

THE  
**KALEE GK-40**

INTRODUCING

COMPLETE SOUND-FILM  
EQUIPMENT

THE  
**KALEE**  
**GK 40**

A COMPLETE SOUND-FILM PROJECTOR EQUIPMENT



## *ct of Co-operation!*

GK-40 sound-film projection equipment described in this booklet is a product of the Kalee organisation—the largest manufacturers and distributors of cinematograph equipment in the British Empire.

The resources of this vast organisation cover every branch of science and industry connected with the design and manufacture of sound and motion picture equipment.

In optics, in mechanics, in electronics and in acoustics the Kalee craftsmen are without a rival and the sales and service organisation behind their products is in keeping with that standard.

The GK-40 equipment has been specially designed to provide high-quality visual and sound performance at the lowest possible cost, for theatres up to 1,500 seats. It will give years of trouble-free service even under the most exacting conditions of temperature and humidity. Read through the specification in these pages and you will agree that it “comprises all that has made the name Kalee world famous.”

*The equipment is designed for use with Alternating Current 50/60 cycles at voltages varying between 100/250.*

*The arclamps normally supplied are for use with A.C. but D.C. arclamps are available to special order at no additional cost.*

☐ See the IMPORTANT NOTICE on Page 16.

*Distributed throughout the World by*

60-66 WARDOUR STREET

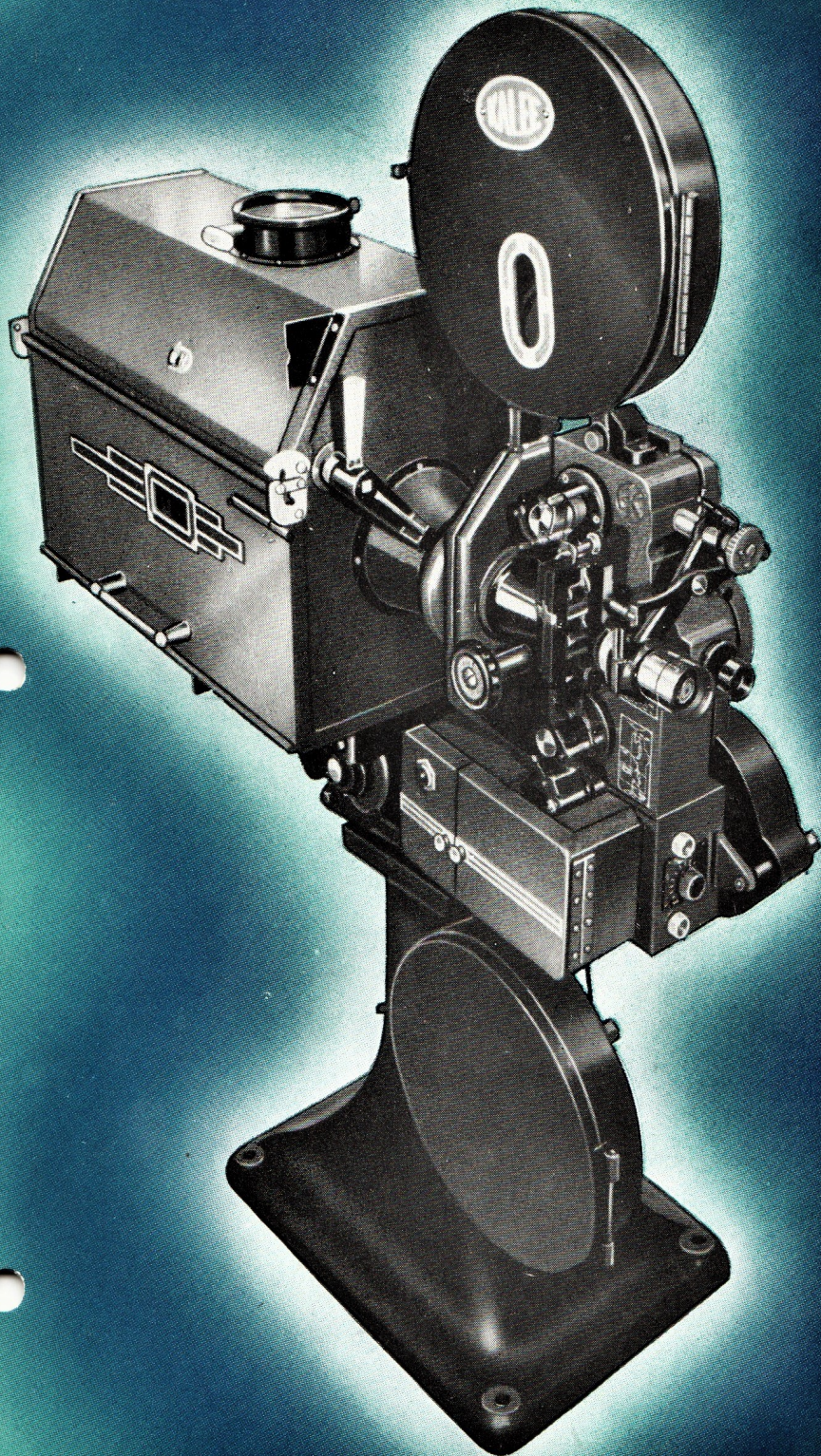


LONDON, W.1. ENGLAND



# THE KALEE GK-40

## COMPLETE SOUND-FILM EQUIPMENT



- is manufactured entirely within the KALEE organisation.
- is designed and built to operate as a complete unit.
- gives high-quality performance at an extremely low price.
- comprises projector, soundhead, amplifiers, arc lamp and loud speakers.
- can be installed by semi-skilled labour, using screwdriver and spanners. Connections are simplified by the plug-in system.
- is robust in construction, easily serviced and will give years of trouble-free operation.
- has been exhaustively tested under extremes of temperature and humidity.
- is available for A.C. or D.C. arc-lamp illumination as ordered.
- carries the KALEE world-wide guarantee of satisfaction.



# PROJECTOR MECHANISM

Kalee projector mechanisms have been famed since the earliest days of motion pictures. It is probable that more projectors have been made bearing the Kalee name than any other.

This is of interest to the buyer of kinema equipment because it constitutes an assurance that Kalee technicians have had years in which to study and eliminate defects until to-day they have attained something very near perfection.

Accurate alignment and generous support for all spindles is secured and maintained in the substantial one-piece box casting.

Examination and servicing of the internal mechanism is facilitated by releasing the single large diameter knurled knob and detaching the cast rear cover.

