

AIR COMM CORPORATION
BOULDER MUNICIPAL AIRPORT
3300 AIRPORT ROAD
BOULDER, CO 80301

206H-205M

Bell OH-58 Cabin Heater
Installation Instructions

March 31, 2004

This document includes:

Installation Instructions
Weight & Balance Data
Service Manual Supplement
Flight Manual Supplement

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Introduction

This document presents a step-by-step procedure for installation of the ACC 206H-205 Cabin Heater System in the Bell OH-58 Series Helicopter. The instructions contained herein are intended to supplement the information contained on the installation drawings.

This manual provides additional information which is required for operation and maintenance of the aircraft. This data is contained in the last three sections of this report. After completion of this installation, the applicable sections are to be removed from this document and placed with the appropriate aircraft documents.

Reference Documents

1. ACC Drawing 206H-205; heater Installation (enclosed).
2. ACC Drawing 206H-530; Bleed Air Plumbing Installation (applicable to -1 system – standard heater system).
3. ACC Drawing 206H-532; Bleed Air Plumbing Installation (applicable to -2system – Hi output heater system).
4. ACC Drawing 206H-934; Heater Ejector Installation (no outlet flow control).
5. ACC Drawing 206H-936; Heater Ejector Installation (outlet flow control – pilot/copilot outlets).
6. ACC Drawing 206H-996; Windshield Defroster Installation (optional)
7. AC43.13.1A; Acceptable Practices, Aircraft Alteration and Repair.

Installation Instructions – Basic Heater System

1. Review the system installation drawings and read completely through the Installation Instructions. BE SURE TO READ THE NOTES ON ALL DRAWINGS.
2. Open up the aircraft.
 - a. Remove the upper fairing.
 - b. Open engine cowling.
 - c. Remove both forward seat panel and the panel under the collective stick.
 - d. Remove the forward console side panels if a defroster is to be installed.
3. Mount the main heater valve assembly in the pilot's seat box panel as shown on pgs. 4 and 5 of Dwg 206H-205.
4. Drill tubing penetration holes.
 - a. LH corner of firewall as shown on the plumbing installation drawing.
 - b. Center console bulkheads. See Ejector installation drawing.
5. Drill Ejector Adapter mounting holes in aft panel of front seat box as shown by the Ejector installation drawing.
6. Mount heater ejectors per Dwg. 206H-934/-936.

Installation Instructions – Basic Heater System (cont'd)

7. Install restrictors and stainless steel hoses on the engine compressor as shown by the plumbing installation drawing.
8. Install the tubes and hardware in the engine compartment as shown by the plumbing installation drawing.
9. Install the tubes on the cabin top as shown on the plumbing drawing. Form tube A/R to achieve proper fit and clamp per applicable dwg rqmts and AC43.13.1A.
10. Install the tube in the broom closet as shown by the plumbing installation drawing. Insert tube from inside the cabin.
11. Install S-9701EC-9 Placard, if applicable (see note 3, dwg 206H-205).
12. Review and check off all dwg notes and dwg rqmts.
13. Leak test system in accordance with plumbing installation drawing instructions. Apply Torque Seal to all fittings.
14. Test run engine and check heater for operation.

Installation Instructions – Defroster System

1. Review Defroster Installation drawing.
2. Install Defroster Valve and connect hose as shown by the installation drawing.
3. Install Defroster Ejectors as shown by the installation drawing.
4. Install and connect plumbing to Valve Assembly and Ejectors.
5. Review all notes on sheet 1, dwg 206H-996. Check all fittings and fasteners for security.

Weight and Balance Data

Correct the aircraft licensed empty weight and center of gravity data as indicated below:

	Wt. lb.	X (in)	Wx (In-lbs.)
<u>Basic 206H-205-1 Heater System</u>	14.57	93.3	1359
Additional amount if 206H-982-1 Defroster System Installed	2.30	50.9	117
<u>Basic 206H-205-2 Heater System</u>	17.10	87.6	1498
Additional amount if 206H-982-1 Defroster System Installed	2.30	50.9	117
Adjust weight if Defroster Blower are removed			
	Wt. lb.	X (in)	Wx (In-lbs.)
Delete Defroster Blowers	-1.60	18.6	-30

