

## **CARGO MIRROR/PULSE LIGHT, KIT INSTALLATION INSTRUCTIONS**

**MODELS: BELL 205A-1**



Read all of the maintenance manual supplement instructions  
thoroughly prior to the inspection of this product



**Weight & Balance**

<u>Part Number</u>	<u>Description</u>	<u>Weight</u>	<u>Long. Arm</u>	<u>Lat. Arm</u>
AAL-290-010-901	Mirror/Light, Kit	10.34* 4.69 (Kg)	4.22 .11 (m)	0.00 0.00 (m)
AAL-290-010-002	Mirror, Kit	5.90* 2.68 (Kg)	3.12 .08 (m)	0.00 0.00 (m)

\* Total increase in weight to aircraft.

**Aircraft Applicability**

- Model: Bell Helicopter 205A-1  
Serial No: All

**General Notes**

- All Installation Instructions shall be accomplished in accordance with (IAW) standard aircraft practices. Refer to the current revision of the FAA publications AC 43.13-1B and AC 43.13-2B for details on standard aircraft practices.
- Torque fasteners IAW the tension type torque limits indicated in the current revision of the FAA publication AC 43.13-1B, Table 7-1 unless otherwise specified.
- All Dimensions are in imperial measures (inches/pounds).
- Refer to the current revision of the Cargo Mirror/Pulselight, Kit Illustrated Parts Breakdown (AAL-290-015-103) for the part numbers of the item(s) referenced within this document.
- Refer to the current revision of the Cargo Mirror/Pulselight, Kit Maintenance Manual Supplement (AAL-290-015-203) for instructions on continuing airworthiness for the item(s) referenced within this document.
- Install Pulselight Control Unit, Assy (Item 15) IAW the current revision of the Precise Flight, Pulselight Installation Manual, PPRI-3000, section 2.4, 2.6 & 3.2
- If changes to this document are required, Alpine Aerotech Ltd. shall revise all pages and reissue the entire document.
- Alpine Aerotech Ltd. shall make any subsequent revisions of this document available upon request. Alpine Aerotech Ltd. also recommends that the end user of this product periodically verify the revision level of this document.



