

Using the TCS TXM-11 Crystal for Bolex EBM-EL-ESM

1. Installation

The TXM-11 plugs into the 7-pin Tuchel socket reserved for crystal control. The unit can be attached wherever convenient, such as to the camera (with Velcro or a Nylon wire tie,) to the tripod handle, or to a commonly used cable. Keep the TXM-11's red LED (light emitting diode) visible for reference when needed.

2. Basic Operation

For crystal-controlled filming, set the camera's speed knob to the "SYNC" or "CRYS" position (depending on the model.) The camera will then run at a crystal 23.976, 24 or 25 FPS (frames per second) depending on which sub-model of the TXM-11 you have. The nameplate is clearly marked "23.976 FPS" in red, "24 FPS" in blue, or "25 FPS" in black.

The "Status Light" on the TXM-11 indicates proper or improper operation of the camera. A **dim** light indicates that crystal filming is taking place with only a slight correction being made by the TXM-11. A **bright** light indicates that the TXM-11 is working hard to maintain crystal speed, possibly owing to a weak battery, cold temperature or camera misadjustment. If the light **flashes**, and the camera speed cycles up and down, this means that the TXM-11 is no longer able to maintain crystal speed; in this case, you should stop filming and change the battery or select a lower non-crystal speed.

The TXM-11 can be left connected at all times, even when not filming with crystal control. When you select a speed on the camera's dial other than "SYNC" or "CRYS" the TXM-11 no longer has control over the camera. The status light may cycle or appear to be lit continuously, and it should be ignored. The added current drain is minimal, amounting to a small percentage of the total drawn by the camera.

3. Additional Information.

The TXM-11 can be used as a piece of precision test equipment for setting the camera's internal speed adjustment center point for crystal filming. Simply run the camera with film, and at normal voltage, in the crystal mode. Your repairman can quickly adjust the pot (potentiometer) in the camera, for minimum brightness of the TXM-11 status light. This will make crystal operation at your usual speed be in the middle of the camera's correction range, for the greatest reliability.

There are no user controls or adjustments, or user serviceable parts, in the TXM-11. Refer servicing to qualified personnel. The crystal in the TXM-11 has a trimming adjustment for recalibration if ever required. Do not disturb this setting unless you have access to a recently certified frequency counter with an ovenized time base. Connect the counter ground lead to pin 8, and the signal lead to pin 9, of the CD4060 IC and adjust for 3928.232 kHz (23.976 FPS), 3932.160 kHz (24 FPS) or 4096.000 kHz (25 FPS) \pm 10 Hz. Do not connect to other pins or the crystal will be detuned causing an improper adjustment.

Do not connect the Tuchel plug to any other equipment that happens to use the same type of plug, as the connections are not standardized and this will likely result in damage to either or both items. Incorrect voltage or connections, and physical abuse, are not covered by the TCS warranty.

Tobin Cinema Systems, Inc.
www.tobincinemasystems.com

TXM11.pub p.3.6-16-94

Use with EBM camera:

Using the TXM-11 requires that your EBM camera have the Power Grip, or the accessory Power Base in order to have an available socket to plug it into.

The newer TCS models TXM-16, TXM-16V and TXM-24 have a power socket built-in, so it is not necessary to have these expensive accessories.

