

#### **SUBJECT:**

Required maintenance for the Forward-Opening Rear Cargo Door (P/N 350-201014 and 130-201004).

## **APPLICABILITY:**

Aircraft with the subject modification embodied in accordance with TCCA STC. No. SH97-34 or any relevant foreign approvals.

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# **RECORD OF REVISIONS**

Rev.	Pages at this Revision	Description, Reason Changed Pages	Prepared Checked App'd/Acc'd (name (name (Civil A/W and date) and date) Authority) (name and date		(name (name (Civil A/W		(Civil A/W Authority)	Released (name and date)
0	1 through 15	Original Issue	D. Kerr 10 April 2006	C. Timmins 10 April 2006	TCCA Floyd Eaves 8 May 2006	R. Manson 6 July 2006.		
1	1 through 18	Addition of alternative door, AS 355 N or AS 355 NP Door Mod with Bonding Jumpers and Ground Stud Installation. (Pages 3 to 6, 8 to 10, 12 to 16 and 18)	D. Kerr 19 June 2008	C. Timmins TCCA 19 June 2008 Floyd Eaves 25 June 2008		R. Manson 9 July 2008		
2	1 through 19	Addition of the EC 130 B4 to the STC. Placard for the EC 130 B4 door incorporated. (Pages 4, 5 11, 13, 14, 15, 16 and 19)	D. Kerr 3 Sept. 2009	C. Timmins 4 Sept. 2009	N/A	R. Manson 10 Sept. 2009		
3	1 through 19	Revision to Inspection Schedule, revision to dimensioning in Figure 6 (Pages 8 and 15)	D. Kerr 10 Sept., 2009	R. Manson 10 Sept., 2009	TCCA G. David 11 Sept., 2009	P. Garofalo 20 July, 2010		
4	1 through 19	Use of door variants -01 and -02 for AS 350/355 N/NP. Re- moved composite door Figure references. Combined door il- lustrations to accommodate all variants. (Pages 3, 4, 6 to 10, 12 to 16 to 19)	D. Kerr 12 May 2011	C. Timmins 12 May 2011	N/A	R. Manson 29 May 2012		
5	1 through 21	Revised the Airworthiness Limitations statement in Sec. 2. Revised 100 FH inspection to 150 FH inspection. Correction to text in Section 5. Additional information added to Sections 4 & 8. (Pages 3, 4, 6, 7, 10 to 19)	See Page 1.	See Page 1.	See Page 1.	See Page 1.		

NOTE: Revisions to this document will be distributed to operators of this equipment by the STC holder.

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



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#### 1. GENERAL

A. The AS 350 / AS 355 / EC 130 rear cargo door is attached to the rear cargo compartment by two hinges on the bottom edge and is secured by a single latch on the top of the door.

The Eurocopter Canada Limited Forward-Opening Rear Cargo Door is available as an alternative to the original AS 350/ AS 355 door and is attached to the cargo compartment by two hinges on the forward edge and secured by two latches on the aft edge. Access to the cargo compartment is improved with the Eurocopter Canada Limited door installed. Refer to Figure 1.

The Eurocopter Canada Limited Forward-Opening Rear Cargo Door is a direct replacement for the rear cargo door installed on the EC 130 and may be installed as an alternative to the original door on aircraft that are not equipped with factory installed air conditioning. Refer to Figure 1.

The Forward-Opening Rear Cargo Door is available in the following variants:

Helicopter type	Installation Drawing number	Variant
AS 350 and AS 355 E, F, F1 & F2	350-201014-01	- 01 variant (350-201024-01). Refer to Figure 4.
AS 355 N & NP	350-201014-02	- 02 variant (350-201024-02: is not required on the AS 355 F1 and F2). Refer to Figure 2.
EC 130	130-201004	-01 variant (350-201024-01: for aircraft without air conditioning). Refer to Figure 4.

The Forward-Opening Rear Cargo Door consists of the following main components:

## **Fixed Provisions**

- Hinge Mounts
- Upper and Lower Hinges
- Latch Assemblies
- Strut Mount Backing Plate
- Lower Hinge Backing Plate

# Detachable Provisions

- ECL Rear Cargo Door
- Door Strut
- Bonding Jumper (-02 variant only)

For instructions on the initial installation refer to IP-ECL-117.

