

AIR COMM CORPORATION
3300 Airport Road
Boulder, CO 80301

Report No. 206HP-200M

Bell 206 Hydraulic Power Unit
Installation Instructions

This document includes:

Flight Manual Supplement
STC Certificate
Service Instructions

Revisions

<u>Rev</u>	<u>Date</u>	<u>Description</u>	<u>Appl</u>
K	02-13-90	Renumbered pages in Service Manual section. Added Pg. 5 of 5.	NS
L	03-22-90	Added mandatory inspection / hardware replacement to Service Manual section.	NS
M	01-28-93	Completely revised to reflect Revision J, ACC drawing 206HP-100.	NS
N	5-12-97	Revised document to add OH-58 applicability.	NS

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Installation Instructions

1. Review all installation drawing.
READ NOTES ON PAGE 1 OF ALL DRAWINGS.
2. Review all sections of this document.
3. Remove the engine and forward cowling.
4. Remove main rotor shaft wind rotor brake housing.
MODIFY ROTOR BRAKE HOUSINGS AS REQUIRED BY NOTE 4,
AND SHOWN BY PAGE 3 OF DRAWING 206HP-302.
5. Remove existing aircraft hydraulic system drain line at station 155.
6. Using template included as a part of the pump installation drawing to complete cutout in firewall.
7. Locate and install pump in accordance with the pump installation drawing.

Installation Instructions (cont'd.)

8. Locate and install reservoir and manifold in accordance with drawing 206HP-404.
9. Install plumbing in accordance with drawing 206HP-524.
10. Install external hard lines (optional) in accordance with drawing 206HP-530.
11. Review and complete all requirements of drawing 206HP-100.

	Item	Wt. (lbs)	H-Arm (ins)	H-Mom (in-lbs)	L-Arm (in)	L-Mom (in-lbs)
③	206HP-100-8 Hyd. System plus 206HP-530-1 External Lines.	35.10	112.2	3940	5.6	197
③	206HP-100-9 Hyd. System plus 206HP-530-1 External Lines plus Flow Control Manifold.	42.10	107.1	4507	5.6	236
④	206HP-100-10 Hyd. System plus 206HP-530-1 External Lines.	36.39	112.2	4106	5.7	208
④	206HP-100-11 Hyd. System plus 206HP-530-1 External Lines plus Flow Control Manifold.	43.39	108.7	4716	5.6	243

The following “weight” and “moment” adjustments must be added to the existing aircraft licensed empty weight. This data does not include the hydraulic fluid, hydraulic motor, and corresponding auxiliary equipment (if installed).

NOTES:

1. RH arm is +.
2. Hydraulic fluid; 7 Qt.: 13 lbs. @ sta 106.7

wx = 1387 in-lbs.
- ③ Aircraft equipped with the standard main rotor drive shaft; Drawing 206HP-302.
- ④ Aircraft equipped with the Kaflex main rotor drive shaft.
5. Additional adjustments - if installed:

Quick disconnect Wt. = 6.5;

wx = 533 and wy = 52 Ftgs

SERVICE MANUAL SUPPLEMENT
(Remove and retain with aircraft documents).

AIR COMM CORPORATION
Boulder Municipal Airport
3300 Airport Road
Boulder, CO 80301

MAINTENANCE PROCEDURES AND INSTRUCTIONS
FOR CONTINUED AIRWORTHINESS

For

The Bell 206 Auxiliary Power
Unit, P/N 206HP-100

Notice

See page 5 for mandatory inspection
and hardware replacement interval.

FAA Approved Data

Hydraulic Power System Description & Operation

The Air Comm auxiliary hydraulic power unit was developed to serve as a source of hydraulic power for approved utility accessories. Typical applications include liquid spray systems, granular dispenser equipment, aerial torches, fire fighting buckets, hoists, and others.

The basic components of the system include a hydraulic pump, flow manifold with pressure relief valve, and reservoir. The location of these components is shown in the following diagram.

The pump is belt driven by means of a pulley sheave, which is mounted to the transmission drive shaft.

The pump is engaged by means of an electro-magnetic clutch which is activated by an ON-OFF switch. The hydraulic motor is controlled by a flow manifold. The manifold provides a means to by-pass the motor (turn it off), or to vary the motor speed. The manifold is available in several configurations. One configuration requires preselection of motor speed while on the ground. An optional configuration provides for adjustment of motor speed during flight.

The auxiliary hydraulic power unit is FAA STC approved for installation and operation during "normal category" operation. Many of the complimentary accessories; such as the Simplex Spray Systems, are limited to "restricted category" operations.

