

Cessna HID Landing / Taxi Light Assembly Kit

KNOTS 2U, LTD.

703 Airport Road
Burlington, WI 53105
262 763-5100
www.knots2u.com

FAA APPROVED

DEC 05 2003
John Alex-1164
CHICAGO AIRCRAFT
CERTIFICATION OFFICE
CENTRAL REGION

REV #	DATE	EFFECT

TABLE OF CONTENTS

	Cover Page	1
	Table of Contents	2
Section 1.0	Introduction	3
Section 2.0	Bulb And Ballast Installation	3
Section 3.0	Parts List	3
Section 4.0	Specifications and Paperwork	3
Section 5.0	Drawing C-RMDHID	4
Section 6.0	Maintenance / Troubleshooting Guide	5
Section 7.0	Typical Wiring Schematic	6
Section 8.0	Supplemental Type Certificate	

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Section 1.0

Introduction

This manual describes the installation of wing mounted HID lights for all Cessna aircraft with wing mounted landing / taxi lights. The installation must be accomplished in accordance with AC43.13-1B and 2A. The installation requires the mounting of a ballast for each bulb. The bulb is mounted using the same attachment method as the bulb it is replacing. HID Lights may be installed individually or as a pair. Before installing confirm the voltage of the ballast being installed is correct for the aircraft voltage.

Section 2.0

Bulb And Ballast Installation

- A) Remove the landing light retainer, lens and old bulb(s) from the wing. Attach the ballast to the wing rib in the leading edge of the wing just to the right of the right hand bulb or just to the left of the left hand bulb. Mount ballast per drawing # C-RMDHID.
- B) Connect black lead of cable # RMD-2280-05 to aircraft ground, verify ground continuity per AC43.13 1B/2A section 11.
- C) Connect red lead of cable # RMD-2280-05 to aircraft power.
- D) Connect cable # RMD-2281-10 from ballast to bulb.
- E) Install new bulb using original hardware and mounting.
- F) Confirm that all wires are secured with tie wraps or Adel clamps. Special care should be taken locating wires in and around fuel lines and/or fuel tanks. With some exceptions, a minimum separation of 6" is required between a power wire and a fuel tank or fuel line. For further information reference AC43.13-1B section 11-126
- G) Reinstall landing light retainer and lens.
- H) For 12/14 volt systems use a 10 Amp circuit breaker for two lights, or individual 5 Amp breakers for each light. For 24/28 volt systems use a 10 Amp breaker for two lights or individual 5 Amp breakers for each light.
- I) Confirm lights are adjusted properly and function test. Confirm there are no circuit breakers popped with all electrical equipment turned on. Also check for any electrical/magnetic interference with radio or navigation equipment.

Section 3.0

Parts List

See Dwg. No. C-RMDHID for Parts List

Section 4.0

Specifications And Paperwork

Complete FAA Form 337 for return to service, log book entry and weight and balance change. Place a copy of the supplemental type certificate, drawing C-RMDHID and maintenance / trouble shooting manual with aircraft logs.

HID weight with PAR 36 bulb.....	1.57 lbs. ea. Including ballast and cable
HID weight with PAR 46 bulb.....	1.72 lbs. ea. Including ballast and cable
Minus weight of bulbs removed.....	.45 lbs. ea. (weight shown is for a GE 4509, check weight if bulb is different)
Arm.....	Per appropriate Cessna aircraft manual
HID amperage 12/14 volt	3.1 A. ea.
HID amperage 24/28 volt.....	1.5 A. ea.

Amperage chart of stock bulb(s) removed:

12 / 14 volt Systems

50 watt	4.2 Amps ea.
100 watt	8.3 Amps ea.
150 watt	12.5 Amps ea.
200 watt	16.7 Amps ea.
250 watt	20.8 Amps ea.
300 watt	25 Amps ea.

24 / 28 volt Systems

50 watt	2.1 Amps ea.
100 watt	4.2 Amps ea.
150 watt	6.3 Amps ea.
200 watt	8.3 Amps ea.
250 watt	10.4 Amps ea.
300 watt	12.5 Amps ea.

