

**“KALEE” Type H.M.L. High
Intensity Reflector Arc Lamp**

10 in. dia. MIRROR AND CONDENSER.
For Currents up to 75 Amperes.

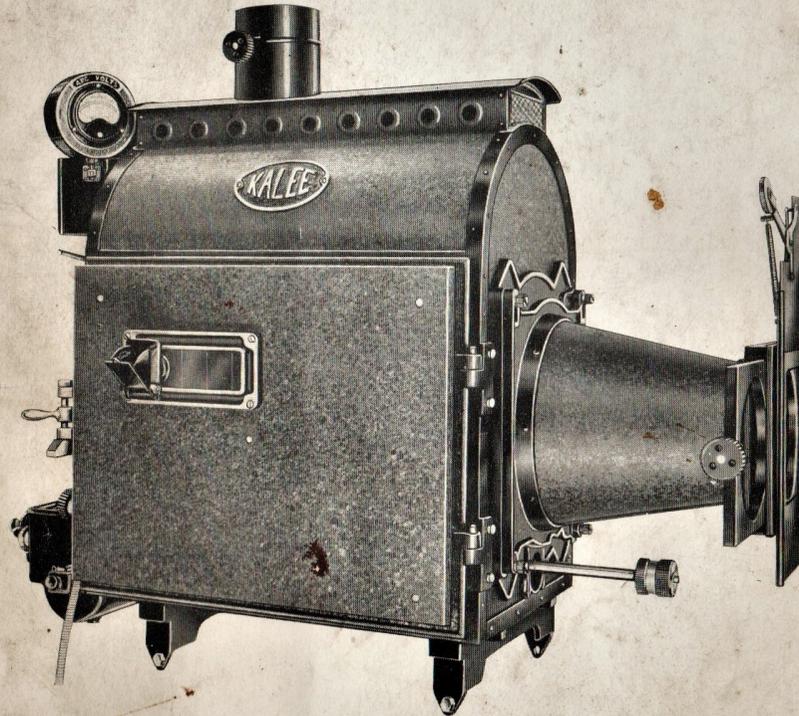


FIG. 1.

SOLE MAKERS—

A. KERSHAW & SON, LEEDS (England)

Branch of Soho Ltd., 3, Soho Square, W.1.

SALES AGENCY—

Kershaw Projector Company,

ALBION WALK, ALBION STREET,
LEEDS.

3, SOHO SQUARE,
LONDON, W.1.

Telephone : 22237
Telegrams : "Projector, Leeds."

Telephone : Gerrard 2184 (2 lines).
Telegrams : "Noiram, Rath, London."

Illustrations must not be taken as binding ; alterations and improvements are
made as occasion arises.

The "KALEE"

Type H.M.L. High Intensity REFLECTOR ARC LAMP

Has been developed to meet the exacting requirements of modern Picture Projection.

It is a dual purpose Arc Lamp. Given a clear atmosphere, moderate throw and screen area, brilliant illumination can be obtained with Low Intensity carbons. Substituting High Intensity Carbons, brilliant illumination is obtained which will penetrate heavy smoke or fog laden atmospheres.

OUTSTANDING FEATURES.

1. Specially designed optical system ensuring maximum light efficiency.
2. Complete automatic arc control, allowing the Projectionist to give full attention to the sound system.
3. Sturdy construction and accessibility to the vital parts.
4. Instantaneous clutch release, allowing hand control to be used for carbon adjustments.
5. Heat resisting 10 in. dia. Mirror and Condenser.
6. Magnetic Arc Flame Controller, deflects the arc flame away from the mirror, thereby increasing its life especially when projecting at a steep angle.