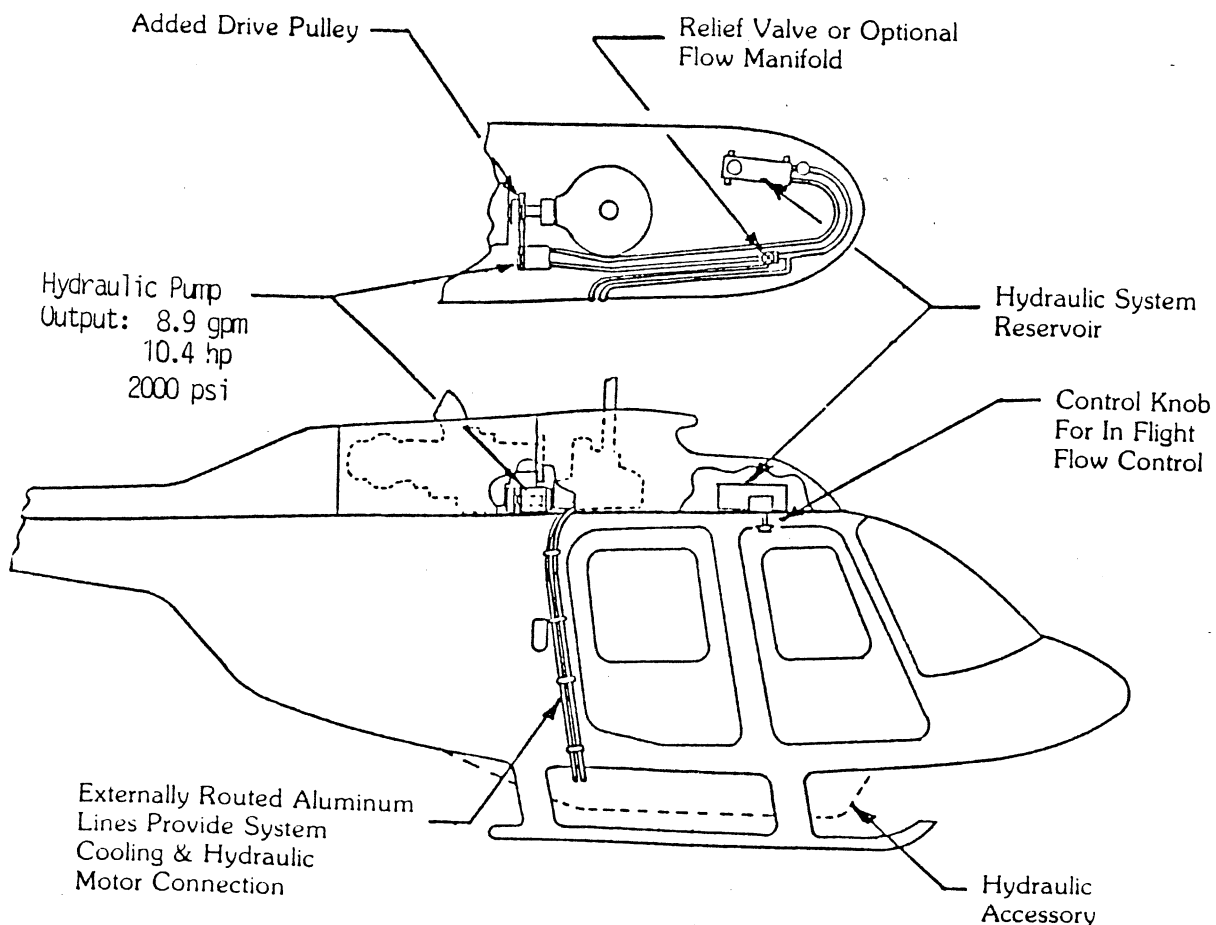


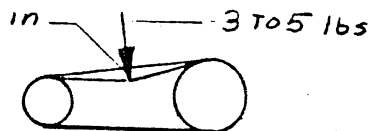
Figure 1. 206HP-100 Hydraulic Power Unit Installation.

Continued Airworthiness Instructions

In order to maintain the Hydraulic System in proper operating condition, the following periodic maintenance operations must be performed every 100 hours.

1. Check the belt for excessive wear, check belt tension, adjust if necessary. Low belt tension will cause the belt to slip and will result in premature belt failure. Excessive belt tension will produce excessive side loads on the drive-train. Note: After each installation of a new belt, or after the system installtion, re-adjust the belt tension after the system has operated for at least 15 minutes.

Adjust belt tension as follows:



2. Remove, clean, and inspect filter, if equipped.
3. Maximum permissible pressure relief valve setting.

<u>System</u>	<u>Valve Setting</u>
206HP-100	2000 psi

The valve setting shuld not be increased beyond the approved pressure setting.

4. Inspect installation for structural integrity.
5. Important - Lube transmission drive coupling as specified in Bell service documents. Lack of lubrication can result in excessive drive coupling wear and overheating.

Reference Documents

The follow ACC drawings are provided with each system and should be retained with this service manual.

