGAC/FAA approved. A SD508 compressor can also be mounted. For kit# 365N-00-2, applicable compressor is Sanden SD5H14 (SD508) and utilizes a P/N 04-365-21-107-01 Compressor Mount Bracket.		
12.7	A "V" belt is used to turn the compressor from the Eurocopter (formerly Aerospatiale) designed main drive shaft pulley to the Sankyo SD compressor pulley. A vertical adjusting arrangement is provided to allow for tightening of the compressor drive belt.		
12.8	The belt used to drive the compressor is installed using Eurocopter supplied components. Should the drive belt fail for any reason the net result will simply be the loss of compressor drive and flow of refrigerant. Due to the Eurocopter (Aerospatiale) factory design of the components, failure of the belt would not interfere with any other systems. Therefore, the belt is deemed to be fail safe.		
12.9	The electrical control switch for the air conditioning system consists of a three position rocker switch. The FAN position allows the evaporator blowers to run for non-cooled air circulation. Evaporator blowers are protected by two (2) each 15 amp circuit breakers. The A/C position turns on the condenser blower as well as the evaporator fan and provides electrical power to the compressor clutch for complete system operation. A 50-amp circuit breaker is provided for protection of the condenser blower. A double throw rocker switch is mounted to provide HIGH-LOW speed selection for the forward evaporator motor. An 80-amp fuse is employed as Master Air Conditioning System protection. This is located on the aircrafts Master Electrical Buss located in the nose. Appropriate decals and placards are provided where required. These include switch and circuit breaker identification.		

STEP	PROCEDURE	MECH.	INSP.
12.10	Plumbing of refrigerant lines is accomplished with standard air conditioning hose covered under SAE standard J51C. **Beginning in 1996, Reduced Barrier Type Hose** was phased in. The lightweight neoprene barrier type hose, compatible with R134a refrigerant, utilized metal crimped ferrules, which are part of the metal fittings. O ring type fittings are utilized at all connections.		
12.11	All lines are installed as per standard aircraft practice. Adel clamps or tie wraps are used as required. Butterflying of Adel clamps and the use of standoffs is provided where required. Plumbing from the aft evaporator and compressor is run down through a single hole in the transmission deck. Caterpillar grommet material is used in all aircraft lightning holes to protect refrigerant hoses from chafing, as required. The refrigerant hoses are routed from the condenser and compressor discharge line below the aircrafts baggage compartments ceiling.		
12.12	Other lines can be through existing lightning holes to the forward evaporator. They are secured in accordance with typical hose supporting as shown in AC43.13-1B and -2A. This type hose is STC'd on several aircraft applications.		
12.13	Supply and return hoses to the compressor may require penetration of the transmission deck. This is accomplished by routing out the deck and filling the surrounding area as shown on the Plumbing Installation Drawings.		

Maintenance Manual MM-365N
Charging Refrigerant (R-134a) Into System

STEP	PROCEDURE	MECH.	INSP.
12.20	**DANGER:** R-134a, practically liquid R-134a, should never be allowed to come in contact with the eyes or skin. Under normal conditions, R-134a as a gas or vapor is in inert substance and non-poisonous. A flame-type leak detector should **never be used** because of the danger of fire or explosion around an aircraft. Several electronic leak detectors are available on the market.		
12.21	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.**		
12.22	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.		
12.23	Should R-134a come in contact with the eyes or 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.		
12.24	The charging of the system should not be attempted unless qualified individuals are present. **The refrigerant used in this system is R-134a and no other refrigerant is to be considered.** Normal safety practices, such as wearing of gloves and the use of goggles should be utilized as R-134a could freeze the eyeball instantly were it to come into contact with the eye. Also frostbite could occur to areas of the skin if R-134a were allowed to come in contact.		
12.25	Charging of the system is a simple procedure whether on 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.		

Maintenance Manual MM-365N
Oil Charging: R-134a Refrigerant

STEP	PROCEDURE	MECH.	INSP.
12.30	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 THIS REFRIGERANT ARE COMPLETELY DIFFERENT.**		
12.31	The oils with R-12 **DO NOT** dissolve into the R-134a. **For this reason, additional oil, other than that in the compressor should NOT be added to a new system.** This is particularly true when barrier type hose is utilized.		
12.32	**The Sanden compressor uses a 100 viscosity POE type oil. No other type oil can be utilized, especially PAG types.**		

Maintenance Manual MM-365N
Initial Charging

STEP	PROCEDURE	MECH.	INSP.
12.40	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 refrigerant 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.** **Pressurize system to 250-PSI minimum, 300-PSI maximum.**		
12.41	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 until (expelling of refrigerant is not allowed).		
12.42	Connect a vacuum pump to the center manifold hose. Open both valves and evacuate the systems for a minimum of twenty minutes. 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).		