FLIGHT MANUAL SUPPLEMENT

OH-58

MODEL OH-58
FLIGHT MANUAL

CABIN HEATER SYSTEM

Log of Revisions			
Original	0		
Rev. No.	Log of Pgs.	Pgs. Rev.	Date
0	1-7		

FAA APPROVED: _____ Date: _____

Approved: _____

BELL HELICOPTER
MODEL OH-58*
Allison 250-C10D and 250-C20C Engines

FLIGHT MANUAL SUPPLEMENT
for
CABIN HEATING SYSTEM

OH58-200

The information in this document supplements or supercedes the basic manual only in the items contained herein. For Limitations, Procedures, and Performance Data not contained in this supplement, consult the basic Flight Manual.

MODEL OH-58
FLIGHT MANUAL

CABIN HEATER SYSTEM

INTRODUCTION

The cabin heating system is a bleed air type which consists of bleed air plumbing, a bleed air valve, and four heater ejectors.

The Bleed air flows from the engine compressor through the bleed lines to the ejectors, where it is mixed with cabin air and exhausted to both the front and rear passengers. The ejectors are located under the front seats. The warm air is ducted forward and aft through swivel outlets, which are located in the seat box structure. The outlet flow can be individually adjusted by rotation of the swivel outlet (optional - two fwd outlets).

The heater control valve is mounted under the pilot's seat, and the heater control is located on the front of the seat box. The system features an optional defroster system. The system consists of an ON-OFF valve, located in the center console, and ejectors, located in each defroster eyebrow. The ejectors pump warm air across the windshield. The original defroster blowers are not required but may remain installed at the option of the operator. The defroster and heater may be used simultaneously. A drain valve is also incorporated as a part of the heater system. This valve is used to drain cleaning solution overboard when washing the internal parts of the engine.

MODEL OH-58
FLIGHT MANUAL

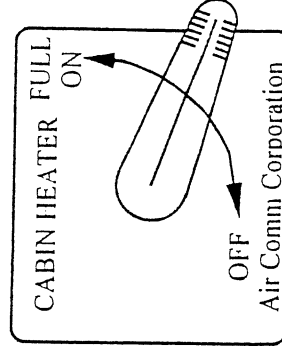
CABIN HEATER SYSTEM

The valve, which is located inside the LH engine access door, is automatic (closed by engine pressure). Both the "heater" and "defroster" valves are infinitely adjustable from OFF to FULL ON, and may be set at the discretion of the operator.

SECTION 1

OPERATING LIMITATIONS

PLACARDS
AND
MARKINGS



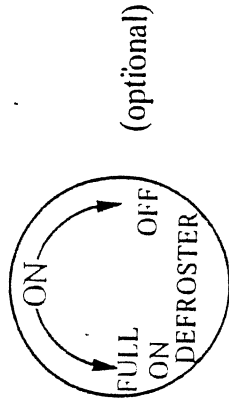
Located on front side of RH seat support box.

MODEL OH-58
FLIGHT MANUAL

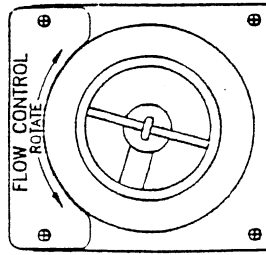
CABIN HEATER SYSTEM

SECTION 1 (cont'd) OPERATING LIMITATIONS

PLACARDS
AND
MARKINGS



Located on the Defroster Control Knob



Located adjacent to the two forward air outlets.
(optional flow control feature)

TYPE OF OPERATION

Flight with heater operating is prohibited during take-off, hover and landing.

MODEL OH-58
FLIGHT MANUAL

CABIN HEATER SYSTEM

SECTION 2 NORMAL PROCEDURES

ENGINE PRESTART CHECK

Heater Control - OFF

BEFORE TAKEOFF

Heater and Defroster Control - OFF

IN FLIGHT OPERATIONS

Note: TOT increases with bleed air heater operations.
Observe turbine outlet temperature limitation. Heater Control - as desired.

DESCENT AND LANDING

Heater and Defroster Control - OFF

WARNING

Flight with heater and defroster operating is prohibited during take-off, hover and landing.

