



SOUND AND PROJECTION

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A Division of

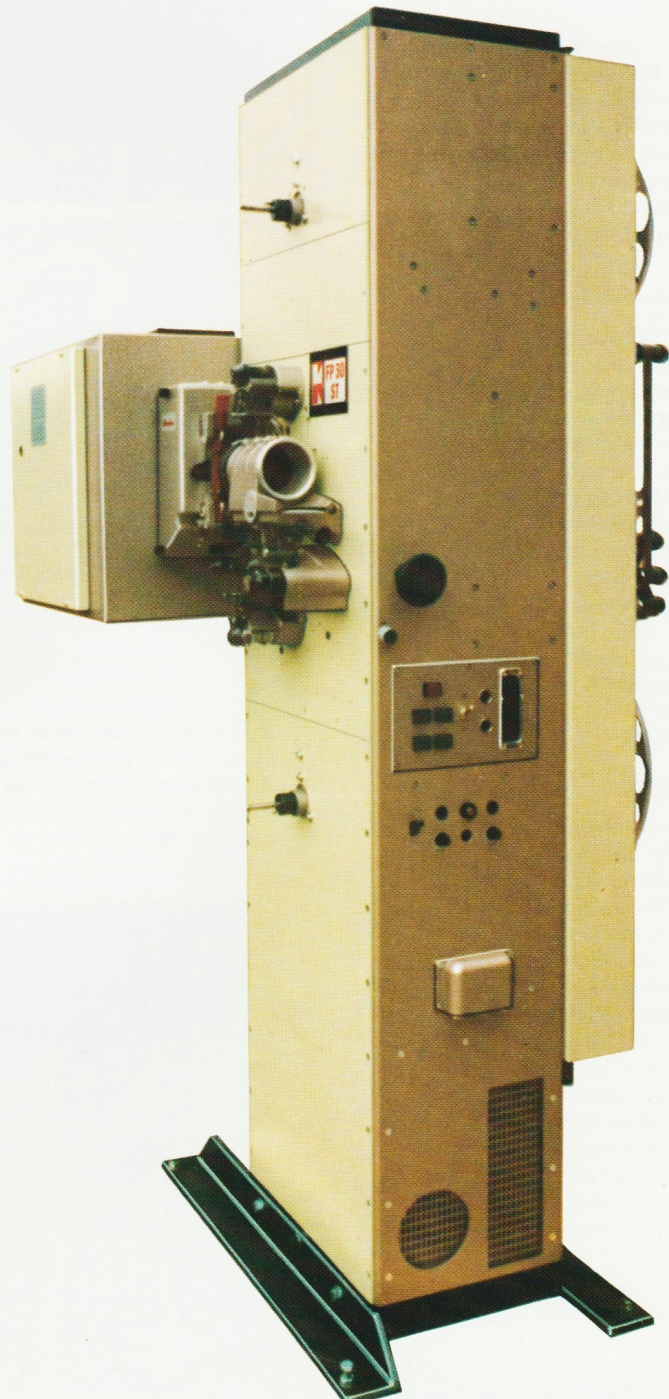
EMI Film & Theatre Corporation Ltd.

A Member of the EMI Group. International leaders in music, electronics and leisure.

35 mm Projector FP 30 Studio FP 30 Studio Double Band FP 30 Telecine

The FP 30 Studio Projector is basically identical to the FP 30 Telecine Projector. The former has been specially designed for use as a universal studio projector in all aspects of studio application, such as pre-views, mixing, post-synchronizing and scanning for television transmission. This projector is provided with a special Maltese Cross intermittent mechanism which permits the intermittent sprocket to be driven continuously for highspeed film travel. The projector ensures true-to-life projection of optimally illuminated, absolutely steady pictures of required size. The capability of rapidly advancing or rewinding any part of the film greatly facilitates quick location of a scene or frame. Projector maintenance is reduced to a minimum; operation is very straightforward. The film transport mechanism has unambiguously proved its merits in the famous FP 20 and FP 30 Projectors.

- Professional high precision equipment
- Facility for projection during inching
- Single frame projection
- 24 frames per second
- 25 frames per second, mains synchronized
- Adjustable high speed film travel up to 120 frames per second at uniform speed
- Forward and reverse film running
- Electronic control equipment using C-MOS technique
- Compatibility with all types of sound equipment



Film Transport Mechanism

The rack column, which can be angled, has a replaceable panel at its front on which the combined film transport mechanism and optical sound head are mounted. On request the projector may additionally be provided with a panel carrying a magnetic sound head (this facility may also be added later). On two other panels are mounted the upper and lower frictions and spindles for spools suitable for 2000 ft. of film. The sprockets are equipped with pad shoes.

