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Installation Instructions for UMA EL Bezel Light System on Beech King Air 65-A90-1or 65-A90-4

Doc # st2222-100g March 10, 2003

Parts Required for Installation:

2-2X-X	2 1/4" EL Light Bezels	
2-3X-X	3 1/8" EL Light Bezels	
10-700-XX	EL Panel Invertor	powers up to 12 bezels
1G02	EL connector kit	(1) kit per bezel

Additional materials or special tools may be needed:

Instrument mounting screws AN515B6 (or equivalent), 1/4" longer as required.
Wire MS22759 26-22 gauge (or equivalent),
Shrink tubing, lug connectors, solder iron, heat gun
mounting hardware
Connector Crimping Tool (Amp # 90222-6)

Before Installation:

The installer should evaluate the currently installed instrument lighting. This Kit is intended for installation only on instruments **not** having internal lighting. Any instrument properly installed with internal lighting among those for which this kit is intended need not have supplemental lighting installed.

Trimming: UMA EL Bezels are designed to provide a secure mounting for the electro-luminescent lighting element. In order to support the bezel around an adjusting knob it is necessary to make the molding larger than the outside dimension of the instrument, possibly creating the need to trim the bezel molding in one or more of three areas:

1). Where the instrument being lit is mounted in an outside corner of the panel, the bezel may need to accommodate a bend radius from forming the instrument panel. It is permissible to sand, file, or cut off enough material from the bezel face to match the profile of the instrument, which would mount flat without the light bezel in place.

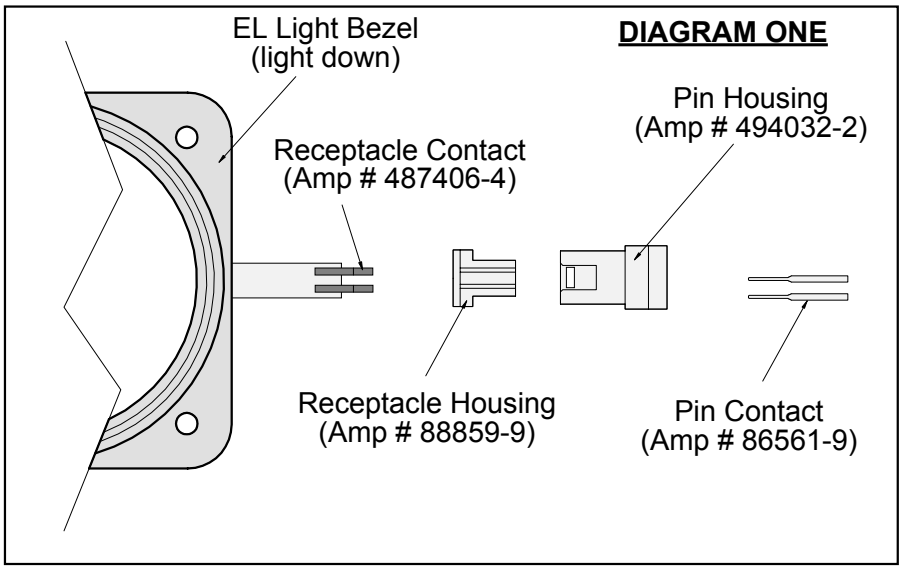
2). Some instruments, notably directional gyros and attitude indicators are built with adjusting shafts, which protrude through the panel mounting hole. It is permissible to enlarge the hole with a drill to accommodate the shaft similar to the panel.

3). Because of the additional material at the corner to provide support around the cutout, it may be necessary to cut, file, or sand the side down where sidewise interference exists.

-Do Not trim in the immediate area of an existing cutout. If the interference is in the area along the top where the light strip lead comes through, try rotating the bezel 90°. When a cutout prevents rotation, contact UMA Inc. for a solution.

Limit the material removed to 0.075" from the outside dimension along the side and 0.250" at the corner radius.

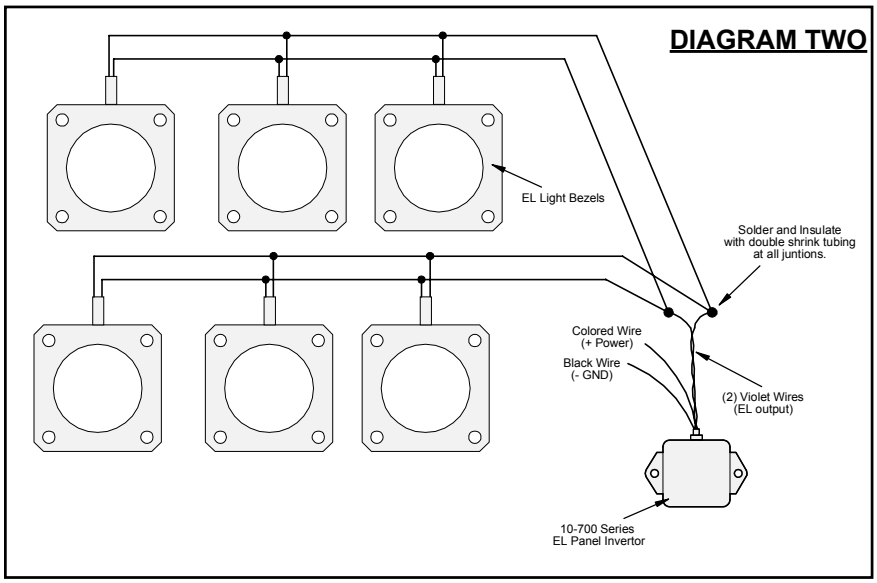
Installation Procedure:



1. Remove Instrument from aircraft panel, measure old mounting screws and replace with 1/4" longer screw. Place appropriate bezel onto the face of instrument and make sure bezel fits. Examine all instrument knobs and make sure the addition of bezel will not interfere with fit or function. (Refer to trimming instructions above in "Before Installation"). Remove (2) supplied pin contacts from light strip and install plastic receptacle housing from connector kit (1G02) onto strip receptacle contacts. Housing should snap in place. Refer to Diagram One for reference.

2. Mount EL Panel Invertor (10-700-XX) in a suitable location. It should be mounted on a metal surface. Drill holes and mount with appropriate hardware. See drawing 10-700-XX for size and spacing.

3. *Note: Use additional MS22759 or equivalent 26-22 gauge wire.*
Each bezel will be connected in **parallel** with output of Invertor. Refer to Diagram Two for reference. The recommended way to connect lighting system is to make separate wire harnesses which connects three to four bezels together. Cut short wires for connecting adjacent bezels into harness. Retain grouping of dimming circuits, so that the same instruments are dimmed by the same control as prior to modification. Maintain separation of dimming circuits to provide independent dimming for pilot and copilot halves of the panel.

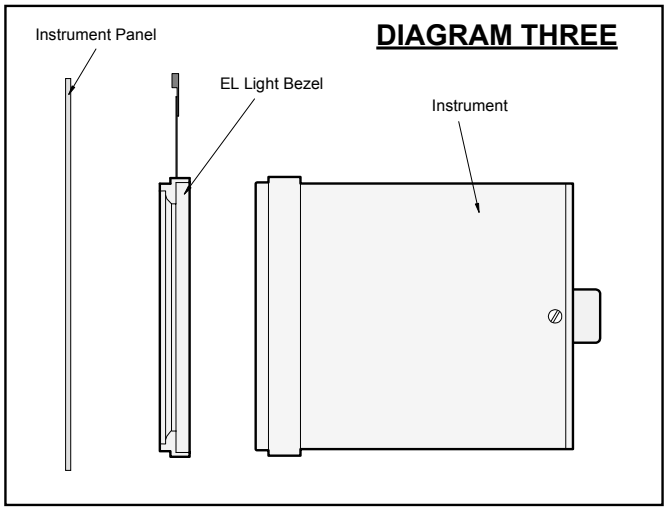


<u>Twist all wires a minimum of 8 turns per foot</u>. Install a pin contact from Connector kit (1G02) onto one end of each short wire, using crimping tool Amp #90222-6 (or equivalent). Do not install into pin housing <u>at this point</u> as pin locations vary between some bezel connectors. See step 5.

4. Once all harnesses are assembled, install behind panel and route wire close to existing manufactures wire bundles when possible. Secure harness with ties as needed. Twist leads together and route to EL Panel Invertor output wires, the (2) Violet colored wires. Connect next harness wires in parallel with first, repeat until all are connected to Invertor outputs. Refer to Diagram Two for reference.

Note: All connections are to be in accordance with AC 43.13-1B Section 6 thru 13.

5. Start at top of panel and work your way down, place appropriate bezel behind panel and slide (2) pins into corresponding slots of pin housing (Refer to Diagram One), make sure wire pins snap in place and **match light strip pin locations**.
Connect both housings together until they snap.



6. Next mount instrument in panel with bezel between panel and instrument.
Important: Make sure bezel connector strips are not wrinkled or kinked and install mounting screws. Refer to Diagram Three for reference.

7. Repeat steps 5 and 6, until all instruments not internally lit for which this kit provides parts have bezels installed.

8. Next the input side of Invertor is connected as follows:
Connect black wire to common ground of aircraft. Yellow wire (28 V DC) is connected to existing dimmer output. Verify capacity of the circuit. (UMA EL Bezel Lighting System draws approximately 10 mA per bezel.) Refer to Drawing #10-700-XXX, for reference. Verify or install placards identifying Pilot and Copilot Dimmer Controls.

9. Insert Supplement Document # st2222-500 into Aircraft Flight Manual.

Post Installation Check:

1. In a dark environment, with instrument lights on, perform the following checks:

   a. Verify that each instrument is evenly illuminated and easily readable.
   b. Verify that the illumination is not reflected from other surfaces including the windshield.
   c. Verify that the illumination is shielded from the pilot(s) eyes at full brightness.
   d. Verify that instrument light dimmer control has good linearity from off to full brightness.

2. Perform EMI Ground Test Procedure per UMA Document # st2222-201.

Instructions for Continued Airworthiness:

On an annual basis, Inspect light system as per post-Installation check. Life expectancy is 10,000 hrs. Should failure occur, replacement of the bezel unit is required.