B. These Instructions for Continued Airworthiness are applicable to aircraft with the subject modification embodied.

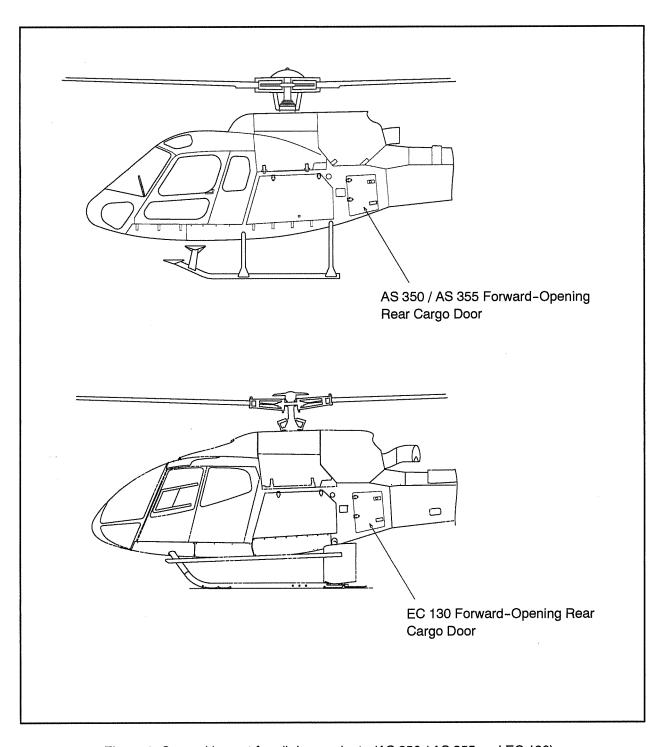


Figure 1 General Layout for all door variants (AS 350 / AS 355 and EC 130)

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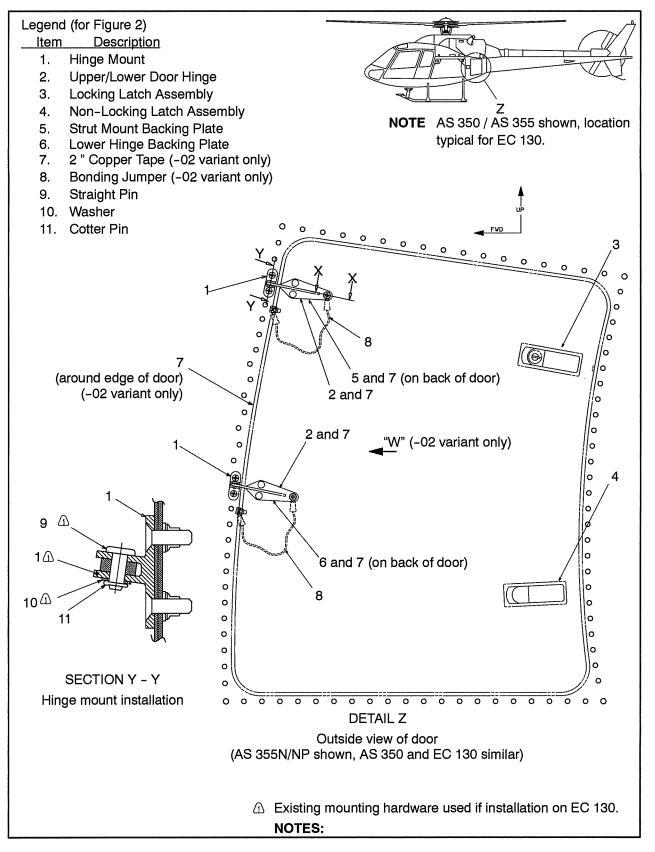


