INTEGRATED
Flight Systems

Air Conditioning System Installation Manual

For

MD 600N

Getting Started

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

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

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

Installation of Aircraft Systems

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

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

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

Phone: 1-888-545-8371 E-Mail: info@rotorcraftservices.com
Fax: 1-817-624-6603

Step 1

Kit Inventory List

Sales Order Number:_____

Shipping Date:_____

Kit S/N Number:_____

Kit Model Number:_____

Customer:_____

Customer PO:_____

Kit Specifics:_____

_____

_____

PARTS ASSEMBLIES

STEP	PART NAME	PART #	QTY	CHK'D BY	VF'D BY
	SWITCH	050001	1		
	SWITCH	050006	1		
	SWITCH BUTTON	050007-1	1		
	SWITCH BUTTON	050007-3	1		
	CIRCUIT BREAKER 50 amp	050012-9	1		
	RESISTOR 100 W 2 OHM	050024-2	1		
	5" VANE AXIAL BLOWER ASSEMBLY	050143	1		
	LOW PRESSURE SWITCH	050107	1		
	BELT	060033	1		
	BOLT	070064	1		
	CYCLIC COVER SCREEN	080043	1		
	HIGH PRESSURE SWITCH	090004	1		
	REC/DRIER	090016-5	1		
	DRAIN HOSE PVC ½" ID	090018-1	5' FT		
	#6 "O" RING	090092	5		
	#8 "O" RING	090093	5		
	#10 "O" RING	090094	5		
	BELT TENSION PLACARD	120092	1		
	INSPECTION/ REPACK PLACARD	120093	1		
	R-134a PLACARD	120111	1		
	A/C SYSTEM PLACARD PILOT L/H	120115	1		
	A/C SYSTEM PLACARD PILOT R/H	120115-1	1		
	AFT CABIN DUCT	250352-1	1		
	AFT EVAP TRANSITION	250361-1	1		
	CENTER LINE TRANSITION	250362	1		
	AFT EVAP. VERTICAL DUCT	250363	1		
	AFT UPPER TRANSITION	250364	1		
	REC/DRIER BRACKET	260909	1		
	BASE RECEIVER DOUBLER	260909-1	1		
	LEFT SEAT PAN	261023	1		
	RIGHT SEAT PAN	261024	1		
	COMPRESSOR SHIM	261025	1		
	AFT RETURN AIR DOUBLER	261032-1	1		
	L/H FORWARD HOSE DOUBLER	261063-1	1		
	SENSOR ROTOR ARM DOUBLER	261158	1		
	LEFT SUPPORT ARM	261149-1	1		
	RIGHT SUPPORT ARM	261149-2	1		

	COWLING MOUNT SHIM	261156	10		

PARTS ASSEMBLIES (Cont)

STEP	PART NAME	PART #	QTY	CHK'D BY	VF'D BY
	OUTER STRAP	261166	1		
	HOSE BRACE	261168	1		
	INNER SHIM	261169	1		
	INNER/OUTER DOUBLERS	261169-2	2		
	VERTICAL STRAP	261174	1		
	SIDE PANEL STANDOFF ASSEMBLY	510310	1		
	RESISTOR MOUNT BRACKET	261180	1		
	SPACER, ROTOR DISK	300349	1		
	TENSION BLOCK	300372	1		
	PULLEY MODIFIED	300374	1		
	BLOWER ASSEMBLY	490034	1		
	AFT EVAP MOUNTING CHANNEL ASSY	510276	1		
	AFT EVAP MOUNTING ANGLE ASSY	510277	1		
	FORWARD SHELF ASSEMBLY	510302	1		
	FWD EVAP MOUNT ASSEMBLY	510305	1		
	ANGLE ASSEMBLY	510306	1		
	ANGLE ASSEMBLY	510307	1		
	ANGLE ASSEMBLY	510308	1		
	CONDENSER SHROUD ASSEMBLY	520081	1		
	CONSOLE SHROUD LH ASSY.	520097	1		
	CONSOLE SHROUD RH ASSY.	520092	1		
	RETURN AIR ASSEMBLY	520086	1		
	COMPRESSOR ENCLOSURE ASSEMBLY	520087	1		
	AIR OUTLET ADAPTER ASSEMBLY	520104	2		
	OIL COOLER SCREEN ASSY	530095	1		
	ROTOR BRAKE LINE ASSEMBLY (RH PIC)	530099	1		
	COMPRESSOR MOUNTING BRACKET ASSY	530101	1		
	ELECTRICAL BOX ASSEMBLY	540028-C-4	1		
	AFT EVAP SWITCH ASSEMBLY	540095-1	1		
	HARNESS ASSEMBLY	540096	1		
	CONDENSER ASSEMBLY	550027	1		
	FWD EVAP ASSEMBLY	560056-2	1		
	AFT EVAPORATOR ASSEMBLY	560057-2	1		

REFRIGERANT HOSE ASSEMBLIES

(R-134a compatiable)

STEP	PART NAME	PART #	QTY	CHK'D BY	VF'D BY
	#8 HOSE ASSEMBLY - COMPRESSOR TO CONDENSER	570080	1		
	#6 HOSE ASSEMBLY - CONDENSER TO REC/DRIER	570081	1		
	#6 HOSE ASSEMBLY – REC/DRIER TO EVAPS	570082	1		
	#10 HOSE ASSEMBLY – AFT EVAP.TO FWD EVAP TO COMPERSSOR	570083	1		

COMPRESSOR ASSEMBLY

STEP	PART NAME	PART #	QTY	CHK'D BY	VF'D BY
	SD-507 COMPRESSOR ASSEMBLY	590007-1	1		

HARDWARE

STEP	PART NAME	PART #	QTY	CHK'D BY	VF'D BY
	TIE WRAP	TY524M	100		
	TIE BLOCK	ZZCR4HM	25		
	SCREW	AN507-10R10	15		
	SCREW	AN525-10R6	10		
	SCREW	AN525-10R8	52		
	SCREW	AN525-10R10	10		
	SCREW	MS35214-29	8		
	WASHER	AN960-10	71		
	WASHER	AN960-516	8		
	WASHER	AN960-516L	8		
	WASHER	AN960-616	8		
	WASHER (ALT: NAS1149F0632P)	AN960-616L	6		
	WASHER	AN970-3	10		
	NUT	MS21044N6	3		
	NUT	MS20183N3	20		
	NUT (ALT: MS20364-1032C)	MS21044N3	40		
	NUT	MS21042-5	4		
	BOLT	AN3-3A	17		
	BOLT	AN3-4A	34		
	BOLT	AN3-5A	40		
	BOLT	AN3-6A	10		
	BOLT	AN6-12A	2		
	BOLT	AN6-45A	1		
	BOLT	NAS 1305-10	4		

HARDWARE (CONTINUED)

STEP	PART NAME	PART #	QTY	CHK'D BY	VF'D BY
	BAND CLAMP 1"	060037	1		
	BAND CLAMP 3"	060036	12		
	BAND CLAMP 5"	060035	1		
	RIVNUT	A10K80	5		
	RIVET	MS20470AD 4-4	55		
	RIVET	MS20470AD 4-3	10		
	RIVET	MS20470AD 4-5	35		
	RIVET	MS20426AD-4-4	25		
	CHERRY MAX RIVET	CR3243 4-2	12		
	CHERRY MAX RIVET	CR3243 4-4	4		
	CHERRY MAX RIVET	CR3243 4-3	4		
	CHERRY MAX RIVET	CR3243 4-6	4		
	CHERRY MAX RIVET	CR3243 4-5	9		
	CHERRY POP RIVET	CCR264SS3-3	130		
	RIVET	CCR264SS3-4	4		
	CATAPILLAR	GM-32	18"		
	SPIRAL WRAP	¾ "	12'		
	ADEL CLAMP (Reduced Size Hose)	MS21919DG10	15		
	ADEL CLAMP	MS21919DG11	2		
	ADEL CLAMP	MS21919DG2	2		
	ADEL CLAMP	MS21919DG12	15		
	NUT PLATE	MS21059L-3	67		
	SPLICE	AP320559	4		
	SPLICE	050020-2	12		
	RING TERMINAL	050020-7	8		
	RING TERMINAL	AP320551	3		
	"BOOT"	MS25171-25	2		
	RING TERMINAL (RED)	050020-9	3		
	RING TERMINAL (RED)	050020-3	2		
	# 8 WIRE	MIL-W-22759/16	12'		
	ALUMINUM FOIL TAPE	070076	30' ft		
	INSULATION TAPE CORK	070078-0	6' ft		
	INSULATION FOAM TAPE	070078	8' ft		

DRAWINGS

STEP	DRAWINGS	PART #	QTY	CHK'D BY	VF'D BY
	AIR CONDITION OVERVIEW	1-600N 1A OF 1	1		
	ELECTRICAL ROUTING	2-600N 1 OF 5	1		
	ELECTRICAL ROUTING	2-600N 2 OF 5	1		
	WIRING DIAGRAM	2-600N 5 OF 5	1		
	PLUMBING DIAGRAM	3-600N 1 OF 2	1		
	PLUMBING ROUTING	3-600N 2 OF 2	1		
	FWD EVAPORATOR INSTALL	4-600N 1A OF 6	1		
	FWD EVAPORATOR INSTALL	4-600N 2A OF 6	1		
	FWD EVAPORATOR INSTALL	4-600N 3A OF 6	1		
	AFT EVAPORATOR INSTALL	4-600N 4 OF 6	1		
	AFT EVAPORATOR INSTALL	4-600N 5 OF 6	1		
	AFT EVAPORATOR INSTALL	4-600N 6 OF 6	1		
	AIR DISTRIBUTION	5-600N 1A OF 4	1		
	AIR DISTRIBUTION	5-600N 2A OF 4	1		
	AIR DISTRIBUTION	5-600N 3A OF 4	1		
	AIR DISTRIBUTION	5-600N 4A OF 4	1		
	COMPRESSOR INSTALLATION	6-600N 1A OF 4	1		
	COMPRESSOR INSTALLATION	6-600N 2A OF 4	1		
	COMPRESSOR INSTALLATION	6-600N 3A OF 4	1		
	COMPRESSOR INSTALLATION	6-600N 4A OF 4	1		
	INSTALLATION CONDENSER	7-600N 1 OF 2	1		
	INSTALLATION CONDENSER	7-600N 2 OF 2	1		
	SEAT PAN MODIFICATION	8-600N 1 OF 2	1		

	OIL BLOWER MODIFICATION	8-600N 2 OF 2	1		

PAPERWORK

STEP	DRAWINGS	PART #	QTY	CHK'D BY	VF'D BY
	INSTALLATION INSTRUCTIONS		1		
	STC	SR09178RC	1		
	FLIGHT MANUAL SUPPLEMENT		1		
	INSTRUCTIONS FOR CONTINUED AIRWORTHINESS		1		
	OPERATORS MANUAL		1		
	MASTER PARTS LIST		1		

MAJOR COMPONENTS SERIAL NUMBERS:

CONDENSER BLOWER S/N: _____

AFT EVAPORATOR BLOWER S/N: _____

COMPRESSOR S/N: _____

Step 2

Supplemental Type Certificate

United States of America

Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SR09178RC

This certificate issued to

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

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

Original Product – Type Certificate Number: H3WE

Make: McDonnell Douglas

Model: 600N

Description of Type Design Change: Installation of a vapor-cycle air conditioning system with a belt driven compressor, in accordance with Integrated Flight Systems, Inc., Master Drawing list DL-44, Revision A, dated July 22, 1997, or later FAA approved revisions.

Limitations and Conditions: FAA approved Rotorcraft Flight Manual supplement for 600N Air-Conditioning dated October 21, 1997 or later FAA approved revision is required. Any modification to the Electrical wire routing and/or electrical equipment modifications for this installation shall require EMI testing including EMI effects on Full Authority Digital Electronic Control (FADEC). Instructions for Continued Airworthiness dated October 7, 1997, or later FAA accepted revision is required for this installation. Compatibility of this design change with previously approved modifications must be determined by the installer. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

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 : April 21, 1997

Date of issuance : October 21, 1997

Date reissued :

Date amended :

By direction of the Administrator

(*Signature*)

Carl F. Mittag, 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 3

Flight Manual Supplement

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

FAA APPROVED

HELICOPTER FLIGHT MANUAL SUPPLEMENT

FOR

McDONNELL DOUGLAS HELICOPTER SYSTEMS

MODEL: 600N

REGISTRATION NO.:

SERIAL NO.:

This supplement must be attached to the FAA approved Rotorcraft Flight Manual dated MAY 15, 1997, when an Integrated Flight Systems, Inc., air conditioning system is installed in accordance with Supplemental Type Certificate number SR09178RC The information contained herein supplements the basic Rotorcraft Flight Manual only in those areas listed. For limitations, procedures, and performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

FAA APPROVED:

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

DATE: OCT 2 1 1997

LOG OF REVISIONS

Original. . . Dated:

PAGE	REVISION NO.	APPROVAL
1 thru 9	Original	

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

FAA APPROVED: OCT 2 1 1997

INDEX

1.0 GENERAL

1.1 System & Description

- The air conditioning installation consists of a vapor cycle (R-134a) air conditioning system featuring a belt driven compressor.

- The system as supplied, may be used without any heater installed. It is a stand alone system.

- The air conditioning system provides for cabin comfort during all operations both on the ground and in flight. During ground operations when the engine is running, cooling may be provided. Controls for the air conditioning system are located forward of the pilot for ease of use.

  Two switches are provided. The Master control Selector consists of a rocker type switch, labeled "A/C", "OFF", and "FAN". Selecting the "A/C" position turns on the system's evaporator fans, and after a delay of several seconds the condenser blower, and belt driven compressor clutch. The second rocker switch provides for "HIGH" and "LOW" evaporator fan speed selection for the cockpit.

  A rocker switch in the aft cabin provides blower speed control for passengers.

2.0 OPERATING LIMITATIONS

- The air conditioning system must be "OFF" during engine start.

- Operation of the air conditioning system is prohibited if the total electrical load will exceed 140 amps, continuous.

3.0 EMERGENCY PROCEDURES

- In the event of an engine failure, turn air conditioner "OFF", if time/crew workload permits.

3.1 D.C. Generator Failure

- Air conditioning - "OFF".

3.2 Excessive Temperature, Fire, Smoke.

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

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

4.0 NORMAL PROCEDURES

4.1 Ground Operation - Generator ON

- To turn air conditioner "ON" - Move switch to "A/C". Prior to "ON" ensure ammeter indicates 100 amps or less
- To turn air conditioner "OFF" - Move switch to "OFF".
- For air circulation without cooling - Move switch to "FAN".
- Select desired blower speed for cockpit.
- Select desired blower speed for cabin.

4.2 Ground and Flight Operations

- Ventilation Control - As desired. (Close windows for cockpit/cabin cooling.)
- Air Conditioning Control Switch - As desired.
- Air conditioning Fan Speed Control Switches - As desired. (cockpit and cabin)
- Monitor Electrical Load to ensure that it remains within approved limits.

5.0 PERFORMANCE

Air Conditioner must be "off" for take offs and landings above 9,000 feet presure altitude.

6.0 WEIGHT and BALANCE

6.1 Pilot is responsible for insuring that heicopter C.G. and weight are within approved limits through each flight.

ii. **Manufacturers Information**

The installed unit is a vapor cycle air conditioner. Refrigerant utilized is the EPA approved R-134a. The compressor is belt driven utilizing a "custom designed flat belt". Point of drive is an IFS pulley just forward of the rotor brake. Compressor is mounted on the upper deck.

The system features dual evaporators, one for the cockpit located forward of the radio/instrument console and another under the right side cockpit seat. Separate fans are provided for each evaporator. Each contains multi speed blower motors.

The condenser is mounted above the cabin roof, forward of the mast.

Thermostatic temperature control is not provided.

Dual refrigerant pressure safety switches are provided.
A high pressure safety switch disengages the compressor and stops operation of the refrigeration cycle in the event of excessive pressure. This can occur due to failure of the condenser blower or restricted condenser air intake.

A low pressure switch of similar design protects the system due to loss of refrigerant. Both switches will automatically reset.

However, the system will NOT cycle on again when the safety pressures are again within the preset perimeters, as in older IFS designs. In the "new" design a 1 amp circuit breaker is "TRIPPED" by a single occurrence of either a low or high pressure fault. The pilot can not reset the circuit breaker in flight.

Service ports, both high and low, are provided on the belly of the helicopter, just under the battery location. They are accessible through a hinged door. A sight glass is also provided.

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

System electrical protection is provided by two (2) each 15 amp, one (1) each 20 amp and one (1) each 1 amp circuit breakers, labeled EVAP, EVAP, COND and RESET in the Air Conditioning Master Electrical Control Panel. This panel is located just below the horizonal shelf, forward of the radio console. A 50 amp Master Air Conditioning system circuit breaker is provided next to the A/C control switches located immediately in front of the pilot's position. If this circuit breaker is pulled for any reason, all electrical power to the air conditioning system is disconnected.

ii. Manufacturers Information continued;

A "soft start mode" is provided electrically for this system. When the Master control selector labeled "A/C" is turned to "ON", both evaporator fans, having a total electrical requirement of 20 amps are immediately energized. A few seconds later, the condenser blower and compressor clutch are energized, which requires another 21 amps of electrical system capacity. Due to this "Delay Feature", electrical system "soft start" is provided.

iii. Electrical Loading

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

Condenser Blower	1 each @ 13 amps	=13 amps
Compressor Clutch	1 each @ 2 amps	= 2 amps
Evaporator Fan (forward)	1 each @ 7 amps	= 7 amps
Evaporator Blower (aft)	1 each @ 13 amps	= 9 amps
TOTAL SYSTEM		**41 AMPS**

Step 4

Instructions for Continued Airworthiness

INTEGRATED FLIGHT SYSTEMS, INC.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

600N

VAPOR CYCLE AIR CONDITIONING KIT P/N 600N-00-011

REPORT 600N

ORIGINAL ISSUE

July 22, 1997

Prepared by:
Integrated Flight Systems, Inc.
8345 Blue Gill Dr.
Meadow Lake Airport
Falcon, Co. 80831

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

LOG OF ACCEPTED REVISIONS

Integrated Flight Systems, Inc. Instructions for Continued Airworthiness for MD600N rotorcraft have been reviewed and found to be acceptable to the Administrator. For the purpose of these instructions for Continued Airworthiness (ICA), acceptable to the Administrator means the ICA contains the applicable requierments specified in Appendix A to Federal Aviation Regulations Part 27 or 29, as appropriate, do not contain any incorrect references, and contain a Cover Page, Log of Accepted Revisions, Revision Control Procedure and Record of Revisions, a List of Effective Pages, and a Table of Contents. No determination as to correct spelling, proper grammer, or accuracy of the information was made by FTW-AEG.

REVISION NUMBER	REVISION DATE	FAA ACCEPTANCE SIGNATURE	ACCEPTANCE DATE	ACCEPTING AEG OFFICE
Original	October 7, 1997	[signature]	11-5-97	FTW-AEG

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

RECORD OF REVISIONS

REVISION NUMBER	ISSUE DATE	DATE INSERTED	BY	REVISION NUMBER	ISSUE DATE	DATE INSERTED	BY

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

LIST OF EFFECTIVE PAGES

SECTION	PAGE	DATE
Cover	Cover	October 7, 1997
Log of Accepted Revisions	ii	October 7, 1997
Record of Revisions	iii	October 7, 1997
List of Effective Pages	iv	October 7, 1997
Chapter Listing	v	October 7, 1997

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

CHAPTER LISTING

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

VAPOR CYCLE AIR-CONDITIONING

CHAPTER 05 - TIME LIMITS/INSPECTIONS

LIST OF EFFECTIVE PAGES

INSTRUCTIONS FOR CONTINUED AIRWORTHIMESS

VAPOR CYCLE AIR-CONDITIONING

CHAPTER 05 - TIME LIMITS/INSPECTIONS

TABLE OF CONTENTS

CHAPTER 05 – TIME/LIMITS INSPECTIONS

VAPOR CYCLE AIR-CONDITIONING

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

VAPOR CYCLE AIR-CONDITIONING

05-00-00 GENERAL - TIME LIMITS/INSPECTIONS

6--1 Time Limits/Inspections - General

A. The checks, oil and lubricant changes, inspections and overhauls specified in Chapter 05 must be accomplished no later than the time limits specified in Sections 05-11-00, 05-12-00, 05-13-00 and 05-14-00 to ensure **Continued Airworthiness of the Helicopter.**

B. This chapter specifies certain actions to ensure the serviceability of the equipment. For the purposes of this section, "checks" can be accomplished by pilots or technicians, and "inspections" must be accomplished by maintenance technicians. All personnel shall have this and other documents available and shall be appropriately certified and or trained to accomplish the tasks.

6-2 Scheduled Checks and Inspections - General

A. The scheduled checks and inspections listed in this section are to be accomplished latest on reaching corresponding operating time of helicopter.

B. If the operating times of parts or components differ from those of the helicopter, then the operating times of these parts or components are applicable.

C. Inspection points of scheduled checks and inspections may be performed earlier. For this make sure that the specified time limits are not exceeded for those measures accomplished in advance.

6-3 Further Scheduled Measures - General

A. Section 05-12-00 contains the time limits for lubricant change.

B. Section 05-13-00 contains the time limits for overhaul-components. Overhauls are to be performed by the STC holder.

C. Section 05-14-00 contains the time limits for storage of parts and components.

5-4 Unscheduled Inspection - General

A. Section 05-11-00, 6-7 contains the Conditional Inspections to be performed after specific operational incidents either prior to the next flight or after specified time intervals. These Conditional Inspections ensure that airworthiness will be maintained between specific maintenance activities.

B. Section 05-11-00, 6-8 contains the Conditional Inspections that are to be performed as a result of specific maintenance activities.

6-5 Ground Run and Functional Check Flight - General

A. Section 21-00-00 contains the procedures for ground run and functional check flight for models 600N with this equipment installed. These serve to test the function and performance of the helicopter systems and equipment.

6-6 Information on Time Limits - General

A. All time limits requiring maintenance procedures are contained in Sections 05-11-00, 05-12-00, 05-13-00 and 05-14-00.

B. Time limits are defined as follows:

(1) If time limits are expressed in **flight hours (Fh)** they generally apply to the flight hours of the helicopter. If the flight hours are related to parts and components, this is explicitly stated. Flight hours are defined as the time between takeoff and landing of the helicopter.

(2) If time limits are expressed as **calendar time**, they generally apply to the helicopter. If the calendar time is related to parts and components, this is explicitly stated. Calendar time is the interval between mandatory checks, inspections and overhauls expressed in **months (mo)** or **years (y)**.

C. Exceeding of time limits is defined as follows:

(1) Time limits can not be **exceeded.** If time limits are inadvertently exceeded, the over-the-limit times should be subtracted from the next check or inspection time interval.

6-7 Support Documentation

A. Below is listed additional documentation referenced in this manual (that is required to support this equipment.

Drawing	Sheet	Title	Revision
MDHS 600N	1 of 7	Continued Airworthiness Illustration Plumbing Routing	Original
MDHS 600N	2 of 7	Continued Airworthiness Illustration Plumbing Diagram	Original
MDHS 600N	3 of 7	Continued Airworthiness Illustration Electrical Diagram	Original
MDHS 600N	4 of 7	Continued Airworthiness Illustration Air Distribution	Original
MDHS 600N	5 of 7	Continued Airworthiness Illustration Air Distribution	Original
MDHS 600N	6 of 7	Continued Airworthiness Illustration Compressor	Original
MDHS 600N	7 of 7	Continued Airworthiness Illustration Seat Pans	Original

05-11-00 TIME LIMITS - SCHEDULED INSPECTIONS

6-1 Preflight Check - Time Limits

A. The Preflight Check is to be performed **prior to the first flight of the day.**

B. The Preflight Check is to be accomplished according to 05-21-00, 6-1.

6-2 Complementary Checks /Inspections - Time Limits

NOTE: Different time intervals apply to the complementary checks.

A. **Every 50 flight hours** a complementary check is to be performed according to 05-21-00,6-2.

The time limit of 50 flight hours may not be exceeded.

If performed at the same due time, the Complementary Check every 50 Fh is done in addition to any other checks due.

6-3 Annual/100 Fh Inspection - Time Limit

A. A annual/100 Fh Inspection is to be performed according to section 05-21-00, 6-3

6-4 Intermediate Inspection - Time Limits

A. An Intermediate Inspection is to be performed according to section 05-21-00, 6-4:

- after **500 flight hours TSN and then each 500 flight hours .**

The time limit of 500 flight hours may not be exceeded.

B. If performed at the same due time, the Intermediate Inspection is done in addition to any other inspections.

6-5 Blank

6-6 Blank

6-7 Conditional Inspections after Operational Incidents - Time Limits

A. After any operational incident involving hard landings, sudden stoppage of the drive train or water immersion, the system must not be operated unless all requirements, inspections and overhauls are performed in accordance with Chapter 05-00-00

B. Notification of incident must be made to the STC holder for additional requirements.

6-8 Conditional Inspections after Maintenance Activity - Time Limits

A. None

05-12-00 TIME LIMITS - LUBRICATION

6-1 Lubrication of compressor pulley bearing - Time Limits

A. The pulley bearing is to be lubricated, according to 21-00-00, 3-5

- after **500 flight hours TSN** or **24 months TSN**, whichever occurs first.

05-13-00 TIME LIMITS - OVERHAULS

6-1 Overhauls - Time Limits

A. After Time Between Overhaul (TBO) of a component has expired, the component must be removed and replaced by a new or overhauled component.

A scheduled inspection has no influence on the TBO of a component.

B. The given time limits may not be exceeded.

C. The TBO for specific components is given below.

Component	Part Number	TBO
5" Vane Axial Blower	050085	1000 Fh *

* Components must be returned to the STC holder for overhaul.

05-14-00 TIME LIMITS - STORAGE

9-1 Storage Compressor - Time Limits

A. If the compressor is not operated within 2 years after installation, the compressor must be inspected in accordance with the 12 month inspected in this section.

9-2 5" Vane Axial Blower - Time Limits

A. If the 5" vane axial blower is not operated within 2 years after installation, the blower must be inspected in accordance with the 12 month inspection in this section.

VAPOR CYCLE FREON AIR-CONDITIONING

CHECKS

6-1 Preflight Check - System

A. The preflight check shall be accomplished in accordance with this guide by a qualified technician.

The preflight check is not a detailed mechanical inspection, but essentially a visual check of the helicopter for correct condition.

The check shall be completed before the first flight of the day.

When unusual local conditions dictate, the extent and/or frequency of this check shall be increased as necessary to promote safe operation.

B. System Check:

The exterior check is laid out as walk-around check, starting forward right at the pilot's door, proceeding clockwise to the tail boom, to the left hand side (including the upper and lower areas of the helicopter) and is completed at the helicopter nose area.

Steps:

1) Check the security of mounting of the compressor to the airframe.

2) Check security of the condenser above the cabin roof and it's attachments.

3) Visually inspect condition of drive belt.

4) Inspect air outlets for condition and operation.

5) Blank

6) Blank

VAPOR CYCLE AIR-CONDITIONING

6-2 Complementary Inspection every 50 Fh.

A. This inspection is to be accomplished by a qualified technician.

B. In conjunction with this inspection, perform a complete pre-flight in accordance with 6-1 of this section.

STEPS;

1) Remove the upper condenser shroud and inspect the entire assembly for security, including support brackets and attachment fittings.

2) Inspect mounting of the condenser blower.

3) Visually inspect the security of the compressor and mount.

4) Reinstall shroud and return aircraft to service, making appropriate entries in the aircraft maintenance record.

6-3 Annual/100 Fh

A. This inspection is to be performed by a qualified technician.

B. In conjunction with this inspection a complete preflight and 50 hour complementary inspection are to be accomplished in accordance with this Chapter Section 6-1 and 6-2.

Steps:

1) Perform an operational test of the system in accordance with Chapter 21-00-00, Part II, 5-1.

2) Perform the functional test Part II in Chapter 21-00-00, 5-2.

3) Inspect both evaporators for security of attachment.

4) Inspect visible portions for cleanliness, security and evidence of leaks.

5) Correct any discrepancies noted.

6) Reinstall cowlings and panels and return aircraft to service making appropriate entries in aircraft maintenance record.

6-4 Intermediate Inspection - 500 Fh

A. This inspection is to be accomplished by a qualified technician.

B. In conjunction with this inspection, perform the inspections contained in Sections 6-1, 6-2, and 6-3 respectively.

Steps:

1) Remove all interior panels and ceiling panels, as required, to gain access to refrigerant lines.

2) Inspect lines for chaffing, leaks and security.

3) Inspect wiring for chafing and security.

4) Remove cover of air conditioner electrical panel assembly P/N: 540028-"C"-4 and inspect for condition.

5) On the operational test, manually trip the high and low pressure safety switches, one at a time to verify that the compressor clutch "reset" one (1) amp circuit breaker trips.
Note: Move air conditioner switch to "off" prior to resetting breaker.

6) Comply with lubrication requirements of Section 05-12-00 as necessary.

7) Check time life limits of chapter 04-00-00. Replace components as necessary.

8) Check overhaul time limits in Section 05-13-00. Replace components as necessary.

9) Reinstall all covers and cowlings.

10) Return aircraft to service and make appropriate entries in aircraft maintenance records.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

VAPOR CYCLE AIR-CONDITIONING

CHAPTER 21 - AIR-CONDITIONING

LIST OF EFFECTIVE PAGES

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

VAPOR CYCLE AIR-CONDITIONING

CHAPTER 21 - AIR-CONDITIONING

TABLE OF CONTENTS

NOTE:

All servicing of the air-conditioning system involving refrigerant should be accomplished in accordance with and by Federal/State/Local rules, guidelines, and certified technicians, This guide does not qualify or authorize any person to perform servicing functions contrary to rules referenced above.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

VAPOR CYCLE AIR-CONDITIONING

21-00-00 TROUBLESHOOTING

1-1 General

A. References: Electrical Diagram Illustration No. MDHS 600N Sheet 3

B. Special Tools: Volt Ohm meter

C. Consumables: None

D. Procedure:

Note: Ground checks of electrical system requires GPU

(1) The high and low pressure safety 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 condenser/compressor circuit breaker.

(2) Always check system R134a pressure first, static pressure should read 80 to 100 PSI (or about the same in PSI as the ambient temperature in fahrenheit) as a leaking unit may have caused the low pressure safety switch to open. This switch is set at 10 to 15 PSI and requires that pressure, or greater, to close.

(3) Failure of the condenser blower or coil blockage could result in the high pressure safety switch opening. In the event either switch actuates, a one (1) amp circuit breaker in the Air-Conditioner master panel must be reset. The cause of the failure should be researched and the cause corrected.

1-2 Compressor and Drive Assy.

A. References: Electrical Diagram Illustration No. MDHS 600N Sheet 3

B. Special Tools: Air-conditioning gauges and Volt Ohm meter

C. Consumables: None

D. Procedure:

Note: Ground checks of electrical system require GPU.

(1) Install refrigerant pressure gauges with flexible hoses at the High/Low test/servicing ports located below the battery. Access is through a hinged door under the helicopter.

(2) With the aircraft operating, cycle the air-conditioner switch between the on and off positions, while visually verifying the compressor drive belt is driving the compressor. If the compressor is turning and no significant pressure changes are noted ensure that refrigerant is in the system. If all other components and systems appear to be operating normally, replace the compressor.

(3) If while the aircraft is operating, and during the actuation of the air-conditioner on-off switch, the compressor is not turning, check compressor/condenser clutch circuit breaker. If circuit breaker is in, check for power at the clutch coil. If power is present replace coil.

(4) If paragraphs 2 & 3 of this section reveal no abnormalities, contact the STC holder.

1-3 Evaporator Fans

A. References: Electrical Diagram Illustration No. MDHS 600N Sheet 3

B. Special Tools: Volt Ohm Meter

C. Consumables: None

D. Procedure:
Note: Ground checks of electrical system requires GPU.

(1) If either evaporator fan 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 in question 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. Inspect the circuit breakers marked "evap" in the Master Air-Conditioning Electrical Panel.

(2) Determine if electrical power is being supplied to the wire, which is the power source to each fan's motor. If power is available, it will be necessary to test with a volt meter 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.

(3) The fan motor may be disassembled from its housing and the screws in the motor case removed to allow removal of the motor. A replacement motor should be obtained from Integrated Flight Systems, Inc. and reinstalled in a similar manner. **Do not attempt disassembly or field repair of any evaporator motor.**

1-4 Condenser Blower

A. References: Electrical Diagram Illustration No. MDHS 600N Sheet 3

B. Special Tools: Volt Ohm Meter

C. Consumables: None

D. Procedure:

Note: Ground checks of electrical system requires GPU.

(1) 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. If the circuit breaker is not open, then power should be supplied directly to the condenser blower, which is mounted above the cabin roof, below the condenser. A time delay of 4 seconds or more may occur.

(2) If air is not being exhausted, a volt meter should be utilized to determine if the power is being supplied through the switch and power 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, remove blower motor and replace with serviceable unit.

21-00-00 AIR-CONDITIONING-SERVICING

3-1 Reclaiming - Refrigerant

A. References: SAE J 1989

B. Special Tools: EPA approved reclaiming unit.

C. Consumable Materials: None

D. Procedure:

(1) Connect the EPA approved recovery unit services hoses, which shall have shut-off valves to the aircraft air-conditioning system service ports.

(2) Operate the recovery equipment as covered by the equipment manufacturers recommended procedure.

(3) Start the recovery process and remove the refrigerant from the aircraft A/C system. Operate the recovery unit until the aircraft system has been reduced from a pressure to a vacuum. With the recovery unit shut off for at least 5 minutes, determine that there is no refrigerant remaining in the aircraft A/C system. If the aircraft system has pressure, additional recovery operation is required to remove the remaining refrigerant. Repeat the operation until the aircraft A/C system vacuum level remains stable for 2 minutes.

(4) Close the valves in the service lines and then remove the service lines from the aircraft system. Proceed with the repair/service. If the recovery equipment has automatic closing valves, be sure they are properly operating.

(5) Technician shall store and use recycled refrigerant in accordance with the referenced SAE J 1989 specification. Information on proper handling of refrigerant can be obtained from:

IMACA
International Mobil Air-Conditioning Association
P.O. Box 9000
Ft. Worth, Texas 76147

1-2 Charging System

A. References: None

B. Special Tools: Evacuation pump - R134a Servicing gauge set

C. Consumable Materials: Refrigerant R134a

D. Procedure:

(1) Charging completely empty system.
a) Install a set of charging gauges to the servicing ports and to the evacuation pump.
b) Open both high and low pressure valves and turn pump on.
c) Allow pump to operate until a low side gauge reading of approximately 30" of vacuum (at sea level) is obtained. Slightly less vacuum will be indicated at higher elevations.
d) Close both valves, **then** turn vacuum pump off.

(2) Pressure test system.
a) Flow a small quantity of refrigerant through system. Pressurize the system using dry nitrogen to 300 PSI. Using an electronic "Sniffer", check entire system for leaks.
b) After leaks are located, use refrigerant reclaimer, reduce pressure to zero, and correct leaks, as necessary.
c) Repeat steps a & b, as required, until all leaks are corrected.

(3) Adding refrigerant.
a) Connect center hose of service gauge set to a suitable supply of refrigerant R134a.
b) Open supply valve and purge line prior to opening low pressure servicing valve.
c) Allow gas to flow until 50 PSI is read on gauges.

d) Start aircraft and turn generator "ON".

e) Open low pressure valve **slowly** to allow gas to flow into system.

f) Allow gas to flow until the sight glass shows clear of bubbles. If the OAT is less than 100° F and more than 70° F add an additional 4oz. of R134a to system. If below 70° F a total of 8oz. can be added.

g) Obtain a temperature reading at the evaporator intake and at the nearest air outlet.

h) The temperature differential (TD) should be 20° F at sea level and slightly less as altitude increases.

I) If the 20° TD cannot be obtained, check for blockage of condenser and proper operation of condenser and compressor.

(4) In-flight Check
a) Secure all open panels and cowlings and prepare ship for flight.
b) The gauges can remain attached to service ports during flight.
c) Fly the aircraft with air-conditioner operating and monitor gauge readings.
d) A slight decrease in gauge readings may occur.
e) Increases in pressure indicates possible defects in the system.

(5) Completion
a) After completion of servicing, remove all test equipment and perform a thorough preflight check of the system in accordance with Chapter 5 of this manual.

3-3 Servicing - Compressor Oil

A. References: None

B. Special Tools: None

C. Consumable Materials: Automotive Air-Conditioner Oil

CAUTION: Oil must be of the exact same type as shown on the compressor. If any doubt exists, contact the STC holder.

D. Procedure:
(1) Introduce approximately 2oz. of "Ester" type refrigerant oil during the initial changing phase found in Section 21-00-00, 3-2.
(2) Complete charging in accordance with 21-00-00, 3-2.

3-4 Blank

3-5 Servicing - Pulley Bearing

A. References: None

B. Special Tools: None

C. Consumable Materials: Mobil 28 grease

D. Procedure:

(1) With bearing removed from pulley, remove old grease from bearing and dry.

(2) Repack 40% to 50% of bearing cavity with Mobil 28 grease.

3-6 Blank

21-00-00 AIR-CONDITIONING-REMOVAL/INSTALLATION

4-1 Removal/Installation - Dual Evaporators and Dual Fans

A. References: None

B. Special Tools Refrigerant Reclaimer

C. Consumable Materials: R134A

D. Procedure:

Removal - Forward Unit

(1) Remove L.H. and R.H. console panels.

(2) Connect refrigerant reclaimer to system in accordance with Section 21-00-00, 3-1, and remove coolant from system. Comply with all Federal/ State and Local rules governing refrigerant handling.

(3) Remove bolts securing evaporator.

(4) Remove dual fan and evaporator enclosure.

(5) Support evaporator while removing lines and other duct work.

(6) Remove evaporator from aircraft.

(7) Cap all open lines on unit and aircraft.

(8) Disconnect electrical connections and remove evaporator fan.

Installation

(1) Reinstall dual fan in aircraft and connect electrical connections.

(2) Position evaporator against fan assembly and loosely install with securing hardware. Secure mounting hardware.

(3) Reinstall drain line.

(4) Connect duct work.

(5) Ensure refrigerant o-rings are installed and in good condition. Replace as necessary. Oil all o-rings and fittings with refrigerant oil of the same type listed on the compressor. Torque refrigerant lines: #6 11-13 Ft/lbs; #8 15-20 Ft/lbs; #10 21-27 Ft/lbs.

(6) After completing other system functions and maintenance service system in accordance with Section 21-00-00, 3-2.

(7) Check for leaks using R-134a Refrigerant "Sniffer".

Removal - Aft Unit

(1) Remove seat pan above evaporator and disconnect electrical connections.

(2) Connect refrigerant reclaimer to system in accordance with Section 21-00-00, 3-1, and remove coolant from system. Comply with all Federal/ State and Local rules governing refrigerant handling.

(3) Remove blower fan and evaporator from aircraft.

(4) Support evaporator while removing lines and duct work.

(5) Cap all open lines on unit and aircraft.

Installation

(1) Reinstall fan/evaporator and connect electrical connections.

(2) Position evaporator and loosely install with securing hardware. Secure mounting hardware.

(3) Reinstall drain line.

(4) Connect duct work.

(5) Ensure refrigerant o-rings are installed and in good condition. Replace as necessary. Oil all o-rings and fittings with refrigerant oil of the same type listed on the compressor. Torque refrigerant lines: #6 11-13 Ft/lbs; #8 15-20 Ft/lbs; #10 21-27 Ft/lbs.

(6) After completing other system functions and maintenance service system in accordance with Section 21-00-00, 3-2.

(7) Check for leaks using R-134a Refrigerant "Sniffer".

4-2 Removal/Installation - Condenser Assembly and Condenser Blower

A. References: None

B. Special Tools: Refrigerant reclaimer

C. Consumable Materials: None

D. Procedure:

Removal

(1) Remove condenser shroud.

(2) Connect refrigerant reclaimer to system and evacuate system in accordance with Section 21-00-00, 3-1.

(3) Remove screws securing condenser assembly to airframe. Disconnect blower wires and both #6 and #8 refrigerant hoses.

(4) Slide condenser from upper deck.

(5) Cap all open lines on condenser and airframe.

Installation

(1) Slide condenser onto upper deck.

(2) Loosely install all hardware securing condenser assembly to deck. Tighten mounting screws only after all hardware is installed.

(3) Remove protective caps from refrigerant lines. Inspect that o-rings are installed and in good condition. Oil all o-rings and fittings with refrigerant oil of the same type listed on the compressor.

(4) Install refrigerant lines. Torque refrigerant lines as follows: #6 11-13 Ft/lbs; #8 15-20 Ft/lbs; #10 21-27 Ft/lbs. Do not over tighten.

(5) Service system in accordance with Section 21-00-00, 3-2.

(6) Install shroud. Ensure that all cam-locks are in place.

4-3 Removal/Installation - Compressor

A. References: None

B. Special Tools: Refrigerant reclaimer

C. Consumable Materials: None

D. Procedure:

Removal

(1) Remove upper transmission cowling.

(2) Connect refrigerant reclaimer to system and evacuate in accordance with Section 21-00-00, 3-1. Comply with all Federal/State and Local rules governing refrigerant handling.

(3) Remove refrigerant lines from compressor and install protective caps to protect from foreign material entering system and compressor.

(4) Disconnect drive belt to compressor.

(5) Remove bolts securing compressor to mount and remove compressor.

Installation

(1) Install compressor loosely on support frame with attaching hardware.

(2) Install drive belt.

(3) Tighten compressor bolts allowing compressor to "Seek" its own natural position on the frame. Tighten compressor belt tensioning bolt to 50 lbs belt tension.

(4) Tighten and safety all compressor mounting bolts.

(5) Remove protective caps from refrigerant lines and compressor. Inspect the o-rings for installation and condition. Replace as necessary.

(6) Oil all fittings and o-rings.

(7) Install refrigerant lines.

(8) Torque refrigerant lines: #6 11-13 Ft/lbs; #8 15-20 Ft/lbs; #10 21-27 Ft/lbs. Do not over torque.

(9) Service system in accordance with Section 21-00-00, 3-2.

(10) Install previously removed cowlings.

4-4 Removal/Installation - Pulley Bearing

A. References: None

B. Special Tools: None

C. Consumable Materials: None

D. Procedure:

Removal

(1) Remove transmission cowlings.

(2) Remove drive belt.

(3) Remove nut attaching pulley to compressor shaft.

(4) Remove snap ring which retains pulley onto compressor.

(5) Remove pulley.

(6) Press bearing from pulley.

Installation

(1) Press new or serviceable bearing into pulley.

(2) Install pulley onto compressor shaft.

(3) Install snap ring.

(4) Install retention nut.

(5) Reinstall belt. Tighten compressor belt tensioning bolt to 50 lbs belt tension.

(6) Reinstall cowlings.

4-5 Removal/Installation - Electrical Components

A. References: Illustrations MDHS 600N Sheet 1 Plumbing Routing and MDHS 600N Sheet 3 Electrical Diagram

B. Special Tools: None

C. Consumable Materials: None

D. Procedure:

Remove

(1) Remove any power to system and aircraft including disconnecting battery.

(2) Locate component or part requiring maintenance.

(3) After access is gained, remove part or component.

Installation

(1) Replace part with original serviceable or new or used serviceable part.

(2) After electrical connections are made ensure wiring is stowed and secured to preclude chaffing or contact with other components that could cause shorts or damage.

(3) Replace any covers or access panels.

(4) Test system as necessary in accordance with this manual.

4-6 Removal/Installation - Lines, Expansion valve and receiver drier.

A. References: Illustrations MDHS 600N Sheet 1 Plumbing Routing and MDHS 600N Sheet 2 Plumbing Diagram

B. Special Tools: None

C. Consumable Materials: Dish soap and water as necessary

D. Procedure:

Removal

(1) Remove panels as necessary to access the components to be changed.

(2) Evacuate system in accordance with Section 21-00-00, 3-1.

(3) Remove component or line to be replaced. Cap all exposed lines if system is not going to be reassembled immediately.

Installation

(1) Install components or lines securing with hardware removed previously.

(2) Inspect for o-ring on fitting and condition of o-rings. Replace with new as necessary. Oil fittings and o-rings.

(3) Torque line and fittings as follows: #6 11-13 Ft/lbs; #8 15-20 Ft/lbs; #10 21-27 Ft/lbs. Do not over tighten.

(4) Service system in accordance with Section 21-00-00, 3-2.

(5) Reinstall all cowls and panels previously removed.

4-7 Removal/Installation - Split Drive Pulley

A. References: Illustrations MDHS 600N Sheet 6 Compressor

B. Special Tools: None

C. Consumable Materials: None

D. Procedure:

Removal

(1) Remove panels as necessary to access the components to be changed.

(2) Remove drive belt.

(3) Remove four MS 21042-5 nuts and NAS 1305-10 bolts.

(4) Remove both pulley halves as an assembly.

Installation

(1) Install pulley assembly.

(2) Install four MS 21042-5 nuts and NAS 1305-10 bolts. Torque bolts in an alternating sequence **100 - 140 in/lbs.**

(3) Install drive belt. Tighten compressor belt tensioning bolt to 50 lbs belt tension

(4) Reinstall all cowls and panels previously removed.

21-00-00 AIR-CONDITIONING-FUNCTIONAL TEST

5-1 Functional Test - Normal Operation

A. With the aircraft engine operating and electrical system on and functioning normally, move the air-conditioner control switch to the "FAN" position.

B. Move the cockpit fan switch from "Low to "High" speed and ensure that air output is present in all the forward air outlets. Repeat the test using the aft cabin fan speed selector switch for the aft cabin air outlets.

C. Reposition the air-conditioner control switch to the "A/C" position and repeat step B above. Cool air should be supplied to the cockpit and cabin vents, after a time delay of 4 to 8 seconds.

D. Turn Air-conditioner switch to "OFF" or the center position. Entire system should shut down.

E. If "A/C" switch in the "off" position does not turn air conditioner off, pull 50 amp master A/C circuit breaker located immediately to the left of the A/C control switches (left hand pilot in command installation).

5-2 Function Test - State of Charge

A. Connect a set of manifold gauges to the aircraft air-conditioner servicing ports located beneath the helicopters battery. Access is through a hinged door on the belly. Ensure that the valves are closed.

B. Start aircraft and bring to flight idle. Ensure generator and the electrical system are operating normally.

C. Move air-conditioner control switch to "A/C" position and stabilize system for at least 5 minutes. Run both evaporator fans on "High" speed.

D. Observe for the following conditions;

1) High pressure gauge indicates 250 to 300 lbs. at 100° F or less. Low pressure gauge reads 30 - 45 lbs. (This reading varies according to "load" on the evaporators and humidity). This indicates a normal system.

E. Obtain a thermometer with a remote probe and locate the probe at the inlet to the evaporator located under the pilot seat for the cabin. Locate another thermometer in the nearest air outlet.

F. With the system operating, at least a 20• temperature differencial (T.D.) should be observed between the readings.
Note: This reading may be lower (eg 16• at altitudes above sea level due to the thinner atmosphere). The test readings should be taken after 5 minutes of operation.

G. Retest in the same manner the cockpit evaporator located in the nose.

H. If readings are outside of these parameters or if the cooling is not sufficient the system may need further tests and servicing in accordance with Section
21-00-00.

21-00-00 AIR-CONDITIONING-CLEANING

7-1 Cleaning - Fans

A. References: None

B. Special Tools: None

C. Consumable Materials: None

D. Procedure:

(1) Clean the blower by means of oil and water free pressurized air.

(2) Clean all blades completely to ensure balance is not affected.

7-2 Cleaning Condenser or Evaporator coils.

A. References: None

B. Special Tools: None

C. Consumable Materials: Dish soap and water as necessary
EPA approved cleaning agents

D. Procedure:

(1) Coils Installed.
a) Gain access to both sides of coils by removing ducts as applicable.
b) Use compressed air to blow loose dirt and dust from units.
c) Reinstall ducting.

(2) Remove
a) After removal of coils in accordance with applicable sections of this manual, tightly cap all hose fitting.
b) Spray or brush a soap and water mixture on coils. Let stand and rinse with fresh water.
c) Blow dry with compressed air.
d) Reinstall in accordance with applicable sections of this manual.

