

Kinoton



SOUND AND PROJECTION

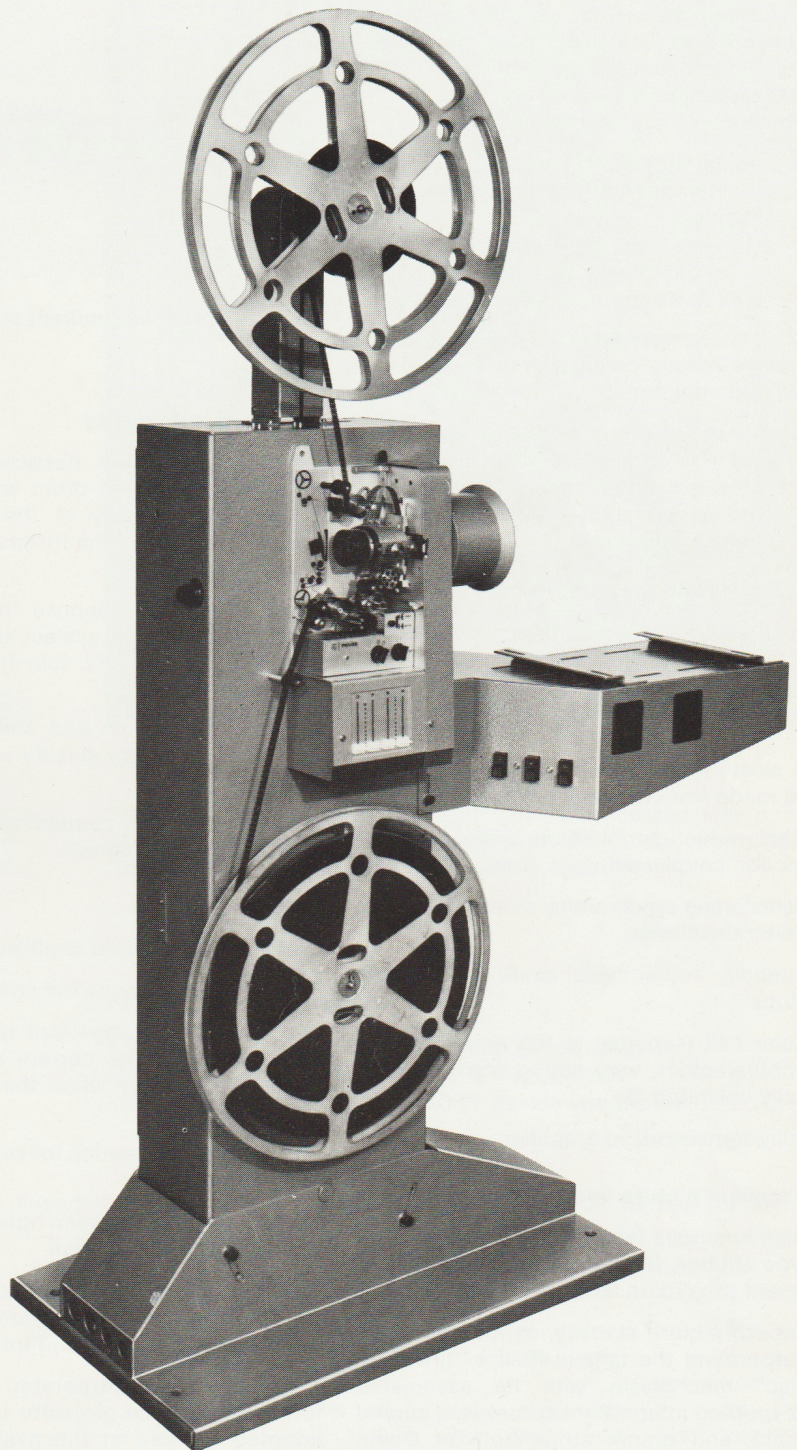
16-mm theatre sound-film projector FP 16



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- Operational simplicity
- Utterly reliable
- Unique "grooved-disc" intermittent mechanism
- Extremely versatile – 3 basic models
- Brilliant, stable pictures of optimum quality
- Optical and magnetic sound system



This stationary 16-mm sound-film projector has been specially designed for theatres in which high demands are made on the life and reliability of the projector and the quality of picture and sound.

The outstanding features of the projector are its simplicity of operation and maintenance, and its suitability for automation.

