

*Stage* ■

T.V. ■



*Studio* ■

*Lighting* ■

**Marumo Electric Co., LTD.**

TOKYO JAPAN

Stage Lighting  
and  
T. V. Studio Lighting  
Equipments

Catalogue **B-15**

**1960**



Manufacturers of  
Stage Lighting and T. V. Studio Lighting  
Equipments

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**Marumo Electric Co., Ltd.**

*1-24, Kanda Sudacho, Chiyoda-ku,  
Tokyo, Japan*

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Please note that our standard lighting equipment can be modified to most special requirement.

We can manufacture special units to your specifications.



## Stage Lighting

It can be said that drama is synthetic art combined with three essential factors of theatre, actor and spectator. Now, any fine theatre and any excellent performance of actors could not gain a single admiration of spectators without lighting; and so to speak, stage lighting plays an important role as a medium in the effect that drama develops into a synthetic art. It is, however, not satisfactory for spectators solely to make a stage look over so well, but stage lighting can satisfactorily work as a medium in such a case as it keeps the balance of illumination between auditorium and stage, and the intensity of illumination between background and stage, and the stage needs the atmosphere that is lighted up by sunshine, indoor light or open fire, and of the mood just like a morning, twilight, or spring and autumn and also the frame of lightning to make performance as look as real. For these effective lighting, the control dimmer and operation switch board are essential part of the stage lighting apparatus, so we are mentioned in detail in this catalogue.

The stage lighting control equipments must be seting on the place where the electricians are able to look the stage, and stage lighting instruments need to be installed at the place where the audience pay no attention for leakage of light except for necessary direction.

The instruments are all constructed as to be able to fixed any colour on each one, our company makes them completely in this respects, moreover all receiving equipments of "stand" or "hanger" are made in common size except extra-large one, so that utility of those instruments are so large for able to exchange.

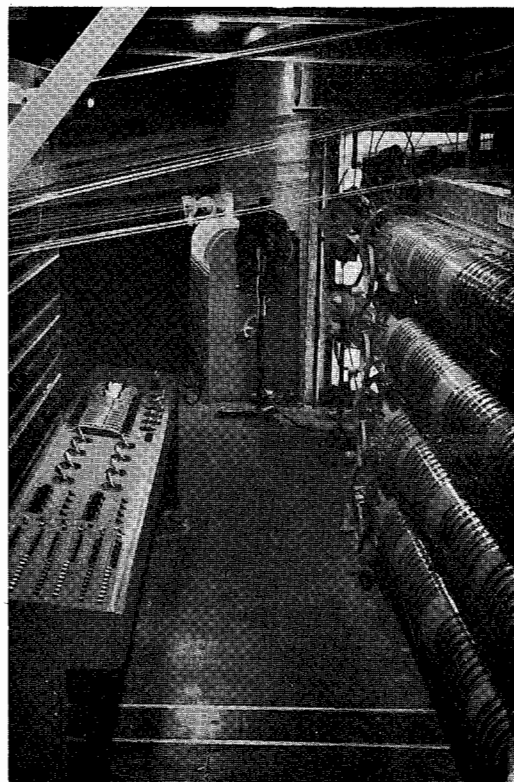


Fig 1

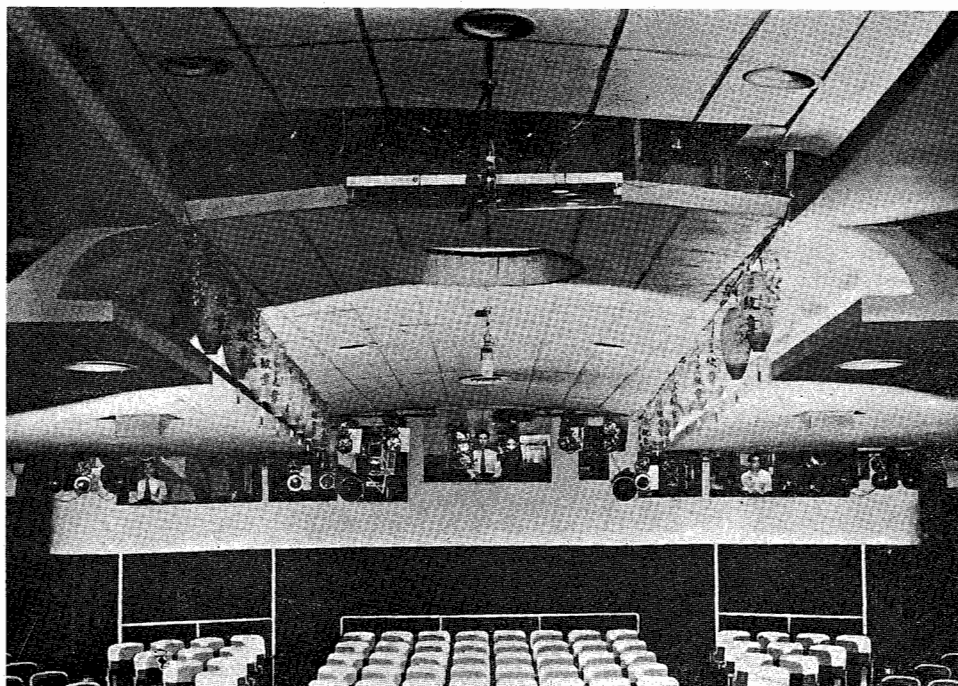


Fig 2



## T. V. Studio Lighting

Five years had gone since the television broadcast was first commenced in our country. During this relatively short period, many remarkable developments were seen in various branches of this field.

The developments made in the way of technical branch have resulted in modernized designing of T. V. studio lighting equipments, and improved controlling system for the equipments and switch board.

All these advances were achieved in a very unique form, which we can not expect to see either in a stage lighting and motion picture studio lighting.

It is obvious, therefore, that unique type and system of lighting instruments, control dimmer and switch board are required in T. V. studio lighting.

We are firmly convinced that every demands by studio directors and lighting engineers in T. V. studio will be satisfied by unceasing efforts of our engineering staff.

Morumo Denki's Fresnel type spot light model HE and MF are enjoying the reputation as the most efficient instruments, featuring of average distribution of light and its wide range of use.

Also, highly reputed one is a Scoop, Model S.C as special made for T.V studio lighting as flood light for base lighting.

Marumo Denki's lighting control equipment model "U" and "UR" have gained absolute trust for our customers by its durability, and easy operation. These equipments are attended by the pre-set switch board and the patch cord plugging board which are all our patent components. Detail of specification are mentioned in this catalogue.

We are staffed to furnish you expert engineering service to help you work out your studio or stage lighting and wiring problems.

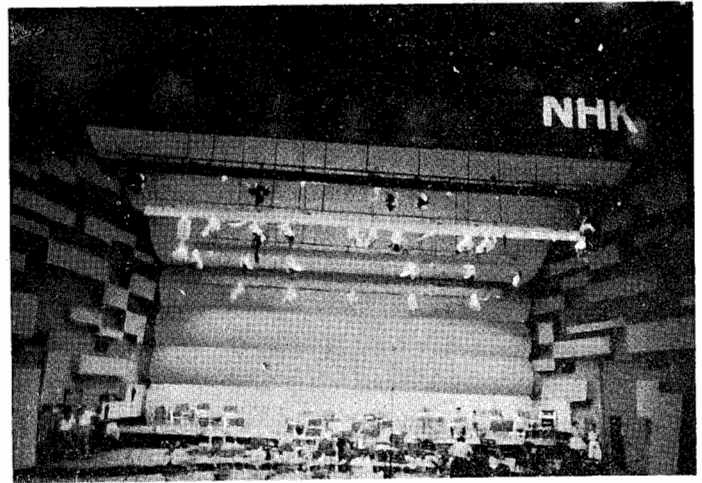


Fig 3 NHK Video Hall

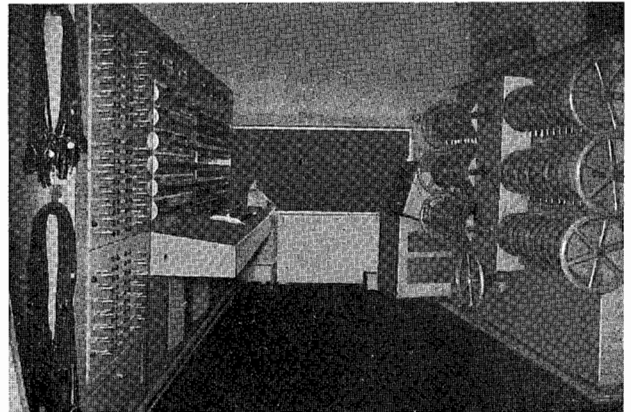


Fig 4 Lighting control panel at NHK Video Hall

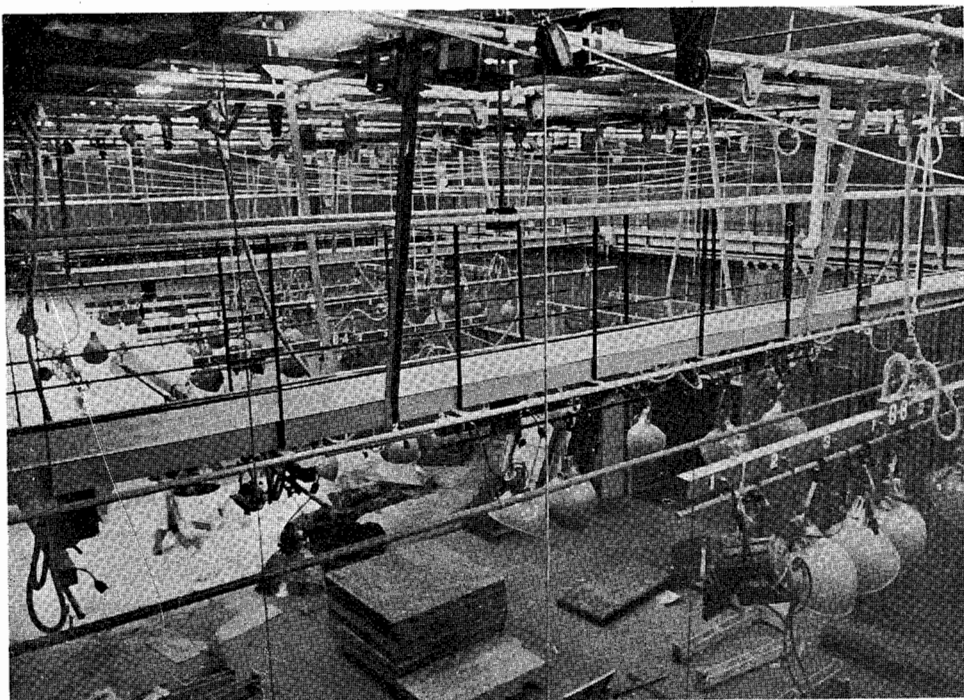


Fig 5



## ER-2 type "Sharp edge Spot Light"

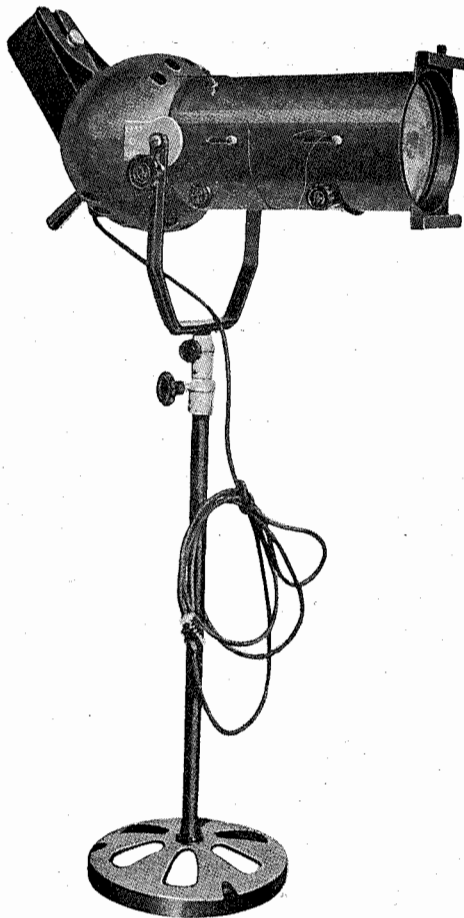
ER-2 type Spot light is one of the new designed spot lights and have five superior characteristics as following.

1. High efficiency.
2. Free size and shape of the projected surface.
3. Easy operation.
4. Even illumination on the lighted surface.
5. Projects no image of filament of lamp at the extreme smallest projection.

ER-2 type spot lights complete with Illuminite finished aluminium reflector as elliptical shape, iris shutter, aperture sheet, plano-convex lens and metal yoke with joint attachment.

The size of lighting surface is controlled with iris shutter or aperture sheet and how small the aperture of shutter may be reduced, it keeps ample light on object, and then illuminate the chief actor by attractive lighting.

Thereby this is essential instrument for stage and T.V. studio, especially like "Ballet" and "Modern Dance".



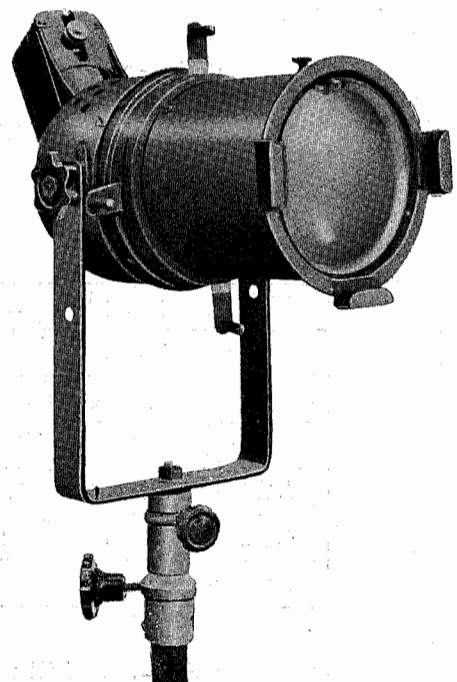
model No. 5506

model No.	capacity	bulb used	mode	weight (kg)
5507	2000W	T-96 C-13 D Med Bip	stand	25 stand 15
5506	1000W	T-76 C-13 D Med Bip	stand	15 stand 15
5505	500W	T-40 C-13 E-26	stand	7.5 " 7.5

## ERS type Spot Light

ERS type spot lights complete with Illuminite finished aluminium reflector as ellipsoidal shape, framing shutters and plano-convex lens.

Ideal for use as front light for projected scenery as there beam can be cut at any want, and these instruments are used as ceiling front lights mounting in slot at auditorium ceiling or as tormentor lights mounting on a flying bridge and tormentor pipes, and can be used on stands may be placed anywhere on the stage floor as need.



model No.	capacity	bulb used	mode	weight body
5508	2000W	T-96 C-13 D Med Bip	hang or	
5509	1000W	T-76 C-13 D Med Bip	base or	
5510	500W	T-40 C-13 E-26	stand	



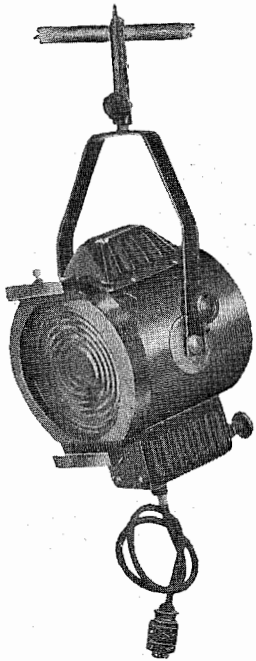
## MF Type Soft Edge Spot Light

These equipments are specially designed for hanging inside the stage as tomentol lighting or spot border and for T. V. studio lighting.

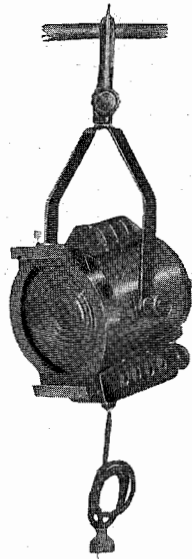
As project soft edge lighting beam, they are given soft illumination on the stage with a high efficiency but also free change from an extremely narrow beam to replacement of "flood light" in open degree.

They have twice as much illumination as the plano convex lens spot light and suit to use within ten meters distance, so can be used effectively as "ceiling light" or "balcony face light" in the small theatre.

Standard size are 1kw use and 500w use with heat proof Fresnel lens 200 $\frac{1}{m}$  dia and 150 $\frac{1}{m}$  dia respectively. Backmirror used them are made of Illuminated pure aluminum sheet, extreme high efficiency and non ageing. Because of good ventilation of the casing, we can use 1500w bulb for 1kw type and 750w bulb for 500 watt type.

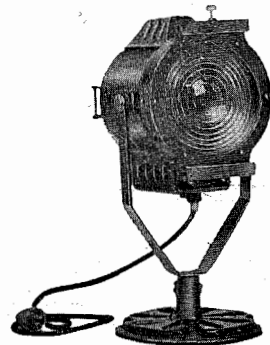
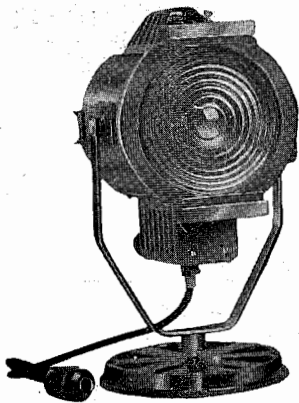


model No. 5332



model No. 5531

model No.	capacity	bulb used	mode	weight(kg)
5531	500W—	T-64	hanging or base	3.6
	750W	C-13		0.7
5532	1000W—	G-127	base	7.1
	1500W	C-13		1.7



MF 1kw spot lights for T. V. studio lighting use are take with 200 $\frac{1}{m}$  dia and 175 $\frac{1}{m}$  focal length lenses, so there maximum opening are increase, for example illuminated distance 3 meter with maximum opening of projected area 3 meter diameter.

distance (m)	projected area dia meter		1 m	1.5m	2 m	2.5m	3 m	4 m	5 m	6 m	7 m	8 m	8.9m
	minimum opening (m)	maximum opening (m)	illumination in lux										
			(lux)	(lux)	(lux)	(lux)	(lux)	(lux)	(lux)	(lux)	(lux)	(lux)	(lux)
3	0.432	1.94	8100	4280	(1.94m) 2880								
5	0.723	3.10	7170	3640	2320	1560	1200	(3.10m) 1140					
10	1.482	6.0		3020	1820	1230	918	585	400	304			
15	2.234	8.9				1130	825	500	360	260	200	164	138

Table of illumination data of MF 1kw Spot light with 200 $\frac{1}{m}$  lens dia, focus 120 $\frac{1}{m}$ , 1000w lamp.



