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INSTALLATION - OPERATING AND MAINTENANCE

INSTRUCTIONS FOR THE ASHCRAFT SUPER CINEX

35/65/70mm PROJECTION LAMP

Correct Optical Distance Reflector to Aperture

After setting the lamp on the projector bedplate, move it as far forward toward the projector mechanism as possible. The distance, measured from the aperture plate to the reflector surface (back of the reflector) should be 31-1/2" - 32". Any obstructions which prevent obtaining this distance should be removed. (See Fig. 1.)

For mounting on the Simplex XL projector, a recess in the lamphouse front is provided into which the readwardly extending portion of the shutter guard projects. This recess is normally covered by a plate which is to be removed. To remove the plate - remove the inside front plate, covering the dowser, the plate is secured to the lamphouse by two small screws. After the screws have been removed the plate may be lifted out and discarded.

When mounting on the XL projector it will also be necessary to remove the left hand projector framing handle and the 45° box connector for the framing light. This is to be replaced by a short straight squeeze connector. This will allow the lamp to be moved forward into its proper position. The right hand framing knob will clear the lamphouse front casting by approximately 3/8". The 5/16 - 18 bolts which hold the lamphouse to the projector base should not extend into the lamphouse bed rails over 5/16" otherwise they may damage the lamphouse base. The length of the bolt projection may be adjusted with 5/16" washers.

Lamp Alignment with Projector

See Fig. 2

Proper optical alignment of the lamp with the center of the picture frame and optical center of the lens is of utmost importance in order that the maximum light and distribution is obtained on the screen.

Fig. 2 shows the only precise method of obtaining the proper alignment (Do not use a string for this purpose). The tools shown in the diagram have become standard and recommended by the Research Council. The dummy lens #5003 is clamped in the

lens holder. In case the projector is equipped with a 4 inch lens holder, a standard lens adaptor is used to hold the dummy lens. Through the exact center of the dummy lens a 1/2" hole is bored through which the 1/2" rod #5002 is passed. On the end of rod #5002 the 2 - 15/16" flange #5004 is placed and located just inside the lamphouse front.

It is not necessary during alignment that the reflector be in the lamp. Before inserting the 13.6 mm rod #5001-A through the carbon tube in the lamphouse back, move the carbon carriage near the lamphouse front then insert the rod through the contacts and into the rotating collet. Place flange #5005 on the end of the rod.

When the two flanges are brought into contact, not only should they be even all around their periphery, but the two flat surfaces should be parallel. All modern projector bases are designed so that both vertical and lateral adjustments of the projector bed plate can easily be made. The supply dealer usually has a set of the proper aligning tools or they can be purchased through the supply dealer from our factory.

Placing the Reflector in the Lamphouse

1. Remove the large duct covering the lamphouse base by removing the wing nuts under the base and lifting out of the lamphouse.
2. Remove the ash tray by unscrewing the wing screw.
3. When placing the reflector in the lamphouse reflector ring, tilt the top forward with the cut-off section parallel with the lamphouse base. Do not strike the reflector against the negative carbon guide or the contacts. Insert the reflector behind the left hand ring clip and then behind the top clip. Push in the right hand side of reflector, closing lever.
4. Be sure the reflector does not touch the negative carbon guide, at least 1/8" clearance should be the minimum. The reflector should have clearance all around the inside of the ring, push up and down and sideways to determine this. Also the three springs should not cramp the reflector against the clips, the springs should only press the reflector lightly against the clips. This may be determined by pressing on the reflector at the clip position.
5. When inserting or removing the positive carbon never allow it to come into contact with the reflector.

Carbons for Use in the Super Cinex Lamp

Both the National Carbon Company and the Lorraine Carbon Company make the proper carbon for use in the Super Cinex lamp - use no other than those herein recommended.

The National Carbons should be:

Positive	13.6 x 18"	Type L 0112
Negative	7/16 x 9"	Type L 1132

Do not Use Hitex Carbons

The Lorraine Carbons should be:

Positive	13.6 x 18"	Type ORLUX 552-09
Negative	7/16 x 9"	Type ORLUX 555C

Do not use heavy duty negative carbons or types other than those herein recommended.

Placing the Positive Carbon in the Contacts and Collet

Insert the positive carbon through the tube in the lamphouse back, through the contacts and into the rotating collet or carbon clamp. The rear end of the positive carbon will come almost in contact with the transite dowser plate but the protrusion beyond the contact will be approximately 15/16" to 1". A plastic handled Allen wrench is provided for insertion into the set screw for locking the carbon in the rotating collet. Extreme pressure is not necessary, moderate pressure brings all three prongs of the collet into contact with the carbon, holding it securely.

Determining and Adjusting the Contact Pressure

See Figure 3

The correct pressure of the contacts S101 and S102 on the carbon is important. The best method of determining the ideal pressure is to insert a short length (approximately 4") of 13.6mm carbon through the contacts and revolving the carbon with the fingers. There should be no looseness or extreme pressure, the carbon should rotate easily but the pressure should be firm. Extreme pressure is

unnecessary and may be injurious to the rotating mechanism over long period of operation. The diameter of carbons vary approximately 1/64". Therefore, allowance must be made for this variation.

On the moveable contact S 102 an adjusting screw No. SC 115 is located for varying the contact pressure, a locknut SC 103N locks the adjusting screw in position. Before any attempt is made to adjust the contact pressure be sure the hexagon swivel nut SC 109 is tight - this nut is the only thing that holds the entire moveable contact arm in position. It should always be screwed securely in position with finger pressure, never use a wrench for tightening.

To adjust the contact pressure loosen the locknut and turn the screw clockwise to increase the pressure. The screw presses against the pressure spring SC 107. After the proper contact pressure has been adjusted lock the adjusting screw nut SC 103N so that the adjusting screw cannot turn.

To Inspect and Clean the Positive Contacts

Daily inspection of the silver contacts S 101 and S 102 should be made. The opening of these contacts is so simple that only a few seconds are necessary for inspection. The hexagon swivel nut SC 109 is to be removed and laid in the ash tray so it will not be misplaced. The moveable contact S 102 can now be lifted off the stud onto which the swivel nut screws.

If the contacts are blackened they should be cleaned with powdered Bon Ami on a wet cloth - never use anything else, by no means a wire brush. Your contacts when properly cared for should become highly polished. The black deposit in the contacts is not from burning of the contact but either carbon dust or some excretion from the carbon itself - probably the binder in the carbon. This binder is soluble in water, therefore the combination of the water on the cloth will dissolve the black and the Bon Ami which is a very mild abrasive polish the silver surface.

Your silver contacts should last the life of the lamp - they are intensely water-cooled and substantially made. However, the contacts can be damaged and even ruined accidentally, usually through carelessness, by running the negative

carbon into the contacts, running out of carbon so that the arc melts the silver, or operating without water flowing through the contacts while the arc is burning.

How to Strike the Arc

Striking is always accomplished by moving the negative carbon into contact with the positive carbon. This should be done rapidly - withdrawing the negative to its position on the arcscope screen immediately. Never leave the negative carbon close to the positive crafer after contact has been made.

After the arc has been established there may be a slight momentary misalignment of the flames but if the proper alignment of the carbon has previously been made, do not readjust the position of the negative carbon relative to the positive until the arc has been burning for at least one minute. The flames usually readjust themselves automatically during that period. If unnecessary readjustment is made immediately upon striking the arc then another unnecessary adjustment will have to be made which results in continual unnecessary adjusting.

The Negative Carbon Holder and Carbon Guide
See Figure 4

When the Super Cinex lamp leaves our factory the pressure of the negative carbon in the guide groove is correctly adjusted. The carbon must not be loose in the guide "V" groove but pressed firmly down into the groove otherwise the position of the negative carbon Fig. 4 relative to the positive carbon crater may vary, requiring frequent readjustment of the negative carbon position.

If the pressure of the negative carbon in the groove is insufficient it may be adjusted by loosening screw SC 8317 located on the negative carbon carriage and tightening screw SC 8317 R. Both screws are secured by locknuts which should be tightened after adjustment.

How to Place the Negative Carbon in the Jaws

Release locking handle SC 8310 by rotating counter clockwise.

Place the carbon in the front of the jaws. Pressing on the rear of the jaws will open the front ends. After the carbon is in position, move the locking handle clockwise as far as possible to its stop. Never leave the handle in any other position as it may alter the position of the arcing end relative to the positive crater and may affect the correct burning of the arc.

The negative carbon jaws should clamp the carbon tightly. If at any time they do not, the pressure can be increased by placing a 3/8" diameter rod crosswise of the jaws at the position marked "A" and pressing the jaws together at the forward end. These jaws are made of bronze so they will not break. Do not push down on the jaws but together otherwise the mounting casting may be damaged.

How to Connect the Lamp to the Correct Electric and Water Lines

Electric

On the inside of the large terminal cover SC 143 on the left hand side of the lamp is a diagram showing all electric connections. There are three pair of wires to be connected solid to the 115 volt AC line (not plugged in) as follows: Except late models CX-160S, CX-160A, and CX-160B. These require a single 115 V.A.C. line connection.

1. On the lamphouse front is a terminal box - these are to the blower motor on the lamphouse top. Except on late models CX-160S, CX-160A & CX-160B.

2. Coiled in the lamphouse back are the wires in flexible metal tubing for the pilot lamp. These are to be passed through the 7/16" diameter hole in the lamphouse back (bottom). Except late models CX-160S, CX-160A and CX-160B.

3. The water recirculator is to be placed near the lower magazine on the left hand side of the projector.

Caution

It is of utmost importance that the recirculator and blower motors operate continuously and that the lamp cannot be operated without these in operation, otherwise both the

reflector and contact jaws will be endangered.

There are two pair of wires to be connected to the Direct Current supply circuit as follows:

1. The pair of double #4 asbestos arc leads. The positive emerges from the terminal block on the left hand side of the lamp and is marked red. The negative emerges from the back of the lamp through a hole in the rear cover.

2. The wires for the arc feed motor emerge from a fuse and connection box on the side of the lamp. These are to be connected to the same projector switch terminals as the double #4 arc feed cables. There is no polarity to the arc feed wires, either may be connected to either positive or negative. Except late models CX-160S, CX-160A and CX-160B.

Water Connections

Two 6 ft. hoses are supplied with each lamp for connecting the contact cooling water to the recirculator. It makes no difference which way the water flows into the terminal block SC 123 located on the distribution panel located on the left hand side of the lamp.

Under no circumstances connect metal tubing to the lamphouse water system. This terminal block is energized, being of positive polarity.

A metal tubing connected to this block may cause a short circuit to ground which may damage the lamp.

Connecting a Water-Cooled Aperture in the Water System

While the Ashcraft water recirculator is capable of supplying water to both lamp and water cooled aperture, the aperture cooler must be correctly designed. Those by manufactured by Simplex - Century - Motiograph and Phillips are satisfactory. However those of some other manufacture cause extreme resistance to the water flow in the contacts which may result in damage to the contacts, particularly if there is sediment or alkali in the water.

No water-cooled apertures must be connected in series with the lamp which will reduce the water flow beyond a safe minimum.

When striking the arc for the first time it is inadvisable to leave the reflector in the lamp until the correct arc operating conditions are attained. It is suggested that the rectifiers or the rheostats be set on low tap and then raised to normal current rather than imposing an accidentally excessive current upon the lamp.

Correct Lamphouse Ventilation

Fig. 5 shows the forced cold air injection and hot air exhaust system built into the Super Cinex lamphouse. The purpose of this method is for heat reduction within the lamphouse, protection of the glass reflector - elimination of ash in the lamphouse or on the reflector. This very complete and efficient air circulation system is severely impaired unless the proper duct and blower system is installed in the projection room. Fig. 6 illustrated a method which is incorrect and should never be used. This single duct system, although exhausting plenty of air has been proved to be the cause of excessive reflector breakage.

Two recommended methods are shown in Fig. 7 and Fig. 8 shows two separate ducts of 6" minimum diameter connecting lamphouse and blower. No dampers are to be used but adjustable bypasses are installed in the duct ends for controlling the exhaust volume.

Fig. 8 shows a common duct connecting the lamphouses with the blower connection located at the center point between the lamps. This method also uses no lamphouse dampers but regulating bypasses.

Referring to Fig. 5 the injection blower forces air downward into the lamphouse through a duct covering the lamphouse front, through a duct covering the lamphouse base and then upward over the reflector surface. A certain amount of air is blown behind the reflector for cooling the rear surface.

The lamphouse blower exhaust tube is located directly over the arc. All smoke and heat from the arc are exhausted from the lamphouse at the rate of 2000 linear ft. per minute. The exhaust from the booth duct and blower system should be sufficient to eliminate any impedence to the heated air blown out of the lamphouse stack, in other

words, at least 2000 linear feet of air should be exhausted after the duct is attached to the lamphouse.

The air flow over the reflector should be between 1100 and 1300 L.F.P.M. This measurement should be taken at the outlet of the base duct at the bottom of the reflector.

Measurement of Air Flow

A simple and inexpensive air flow meter, the Alnor Jr. Velometer Model AL 85 V27 having a low scale of 0-500 and a high scale of 0 - 2500 LFPM can be obtained from the Electrotec Equipment Co., 308 Canal St., New York City or from our company. The net cost is approximately $38.00.

The Appearance of the Super Cinex Arc and Relative Position of the Carbon Ends

Fig. 9 shows the appearance of the Super Cinex Arc in correct operation. The combined flames rise vertically. The blue jet or tongue emerging from the tip of the negative carbon sweeps up past the mouth of the positive crater, not directed into the crater. This tongue should be located about 3/16" in front of the positive carbon end. If the tip of the negative carbon is too low not only will the jet become too close to the crater but the negative flame will envelope the crater end, causing excessive current to flow in the arc. The negative flame should not underlap the positive crater.