Figure 2 Upper and Lower Hinge Installation

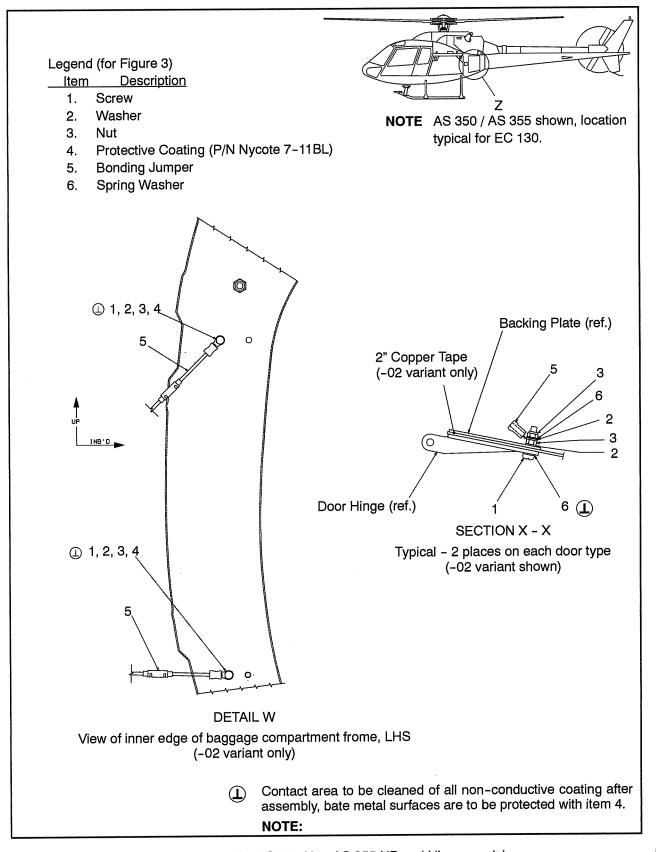


Figure 3 Bonding for AS 355 N or AS 355 NP and Hinge provisions

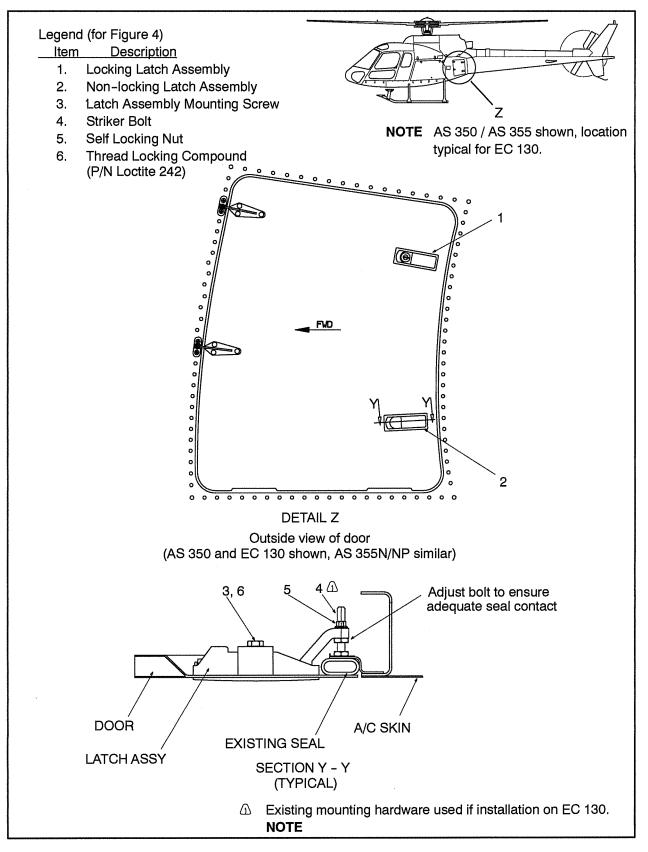


Figure 4 Door Latch Assembly

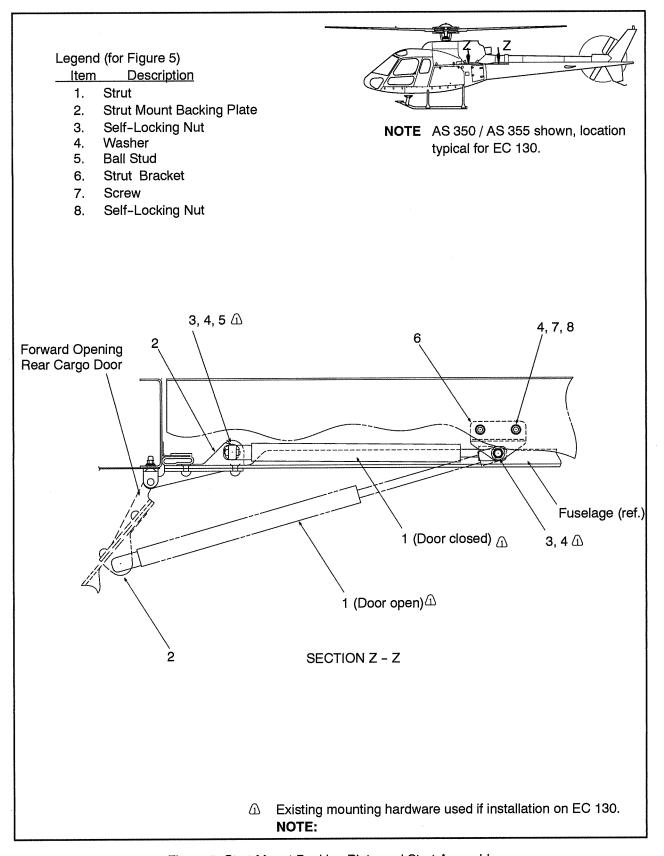


Figure 5 Strut Mount Backing Plate and Strut Assembly

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## C. REFERENCES

DOCUMENT	DOCUMENT TITLE
Text deleted	Text deleted
AMM (EC 130)	Aircraft Maintenance Manual
IP-ECL-117	Installation Procedure, Forward-Opening Rear Cargo Door
IPC	Illustrated Parts Catalogue
MET (AS 350/ 355)	Maintenance Manual
MRM (AS 350)	Maintenance Repair Manual
MTC (all aircraft)	Standard Practices Manual

## D. ABBREVIATIONS & DEFINITIONS

ABBREVIATION	DEFINITION
A/C	Aircraft
D	Days
EC	Eurocopter (France)
ECL	Eurocopter Canada Limited
FH	Flight Hours
FWD	Forward
hrs	hours
LHS	Left-Hand Side
M	Months

# **E. UNITS OF MEASUREMENT**

ABBREVIATION / SYMBOL	UNIT OF MEASUREMENT
in	inch
kg	kilogram
lb	pound
m	meter



# 2. **AIRWORTHINESS LIMITATIONS**

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister. Variations must also be approved.

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

No airworthiness limitations associated with this installation.

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## 3. CONTROL AND OPERATION

Control and operation of the aircraft remains unchanged.