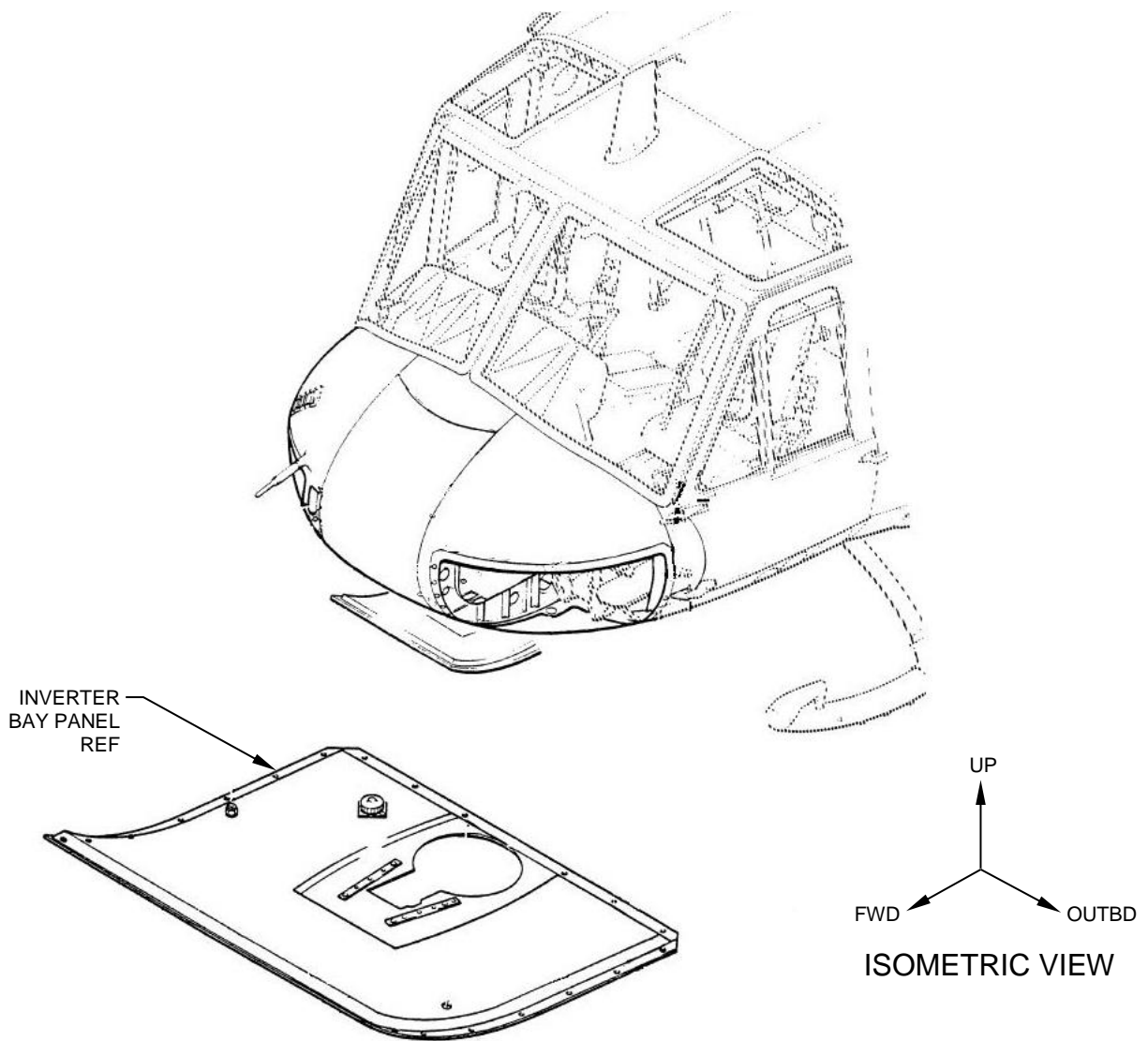
### **Installation Notes**

- 1 Coordinate Insert (Items 2 & 3) positions with holes in LHS (Item 4) and RHS (Item 5) Mounting Block, Assys.
- 2 Apply fillet of Sealant (Item C02) to periphery of Mounting Block, Assys (Item 4 & 5) after installation. Sealant is not supplied, procure locally.
- 3 Utilize Adhesive (Item C01) for installation of inserts into their respective honeycomb panels. Adhesive is not supplied, procure locally.
- 4 Apply fillet of Sealant (Item C02) to groove of grommet (Item 38) before installation. Sealant is not supplied, procure locally.
- 5 Violet and gray wires shown connected for alternating strobe.
- 6 Brown wires joined for high speed pulse rate.
- 7 Apply Adhesive (Item C03) to faying surfaces of cable tie mount (Item 39) and inverter bay panel. Adhesive is not supplied, procure locally.



**Installation Instructions (205A-1)**

1. Gain access to the inverter bay panel on the underside of the aircraft nose. Reference Figure 1.



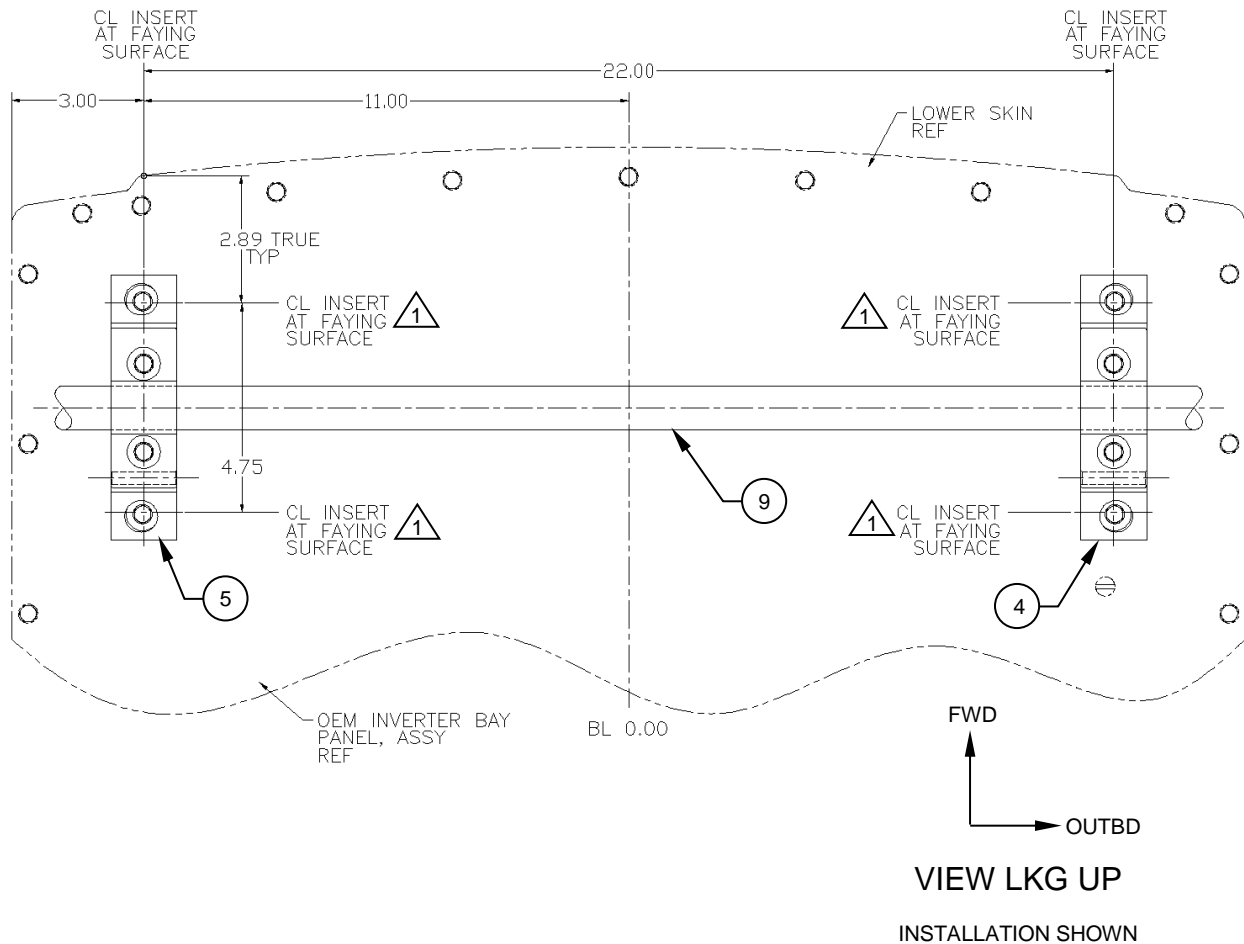
**Figure 1**

2. Remove the inverter bay panel. Reference Figure 1.



**Installation Instructions (205A-1)**

3. Roughly position the Mounting Block, Assys (Items 4 & 5) on the outside of the inverter bay panel. Reference Figure 2.