All shafts and spindles rotate in closed precision ball bearings which are totally maintenance free.

The take-up shafts and the mechanical frictions are chain-driven and need no maintenance. The guide rollers are made of synthetic material – these should not be lubricated.

The film gate is curved and the pressure skate encloses the very light intermittent sprocket, supported on either side by bearings. The rotating sound drum ensures optimal wow and flutterless sound reproduction. It is equipped with a solar cell and a pre-focused exciter lamp that can be rapidly replaced.

Intermittent Mechanism

The Maltese Cross and cam are contained in an oil bath and ensure a picture steadiness with an accuracy better than 99.8%. A very light precision-balanced double-winged shutter is driven directly by a flexible intermediate gear wheel. An internationally patented design allows the intermittent drive mechanism of the sprocket to be completely disengaged at any time by means of a motor-driven lever. This allows the sprocket to be driven at a uniform speed. This facility also permits the film to be advanced or rewound at a very high speed so as to locate rapidly a particular scene or frame without risk of damage to the film.

Electronic Control

The film transport mechanism is equipped with a specially constructed D.C. motor with additional commutator segments designed for a maximum supply voltage of 65 volt. Even in the lowest speed range, as required for individual frame projection, the torque remains high. A disc with 128 rectangular teeth is fixed to the rotor: a sensor and an amplifier generates a control signal consisting of 128 square-wave pulses at every revolution and frame. Two sensors are used to identify the position of the intermittent mechanism, the sprocket of which is temporarily arrested during the interval so that its drive is switched from intermittent to nonintermittent operation.

Electronic Unit

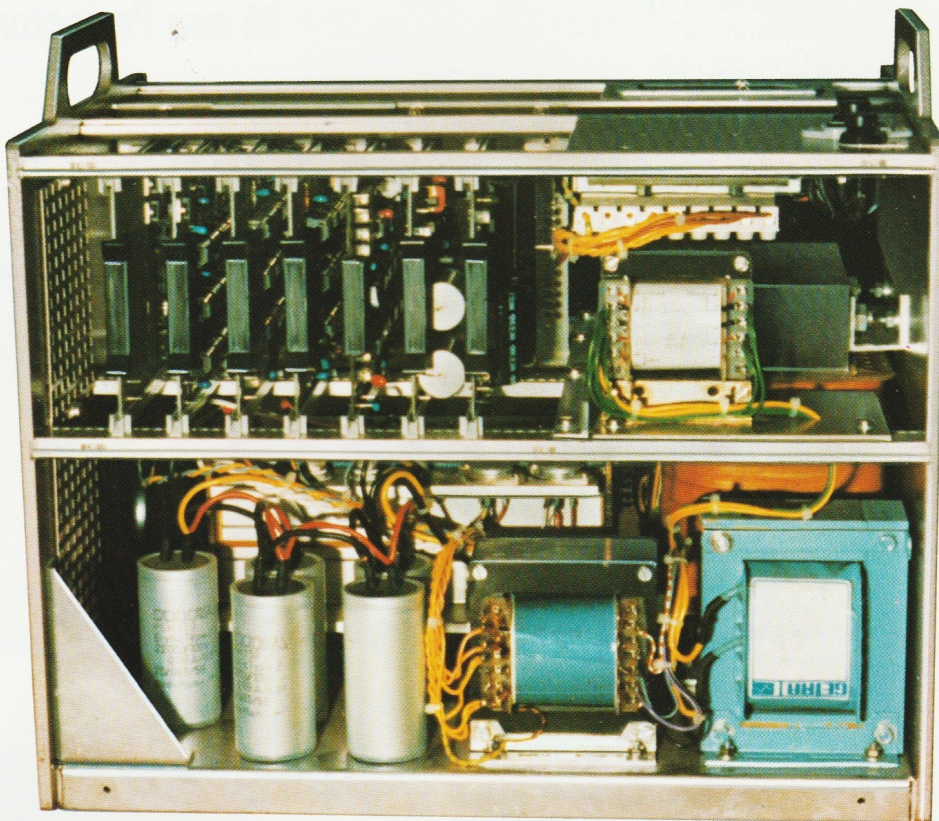
The electronic unit is mounted in a separate case at the base of the projector column, for convenience of mounting and replacement. Connection to the projector is made by cables fitted with plugs. This unit consists essentially of the motor power

supply mounted on a cooling block with a fan and 7 plug-in printed boards using C-MOS technique which form the control system. The rectifier for the exciter lamp is an integral feature.

