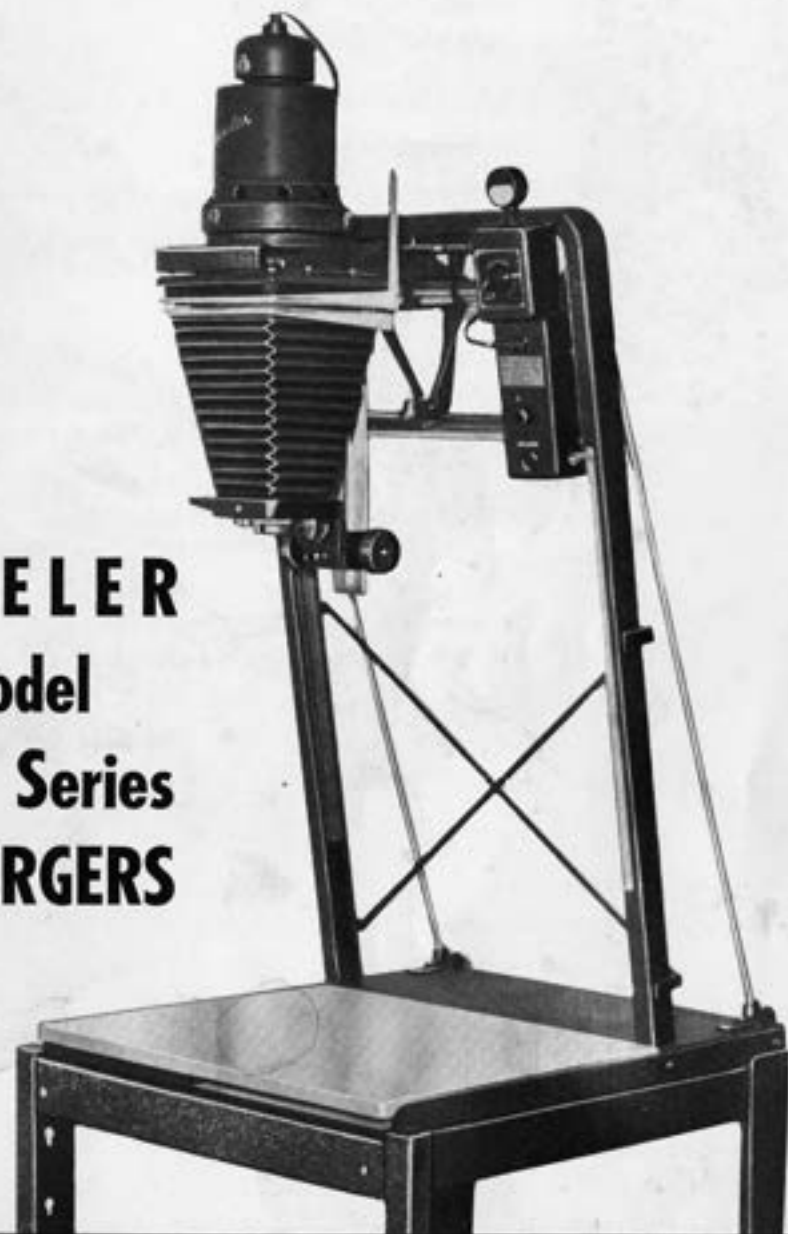




CHARLES BESELER COMPANY

219 South 18th Street, East Orange, N. J. 07018

*How
to
Use
the*
**BESELER
Model
45M Series
ENLARGERS**



CHARLES BESELER COMPANY

219 SOUTH 18th STREET

EAST ORANGE, N. J. 07018



CHARLES BESELER COMPANY
219 South 18th Street, East Orange, N. J. 07018

In 1869: One of America's Earliest Photographic Manufacturers . . .
In 1957: The World's LARGEST Manufacturer of Opaque and Overhead Projection Apparatus
In 1958: The World Leader in Enlargers