21-00-00 AIR-CONDITIONING-REPAIR

8-1 Repair

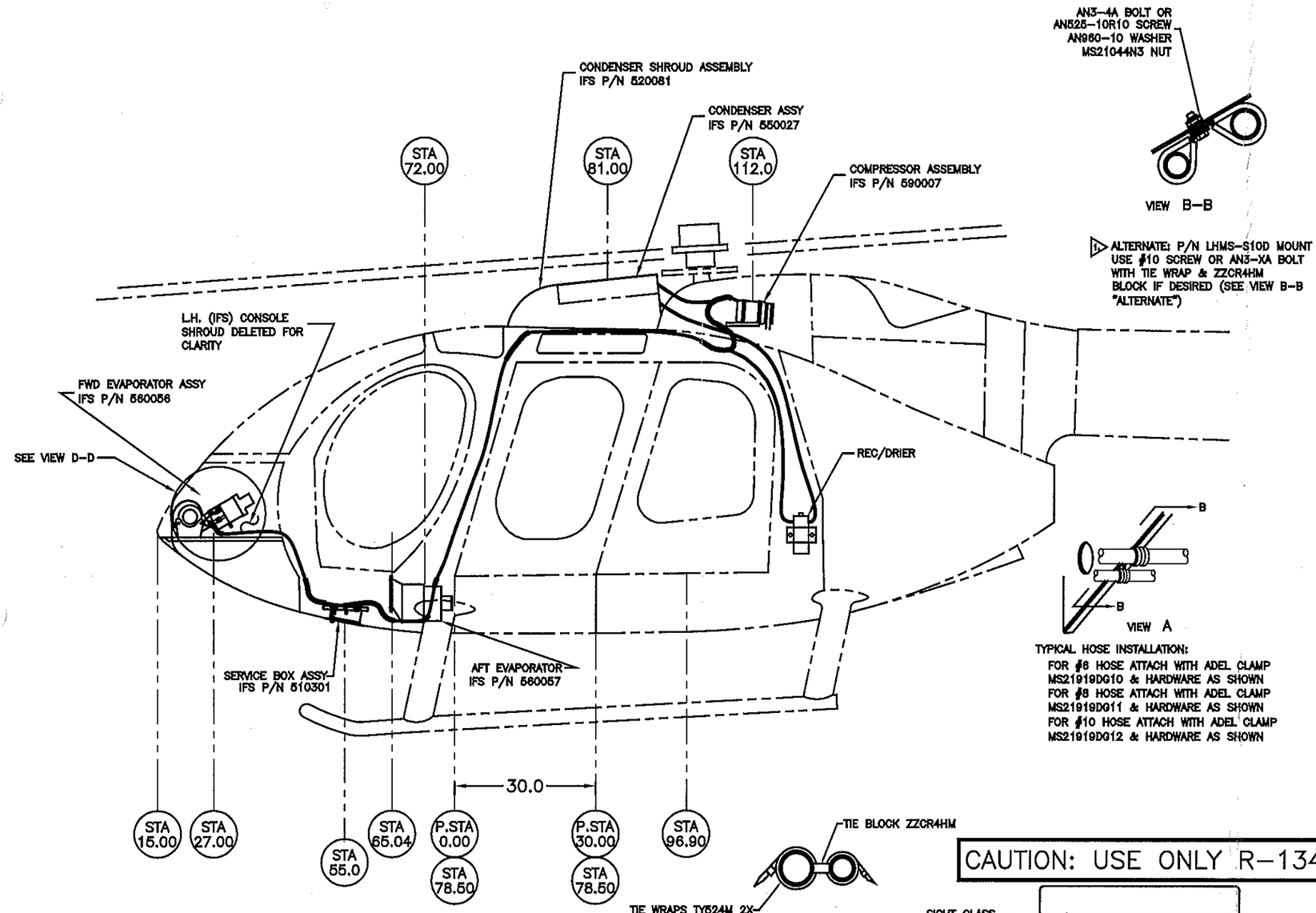
A. No repairs other than those that can be accomplished with normal methods or that are called out in this ICA should be attempted unless the STC holder is contacted and specific written instructions are provided.

Normal repairs would include paint touch up, sheet metal repairs to non structural components and fiberglass repairs to ducts and plenums done in accordance with generally accepted maintenance practices.

Step 5

ICA Illustrations & Diagrams

REV.	DESCRIPTION	DATE	APPV.

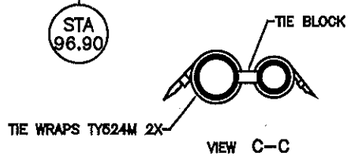


VIEW B-B

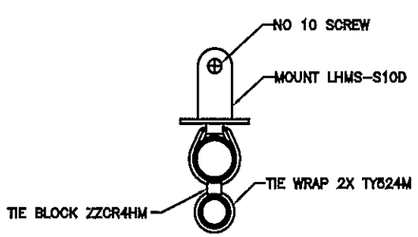
1 ALTERNATE: P/N LHMS-S10D MOUNT USE #10 SCREW OR AN3-XA BOLT WITH TIE WRAP & ZZCR4HM BLOCK IF DESIRED (SEE VIEW B-B "ALTERNATE")

VIEW A

TYPICAL HOSE INSTALLATION:
FOR #6 HOSE ATTACH WITH ADEL CLAMP
MS21919DG10 & HARDWARE AS SHOWN
FOR #8 HOSE ATTACH WITH ADEL CLAMP
MS21919DG11 & HARDWARE AS SHOWN
FOR #10 HOSE ATTACH WITH ADEL CLAMP
MS21919DG12 & HARDWARE AS SHOWN

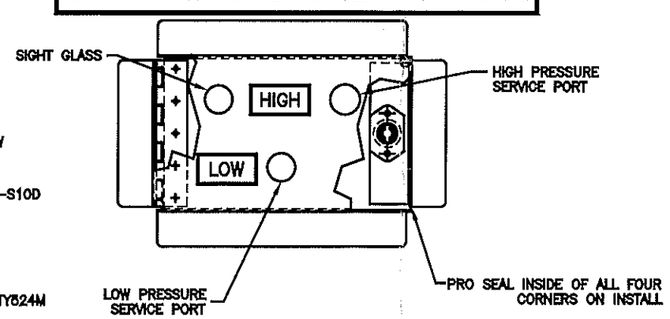


VIEW C-C



VIEW B-B
"ALTERNATE"

CAUTION: USE ONLY R-134a



SERVICE BOX ASSEMBLY
IFS P/N 510301

(LOOKING INSIDE FROM UNDER THE HELICOPTER), DOOR REMOVED FOR CLARITY.

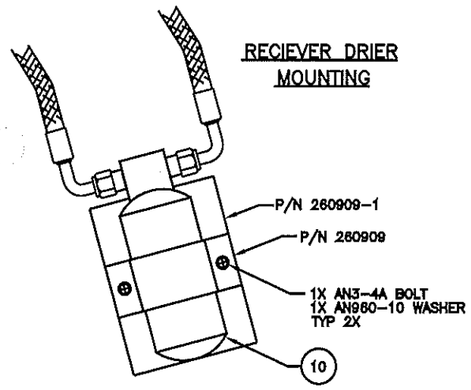
NOTE:
THIS DRAWING TO BE USED FOR PURPOSES OF CONTINUED AIRWORTHINESS INCLUDING COMPONENT REMOVAL AND REINSTALLATION.

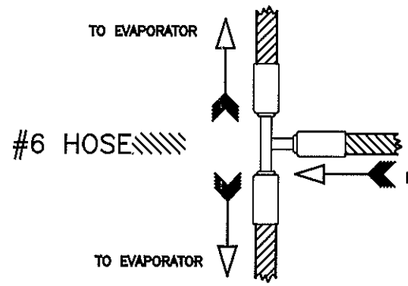
INTEGRATED FLIGHT SYSTEMS INC.			
DATE: 09/03/97	APPROVED BY:	SHEET: 1 OF 7	DRAWN BY: B.KNUDSEN
SCALE: 1/12			
TITLE: CONTINUED AIRWORTHINESS ILLUSTRATION PLUMBING ROUTING			
APPLICATION: MDHS 600N		DRAWING NUMBER: MDHS 600N	

\CONTAIR\MDHS600N\01.DWG

REV.	DESCRIPTION	DATE	APPV.

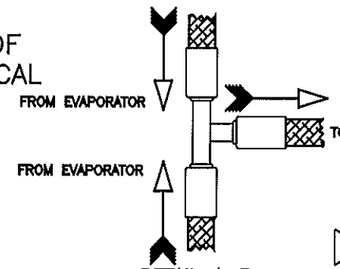
RECIEVER DRIER MOUNTING





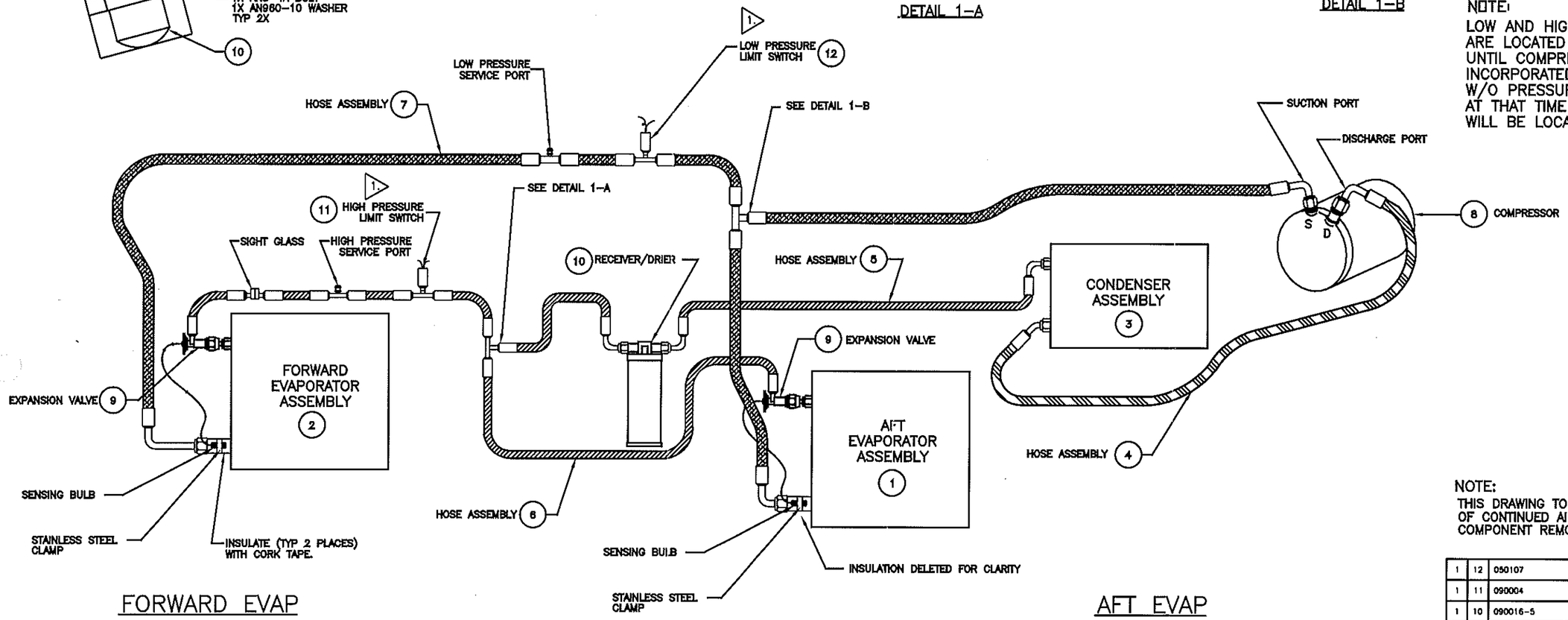
DETAIL 1-A

DIRECTION OF FLOW IS CRITICAL



DETAIL 1-B

1. NOTE:
LOW AND HIGH PRESSURE SWITCHES ARE LOCATED ON COMPRESSOR UNTIL COMPRESSORS ARE INCORPORATED INTO THE SYSTEM W/O PRESSURE PORTS. AT THAT TIME PRESSURE SWITCHES WILL BE LOCATED AS SHOWN.



FORWARD EVAP

EXTREMELY IMPORTANT

FAILURE TO SECURE EXPANSION VALVE SENSING BULB, TIGHTLY, TO THE RETURN LINE HOSE FITTING (AT 3 OR 9 O'CLOCK POSITION) WITH A STAINLESS STEEL CLAMP (AND INSULATE SENSING BULB AND LINE) WILL DRAMATICALLY DECREASE THE PERFORMANCE OF THE AFT (NOT FORWARD) EVAPORATOR.

REFRIGERANT HOSE SCHEDULE

#6 HOSE

#8 HOSE

#10 HOSE

AFT EVAP

EXTREMELY IMPORTANT

FAILURE TO SECURE EXPANSION VALVE SENSING BULB, TIGHTLY, TO THE RETURN LINE (VERTICAL COPPER TUBE) WITH A STAINLESS STEEL CLAMP (AND INSULATE SENSING BULB AND LINE) WILL DRAMATICALLY DECREASE THE PERFORMANCE OF THE FORWARD (NOT AFT) EVAPORATOR.

NOTE:
THIS DRAWING TO BE USED FOR PURPOSES OF CONTINUED AIRWORTHINESS INCLUDING COMPONENT REMOVAL AND REINSTALLATION.

QTY	ITEM	PART NO.	DESCRIPTION
1	12	050107	LOW PRESSURE SWITCH
1	11	090004	HIGH PRESSURE SWITCH
1	10	090016-5	RECEIVER/DRIER
2	9	090002-"0"	EXPANSION VALVE
1	8	590007	COMPRESSOR ASSY
1	7	570083	HOSE ASSEMBLY, EVAP'S TO COMP
1	6	570082	HOSE ASSEMBLY, REC/DRIER TO EVAP'S
1	5	570081	HOSE ASSEMBLY, COND TO REC/DRIER
1	4	570080	HOSE ASSEMBLY, COMP TO COND
1	3	550027	CONDENSER ASSEMBLY
1	2	560056	FORWARD EVAPORATOR ASSEMBLY
1	1	560057	AFT EVAPORTATOR ASSEMBLY

INTEGRATED FLIGHT SYSTEMS INC.

DATE: 09/03/97	APPROVED BY:	SHEET: 2 OF 7	DRAWN BY: MAR
SCALE: NONE			

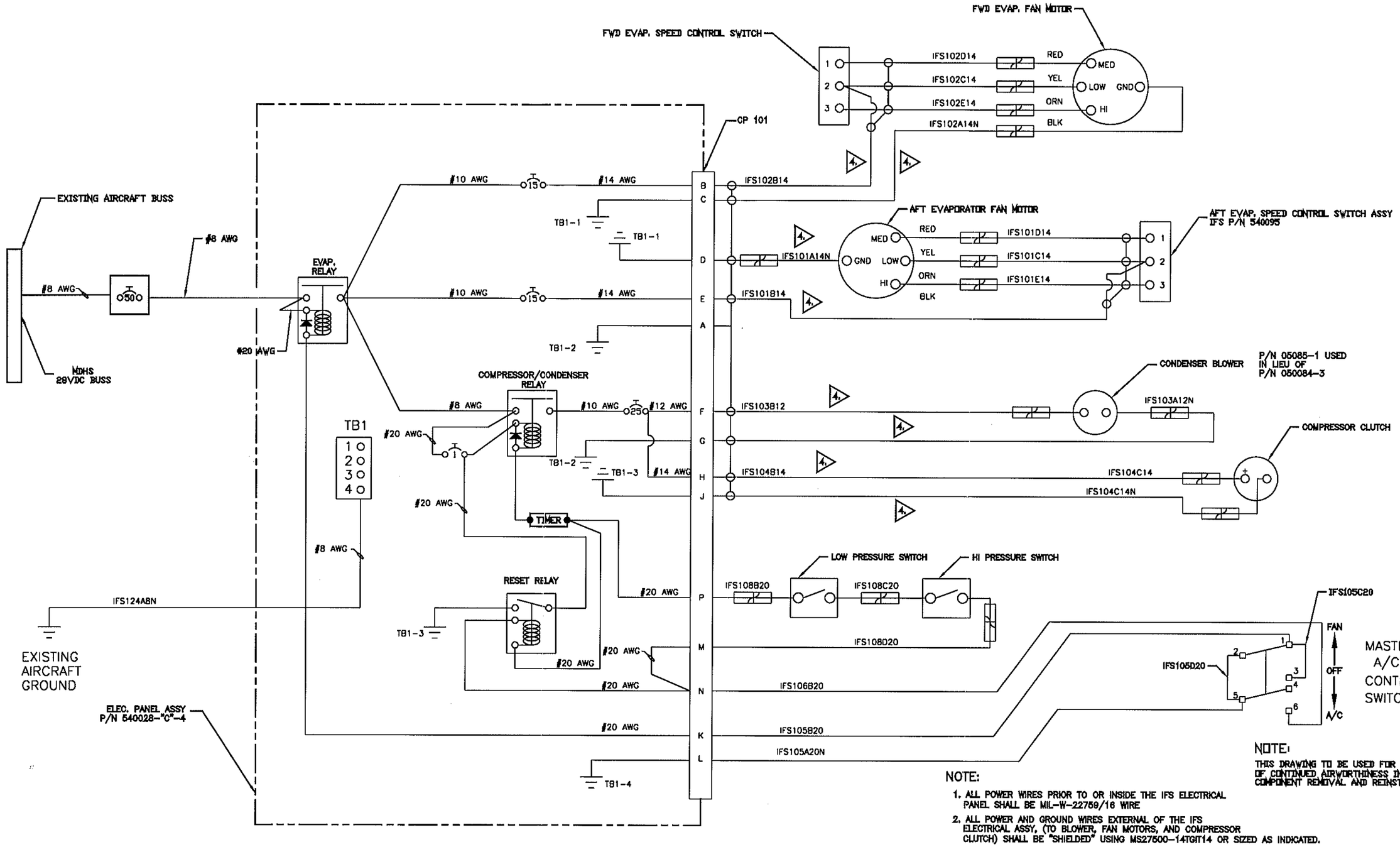
TITLE: CONTINUED AIRWORTHINESS ILLUSTRATION PLUMBING DIAGRAM

APPLICATION: MDHS 600N

DRAWING NUMBER: MDHS 600N

\CONTAIR\MDHS600N\02.DWG

REV.	DESCRIPTION	DATE	APPV.



NOTE:

THIS DRAWING TO BE USED FOR PURPOSES OF CONTINUED AIRWORTHINESS INCLUDING COMPONENT REMOVAL AND REINSTALLATION.

NOTE:

1. ALL POWER WIRES PRIOR TO OR INSIDE THE IFS ELECTRICAL PANEL SHALL BE MIL-W-22759/16 WIRE
2. ALL POWER AND GROUND WIRES EXTERNAL OF THE IFS ELECTRICAL ASSY, (TO BLOWER, FAN MOTORS, AND COMPRESSOR CLUTCH) SHALL BE "SHIELDED" USING MS27500-14TGIT14 OR SIZED AS INDICATED.

NOTES: CONTINUED

3. IFS103B12 WIRE, AND 25 AMP C/B MAYBE CHANGED TO: IFS103B14 AND 20 AMP C/B, WHEN 13 AMP, 5" BLOWER (P/N 050085-1) IS UTILIZED.
4. WHENEVER MAINTENANCE IS PERFORMED METALLIC OVER BRAID MUST BE REINSTALLED OVER ALL POWER WIRES. SOLDER MIL-W-22759/16/20 WIRE TO BOTH ENDS OF OVER BRAID AND GROUND FOR ADDED EMI SUPPRESSION.

WIRE #IFS XXX X XX N

- GROUP
- SEQUENCE
- GAUGE
- INDICATES GROUND

MD 600N
ELECTRICAL WIRING DIAGRAM

SINGLE CONDENSER BLOWER

INTEGRATED FLIGHT SYSTEMS INC.

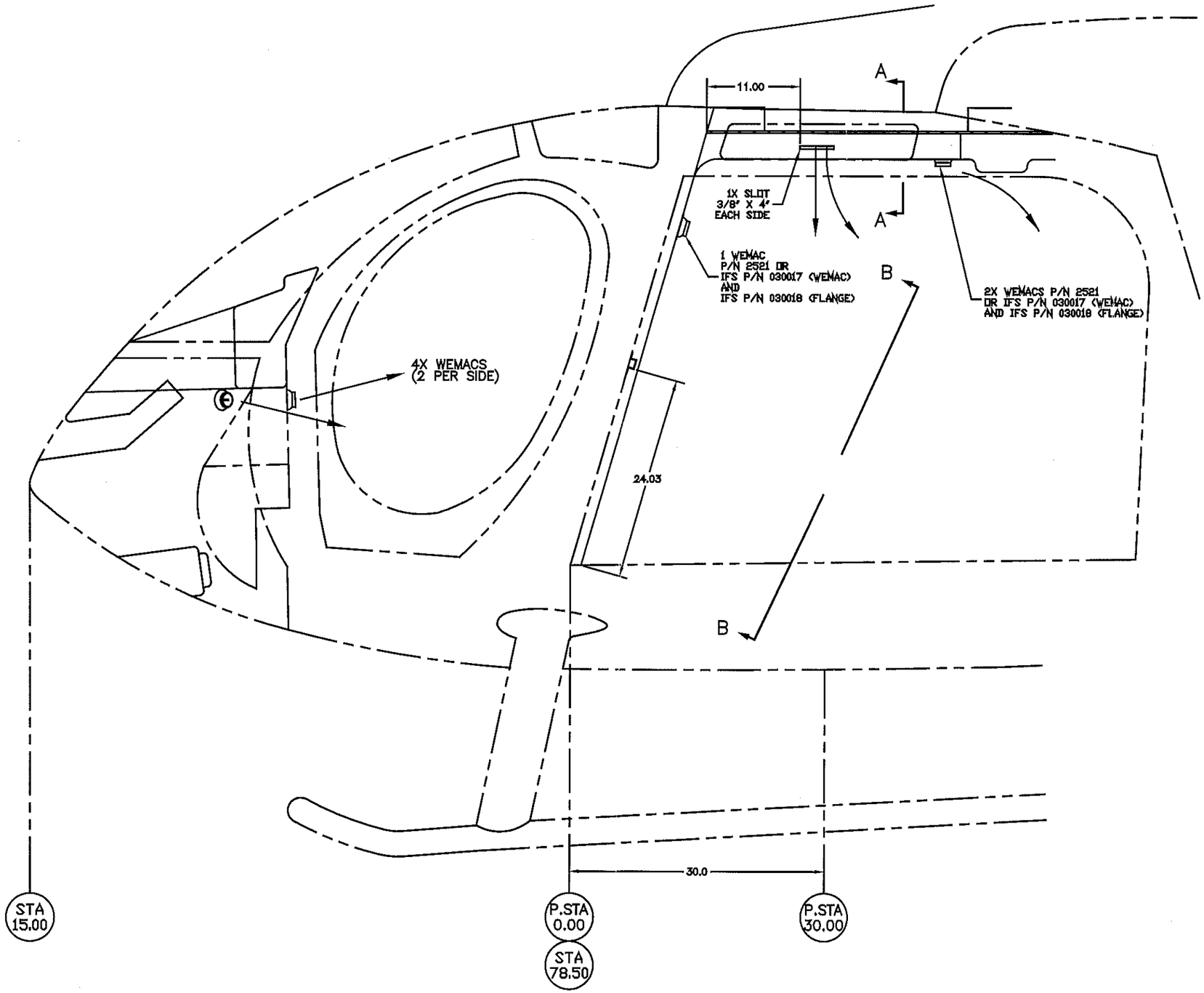
DATE: 09/03/97	APPROVED BY:	SHEET: 3 OF 7	DRAWN BY: MAH
SCALE: NONE			

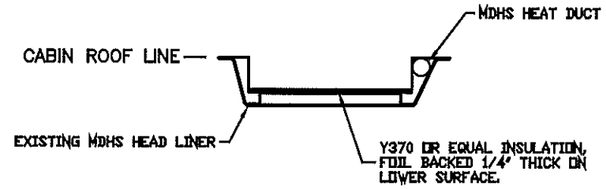
TITLE: CONTINUED AIRWORTHINESS ILLUSTRATION ELECTRICAL DIAGRAM

APPLICATION: MDHS 600N	DRAWING NUMBER: MDHS 600N

\CONTAIR\MDHS600N\ELD.DWG

REV.	DESCRIPTION	DATE	APPV.



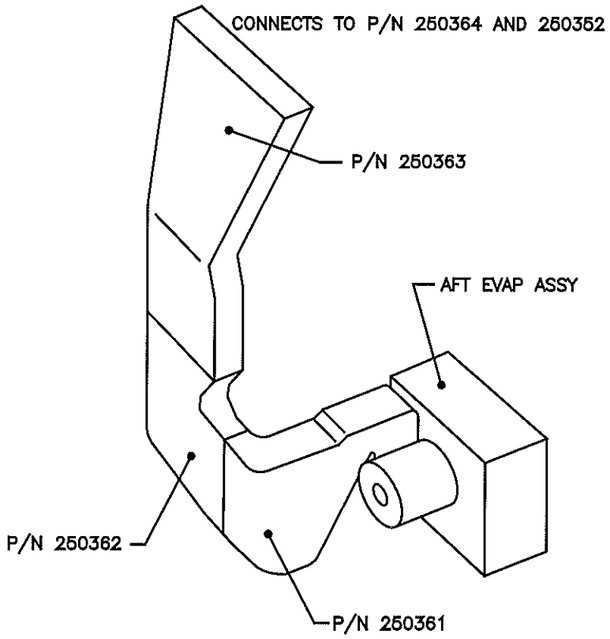


SECTION A–A

AFT DUCT

NOTE:

1. WHENEVER MAINTENANCE IS PERFORMED SEAL ALL JOINTS W/ FOIL TAPE.
2. SECURE DUCTS TO AIR FRAME OR TO INTERIOR PANELS, AS REQ.



SECTION B–B

NOTE:

THIS DRAWING TO BE USED FOR PURPOSES OF CONTINUED AIRWORTHINESS INCLUDING COMPONENT REMOVAL AND REINSTALLATION.

INTEGRATED FLIGHT SYSTEMS INC.

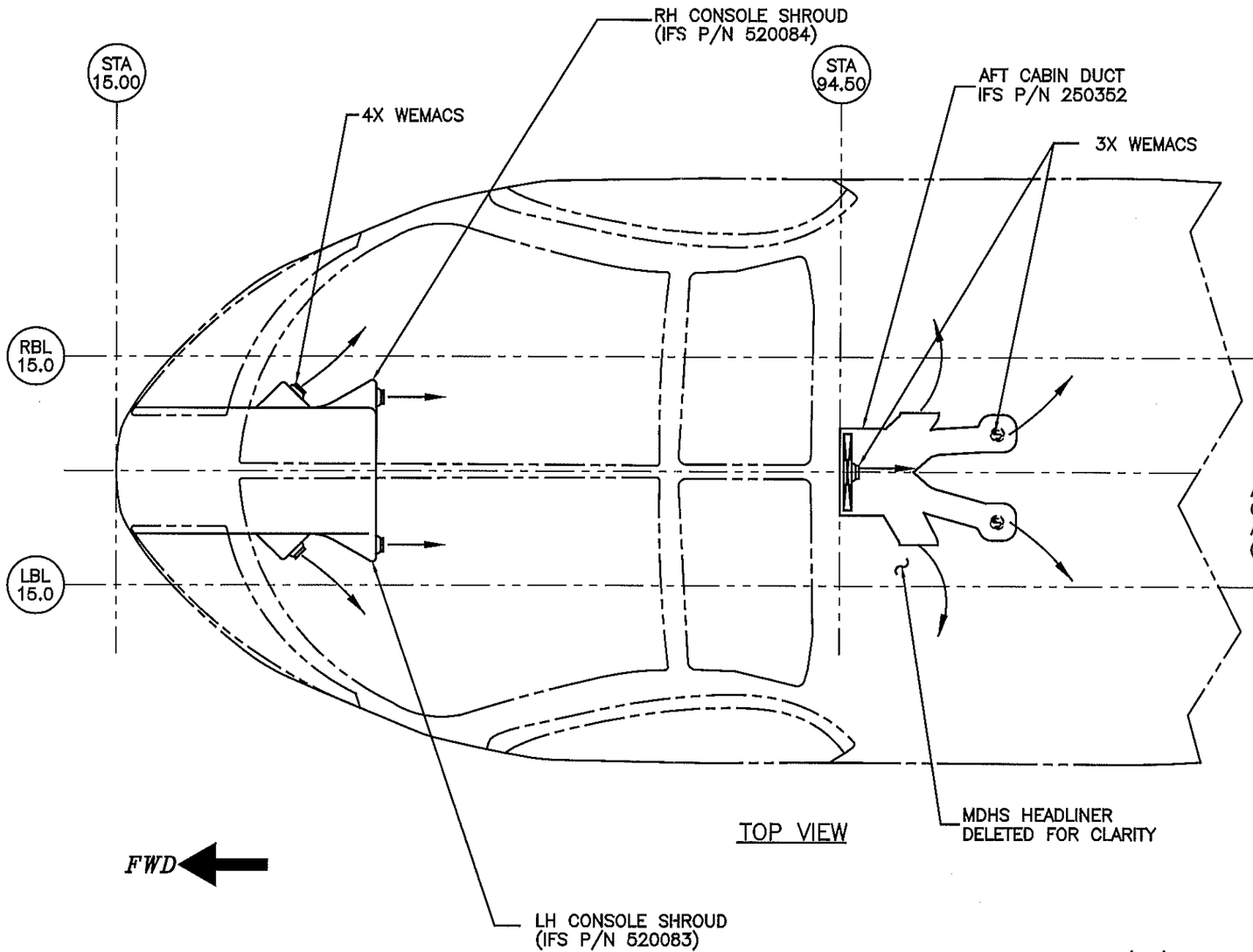
DATE: 09/03/97	APPROVED BY:	SHEET: 4 OF 7	DRAWN BY: MAH
SCALE: 1/6			

TITLE: CONTINUED AIRWORTHINESS ILLUSTRATION
AIR DISTRIBUTION

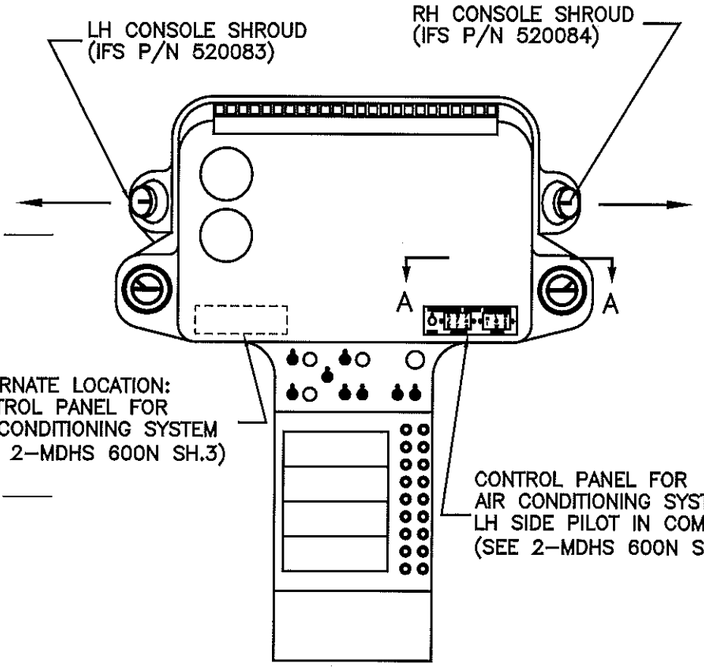
APPLICATION: MDHS 600N	DRAWING NUMBER: MDHS 600N

\CONTAIR\MDHS600N\04.DWG

REV.	DESCRIPTION	DATE	APPV.



TOP VIEW



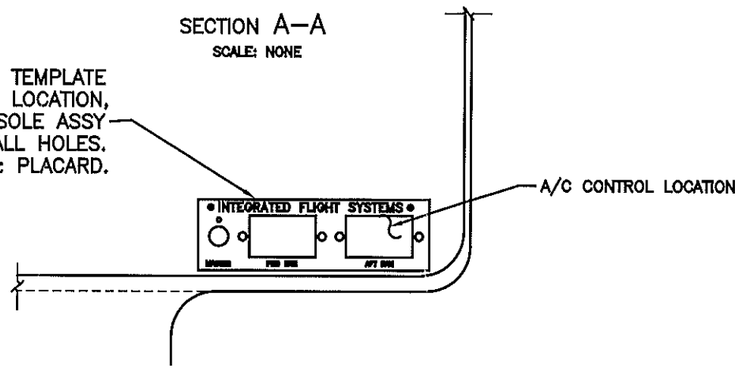
COCKPIT CONSOLE

VIEW LOOKING FORWARD

SCALE:1/3

SECTION A–A

SCALE: NONE

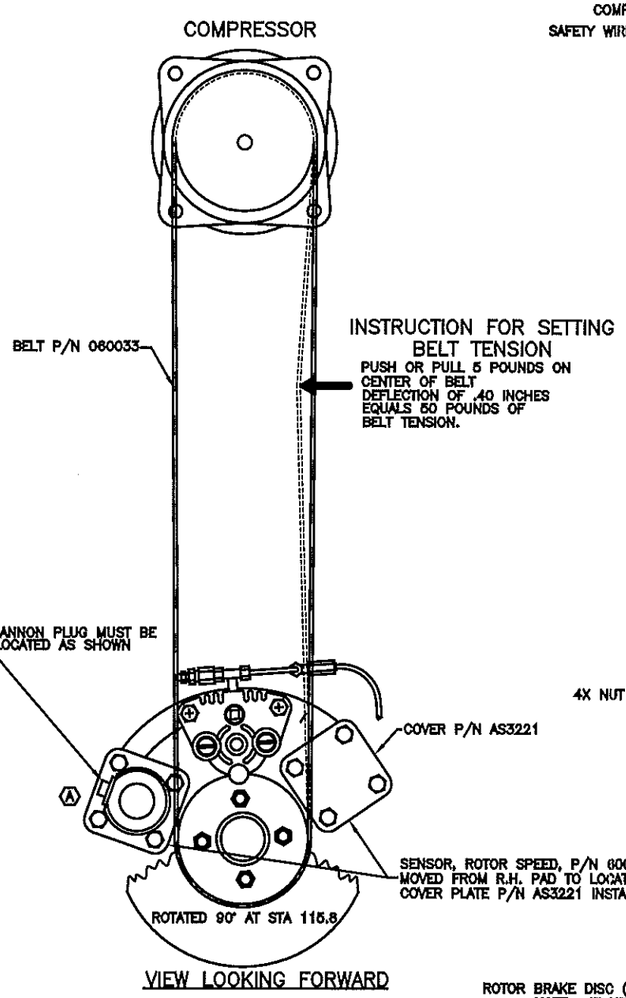


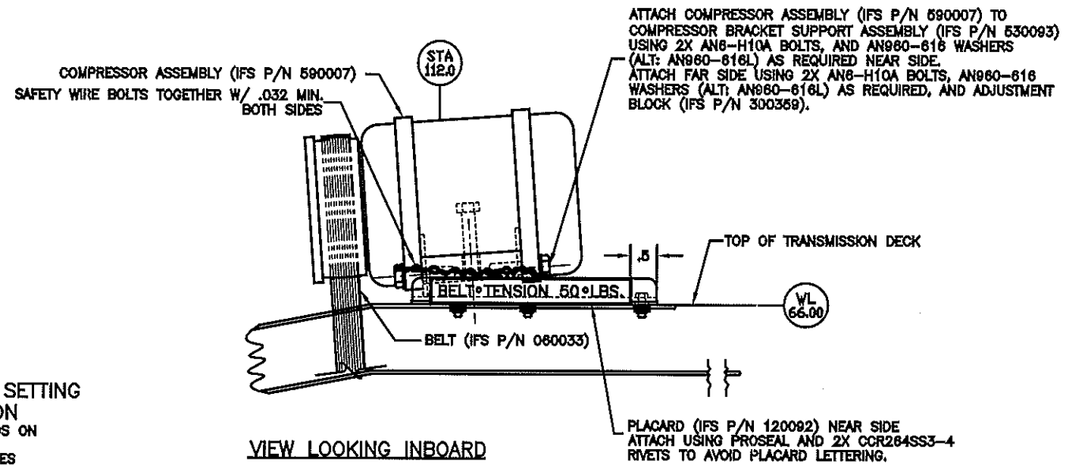
NOTE:
THIS DRAWING TO BE USED FOR PURPOSES OF CONTINUED AIRWORTHINESS INCLUDING COMPONENT REMOVAL AND REINSTALLATION.

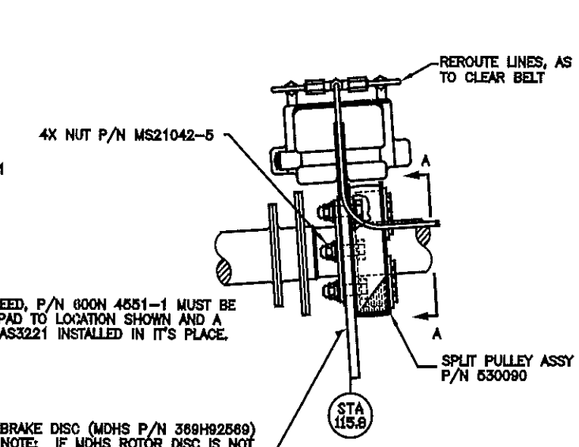
INTEGRATED FLIGHT SYSTEMS INC.			
DATE: 09/03/97	APPROVED BY:	SHEET: 5 OF 7	DRAWN BY: MAH
SCALE: 1/8			
TITLE: CONTINUED AIRWORTHINESS ILLUSTRATION AIR DISTRIBUTION			
APPLICATION: MDHS 600N		DRAWING NUMBER: MDHS 600N	

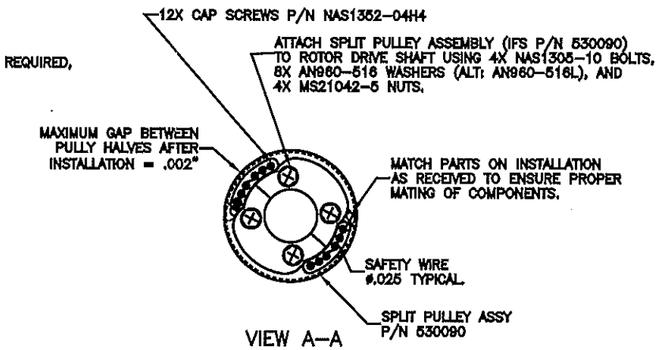
\CONTAIR\MDHS600N\05.DWG

REV.	DESCRIPTION	DATE	APPV.









NOTE:
THIS DRAWING TO BE USED FOR PURPOSES OF CONTINUED AIRWORTHINESS INCLUDING COMPONENT REMOVAL AND REINSTALLATION.

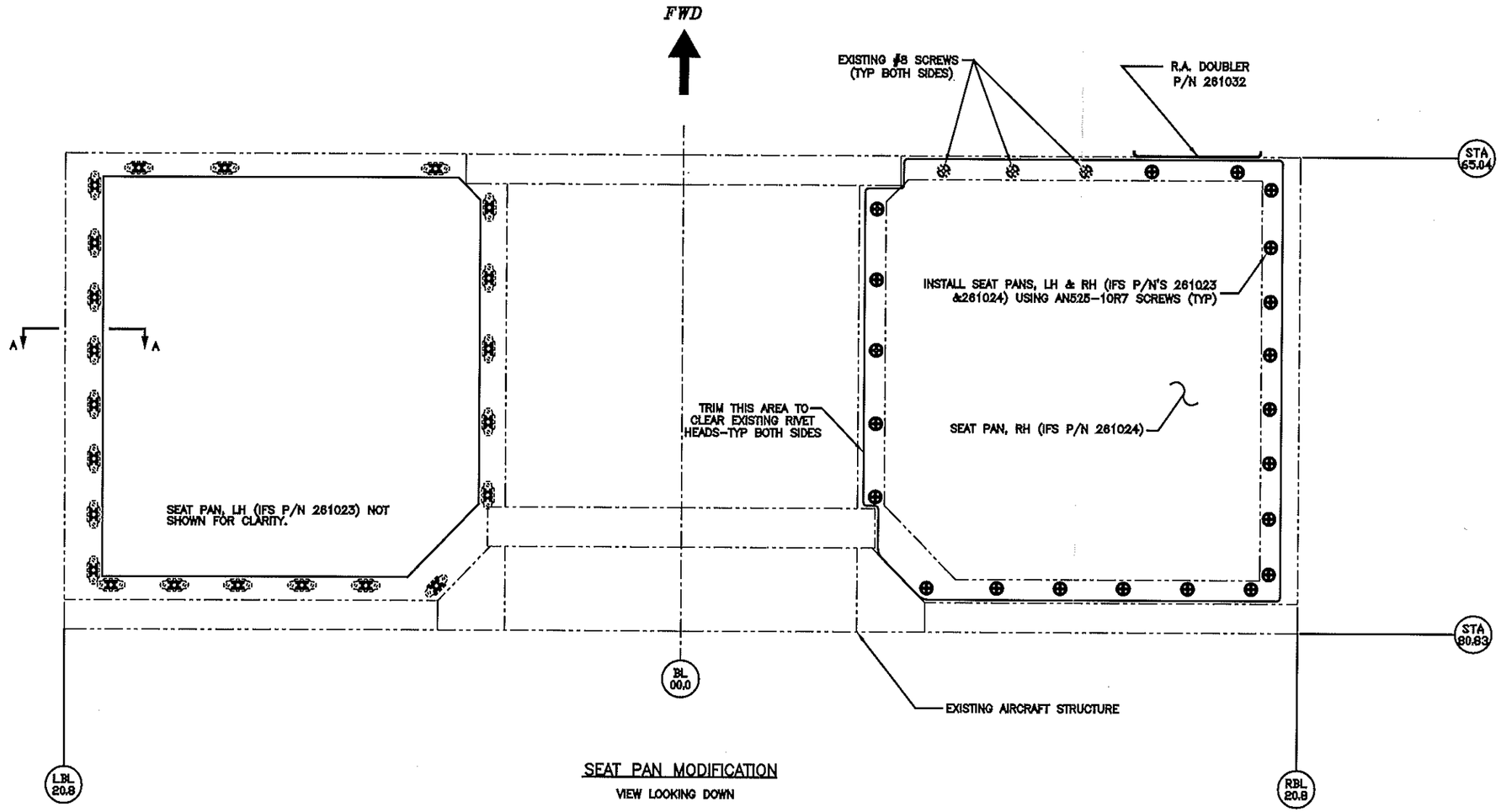
INTEGRATED FLIGHT SYSTEMS INC.			
DATE: 09/03/97	APPROVED BY:	SHEET: 6 OF 7	DRAWN BY: TMUZZY
SCALE: 1/2			
TITLE: CONTINUED AIRWORTHINESS ILLUSTRATION COMPRESSOR			
APPLICATION: MDHS 600N		DRAWING NUMBER: MDHS 600N	

\CONTAIR\MDHS600N\06.DWG

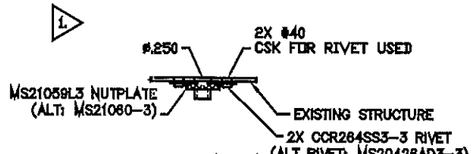
REV.	DESCRIPTION	DATE	APPV.

NOTES:

1. IF NUTPLATE REPLACEMENT IS REQUIRED:
   DRILL #10 DIAMETER HOLE.
   DRILL RIVET HOLES WITH NUTPLATE TEMPLATE.
   COUNTERSINK RIVET HOLES.
   DRILL #10 DIAMETER HOLE OUT TO .250 DIA.



SEAT PAN MODIFICATION
VIEW LOOKING DOWN



VIEW A-A
TYPICAL NUTPLATE INSTALLATION
NOT TO SCALE

NOTE:
THIS DRAWING TO BE USED FOR PURPOSES OF CONTINUED AIRWORTHINESS INCLUDING COMPONENT REMOVAL AND REINSTALLATION.

INTEGRATED FLIGHT SYSTEMS INC.			
DATE: 09/03/97	APPROVED BY:	SHEET: 7 OF 7	DRAWN BY: TMUZZY
SCALE: 1/2			
TITLE: CONTINUED AIRWORTHINESS ILLUSTRATION SEAT PANS			
APPLICATION: MDHS 600N		DRAWING NUMBER: MDHS 600	

\CONTAIR\MDHS600N\07.DWG

Step 6

Operator's Manual

INTEGRATED FLIGHT SYSTEMS, INC.
8345 BLUE GILL DRIVE
FALCON, CO 80831

OPERATOR'S MANUAL

FOR

VAPOR CYCLE
(R-134a)

AIR CONDITIONER

IN

McDONNELL DOUGLAS HELICOPTERS SYSTEMS

MODEL: 600N

WITH

KIT #600N-00-011

(SINGLE CONDENSER BLOWER)
By
Aerospace Systems & Components, Inc.

"ESTER OIL EQUIPPED COMPRESSOR"

ISSUED: October 21, 1997
(With EPA/R-134a data)

INDEX

ii. **STC, KITS, COMPANY NAME:**

The Federal Aviation Administration awarded a Supplemental Type Certificate for a belt driven compressor Vapor Cycle (R-134a) air conditioning system under STC# SRO9178RC, covering the McDonnell Douglas Helicopter Systems model 600N on October 21, 1997 to Integrated Flight Systems, Inc. of Falcon, Colorado.

All current models of the 600N helicopter are now covered by the STC.

Present management of Integrated Flight Systems, Inc. and the general location of the company are the same as in 1979 when the management's first Vapor Cycle air conditioner was awarded an STC by the Denver Aircraft Certification Office of the Federal Aviation Administration.

Numerous product improvements and manufacturing techniques have taken place since the first STC was awarded to the same management team. Many ABS/plastic parts that were formerly vacuum formed are now constructed of high quality fiberglass. This prevents warping, distortion and loss of aesthetic lines. The product has not only been enhanced, but the longevity of our products value has been greatly increased.

KIT CONFIGURATIONS:

Kit #600N-00-011 is applicable to all configurations of the model 600N helicopter. The same "KIT" is utilized in a "left hand command or right hand command" helicopter.

The same "KIT" is utilized:

a) Without a rotor brake.
b) With a LH rotor brake.
c) With a RH rotor brake.

While no IFS "KIT" modifications are required, fiberglass panels that are a part of the McDonnell Douglas Helicopter Systems interior can be affected.

This kit is compatible with utility, corporate, and EMS configurations without any changes being required to the air conditioning system.

Border Patrol and some State Police operated helicopters will be operated with the Pilot In Command from the right side. This is the opposite of the PIC for most MDHS helicopters which are primarily considered to be left hand PIC aircraft. Due to the special missions of the above-mentioned helicopters, items such as monitors and other special surveillance equipment may be installed. IFS has customized and obtained FAA approval for the left hand air outlets in order to mate to this type equipment.

REFRIGERANT, HOSE & FITTINGS:

The refrigerant utilized is R-134a (non-CFC type).

The "KIT" requires one of the following type oils to be used.

a) **ESTER, Viscosity: ISO 100 - 500 SUS at 100 Degrees Fahrenheit;**
b) **SP-20 Sanden oil (PAG OIL IS NOT TO BE USED). Type oil installed will be noted on the compressor.**
c) "O" ring seals **(blue in color)** are utilized.
d) Barrier type hose is utilized to control leakage through hose lining and skin.
e) Bubble type crimp fittings are utilized to control leakage at the fittings.
f) Reduced size is employed to save weight.

iii. **EPA STANDARDS - RULES**

The refrigerant used in this cooling system is R-134a. NO OTHER REFRIGERANT may be substituted, directly for R-134a, at this time.

All EPA, city, State and local regulations in regard to refrigerant R-134a shall be complied with.

1.0 GENERAL DESCRIPTION:

The Integrated Flight Systems, Inc. air conditioning system covered by this report for the MDHS 600N model helicopters consists of six (6) major components. **The kit for which this report is applicable is P/N: 600N-00-011.**

The above kit is universal. It is designed to mate to the "Corporate, Utility, or EMS Versions" with a left hand pilot in command.

Components are:

1.1 The belt-driven compressor located immediately aft of the main transmission, on the upper deck.

1.2 The condenser coil and condenser blower mounted above the cabin roof, forward of the transmission.

1.3 Dual evaporator/blower assemblies. Forward evaporator is mounted on a sheet metal shelf, forward of the radio console.

1.4 Aft evaporator is mounted under the right side pilot's seat.

1.5 Aft evaporator blower is mounted directly to the aft side of the evaporator.

1.6 The refrigerant plumbing and electrical required for the above.

1.7 The forward evaporator is located at C.G. station 19.0, aft evaporator is mounted at C.G. station 120.1, compressor is located at C.G. station 147.80, and condenser is mounted at C.G. station 133.8.

1.8 The dual air distribution system consists of several air outlets. Two are located forward of the co-pilots' position and two are forward of the pilot's position. The aft evaporator provides airflow into a "NEW" overhead duct system, which incorporates three (3) to five (5) wemacs.

2.0 SPECIFIC FEATURES:

2.1 The condenser coil assembly mounted above the cabin roof area is attached to existing aircraft frames by new IFS provided aluminum sheet metal panels. The coil is bolted to an sheet metal enclosure that houses the condenser blower. A single five-inch diameter vane axial blower pulls air through the air inlet (upper) side of the coil and exhausts the air out the aft end of the condenser assembly.

2.2 The rear evaporator assembly consists of an evaporator coil and expansion valve. The coil is mounted inside a fiberglass case with a drain tube/outlet. The entire assembly mounts to a "C" shaped channel and is securely bolted in place. A "NEW" IFS fiberglass duct allows the cooled air to flow from the evaporator/blower into "NEW" ducts in the aft cabin overhead air distribution system.

2.3 Return air is drawn from the cabin through the "cyclic cover" (if installed) and then through the vertical IFS installed bulkhead doubler of the co-pilot's (L.H. PIC) seat. It then travels directly into the evaporator. No relocation of any cabin appointments is required.

2.4 The forward evaporator/fan is mounted forward of the radio console. It is supported on a "shelf". The entire evaporator assembly is contained within a fiberglass case. Air distribution is by way of: two (2) each 3" flexible hoses to large WEMAC type air outlets on either side of the instrument console.

2.5 The Cabin Environment Control Panel consists of a 50 amp "Master A/C system circuit breaker and two rocker type control switches located in the Instrument Panel.

2.6 The Sanden SD-507 compressor is mounted on a steel bracket, which is bolted directly to the upper deck. This bracket carries all loads imposed.

2.7 A flat belt is used to turn the compressor from the IFS designed pulley to the Sanden SD-507 compressor pulley, which has been modified to accept the flat belt. A belt tension adjusting bolt located at the aft left corner of the compressor allows for tightening of the drive belt.

2.8 The belt used to drive the compressor is manufactured by Habasit Belting, Inc. and is produced from A-2 type material. Should the drive belt fail for any reason the net result will simply be the loss of compressor drive and flow of refrigerant. Failure of the belt would not interfere with any other components or systems. Therefore, the belt is deemed to be "fail safe".

2.9 The electrical system for the air conditioning system consists of dual double throw rocker switches on the cabin Environment Control Panel. The "Master" control switch has three positions: "A/C", "OFF" and "FAN".

2.10 The "FAN" position allows the evaporator fan or blower to run for non-cooled air circulation. Evaporator fan/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 fans and provides electrical power to the compressor clutch for complete system operation. A 20 amp circuit breaker is provided for protection of the condenser blower.