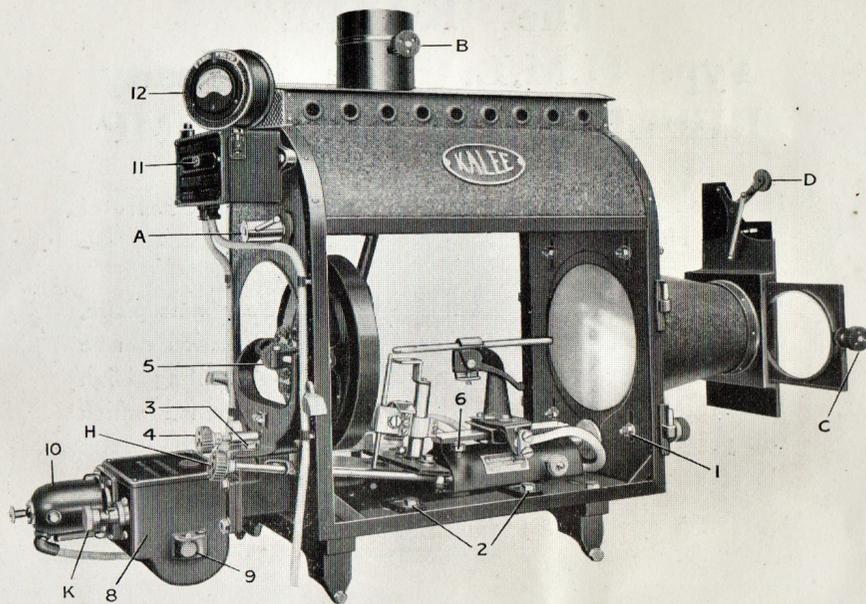


FIG. 2.

1. Vertical Adjustment (4 nuts) to condenser and front.
2. Horizontal Movement to Lamp.
3. Bolt Clamping Mirror Holder for setting mirror to correct focus.
4. Vertical Centering to Mirror.
5. Horizontal Centering to Mirror.
6. Vertical Adjustment to Lamp.
7. Magnetic Arc Flame Control (FIG. 3).
8. Auto Feed Gear Box.
9. Gear Box Oil Filler and Level.
10. Auto Feed Motor.
11. Potentiometer Resistance Control.
12. Arc Voltmeter.

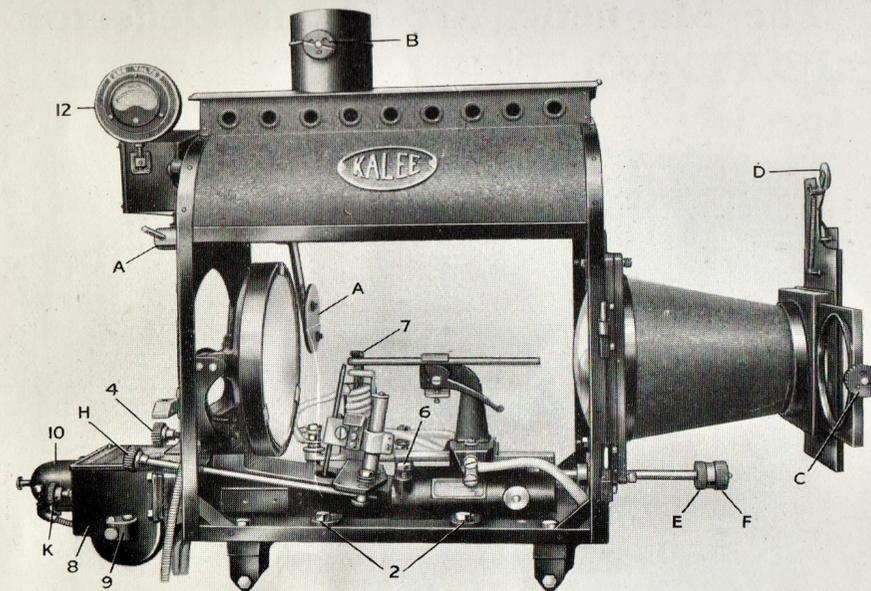
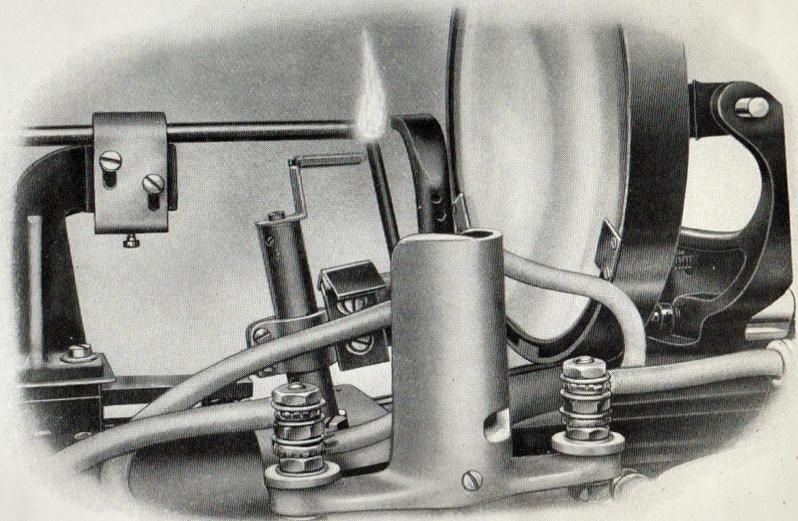


FIG. 3.