## HE type "Solar Spot Light"

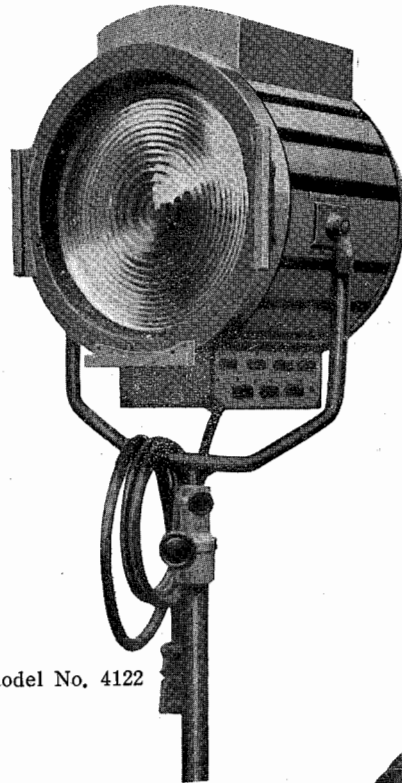
HE type is a instrument for modeled upon the sun shine and moon light, and is specially available in the case that projected high light on the objects. It is favourably softly harmonious with the general lighting on the stage.

The standard size of these instrument are 2000 watt and 3000~5000 watt types with heat-proof grass fresnel lens 250 $\frac{7}{8}$ " in dia and, 350 $\frac{7}{8}$ " in dia, respectively and with back mirror made of Illuminated pure aluminium, very high efficiency.

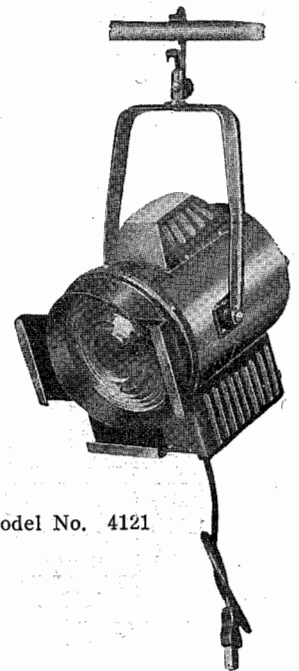
By good ventilation, they maintain the life of lamps and no decrease the efficiency of the instrument for long time using.

They can freely control the beam of light from almost parallel ray to 36° of wide angle, and lamp base are used "mogul-bipost" so that these need no control the position of lamp and handling very simple, and backmirror are fixed in excellent construction so need not adjust.

model No.	capacity	bulb	mode	weight
4 1 2 1	2000W	G-145 C-13D Med Bip	hanging	h 11.7 s 21.6
4 1 2 2	5000W	G-200 C-13D T-200 C-13D Mog Bip	or stand	h 20.7 s 35.0



model No. 4122



model No. 4121

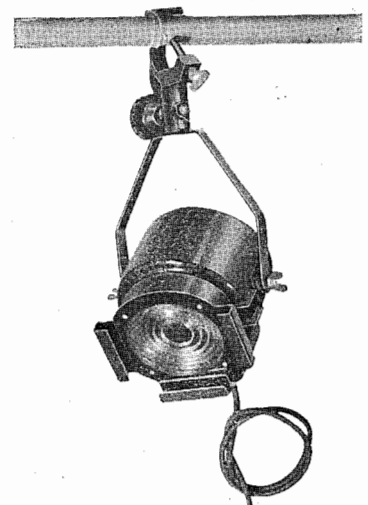
## BF type "Baby Soft edge Spot Light"

BF type baby spot light is a miniature spot light as same type as MF type, in which 300~200 watts bulb is used. It is suitable to be used particularly as eye light on the T. V. studio.

As it projects soft edge light and gives soft illumination to the object and can change the angle of beam of light freely.

Also it can adequately use as partially lighting on the stage.

model No.	capacity	bulb	mode	weight(kg)
5 5 3 0	300 W	G-80 C-13	hanging or base	2.7



model No. 5530





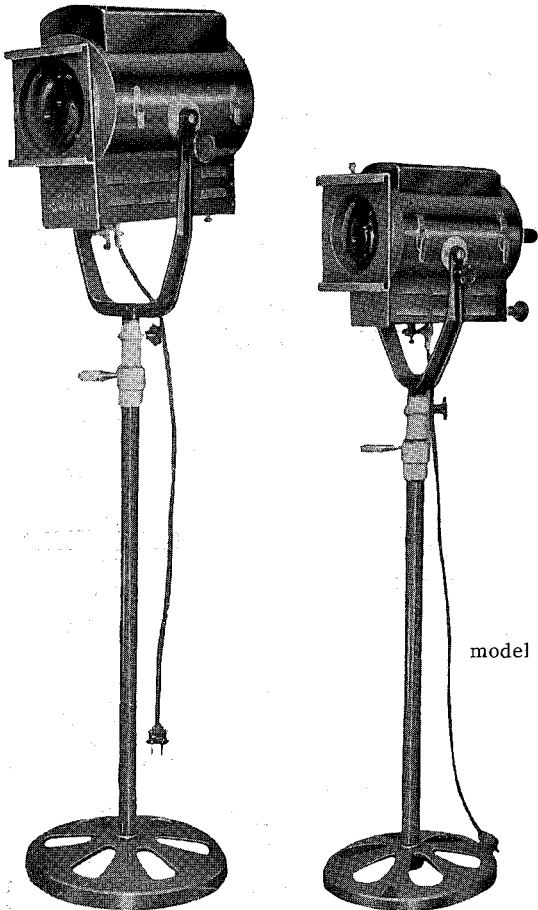
## C type Spot light C-8 type Spot light

These are conventional spot lights on the stage with plano-convex lens and back mirror.

They are easy handling and firmly constructed with good ventilation and easy regulation of light source.

Especially C-8 type spot light show the highest efficiency in these kind spot lights by its good design.

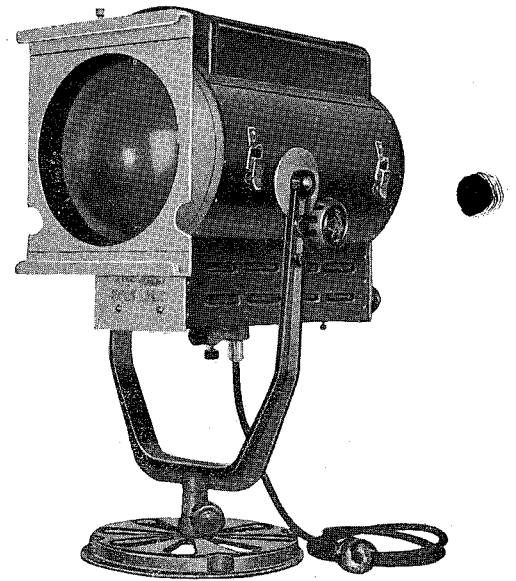
Useful service at normal projection distance up to 20 meters.



model No. 4008

model No. 4009

type	model No.	capacity	bulb	mode	weight (kg)		
					body	stand	base
C	4008	1000 W	G-127 C-13	stand or base	9	10.5	2.5
C	4009	500 W	T-64 C-13		5	7.5	1.7
C-8	4014	1000 W	G-127 C-13	base	12	10.5	2.5



model No. 4014

## CL type Spot light

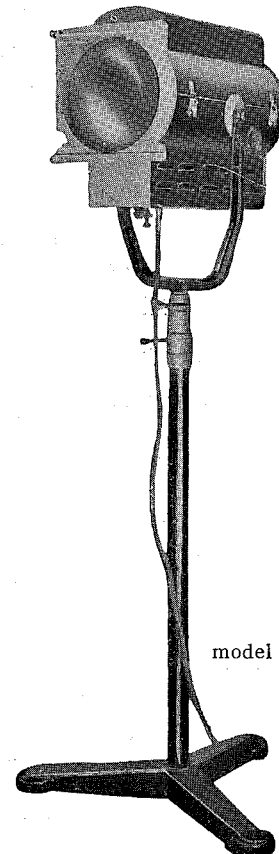
These instruments are designed as "follow spots" or "center spots" for specially illuminate to follow the actor on the stage from far distance of 25~40 meters.

When lighted from 40 meters distance, it is able to gain a intensity of illumination of about 240 lux as 1000 watt lamp used, and about 360 lux as 1500 watt lamp used in the case of two meters diameter projection on the stage.

We can distinguish the difference of illumination over 10 percent, so it is sure that give a good effect to the key lighted actor on the stage in the above case.

"Iris shutter" for this instrument in 8 inch diameter.

model No.	capacity	bulb	mode	weight(kg)
4012	1000/1500W	G-127 C-13	stand	24



model No. 4012

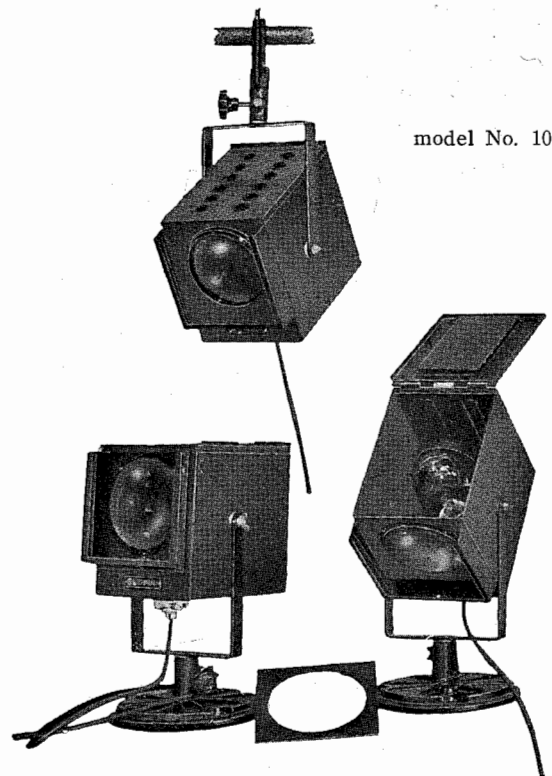


## T-1 type TH type Spot light

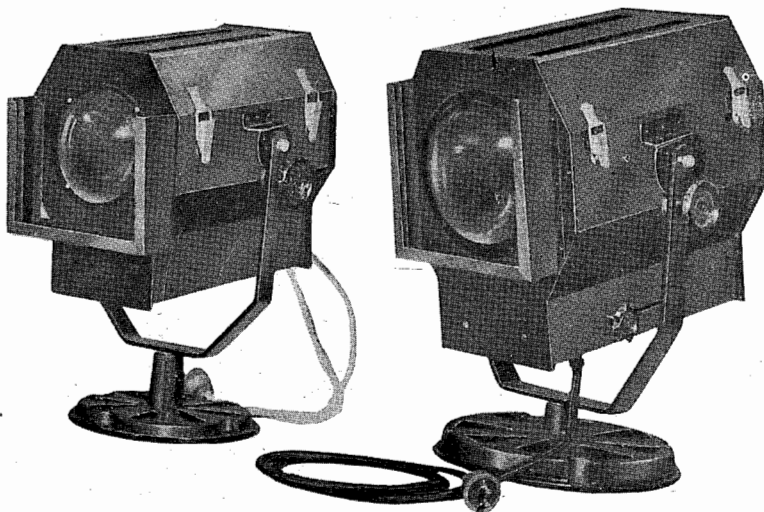
These are simplest spot lights with plano-convex lens and backmirror, and suitable for hanging or mounting at normal position of the tormentor or the side of the stage.

type	model No.	capacity	bulb used	mode	weight
TH	1067	1000W	G-127 C-13	hang or base	6 + 0,7 2.5
TH	1071	500W	T-64 C-13		4 + 0,7 2.5
T-1	1053	500W	T-64 C-13	hang	2
T-1	1054	500W	T-64 C-13	base	3

model No. 1053

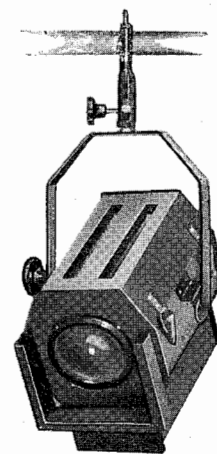


model No. 1054



model No. 1071

model No. 1067



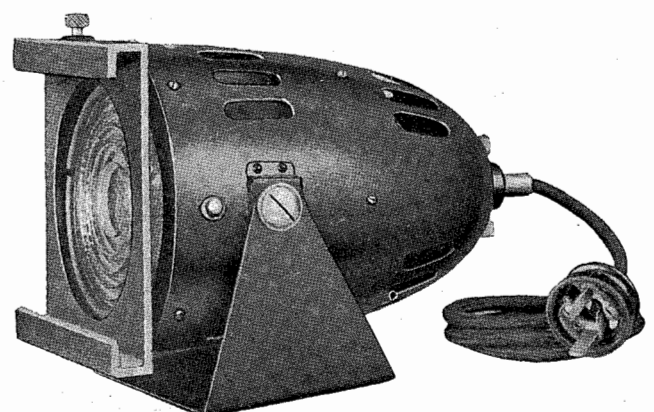
model No. 1071

## FP type "Foot Spot light"

This is a foot spot light for setting behind the foot lights and so lower height as it can be concealed within them, and also is very suitable use in the show-window as hanging from or setting on the narrow corner.

It is consist with a fresnel lens and 500w special lamp for horizontal use.

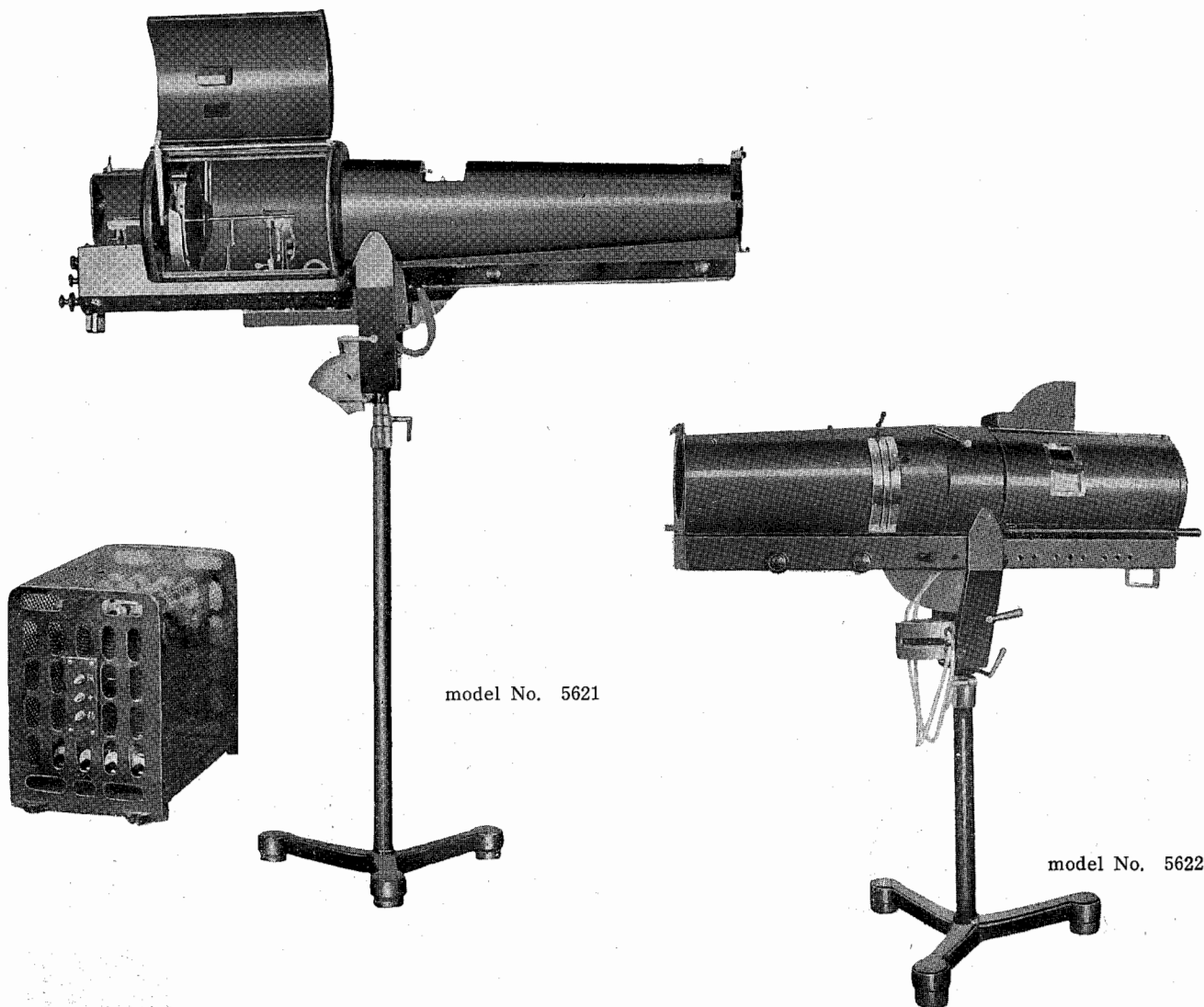
model No.	capacity	bulb	mode	weight(kg)
5521	500 W	G-65C-13D F-27	with bend sheet base	2.6



model No. 5521



## SEB type Arc Spot light (D.C)



model No. 5621

model No. 5622

"SEB" arc spot light provides a sharp edge beam of high intensity, with plano-convex lens, as objective lens, and by the efficient gathering of light rays from the source by means of an elliptical shaped silvering glass mirror. Through the shutter at the gate, the beam can be shaped to give any form as want, although it can be used as a soft edge beam if desired by putting the position of lens out of focus.