2.11 A single throw rocker switch provides blower speed selection for the aft cabin.

2.12 A double throw rocker switch is mounted to provide "HIGH- MED-LOW" speed selection for the forward evaporator motor.

2.13 Plumbing of refrigerant lines is accomplished with standard air conditioning hose covered under SAE standard J51C.

2.14 Nylon "REDUCED BARRIER TYPE" hose utilizing "BUBBLE TYPE" crimped fittings with the ferrule made onto the fittings are utilized.

2.15 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 are provided where required. Plumbing from the compressor is run down through a large hole in the transmission deck. Caterpillar grommet material or spiral wrap is used in all aircraft lightning holes to protect refrigerant hoses from chafing, as required. The refrigerant hoses are routed from the condenser to the receiver/drier. Compressor return line is routed below the cabin roof from a "T" near the aft evaporator up to the compressor, along the right side of the aircraft.

2.16 They are secured in accordance with typical hose supporting as shown in AC43.13-1A and -2A. This type hose is STC'd on several aircraft applications.

2.17 Appropriate decals and placards are provided where required. These include switch and circuit breaker identification.

2.18 The vane axial blower used on the **condenser** is purchased under IFS P/N: 580001. Blower is five inches (5") in diameter.

2.19 Blower used on the **aft evaporator** is under IFS P/N: 050085-1.

Aerospace Systems and Components, Inc. is the vendor for both blowers.

3.0 SCOPE: CHARGING, SERVICING, MAINTENANCE:

3.1 It is assumed by the following instructions that the personnel engaged in Charging, Servicing, or Maintenance of the system will be either an experienced air conditioning mechanics under the supervision of a qualified A&P mechanic or an A&P mechanic possessing good air conditioning skills.

3.2 Prior to charging the system with R-134a, the evaporator fan/blowers and condenser blower should be checked for operation and direction of airflow. This is most easily done by utilizing a GPU unit for electrical power. Since the compressor is belt driven, only those maintenance and operational functions that are electrically powered may be checked either in the hanger or on the ramp without running the engine.

3.3 After the GPU is connected to the aircraft and the Aircraft Master Switch is "ON", the air conditioning system may be turned "ON". Place the rocker switch on the Master Air Conditioning Control Panel to "**A/C**". It does not cause the compressor to run or refrigerant to be pumped. Aft evaporator blower and the forward evaporator fan should start immediately. The compressor clutch and condenser blower should activate after about a four (4) seconds.

3.4 Check airflow of each evaporator fan/blower. Determine that air is coming out of the cockpit and the cabin air outlets.

3.5 Check airflow into and out of condenser air openings.

3.6 All evaporator fan/blowers, condenser blowers and controls are 28 volt DC.

4.0 CHARGING R-134a INTO SYSTEM:

4.1 **Danger:** R-134a, particularly 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 an inert substance and non-poisonous. However, the discharge of the gas into an open flame or near by one can produce phosgene gas, which is highly poisonous and can cause blindness and/or death.

A flame-type leak detector should therefore **Never be used** for this reason and also because of the danger of fire or explosion around an aircraft. Several electronic leak detectors are available on the market, such as the Tiff Model 5500 and others. It is highly recommended that due to the time saved in locating leaks, that the money spent on an electronic leak detector is the best investment you can make.

4.2 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.**

4.3 Never attempt to repair a leak requiring brazing or soldering within the aircraft structure as phosgene gas, fire, or explosion can result. Remove the entire assembly from the aircraft to a safe location before attempting such a procedure.

4.4 **Caution:** 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.

4.5 The charging of the system should not be attempted unless two 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 in contact with the eye. Also, frostbite could occur to areas of the skin if R-134a were allowed to come in contact.

4.6 Charging of the system is a simple procedure whether on initial charging 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.

4.7 The system is made up of two evaporator assemblies. One is mounted above the nose shelf, forward of the radios. The other is located under the right side pilot seat. Service ports are forward of the left side, aft cabin foot well. The high side and low side service ports are readily accessible.

Note: The sight glass is located vertically on the aft side of LH door post.

The high and low pressure safety switches are located on the compressor for ease of installation.

5.0 OIL CHARGING:

5.1 Prior to charging each system with any refrigerant, **obtain TWO (2) ounces of ESTER type oil.**

The Sankyo (Sanden) SD-507 compressor maybe operated with a variety of oil types. The type selected depends on the refrigerant selected (R-134a) and other factors. Integrated Flight Systems, Inc., after a thorough investigation, has selected **ESTER** type oil to be used with the R-134a refrigerant in its systems. **Neither "PAG" nor any other type oil is to be utilized.**

Approximately two (2) ounces of oil is distributed throughout the system in coating the inside of the hoses on a newly installed system. **Additional oil will not be required during the refrigerant charging phase of the operation.** The amount called out above is the **correct amount** for this installation due to the hose lengths employed. **Oil should only be inserted into the high side.**

6.0 INITIAL CHARGING:

6.1 After the system has had all lines completely installed, **with the exception of the two (2) lines at the receiver/drier.** Un-seal the receiver/drier. Place refrigerant oil on both line fittings and the male threads of the receiver/drier, and tighten the fittings. Connect the refrigerant charging manifold to a cylinder of R-134a. Connect an EPA approved R-134a recovery. Complete the connection of any open lines.

Allow R-134a, in the form of vapor, to flow through both sides of the manifold by opening each of the valves. This will flush any minor debris from the lines as well as expelling any air present and drying the system. Ensure that all R-134a is captured. Open both charging manifold valves and pressurize the system. Allow approximately 50 to 70 pounds of refrigerant pressure to build up within the system (about 12 ounces). Close the valve on the cylinder of R-134a. **Close low side valve (left) at manifold. Failure to do so can cause high pressure to flow to the low side (left) gauge. Failure of gauge can result. Pressurize system to between 300 and 400 PSI.** An electronic leak detector should be utilized to check all fittings and hoses.

Tighten any leaking connections or make repairs as necessary to eliminate leaks. Shut off and disconnect hose from the refrigerant cylinder. Connect to a regulator mounted on a cylinder of dry nitrogen. Purge regulator to center manifold hose.

6.2 After the system has been rechecked with an electronic 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 captured by an EPA approved recovery unit.

6.3 Connect a vacuum pump to the center manifold hose. Open both valves and evacuate the system for a minimum of twenty minutes. After twenty minutes of vacuum pump operation, the low side gauges should read approximately 30" 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 will occur.)

Adding R-134a refrigerant to the system:

6.4 Close both the manifold valves and connect the center charging hose to a cylinder of R-134a. Open the valve on the cylinder. Purge the charging hose by loosening it at the charging manifold's center hose. Open the high side valve of the charging manifold only.

The combination of the vacuum still existing in the system and the pressure in the R-134a cylinder transfers the R-134a from the cylinder into the system without the compressor running. If a scale is available, the cylinder may be pre-weighted and four pounds of refrigerant R-134a added to the system. A total of approximately 4-1/2 pounds will be required. Additional refrigerant should be added only after the total system is in operation.

6.5 The system is now ready for operation. **This must be performed on the flight line with the engine running 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. The condenser blower and clutch have a time delay of several seconds built in (soft start).

6.6 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 DC power is available for control circuitry, and check the operation of the relays and contactors.

6.7 After the compressor has come on line, the entire system is operational. Close the manifold valve 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 allow the low pressure safety switch to disconnect the electrical power to the compressor clutch. 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. The sight glass located on the LH aft door post may be easily seen. The sight glass should be closely monitored and a stream of what would appear to be bubbles will be noted at this time. Continue charging the system with vapor R-134a with the cylinder in the **upright position only**. At no time should the cylinder be turned upside down to allow liquid to enter the system as this can cause "slugging" of the compressor and damage to the reed valves. It should be noted that pressure on the low side with the R-134a cylinder valve closed can vary depending on the temperature of the cabin continue charging the system until the stream of bubbles disappears and the sight glass becomes clear.

6.8 At this point, the **minimum** amount of R-134a is in the system and charging should cease temporarily. If the outside air temperature is 100 degrees F, or more, the amount of R-134a in the system with a clear sight glass, is satisfactory. If the temperature is less than 100 degrees F, particularly if it is in the 60-70 degree F range, approximately 8 ounces of additional R-134a should be added into the system, by weight.

6.9 A test sheet should be completed noting the average cabin temperature, the temperature of the return or entering air to both evaporators, and the discharge air from the evaporators, at the nearest point. If a **temperature differential (T.D)** of less than 15 degrees Fahrenheit is recorded through either of 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 15 degrees Fahrenheit temperature difference may be recorded. This is due to less dense air moving more rapidly through the evaporators.

7.0 RECHARGING OF THE SYSTEM:

7.1 If the system is found to be completely empty of R-134a, a set of charging gauges should be connected to both the 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.

7.2 After the leaks have been found and corrected, pressurize the R-134a in the system with dry nitrogen as in 6.1. Re-check for leaks. Capture all of the R-134a in the system with an EPA approved recovery unit. Connect a vacuum pump to the center charging hose and evacuate the system for a minimum of 16 minutes from both the high and low sides. If the system has been allowed to become contaminated, then the receiver/drier should be replaced before recharging the system. In no case should the system be allowed to remain open for more than a few minutes without a new receiver/drier being installed.

7.3 It is always good air conditioning practice to replace the receiver/drier whenever it is suspected that moisture has contaminated the system.

7.4 The balance of the recharging procedure is exactly the same as pointed out previously under the **Initial 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.

8.0 SERVICE:

8.1 Normally service will not be required on a properly installed **Integrated Flight Systems, Inc.** unit. Routine and seasonally dictated operations, such as checking the R-134a refrigerant charge will be listed under the Maintenance section. The question is often asked, "How often should I add refrigerant to my system?" The answer is, "Never". Point is that either a system has a leak or it has none, therefore requiring no service. We recognize the fact that while the above is true, that due to helicopter vibration and the environment in which it is installed, leaks can occur, usually due to vibration. The location, type of equipment used, and other items will thus be addressed under the topic of maintenance.

9.0 MAINTENANCE: (To Accomplish Continued Airworthiness)

NOTE: A separate "Manual" titled **"INSTRUCTIONS for CONTINUED AIRWORTHINESS"** has been submitted to and "accepted" by the FAA. This manual, written by **Integrated Flight Systems, Inc.**, in a ATA format is the only FAA approved data for maintaining the air conditioning system.

It is the "OWNERS" responsibility to ensure that the directions in the manual are followed. (See limitations section on STC.)

10.0 TROUBLESHOOTING:

10.1 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 trouble shooting guide if the A&P mechanic is unfamiliar with the characteristics of a mobile air conditioning unit. The symptoms, diagnosis and corrections are so numerous for various conditions that we will not attempt to list them all in this guide.

10.2 The high and low pressure safety 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 20 amp condenser circuit breaker.

NOTE: A one (1) amp circuit breaker will trip if the high pressure switch exceeds its upper setting. Power to the clutch and condenser blower will be interrupted.

10.3 Always check system R-134a pressure first, as a leaking unit may have caused the low pressure switch to open. This switch is set to open at 7 PSI and close at 22 PSI. It requires that pressure, or greater, to close.

10.4 Failure of the condenser blower or coil blockage could result in the high side switch opening. Both switches are designed to reset automatically.

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 expansion valves in the system closes shut or they have foreign matter restricting them. The same reading would occur if the receiver/drier was clogged.

11.0 COMPRESSOR:

11.1 The compressor installed is a Model #SD-507 manufactured by Sanden (formerly Sankyo) International.

11.2 A copy of the Sanden Service Manual can be supplied.

11.3 No maintenance, other than **"clutch bearing"** or **"coil replacement"** should be attempted in the field.

11.4 **Drive belt is P/N: 060033.**

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12.0 REFRIGERANT CYCLE:

12.1 A typical mobile vapor cycle air conditioning schematic can be supplied. It is based on automotive applications, and thus the temperatures and pressures shown are not representative of the **Integrated Flight Systems, Inc.** system installed in this application.

13.0 EVAPORATOR FAN/BLOWER:

13.1 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.

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 volt meter 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.

13.2 The forward motor, **P/N: 050127-1,** maybe disassembled from its housing and the screws in the motor support plate loosened to allow removal of the motor. A replacement motor should be obtained from **Integrated Flight Systems, Inc.** and reinstalled in a similar manner. **Do not attempt disassembly or field repair of this motor.**

The aft evaporator blower motor should not be disassembled other than to inspect the brushes. The motor is ordered as a unit under **P/N: 050028.**

14.0 CONDENSER BLOWER:

14.1 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. If the 20 amp circuit breaker is not open, then power should be supplied directly to the condenser blower, which is mounted on the aft end of the condenser assembly.

14.2 If air is not being exhausted, a volt meter 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

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14.2 If air is not being exhausted, a volt meter 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)** and should be replaced by ordering **P/N: 580001**.

15.0 CONDENSER REMOVAL:

15.1 To remove the condenser the entire assembly may be unbolted and removed once the refrigerant lines have been disconnected.

NOTE: Before removing any lines, bleed R-134a from the system slowly so as not to deplete the refrigerant oil. All refrigerant MUST BE CAPTURED using an EPA approved recovery unit.

Normally it would not be necessary to remove the condenser assembly unless high head pressures or physical examination indicates that severe damage has occurred.

If dirt or other obstructions have formed on the aluminum fins, thereby obstructing the flow of air and reducing the efficiency of the condenser, it can usually be cleaned in place.

16.0 RECEIVER/DRIER:

16.1 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 refrigerant 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 part number is, **P/N: 090016-5 ("O" ring type)**. The charging instructions found on Pages 7, 8, 9, 10 and 11 should be followed in recharging the system.

17.0 **EXPANSION VALVES:**

17.1 Both expansion valves are identical, **"O" Ring type, P/N: 090002-"O".**

17.2 **It is EXTREMELY IMPORTANT that the sensing bulb be clamped tightly to the suction return line (with a steel clamp) 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. Recharge and leak test.**

18.0 **REFRIGERANT HOSE:**

18.1 **NYLON "BARRIER TYPE" REDUCED SIZE HOSE (for R-134a)**

Nylon "Barrier type" hose with "Bubble" crimped ferrules are utilized with "O" ring type fittings. They are found at all fitting locations.

19.0 **SYSTEM OPERATING LIMITATIONS:**

19.1 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 the fact the 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".

19.2 **Low pressure switch:**

This switch is a non-adjustable type (normally open) and is located on the compressor. **P/N: is 050107** (set at 7 PSI out, 22 PSI in) or **P/N 090014** (set at 6 PSI out, 34 PSI in). Both switches will automatically re-set to the closed position as soon as pressure is applied in psi, greater than the cut-in point.

P/N: 050107 or 090014 non-adjustable switches are now located on the compressor.

20.0 **HIGH PRESSURE SWITCH LIMITATIONS:**

20.1 **High pressure switch (all years):**

The switch is identified under **P/N: 090004.** It is a "normally closed" unit. This 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.

Step 7

Master Parts List

INTEGRATED FLIGHT SYSTEMS, INC.
8345 BLUE GILL DRIVE
FALCON, COLORADO 80831

MASTER PARTS LIST

Vapor Cycle Air Conditioner

IN

MODEL: 600N

FOR

KIT # 600N-00-011

with

(SINGLE CONDENSER BLOWER)
by
ASC

"ESTER OIL EQUIPPED COMPRESSOR"

OCTOBER 21, 1997
(With R-134a/EPA data)

MASTER PARTS LIST

600N

07/02/97

KIT #600-00-011

SINGLE CONDENSER BLOWER
(By; Aerospace Systems & Components, Inc.)

ITEM	DESCRIPTION	REPLACEMENT PART NUMBER
1.	**BELT - FLAT**	060033
2.	**SD 507 COMPRESSOR ASSEMBLY** COMPLETE W/ FLAT PULLEY, 24 VDC COIL **(FOR USE WITH R-134a ONLY)**	590007-1
	COMPRESSOR PARTS	
	FOR: SD 507 W/ 5.0" CLUTCH	
3.	**BEARING (ONLY):** SD 507 COMPRESSOR W/ 5.0" CLUTCH	8543-0020
4.	**24 VDC COIL (GREEN WIRE)**	9351-6040
5.	**IFS PULLEY w/BEARING**	300355
6.	**PULLEY FACE PLATE 5.0"**	A6H65FM
7.	(Left Blank on Purpose)	

ITEM	DESCRIPTION	REPLACEMENT PART NUMBER
	EVAPORATOR PARTS	
	FORWARD EVAPORATOR	
8.	**MOTOR,** FORWARD EVAPORATOR 24VDC, double shaft	050127-1
9.	**WHEEL,** FORWARD EVAPORATOR fan, metal, CC rotation, 5/16" bore	040004-8
10.	**WHEEL,** FORWARD EVAPORATOR fan, metal, CCW rotation, 5/16" bore	040004-7
	AFT EVAPORATOR	
11.	**5" VANE AXIAL BLOWER ASSY.**	050085
12.	**MOTOR:** 5" VANE AXIAL BLOWER FITS IFS P/N: 050085	0911008-6
	CONDENSER BLOWER PARTS	
13.	**5" VANE AXIAL BLOWER ASSY.**	580001
14.	**MOTOR:** 5" VANE AXIAL BLOWER FITS IFS P/N 580001	0911008-6

ITEM	DESCRIPTION	REPLACEMENT PART NUMBER
15.	**METAL BLADE AND HUB ASSY.** FITS 5" VANE AXIAL BLOWER, MFG P/N 091-1or -2 IFS P/N 580001 or 050085	0911007-1
16.	**BRUSHES** (2 EACH)/MOTOR FITS MFG P/N 091-1or -2 IFS P/N 580001 or 050085	0941101-1-2
	MISC. PARTS	
17.	**RECEIVER/DRIER** "O" RING	090016-5
18.	**EXPANSION VALVE** **FWD. AND AFT EVAP.** **"O" RING TYPE**	090002-"O"
19.	**HIGH PRESSURE SAFETY SWITCH** (ALL YEARS)	090004
20.	**LOW PRESSURE SAFETY SWITCH** NON-ADJUSTABLE (7 OUT/22 IN)	050107
21.	**LOW PRESSURE SAFETY SWITCH** (ALTERNATE) NON-ADJUSTABLE (6 OUT/34 IN)	090014

Integrated Flight Systems, Inc.

Pressure Switch Identification

for all

vapor cycle air conditioning kits

using R-134a

Low Pressure Switch: IFS P/N 050107

Leads are: **BLUE** in color

Mfg. P/N on switch: 20PS003MA022C007C

Opens: 7PSI Closes: 22 PSI

High Pressure Switch: IFS P/N 090004

Leads are: **BLACK** in color

Mfg. P/N on switch: 20PS104MB350K265K
Opens: 350 PSI Closes: 265 PSI

ALT. Mfg. P/N on switch: 20PS002MB300K250K
Opens: 300 PSI Closes: 250 PSI

IFS P/N 090004 (Both Types)

Step 8

A/C Configuration & Overview Drawings

REV.	DESCRIPTION	DATE	APPV.

CONFIGURATION CONTROL TABLE

DRAWING NO.	DRAWING TITLE	NUMBER OF SHEETS	DRAWING DATE	REVISION	REVISION DATE	AIR CONDITIONING CONFIGURATION DESCRIPTION						
						1	2	3				
1-1-MDHS 600N	AIR CONDITIONING OVERVIEW	1	03/10/97	B	08/20/98	X						
1-2-MDHS 600N	AIR CONDITIONING OVERVIEW	1	08/20/98	N/C	------		X	X				
2-1-MDHS 600N	ELECTRICAL INSTALL	3	03/10/97	B	08/20/98	X	X	X				
3-1-MDHS 600N	PLUMBING INSTALL	2	03/10/97	B	08/20/98	X	X	X				
4-1-MDHS 600N	FWD EVAPORATOR INSTALL	3	03/10/97	B	08/20/98	X						
4-2-MDHS 600N	AFT EVAPORATOR INSTALL	3	03/10/97	B	08/20/98							
4-3-MDHS 600N	FWD EVAPORATOR INSTALL	3	08/20/98	N/C	------		X	X				
4-4-MDHS 600N	AFT EVAPORATOR INSTALL	3	05/15/98	N/C	------	X	X	X				
5-1-MDHS 600N	AIR DISTRIBUTION	4	03/10/97	B	08/20/98	X						
5-2-MDHS 600N	AIR DISTRIBUTION	4	08/20/98	N/C	------		X					
5-3-MDHS 600N	AIR DISTRIBUTION	4	08/20/98	N/C	------			X				
6-1-MDHS 600N	COMPRESSOR INSTALLATION	3	03/10/97	B	08/20/98							
6-2-MDHS 600N	COMPRESSOR INSTALLATION	4	08/20/98	N/C	------	X	X	X				
7-1-MDHS 600N	CONDENSER INSTALLATION	2	03/10/97	B	9/20/98	X	X	X				
8-1-MDHS 600N	SEAT PAN MODIFICATION	1	03/10/97	B	08/20/98	X	X	X				
9-1-MDHS 600N	OIL BLOWER MODIFICATION	1	07/22/97	A	08/20/98	X	X	X				

CONFIGURATION DESCRIPTIONS:

1. CORP. LONG INSTRUMENT CLOSEOUT PANELS.
2. R/H PILOT IN COMMAND (LAW ENFORCEMENT/BORDER PATROL).
3. MODIFIED MDHS INSTRUMENT CLOSEOUT PANELS.

\001MDHS600NR\1-0-MDHS6001.DWG

INTEGRATED FLIGHT SYSTEMS INC.

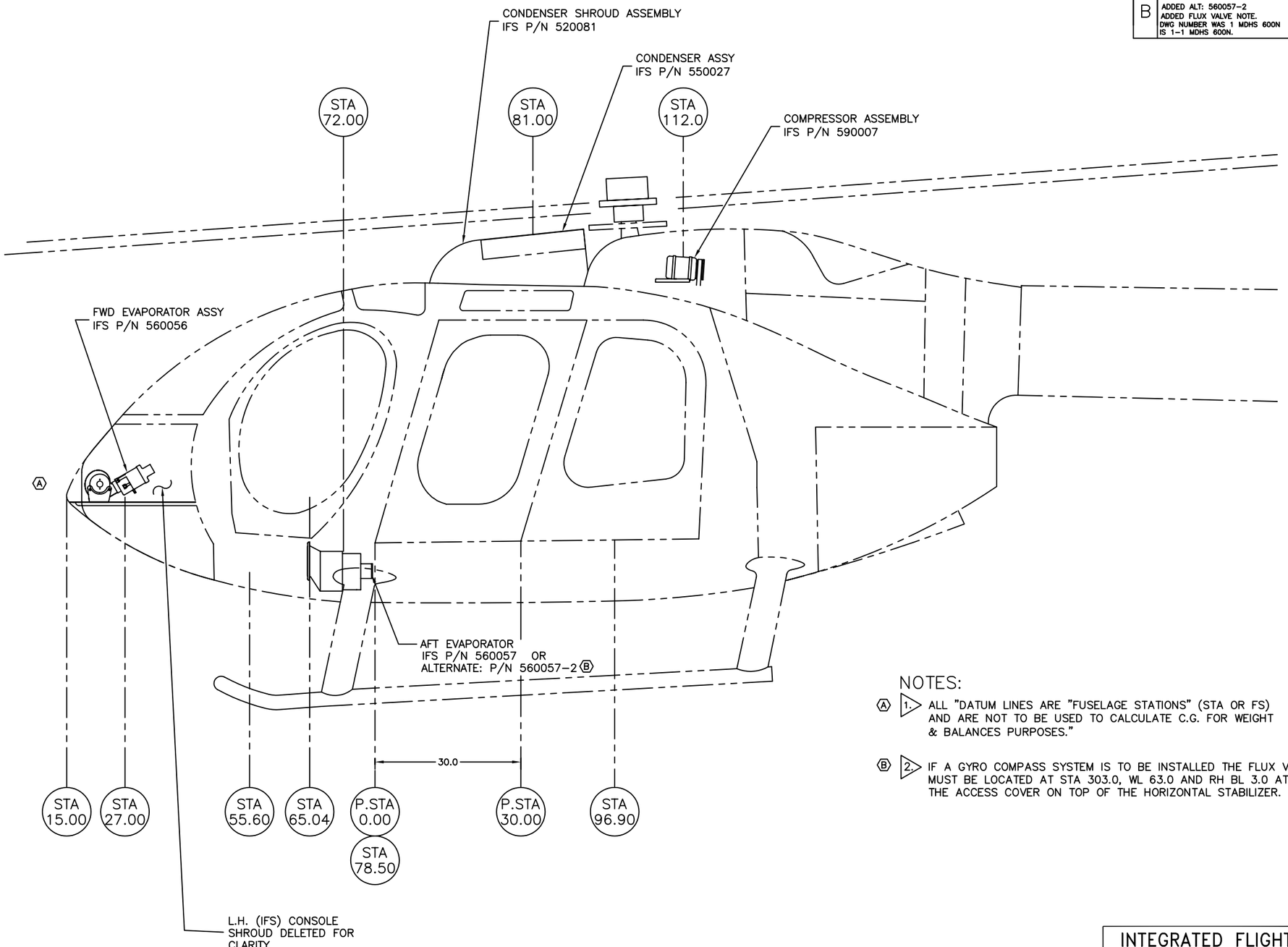
DATE: 08/20/98	APPROVED BY:	SHEET: 1 OF 1	SIZE: D	DRAWN BY: LB
SCALE: NONE				

TITLE: AIR CONDITIONING CONFIGURATION CONTROL DRAWING

APPLICATION: MDHS 600N	DRAWING NUMBER: 1-0-MDHS 600N

REV.	DESCRIPTION	DATE	APPV.
A	ROTATED BLOWER, LOWERED EVAP/BLOWER ASSY., & ADDED NOTE	07/22/97	
B	ADDED ALT: 560057-2 ADDED FLUX VALVE NOTE. DWG NUMBER WAS 1 MDHS 600N IS 1-1 MDHS 600N.	08-20-98	

B



NOTES:

(A) 1. ALL "DATUM LINES ARE "FUSELAGE STATIONS" (STA OR FS) AND ARE NOT TO BE USED TO CALCULATE C.G. FOR WEIGHT & BALANCES PURPOSES."

(B) 2. IF A GYRO COMPASS SYSTEM IS TO BE INSTALLED THE FLUX VALVE MUST BE LOCATED AT STA 303.0, WL 63.0 AND RH BL 3.0 AT THE ACCESS COVER ON TOP OF THE HORIZONTAL STABILIZER.

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

B

INTEGRATED FLIGHT SYSTEMS INC.

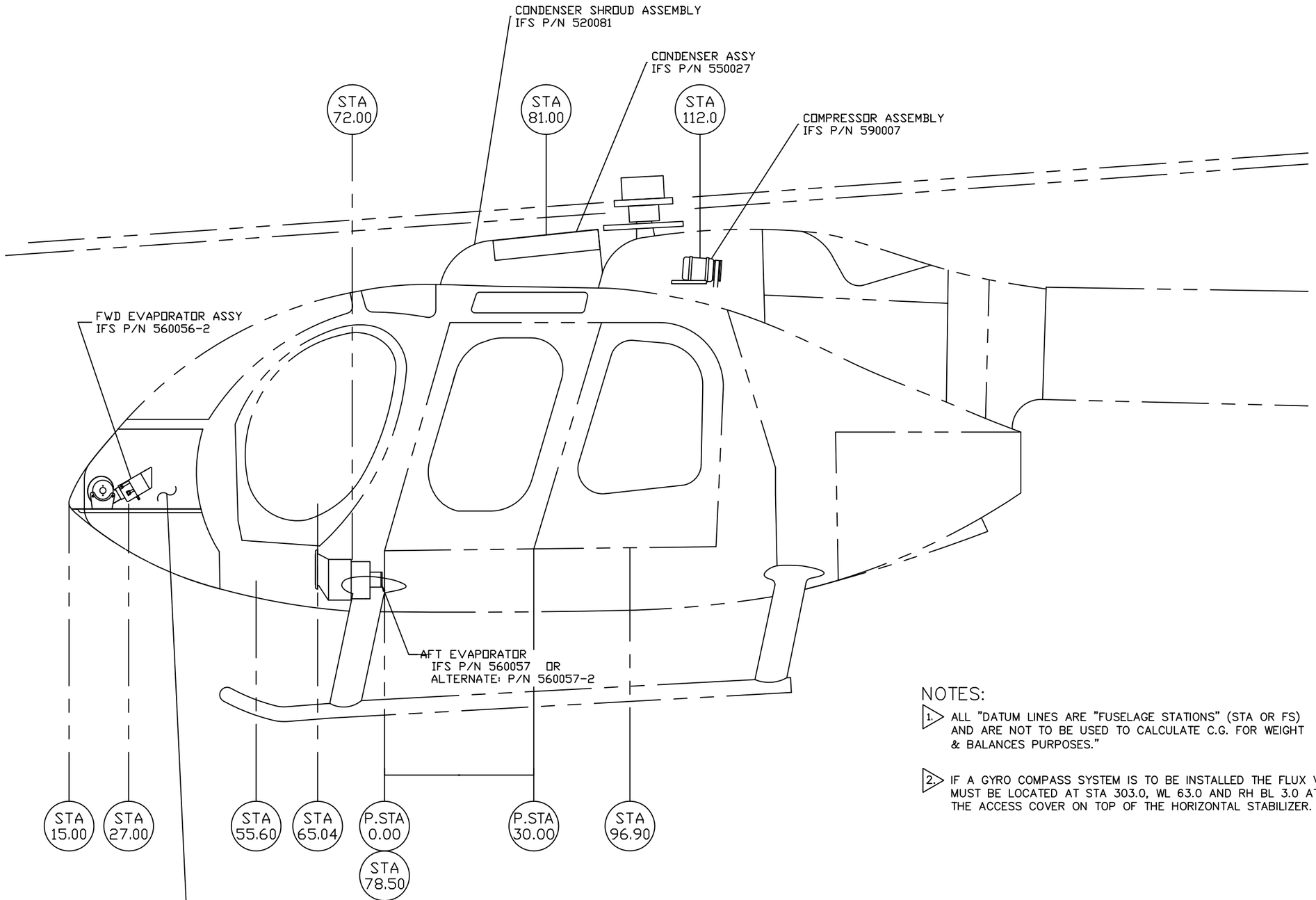
DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 1	SIZE: D	DRAWN BY: MAH
SCALE: 1/12				

TITLE: AIR CONDITIONING OVERVIEW

APPLICATION:	DRAWING NUMBER:
MDHS 600N	1-1-MDHS 600N

\001MDHS600NR\1-1-MDHS6001_C.DWG

REV.	DESCRIPTION	DATE	APPV.



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"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\1-2-MDHS6001.DWG

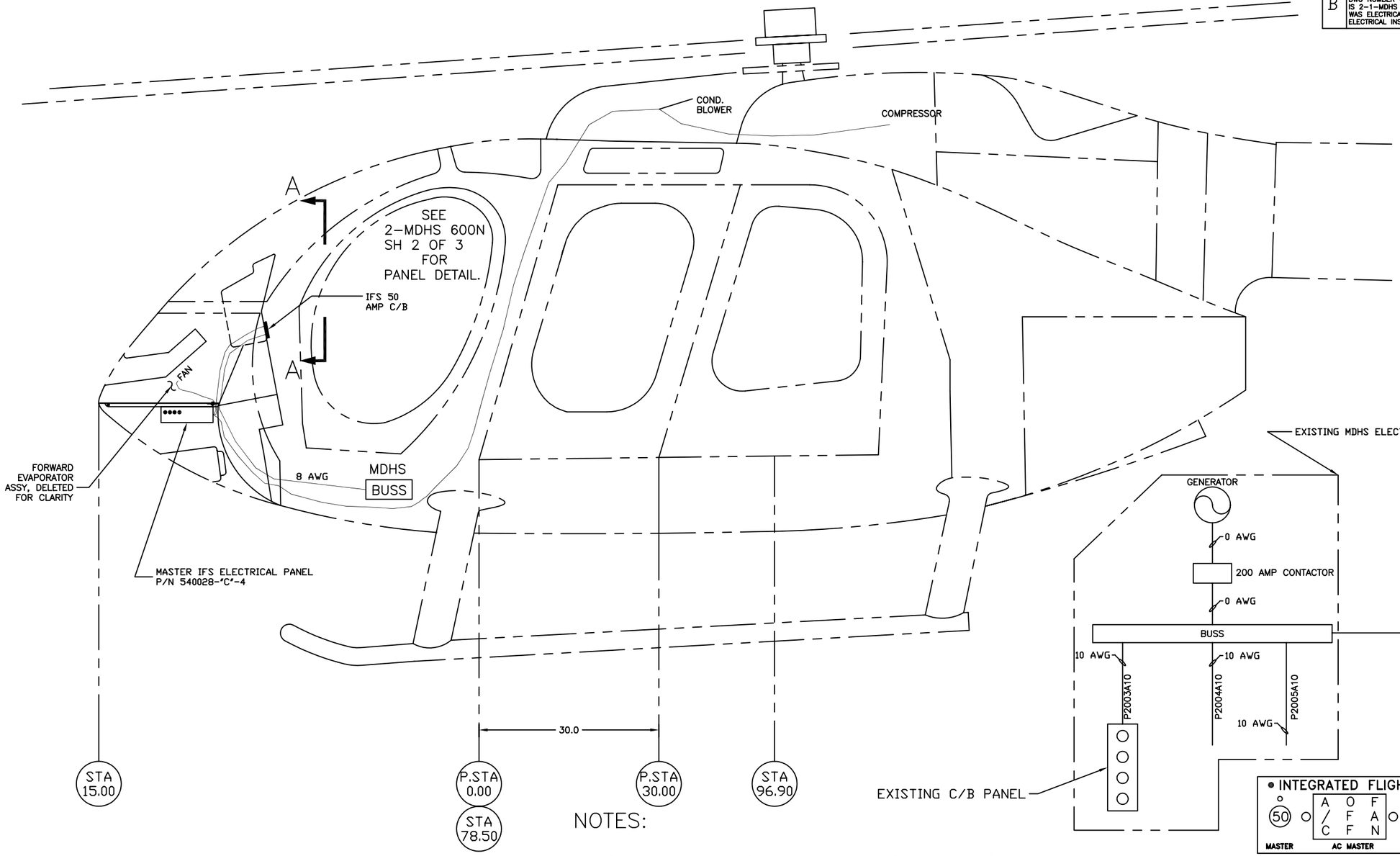
INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 1 OF 1	SIZE: D	DRAWN BY: MAH
SCALE: 1/12				
TITLE: AIR CONDITIONING OVERVIEW				
APPLICATION: MDHS 600N		DRAWING NUMBER: 1-2-MDHS 600N		

Step 9

Electrical Installation Drawings

REV.	DESCRIPTION	DATE	APPV.
A	RELOCATED C/B TO LEFT SIDE. ADDED NOTE.	07/22/97	
B	DWG NUMBER WAS 2-MDHS 600N IS 2-1-MDHS 600N. DWG TITLE WAS ELECTRICAL ROUTING IS ELECTRICAL INSTALL.	08/20/98	

B



A

CONTROL PANEL FOR AIR CONDITIONING SYSTEM

NOTES:

ALL "DATUM LINES ARE "FUSELAGE STATIONS" (STA OR FS) AND ARE NOT TO BE USED TO CALCULATE C.G. FOR WEIGHT & BALANCES PURPOSES."

ROUTE IFS 8 AWG FROM MDHS BUSS IN FREE AIR UNDER THE FLOOR TO IFS 50 AMP C/B IN CONSOLE.

SEPARATE IFS WIRE FROM 3 EACH MDHS 10 AWG WIRES

"REDUCED PRINT" DO NOT SCALE DRAWING FOR DIMENSIONS

ELECTRICAL ROUTING

B

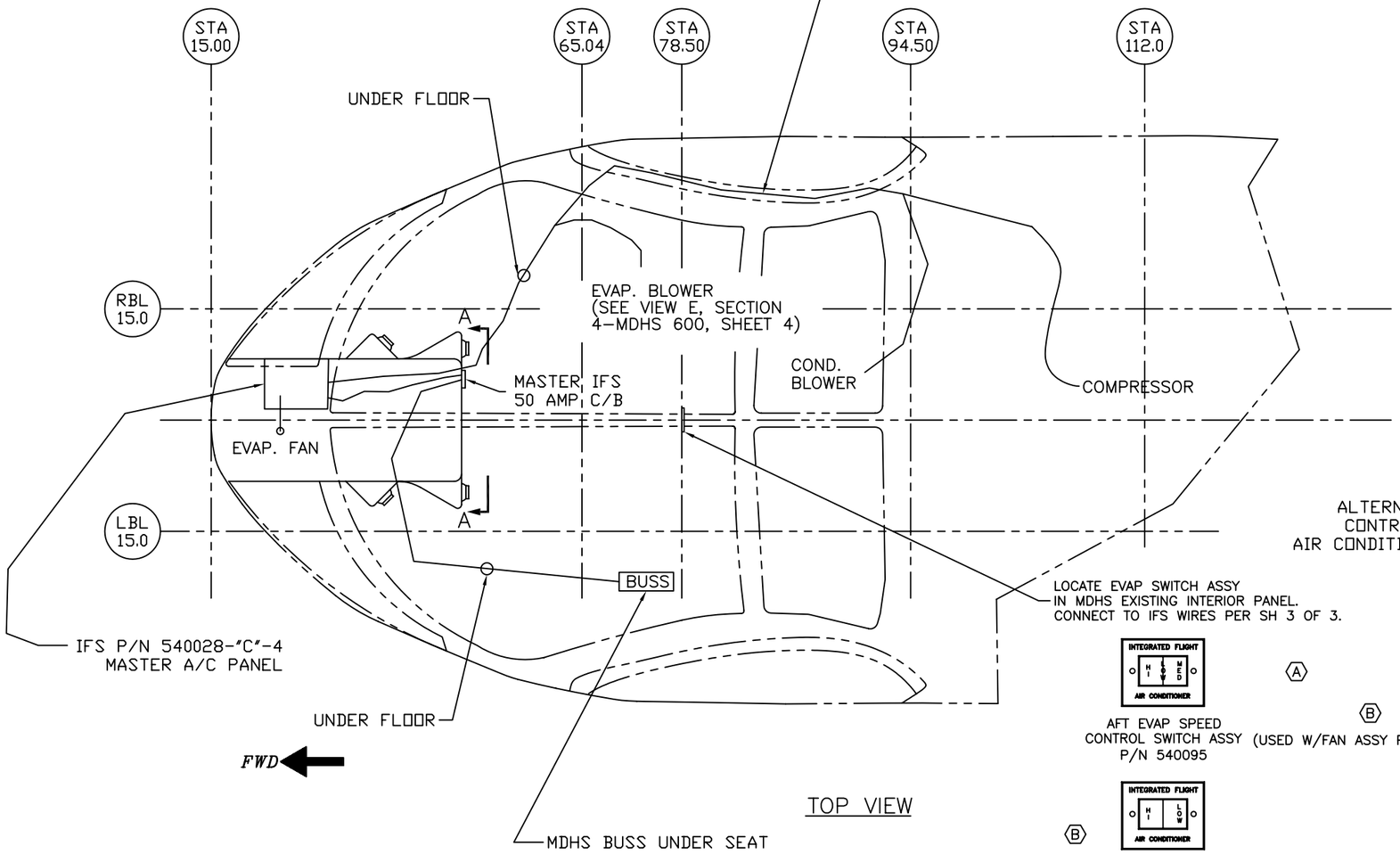
INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 3	SIZE: D	DRAWN BY: MAH
SCALE: 1/8				
TITLE: ELECTRICAL INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 2-1-MDHS 600N		

\001MDHS600NR\2-1-MDHS6001_D.DWG

REV.	DESCRIPTION	DATE	APPV.
A	DEPICTED REVISED CONTROL PANEL. WAS 1.5, IS 1.0. WAS .75, IS .60. ADDED LH PILOT NOTE. WAS 120112, IS 120115. ADDED LOCATION OF AFT EVAP SPEED CONTROL ASSY.	07/22/97	
B	ADDED P/N 540095-1 SEE REV ON SHEET 3 DWG NUMBER WAS 2-MDHS 600N IS 2-1-MDHS 600N. DWG TITLE WAS ELECTRICAL ROUTING IS ELECTRICAL INSTALL.	08/20/98	

B

ROUTE CONDENSER BLOWER AND COMPRESSOR CLUTCH WIRES UP DOOR POST, AFT ABOVE HEAD LINER NEXT TO REFRIGERANT LINES TO COMPRESSOR, ROUTE WIRES FORWARD TO CONDENSER BLOWER.



TOP VIEW

LOCATE EVAP SWITCH ASSY IN MDHS EXISTING INTERIOR PANEL. CONNECT TO IFS WIRES PER SH 3 OF 3.

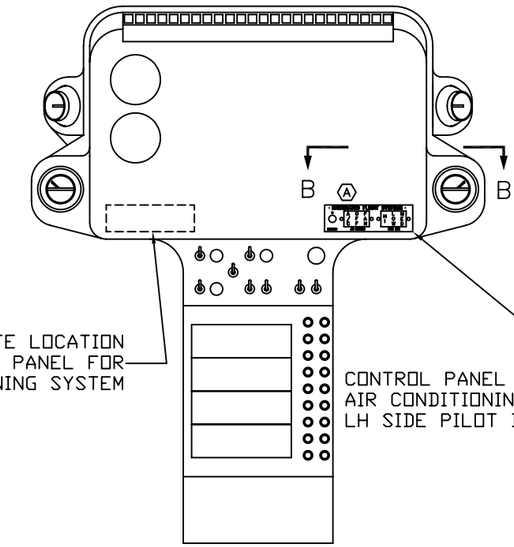
Ⓐ

AFT EVAP SPEED CONTROL SWITCH ASSY (USED W/FAN ASSY P/N 490032) P/N 540095

Ⓑ

Ⓑ

AFT EVAP SPEED CONTROL SWITCH ASSY (USED W/FAN ASSY P/N 050085) P/N 540095-1



SECTION A-A

COCKPIT CONSOLE

VIEW LOOKING FORWARD

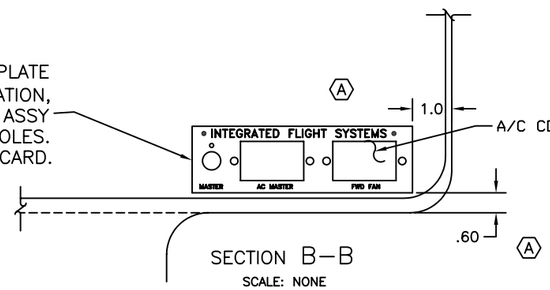
SCALE: 1/4

NOTES:

ROUTE IFS 8 AWG FROM MDHS BUSS IN FREE AIR UNDER THE FLOOR TO IFS 50 AMP C/B IN CONSOLE.

SEPARATE IFS WIRE FROM 3 EACH MDHS #10 AWG WIRES

USE IFS P/N 120115 AS TEMPLATE TO LOCATE SWITCH & C/B LOCATION, ABOVE & INBOARD OF CONSOLE ASSY FRAME. CUT & DRILL ALL HOLES. MOUNT COMPONENTS & PLACARD.



SECTION B-B

SCALE: NONE

B

"REDUCED PRINT" DO NOT SCALE DRAWING FOR DIMENSIONS

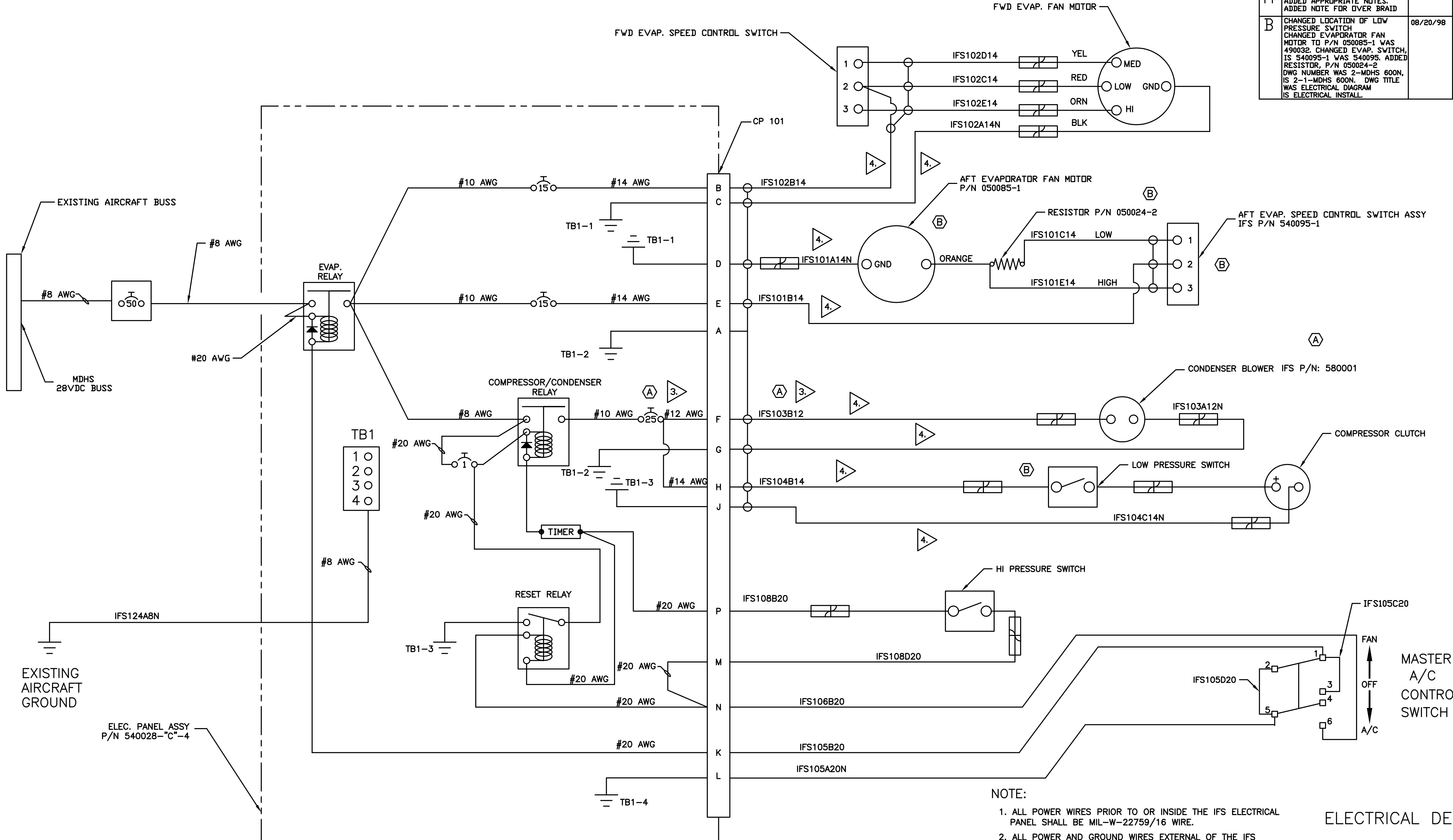
ELECTRICAL ROUTING

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 2 OF 3	SIZE: D	DRAWN BY: MAH
SCALE: 1/8				
TITLE: ELECTRICAL INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 2-1-MDHS 600N		

\001MDHS600NR\2-1-MDHS6002_D.DWG

REV.	DESCRIPTION	DATE	APPV.
A	CHANGED TO 5" BLOWER ADDED APPROPRIATE NOTES. ADDED NOTE FOR OVER BRAID	07/22/97	
B	CHANGED LOCATION OF LOW PRESSURE SWITCH CHANGED EVAPORATOR FAN MOTOR TO P/N 050085-1 WAS 490032. CHANGED EVAP. SWITCH, IS 540095-1 WAS 540095. ADDED RESISTOR, P/N 050024-2 DWG NUMBER WAS 2-MDHS 600N, IS 2-1-MDHS 600N. DWG TITLE WAS ELECTRICAL DIAGRAM IS ELECTRICAL INSTALL.	08/20/98	

B



\001MDHS600NR\2-1-MDHS6005_D.DWG

"REDUCED PRINT" DO NOT SCALE DRAWING FOR DIMENSIONS

MD 600N ELECTRICAL WIRING DIAGRAM

SINGLE CONDENSER BLOWER

NOTE:

1. ALL POWER WIRES PRIOR TO OR INSIDE THE IFS ELECTRICAL PANEL SHALL BE MIL-W-22759/16 WIRE.
2. ALL POWER AND GROUND WIRES EXTERNAL OF THE IFS ELECTRICAL ASSY, (TO BLOWER, FAN MOTORS, AND COMPRESSOR CLUTCH) SHALL BE "SHIELDED" USING MS27500-14TGIT14 OR SIZED AS INDICATED.

ELECTRICAL DESIGN

NOTES: CONTINUED

(A)

3. IFS103B12 WIRE, AND 25 AMP C/B MAYBE CHANGED TO: IFS103B14 AND 20 AMP C/B, WHEN 13 AMP, 5" BLOWER (P/N 050085-1) IS UTILIZED.

4. INSTALL METALLIC OVER BRAID ON ALL POWER WIRES. SOLDER MIL-W-22759/16/20 WIRE TO BOTH ENDS OF OVER BRAID AND GROUND FOR ADDED EMI SUPPRESSION.

