

Tobin Cinema Systems TXM12-R

Crystal Conversion of Russian 1KCP-8M Motor

1. General Cautions

Never apply reversed DC polarity to the motor. While most of the circuitry is protected against this fault, reversed polarity will blow the fuse and could cause additional damage. When using a new power source or cable for the first time, check for proper polarity with a voltmeter to be safe. Pin 1 should be — and pin 4 should be +.

2. Installation

Attach the motor to the camera in the usual way.

3. Basic Operation

A. The camera is operated basically as before. The “Sync Alarm” lights up if the crystal or externally selected speed is lost. The release switch has three positions: Off, Run, and Inch. In “Run” the camera operates at the selected crystal-controlled speed. In “Inch” the camera advances slowly as long as the switch lever is depressed, to manually re-close the shutter and restore the viewing position in case the camera stops with the shutter open.

B. Up to 16 crystal speeds are available. The highest speed (40 FPS) may require an increased battery voltage, say 14 to 16 volts, for reliable operation. Do not apply over 18 volts. (As you know, FPS means “frames per second.”)

C. The TXM12-R has only 60 Hz HMI-safe speeds built in. Because an HMI, fluorescent or other discharge type light flashes 120 or 100 times per second (on 60 and 50 Hz current respectively) only speeds of 120 or 100 divided by a whole number are HMI safe and will give film that has even exposure from one frame to the next and does not flicker. All speeds in the TXM12-R are HMI safe for 60 Hz powering of the lights. Only 6.667, 10 and 20 FPS are also 50 Hz HMI safe. For filming under non-flickering light such as daylight or high-amperage tungsten, any speeds can be used at will in any part of the world.

The normal speeds for double-system sound filming are 24 FPS in North America and 25 FPS in Europe. For 25 FPS, connect an external speed control, see section 4 below. Or, for export sale, TCS can supply a variation of the TXM12-R that has only 50 Hz HMI speeds instead of 60 Hz.

D. No physical harm will be done by changing speeds during filming, but remember that a speed change requires a corresponding lens aperture change.

4. External Speed Control

A. An external speed control such as the TCS TMC-55Aa Milliframe Controller gives added flexibility for: 1. Filming at traditional or non-60 Hz HMI speeds such as 16, 18, 25, 32, etc. FPS; 2. Filming at video transfer speeds such as 23.976 and 29.970 FPS for double-system sound on DAT (digital audio tape), Hi-Fi video tape, CD (compact disc), etc. that cannot be speed corrected to match the Rank/Bosch video transfer rate; and 3. Filming from video or computer monitors while giving shutter bar control. Other Aaton-compatible controllers using the WPI (formerly Amphenol) “Tiny Tim” 9-pin connector and 100 pulse per frame frequency should work also. The TXM12-R outputs a 5 V digitally generated frame pulse so it will support optional features such as an external footage counter, and it cannot be used for automatic shutter re-phasing or strobe sync.

B. For best results limit external speeds to the range of 6 to 40 FPS. Speeds below 6 may have exposure inconsistencies and speeds above 40 are excessive for the camera mechanism. This still gives some 34,000 possible running speeds. If using over-12 V power and a controller other than the TMC-55Aa verify that this voltage will not harm the controller.

C. For operational simplicity, and because the TCS TMC-55Aa draws such a small amount of current, no standby switch is provided. The TCS controller’s CMOS circuitry draws such little power (25 mA or .025 A) that it would have to be connected for a week, 24 hours a day, to discharge the typical battery.

D. When the connector is inserted into the socket, speed control is automatically transferred to the external controller. Even when using externally selected speed control, **also set** the TXM12-R’s speed dial to the approximate speed. This will enable reaching the externally chosen speed more quickly, without a sluggish start or overshooting the desired speed.

5. Maintenance

No routine maintenance is required.

If the fuse blows, replace it by installing a new 5 Amp GMA or 5 x 20mm fuse into the holder.

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There are two adjustments on the circuit board that should not be disturbed without instructions from TCS and suitable measuring instruments.

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