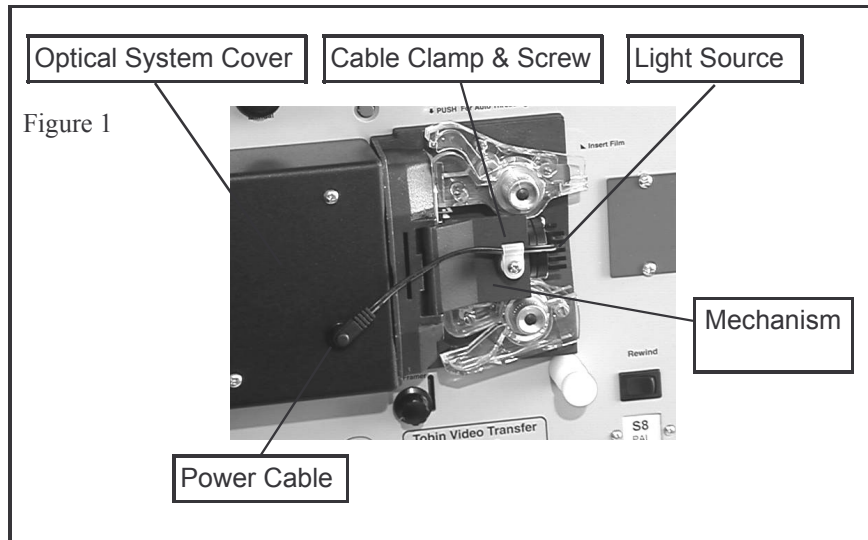


Light Source Replacement in the Tobin Video Transfer TVT-8 Machines

These instructions apply when exchanging a unit with a different type, or when replacing a worn-out light source after many years' use.

A. Physical replacement.

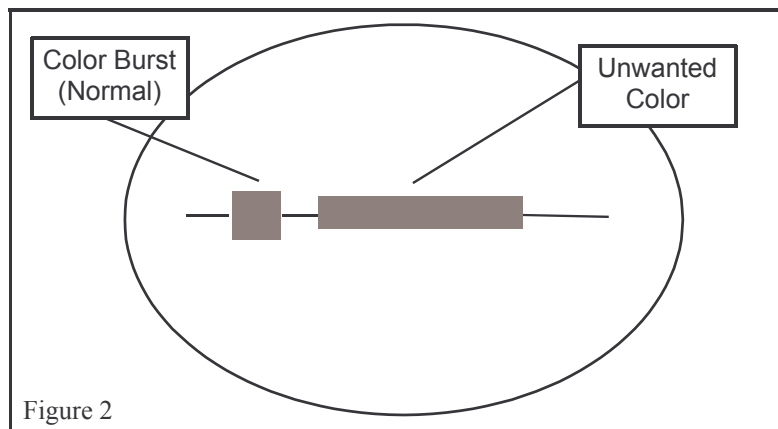
1. Refer to Figure 1. Unplug the power cable from the optical system cover.
2. Remove the screw and cable clamp holding the light source in place. Save these as they will be re-used.
3. Slide out the light source to the right to remove.
4. Slide in the replacement light source. Align so the tapped hole in the barrel section will be in the right place to accept the holding screw.



5. Place the cable clamp over the cable as shown. Pass the screw through the cable clamp hole. Pass the screw through the hole in the lens holder and into the tapped hole in the light source barrel. Tighten the screw gently.
6. Plug the power cable into the jack in the optical system cover.

B. Electronic adjustment.

1. Obtain an oscilloscope or waveform monitor. Connect it to the C (chrominance) output, the upper right-hand pin, of the S-video jack and chassis ground. Connect a picture monitor to the BNC video output.
2. Switch the TVT to "Still" and "Peak Auto." Adjust the oscilloscope controls for a display similar to that in Figure 2. (The left and right ends of the Unwanted Color portion correspond to the left and right edges of the picture.) Since no two light sources are exactly the same color, it will probably be necessary to adjust the white balance. This is indicated by unwanted color information in what should be a neutral white. This is removed as follows:
3. Remove the optical system cover



by removing three screws.