This is used a carbon arc source, 50 amperes 55 volts direct current, and carbons are used 8<sup>m</sup>/<sub>m</sub> dia as positive and 6.5<sup>m</sup>/<sub>m</sub> dia as negative, and with a ballast resistance for 70volts D. C source.

model No.	capacity ampere	voltage on source	distance for use	weight (kg)
5 6 2 1	50	D, C 70V	up to 45m	120.0. ball- ast 24.7
5 6 2 2	50	D, C 70V	up to 30m	94.3. balla- st 24.7



## KLS type Arc Spot light (A. C and D. C)

KLS arc spot light can be used for alternating and direct current sources. In the case of A. C source, can be served to the line current as about one half of the arc current by use with our "Economizer", and in the case of D. C source, it can be used with ballast resistance as suit for 70 volt D. C source.

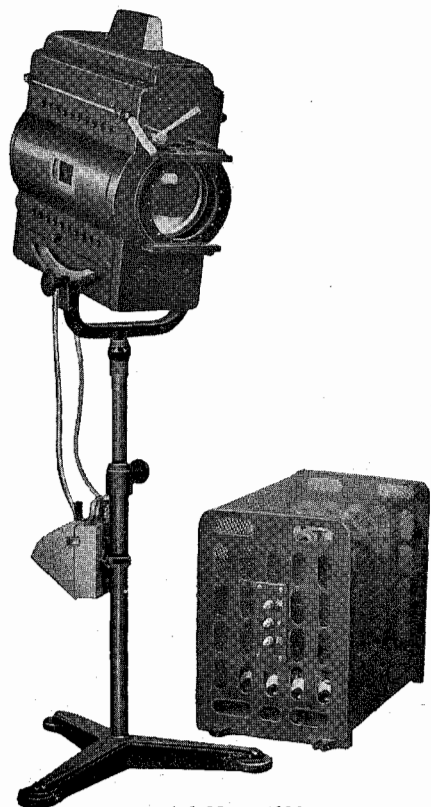
This instrument is very easy in handling and controlling with minimum adjusting point and good ventilation so the out side of the hood is not so heat.

Modle No.	Capacity	Power source	Carbon	Weight
5601	(amp) 50~60	A.C 100V	8 $\frac{7}{8}$ "D(AC)	head part 19.1kg
		D.C 70V	pos. 8 $\frac{7}{8}$ "D neg. 7 $\frac{7}{8}$ "D	

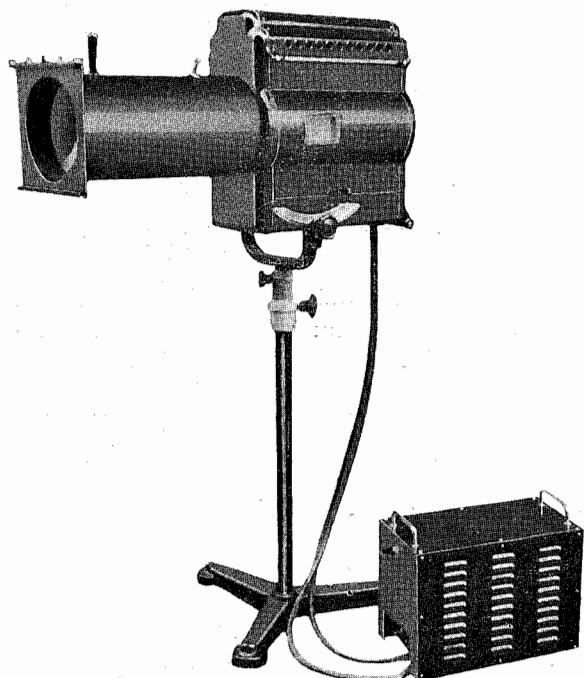
### Accessory.

8 inch dia iris shutter, switch.

Pipe stand. Economizer for A.C use (48.3kg)  
or ballast resistance for D.C use (24.7kg)



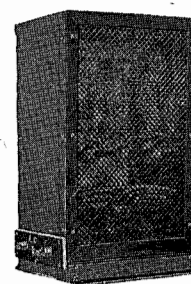
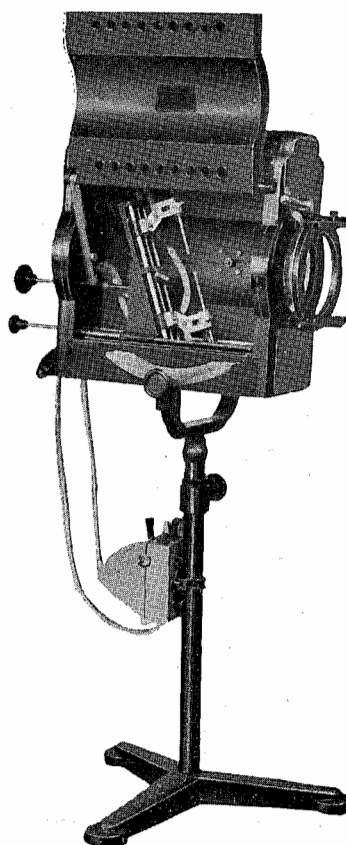
model No. 5602



## SX type Xenon Arc Spot Light

(model No. 5631)

SX type Xenon arc spot light is a latest designed sharp edge beam spot light with xenon arc lamp as light source. Short-arc xenon lamp contains seven



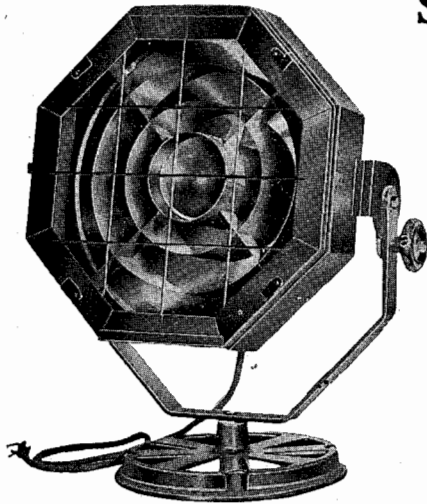
model No. 5601

atmospheres pressure of xenon gas. It reach full out-put in a few seconds but instantaneous restarting with full brightness is possible at any time. The arc colour approximates daylight.

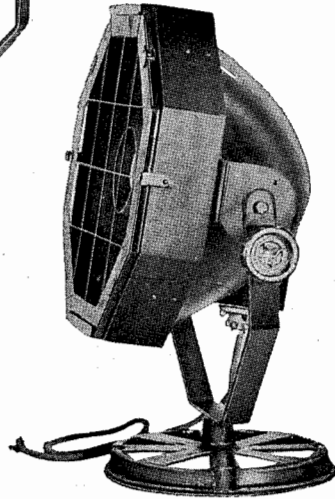
SX type xenon arc spot light is used on 100 volt 50 or 60 cycle A.C souree with special rectifire.



## SRF type "Sun Flood light"



model No. 5351

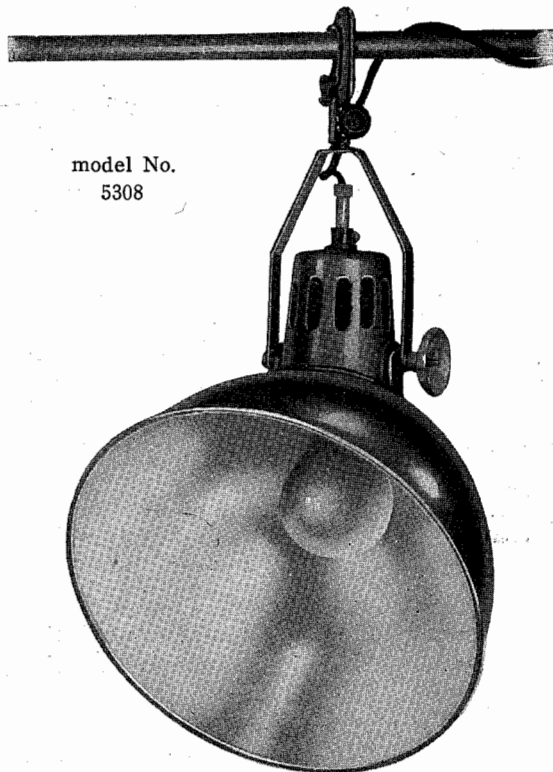


This instrument is a flood light as projected from far distance as 30 ~ 40 meter, and is suit to use as model on direct sun shine and moon light on the stage or the studio, and can be used to lighting from the rear of the auditorium for back of stage or drop curtain.

It is constructed to gather the major part of the luminous flux of light source by its back mirror and lens, so the projecting light intensity is extreme high, and its beam opening is about 8°~10° so that it can be used most effectively in the case from the distance about 30 meter or more.

model No.	capacity	bulb used	mode	weight(kg)
5351	1000W	G-127 C-13	base	11
5352	500W	T-64 C-13	base	7

Attachment one colour frame.



model No.  
5308

## SC type Scoop

SC Scoop is a new designed flood light for T. V. studio, with elliptical illuminated aluminium reflector, as even illumination of high intensity.

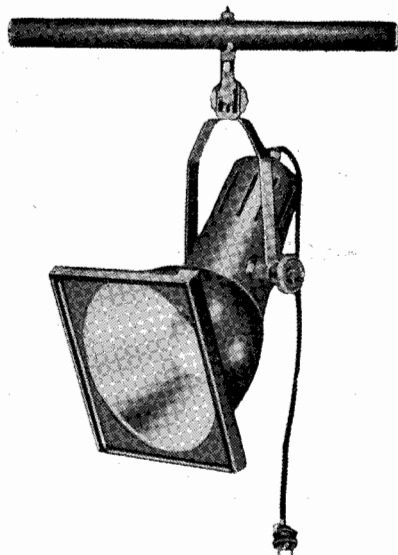
Ideal for use from 3 to 4 meters ceiling as hanging over head on the batten as a base lighting of studio. Equipped with universally adjustment yoke and clamp permitting straight down as well as up lighting and it is suits for portable by its light weight.

This unit makes 500 watts and 1000 watts unit and its size is 380mm dia for 500w. and is 450mm dia for 1000w. and it can be used 750w and 1500w respectively.

model No.	capacity	bulb used	mode	weight(kg)
5308	1000W— 1500W	PS-165 E-39-13	hanging	4.5
5307	500W— 750W	PS-110 E-39		3.5



## IE type Horizon Light



model No. 5341

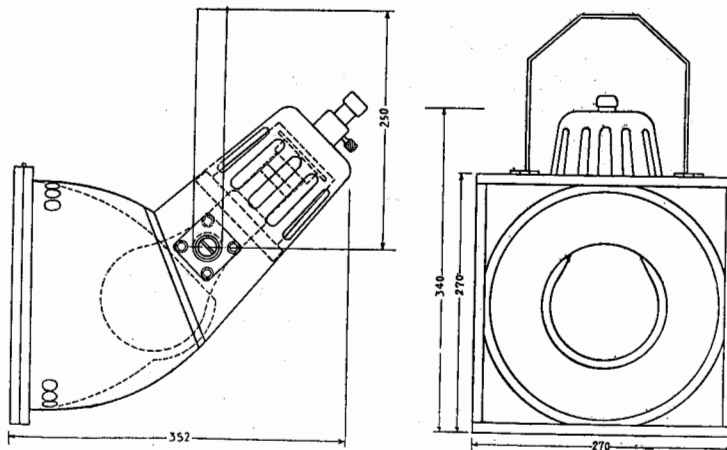


Fig 6 Dimension of IE Horizon Light

It is generally known that the blue light is used on the horizon wall or drop for illumination as display a feeling of the sky on the field scene on the stage, when used a blue coloured filter as screen on the instrument, the efficiency of light is diminished only 8 per-cent. Special inquiry, therefore, is necessary on the design of the instrument.

Our IE. Horizon Light is very suitable for this use, when used to hanging as 3 units per meter on the pipe batten at the front of horizon wall or drop on 3 or 4 meters distance, then the horizon is illuminate evenly and amply as required.

This unit is used with PS 500w lamp but the effect of lighting is as much as that of cylindrical horizon light as usual with 1000 watts lamp, and the size of gelatin paper for coloured light is only half size used as compared to others.

It is also very suitable in the T. V. studio use.

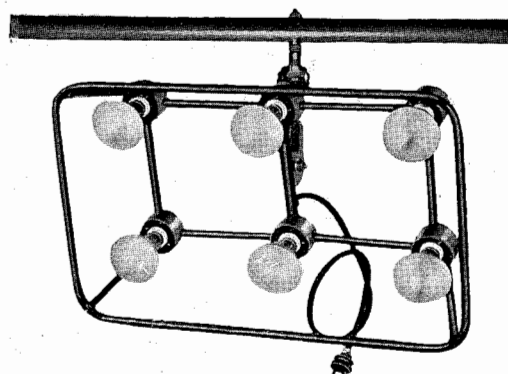
model No.	capacity	lamp used	mode	weight
5 3 4 1	500 w	PS 500w	hanging	3.2

## BL-6 type Bank light

BL-6 bank light is banked with six 150w~300w reflector lamps of inner reflector type. It is suited to use as base lighting of studio and also can be use as modeling light.

The capacity of reflector lamps are 150w, 200w and 300w, and each of them have 30° and 60° beam opening angle and lamps life about 1000 hours.

Model No. 5361.



model No. 5361



## LI type Flood light

This is used as a Bunch light on stand with a very ample light; and also as a horizon light putting on the stage floor for increasing of the optical depth of the stage as extremely efficient. It projects even spread lighting on the screen or drop curtain as used from 3~5 meters distance, so that it is very useful for the T. V. studio lighting also.

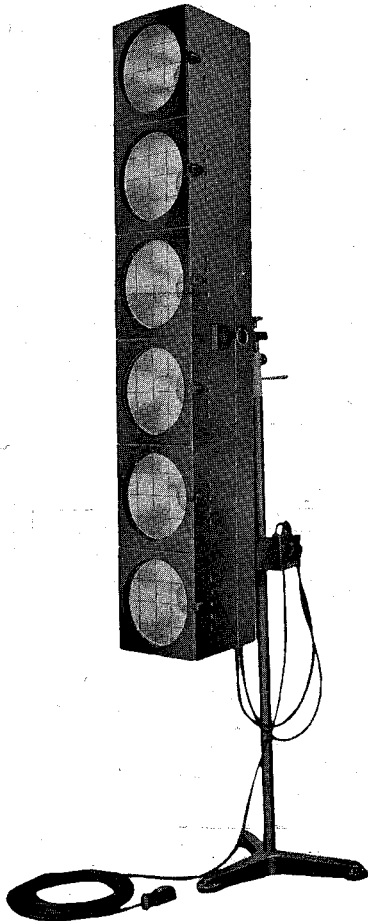
model No.	capacity	bulb used	mode.	weight(kg)
5 3 1 2	1000 w	C-127 C-13	base	5.5

## WI type Wing Lights

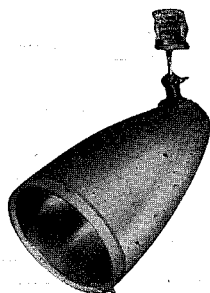
WI Wing lights is a convenient one to light from the narrow opening of wings on the stage and also behind the scenery on the T. V. studio.

It is constructed of iron sheet trough with six compartments with elliptical Illuminite finished aluminium reflectors, and it can be set on the stand with cramp to be adjust the height and the position of row of light as vertically, and on tilt as want.