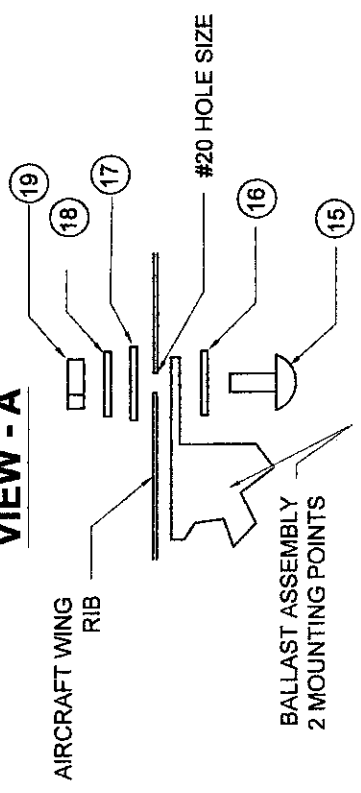
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Grim ACK-116C
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REV.	DATE	EFFECT	Item No.	Part No.	Nomenclature / Description	Qty.
			4	RMD-2280-01	GLASS HOUSING, HID LIGHT (Par 36)	1
			4A	RMD-2280-01A	GLASS HOUSING, HID LIGHT (Par 46)	1
			5	RMD-2281-08	BALLAST, HID, 28 VOLT (ALT. P/N 50110-24)	1
			6	RMD-2281-09	BALLAST, HID, 14 VOLT (ALT. P/N 50110-12)	1
			7	RMD-2281-10	CABLE, 3 WIRE, BALLAST TO LAMP (MIL-W22758/18)	1
			8	RMD-2280-05	CABLE, A/C TO BALLAST (14 GA. WIRE MIN. REQ.)	1
			9	RMD-2280-06	BULB, D1S	1
			9 Alt.	RMD-2280-07	BULB, D1R	1
			15*	MS27039-1-15	PAN HEAD SCREW, STRUCTURAL	2
			16*	AN960-10	WASHER	2
			16 AIR*	NAS1149-0316	WASHER	2
			17*	AN970-3	WASHER, FLAT, LARGE AREA	2
			18*	MS35338-43	LOCKWASHER, HELICAL SPLIT	2
			19*	AN365-10	NUT, NYLOC INSERT	2

* Not supplied with the kit. Sizes are recommended but appropriate substitutions may be made depending on installation.

VIEW - A



TOLERANCES UNLESS OTHERWISE SPECIFIED: (1) PLACE DECIMAL +/- .030 (3) PLACE DECIMAL +/- .005 FRACTIONS +/- 1/16
 ANGLES +/- 2 REMOVE ALL BURRS, BREAK
 HOLE DIA +/- .010 ALL SHARP EDGES .010R

KNOTS 2U, LTD.

