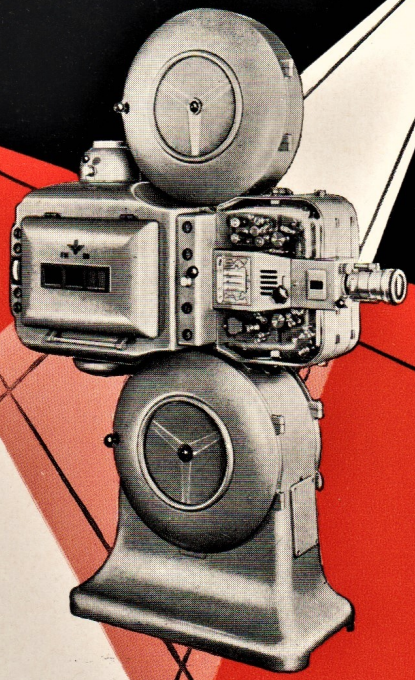
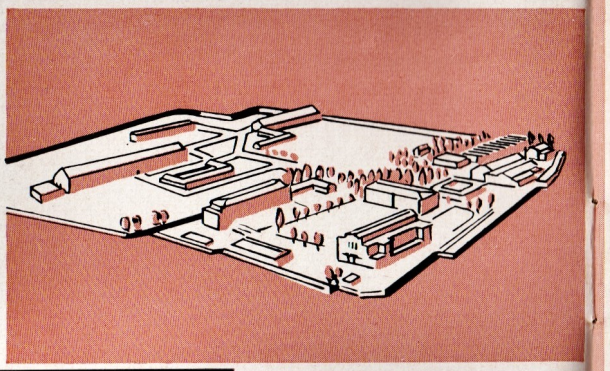
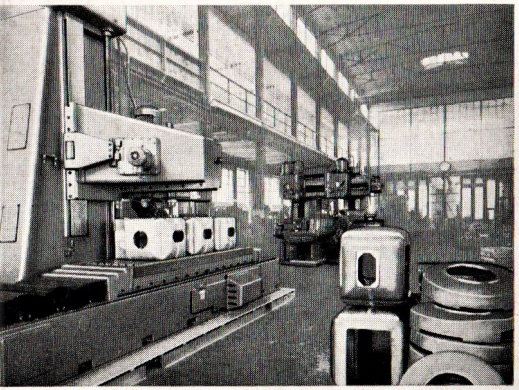
FH 99

THE SOUND PROJECTOR
OF SUPERIOR ECONOMY



FRIESEKE & HOEPFNER G. M. B. H. ERLANGEN-BRUCK





For many years, the FRIESEKE & HOEPFNER Company is known for its pioneering achievements in building sound projectors and cinematographic equipment which meeting the highest demands, have gained a world-wide reputation as peak products.

In spacious workshops and assembling rooms equipped with the latest machinery for series production, our designers' new ideas take a definite shape, which is all to the theatre owners' benefit.

