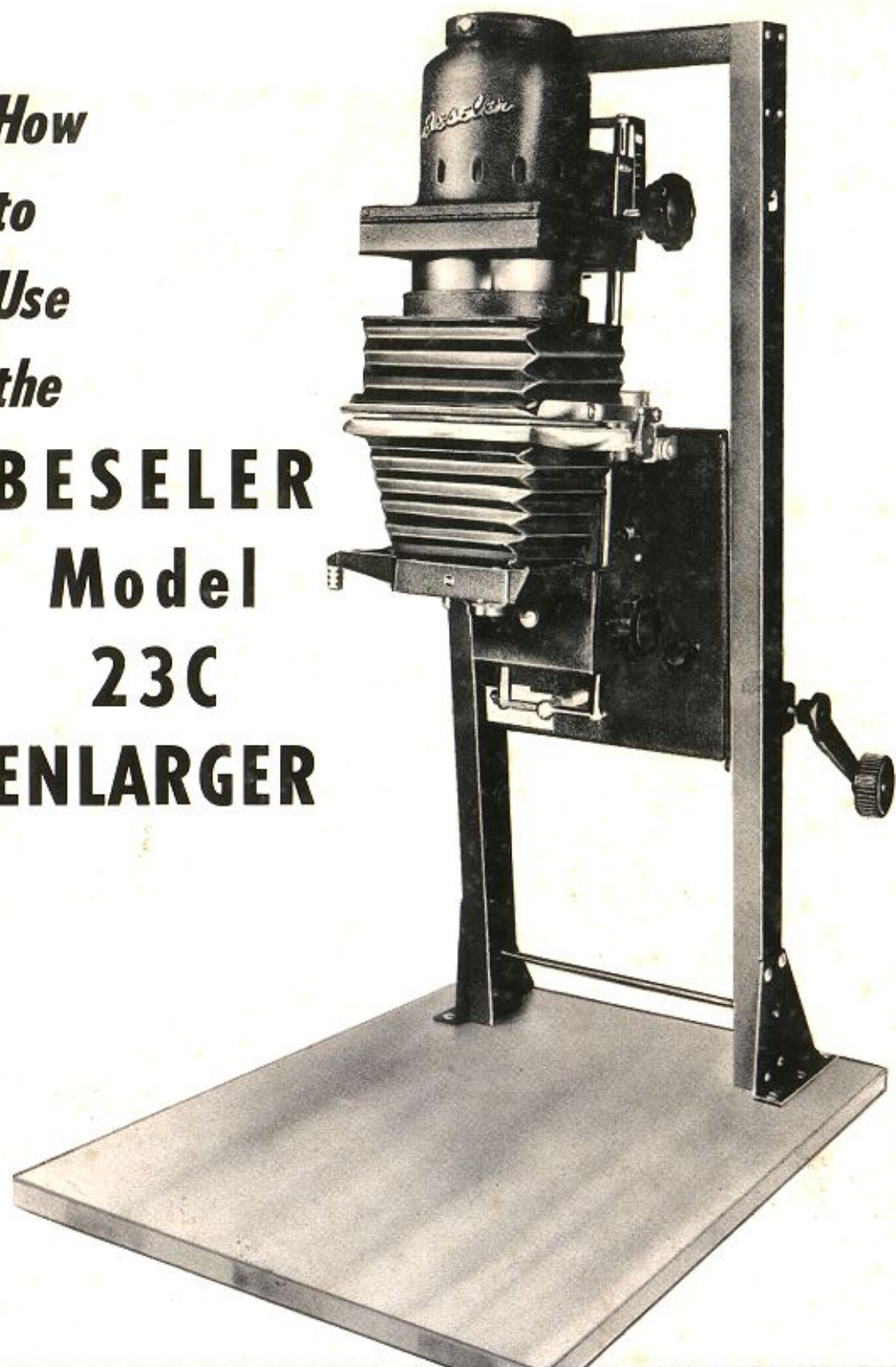


*How
to
Use
the*
**BESELER
Model
23C
ENLARGER**



CHARLES *Beseler* COMPANY

219 SOUTH 18TH STREET

EAST ORANGE, NEW JERSEY



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In 1868: One of America's Earliest Photographic Manufacturers . . .