SECTION 3

EMERGENCY PROCEDURES

Operate Cabin Heater and Defroster Control to - OFF,
for any of the following emergencies:

- Engine Failure
- Engine Over-temperature
- Fuel Control and/or Governor Failure
- Insufficient Power

SECTION 4

MALFUNCTION PROCEDURES

No change.

SUPPLEMENT

**MODEL OH-58
FLIGHT MANUAL**

CABIN HEATER SYSTEM

SECTION 5 PERFORMANCE PROCEDURES

No change in performance with heater OFF.

Basic Flight Manual performance cannot be achieved with heater and/or defroster ON.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

AIR COMM CORPORATION
Boulder, CO 80301

INSTRUCTIONS FOR CONTINUED AIR WORTHINESS

for

BELL OH-58 CABIN HEATER, 206H-205-1 & -2

March 31, 2004

INTRODUCTION

This document provides maintenance and service information for the ACC 206H-205-1 cabin heater installation in the Bell OH-58 aircraft.

REFERENCE DOCUMENTS

1. Basic Bell Service Instructions.
2. AC43.13.1A, Acceptable Practices, Aircraft Alternation and Repair.
3. ACC Drawings:
 - 206H -205; Heater Installation
 - 206H -530; Bleed Air Plumbing Installation (-1 System/Std)
 - 206H -532; Bleed Air Plumbing Installation (-2 System/Hi output)
 - 206H -934; Heater Ejector Installation
 - 206H -936; Heater Ejector Installation (optional fwd outlet flow control)
 - 206H -996; Windshield Defroster Installation (optional)

SYSTEM DESCRIPTION AND OPERATION

The cabin heating system is a bleed air type which consists of bleed air plumbing, a bleed air valve and four heater ejectors.

The bleed air flows from the engine compressor through the bleed lines to the ejectors, where it is mixed with cabin air and exhausted to both the front and rear passengers. The ejectors are located under the front seats. The warm air is ducted forward and aft through swivel outlets, which are located in the seat box structure.

The heater control valve is mounted under the pilot's seat and the heater control is located on the front of the seat box.

The system features an optional defroster system. The system consists of an ON-OFF valve, located in the center console and ejectors, located in each defroster eyebrow. The ejectors pump warm air across the windshield. The original defroster blowers are not required but may remain installed at the option of the operator. The defroster and heater may be used simultaneously.

System Description and Operation (cont'd)

A drain valve is also available as a part of the heater system. This valve is used to drain cleaning solution overboard when washing the internal parts of the engine. The valve, which is located inside the LH engine access door, incorporates a spring loaded ball valve. The valve is normally open when the engine is off. The valve closes due to engine pressure when the engine is operating. Both the "Heater" and "Defroster" valves are infinitely adjustable from OFF to FULL ON, and may be set at the discretion of the operator.

MAINTENANCE INSTRUCTIONS

Conduct the following inspection functions annually:

1. Inspect bleed air hose and tube assemblies for evidence of damage or deterioration. Replace if any of the above exists.
2. Inspect valve for mounting security.
3. Inspect valve for freedom of operation.
4. Inspect bleed plumbing for insulation and security.
5. Verify security of control knobs and placards.
6. Check the function of the automatic drain valve to insure that the valve is closed when the engine is operating. The valve should be checked with the heater "FULL ON." Slight leakage is permitted.
7. Remove heater ejectors. Inspect nozzles for evidence of deterioration. Check "flow control" valve for "freedom of operation."
8. Verify that all placards are located where required (see Flight Manual Supplement).

Maintenance Instructions (cont'd)

Spares List (206H-205-1)