#### 4. INSPECTION SCHEDULE AND MAINTENANCE ACTION

**NOTE:** Use torque per MTC, Chapter 20.02.05.404, unless otherwise specified.

# 4.1. INSPECTION SCHEDULE

4.1.1. Every 150 FH or 12 M (Margin: 15 FH or 36 D) to coincide with the 150 FH or 12 M helicopter inspection, whichever occurs first:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION
Α	Visually check the forward opening rear cargo door for:	
	a. general condition, visible damage	Minor repairs may be accomplished in accordance with MTC, Chapter 20.03.07.101. For major repairs, contact ECL.
В	Visually check, forward opening rear cargo door for:	
	a. delamination or irregularity	a. For the AS 355 and the EC 130 determine extent of the damage in accordance with MTC, Chapter 20-03-06-601, Sections B (1) and (2).
		Repair all models, in accordance with MTC, Chapters 20-03-06-401 Section 401, C and 20-03-07-101.
С	<ul> <li>Visually inspect both straight pins, item 9, in the door hinges, item 2 in Figure 2 for:</li> </ul>	
	a. security	Secure both straight pins as required.
	b. corrosion	b. No corrosion is allowed. If corrosion is found, contact ECL for replacement parts.
D	Visually inspect upper and lower door hinge, item 2, in Figure 2 for:	
	a. security	a. Secure as required.

Table 1 Inspection Schedule and Maintenance Action
Every 150 FH or 12 M, to coincide with the 150 FH or 12 M helicopter inspection, whichever occurs first
(continued on following page)