In 1956: The World's LARGEST Manufacturer of Opaque and Overhead Projection Apparatus

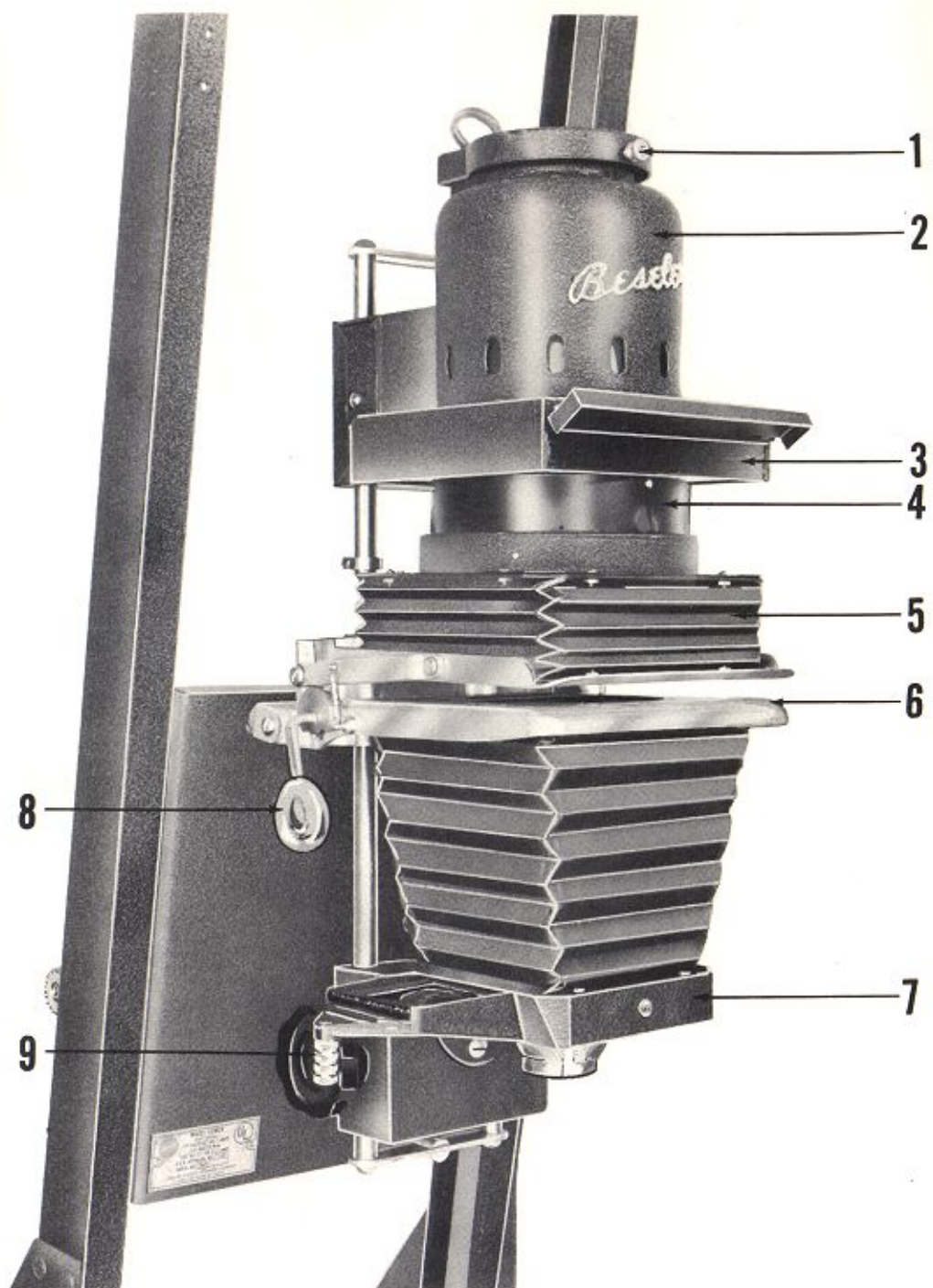
Introduction

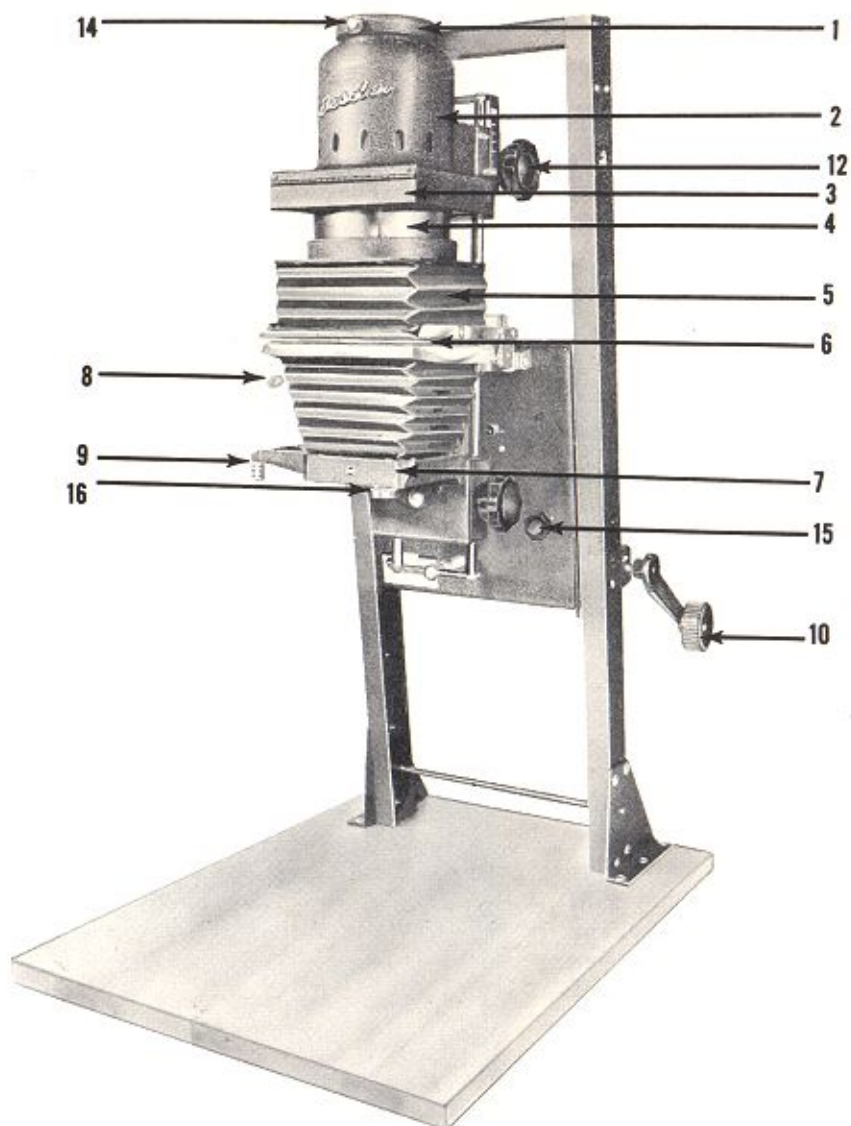
Your Beseler Model 23C Enlarger is the end result of over 85 years of experience in equipment design. It embodies principles of design and construction in enlargers that recognize basic requirements for efficient enlarger use where the range of negative sizes lie between 8mm (Minox) and 2¼" x 3¼". These principles, altho new to enlarger design, are old and proven in scientific fields. Its construction assures the freedom from vibration that is so important in enlarging work. Its ability to accommodate various sizes of negatives without the need for accessory spacers, condensers, etc., bows to the need for dark-room simplicity. Its mechanism is modern and its dependability is proven.

Optically, as well as mechanically and electrically, your Beseler 23C Enlarger is the proper companion to your fine photographic equipment and it is a compliment to your photographic capabilities.

The Charles Beseler Company, manufacturers of your Beseler 23C Enlarger was founded in 1869—almost a century ago! Its work has always been engaged in precision apparatus and your Beseler 23C Enlarger reflects the precision and painstaking production efforts that typify Beseler practice.

Like any other fine apparatus, your Beseler 23C Enlarger is built to give years of faithful and precise service. Its capabilities ask only your care and attention to its protection so that it will remain steadfast in its brilliant performance, as it was designed and built to do.