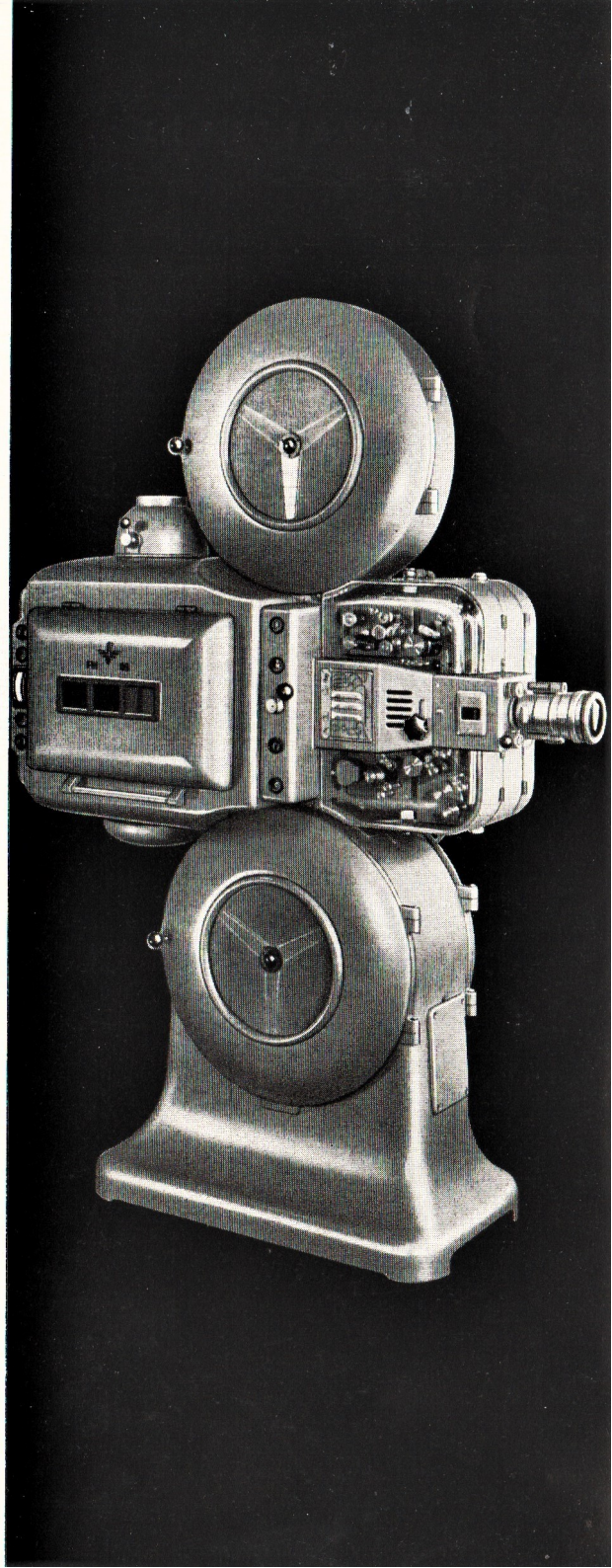
Those visiting our plant are impressed by the modern layout of the 617 acres area which secures employment for 1.300 technical and commercial experts and skilled workers.

Such is the birthplace of the famous FRIESEKE & HOEPFNER range of sound projectors which include the FH 66 model, the most favourable, meeting up to all conditions of both small and large cinemas; the FH 77 model for the exhibitor working on a small budget of which machine has already proven its ability in the smaller type cinema, and the FH 99 the latest of the FH series.

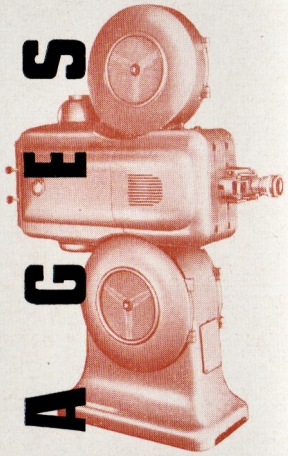
The FH 99 projector is the last word in cinema achievement and reflects very highly on the skill and engineering which has been put into the development of this superior type equipment.

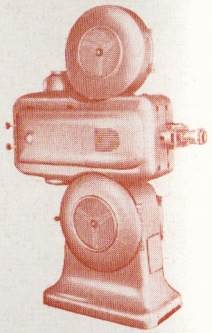
With the development of the FH 99 projector, the FRIESEKE & HOEPFNER Company, continues a tradition that has enlisted unrestricted acknowledgement of all who are engaged in cinematographic work. Hundreds of cinemas, at home and abroad, have adopted F & H projectors whose superior type of construction proves its value in the every-day service anew. The perfection as manifested with the development of the FH 99 is the result of an experience which has been accumulated in the course of twenty-five years.

It is the first projector that is designed for organical mounting of a magnetic soundhead, and from the very beginning, for the reproduction of all new processes of film projection, such as standard film, 3-D, Wide Screen, Plastorama, CinemaScope, SuperScope, Cinepanoramic. MetroScope, Vista Vision, stereophonic sound reproduction with photoelectric soundhead as well as magnetic soundhead. It represents a block machine with a reasonable arrangement of all parts and is available like all F & H projectors, as a couple consisting of right and left-hand model.



ADVANTAGES





Adaptable to any theatre size

The systematic composition of the individual parts into a unit construction permits that the FH 99 is equipped according to the customers' particular requirements.