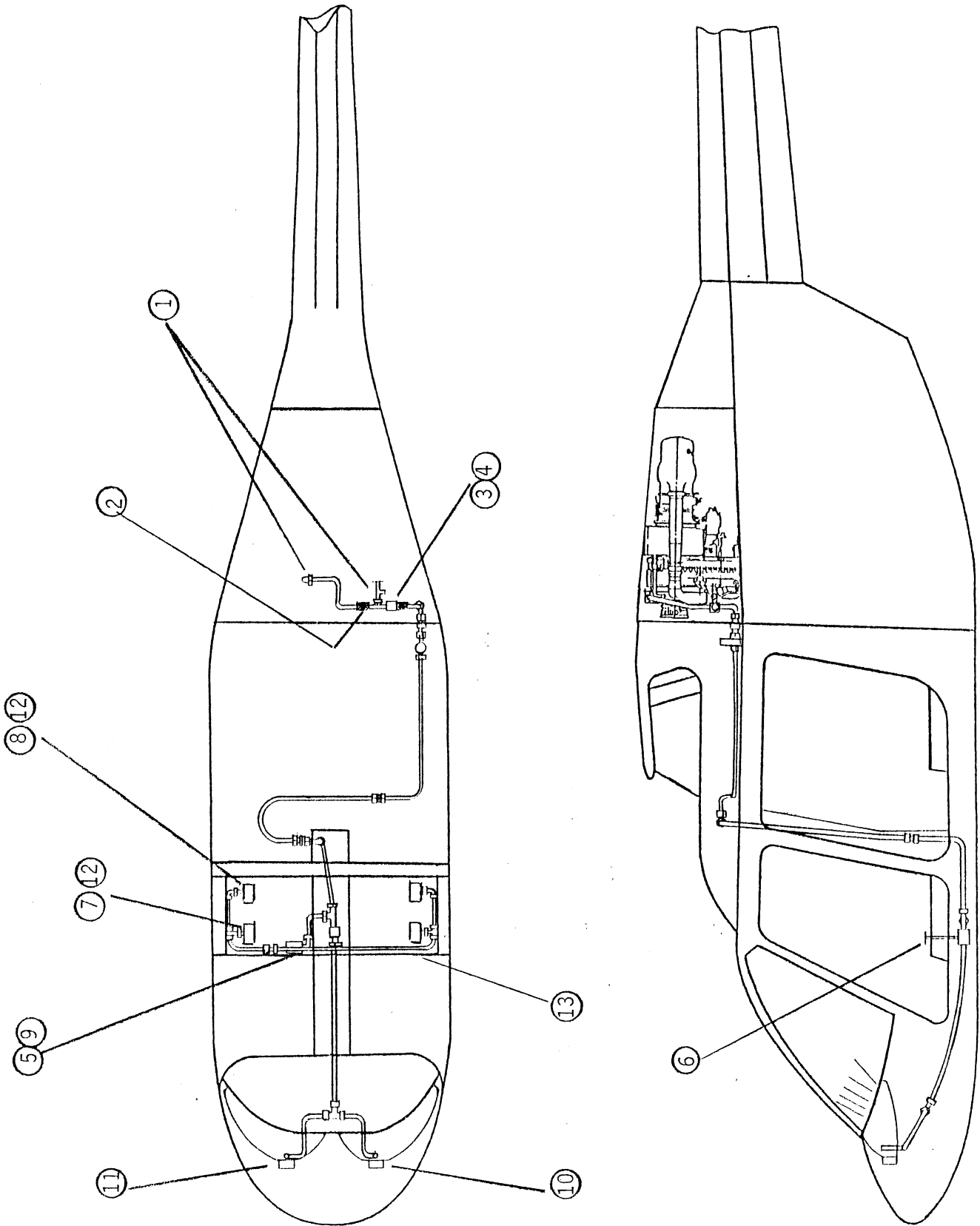
Item No.	Description	P/N	Qty/System
1	Restrictor	S-9216EC-1	2
2	Hose Assy – SS	S-9213EC-2	1
3	Y-Fitting	S-9266EC-30	1
4	Valve Assy – Drain	S-9230EC-1	1
5	Valve Assy – Heater	S-9209EC-1	1
6	Valve Assy – Opt Defroster	S-9209EC-3	1
7	* Ejector Assy – Heater (Fwd)	S-6424EC-1	2
8	Ejector Assy – Heater (Aft)	S-6424EC-4	2
9	Placard – Heater	S-9701EC-21	1
10	Ejector Assy – Defroster (LH)	S-9224EC-3	1
11	Ejector Assy – Defroster (RH)	S-9224EC-4	1
12	Ejector Adapter	S-9704EC-1	4
13	Label – Heater Outlet (Opt)	S-9722EC-1	2

Spares List (206H-205-2)