Operation

The projector is provided with a remote control panel which can be linked to the electronic unit through a cable with a

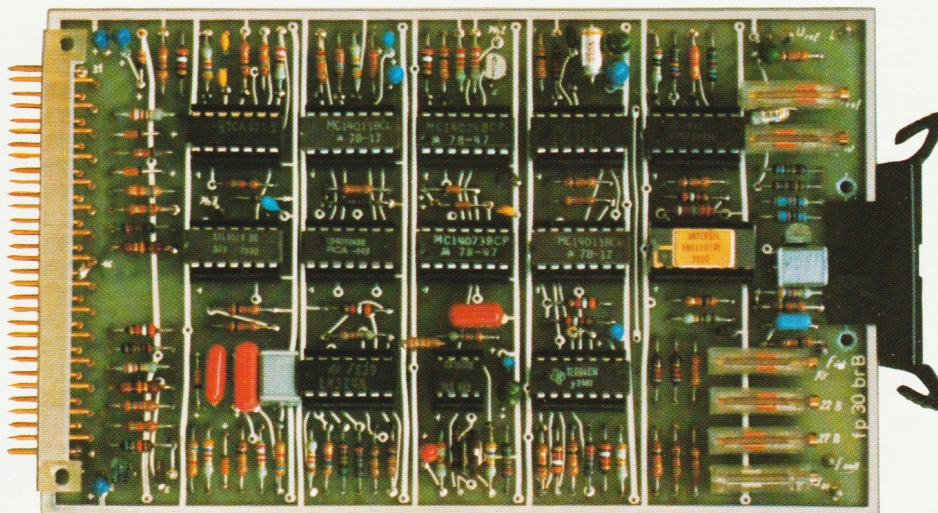
projector is operating in the range 22 to 27 frames per second. During single frame projection, a neutral density filter is automatically interposed in the light beam. Under high speed film travel, the pressure roller of the sound drum is automatically lifted. In the Telecine version an auxiliary motor runs the sound drum up to a speed just below normal before the projector is started. This motor is automatically declut-



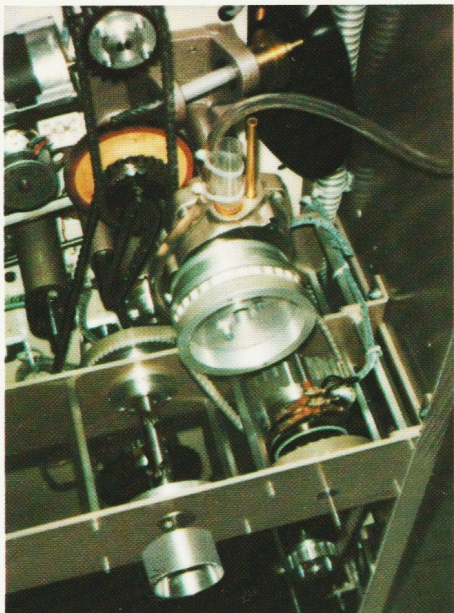
Electronic unit

multiple pin plug. Additional remote control panels may be connected as required. The picture relay is controlled electronically so that it opens only when pictures are projected one by one or when the

chained when the projector driving motor is switched on. The time taken to bring the projector to normal projection speed can be adjusted electronically according to requirements.



Plug-in electronic printed board



Coupling

At a speed of 25 frames per second the pulses obtained from the motor are compared with the mains frequency so that any deviation of the motor speed is automatically corrected. If the pictures are to be scanned for television purposes or back projection, the projector can also be synchronised with other frequencies.

When the projector is carrying out a function, the corresponding push button on the control panel will light. When changing over to another function, the STOP button need not be pressed, nor is it necessary for the projector to come to a standstill.

Frame Counter and Indicator

The electronic unit has been so constructed that it not only generates signals during forward and reverse transport of film, but also produces a pulse per frame, and an electronic frame counter may readily be connected to it. Additional electronic equipment, available to order, permits the counter to be preset so that the film is made to travel a specified number of frames. The memory has been so designed that, if desired, the film will travel to and fro between two frame numbers as often as requested: this procedure will be repeated on demand for other frame numbers subsequently specified.

Double Band Version

For double-band operation, a sound head for 17,5/35 mm perfotape is built into the hinged door of the projector. This sound head is provided with mountings for three separate magnetic heads (for recording, erasing and reproducing magnetic tape), but is normally equipped with only one 3-track reproduction head. Under high speed travel the tape is lifted from the sound head by a solenoid.