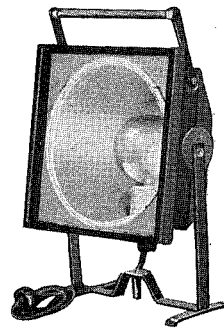
model No.	capacity	bulb used	size	weight with stand (kg)
5 3 2 6	300w×6	PS 300w	300×1600 ×350	41
5 3 2 7	200w×6	PS 200w	225×1350 ×330	30
5 3 2 8	100w×6	A 100w	165×1000 ×220	20



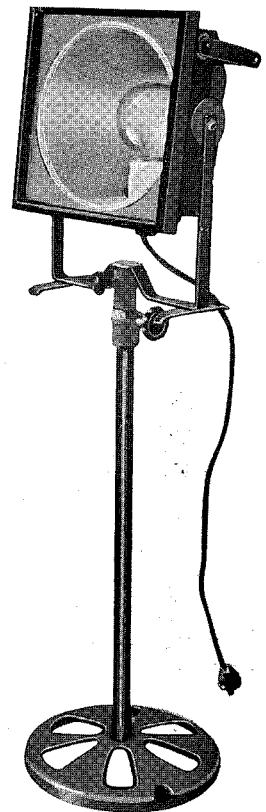
model No. 5326



model No. 5304



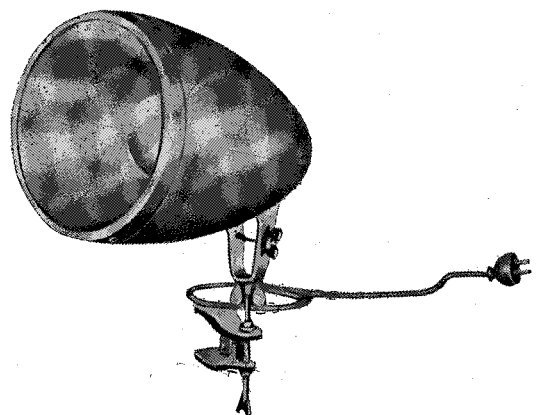
model No. 5312



## RT type Clip-on Light

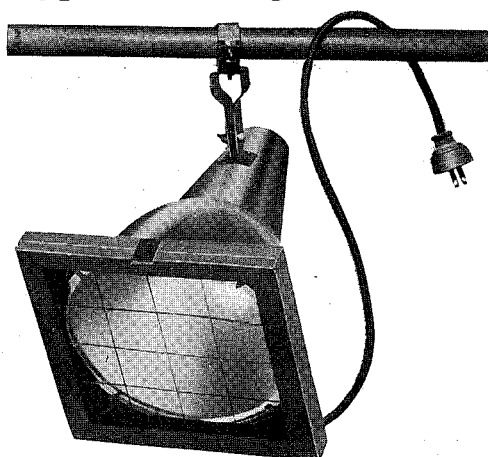
RT Clip-on light are the small flood light with type "A" 100 watts and type "PS" 200 watts lamps and can be placed freely by clip - on to light the entrance or the window of scenery behind it and can be used as fill-light and eye-light on T. V. studio.

model No.	capacity	bulb used	weight (kg)
5 3 0 4	100 w	A-100w	0.64
5 3 0 5	200 w	PS 200w	1.5





## NUC type Flood light



model No. 5302

This is a small efficient hanging flood light and is very conveniently used at the entrance of a setting and as a partial illumination. It is also used as a horizon light by arranging 3 unit per meters on pipe batten one or two rows.

It is made of iron plate strongly but lightly, and with Illuminite finished aluminium reflector as 80° opening even illumination with 200w P. S. lamp. It is used conveniently and safely on stage and T.V. studio as where is necessary to change the place of setting and may be contacts with other things.

model No.	capacity	bulb used	mode	weight (kg)
5 3 0 2	200 w	PS 200w	hanging	1.3

## “CT” Portable strip lights

“CT” portable strip lights is made of iron sheet as a long strip with 4, 8 or 12 “A” 60 or 100 watts bulbs, and it can be set on the floor of the stage and hung behind the setting as horizontally or vertically as want. They can be used with 2 or 3 units each connected by pig tail plugs on series.

model No.	length $\frac{m}{m}$	no of lamps	bulb used	weight (kg)
2 5 6	950	4	“A” 60w or 100w	3.5
2 5 8	1840	8	“ ”	6.8
2 5 9	2750	12	“ ”	10.2

each model are two kinds as single or double circuits connected with pig tail plugs.

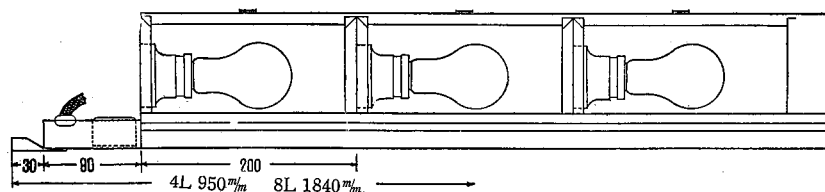
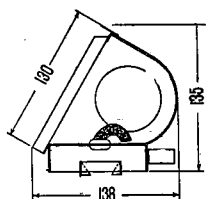
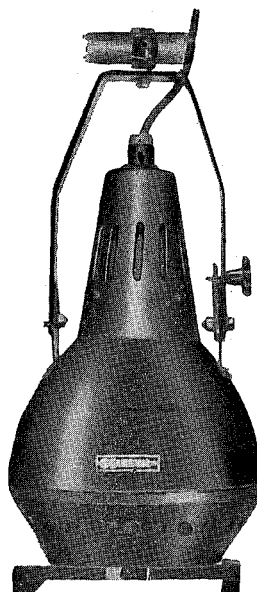
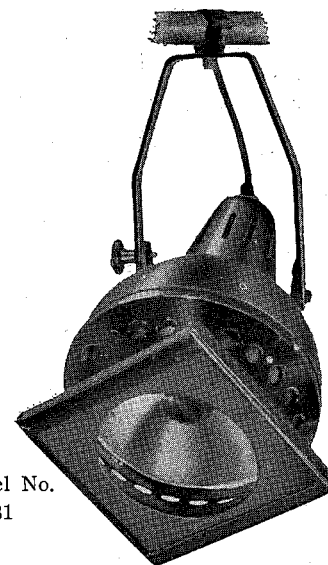


Fig 7 Dimension of CT Portable strip light

## “ES” Suspnsion Flood light



model No. 5331

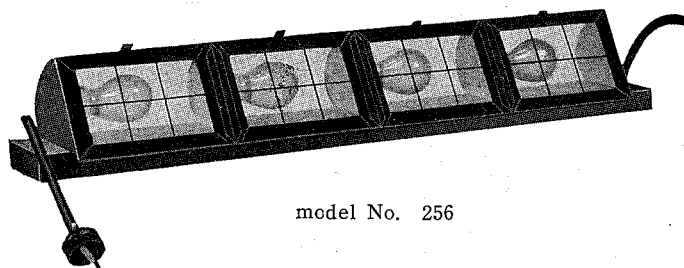


Many various instruments are hunged over head on the down stage, among them, the suspension flood lights are essentially used to give an ample illumination on the acting area of the stage.

“ES” suspension flood light is suitably designed for those place as small and compact and easily controled of lighting direction and as fixed on rigidly.

This unit is made steel sheet with elliptical “Illuminite” finished aluminium reflector as the light beam opening as 60°, and it can be illuminated the necessary parts effectively. That is an economical merit of this unit as the gelatin paper for colour medium is used with as very small.

model No.	bulb used	size ( $\frac{m}{m}$ )		weight (kg)
		out dia	gross hight	
5 3 3 1	PS 500 w	250	575	3.9
5 3 3 2	PS 1000 w	330	700	6.0



model No. 256





## HI type Horizon lights

HI, Horizon lights is a strip light to lights as a feeling the sky on the horizon on the stage and may be placed in a sunken trough near the cyclo-rama curtain. It makes two kind for 200 watts lamp and 100 watts lamp use, and each units are constructed from 12 lamps, 6 lamps or 3 lamps, as three colours winding with three pairs of pig tail plugs; but 3 lamps units are connected on single circuit with one pair of pig tail plugs, and then they are connected each other in series and last one are connected on the stage floor consent. This unit is set on the metal frame with adjustable fitting for lighting direction, and lamps are put in each compartment with elliptical "Illuminite" finished aluminium reflectors so the instruments are extremely efficient.

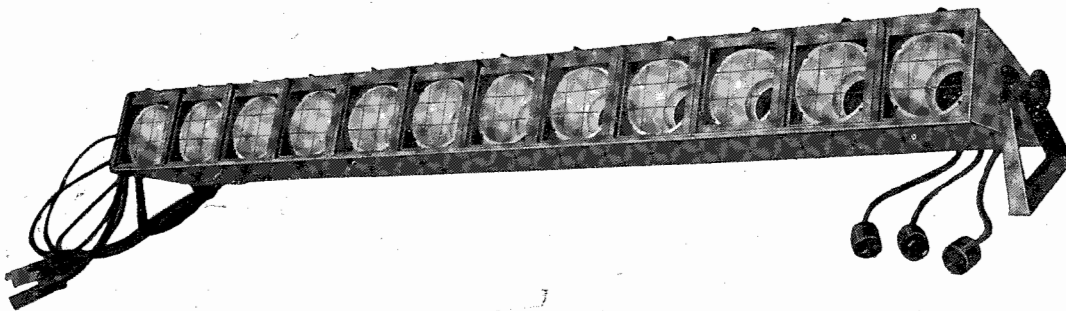
model No.	capacity	bulb used	size	weight (kg)
5 3 2 0	200w×12	PS 200w	225×2700 ×330	31.2
5 3 2 1	200w×6	"	225×1350 ×330	17.2
5 3 2 2	200w×3	"	225×675 ×330	9.4
5 3 2 3	100w×12	A 100w	165×2000 ×220	13.6
5 3 2 4	100w×6	"	165×1000 ×220	7.5
5 3 2 5	100w×3	"	165×500 ×220	4.1

## Border lights and Foot lights

Border lights and foot lights are companion equipments and are used to tone the set and acting area in various colours and to provide general illumination, and constructed of metal trough as compartment type with many lamps and each lamp is put on each compartment with "Illuminite" finished aluminium reflectors. Border lights are provided three or four of colour circuits and the wiring is carried in heat proofed separate channel above the lamp trough, and is connected by terminal bolts to flexible multiconductor border cable in the splicing box, and foot lights are also but wiring in channel, directly down the lamps, and is permanently connected in box, to the lines from the switch board.

Mounting of border lights are effected by chains which are secured to them, at intervals of about 1.5 meters. These are hung over to the batten which is, in turn, suspended by the regular set of lines usually three to five in number from the grid-iron by counter weighted flying lifts.

Foot lights are located in the open trough on the front of the apron stage, sunk in most part of them, if you want, they can be sunk below the level of the stage floor, completely out of sight, when they are not being use.

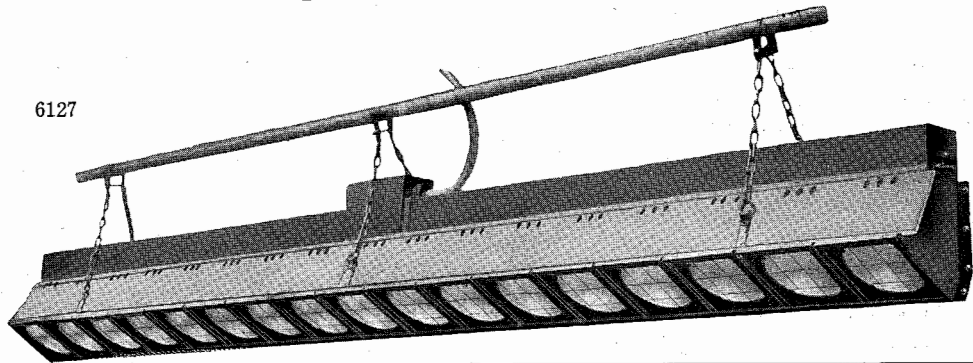


model No. 5323



# BCI type Border Lights

model No. 6127



BCI Border lights are effective equipment and made of iron sheet 0.6mm thickness, and framed by electric welding, so durability and optical straight very good. The framework are consist of two parts, as for wiring uper part and for lamps down part, and separated by iron and asbestos sheet so the wiring part are heat proofed. Wiring are connected by terminal bolts to flexible multi-conductors border cable in splicing box, and the lamp parts are of compartment opened downward with illuminate finished alminium reflectors and colour frames.

They are manufactured two kinds as 100w lamp and 150w or 200w lamp use.

model No.	bulb used	weight per meter(kg)
6 1 2 6	100w A-70	1 0
6 1 2 7	150w or 200w PS-80	1 0

## Border light lift apparatus

Border lights are used hanging from the grid iron of the stage, and the height of the border light, according to the scenery, must be changed, and sometimes necessary to hang spot lights from border batten temporary, and to renewing the lamps and coloured gelatin papers, so they are drew down to near the stage floor. Then it is necessary to have some apparatus that can easily raise and down the border lights.

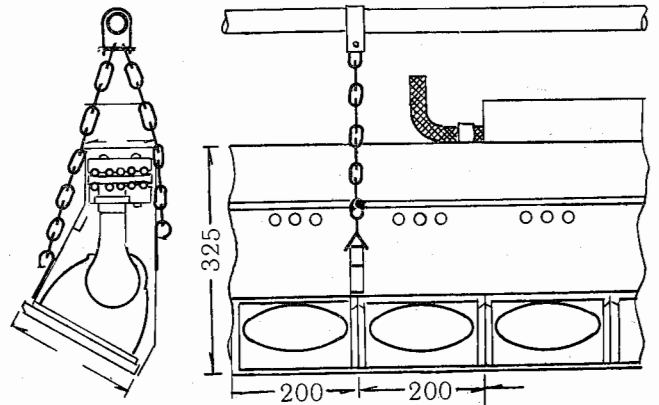
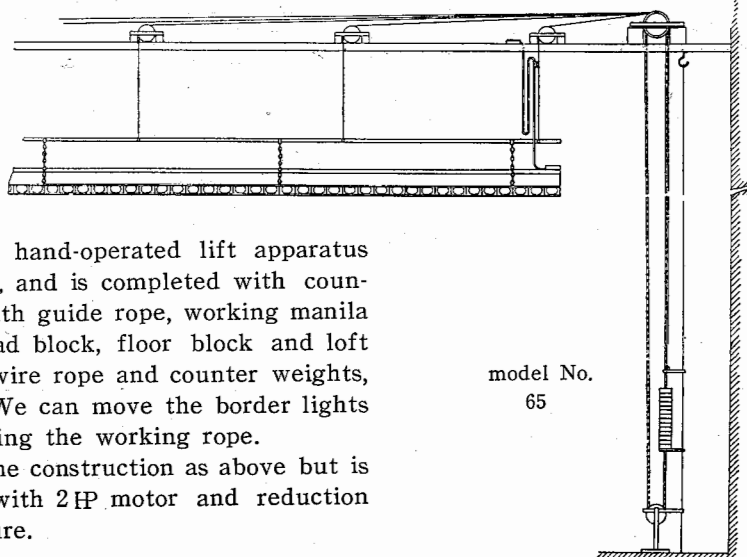
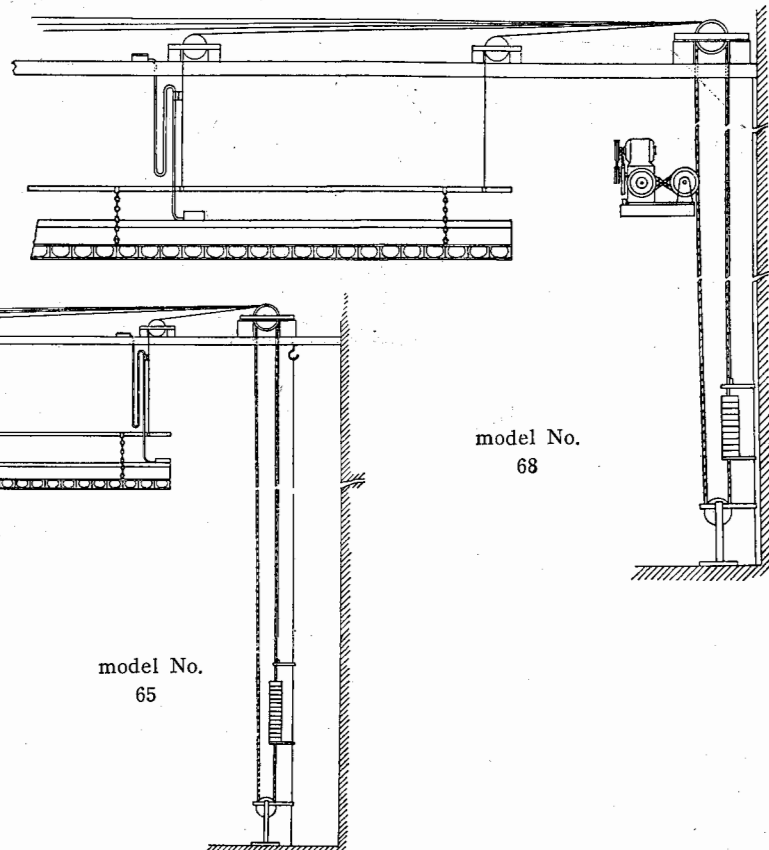


Fig 8 Dimension of BCI Border light



Model No. 65 is a hand-operated lift apparatus with counter weights, and is completed with counterweight carriage with guide rope, working manila rope and its lock, head block, floor block and loft blocks with wheels, wire rope and counter weights, as show on figure. We can move the border lights quite freely by drawing the working rope.

Model No. 68 is same construction as above but is operated by motor with 2HP motor and reduction gear, as show on figure.

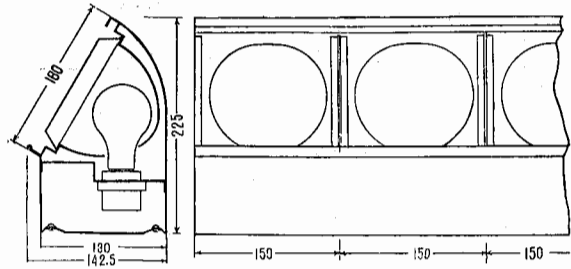


## “E” type Foot lights

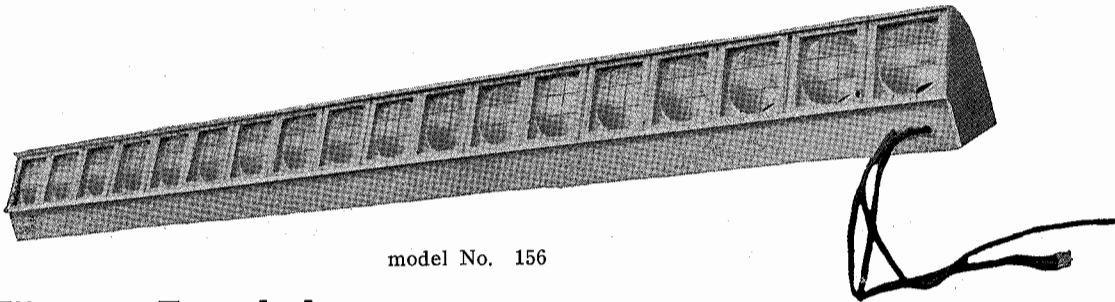
“E” foot lights are a long strip instrument located in the open trough near the front edge of the stage as sinking major part of them but the back side of the upper part are exposed in optic of the audience.