If the tip of the negative carbon is too high there will be an upward bow in the negative flame creating an unstable arc and a decrease in screen light. As illustrated the center line of the negative carbon should intercept the crater face approximately 3/32 from the bottom.

Fig. 10 illustrated the correct and incorrect methods of carbon positioning to obtain the maximum light, arc stability and optimum burning conditions.

A shows the tip of the negative carbon too high with a loss of light and unstable arc.

B is the correct method. A slight underburning of the negative flame on the positive Carbon.

C Excessive underburning causing an excessive arc current without corresponding light increase.

D Results of too short arc gap -- a splitting of the positive flame.

E Correct. Negative flame flattens the positive flame over the crator face creating maxim illumination.

Controls of Super Cinex Lamp

There are nine control knobs on the Super Cinex lamp for adjusting the carbon positions, mirror and rate of forward feeding of the carbons. These are shown in Fig. 11. The only control that requires explanation is the positive feed control located at the rear top of the lamphouse. There are two control knobs, one on the back and one on the side of the case. These knobs regulate rheostats in the motor field circuit, the two rheostats are in series therefore both increase the motor speed when turned clockwise. It is suggested that the knob on the back be set in the center position of the scale which is the usual position and the knob on the side set on "low" unless greater motor speed be required. When both knobs are on #10 position the maximum motor speed is obtained.

The Arc Scope and Screen

See Fig. 12

When your Super Cinex lamp is received these will be found packed in a box marked "Arcscope" to avoid damage in shipment. The four retaining screws for the arcscope and two for the screen frame will be found screwed into their proper holes on the side and front of the right hand doors. Also in the same box will be found a gauge for locating the positive carbon crater distance from the rear of the reflector for both 35 mm and 70 mm.

When the lamp is tested at our factory the arcscope is adjusted to reflect the image of the arc on the proper lines of the arc image screen but this position may require slight alteration to obtain the maximum light and distribution in the theatre. This adjustment is made by changing the angle of the reflecting mirror in the arcscope case. Movement of

the two screws SC 170 accomplish the change of angle. By loosening the locknuts the screws can be turned. Loosening one screw and tightening the other swivels the mirror about its axis, thereby changing the position of the reflected image on the arcscope screen.

How to Obtain the Maximum Light and Required Distribution of Light on the Screen

Before the final adjustment for optimum screen light is attempted the following should have been accomplished:

1. The correct distance of 31-1/2" from reflector to aperture.

2. Exact alignment of lamp optical center and projector aperture and lens.

3. Clearance of all obstructions in the light beam between lamphouse and aperture.

4. Correct burning condition of the arc.

If the projection is for 35 mm film - use the gauge setting the position of the arcing end of the positive carbon 6-11/16" from the rear surface of the reflector.

Burn in the crater. Again check with the gauge. Immediately after striking the arc observe whether the arc image of the crater end coincides with the 35 mm crater position line on the arcscope screen. If not make the necessary change.

Start the projector, without film, and observe the light on the screen correcting the aperture spot position vertically and laterally by means of the reflector control knobs. The aperture spot should be of sufficient diameter to cover the aperture with no trace of blue light on the sides of the screen. Neither should the spot be so large that insufficient light or a yellowish spot appears in the center of the screen.

A final check should now be made to determine the exact optimum position of the crater of the positive carbon relative to the reflector as indicated on the arcscope screen. During this procedure the length of the arc gap must remain constant.

if the image of the positive carbon is moved slightly ahead of the register line on the arcscope screen the image of the negative should be retracted an equal distance. By moving the image alternately slightly ahead of and back of the line the point of maximum screen illumination will be determined. This, however, may not be the exact point of optimum light distribution. The point of maximum distribution will occur when the crater is moved sufficiently ahead of the line so that a shadow will appear in the center of the screen, now retract the image until the shadow disappears and the overall screen brightness increases to the desired point.

Arc Current Voltage - Carbon Consumption and Resulting Relative Maximum Center Screen Light

Arc Amp	Arc Volts	Approx. Burning Per Hr.	Relative Light
135	48	6	220
140	51	7-1/2	237
145	54	9	255
150	57	11-1/2	285
155	60	13	295
160	63	15	310
165	66	17-18	330

The Super Cinex Lamp as a recommended arc current range of from 135 to 165 amperes. The current to be used will, of course, be determined by light intensity required, the efficiency of the lenses - the reflectivity of the screen and the light transmission of the projector shutter. In general, it has been determined by experience, that the range between 145 and 155 amperes will be used. The above table shows the approximate carbon consumption at each current setting. The meter reading can be checked against the consumption over a 20 minute period for determining the accuracy of the meter if any question exists.

Adjusting the Arc Feed Mechanism for Constant Regulation

A satisfactory balance between the relative feeding of both positive and negative carbons can easily be made whereby the image position of both carbons on the arcscope screen will

remain constant during periods of operation without frequent adjustment by the projectionist. After the required arc current has been selected the regulating rhestat control should be advanced to the position where the image will remain exactly on the arcscope register line when the negative image is held constant on its register line. During this procedure regulate the negative position manually if necessary. After the forward feed of the positive has been set then determine if the negative feed control is correct. The position of the negative carbon will now determine the accuracy of the positive carbon position. If the negative is fed forward too fast tending to shorten the arc gap, the arc current will increase burning the positive back of the tine. It is very simple and most important that the negative carbon tip position remain constant. Modern carbons burn at a very constant rate, particularly so in the case of the 13.6 carbon used in the Super Cinex Lamp.

Once the correct feeding ratio of the two carbons has been established the accuracy of feeding will be exceedingly accurate requiring no manual adjustments by the projectionist.

Power Sources Rectifiers, Generators, etc.

The Ashcraft S1712 12 phase Rectifier.

Simultaneous with the development of the highly efficient Super Cinex Lamp an equally efficient multiphase selenium rectifier was designed.

The advantages of a highly developed rectifier is evident from the fact that no wasteful ballast resistors are required to regulate the arc current. An example of the inefficiency of generators and ballast resistors is realized in the case of a 100 Volt generator. The Super Cinex Lamp normally requires an arc voltage of only 57 at 150 amps. The power required is the voltage times the amperes. In the case of the generator and ballast 57 X 150 or 8550 arc watts are used and 43 volts X 150 amps or 6450 watts are wasted in the ballast. The Super Cinex twelve phase rectifier supplies only the voltage required 8550 watts. In addition to this the losses in the generator and driving motor are drawing considerably much more

power from the mains than an efficient rectifier.

The S 1712 rectifier was designed with the idea in mind of supplying a steady and dependable supply to the arc. It is designed particularly for the exact requirements of the Super Cinex Arc with six arc current adjustments, one for each current setting from 135 to 160 amperes.

Fig. 13 shows the regulating panel of the Ashcraft Super Cinex S 1712 12 phase rectifier. At the top of panel are 5 sets of studs for AC power lines of from 200 volts to 250 volts. Your electrician should advise you as to the power line voltage in your theatre. Set the top connecting strap on the proper studs for that voltage. In the diagram this strap is set on the 220 volt studs.

To select the correct current it is only necessary to set the solid bar strap on the correct current selection studs which range from 135 amperes on the left to 160 amperes on the extreme right.

The electrician must know how much current is drawn from the line for maximum output of DC current for the arc. At 220 volts the power lines to the rectifier should be large enough to supply 40 amperes per phase. If your power line voltage is 240 the amperes per phase will be less, approximately 34-35 amperes. At normal arc current 145-155 the current from the line will be approximately 31 amp. per phase or a total power consumption of 12 K. V. A.

The wiring diagram, both internal and external, from the rectifier to the power switch is shown in Fig. 14. Fig. 15 gives the dimensions of the rectifier and location of the junction box on the side of the rectifier.

Correct Ballast Resistors for Use with Super Cinex Lamps

In cases where generators and ballast resistors must be used or where Alternating Current is not available but Direct Current is, the current regulating ballast resistors should be adapted to the specific requirements of the Super Cinex Lamp.

The information to be supplied to the resistor manufacturer is as follows:

3 point Ballast Resistors
Specify Generator or Line Voltage
Striking Current 90 Amperes
Minimum Arc Current 130 amperes, 48 volts
Maximum Arc Current 180 amperes, 70 volts
Normal Working Range

150 amperes, 56 volts
165 amperes, 64 volts.

Rheostat must be supplied with at least 4 current adjusting switches.

The Chas. Besselor Co. of Newark, N. J. manufactures a rheostat with the above specifications.

Super Cinex Lamp for Use with
Todd A-O Phillips Projector

Fig. 16 shows the Super Cinex Lamp mounted on the Todd-A-O Phillips Projector. Due to the particular construction of the projector a special lamphouse can be supplied, the designation of which is CX 160T. This lamp is designed to corrdinate with the Phillips mechanism to produce the maximum light and best distribution. This lamp is not our standard Super Cinex but identical except for the lamphouse front and overall length. A special sub-base is provided for mounting the lamp on the projector bed, also a projector rear light entrance plate for the mechanism.

Dimensions of this lamphouse as well as our standard Super Cinex are shown in Fig. 17.

The identical working distance of 31-1/2" is to be used however the focal distance is to be adjusted for the 70mm aperture.

Mounting the Super Cinex Lamp on the Todd A-O projector base.

Place the lamphouse on the projector base, install reflector in its holder. With the projector gate in its closed

or running position, push the lamphouse as far forward as possible. This should locate the rear of the reflector 31 1/2 in. from the aperture. The four slotted holes in the lamphouse sub-base should now line up with the four slots in the projector base.

Now slip the 5/16" x 1 1/2" x 10" tapped locking bars crosswise between the two lamphouse rails, aligning them with the slots in the lower rail. Using the 5/16 18 capscrews supplied with the sub base, with washers under the heads, pass the capscrews through the projector base slots, through the lamphouse base slots - screw them into the locking bars. Forward movement of the lamphouse can be made as the slots in the projector base will allow 2" longitudinal motion. Lateral adjustment is possible by means of the lamphouse base slots.

Accurate lamphouse optical lineup with that of the projector is essential. Vertical adjustment is by means of adding the slotted steel washers on the mounting bolts betweeen the bottom sub-base rail and the projector base. Care should be used that the mounting bolt ends do not extend far enough through the locking bars to strike and bend the sheet metal lamphouse base.

A projector light entrance plate is supplied to replace the plate and cone of the Phillips projector. This will allow the large light beam to enter the projector without loss.

65/70 MM Wide Film Projection With Ashcraft Super Cinex Lamps

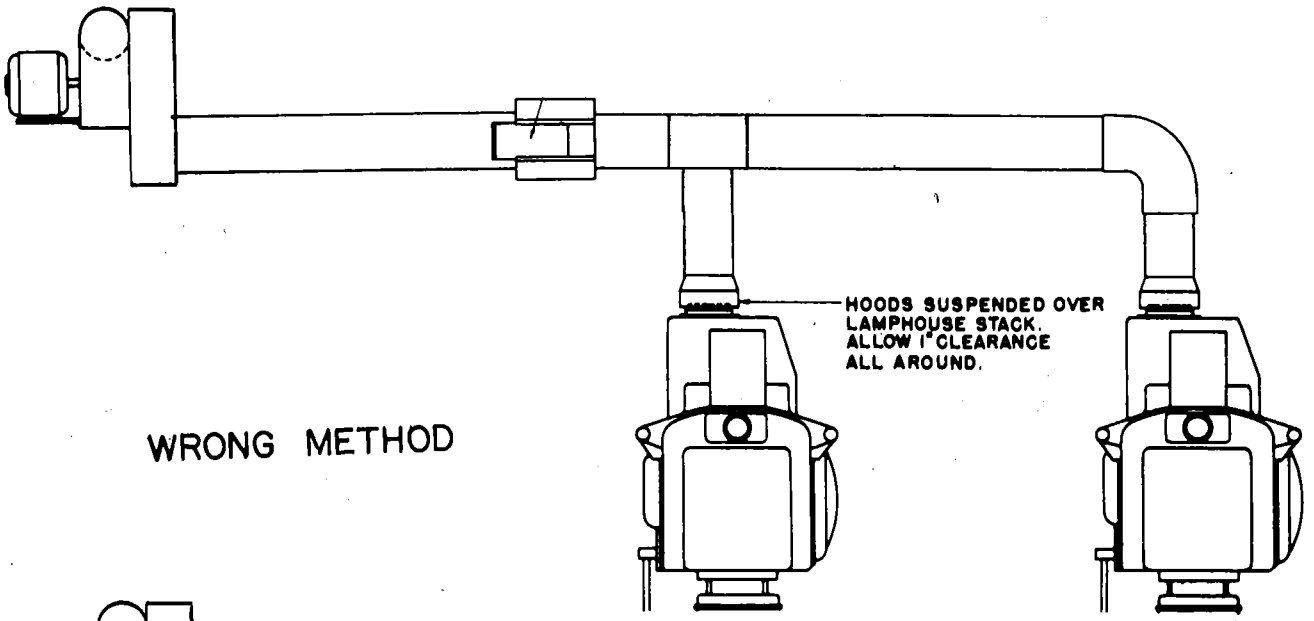
The Super Cinex Lamp is designed to project with equal efficiency either 35mm or 70mm film. No change of reflectors is necessary. The 18" Ashcraft Balcold reflector is standard for both widths of film.

As hereinbefore stated, for 35mm projection, a gauge is furnished to set the correct distance from the rear of the reflector to the positive carbon crater end. This distance for 35 mm is 6 11/16". The gauge is to be hooked on the back of the reflector through the center hole then extended to the carbon end.