The perfotape driving mechanism is equipped with an upper and lower friction and spindles for 2000 foot film spools, film discs and Kodak bobbins. The me-

chanism is linked to the projector via an intermediate gear. A magnetic clutch allows either the film transport advance mechanism or the perfotape mechanism to be driven individually or both to be driven simultaneously. When the two mechanisms are coupled, the clutch is not energized, so that even in the event of a mains failure, synchronism will not be upset.

Connecting to Sound Equipment

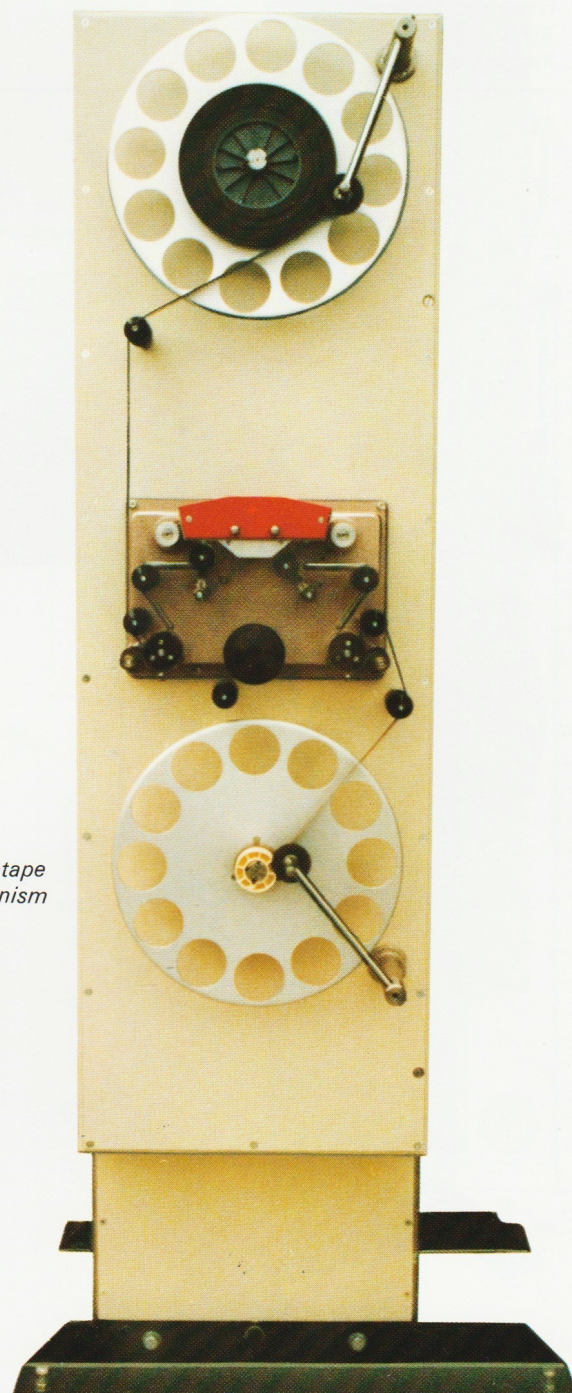
Provision has been made for Rotosyn operation.

The installation can be combined with opto-couplers, photo-light sensors and shaft encoders for any existing interlock

interface. Additionally, the equipment may be coupled to frequency controlled systems, such as Siemens-Novocord.

Light Sources

The projector can be equipped with one of the following light sources: a 24 volt, 250 watt or a 36 volt, 400 watt halogen lamp, in which case two lamps are mounted on a turret. In the event of a failure of one of the lamps, the other is automatically brought into service. Alternatively, lamp-houses for 500 watt, 700 watt, 1000 watt or 1600 watt Xenon lamps may be used. All lamps are ignited automatically. (For further details see special brochure).



Perfotape mechanism

The range also comprises high; class studio amplifying equipment, also with an automatic change-over facilities to cater for possible failure of one set of amplifiers. In addition, loudspeaker installations are available for all applications and power requirements.

The projector can be provided with the following additional equipment:

Film Disc equipment for up to 20,000
of film

The FP 30 Projector meets the most stringent requirements where universal applicability, picture steadiness, brightness, optimal light distribution and the facilities offered by electronic control are of paramount importance.

FP 30 Studio

Studio projector without electronic control unit and lamphouse	128,0 kg
Projector FP 30 Studio double-band without electronic control unit and lamphouse	150,0 kg
Electronic control unit	33,5 kg
Xenon lamphouse 500 W	10,0 kg
Xenon lamphouse 700/1600 W	28,0 kg