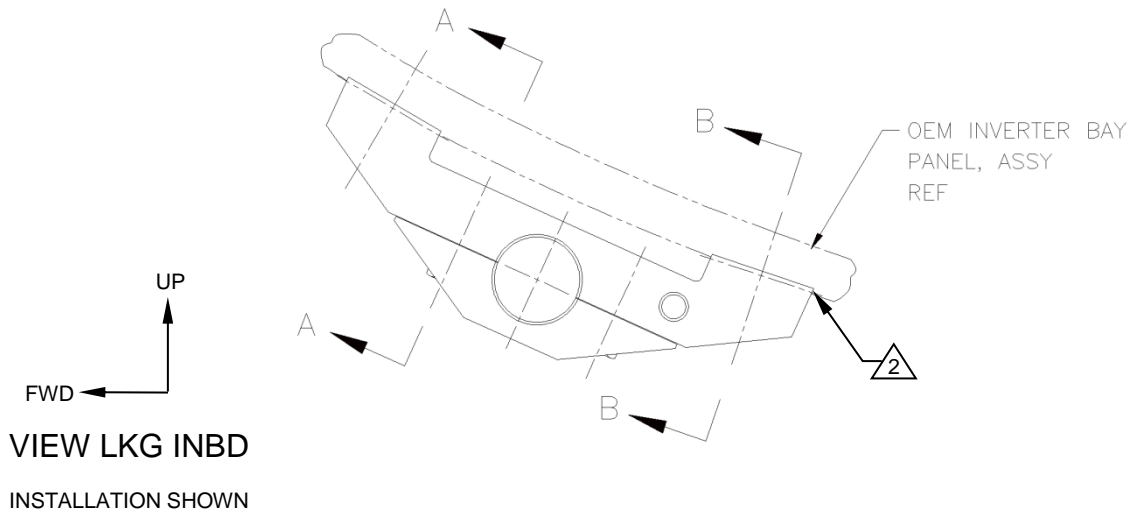
**Figure 2**

4. Lay the Crosstube, Assy (Item 9) into the slots in the Mounting Block, Assys (Items 4 & 5). Reference Figure 2.
5. Align the Crosstube, Assy (Item 9) perpendicular to the aircraft butt line axis and position the Mounting Block, Assys according to the dimensions shown. Reference Figure 2.
6. Mark locations of the four inserts and install them in accordance with Bell Structural Repair Manual BHT-ALL-SRM, Section 3-2-12.

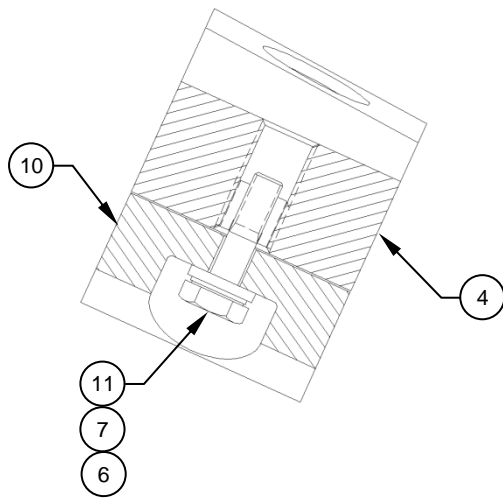


**Installation Instructions (205A-1)**

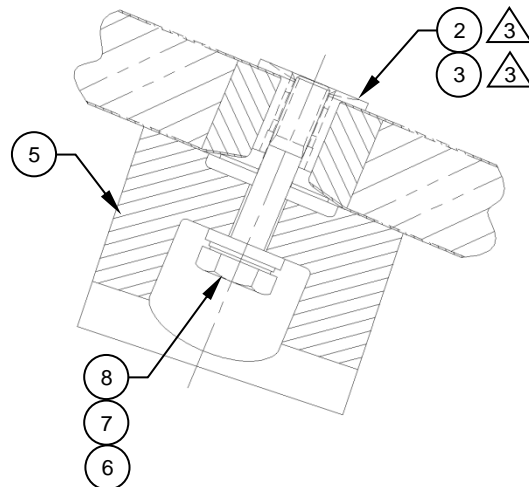
7. Install the remaining fasteners in the Mounting Block, Assys (Items 4 & 5) and add a fillet of Sealant (Item C02) around the edge of each Mounting Block, Assy. Reference Figures 4 & 5.