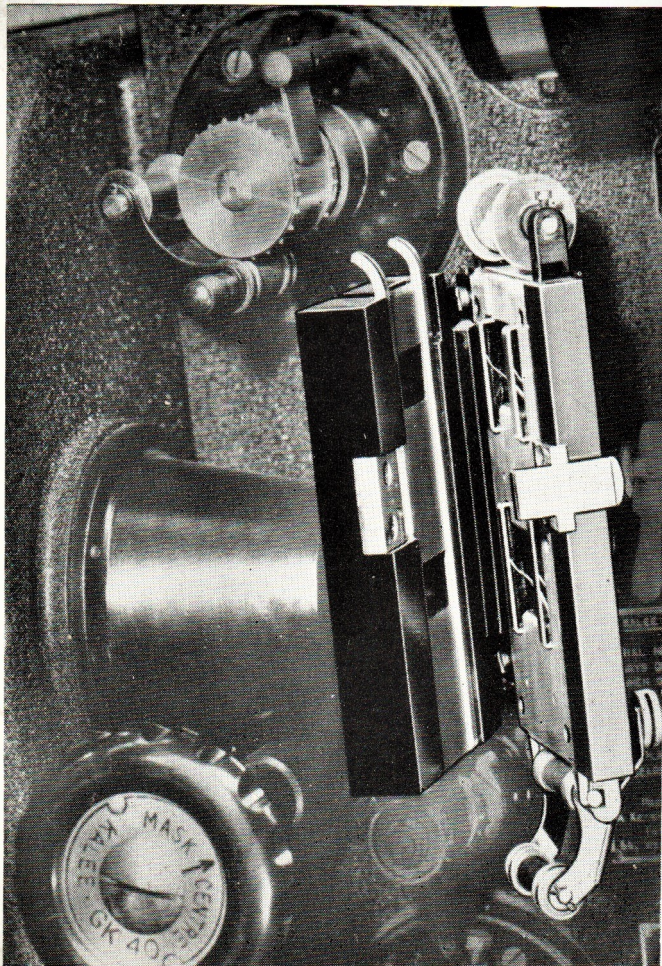
The lens holder and focusing mechanism ensure great accuracy and rigidity. The lens can be swung up and held out of the way while threading or gate cleaning without disturbing the micrometer-set focus position.

The projector drive is from  $\frac{1}{4}$  h.p. capacitor-start type split phase, 50/60 cycle motor for 110 or 220 volt input as ordered. The drive is conveyed by twin vee-sectioned rubberised fabric belts protected by a detachable metal guard.

Provision is made for turning the mechanism by hand, also for racking while

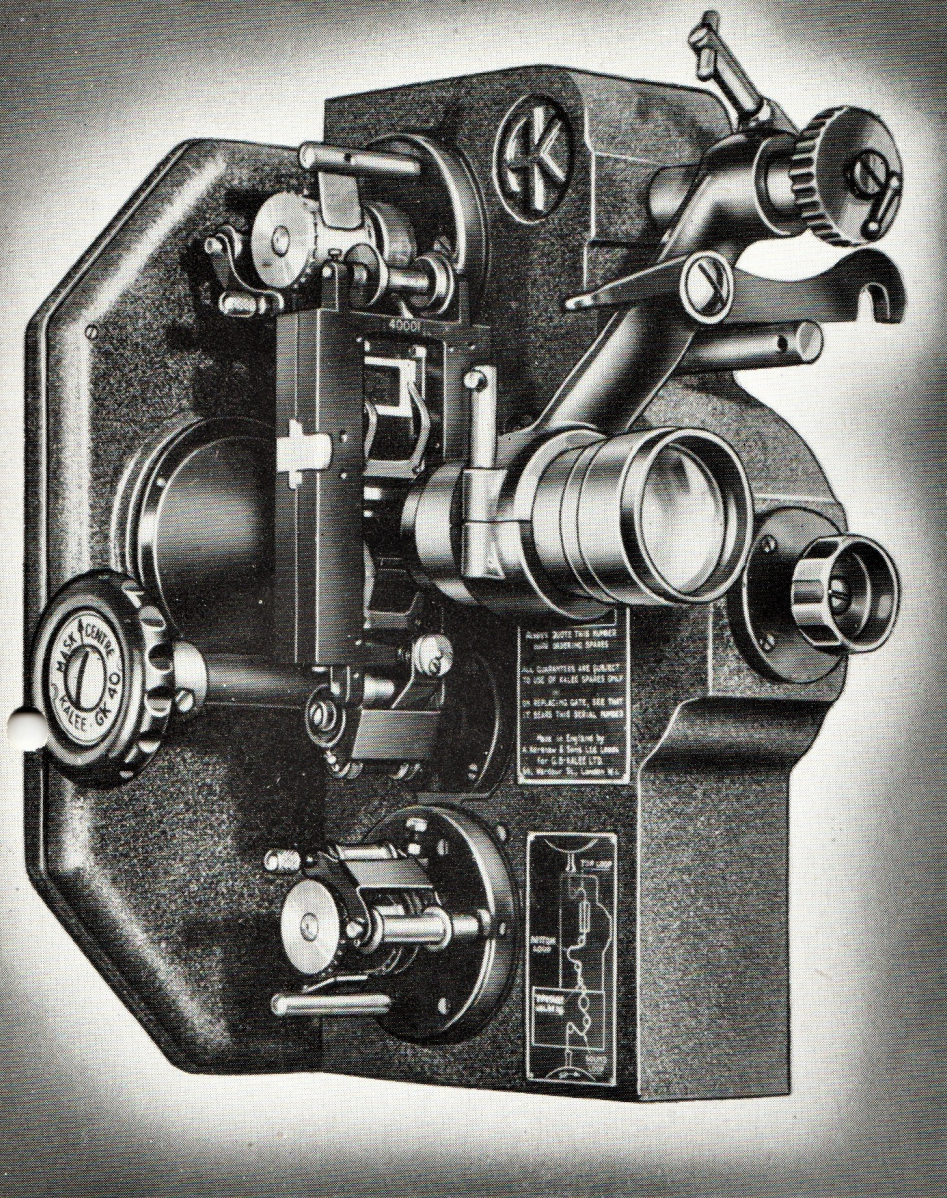
the machine is running. The intermittent sprocket is hardened by a special Kalee process, giving long life and preventing film mutilation.

Spool boxes accommodate regular 2,000 foot (600 metre) spools and both are fitted with hinged fire traps which open like a book for easy threading and cleaning. 3,000 foot (900 metre) top and bottom spool boxes are available to special order.



*Both the hardened aperture plate and the hinged gate are instantly detachable for ease in cleaning.*

