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FAA Approved

Rotorcraft Flight Manual Supplement
For
Airbus Helicopters

Model: AS350 BA

Document Number: 19-350-21-009

-031 Dual Condenser

Registration Number:_____

Serial Number:_____

This supplement must be attached to the FAA approved Rotorcraft Flight Manual, dated March 11, 1992, or later approved revision, when an RSG Products Inc. air conditioning system is installed in accordance with STC No. SH3509SW.

The Information contained herein supplements or supersedes the basic Rotorcraft Flight Manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this document, consult the basic Rotorcraft Flight Manual.

APPROVED: RYAN B NELSON Digitally signed by RYAN B NELSON Date: 2023.10.10 17:40:30 -05'00' DATE: October 10, 2023

Ryan Nelson, FTP, AIR-712 *for*
Manager, Flight Test & Human Factors Branch, AIR-710
Federal Aviation Administration

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LOG OF REVISIONS

REV	Affected Pages	Reason for Change	Date	FAA APPROVED
Original	1-8		5/15/1992	ASW170
A	6-7	Page 6: Section 5: Replaced existing data with performance degradation information. Page 7: System change. Was: “2 each 15 amp and 2 each 20 amp circuit breakers” Is: “1 each 15 amp and 3 each 20 amp circuit breakers”	7/12/2013	Scott Horn Mgr. ASW170 Fort Worth, TX
B	1-9	Reformatted document to RSG Products Template. Page 1: Changed aircraft manufacturer. Was: “Aerospatiale Helicopter Corporation.” Is: “Airbus Helicopters.” Page 4/5: Added switch names to normal and emergency procedure instructions. Page 6/7: Added instructions based on A/C configuration descriptions. Page 7: Location of FWD Switch Panel Was: “to the right of the instrument panel.” Is: “on the instrument panel.” Page 7: 5 amp circuit breaker location Was: “below the left air outlet.” Is: “in the instrument panel on the right of the switch assembly.”	11/17/2014	Scott A. Horn, Manager Fort Worth Aircraft Certification Office, ASW-140 Federal Aviation Administration Fort Worth, TX 76177

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C	1-10	Pages 1-10: Update RSG Products Address. Page 8: Correct approximate Air conditioning weight. Was: “80 lbs” Is: “99 lbs”	10/10/2023	Ryan Nelson FTP, AIR-712

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

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TABLE OF CONTENTS

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1.0 GENERAL

The installation consist of a belt drive vapor-cycle air conditioning system.

2.0 OPERATING LIMITATIONS

- The air conditioning system must be “OFF” during engine start.
- Operation of the air conditioning system is if the generator is inoperative.
- “MAG” compass deviation may be excessive with air conditioner, “A/C”, or fan, “FAN”, “ON”. Turn air conditioner “OFF” to read “MAG” compass.
- The air conditioning system must be turned “OFF” during takeoff, approach, and landing above 7000 feet density altitude.
- The air conditioning system must be turned “OFF” to obtain the FAA approved Rotorcraft Flight Manual performance above 7000 feet density altitude.

3.0 EMERGENCY PROCEDURES

3.1 EMERGENCY PROCEDURES

- In the event of an engine failure, turn air conditioner “MASTER” switch to “OFF”.
- In the event of electrical power failure, turn air conditioner “MASTER” switch to “OFF”.

3.2 EXCESSIVE TEMPERATURE, FIRE, SMOKE

In the event of any of the following, turn air conditioner “MASTER” switch to “OFF”.

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

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4.0 NORMAL PROCEDURES

4.1 GROUND OPERATIONS

- Air conditioning system operation: The forward air conditioning control switches are located on the instrument panel.

- To turn the air conditioner “ON” - Move “MASTER” switch to “A/C”.

- To turn the air conditioner “OFF” – Move “MASTER” switch to “OFF”.

- For air circulation without cooling – Move “MASTER” switch to “FAN”.

- For high speed air circulation – Move “FWD FAN” switch to “HI”.

- For low speed air circulation – Move “FWD FAN” switch to “LOW”.

- For medium speed air circulation – Move “FWD FAN” switch to “MED” (when option is present).

  The aft air conditioning control switch is located on the overhead aft cabin (Basic) or on the instrument panel (Tour 1).

- For high speed air circulation – Move “AIR CONDITIONER” or “AFT FAN” switch to “HI”.

- For low speed air circulation – Move “AIR CONDITIONER” or “AFT FAN” switch to “LOW”.

4.2 NORMAL PROCEDURES

Ground and flight operations:

- Ventilation control – As desired (Close for cockpit/cabin cooling).

- Air conditioning “MASTER” control switch – As desired.

- Air conditioning “FWD FAN” speed control switch – As desired.

- “AIR CONDITIONER” or “AFT FAN” speed control switch – As desired.

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5.0 PERFORMANCE DATA

Reduce IGE maximum weight by 25 lbs.

Reduce OGE maximum weight by 25 lbs.

Reduce RFM Rate of Climb by 70 fpm.

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6.0 WEIGHT AND BALANCE

Weight and Balance must be computed with the air conditioning system installed. Approximate air conditioning weight is 99 lbs. See installation instructions supplied with kit for actual weight.

7.0 SYSTEMS DESCRIPTION

The air conditioning installation consists of a belt driven vapor cycle (Freon) air conditioning system using R-134a refrigerant.

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 based on the configuration selected.

For Basic Configuration:
(Control switches located on instrument panel & overhead aft cabin)

The control switches are located on the instrument panel and overhead in the aft cabin. The switch panel on the instrument panel contains two (2) switches, the "MASTER" control selector consists of a toggle type switch, labeled "A/C", "OFF", and "FAN". Selecting the "A/C" position turns on the system's dual evaporator fans, dual condenser blowers, and belt driven compressor. The second toggle switch, "FWD FAN", provides "HI" and "LOW" forward evaporator fan speed selection for the cockpit. Another toggle switch, "AIR CONDITIONER", is located overhead in the aft cabin and provides "HI" and "LOW" aft evaporator fan speed selection.

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For Tour 1 Configuration:
(Control switches located on instrument panel)

The control switches are located on the instrument panel. The switch panel on the instrument panel contains three (3) switches, 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 dual evaporator fans, dual condenser blowers, and belt driven compressor. The second rocker switch, "FWD FAN", provides "HI", "LOW", and "MED" forward evaporator fan speed selection for the cockpit. The third rocker switch, "AFT FAN", provides "HI" and "LOW" aft evaporator fan speed selection for the cabin.

Applies to Both Configurations:

Thermostatic temperature control is not provided. A 5 amp circuit breaker located in the instrument panel on the right of the switch assembly disconnects power to all relays.

A high pressure safety switch, located on the condenser or compressor, disengages the compressor and stops operation of the system in the event of excessive refrigerant pressure. This can occur due to failure of the condenser blower or restricted air intake. The switch will automatically reset itself and the system will cycle on again when the pressures are reduced below a predetermined point.

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

System electrical protection is provided by 1 each 15 amp and 3 each 20 amp circuit breakers labeled "CONDENSER FAN" and "EVAPORATOR FAN" in the Air Conditioning Electrical Control Panel. This panel is located in the right side baggage compartment above the battery.

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APPENDIX

A.0 ELECTRICAL LOADING

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

Condenser Blower	2 each @ 13 amps = 26 amps
Compressor	1 each @ 2 amps = 2 amps
Evaporator Fan (FWD)	1 each @ 7 amps = 7 amps
Evaporator Fan (AFT)	1 each @ 13 amps = 13 amps
	TOTAL 48 amps