Title	Drawing No.
General Arrangement - Bell 206 Hydraulic Power System.	206HP-100
Hydraulic Pump Installation (Std. MR drive-shaft).	206HP-302
Hydraulic Pump Installation (KAflex MR drive-shaft).	206HP-304
Hydraulic Reservoir/Manifold Installation (Ground adjustable).	206HP-402
Hydraulic Reservoir/Manifold Installation (In-flight adjustable).	206HP-404
Plumbing Installation.	206HP-524
External Hard Lines to Bottom of Fuselage.	206HP-530

Model Applicability

P/N	Description
206HP-100-8	Installation - Basic 206A/B Hyd Power Unit
206HP-100-9	Installation - 206A/B Hyd Power Unit; Flow Control Manifold
206HP-100-10 *	Installation - Basic Hyd Power Unit (Kaflex)
206HP-100-11 *	Installation - Hyd Power Unit; Flow Control Manifold (Kaflex)

* Applicable to the 206A, 206B and OH-58 equipped with the Kaflex main rotor drive shaft.

X INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Item	Every 100 hr. Operation	Every 1000 hr. Operation
Belt Wear & Tension	X ¹	
Placards		X
Compressor Mount for Structural Integrity	X	X
Replace Belt		X ¹
Drive Pulley Inspection and Bolt Replacement	See below	

Notes:

¹The belt tension on a newly installed belt should be reset after two hours of operation.

²It is acceptable to remove the compressor drive belt during the cold weather season. Care should be taken to insure that the compressor is securely supported by the belt tension link.

NOTICE

Compliance with drive pulley inspection and pulley mounting bolt replacement schedule, shown on page 6, is mandatory for the 206HP-302 Hydraulic Pump Installation.

Instructions for Continued Airworthiness (Cont'd)

Applicable to the 206HP-302 Pump Installation

Mandatory Inspection and Hardware Replacement Interval:

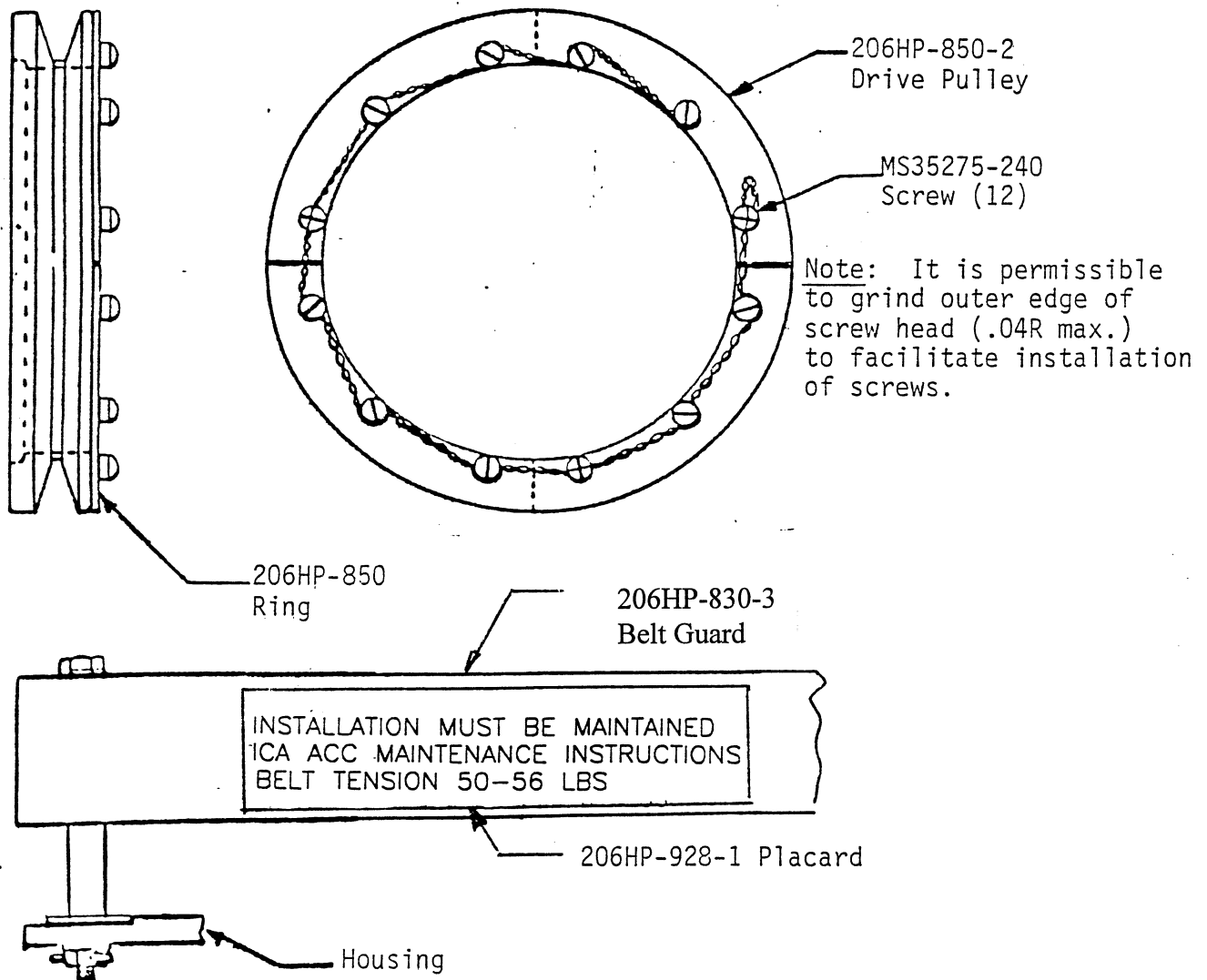
The following is required to insure security of the hydraulic pump drive pulley.

