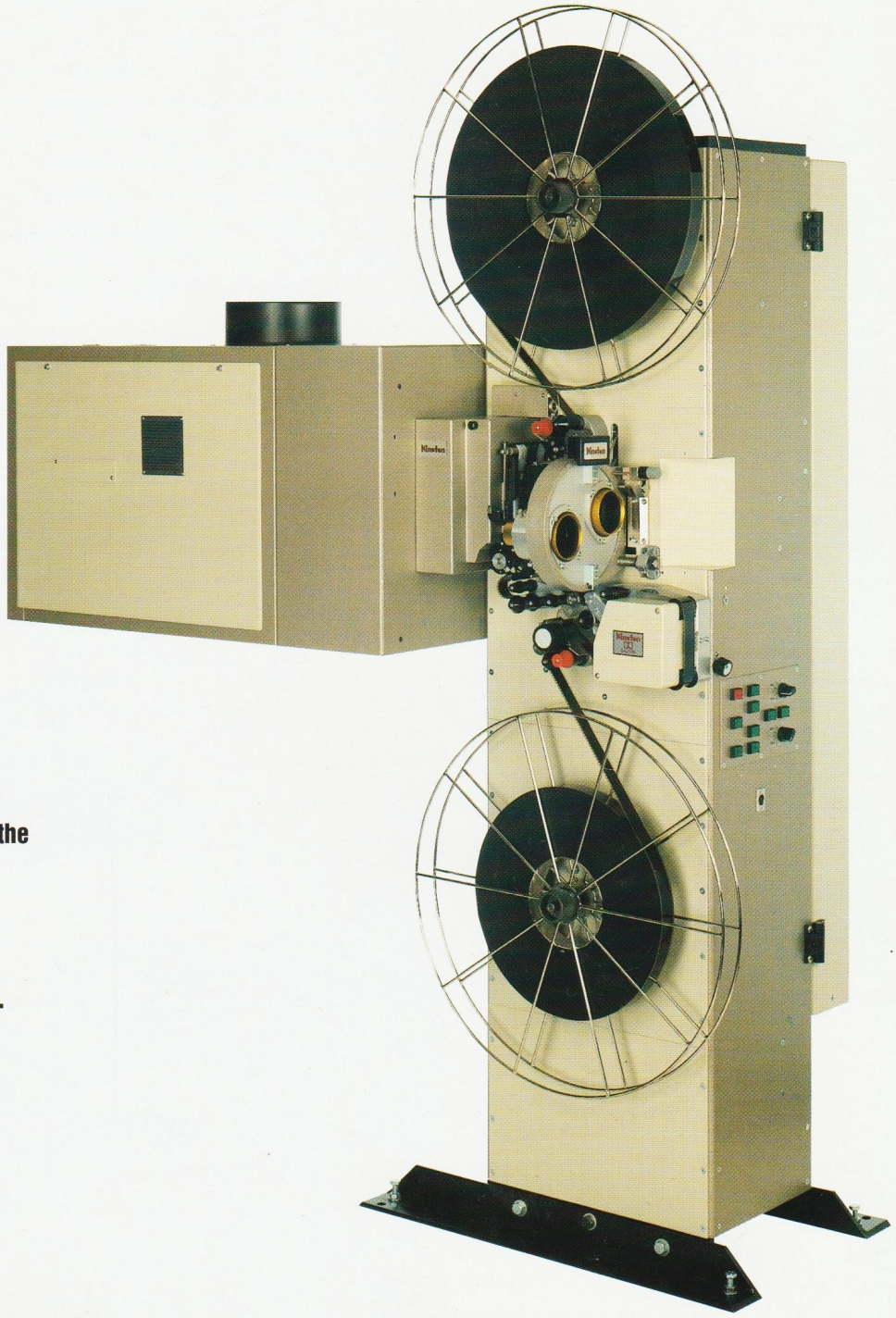
Kinoton GMBH
Filmtheater- und Studiotechnik

Electronic Film Projector FP 30 E / FP 38 E

The first projector worldwide for cinema application without the traditional Maltese cross sets a new standard for picture perfect performance.

The electronic sprocket drive of the projectors FP 30 E and FP 38 E is precisely designed to optimize picture steadiness, focus and contrast. An advantage which clearly proofs itself, especially with the move towards larger screens.