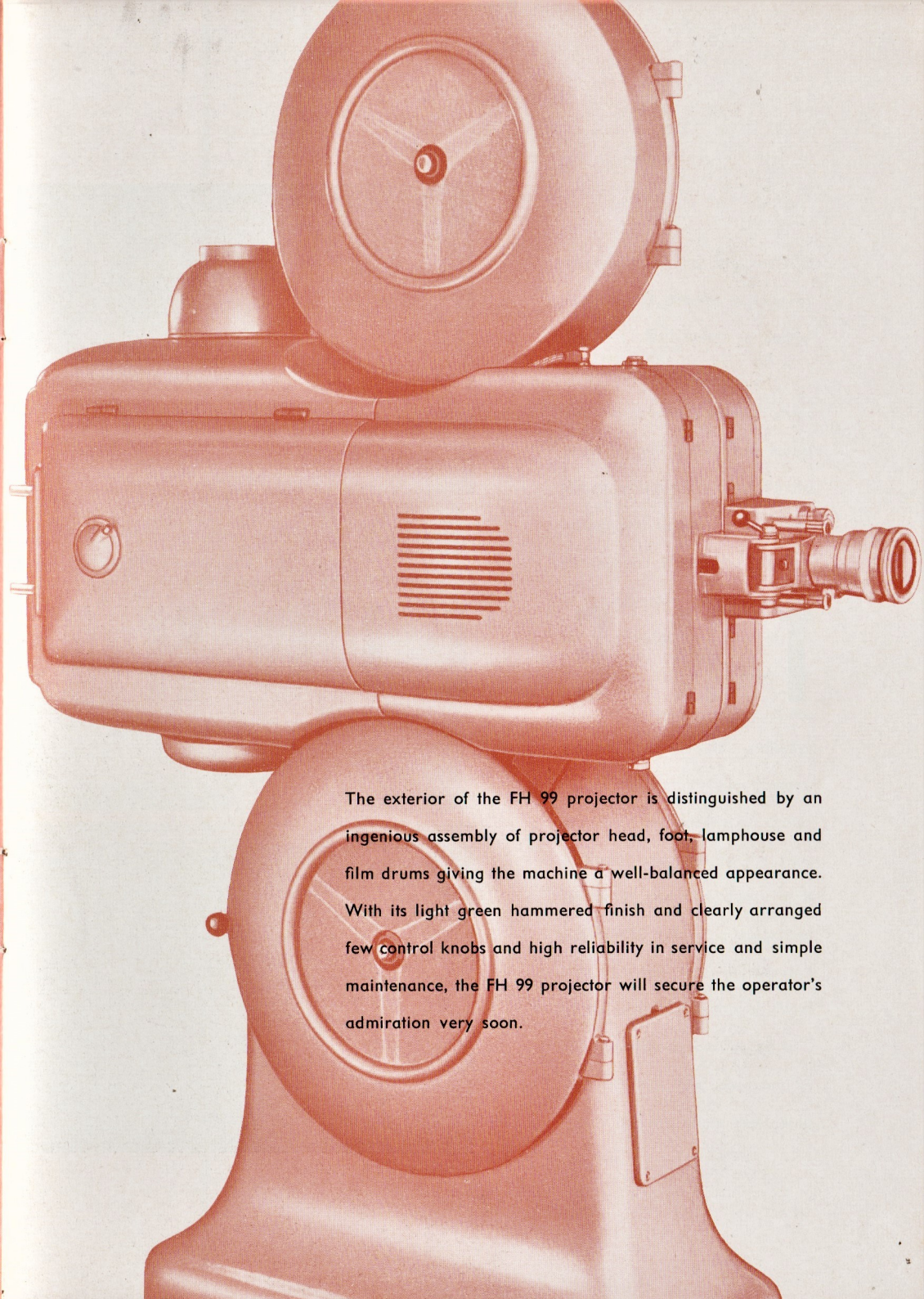
With a perfect basic equipment, it is quite simple, even for unexperienced personnel, to install subsequently magnetic soundhead, water cooling system, cased-in film guide etc.

Unusually high light efficiency

The FH 99 projector is characterized by a marked increase of its light intensity. It is significant that with low intensity carbon service, light currents are attainable which hitherto necessitated HI-service. Moreover, it allows the projection on screens of a new order of magnitude, such as required for very large screens in outdoor drive-in theatres.