Maintenance Manual MM-365N
Adding R134a Refrigerant to the System

STEP	PROCEDURE	MECH.	INSP.
12.50	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 manifolds center hose. **ONLY THE HIGH SIDE VALVE OF THE CHARGING MANIFOLD MAY NOW BE OPENED.**		
12.51	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 **2.5 pounds of refrigerant R-134a added to the system**. No additional refrigerant should be added after the system is in operation. Close manifold.		
12.52	The system is now ready for operation. **This must be performed on the flight line with at least one engine at 100%**. As soon as the A/C Master Control Switch is turned to A/C all 28 VDC evaporator blowers will immediately begin operation (see SECTION 3.3). If after the system has been in the A/C mode for at least 2 minutes and cooling is not being accomplished, then check all circuit breakers. Determine that 28 VDC power is available for control circuitry. Check the operation of the relays and contacts. If only the one engine is being utilized, the override switch must be in the override position (mode) and the amber light illuminated. Otherwise, both engines and generators must be providing power to the electrical buss.		
12.53	If, after the system has been in the A/C mode for at least 2 minutes and cooling is not being accomplished, then check all circuit breakers. Determine that 28 VDC power is available for control circuitry. Check operations of the relays and contacts.		

STEP	PROCEDURE	MECH.	INSP.
	After the compressor has come on line, the entire system is operational with the manifold valve closed on the high side. The R-134a cylinder valve should be closed initially in order to get an accurate reading on the low side gauge of the system pressure. The reading on the gauge should not be allowed to go below 10 PSI, as this will indicate that the low-pressure safety switch is possibly set to low. It 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, if additional R-134a is needed.		
12.54	The sight glass located in the top of the receiver/drier may be easily seen with a flashlight and inspection mirror. The sight glass should be closely monitored and a stream of what should appear to be air bubbles may be noted at this time. **DO NOT** continue charging the system with vapor R-134a. Should additional charging be required, do so with the cylinder in the upright position. Charge the system, if required, until the systems of bubbles disappears and the sight glass becomes clear. It should be noted that pressure on the low side with the R-134a cylinder valve closed and vary depending on the temperature in the cabin and the O.A.T.		
12.55	At the point, the <u>minimum</u> amount of R-134a is in a system and charging should cease temporarily. If the outside air temperature is 85 degrees Fahrenheit or more, the amount of R-134a in the system with a clear sight glass, is usually satisfactory. **THE REFRIGERANT CHARGE SHOULD NOT EXCEED 4.0 POUNDS.**		
12.56	The optimum method of determining the correct charge using at least two digital thermometers and place them near the return air and the discharge air of each evaporator. R-134a can then be added or removed as required, until the highest T.D. is noted per the paragraph below. At that time, the correct amount of refrigerant is installed.		

STEP	PROCEDURE	MECH.	INSP.
12.57	A test should be completed noting the average cabin temperature, the temperature of the return or entering air to all evaporators and the discharge air form 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.		

Maintenance Manual MM-365N
Effect of Humidity on T.D.

STEP	PROCEDURE	MECH.	INSP.
12.60	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. 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 required that LATENT HEAT containing moisture borne heat must first be removed prior to the removal of the sensible heat.		

Maintenance Manual MM-365N
Recharging the System

STEP	PROCEDURE	MECH.	INSP.
12.70	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.		
12.71	After the leaks have been found and corrected, pressurize the system with dry nitrogen. Recheck for leaks. 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.		
12.72	It is always good air conditioning practice to replace the receiver/drier whenever it is suspected that moisture has contaminated the system.		
12.73	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.		

Step 13
Warranty/Repair

IFS WARRANTY POLICY

Although Integrated Flight Systems, Inc. (hereinafter "IFS") makes every effort to manufacture a quality product that will perform to your expectations, no unit is guaranteed to meet your specific temperature desires, since atmospheric conditions or space limitations relating to evaporator or condenser performance with any non-standard cabin equipment may be compromised to some degree.

General Conditions of Warranty

In order to validate your Warranty, the Warranty Registration Form must be received within 3 days of the Completion of installation date accompanied by a copy of the T.T. Log Book Entry identifying the kit Serial Number, Date of Installation and Signature of the "individual/technician/owner-operator" installing this product.

What follows is a brief description of the IFS Warranty Policy, to be stated in more precise language in the following document.

Integrated Flight Systems, Inc. (hereafter "IFS") offers the following Limited Warranty on its products subject to the conditions listed below.

This Warranty is expressly in lieu of any other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose and of any other obligations of IFS to the purchaser whether for direct or consequential damage or otherwise. IFS neither assumes nor authorizes any other person to assume for it any liability in connection with a unit ("kit") or any of its parts.

Air Conditioning systems as used in Rotorcraft have significantly different criteria than those of, for example, automobiles or trucks. As a result, proper maintenance is crucial to the longevity of a system. IFS wants its customers to have the best possible experience with its products. In order to create that environment IFS is implementing this warranty with requirements for certain maintenance. It will be necessary for the Operator to send a Copy of the T.T. Log Book Entry when specified items requiring routine maintenance are performed in order to fulfill the purchaser's requirements under the Warranty.