- A. Arc Flame Shield to protect Mirror when striking Arc.
- B. Ventilator Damper.
- C. Heavy Heat Cut-off.
- D. Quick Action Light Cut-off.
- E. Hand Feed to Negative Carbon.
- F. Hand Feed to Positive Carbon.
- EF. When F is pulled out, simultaneous hand feed of both carbons is obtained; when F is pushed in separate hand feed is obtained to each carbon.
- H. Horizontal Centering to Negative Carbon.
- K. Clutch Knob for Automatic Feed.

The Magnetic Arc Flame Deflector



Fitted to each "KALEE" TYPE H.M.L. REFLECTOR ARC LAMP is a specially designed Magnetic Arc Flame Deflector.

When heavy currents are used with Arc Lamps of the Angle Burning type, an Arc Flame is produced and directed towards the mirror. The Magnet will be found to exercise complete control over the Arc Flame, directing it in a vertical zone, thus preventing mirror breakage and also increasing the Arc efficiency.

The Magnetic Control has been critically tested and adjusted at the Factory to obtain the most accurate results. **Its position under no circumstances must be altered or the direction of the winding changed.**

CARBONS.

The following combinations are recommended.

HIGH INTENSITY. Copper Coated.

| Amperes | Positive+ | Negative— | Arc Volts |
|---------|-----------|-----------|-----------|
| 45 | 8 m/m | 6 m/m | 42 |
| 60 | 9 m/m | 6 m/m | 42 |
| 75 | 10 m/m | 7 m/m | 42 |

LOW INTENSITY.

| Amperes | Positive+ | Negative— | Arc Volts |
|---------|-----------|-----------|-----------|
| 20 | 10 m/m | 7 m/m | 50 |
| 30 | 12 m/m | 8 m/m | 50 |
| 35 | 13 m/m | 9 m/m | 50 |
| 40 | 14 m/m | 10 m/m | 50 |

"KALEE" Type H.M.L. AUTOMATIC FEED CONTROL

When operating the "KALEE" TYPE H.M.L. REFLECTOR ARC LAMP it is necessary to maintain the correct arc voltages recommended for the carbon combination in order to obtain efficient and constantly even screen illumination.

To obtain these results automatically, a potentiometer resistance controlled shunt wound motor is coupled through a gear box to the carbon feed spindle; a simple clutch provides for releasing the feed so that hand feed can be used for striking the arc and setting the carbons in the correct relative positions which can be observed by the crater reflector.

The best working position of the carbons is with the negative carbon point just below and in front of the positive carbon crater.

If the arc flame splits or a side lip is formed on the positive crater, rectify by checking lateral position of negative carbon.

The motor field windings and the Potentiometer are connected in parallel across the lamp terminals. One of the armature leads is connected to one of the fixed terminals and the other lead to the sliding contact respectively of the Potentiometer.

When the arc is in operation, the full arc voltage is impressed on the field windings and the Potentiometer; the voltage applied to the armature being variable from zero to arc voltage according to the position of the sliding contact of the Potentiometer.

To maintain a perfectly steady arc, it is necessary that the change of speed of the motor is sensitive to any slight variation of arc voltage due to burning away of the carbons.

