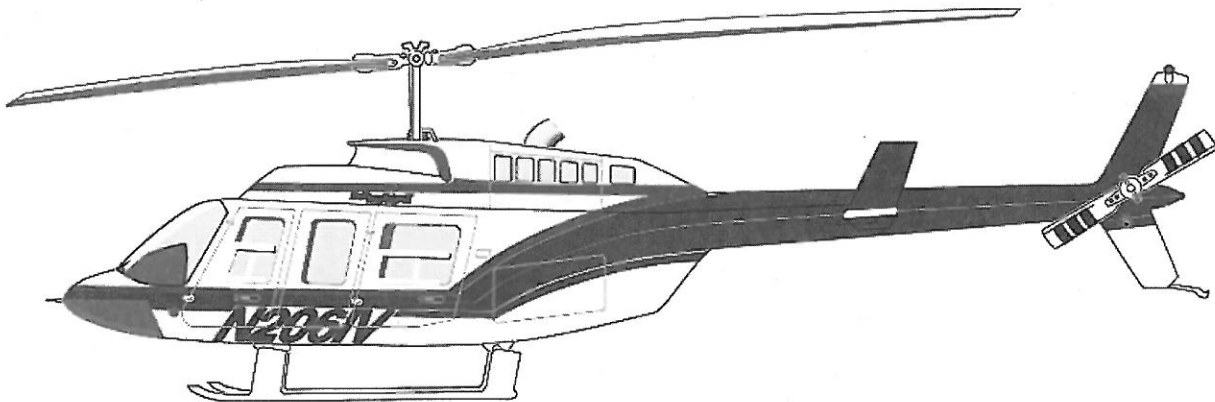


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**INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
 BELL HELICOPTER 206L3 & L4
 CABIN HEATER SYSTEM**



**THIS HANDBOOK INCLUDES THE MAINTENANCE INFORMATION
 REQUIRED TO BE AVAILABLE BY FAR PART 27**

NOTE

206L3 Service Instructions are applicable for 206L1 rotorcraft that have been modified IAW BHT-206-SI-2050.

NOTE

206L4 service Instructions are applicable to 206L1 rotorcraft that have been modified IAW BHT-206-SI-2050 engine upgrade and BHT-206-SI-2052 increased gross weight Mod and 206L3 rotorcraft that have been modified IAW BHT-206-SI-2052 increased gross weight Mod.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS – 206H-203M-1

REVISIONS

Rev	Description	Date
A	Incorporated optional adjustable heater outlet flow.	11/18/92
B	Re-formatted entire document to meet 8110.54. Added Note to bottom of cover and under applicability pg 0-1.	03/15/11

LIST OF EFFECTIVE PAGES

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List of effective Pages	ii	B
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**Chapter 0
INTRODUCTION**

1. SCOPE

The scope of this manual encompasses the scheduled and unscheduled maintenance procedures for the continued airworthiness of the Air Comm Corporation cabin heater system installed in the Bell 206L3 and 206L4 series helicopter.

2. PURPOSE

The purpose of this manual is to provide the aircraft mechanic in the field with the necessary information to maintain the cabin heater system.

3. ARRANGEMENT

This manual is arranged by chapters which are broken down into paragraphs and subparagraphs. All of the chapters and paragraphs are listed in the front of this manual in the Table of Contents, and are further identified by their individual page number.

4. APPLICABILITY

This manual is applicable to Bell Helicopter 206L3 and 206L4 models that are equipped with the Air Comm Corporation kit number 206H-202 cabin heater system.

NOTE

206L3 Service Instructions are applicable for 206L1 rotorcraft that have been modified IAW BHT-206-SI-2050.

NOTE

206L4 Service Instructions are applicable to 206L1 rotorcraft that have been modified IAW BHT-206-SI-2050 engine upgrade and BHT-206-SI-2052 increased gross weight Mod in addition to 206L3 rotorcraft that have been modified IAW BHT-206-SI-2052 increased gross weight Mod.