WIRE #IFS XXX X XX N

- XXX — GROUP
- X — SEQUENCE
- XX — GAUGE
- N — INDICATES GROUND

(B)

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97 SCALE: NONE	APPROVED BY:	SHEET: 3 OF 3	SIZE: D	DRAWN BY: MAH
TITLE: ELECTRICAL INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 2-1-MDHS 600N		

Step 10

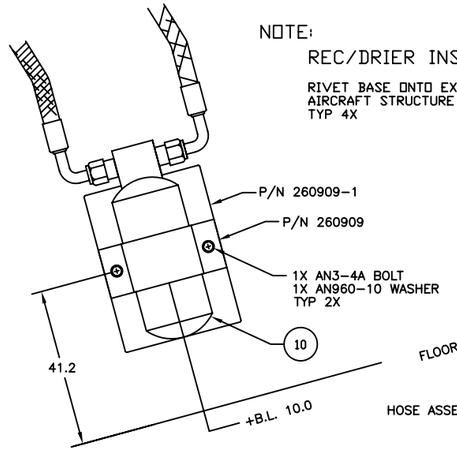
Plumbing Installation Drawings

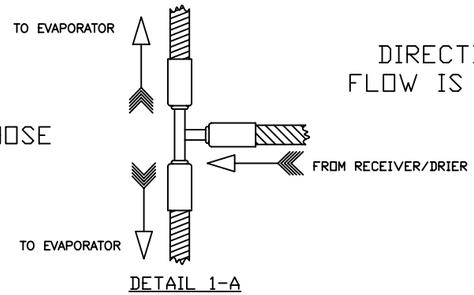
REV.	DESCRIPTION	DATE	APPV.
A	RELOCATED RECEIVER/DRIER. ADDED HIGH, LOW PRESSURE SWITCHES, AND SIGHT GLASS. ADDED NOTE & REC/DRIER INSTALL.	07/22/97	
B	MADE HOSE END FITTINGS PICTORIALLY CORRECT. ADDED LOCATION NOTE FOR HIGH AND LOW PRESSURE SERVICE PORTS, AND THE SIGHT GLASS. ADDED ALT AFT EVAP ASSY. DWG NUMBER WAS 3-MDHS 600N IS 3-1-MDHS 600N. DWG TITLE WAS PLUMBING DIAGRAM IS PLUMBING INSTALL.	08/20/98	

B

NOTE:
REC/DRIER INSTALLATION.

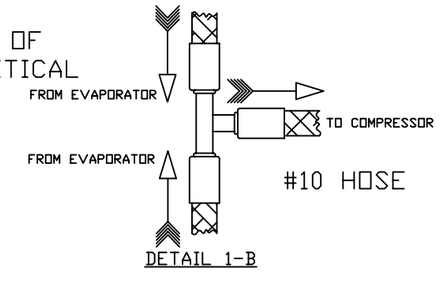
RIVET BASE ONTO EXISTING AIRCRAFT STRUCTURE W/CR3243-4-X TYP 4X





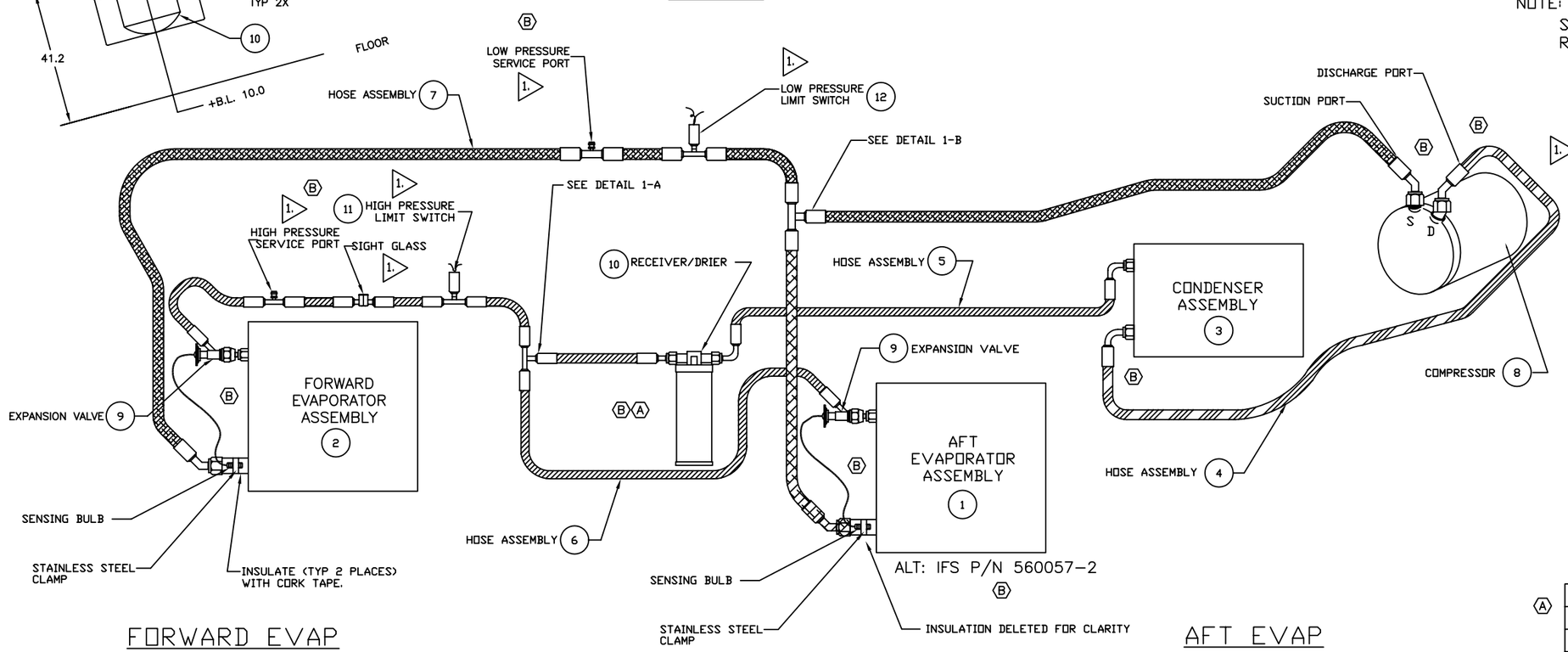
DETAIL 1-A

DIRECTION OF FLOW IS CRITICAL



DETAIL 1-B

NOTE:
SEE SH 2 OF 2 FOR ROUTING & CLAMPING DETAILS



NOTE:
1. LOW AND HIGH PRESSURE SWITCHES ARE LOCATED ON COMPRESSOR UNTIL COMPRESSORS ARE INCORPORATED INTO THE SYSTEM W/O PRESSURE PORTS. AT THAT TIME PRESSURE SWITCHES WILL BE LOCATED AS SHOWN.

LOW AND HIGH SERVICE PORTS WILL BE LOCATED IN THE SERVICE BOX OR AS AN ALTERNATE, IN THE LEFT FOOT WELL.

THE SIGHT GLASS WILL BE LOCATED IN THE SERVICE BOX OR AS AN ALTERNATE, VERTICALLY ON THE AFT SIDE OF THE LH CABIN DOOR POST.

FORWARD EVAP

EXTREMELY IMPORTANT

FAILURE TO SECURE EXPANSION VALVE SENSING BULB, TIGHTLY, TO THE RETURN LINE HOSE FITTING (AT 3 OR 9 O'CLOCK POSITION) WITH A STAINLESS STEEL CLAMP (AND INSULATE SENSING BULB AND LINE) WILL DRAMATICALLY DECREASE THE PERFORMANCE OF THE AFT (NOT FORWARD) EVAPORATOR.

REFRIGERANT HOSE SCHEDULE

#6 HOSE
#8 HOSE
#10 HOSE

AFT EVAP

EXTREMELY IMPORTANT

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

PLUMBING DIAGRAM

	QTY	ITEM	PART NO.	DESCRIPTION
A	1	12	050107	LOW PRESSURE SWITCH
	1	11	090004	HIGH PRESSURE SWITCH
	1	10	090016-5	RECEIVER/DRIER
	2	9	090002-"0"	EXPANSION VALVE
	1	8	590007	COMPRESSOR ASSY
	1	7	570083	HOSE ASSEMBLY, EVAP'S TO COMP
	1	6	570082	HOSE ASSEMBLY, REC/DRIER TO EVAP'S
	1	5	570081	HOSE ASSEMBLY, COND TO REC/DRIER
	1	4	570080	HOSE ASSEMBLY, COMP TO COND
	1	3	550027	CONDENSER ASSEMBLY
	1	2	560056	FORWARD EVAPORATOR ASSEMBLY
B	1	1	560057	AFT EVAPORTATOR ASSEMBLY

INTEGRATED FLIGHT SYSTEMS INC.

DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 2	SIZE: D	DRAWN BY: MAH
SCALE: NONE				

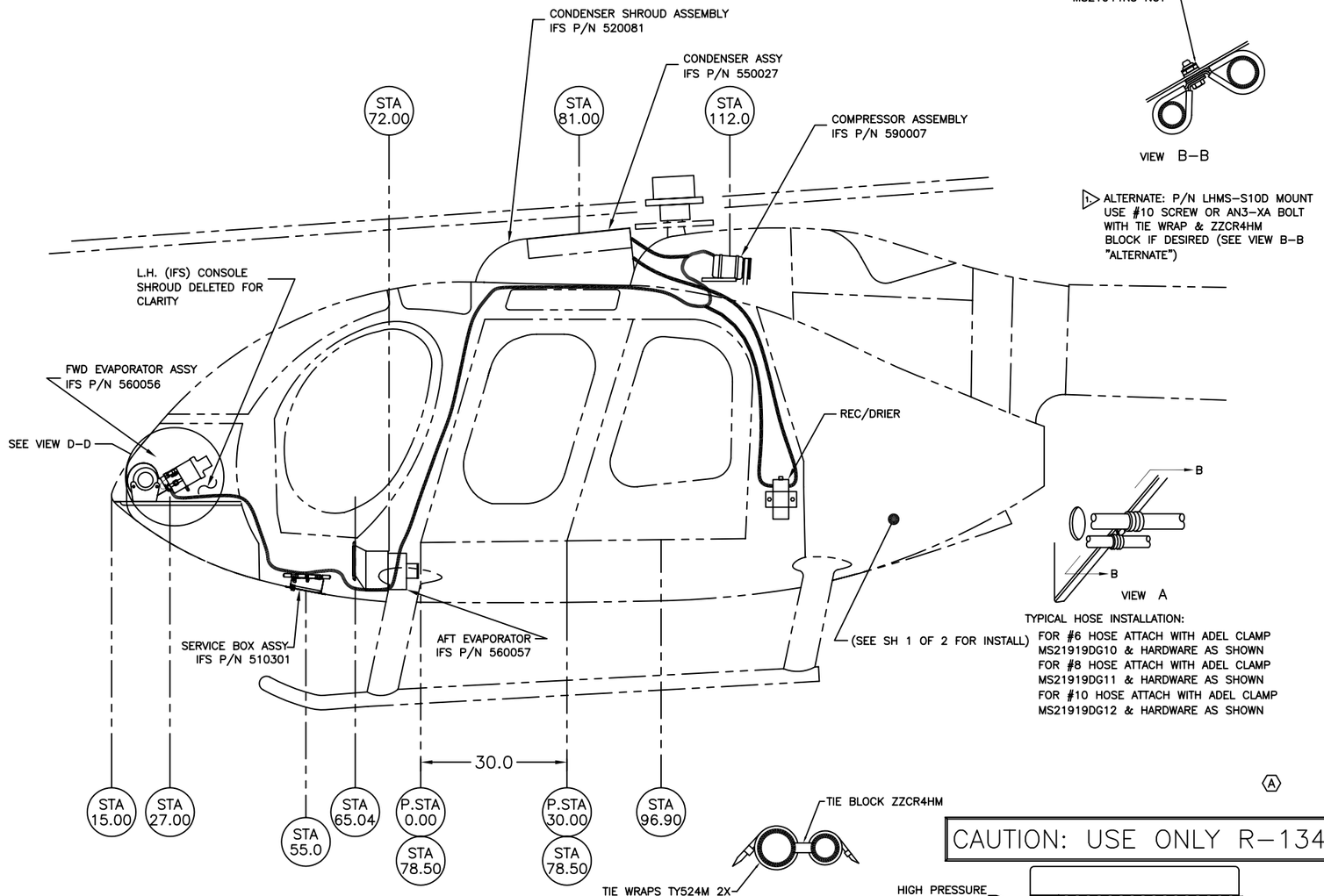
TITLE: PLUMBING INSTALL

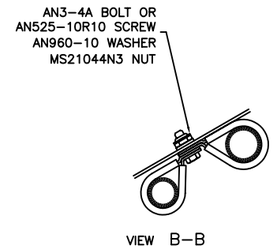
APPLICATION:	DRAWING NUMBER:
MDHS 600N	3-1-MDHS 600N

\001MDHS600NR\3-1-MDHS6001_C.DWG

REV.	DESCRIPTION	DATE	APPV.
A	ADDED SERVICE BOX INSTALLATION ADDED PLACARD P/N 120111. RELOCATED SIGHT GLASS & HIGH PRESSURE SWITCH.	07/22/97	
B	ADDED SERVICE BOX INSTALLATION ADDED PLACARD P/N 120111. RELOCATED SIGHT GLASS & HIGH PRESSURE SWITCH. ADDED NOTE 8. DWG NUMBER WAS 3-MDHS 600N IS 3-1-MDHS 600N. DWG TITLE WAS PLUMBING ROUTING IS PLUMBING INSTALL.	08/20/98	

B





VIEW B-B

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

VIEW A

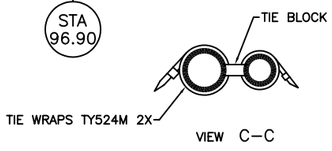
TYPICAL HOSE INSTALLATION:

FOR #6 HOSE ATTACH WITH ADEL CLAMP
MS21919DG10 & HARDWARE AS SHOWN
FOR #8 HOSE ATTACH WITH ADEL CLAMP
MS21919DG11 & HARDWARE AS SHOWN
FOR #10 HOSE ATTACH WITH ADEL CLAMP
MS21919DG12 & HARDWARE AS SHOWN

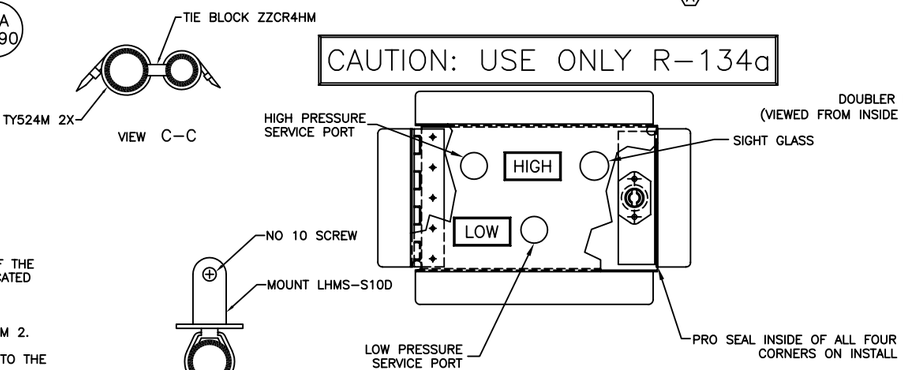
Ⓐ SERVICE BOX INSTALLATION

SEE NOTE 8 FOR ALTERNATE TO SERVICE BOX INSTALLATION

1. REMOVE AND STORE BATTERY.
2. USE DOUBLER P/N 261060 AS A TEMPLATE TO LAYOUT HOLE THROUGH AIRCRAFT SKIN AND ESTABLISH RIVET PATTERN.
3. PLACE DOUBLER OUTBOARD OF STRINGER WITH EDGE AT B.L. -6.5 AND WITH AFT EDGE AGAINST FORWARD LIP OF FRAME.
4. MARK OUTLINE OF DOUBLER AND RIVET LOCATIONS. REMOVE A/C SKIN INSIDE DOUBLER LINE.
5. INSTALL SERVICE BOX ASSEMBLY P/N 510301 ON INSIDE OF AIRCRAFT.
6. INSTALL DOUBLER ON OUTSIDE OF A/C SKIN, MATCH DRILL DOUBLER TO A/C SKIN AND SERVICE BOX. INSTALL W/MS20470AD4-X RIVETS.
7. INSTALL PLACARD P/N 120111 NEXT TO DOOR ON OUTER SKIN.
8. Ⓑ AS AN ALTERNATE TO SERVICE BOX INSTALLATION THE HIGH AND LOW SERVICE PORTS MAY BE LOCATED IN THE LH FOOT WELL AND THE SIGHT GLASS MAY BE LOCATED VERTICALLY ON AFT SIDE OF THE LH CABIN DOOR POST.

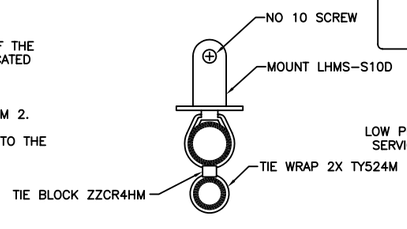


VIEW C-C

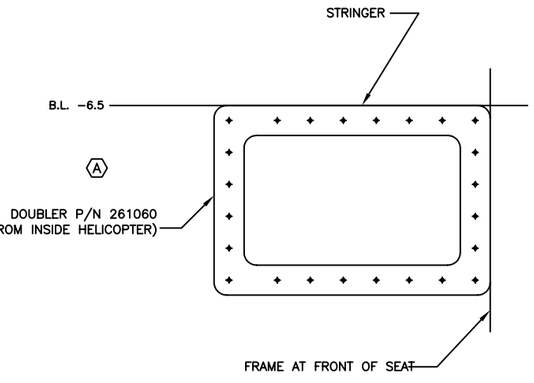


SERVICE BOX ASSEMBLY
IFS P/N 510301

(LOOKING INSIDE FROM
UNDER THE HELICOPTER).
DOOR REMOVED FOR CLARITY.



VIEW B-B
"ALTERNATE"



PLUMBING ROUTING

INSTALLATION INSTRUCTIONS

1. ROUTE HOSE P/N 570080 FROM COMPRESSOR TO CONDENSER.
2. ROUTE HOSE P/N 570083 FROM COMPRESSOR AFT, DOWN THROUGH EXISTING OPENING, OUTBOARD AND FORWARD ALONG AFT CABIN CEILING TO AFT SIDE DOOR POST AT STATION 78.50. ROUTE HOSE DOWN INSIDE OF DOOR POST AND FORWARD TO AFT EVAPORATOR. ROUTE FROM AFT EVAPORATOR UNDER PILOT'S SEAT, SECURING LOW PRESSURE SERVICE PORT THROUGH THE TOP OF THE SERVICE BOX AND THEN FORWARD THROUGH THE SHEET METAL DOUBLER TO THE EVAPORATOR LOCATED IN THE NOSE.
3. ROUTE HOSE P/N 570081 FROM THE CONDENSER ASSEMBLY IN A SIMILAR MANNER, AS ABOVE, TO THE RECEIVER/DRIER BOTTLE WHICH SHALL BE LOCATED IN THE LOWER, REAR, R.H., CORNER OF CABIN STRUCTURE. ROUTE HOSE FROM RECEIVER/DRIER UP AND FORWARD AS IN ITEM 2.
4. ROUTE HOSE P/N 570082 FROM THE RECEIVER/DRIER BOTTLE TO THE AFT EVAPORATOR, FORWARD TO THE SERVICE BOX, SECURING THE HIGH PRESSURE SERVICE PORT AND SIGHT GLASS TO THE TOP OF THE BOX. CONTINUE ROUTING THE HOSE FORWARD THROUGH THE PROVIDED SHEET METAL DOUBLERS TO THE EVAPORATOR LOCATED IN THE NOSE.
5. SECURE ALL HOSES ON THE UPPER TRANSMISSION DECK, IN THE AFT CABIN CEILING, TO THE INSIDE OF THE OUTBOARD DOOR POST, UNDER THE PILOT'S SEAT, AND FORWARD UTILIZING ADEL CLAMPS, TIE BLOCKS P/N ZZCR4HM AS SHOWN IN DETAILS VIEW A, VIEW B-B AND VIEW C-C.

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 2 OF 2	SIZE: D	DRAWN BY: B.KNUDSEN
SCALE: 1/12				
TITLE: PLUMBING INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 3-1-MDHS 600N		

\001MDHS600NR\3-1-MDHS6002_C.DWG

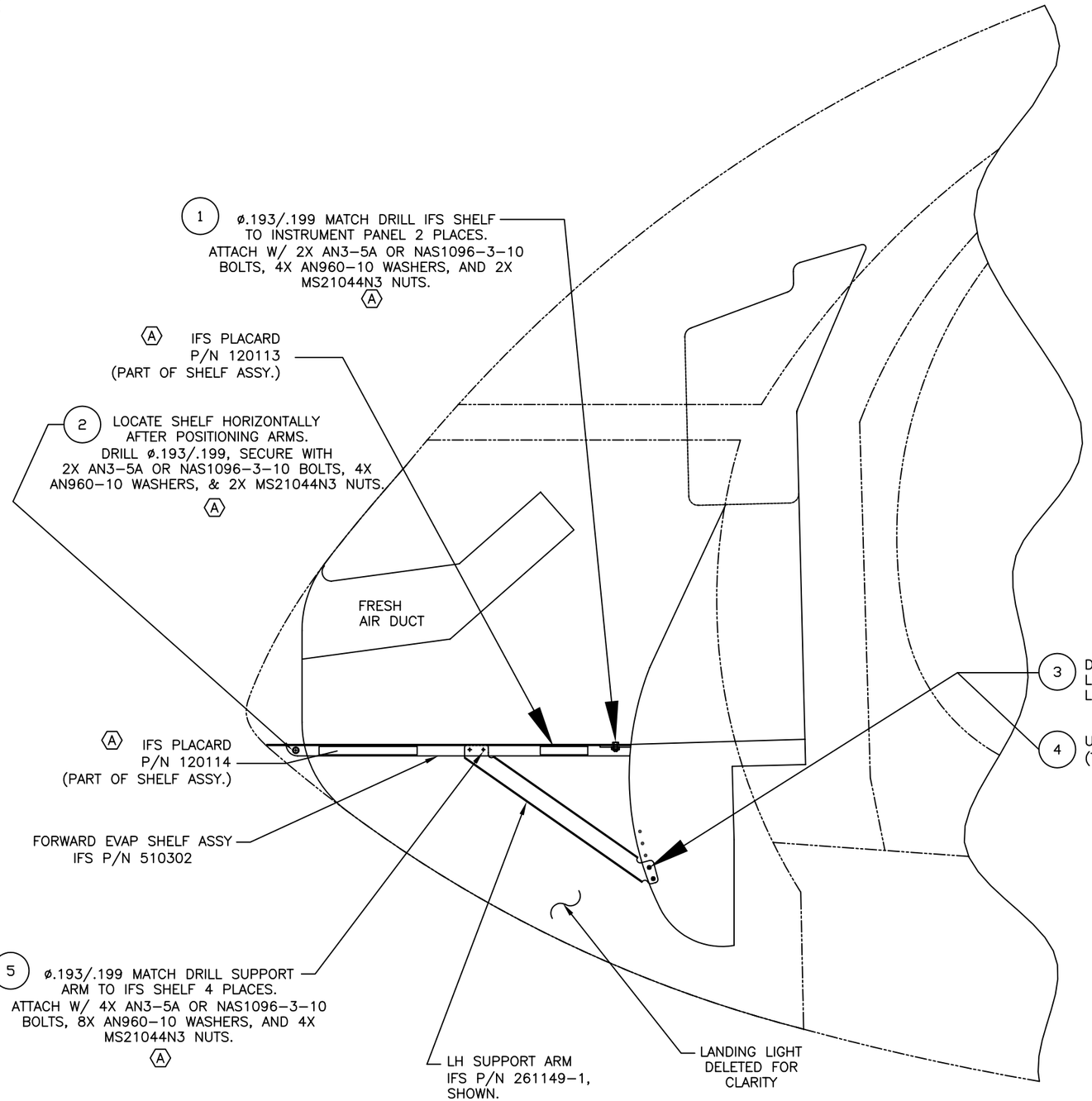
Step 11

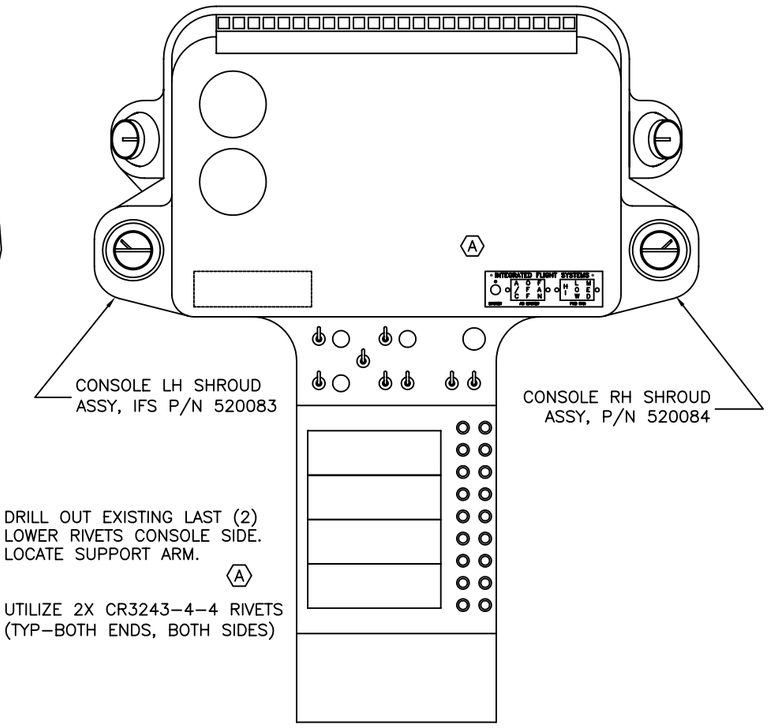
Forward & Aft Evaporator Installation Drawings

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

REV.	DESCRIPTION	DATE	APPV.
A	ADDED NAS BOLTS AS AN ALT P/N FOR CALLOUT (1)(2). CLARIFIED CALLOUT (3). DELETED MS20470AD4-4 RIVETS FROM CALLOUT (4). ADDED CALLOUT (5). SWITCHED PLCS OF PLACARD REFS.	07/22/97	
B	DWG NUMBER WAS 4-MDHS 600N IS 4-1-MDHS 600N. SHEET NUMBER WAS 1 OF 4 IS 1 OF 3.	08/20/98	

B





COCKPIT CONSOLE

VIEW LOOKING FORWARD

SCALE:NONE

SHELF INSTALLATION

(B)

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				

TITLE: FORWARD EVAPORATOR INSTALL

APPLICATION:	DRAWING NUMBER:
MDHS 600N	4-1-MDHS 600N

\001MDHS600NR\4-1-MDHS6001_C.DWG

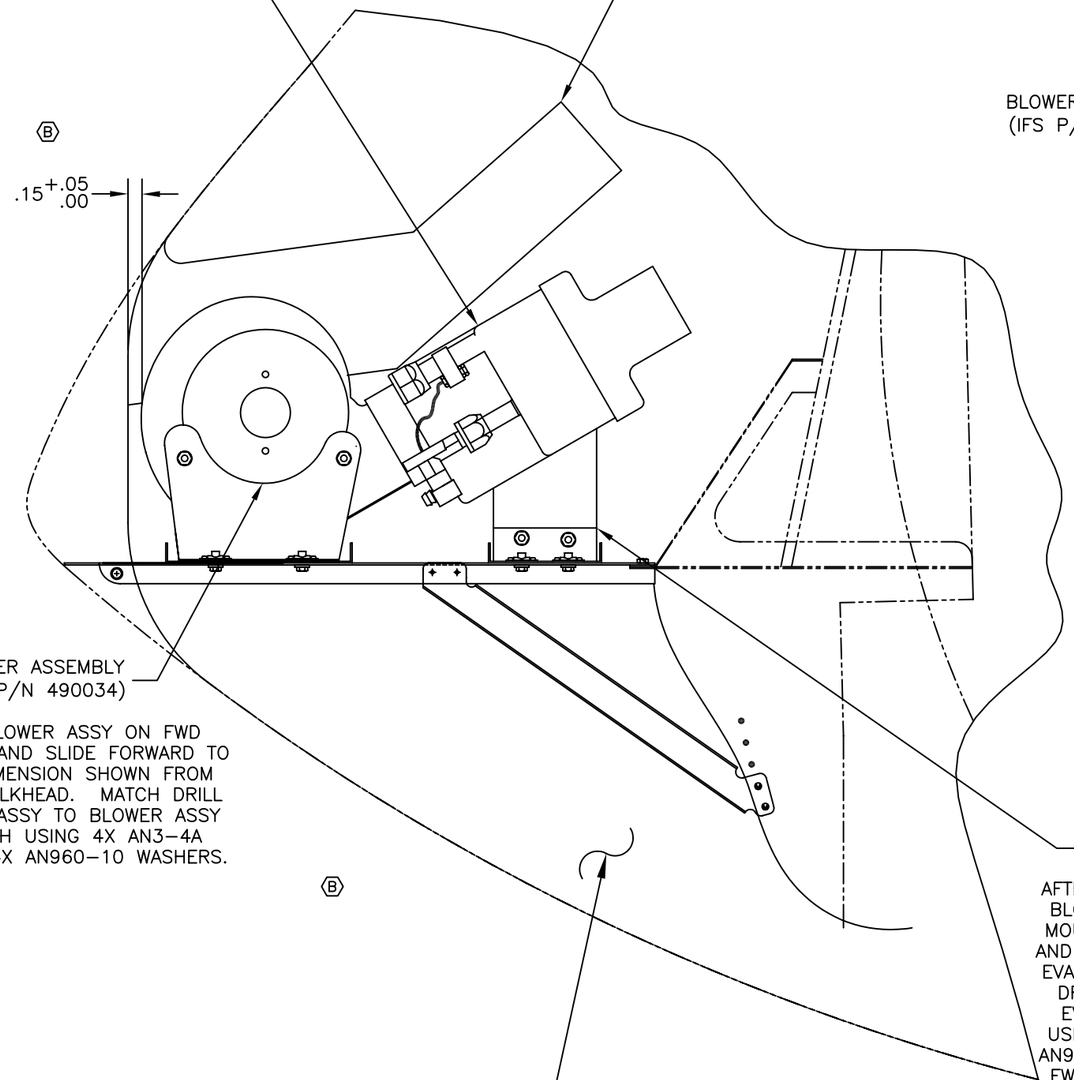
REV.	DESCRIPTION	DATE	APPV.
A	CHANGED 4.0 DIM TO 1.6. ADDED 4.1 DIM. CHANGED LENGTH OF IFS P/N 510305.	07/22/97	
B	CLARIFIED COMPONENT PART NUMBERS AND INSTALLATION METHODS. ADDED .15 DIMENSION. DWG NUMBER WAS 4-MDHS 600N IS 4-1-MDHS 600N. SHEET NUMBER WAS 2 OF 4 IS 2 OF 3.	08/20/98	

B

FWD, EVAP. ASSY
(IFS P/N 560056)

MATE FWD EVAP ASSY TO BLOWER ASSY. ATTACH USING INSTRUCTIONS FOR FWD EVAP MOUNT ASSY.

FRESH AIR DUCT LOCATED BETWEEN DUAL BLOWER HOUSING



BLOWER ASSEMBLY
(IFS P/N 490034)

CENTER BLOWER ASSY ON FWD SHELF ASSY AND SLIDE FORWARD TO ACHIEVE DIMENSION SHOWN FROM FORWARD BULKHEAD. MATCH DRILL FWD SHELF ASSY TO BLOWER ASSY AND ATTACH USING 4X AN3-4A BOLTS AND 4X AN960-10 WASHERS.

Ⓑ

LANDING LIGHT DELETED FOR CLARITY

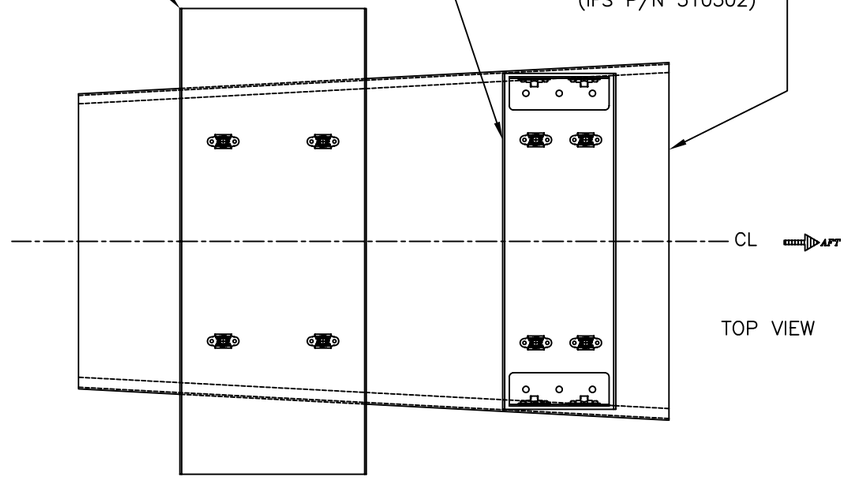
FORWARD EVAP MOUNT ASSY
(IFS P/N 510305)

AFTER MATING FWD EVAP ASSY AND BLOWER ASSY, CENTER FWD EVAP MOUNT ASSY ON FWD SHELF ASSY AND SLIDE FORWARD UNTIL THE FWD EVAP ASSY IS SUPPORTED. MATCH DRILL FWD SHELF ASSY TO FWD EVAP MOUNT ASSY AND ATTACH USING 4X AN3-4A BOLTS AND 4X AN960-10 WASHERS. MATCH DRILL FWD EVAP MOUNT ASSY SUPPORT ARMS TO FWD EVAP ASSY AND ATTACH USING 4X AN3-4A BOLTS AND 4X AN960-10 WASHERS.

BLOWER ASSEMBLY
(IFS P/N 490034)

FWD EVAP MOUNT
BASE ASSEMBLY
(IFS P/N 510305)

FORWARD SHELF ASSY
(IFS P/N 510302)



TOP VIEW

BLOWERS, MOTOR, AND FORWARD EVAPORATOR ASSEMBLY NOT SHOWN IN THIS VIEW FOR CLARITY.

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

Ⓑ

INTEGRATED FLIGHT SYSTEMS
INC.

DATE: 03/10/97	APPROVED BY:	SHEET: 2 OF 3	SIZE: D	DRAWN BY: B.KNUDSEN
SCALE: 1/2				

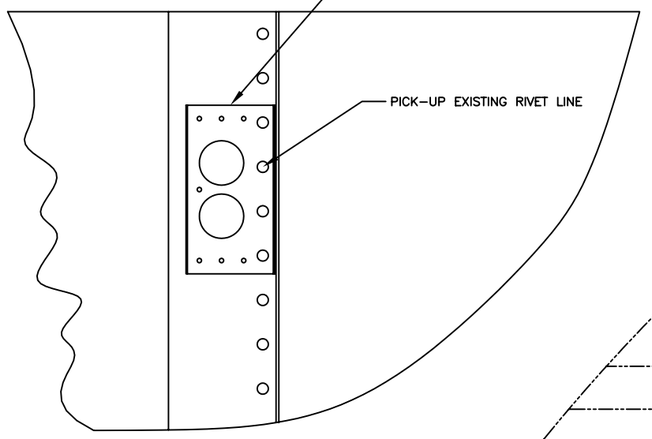
TITLE:
FORWARD EVAPORATOR INSTALL

APPLICATION:	DRAWING NUMBER:
MDHS 600N	4-1-MDHS 600N

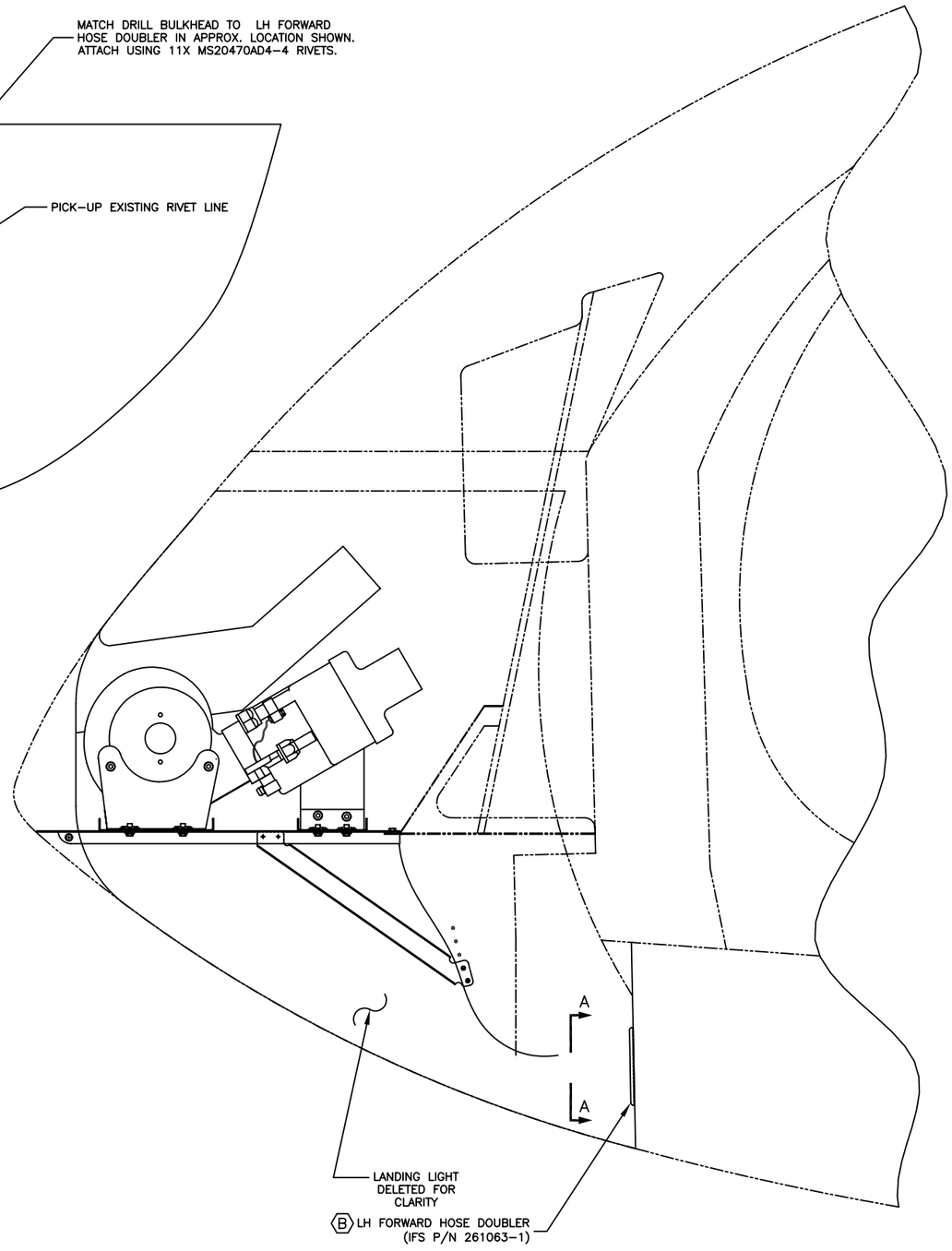
\001MDHS600N\R\4-1-MDHS6002_C.DWG

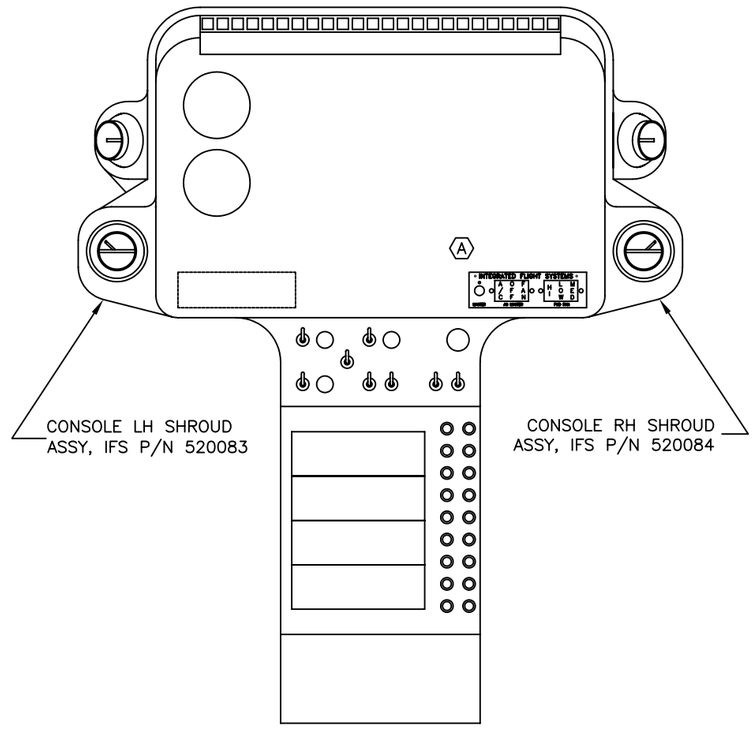
REV.	DESCRIPTION	DATE	APPV.
A	ROTATED BLOWER & LOWERED EVAP/BLOWER ASSY. MOVED 50 AMP C/B INBOARD. ADDED CALLOUT FOR EVAP SUPPORTS.	07/22/97	
B	ADDED INSTALLATION INSTRUCTIONS TO 4-1-MDHS 600N,SHEET 2 OF 3. ADDED VIEW A-A SHOWING INSTALLATION OF IFS P/N 261063-1. DWG NUMBER WAS 4-MDHS 600N IS 4-1-MDHS 600N. SHEET NUMBER WAS 3 OF 4 IS 3 OF 3.	08/20/98	

B



VIEW A-A
VIEW LOOKING AFT





COCKPIT CONSOLE

VIEW LOOKING FORWARD

SCALE:NONE

REDUCED PRINT
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\4-1-MDHS6003_C.DWG

(B)

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 3 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				

TITLE: FORWARD EVAPORATOR INSTALL

APPLICATION:	DRAWING NUMBER:
MDHS 600N	4-1-MDHS 600N

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

REV.	DESCRIPTION	DATE	APPV.
A	ROTATED BLOWER HOUSING 60° CW. ADDED ATTACHMENT OF EVAPORATOR HOUSING TO VERT FACE OF SEAT. ADDED NOTE TO REMOVE APU PLUG CHANGED 2.25 DIM IN VIEW C–C (2.25).	07/22/97	
B	ADDED LOCATION DIMENSIONS FOR EVAPORATOR RETURN AIR DOUBLER. ADDED ILLUSTRATION OF CYCLIC PLUG RELOCATION. ADDED CYCLIC COVER NOTE. DWG NUMBER WAS 4–MDHS 600N IS 4–2–MDHS 600N. SHEET NUMBER WAS 4 OF 4 IS 1 OF 3. ADDED SHEET 2 OF 3 AND 3 OF 3.	08/20/98	

B

NOTE:
MDHS CYCLIC COVER NOT SHOWN ON THIS PAGE FOR CLARITY
SEE PAGE 3 OF 3 FOR CYCLIC COVER VARIATIONS.

FWD (B)

ATTACH AFT EVAPORATOR RETURN AIR DOUBLER (IFS P/N 261032–1) TO FORWARD FACE OF SEAT CLOSE OUT USING 44X AN470AD4–4 RIVETS.

MATCH DRILL DOUBLER, A/C STRUCTURE AND MOUNTING FLANGE OF FWD EVAP. HOUSING IN 4X LOCATIONS SHOWN. ATTACH MOUNTING FLANGE OF EVAPORATOR HOUSING TO VERTICAL FACE OF SEAT AND DOUBLER WITH 4X AN3–5A BOLTS, 4X AN960–10 WASHERS, AND 4X MS21044N3 NUTS (SEE VIEW D–D). AS AN OPTION TO SPECIFIED NUTS AND WASHERS, MS21059L3 NUTPLATES MAY BE INSTALLED ON THE AFT SIDE OF THE EVAPORATOR HOUSING MOUNTING FLANGE.

BL 00.0

STA 65.04

STA 78.50

FORE/AFT LOCATION OF MOUNT COMPONENTS IS DETERMINED BY EXISTING VERTICAL ANGLE.

ATTACH AFT EVAP MOUNT CHANNEL ASSY (IFS P/N 510276) TO INBOARD SEAT CLOSE OUT USING 2X AN3–5A BOLTS, 4X AN960–10 WASHERS, AND 2X MS21044N3 NUTS.

MATCH DRILL AFT EVAP MOUNT CHANNEL ASSY (IFS P/N 510276) TO EVAP MOUNT ANGLE ASSY (IFS P/N 510277) AND ATTACH USING 2X AN3–5A BOLTS, AND 2X AN960–10 WASHERS.

OUTBOARD RIGHT

ATTACH AFT EVAPORATOR ASSY (IFS P/N 560057) TO AFT EVAP MOUNT CHANNEL ASSY (IFS P/N 510276) USING 4X AN3–5A BOLTS, AND 4X AN960–10 WASHERS.

ATTACH BLOWER ASSY (IFS P/N 490032) TO AFT EVAPORATOR ASSY (IFS P/N 560057) USING 3X AN3–5A BOLTS, AND 3X AN960–10 WASHERS.

SEAT PAN P/N 261024 REMOVED FOR CLARITY

FWD

TOP OF SEAT REMOVED FOR CLARITY

2.25 (REF) (A)

STA 65.04

VIEW C–C
LOOKING OUTBOARD

AREA UNDER SEAT REMOVED FOR CLARITY

EXPANSION VALVE DELETED FOR CLARITY

1/2" DRAIN TUBE ATTACH TO EVAPORATOR DRAIN FITTING USING SS SAFETY WIRE OR HOSE CLAMP. CUT HOLE IN AIRCRAFT SKIN, INSTALL GROMMET & ROUTE TO OUTSIDE OF AIRCRAFT.

VIEW B–B
LOOKING FORWARD OUTBOARD

GROMMET (P/N MS35489–20)

45°

1.0

AIRCRAFT SKIN

LBL 20.8

TEMPORARILY REMOVE APU PLUG FOR ACCESS WHILE INSTALLING AFT EVAPORATOR. (A)

ATTACH AFT EVAP MOUNT ANGLE ASSY (IFS P/N 510277) TO SIDE SEAT CLOSE OUT USING 2X AN3–5A BOLTS, 4X AN960–10 WASHERS, AND 2X MS21044N3 NUTS. SHIM AS REQUIRED USING IFS P/N'S 261178–1 & 261178–2.

UNDER RIGHT SIDE SEAT

BUTT DOUBLER UP AGAINST EXISTING ANGLE (B)

EVAPORATOR RETURN AIR DOUBLER (IFS P/N 261032–1)

8.1

LBL 20.8

2X .5

2X .5

2X .4

2X .4

VIEW D–D
LOOKING AFT OUTBOARD

SEE SHEET 2 FOR INSTALLATION INSTRUCTIONS

B

INTEGRATED FLIGHT SYSTEMS INC.

DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				

TITLE:
AFT EVAPORATOR INSTALL

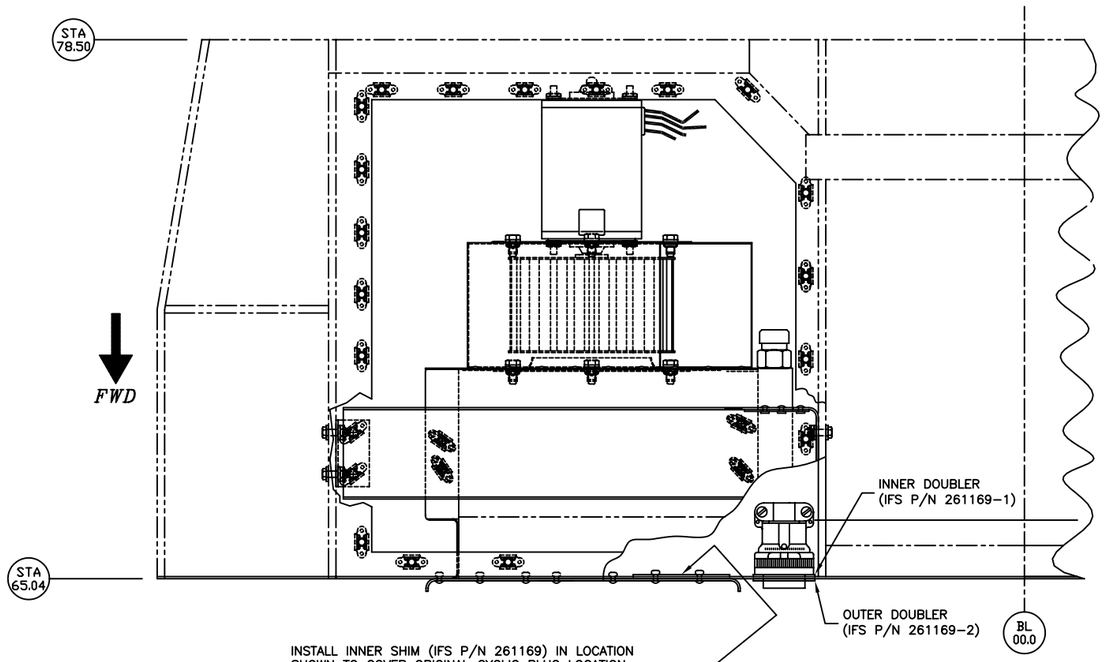
APPLICATION:	DRAWING NUMBER:
MDHS 600N	4–2–MDHS 600N

\001MDHS600NR\4-2-MDHS6001_C.DWG

REV.	DESCRIPTION	DATE	APPV.
B	DWG NUMBER WAS 4-MDHS 600N IS 4-2-MDHS 600N. SHEET NUMBER WAS 4 OF 4 IS 2 OF 3. SEE SH 1 OF 3 FOR REV A & B.	08/20/98	

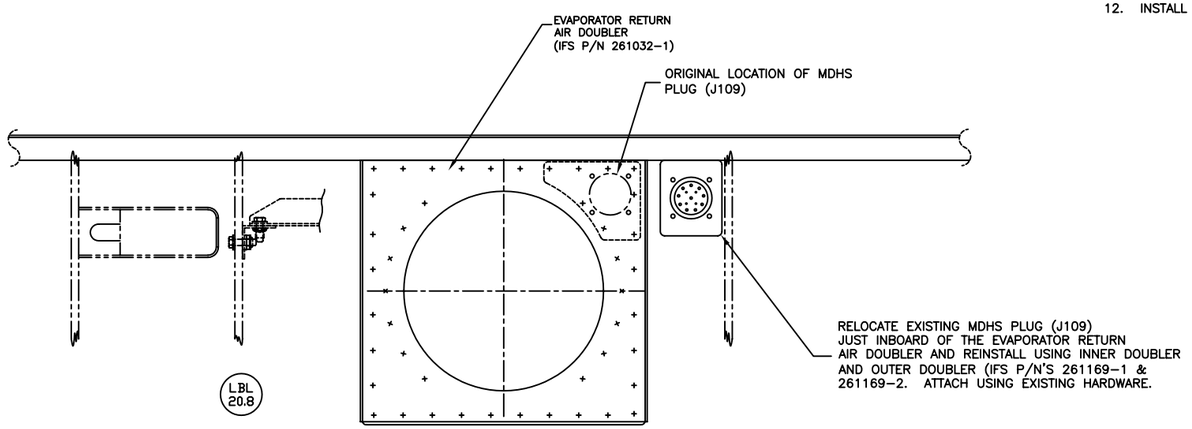
B

NOTE:
MDHS CYCLIC COVER NOT SHOWN ON THIS PAGE FOR CLARITY
SEE SHEET 3 OF 3 FOR CYCLIC COVER VARIATIONS.