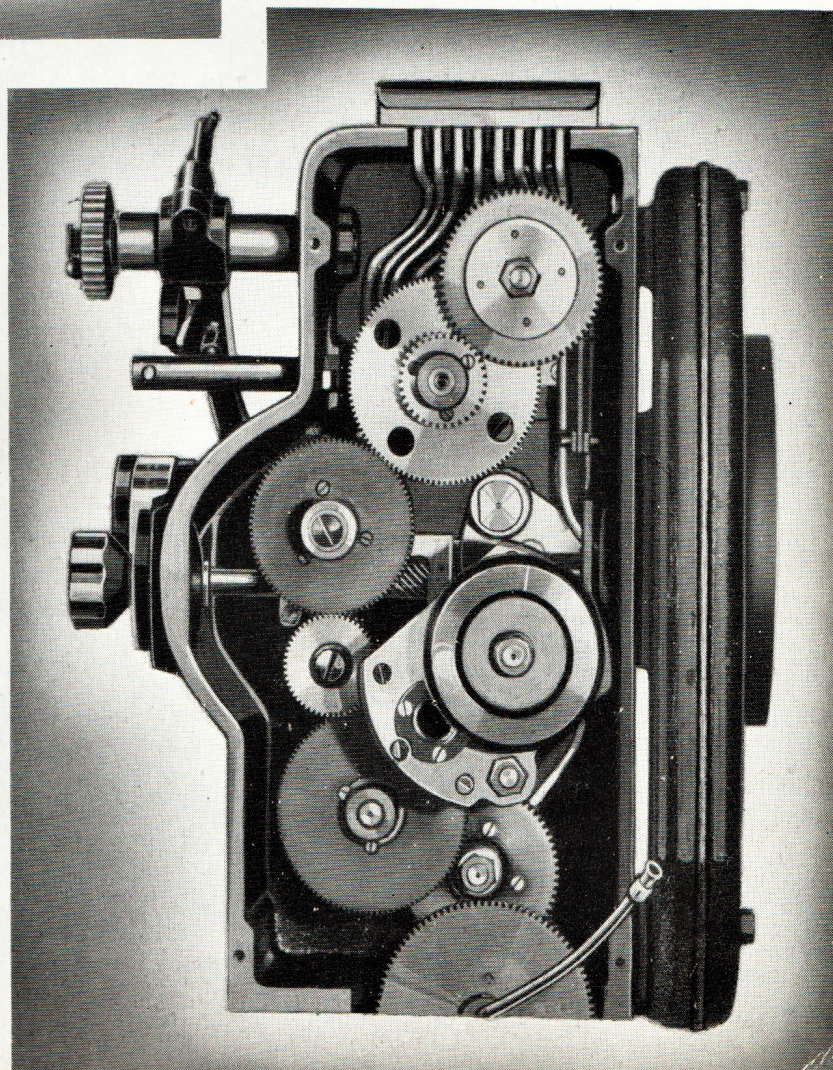




The two-bladed rear shutter runs in a substantial totally enclosed guard. A safety shutter of the flag type, governor controlled, works in front of the rear shutter and comes into action as soon as the speed of the machine falls below a predetermined limit. This action cuts off light and heat from the film in the event of any stoppage of the mechanism, thus preventing fire.

The intermittent mechanism is generously proportioned with heat treated and ground working parts running in an oil bath and is readily detachable as a complete unit.

A sight glass visible when the rear cover is removed enables a ready check of the oil level. All spindles are arranged with oil throwers and drain ways so as to keep oil away from the operating side of the mechanism. Bearings are piped to a central lubricator block (see illustration at right) to facilitate lubrication of all necessary parts. Kalle "Superoil" lubricant only should be used.





# SOUNDHEAD

Kalee technicians are justifiably proud of the soundhead fitted to the GK-40 equipment.

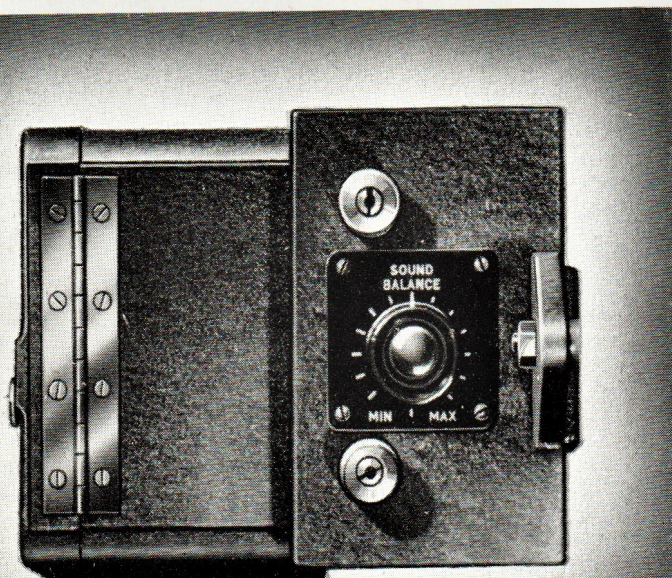
Their aim has been to secure results—in terms of controlled sound reproduction—comparable with those obtained in the leading cinemas. At the same time they have kept in mind that GK-40 installations will often operate in remote locations, subject to extremes of humidity and climatic temperature.

To combine all the qualities demanded by high-class reproduction ; long, trouble-free service ; ease of maintenance, and proof against climate extremes, has called for experience and craftsmanship such as the Kalee organisation alone can command.

Apart from the general high efficiency and robust construction of the soundhead, a noticeable feature is the method of driving the constant speed sprocket. The shaft of this sprocket carries a heavy 9 inch diameter flywheel which is directly driven by the main projector motor. Absolute constancy of film speed is thus assured.

The lower or take-up sprocket drive is cushioned to avoid any film take-up snatch being transmitted to the constant speed sprocket.

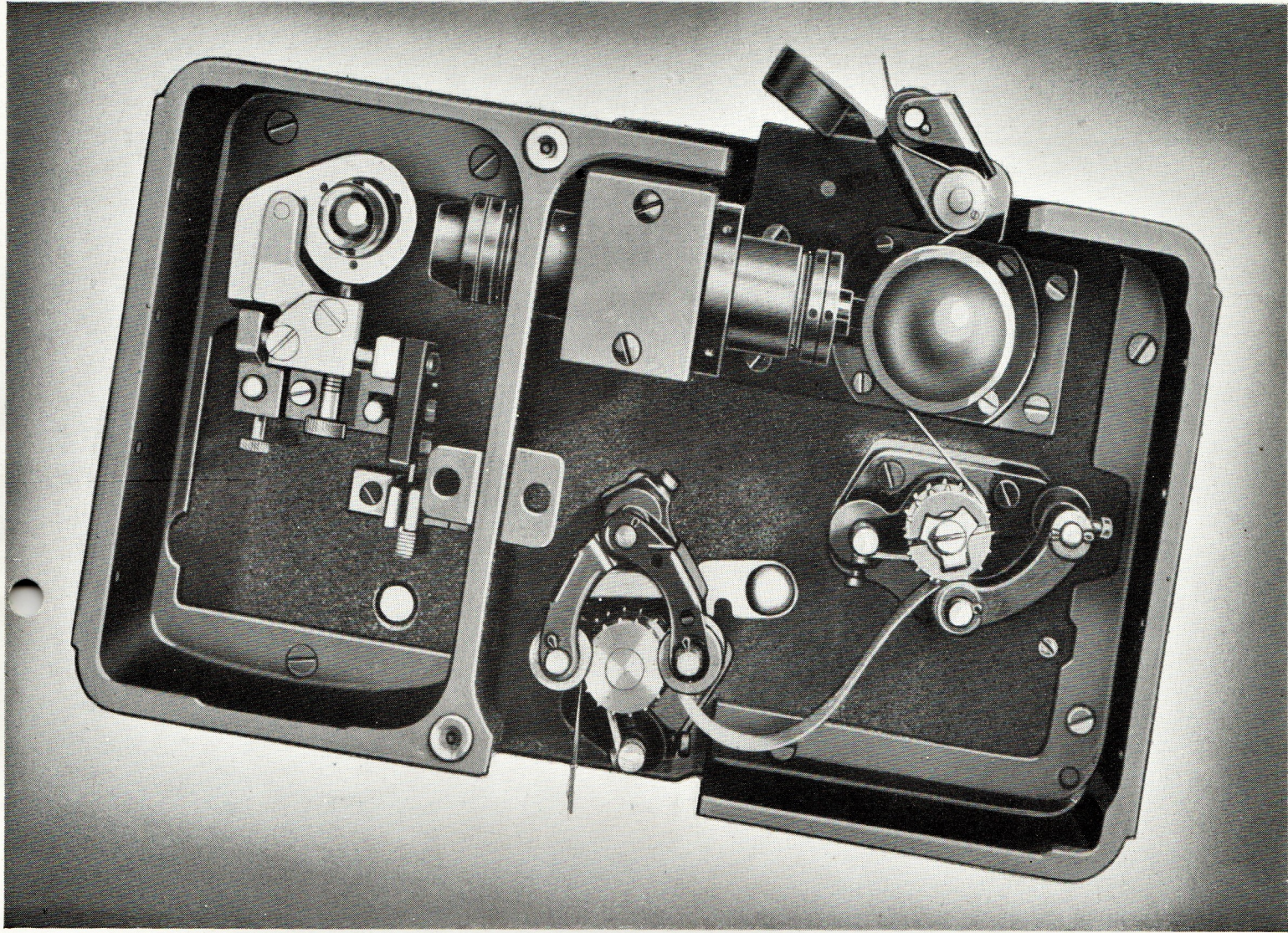
The exciter lamp is of the pre-focus type and is carried in a detachable focusing holder.