5. DEFINITIONS

The following terms are provided to give a ready reference to the meaning of some of the words contained within this manual. These definitions may differ from those given by a standard dictionary.

Ambient air temperature: The temperature of the air surrounding a person or object.

Cold: The absence of heat.

Glazing: A shiny coating caused by excessive heat.

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Chapter 0
INTRODUCTION (continued)

Inches of mercury: A measurement of pressure, normally used for pressures below atmospheric, one inch of mercury is equal to approximately one half pound per square inch.

Pressure, ambient: The pressure of the air surrounding a body, normally measured in Pounds Per Square inch gauge, or PSIG.

Relative humidity: The ratio of the amount of water vapor in the air to the amount of water vapor required to saturate the air at the existing temperature.

6. ABBREVIATIONS

InHg:	Inches of Mercury
Lbs:	Pounds
oz:	Ounces
Psig:	Pounds Per Square Inch (gauge)
gr:	Grams
kg:	Kilograms
Kgcm:	Kilograms Per Centimeter
ml:	Milliliters
mm:	Millimeters
Nm:	Newton-meters

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Chapter 0
INTRODUCTION (continued)

7. PRECAUTIONS

The following precautions are found throughout this manual, and will vary depending on the seriousness of the Hazard or Condition:

WARNING: May be a maintenance procedure, practice, condition, etc., which could result in personal injury or loss of life.

CAUTION: May be a maintenance procedure, practice, condition, etc., which could result in damage or destruction of equipment.

NOTE: May be a maintenance procedure, practice, condition, etc., or a statement which needs to be highlighted.

8. UNITS OF MEASUREMENT

All measurements contained within this manual are given in the United States standard measurement.

9. INFORMATION ESSENTIAL TO THE CONTINUED AIRWORTHINESS OF THE CABIN HEATER SYSTEM.

This manual provides information which is required for operation and maintenance of the Air Comm air cabin heater system installed in the Bell model 206L series helicopter. After completion of the cabin heater installation this document must be placed with the appropriate existing aircraft documents.

10. REFERENCE DOCUMENTS

The approval basis of the system covered by this ICA is Supplemental Type Certificate **SH3887NM**

11. DISTRIBUTION

This document is to be placed with the aircraft maintenance records at the time of system installation.

Changes will be made to this document in response to "Safety of Flight", and or "Non-safety of Flight" issues. Any changes will result in a revision to this document. Revisions shall be noted in the Record of Revisions (page i), and on the List of Revisions (page ii) of this manual.

In addition to the revision of the manual, those changes categorized as "Safety of Flight" shall have a Service Bulletin issued to the operator providing the necessary information to comply with, and or to correct, the "Safety of Flight" issue.

Replacement, and or revised copies of this manual maybe purchased by contacting:

Air Comm Corporation Service Department
3330 Airport Road
Boulder, CO.80301
Phone No. 303-440-4075 Fax No. 303-440-6355
INFO@aircommcorp.com

Chapter 0
INTRODUCTION (continued)

12. CHANGES TO INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Changes made to a line or paragraph of this document will be indicated by a vertical bar in the right hand margin, while a complete page change will be indicated by a vertical bar next to the page number.

(Example: Any change will appear with a vertical bar next to that change). 

13. 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. Both the "Heater" and "Defroster" valves are infinitely adjustable from OFF to FULL ON, and may be set at the discretion of the operator.

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.

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Chapter 1
AIRWORTHINESS LIMITATION SECTION

The Airworthiness Limitations section is FAA approved and specifies maintenance required under paragraph 43.16 and 91.403 of the Federal Aviation Regulations unless an alternate program has been FAA approved.