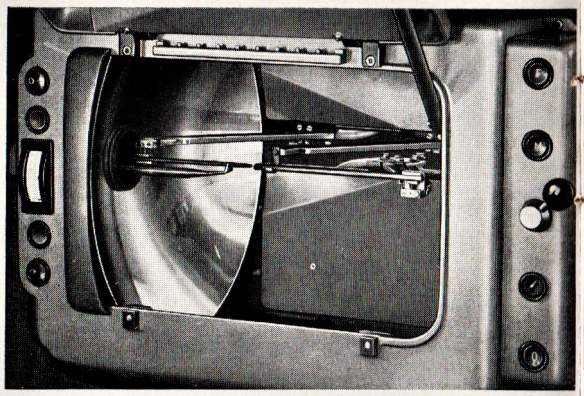
Superior economy

The FH 99's most distinguishing feature is that the operating costs which normally increase in proportion to the screen sizes, can be reduced to a surprisingly low level. The enormous light power of the new optical system enables the theatre owner to make annual economies in carbon and current consumption that amount to hundreds of pounds.



The exterior of the FH 99 projector is distinguished by an ingenious assembly of projector head, foot, lamphouse and film drums giving the machine a well-balanced appearance. With its light green hammered finish and clearly arranged few control knobs and high reliability in service and simple maintenance, the FH 99 projector will secure the operator's admiration very soon.

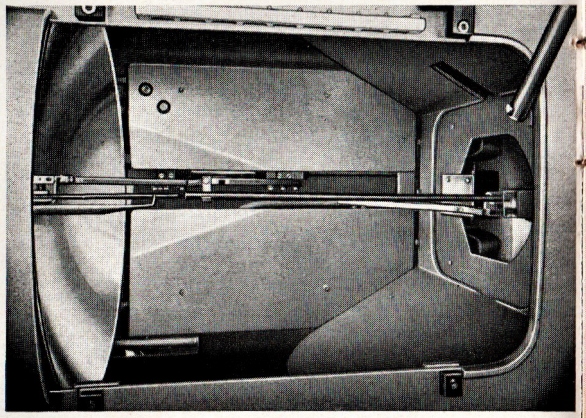
The high-intensity lamphouse is flanged to the projector main frame without support; its reflector of 540 mm (21") in diameter, is arranged at a large distance from the arc lamp which eliminates contaminations through excessive heat, carbon and metal particles. A special reflector shield is therefore superfluous. The guiding spindles of the carbon holders are fitted to the rear lateral lamphouse wall, thus being preserved

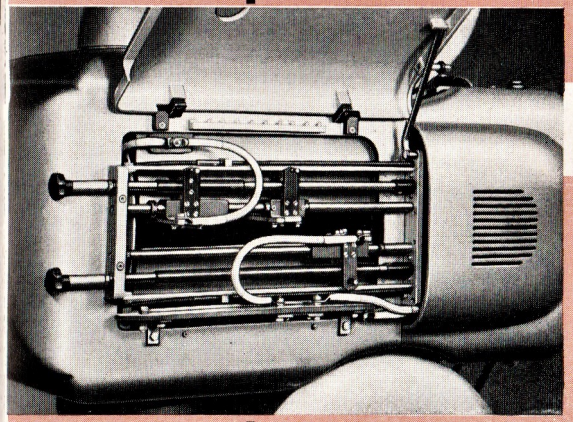


THE LIGHT

from dust though easily accessible in detail.

Attendance and maintenance of the lamphouse are kept clear and simple. Owing to the easy adjustability of carbon holders and tip guides, the exchange of carbons with different diameters is largely simplified. Instantaneous ignition allows reliable starting and protects the rectifier from being overloaded.



