

# Beechcraft Bonanza HID Landing Light Assembly Kit

INSTALLATION MANUAL No. HID-B-001

**Beechcraft 33 / 35 / 36 / YT-34 / T-34A / T-34B Models**

***KNOTS 2U, LTD.***

*709 Airport Road*

*Burlington, WI 53105*

*262 763-5100*

*www.knots2u.com*

REV #	DATE	EFFECT
A	11-23-05	Changed ballast mounting and associated hardware to three mount ballast
B	3-21-06	Added EMI Checklist as Section 8.0. Changed ballast part numbers as follows: RMD-2281-08 became RMD-2281-08A, RMD-2281-09 became RMD-2281-09A.
C	12-22-07	ECO 0119

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## Section 1.0

## Introduction

This manual describes the installation of a cowl mounted HID light which replaces the factory cowl mounted landing light. This approval does not extend to models not listed on the AML. The installation must be accomplished in accordance with AC43.13-1B and 2A. The installation requires the mounting of a ballast and bulb. 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 and bulb from the cowling, remove the air cleaner and the left hand cowl access door to allow more room for ballast installation.
- B) Install HID ballast off to the side of, and in proximity to, the air filter as shown in Figure A. Reference Figure B for installation details. (Alternate ballast mounting locations may be chosen by the installer, provided that they will withstand the inertia forces stipulated in AC43.13-2A Chapters 1 & 3 to Section 2 A)
- C) Connect black lead of cable # RMD-2281-11 to aircraft ground. verify ground continuity per AC43.13 1B/2A section 11. (Lead may be shortened if necessary)
- D) Connect red or white lead of cable # RMD-2281-11 to original aircraft landing light power wire. (Lead may be shortened if necessary)
- E) Per Figure B, install Part No. RMD-2280-09 to Part No. BON-HID-001, 002, or 003 using bulb retainer from original assembly.
- F) Connect cable # RMD-2281-10 from ballast to bulb.
- G) Confirm that all wires are secured with tie wraps or Adel clamps. For further information reference AC43.13-1B section 11-126
- H) Install new Light Assembly to cowling. (Figure B)
- I) Test HID light, confirm there are no circuit breakers popped with all electrical equipment turned on. Also check for any electrical/magnetic interference with all radio and navigation equipment per EMI checklist, section 8.0 of this manual.
- J) Re-install air filter and left hand cowl access door.

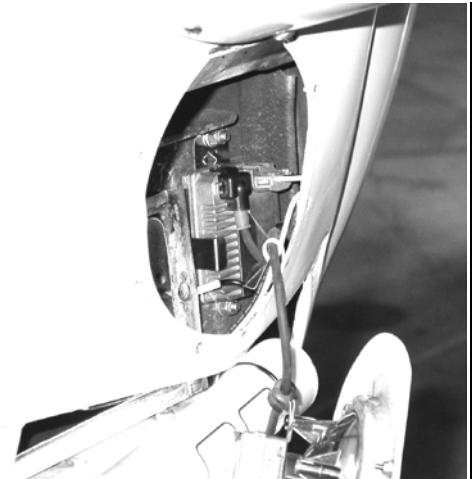


Figure –A-

## Section 3.0

## Parts List

See Figure B for Parts List

## Section 4.0

## Specifications And Paperwork

Complete FAA Form 337 for return to service and log book entry. Place a copy of the supplemental type certificate and maintenance / trouble shooting manual with aircraft logs.

HID Assembly Weight .....	.95 lbs.
Minus Weight of Assembly Removed.....	.84 lbs.
Weight Change .....	.11 lbs. - Negligible