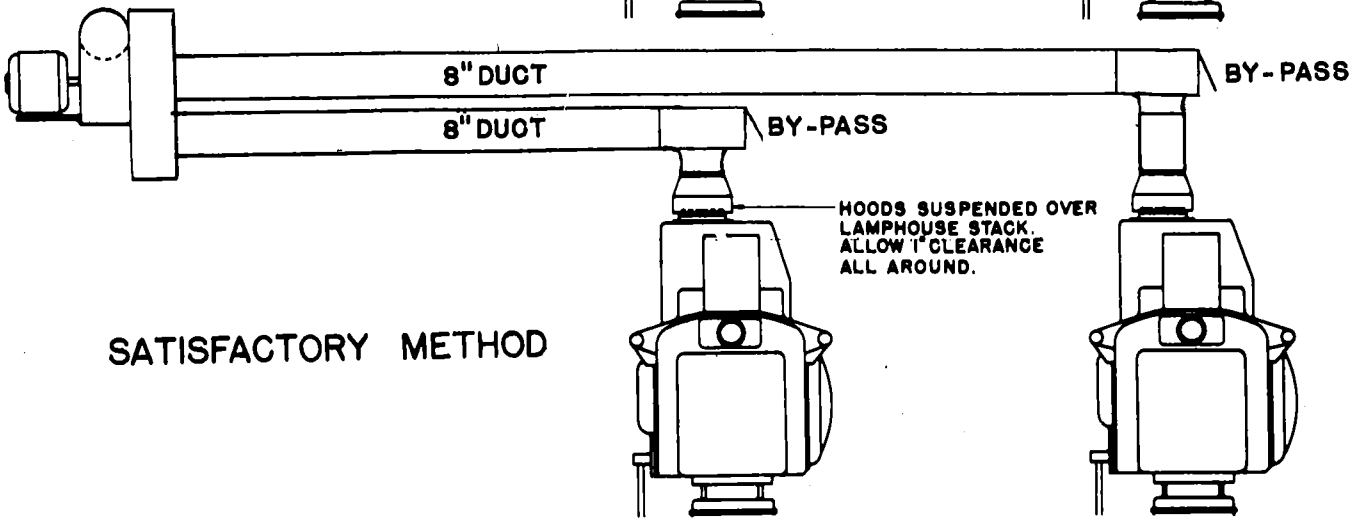
For 70mm projection a gauge is furnished which will set the position of the carbon 6 15/32 from the rear of the reflector. This enlarges the aperture spot diameter from 1 1/2" for 35mm to approximately 2 1/2" which will be necessary to cover the large 70mm aperture.

Correct positioning of the negative carbon tip as illustrated in Fig. 9. is essential for both widths of film will appear identical. Slight adjustment beyond the prescribed crater to reflector distances to obtain the desired light level and distribution may be necessary.

VENTILATING SYSTEMS



WRONG METHOD



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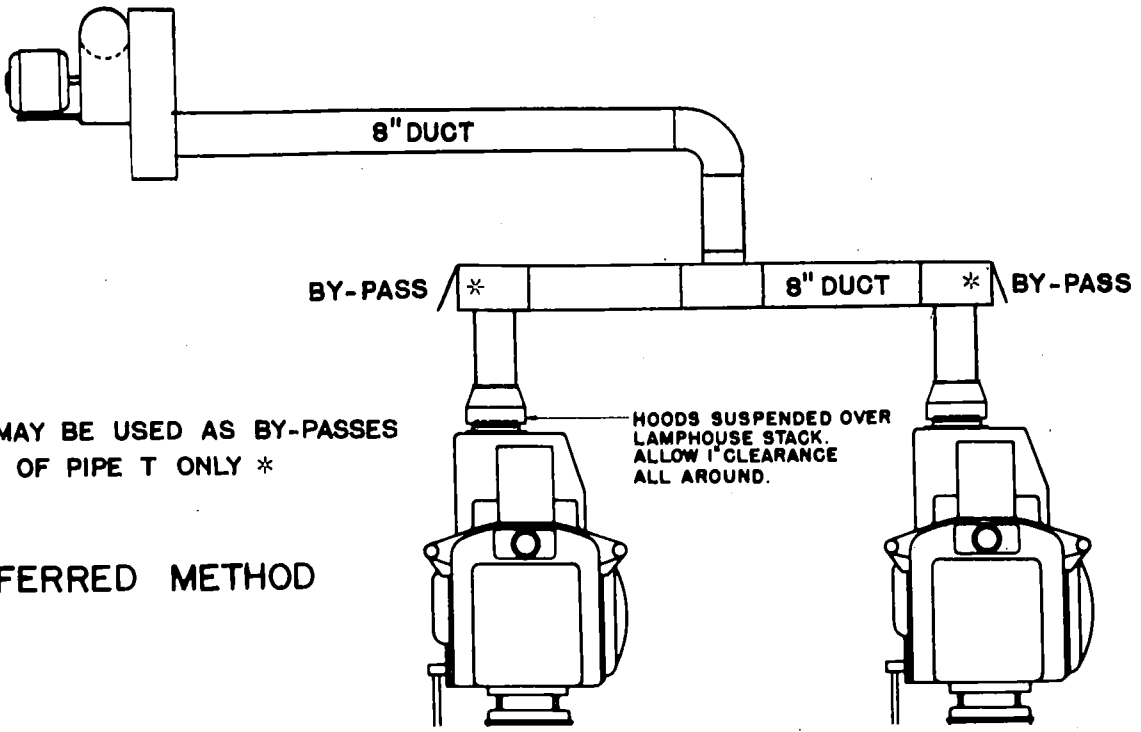
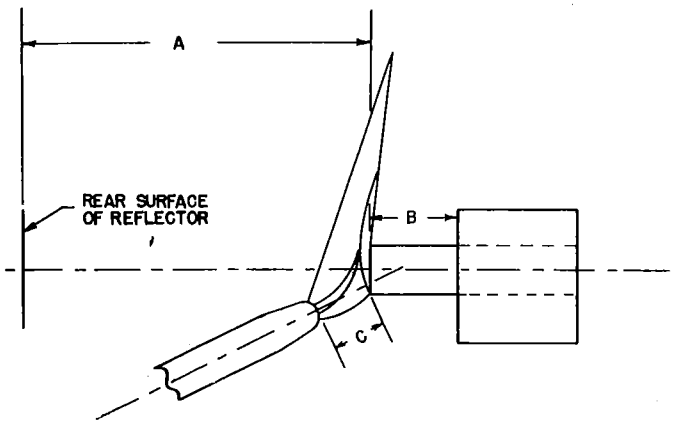


DAMPERS MAY BE USED AS BY-PASSES IN OUTSIDE OF PIPE T ONLY *

PREFERRED METHOD

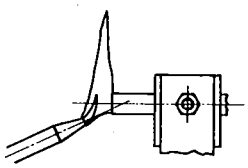


A – 35MM $6\frac{9}{16}$"
70MM $6\frac{15}{32}$"

B – 35MM $\frac{3}{4}$" – $\frac{7}{8}$"
70MM

C – 35MM $\frac{19}{32}$" – $\frac{21}{32}$"
70MM

OPTIMUM RELATIVE CARBON POSITIONS



REDUCES AMPERAGE AND LIGHT

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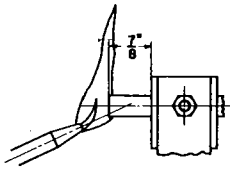
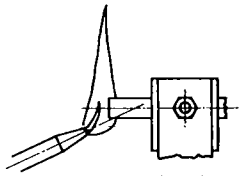
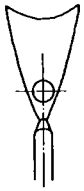




