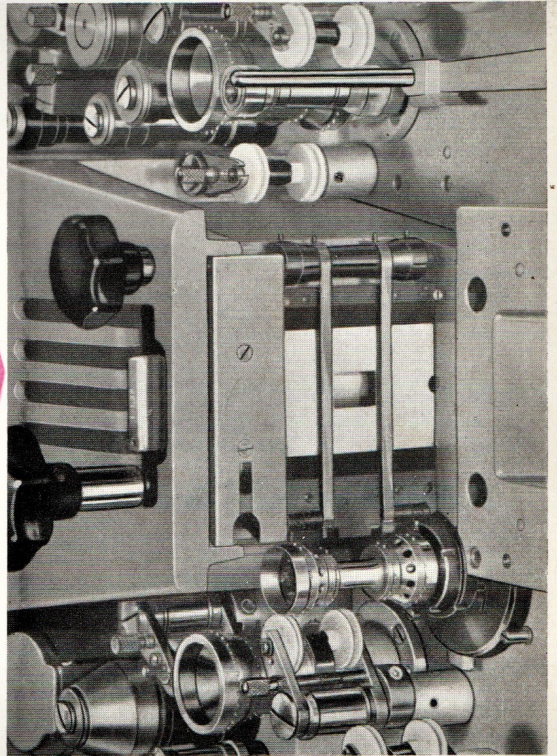
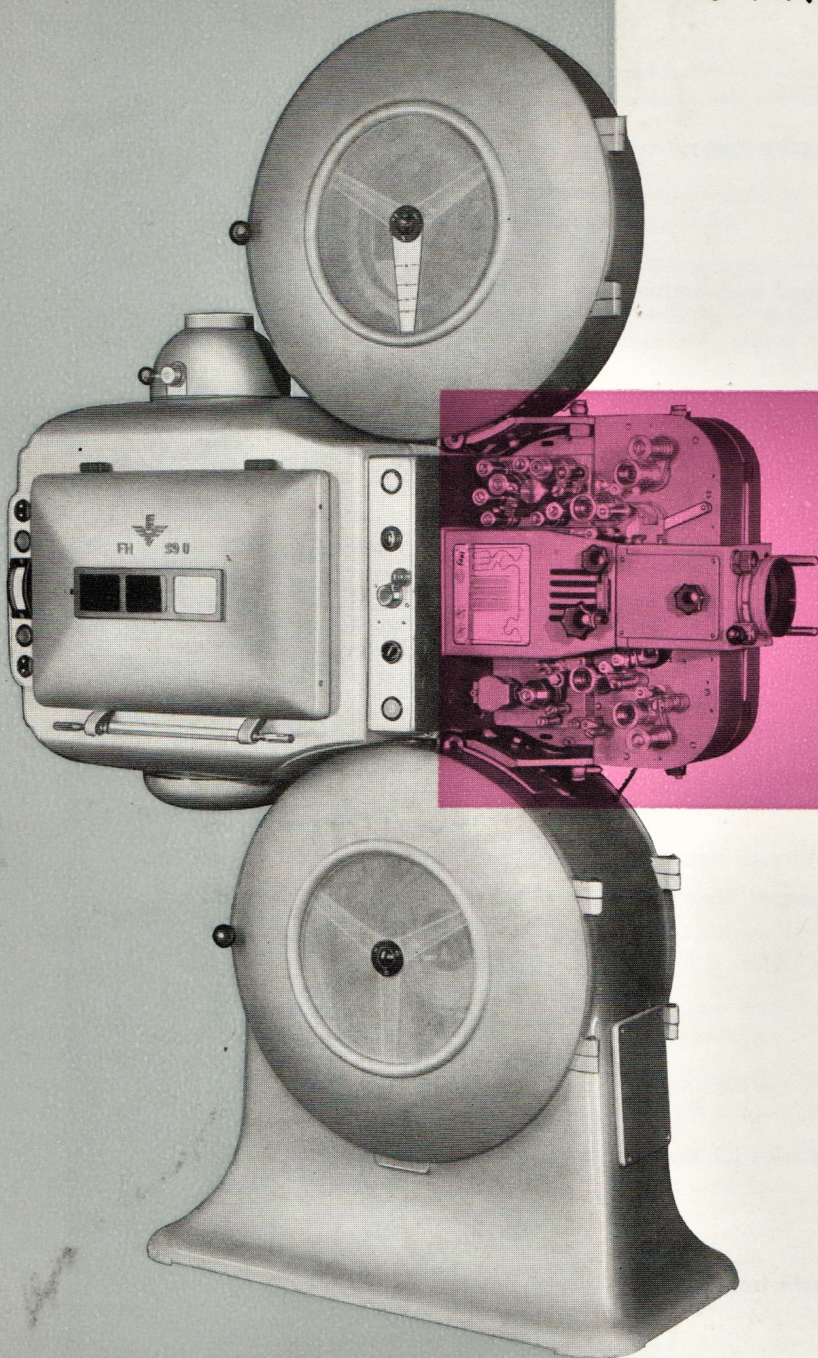