So that they are manufactured to take care looking and no leakage of light for the audience. They are made of iron sheet 0.6~0.8mm thickness firmly, and are consisted of two parts as winding and lamp parts. Lamp parts are formed of compartments opened toward the stage side, with white oxidized aluminium reflectors and colour frames. They are manufactured 60w lamp use and winding as same as border lights but usually are connected directly with the lines to switch board.

E type “model No. 156” Dimension



model No.	bulb used	compartment span	weight per meter (kg)
1 5 6	A 60w	1 5 0 mm	6.0

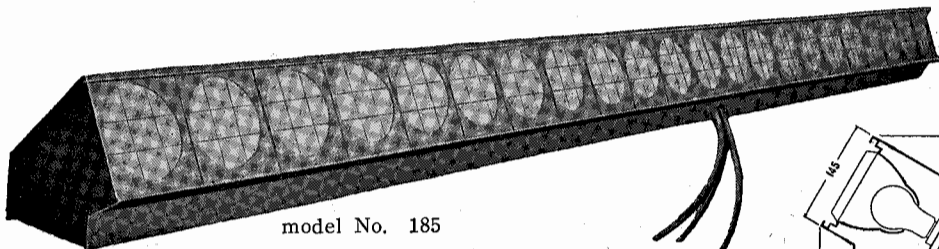


model No. 156

## “CF” type Foot lights

“CF” foot lights are made same as “E” type but they can make into curved frame as suit to set on curved trough of the apron stage.

model No.	bulb used	compartment span	weight per meter (kg)
1 8 5	A 60w	1 5 0 mm	6.0



model No. 185

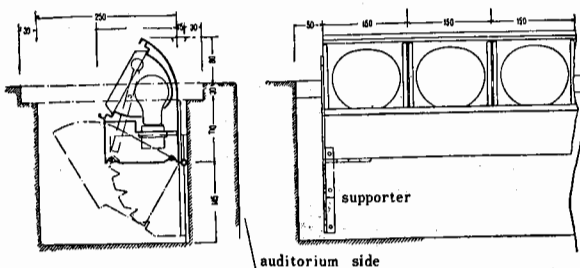
## Sinking Device of Foot lights

When the foot lights are unused, we can advice as a simple device as model 69 and model 70, for sinking in below the level of the stage floor.

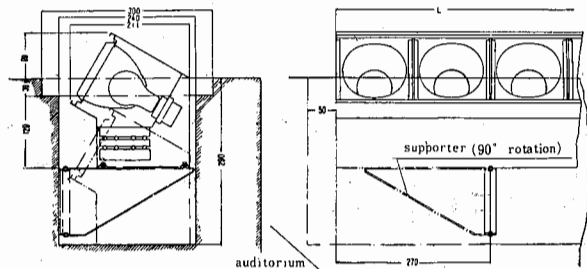
On model 69, foot lights are setting at the trough side with hinge joint of the locking piece and when use the foot lights, turn out the body then locked

by spring clutch, and when out of use, lock out the side handle and turn down the body and cover the floor.

On model 70, foot lights are set on the removal rests.



model No. 69



model No. 70



## Outlet strip

To minimize the use of long extension cables which require considerable time to handle, an adequate quantity of pigtail outlets is provided on the over head of the studio. Each of the over head batten supports an outlet strip composed of trough with about six 20 ampere pigtail outlets, and to provide for live colour television, each of these outlet strips also has a 50 ampere pigtail outlet located at the center.

Number of outlet strips to be set on the studio are determined by size of studio and the others, but generally about 40 outlets for 100 square meter of the area of the studio.

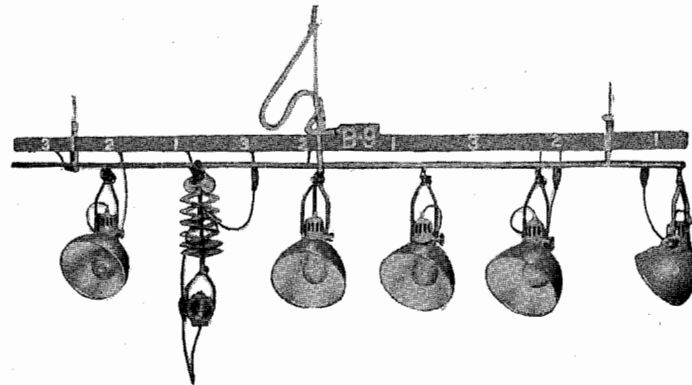
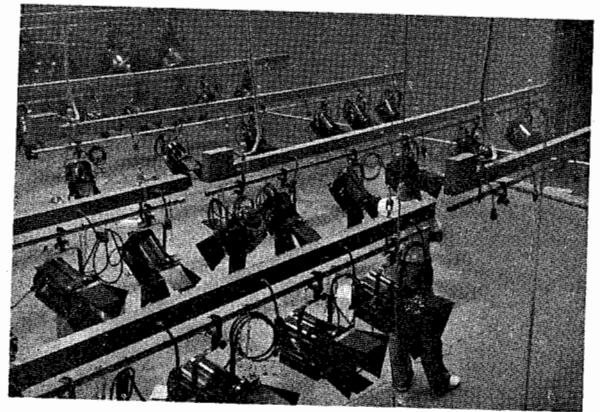


Fig 9 outlet strip

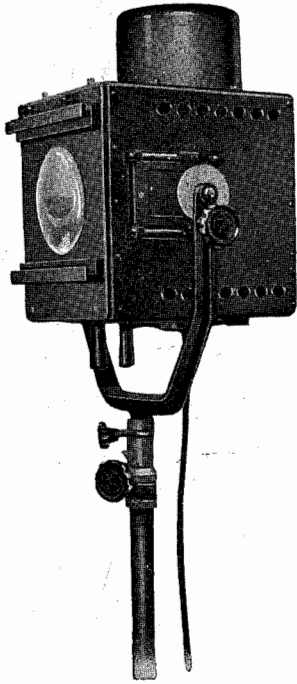
## Lead-in Cable

JIS C 3301 cord (in-door use) or JIS C 3302 cap-tyre cable (all rubber parallel cord) are used as lead-in cable for instruments.

Boder light and outlet strip are used multi-conductors cable to lead-in from the end of branch

circuit of control board. Multi-conductors cable is constructed to gather two or more flexible conductor as each rubber insulated and cotton baided, and outer covering by double cotton braid treated as moisture proof.

current carrying capacity Amp.	model No.	No. of conductors	size of conductor sectional area mm <sup>2</sup>	structure of condnetor no. of wire/bare conductor	over all diameter mm
2 6	9 2 1	5	3.5	138/0.18 mm	19.5±2.0
3 4	9 2 2	5	5.5	217/0.18 "	21. ±2.0
4 3	9 2 3	5	8.	315/0.18 "	26. ±2.0
2 6	9 2 5	7	3.5	138/0.18 "	20.5±2.0
3 4	9 2 6	7	5.5	217/0.18 "	23.5±2.0
4 3	9 2 7	7	8	315/0.18 "	27.5±2.0
2 6	9 2 9	9	3.5	138/0.18 "	23.0±2.0
3 4	9 3 0	9	5.5	217/0.18 "	28.0±2.0
4 3	9 3 1	9	8	315/0.18 "	31.0±2.0



model No. 5510

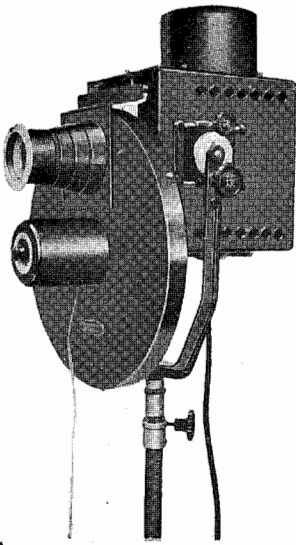
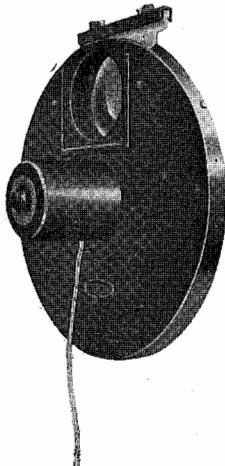


Fig A  
model No. 5510 2903 703 (combined)



model No. 2903

## “SES” type Projector

“SES” Projector is a light source instrument with 1000 or 1500 watt filament lamp to project the effect of light on the back screen on the stage, with slide or moving effect disc in one housing and objective lens.

“SES” projector is a very effective projector by good arrangement of three lenses with reflector as condensing ample flux of light from incandescent filament, and it can be used a carrier for standard  $3\frac{1}{4}'' \times 4''$  slide and a moving effect for standard 5" aparture, and an objective system of any specified focal length for so called 4" to 12".

model No.	bulb used	mode	weight
5 5 1 0	1000w G-127 C-13	stand	13.5kg

## Effect Machine

The projective stage effect is an ingenious apparatus for the projection of moving effects that are reproductions of natural phenomena and many forms of stage illusions. The effect is painted on a mica disc or other form which is rotated or vertically slid by an electric motor, in front of the SES projector or a spot light. The mica disc or the slides are enclosed in a metal case on which is mounted a electric motor and control rheostat.

The casing is equipped with a holding plate on back that fits snugly into the slide grooves on the front of SES projector or an effect holder put on a spot light. This holding plate is fastened to the effect casing by means of a swivel joint, which permits the casing to be turned in any position, so that the effect image may be moved in any desired direction across the screen.

Effect machine casing are manufactured of various kinds as variable speed and constant speed on several crass, or special forms and they are selected to combine with an adequate effect disc, for example.—

Model No. 2903 as a standard form as combine with 18 inch diameter mica disc or thin aluminium sheet disc of the effect of moving clouds and falling snow and with electric motor, reduction gears and speed control rheostat.

Model No. 2911. as a standard form of definite speed as combine with 18 inch diameter mica disc or others of the effect of clouds-drift and flaming-fire and with synchronous clock-motor.

Model No. 2921 as a special form with 5 inch diameter mica disc revolving without center shaft, with variable speed motor and control rheostat.

Model No. 3021. as a effect of water ripples with moving three painted mica discs sliding up and down at different in phase and with synchronous clock motor, constant speed.



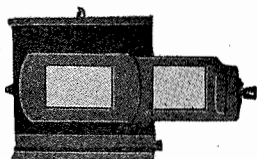
## Classification of Effect machine

model No.	form	turning speed & control range
2901	V.S	Variable 1 turn/10 minute $\pm 50\%$
2902	V.S	" 1 turn/3 minute $\pm 50\%$
2903	V.S	" 1 turn/1 minute $\pm 50\%$
2904	V.S	" 2 turn/1 minute $\pm 50\%$
2905	V.S	" 5 turn/1 minute $\pm 50\%$
2911	C.S	Constant 1 turn/10 minute
2912	C.S	" 1 turn/3 minute
2913	C.S	" 1 turn/1 minute
2914	C.S	" 2 turn/1 minute
2915	C.S	" 3 turn/1 minute
2916	C.S	" 5 turn/1 minute
2921	N.C	Variable 1 turn/1 minute
2922	N.C	" 3 turn/1 minute
3021	R.P	Constant water ripple only

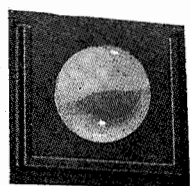
## Effect Disc

Effect disc, painted mica or others, being used frequently on stage and studio, as follow.

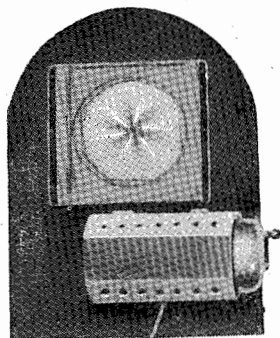
model No.	kind of effect	kind of disc	suitable machine
3000	Stormy clouds	18inch disc	2904
3001	Cloud-drift	18inch disc	2902, 2912
3031	Tidal wave	18inch disc with front glass	2903
3014	Water ripple	3-5inch square disc	3021
8015	Falling snow	18inch disc	2903, 2913
3016	Falling rain	18inch disc with front piece	2905, 2915
3025	Water-fell	18inch disc with front piece	2904, 2914
3030	Rising flames	18inch disc with front piece	2903
3054	Turning flower ring	6inch disc	2921
3055	Vortex ring	6inch disc	2922



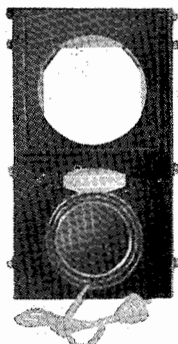
model No. 3095



model No. 3418



model No. 2921



model No. 3021

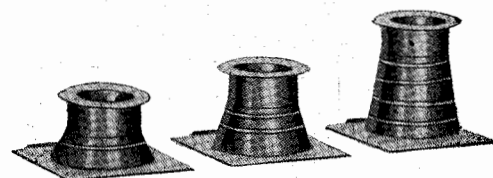
## Objective Lens

The objective lens used with a sciopticon receives the image of the lighted slide or disc, magnifies it many times, and project it on the screen or back drop. It consists of two plano-convex lenses mounted in a cylindrical brass tube. This lenses barrel telescopes within another brass cylinder (thus allowing for focus adjustment) which is fastened to a rigid conical sheet metal holder that fits the slide grooves on the effect head as shown figure A. (P20)

An objective lens of given focal length has but a limited projection range, so that it must be used vary as regards projection distance and size of projected image desired.

The table indicates focal lengths and size of image at various projection distance, on the opening in the effect head, 5 inch or  $127\text{mm}$  in diameter.

model No.	focal length of lens inch	open degree of light beam	projection distance	
			4.5 m	6 m
700	4	100°	10	13
701	6	73°	7	9
702	8	53°	5	6.5
703	10	45°	3.5	4.5
704	12	38°	3	4



model No. 701

702

704

## Slide charrior

Slide charrior is a holder to receive two piece of three and one fourth by four-inch lantern slides on which painted anything desired, and can be changed one to other by sliding. model No. 3095

size of slide  $80\text{mm} \times 100\text{mm}$

## Effect holder. model No. 3418

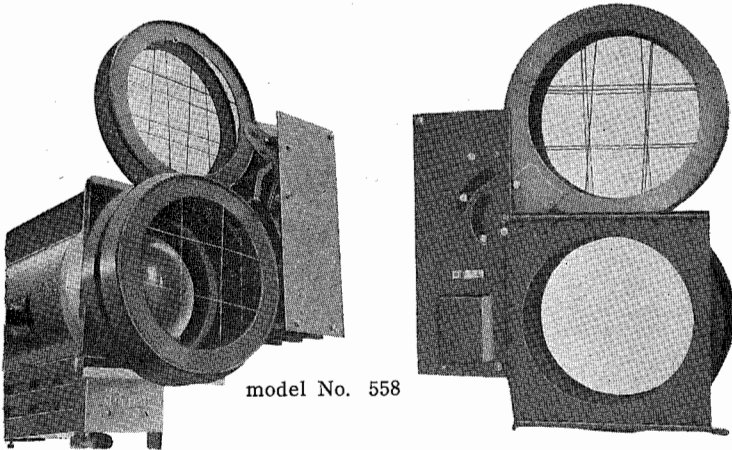
Effect holder is used for "C" type spot light used as projector, and is accomplished with a second condenser lens served to redirect the diverging light rays of spot light, forming them into a convergent, or narrowing, beam of light. It is made of aluminium and fits tightly into the colour frame grooves of the spot light and is itself equipped with a set of grooves in which the effect head is securely fitted.



# Marumo Magno-Colour.

model No. 558

# Manual Colour changer

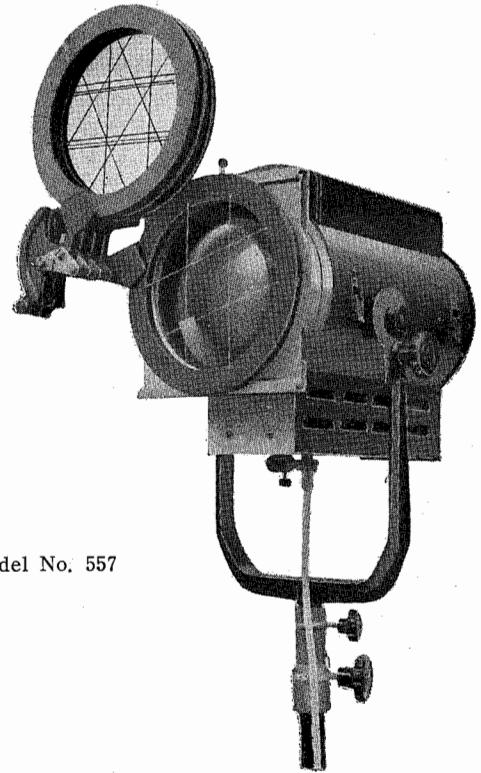


model No. 558

Ceiling and Balcony front light are setting on the place so difficult to operate them, then if want to change the colour of light of them, we must be used remote control colour changers with spot lights, otherwise must be setting the spot lights as many times as number of the colour used.

Marumo magno-colour is the ideal colour changer of spot light as remote operated apparatus with reliability and soundless, and they are able to operate many numbers at the same time by the preset control board.