The projector can be supplied in various versions, all of which have an optical soundhead. The characteristics of a particular version will be determined by the presence or absence of:

- a magnetic soundhead
- a built-in pre-amplifier and output amplifier
- a tungsten halogen lamp or a 500 W Xenon gas-discharge lamp, or a 900 to 1600 W Xenon gas discharge lamp.

All versions not having the built-in amplifier can be readily connected to existing amplifying equipment.

Owing to its great reliability, the FP 16 projector is suitable for use not only in theatres, but also in preview rooms, film studios, as well as for permanent performances at exhibitions.

Long life and great reliability

"Grooved-disc" intermittent mechanism in a totally enclosed oil-bath.

12-toothed intermittent sprocket, 5 teeth of which engage in the film perforations.

A single worm-wheel and 4 gear wheels, all made from extremely durable material.

Chain-driven spool-shafts with adjustable friction couplings.

Self-starting synchronous motor with timing belt transmission.

Speedily replaceable skate and runner strips.

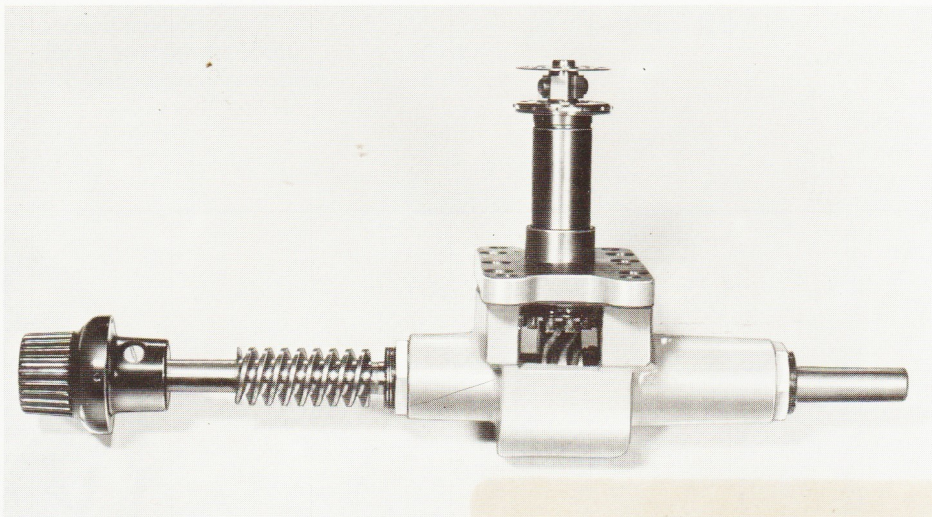
Solar cell (superior to the normally-used photoelectric), very stable and of practically unlimited life.

Fully-transistorized amplifier.

Excellent picture quality

High luminous flux, because a large disc-type shutter, (efficiency 72%) and a high-speed projection lens are used.

Superb picture stability, as a result of incorporating the unique Philips "grooved-disc" mechanism with its associated 12-toothed intermittent sprocket, a curved skate, and runner strips both of Delrin (to which no dirt adheres).



"Grooved disc" intermittent mechanism with oil bath cut open to show the interior.

Lifelike sound quality

Low wow and flutter, because of the use of the rotary sound drum with pressure roller (fundamentally of the same construction as that in the Philips 35-mm and 70-mm-projectors).

Wide frequency response thanks to the precision-slit optical system, the solar cell, and the high-quality fully-transistorized amplifier.

Low distortion, hum and noise are other benefits of this high-quality transistorized amplifier.

Mixing facilities for combining microphone and sound-track signals.

Simple operation

Conveniently-located controls.

A single handle opens the entire film-path.

The film can be kept taut when threading up; loops of the correct size are formed automatically when the film-path is closed.

Forward/reverse switch for re-showing selected sequences.

Simple selection between optical and magnetic sound reproduction.

Individual slide potentiometers for control of sound-track and microphone signal volumes, as well as bass and treble.

Tappings on the incorporated mains transformer enable the projector to be quickly adapted for use at the available mains voltage.

Simple installation

The whole projector is received in a single container.

No wiring-up or internal connections to be made; everything is done at the factory.

To facilitate connection to the mains and auxiliary equipment all external terminals are suitably marked and readily accessible.

If supplied with built-in amplifier the only external connections are to the mains and the loudspeakers.

Even if separate amplifying equipment is used only a few connections have to be made: mains, douser, exciter lamp, solar cell, and magnetic head (if present).

Fixing facilities for the lamphouse are such that any type may be used.