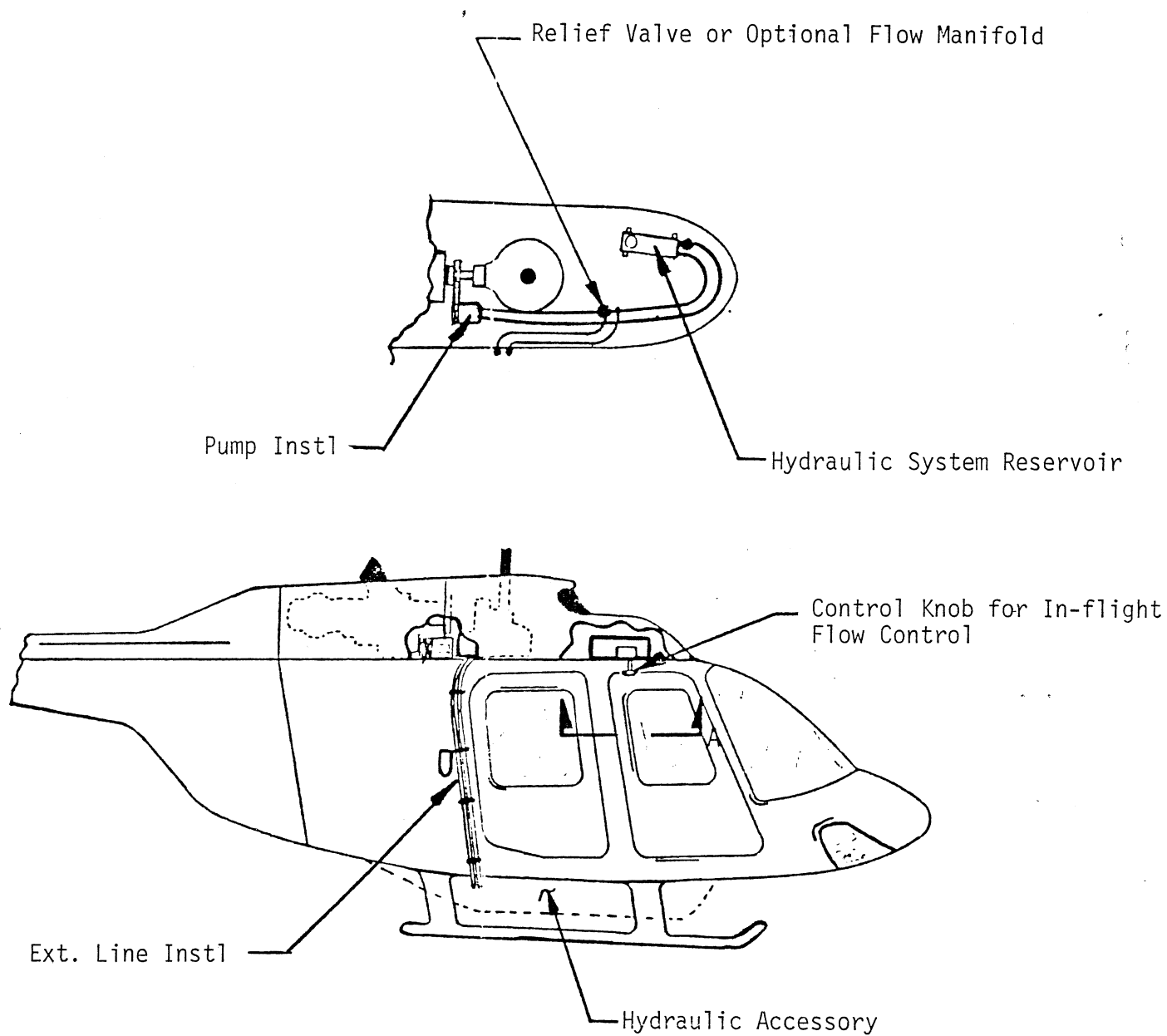
Every 600 hours, or annually:

Remove and discard the four AN4H pulley mounting bolts.

