

# Shade Adjustment Guide

MODEL: AP2655-SH-xx  
Shade Adjustment Guide V 1.03-9/2006

## **CAUTION:**

**RISK OF ELECTRIC SHOCK - EXPOSED WIRES AND CONNECTIONS ARE ACCESSABLE DURING THIS PROCEEDURE. ONLY QUALIFIED TECHNICAL PERSONNEL SHOULD PERFORM MAINTENANCE AND REPAIRS. DISCONNECT POWER BEFORE ACCESSING LIVE PARTS.**

- 1 Review the mechanical assembly and confirm it is in working condition:
  - Cables are intact and are wrapping smoothly around bottom roller (FIG. 1),
  - Shade is not damaged or torn,
  - Bottom edge of the shade is in the guides of the frame and the shade can move freely.

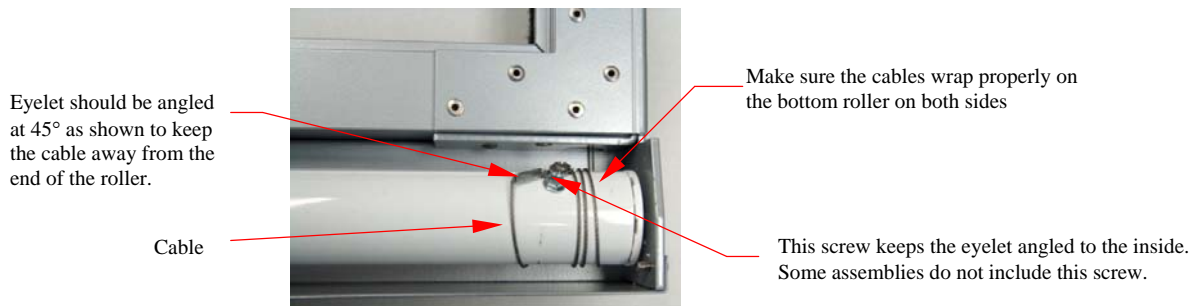


FIG. 1

The SHADE assembly is supplied with three (3) limit switches. These switches are attached to a plate that is directly above the motor. Two of the three switches stop the shade at the upper and lower positions and the third switch is part of the optional “Fail-Safe” circuit. (The Fail-Safe switch controls the voltage to a time delay relay that removes power to the lamp should the shade fail to close within 10 seconds. The time delay relay is located in the ballast housing.) Although the shades are adjusted and tested at the factory, it is sometimes necessary to re-adjust the switches.

- 2 Remove shade motor cover by loosening one screw and sliding the cover up. (FIG. 2)
- 3 Remove directional control relay by removing retaining clip and pulling relay out of its socket. (FIG. 3)
- 4 Install directional control relay By-Pass switch into the relay socket. (FIG. 4)

**IMPORTANT:** When operating the shade motor, move the relay By-Pass switch to the center/neutral position whenever the motor continues to run after the shade has reached it full open or full closed position. This will prevent the motor from over-heating and will prevent damage to the shade.