INSTALLATION INSTRUCTIONS.

1. TEMPORARILY REMOVE APU RECEPTACLE.
2. REMOVE MDHS CYCLIC PLUG (J109) AND EXISTING DOUBLER.
3. LOCATE EVAPORATOR RETURN AIR DOUBLER (IFS P/N 261032-1) IAW SHEET 1, VIEW D-D OF THIS DRAWING, MARK PILOT HOLES ON EXISTING STRUCTURE AND CHECK FOR INTERFERENCE WITH EXISTING HOLES.
4. CUT ø6.5 HOLE IN EXISTING STRUCTURE.
5. INSTALL RETURN AIR DOUBLER (IFS P/N 261032-1) AND INNER SHIM (IFS P/N 261169).
6. MATE AFT EVAPORATOR ASSY (IFS P/N 560057) TO EVAPORATOR RETURN AIR DOUBLER AND MATCH DRILL EXISTING STRUCTURE TO THE AFT EVAPORATOR ASSY FORWARD FLANGE. ATTACH IAW SHEET 4 OF THIS DRAWING.
7. INSTALL THE AFT EVAP MOUNT CHANNEL ASSY (IFS P/N 510276) AND THE EVAP MOUNT ANGLE ASSY (IFS P/N 510277) FORE AND AFT IAW SHEET 1 OF THIS DRAWING AND VERTICALLY FLUSH WITH THE TOP OF THE AFT EVAPORATOR ASSY.
8. MATCH DRILL THE AFT EVAP MOUNT CHANNEL ASSY TO THE AFT EVAPORATOR ASSEMBLY AND ATTACH IAW SHEET 1 OF THIS DRAWING.
9. MATCH DRILL EXISTING STRUCTURE TO THE AFT EVAP MOUNT CHANNEL ASSY AND THE EVAP MOUNT ANGLE ASSY. MOUNT ANGLE ASSY AND ANGLE AND ATTACH TO AFT EVAP ASSY.
10. REINSTALL APU RECEPTACLE.
11. RELOCATE AND INSTALL MDHS CYCLIC PLUG (J109) IAW SHEET 2 OF THIS DRAWING.
12. INSTALL BLOWER ASSY (IFS P/N 490032) IAW SHEET 1 OF THIS DRAWING.



DETAIL OF CYCLIC PLUG RELOCATION.

VIEW LOOKING AFT AT STA 65.04

\001MDHS600NR\4-2-MDHS6002_C.DWG

(B)

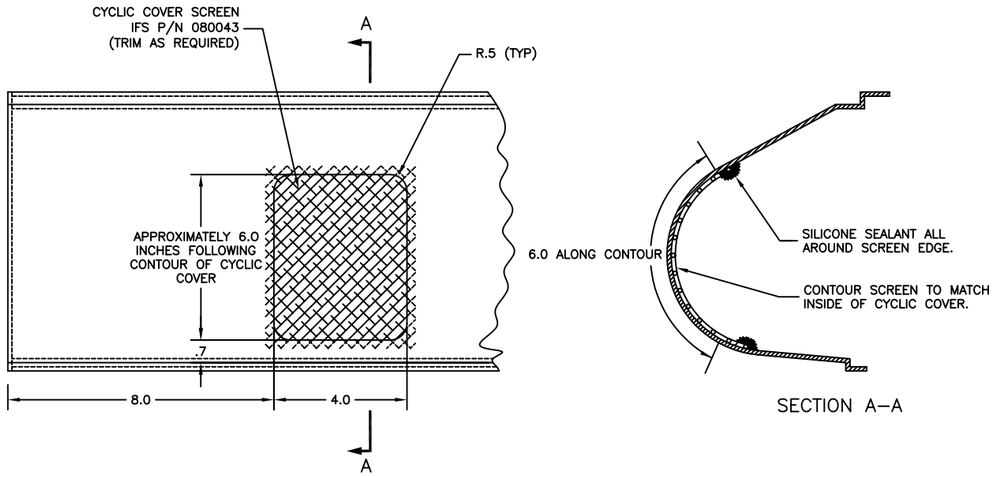
INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 2 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				
TITLE: AFT EVAPORATOR INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 4-2-MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.
B	DWG NUMBER WAS 4–MDHS 600N IS 4–2–MDHS 600N. SHEET NUMBER WAS 4 OF 4 IS 3 OF 3. SHEET 1 OF 3 FOR REV A & B.	08/20/98	

B

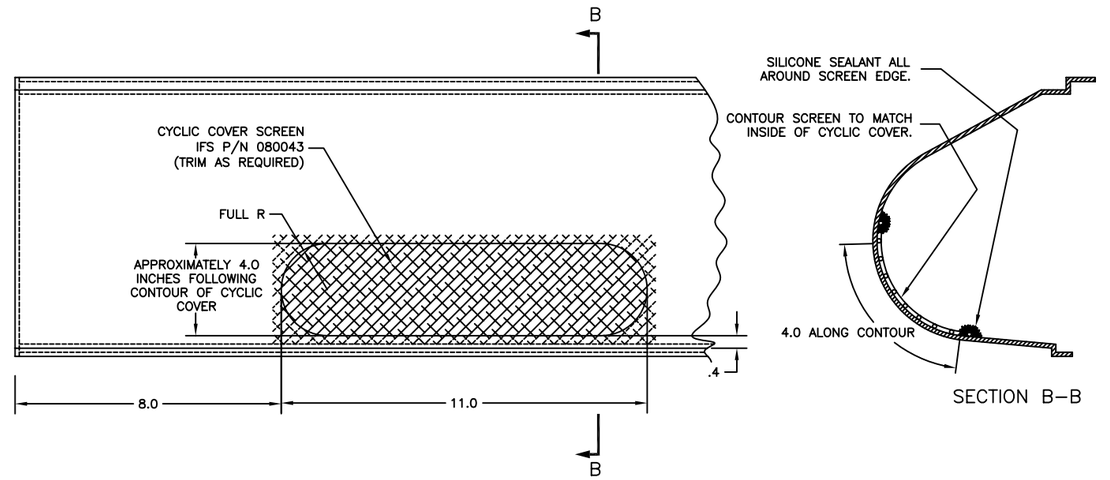
CYCLIC COVER SCREEN VARIATIONS

CYCLIC CONTROLS NOT SHOWN FOR CLARITY



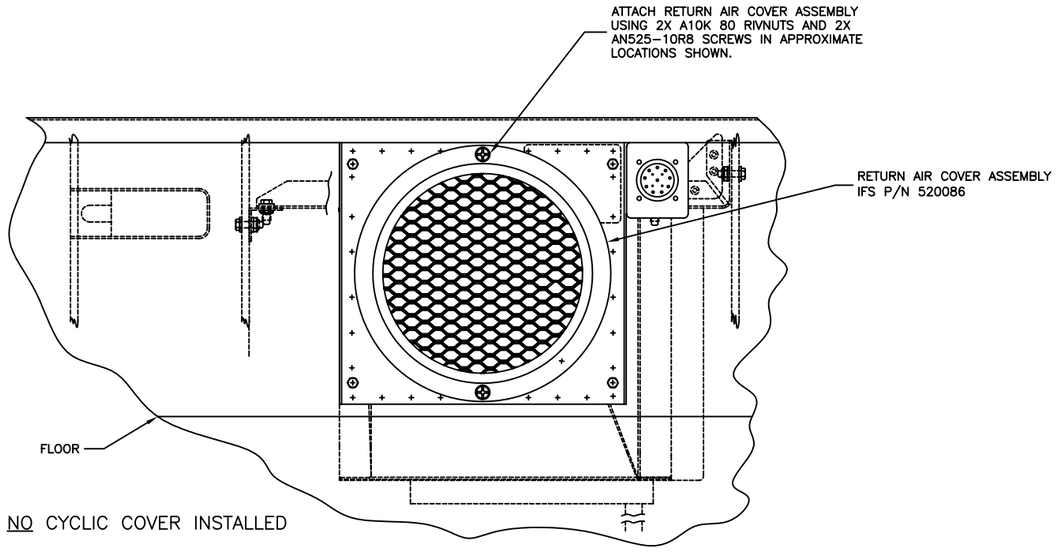
CYCLIC COVER SCREEN INSTALLATION
WITH SLANT RADIO PANEL INSTALLED.

VIEW LOOKING AFT



CYCLIC COVER SCREEN INSTALLATION
WITHOUT SLANT RADIO PANEL INSTALLED.

VIEW LOOKING AFT



NO CYCLIC COVER INSTALLED

VIEW LOOKING AFT AT STA 65.04

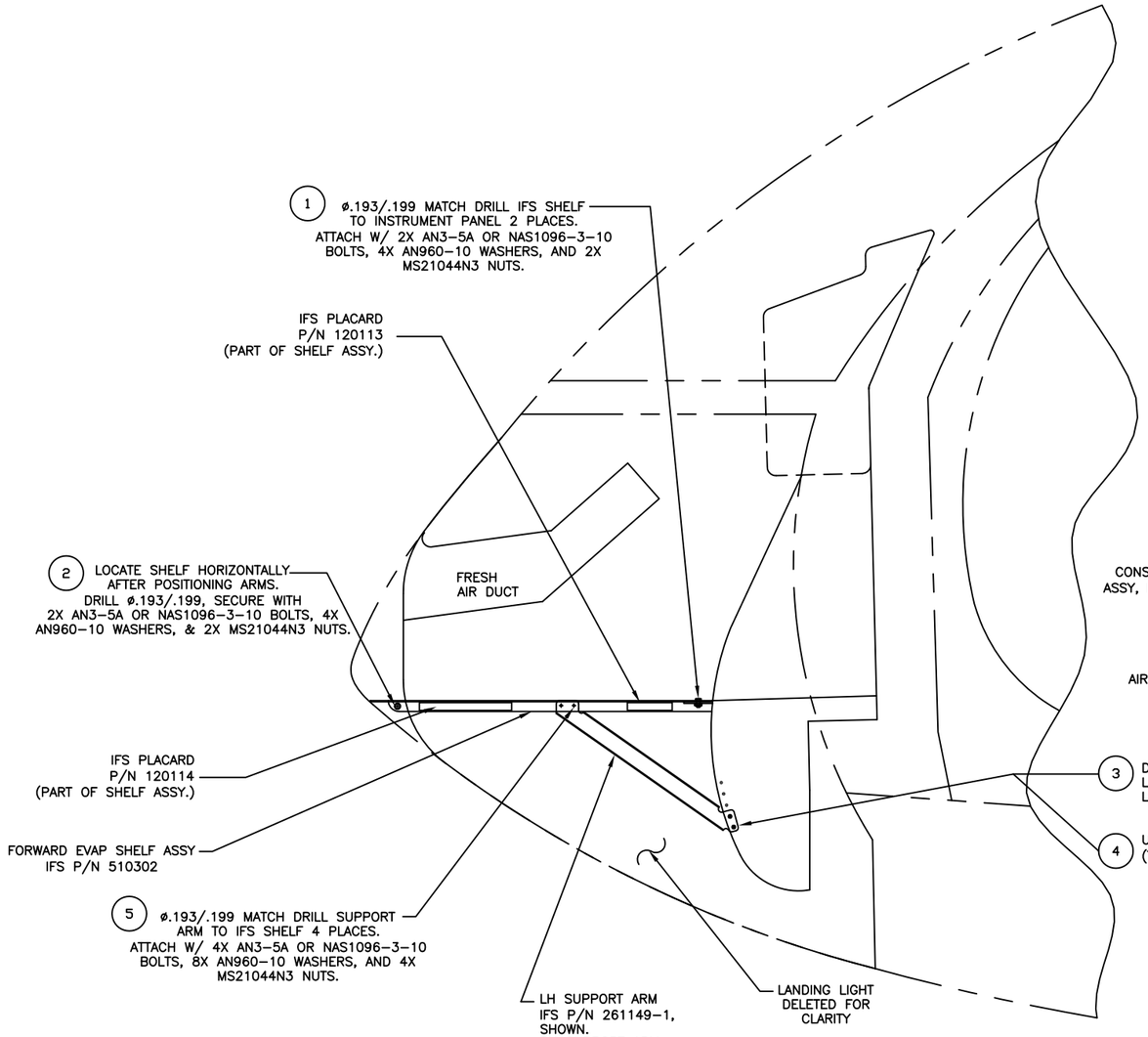
"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\4-2-MDHS6003_C.DWG

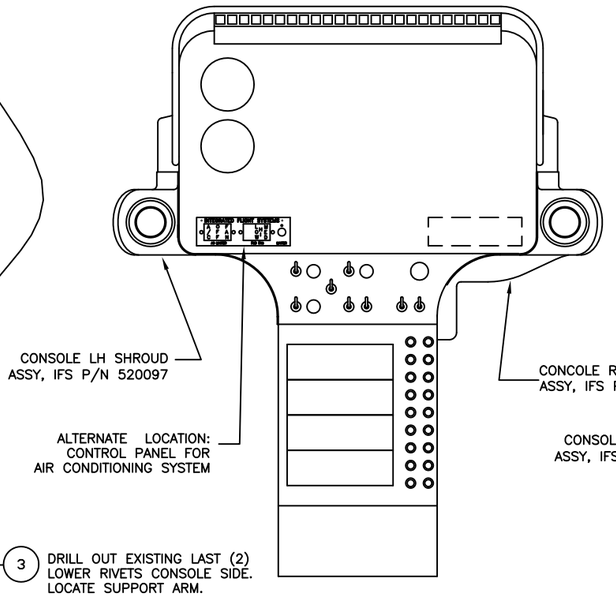
(B)

INTEGRATED FLIGHT SYSTEMS INC.					
DATE: 03/10/97	APPROVED BY:	SHEET: 3 OF 3	SIZE: D	DRAWN BY: TMUZZY	
SCALE: 1/2					
TITLE: AFT EVAPORATOR INSTALL					
APPLICATION: MDHS 600N		DRAWING NUMBER: 4–2–MDHS 600N			

REV.	DESCRIPTION	DATE	APPV.



SHELF INSTALLATION

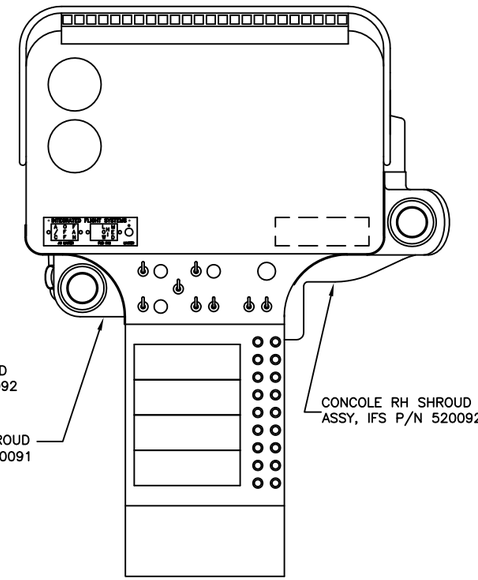


COCKPIT CONSOLE

STD MODIFIED MDHS INSTRUMENT CLOSEOUT PANEL

VIEW LOOKING FORWARD

SCALE:NONE



COCKPIT CONSOLE

RIGHT PILOT IN COMMAND ONLY
LAW ENFORCEMENT/BORDER PATROL

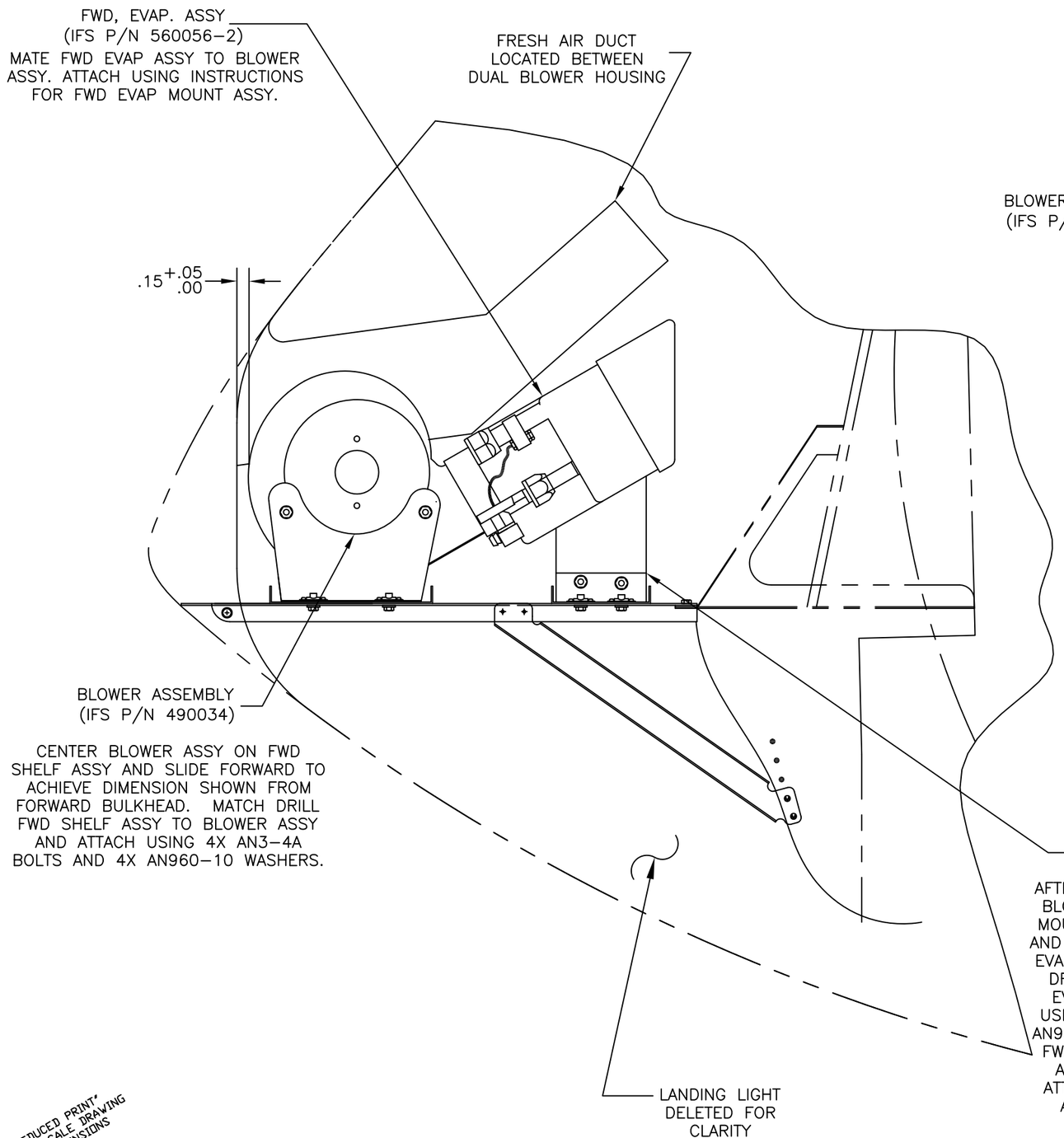
VIEW LOOKING FORWARD

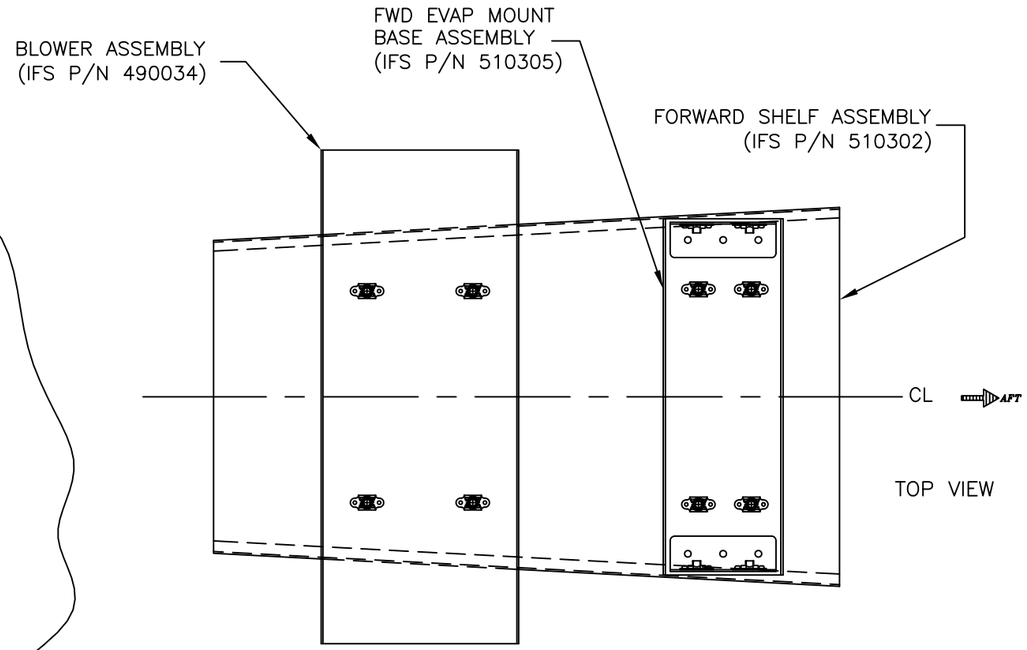
SCALE:NONE

\0011MDHS600NR\4-3-MDHS6001.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 1 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				
TITLE: FORWARD EVAPORATOR INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 4-3-MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.





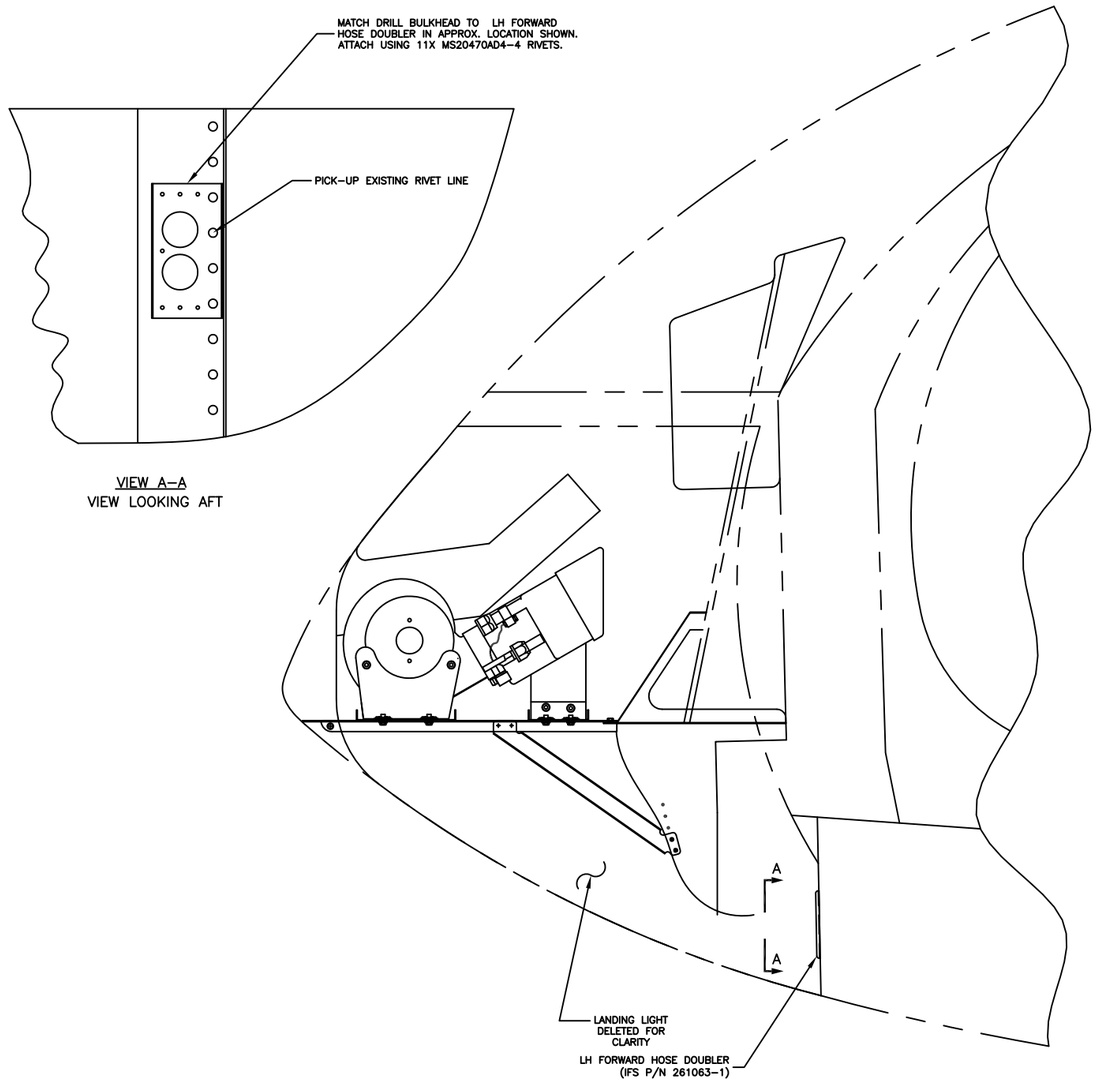
BLOWERS, MOTOR, AND FORWARD EVAPORATOR ASSEMBLY NOT SHOWN IN THIS VIEW FOR CLARITY.

"REDUCED PRINT" DO NOT SCALE DRAWING FOR DIMENSIONS

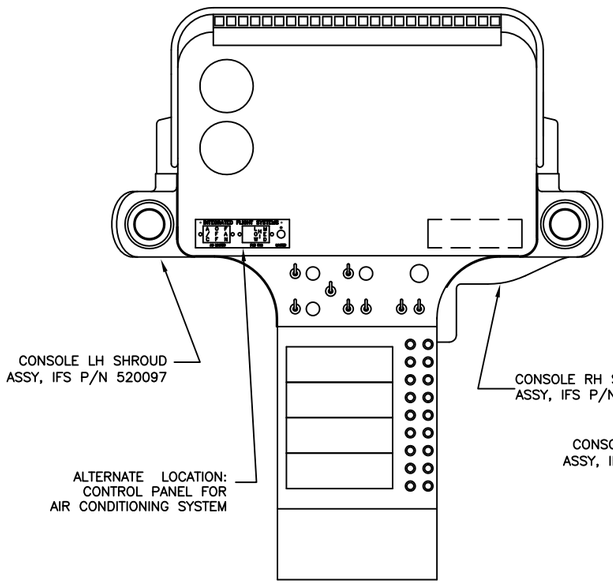
\001MDHS600NR\4-3-MDHS6002.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 2 OF 3	SIZE: D	DRAWN BY: B.KNUDSEN
SCALE: 1/2				
TITLE: FORWARD EVAPORATOR INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 4–3–MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.



VIEW A–A
VIEW LOOKING AFT

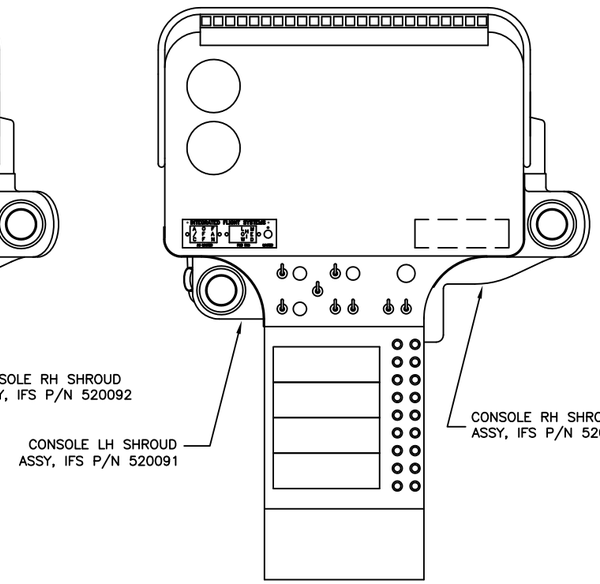


COCKPIT CONSOLE

STD MODIFICATION MDHS INSTRUMENT CLOSEOUT PANEL

VIEW LOOKING FORWARD

SCALE:NONE



COCKPIT CONSOLE

RIGHT PILOT IN COMMAND ONLY
LAW ENFORCEMENT/BORDER PATROL

VIEW LOOKING FORWARD

SCALE:NONE

\001MDHS600NR\4–3–MDHS6003.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 3 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/4				
TITLE: FORWARD EVAPORATOR INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 4–3–MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.

INSTALL BOOT, P/N MS25171-2S BOTH ENDS OF RESISTOR

VIEW E

NOTE:
MDHS CYCLIC COVER NOT SHOWN ON THIS PAGE FOR CLARITY
SEE SHEET 3 OF 3 FOR CYCLIC COVER VARIATIONS.

FWD

ATTACH AFT EVAPORATOR RETURN AIR DOUBLER (IFS P/N 261032-1) TO FORWARD FACE OF SEAT CLOSE OUT USING 44X AN470AD4-4 RIVETS.

MATCH DRILL DOUBLER, A/C STRUCTURE AND FWD FLANGE OF FWD EVAP. HOUSING IN 4X LOCATIONS SHOWN. ATTACH FWD FLANGE OF EVAPORATOR HOUSING TO VERTICAL FACE OF SEAT AND DOUBLER WITH 4X AN3-5A BOLTS & 4X AN960-10 WASHERS. (SEE VIEW D-D)

BL 00.0

STA 65.04

STA 78.50

FORE/AFT LOCATION OF MOUNT COMPONENTS IS DETERMINED BY EXISTING VERTICAL ANGLE.

ATTACH AFT EVAP MOUNT CHANNEL ASSY (IFS P/N 510276) TO INBOARD SEAT CLOSE OUT USING 2X AN3-5A BOLTS, 4X AN960-10 WASHERS, AND 2X MS21044N3 NUTS.

1. DRILL RIVET HOLES WITH NUTPLATE TEMPLATE. COUNTERSINK RIVET HOLES. DRILL #10 DIAMETER HOLE OUT TO .250 DIA.

ATTACH AFT EVAP MOUNT CHANNEL ASSY (IFS P/N 510276) TO EVAP MOUNT ANGLE ASSY (IFS P/N 510277) USING 2X AN3-5A BOLTS, AND 2X AN960-10 WASHERS

OUTBOARD RIGHT

ATTACH AFT EVAPORATOR ASSY (IFS P/N 560057-2) TO AFT EVAP MOUNT CHANNEL ASSY (IFS P/N 510276) USING 4X AN3-5A BOLTS,AND 4X AN960-10 WASHERS.

ATTACH BLOWER ASSY (IFS P/N 050085-1 ALT: 050143) TO AFT EVAPORATOR ASSY (IFS P/N 560057-2) USING 5X AN3-5A BOLTS, AND 5X AN960-10 WASHERS.

"REDUCED PRINT" DO NOT SCALE DRAWING FOR DIMENSIONS

ø.250 — 2X #40 CSK FOR RIVET USED

MS21059L3 NUTPLATE (ALT: MS21060-3) — 2X CCR264SS3-3 RIVET (ALT RIVET: MS20426AD3-3)

TYPICAL NUTPLATE INSTALLATION
NOT TO SCALE

FWD

BLOWER MOTOR NOT SHOWN FOR CLARITY

TOP OF SEAT REMOVED FOR CLARITY

2.25(REF)

STA 65.04

VIEW C-C
LOOKING OUTBOARD

AREA UNDER SEAT REMOVED FOR CLARITY

ATTACH RESISTOR MOUNT BRACKET (IFS P/N 261180) TO EVAPORATOR FACE AS SHOWN USING 2X AN3-5A BOLTS, 4X AN960-10 WASHERS, AND 2X MS21044N3 NUTS.

SEE VIEW E

EXPANSION VALVE DELETED FOR CLARITY

ATTACH 1/2" DRAIN TUBE TO EVAPORATOR DRAIN FITTING USING SS SAFETY WIRE OR HOSE CLAMP. CUT HOLE IN AIRCRAFT SKIN. INSTALL GROMMET AND ROUTE TO OUTSIDE OF AIRCRAFT.

VIEW B-B
LOOKING FORWARD
OUTBOARD

GROMMET (P/N MS35489-20)

45°

1.0

AIRCRAFT SKIN

LBL 20.8

ATTACH AFT EVAP MOUNT ANGLE ASSY (IFS P/N 510277) TO SIDE SEAT CLOSE OUT USING 2X AN3-5A BOLTS, 4X AN960-10 WASHERS, AND 2X MS21044N3 NUTS.

INSTALL RESISTOR (IFS P/N 050024-2 USING 2X AN525-10R8 SCREWS, 2X AN960-10 WASHER, AND 2X MS21044N3 NUTS. SHIM AS REQUIRED WITH IFS P/N 261178-1 AND 261178-2.
NOTE: USE OF SHIMS P/N 261178, 261178-1, AND 261178-2 MAY BE NECESSARY BECAUSE OF THE EXISTENCE OF CORRUGATIONS USED ON THE INNER WALL.

SECURE BRACKET W/AN3-6A BOLT, AN960-10 WASHER,MS29059L3 NUTPLATE (ON INSIDE HOUSING) 1.

UNDER RIGHT SIDE SEAT

SEAT PAN P/N 261024 REMOVED FOR CLARITY

8.1

TEMPORARILY REMOVE APU PLUG FOR ACCESS WHILE INSTALLING AFT EVAPORATOR.

LBL 20.8

BUTT DOUBLER UP AGAINST EXISTING ANGLE OUTBOARD AND FLANGE BELOW TOP OF SEAT

EVAPORATOR RETURN AIR DOUBLER (IFS P/N 261032-1)

2X .5

2X .5

2X .4

2X .4

LOOKING AFT
OUTBOARD

VIEW D-D

SEE SHEET 2 OF 3 FOR INSTALLATION INSTRUCTIONS

\001MDHS600NR\4-4-MDHS6001.DWG

INTEGRATED FLIGHT SYSTEMS INC.

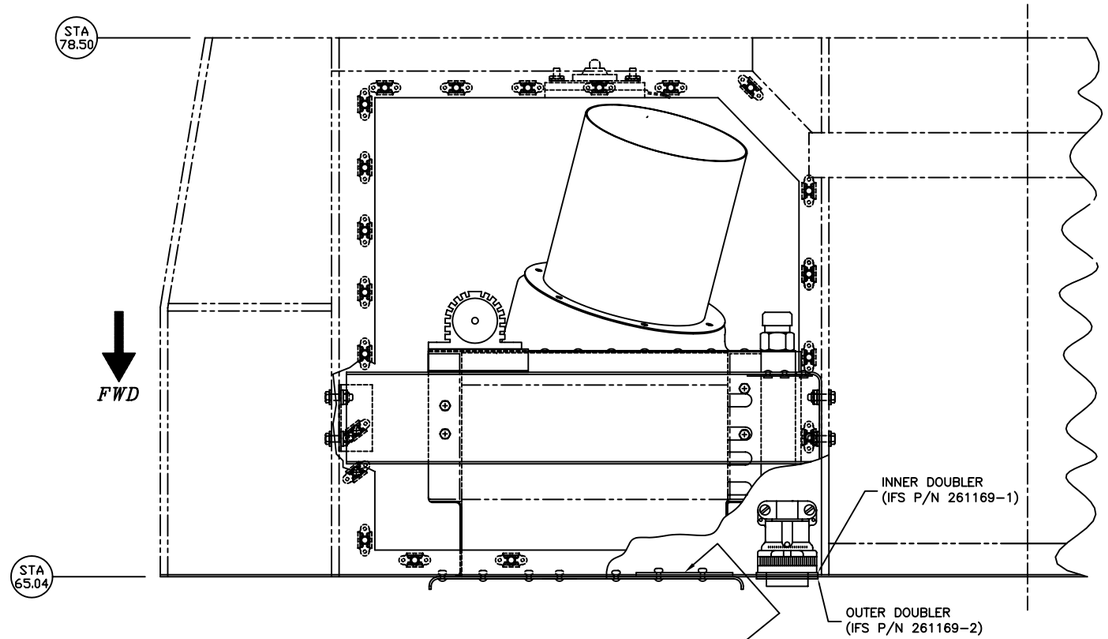
DATE: 05/15/98	APPROVED BY:	SHEET: 1 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				

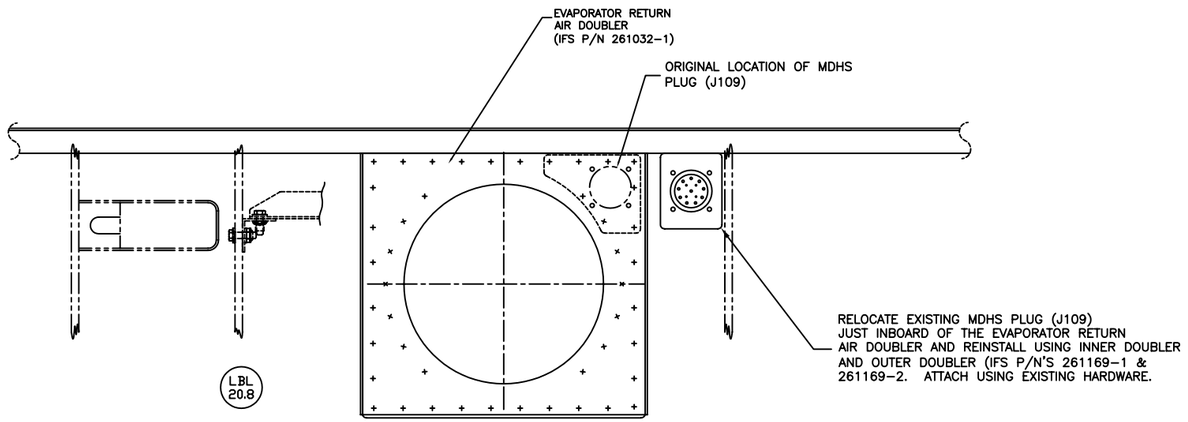
TITLE: AFT EVAPORATOR INSTALL

APPLICATION: MDHS 600N	DRAWING NUMBER: 4-4-MDHS 600N

REV.	DESCRIPTION	DATE	APPV.

NOTE:
MDHS CYCLIC COVER NOT SHOWN ON THIS PAGE FOR CLARITY
SEE SHEET 3 OF 3 FOR CYCLIC COVER VARIATIONS.





DETAIL OF CYCLIC PLUG RELOCATION.
VIEW LOOKING AFT AT STA 65.04

INSTALLATION INSTRUCTIONS.

1. TEMPORARILY REMOVE APU RECEPTACLE.
2. REMOVE MDHS CYCLIC PLUG (J109) AND EXISTING DOUBLER.
3. LOCATE EVAPORATOR RETURN AIR DOUBLER (IFS P/N 261032-1) IAW SHEET 1, VIEW D-D OF THIS DRAWING, MARK PILOT HOLES ON EXISTING STRUCTURE AND CHECK FOR INTERFERENCE WITH EXISTING HOLES.
4. CUT ø6.5 HOLE IN EXISTING STRUCTURE.
5. INSTALL RETURN AIR DOUBLER (IFS P/N 261032-1) AND INNER SHIM (IFS P/N 261169).
6. MATE AFT EVAPORATOR ASSY (IFS P/N 560057-2) TO EVAPORATOR RETURN AIR DOUBLER AND MATCH DRILL EXISTING STRUCTURE TO THE AFT EVAPORATOR ASSY FORWARD FLANGE. ATTACH IAW SHEET 1 OF THIS DRAWING.
7. INSTALL THE AFT EVAP MOUNT CHANNEL ASSY (IFS P/N 510276) AND THE EVAP MOUNT ANGLE ASSY (IFS P/N 510277) FORE AND AFT IAW SHEET 1 OF THIS DRAWING AND VERTICALLY FLUSH WITH THE TOP OF THE AFT EVAPORATOR ASSY.
8. MATCH DRILL THE AFT EVAP MOUNT CHANNEL ASSY TO THE AFT EVAPORATOR ASSEMBLY AND ATTACH IAW SHEET 1 OF THIS DRAWING.
9. MATCH DRILL EXISTING STRUCTURE TO THE AFT EVAP MOUNT CHANNEL ASSY AND THE EVAP MOUNT ANGLE ASSY. MOUNT ANGLE ASSY AND ANGLE AND ATTACH TO AFT EVAP ASSY.
10. REINSTALL APU RECEPTACLE.
11. RELOCATE AND INSTALL MDHS CYCLIC PLUG (J109) IAW SHEET 2 OF THIS DRAWING.
12. (B) INSTALL BLOWER ASSY (IFS P/N 050085-1, ALT: 050143) IAW SHEET 1 OF THIS DRAWING.

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

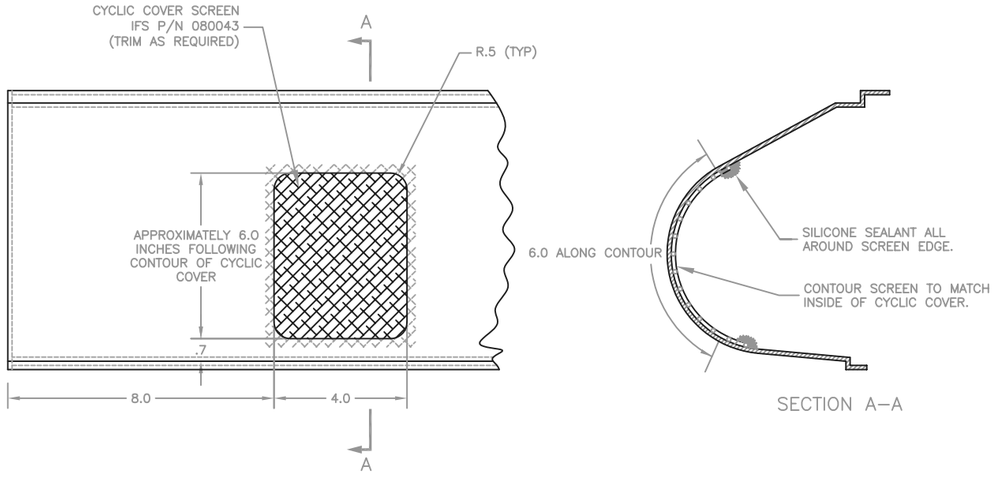
\001MDHS600NR\4-4-MDHS6002.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 05/15/98	APPROVED BY:	SHEET: 2 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				
TITLE: AFT EVAPORATOR INSTALL				
APPLICATION: MDHS 600N		DRAWING NUMBER: 4-4-MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.

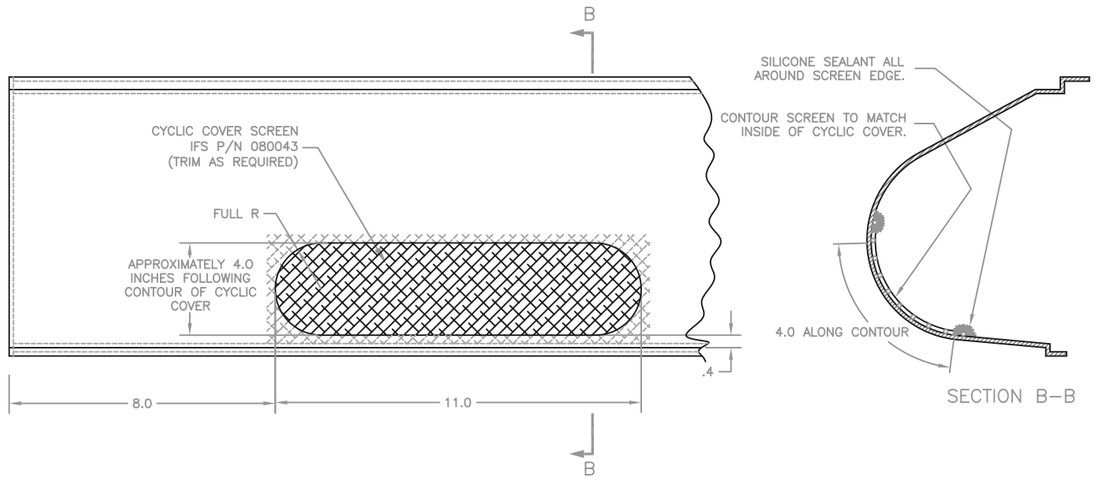
CYCLIC COVER SCREEN VARIATIONS

CYCLIC CONTROLS NOT SHOWN FOR CLARITY



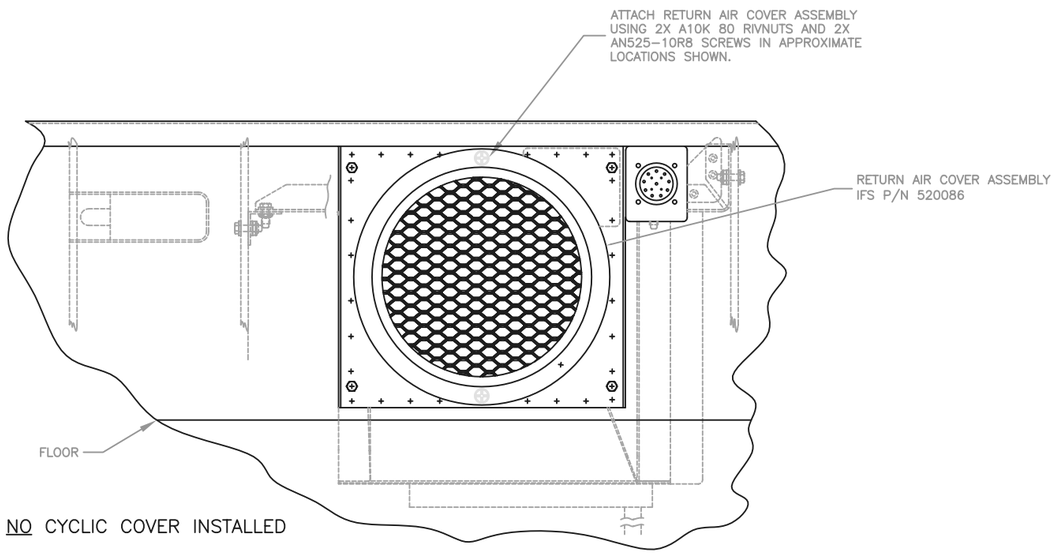
CYCLIC COVER SCREEN INSTALLATION
WITH SLANT RADIO PANEL INSTALLED.

VIEW LOOKING AFT



CYCLIC COVER SCREEN INSTALLATION
WITHOUT SLANT RADIO PANEL INSTALLED.

