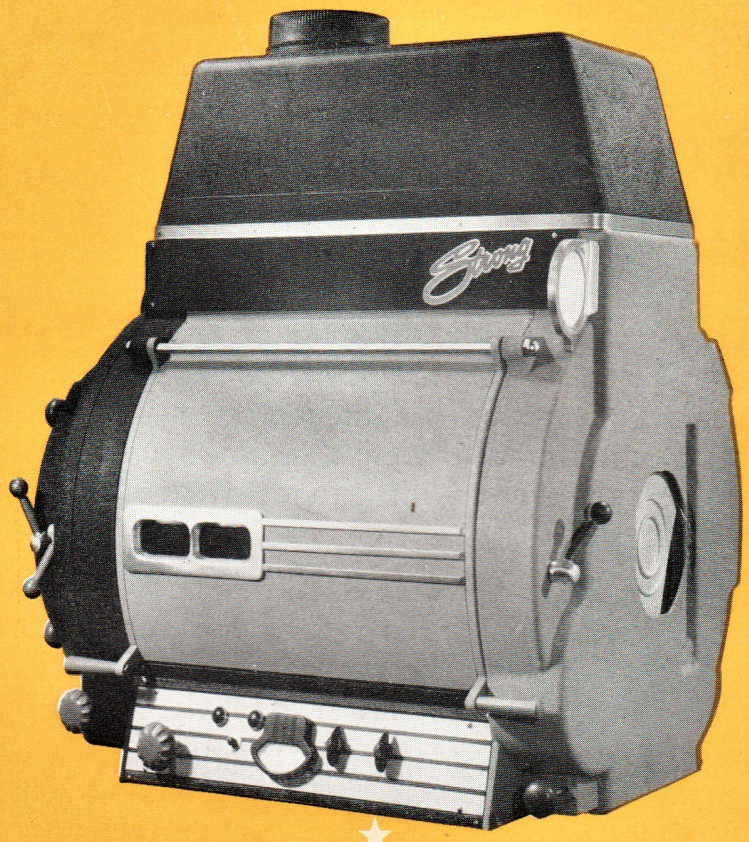
THE STRONG JETARC PROJECTION LAMP



THE STRONG ELECTRIC CORPORATION
TOLEDO 1, OHIO

Strong

A GENERAL PRECISION COMPANY

THE STRONG JETARC PROJECTION LAMP

THIS IS BY FAR THE MOST POWERFUL projection arc lamp ever developed. It delivers such a tremendous amount of light that what has heretofore been the finest projection of any gauge film by any process pales by comparison of brilliance when this new light source is installed. Unbelievably better screen images are now possible, even when projected on the largest screens in existence.

AN INCREASE IN PROJECTED LIGHT VOLUME of 51% over any other lamp on the market using the commonly available f1.7/f1.8 lens is afforded with this new arc when used in the projection of any width film, by any of the various processes, and with any size aperture.