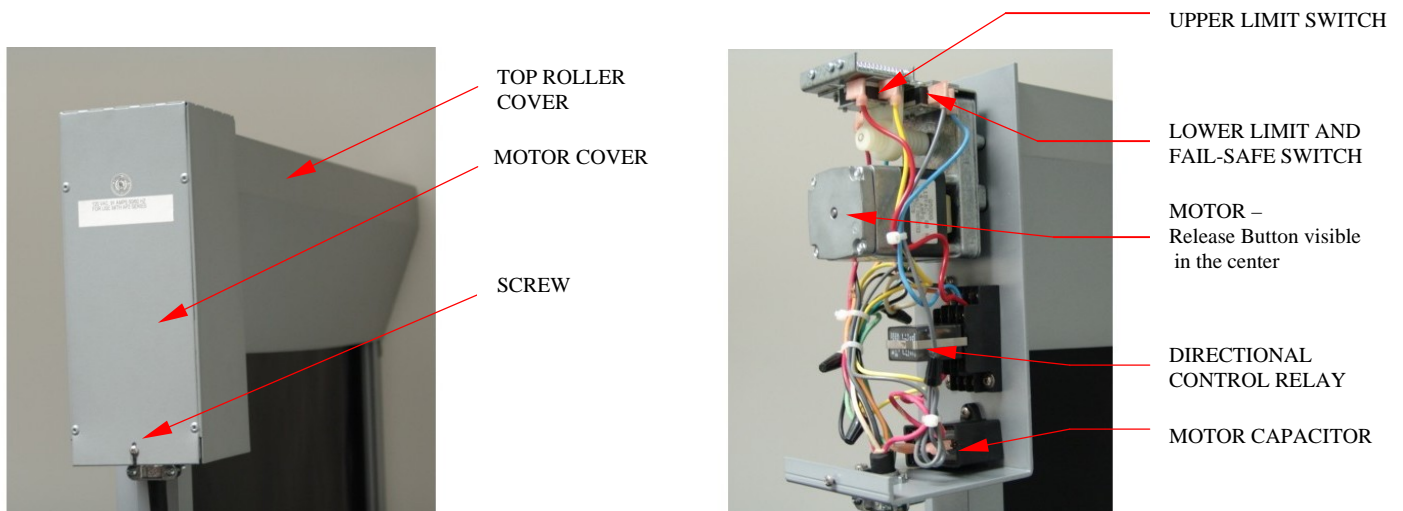


FIG. 2

FIG. 3

- 5 Verify that the Upper-Limit switch is properly adjusted:  
 The shade motor gets its power from the 120-volt tap on the ballast; with the power “on” to the luminaire, use the By-Pass switch that was just installed, to open the shade. The Upper-Limit switch should stop the shade just as the bottom edge of the shade clears the opening and goes behind the top roller cover (FIG. 2). Use the By-Pass switch to stop the shade travel should the motor continue to run after the bottom edge of the shade is no longer visible.

**Upper-Limit Switch adjustment – Shade stops before it is fully open:**

- 6 Put the By-Pass switch (FIG. 4) in the neutral/center position.  
 7 Loosen the Upper-Limit switch locking screws (FIG. 5) approximately one turn.  
 8 Turn the Upper-Limit adjustment screw (center screw) clockwise for ½ to 1 full turn.  
 9 Tighten the Upper-Limit switch locking screws.  
 10 Use the By-Pass switch to partially close the shade and then to open the shade.  
 11 Observe where the shade stops, if needed, repeat the above steps until the shade stops at the proper location.

**Upper-Limit Switch adjustment – Motor continues to run after shade is open:**

- 12 Using the By-Pass switch, position the shade so that the bottom edge is not blocking any of the frame opening and the edge is no more than 1” inside the top roller cover.  
 13 Loosen the Upper-Limit switch locking screws (FIG. 5) and turn the Upper-Limit switch adjustment screw (center screw) counter-clockwise until you hear the faint “click” of the limit switch.  
 14 Tighten the Upper-Limit switch locking screws.  
 15 Use the By-Pass switch to partially close the shade and then to open the shade  
 16 Observe where the shade stops, if needed, repeat the above steps until the shade stops at the proper location.

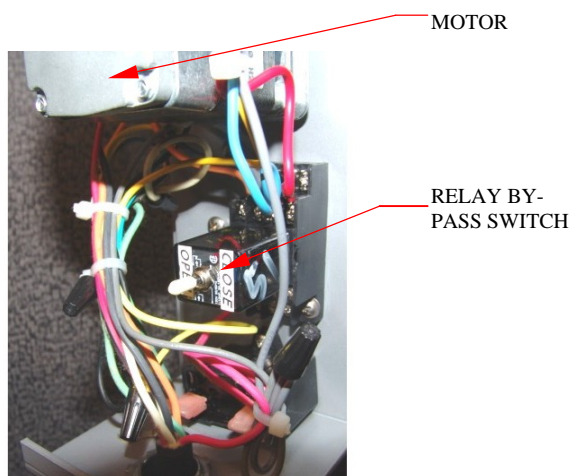


FIG. 4

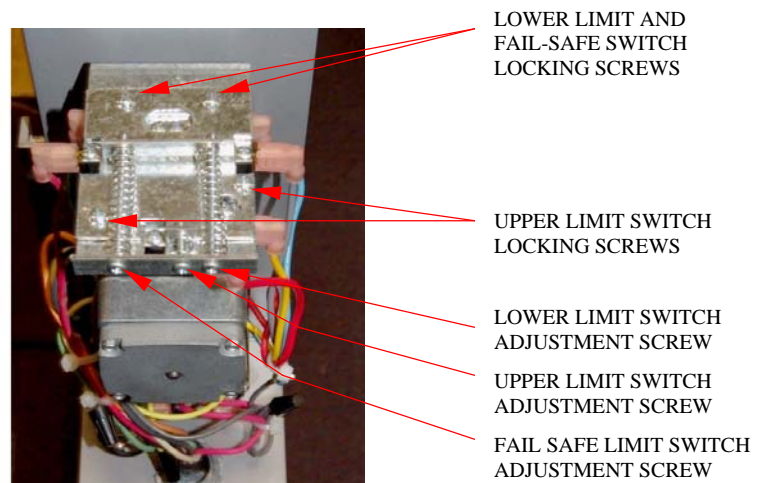


FIG. 5

**ATTENTION:**

**THE MOTOR IS EQUIPPED WITH A THERMAL LIMIT SWITCH. THIS SWITCH MAY TRIP IF CYCLED MULTIPLE TIMES (APPROXIMATELY 10 PER MINUTE.) IF THE THERMAL SWITCH TRIPS, ALLOW MOTOR TO COOL FOR 10 MIN. BEFORE ATTEMPTING TO RESET THE LIMIT SWITCHES.**