*The latest FH - development*



## FH-UNIVERSAL PROJECTOR

suitable for the projection  
of all picture systems  
known up to now  
with films of 35 mm  
and 70 mm width

35

70



FRIESEKE & HOEPFNER GMBH ERLANGEN-BRUCK  
WESTERN GERMANY

# The FH-Universal Projector

is characterized by an ingenious construction, an excellent light intensity and a high comfort in the attendance

## Features:

Easy attendance by clearly arranged push-button control

the picture system can be changed even during the running of the machine

adaptable from 35 to 70 mm and vice versa within a few minutes and without interruption of the performance

rapid change of the lens with warranted sharpness of pictures for each system

direct start by a new wind-up friction, without any danger of film break, for normal films of 1800 m or 70 mm wide films of 900 m length

rapid ignition of the arc lamp

lighting control device for the film gate at the lamphouse door, service side

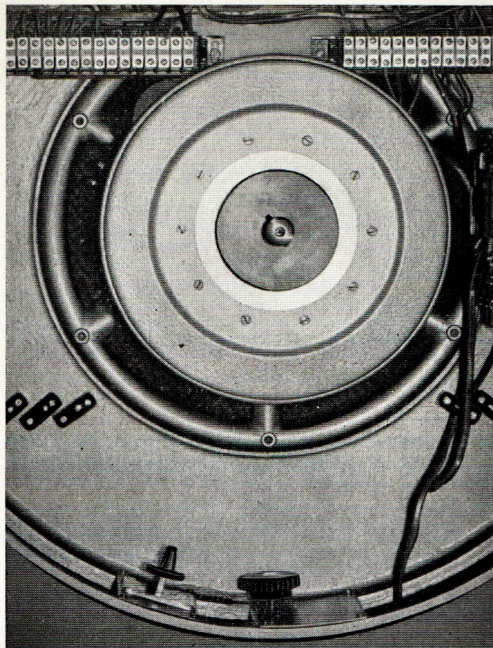
carbon feed motion, consumption separately adjustable from 0.5 to 12 mm per minute

maximum load up to 150 amps

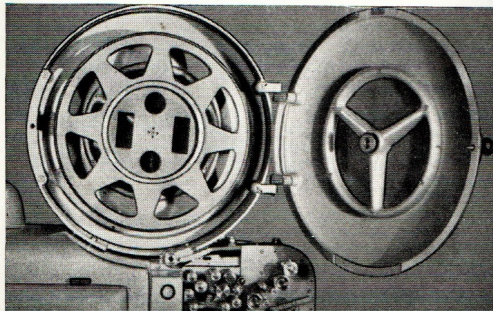
alternatively 24 or 30 frames/sec. by electrical pole-reversing of the driving motor

no change of rollers and sprockets in the film traction mechanism

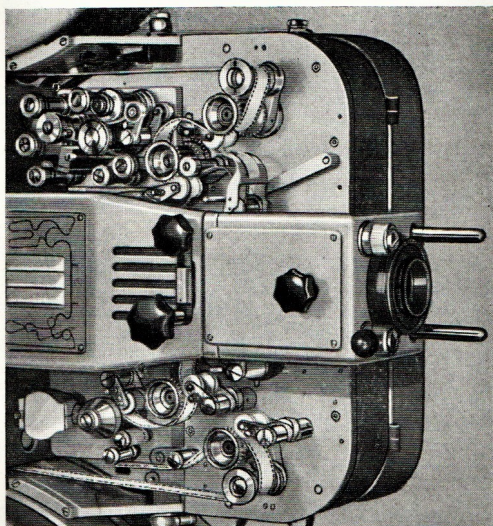
# Assembly of the FH-Universal Projector