*This control rheostat mounted on the forward end of the soundhead frame regulates the brightness of the exciter lamp. The accurate matching of sound level between the two machines at change-over is thus conveniently and instantly assured.*

*Variations in print density can also be compensated with ease.*





An extra lamp and holder is supplied ready for immediate use should the lamp fail in operation. A safeguard against failure is provided for by deliberately arranging that the lamp is under-run.

The photo-electric cell is of a standard 4-pin English base type having a sensitivity of 180 microamps per lumen.

The exciter lamp is supplied with current at supersonic frequency from the 12-watt amplifier stage by a 5-foot lead.

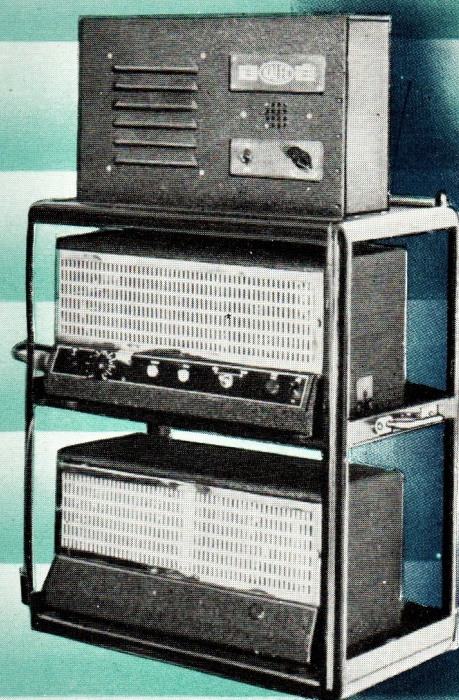
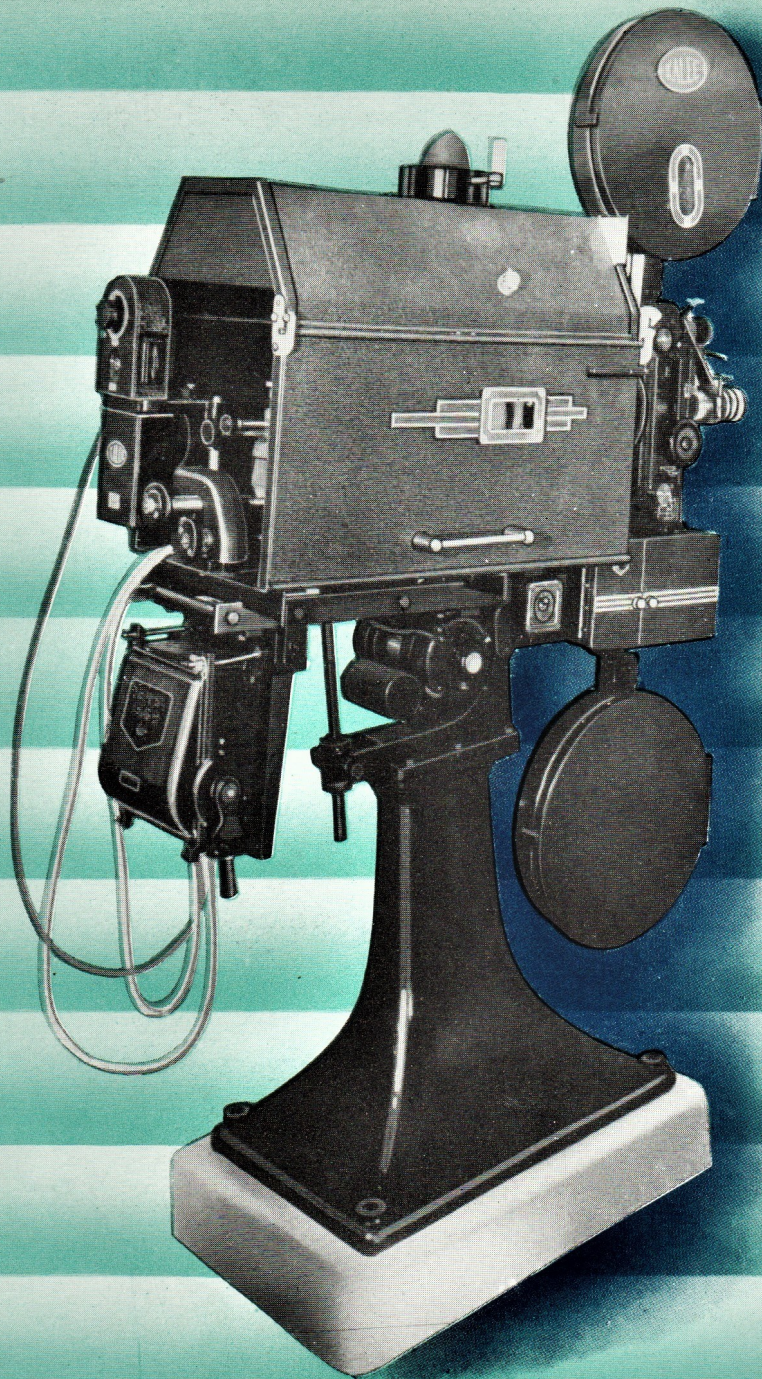
A separate lead of low loss co-axial type couples the photo-electric cell to the driver-stage amplifier.

These leads have non-interchangeable plugs which obviate any possibility of wrong connections.

The optical slit system is pre-set in focus and azimuth and sealed against entry of damp and oil.

The system can be dismounted for cleaning or inspection and replaced without loss of adjustment or focus.





## The Standard GK-40 Sound-Film Equipment consists of

### 2 PROJECTORS, each comprising :—

projector mechanism ; soundhead complete with exciter lamp and photo-electric cell ; Kalee series " H " " bloomed " colour-corrected lens, any focus from 3 ins. to 6 ins. (76 to 152 mm.) inclusive as required.