1. Lamp House Cap
2. Lamp House
3. Color Head Filter Compartment
4. Condenser Housing
5. Upper Bellows
6. Negative Stage
7. Lens Stage
8. Negative Stage Lever
9. Filter Drawer

10. Elevation Handle
11. Negative Carrier
12. Condenser Stage Adjustment Knob
13. Condenser Stage Guide
14. Lamp House Cap Locking Screw
15. Elevation Brake
16. Enlarging Lens
17. Horizontal Lock
18. Vertical Adjustment Screw

Instructions for operating the Beseler 23C Enlarger

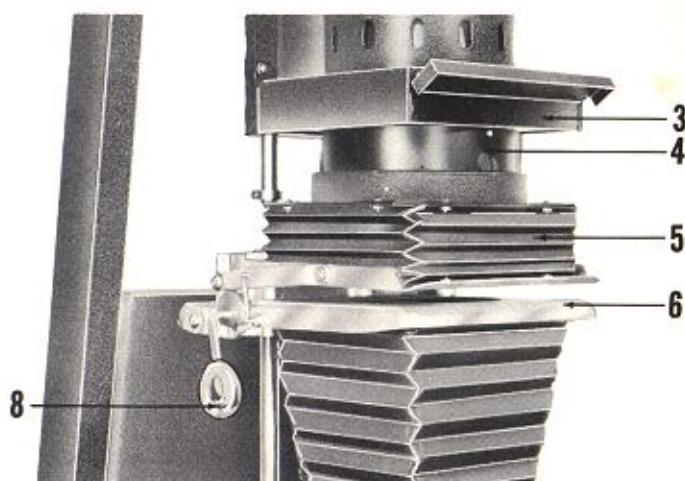
GETTING READY

The Beseler Model 23C Enlarger is shipped in a single carton, partially assembled and ready for use immediately after it is unpacked and prepared as follows:

1. Remove safety tapes
2. Remove steel strap on frame
3. Assemble Baseboard
4. Mount condenser assembly and lamphouse
5. Insert power cord into outlet

When the desired negative is placed into its proper negative carrier (11) and the enlarging lens is inserted into the lens stage (7), your Beseler Model 23C is ready.

IMPORTANT: Examine the carton and its packing material carefully before disposing of it! The negative carrier, and baseboard are packed within supporting dividers in the carton.



THE NEGATIVE STAGE (#6)

The negative stage consists of a flat platform (#6) that divides the upper and lower bellows. It is opened by pulling down the negative stage lever #8. Depressing this lever to its lowest position permits the negative stage to remain open. The negative stage will close when lever #8 is released.

When the lens stage is open, insert the negative carrier into it, with the ring on the under side. This ring places the negative carrier into the proper optical position of the negative stage—and serves to guide the carrier as it is rotated to the desired point.

THE NEGATIVE CARRIER

A negative carrier is available for any size film from Minox (8MM) to 2 1/4" x 3 1/4". All standard negative carriers are of the glassless, dustless type, and may be rotated in the negative stage.

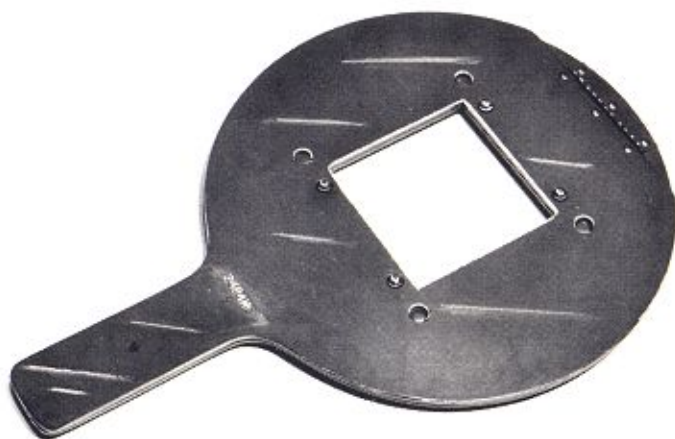
Each negative carrier consists of two flat metal discs, with an aperture that is correct for its negative. Two guide pins at each of the two sides of the aperture of one disc locate the negative precisely into its position. Four holes in the second disc accommodate these guide pins so that the combination of the two discs forms a flat, smooth assembly. The ring on the underside of the lower disc acts to retain the negative carrier assembly in the negative stage and to guide the carrier accurately as it is rotated.