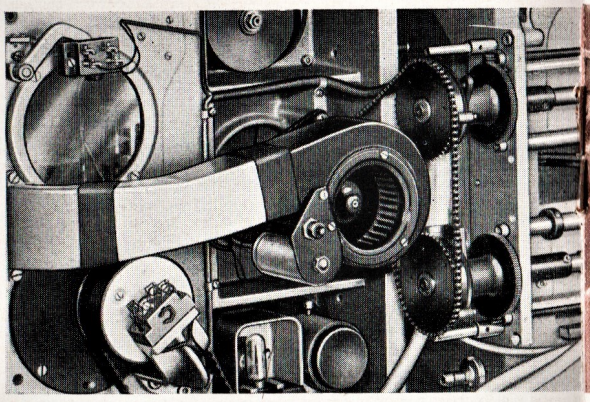


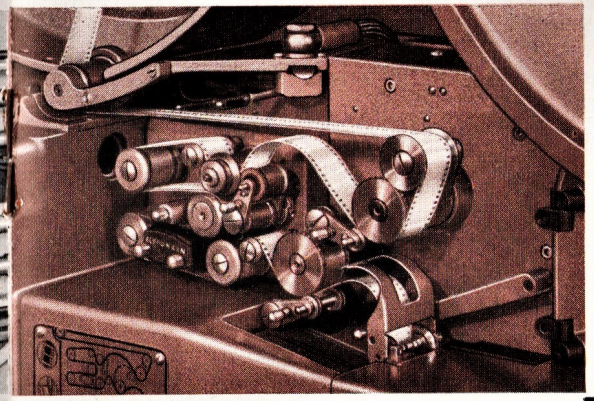
Alignment of the reflector and tip guide is effected quickly by means of ball levers in convenient arrangement.

The lamphouse service door provided with direct view inside, shows additionally on a frosted screen the carbon craters and as special novelty the position of the reflector. Thus the operator is enabled to adjust according to a crossline system not only the carbon craters and the carbons but also the reflector before the performance is started. With an additional crater projector mounted to the rear lamphouse service door, it is possible to project a magnified picture to the crater on the wall of the projection room in front of the projector or behind it. This enables the operator to watch the arc while rewinding the film.

The carbon feed device is mounted between projector mechanism and lamphouse as an integral unit. It permits a sensitive but independent control of carbon consumption of 0.5 up to 8 mm per minute. The lamp burns down carbons of 500 mm (20") in length straight on, which is equivalent to a 75 minute continuous service at currents of 100 amps., which is sufficient for projecting a film of 1.800 m (6000 ft). Both the slide attachement of high luminosity and the device for projecting coloured ornaments can easily be mounted afterwards onto the service side of the projector.

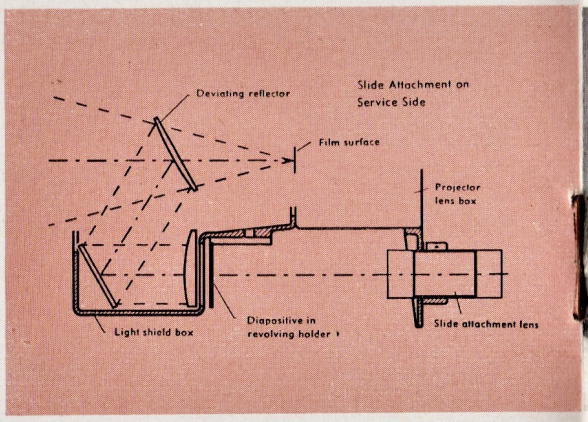
Uninterrupted changing over to the projection of the film is guaranteed.

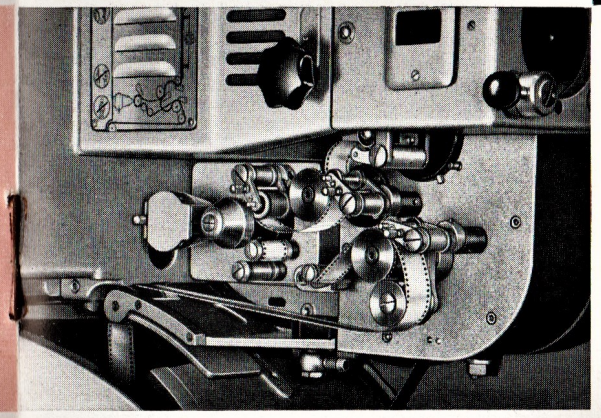




The magnetic soundhead is organically mounted on the projector as a separate unit and can also be attached later on. There is a new type of film guidance which is effected over two driven prespooling sprockets, thus keeping off irregular film pull from the magnetic soundhead and warranting a first-class sound reproduction. Owing to its plug connection, the magnetic soundhead for being cleaned or interchanged, can easily be removed, making auxiliary tools superfluous.