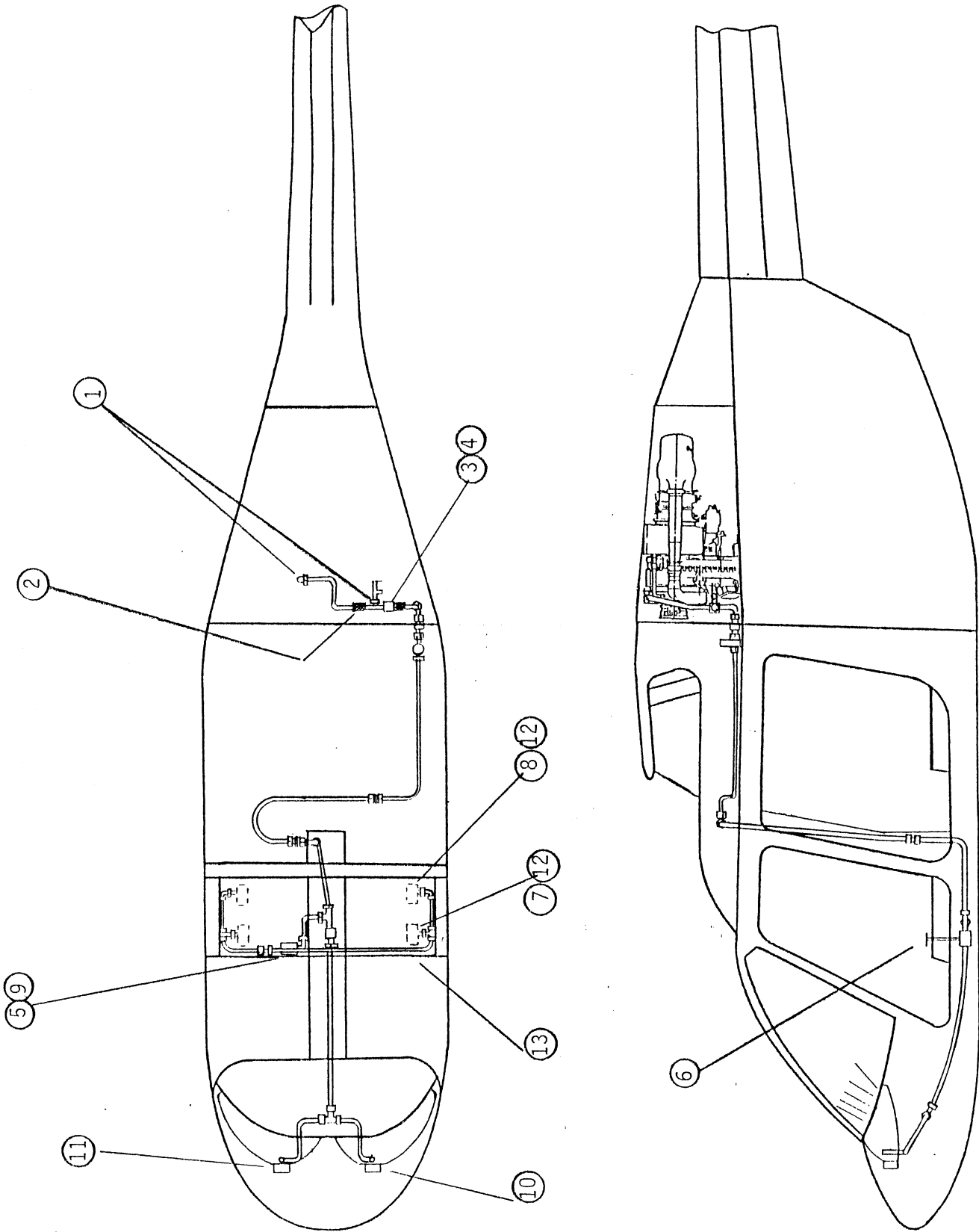
Item No.	Description	P/N	Qty/System
1	Restrictor	S-9216EC-1	2
2	Hose Assy – SS	S-9213EC-2	1
3	Y-Fitting	S-9266EC-30	1
4	Valve Assy – Drain	S-9230EC-1	1
5	Valve Assy – Heater	S-9264EC-2	1
6	Valve Assy – Opt Defroster	S-9209EC-3	1
7	Ejector Assy – Heater (Fwd)	S-6450EC-1	1
8	Ejector Assy – Heater (Aft)	S-6450EC-2	1
9	Ejector Assy – Heater (Fwd)	S-6450EC-7	1
10	Ejector Assy – Heater (Aft)	S-6450EC-8	1
11	Placard – Heater	S-9701EC-24	1
12	Ejector Assy – Defroster (LH)	S-9224EC-3	1
13	Ejector Assy – Defroster (RH)	S-9224EC-4	1
14	Ejector Adapter	S-9704EC-1	4
15	Label – Heater Outlet (Opt)	S-9722EC-1	2

See ACC drawing 206H-205 and 206H-530 /-532 for installation details.