A handle is conveniently placed on the negative carrier to facilitate its rotation.

Stripfilm is easily moved in the negative carrier by releasing the tension in the negative stage. This is done by pulling down Negative Stage Lever #8.

A negative carrier is also available in a Rapid Shift type of unit, called the "Film Transport". This unit incorporates "arms" at each side to hold the curled negative.

All Beseler 23C negative carriers have specially designed handles to facilitate quick separation, and are hinged.

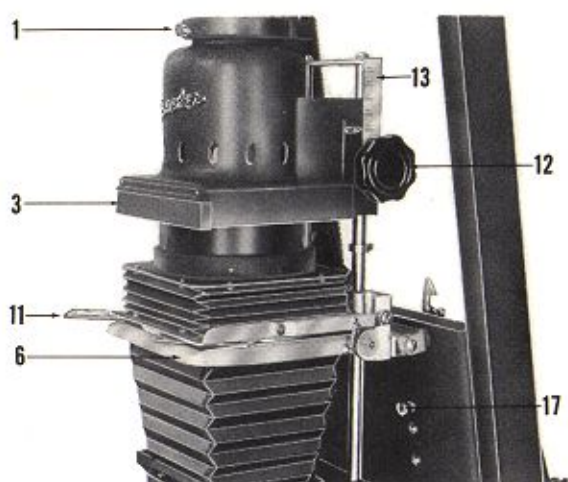


USING VARIOUS SIZE NEGATIVES

Any size negative, from Minox (8MM) to $2\frac{1}{4}" \times 3\frac{1}{4}"$ may be used in the Beseler 23C Enlarger without changing the condenser unit. This is accomplished by locating the condenser stage in its proper position for the size of the negative used.

This is done by raising or lowering the condenser stage so that it rests at the correct point. This point is one that provides complete light coverage of the negative area, with the proper flatness of field and the avoidance of "hot spots"

First insert the negative carrier into the negative stage. Raise or lower the condenser stage to its correct position by rotating knob #12. When the proper position is reached as indicated on guide #13, the condenser is in its



optically correct position for use. Five positions are indicated on guide #13, but any size negative may be used within its range:—

$2\frac{1}{4}" \times 3\frac{1}{4}"$ position.....	$2\frac{1}{4}" \times 3\frac{1}{4}"$ negatives 6 x 9 CM negatives
$2\frac{1}{4}" \times 2\frac{1}{4}"$ position.....	$2\frac{1}{4}" \times 2\frac{1}{4}"$ negatives 2" x 2" negatives Bantam negatives Vest Pocket negatives $\frac{1}{2}$ Vest Pocket negatives
8-16-35 MM position.....	35 MM. B & W negatives 35 MM. Kodachrome Transparencies 1" x 1" negatives 16 MM. negatives 8 MM. (Minox) negatives

LENSES AND THE LENS STAGE

Any lens of focal length from 2" to 4" may be used in the Beseler 23C Enlarger without the need of negative spacers, or special lens boards. The standard 4" square lens board supplied with the Beseler 23C will accommodate any of these lenses and will operate perfectly with its corresponding negative.

The lens board is inserted into the lens stage #7 by inserting the back edge into the rear lens retainer. A soft, springy resistance will be felt, caused by a hidden spring that holds the lens firmly in proper position when its lens board is permitted to slide back into the forward retainer. Removal of the lens board is accomplished by pressing it back against its retainer spring and letting the front edge drop out of the forward retainer.

Extremely short focal length lenses (either 1½" or 1") may be used by first inverting the lensboard before insertion into the lens stage. This will bring the short focal length into proper proximity to the negative. In this position *the Filter Drawer is inoperative!*

Standard lenses are available for every size negative. Recommended focal lengths are as follows:

Negative Size	Lens
2¼" x 3¼".....	4" focal length
2¼" x 2¼".....	3½" focal length
35 MM.....	2" focal length
16 MM.....	2" focal length
8 MM.....	2" focal length

Baseboard Magnifications on the Beseler 23C Enlarger are:—

Negative Size	Focal Length Lens	f:	Maximum Baseboard Magnification
2¼" x 3¼"	4"	4.5	6½X
2¼" x 3¼"	3½"	4.5	8X
2¼" x 2¼"	3"	4.5	9¾X
35 MM (1" x 1½")	2"	4.5	15⅝X
16 MM	2"	4.5	15⅝X
8 MM (Minox)	2"	4.5	15⅝X

MAGNIFICATION

The size of the enlargement is determined principally by the height of the Enlarger Lamp House from the easel. Increasing its height, increases the size of the enlargement. Lowering it, decreases the size of the enlargement.