- **direct electronic sprocket drive**
- **unprecedented picture steadiness provided by electronic control**
- **excellent focus, contrast and light efficiency due to longer dwell time of the picture in frame**
- **versions for continuous reverse running with 100 frames / sec.**
- **versions for additional continuous forward running with 100 frames / sec.**
- **electronic framing device included**
- **processor controlled electronic friction with constant film tension**
- **configured for all Kinoton automation systems**
- **remote control of projector functions available**
- **capable of MASTER performing in synchronous operation**

Conception and Design

More than 10 years ago Kinoton had succeeded in developing a high speed projector for studio application. Instead of the Maltese cross the sprocket is driven by an electronic controlled synchronous motor. Meanwhile these versatile and heavy-duty projectors are used in continuous operation by all leading studios around the world. Only based on that know-how and experience can projectors which adhere to the highest demands be produced: the Kinoton E-series.

The FP 30 E projector is designed for 35-mm film only. The FP 38 E projector is a 2-format projector, available in 2 versions:

- for 35-mm and 16-mm
- for 35-mm, 16-mm and Super 16

The different projector versions and various options keep customized adaptation up and costs down.

The film run mechanism, the spool drives, the sound devices and the electrical and electronic units are accommodated in a column with adjustable pedestal, providing a variable projection angle of ± 10°.

Mechanical components as well as control units are easily and quickly accessible and - in the rare event of failure - nimbly replaced.

The projectors are delivered prewired and tested at the factory thus cutting down on installation time and expenses.

The 2-format projector FP 38 E provides for a quick and simple changing from 35-mm to 16-mm film and vice versa. Remote control panels for the projector functions are available upon request.

Picture Quality

Considering larger screens and shorter projection distances today picture quality and steadiness is pushed to the limits, even when using precision Maltese crosses. The electronic projectors of the E-series now set for new standards and astonishing improvements in the projected image. The digital drive is designed for permanent control of the vertical picture weave. The extremely high resolution of the digital measuring system and the long dwell of picture position, visibly improves picture steadiness, focus and contrast.

Drive Method

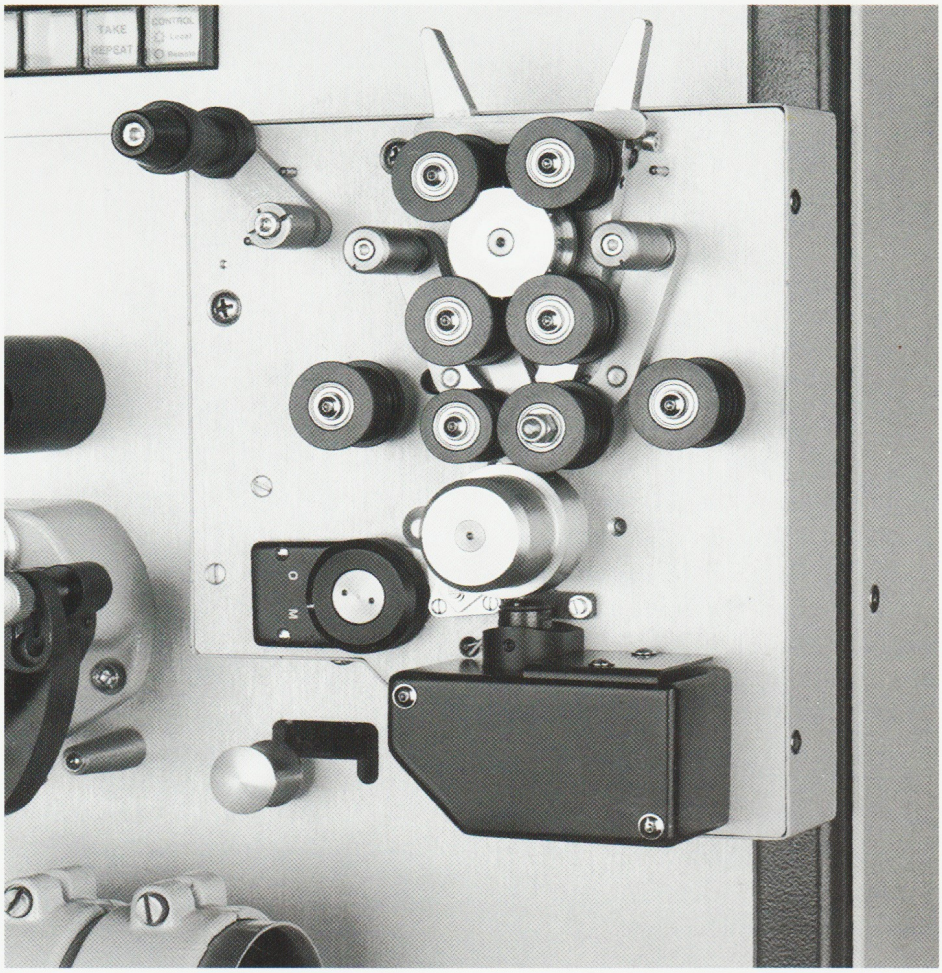
A digital controlled synchronous motor is designed for the intermittent drive of the precision sprocket. A permanently active position control compensates mechanical dependent weave and thus ensures precise centering of the picture.

