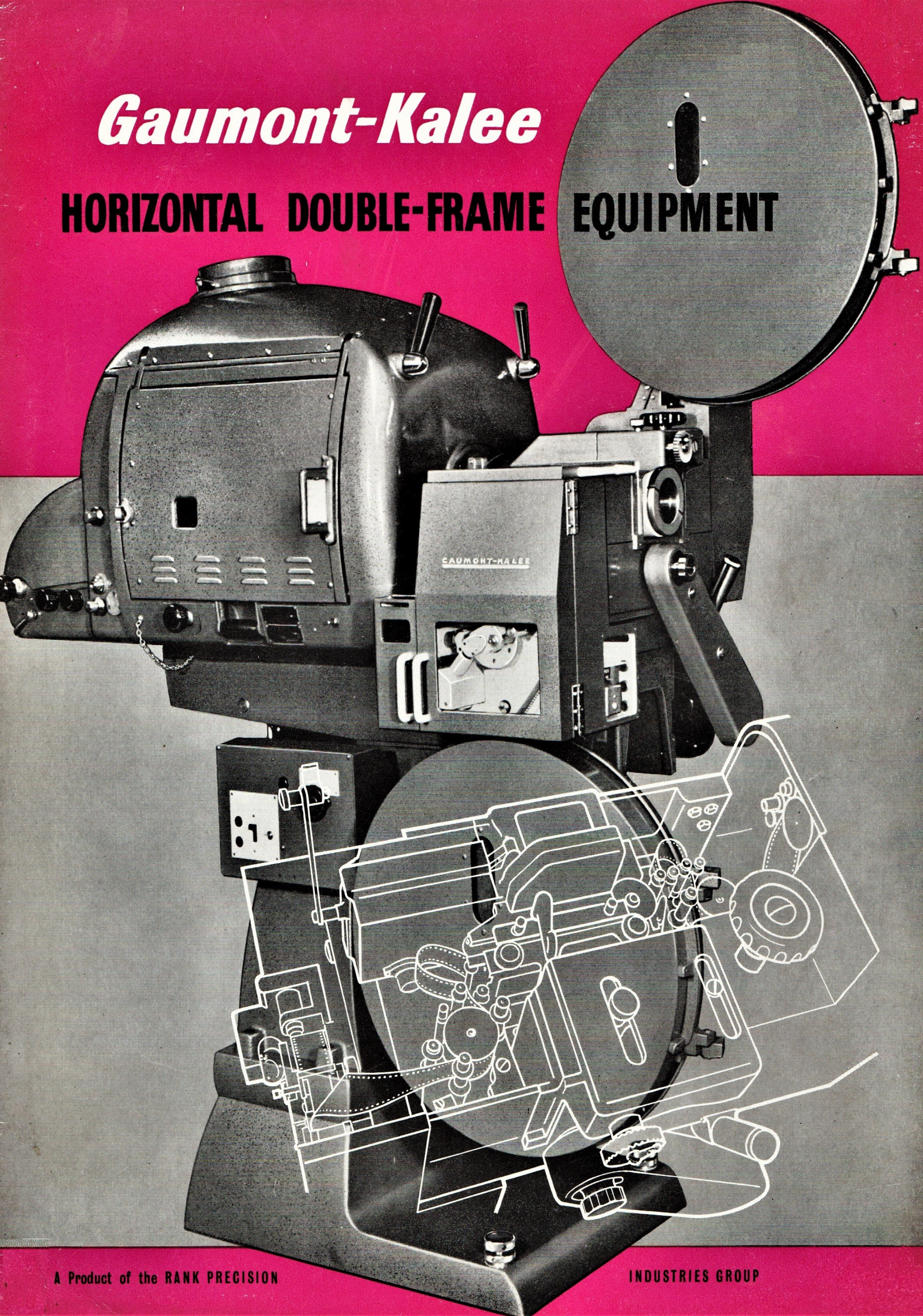


Gaumont-Kalee

HORIZONTAL DOUBLE-FRAME EQUIPMENT



A Product of the RANK PRECISION

INDUSTRIES GROUP

Gaumont-Kalee HORIZONTAL Double-frame PROJECTION & SOUND EQUIPMENT for

'Technirama'

The greatly increased size of the projected picture during the past few years has been accompanied by demands for more light from the projector, and better definition of both the image on the film, and the projected picture on the Cinema screen.

These demands have resulted in improvements in light sources and in projection lenses. In this field the Rank Precision Industries Group of Companies have made several important contributions.

The Gaumont-Kalee Horizontal Double-Frame Projector Mechanism now introduced is revolutionary in design and is a complete departure from standard practice.

Whilst continuing to use standard 35 mm film its increased frame size, nearly $2\frac{1}{2}$ times normal, provides the advantages of a larger projected picture area, with improved definition and reduction of visual graininess because of the smaller magnification factor employed.