HID Amperage 12/14 Volt .....	2.9 Amps
HID Amperage 24/28 Volt .....	1.5 Amps

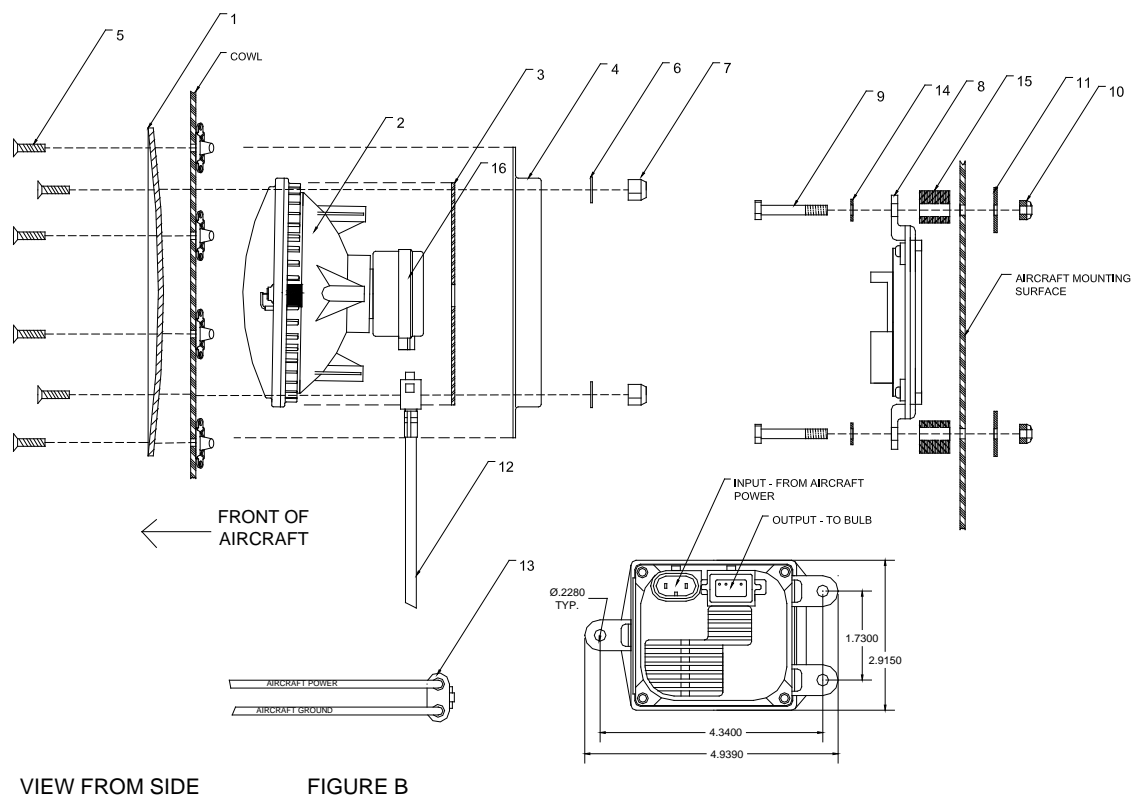
Amperage chart of stock bulb(s) removed:

### 12 / 14 Volt Systems

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

### 24 / 28 Volt Systems

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



VIEW FROM SIDE

FIGURE B

INDEX No.	PART No.	DESCRIPTION	UNITS PER ASSY.
1	BON-HID-001	HID RETAINER .....	1
Or	BON-HID-002	HID RETAINER .....	1
Or	BON-HID-003	HID RETAINER .....	1
2	RMD-2280-08	REFLECTOR HOUSING, HID LIGHT, CLEAR .....	1
OR	RMD-2280-09	REFLECTOR HOUSING, HID LIGHT, DIFFUSED .....	1
3	36-GASK	PAR 36 .0625 GASKET - SILICONE .....	1
4	*002-410000-143	BEECHCRAFT RETAINER (ORIGINAL) .....	1
5	AN507C-632R-8	S.S. C/S SCREW .....	11
6	AN960-6	WASHER .....	3
7	AN365-632A	NUT – FIBER LOCK .....	3
8	RMD-2281-08A	BALLAST, HID, 24 VOLT .....	1
OR	RMD-2281-09A	BALLAST, HID, 12 VOLT .....	1
9	AN3-12A	BOLT .....	3
10	MS21044N3	NUT-FIBERLOCK .....	3
11	AN970-3	WASHER, WIDE AREA .....	3
12	RMD-2281-10	HID CABLE, BALLAST TO LAMP .....	1
13	RMD-2281-11	CABLE, A/C TO BALLAST .....	1
14	MS35333-39	INTERNAL TOOTH LOCKWASHER .....	3
15	HID-2281-13	SPACER – NEOPRENE .....	3
16	RMD-2280-06	BULB, D1S .....	1

Hardware sizes are recommended, appropriate substitutions may be used.

- Beechcraft Part No. (or equivalent)

Section 5 Figure B

**Section 6.0**

**Maintenance / Troubleshooting Guide**

Knots 2U, Ltd.  
703 Airport Road  
Burlington, WI 53105  
262.763.5100  
[www.knots2u.com](http://www.knots2u.com)

**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, whichever comes first.	Contact Knots 2U, Ltd. for a replacement.