# 4. INSPECTION SCHEDULE AND MAINTENANCE ACTION (continued)

- 4.1. INSPECTION SCHEDULE (continued)
  - 4.1.1. Every 150 FH or 12 M (Margin: 15 FH or 36 D) to coincide with the 150 FH or 12 M helicopter inspection, whichever occurs first:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION			
E	<ul> <li>Visually inspect bonding jumper (-02 variant only), item 8, in Figure 2, for:</li> </ul>				
	a. security	a. Secure as required.			
	b. corrosion	b. No corrosion is allowed. If corrosion is found, contact ECL for replacement parts.			
F	Visually inspect 2" copper tape (-02 variant only), item 7, in Figure 2, for:				
	a. security	a. Secure as required.			
G	<ul> <li>Perform functional test of locking latch assembly, item 1, in Figure 4, for:</li> </ul>				
	a. proper locking function	a. Clean and lubricate to restore proper locking function.			
Н	Test both door latch assemblies, items 1 and 2, in Figure 4, for:				
	a. freedom of movement	a. Clean and lubricate to restore freedom of movement.			
	b. proper latching	b. Adjust striker bolt (item 4, Figure 4) as required to ensure adequate seal between the door and door seal.			
I	Visually inspect existing door seal, in Figure 4 for:				
	a. cuts and cracking	a. If cuts or cracks are evident replace door seal in accordance with MRM, Chapter 52.10.16.701 for the AS 350/AS 355, or IPC, Chapter 52-31-10-02 for the AS 350 B2/B3.			
	b. debonding or loss of elasticity	b. If debonding or loss of elasticity is evident replace door seal in accordance with MRM, Chapter 52.10.16.701 for the AS 350/AS 355, or IPC, Chapter 52-31-10-02 for the AS 350 B2/B3.			

Table 2 Inspection Schedule and Maintenance Action
Every 150 FH or 12 M, to coincide with the 150 FH or 12 M helicopter inspection, whichever occurs first
(continued on following page)



# 4. INSPECTION SCHEDULE AND MAINTENANCE ACTION (continued)

# 4.1. INSPECTION SCHEDULE (continued)

4.1.1. Every 150 FH or 12 M (Margin: 15 FH or 36 D) to coincide with the 150 FH or 12 M helicopter inspection, whichever occurs first:

ITEM	INSPECTION OR MAINTENANCE WORK	CORRECTIVE ACTION
J	<ul> <li>Visually inspect door strut, item 1, in Figure 5, for:</li> </ul>	
	a. secure installation	a. Ensure that the door strut is connected correctly to door and fuselage attachments.
	b. correct operation	b. If door strut does not hold the door in the open position, contact ECL for replacement part.
K	Check placards and markings (refer to Section 10) for:	
	a. legibility	a. If placards have become illegible, contact Eurocopter Canada Limited for replacement parts.
	b. secure mounting	b. Secure or reattach placards and markings as required.

Table 2 Inspection Schedule and Maintenance Action

Every 150 FH or 12 M, to coincide with the 150 FH or 12 M helicopter inspection, whichever occurs first

# 5. REPLACEMENT COMPONENTS AND REPAIR / OVERHAUL INFORMATION

Contact ECL for replacement parts. No overhaul information required for this installation.

## 6. TROUBLESHOOTING

There are no unique characteristics which require special troubleshooting techniques; standard techniques are adequate.

# 7. SPECIAL TOOLING

No special test equipment or tools are required. Standard tools are adequate.

#### 8. REMOVAL AND REPLACEMENT

Proceed as follows if any of these items need to be removed.

- A. If modifying an AS 350 (excluding AS 350 B2/B3):
  - Read the General Electrical Instructions (refer to AS 350 Maintenance Manual, Chapter 24.00.00.301).
  - set the "D.BAT" push button to "OFF"
  - set the "EXT PWR BAT" or "BAT EPU" (depending on MOD) pushbutton to "OFF" (refer to Electrical Power AS 350 MET, Chapter 24.00.00.301)
  - disconnect the external power unit and battery (refer to Removal/ Installation AS 350 MET, Chapter 24.30.00.401)
- B. If modifying an AS 350 B2/B3:
  - Read General Safety Instructions Electrical Power Supply System (refer to AS 350 B2, B3, AMM, Chapter 24-00-00, 3-1).
  - Read Electrical Power Supply on the Ground (refer to AS 350 B2, B3, AM M, Chapter 24–00–00, 2–1).
  - disconnect the external power unit and battery (refer to Removal/Installation, AS 350 B2, B3, AMM, Chapter 24–33–00, 4–1)
- C. If modifying an AS 355:
  - Read the General Electrical Instructions (refer to AS 355 MET, Chapter 24.00.00.301).
  - set the "D.BAT" push button to "OFF"
  - set the "PARC-BATT", "BAT EPU 1" and BAT EPU 2" (depending on MOD) pushbutton to "OFF" (refer to Electrical Power AS 355 Maintenance Manual, Chapter 24.00.00.301)
  - disconnect the external power unit and battery (refer to Electrical Power Generating System refer to AS 355 MET, Chapter 24.30.00.401)
- D. If modifying an EC 130:
  - Read General Safety Instruction Electrical Power Supply System (EC 130 AMM, Chapter 24-00-00, 3-1)
  - set the "D.BAT" pushbutton to "OFF" (refer to Removal/Installation EC 130 AMM, Chapter 24.33.00, 4-1)
  - set the "EXT PWR BAT" or "BAT EPU" (depending on MOD) pushbutton to "OFF" -(refer to Electrical Power Supply on the Ground, EC 130 AMM, Chapter 24-00-00, 2-1)
  - disconnect the external power unit and battery (refer to Removal/Installation EC 130 AMM, Chapter 24.33.00, 4-1)