2,000 ft. (600 metre) top and bottom spool boxes. (3,000 ft. [900 metre] supplied to special order.)

2,000 ft. (600 metre) spool. (3,000 ft. spool supplied with 3,000 ft. spool boxes.)

2,000 ft. (600 metre) split spool. (3,000 ft. supplied with 3,000 ft. spool boxes.)

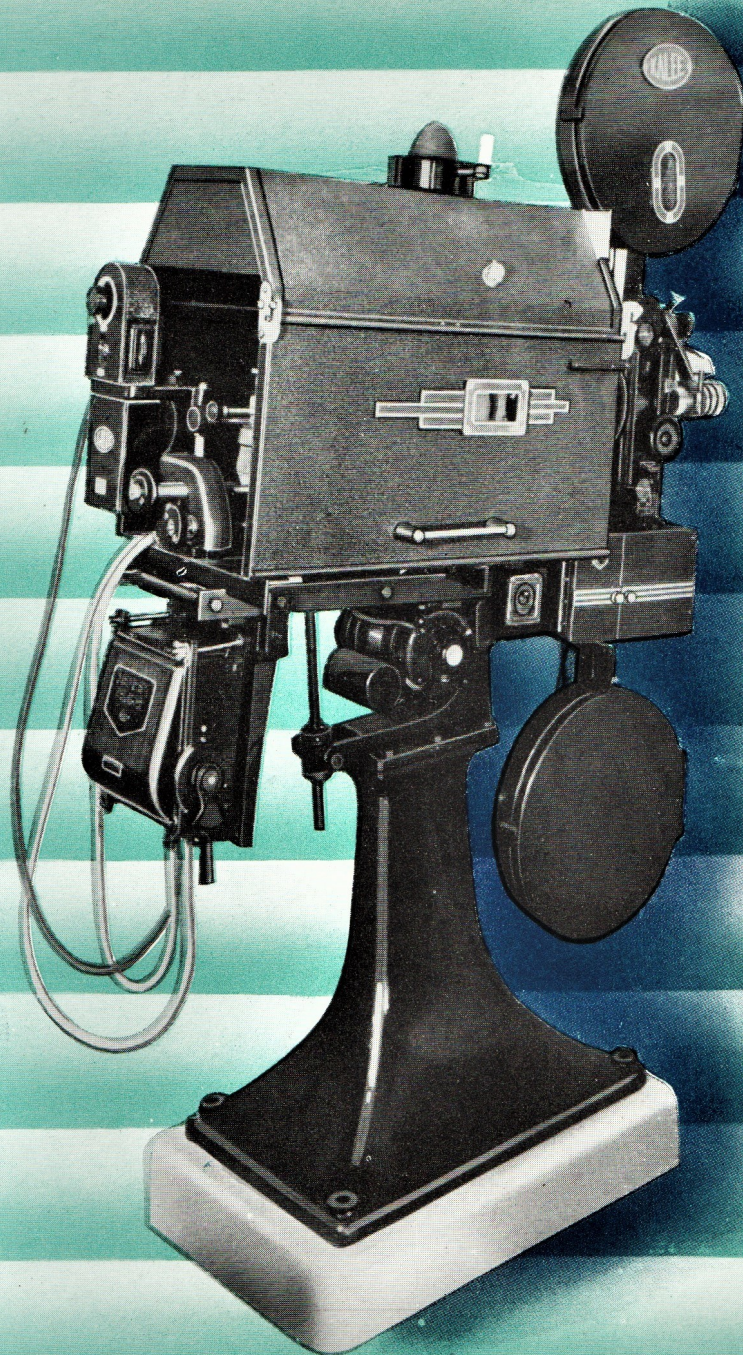
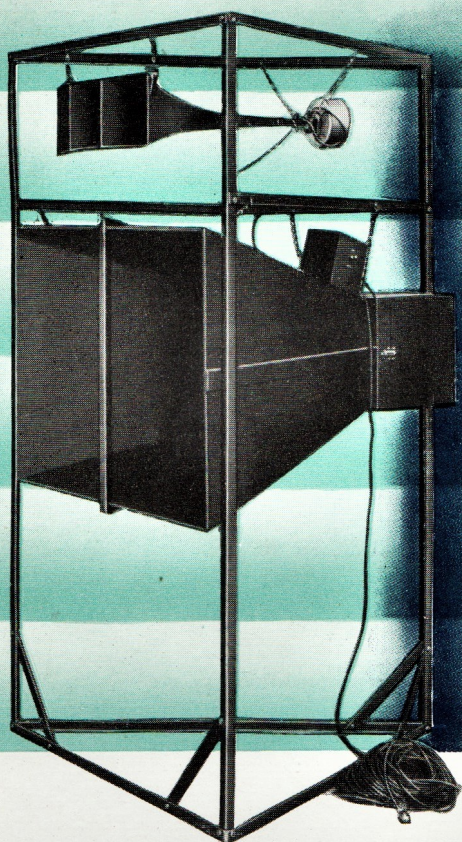
Arclamp, complete with 12 in. mirror (305 mm.) and spare fuses, for operation on A.C. or D.C. as ordered.

Pedestal, complete with  $\frac{1}{4}$  h.p. driving motor, and two driving belts.

Bottom spool take-up belt.



# GENERAL ASSEMBLY



AMPLIFIER SET, complete with valves, spare fuses and Monitor Speaker  
(see pp. 6 and 7).

LOUD SPEAKER TOWER, complete as shown on p. 14.

Sundries :—

- 1 spare exciter lamp mounting with lamp.
- 1 photo-electric cell extractor.
- 1 spare volume-control.
- 1 pint projector oil (Kalee "Superoil") in tin with detachable spout.
- 1 instruction manual and all necessary bolts, etc., for assembly of equipment.

*Note. The white plinths illustrated are not supplied, nor are the iron clad switch boxes attached below the rear end of the lamphouse, but it is recommended that these switch boxes be ordered as an extra when D.C. arclamps are specified.*