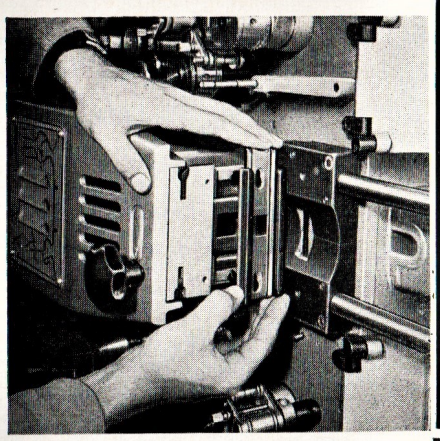
THE SOUND





The photoelectric soundhead represents a separate unit which is located at the lower projector part. The ingenious design of the film pull guides the film over a film-motion filtering system into the soundhead. While the film is running, it is possible to check the position of the soundtrack and to make adjustments. The photoelectric soundhead is already adapted to multi-channel stereophonic sound reproduction, Perspecta-Sound, or push pull. Both soundlamp and photoelectric cell are interchangeable from the projector rear within a few seconds.

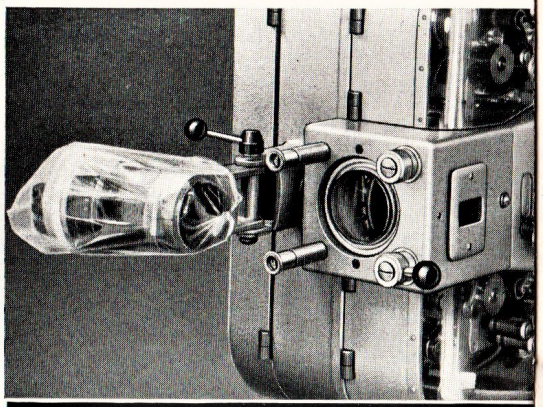
THE FILM GUIDE

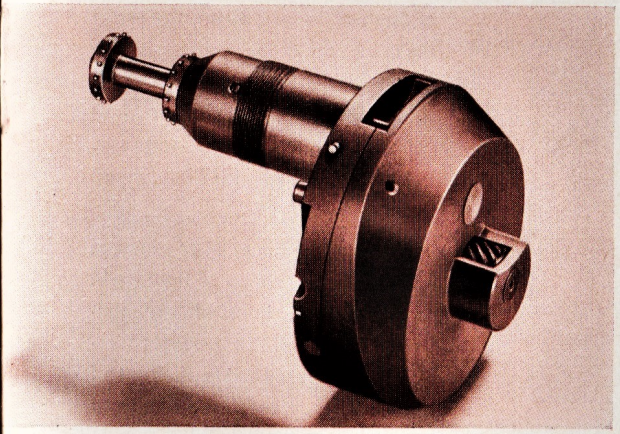


The film gate can rapidly be interchanged and adapted to any picture size. When projecting films of different screen sizes in the run of one and the same performance, the projection objectives can be interchanged without causing inconvenient break as readjustment of the objective is superfluous owing to the preset stops for sharp objective focusing.

The anamorphic lens for CinemaScope projection permits to be swung in and out around a vertical axis.

The correct position of the picture frame can be watched with a pilot light when inserting the film and through a window at the lens holder whilst the projector is in operation.





Exchangeable
Maltese Cross gear

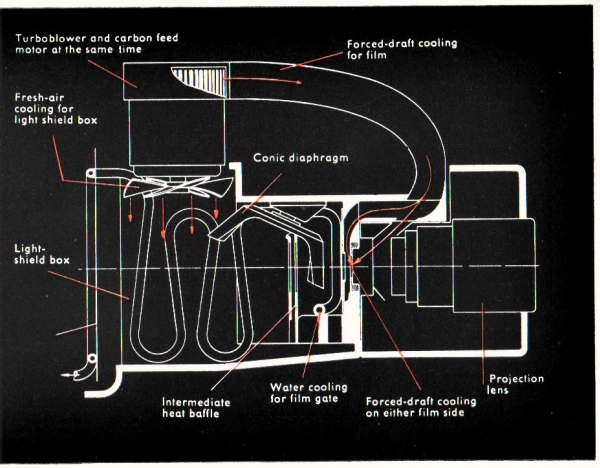
Other characteristic features of the design