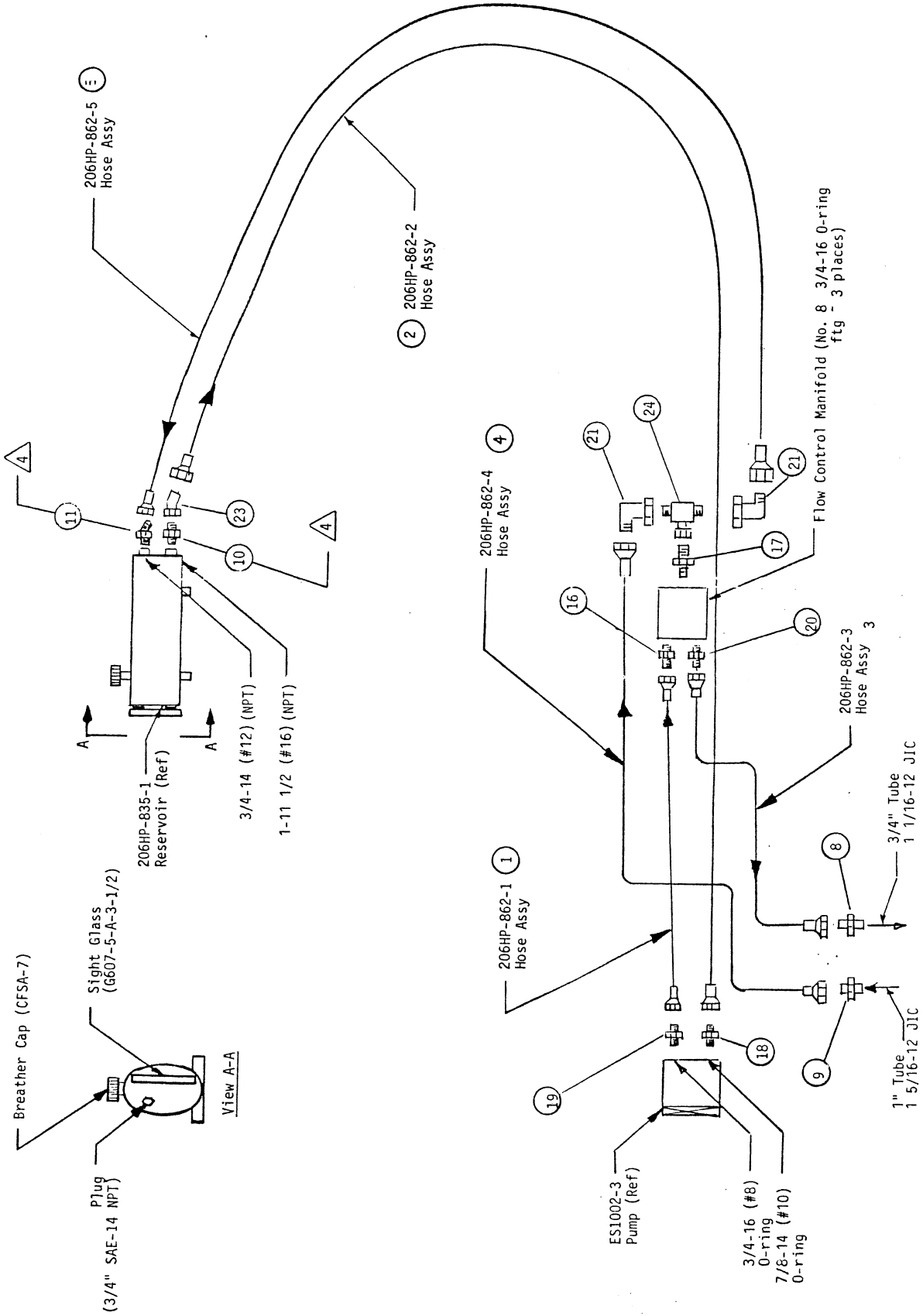
Inspect the pulley, drive coupler and 206-706-113-1 gasket for general condition. Replace any component which exhibits evidence of excessive wear or deterioration.

Reinstall drive pulley using new AN4H bolts. Torque bolts to 40-50 in. lbs. Safety wire AN4 bolts and MS35275-240 screws in accordance with AC-65-9A. Insure that the 206HP-928-1 placard is mounted to the belt guard. Check pulley to make sure that it is clamped tightly against the drive coupler flange.