Raising and lowering of the Beseler 23C lamphouse is accomplished by elevation handle #10.

IMPORTANT

The metal parts of your Model 23C have been treated to withstand the effects of darkroom fumes. However, lubricants require replenishment and we recommend that you apply a small amount of LUBRIPLATE to the sliding surfaces of your enlarger frequently. This practice will assure constant and smooth operation of the focusing controls even under the most adverse conditions.



No lubrication of the counterbalance control is necessary. Its working parts have been properly and permanently lubricated at the factory.

A calibrated strip on the right side of the frame structure, is available as an aid in determining the proper positioning of the lamphouse, particularly for repetitive work where it is desired to make additional enlargements of a precise size. Adjusting the position of the lamphouse to the predetermined point on the calibrated scale, and using control knob as a guide, will assure correct positioning.

The entire lamphouse carriage assembly is supported on two sturdy geared racks and it cannot move or change its position in any way until the elevator knob is operated.

THE FILTER DRAWER (#9)

A standard red safety filter is normally supplied with the Beseler 23C Enlarger. The filter will be found in the compartment of Filter Drawer #9. Its operation requires only the insertion of the drawer into the enlarger for use of the filter and opening the drawer when the enlargement is to be made.

The Filter Drawer will also accommodate other types of filters, such as Varigam, 3 color, density, diffusion, etc. Its capacity is $2\frac{1}{4}" \times 2\frac{1}{4}"$ to $2\frac{3}{8}" \times 2\frac{3}{8}"$.



SPECIAL NOTE ON PRINTON

The Color Filter Compartment (#3)

When it is desired to use commercial Printon filters or foils or any other filter material that is optically "active", then such material must be used at a position that is removed from the plane of the negative or the enlarging lens.

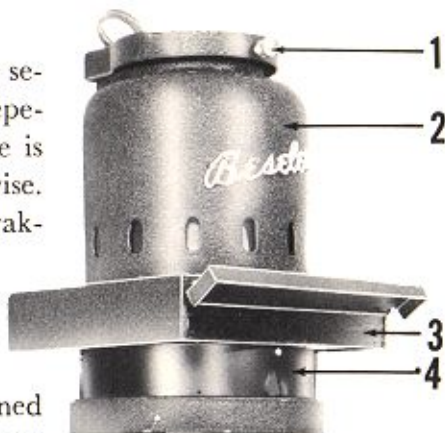
A filter holder is provided into which one or several gelatine filters may be placed quickly and accurately.

ELEVATION BRAKE

A special brake (#15) is provided for securing the lamphouse in position when repetitive use makes this desirable. The brake is operated by rotating the knob clockwise. Turning it counter-clockwise releases its braking mechanism.

LAMP HOUSE (#2)

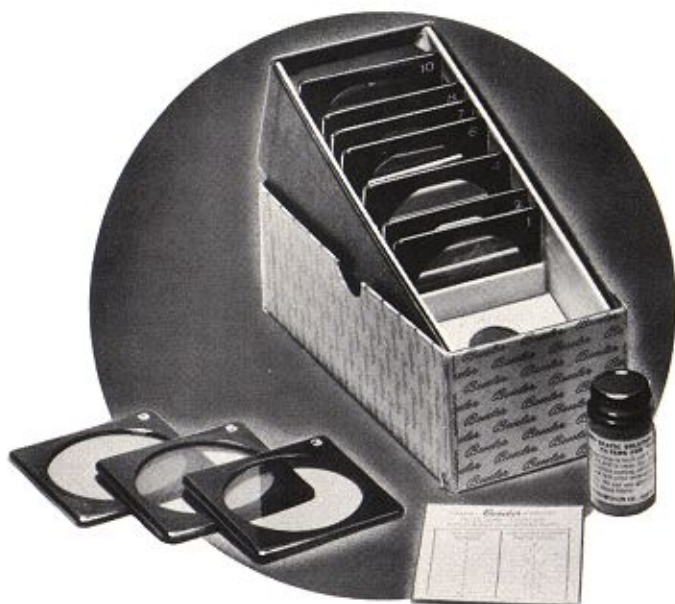
The Beseler 23C lamphouse may be opened for lamp replacement by loosening the screw at the top, and lifting the lamphouse cap up from its base. Always replace the standard lamp supplied with the enlarger with a #111 lamp (75 watts).