INCREASES AMPERAGE AND UNSTABLE ARC

D



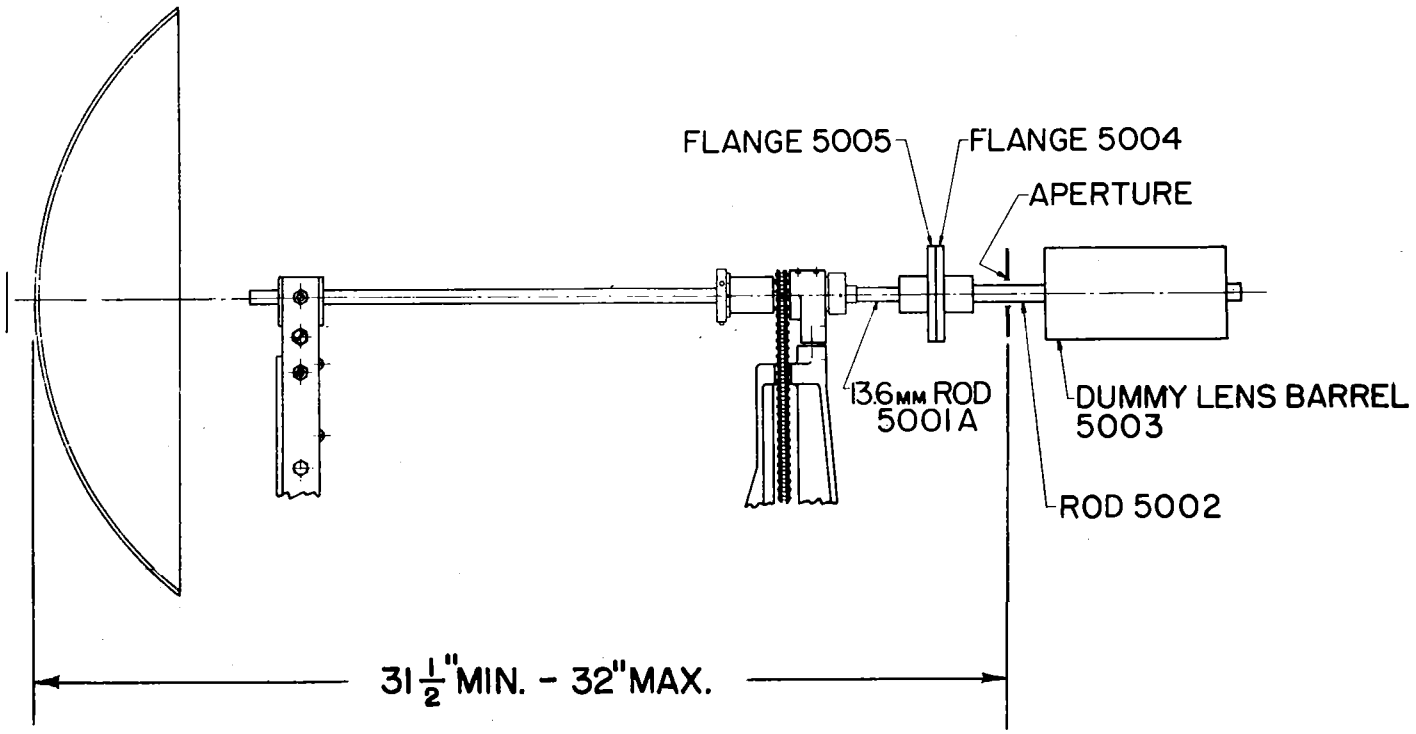
CORRECT CARBON POSITIONING

C

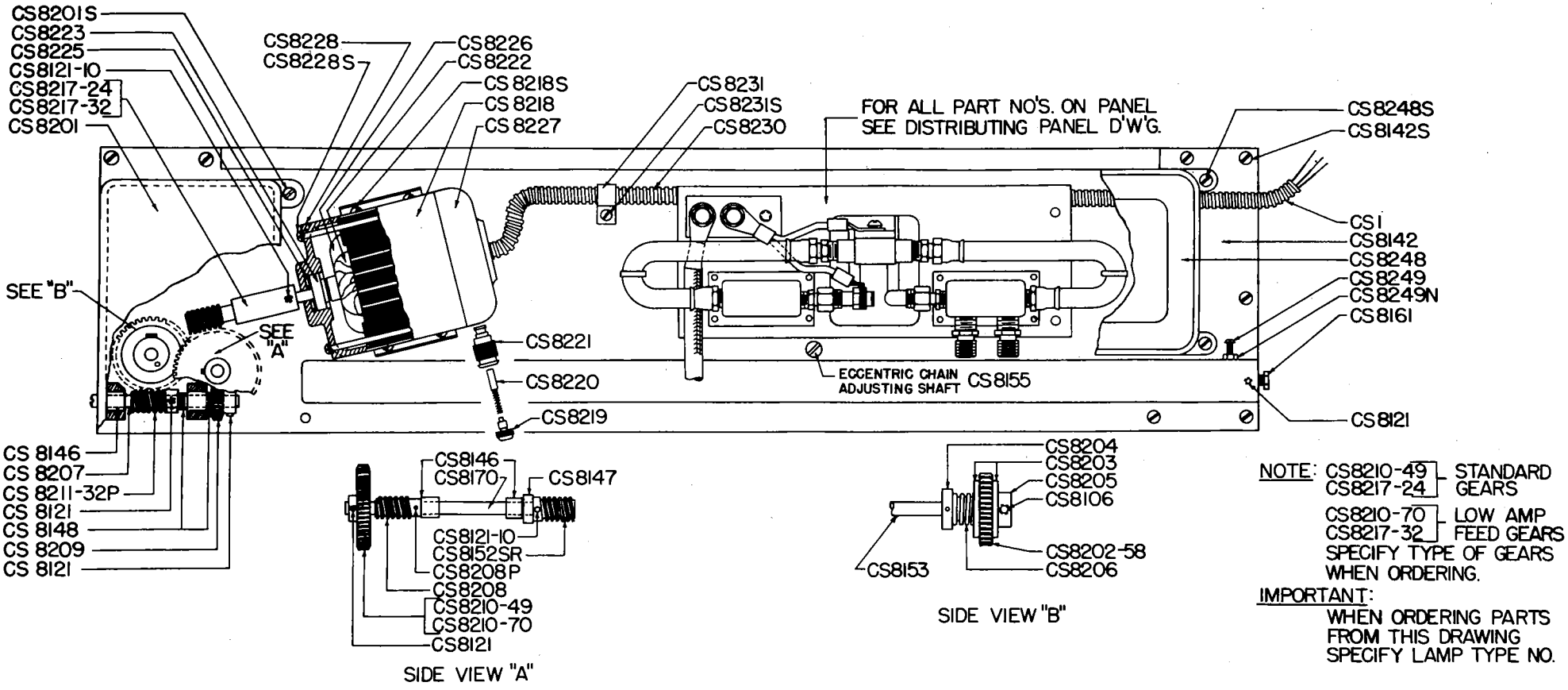
ARC TOO CLOSE VOLTAGE TOO HIGH

B

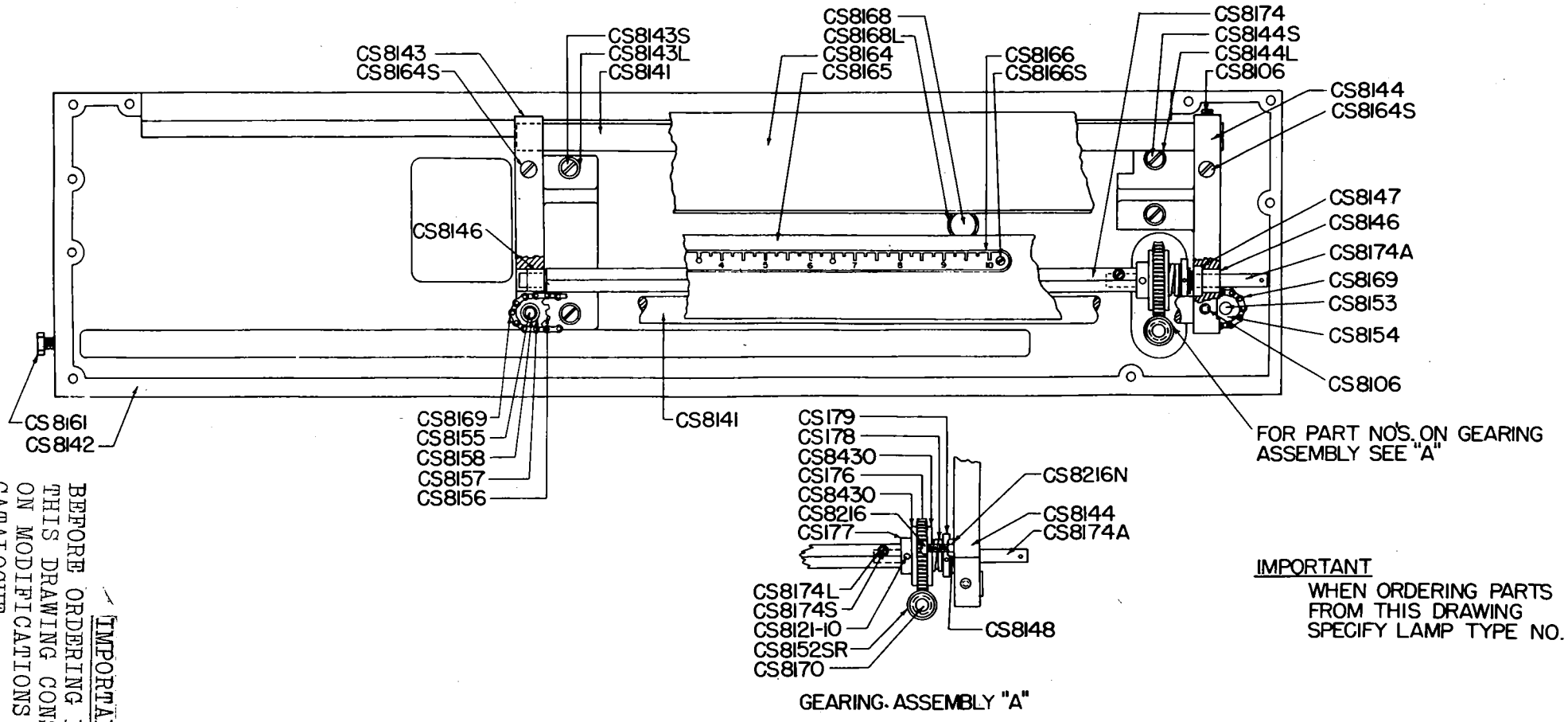
CARBON ALIGNMENT



OPTICAL ALIGNMENT



OUTSIDE ELEMENT BASE



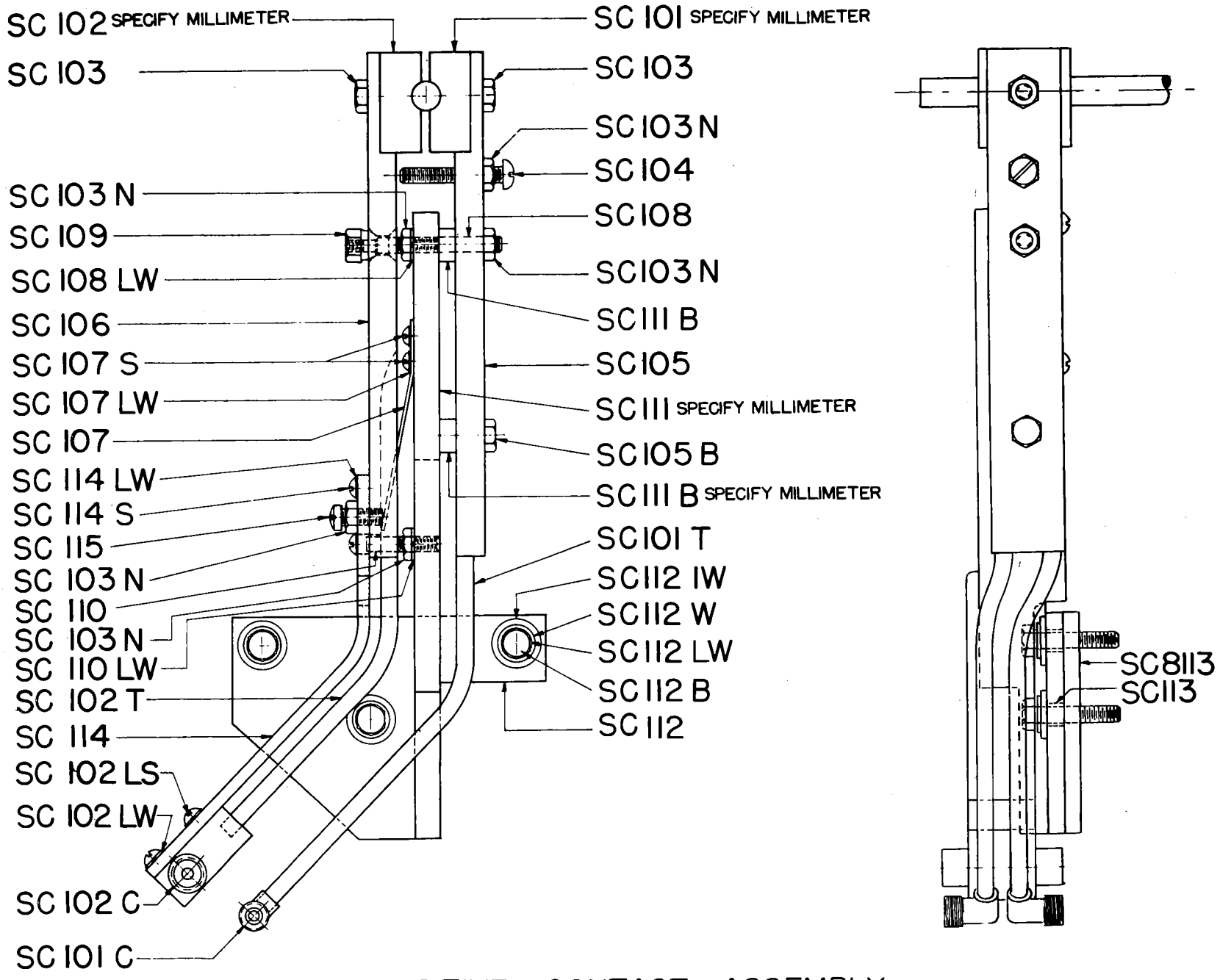
IMPORTANT

WHEN ORDERING PARTS FROM THIS DRAWING SPECIFY LAMP TYPE NO.

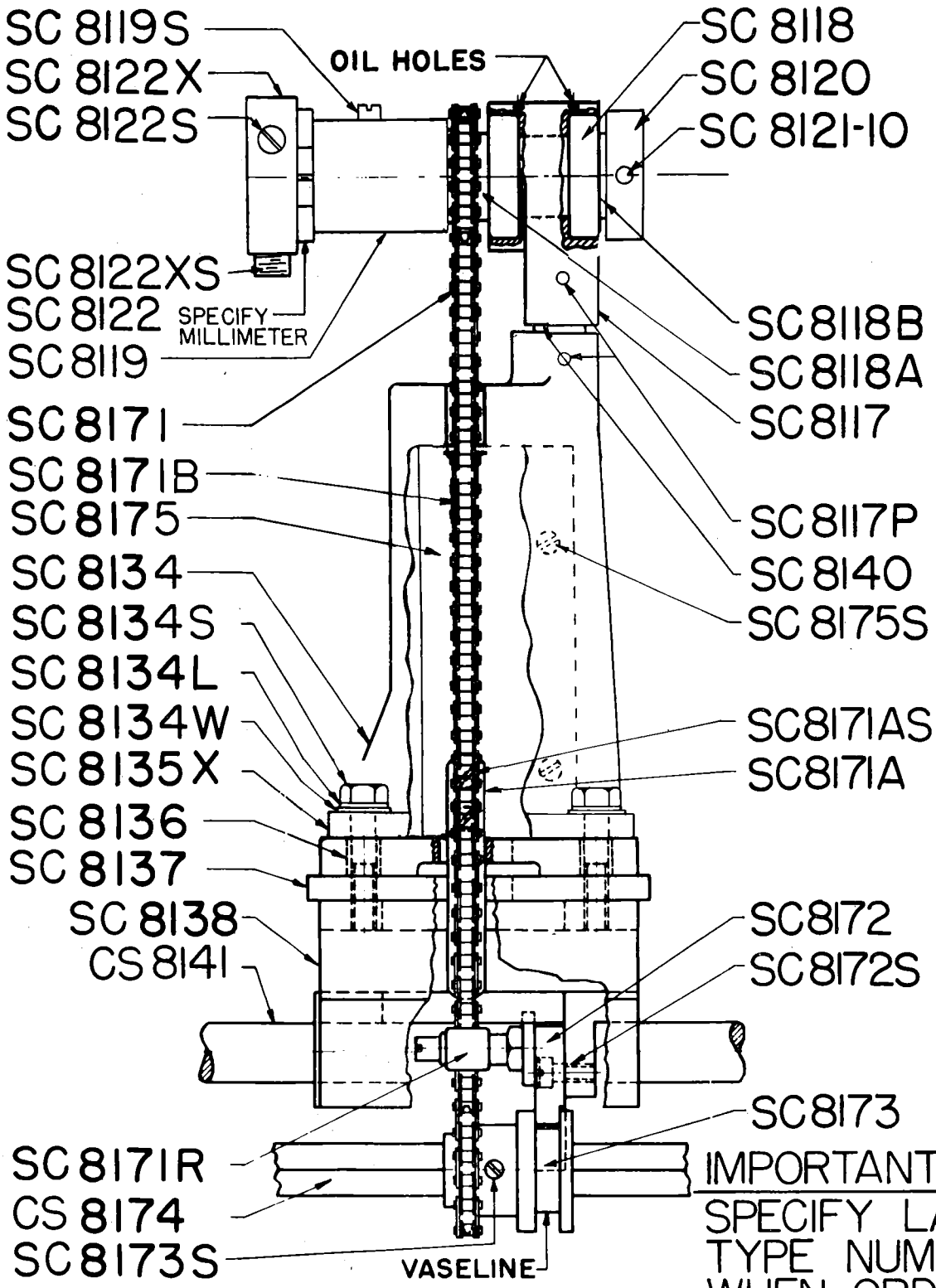
IMPORTANT

BEFORE ORDERING PARTS FROM THIS DRAWING CONSULT SHEET ON MODIFICATIONS AT REAR OF CATALOGUE.

INSIDE ELEMENT BASE



POSITIVE CONTACT ASSEMBLY



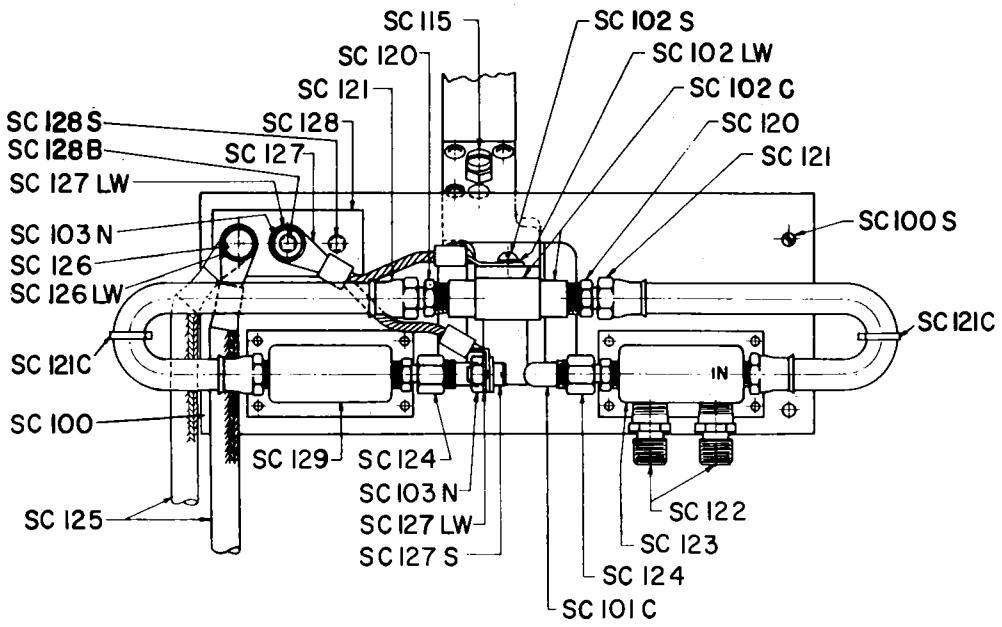
IMPORTANT

SPECIFY LAMP TYPE NUMBER WHEN ORDERING PARTS.