VIEW LOOKING AFT



NO CYCLIC COVER INSTALLED

VIEW LOOKING AFT AT STA 65.04

INTEGRATED FLIGHT SYSTEMS INC.					
DATE: 05/15/98	APPROVED BY:	SHEET: 3 OF 3	SIZE: D	DRAWN BY: TMUZZY	
SCALE: 1/2					
TITLE: FORWARD EVAPORATOR INSTALL					
APPLICATION: MDHS 600N		DRAWING NUMBER: 4–4–MDHS 600N			

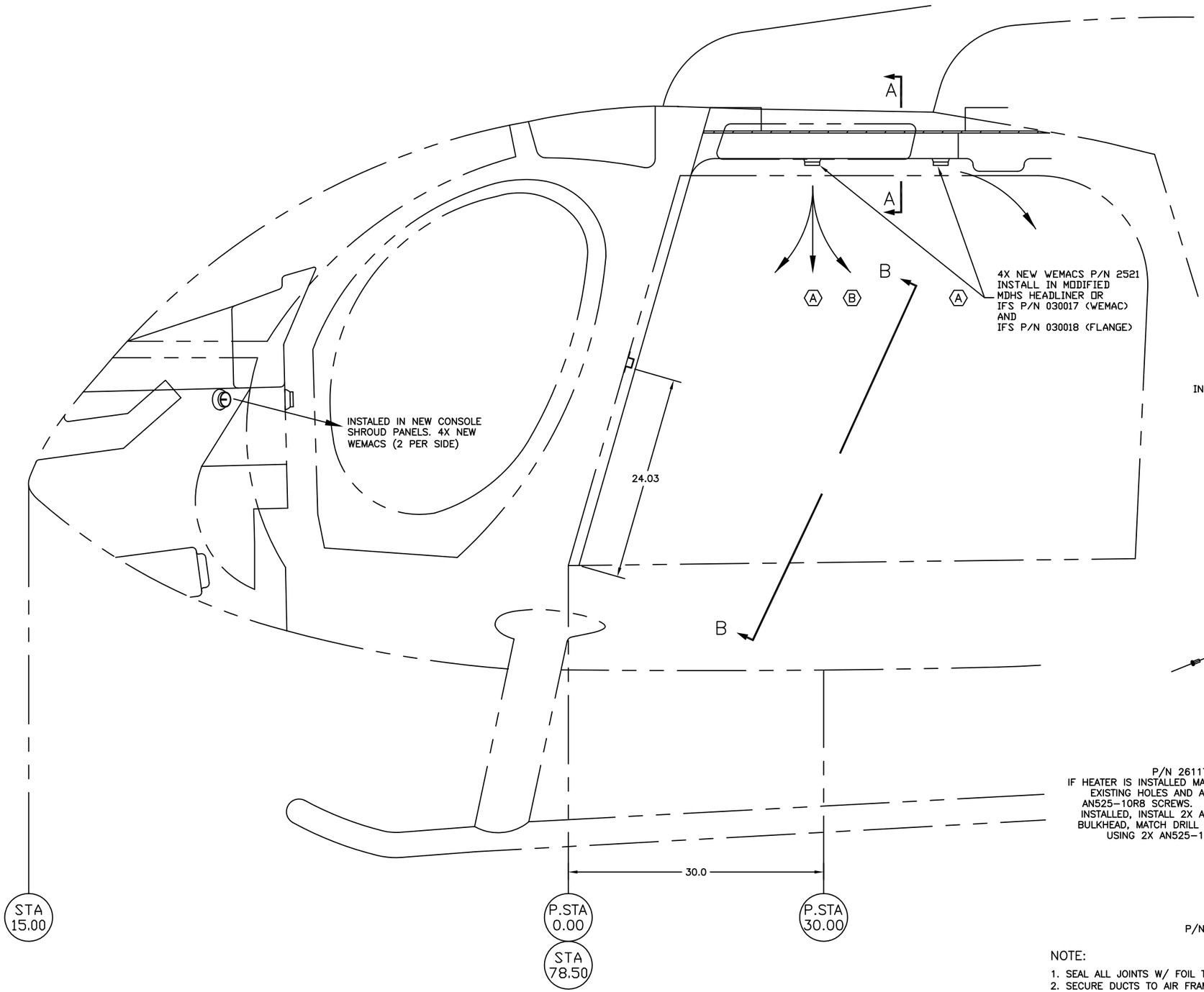
\001MDHS600NR\4-4-MDHS6003.DWG

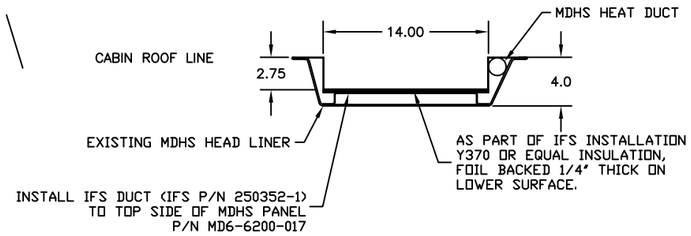
Step 12

Air Distribution Drawings

REV.	DESCRIPTION	DATE	APPV.
A	ADDED AFT DUCT INSTALL AND SECTION B-B. ADDED IFS WEMAC AND FLANGE P/N REF.	07/22/97	
B	REMOVED AFT SIDE SIDE AIR OUTLETS. ADDED 3 WEMACS ACROSS CABIN ROOF. CHANGED P/N 250352 TO P/N 250352-1. ADDED P/N 261175 AND 2X SCREWS AND 2X RIVNUTS. ADDED VIEW OF P/N 250364. DELETED FAN P/N 490032, ADDED BLOWER P/N 050085-1. DELETED AFT EVAP ASSY P/N 560057-1, ADDED AFT EVAP ASSY P/N 560057-2. DWG NUMBER WAS 5-MDHS 600N IS 5-1-MDHS 600N. ADDED: CONFIGURATION NOTE, SHEET NUMBER WAS 1 OF 2 IS 1 OF 4. ADDED ALT BLOWER ASSY P/N 050143. ADDED SH 3 OF 4, 4 OF 4.	08/20/98	

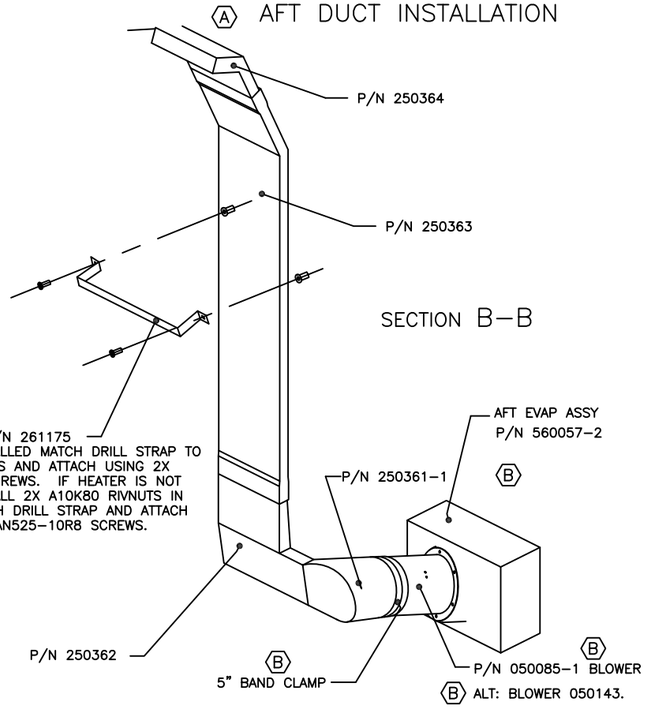
B





SECTION A–A

Ⓐ AFT DUCT INSTALLATION



SECTION B–B

NOTE:

1. SEAL ALL JOINTS W/ FOIL TAPE.
2. SECURE DUCTS TO AIR FRAME OR TO INTERIOR PANELS, AS REQ.

Ⓒ USED WITH CORPORATE LONG INSTRUMENT CLOSEOUT PANELS.

Ⓑ

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-1-MDHS6001_C.DWG

INTEGRATED FLIGHT SYSTEMS
INC.

DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 4	SIZE: D	DRAWN BY: MAH
SCALE: 1/6				

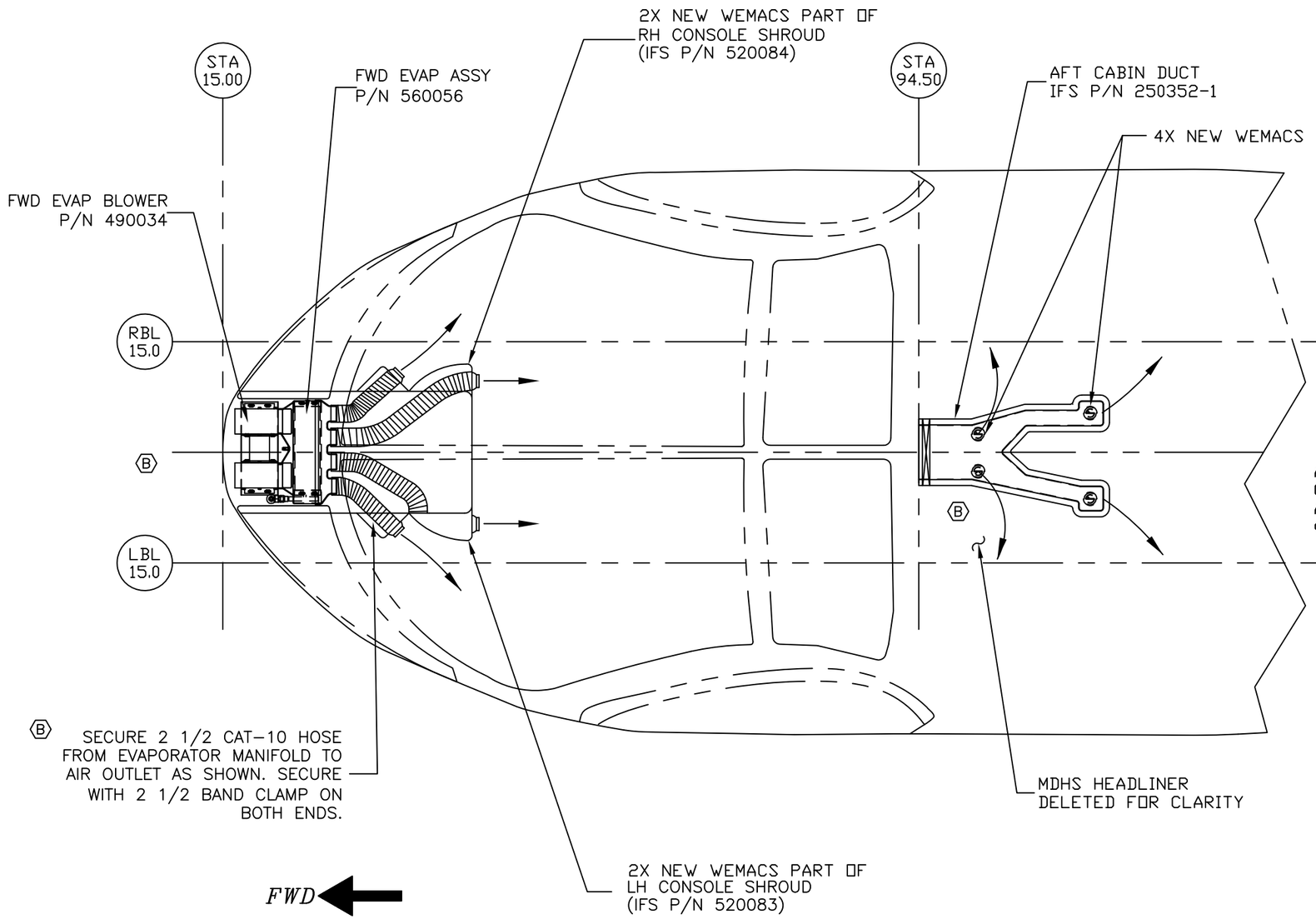
TITLE:

AIR DISTRIBUTION

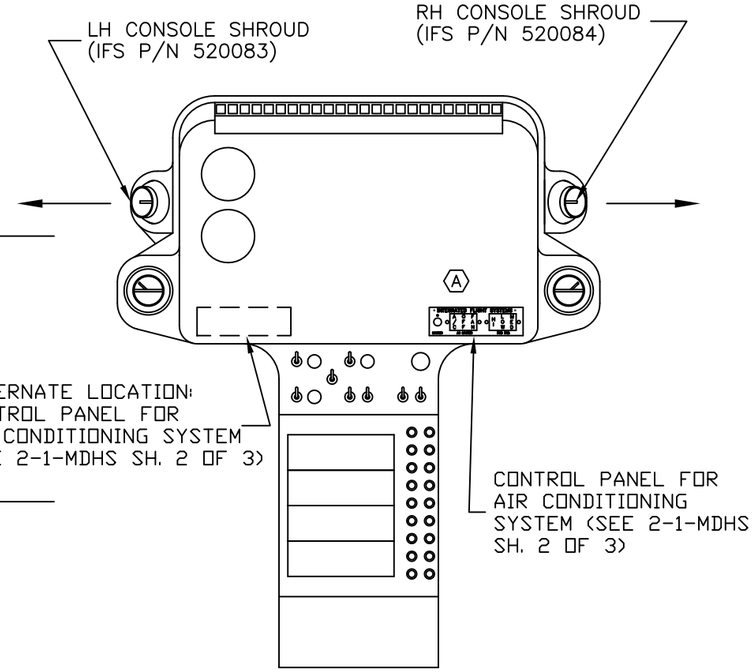
APPLICATION:	DRAWING NUMBER:
MDHS 600N	5-1-MDHS 600N

REV.	DESCRIPTION	DATE	APPV.
A	DEPICTED REVISED CONTROL PANEL.	07/22/97	
B	REMOVED AFT. SIDE AIR OUTLETS. ADDED 2X WEMACS ACROSS CABIN ROOF. CHANGED P/N 250352 TO 250352-1. DWG NUMBER WAS 5-MDHS 600N IS 5-1-MDHS 600N. ADDED: CONFIGURATION NOTE,WAS SH 2 OF 2 IS SH 2 OF 4. ADDED CAT-10 NOTE. ADDED SHEET 3 OF 4, 4 OF 4. ADDED VIEW OF FWD EVAP.	08/20/98	

B



TOP VIEW



COCKPIT CONSOLE

VIEW LOOKING FORWARD

SCALE:1/3

B USED WITH CORPORATE LONG INSTRUMENT CLOSEOUT PANELS.

"REDUCED PRINT" DO NOT SCALE DRAWING FOR DIMENSIONS

\001MDHS600NR\5-1-MDHS6002_C.DWG

B

INTEGRATED FLIGHT SYSTEMS INC.

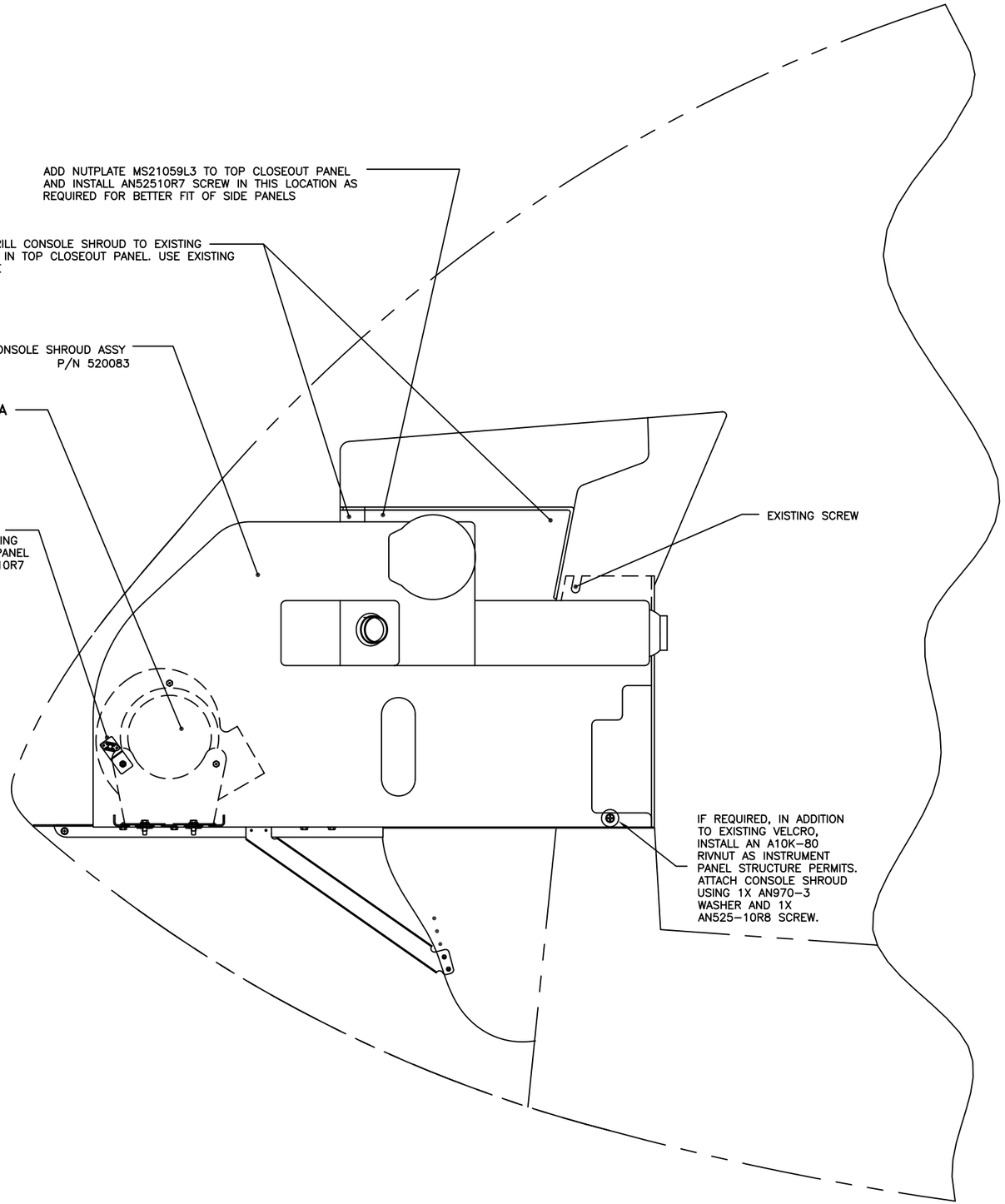
DATE: 03/10/97	APPROVED BY:	SHEET: 2 OF 4	SIZE: D	DRAWN BY: MAH
SCALE: 1/8				

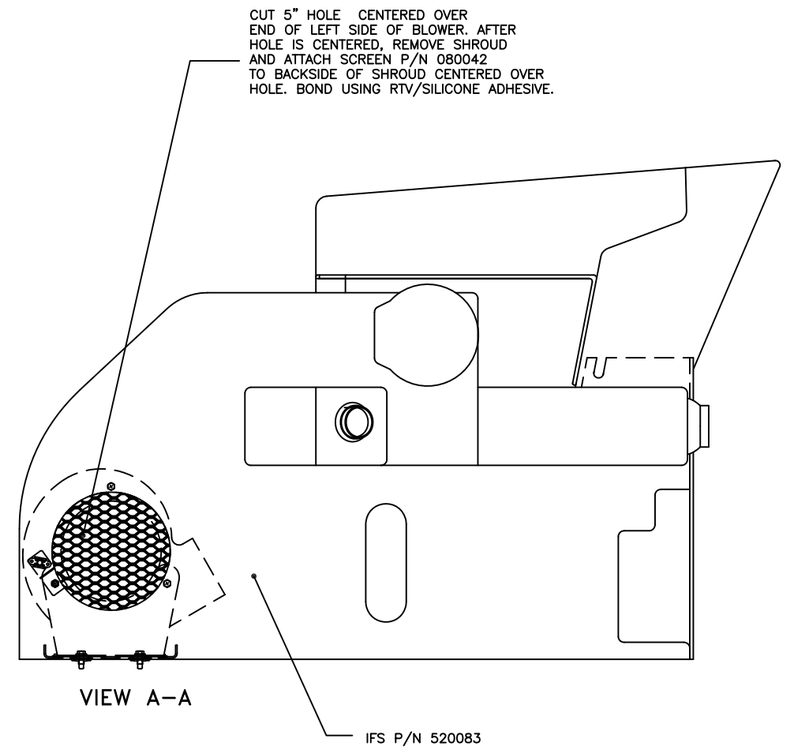
TITLE: AIR DISTRIBUTION

APPLICATION: MDHS 600N	DRAWING NUMBER: 5-1-MDHS 600N

REV.	DESCRIPTION	DATE	APPV.
B	SEE SHEET 1 OF 4, 2 OF 4 FOR REV A & B. ADDED SHEET 3 OF 4 AND 4 OF 4 TO SHOW INSTALLATION OF LH SIDE PANEL OF P/N 520083. REDRAWN TO SHOW LH SIDE VIEW OF P/N 520083.	08/20/98	

B





CORPORATE LONG INSTRUMENT CLOSEOUT PANELS

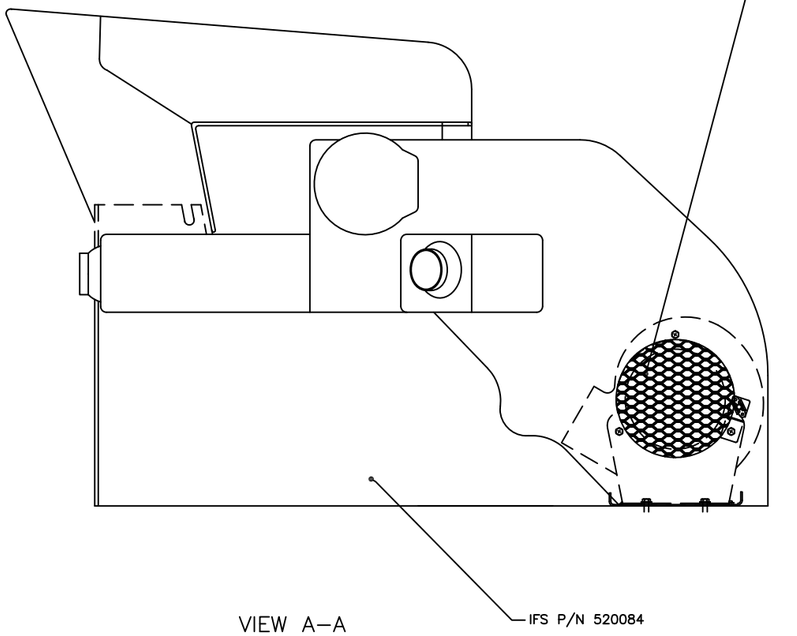
"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-1-MDHS6003_C.DWG

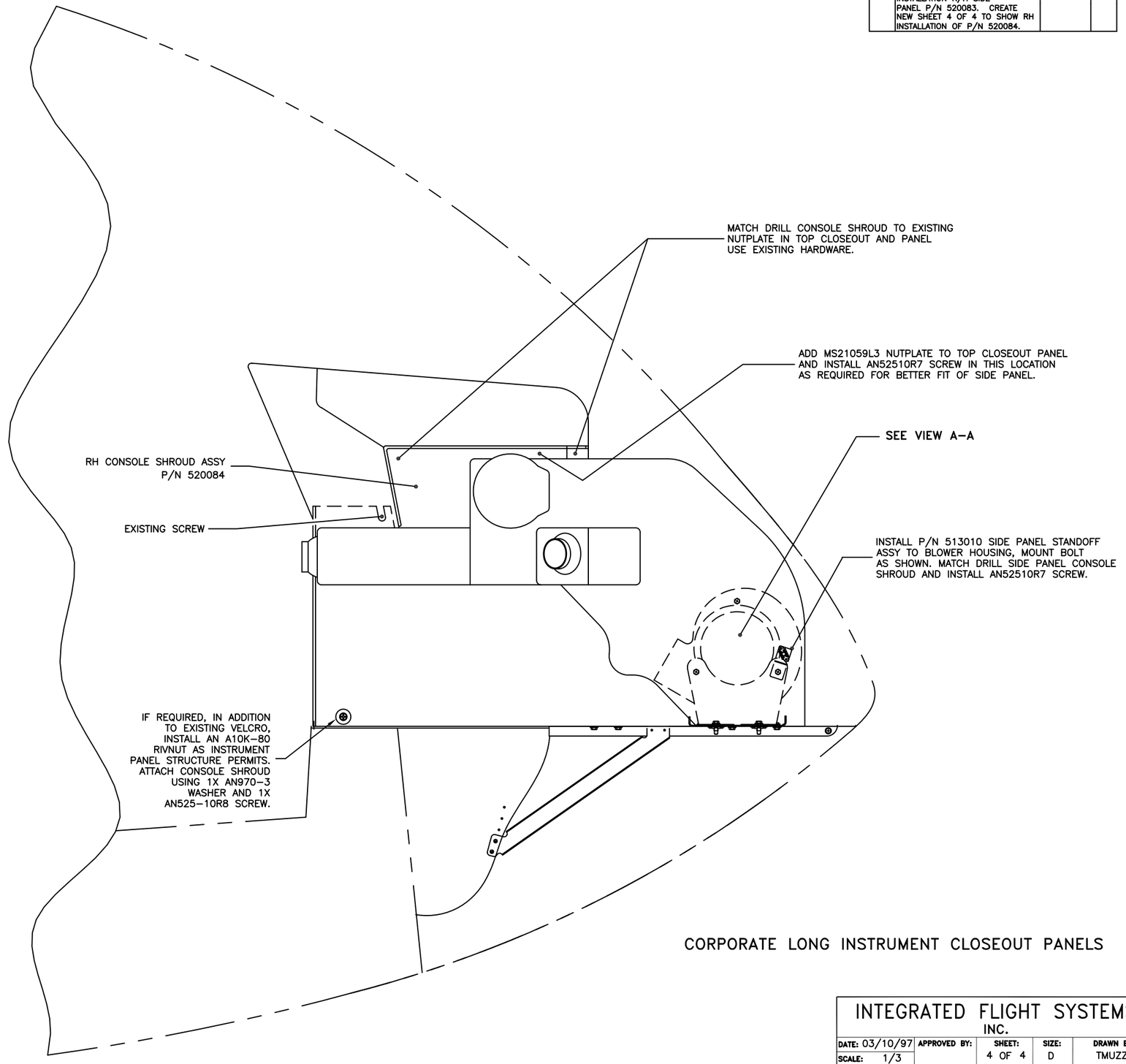
INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 3 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				
TITLE: AIR DISTRIBUTION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 5–1–MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.
B	SEE SHEET 1 OF 4, 2 OF 4 FOR REV A & B. ADDED SHEET 3 OF 4 AND 4 OF 4 TO SHOW INSTALLATION R/H SIDE PANEL P/N 520083. CREATE NEW SHEET 4 OF 4 TO SHOW RH INSTALLATION OF P/N 520084.	08/20/98	

B



VIEW A–A



CORPORATE LONG INSTRUMENT CLOSEOUT PANELS

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-1-MDHS6004_C.DWG

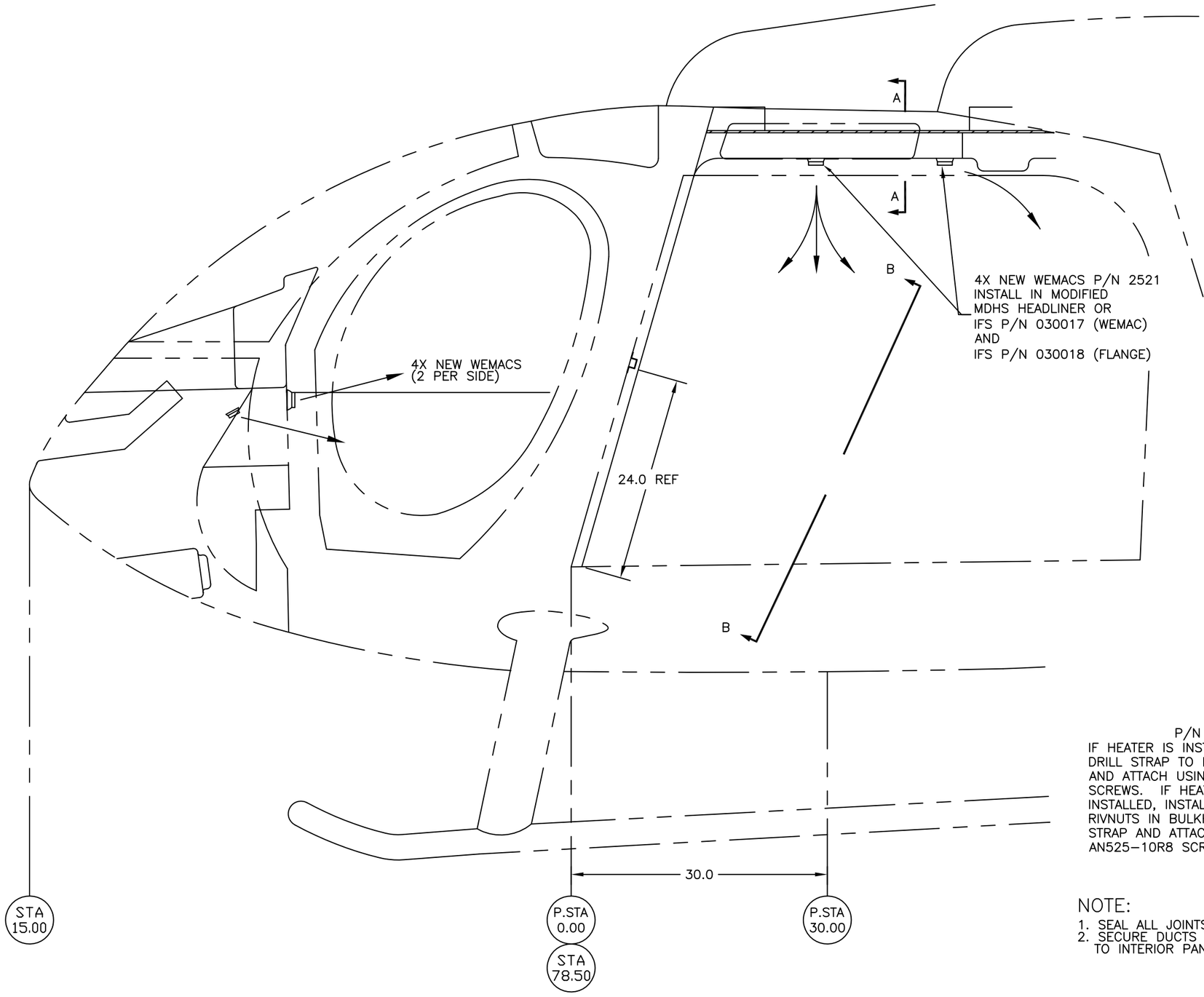
INTEGRATED FLIGHT SYSTEMS
INC.

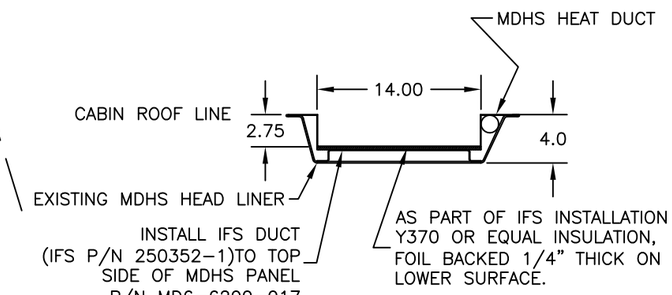
DATE: 03/10/97	APPROVED BY:	SHEET: 4 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				

TITLE:
AIR DISRTIBUTION

APPLICATION: MDHS 600N	DRAWING NUMBER: 5-1-MDHS 600N

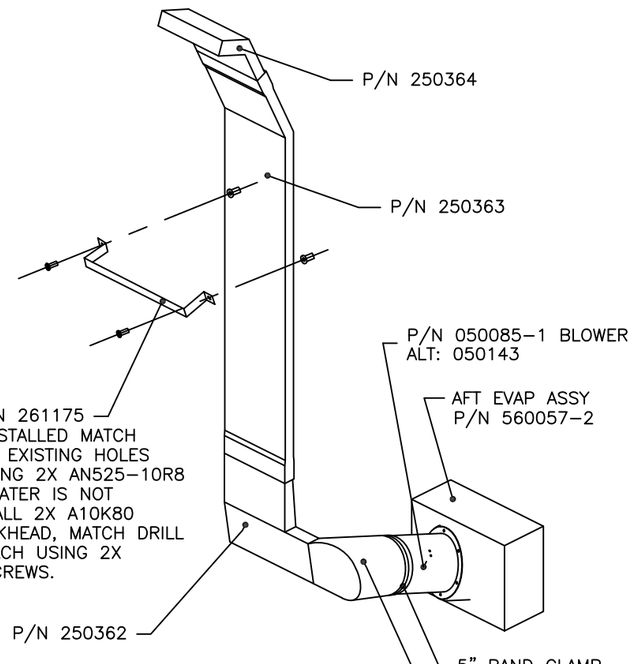
REV.	DESCRIPTION	DATE	APPV.





SECTION A–A

AFT DUCT INSTALLATION



NOTE:

1. SEAL ALL JOINTS W/ FOIL TAPE.
2. SECURE DUCTS TO AIR FRAME OR TO INTERIOR PANELS, AS REQ.

SECTION B–B

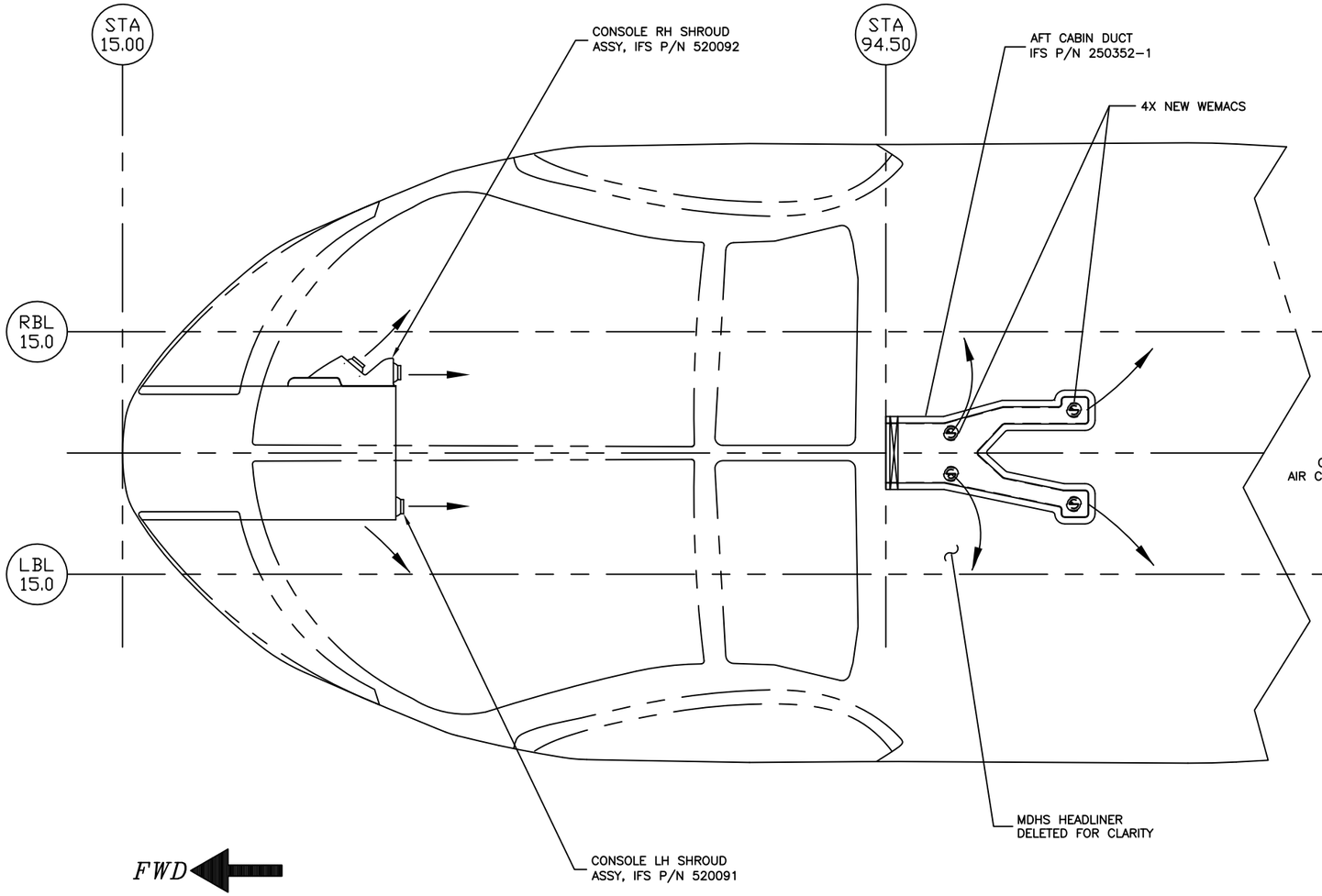
RIGHT HAND PILOT IN COMMAND
(LAW ENFORCEMENT/BORDER PATROL)

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

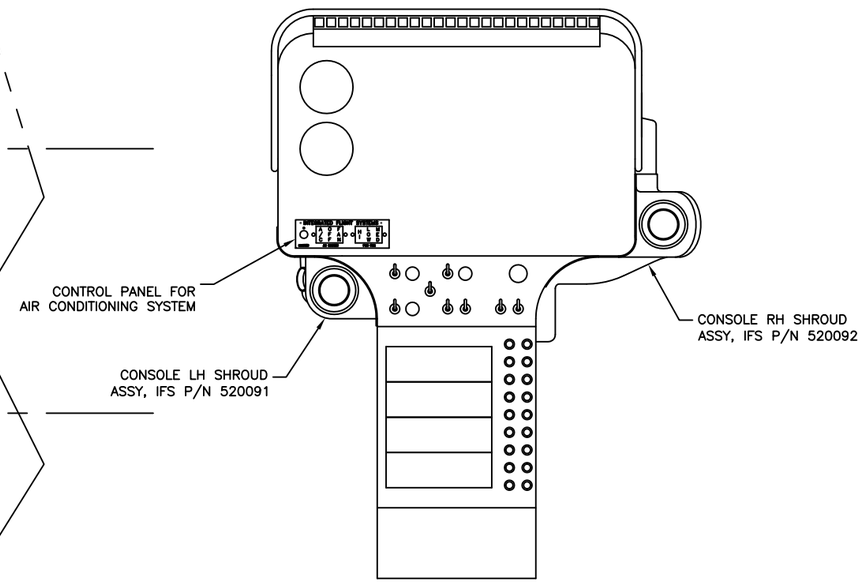
\001MDHS600NR\5-2-MDHS6001.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 1 OF 4	SIZE: D	DRAWN BY: MAH
SCALE: 1/6				
TITLE: AIR DISTRIBUTION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 5-2-MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.



TOP VIEW



COCKPIT CONSOLE

VIEW LOOKING FORWARD

SCALE:1/3

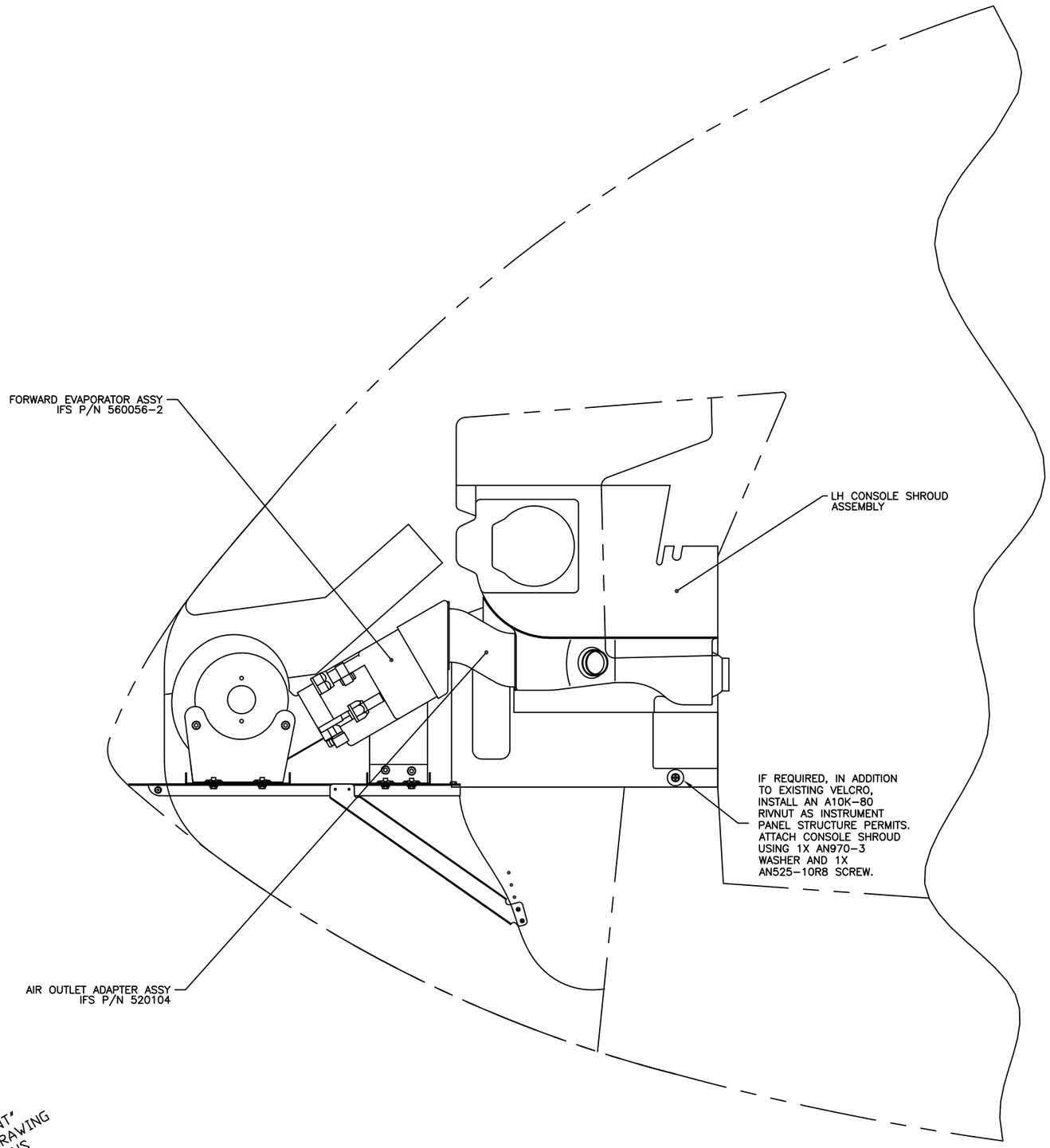
RIGHT HAND PILOT IN COMMAND
(LAW ENFORCEMENT/US BORDER PATROL)

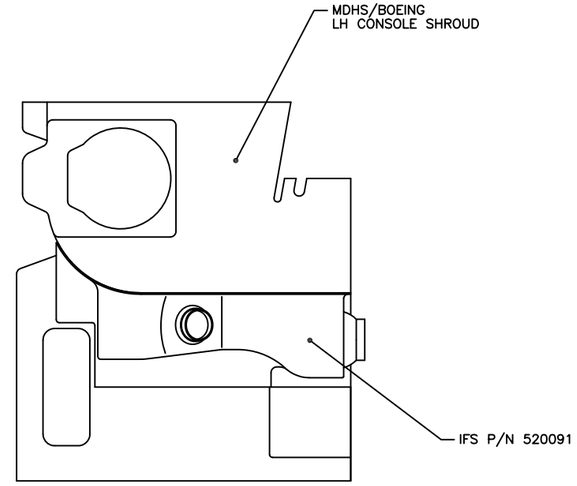
"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-2-MDHS6002.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 2 OF 4	SIZE: D	DRAWN BY: MAH
SCALE: 1/8				
TITLE: AIR DISTRIBUTION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 5-2-MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.





NOTES:

1. SECURE IFS P/N 520091 TO LH CONSOLE SHROUD WITH PROSET OR OTHER COMPATIBLE 2 PART EPOXY ADHESIVE. USE CLAMPS OR CLECOS TO HOLD IN PLACE PER ADHESIVE MFG'S CURE TIME SPECIFICATIONS.
   OPTIONAL A: SECURE ABOVE PART USING ABA RIVETS AND ADHESIVE.
   OPTIONAL B: SECURE PART USING AN525-832R8 SCREWS INTO MS21059L08 NUTPLATES.
2. FEATHER UPPER AND LOWER MATING LINES OF IFS P/N 520091 INTO SHROUD.
3. FINISH: IFS P/N 520091 AND SHROUD BY APPLYING 3M ROCKER PANEL SPRAY, P/N 051131-059 PER LABEL INSTRUCTIONS. FINAL COLOR: BLACK.

RIGHT HAND PILOT IN COMMAND
(LAW ENFORCEMENT/U.S BORDER PATROL)

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-2-MDHS6003.DWG

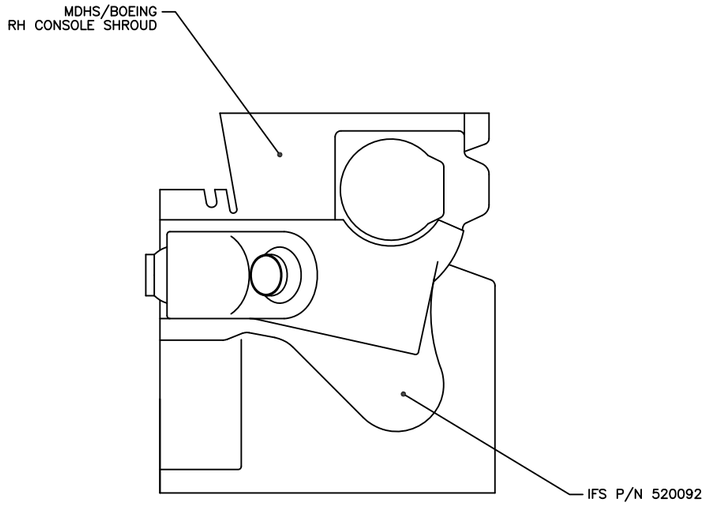
INTEGRATED FLIGHT SYSTEMS
INC.

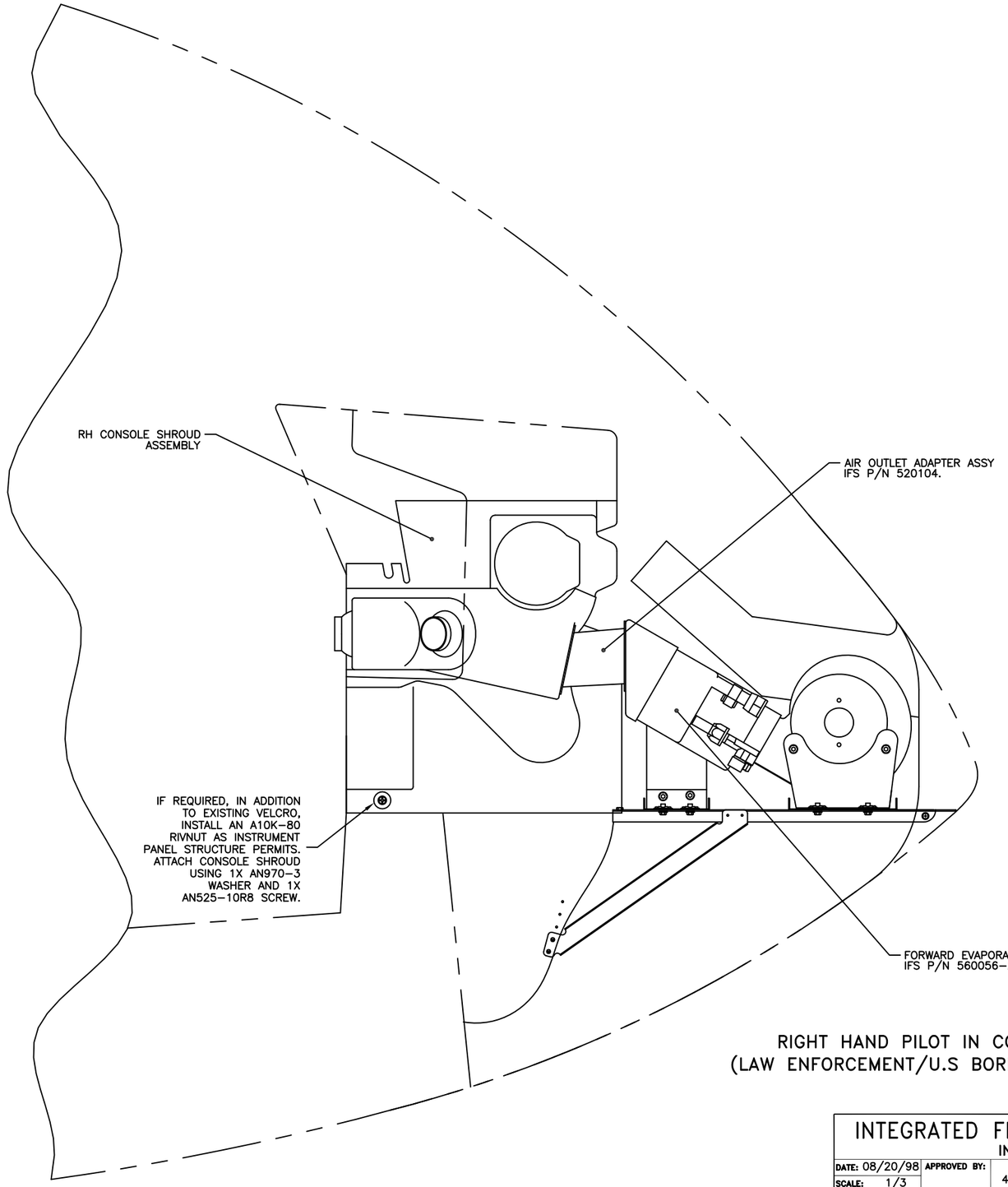
DATE: 08/20/98	APPROVED BY:	SHEET: 3 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				

TITLE:
AIR DISTRIBUTION

APPLICATION:	DRAWING NUMBER:
MDHS 600N	5-2-MDHS 600N

REV.	DESCRIPTION	DATE	APPV.





NOTES:

1. SECURE IFS P/N 520092 TO LH CONSOLE SHROUD WITH PROSET OR OTHER COMPATIBLE 2 PART EPOXY ADHESIVE. USE CLAMPS OR CLECOS TO HOLD IN PLACE PER ADHESIVE MFG'S CURE TIME SPECIFICATIONS.
   OPTIONAL A: SECURE ABOVE PART USING ABA RIVETS AND ADHESIVE.
   OPTIONAL B: SECURE PART USING AN525-832R8 SCREWS INTO MS21059L08 NUTPLATES.
2. FEATHER UPPER AND LOWER MATING LINES OF IFS P/N 520092 INTO SHROUD.
3. FINISH: IFS P/N 520092 AND SHROUD BY APPLYING 3M ROCKER PANEL SPRAY, P/N 051131-05910 PER LABEL INSTRUCTIONS. FINAL COLOR, BLACK.