**Figure 3**



**Figure 4**  
Section View A-A



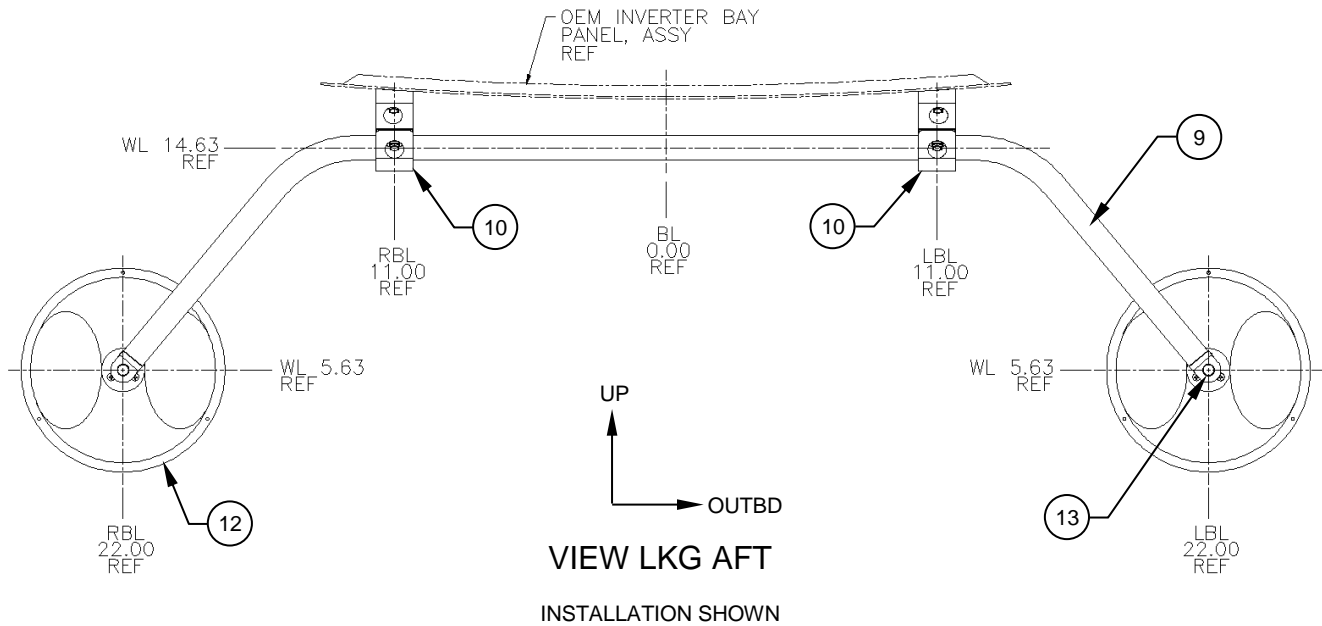
**Figure 5**  
Section View B-B



### **Installation Instructions (205A-1)**

8. Install the Mirror, Assys (Item 12) on the Crosstube, Assy (Item 9). Reference Figure 6.

**NOTE: Discard the OEM lock washers (split ring washers) that come supplied with the Mirror, Assys (Item 12) and replace with Washer, Lock (Item 13).**



**Figure 6**

9. Loosely attach the Crosstube, Assy (Item 9) to the Mounting Block, Assys (Items 4 & 5) with the Cap, Details (Item 10) and the supplied hardware. Reference Figures 4 & 5.

**NOTE: Do not apply final torque to fasteners common to the Cap, Details until the desired pilot/co-pilot viewing angle is established.**

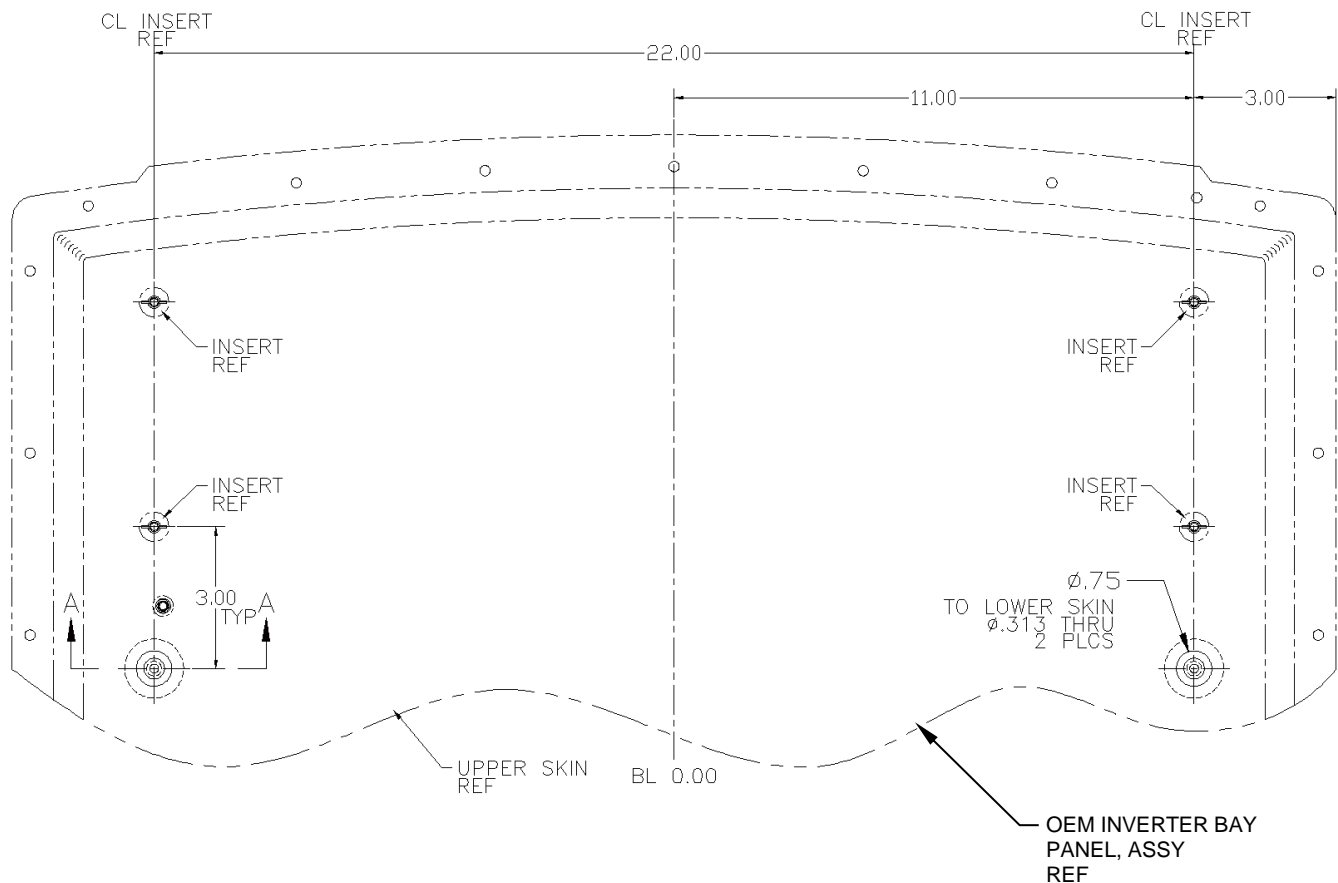
10. Cargo Mirror installation complete.
11. Perform a General Inspection of all items to ensure proper installation.
12. Update the aircraft logbook to reflect the installation of the Cargo Mirror, Kit.