1. Airworthiness Limitations

No airworthiness limitations associated with this design change

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**Chapter 2
INSPECTIONS**

No.	Frequency	Inspection
1	Annually	Inspect bleed air hose and tube assemblies for evidence of damage or deterioration. Replace if any of the above exists.
2	Annually	Inspect valves for mounting security.
3	Annually	Inspect heater valve for freedom of operation.
4	Annually	Inspect defog valve for freedom of operation.
5	Annually	Inspect bleed air plumbing for insulation and security.
6	Annually	Verify security of control knobs and placards.
7	Annually	Inspect the automatic drain valve in the engine compartment. This valve should be removed, disassembled and cleaned and checked for damage to the O-ring.
8	Annually	Remove heater ejectors. Inspect nozzles for evidence of deterioration. Check “flow control” valve for “freedom of operation.”
9	Annually	Verify that all placards are located where required (see Flight Manual Supplement).

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Chapter 3
LOCATION AND ACCESS

Nomenclature	Description of Location	Item
Cabin Heater General Arrangement	System overview	A
Bleed Air Plumbing	Cabin roof	B
Plumbing – Control Valve to Heat Ejectors	Under floor and center console	C
Plumbing – Defroster	Center console to instrument panel bulkhead	D
Forward Crew Ejectors	Forward Seat Box Compartments	E
Aft Cabin Ejector Installation	Between Aft Facing Seat Boxes	F
Windshield Defog System	In front of instrument panel and below floor	G
Defog System Control Valve	Between Forward Seat Boxes	H
Heater Control Valve	Forward Seat Box Compartments	J

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Chapter 3
LOCATION AND ACCESS

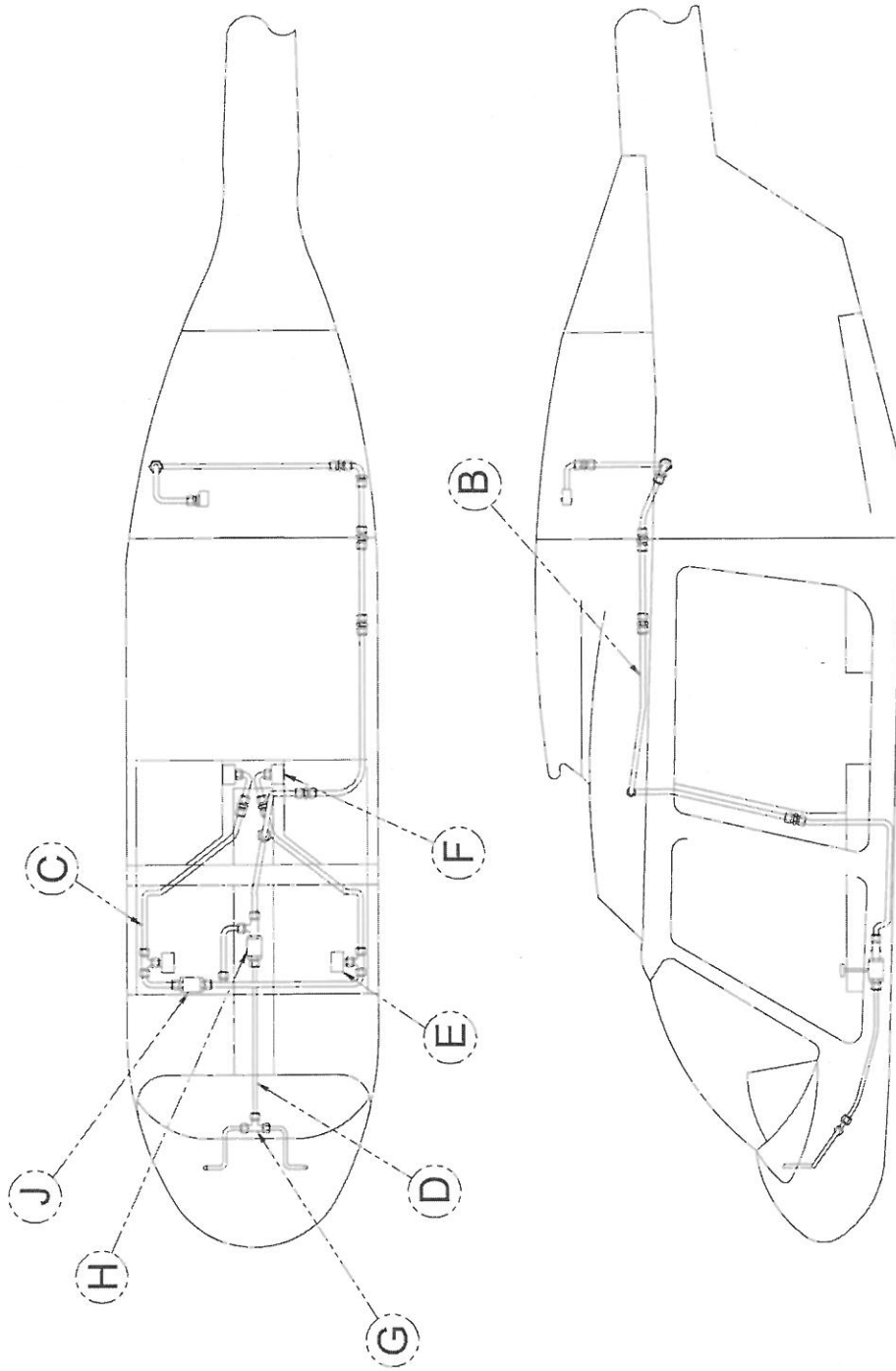
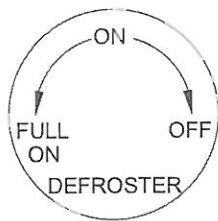
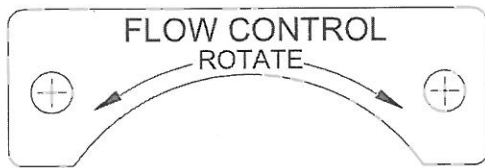