VARIGAM OR POLYCONTRAST

Plastic filters for Varigam (Catalog #407A) or for Polycontrast (Catalog #409A) are available for use in the filter drawer (#9) of Beseler Enlargers.

A set of 10 filters for Varigam (7 for Polycontrast) mounted in plastic frames and of square format, makes possible quick insertion and removal in the filter drawer. Each of the filters bears an embossed number on the frame. Literature and instructions on the use of Varigam or Polycontrast papers is available from your dealer.



HORIZONTAL PROJECTION (MURALS)

For enlargements of a size exceeding that possible on the baseboard, the Beseler 23C Enlarger may be quickly adjusted for wall projection. This is done by swinging the entire lamphouse assembly on its axis slowly. In its final position, a spring catch will engage itself to hold the lamphouse assembly firmly in a horizontal position. To return the lamphouse to its vertical position, disengage the catch #17 and slowly lower the lamphouse to its vertical position.

The design of the horizontal projection mechanism assures rigidity and the accurate return of the lamphouse assembly to a precise vertical position.



HEAT ABSORBING FILTER

A Heat Absorbing Filter (Catalog #B.S.I.6-21A) is available for use in Beseler 23C Enlarger. It is made of a special glass with heat absorbing properties. When it is desired to use an enlarging lamp of high intensity and for prolonged periods or for Printon color it may become necessary to introduce a heat absorbing filter. The heat absorbing filter is placed above the condenser assembly and into the filter drawer (above the filters). First, raise lamphouse (#2) then place the heat absorbing filter into condenser housing (#4) and above the upper condenser lens.

PORTRAIT SOFT FOCUS FILTER

The Portrait Soft Focus Filter (Catalog #401A) is available and may be placed into the filter drawer (#9) of Beseler Enlargers to achieve a pictorial and slightly diffused effect in enlargements. This filter consists of a fine wire mesh mounted in a plastic frame and, when placed in the filter drawer, affects the image only to the extent of its diffusion for portraiture and similar purposes.

RESISTROL (See Illustration Page 15)

RESISTROL is a voltage control unit which when properly connected to the electrical cord of the 23C Enlarger provides means for varying the voltage input into the lamp of the Beseler Enlarger, up to maximum line voltage.

It is used:

1. to help maintain constant voltage for uniformity of Kelvin values in color work.
2. to reduce voltage for increasing lamp life.
3. to reduce light intensity where it is either impractical or undesirable to reduce the enlarging lens diaphragm opening, i.e., to prolong enlarging time for "dodging" or "burning-in" purposes but without increase in sharpness of detail.

To utilize this feature, it is generally good practice to adjust the Resistrol Knob to a point *under* maximum voltage so that sufficient margin for adequate increase will always be available where line voltage fluctuation exists.

Accurate determination of the intensity of illumination may be made by densitometer readings at the baseboard, or even by use of a light meter. Quick and dependable means for such evaluation may be made by inserting a voltmeter into the outlet located at the top of the control for this very purpose. A special voltmeter, the BESTROL METER, is available as an accessory (for A.C. only). (Catalogue No. 4415-7)

SPECIAL HINTS

Beseler Enlargers are engineered to provide accurate, smooth and dependable performance under even severe working conditions. Occasionally, adverse conditions or a need for moving the enlarger may disturb the alignment of one of its working parts. The following hints for their correction will help the owner to avoid loss of time created by correspondence or by shipment of the enlarger to the factory.

1. The vertical adjustment of the lamphouse-bellows assembly is secured by means of a contact located immediately behind the lenstage casting. This contact may be adjusted in either direction by first loosening the hexagon nut to which it is attached, and then rotating the contact button in either direction until a perfectly vertical position of the lamphouse is reached. This position may be determined by a "T Square" with one side placed on the surface of the vertical focusing rods and its base on the baseboard.