The optical axis is easily adjusted by means of height adjustment of the mounting table.

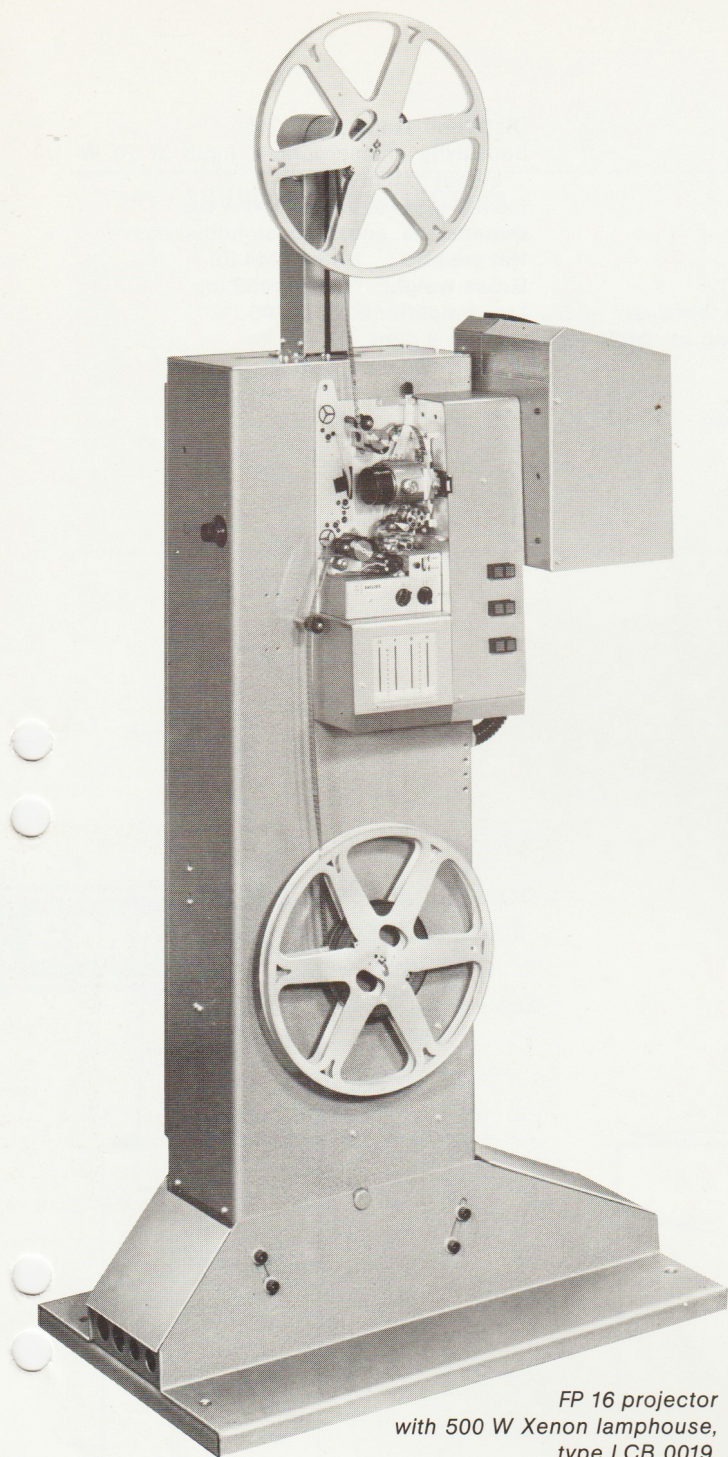
Easy maintenance

Removable runner plate, pressure skate and pad shoes. These items can be cleaned and replaced without the use of tools.