703 AIRPORT ROAD BURLINGTON, WI 53105

CESSNA RMD HID LIGHT INSTALLATION 12/14 OR 24/28 VOLT

SCALE: NONE DWG DATE: 07/04/03

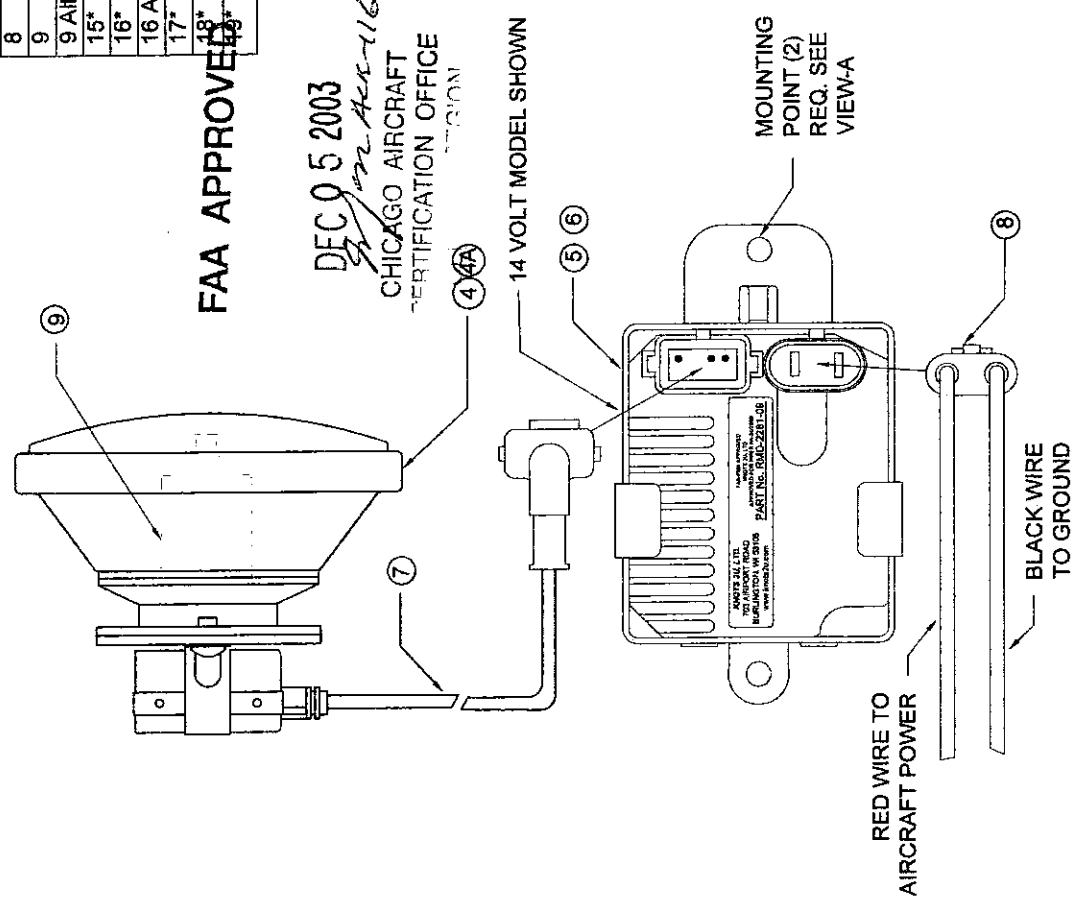
Dwg By: JMB

Dwg. No. C-RMDHID

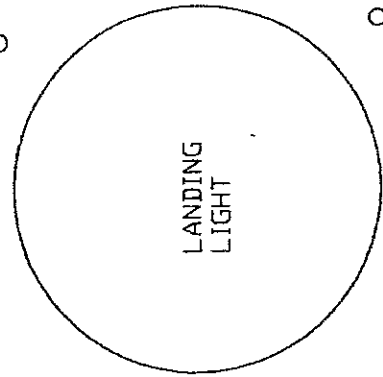
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 1166



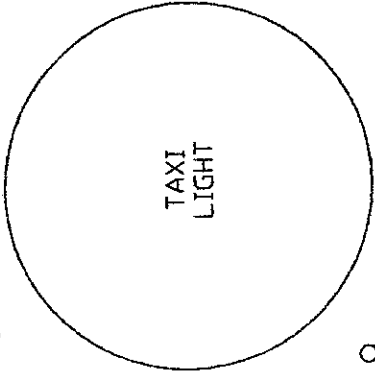
MS35207-273
SPACER 1.25"



MS35207-272
SPACER 1.10"

LANDING LIGHT		
DESCRIPTION	PART No.	QTY.
SPACER	1.10	1
SPACER	1.25	1
SPACER	1.75	1
SCREW	MS35207-272	1
SCREW	MS35207-273	1
SCREW	MS35207-274	1
SPRING	.29" x .75"	3

TAXI
LIGHT

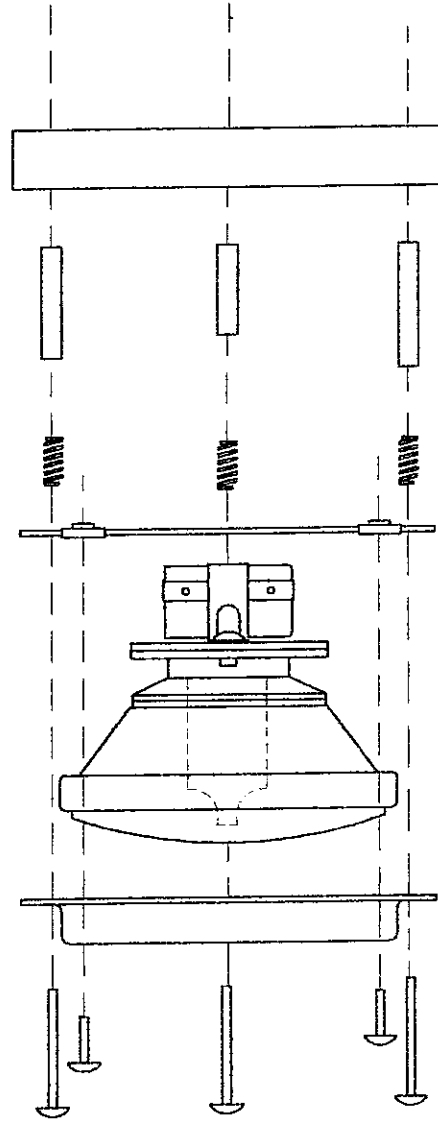


MS35207-273
SPACER 1.63"

TAXI LIGHT		
DESCRIPTION	PART No.	QTY.
SPACER	1.25	1
SPACER	1.50	1
SPACER	1.63	1
SCREW	MS35207-272	2
SCREW	MS35207-273	1
SPRING	.29" x .75"	3

MS35207-272
SPACER 1.50"

MS35207-274
SPACER 1.75"



SPACERS - ALLOY 6061 ALUMINUM TUBING, .21" ID WITH
.049" WALL THICKNESS.