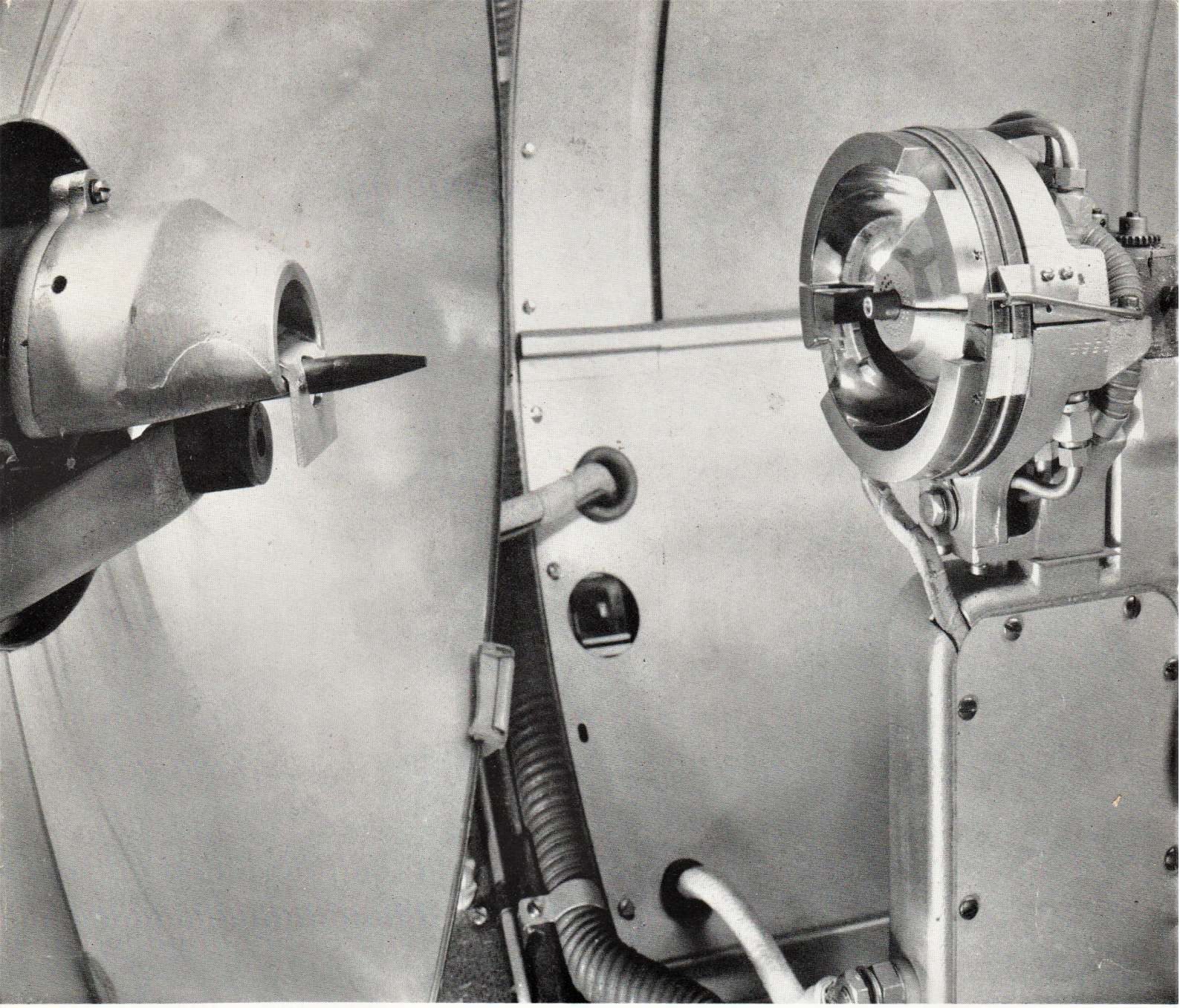
THE LAMP DELIVERS 46,000 LUMENS when projecting small aperture 35mm pictures (8.25 x 6.00); 55,000 lumens for CinemaScope 35mm (.839 x .715 or .912 x .715); 56,000 lumens for MGM 65mm and Todd-AO 70mm; and 65,000 lumens for Fox CinemaScope 55mm (1.340 x 1.06).

ONE HUNDRED PERCENT DISTRIBUTION of light can be attained over the entire screen area. A minimum in-focus distribution of 80% is afforded when projecting through a 35mm aperture with a f1.7/1.8 lens.

A TOTALLY DIFFERENT SYSTEM of producing light by carbon arc than that of present commercial techniques was necessary to attain these new high standards of screen illumination. In the conventional manner of burning carbons the light projected to the screen is picked up solely from the flat disc-like arc source by a single mirror. The development of this new system not only resulted in an inherent higher brightness, but also produced a light source of such THREE-DIMENSIONAL shape that a much more effective optical system could be utilized. The higher brightness derives from the fact that brilliance of an arc increases as it is constricted.

CONSTRICTION OF THE ARC has been accomplished by air jets arranged in concentric circles around the positive carbon and directed toward its burning end. The air pressure at these jets is supplied by a blower which is an integral part of the lamp.

DUE TO THE RESULTING CYLINDRICAL shaped light source, the light pickup angle can be increased to more than 260°. Since the conventional reflector pickup angle is only 155-160°, an auxiliary 4-inch spherical reflector was located behind the positive carbon to utilize this increased available pickup angle. This auxiliary reflector picks up from the arc flame the edge light that would ordinarily be lost and reimages this light source so as to be picked up by the main mirror and combined with the light which is picked up from the crater. These auxiliary optics alone increase the total lumens on the screen 12-15%.



THE 10MM x 27" NON-ROTATING ULTREX positive burns at 140 to 160 amperes and 70 to 78 volts in conjunction with a rotating 7/16" x 12" solid graphite negative carbon. An alternate positive, the 10mm x 25" or 27" Hitex, may be burned at 125 to 140 amperes or a 10mm regular positive at 110 to 125 amperes.

THE MAIN MIRROR, AN INTEGRAL PART of the rear door, is of the glass cold type and is 21 inches in diameter—the largest reflector ever put into regular production. All film sizes can be projected without any change of reflectors.

THE LAMP HOUSE AND REFLECTOR are completely air conditioned. Aperture heat generated by the projection beam is no greater than when burning an 8mm copper coated trim at 70 amperes without a heat filter. All the direct products of combustion, soot and smoke are withdrawn by a 100 cfm suction blower which completely changes the air in the lamphouse every six seconds. The auxiliary mirror, and positive and negative carbon heads are water cooled.

A WATER FLOW AND AIR FLOW SWITCH controls an interlock to contactor to prevent energizing of the arc except when these cooling agents are operating.

A SEPARATE MANUAL control in one easy motion gives much quicker and more positive striking. At the same time it automatically positions the arc for the proper gap length of ½". Controls are provided on the instrument panel for controlling the power output of the associated rectifier and also for turning the rectifier on and off.

THE OVERALL DIMENSIONS of the lamp are 45" long x 29" wide and 43" high.

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