This is achieved by the horizontal disposition of the projector mechanism. The film travels at twice the normal speed and in the reverse direction to normal practice. It is now drawn up from the bottom feed spool box and passes through the sound-head, then horizontally, through the projector head, to finally pass into the top take-up magazine.

High shutter efficiency is obtained with a single blade shutter rotating at 48 revolutions per second, twice the frame speed. The total angle of obscuration of the shutter is less than a normal two bladed shutter rotating once per frame.

A long picture gate is fitted to maintain adequate control of the film and provision is also made for watercooling the rear part of the gate. In addition high velocity air jets are directed at the film to reduce its temperature and stabilize its position.

The lens mount is 4" (100 mm) in diameter to accommodate the new range of 'Vistatal' projection lenses designed by Taylor Hobson especially to cover the large film area and to give high definition over the whole picture.

The backing lens controls the picture width but the height is governed by the special Gaumont-Kalee vertical compression Anamorph. The compressed horizontal film image is compensated by vertical compression in projection instead of the usual horizontal expansion. The combination of vertical anamorphic compression and 'Vistatal' projection lenses sets a new high standard in picture presentation.

An electrically operated changeover device is fitted to the projector mechanism.

The spool box capacity is 6,000 feet (1800 metres approx), thus providing up to 30 minutes continuous running.

Two designs of soundhead are available, one for optical sound only and one capable of handling both optical and magnetic sound. In both models a film stabilising system of the tight loop type is embodied. With the dual purpose sound-head the sprocket and its associated rollers, and the compliance arms of the mechanical filter system, are common to both the magnetic and the optical film paths. These are mounted on a turret which rotates around the sprocket axis. It is the work of a few moments only to unlock the turret and move its position to convert the soundhead from optical to magnetic operation.

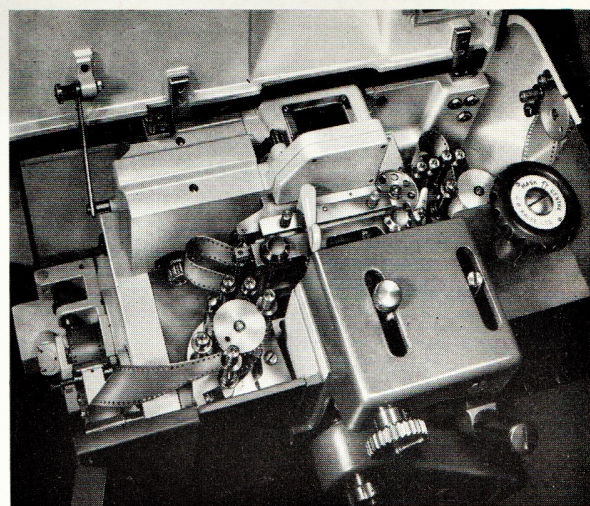
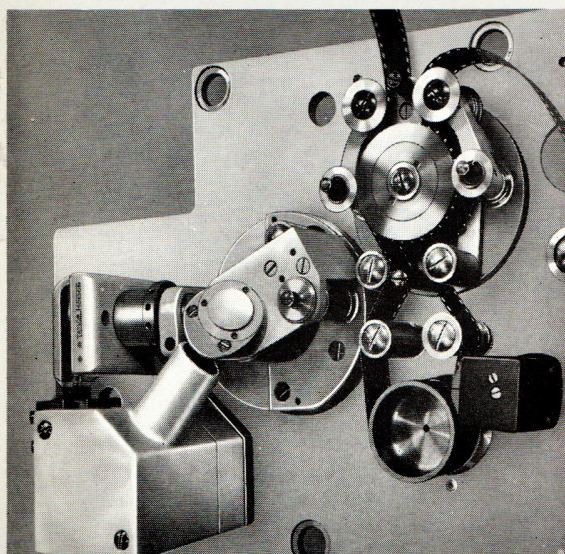
The film paths in the soundhead allow for an optical sound track synchronising distance of 18 double frames, and the magnetic scanning point 20 double frames from the picture.

The total R.M.S. flutter of both soundheads measured on the Gaumont-Kalee flutter meter, British standard No. 1988, is less than 0.1%.

Provision can also be made for multiple channel Stereophonic reproduction with follower heads and Selsyn interlock control gear.

PROJECTOR

Illustration shows the passage of the film, from the sound-head below, twisted through 90° travelling from left to right through the long parallel opening gate, and finally twisted again through 90° to the top magazine. The front section of the gate opens clear of the projection lens and can be removed for cleaning. It is accurately located on dowel pins and drops back precisely into the correct position. The intermittent sprocket is twice the diameter of the 4 picture sprocket used on conventional projectors. Picture masking can be operated without opening the projector door. The mechanism is oil bath lubricated.