**NOTE: For installation of the Pulselight, Kit, proceed with steps 13 to 29.**



**Installation Instructions (205A-1)**

13. Mark the location of wire holes in the inverter bay panel in accordance with the dimensions outlined below. Reference Figure 7.



**Figure 7**

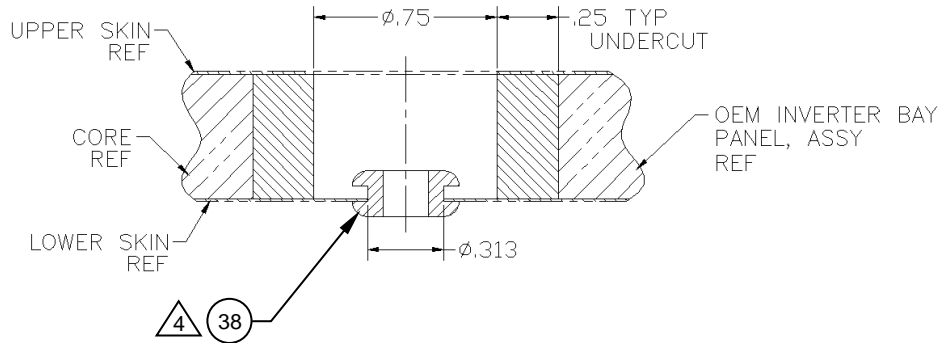
14. Drill and epoxy the wire holes as per standard practices outlined in Bell Structural Repair Manual BHT-ALL-SRM. Reference Figure 7.
15. Install the Grommets (Item 38) in the lower skin of inverter bay panel as shown. Reference Figures 7 & 8.





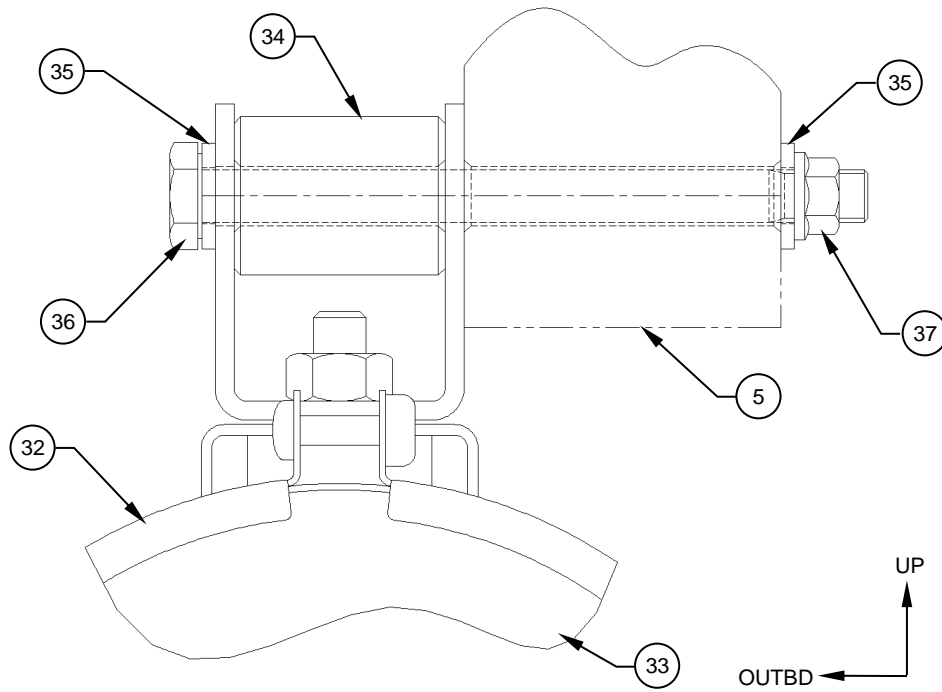
**Installation Instructions (205A-1)**

16. Lead the supplied wiring harness (Item 40) through the appropriate wire holes and associated Grommets (Item 38) in the inverter bay panel keeping the male connector on the inside of the panel. Reference Figure 8 & 11.