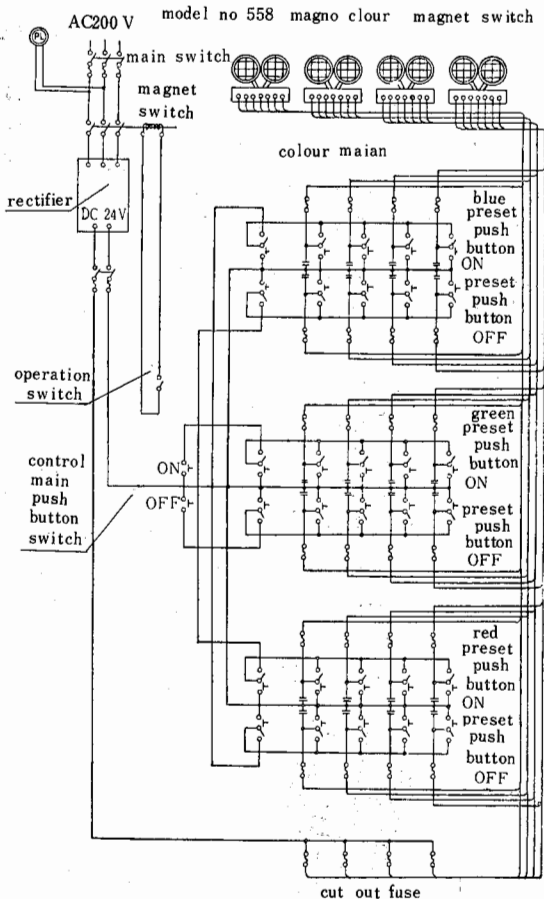
Marumo magno-colour can be four change by three colour frames with magnets and white of beam of spot light and the magnet coils are operated by D. C 24 volt electric source.



model No. 557

Model No. 556 and 557 are manual operated colour changing apparatus with four colour frames and with fitting plate to the grooves of a spot light.

Model No. 556 as conform to lens diameter 150mm spot light and 557 as to 200mm spot light.



(Connection diagram of the control circuit).

## Colour wheel

Model No. 552 and 553 are manual operated rotating colour changing apparatus with colour wheel and fitting plate to the grooves of a spot light.

Model No. 552 with six holes of colour.

Model No. 553 with five holes of colour.

## Colour Frame

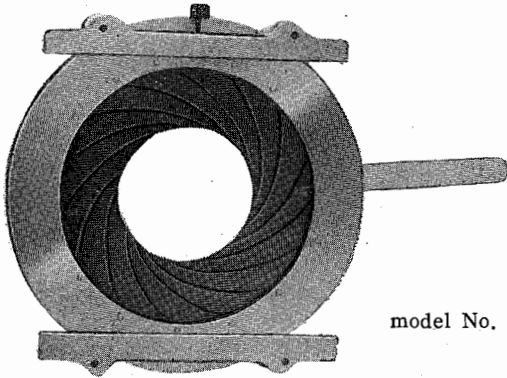
Colour frames or gelatin colour sheet holders are manufactured every sizes and forms of metal frame for insert adequately on the grooves of various instruments of the stage lighting.

## Diffuser Frame

Diffuser frames are manufactured several size for several spot lights and flood lights adequately, to be used for diffusing the light as even illumination by translucent gelatin paper or cellophane.



## Iris shutter



model No. 602

Model No. 601 and 602 are mechanical dimmer for control of the quantity of light rays of spot light besides it able to reduce the opening of light ray something and to shut off the light.

## Panta-graph

Model No. 1501-1502 spring counter-balance raising and lowering device for use with SC scoop or MF spot light, adjustable range about 2 meter, and permits 360° horizontal rotation.

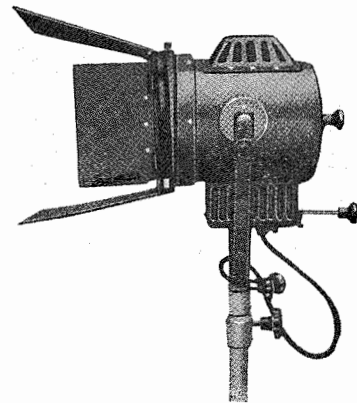
Sometime this device able to eliminates counter balanced battens and provides the light at desired position.

model No.	service and limits	indication on spring
1 5 0 1	heavy weight 5.4kg~12kg	red
1 5 0 2	light weight 1.2kg~6.8kg	white



model No. 1501 with mndel No. 5532

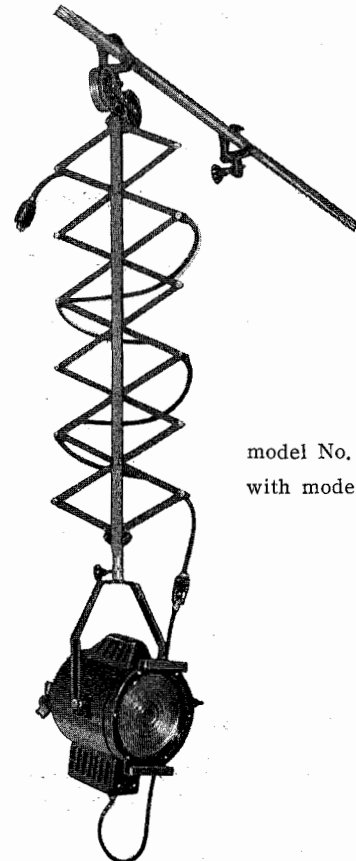
## Barn-Door



model No. 666 on model No. 5532

Barn-door is used mainly with MF or ERS type spot light setting on its front face, to prevent its stray light, two kinds as four doors and two doors and these doors are adjustable.

model No.	2 doors	model No.	4 doors
6 6 1	500w use	6 6 5	500w use
6 6 2	1 kw use	6 6 6	1 kw use
6 6 3	2 kw use	6 6 7	2 kw use



model No. 1501  
with model No. 5532





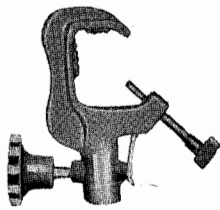
## Hanger, Base, Stand

Hanger, Base, and Stand are provided with common size receptacle for exchangeable to various kinds of lighting instruments.

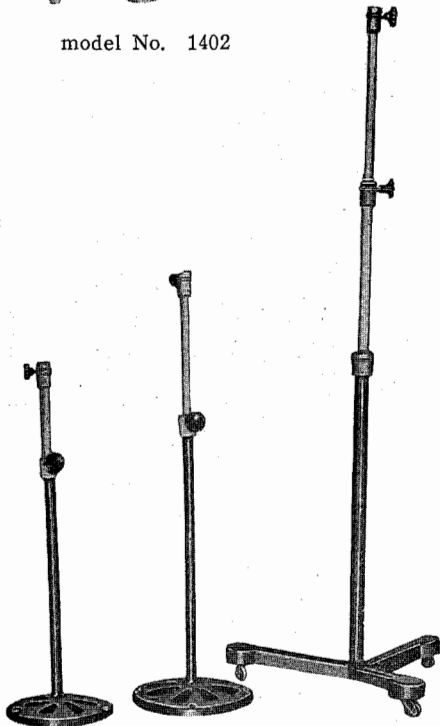
Model No. 1402 hanger are equipped with double stop device for prevents to danger.

Model No. 1441—Roller Caster Stand with trifurcate base. Adjustable height from 1 meter to about 3 meter.

model No.	kind	mode
1401	hanger	60 <sup>mm</sup> dia steel tube use
1402	hanger	40~50 <sup>mm</sup> dia steel tube use
1411	base	300w spot light use
1412	base	500w " " "
1413	base	1 kw " " "
1414	base	2 kw " " "
1421	stand	Height adjust 800~1400 <sup>mm</sup>
1422	stand	" " 900~1700 <sup>mm</sup>
1431	stand	with trifurcate base height adjust 900~1700 <sup>mm</sup>
1441	caster stand	with roller caster trifurcate base " " 1150~2650 <sup>mm</sup>
1442	caster stand	" " " 1500~3600 <sup>mm</sup>



model No. 1402



model No. 1421

1422

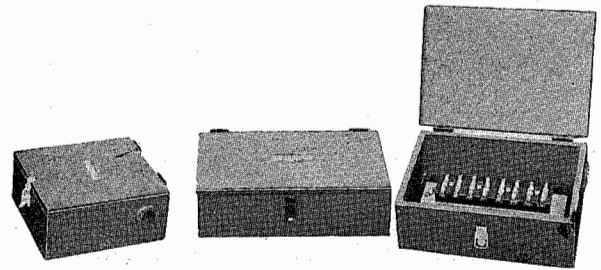
1441

## Wiring Devices

Marumo stage and T.V. studio units of wiring assure complete protection of stage and studio persons, actors and talents.

### Joint box

Hanging instrument on the stage and studio, as border light and out let strip, are connected to multi-cored flexible cable in the splice box on top of the housing and other ends of the cable are connected to distribution wiring in a joint box with multi-circuits terminal with metal housing, and it is constructed as tension on the cord or cable will not be transmitted to the connecting terminals.

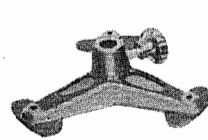


model No. 1253

1255

1254

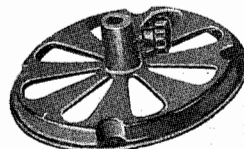
model No.	no. of circuits	size of box <sup>mm</sup>
1251	1	220×200×100
1252	2	220×200×100
1253	3	220×250×100
1254	4	220×300×300
1255	5	220×350×100
1256	6	220×400×100



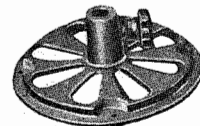
model No. 1415



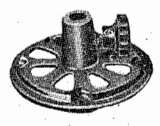
1416



model No. 1413



1412



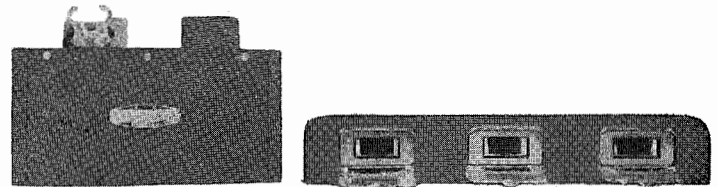
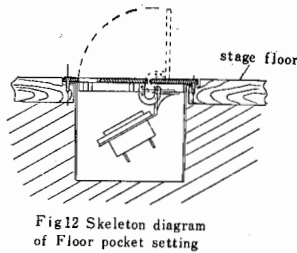
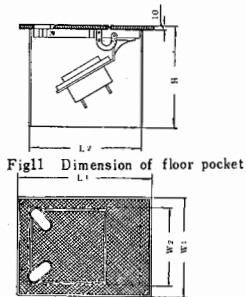
1411



## Floor Pocket

Floor pocket is an out-let box installed on the stage floor to supply each lighting instrument.

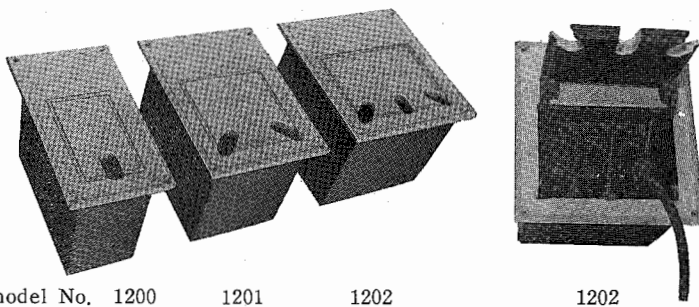
Floor pockets are manufactured two kinds as up to 50 ampere and up to 20 ampere and each kind is four class as with single receptacle to four receptacles.



model No. 1211

1212

model No.	type and form	size of box		
		L	H	W
1210	"A" 50Amp. 1 way	140	150	60
1211	" " 2	270	150	60
1212	" " 3	400	150	60
1213	" " 4	530	150	60
1275	"A" 20Amp. 1 way	140	150	60
1276	" " 2	270	150	60
1277	" " 3	400	150	60
1278	" " 4	530	150	60



model No. 1200

1201

1202

1202

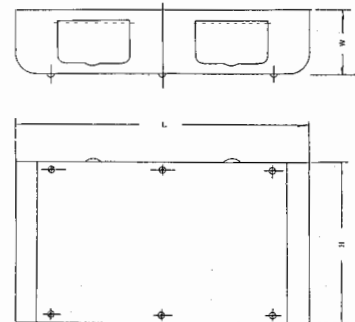
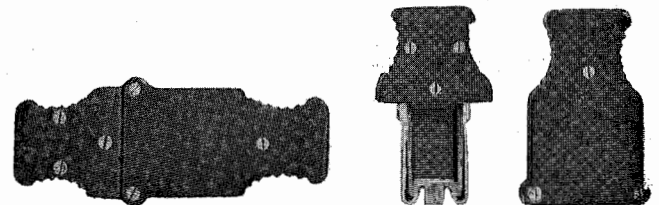


Fig 13 Dimension of wall pocket

model No.	type and form	size of box				
		L <sub>1</sub>	L <sub>2</sub>	W <sub>1</sub>	W <sub>2</sub>	H
1200	"A" 50Amp. 1 way	275	230	150	105	210
1201	" " 2	275	230	205	160	210
1202	" " 3	275	230	260	215	210
1203	" " 4	275	230	320	270	210
1270	"A" 20A. 1	275	230	150	105	210
1271	" " 2	275	230	205	160	210
1272	" " 3	275	230	260	215	210
1273	" " 4	275	230	320	270	210



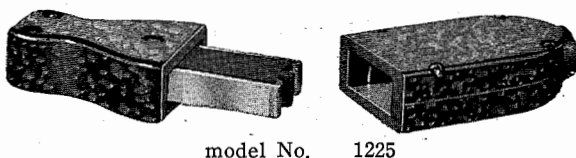
model No. 1233

A type 20 Amp. connector

A type 50 Amp. connector

## Extension plug or connector

At the extension joint of instrument, it is usefulness to use as same plug and receptacle as floor and wall pocket, there-by we are manufactured suitable one.



model No.

1225

model No.	type and form		
1225	A type 20 Amp. connector	▽	7-2234
1228	" " plug	▽	7-2158
1229	" " receptacle	▽	
1230	" 50 Amp. plug	▽	7-2077
1231	" " receptacle	▽	
1233	A type 50 Amp. connector		



## Marumo U type Stage Lighting Control Apparatus

Marumo U type stage lighting control apparatus is a combined apparatus of some U type dimmer transformers and a preset mechanisms control bank, and it is most excellent apparatus as compared with another system as resistance, reactance and electronics at the present.

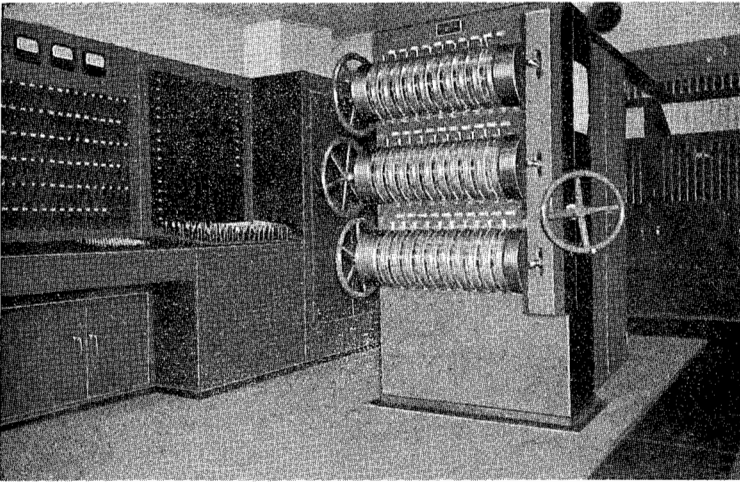


Fig 15 T.V. studio lighting control room

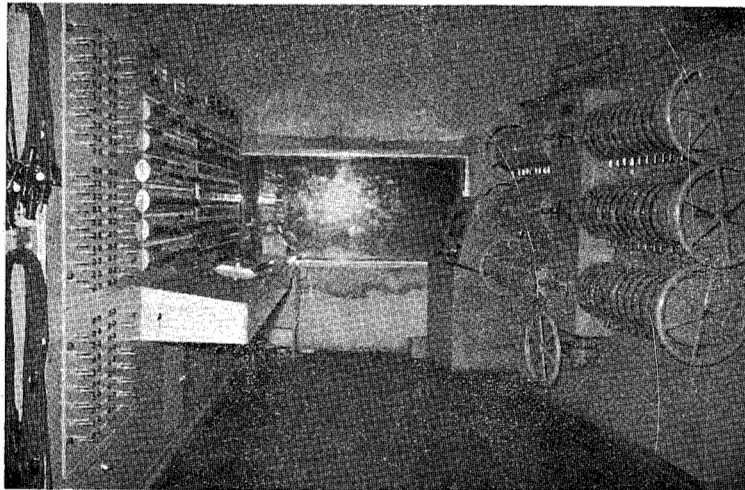


Fig 16 Stage lighting control room

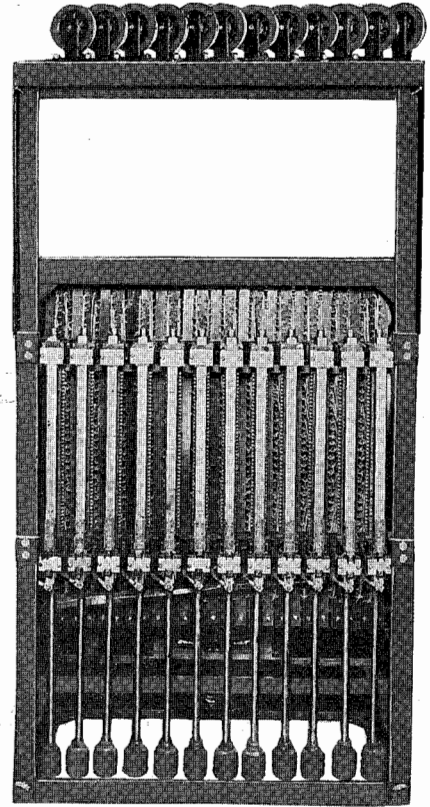


Fig 18 front view of U type dimmer

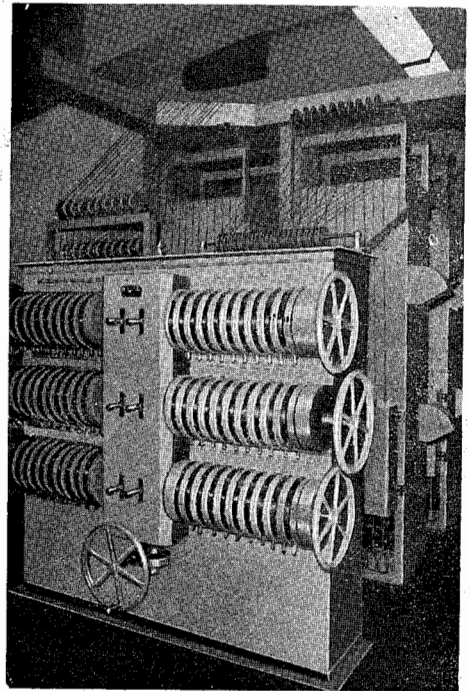


Fig 17 U type dimmer control bank and U type dimmers



# Marumo U type Dimmer Transformer

Marumo U type dimmer-transformer is an auto-transformer with load-capacity 10kw~35kw as an unit with five to twelve branches of free control dimmer unit, and each branch circuit can be made to give its capacity as any 10, 20, 30, 40, and 50 ampere at 100volt, and each branch can be handled as an independent dimmer freely.