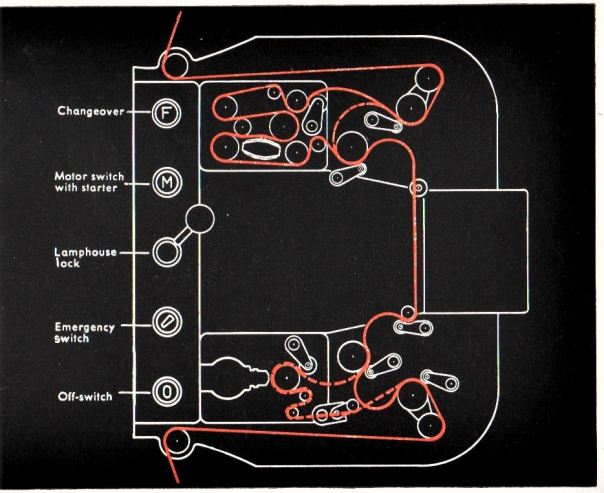
The simultaneous drive effects a transmission of the motor force in two directions: to the direct drive of the take-up friction necessitating most of the force for large diameter spools, and over an indented plastic belt with steel wire core to the central wheel of the projector head. From here the motor force is transmitted also in two directions: to the regularly rotating sprockets and to the Maltese Cross gear which is totally enclosed and interchangeable as a separate unit.

The circulating-oil pump effects an abounding oil distribution to the projector mechanism. It is fitted to the bottom part of the vertical shaft and works soundless. A magnetic filter holds back mechanical contaminations and keeps the oil pure.

Both reeling and feeding of the film needs no attendance and is dependent upon weight which effects a uniform and smooth film traction regulable by hand from the outside. This even film traction guarantees the best possible preservation of the film.

Undangerous low voltage is imposed to the push-button control system and to all electrical wires coming out from the lower magazine, in order to eliminate health hazards even in case of careless attendance.





Owing to air and water cooling systems, excessive heat is reliably avoided. Air cooling is effected by the carbon feed motor being continously in operation while the arc lamp is burning and a heavy blast is directed to both film sides when the film passes the film gate. The water cooling system constitutes a separate interchangeable unit which incorporates film gate assembly, light shield box and lamphouse front wall.

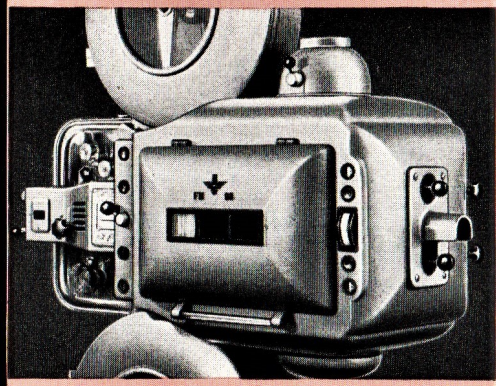
The heat-reflecting filter secures superior preservation of the film in separating the infrared radiation from that of light. The thermal radiation being turned aside in front of the film strip, protects the film from being curved and dried out.

Electrical change-over device for sound and image is a part of the standard equipment and is laid out both for photoelectric and multitrack magnetic sound reproduction. Shock-absorbing spring rolls near to the pre-spooling sprocket and subsequent spooling sprocket effect a completely uniform and film-preserving transportation. Owing to an ingenious arrangement of the soundheads, it is possible to use the projector with only one of the soundheads working; in this case there is no need for changing the original film run since the soundhead not working is automatically left out and the film continues its ordinary path in the projector.

Easy threading and simple attendance are retained also for a cased-in projector.