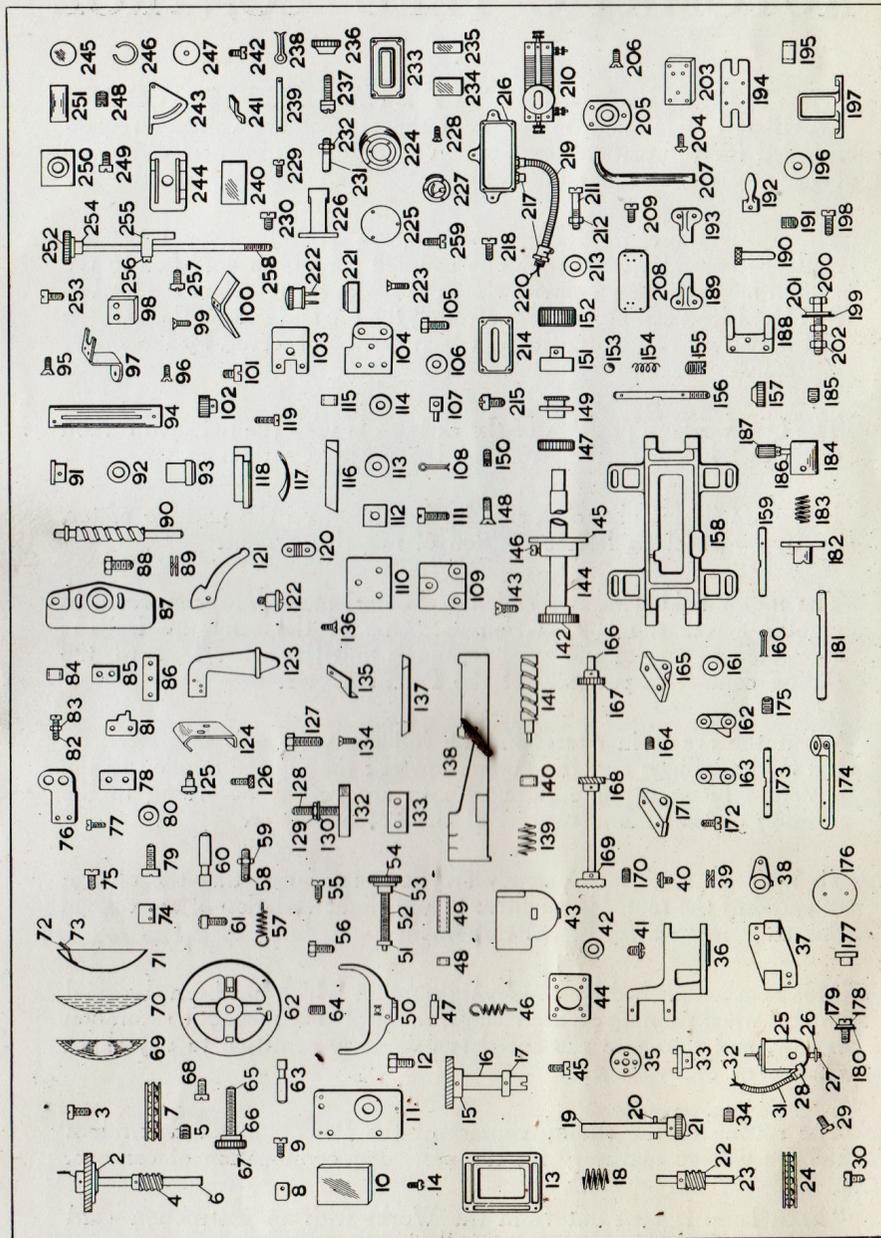
This is accomplished by employing a motor which has been designed so that when running on arc voltage, the degree of magnetic saturation is low, and therefore the speed is extremely sensitive to any slight change of arc voltage.

The setting of the sliding contact of the Potentiometer determines the arc voltage necessary for the particular combination of carbons.

"Each lamp is sent out from the Works with an instruction card attached. *See that you get this.*"