Each branch of U type Dimmer transformer as a independent dimmer can be controled the lamp load connected its circuit from full brightness to dead dark so quite smoothly and can be stoped long time at any position of voltage controled.

Then a set of the U type dimmer transformer corresponds to many number of single dimmer, so the cost of wiring and equipments can be reduced in large percent.

As these apparatus are controled by the vertical movement of contact brushes, they can handle lightly and remotely with wire-rope and balance weight, so can be set on any place freely.

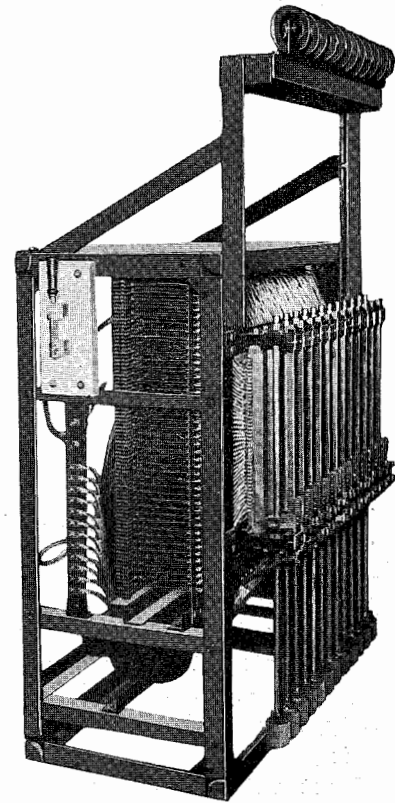


Fig 19 semi-side view of U type dimmer

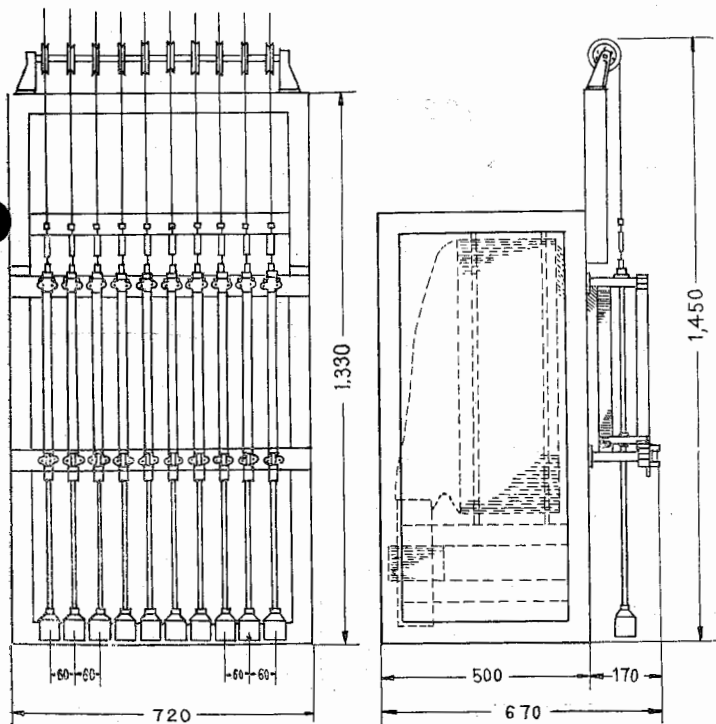


Fig 20 Skeleton diagram of U type dimmer

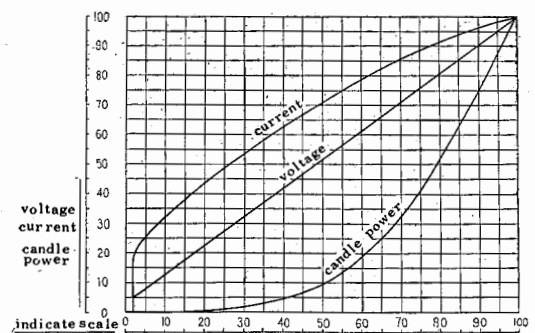


Fig 21 characteristic curve of U type dimmer out put



## Marumo U type Preset Control Bank

Marumo U type preset control bank is consists of a bank frame with many individual handles, from three to eight group master handles and a grand master handle. Number of the individual handles are equal to the total number of the branches of the U type dimmer transformers, and five to twelve individual handles are grouped with a main shaft and a main handle, and they are put together on one set as three to eight main shafts and with change-overgear mechanism as clutch in and off the main shafts to the grand master.

Individual handle with a scale as indicate the dimming degree and clutch in device to the shaft as preset mechanism then can be handled as group and as single.

Each individual handle is connected mechanically to each contact brush of the branch of dimmer transformers by wire rope, and then stage or studio lighting can be controled partially and generally as want.

Marumo U type preset control bank are handled manually but if you want, and we can make as a motor control set with electric motors and speed control device.

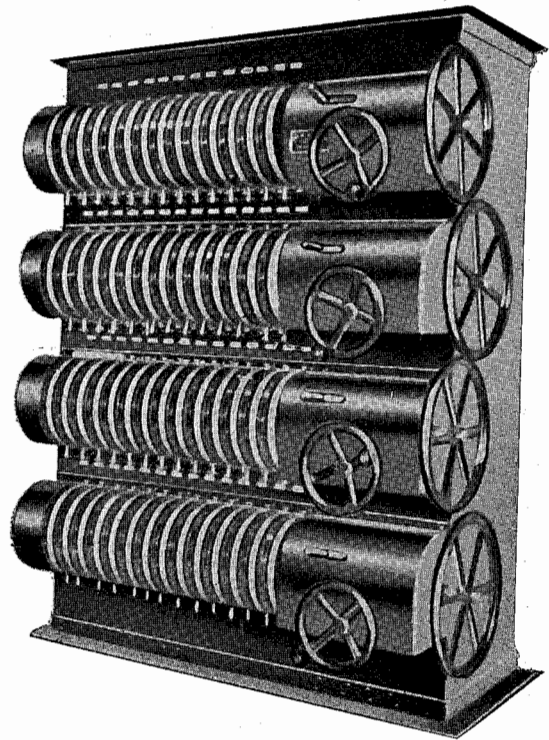


Fig 22 motor and manual driven U type dimmer control bank

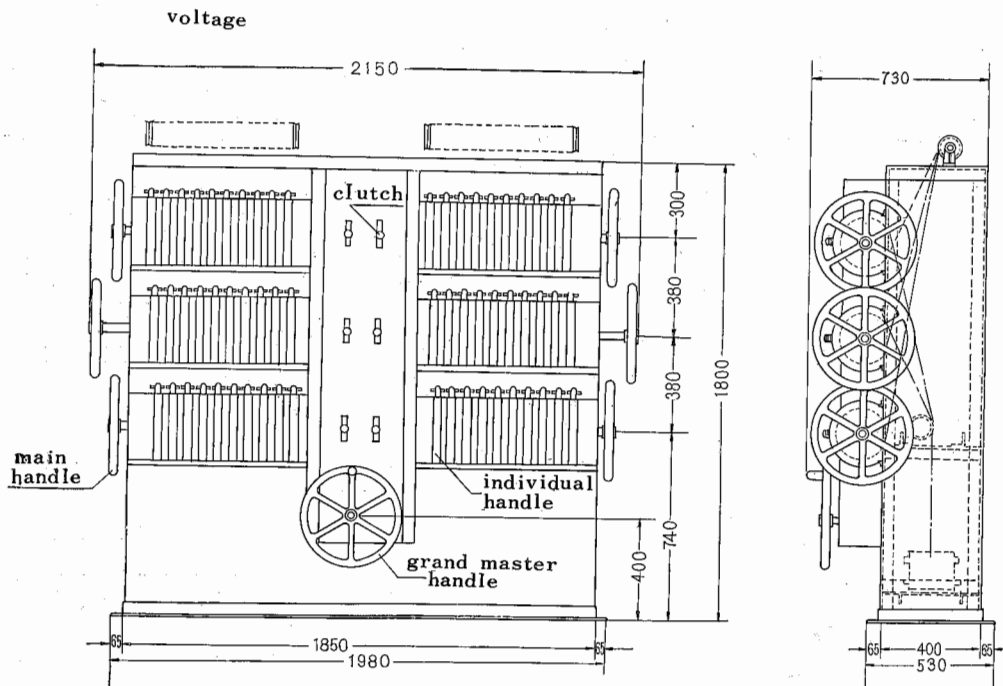


Fig 23 skeleton diagram of U type dimmer control bank



# Marumo UM type Control bank

Marumo UM type control bank is a perfect remote control device as same use as U type preset control bank.

Each individual handle is clutch in by electro-magnet to the main shaft and dimming and rising are able to act on the same direction of the main shaft revolution, and main shafts are driven by electric motors. The principle and control winding of UM type control bank as shown in figure.

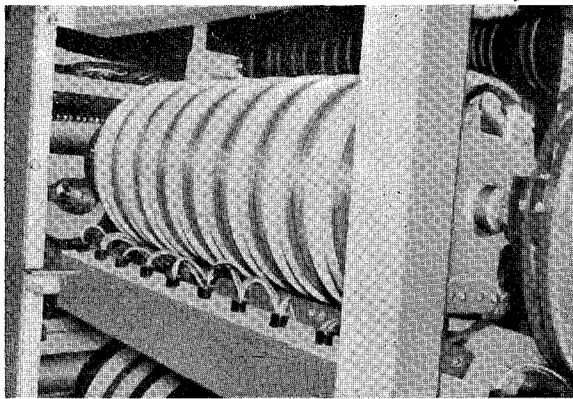


Fig 25 back view of UM Bank

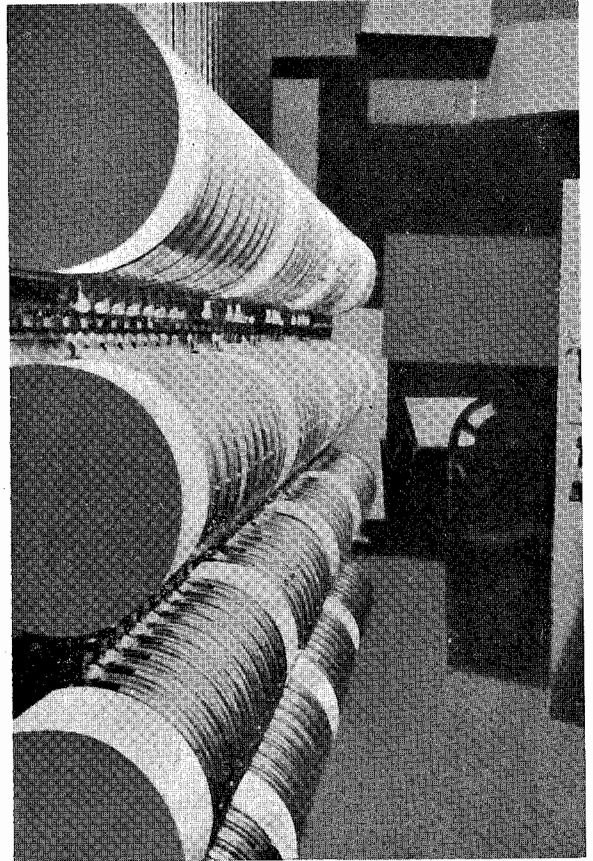
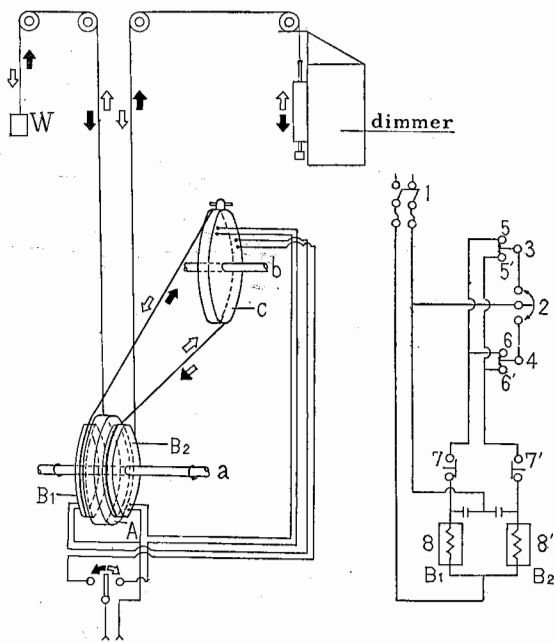
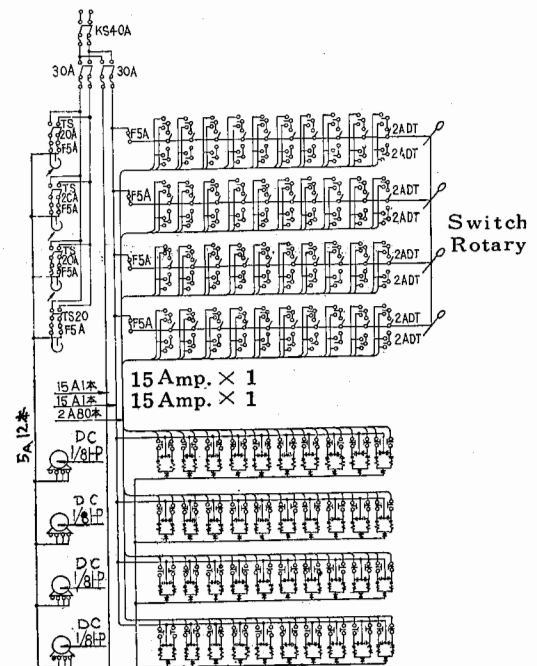


Fig 24 UM type control bank



mechanism



connection of UM control set



## Marumo CR type Dimmer Transformer

Marumo CR type Dimmer Transformer is an auto transformer type dimmer as able to smoothly control from 0 to 100 volt for lamp load on 100 volt circuit and constructed as manually or motor driven control as single unit and as a bank for grouped some units, with preset handles.

Form	Lamp Load Capacity
CR-3	1 KW ~ 2 KW
CR-4	3 KW ~ 4 KW
CR-5	5 KW ~ 7.5 KW
CR-10	8 KW ~ 10 KW
CR-15	12.5 KW ~ 15 KW

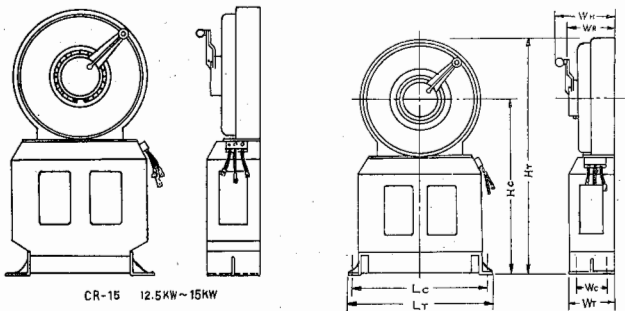


Fig 28

Fig 29

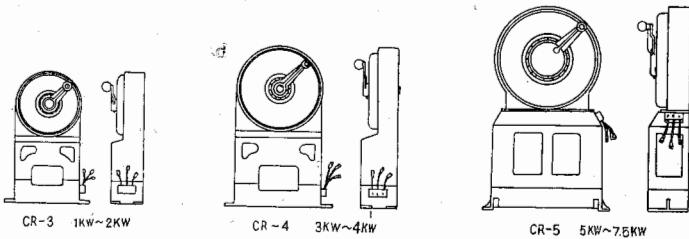


Fig 30

Fig 31

Fig 32

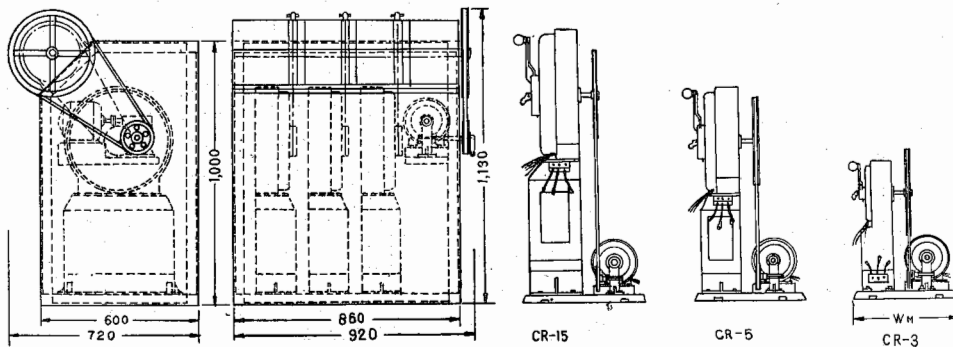


Fig 33 3 units combined motor driven

Fig 34

Dimension of standard CR Dimmer						
		CR-3	CR-4	CR-5	CR-10	CR-15
HT		500	615	805	900	1020
HC		375	450	600	670	760
LT		330	410	485	550	570
LC		300	370	450	520	500
WT		120	140	150	175	200
WC		75	100	110	115	120
WH	Handle	165	200	210	220	250
WR	Rope	140	170	160	190	270
WM	Motor	400	400	410	450	450

## Marumo UR Dimmer Bank

Marumo UR Dimmer Bank is combined with U type dimmer transformers and control bank, and is constructed compactly, so it is very suitable for small studio with respect to the setting place.