4. Obtain a small (1.6mm or 1/16") tip screwdriver and identify the two color balance adjustment pots (potentiometers or variable resistors) on the lower edge of the camera module's rear circuit board. On the oscilloscope, the color burst will always be present as part of the normal chroma signal. Any signal after the burst will be unwanted color if the white balance adjustments are incorrect.

5. If the picture monitor shows a distinct color, this will guide you in the fastest adjustment of white balance. If the "white" in the picture monitor is primarily blue or yellow, first adjust the left-hand pot. If the "white" is primarily red or cyan, instead first adjust the center pot.

Note 1: The color adjusting pots (see Figure 4) are tiny, delicate and easily damaged or torn from the circuit board. If any force is required to keep the screwdriver in the slot, apply an equal opposite pressure to the rear of the pot with your fingertip. **Note 2:** The camera circuit boards are

static sensitive so ground yourself to the TVT-8 metal case before and during adjustments. Do not generate static electricity, such as by rubbing your foot on a carpet. Otherwise the camera can be damaged and require replacement.

6. Adjust the primary (left or center) pot for a minimum color carrier after the color burst on the oscilloscope. Then adjust the other (center or left) pot for a minimum color carrier again. If there is still residual color, repeat the adjustments. A correct white balance is shown by almost no vertical signal (height) to the right of the color burst. In practice it may not be possible to get absolutely zero chroma over the entire picture area. A small residual brightness or color shading error will not be noticed in an actual picture.

7. Replace the optical system cover and the three attaching screws.

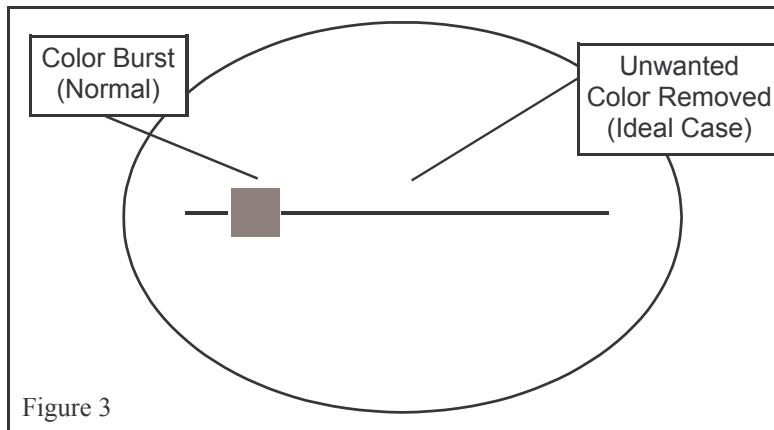


Figure 3

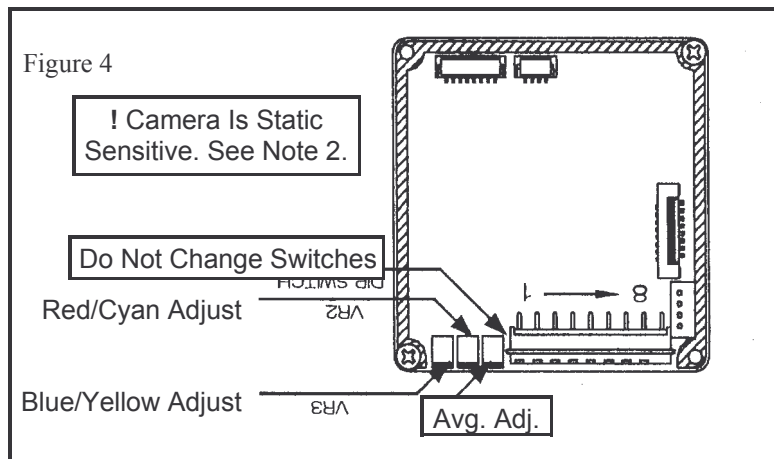


Figure 4

Tobin Cinema Systems, Inc.
<http://www.TobinCinemaSystems.com>