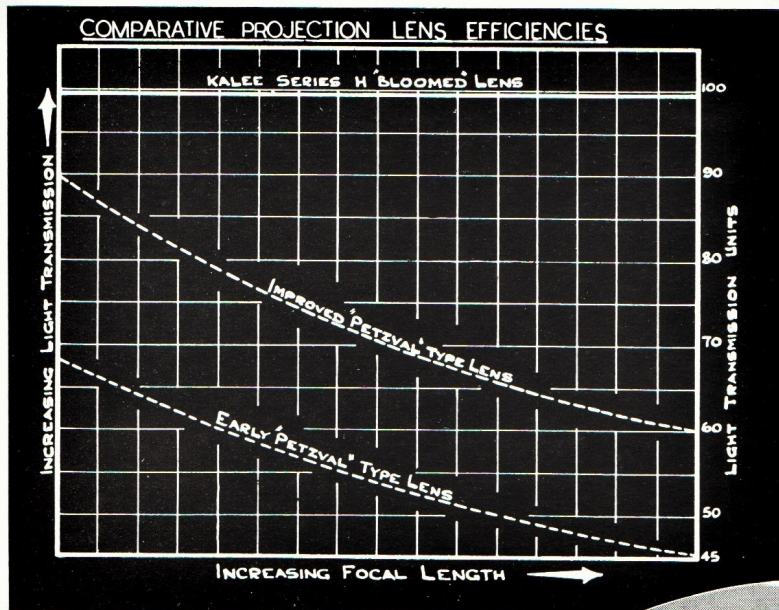


# BLOOMED LENSES

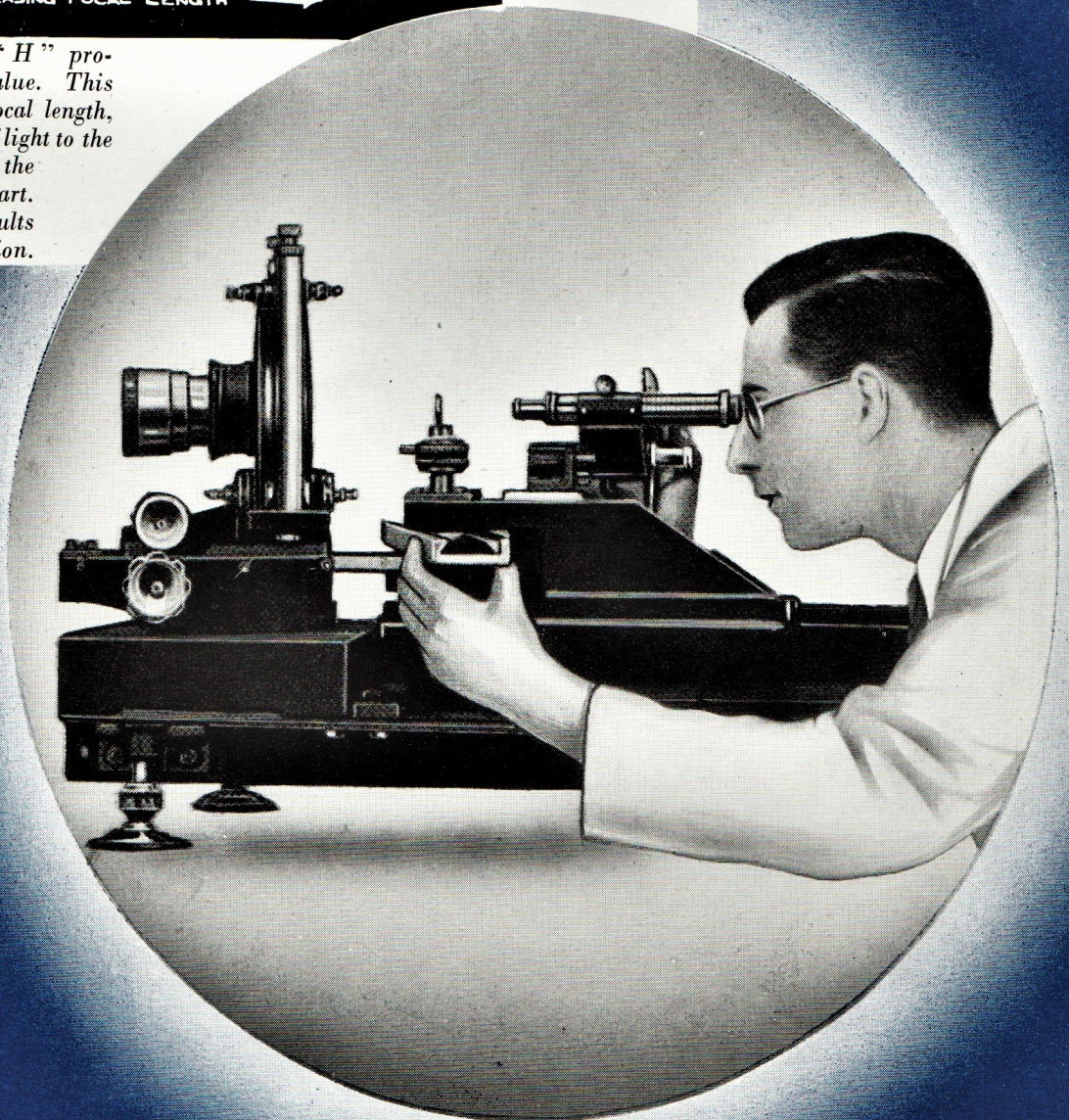


**T**he Kalee series "H" projection lenses supplied with this equipment represent the highest development in modern projection lens design and manufacture, embodying the constant F value optical principle to provide maximum screen illumination irrespective of the focal length of the projection lens. Specially selected optical glasses of high transparency have been used and elaborate testing plant has been developed to achieve the designers' exacting specifications. The lens surfaces have been coated with a refractive medium to increase light transmission and improve the contrast of the projected picture. This process is known as "blooming." The Kalee "blooming" process (on which patent is pending) is a novel modification of the usual technique, specially designed for application to projection lenses to ensure automatic correction of the colour of the light reaching the screen and to produce an intense pure white projection beam which enhances the picture from black and white or colour film stock.





The whole range of Kalee Series "H" projection lenses possess a constant F value. This means that each lens, whatever its focal length, passes the same maximum amount of light to the screen, as is graphically illustrated by the straight line characteristic in the chart. This feature of constant F value results in an appreciable gain of illumination.





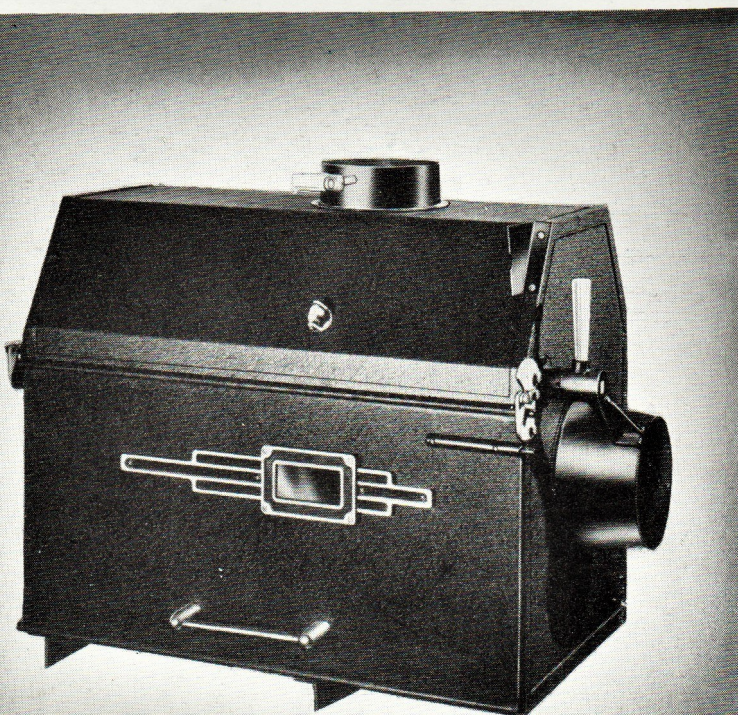
# ARC LAMP

A sturdy efficient arc lamp is the basis of all good projection. No refinement necessary to complete light control and maximum light utilisation has been omitted in the GK-40 equipment. It is a thoroughly trustworthy job and consistent with highest standards of projection technique.