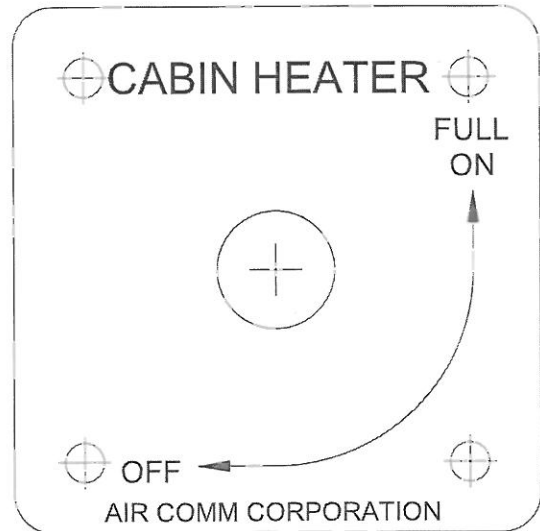
Figure 3-1
General Arrangement (A)

Chapter 4
PLACARDS AND MARKINGS

Above Heater Outlets
(Optional Flow Control)



End of
Defog knob



Front Side of
RH Seat Box

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Chapter 5
SERVICING

No Servicing is required for the Cabin Heater System.

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Chapter 6
STANDARD PRACTICES

1. B-NUT / FITTING SAFETY WIRE PROCEDURE

- A. Use MS20995C-32 per QQ-W-423B Cond A Safety wire (or Equivalent) to secure all B-nut / Fittings in the heater bleed air system.
 - a. Cut safety wire with excess length.
 - b. Thread through safety wire hole in B-nut (or fitting).
 - c. Pull ends even. Twist safety wire to ensure a tight fit against the safety wire hole on the B-nut (or fitting).
 - d. Twist wire to achieve 8 to 12 twist per inch (2.5 cm).
 - e. Thread through safety wire hole in the next B-nut (or fitting). Ensure safety wire routing prevents loosening of B-nuts.
 - f. Twist wire again to achieve 8 to 12 twists per inch (2.5 cm). Cut to form a “pigtail” with a minimum of 4 twists.