**Figure 8**  
Section A-A

17. Install the Housing, Assys (Item 32) on the Mounting Block, Assys (Items 4 & 5). Reference Figures 9 & 10.



**Figure 9**

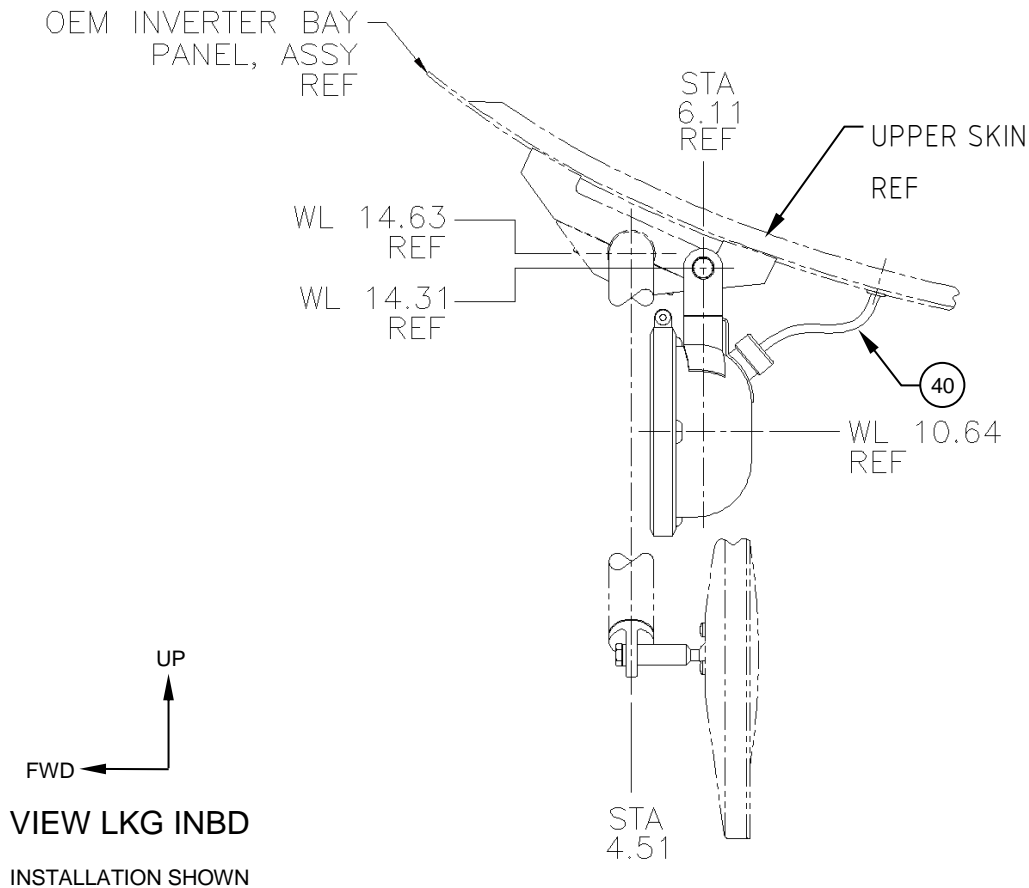
VIEW LKG AFT

RHS INSTALLATION SHOWN



**Installation Instructions (205A-1)**

18. Connect the Wiring Harness, Assy (Item 40) to the appropriate Housing, Assys (Item 32) and assemble with Lamp, Assys (Item 33). Reference Figures 9, 10 & 13.