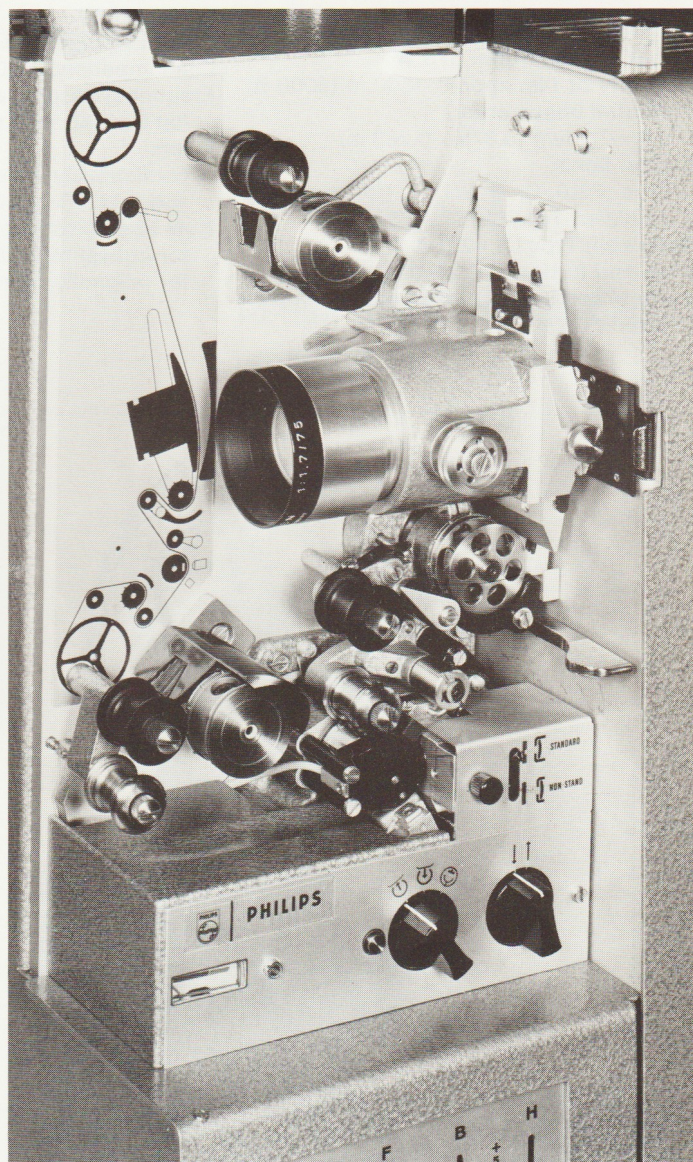
Exciter lamp has a pre-focused base; hence no adjustment required.

Plug-in pre-amplifier and output amplifier; have rapid replacement in the unlikely event of a breakdown.

Little need for lubrication; but the few lubricating points are easily accessible.



FP 16 projector
with 500 W Xenon lamphouse,
type LCB 0019.



Projector mechanism with simple, clearly indicated film path
QI = volume control for microphone, F = volume control for
film sound, B = bass control, H = treble control.

Projector type numbers

LCB 0016/ .. suitable for arc lamp or Xenon lamp
LCB 0017/ .. equipped with lamp 24 V, 250 W
LCB 0019/ .. equipped with 500-W Xenon-lamphouse

All projector types are equipped with an optical soundhead; the other facilities are indicated by the version number:

Versions	/01	/02	/03	/04	/05	/06	/11	/12	/13	/14	/15	/16
Synchronous motor 50 Hz, 24 frames/s	yes	yes	—	—	—	—	yes	yes	—	—	—	—
50 Hz, 25 frames/s	—	—	yes	yes	—	—	—	—	yes	yes	—	—
60 Hz, 24 frames/s	—	—	—	—	yes	yes	—	—	—	—	yes	yes
Additional magnetic soundhead	—	yes	—	yes	—	yes	—	yes	—	yes	—	yes
Built-in amplifier	—	—	—	—	—	—	yes	yes	yes	yes	yes	yes

Technical data

General

Power consumption: 375 W

Capacity of film spools: 1500 m (5000 ft)

Projected image area:

9.6 x 7.2 mm (0.378 x 0.283 in)

Exciter lamp:

Type 7210 C, 6 V/1 A; (for separate amplifier: Type 6218 C, 2.5 V/3 A)

Solar cell: Type C1 420 98

Wow and flutter: < 0.2% rms

Vertical and lateral movement of the picture: < 0.2%

Built-in amplifier

Power: 20 W

Output voltage: 100 V

Load impedance: 500 Ω

Frequency response:

flat from 40 to 7000 Hz

Filters:

continuously adjustable between -7.5 and +14 dB at 40 Hz and at 10000 Hz

Hum and noise level:

for optical reproduction < -60 dB

for magnetic reproduction < -45 dB

Distortion at 1000 Hz: < 1%

Sensitivity of microphone input at 20 W output: 0.6 mV

Exciter-lamp supply: 6 V, 1 A d.c.

Dimensions: see dimensioned sketch

Net weight: 110 kg (244 lb)

Gross weight: 206 kg (453 lb)

Line amplifier EL 5490/00

Output: 8 dBm

Load impedance: 600 Ω