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## 8. REMOVAL AND REPLACEMENT (continued)

#### A. REMOVAL

- 1) FORWARD-OPENING REAR CARGO DOOR (Refer to Figures 2, 3 and 5)
  - a) With door in the open position, disconnect strut (1) from the ball stud (5) located on the strut mount backing plate (2) by lifting the locking tab on the strut (1). Refer to Figure 5.
  - b) Disconnect strut (1) from the strut bracket (6) by lifting the locking tab on the strut (1). Remove strut (1) from aircraft. Refer to Figure 5.
- NOTE: For -02 variant only: disconnect the upper and lower bonding jumper (8) (2 places) from inside the LHS of the baggage compartment. Remove screws (1) (2 places), washers (2) (2 places) and nuts (3) (2 places) from inside LHS of baggage compartment. Refer to Figure 3.
  - c) Remove cotter pins (11) (2 places) washers (10) (2 places) and remove straight pins (9) (2 places) from hinge mounts (1) (2 places) while holding door. Refer to Figure 2, Section Y Y.
- 2) LOCKING AND NON-LOCKING LATCH ASSEMBLIES (Refer to Figure 4)
  - a) With door open, position door latch assemblies (1 and 2) in the latched position. Refer to Figure 4.
  - b) Remove latch assembly mounting screw (3) from each door latch assembly (1 and 2). Remove both door latch assemblies (1 and 2) from door. Refer to Figure 4.
- 3) STRAIGHT PIN (Refer to Figure 2)
  - a) Unlatch rear cargo door and disconnect strut (1).
  - b) Remove cotter pins (11) (2 places), washers (10) (2 places) and straight pins (9) (2 places) from hinge mounts (1) (2 places). Discard cotter pins. Refer to Figure 2, Section A A.

NOTE: Do not reuse cotter pins. Cotter pins must be replaced.

4) BONDING JUMPER (Refer to Figure 3)

**NOTE:** Instructions are the same for both jumpers.

- a) For -02 variant only: with door in open position, disconnect the upper and lower bonding jumper (5) from inside the LHS of the baggage compartment. Remove screw (1), washer (2) and nuts (3) from inside LHS of baggage compartment. Refer to DETAIL W.
- b) To remove the bonding jumper (5) from either door hinge remove nut (3) (2 places), spring washer (6) (1 places), washer (2) (2 places) and screw (3). Refer to SECTION X X.
- 5) DOOR STRUT (Refer to Figure 5)
  - a) With door in the open position, disconnect strut (1) from the ball stud (5) located on the strut mount backing plate (2) by lifting the locking tab on the stut (1).
  - b) Disconnect strut (1) from the strut bracket (6) by lifting the locking tab on the strut (1). Remove strut (1) from the aircraft.

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## 8. REMOVAL AND REPLACEMENT (continued)

## **B. REPLACEMENT**

**NOTE** Use torque per MTC, Chapter 20.02.05.404, unless otherwise specified.

Safetying with Loctite 242 - refer to Safetying with Loctite Compounds - MTC, Chapter 20-02-06-409.

Safetying with cotter pins - refer to Safetying with cotter pins - MTC, Chapter 20-02-06-404.

Sealing compound Nycote 7-11BL - refer to General Sealing Procedures - MTC, Chapter 20.05.01.102.