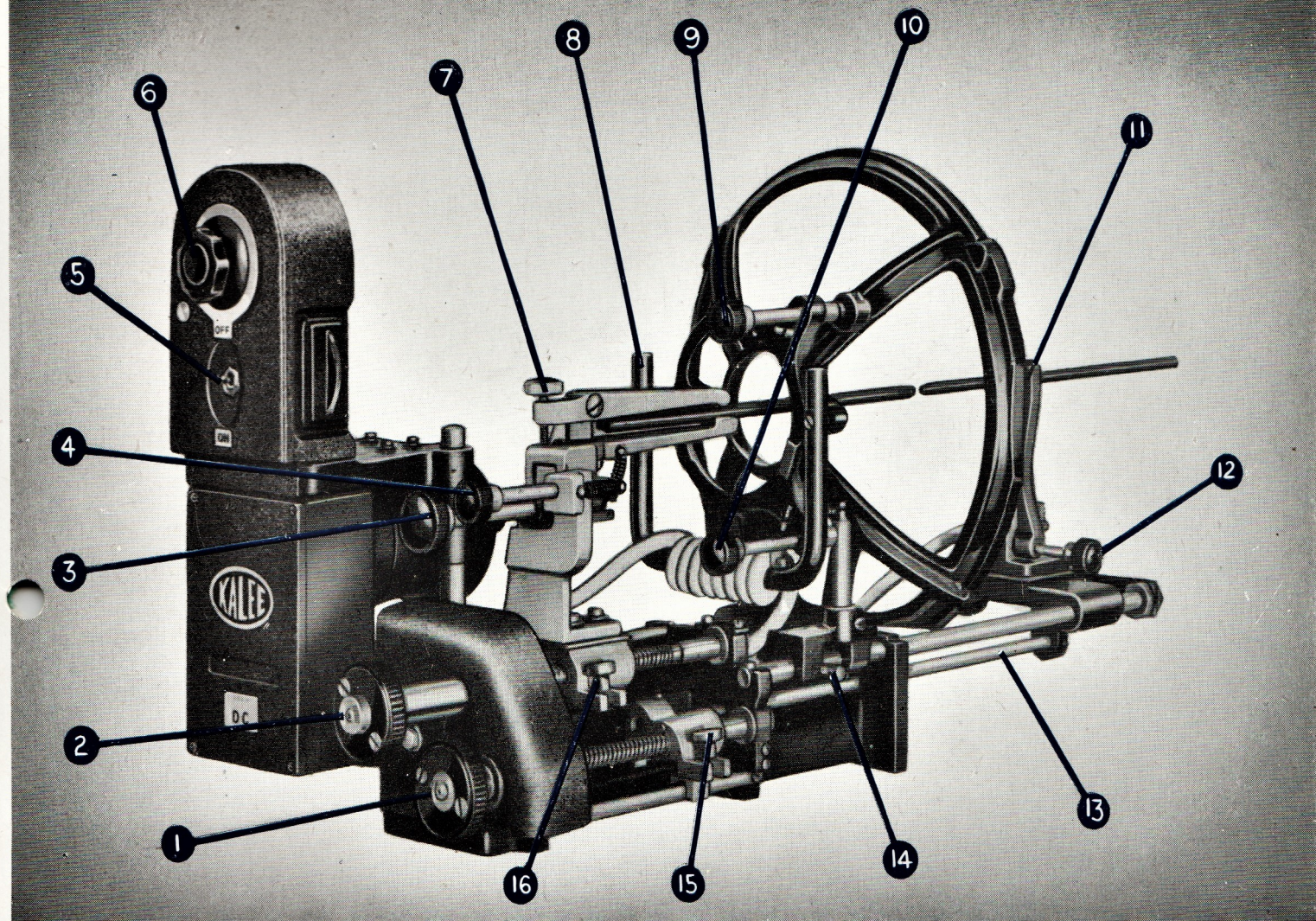
1. *General Assembly.* The Arc Lamp, Picture Head and Soundhead, together with the motors for driving the projector and feeding the arc are designed to function as one complete unit and are mounted on a substantial cast pedestal allowing of an angle of rake from  $20^{\circ}$  negative to  $7^{\circ}$  positive.
2. *Optical.* The maximum possible light is collected by the 12" short-focus aspherical mirror. A periscope throws a magnified image of the arc on to the screen provided. Markings on the indicator card show the latitude limits for positioning the arc and setting the arc gap.
3. *Electrical.* Apart from its general efficiency as a piece of electrical apparatus this arc lamp is provided with many refinements deserving of particular notice. A sensitive wide-speed-range automatic carbon feed is fitted to both A.C. and D.C. models. The rheostat adjustment enables any desired speed to be secured precisely. In the D.C. model a Kalee Energised Magnetic Arc Control is provided which assures not only correct arc formation and stability, but also reduces risk of mirror breakage.
4. *Mechanical.* The rugged construction of every part of this lamp makes it

eminently suitable for trouble-free service in outlying districts. All working mechanism is located in the cool part of the lamphouse behind the arc and is readily accessible for adjustment and lubrication. Carbon holders can be fed by hand, either simultaneously or independently.

The dowser is linked with a mirror-protecting screen for use when striking the arc.







- |   |  |
|---|--|
| 1 Positive feed-knob.                                 | 9 Vertical movement to mirror.         |
| 2 Negative feed-knob.                                 | 10 Horizontal movement to mirror.      |
| 3 Vertical movement to negative-carbon.               | 11 Positive-carbon holder.             |
| 4 Horizontal movement to negative-carbon.             | 12 Positive-carbon clamp.              |
| 5 Motor switch.                                       | 13 Positive feed coupling bar.         |
| 6 "Shaded" potentiometer carbon feed control.         | 14 Mirror focusing clamp screw.        |
| 7 Negative-carbon holder clamp.                       | 15 Quick release positive-carbon feed. |
| 8 Energised arc flame deflector (on D.C. lamps only). | 16 Quick release negative-carbon feed. |

*Note With D.C. models interchangeable gear wheels are supplied to accommodate Suprex (and Suprex) type carbons or Hilo (and Hilux) type.*