**Lower-Limit switch and the Fail-Safe switch: (An ohm-meter / continuity meter is required)**

- Determine if your luminaires are supplied with the optional Fail-Safe circuit.  
 Locate the ballast assembly and remove the ballast cover. If supplied with Fail-Safe, a relay assembly is attached to a plate inside the ballast box near the terminal block.
- For luminaires without Fail-Safe, the adjustment consists of stopping the shade in the full open and full closed positions.
- For luminaires with Fail-Safe, another adjustment is required to actuate the Fail-Safe limit switch slightly before the Lower-Limit switch is actuated.
- When the Lower-Limit switch is properly adjusted – the shade travel is stopped when the bottom edge of the shade enters the opening in the bottom frame extrusion.

**WITHOUT FAIL-SAFE; Lower-Limit switch adjustment – Shade stops before it is fully closed:**

- 17 Put the By-Pass switch in the neutral position, (FIG. 4)
- 18 Loosen the Lower-Limit switch locking screws (FIG. 5)
- 19 Turn the Lower-Limit switch and Fail-Safe Limit switch adjustment screws counter-clockwise, ½ to 1 full turn.
- 20 Tighten the Lower-Limit switch locking screws.
- 21 Use the By-Pass switch to partially open the shade and then to close the shade.
- 22 Repeat steps 17 through 21 until the shade stops at the proper location.

**WITHOUT FAIL-SAFE; Lower-Limit Switch adjustment – Motor continues to run after shade is closed:**

- 23 Use the By-Pass switch to position the shade in the correct closed position (bottom edge of the shade just inside the opening of the bottom frame.)
- 24 Loosen the Lower-Limit switch locking screws (FIG. 5) and turn the Lower-Limit switch and Fail-Safe Limit switch adjustment screws clockwise, until the switch opens.  

There is a faint click when the switch opens, if this is not audible - disconnect the **blue** and **gray** wires from the Lower-Limit switch by pulling the connectors (FIG. 6, right-hand side) from the blade terminals of the switch and check for continuity between these blade terminals.
- 25 Tighten the switch locking screws.
- 26 Re-connect the blue and gray wires to the switch, if previously disconnected.
- 27 Use the By-Pass switch to partially open the shade and then close it to check if additional adjustment is required.