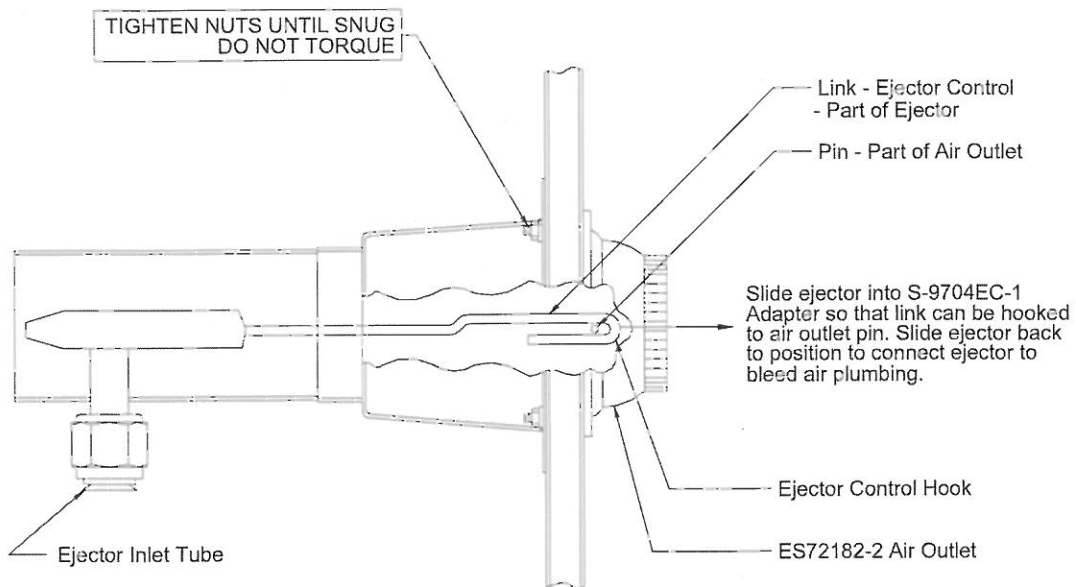


Figure 6-1 Heater Ejector Install
(Flow Control option)

Chapter 6

STANDARD PRACTICES (Continued)