This Warranty **does not cove**r:

- Service calls to repair and/or correct the installation of the system.
- Transportation fees and/or accommodations
- Damage to your cooling system caused by misuse, accident, fire or use of products not supplied by IFS.
- Failure due to improper installation, incorrect refrigerant amount, **lack of routine**

maintenance (**NOTE**: It is **IMPORTANT** to submit a copy of the T.T. log book entry at each maintenance interval to keep from voiding warranty.)

WARRANTY MAINTENANCE REQUIREMENTS

A review of our warranty claims history for Air Conditioning Systems has shown us three items that identify the majority of Warranty Claims. Furthermore, a review of those items reveals that our customers will have greater longevity for their systems by simply maintaining a regimen of maintenance that includes a review of consumable items. Therefore IFS is implementing a program of required maintenance as part of the warranty validation.

WARRANTY COMPONENTS LIMITATIONS

A. Warranty coverage on receiver/drier is limited to sight glass leaking or desiccant breakdown.

B. Broken fittings, stripped threads, broken mounting bosses, seizure due to lack of oil, the system has been breached, e.g. opened etc., nullifies all warranties on the compressor and other components.

C. Service and/or replacement parts are warranted for ninety (90) days from date of their installation. This includes brushes for blower motors.

WARRANTY REGISTRATION PROCEDURES

A. A Warranty Registration Form is packed with your kit and must be completed in its entirety, signed and returned to IFS. The Rotorcraft Serial Number and appropriate signatures and requested information must be on the completed Warranty Registration Form. Copies of the Warranty Registration Form with all required information and signatures may be faxed to 1 (817) 624-6603 and copies should be maintained by the customer and installing contractor if not installed by the Owner.
B. Upon receipt of the Warranty Registration Form at IFS, it will be entered into our computer data base and filed under the Serial Number of the Rotorcraft.

WARRANTY CLAIMS

A. Warranty Claims will be accepted from:
*Actual Owner of the system. **OR**
*Lessor of the Rotorcraft with proper identification and records.

B. Claims will be paid on a cost per warranty part basis.

C. Claims will not be paid for reclaiming/recharging, unless the compressor, evaporator coil or condenser coil are found to be defective. New compressors are excluded from replacement unless the compressor manufacturer determines that the compressor failure is due to manufacturing materials and/or workmanship. Credit will not be issued on replacement compressors until defective compressor is received and inspected.

D. No allowance will be made for mileage, travel time, down time, and/or related expenses.

E. **A RETURN MATERIALS AUTHORIZATION (RMA) NUMBER MUST BE OBTAINED FROM IFS IN ORDER TO RETURN WARRANTY ITEMS.** Warranty items must be returned to IFS, **FREIGHT PREPAID,** within thirty (30) days of replacement. The RMA number is to be clearly marked on the outside of the container. IFS reserves the right to examine all parts returned under warranty before replacement or issuance of credit can take effect.

F. **All claims are subject to review and verification at the discretion of IFS.**

G. Total Warranty Claim(s) cannot exceed the cost of the system.

H. A Warranty Claim must be filed on the Warranty Claim Form attached at the back of this pamphlet. It may be mailed or faxed. Once properly filled out it can be faxed to IFS (See number above) to expedite processing of the claim.

FORMS ATTACHED:

1. WARRANTY REGISTRATION – for initiation of Warranty.
2. REQUIRED MAINT. VERIF. – For verification of installation & maintenance completed.
3. WARRANTY CLAIM – required along with Copy of T.T. Log Entry & Warranty Initiation to process Warranty.

INTEGRATED FLIGHT SYSTEMS, INC.

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 Installation for a period of one year or 1000 hours Subject to the limitations identified in the attached Warranty Policy, effective 07/01/05.

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

REQUIRED MAINTENANCE VERIFICATION

Item: Brush Length Check (Only for 365N-00-1)

Time in Flight

Date: ___/___/____. T.T. Hr._____ Min._____

Signature & Lic. #: _____

Time in Flight

Date: ___/___/____. T.T. Hr._____ Min._____

Signature & Lic. #: _____

Item: Compressor Belt Condition

Time in Flight

Date: ___/___/____. T.T. Hr._____ Min._____

Signature & Lic. #: _____

Time in Flight

Date: ___/___/____. T.T. Hr._____ Min._____

Signature & Lic. #: _____

WARRANTY CLAIM FORM

FILL OUT & FAX TO (817) 624-6603

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: _____

DATE REMOVED: _____ T.T AT REMOVAL: _____

REASON FOR RETURNING COMPONENT: _____

PLEASE ANSWER THE FOLLOWING QUESTIONS WITH RESPECT TO THE ROTORCRAFT ON WHICH YOU SEEK WARRANTY ASSISTANCE:
HAVE ALL REQUIRED ROUTINE MAINTENANCES BEEN PERFORMED?

YES ☐ NO ☐

PLEASE PROVIDE COPIES OF T.T. LOG BOOK ENTRIES TO THE ATTACHED FORM.