By replacing the mechanical intermittent movement with an electronic controlled synchronous motor, the projector versions FP 30 E-R, FP 38 E-R, FP 30 E-S and FP 38 E-S are designed for the instant switch from projection mode to continuous running. The projector versions featuring shuttle mode are a superb tool for film productions, film laboratories, film archives and for special venues, such as exhibitions, trade fairs and special events.

The sprocket is equipped with 32 teeth for 35-mm respectively 16 teeth for 16-mm. For 35-mm film 8 teeth and for 16-mm film 4 teeth are engaged in the perforation, permitting precise pull down and accurately guiding the film even split film or film with damaged perforations. The feed and take up sprockets are driven by a frequency controlled synchronous motor.

Spool Shafts and Friction

As always, perfection is reflected in every detail. Each projector is available with different spool shafts and friction. Low cost mechanical frictions are suitable for theatrical use, studio use requires electronic friction. Using a mechanical friction the lower spool shaft drive is accomplished by the motor drive of the feed and take up sprockets. Spool shafts of electronic frictions are each driven by their own motor. The micro-processor control insures a constant film tension on all



Sound device 16 mm COMOPT / COMMAG

Options:

- **Lens holder with quick-change mount with pre-adjusted focus. Lens holder accommodates lenses of 70.6 or 101.6 mm diameter.**
- **Lens turret for 2 or 3 lenses 70.6 mm diameter for manual operation**
- **Lens turret for 2 or 3 lenses 70.6 mm with automatic lens and aperture changer**
- **Remote focusing control**

- **35-mm optical sound device for Mono- and Stereo prints**
- **Kinoton reverse scan sound device for 35-mm analog sound**
- **Kinoton reverse scan sound device for 35-mm analog sound and DOLBY-digital sound**
- **Sound readers for digital sound formats made by DOLBY, DTS and SONY**
- **16-mm sound reader for optical and magnetic sound**

- **Short column version. Top and bottom shortend column available**

For projector door mounting:

- **PLC control for Computer Automation System ASK 1**
- **Matrix programmer**
- **Electronic Programming Unit EMK1**

- **Remote control for all projector functions**

- **Mechanically driven friction with spool shafts for film spools up to 600 m acc. European standard**
- **Mechanically driven friction with spool shafts for film spools up to 600 m acc. US standard 5/16"**
- **Mechanically driven friction with spool shafts for film spools up to 2,000 m acc. European standard**
- **Mechanically driven friction with spool shafts for film spools up to 2,000 m acc. US standard 5/16"**
- **Mechanically driven friction with spool shafts 12.7-mm diameter for film spools up to 4,000 m (with top-housing)**
- **Mechanically driven friction with spool shafts 12.7-mm for film spools up to 4,000 m upper friction mounted in additional rack**

- **Electronic friction with spool shafts for film spools up to 600 m acc. European standard**
- **Electronic friction with spool shafts for film spools up to 600 m acc. US standard 5/16"**
- **Electronic friction with spool shafts for film spools up to 2,000 m acc. European standard**
- **Electronic friction with spool shafts for film spools up to 2,000 m acc. US standard 5/16"**
- **Electronic friction with spool shafts 12.7-mm diameter for film spools up to 4,000 m (with top housing)**
- **Electronic friction with spool shafts 12.7-mm diameter for film spools up to 4,000 m, upper friction mounted in additional rack**

film formats and spool sizes. The winding direction can be reversed. If no film is threaded or in the event of film break, the friction drive will stop automatically.