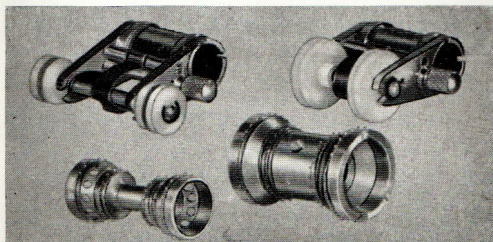
Pedestal (back) - Take-up friction for 1800 metres (normal film) and, without alteration, for 900 metres (film of 70 mm width) - Selector switch - Regulator for initial velocity



Upper safety magazine, front view, with inserted 70 mm film reel



Projector head, front view, with magnetic soundhead for 4- and 6-track magnetic sound films, with photoelectric soundhead, vaulted film guide, inserted with 35 mm normal film



Double geared roller and rotating sprockets for 35 and 70 mm films with cylinder holder for 70 mm wide film and cylinder holder for 35 mm normal film

## Pedestal:

New type load-dependent friction with direct drive, without maintenance which is worth mentioning. Accurate take-up for 35 mm film up to 1800 m and, without any alteration, likewise for 70 mm film up to 900 m length.

The film pull can be adjusted from outside.

Pole-changeable drive motor for changing over alternatively to 24 or 30 frames/sec.

Power transmission with toothed Perlon belt for mains supply of 50 cycles.

Special driving arrangement of the machinery for the export trade into countries with mains current of respectively 60 and 40 cycles or single-phase alternating current.

The terminal board with connectors is a separate unit. The regulator for the starting speed is located in the pedestal.

## Upper safety magazine:

High capacity, appropriate to take 35 mm films up to a length of 1600 m or 70 mm films up to 900 m. Always vertical position of the door hinges, independent of the inclination of the projector. Adjustable film feed friction. Upon request with a winding capacity of 1800 m for 35 mm films.

## Projector head:

All rollers and rotating sprockets are equally designed for 35 mm and 70 mm films.

Pressure-roller sets for 35 mm as well as for 70 mm films are provided, the change is merely effected by disengaging the stop springs.

The upper and lower safety channels are fixed component parts of the projector head.

Incorporated swing levers control the film pull from the upper magazine and towards the winding-up friction. A direct start of the machine is thus possible.

Inserted film loops will not be altered when adjusting the frame-line, owing to an automatic loop compensation.

A cone shutter made of tinderproof steel ensures the highest possible utilization of the light intensity.

A perfect and complete cooling for film and film gate is realized by a fan motor which likewise operates the carbon feed motion.

An additional holding-motor keeps the projector at constant speed for 24 frames as well as for 30 frames/sec.

An efficiently working water cooling-system is an integral aggregate of the projector head.

The lens-carrier can take lenses of any diameter up to 101.6 mm. The high-speed lens changing-motion realizes an immediate sharpness for each picture system.

The film guides for 35 and 70 mm films are ready-built components. Guide pins are provided for the film slide sections to ensure a perfect seat when changing the film system. In the counter-part of the lens-carrier there are merely elastic steel strips which by means of a press-button effect the right pressure of the 35 mm and 70 mm films on to the arched film-pull guide.

Correspondingly designated film-gate slides are available for each picture system.

#### Sound head:

The sound head as an organic component of the projector head is scanning the sound track with macroscopic projection.

#### Magnetic soundhead:

The film guidance is arranged for 35 mm as well as for 70 mm films; the 4- and 6-sound track magnet-heads can easily be interchanged. The rubber rollers on the soundhead as well as all other pressure rollers are likewise interchangeable within a short time. The magnetic soundhead is connected by means of approved TUCHEL-Connectors.

#### Pushbutton control system:

Manipulation extremely facilitated by an ingenious arrangement.