SIGNATURE: _____

Step 14
Troubleshooting Guide

System Overview

STEP	PROCEDURE	MECH.	INSP.
15.0	Should the system not perform as expected, either because of unreasonably erratic pressure readings, total lack of cooling or reduced cooling, it will be necessary to obtain a troubleshooting guide if the A&P mechanic is unfamiliar with corrections. Possibilities are so numerous for various conditions that we will not attempt to list.		
15.1	The high and low-pressure switches should be checked if electrical power is lost to the compressor clutch. These are in series, and they should be checked from their electrical source, which is the 50-amp condenser blower circuit breaker for 365N-00-1 and 40-amp condenser blower circuit breaker for 365N-00-2.		
15.2	Always check system R-134a pressure first, as leaking unit may have caused the low-pressure switch to open. This switch is set to open at 7 +/- 3 PSI and close at 22 +/-5 PSI.		
15.3	Failure of the condenser blower or coil blockage could result in high side switch opening. Both switches are designed to reset automatically.		
15.4	**NOTE**: Internal blockage of the high-pressure side of the refrigerant system can cause a very low-pressure reading at the "low side" service gage and may also cause a low-pressure reading at the "high side" service gage. This can occur when either or both of the two (2) expansion valves in the system closes and when the receiver/drier is clogged.		

Compressor

STEP	PROCEDURE	MECH.	INSP.
15.10	The compressor installed is a Model # SD-505 or SD-508 style manufactured by Sanden International. Compressor installed for Kit# 365N-00-2 is a Model # SD5H14.		
15.11	A copy of Sanden Service Manual can be found on the Sanden website at www.sanden.com.		
15.12	No maintenance, other than "clutch bearing" or "coil replacement" should be attempted in the field.		
15.13	Drive Belt is P/N 060014 (SD-505 style compressors) or P/N 060044 (SD-508 style compressors). For Kit# 365N-00-2, Compressor Belt is P/N 09-365-21-102.		

Refrigerant Cycle

STEP	PROCEDURE	MECH.	INSP.
15.20	A typical mobile vapor cycle (Freon) air conditioning schematic is supplied. For Kit # 365N-00-2 Refrigerant Schematic is drawing 01-365-21-700.		

Evaporator Fan/Blower

STEP	PROCEDURE	MECH.	INSP.
15.30	If either the forward evaporator fan or aft evaporator blower fails to run, confirm that the Aircraft Master Switch is in the "ON" position and the Air Conditioning Control Switch is placed to "FAN". If the fan/blower still does not run, determine that electrical power is available to the aircraft from an outside power source, such as a GPU or the aircraft power source. Ensure the Override Switch is on. Inspect the circuit breakers in the Master Air Conditioning Electrical Panel. Determine if electrical power is being supplied to the wire, which is the power source to each motor. If power is available, it will be necessary to test with a voltmeter that electrical power is being supplied directly to the motor by the appropriate wire. If power is being supplied, and the motor is properly grounded, then it can be assumed that the motor has failed or that in the case of the aft evaporator blower on the 365N-00-1 kit, that the brushes may have failed.		
15.31	In the forward motor, P/N 050143 or 050078, the bolts in the motor support loosen to allow removal and installation. For Kit# 365N-00-2 refers to Blower Motor P/N 09-365-21-307-01.		
15.32	In the aft motor, P/N 050143 or 050078, the screws in the motor support loosen to allow removal and installation. For 365N-00-2 refers to Blower Motor P/N 09-365-21-307-01. **NOTE:** The Aft Evaporator Blower **SHOULD NOT BE DISASSEMBLED** other than to inspect the brushes. The Motor is Ordered as a **UNIT**. Brushless motors are used in 365N-00-2.		

Condenser Blower

STEP	PROCEDURE	MECH.	INSP.
15.40	The condenser blower may be checked by placing the Aircraft Master Switch "ON" and then placing the Air Conditioning Control Switch to the "A/C" position and the override switch on. If the 50-amp circuit breaker (40-amp for 365N-00-2) is not open, then power should be supplied directly to the condenser blower, which is mounted below the aft baggage area.		
15.41	If air is not being exhausted, a voltmeter should be utilized to determine if the power is being supplied through the switch and relay to the appropriate wire. Check that all electrical terminals are secure and that power is directed to the motor's terminals. Inspect ground. If it is determined that the motor has failed, the screws holding the blower assembly in place should be removed. The blower assembly must be removed as an entire assembly **(for WARRANTY purposes).**		

Receiver/Drier

STEP	PROCEDURE	MECH.	INSP.
15.60	The receiver/drier may be replaced, if required, by discharging the R-134a from the system through a refrigerant hose or set of charging gauges. Again, all R-134a refrigerants **MUST BE CAPTURED**. Normally, the receiver/drier will not need replacement unless one of two factors is present: (a) The system has been left open for some time and may be contaminated by air and/or moisture. (b) The receiver/drier has become plugged which is evident by a large temperature differential on either side of the receiver/drier. Normally, the liquid line to and from it would be of approximately equal temperature and will be quite warm. IF one side is relatively warm and the other side is very cool or attempts to frost, then blockage of the receiver/drier has been determined. The receiver/drier should be removed and a new one installed in its place. The P/N is 090016-2 ("O" ring type). The charging instructions should be followed in recharging the system. For Kit# 365N-00-2 refer to Receiver/Dryer Bottle P/N: 09-365-21-201-01.		