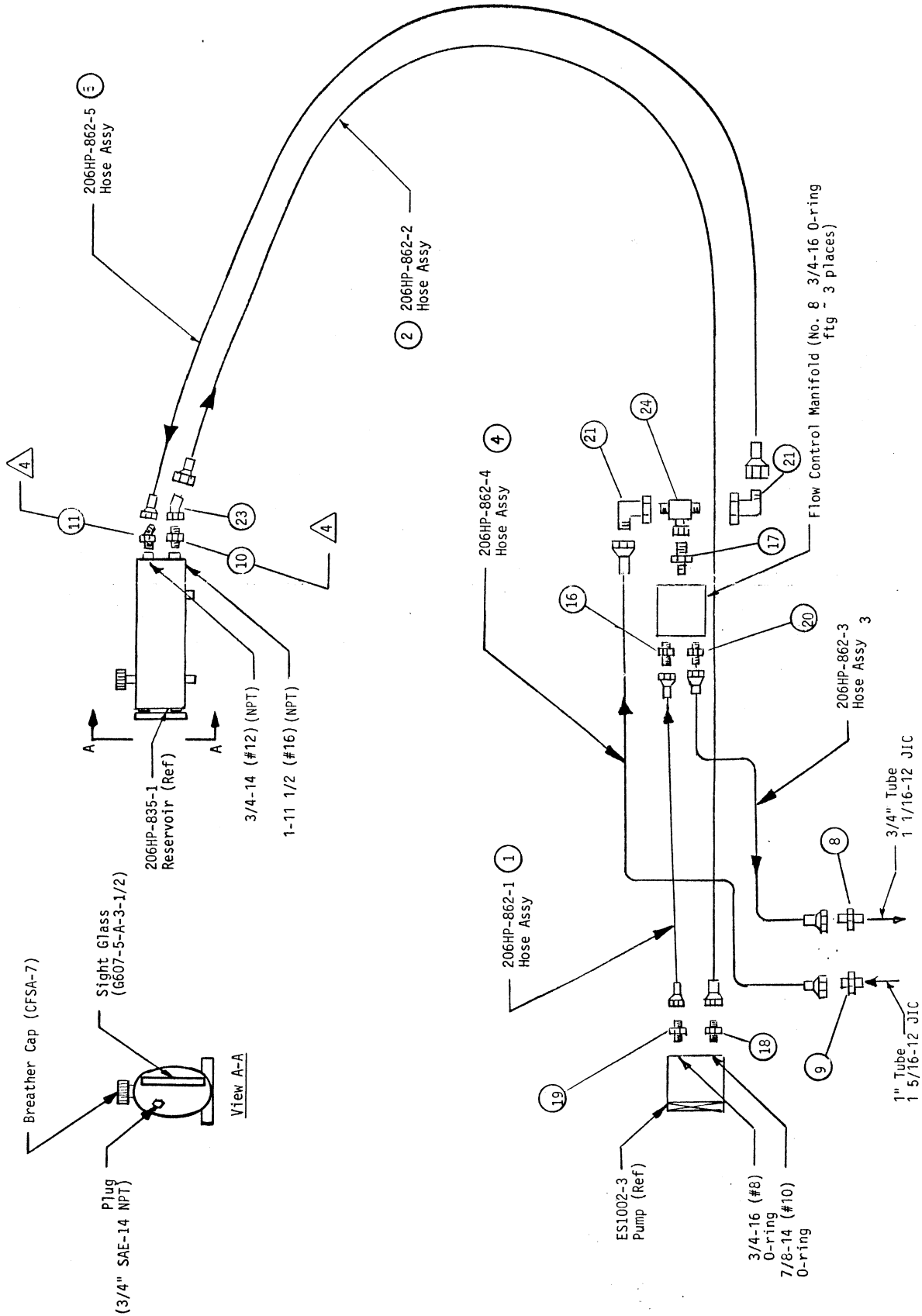




Hydraulic Power System Installation

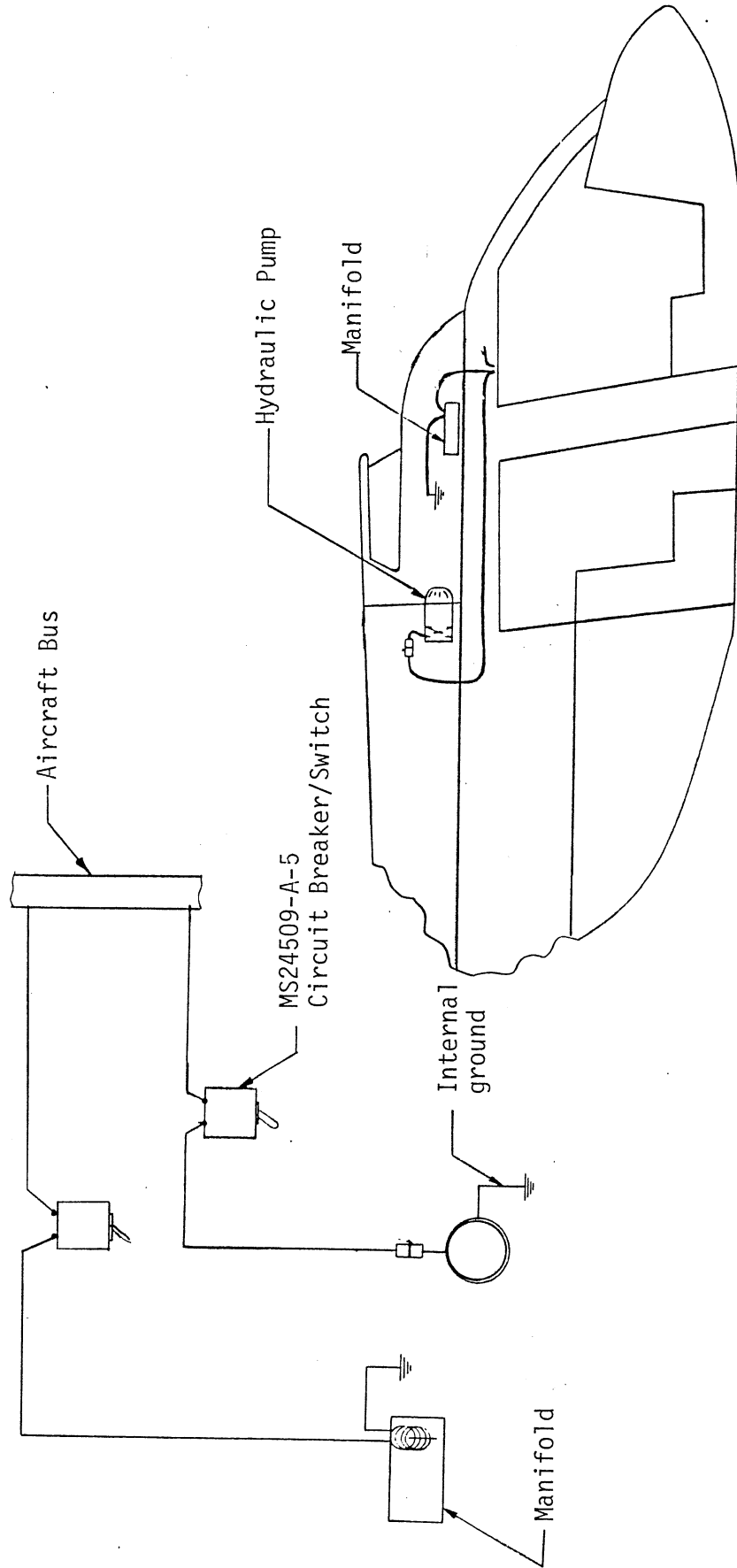


206HP-524-1 Plumbing Schematic



206HP-524-1 Plumbing Schematic

MS24509-A-5 Circuit Breaker Switch



FLIGHT MANUAL SUPPLEMENT
(Remove and retain with aircraft documents).

AIR COMM CORPORATION
7421 MT. SHERMAN
LONGMONT, CO 80501

Log of Pages

FAA APPROVED
SUPPLEMENT

206A/206B
FLIGHT MANUAL

Hydraulic Power Unit

Bell Helicopter
Models 206A and 206B

FLIGHT MANUAL SUPPLEMENT

for

Hydraulic Power Unit Installation

206HP-0100

FAA APPROVED

The information contained in this document is FAA approved material which must be carried in the basic Flight Manual after the rotorcraft has been modified by installation of the hydraulic power unit in accordance with Air Comm Corporation STC No. SH2709NM.

The information in this document supplements or supersedes 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.

FAA APPROVED DATE: 5/3/85
REVISED: 6/9/86
REVISED: 8/17/87

1 of 8

LOG OF PAGES			
Pages	Rev. No.	Pages	Rev. No.
Original 0			
1 - 8	N/C		

FAA APPROVED DATE: 5/3/85

Approved: *George A. Meyers III*
Woodford R. Boyce, Manager
Denver-Aircraft Certification Office
Northwest Mountain Region, Aurora, CO

FAA APPROVED 5/3/85

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Hydraulic Power Unit

HYDRAULIC POWER UNIT

INTRODUCTION

The hydraulic power unit consists of a hydraulic pump, reservoir, pressure relief valve, and the necessary connecting plumbing. This power unit is intended to be used in conjunction with other approved aircraft accessories, which require a source of hydraulic power.

The system may also be equipped with a flow control manifold, for adjustment of hydraulic motor speed. The manifold may be one of several configurations. One configuration requires preselection of the motor speed while on the ground. An optional configuration provides for adjustment of motor speed, as desired, during flight.

The pump is belt driven by means of a pulley sheave, which is mounted to the transmission drive shaft.

The pump is engaged by means of an electromagnetic clutch. The clutch is controlled by a single ON-OFF switch.