RESISTROL UNIT

With the Resistrol Unit, you can control the voltage input into the lamp up to maximum line voltage. Ideal for color work, abnormal negatives, etc. The perfect accessory for the careful darkroom worker. Resistrol clamps on lateral tube above motor housing of all Beseler Enlargers. (Cat. No. 4415)



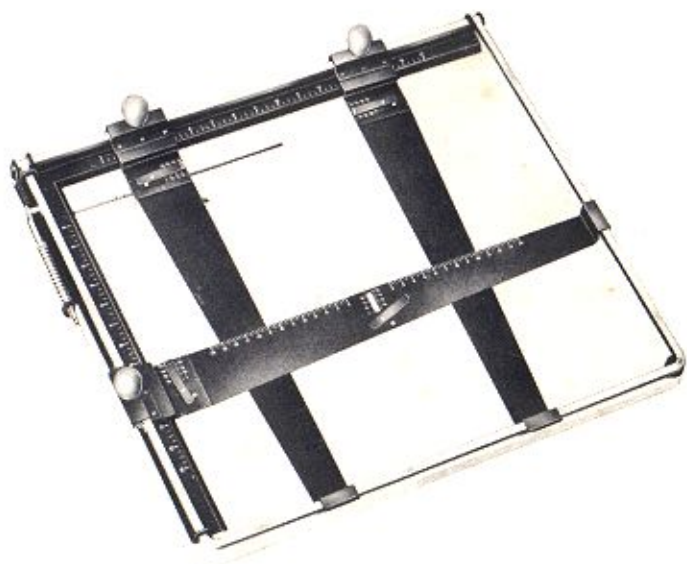
BESTROL VOLTMETER

The Voltmeter inserts into the Resistrol Unit and shows the voltage fluctuations from the power source. With the aid of the Bestrol Voltmeter, the operator can maintain constant voltage into the Enlarger Lamp by adjusting the Resistrol Unit as desired. (Cat. No. 4415-7)

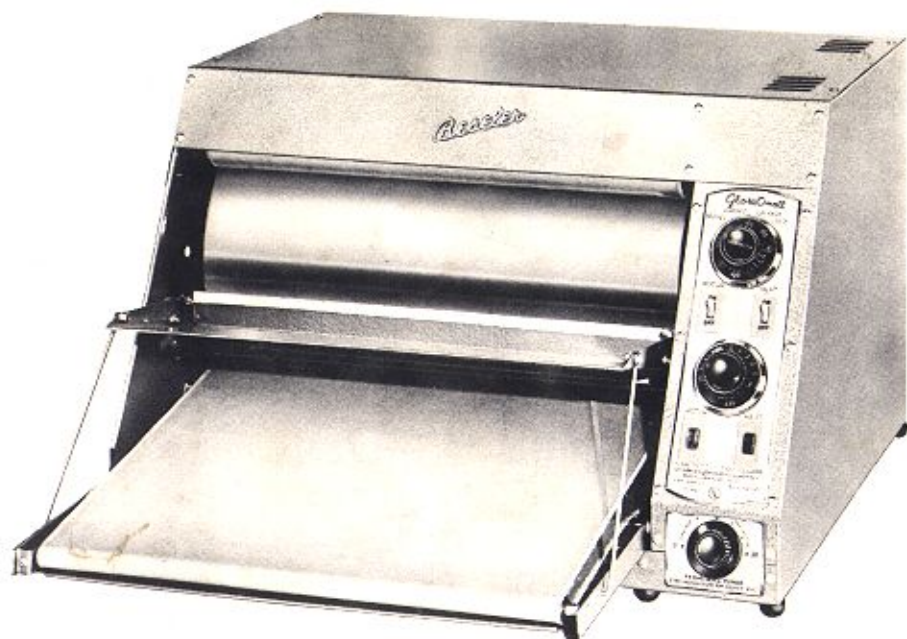


BESELER ENLARGER GUIDE written by Charles Cole. Contains 124 pages of instructions, facts on the Beseler Enlarger and enlarging in general. Profusely illustrated.

PERFECT COMPLIMENTS TO YOUR 23C ENLARGER



BESLER "INVINCIBLE" EASEL



BESLER #1217 DRYER

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