"KALEE" Type H.M.L. High Intensity Reflector Arc Lamp

Price List of Spare Parts



Spare Parts "KALEE" High Intensity Reflector Arc Lamps

| No. | SPARE PART | PRICE EACH | | |
|-----|------------------------------------|------------|----|-------|
| | | £ | s. | d. |
| 1 | Bush, Fabroil Gear | .. | .. | 6 0 |
| 2 | Gear, Fabroil | .. | .. | 12 0 |
| 3 | Screw, Bush to Gear | .. | .. | 6 |
| 4 | Worm, Cross Spindle | .. | .. | 6 0 |
| 5 | Grub Screw, Worm and Wheel | .. | .. | 6 |
| 6 | Spindle, Cross | .. | .. | 3 6 |
| 7 | Ball Race, E.W. $\frac{3}{8}$ " | .. | .. | 3 0 |
| 8 | Clip, Window Glass | .. | .. | 9 |
| 9 | Screw, Clip | .. | .. | 6 |
| 10 | Window Glass | .. | .. | 1 0 |
| 11 | Adapter Plate, Gear Box | .. | .. | 10 0 |
| 12 | Screws, Adapter Plate | .. | .. | 6 |
| 13 | Cover Plate, Gear Box | .. | .. | 12 0 |
| 14 | Screws, Cover Plate | .. | .. | 6 |
| 15 | Worm Wheel, Clutch Spindle | .. | .. | 15 0 |
| 16 | Long Bush, Clutch Spindle | .. | .. | 8 0 |
| 17 | Collar, Long Bush | .. | .. | 2 0 |
| 18 | Spring, Short Clutch Spindle | .. | .. | 6 |
| 19 | Spindle, Short Clutch | .. | .. | 2 6 |
| 20 | Pin, Short Clutch Spindle | .. | .. | 6 |
| 21 | Knob, Short Clutch Spindle | .. | .. | 2 0 |
| 22 | Worm, Motor Extension Spindle | .. | .. | 5 0 |
| 23 | Spindle, Motor Extension Spindle | .. | .. | 2 6 |
| 24 | Ball Race, E.W. $\frac{1}{4}$ " | .. | .. | 3 0 |
| 25 | Motor | .. | .. | .. |
| 26 | Disc, Indicating | .. | .. | 1 6 |
| 27 | Screw, Indicating Disc | .. | .. | 6 |
| 28 | Socket, Elbow | .. | .. | 4 0 |
| 29 | Screw, Clamping Flexible Tube | .. | .. | 6 |
| 30 | Screw, Elbow Socket | .. | .. | 6 |
| 31 | Tube, Flexible | .. | .. | 4 6 |
| 32 | Cable | .. | .. | 1 6 |
| 33 | Coupling, Motor Spindle | .. | .. | 3 0 |
| 34 | Grub Screw, Coupling | .. | .. | 6 |
| 35 | Disc, Leather | .. | .. | 1 6 |
| 36 | Bracket, Motor and Clutch Spindles | .. | .. | 1 4 0 |
| 37 | Bracket, Cross Spindle | .. | .. | 7 6 |
| 38 | Lid, Oil Filler | .. | .. | 2 0 |
| 39 | Washer, Spring | .. | .. | 6 |
| 40 | Screw, Oil Filler Lid | .. | .. | 6 |
| 41 | Plug, Oil Drain | .. | .. | 1 6 |
| 42 | Washer, Fibre | .. | .. | 6 |

Price List of Spare Parts—Continued

| No. | SPARE PART | PRICE EACH | | |
|-----|---|------------|----|----|
| | | £ | s. | d. |
| 43 | Gear Box | | | |
| 44 | Adapter Plate, Motor | 5 | 0 | |
| 45 | Screws, Adapter Plate | | 6 | |
| 46 | Spring, Tension (long) | | 9 | |
| 47 | Holder, Tension Spring | | 9 | |
| 48 | Tube, Stop (short) | | 9 | |
| 49 | Tube, Stop (long) | 1 | 6 | |
| 50 | Bracket, Mirror Tilting | 1 | 2 | 6 |
| 51 | Collar | | 6 | |
| 52 | Screw, Tilting | 3 | 0 | |
| 53 | Boss | 2 | 0 | |
| 54 | Knob | 3 | 0 | |
| 55 | Screws, Knob | | 6 | |
| 56 | Screw, Tilting Bracket | | 6 | |
| 57 | Tension Spring (short) | | 9 | |
| 58 | Anchor, Tension Spring | 1 | 0 | |
| 59 | Locknut | | 4 | |
| 60 | Slide Pin, Mirror Holder (R.H.) | 2 | 0 | |
| 61 | Clamp Screw, Mirror Frame | | 6 | |
| 62 | Mirror Frame | 1 | 1 | 0 |
| 63 | Slide Pin, Mirror Holder (L.H.) | 2 | 0 | |
| 64 | Grub Screws, Slide Pins | | 6 | |
| 65 | Screw, Adjusting | 2 | 6 | |
| 66 | Boss | 2 | 0 | |
| 67 | Knob | 3 | 0 | |
| 68 | Screw, Knob | | 6 | |
| 69 | Mirror | | | |
| 70 | Condenser | | | |
| 71 | Guard, Mirror | 9 | 0 | |
| 72 | Springs, Mirror | 1 | 0 | |
| 73 | Pads, Spring | | 4 | |
| 74 | Clips, Mirror | 1 | 0 | |
| 75 | Screws, Clips | | 6 | |
| 76 | Slide, Neg. Carbon Holder | | | |
| 77 | Screw, Slide | | 6 | |
| 78 | Strip, Mica Insulating (large) | 1 | 6 | |
| 79 | Screw, Insulating Strip | | 6 | |
| 80 | Washer, Insulating Strip | | 4 | |
| 81 | Tooth, Single | 2 | 6 | |
| 82 | Screw, Single Tooth | | 6 | |
| 83 | Nut, Single Tooth | | 4 | |
| 84 | Bushes, Insulating | 1 | 0 | |
| 85 | Strip, Mica Insulating | 1 | 6 | |
| 86 | Ribbon, connecting | 2 | 0 | |
| 87 | Base, Neg. Carbon Holder | 15 | 0 | |
| 88 | Screw, Base | | 6 | |
| 89 | Spring Washer, Base Screw | | 6 | |