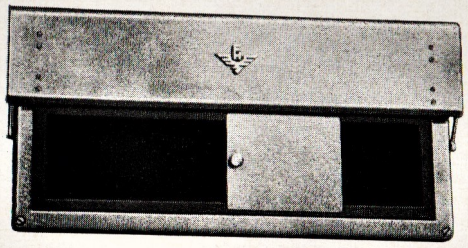
A T T E N D A N C E

All control elements are easily accessible and reasonably disposed into two groups according to their functions: the first group is placed adjacent to the service door of the lamphouse comprising the ammeter, the pushbuttons for switching the arc lamp on and off, and adjusting knobs for the carbon feed. Quite near at the rear lamphouse wall, there are the ball levers for adjusting the reflector and the negative carbon tip guide as well as two knobs for the carbon spindle adjustment. The actual projection control elements represent the second group arranged between lamphouse and projector head. A pushbutton of peculiar shape assures the simultaneous disconnection of two machines (this complies with the regulations for fire protection in case only one operator has to attend two right-hand machines). The normally shaped red pushbutton effects the disconnection of only one machine. A hand lever for shutting off the lamphouse permits to present play music before or after the performance. The design of the hand lever is such that, independent from the automatic light control, the light can be shut off; the light passage will not be cleared, however, unless all safety devices of the machine work satisfactorily. Taking into account the high luminous efficiency of the projector, this ingenious design means a considerable advantage. The black pushbutton provided for actuating the motor guarantees a smooth start owing to its pressure stages. Furthermore, an electric starter regulates the initial motor speed. The notable new feature is, here, the design without crank handle. As soon as the green control knob for image and sound changeover is being actuated, the performance sets in. A couple of electrical locks eliminate automatically error attendance and secure a smooth and unfailing operation.



Service side of left-hand model

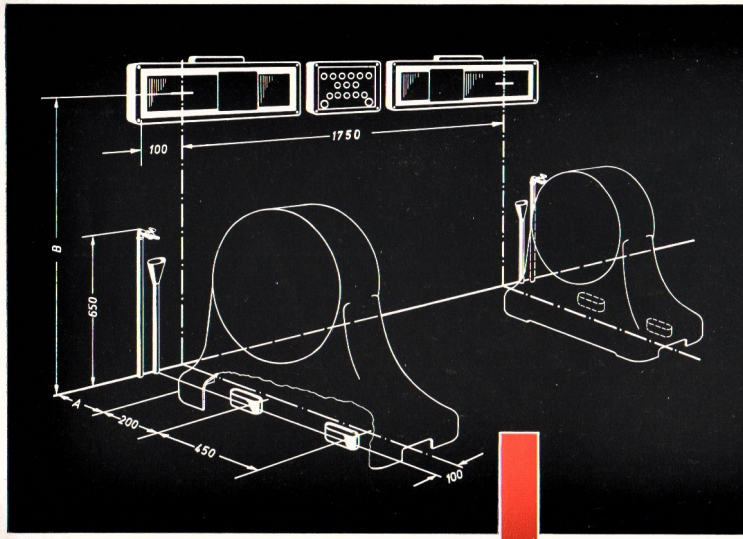
THE NEW FH CABIN WINDOW



The FH 99 imparts to the projection room an up-to-date character which is still accentuated by a FH cabin window equipment.

The new FH cabin window consists of a projection glass, dimensioned with 300 × 150 mm, an observation glass with 150 × 150 mm, which are held both in one frame.

For the first time, they are embedded in a rubber profile without being screwed. This way of fastening exerts no strain on the glasses and avoids any image distortion and unclearness that might arise through incorrect screwing, especially in the event of large screen or Cinema-Scope projections.



Dimensions for Erection

Direction of Projection	Inclination of the Machine	Distance A in mm	Center of Cabin Window B in mm	Total Height in mm	inches		
upwards	5°	450	1290	2130	17.72	50,8"	83,8"
horizontal	0°	510	1215	2135	20.08	48"	84"
downwards	5°	550	1125	2130	21.65	45"	83,8"
downwards	10°	590	1035	2110	23.23	41"	83"
downwards	15°	630	940	2100	24.8	37"	82,7"

In special cases, any desired inclination is obtainable.
Weight of projector depending upon the equipment: approx. 300 kgs.

The large base plate and the weight of the machine assure a stable and solid stand needing no anchoring.
For detailed installation plan, see FH 99 operating instructions.

On delivery, we preserve the right to deviate from the illustrations and descriptions as given therein.

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