Sound Reading

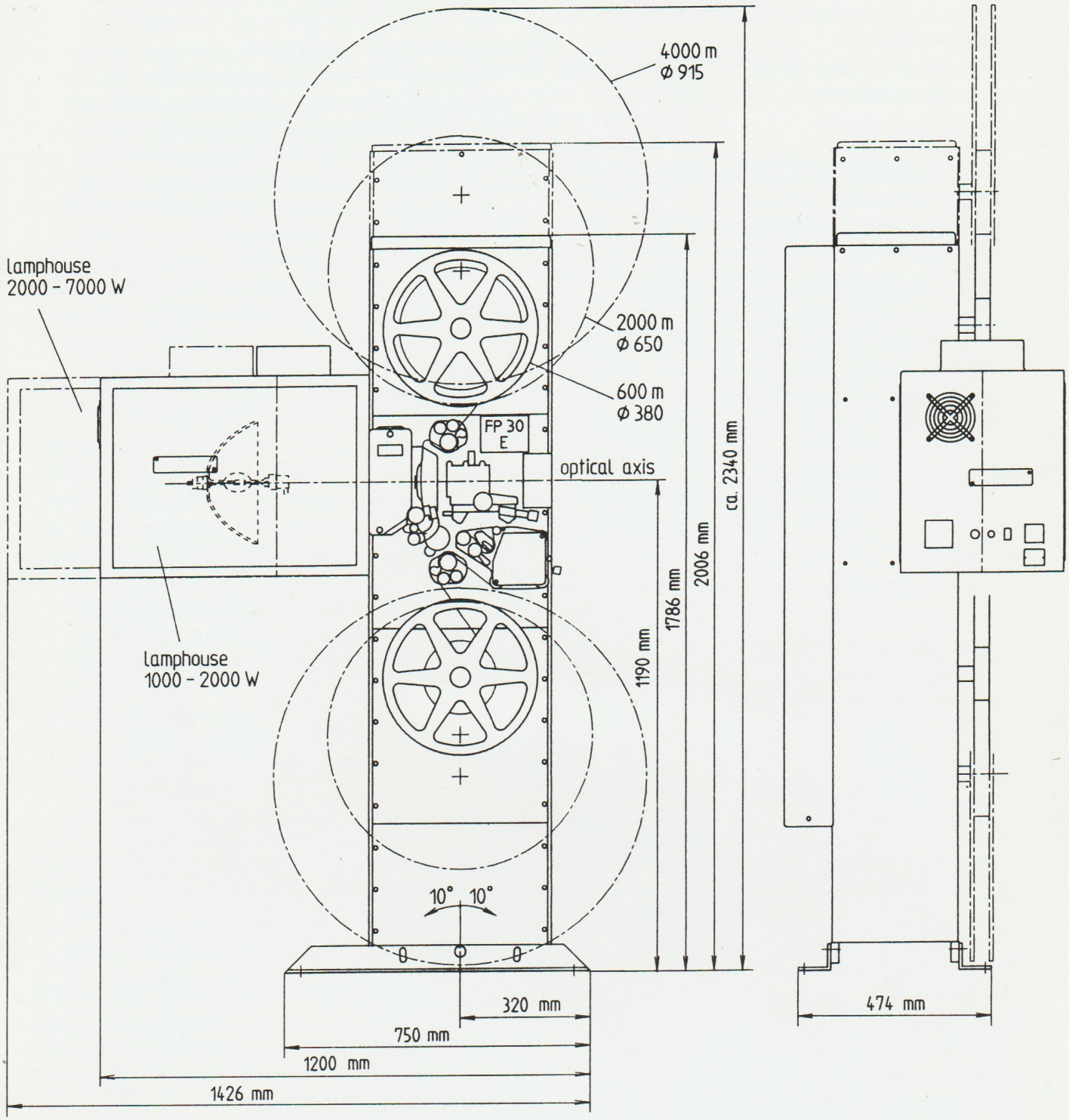
The KINOTON Reverse Scan Sound Device is designed to read all 35-mm optical sound formats and DOLBY digital sound. Operating in reverse scan mode, damages in the emulsion layer will have very little influence on the sound reproduction. The film is easy to thread. The incorporation of scanning the sound signals via high output LED, reading the optical sound track via solar cell with a narrow gap and the reproduction of signals via sophisticated components, leads to impressive results in all frequency ranges on both analog and digital sound. Optionally the projector is capable of being equipped with a traditional 35-mm fly-wheel optical sound device. Highly sophisticated gap optic and solar cell components assure good optical sound quality. The 16-mm sound device is designed to read optical and magnetic sound. The revised design reduces sound flutter to minimum levels and thus provides an excellent 16-mm sound reproduction. Shift rollers prevent film damage during shuttle mode.

Video Scanning

The design of the electronic film projectors incorporates a constantly running shutter, thus realizing a completely flicker-free projection in the whole range of projection speed 1 - 30 frames/sec (S-versions) and a low cost video scanning. There are different types of video scanning units available, consisting of lens holder with attachment tube, diverting prism and video camera.

Synchronous MASTER coupling

The standard versions of both projectors FP 30 E-S and FP 38 E-S are designed to put out a biphase signal when used as MASTER.



Versions:	FP 30 E/FP 38 E	FP 30 E-R/FP 38 E-R	FP 30 E-S/FP 38 E-S
Projection:	24 and 25 fps	24 and 25 fps	2 selectable speeds
	–	–	variable projection speed within the range 1 - 30 fps
Shuttle Mode:	–	Reverse running 100 fps	Reverse running 100 fps Forward running 100 fps
Friction:	mechanical	electronic	electronic

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