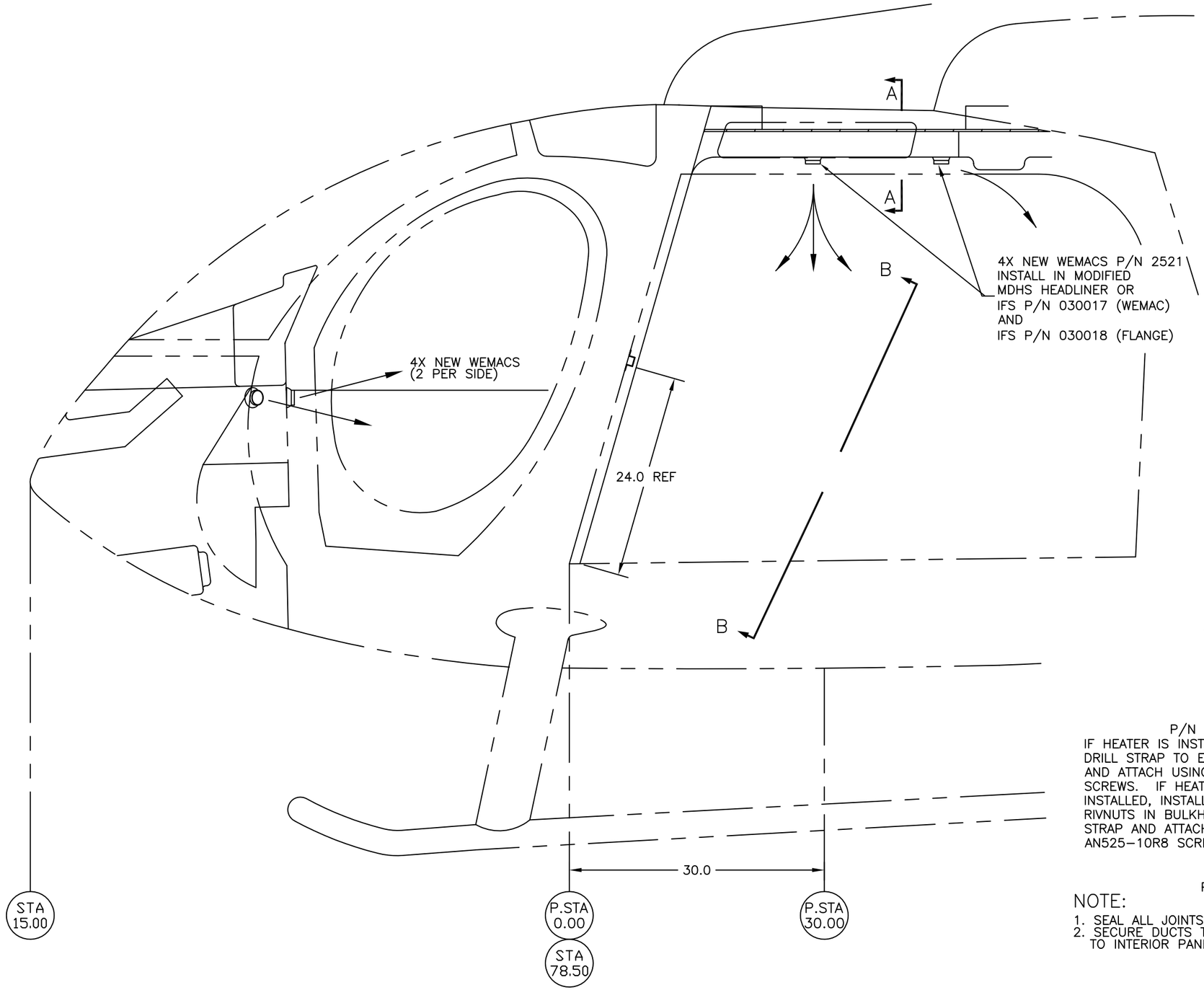
RIGHT HAND PILOT IN COMMAND
(LAW ENFORCEMENT/U.S BORDER PATROL)

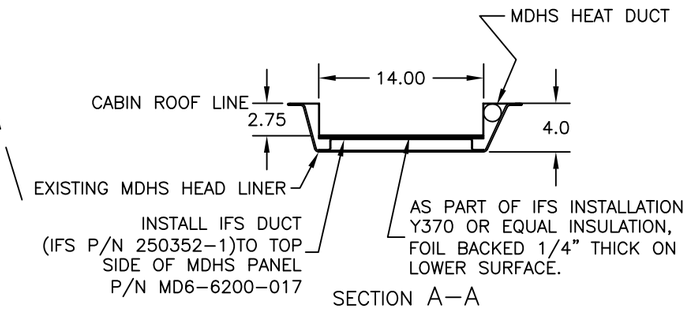
"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-2-MDHS6004.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 4 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				
TITLE: AIR DISRTIBUTION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 5-2-MDHS 600N		

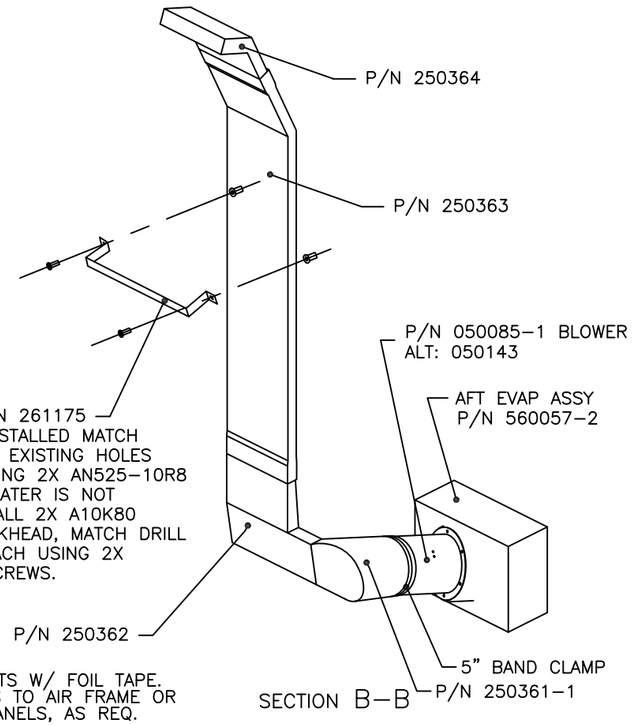
REV.	DESCRIPTION	DATE	APPV.





SECTION A–A

AFT DUCT INSTALLATION



SECTION B–B

NOTE:
1. SEAL ALL JOINTS W/ FOIL TAPE.
2. SECURE DUCTS TO AIR FRAME OR TO INTERIOR PANELS, AS REQ.

STD. MODIFIED MDHS INSTRUMENT CLOSEOUT PANEL

REDUCED PRINT
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-3-MDHS6001.DWG

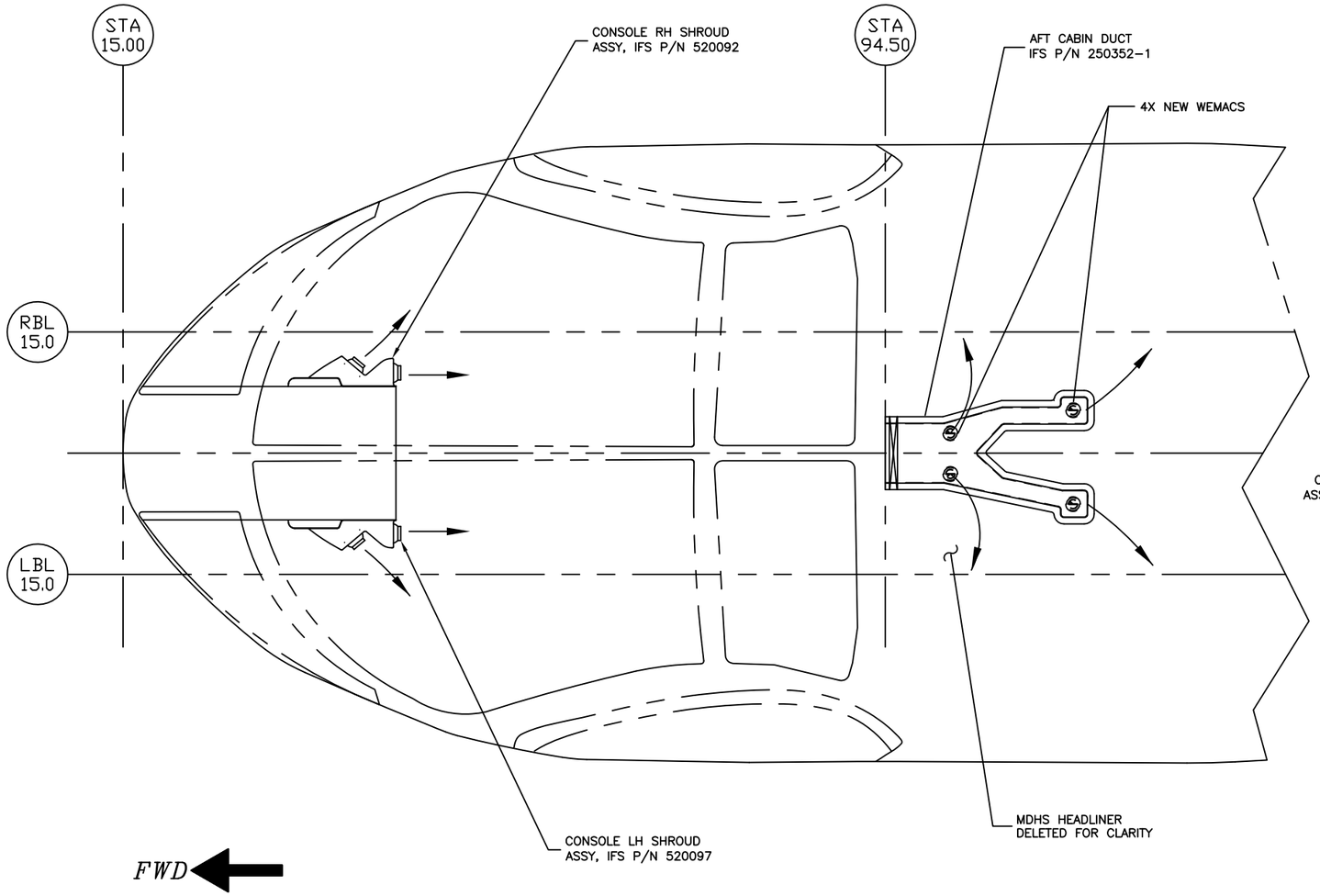
INTEGRATED FLIGHT SYSTEMS INC.

DATE: 08/20/98	APPROVED BY:	SHEET:	SIZE:	DRAWN BY:
SCALE: 1/6		1 OF 4	D	MAH

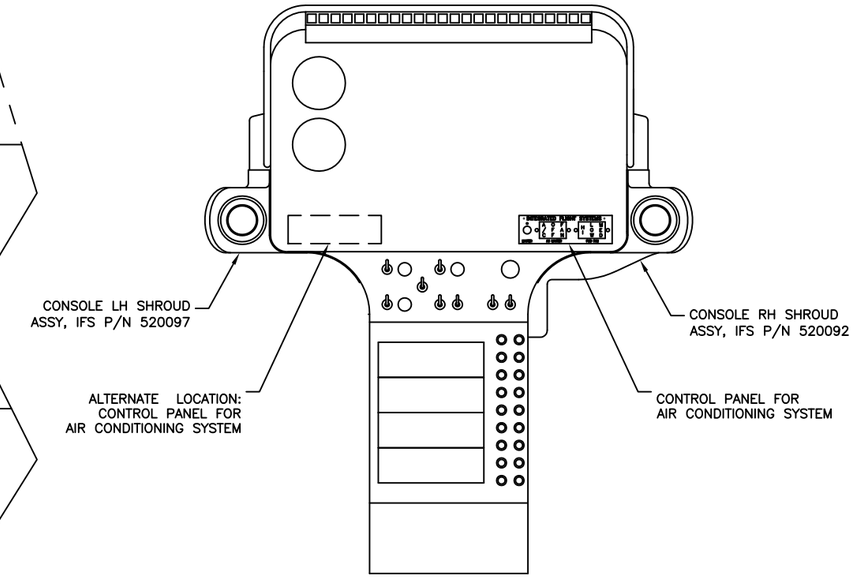
TITLE: AIR DISTRIBUTION

APPLICATION:	DRAWING NUMBER:
MDHS 600N	5-3-MDHS 600N

REV.	DESCRIPTION	DATE	APPV.



TOP VIEW



COCKPIT CONSOLE

VIEW LOOKING FORWARD

SCALE:1/3

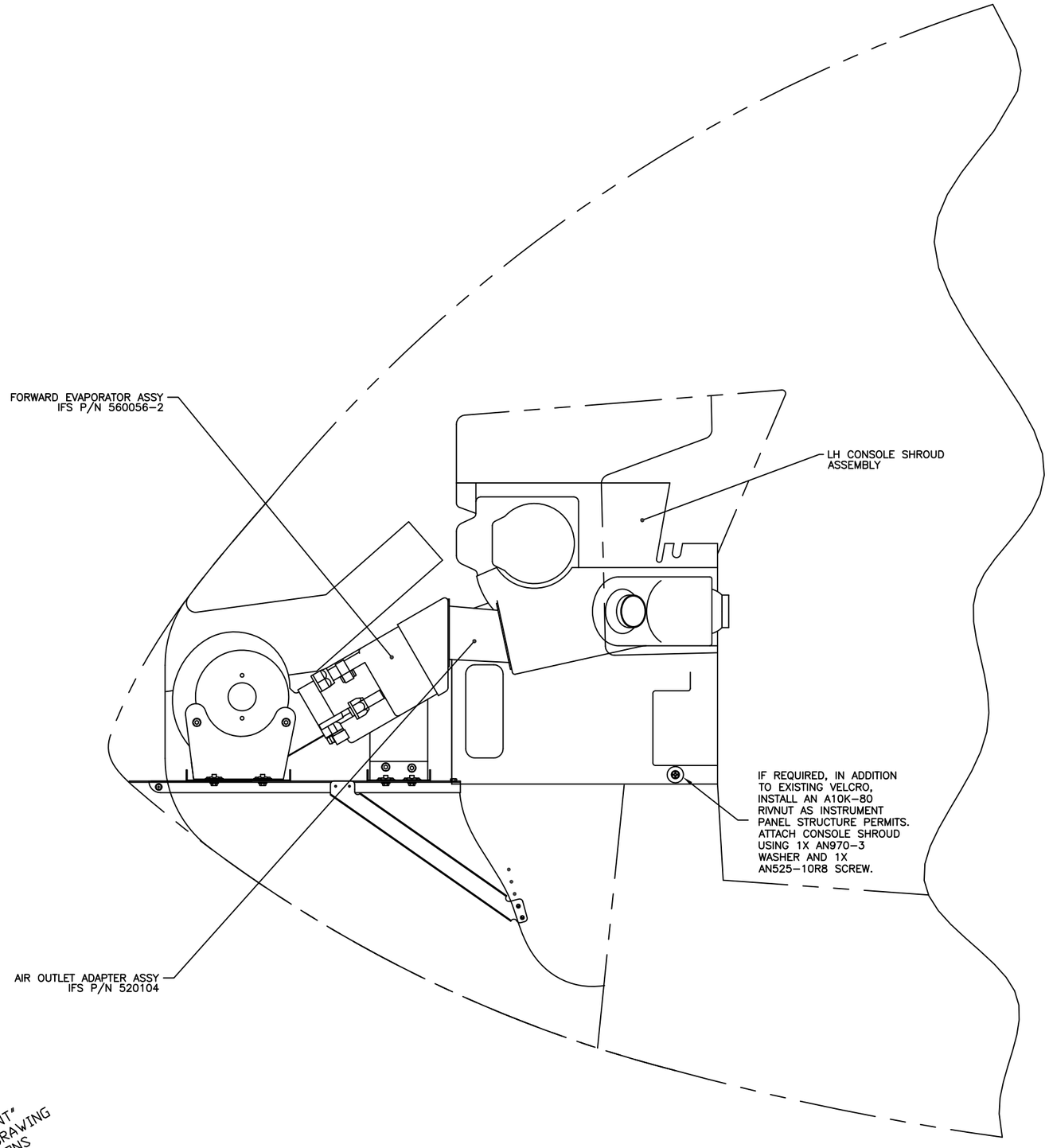
STD. MODIFIED MDHS INSTRUMENT CLOSEOUT PANEL

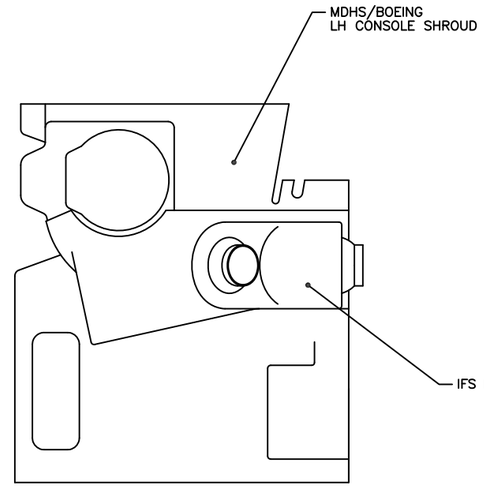
"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-3-MDHS6002.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 2 OF 4	SIZE: D	DRAWN BY: MAH
SCALE: 1/8				
TITLE: AIR DISTRIBUTION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 5-3-MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.





NOTES:

1. SECURE IFS P/N 520097 TO LH CONSOLE SHROUD WITH PROSET OR OTHER COMPATIBLE 2 PART EPOXY ADHESIVE. USE CLAMPS OR CLECOS TO HOLD IN PLACE PER ADHESIVE MFG'S CURE TIME SPECIFICATIONS.
   OPTIONAL A: SECURE ABOVE PART USING ABA RIVETS AND ADHESIVE.
   OPTIONAL B: SECURE PART USING AN525-832R8 SCREWS INTO MS21059L08 NUTPLATES.
2. FEATHER UPPER AND LOWER MATING LINES OF IFS P/N 520097 INTO SHROUD.
3. FINISH: IFS P/N 520097 AND SHROUD BY APPLYING 3M ROCKER PANEL SPRAY, P/N 051131-059 PER LABEL INSTRUCTIONS. FINAL COLOR, BLACK.

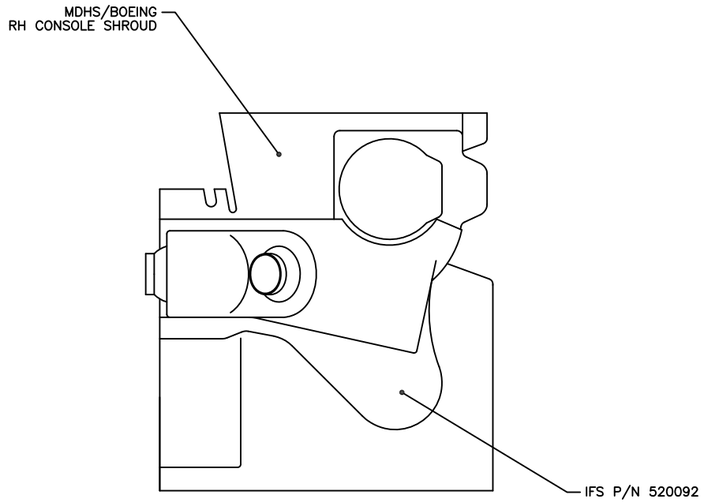
STD. MODIFIED MDHS INSTRUMENT
CLOSEOUT PANEL

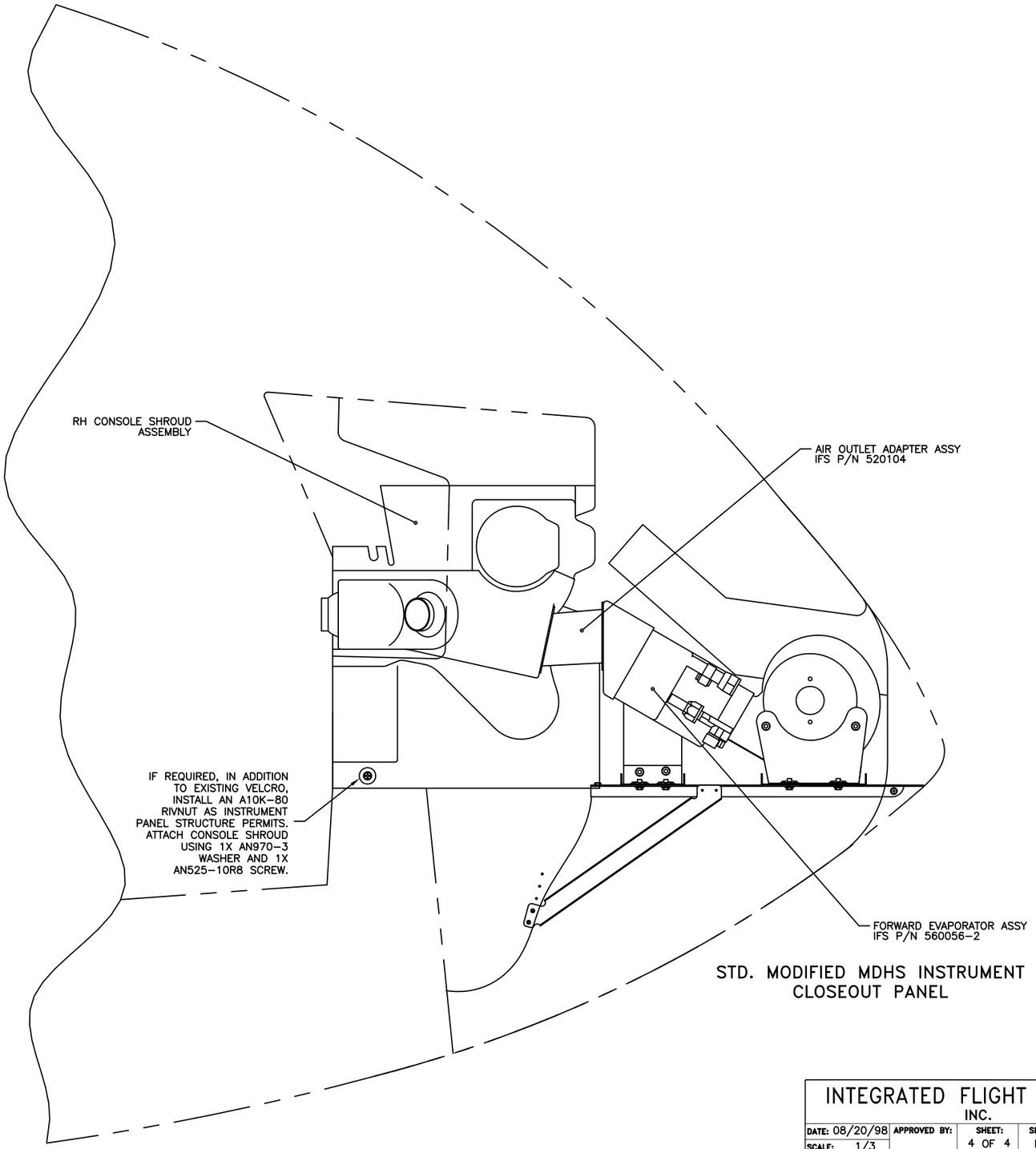
"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\5-3-MDHS6003.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 3 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				
TITLE: AIR DISTRIBUTION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 5-3-MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.





STD. MODIFIED MDHS INSTRUMENT
CLOSEOUT PANEL

NOTES:

1. SECURE IFS P/N 520092 TO LH CONSOLE SHROUD WITH PROSET OR OTHER COMPATIBLE 2 PART EPOXY ADHESIVE. USE CLAMPS OR CLECOS TO HOLD IN PLACE PER ADHESIVE MFG'S CURE TIME SPECIFICATIONS.
   OPTIONAL A: SECURE ABOVE PART USING ABA RIVETS AND ADHESIVE.
   OPTIONAL B: SECURE PART USING AN525-832R8 SCREWS INTO MS21059L08 NUTPLATES.
2. FEATHER UPPER AND LOWER MATING LINES OF IFS P/N 520092 INTO SHROUD.
3. FINISH: IFS P/N 520092 AND SHROUD BY APPLYING 3M ROCKER PANEL SPRAY, P/N 051131-05910 PER LABEL INSTRUCTIONS. FINAL COLOR, BLACK.

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 4 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/3				
TITLE: AIR DISTRIBUTION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 5-3-MDHS 600N		

\001MDHS600NR\5-3-MDHS6004.DWG

Step 13

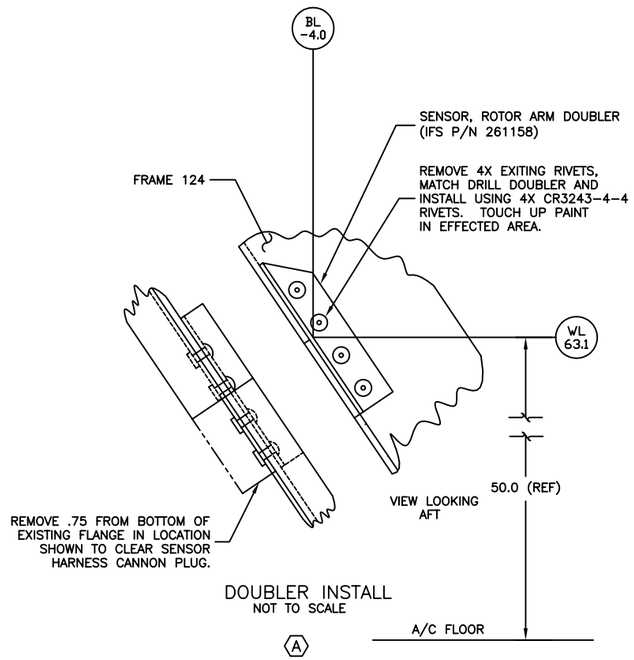
Compressor Installation Drawings

REV.	DESCRIPTION	DATE	APPV.
A	ADDED COMPRESSOR AND BELT TENSION NOTE. RELOCATED SENSOR, ROTOR SPEED FROM R.H. TRANSMISSION PAD TO L.H. PAD. ADDED PLACARD P/N 120092. ADDED DOUBLER INSTALL.	07/22/97	
B	ADDED ALTERNATE PULLEY (IFS P/N 300344-1). ADDED SHIM WASHERS, AN960-616 OR 616L., DWG NUMBER WAS 6-MDHS 600N IS 6-1-MDHS 600.	08/20/98	

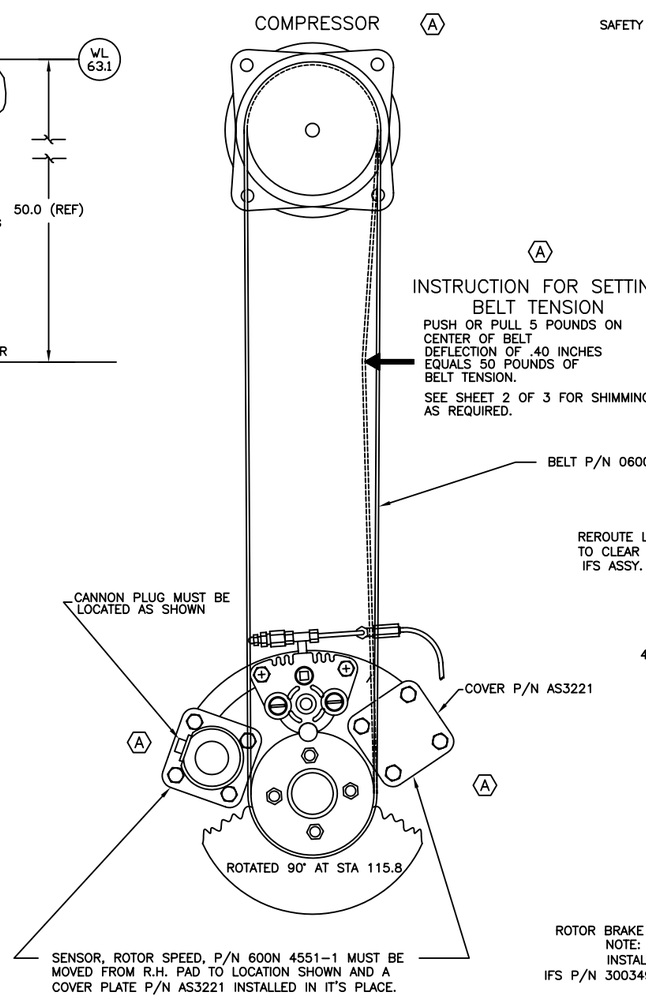
B

Ⓑ INSTRUCTIONS:

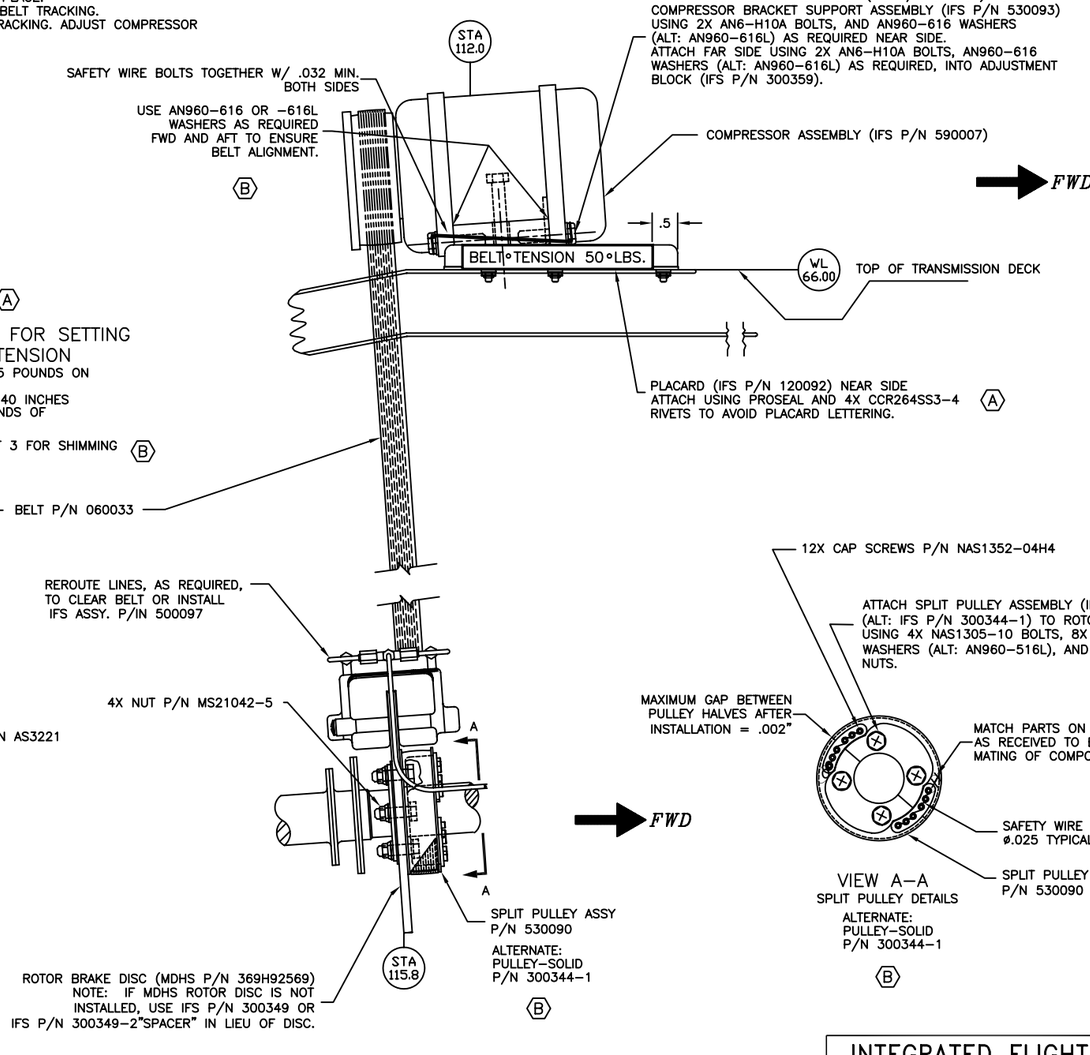
1. TRIAL FIT COMPONENTS PER SHEET 1 AND 2 OF 3.
2. BOLT COMPRESSOR TO SUPPORT BRACKET ON WORK BENCH.
3. AFTER INSTALLING SHIM PER SHEET 2 OF 3, TRIAL FIT COMPRESSOR AND SUPPORT TO AIRCRAFT USING CLAMPS. ENSURE BELT IS ALIGNED WITH LOWER DRIVE PULLEY BY USING TWO STRAIGHT EDGES.
4. DETERMINE THAT BELT CLEARS SENSOR, ROTOR AND ROTOR BRAKE LINES.
5. DETERMINE BELT TENSION IS CORRECT OR INCREASE PER "INSTRUCTION FOR SETTING BELT TENSION".
6. ENSURE COMPRESSOR IS ALIGNED WITH THE C/L OF THE HELICOPTER. THIS MAY REQUIRE THAT THE COMPRESSOR BRACKET ASSY. P/N 530093 SEE (SHEET 2 OF 3). FORWARD EDGE OF COMPRESSOR BRACKET MAY NOT ALIGN WITH AIRFRAME (STA 106.5) SHEET METAL IN ALL CASES WHEN COMPRESSOR ALIGNMENT IS CORRECT.
7. LOCATE COMPRESSOR FORE AND AFT, USING AN960-616 OR 616L WASHERS PER SHEET 1 OF 3.
8. USE DIGITAL PROTRACTOR TO ENSURE ROTOR DISC TO COMPRESSOR PULLEY FACE ANGLE IS NOT MORE THAN .5 DEGREES.
9. TURN ROTOR HEAD AND OBSERVE BELT TRACKING. ADJUST AS REQUIRED.
10. BOLT COMPRESSOR AND SUPPORT IN PLACE.
11. DURING FIRST ENGINE RUN OBSERVE BELT TRACKING.
12. AFTER FIRST FLIGHT OBSERVE BELT TRACKING. ADJUST COMPRESSOR AS REQUIRED.



DOUBLER INSTALL
NOT TO SCALE
Ⓐ



VIEW LOOKING FORWARD



VIEW LOOKING INBOARD

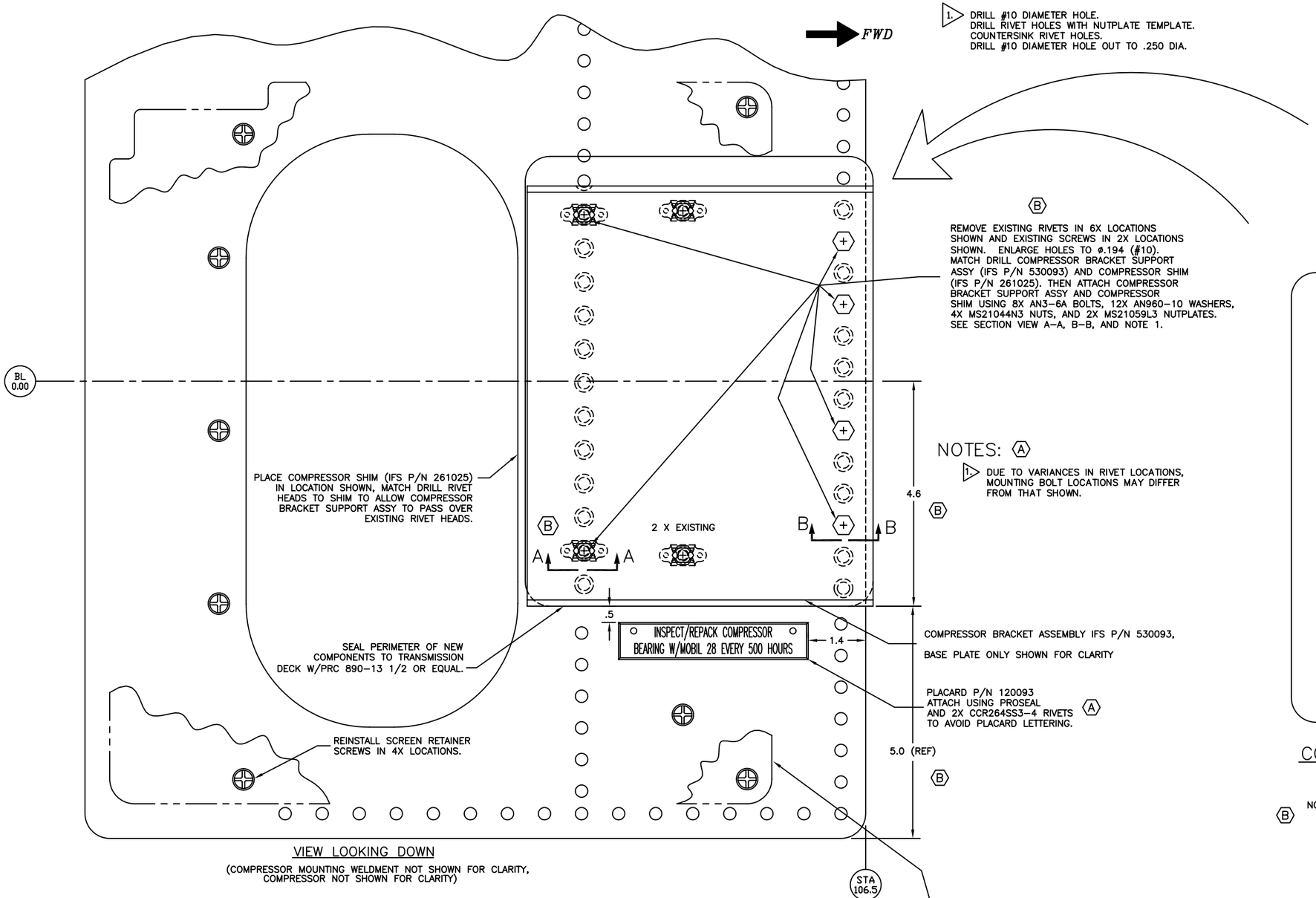
Ⓑ

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				
TITLE: COMPRESSOR INSTALLATION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 6-1-MDHS 600N		

\001MDHS600NR\6-1-MDHS6001_C.DWG

REV.	DESCRIPTION	DATE	APPV.
A	RELOCATED BOLT. ADDED NOTE. ADDED PLACARD P/N 120093.	07/22/97	
B	EDGE OF COMPRESSOR BRACKET ASSY WAS 4.3, IS 4.6 FROM A/C CENTERLINE. ADDED NUTPLATES AND ASSOCIATED NOTES AND SECTION VIEWS. MOVED COMPRESSOR SHIM & COMPRESSOR BRACKET SUPPORT ASSY .15 INCHES FORWARD. DWG NUMBER WAS 6-MDHS 600N IS 6-1-MDHS 600N.	08/20/98	

B

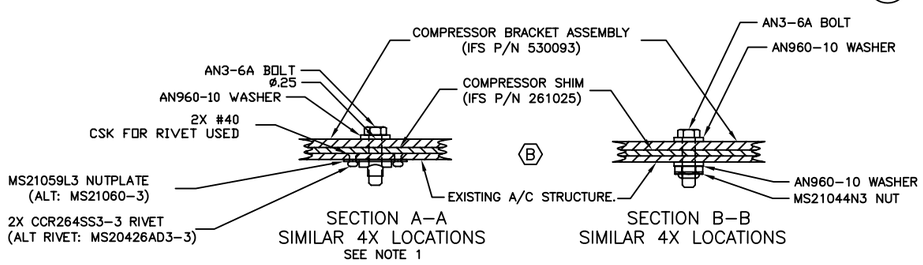


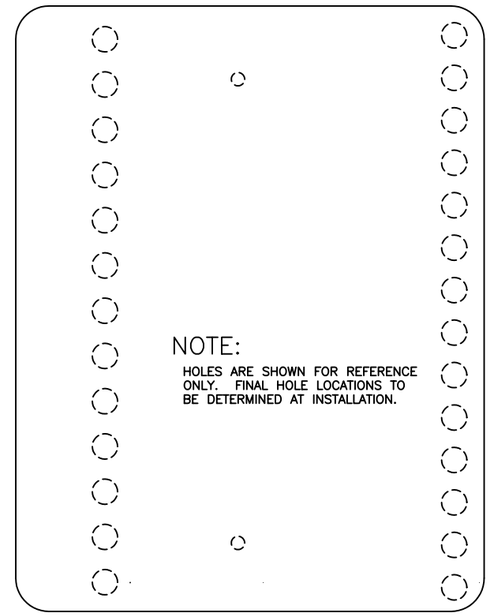
VIEW LOOKING DOWN

(COMPRESSOR MOUNTING WELDMENT NOT SHOWN FOR CLARITY, COMPRESSOR NOT SHOWN FOR CLARITY)

NOTES: (A)

1. DUE TO VARIANCES IN RIVET LOCATIONS, MOUNTING BOLT LOCATIONS MAY DIFFER FROM THAT SHOWN.





COMPRESSOR SHIM P/N 261025

INSTALL BETWEEN COMPRESSOR BRACKET ASSY & TRANSMISSION DECK

(B) NOTE: INSTALL 2ND SHIM, IF REQUIRED, TO ACHIEVE CORRECT BELT TENSION. USE OF LONGER MOUNTING BOLTS SUCH AS AN3-7A MAY BE NECESSARY.

INTEGRATED FLIGHT SYSTEMS INC.

DATE: 03/10/97	APPROVED BY:	SHEET: 2 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/1				

(B) TITLE: COMPRESSOR INSTALLATION

APPLICATION: MDHS 600N	DRAWING NUMBER: 6-1-MDHS 600N

\001MDHS600N\R\6-1-MDHS6002_C.DWG

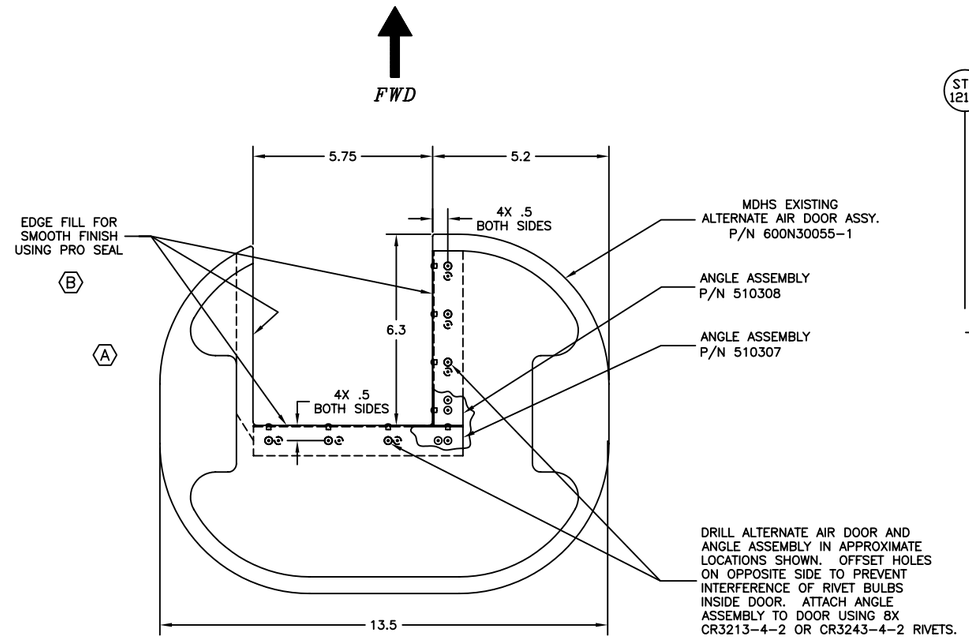
REV.	DESCRIPTION	DATE	APPV.
A	ADDED ALTERNATE AIR DOOR MODS.	07/22/97	
B	ADDED INSTALLATION OF FILLER ANGLE ASSY'S (IFS P/N'S 510307 & 510308 WITH ASSOCIATED DIMENSIONS AND HARDWARE. CHANGED P/N 250360 TO P/N 520087. CHANGED EPOXY TO PRO SEAL. ADDED SECTION A-A. ADDED TRIM NOTE FOR COMP ENCLOSURE ASSY. DWG NUMBER WAS 6-MDHS 600N IS 6-1-MDHS 600N.	08/20/98	

B

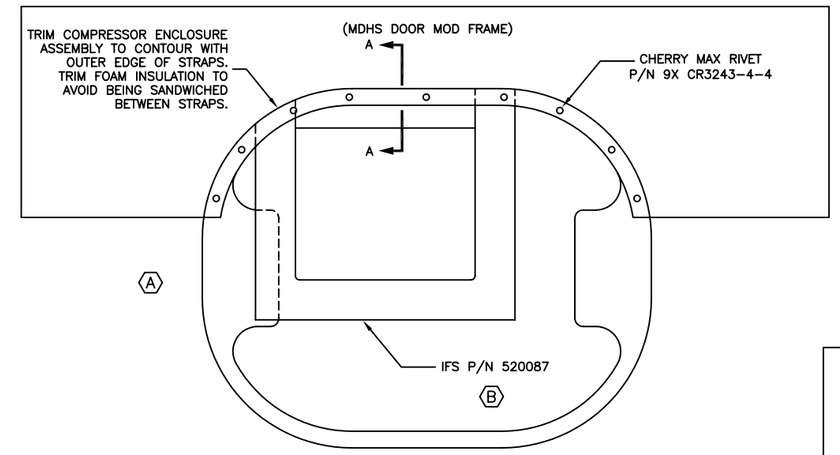
Ⓐ ALTERNATE AIR DOOR MODIFICATIONS

Ⓑ

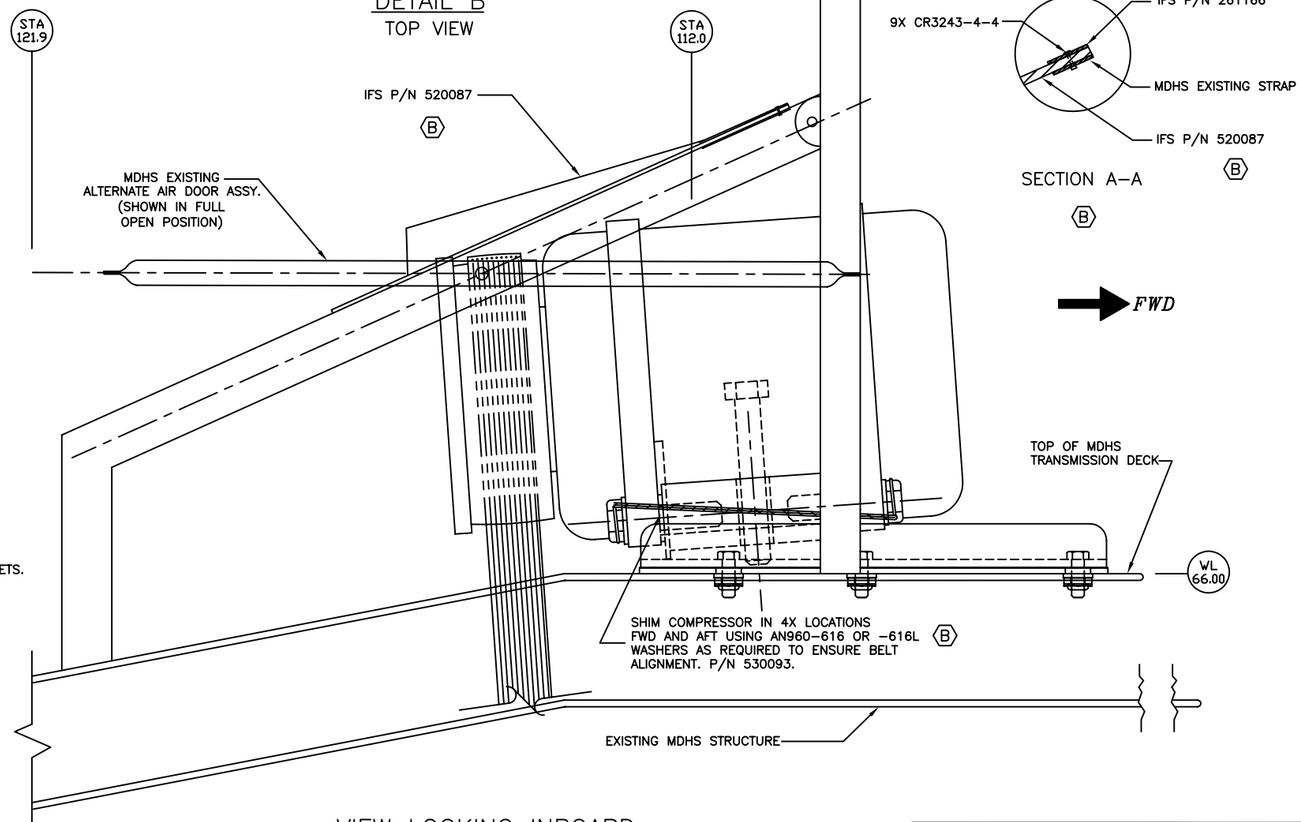
1. REMOVE AND REPLACE DOOR PER MDHS MAINTENANCE MANUAL INSTRUCTIONS.
2. CUT DOOR PER DETAIL "A".
3. EDGE FILL DOOR WITH PROSEAL PER DETAIL "A"
4. TRIAL FIT DOOR.
5. ENSURE OPERATION/CLEARANCE OF DOOR TO COMPRESSOR.
6. REMOVE DOOR AND INSTALL, COMPRESSOR ENCLOSURE ASSY, IFS P/N 520087 TO UPPER EDGE OF MDHS FRAME 90-600N 3128-503 IN ALIGNMENT WITH DOOR CUTOUT.
7. ENSURE THAT IFS PART, WHEN INSTALLED, WILL ALLOW DOOR TO SEAL AS PER ORIGINAL DESIGN.
8. INSTALL IFS P/N 520087 UTILIZING NEW IFS P/N 261166 AS AN OUTER STRAP.
9. THE NEW SHEET METAL STRAP IS USED TO SANDWICH THE NEW FIBERGLASS PART TO THE EXISTING DOOR LIP. (SEE SECTION A-A)
10. FASTEN COMPONENTS TOGETHER AT 9 EXISTING RIVET LOCATIONS UTILIZING CHERRY MAX RIVETS P/N 3243-4-X.
11. REPLACE DOOR AND PERFORM OPERATIONAL CHECK.