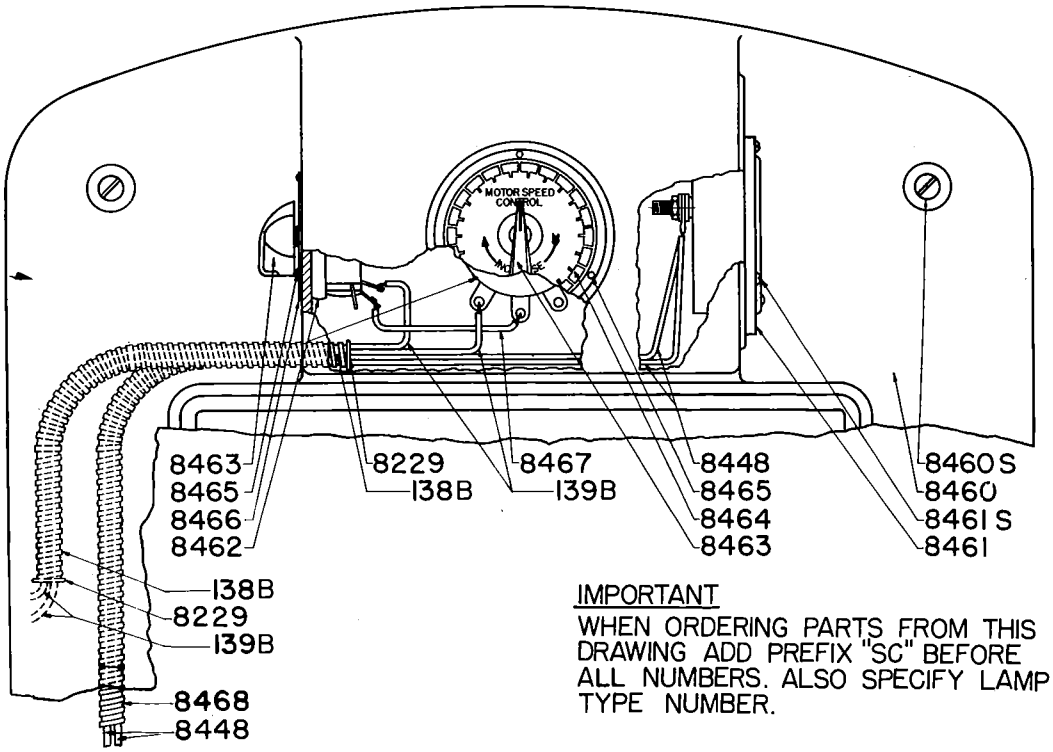
IMPORTANT

BEFORE ORDERING PARTS FROM THIS DRAWING CONSULT SHEET ON MODIFICATIONS AT REAR OF CATALOGUE.

POSITIVE ROTATING & CARRIAGE ASSEMBLY



DISTRIBUTION PANEL



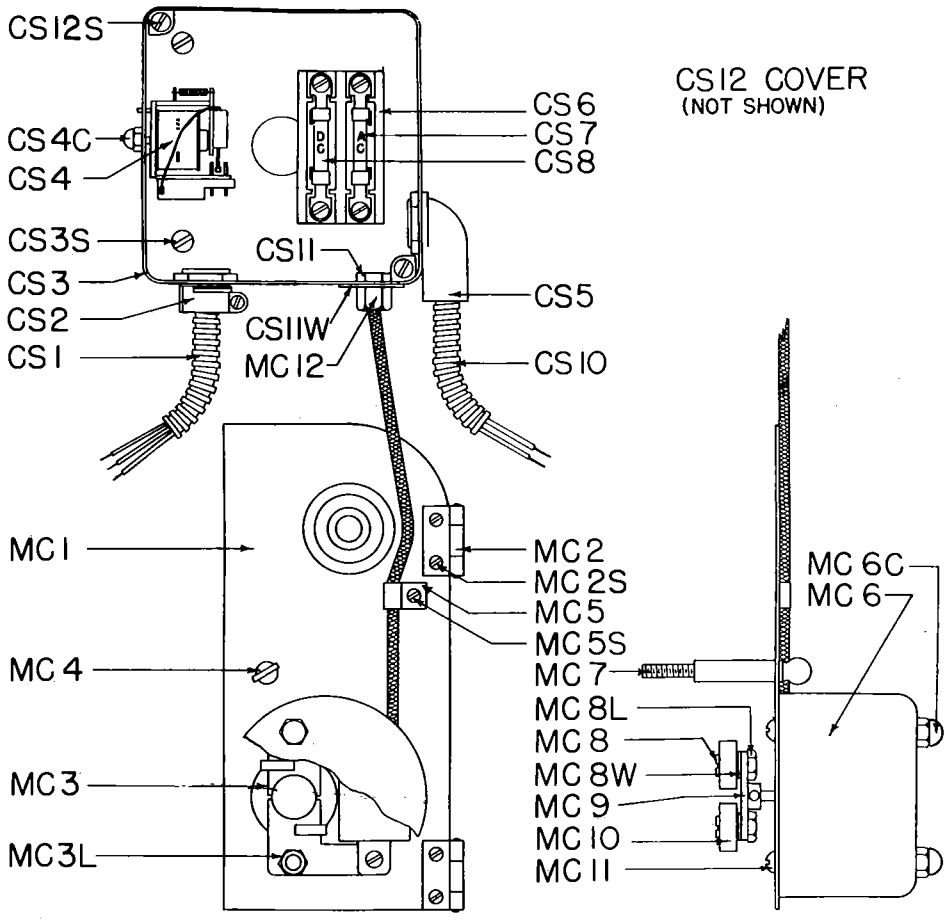
IMPORTANT

WHEN ORDERING PARTS FROM THIS DRAWING ADD PREFIX "SC" BEFORE ALL NUMBERS. ALSO SPECIFY LAMP TYPE NUMBER.

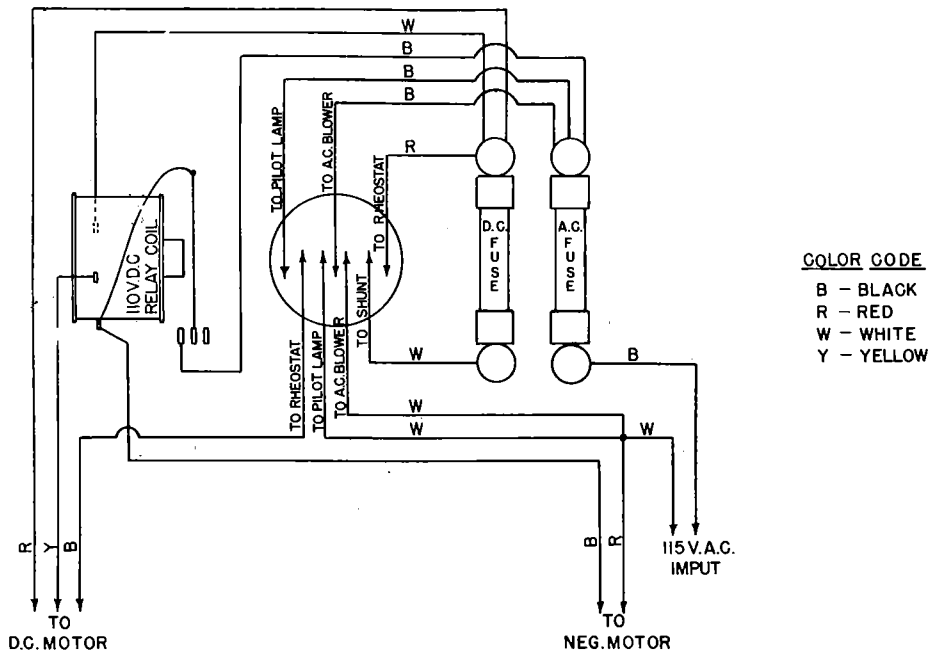
REAR COVER

IMPORTANT

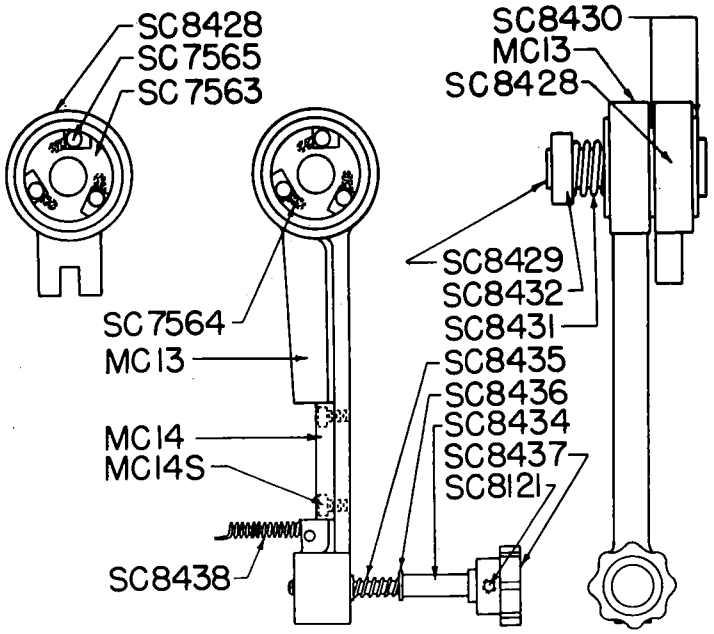
BEFORE ORDERING PARTS FROM THIS DRAWING CONSULT SHEET ON MODIFICATIONS AT REAR OF CATALOGUE.