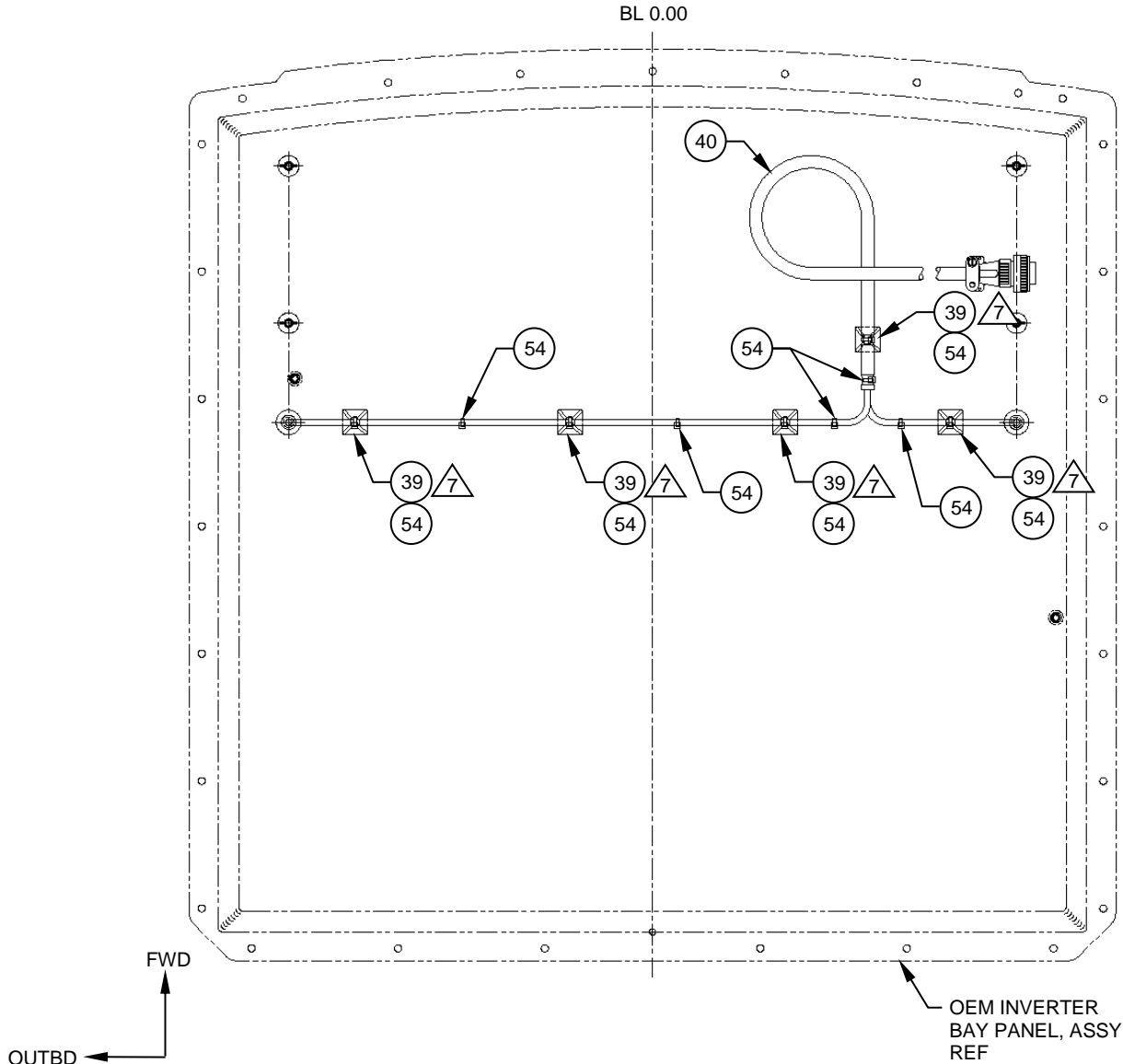


**Figure 10**

19. Bond the cable tie mounts to the inner surface of the inverter bay panel using the specified urethane adhesive (Item C03). Reference Figure 11. Allow the adhesive to cure before proceeding to Step 20.
20. Secure the Wiring Harness, Assy (Item 40) to the inverter bay panel using cable ties and bonded cable tie mounts. Reference Figure 11.



**Installation Instructions (205A-1)**



**VIEW LKG DOWN**

**Figure 11**

INSTALLATION SHOWN

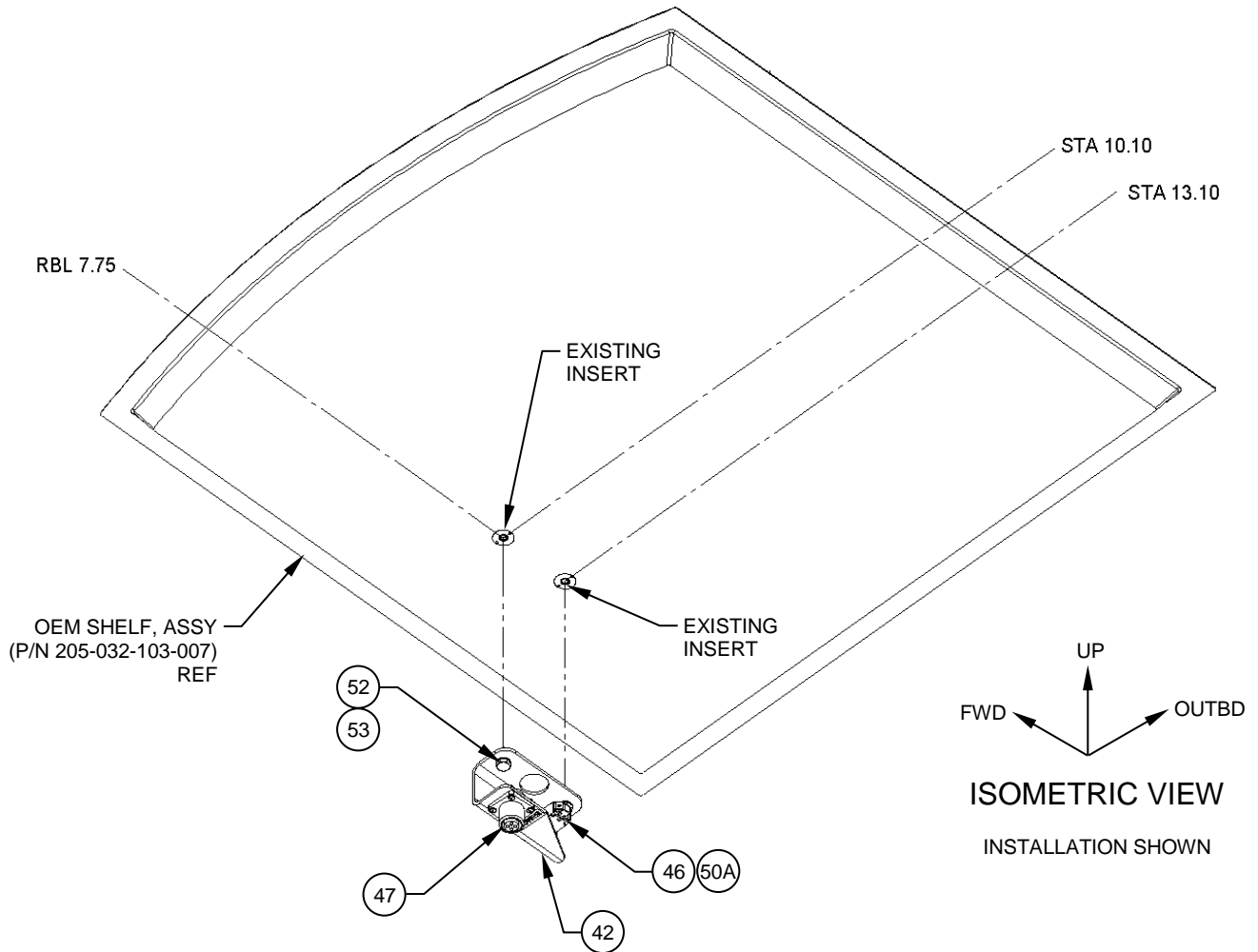
21. Mount the Control Unit, Assy (Item 15) to the aircraft radio rack.