Electrical Bonding - refer to Electrical Bonding - General, MTC, Chapter 20.02.07.101.

- 1) FORWARD-OPENING REAR CARGO DOOR (Refer to Figures 2, 3 and 5)
  - a) Position Door on aircraft aligning upper and lower hinges (2) in hinge mounts (1) (2 places). Refer to Figure 2.
  - b) Insert straight pins (9) (2 places) into hinge mounts (1) (2 places) and secure using washers (10) (2 places) and new cotter pins (11) (2 places). Refer to Figure 2, SECTION Y Y. Refer to Safeting with cotter pins MTC, Chapter 20-02-06-404.
  - c) Secure strut (1) to strut bracket (6). Reconnect strut (1) to ball stud (5) located on the strut mount backing plate (2). Refer to Figure 5.

For -02 variant only: Secure upper and lower bonding jumpers (5) (2 places) to LHS of baggage compartment using screws (1) (2 places), washers (2) (2 places) and nuts (3) (2 places). refer to Figure 3, DETAIL W.

NOTE: Contact area to be cleaned of all non-conductive coating. After assembly, bare metal surfaces to be protected with Nycote 7-11BL. Refer to General Sealing Procedures - MTC, Chapter 20.05.01.102.

Check electrical bonding in accordance with Electrical Bonding - MTC, Chapter 20.02.07.101.

- 2) LOCKING AND NON-LOCKING LATCH ASSEMBLIES (Refer to Figure 4)
  - a) Position both door latch assemblies (1 and 2) into door in the latched position. Refer to Figure 4.
  - b) Secure using the latch assembly mounting screws (3) (2 places). Refer to Figure 4.

NOTE Apply thread locking compound (6) to latch assembly mounting screws (3) upon installation. Refer to Safeting with Loctite Compounds – MTC, Chapter 20–02–06–409.



## 8. REMOVAL AND REPLACEMENT (continued)

- B. REPLACEMENT (continued)
- 3) STRAIGHT PINS (Refer to Figure 2)
  - a) Insert new straight pins (9) (2 places) into hinge mounts (1) (2 places) and secure using washer (10) (2 places) and new cotter pin (11) (2 places). Refer to Safetying with cotter pins MTC, Chapter 20-02-06-404.
  - b) Reconnect strut (1).
- 4) BONDING JUMPER (Refer to Figure 3)
  - a) For -02 variant only: With door in open position, secure upper and lower bonding jumper (2)
     (2 places) to LHS of baggage compartment using screws (3) (2 places), washers (4) (2 places) and
     nuts (5) (2 places). Refer to Figure 5. Refer to Electrical Bonding General, MTC,
     Chapter 20.02.07.101.

Check electrical bonding in accordance with Electrical Bonding - MTC, Chapter 20.02.07.101.

- 5) DOOR STRUT (Refer to Figure 5)
  - a) With door in open position, secure strut (1) to strut bracket (6). Reconnect strut (1) to ball stud (5) located on the strut mount backing plate (2).
- 6) Close all areas opened for service in the PRELIMINARIES paragraph of this section.

For AS 350 / AS 355 (excluding AS 350 B2/B3):

- Apply external power unit and battery. Refer to AS 350/AS 355 MET, Chapter 24.30.00.401.
- Perform functional test in accordance with AS 350/AS 355 MET, Chapter 24.30.00.501.

## For AS 350 B2/B3:

- Before energizing the aircraft power supply system, read safety instructions (refer to General Safety Instruction – Electrical Power Supply System, AS 350 B2, B3, AMM, Chapter 24-00-00, 3-1).
- Reconnect the external power unit and battery (refer to Removal/Installation AS 350 B2, B3 AMM, Chapter 24-33-00, 4-1).
- Perform functional test DC Power Supply System in accordance with AS 350 B2, B3 AMM,
   Chapter 24-30-00-5-1.

## For EC 130:

- Before energizing the aircraft power supply system, read safety instructions (refer to Electrical Power Supply on the Ground, Aircraft Maintenance Manual, EC 130 AMM, Chapter 24-00-00, 2-1)
- Reconnect the external power unit and battery (refer to Removal/Installation EC 130 AMM, Chapter 24.33.00, 4-1)
- Perform functional test DC Power Supply System in accordance with AMM, Chapter 24-30-00, 5-1.