LOG OF REVISIONS			
NO.	REV DATE	PGS REVISED	FAA APPL
1	3-31-86	2 and 5	<i>George A. Meyer III</i>
2	06-09-86	1 and 3	<i>Robert Meyer III</i>
3	8-17-87	1, 3, 4, & 6	<i>D. T. Cooney</i>

Note: Revisions are indicated by a black vertical line. Insert revision pg, discard superseded pg.

MODEL 206A/206B
FLIGHT MANUAL

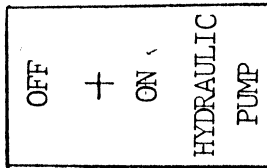
HYDRAULIC POWER UNIT

SECTION 1

OPERATING LIMITATIONS

Do not operate pump unless connected to a hydraulic motor to avoid overheating system.

PLACARDS AND MARKINGS



Locate on circuit breaker panel next to switch.

TURN HYDRAULIC PUMP OFF
FOR TAKE-OFF AND LDG

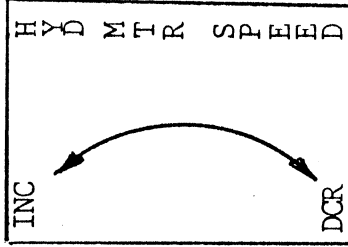
Locate on instrument panel in full view of pilot.

MODEL 206A/206B
FLIGHT MANUAL

HYDRAULIC POWER UNIT

SECTION 1 (cont'd)

OPERATING LIMITATIONS



Locate on headliner adjacent to flow control knob (if installed)

SECTION 2

NORMAL PROCEDURES

PREFLIGHT CHECK (Exterior)

Fuselage - RH side

Pump - check security

Belt - check condition and security

Reservoir - check security

ENGINE PRESTART CHECK

Hydraulic pump switch - OFF

ENGINE RUN-UP CHECK

Hydraulic pump switch - OFF

206A/206B
FLIGHT MANUAL

HYDRAULIC POWER UNIT

SECTION 2 (cont'd) - NORMAL PROCEDURES
BEFORE TAKE-OFF

Hydraulic pump switch - OFF

IN FLIGHT OPERATIONS

Hydraulic pump switch - ON
for all maximum allowable gross
weights.

PRIOR TO LANDING

Hydraulic pump switch - OFF

ENGINE SHUTDOWN

Hydraulic pump switch - OFF

SECTION 3 - EMERGENCY PROCEDURES

Hydraulic pump switch - OFF

For any of the following emergencies:

- Fuel control and/or governor failure.
- Engine failure.
- Engine over-temperature.
- Insufficient power.
- Generator failure.

206A/206B
FLIGHT MANUAL

HYDRAULIC POWER UNIT

SECTION 4 - MALFUNCTION PROCEDURES
Any abnormal vibration.

Turn hydraulic pump off.

SECTION 5 - PERFORMANCE DATA

Hydraulic pump - ON

NOTE

Reduce the R/C performance data in the basic Flight Manual by the amount given below for "OAT-Altitude" combinations above the Max Cont Power Curve.

Rate of Climb-fpm.	<u>206A</u>	<u>206B</u>
	134	134

To obtain OGE hover ceiling, when using the hydraulic pump, add 120 lbs to actual aircraft weight and read the corresponding OGE hover ceiling from the basic Flight Manual performance curves.

STC CERTIFICATE

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

Number SH2709NM

This certificate, issued to Air Comm Corporation
7421 Mt. Sherman
Longmont, Colorado 80524

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 6 of the Civil Air Regulations.

Original Product — Type Certificate Number: H2SW

Make: Bell Helicopter Textron

Model: 206A, 206B

Description of Type Design Change:

Installation of engine driven accessory hydraulic pump and associated hardware in accordance with Drawing List DL-206HP, revision D dated May 1, 1985, or later FAA approved revision.

Limitations and Conditions:

1. FAA approved Flight Manual Supplement, dated May 3, 1985, or later FAA approved revision is required.
2. This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the interrelationship between this change and any other previously approved modification will introduce no adverse effect upon the airworthiness of the aircraft.

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: January 4, 1984

Date reissued: June 16, 1987

Date of issuance: May 12, 1986

Date amended: June 23, 1986



By direction of the Administrator

David T. Grossman
David T. Grossman, (Signature) Manager
Denver Aircraft Certification Office
Northwest Mountain Region, Aurora, Colorado

(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.

WARRANTY

AIR COMM CORPORATION

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.

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

WARRANTY REGISTRATION

AIRCRAFT MODEL #

INSTALLER'S NAME

AIRCRAFT REGISTRATION NUMBER

STREET

PRODUCT P/N

CITY STATE ZIP

DESCRIPTION

OWNER'S NAME

DELIVERY DATE

STREET

INSTALLATION DATE

CITY STATE ZIP

TOTAL AIRCRAFT TIME

OWNER'S SIGNATURE

TITLE (IF APPLICABLE)

DATE