KNOTS 2U, LTD.

703 AIRPORT ROAD BURLINGTON, WI 53105

CESSNA HID LIGHT INSTALLATION DIAGRAM.
MODELS 172R, 172S, 182S, 182T, T182T, 206H, T206H

SCALE: NONE

DWG DATE: 04/30/04

Dwg By: JMB

Dwg. No. K2U-CE-HID2

Section 6.0

Maintenance / Troubleshooting Guide

Knots 2U, Ltd.
 703 Airport Road
 Burlington, WI 53105
 262.763.5100
www.knots2u.com

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Trouble Shooting

Problem	Solution	Comments
Light circuit breaker "pops" frequently.	Check wires for a short circuit. Remove and replace ballast.	Contact Knots 2U, Ltd. for a replacement.
HID Light does not illuminate, illuminates slowly or does not go to full power.	Replace bulb and / or ballast, verify function.	Contact Knots 2U, Ltd. for a replacement.

Maintenance / Inspection Requirements

Scheduled Inspections

Inspection	Time interval	Comments
Remove landing light retainer and lens, inspect; A) Ballast for mounting security and general condition. B) Bulb housing, bulb and retainer plate for security and general condition.	Annual or 200 hours.	Contact Knots 2U, Ltd. for a replacement.

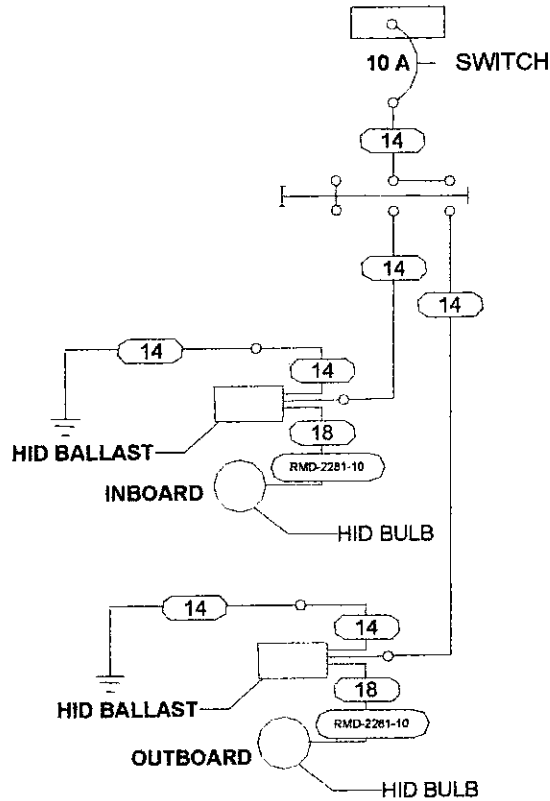
Unscheduled Inspections

Inspection	Event	Comments
Remove landing light retainer and lens, inspect; A) Ballast for mounting and security B) Bulb housing, bulb and retainer plate for security and general condition. C) Perform function test.	Hard landing, Lightning Strike, Wing strike.	Contact Knots 2U, Ltd. for a replacement.

Section 7.0

Typical Wiring Schematic

This wiring schematic is typical of the aircraft approved by this Supplemental Type Certificate and is shown as reference. See the appropriate Cessna Service Manual for wiring schematics applicable to your aircraft.



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John A. C. - 116c
CHICAGO AIRCRAFT
CERTIFICATION OFFICE
CHICAGO, ILLINOIS

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

Number SA01834CH

This certificate issued to Knots 2U, Ltd.
703 Airport Road
Burlington, WI 53105

*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 * of the * Regulations. **

*Original Product - Type Certificate Number : **

*(see attached FAA Approved Model

*Make : **

List (AML) No. SA01834CH for list of

*Model : **

Approved airplane models and applicable airworthiness regulations)

Description of Type Design Change:

Installation of wing mounted High Intensity Discharge Light Assembly Kit RMDHID in accordance with Knots 2U Installation Instructions as listed on AML No. SA01834CH, issued May 16, 2003, or later FAA approved revisions.