Expansion Valves

STEP	PROCEDURE	MECH.	INSP.
15.70	The use of "O" ring type expansion valves, refrigerant fittings and coils; both expansion valves are identical. "O" ring type P/N 090002-"O". For Kit# 365N-00-2 refer to Expansion valve P/N 09-35-21-304-01. **NOTE:** THE EXPANSION VALVES OF THE ABOVE "PART NUMBER" CONTAIN A "CHARGE" IN THE HEAD OF THE VALVE, CONTAINING R-134A.		
15.71	It is EXTREMELY IMPORTANT that the sensing bulb be clamped tightly to the suction return line in the same manner as removed. Also, the line is to be clean, so good contact takes place between the sensing bulb and the line. This area must be re-insulated as in the original manner. Leak test and recharge.		

Refrigerant Hoses

STEP	PROCEDURE	MECH.	INSP.
15.80	NYLON "BARRIER TYPE" HOSE (for R-134a): Nylon "barrier type" hoses with "Bubble" crimped ferrules are utilized with "O" ring fittings. They are found at all fitting locations and should be inspected for security. All crimped fittings should be inspected for leakage, and obvious defects.		

Low and High Pressure Switch Limitations

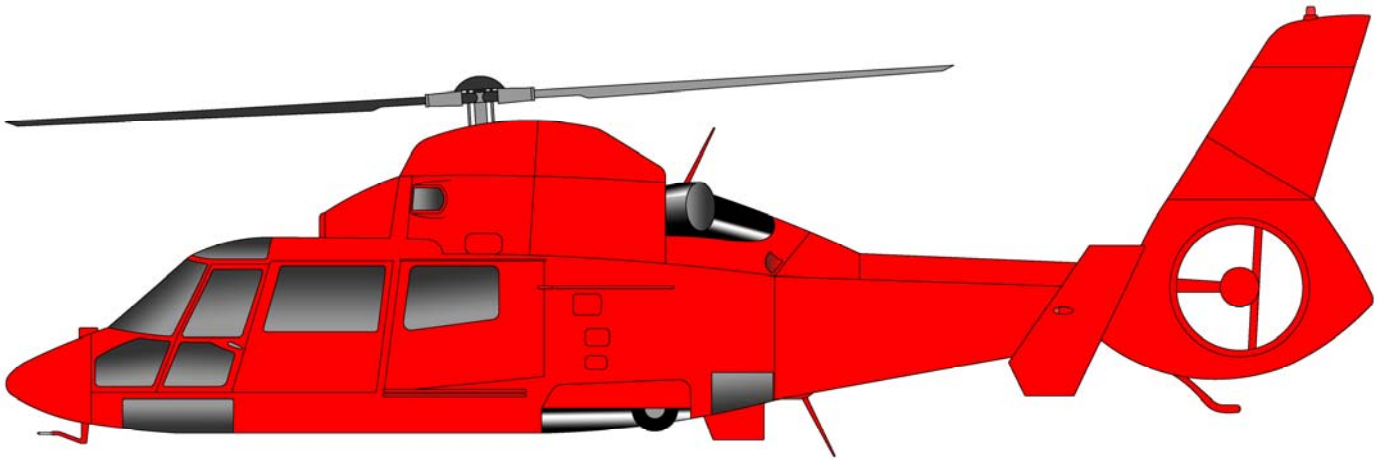
STEP	PROCEDURE	MECH.	INSP.
15.90	Low Pressure Switch is a non-adjustable type (normally closed) and relocated to an area under the cabin floor. P/N 050107 (set at 7 PSI out, 22 PSI in) or P/N 090014 (set at 6 PSI out, 34 PSI in) is utilized. Both switches will automatically reset to the closed position as soon as pressure greater than the cut-in point, is applied. For Kit# 365N-00-2 refer to Low Pressure Switch P/N 09-365-21-305-01.		
15.91	High-pressure switch is identified under P/N 090004. It is a "normally closed" switch, which "opens" on a rise in pressure that exceeds the switches upper limit. Once the pressure has been reduced below the switches upper design point, it will again close, automatically. For Kit# 365N-00-2 refer to High Pressure Switch P/N 09-365-21-306-01.		

System Operation Limitations

STEP	PROCEDURE	MECH.	INSP.
15.100	Below 60 degrees Fahrenheit, it may be found that the air conditioning compressor will not come on line and remain in operation. This is due to that fact that coolness of the air available across the condenser does not allow the refrigerant system to maintain sufficient low side pressure to keep the safety low-pressure switch from tripping the compressor “off line”.		

INTEGRATED

Flight Systems



Servicing and Trouble Shooting Guide

365 (Series)

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 and air conditioning fitting with an oily residue and the area around it is dry, you’ve probably found you 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 lose 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.