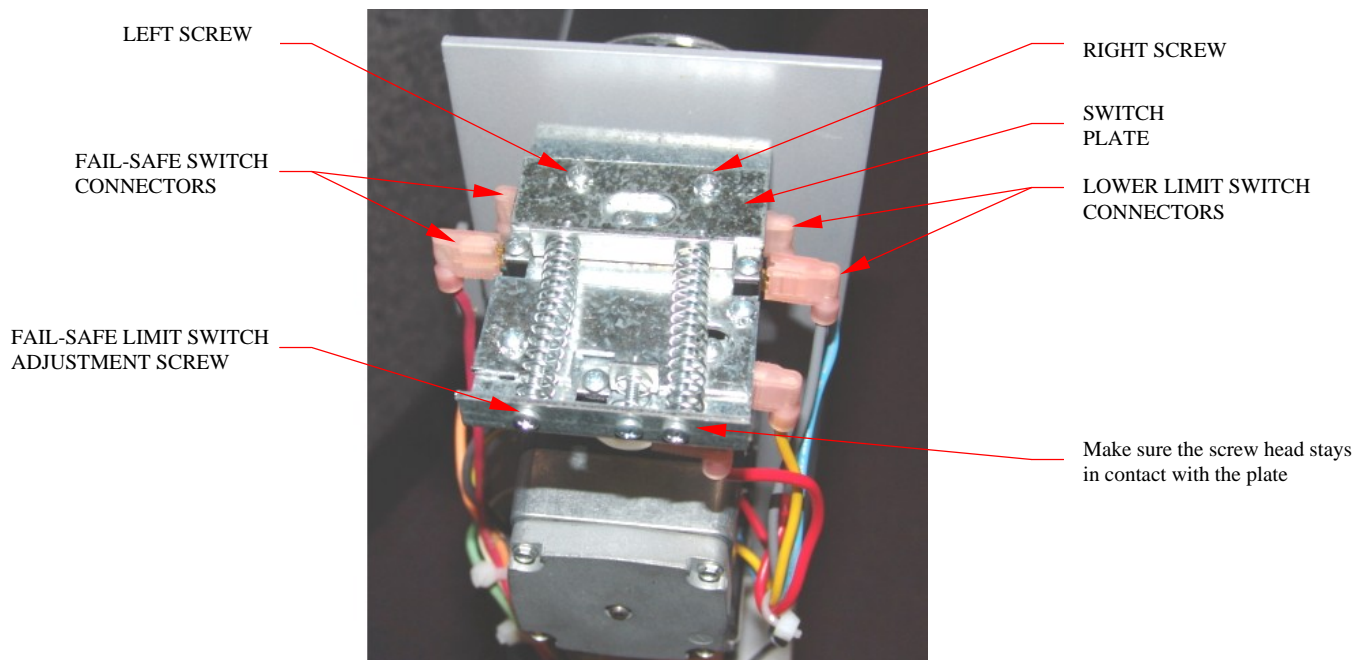


FIG. 6

**WITH FAIL-SAFE; Lower-Limit and Fail-Safe switch adjustment:**

With the Fail-Safe option, the best method to adjust the limit switches is to temporarily remove the Fail-Safe switch from the circuit and use a continuity meter /ohmmeter to adjust the switch settings.

- 28 Disconnect the **blue** and **red** wires from the **Fail-Safe switch** by pulling the connectors (FIG. 6, left-hand side) from the blade terminals of the switch.

**WITH FAIL-SAFE; Lower-Limit switch adjustment – Shade stops before it is fully closed:**

- 29 Put the By-Pass switch in the neutral position, (FIG. 4)
- 30 Loosen the Lower-Limit switch locking screws (FIG. 5)
- 31 Turn the Lower-Limit switch and Fail-Safe Limit switch adjustment screws counter-clockwise, ½ to 1 full turn.
- 32 Re-tighten the Lower-Limit switch locking screws.
- 33 Use the By-Pass switch to partially open the shade, then to close the shade.
- 34 Repeat the above steps until the shade stops at the proper location.
- 35 Check for continuity on the Fail-Safe switch.
  - A If the switch is open –
    - Make sure the switch locking screws are tightened.
    - Re-check the adjustment by opening then closing the shade
    - Re-check the Fail-Safe switch for continuity.
    - If the switch is open, re-attach the red and blue wires to the switch. Adjustment is complete.
  - B If the switch is closed
    - Loosen the Left Screw only (FIG. 6).
    - Turn the Fail-Safe Limit switch Adjustment Screw clockwise until the Fail-Safe switch “opens”.
    - The Switch-Plate should pivot around the Right Screw (FIG. 6). The Switch-Plate should be at a slight angle with the left side being closer to the adjustment screws than the right side.
    - Make sure all screws are tightened, partially open the shade then close it.
    - Verify that the shade stops in the correct location and that the Fail-Safe switch is “open”.
    - Repeat these procedures if necessary.
  - C Re-connect the red and blue wires to the switch. Adjustment is complete.

**WITH FAIL-SAFE; Lower-Limit switch adjustment – Motor continues to run after shade is closed:**

- 36 Use the By-Pass switch to position the shade in the correct closed position (bottom edge of the shade just inside the opening of the bottom frame.)
- 37 With the By-Pass switch in the neutral position, loosen the Lower-Limit switch locking screws (FIG. 4)
- 38 Turn the Lower-Limit switch and Fail-Safe Limit switch adjustment screws clockwise, ½ to 1 full turn.
- 39 Re-tighten the switch locking screws.
- 40 Use the By-Pass switch to partially open the shade, then to close the shade.
- 41 Continue the above steps until the shade stops at the proper location.
- 42 Check for continuity on the Fail-Safe switch.
  - A If the switch is open –
    - Make sure the switch locking screws are tightened.
    - Re-check the adjustment by opening then closing the shade
    - Re-check the Fail-Safe switch for continuity.
    - If the switch is open, re-attach the red and blue wires to the switch. Adjustment is complete.
  - B If the switch is closed
    - Loosen the Left Screw only (FIG. 6).
    - Turn the Fail-Safe Limit switch Adjustment Screw clockwise until the Fail-Safe switch “opens”.
    - The Switch-Plate should pivot around the Right Screw (FIG. 6). The Switch-Plate should be at a slight angle with the left side being closer to the adjustment screws than the right side.
    - Make sure all screws are tightened, partially open the shade then close it.
    - Verify that the shade stops in the correct location and that the Fail-Safe switch is “open”.
    - Repeat these procedures if necessary.
  - C Re-connect the red and blue wires to the switch. Adjustment is complete.
- 43 Remove directional control relay By-Pass switch
- 44 Replace the directional control relay and retaining clip.
- 45 Replace the shade motor cover and tighten the retaining screw.