SOUNDHEAD

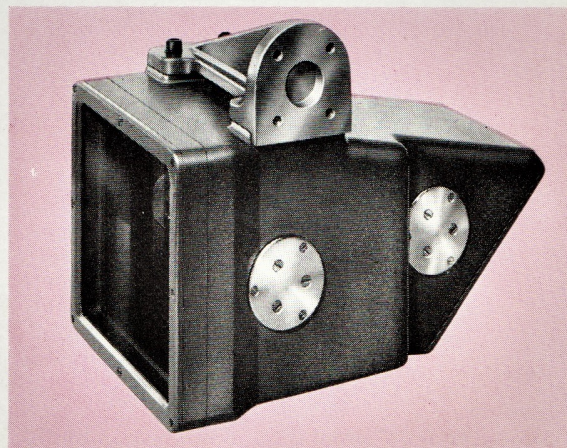
An optical soundhead is fitted in the complete equipment shown on the opposite page, and the model for both optical and magnetic sound is illustrated at left. The picture shows the turret on which are mounted the filter compliance arms and sprocket rollers rotated and locked in position for magnetic sound. Film from the bottom spool box, driven by the sprocket, is scanned by the magnetic pick-up head and finally twisted through 90° to the projector mechanism situated above. The conversion of the soundhead to either optical or magnetic operation is the work of only a few moments. Each sound-drum shaft is fitted with its own flywheel and guide rollers.

BACKING LENS & ANAMORPH

The combination of vertical anamorphic compression, and the new 'Vistatal' projection lenses, represents a complete departure from the traditional methods of anamorphic projection, and sets a new high standard in picture presentation.

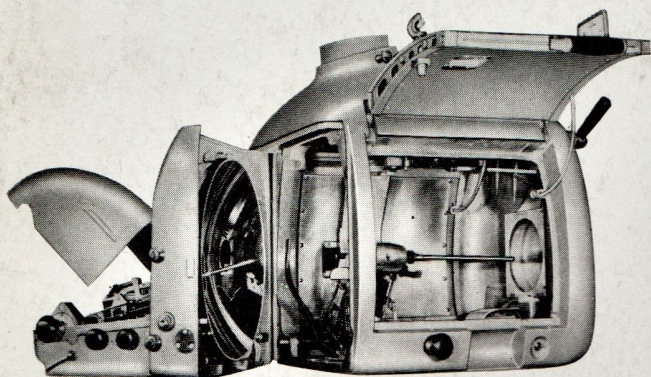
The short focal length 'Vistatal' projection lenses cover the large release prints without sacrifice of definition and illumination towards the edges of the picture. They are produced in thirteen focal lengths from 3" to 6" in $\frac{1}{4}$ " steps and have a relative aperture of f/1.9.

The vertical compression anamorphic attachment has a compression ratio of X 1.5, and is designed to cover the



'Vistatal' range of lenses without vignetting. It is supplied with a pre-set focus to suit the particular theatre screen throw distance.

MOLE RICHARDSON, GAUMONT-KALEE *High Power* ARC LAMP



- Water cooled positive carbon contacts
- Rotating uncoppered 11 mm or 10 mm positive carbon
- More light - lower cost
- Heat filter and mirror air cooled by blower motor
- Every part readily accessible for maintenance

The new Mole Richardson, Gaumont-Kalee high power arc lamp provides ample illumination for the new Technirama double-frame print. Approximately 19,000 lumens can be obtained at 130 amperes with no film in the gate but with the shutter running. The rotating positive carbon head is fitted with a watercooling shroud for the carbon contacts. The heat filter between the arc and the projector is equipped with its own blower motor which also supplies a current of cool air across the 16" (400 mm) diameter mirror.

WATER COOLING FOR ARC LAMP POSITIVE CARBON HEAD, AND PROJECTOR MECHANISM GATE

The installation of a Gaumont-Kalee water re-circulator is strongly recommended. It is completely self contained, independent of the mains water supply, and can be installed below the arc lamp it serves. The bell alarm is coupled across the D.C. supply to the arc, and operates immediately should any attempt be made to run the arc without switching on the water re-circulator. One unit is required for each arc lamp, and will also supply at the same time one water cooled gate on the projector mechanism.



- Alarm bell warning if arc is struck without water circulation switched on
- Protection of positive carbon head
- Completely self-contained
- Safeguard and security

AMPLIFYING EQUIPMENT

There is an extensive range of Gaumont-Kalee amplifiers and associated equipment for the reproduction of optical, and single or multi-track magnetic recordings, with outputs to suit precisely the requirements of every type of installation.

Provision can also be made for multiple channel stereophonic reproduction with follower heads and Selsyn interlock control gear.



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