**NOTE:** Location on the aircraft radio rack is to be determined by the installer. Ancillary items required to accomplish installation of Control Unit, Assy are to be supplied by the installer. Weight and Balance information is to be recalculated as required.



**Installation Instructions (205A-1)**

22. Install the Bracket, Assy (Item 42) on the lower side of the OEM inverter bay panel assy with the supplied hardware as shown. Reference Figure 12.



**Figure 12**

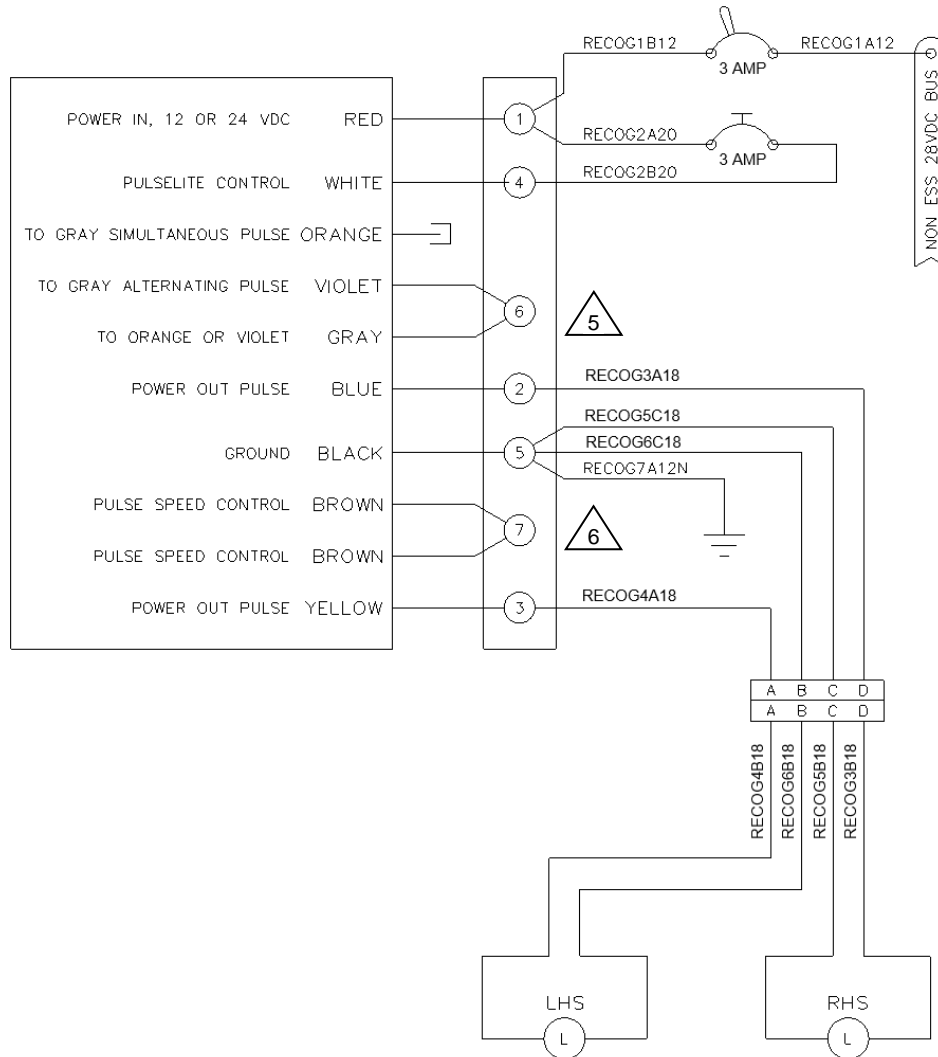


**Installation Instructions (205A-1)**

- Lead the free (raw) ends of the supplied Wiring Harness, Assys (Item 47 & 50A) from the Bracket, Assy (Item 42) to the Control Unit, Assy (Item 15) on the radio rack and wire accordingly. Reference Figure 13.

**NOTE: Ensure Wiring Harness, Assys (Item 47 & 50A) are properly secured to avoid the possibility of pinching, chaffing or other damage to the wires.**

- Locate and install the Toggle Switch (Item 51) in a suitable location on the flight control panel. Label the switch as necessary.



**Figure 13**



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### **Installation Instructions (205A-1)**

25. Wire the Toggle Switch (Item 51) and pulse control to the aircraft. Reference Figure 13.
26. Re-install inverter bay panel.
27. Installation complete.
28. Perform a General Inspection of all items to ensure proper installation.
29. Update the aircraft logbook for the installation of the Cargo Mirror/ Pulselight, Kit