Price List of Spare Parts—Continued

| No. | SPARE PART | PRICE EACH | | |
|-----|--|------------|----|----|
| | | £ | s. | d. |
| 90 | Feed Screw (Neg. Car.).. .. . | | 8 | 0 |
| 91 | Bush, Tube (top) | | 2 | 0 |
| 92 | Washer, Thrust | | | 4 |
| 93 | Bush, Tube (bottom) | | 2 | 6 |
| 94 | Tube | | 4 | 6 |
| 95 | Screws, Top Bush | | | 6 |
| 96 | Screws, Bottom Bush | | | 6 |
| 97 | Bracket, Steatite Pad | | 3 | 6 |
| 98 | Pad, Steatite | | 6 | 0 |
| 99 | Screws, Cover Shield | | | 6 |
| 100 | Cover Shield | | 3 | 6 |
| 101 | Screw, Bracket for Steatite Pad and Ribbon | | | 6 |
| 102 | Gear, Feed Screw | | 4 | 6 |
| 103 | Plate, Clamping | | 4 | 0 |
| 104 | Clamp, Neg. Carbon | | 6 | 0 |
| 105 | Screw, Clamping Plate and Outer Connection Plate | | | 6 |
| 106 | Washer for 105 | | | 4 |
| 107 | Stud, Swivelling Bracket | | 1 | 6 |
| 108 | Split Pin, Stud | | | 3 |
| 109 | Slide, Pos. Car. Holder | | 6 | 0 |
| 110 | Base, Mica | | 2 | 0 |
| 111 | Screw, Pos. Car. Holder | | | 6 |
| 112 | Washers, Insulating | | 1 | 0 |
| 113 | Washers, Insulating | | | 4 |
| 114 | Washers, Positive Carbon Holder Screw | | | 4 |
| 115 | Bush, Insulating | | 1 | 0 |
| 116 | Slide, Slip | | 3 | 0 |
| 117 | Spring | | | 9 |
| 118 | Slip, Bracket | | 4 | 0 |
| 119 | Screws, Bracket for Slip | | | 6 |
| 120 | Plate, outer connection | | 1 | 9 |
| 121 | Lever, Clamping | | 4 | 0 |
| 122 | Screw, Clamping Lever | | | 0 |
| 123 | Holder, Positive Carbon | 1 | | 0 |
| 124 | Clamp, Positive Carbon Holder | | 4 | 0 |
| 125 | Screw, Clamp | | | 9 |
| 126 | Screw, Adjusting | | 1 | 0 |
| 127 | Screw, Adjusting Optical Centre | | | 6 |
| 128 | Screw, Terminal | | 1 | 6 |
| 129 | Locknuts, Cable | | | 4 |
| 130 | Washers | | | 4 |
| 131 | | | | |
| 132 | Block Terminal | | 2 | 6 |
| 133 | Strip, Mica Insulating | | 1 | 6 |
| 134 | Screw, Terminal Block | | | 6 |
| 135 | Tooth, single | | 2 | 0 |
| 136 | Screw, single tooth | | | 6 |