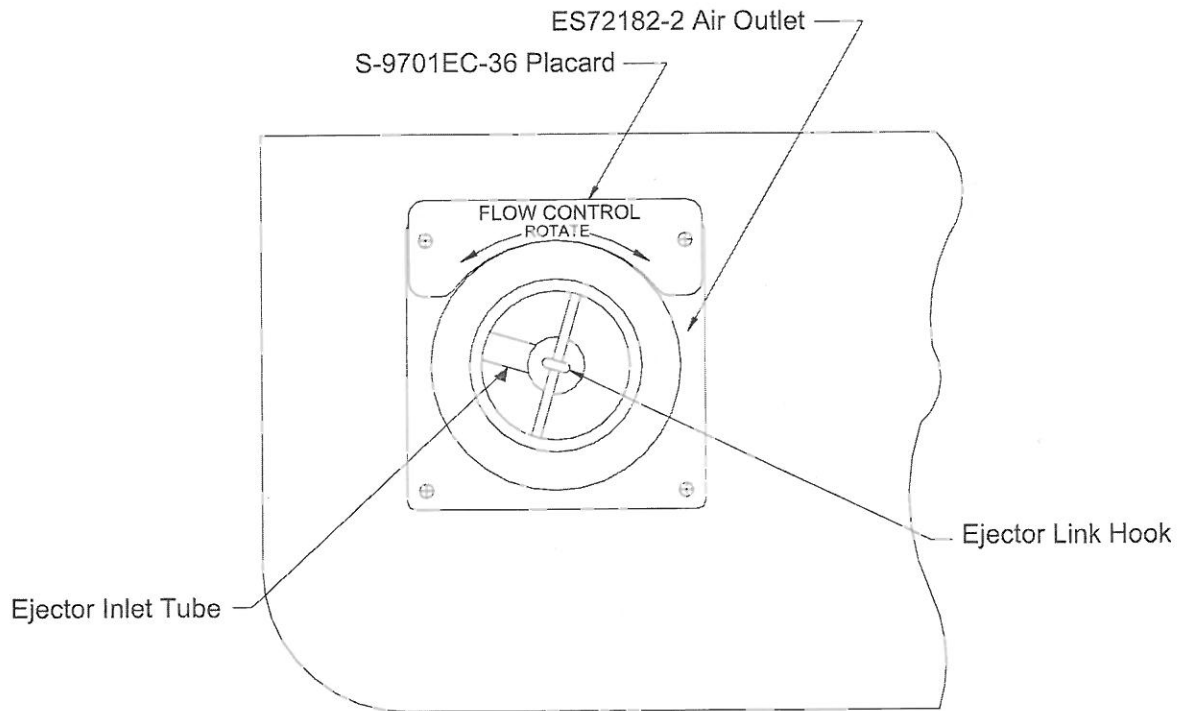


Figure 6-2 Heater Ejector Looking Aft
(Flow Control option)

2. REMOVAL, INSTALLATION / REPLACEMENT OF COCKPIT HEATER EJECTOR ASSEMBLY

(See figure 6-1 & 6-2).

REMOVAL

- A. Disconnect the Ejector B-Nut from the inlet tube.
- B. Remove the AN526-6R6 screw from the side of the ejector body
- C. Slide the Ejector away from the outlet assembly to remove it from the aircraft.

INSTALLATION / REPLACEMENT

- A. Install the Ejector Assembly in the reverse order of its removal.
- B. To ensure proper torque, align connection and thread B-Nut until metal on metal contact is felt. Continue to tighten an additional 60 degrees of rotation and safety wire per step 1.

Chapter 6
STANDARD PRACTICES (Continued)