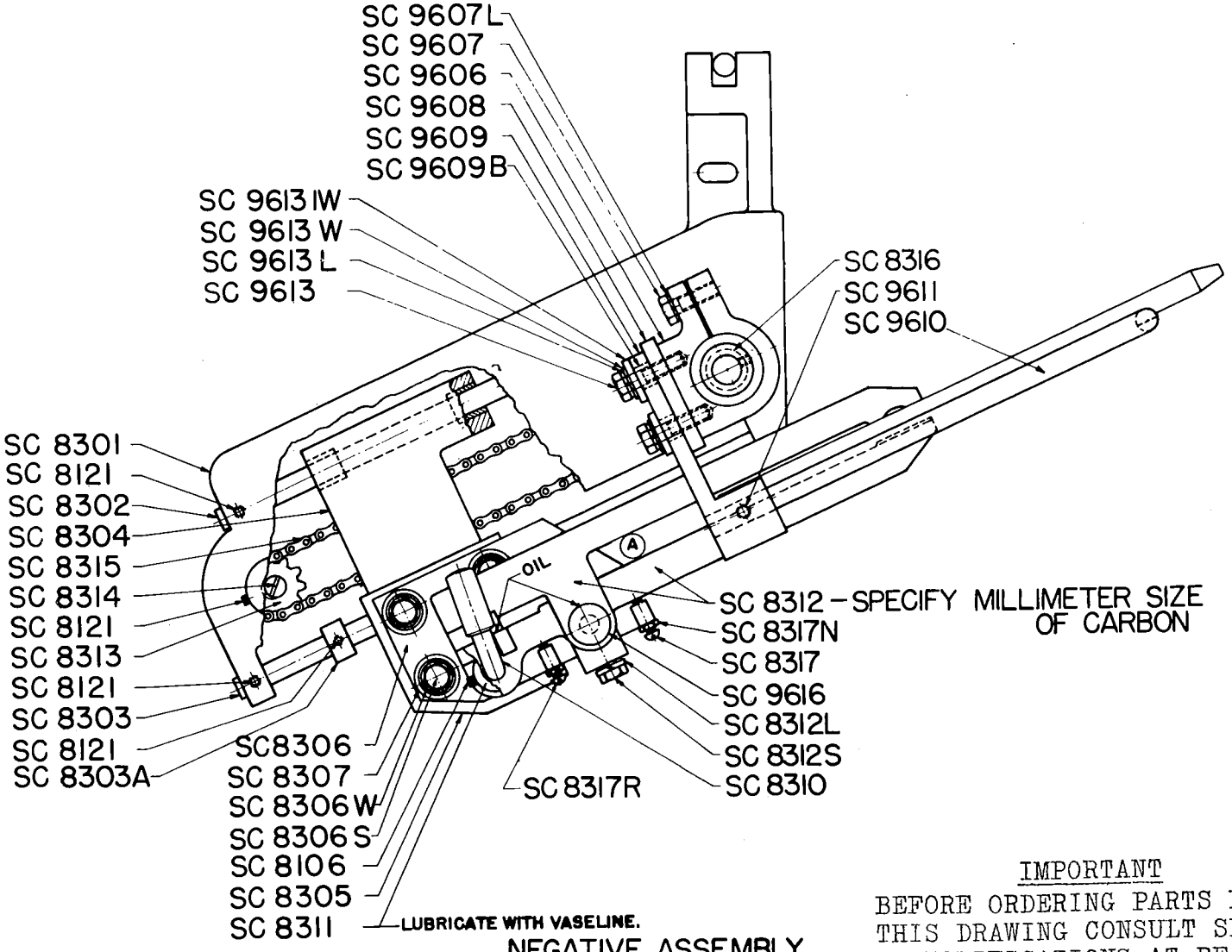
SUPER CINEX
D.C. RELAY, FUSE BOX & SYNCHRONIC NEGATIVE MOTOR CONTROL



WIRING DIAGRAM - SUPER CINEX RELAY & FUSE BOX



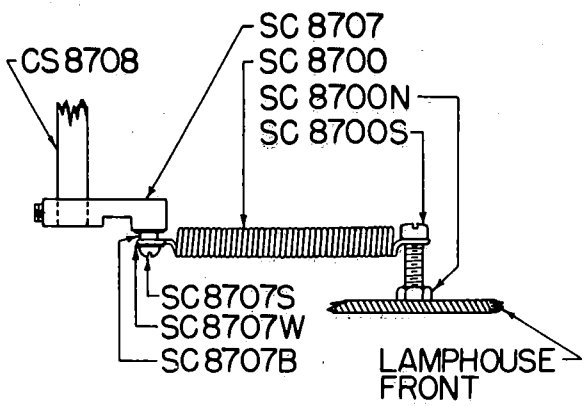
NEGATIVE CLUTCH ASSEMBLY



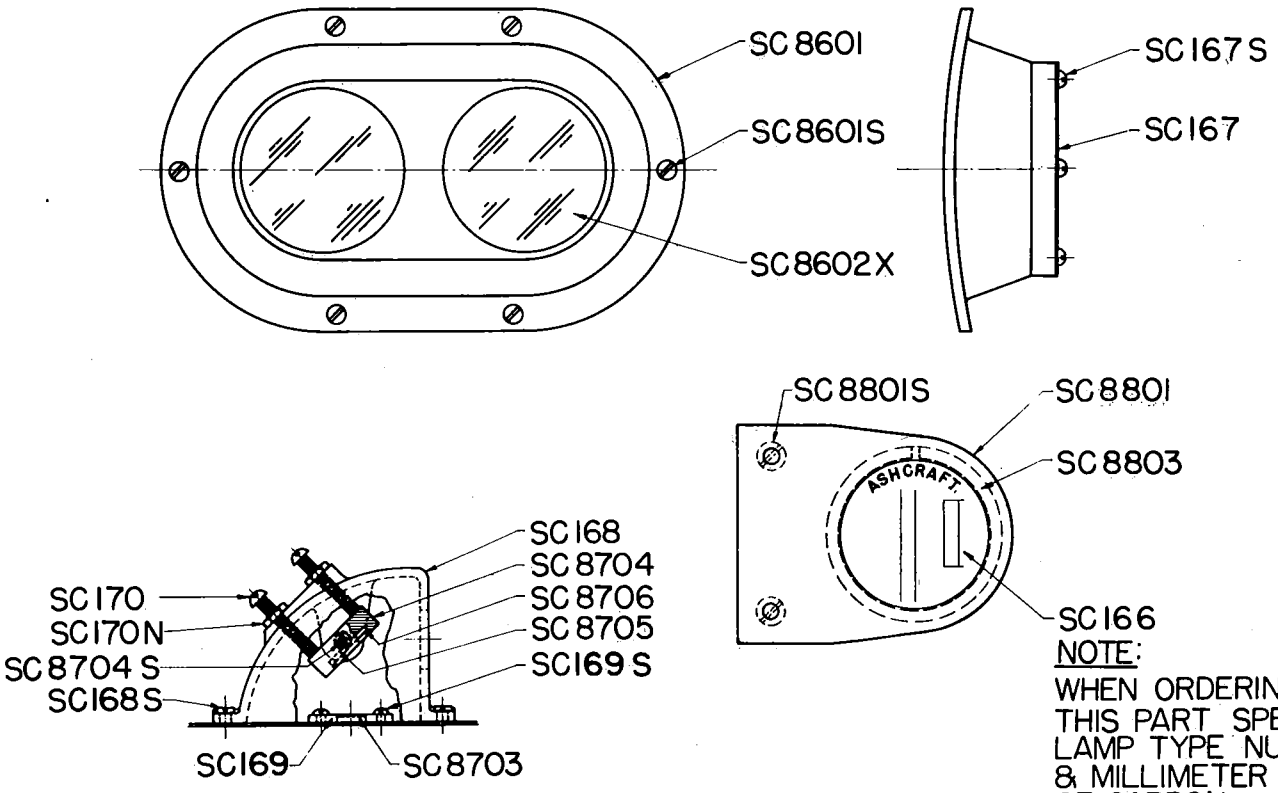
NEGATIVE ASSEMBLY

IMPORTANT

BEFORE ORDERING PARTS FROM THIS DRAWING CONSULT SHEET ON MODIFICATIONS AT REAR OF CATALOGUE.

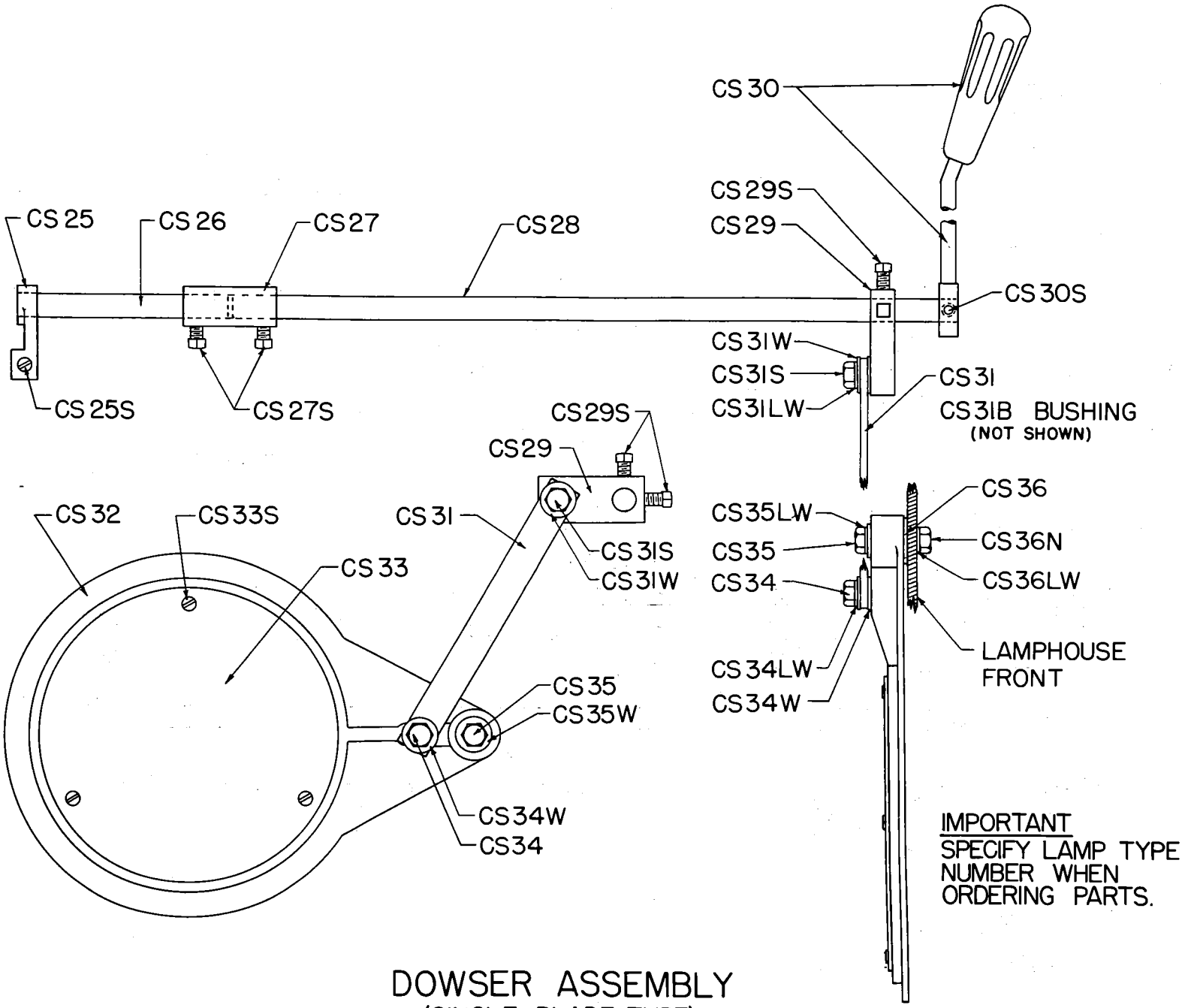


DOOR SPRING ASSEMBLY

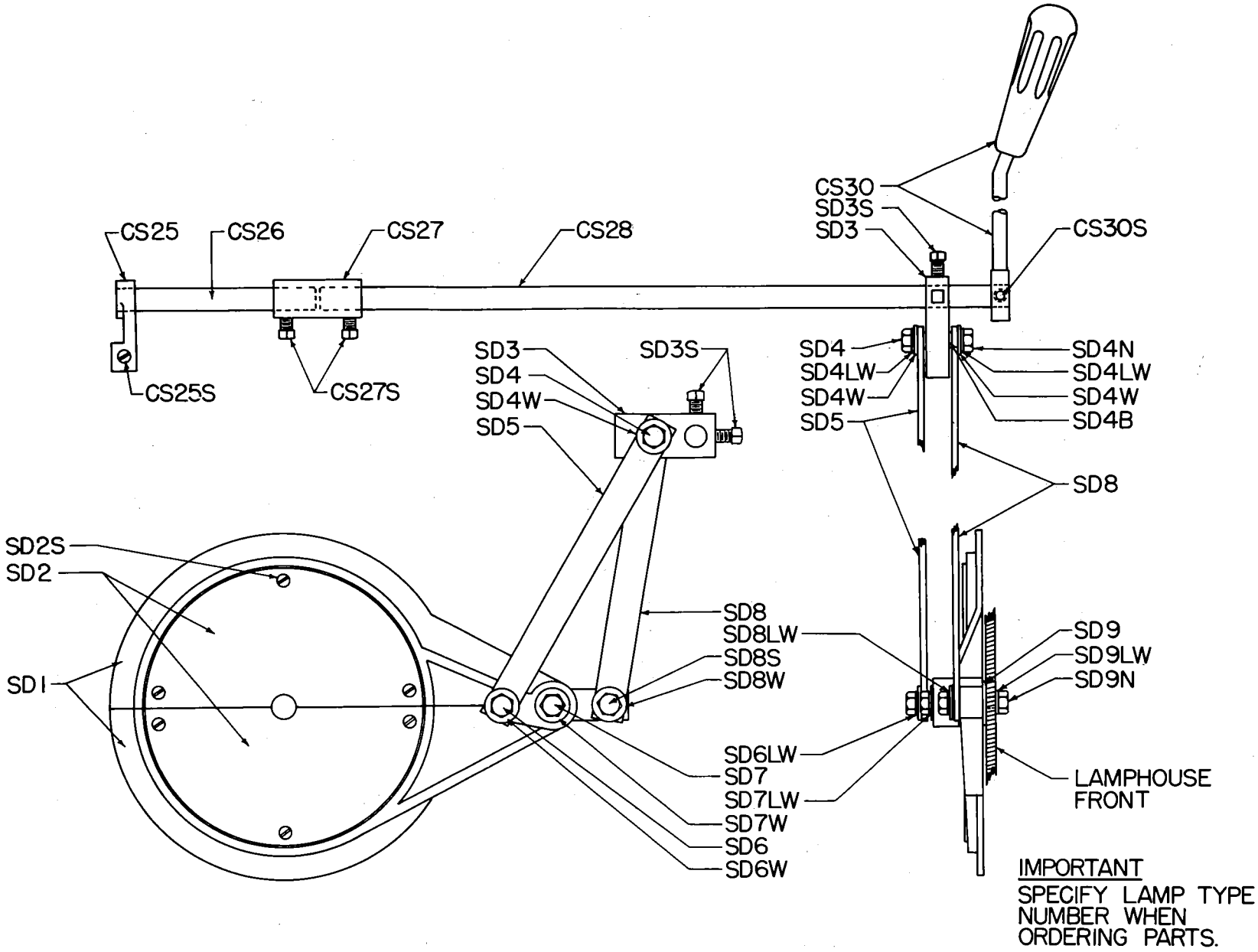


NOTE:
WHEN ORDERING THIS PART SPECIFY LAMP TYPE NUMBER & MILLIMETER SIZE OF CARBON.