Price List of Spare Parts—Continued

| No. | SPARE PART | PRICE EACH | |
|-----|---|------------|-------|
| | | £ | s. d. |
| 137 | Rail | 8 | 0 |
| 138 | Body | | |
| 139 | Spring, Feed Screw | | 6 |
| 140 | Collar, loose | | 9 |
| 141 | Screw, Feed | 10 | 0 |
| 142 | Gear, Extension Tube | 6 | 0 |
| 143 | Screw, Extension Tube Gear | | 6 |
| 144 | Tube, Extension | 4 | 0 |
| 145 | Adapter Extension Tube | 7 | 6 |
| 146 | Screw, Extension Tube Adapter | | 6 |
| 147 | Head, knurled (pos.) | 2 | 6 |
| 148 | Screws, knurled head | | 6 |
| 149 | Clutch, multi-tooth | 6 | 0 |
| 150 | Screw, Clutch | | 6 |
| 151 | Clutch, single tooth | 6 | 0 |
| 152 | Head, knurled (neg.) | 3 | 0 |
| 153 | Ball | | 3 |
| 154 | Spring, Ball | | 6 |
| 155 | Screw | | 6 |
| 156 | Spindle, Connecting Link, top (front) | 3 | 0 |
| 157 | Nut, Clamp | 2 | 0 |
| 158 | Carriage | 13 | 0 |
| 159 | Spindles, Connecting Link, bottom | 2 | 3 |
| 160 | Pin, Split | | 3 |
| 161 | Washers | | 4 |
| 162 | Link, front, connecting | 3 | 0 |
| 163 | Link, back, Connecting | 3 | 0 |
| 164 | Screws, Connecting Link Spindles | | 6 |
| 165 | Bracket, Spindle Support (front) | 3 | 0 |
| 166 | Spindle, long Clutch | 2 | 0 |
| 167 | Gear, Fixed Clutch Spindle (34T) | 6 | 0 |
| 168 | Gear, Fixed Clutch Spindle (14T) | 6 | 0 |
| 169 | Clutch | 9 | 0 |
| 170 | Screw, Clutch | | 6 |
| 171 | Bracket, Spindle Support (back) | 4 | 6 |
| 172 | Screw, Spindle Support Bracket (back and front) | | 6 |
| 173 | Spindle, Connecting Link Top (back) | 2 | 3 |
| 174 | Arm, Dowser | 3 | 0 |
| 175 | Screw, Arm | | 6 |
| 176 | Dowser | 3 | 0 |
| 177 | Bushes | 1 | 0 |
| 178 | Screws, Bushes | | 6 |
| 179 | Washers | | 4 |
| 180 | Washers, Mica | | 4 |
| 181 | Spindle, Dowser | 2 | 3 |
| 182 | Bearing, Spindle | 3 | 6 |
| 183 | Spring | | 6 |

Price List of Spare Parts—Continued

| No. | SPARE PART | PRICE EACH | |
|-----|--------------------------------|------------|-------|
| | | £ | s. d. |
| 184 | Retainer, Spring | 3 | 6 |
| 185 | Screw, Retainer | | 6 |
| 186 | Pin | | 1 6 |
| 187 | Knob, Dowser | | 1 6 |
| 188 | Bracket, Door Catch | 5 | 0 |
| 189 | Lug, Door Catch (L.H.) | 4 | 0 |
| 190 | Pins, Door Catch | 2 | 6 |
| 191 | Screws, Handle | | 6 |
| 192 | Handles | 2 | 6 |
| 193 | Lug, Door Catch (R.H.) | 4 | 0 |
| 194 | Base Plate, Arc Deflector | 6 | 0 |
| 195 | Bush, Insulating | 1 | 0 |
| 196 | Washer, Insulating (Micanite) | 1 | 0 |
| 197 | Cover, Arc Deflector Coil | 6 | 0 |
| 198 | Screw, Adjusting Cover | | 6 |
| 199 | Washer, Mica | | 4 |
| 200 | Screw, Cable | | 6 |
| 201 | Washers (Metal) | | 4 |
| 202 | Locknuts | | 4 |
| 203 | Base, Insulating | 4 | 0 |
| 204 | Screw, Base | | 6 |
| 205 | Stand | 5 | 0 |
| 206 | Screws, Stand | | 6 |
| 207 | Core | 4 | 0 |
| 208 | Base, Potentiometer Insulating | 4 | 6 |
| 209 | Screw, Base | | 6 |
| 210 | Potentiometer | | |
| 211 | Screw, Potentiometer | | 6 |
| 212 | Nuts for 211 | | 4 |
| 213 | Washers for 211 | | 4 |
| 214 | Lid, Box | 9 | 0 |
| 215 | Screws, Lid | | 6 |
| 216 | Box, Potentiometer | | |
| 217 | Socket, Cable | 4 | 0 |
| 218 | Screws, Cable | | 6 |
| 219 | Tubing, Flexible | 4 | 6 |
| 220 | Cable | 1 | 6 |
| 221 | Socket, Plug | | |
| 222 | Plug | | |
| 223 | Screws, Socket | | 6 |
| 224 | Bracket, Voltmeter | | |
| 225 | Cover, Voltmeter Bracket | | |
| 226 | Holder, Voltmeter | 5 | 0 |
| 227 | Voltmeter | | |
| 228 | Screws, Voltmeter | | 6 |
| 229 | Screw, Adjusting Voltmeter | | 6 |
| 230 | Screw, Holder | | 6 |