Optional Flow Control Ejectors (Fwd): S-6450EC-1

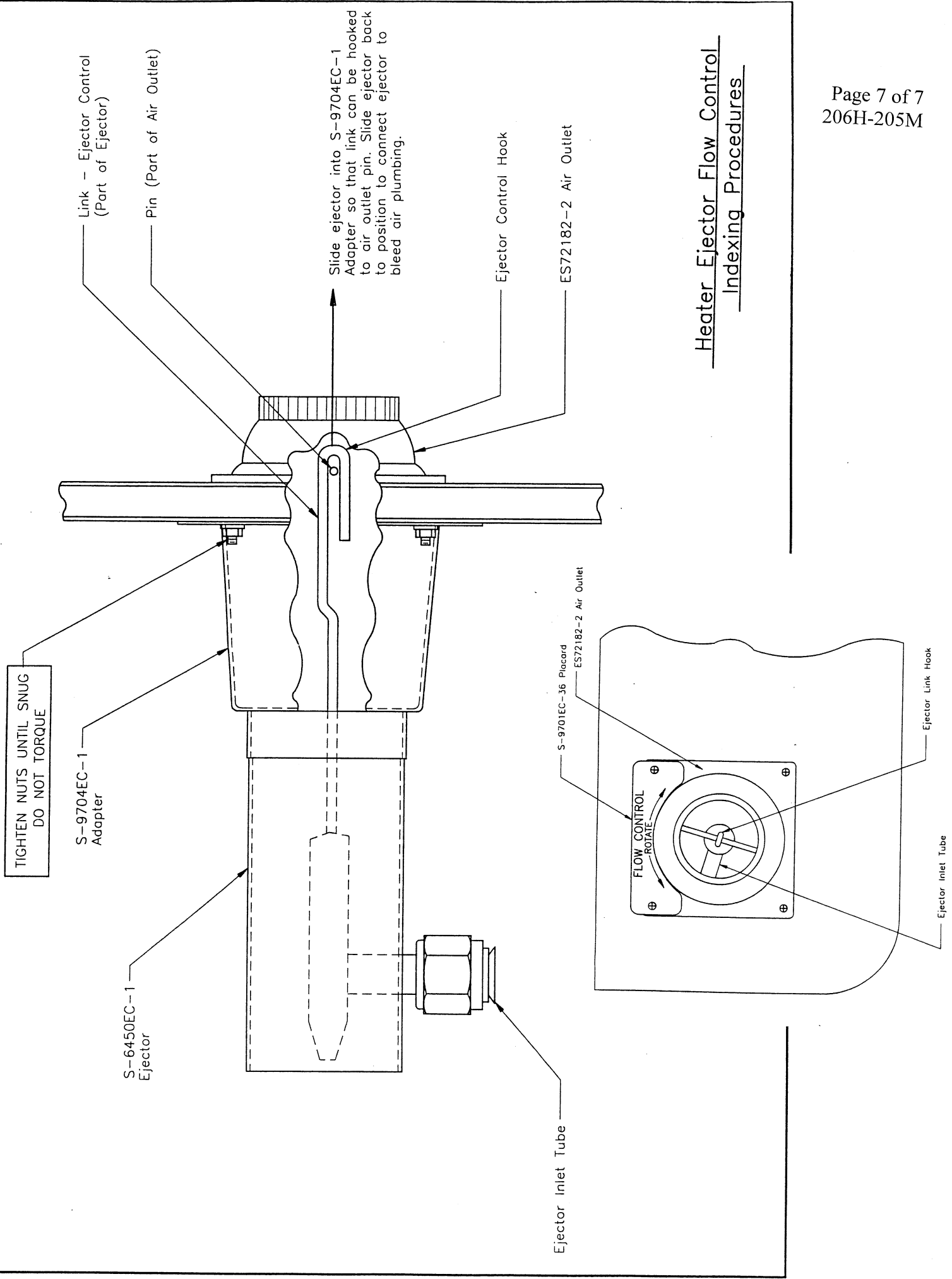


206H-205-1 Cabin Heater System



206H-205-2 Cabin Heater System

Heater Ejector Flow Control
Indexing Procedures



WARRANTY

AIR COMM CORPORATION **Cabin Heating & Air Conditioning Systems**

Warranty Terms

Air Comm Corporation (hereafter referred to by ACC) warrants that products manufactured by ACC shall be free of defects in materials and workmanship for a period of one year from the date of installation and / or 1000 hours of flying time, which ever occurs first.

Limitations and Exclusions

Installation, maintenance and operation of the product must be in accordance with the specifications and instructions provided by ACC. The warranty registration must be returned to ACC within ten days of the date of installation.

This warranty shall not apply to any product repaired or altered by parties other than ACC unless express prior authorization is granted; nor shall this warranty apply to any product subjected to misuse or accident unless proof is submitted to the satisfaction of ACC that such misuse or accident was not a cause for the claimed defect.

The sole responsibility and liability of ACC and your exclusive remedy under any claim arising out of, connected with, or resulting from, this sale or the performance of breach of any condition of warranty thereunder, or from the manufacture, delivery, or use of the product shall be the repair or replacement of defective parts. Labor costs shall not be covered under any circumstances.

In no event, whether as a result of a breach of contract, warranty, tort (including negligence) or otherwise, shall ACC be liable for any special, consequential, incidental or penal damages or expenses including but not limited to loss of profit, goodwill, or revenues, loss of use of the equipment or any associated equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities or services, down time, or cost or claims of third parties for such damages or expenses.

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