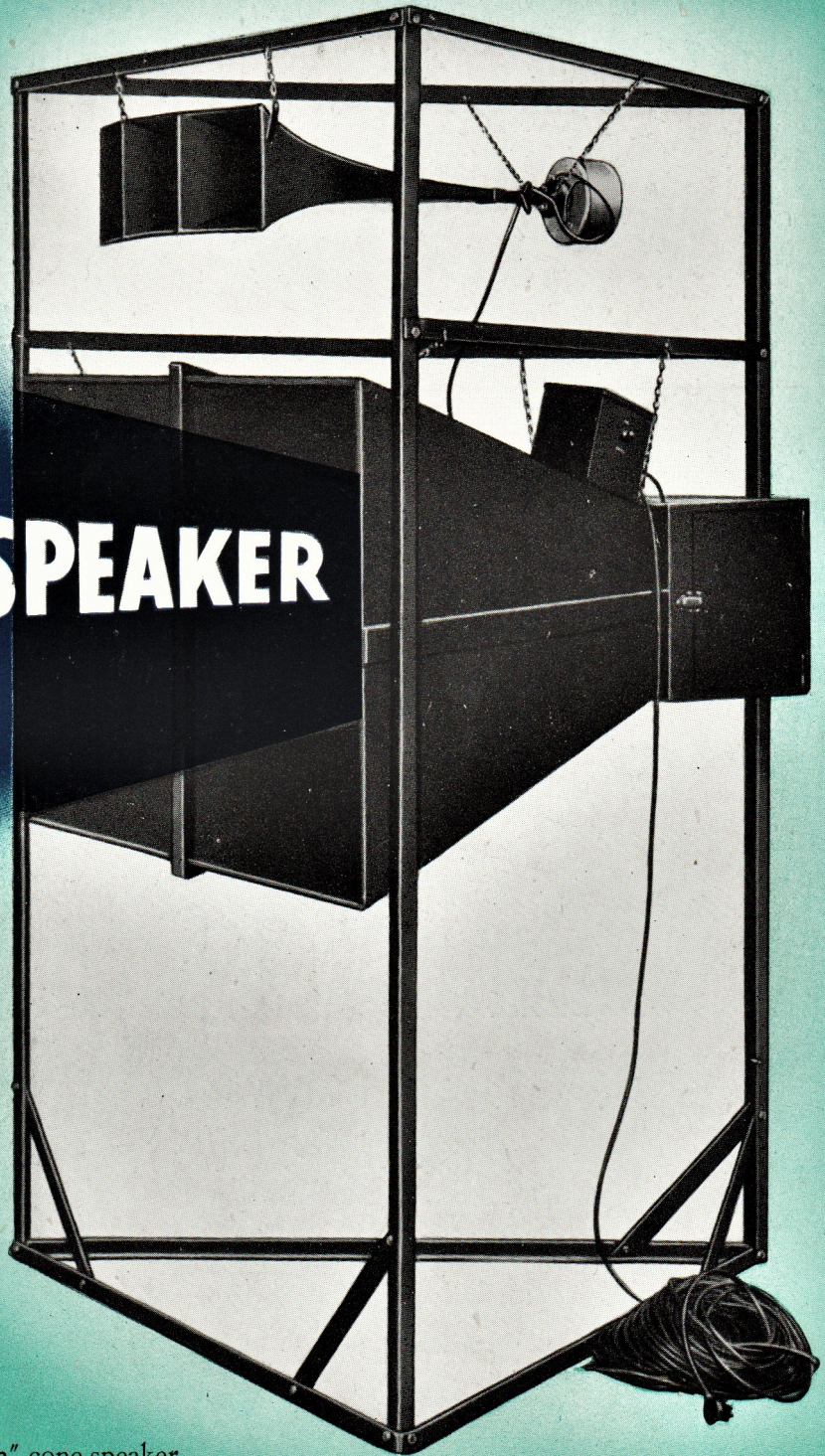


# THE LOUD SPEAKER

The standard loud speaker array supplied with the GK-40 equipment gives adequate undistorted reproduction in theatres up to 1,500 seats.

Standard equipment comprises :—

- 1 A heavy-duty permanent magnet 12" cone speaker with a specially designed directional "vee" baffle. An emergency switch enables the programme to be carried on this speaker alone if necessary.
- 2 A permanent magnet high frequency speaker unit with multi-cellular horn.
- 3 A constant-impedance frequency-dividing network giving correct matching to the amplifier at all frequencies.
- 4 A 7' high triangular tower which requires 4' 1" clearance behind the screen.
- 5 50 yards twin PVC covered loudspeaker cable with plug for amplifier connection.



*Note All metal and wood parts are "tropicalised."*



# OPTIONAL EQUIPMENT

## NON-SYNC ATTACHMENT

This useful accessory enables recorded music or speech to be played over the main auditorium loudspeaker.

It consists of a single 12" turntable driven by a 110/220 volt A.C. motor, a pick-up, volume control and variable scratch-filter.

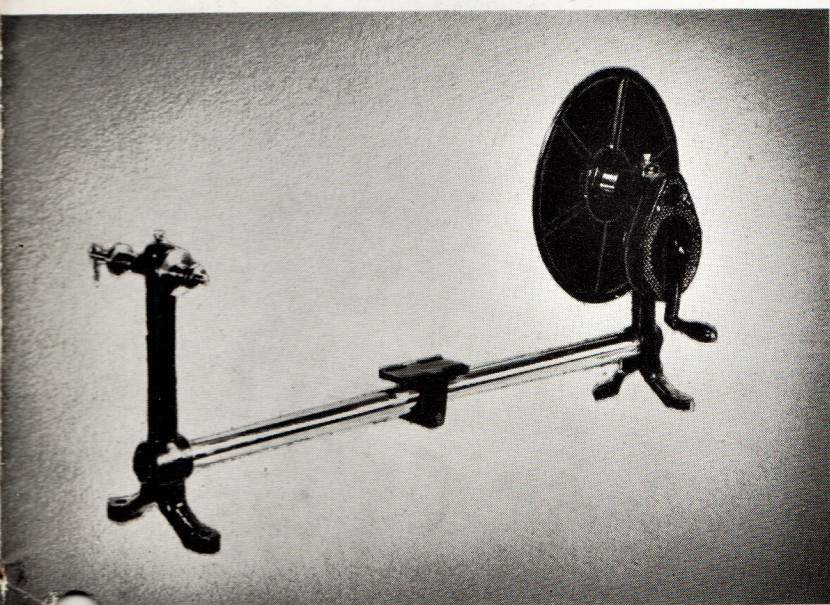
It is fitted with leads and jack to plug in to the 12-watt pre-stage amplifier.

Interchangeably a Microphone Attachment can also be plugged in to the same socket on the 12-watt pre-stage amplifier enabling "live" speech to be reproduced on the auditorium speaker.



## REWINDER

The clutch type rewinder set, for bench-fixing, illustrated here is of a design suitable to take the standard  $\frac{5}{16}$ " bore spools with which the GK-40 Equipment is supplied. This fitting is standard American type.



## ADDITIONAL ACCESSORIES

The Standard Equipment of the GK-40 is given in detail on pages 8 and 9.

For the convenience of overseas users and those in remote districts, standard sets of spares and replacement parts have been made up as under, and we recommend that one or more sets be ordered with the equipment.

- |                          |                      |
|--------------------------|----------------------|
| 4 Motor Belts            | 6 Pilot Lamps        |
| 2 Take-up Belts          | 6 Amplifier Fuses    |
| 2 Pints Kalee "Superoil" | 6 Arc Fuses          |
| 1 Photo-electric Cell    | 1 Set of Valves (10) |
| 6 Exciter Lamps          | 1 Volume Control     |

The following are also recommended:—

Kalux matt or beaded perforated screen to size required.

1 Set of Spools, 2,000 ft. or 3,000 ft. as required (10 recommended).

1 Pyrene Fire Protection Equipment complete with spare cylinder.

1 Microphone Attachment as mentioned above.



# KALEE

## GK 40