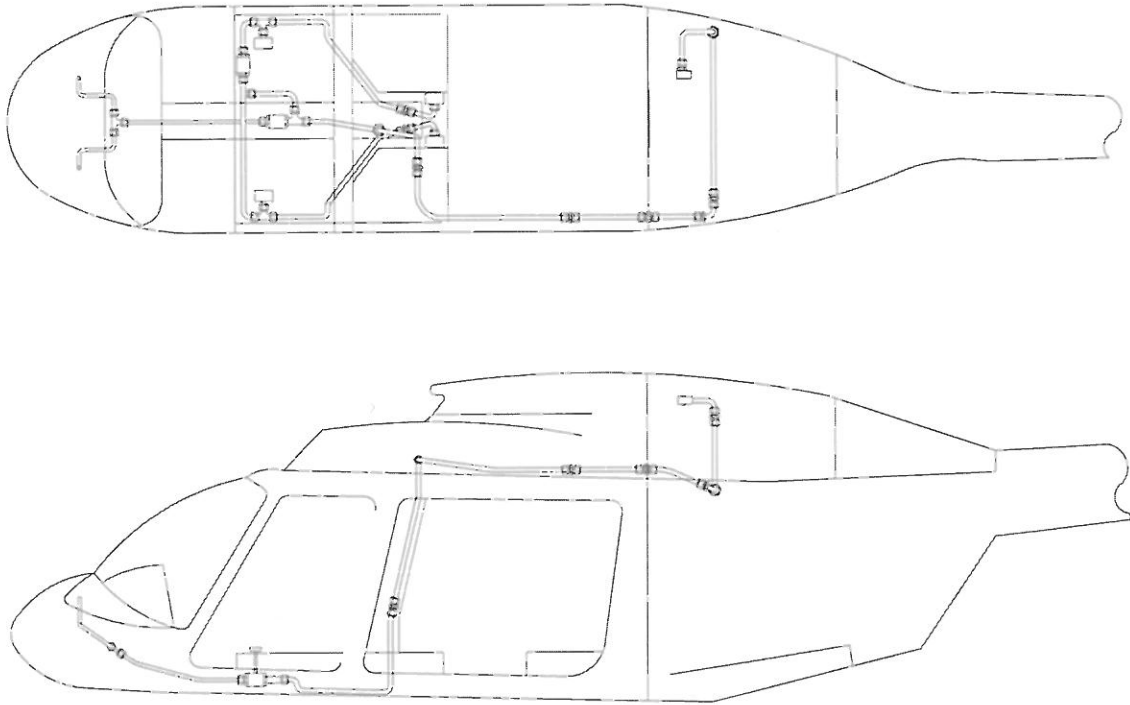


Figure 6-3
Plumbing General
Layout

3. REMOVAL INSTALLATION / REPLACEMENT OF THE HEATER SHUTOFF VALVE (see figure 3.1).

REMOVAL

- A. Remove the Main Rotor Transmission Cowling.
- B. Disconnect the bleed air plumbing from the Shutoff Valve.
- C. Disconnect the electrical connection to the valve.
- D. Remove the two MS27039C-1-15 mounting screws and remove the Valve from the aircraft.

Chapter 6

STANDARD PRACTICES (Continued)

INSTALLATION/REPLACEMENT

- A. Install the Valve in the reverse order of its removal.
- B. To ensure proper torque, align connection and thread until metal on metal contact is felt. Continue to tighten an additional 60 degrees of rotation and safety wire per step 1.

4. REMOVAL INSTALLATION / REPLACEMENT OF THE HEATER/ DEFROSTER CONTROL VALVE.

REMOVAL

- A. Remove the panel located under the Pilots and Co-pilots seats to gain access to the defroster control valve.
- B. Disconnect the bleed air plumbing from Defroster Control Valve.
- C. Remove the Valve Control Knobs.
- D. Remove the two MS27039-0808 Screws, and remove the Valve from the aircraft.

INSTALLATION / REPLACEMENT

- A. Install the Valve in the reverse order of its removal.
- B. To ensure proper torque, align connection and thread B-Nut until metal on metal contact is felt. Continue to tighten an additional 60 degrees of rotation and safety wire per step 1.

5. REMOVAL AND INSTALLATION / REPLACEMENT OF THE BLEED AIR PLUMBING

REMOVAL

- A. Cut attaching safety wire from B-nuts at each end of the section of Bleed Air Plumbing to be removed.

NOTE

Always use a back-up wrench to hold the union, bulkhead fitting, or component that the Bleed Air Plumbing is being removed from.

- B. Loosen the B-Nut at each end of the Bleed Air Plumbing to be removed.
- C. Remove any clamps securing the Bleed Air Plumbing to the aircraft.
- D. Remove Bleed Air Plumbing from the aircraft.

INSTALLATION / REPLACEMENT

- A. Install Bleed Air Plumbing in the reverse order of its removal.

NOTE

Always use a back-up wrench to hold the union, bulkhead fitting, or component that the Bleed Air Plumbing is being installed.

Chapter 6

STANDARD PRACTICES (Continued)

- B. To ensure proper torque, align connection and thread B-Nut until metal on metal contact is felt. Continue to tighten an additional 60 degrees of rotation and safety wire per step 1.
- C. After completion of Bleed Air Plumbing installation, check all joints for audible signs of leakage during operational run up of system. Apply Torque Seal to all fittings.

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Chapter 7 TROUBLESHOOTING

1. SYSTEM TROUBLESHOOTING

Prior to troubleshooting a defective system, it is advisable to conduct a visual inspection for general condition, and obvious signs of damage or failure.

The following matrix lists the easiest checks, and the most likely problems.

Problem	Probable Cause	Solution
No Heat	Manual heater valve in the off position	Operate the heater valve to the ON position

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INSTRUCTIONS FOR CONTINUED AIRWORTHINESS – 206H-203M-1

Chapter 8
WEIGHT AND BALANCE

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

	WT (Lbs)	X (In)	Wx (IN-Lbs)
Basic 206H-202 Heater System	15.04	102.5	1541
Additional amount if 206H-982 Defroster System is installed	2.30	50.9	117

Add 0.75 Lbs @ sta. 155 if particle separator hose and restrictor are installed.

Adjust weight as follows if Defroster Blowers are removed.

	WT (Lbs)	X (In)	Wx (IN-Lbs)
Defroster Blowers Removed	-1.60	18.6	-30