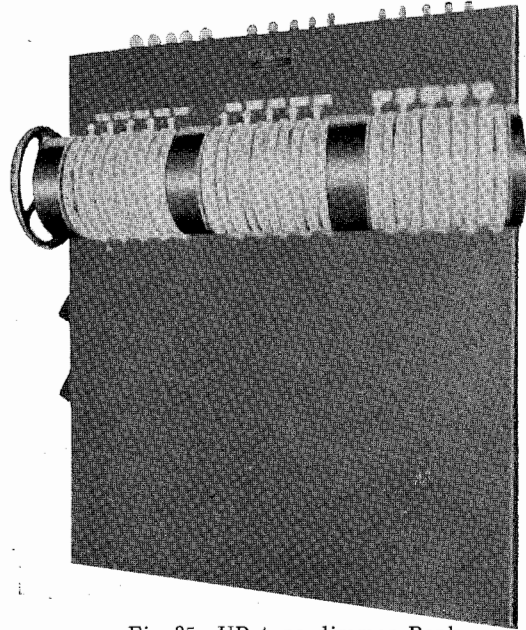


Fig 35 UR type dimmer Bank

## Marumo CRD type Dimmer

CRD dimmer is a portable one and very convenient to location and its primary side can be received from A.C 200volt and 100volt source by terminal change and secondary is adjustable from 0 to 120 volt and equipped with stop device at 100 volt position. Manufactured as standard capacity as 3kw. 5kw. 10 kw and 15 kw at the 100volt lamp load.

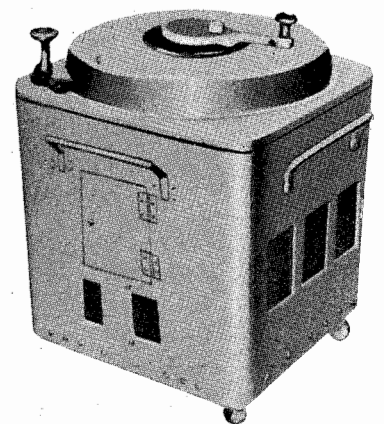


Fig 36 CRD type Dimmer



## Stage and T.V. studio lighting control boards

Adequate wiring system for stage and T.V. studio lighting is the three phase four wire system or single phase three wire system with neutral earth and each branch circuit should contains its two individual wires in same conduit or duct, to avoid unbalanced neutral currents.

Marumo Stage and Studio switch boards are consisted of a main panel board, an operating control board and a patch cord plug board, and are combined with Marumo U type dimmer.

The operating control board is a semi-remotely operated system with magnet switches and motor driven dimmer bank, and able to operate from one preset to another, as firmly and compactly constructed and easy operation.

Patch-cord plug board is constructed with cold plugs as no spark at plug on and off, therefore they can operate on live load up to 50 amp circuit.

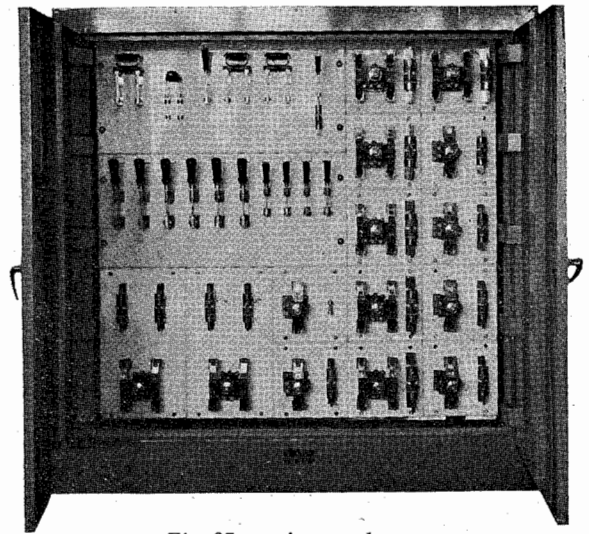


Fig 37 main panel

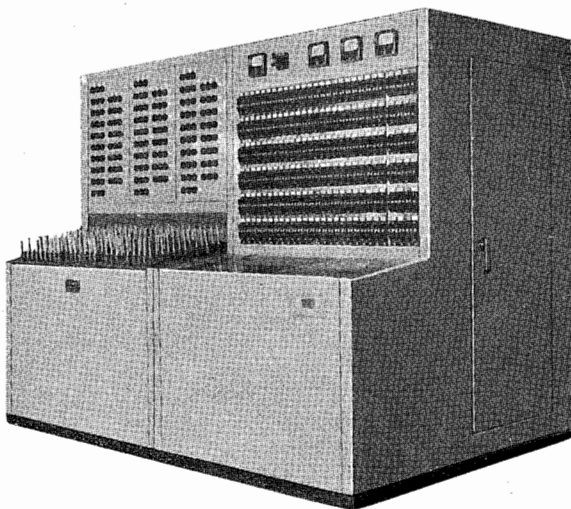


Fig 38 control preset Board

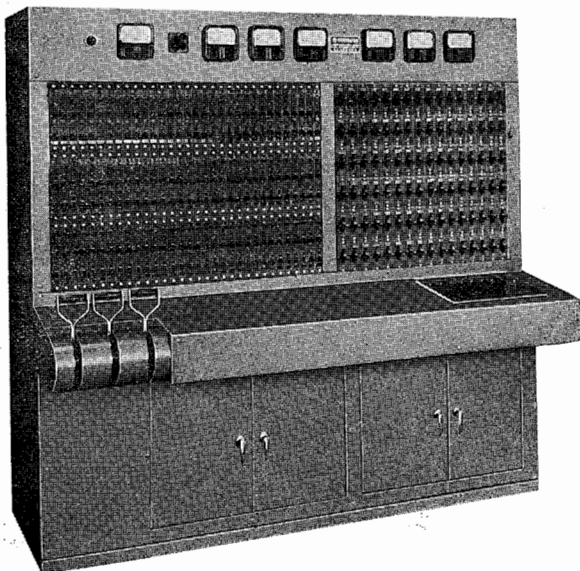


Fig 39 control preset board

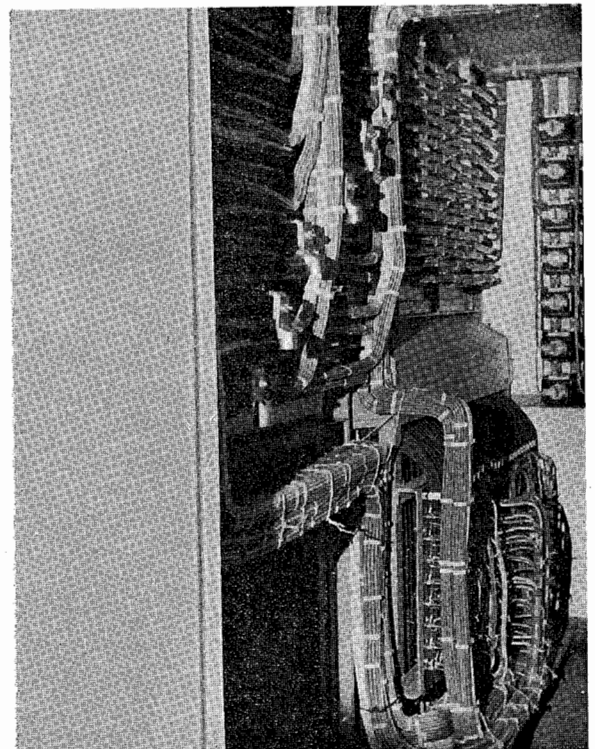


Fig 40 back connection of control board



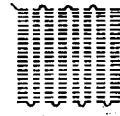


# Incandescent Filament lamps for the instruments in this catalogue.

## form of filament

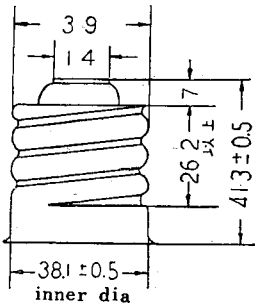


C-13

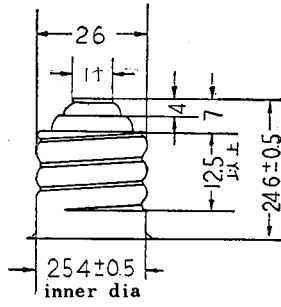


C-13D

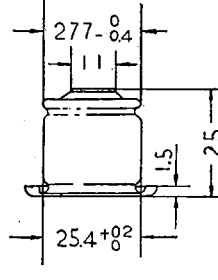
## Lamp Bases



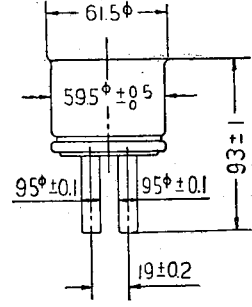
JIS E39  
mogul base



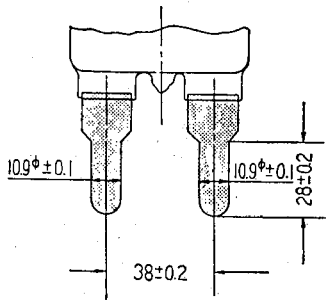
JIS E26  
medium edison base



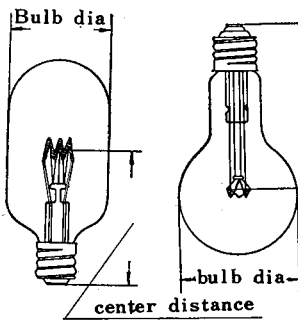
JIS F27  
prefocus medium base



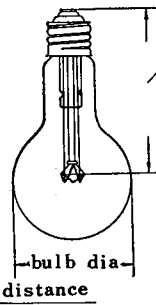
JIS P60-8  
medium Bipost



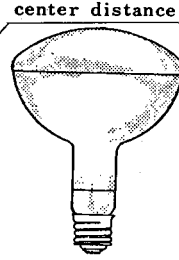
mogul bipost



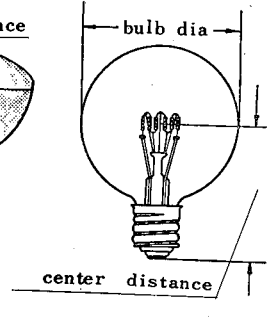
T type



PS type

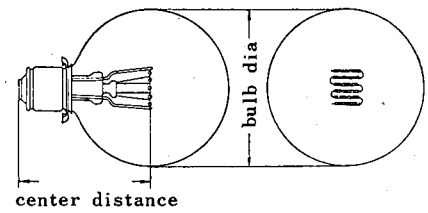


P type  
Reflector Lamp

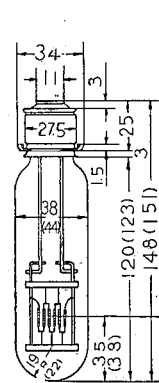


G type

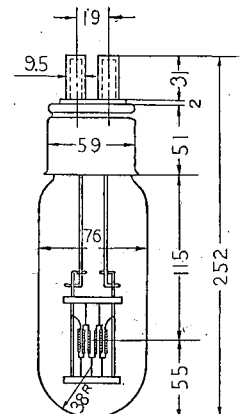
type	bulb diameter	base	light center length %	Burning position
A 100V 100W	70	E26	102±3	
PS100V 150W	80	E26	123±3	
PS100V 200W	80	E26	125±3	
PS100V 300W	95	E39	165±3	
PS100V 500W	110	E39	175±3	
PS100V 1000W	165	E39	240±5	
G-80 100V 300W	80	E26	70±3	(upward)
T-64 100V 500W	64	E26	80±3	( " )
G-127 100V 1000W	127	E39	105±3	( " )
G-152 100V 2000W	152	P60-8	125±3	( " )
G-203 100V 5000W	203	Mogul BiPost	165±2	( " )
T-203 100V 5000W	203	"	"	( " )
M-95 100V 300W	75	F-27 (prefocus)	76	(side ward)
R-100 100V 150W	110	E-26	—	
R-130 100V 300W	130	E-26	—	
D-38 100V 500W	32	E-26	113±3	(down ward)
D-76 100V 1000W	76	P60-8	199±3	( " )
D-96 100V 2000W	96	P60-8	207±3	( " )



M-95



D 38



D 76



## Special arrangement of T.V. studio lighting apparatus

Planing a reasonable and artistic lighting on the T.V. studio, it must be needed suitable arrangement and adjustment of the instruments, and use of defuse screen and barn door, and adjusting of height of lighting instrument to gain the best effect of light.

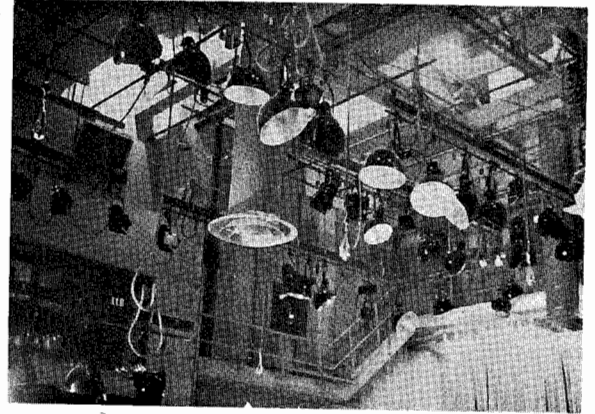


Fig 42 arrangement of T.V. studio lighting apparatus

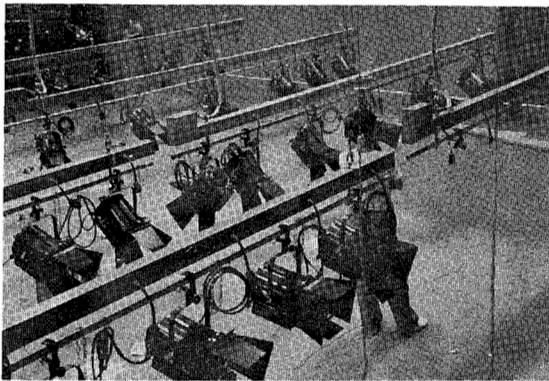


Fig 41 arrangement of T.V. studio lighting apparatus

## Pipe grid and cat walk

In the T.V. studio, total weight of apparatus hanging over head is not heavier than stage, so that the over head grid-iron is suitable to construct of 1 1/4 "to 2" gas-pipe with two or three lines of cat walk for control the instrument in the midst of playing. and lift apparatus model No. 65 or 68 are set on the pipe grid and its counter weights are set to along the side wall of the studio.

## Curtain truck

In T.V. studio, it is necessary to drawing a dropcurtain along the wall. In the most cases, the curtain is drawn on a rail beneath the cat-walk around in studio about 7.5 meter in height from the floor.

Our company can advice a suitable set of equipment and these good arrangement if you want.

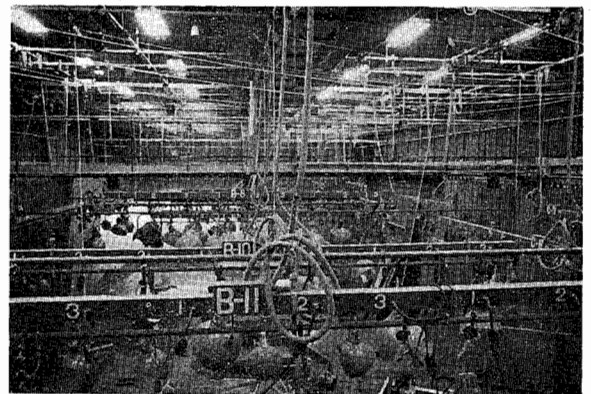


Fig 43 pipe grid and cat walk

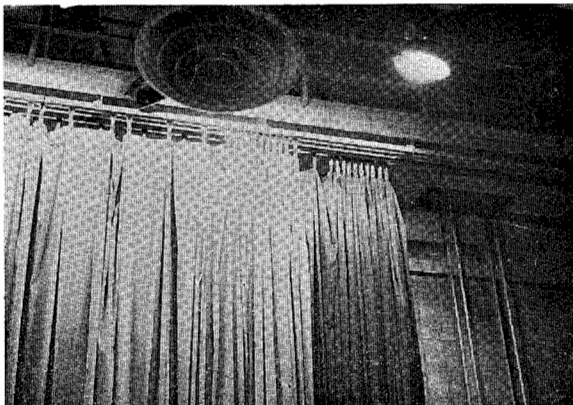


Fig 44 curtain truck

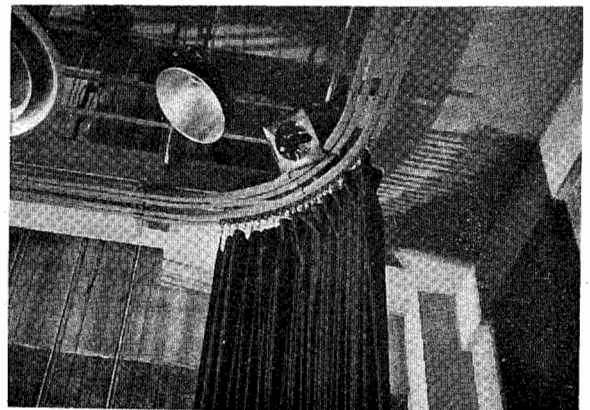


Fig 45 curtain truck