Acceptance of the product by you shall constitute your acknowledgment and acceptance of the terms, provisions, limitations and exclusions set forth herein. Such terms, provisions, limitations and exclusions shall not be modified, deleted or supplemented except by an express written acknowledgment of ACC.

WARRANTEE PERFORMANCE: All claims under this warranty shall be made to ACC. All returned parts must be shipped prepaid for evaluation. Full details of the symptoms of the malfunction should be included to assist in the evaluation. Warranty credit or replacement will be extended only after ACC has determined that all conditions of this warranty have been met.

Air Comm Corporation
3300 Airport Road
Boulder, CO. 80301
Phone 303-440-4075
Fax 303-440-6355

Air Comm Corporation Malfunction Report

Submitted To:

Air Comm Corporation
3300 Airport Road
Boulder, CO. 80301
Attn: Service Manager
Phone No. 303-440-4075
Fax No. 303-440-6355

Date Reported or Claim Filled _____/_____/_____
Date Discrepancy Occurred _____/_____/_____

Submitted By: (Company Name, Address, Phone No.)

Submitted For: (Company Name, Address, Phone No.)

Phone Number _____

Phone Number _____

Fax Number _____

Fax Number _____

Person to contact _____

Person to contact _____

All warranty parts claims must be accompanied by the following information, failure to do so may delay the ability of ACC to determine the validity of the claim.

Aircraft Data: (Please complete all sections)

Model No.	Registration No.	Serial No.	Delivery Date	Total Hrs. at Delivery	Hrs. at Occurrence

Part Data: (Please complete all sections)

Quantity	Part Number	Part Name	Serial No. (if available)	Hrs. at Occurrence

Is this original equipment Yes No (if no, please complete these two blocks ▶)	Date Installed	Total A/C Hrs. when installed

Describe (in detail) of how the part failed, or reason for its return, (Please give any information that may be helpful in the evaluation of this part). _____

Warranty: Approved	Disapproved
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WARRANTY REGISTRATION

AIRCRAFT MODEL #

S/N

INSTALLER'S NAME

AIRCRAFT REGISTRATION NUMBER

STREET

PRODUCT P/N

CITY

ST

ZIP

DESCRIPTION

OWNER'S NAME

DELIVERY DATE

STREET

INSTALLATION DATE

CITY

ST

ZIP

TOTAL AIRCRAFT TIME

OWNER'S SIGNATURE

TITLE (IF APPLICABLE)

DATE