Price List of Spare Parts—Continued

| No. | SPARE PART | PRICE EACH | | |
|-----|---|------------|----|----|
| | | £ | s. | d. |
| 231 | Stud | 1 | 6 | |
| 232 | Nuts | | 4 | |
| 233 | Frame, Window | 4 | 0 | |
| 234 | Window (large) | 2 | 0 | |
| 235 | Window (small) | 1 | 9 | |
| 236 | Nut, Clamp | 1 | 6 | |
| 237 | Screw, Clamp Nut | | 9 | |
| 238 | Pins, Split | | 3 | |
| 239 | Pin, Hinge | | 9 | |
| 240 | Mirror | 1 | 6 | |
| 241 | Retainer, Mirror | | 9 | |
| 242 | Screw, Retainer | | 6 | |
| 243 | Holder, Mirror | 3 | 6 | |
| 244 | Plate, Base | 4 | 0 | |
| 245 | Lens | 1 | 6 | |
| 246 | Spring, Lens | | 9 | |
| 247 | Disc, Lens Tube | 1 | 6 | |
| 248 | Screw, Periscope | | 6 | |
| 249 | Screw, Base Plate | | 6 | |
| 250 | Adapter Plate, Base | 2 | 6 | |
| 251 | Tube, Lens | 2 | 6 | |
| 252 | Knob | 3 | 0 | |
| 253 | Screws, Knob | | 6 | |
| 254 | Boss | 2 | 0 | |
| 255 | Support Bracket, Swivelling Screw | 3 | 0 | |
| 256 | Screw, Stop | 1 | 6 | |
| 257 | Screw, Support Bracket | | 6 | |
| 258 | Screw, Swivelling | 3 | 0 | |
| 259 | Screw, Voltmeter Bracket Cover | | 6 | |

“KALEE” Type H.M.L. High Intensity Reflector Arc Lamp, complete in Lamp House with triple ventilated doors. Operating side door is fitted with large observation window and an adjustable arc reflector.

Quick action light cut-off and heavy heat cut-off.

10 in. dia. Mirror and 10 in. dia. Condenser.

Automatic Carbon Feed, Potentiometer, Motor and Gear Box.

Magnetic Arc Flame Control, Flexible Copper Asbestos covered Leads,

Tin of Gear Box Oil and Spanners.

Price .. £90 0s. 0d.

Code Word: “AUTOL.”

“KALEE” Type H.M.L. High Intensity Reflector Arc Lamp, as above specification but **without** Automatic Feed (Motor and Gear Box), arranged for Carbon Hand Feed only.

Price .. £50 0s. 0d.

Code Word: “HANAL.”

“KALEE” Arc Voltmeter.

Consists of a 2½ in. dia. Voltmeter mounted on the back of the Lamp House. It is coupled across the arc and constantly indicates the arc volts.

Price .. £4 0s. 0d.

Code Word: “ARVOL.”

“KALEE” H.M.L. Gear Box Oil.

No. 1 size Tin (½ pint) **£0 1s. 9d.**

Code Word: “GEGOL.”

“KALEE” Superoil.

No. 1 size Tin (½ pint) **£0 1s. 9d.**

Code Word: “SUPIT.”

“KALEE” Superoil should only be used for lubricating parts which are not subjected to heat; for the burner parts which are subjected to heat a special graphite blended lubricant has been produced.

“KALEE” Arc Burner Lubricant.

Per Tin .. **£0 3s. 6d.**

Code Word: “HETOL.”