ARCSCOPE, SCREEN & PORT FRAME

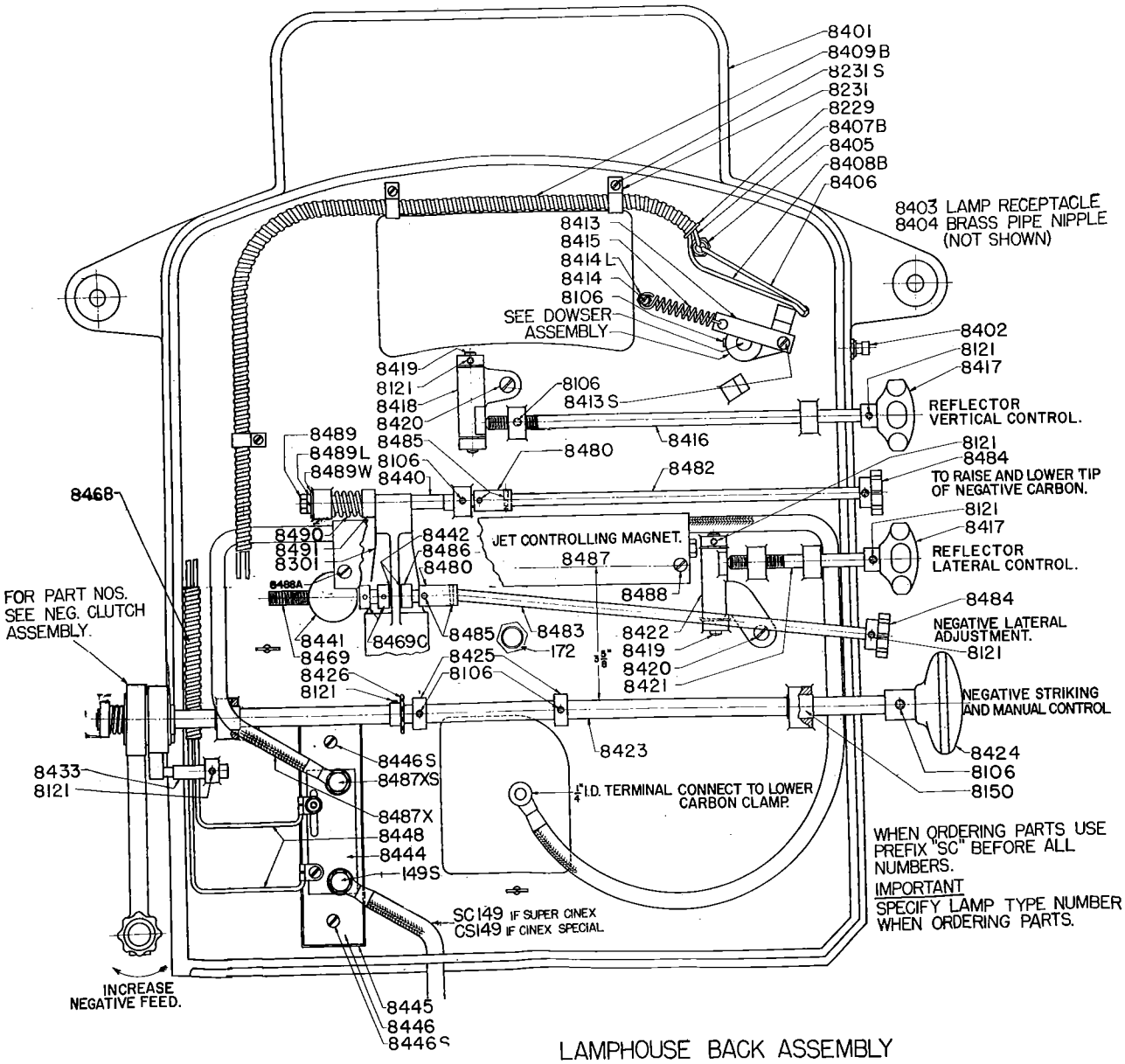


DOWSER ASSEMBLY
(SINGLE BLADE TYPE)



DOWSER ASSEMBLY

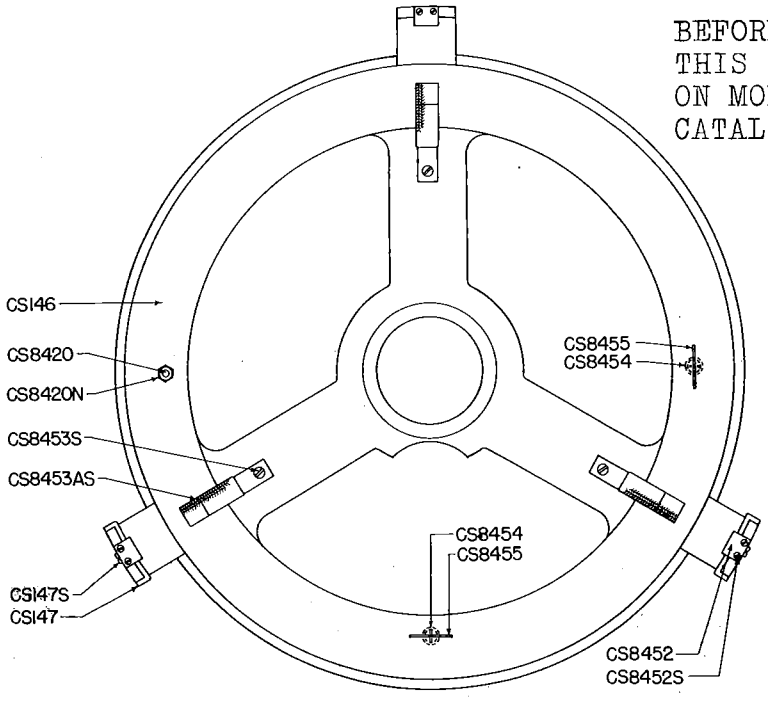
(SPLIT BLADE TYPE)



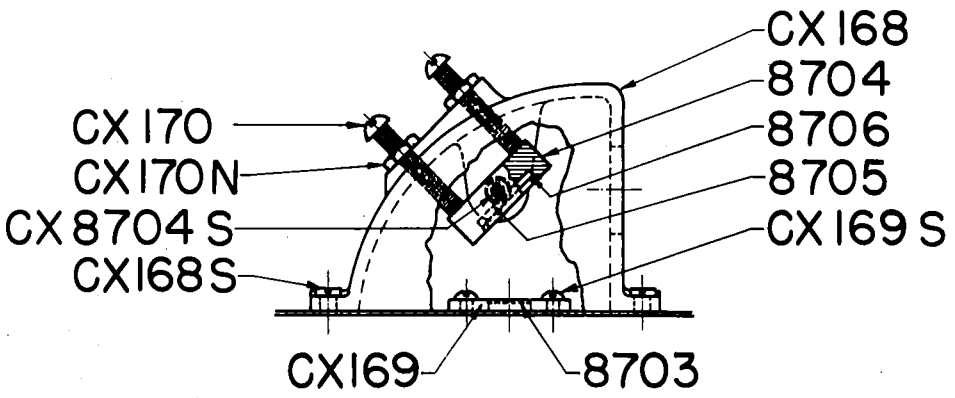
LAMPHOUSE BACK ASSEMBLY

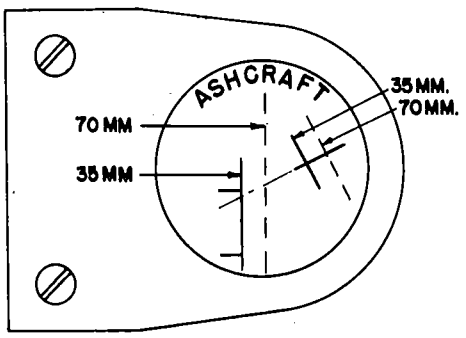
IMPORTANT

BEFORE ORDERING PARTS FROM THIS DRAWING CONSULT SHEET ON MODIFICATIONS AT REAR OF CATALOGUE.



18" REFLECTOR RING ASSEMBLY





ARCSCOPE AND SCREEN

FIG. 12

DIMENSIONS OF ASHCRAFT S-1612 SELENIUM RECTIFIER

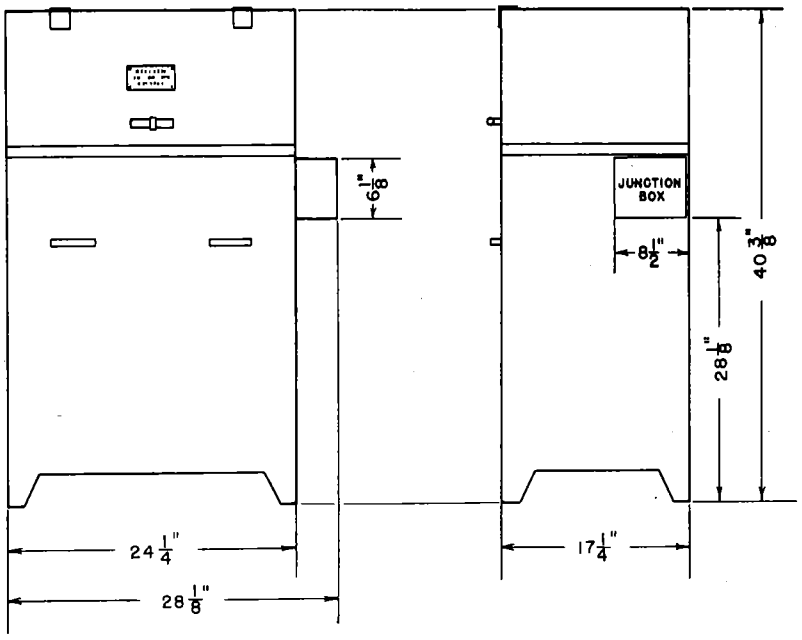


FIG. 15

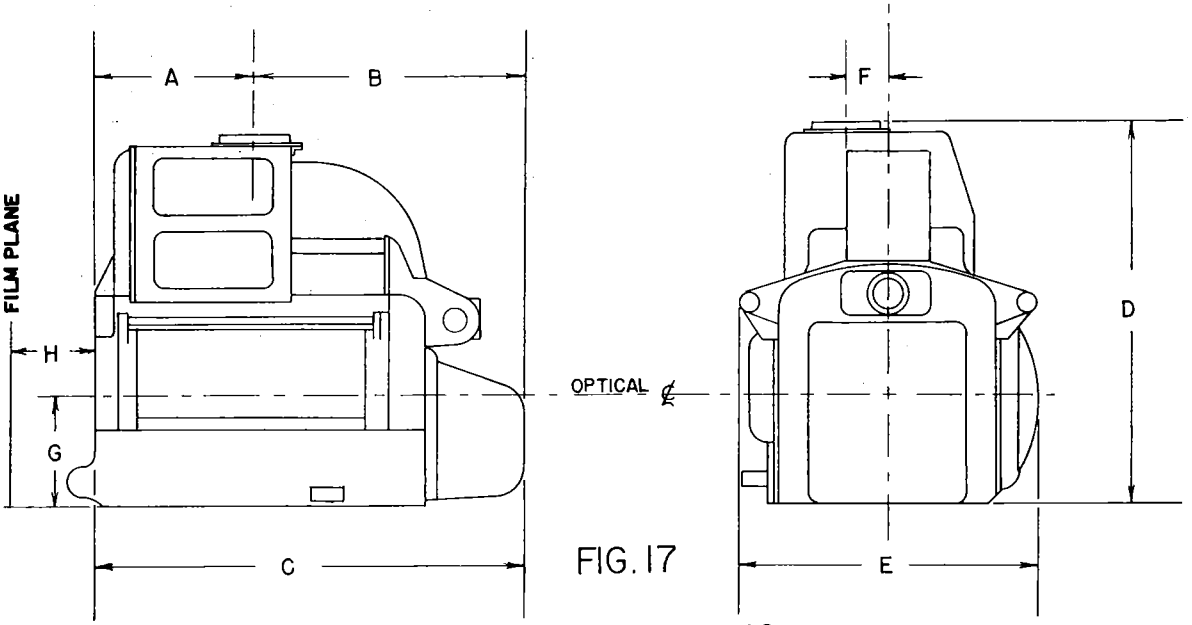
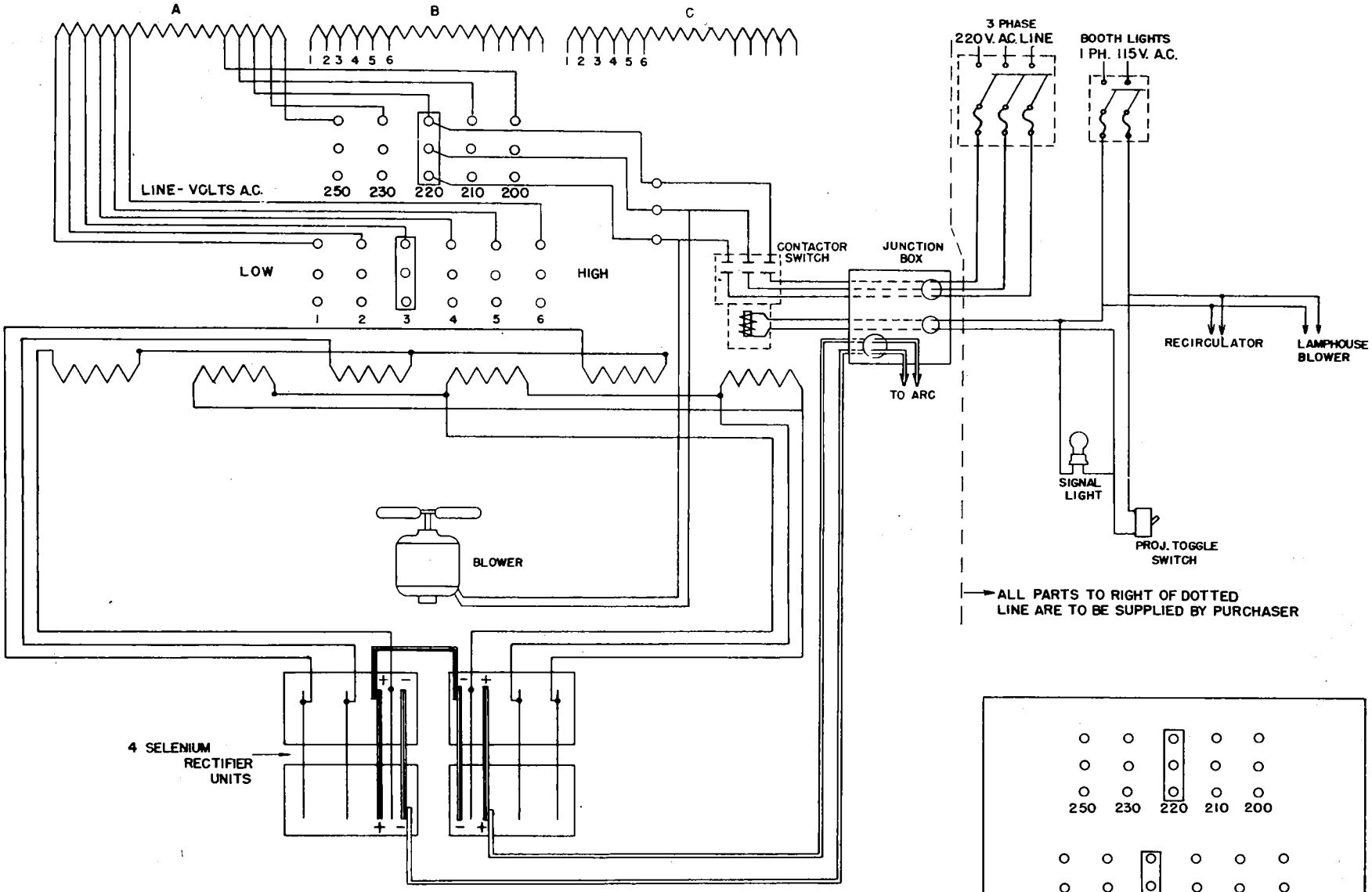