Limitations and Conditions:

1. Compatibility of this design change with previously approved modifications must be determined by the installer. 2. A copy of this Certificate and FAA Approved Model List (AML) No. SA01834CH, issued May 16, 2003, or later FAA approved revisions, must be maintained as part of the permanent records for the modified aircraft. 3. The High Intensity Discharge Light Assembly Kit RMDHID is to be inspected and maintained in accordance with Knots 2U Piper PA-24/30/39 HID Light Assembly Kit Installation Manual, No Revision, dated July 27, 2002, or later FAA approved revisions. 4. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission

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 : October 08, 2002

Date reissued :

Date of issuance : May 16, 2003

Date amended :



By direction of the Administrator

Gregory J. Michalik

(Signature)

Gregory J. Michalik, Senior Aerospace Engineer
Airframe & Administrative Branch
Chicago Aircraft Certification Office

(Title)

FAA APPROVED MODEL LIST (AML) NO. SA01834CH
 KNOTS 2U, LTD.

FOR

INSTALLING HIGH INTENSITY DISCHARGE (HID) LIGHT FOR WINGTIPS

ISSUE DATE: 5/16/03

ITEM	AIRCRAFT MAKE	AIRCRAFT MODEL	ORIGINAL TYPE CERTIFICATE NUMBER	CERTIFICATION BASIS FOR ALTERATION	INSTALLATION INSTRUCTIONS		AFM SUPPLEMENT NUMBER/DATE	AML AMENDMENT DATE
					NUMBER	REVISION NO. & DATE		
1	The New Piper Aircraft, Inc.	PA-24, PA-24-250, PA-24-260, PA-24-400	1A15	CAR 3	Piper PA-24/30/39 HID Light Assembly Kit Installation Manual	No Revision Dated 7/27/02	N/A	--
2	The New Piper Aircraft, Inc.	PA-30, PA-39	A1EA	CAR 3	Piper PA-24/30/39 HID Light Assembly Kit Installation Manual	No Revision Dated 7/27/02	N/A	--
3	Cessna Aircraft Company	150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, A150K	3A19	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
4	Cessna Aircraft Company	172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H, 172I, 172K, 172P, 172Q, 172R, 172S	3A12	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
5	Cessna Aircraft Company	172RG, 175, 175A, 175B, 175C	3A17	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
6	Cessna Aircraft Company	177, 177A, 177B	A13CE	FAR 23	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
7	Cessna Aircraft Company	177RG	A20CE	FAR 23	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
8	Cessna Aircraft Company	180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H	5A6	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	4/23/04

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					NUMBER	REVISION NO. & DATE		
9	Cessna Aircraft Company	182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N	3A13	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	4/23/04
10	Cessna Aircraft Company	182S, 182T, T182T	3A13	FAR 23	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	4/23/04
11	Cessna Aircraft Company	185, 185A, 185B, 185C, 185D, 185E, A185E, A185F	3A24	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
12	Cessna Aircraft Company	206, 206H, P206, P206A, P206B, P206C, P206D, P206E, T206H, TP206A, TP206B, TP206C, TP206D, TP206E, TU206A, TU206B, TU206C, TU206D, TU206E, U206, U206A, U206B, U206C, U206D, U206E	A4CE	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	4/23/04
13	Cessna Aircraft Company	207, 207A, T207, T207A	A16CE	FAR 23	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
14	Cessna Aircraft Company	208, 208A, 208B	A37CE	FAR 23	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
15	Cessna Aircraft Company	210, 210A, 210B, 210C, 210D, 210E, 210F, 210G, 210H, 210K, T210F, T210G, T210H, T210J, T210K	3A21	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03

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					NUMBER	REVISION NO. & DATE		
16	Cessna Aircraft Company	336	A2CE	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
17	Cessna Aircraft Company	337, 337A	A6CE	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
18	Cessna Aircraft Company	337B, 337C, 337D, 337E, T337B, T337C, T337D, T337E	A6CE	FAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
19	Reims Aviation S.A.	F150G, F150H, F150J, F150K	A13EU	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
20	Reims Aviation S.A.	F172D, F172E, F172F, F172G, F172H, F172K, F172P	A4EU	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03
21	Reims Aviation S.A.	FR172E, FR172F, FR172G, FR172H	A18EU	CAR 3	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03

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					NUMBER	REVISION NO. & DATE		
22	Reims Aviation S.A.	F337E, FT337E	A23EU	FAR 23	Cessna HID Landing/Taxi Light Assembly Kit Installation Manual	No Revision Dated 7/4/03	N/A	12/5/03



FAA APPROVED:

Gregory J. Michalik, Senior Aerospace Engineer
 Airframe & Administrative Branch
 Chicago Aircraft Certification Office

Amended: 12/5/03, 4/23/04