The change-over button operates the lamphouse shutter of both machines and besides also the photoelectric and magnet sounds are changed over.

The motor push-button alternatively operates the slow-speed running with subsequent stop as "electrical starter" or the hurried take-off.

The push-button "OFF" completely stops the running machine.

Both machines are put out of action by the main switch (safety switch).

#### Change-over device:

The lamphouse shutter serves as change-over device and is likewise designed for remote control or automatic device.

#### Lamphouse:

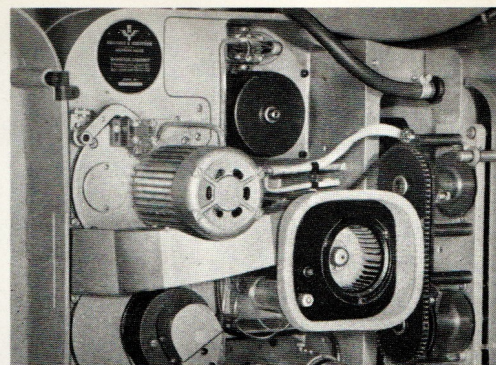
This high-efficiency lamphouse with cold-light reflector of 540 mm dia. presents lighting currents which meet all requirements. The great distance of the light arc from the reflector eliminates contaminations through excessive heat, carbon or metal particles.

The lamphouse door provided with a direct view inside, shows on a frosted screen the carbon craters and the position of the reflector (with crossline). Consequently a perfectly illuminated picture is guaranteed when changing over. The carbon holders are suitable for each carbon size. It is possible to use without alteration even special carbons.

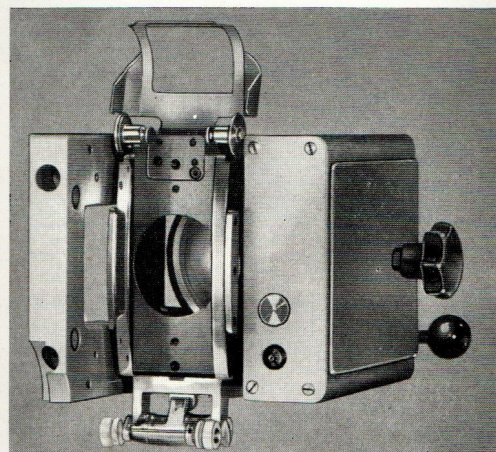
The feed motion spindles are fitted to the rear of the lamphouse, thus being preserved from dust.

The feed regulation is made from the service side of the machine by means of INBUS keys.

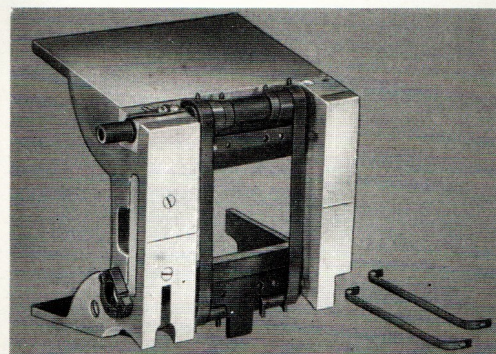
An effective water-cooling device ensures a good heat rejection.



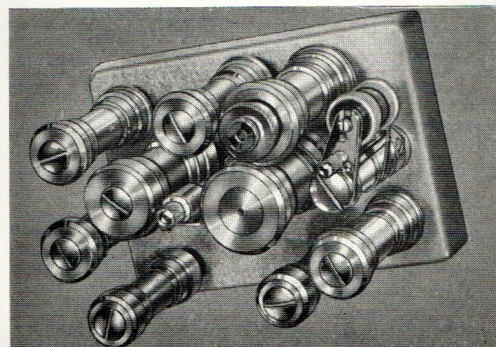
Projector head 35/70, back view, with fan motor which likewise operates the carbon feed motion and with supporting motor



Lens holder with vaulted 70 mm film guide



Slide with inserted 70 mm strips, without film gate slides



Magnetic soundhead for 4- and 6-track magnetic sound films

Furthermore we supply: Sound Film Projectors FH 66/77 and FH 99. Please ask for further details.



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