# 9. WEIGHT AND BALANCE DATA

AS 350 / AS 355:

A. Removed Items AS 350 / AS 35	<u>5</u>					
DESCRIPTION	WEIGHT		ARM		MOMENT	
	kg	lbs	m	in	kg m	lb in
Basic aircraft Rear Door and hardware	- 1.15	- 2.5	4.61	181.5	- 5.30	- 453.8
B. Added Items AS 350/AS 355						
DESCRIPTION	WEI	GHT	Al	RM	MOI	MENT
	kg	lbs	m	in	kg m	lb in
AS 350/AS 355 Forward-Opening Rear Cargo Door	1.78	3.9	4.61	181.5	8.21	707.9

EC 130 Weight and Balance - no change.

## 10. PLACARDS AND MARKINGS

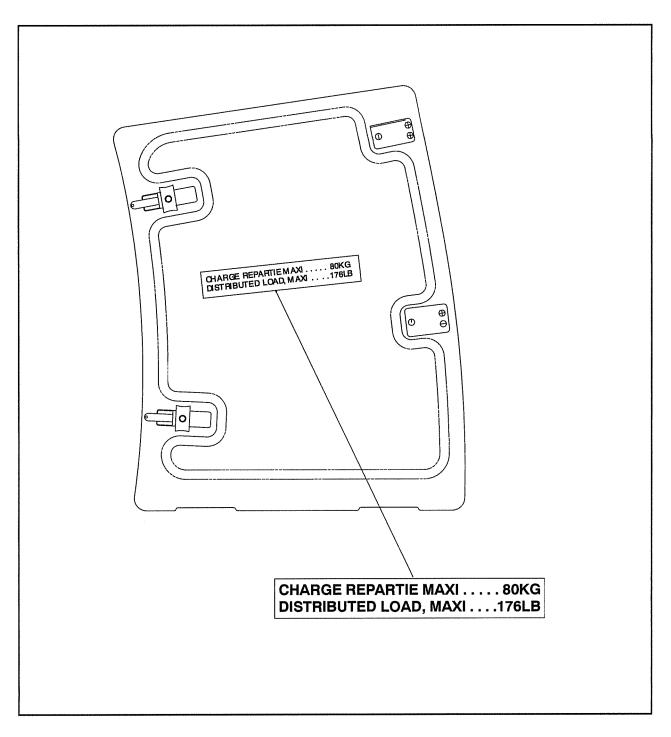


Figure 6 Identification label on inside of door (AS 350 / AS 355)

# 10. PLACARDS AND MARKINGS (continued)

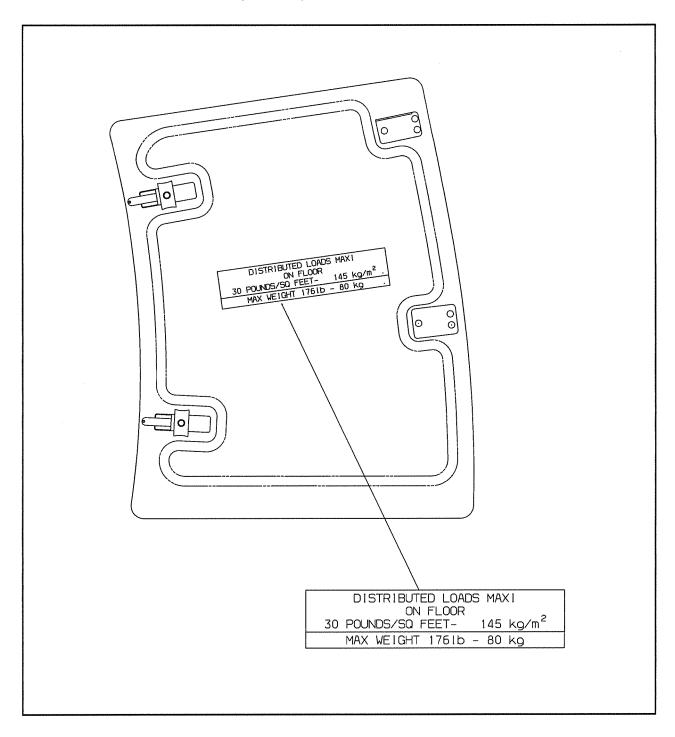


Figure 7 Identification label on inside of door (EC 130)

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