365 Series Trouble Shooting Guide

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 cause 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 Serviced With 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 install 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 charge system.) The refrigerant should foam and then settle away from the glass in less than forty-five seconds. If the sight glass remains clear foe more that 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 or refrigerant.

Correction: Suck all the Freon from the system. Replace of 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) meaans the system is either full or empty. Note, with HFC-134A the glass appears milky when properly charged, though there should be no bubbles in the sight glass.

1. System has no electrical power to air conditioner relay control panel:
   A) Check 80 amp fuse in aircraft electrical bus.

2. System has power but will not turn on:
   A) Check override switch and see if amber light comes on.
   B) Check ground lead on cannon plug CP100.
   C) Check evaporator fan relay in air conditioner master relay panel.

3. Forward evaporator fan will not turn on, but aft fan runs:

   A) Check 20 amp evaporator circuit breaker.
   B) Check ground wire from evaporator motor.
   C) Check for power at CP102 on pin 2.
      1) If you have power, your motor is bad.
      2) If no power, disconnect cannon plug CP101 and check continuity from pin 3/c on CP101 to cannon plug CP102 pin 2. If no power, check cannon plug for bad connections.

4. Aft evaporator fan will not run, but forward evaporator fan runs:
   A) Check 20 amp evaporator circuit breaker.
   B) Check ground wire from fan.
   C) Check Brushes.
      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 CP104 and check power from pin 3/B of CP104 to evaporator 20 amp circuit breaker.

5. Condenser fan does not operate:
   A) Check 50 amp circuit breaker.
   B) Check override switch and see if amber light comes on.
      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.

      3) **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 there is no power. Check the temperature controller, high and low pressure switches.

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 should be no bubbles in the sight glass.
        2) Service system by measuring temperature from evaporator. Add Freon while watching the temperature. As long as temperature keeps falling, add Freon. Once temperature stops dropping, holds or starts to rise, stop.
        3) Service system by weight. If you have a service service station or scale, you can add the proper amount by weight.
        4) Service according to a standard pressure temperature chart.)

8. One evaporator is cooling, one is not.
    A) One expansion valve may be blocked form 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.
    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 of 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.
    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.

12. Blower Motor Brush Inspection (For 365N-00-1 Only)

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 (FOR 365N-00-1 ONLY)

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.) 5” BLOWER MOTORS HAVE BRUSHES 13/16” LONG. BRUSHES MUST BE INSPECTED EVERY 200 HOURS AND REPLACED WHEN WEAR IS DOWN TO 5/16” OR LESS.

B.) 7” - 2 BRUSH BLOWER MOTORS HAVE BRUSHES 3/4” LONG. BRUSHES MUST BE INSPECTED EVERY 300 HOURS AND REPLACED WHEN WEAR IS DOWN TO 1/2” OR LESS.

C.) 7”- 4 BRUSH BLOWER MOTORS HAVE BRUSHES 9/16” LONG. BRUSHES MUST BE INSPECTED EVERY 300 HOURS AND REPLACED WHEN WEAR IS DOWN TO 5/16” OR LESS.

NOTICE

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.

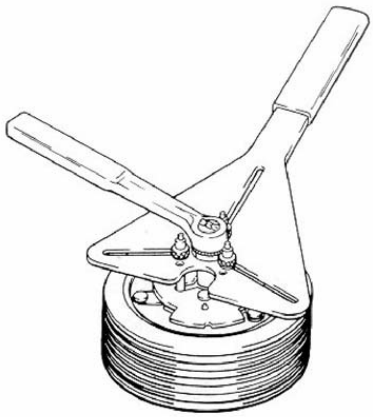
4. Remove armature assembly using puller. Thread 3 puller bolts into the threaded holes in the armature assembly. Turn center screw clockwise until armature assembly comes loose.

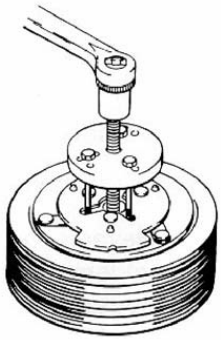
5. If shims are above shaft key, remove them now. If shims are below shaft key, the key and bearing dust cover (if present) must be removed before the shims can be removed.

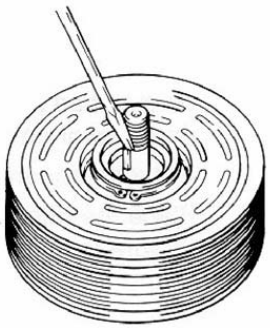
6. Remove bearing dust cover (if present). Use caution to prevent distorting cover when removing it.

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.