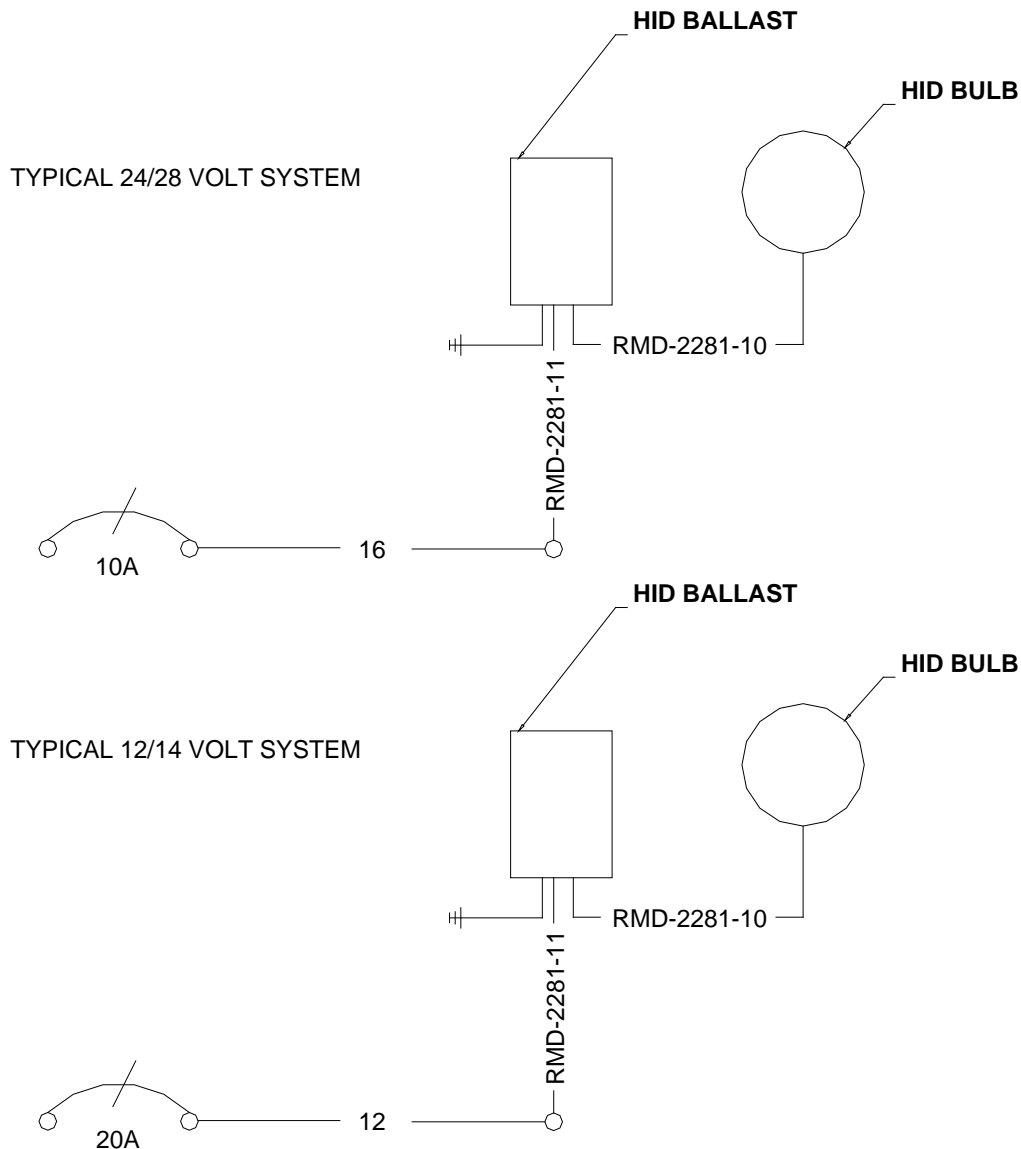
**Unscheduled Inspections**

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.	Contact Knots 2U, Ltd. for a replacement.

**Section 7.0**

**Typical Wiring Schematic**

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



## **Section 8.0**

## **EMI Checklist**

1. This EMI checklist must be completed after installation of the HID light(s). The purpose of this checklist is to insure that there is no out of tolerance interference between the HID lighting system and other systems already installed in the aircraft. If out of tolerance interference is detected, the installation may be modified by adding external filters, re-locating equipment, or re-routing cables as necessary to eliminate interference. For further assistance, the installer may contact Knots 2U, Ltd.
  - a. VHF Radio Check
    - With the VHF Radio on, adjust to the squelch activation threshold. Test the following frequencies, 121.7, 122.95, 128.7, and 131.3. Note any normal background noise.
    - Activate HID light(s) and repeat frequency check. Note any deviation in readings between tests.
    - Repeat check on any additional radios.
  - b. VOR Check
    - With the nav radio on adjust squelch to the activation threshold. Test the following frequencies, 108.00, 111.4, 116.4 and 117.95. Note any normal background noise.
    - Activate HID light(s) and repeat frequency check. Note any deviation in readings between tests.
    - Repeat check on any additional nav radios.
  - c. ADF Check
    - With the ADF/NDB on, adjust to the squelch activation threshold. Test at least three frequencies one near the low ADF/NDB frequency range, one near the middle ADF/NDB frequency range and one in the higher ADF/NDB frequency range. Note any normal background noise.
    - Activate HID light(s) and repeat frequency check. Note any deviation in readings between tests.
    - Repeat check on any additional ADF/NDB driven equipment
  - d. GPS Check
    - Turn on GPS and set to a way - point at least 100 miles away. Note GPS readings
    - Activate HID light(s). Note any deviation in readings between tests.
    - Repeat test for each additional GPS.
  - e. Additional Equipment

Operate any other equipment and test for interference with the HID light(s). Individual equipment installation and/or operation manuals may be referenced for specific test procedures.