FIG. 17

	STANDARD	PHILLIPS
A –	15 5/8"	15 5/8"
B –	22 9/16"	21 1/16"
C –	38 3/16"	36 11/16"
D –	37 1/8"	37 1/8"
E –	27 3/4"	27 3/4"
F –	4"	4"
G –	8 15/16"	8 15/16"
H –	6 1/4"	7 1/2"



S 1612 WIRING DIAGRAM

FIG. 14

S1612 RECTIFIER REGULATING PANEL

FIG. 13

SUPER CINEX 35 - 70 MM
INSTALLATION
TODD A.O. PROJECTOR

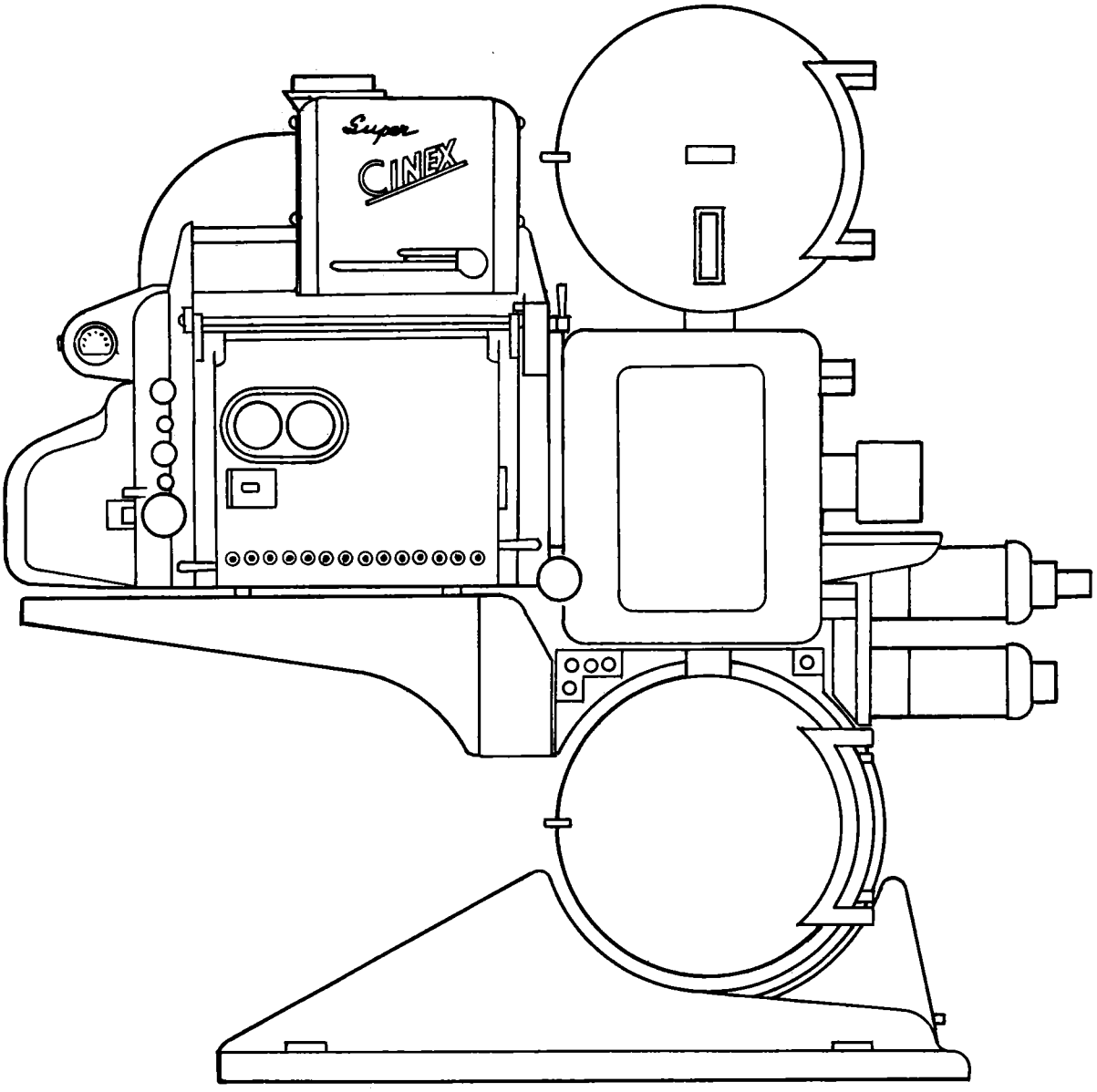
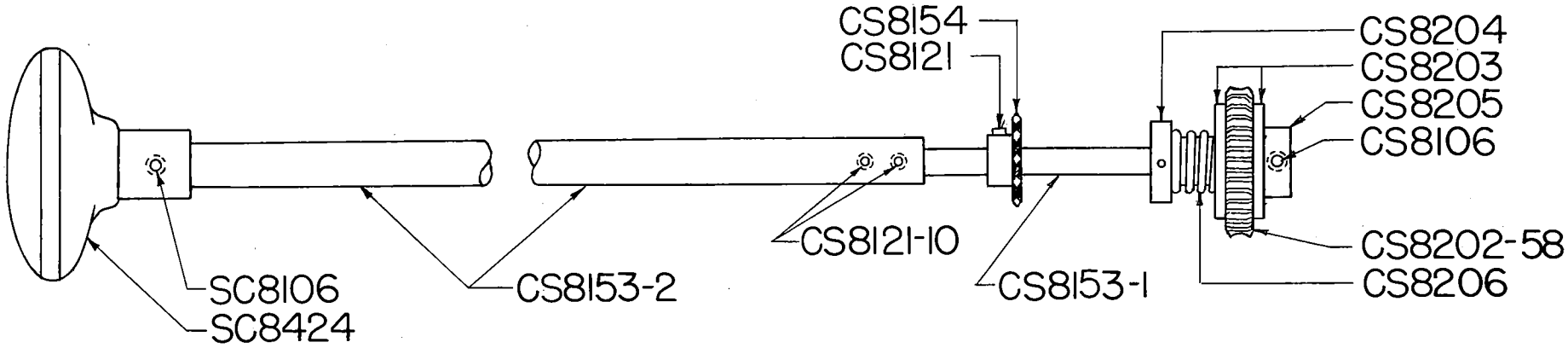
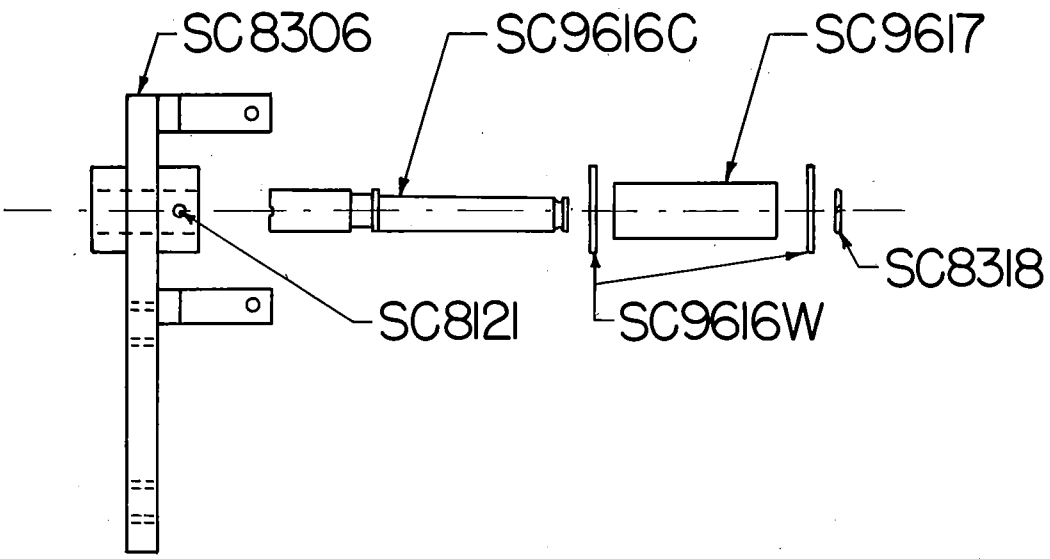


FIG. 16

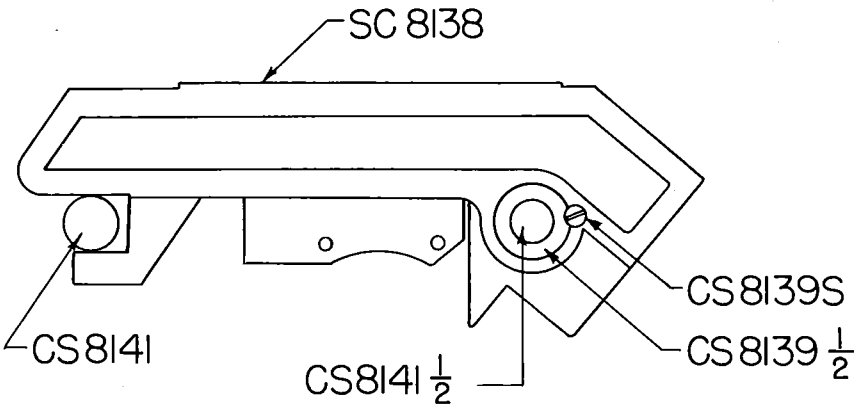


MODIFICATIONS

POSITIVE CONTROL SHAFT ASSEMBLY



NEGATIVE JAW MOUNTING ASSEMBLY



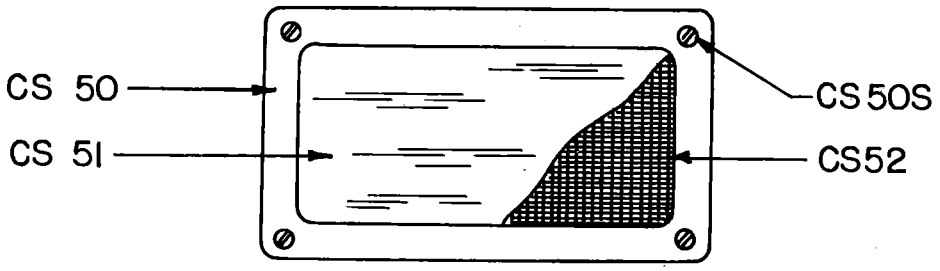
POSITIVE CARRIAGE

MODIFICATIONS

RE: REAR COVER

When ordering part No. SC-8460 use part No. SC-8460C
SC-8461 use part No. SC-8461C

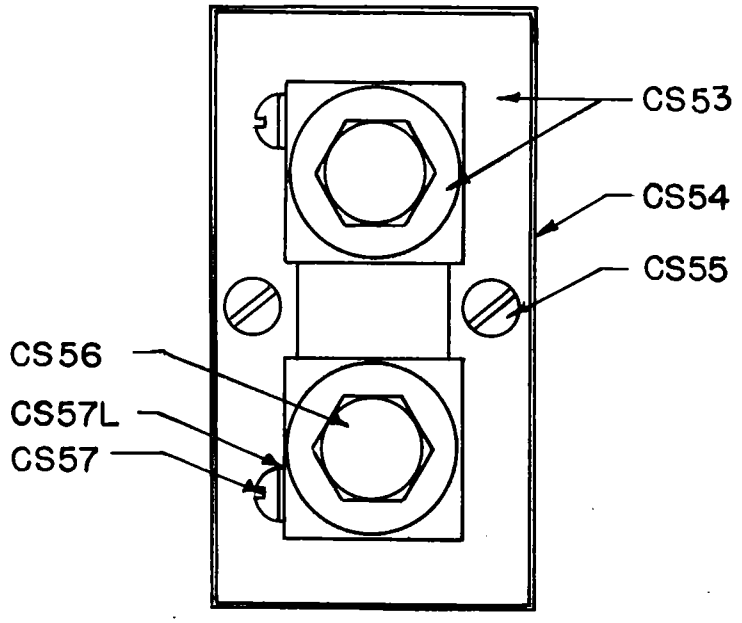
RE: ARCSCOPE, SCREEN & PORT FRAME



PORT FRAME

RE: LAMPHOUSE BACK ASSEMBLY

When ordering Shunt parts consult drawing below



SHUNT ASSEMBLY