DETAIL A
TOP VIEW
Ⓑ



DETAIL B
TOP VIEW



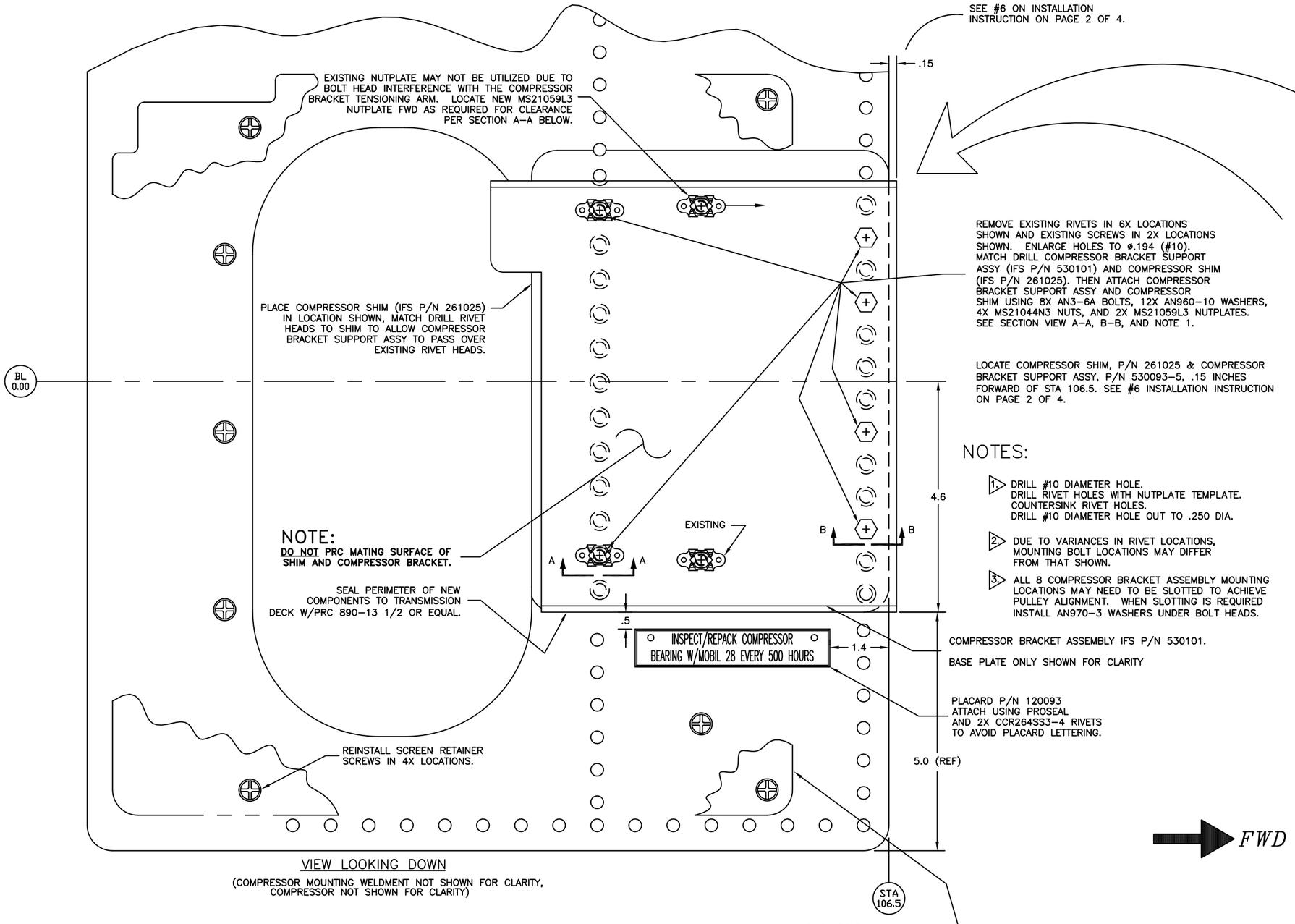
VIEW LOOKING INBOARD

Ⓑ

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 3 OF 3	SIZE: D	DRAWN BY: TMUZZY
SCALE: NONE				
TITLE: COMPRESSOR INSTALLATION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 6-1-MDHS 600N		

\001MDHS600NR\6-1-MDHS6003_C.DWG

REV.	DESCRIPTION	DATE	APPV.

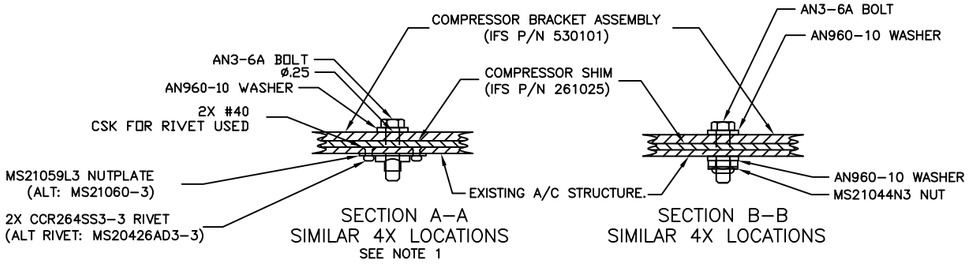


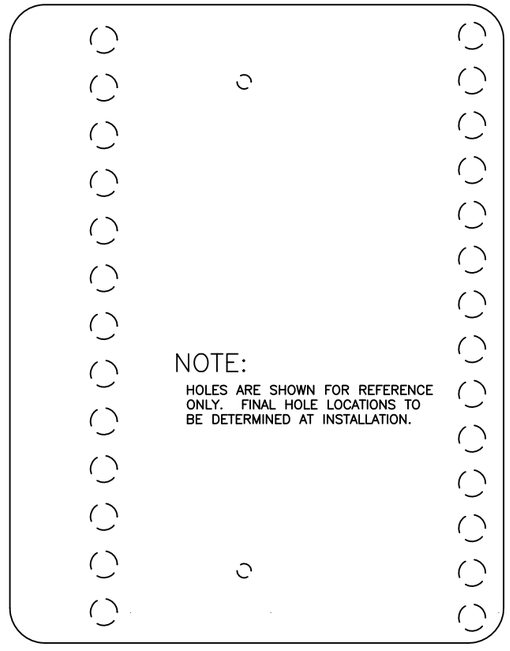
VIEW LOOKING DOWN

(COMPRESSOR MOUNTING WELDMENT NOT SHOWN FOR CLARITY, COMPRESSOR NOT SHOWN FOR CLARITY)

NOTES:

1. DRILL #10 DIAMETER HOLE. DRILL RIVET HOLES WITH NUTPLATE TEMPLATE. COUNTERSINK RIVET HOLES. DRILL #10 DIAMETER HOLE OUT TO .250 DIA.
2. DUE TO VARIANCES IN RIVET LOCATIONS, MOUNTING BOLT LOCATIONS MAY DIFFER FROM THAT SHOWN.
3. ALL 8 COMPRESSOR BRACKET ASSEMBLY MOUNTING LOCATIONS MAY NEED TO BE SLOTTED TO ACHIEVE PULLEY ALIGNMENT. WHEN SLOTTING IS REQUIRED INSTALL AN970–3 WASHERS UNDER BOLT HEADS.





COMPRESSOR SHIM P/N 261025

INSTALL BETWEEN COMPRESSOR BRACKET ASSY & TRANSMISSION DECK

NOTE: INSTALL 2ND SHIM, IF REQUIRED, TO ACHIEVE CORRECT BELT TENSION. USE OF LONGER MOUNTING BOLTS SUCH AS AN3–7A MAY BE NECESSARY.

"REDUCED PRINT" DO NOT SCALE DRAWING FOR DIMENSIONS

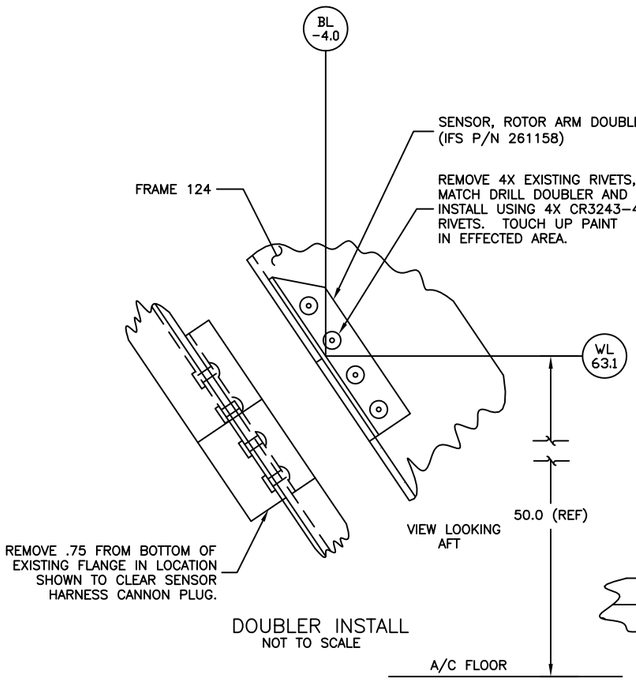
\001MDHS600NR\6-2-MDHS6001.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 1 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/1				
TITLE: COMPRESSOR INSTALLATION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 6-2-MDHS 600N		

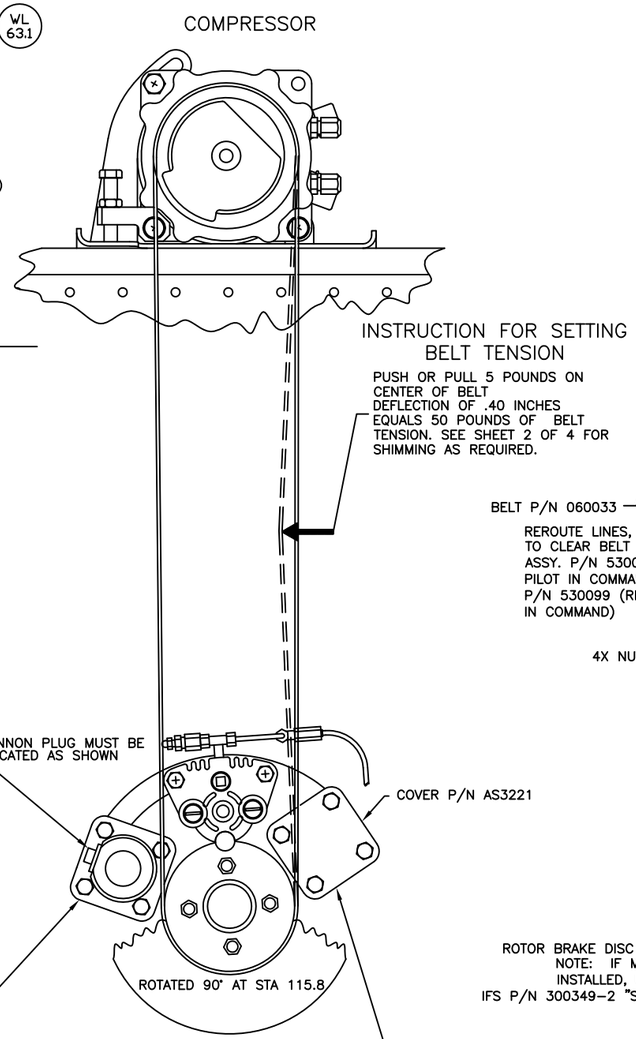
REV.	DESCRIPTION	DATE	APPV.

INSTRUCTIONS:

1. TRIAL FIT COMPONENTS PER SHEET 1, 2 AND 3 OF 4.
2. BOLT COMPRESSOR TO SUPPORT BRACKET ON WORK BENCH.
3. AFTER INSTALLING SHIM PER SHEET 2 OF 4 AND 3 OF 4, TRIAL FIT COMPRESSOR AND SUPPORT TO AIRCRAFT USING CLAMPS. ENSURE BELT IS ALIGNED WITH LOWER DRIVE PULLEY BY USING TWO STRAIGHT EDGES FROM FWD SIDE OF ROTOR BRAKE DISC TO AFT FACE OF COMPRESSOR PULLEY (W/FACE PLATE REMOVED).
4. DETERMINE THAT BELT CLEARS SENSOR, CALIPER, ROTOR, AND ROTOR BRAKE LINES AT HIGHEST TENSION SETTING.
5. DETERMINE BELT TENSION IS CORRECT OR INCREASE PER "INSTRUCTION FOR SETTING BELT TENSION".
6. ENSURE COMPRESSOR IS ALIGNED WITH THE C/L OF THE HELICOPTER. THE COMPRESSOR BRACKET ASSEMBLY (P/N 530101) FORWARD EDGE MAY NOT ALIGN WITH THE AIRFRAME SHEET METAL AT STA 106.5 WHEN COMPRESSOR ALIGNMENT IS CORRECT. NOTE .15 OVERHANG FORWARD.
7. LOCATE COMPRESSOR FWD AND AFT BY SLOTTING HOLES FOR AN3 BOLTS, AS REQUIRED. PLACE AN970–3 WASHERS UNDER HEAD OF BOLTS AND SEAL WITH PRC AFTER FINAL ADJUSTMENTS.
8. USE DIGITAL PROTRACTOR TO ENSURE ROTOR DISC TO COMPRESSOR PULLEY FACE ANGLE IS NOT MORE THAN .5 DEGREES.
9. TURN ROTOR HEAD AND OBSERVE BELT TRACKING. ADJUST AS REQUIRED.
10. BOLT COMPRESSOR AND SUPPORT IN PLACE.
11. DURING FIRST ENGINE RUN OBSERVE BELT TRACKING.
12. AFTER FIRST FLIGHT OBSERVE BELT TRACKING. ADJUST COMPRESSOR AS REQUIRED.



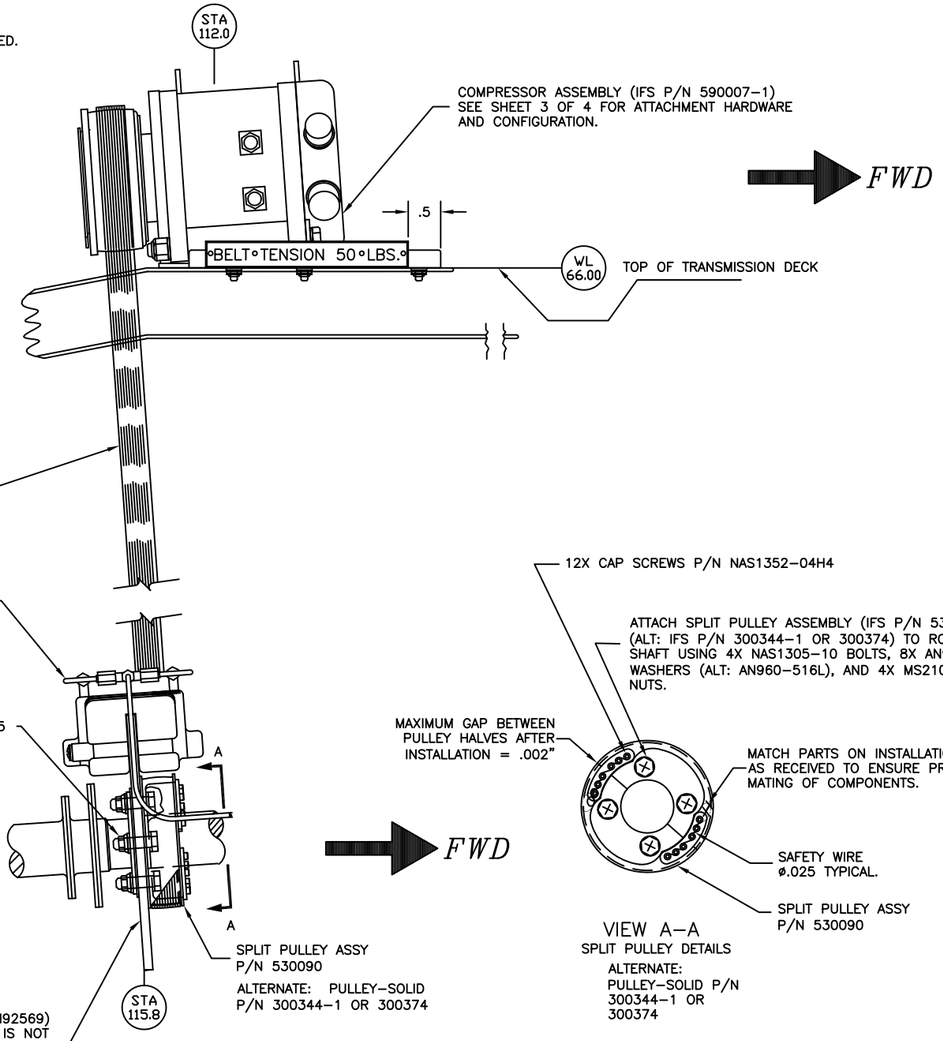
DOUBLER INSTALL
NOT TO SCALE



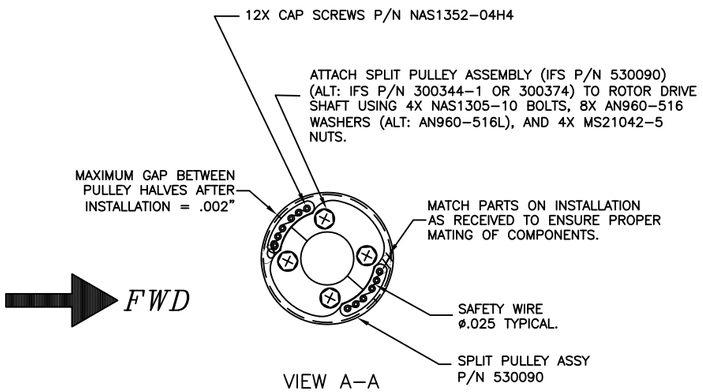
VIEW LOOKING FORWARD

INSTRUCTION FOR SETTING
BELT TENSION

PUSH OR PULL 5 POUNDS ON
CENTER OF BELT
DEFLECTION OF .40 INCHES
EQUALS 50 POUNDS OF BELT
TENSION. SEE SHEET 2 OF 4 FOR
SHIMMING AS REQUIRED.



VIEW LOOKING INBOARD



VIEW A–A
SPLIT PULLEY DETAILS
ALTERNATE:
PULLEY–SOLID P/N
300344–1 OR
300374

REDUCED PRINT
DO NOT SCALE DRAWING
FOR DIMENSIONS

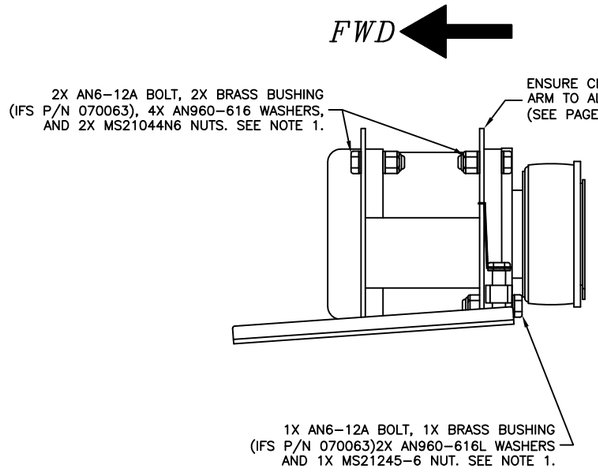
\001MDHS600NR\6-2-MDHS6002.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 2 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				
TITLE: COMPRESSOR INSTALLATION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 6–2–MDHS 600N		

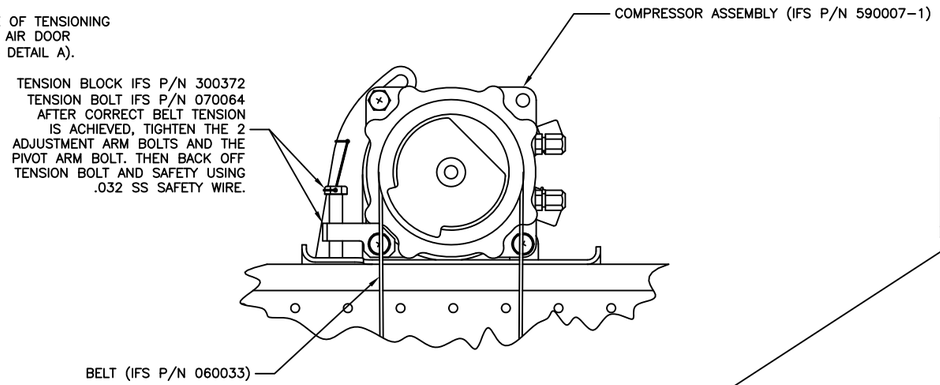
REV.	DESCRIPTION	DATE	APPV.

NOTES:

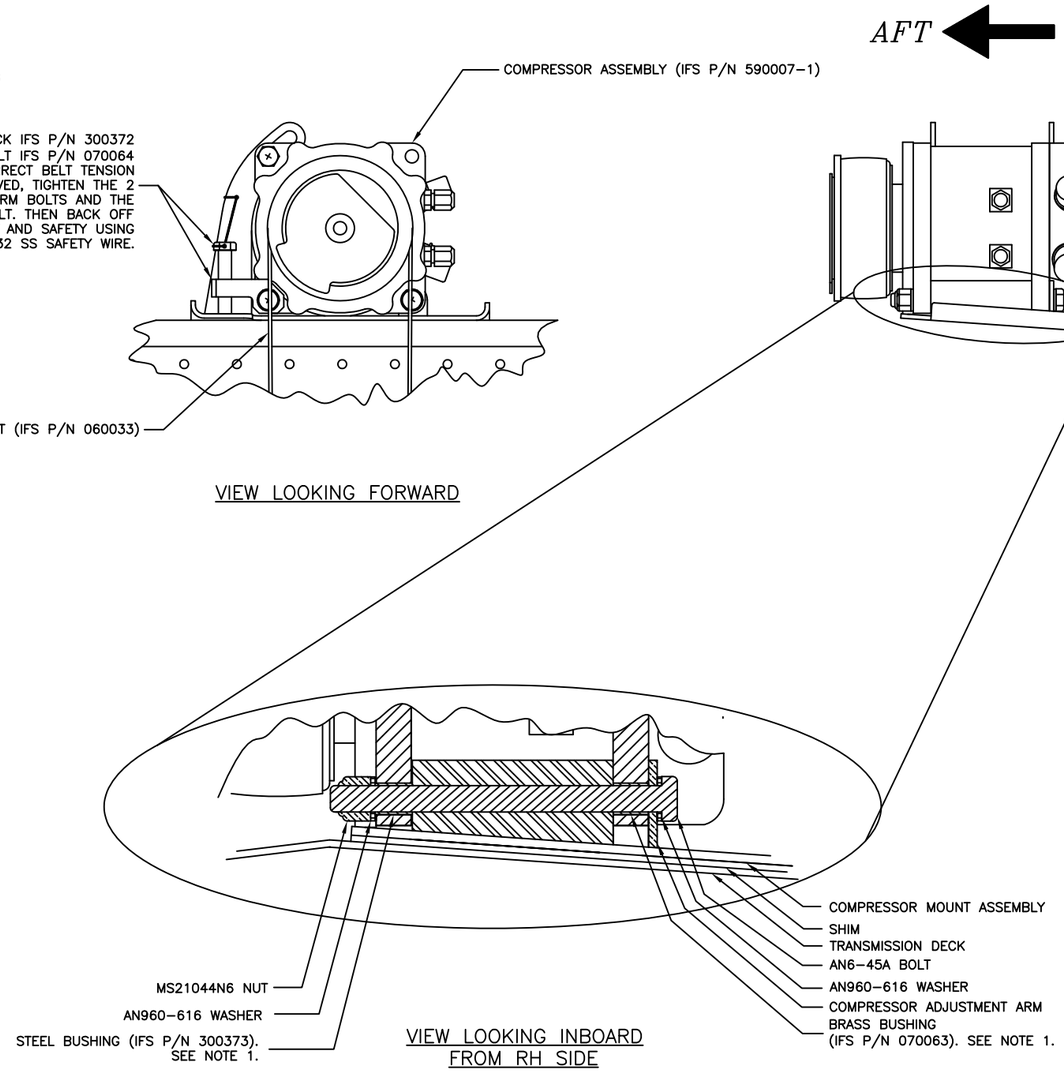
1. BUSHINGS SHOWN ARE PART OF COMPRESSOR ASSEMBLY (IFS P/N 590007-1) AND ARE DETAILED HERE FOR FIELD MAINTENANCE PURPOSES. NOTE THAT FWD (BRASS) BUSHING IS .005 UNDER EAR THICKNESS AND AFT (STEEL) BUSHING IS .030 OVER EAR THICKNESS.



VIEW LOOKING INBOARD FROM LH SIDE



VIEW LOOKING FORWARD



VIEW LOOKING INBOARD FROM RH SIDE

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

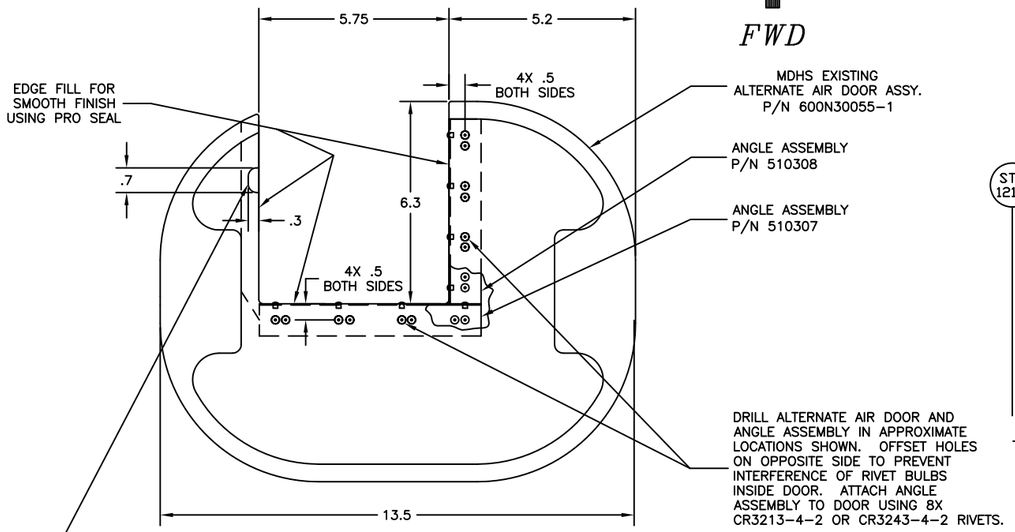
\001MDHS600NR\6-2-MDHS600J.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 3 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				
TITLE: COMPRESSOR INSTALLATION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 6-2-MDHS 600N		

REV.	DESCRIPTION	DATE	APPV.

ALTERNATE AIR DOOR MODIFICATIONS

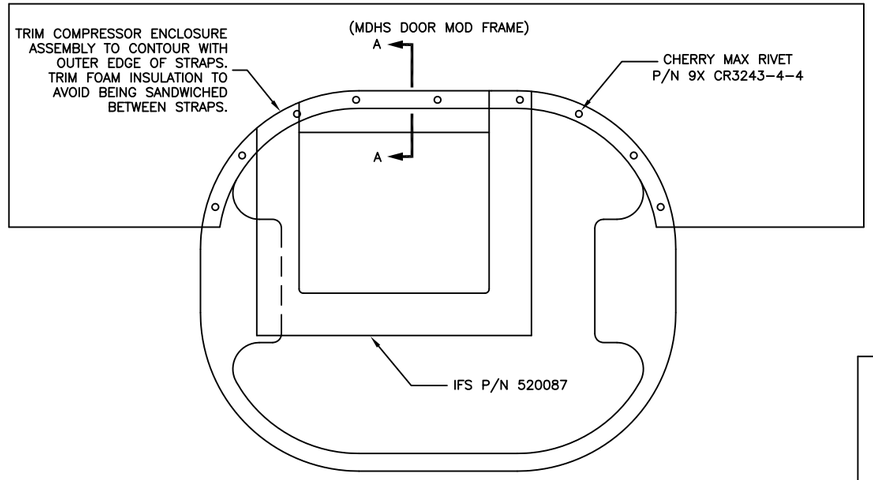
1. REMOVE AND REPLACE DOOR PER MDHS MAINTENANCE MANUAL INSTRUCTIONS.
2. CUT DOOR PER DETAIL "A".
3. ATTACH ANGLE ASSY. P/N 510307, P/N 510308 AS SHOWN.
4. EDGE FILL DOOR WITH PROSEAL PER DETAIL "A"
5. TRIAL FIT DOOR.
6. ENSURE OPERATION/CLEARANCE OF DOOR TO COMPRESSOR.
7. REMOVE DOOR AND INSTALL, COMPRESSOR ENCLOSURE ASSY, IFS P/N 520087 TO UPPER EDGE OF MDHS FRAME 90-600N 3128-503 IN ALIGNMENT WITH DOOR CUTOUT.
8. ENSURE THAT IFS PART, WHEN INSTALLED, WILL ALLOW DOOR TO SEAL AS PER ORIGINAL DESIGN.
9. INSTALL IFS P/N 520087 UTILIZING NEW IFS P/N 261166 AS AN OUTER STRAP.
10. THE NEW SHEET METAL STRAP IS USED TO SANDWICH THE NEW FIBERGLASS PART TO THE EXISTING DOOR LIP. (SEE SECTION A-A)
11. FASTEN COMPONENTS TOGETHER AT 9 EXISTING RIVET LOCATIONS UTILIZING CHERRY MAX RIVETS P/N 3243-4-X.
12. REPLACE DOOR AND PERFORM OPERATIONAL CHECK.



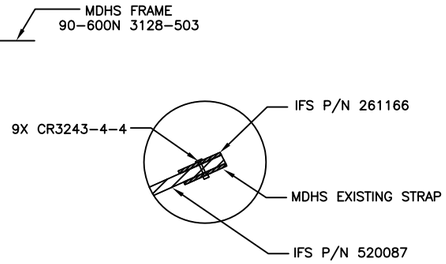
DRILL ALTERNATE AIR DOOR AND ANGLE ASSEMBLY IN APPROXIMATE LOCATIONS SHOWN. OFFSET HOLES ON OPPOSITE SIDE TO PREVENT INTERFERENCE OF RIVET BULBS INSIDE DOOR. ATTACH ANGLE ASSEMBLY TO DOOR USING 8X CR3213-4-2 OR CR3243-4-2 RIVETS.

DETAIL A
TOP VIEW

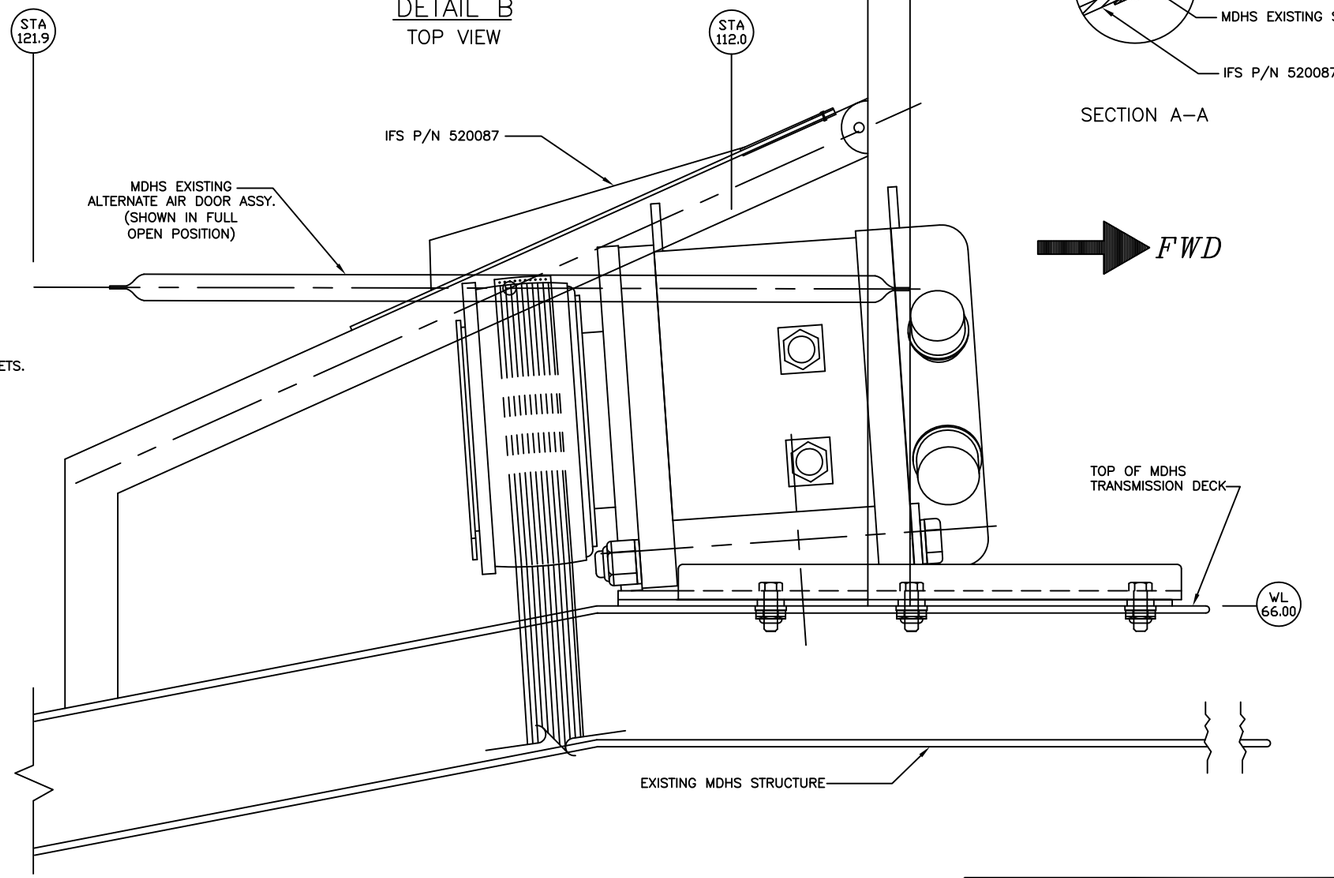
SLOT DOOR AS SHOWN, LOCATED FWD AND AFT TO AVOID THE COMPRESSOR TENSIONING ARM WHEN DOOR IS IN THE OPEN POSITION.



DETAIL B
TOP VIEW



SECTION A-A



VIEW LOOKING INBOARD
FROM RIGHT SIDE

"REDUCED PRINT"
DO NOT SCALE DRAWING
FOR DIMENSIONS

\001MDHS600NR\6-2-MDHS6004.DWG

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 08/20/98	APPROVED BY:	SHEET: 4 OF 4	SIZE: D	DRAWN BY: TMUZZY
SCALE: NONE				
TITLE: COMPRESSOR INSTALLATION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 6-2-MDHS 600N		

Step 14

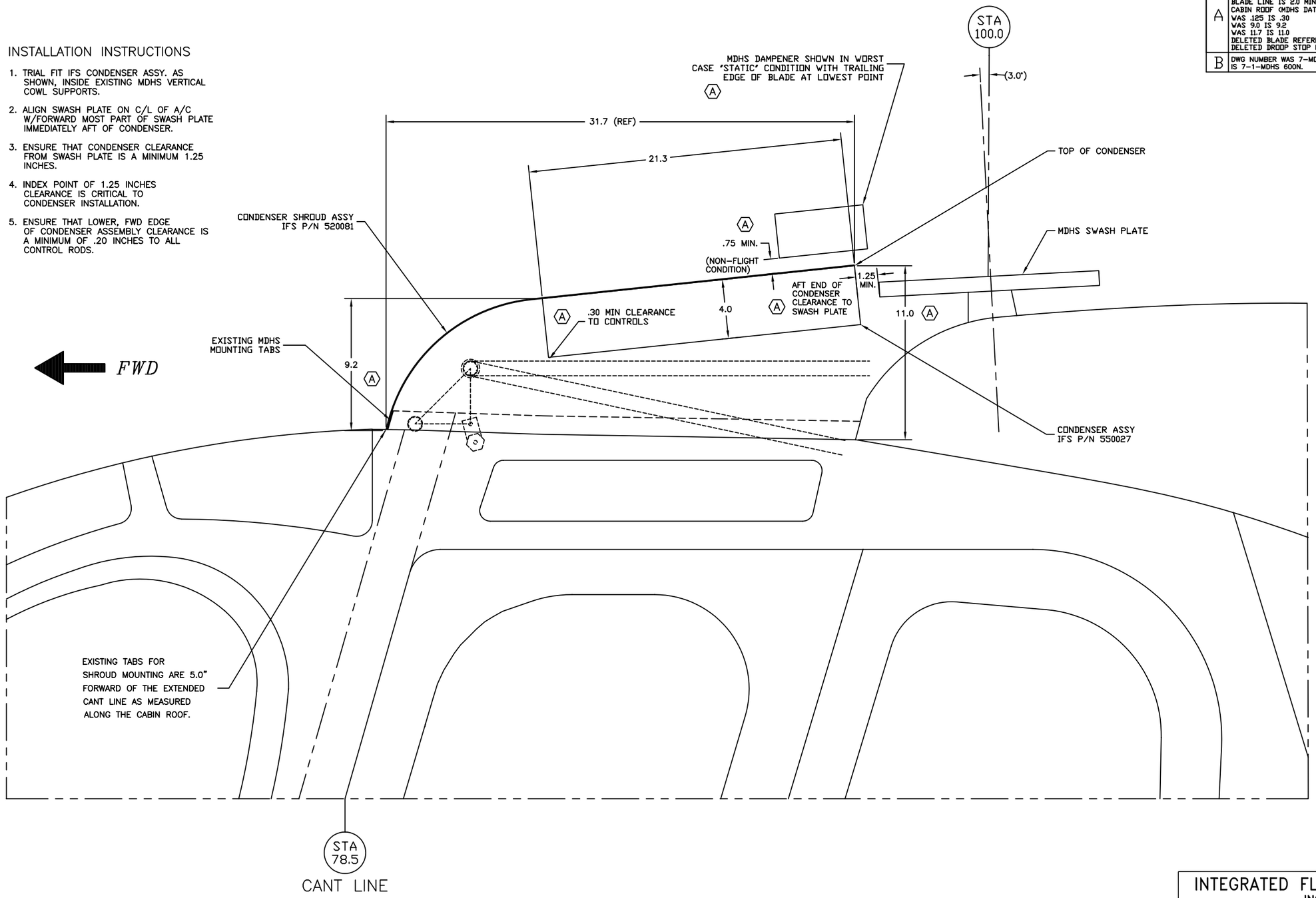
Condenser Installation Drawings

REV.	DESCRIPTION	DATE	APPV.
A	WAS 1.0 IS 1.5. BLADE LINE IS 2.0 MIN. AT CABIN ROOF (MDHS DATA) WAS .125 IS .30 WAS 9.0 IS 9.2 WAS 11.7 IS 11.0 DELETED BLADE REFERENCE DELETED DROOP STOP REF	07/22/97	
B	DWG NUMBER WAS 7-MDHS 600N IS 7-1-MDHS 600N.	08/20/98	

B

INSTALLATION INSTRUCTIONS

1. TRIAL FIT IFS CONDENSER ASSY. AS SHOWN, INSIDE EXISTING MDHS VERTICAL COWL SUPPORTS.
2. ALIGN SWASH PLATE ON C/L OF A/C W/FORWARD MOST PART OF SWASH PLATE IMMEDIATELY AFT OF CONDENSER.
3. ENSURE THAT CONDENSER CLEARANCE FROM SWASH PLATE IS A MINIMUM 1.25 INCHES.
4. INDEX POINT OF 1.25 INCHES CLEARANCE IS CRITICAL TO CONDENSER INSTALLATION.
5. ENSURE THAT LOWER, FWD EDGE OF CONDENSER ASSEMBLY CLEARANCE IS A MINIMUM OF .20 INCHES TO ALL CONTROL RODS.



Ⓑ

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 2	SIZE: D	DRAWN BY: MAH
SCALE: 1/3				

TITLE: CONDENSER INSTALLATION

APPLICATION:	DRAWING NUMBER:
MDHS 600N	7-1-MHDS 600N

\001MDHS600NR\7-1-MDHS6001_B.DWG

REV.	DESCRIPTION	DATE	APPV.
A	BLOWER P/N WAS 050084-3 IS P/N 050085-1, ADDED A-A DELETED BLADE REFERENCE DELETED P/N 520079.	07/22/97	
B	DWG NUMBER WAS 7-MDHS 600N IS 7-1-MDHS 600N. CHANGE BLOWER WAS P/N 050085-1 IS 580001.	08/20/98	

B

NOTE:
NEW IFS CONDENSER AIR INLET ASSY P/N 520059 DELETED FOR CLARITY.

COIL BASE

TRIM LOWER EDGE OF NEW IFS SHEET METAL PANELS, AS REQUIRED, TO ENSURE THAT TOTAL HEIGHT, INCLUDING SHROUD DOES NOT EXCEED SPECIFIED HEIGHT AS SHOWN ON SHEET 1 OF 2 AT AFT END OF ASSY.

14.0

VIEW LOOKING AFT

CONDENSER BLOWER P/N 580001 (B)

NEW IFS COWLING LINE

A
A

EXISTING MDHS SHEET METAL

CABIN ROOF

NEW IFS CONDENSER/COIL SUPPORT (NEW PANEL NOTCHED TO CLEAR EXISTING MDHS CAM-LOKS)

AFT

TOP VIEW

IFS SCREENED INLET

INSTALL CAM-LOK FASTENERS ON BOTH SIDES OF IFS ASSY AT LOWER EDGE OF SAME TYPE AND PART NUMBER AS ORIGINAL MDHS P/N. MATCH DRILL TO MATE WITH FEMALE FASTENERS, PREVIOUSLY INSTALLED.

STA 100.0

21.25

4.0

11.0

5.0 TO TOP OF RODS

(A)

SECURE NEW IFS CONDENSER ASSEMBLY P/N 550027 TO MDHS EXISTING VERTICAL PANELS WITH AN507-10R8 SCREWS ON 2.5" CENTERS BEGINNING 1.0" FROM FORWARD END INTO MD21059L3 NUPLATES ALIGNED ON INSIDE ON NEW IFS VERTICAL CONDENSER ASSY.

MDHS CONTROL RODS

STA 78.5

CANT LINE

(A)

MDHS EXISTING COWL SUPPORT

EXISTING MDHS FEMALE CAM-LOK

OUTBOARD (TYPICAL)

RIVET P/N MS426AD3-4 (DOUBLE FLUSH) 2X PER SHIM

SHIM P/N 261156 5X PER SIDE

VIEW A-A
TYPICAL SHIM W/RIVET SECTION
LOCATED BETWEEN EACH NOTCH

INTEGRATED FLIGHT SYSTEMS INC.

DATE: 03/10/97	APPROVED BY:	SHEET: 2 OF 2	SIZE: D	DRAWN BY: MAH
SCALE: 1/4				

(B)

TITLE: CONDENSER INSTALLATION

APPLICATION:	DRAWING NUMBER:
MDHS 600N	7-1-MDHS 600N

\001MDHS600NR\7-1-MDHS6002_B.DWG

Step 15

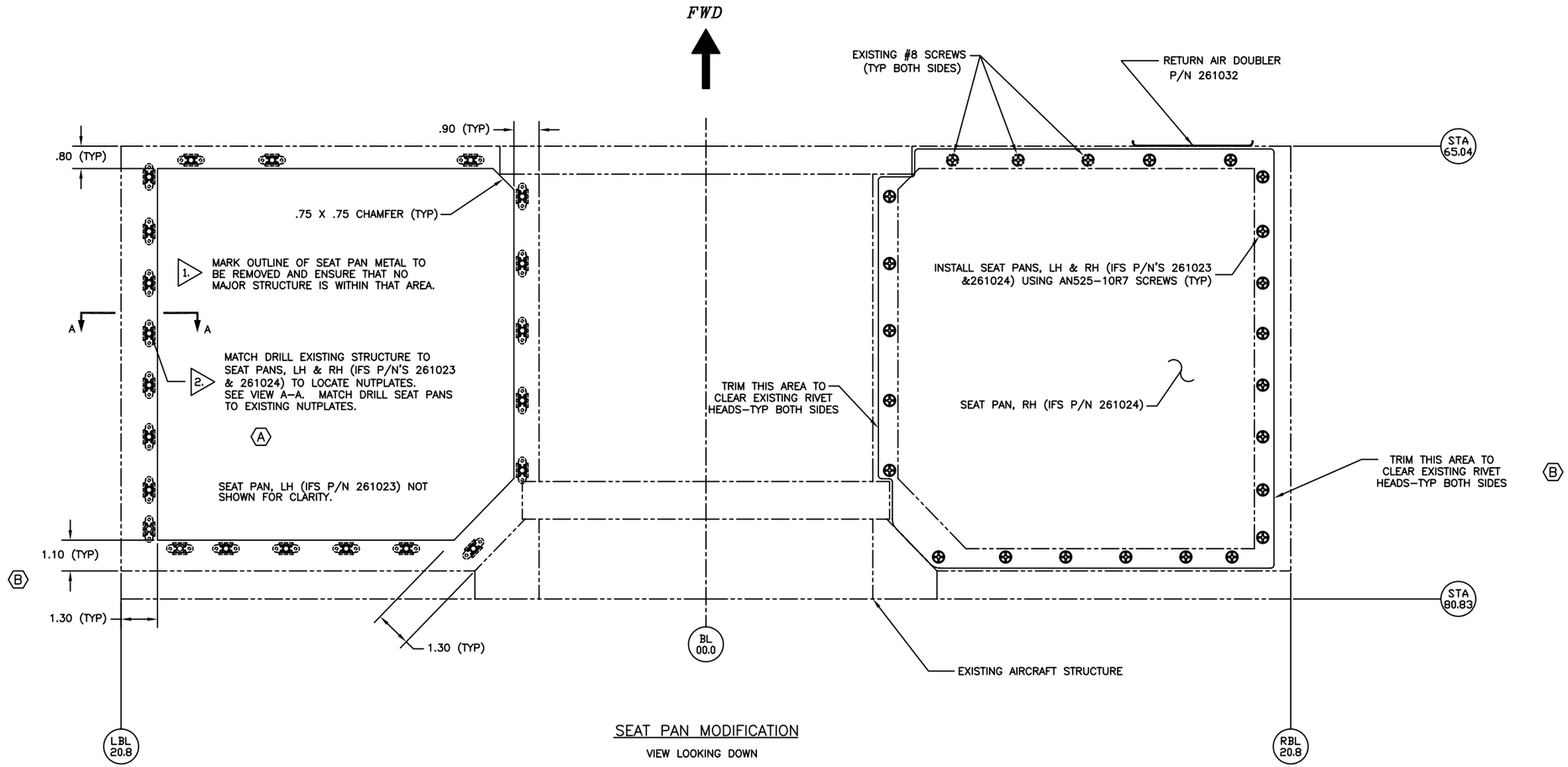
Seat Pan & Oil
Modification Drawings

REV.	DESCRIPTION	DATE	APPV.
A	ADDED MATCH DRILLING OF SEAT PANS.	07/22/97	
B	WAS .80 (TYP), IS 1.10 (TYP). ADDED TRIM NOTE. DWG NUMBER WAS 8-MDHS 600 IS 8-1-MDHS 600N. SHEET NUMBER WAS 1 OF 2 IS NOW 1 OF 1.	08/20/98	

B

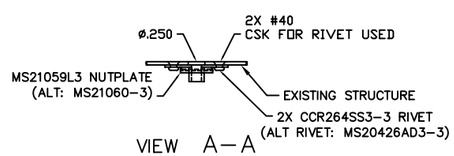
NOTES:

1. CUT OUT DIMENSIONS TYPICAL LH AND RH SIDES.
2. DRILL #10 DIAMETER HOLE.
   DRILL RIVET HOLES WITH NUTPLATE TEMPLATE.
   COUNTERSINK RIVET HOLES.
   DRILL #10 DIAMETER HOLE OUT TO .250 DIA.



SEAT PAN MODIFICATION

VIEW LOOKING DOWN



VIEW A-A

TYPICAL NUTPLATE INSTALLATION

NOT TO SCALE

REDUCED PRINT DO NOT SCALE DRAWING FOR DIMENSIONS

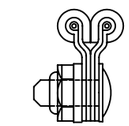
B

INTEGRATED FLIGHT SYSTEMS INC.				
DATE: 03/10/97	APPROVED BY:	SHEET: 1 OF 1	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				
TITLE: SEAT PAN MODIFICATION				
APPLICATION: MDHS 600N		DRAWING NUMBER: 8-1-MDHS 600N		

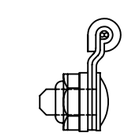
\001MDHS600NR\8-1-MDHS6001_C.DWG

REV.	DESCRIPTION	DATE	APPV.
A	DWG NUMBER WAS 8-MDHS 600N IS 9-1-MDHS 600N. SHEET NUMBER WAS 2 OF 2 IS 1 OF 1.	08/20/98	

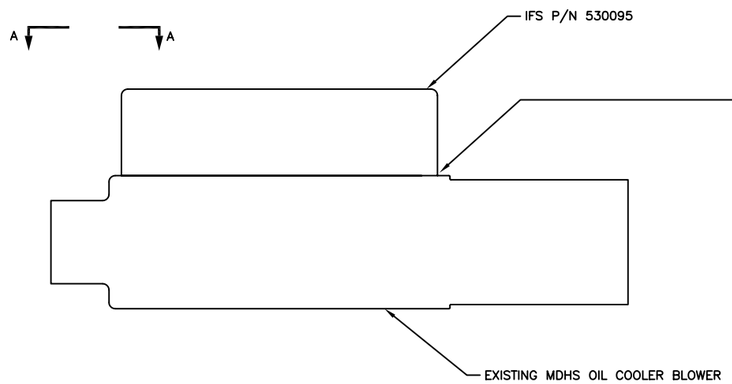
A



VIEW A-A
OPPOSITE SIDE SIMILAR
NOT TO SCALE



VIEW A-A
ALTERNATE
OPPOSITE SIDE SIMILAR
NOT TO SCALE



SIDE VIEW

INSTALL INSTRUCTIONS

1. REFER TO MDHS 600N MAINTENANCE MANUAL FOR ALL REMOVAL AND INSTALLATION PROCEDURES.
2. REMOVE TRANSMISSION FOR PULLEY INSTALLATION.
3. REMOVE BLOWER ASSEMBLY.
4. INSTALL SCREEN ASSEMBLY COMPONENTS (P/N 530095) UTILIZING ADEL CLAMPS AT MATING SURFACES.
5. INSTALL SCREEN ASSEMBLY TO BLOWER HOUSING.
6. REINSTALL BLOWER.

CAUTION

SECURE SCREEN TO BLOWER HOUSING IN 2 PLACES W/EXISTING SCREWS (FRONT AND REAR ONLY) W/ADEL MS21919DG 2

DO NOT USE SCREWS THAT SUPPORT CENTER BEARING HOUSING AS ATTACHMENT POINTS

INTEGRATED FLIGHT SYSTEMS INC.

DATE: 07-22-97	APPROVED BY:	SHEET: 1 OF 1	SIZE: D	DRAWN BY: TMUZZY
SCALE: 1/2				

A

TITLE: OIL BLOWER MODIFICATION

APPLICATION: MDHS 600N	DRAWING NUMBER: 9-1-MDHS 600N

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