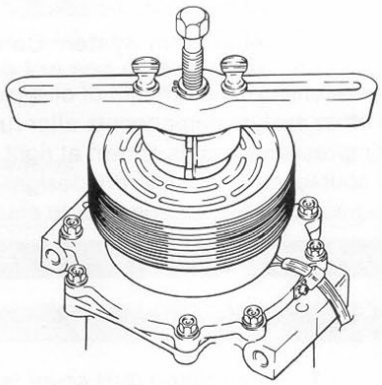






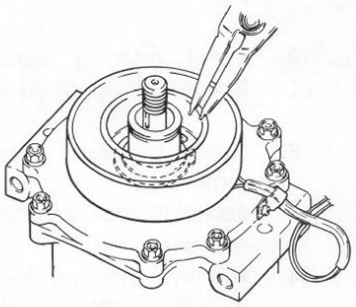
SERVICE OPERATIONS - CLUTCH

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

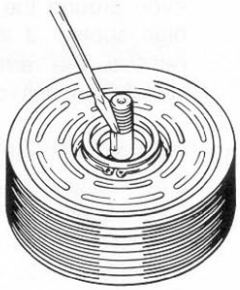
Reverse the steps of Section 14.3. Protrusion on underside of coil ring must match hole in front housing to prevent movement and correctly locate lead wire(s).

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.



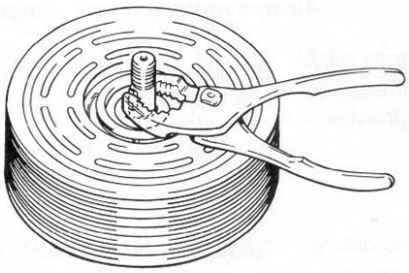
5. Reinstall rotor bearing snap ring, if it has been removed, with internal snap ring pliers.

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.

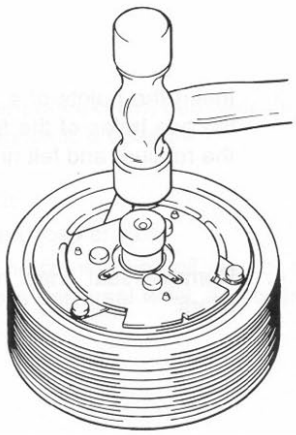
14.6 Armature Assembly Installation

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.

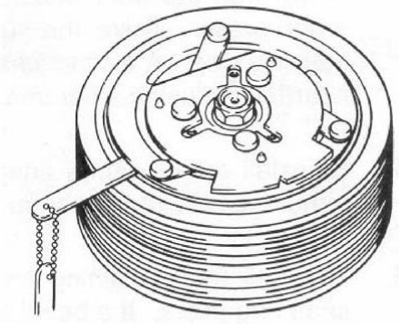
3. Align keyway in armature assembly to shaft key. Using driver and a hammer or arbor press, drive the armature assembly down over the shaft until it bottoms on the shims. A distinct sound change will be noted if driving with a hammer.



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 (15-21N•m, 150-210kgf•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.

RSG PRODUCTS INC.

ENGINEERING **C**HANGE **O**RDER

ECO No. 0861	SHT 1 OF 3
DWG No. INST-365N	REV B
DWG No.	REV
REF. STC No. SH5832SW	
REF. STC No.	

CHANGE CLASS:
- ■ RECORD CHG. PARTS NOT AFFECTED
- ☐ NON-INTERCHANGEABLE PARTS
- ☐ INTERCHANGEABLE PARTS
- ☐ OTHER _____

EXISTING/IN-WORK STOCK DISPOSITION:
- ■ RECORD CHG. PARTS NOT AFFECTED
- ☐ RE-WORK EXISTING STOCK
- ☐ SCRAP EXISTING STOCK
- ☐ OTHER _____

EFFECTIVITY:
- ☐ ALL UNITS THIS CUSTOMER
- ☐ LIMITED UNITS SPECIFIED
- ■ ALL UNITS MFG'D AFTER THIS DATE
- ☐ OTHER _____

DESCRIPTION OF CHANGE:
ADDED BELT TENSIONING INSTRUCTIONS PER AIRBUS MAINTENANCE MANUAL TO STEP 8.1.10 OF KIT # 365N-00-1 AND STEP 8.2.7 OF KIT# 365N-00-2.

FOR STEP 8.1.10

WAS: Tension belt to 50 pounds. Check vertical tolerance alignment between drive and driven pulley to installation drawing. Safety wire belt tensioning bolt. See drawing 6-SA365N sheets 1 or 2 of 3.

IS: Check vertical tolerance alignment between drive and driven pulley to installation drawing. Safety wire belt tensioning bolt. See drawing 6-SA365N sheets 1 or 2 of 3.

PER (EUROCOPTER) MAINTENANCE MANUAL REPAIR ON SECTION: MET 21-50-30-501
Using the spring balance, apply a traction or pressure force F of 5 daN (11 lbf) on the center of belt on Figure 2.
Measure the value of deflection "e":
When tension is correct: "e" = 7 to 9 mm (.276 to .354 in).
If dimension "e" is outside these values, adjust using tensioning bolt until correct tension is obtained.

NOTE
The result of adjusting values defined in this paragraph corresponds to actual tension of the belt included between 50 and 80 daN (113 - 179 lbf)

REMARKS:
MINOR CHANGE FOR PRODUCT IMPROVEMENT.

ENGINEERING REVIEW BOARD

SIGNATURE	STAMP	DATE
	ERB04	5/27/2016
	P016	5/27/2016
	QA11	5/27/2016

INCORPORATION STATUS
- ☐ IMMEDIATE
- ■ OUTSTANDING

PRODUCTS INC.

ENGINEERING
CHANGE
ORDER

ECO No. 0861	SHT 2 OF 3
DWG No. INST-365N	REV B
DWG No.	REV
REF. STC No. SH5832SW	
REF. STC No.	

FOR STEP 8.2.7

WAS: Tension belt to F=30-50 LBS. Check vertical tolerance alignment between drive and driven pulley to installation drawing. Safety wire belt tensioning bolt and the two AN5H5A bolts from step 8.2.4. See drawing 01-365-21-100

IS: Check vertical tolerance alignment between drive and driven pulley to installation drawing. Safety wire belt tensioning bolt and the two AN5H5A bolts from step 8.2.4. See drawing 01-365-21-100

PER (EUROCOPTER) MAINTENANCE MANUAL REPAIR ON SECTION: MET 21-50-30-501

Using the spring balance, apply a traction or pressure force F of 5 daN (11 lbf) on the center of belt on Figure 2.
Measure the value of deflection "e":
When tension is correct: "e" = 7 to 9 mm (.276 to .354 in).
If dimension "e" is outside these values, adjust tensioning bolt until correct tension is obtained.

NOTE
The result of adjusting values defined in this paragraph corresponds to actual tension of the belt included between 50 and 80 daN (113 - 179 lbf)

PRODUCTS INC.

ENGINEERING
CHANGE
ORDER

ECO No. 0861	SHT 3 OF 3
DWG No. INST-365N	REV B
DWG No.	REV
REF. STC No. SH5832SW	
REF. STC No.	

FOR KIT# 365N-00-1, FIGURE 1 AND 2 WILL BE SHOWN ON NEW PAGE 4 OF 4 AFTER STEP 8.1.11

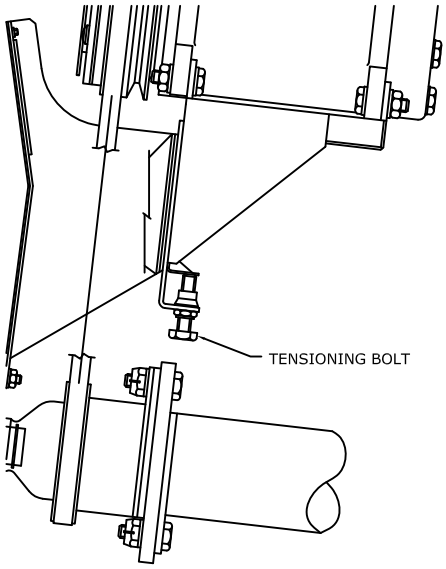


FIGURE 1

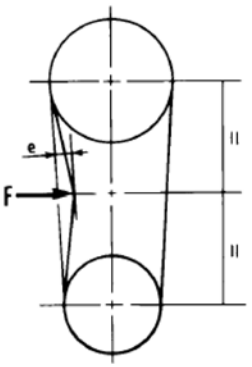


FIGURE 2

FOR KIT# 365N-00-2, FIGURE 1 AND 2 WILL BE SHOWN ON NEW PAGE 4 OF 4 AFTER STEP 8.2.9

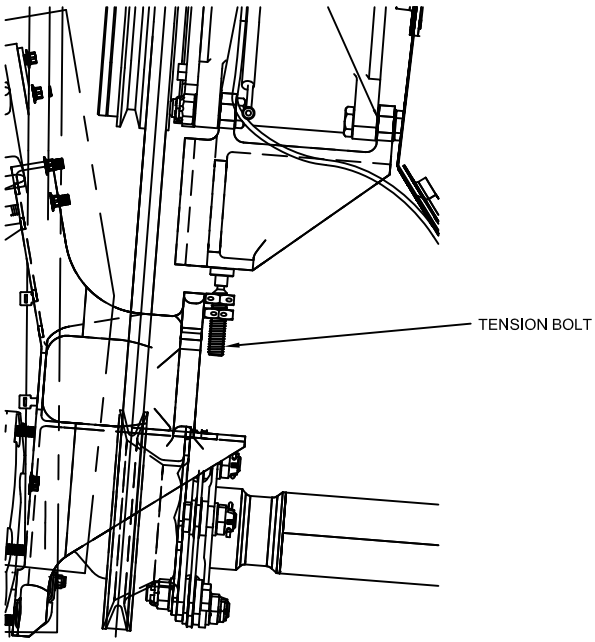


FIGURE 1

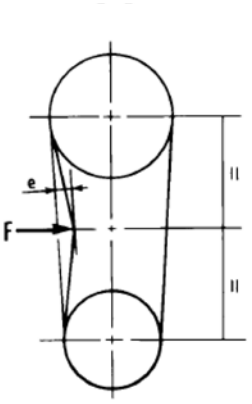


FIGURE 2