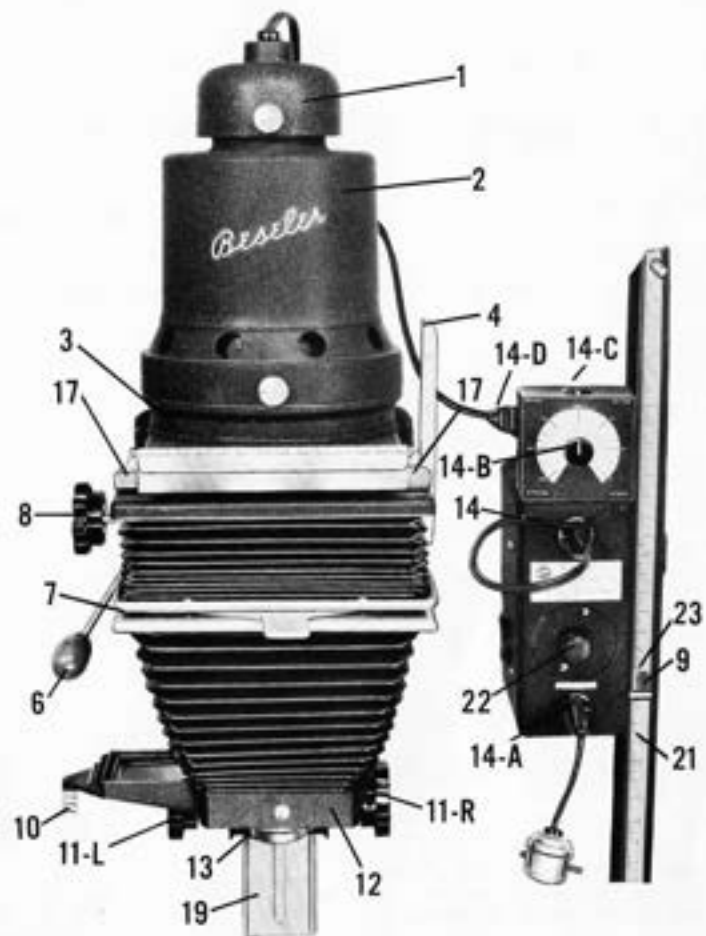
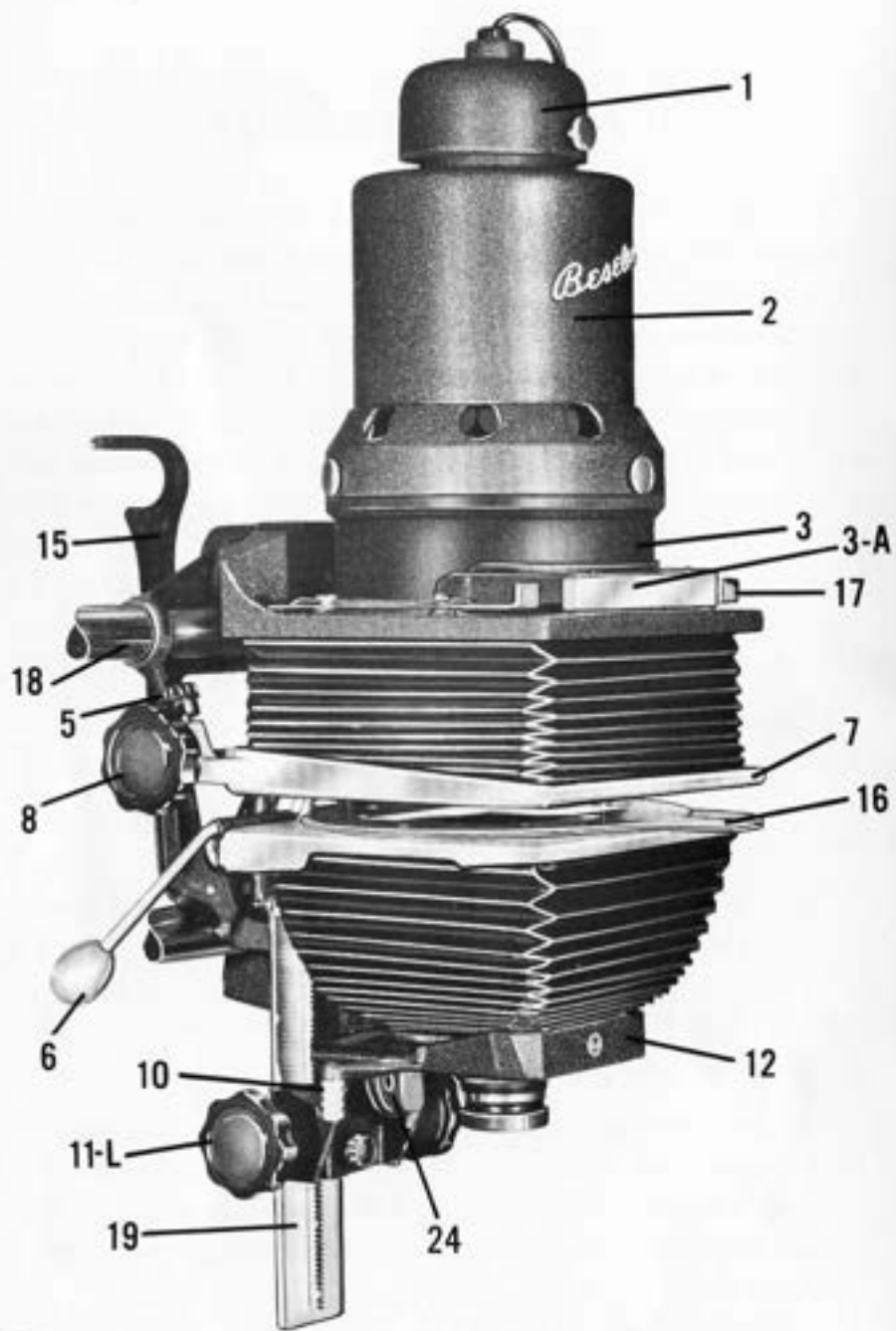
Introduction

Your Beseler Model 45MCR Enlarger is the end result of over 85 years of experience in equipment design. It embodies principles of construction and function in enlarger practice that recognize basic requirements for efficient enlarger use. These principles, altho new to enlarger design, are old and proven in scientific fields. Its skyscraper construction, with four points of support rather than one as used in other types, 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 automatic mechanism is modern and its dependability proven in hosts of other devices that formerly depended on manual controls.

Optically, as well as mechanically and electrically, your Beseler 45MCR 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 45MCR Enlarger was founded in 1869—almost a century ago! Its work has always been engaged in precision apparatus and your Beseler 45MCR Enlarger reflects the precision and painstaking production efforts that typify Beseler practice.

Like any other fine apparatus, your Beseler 45MCR 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.



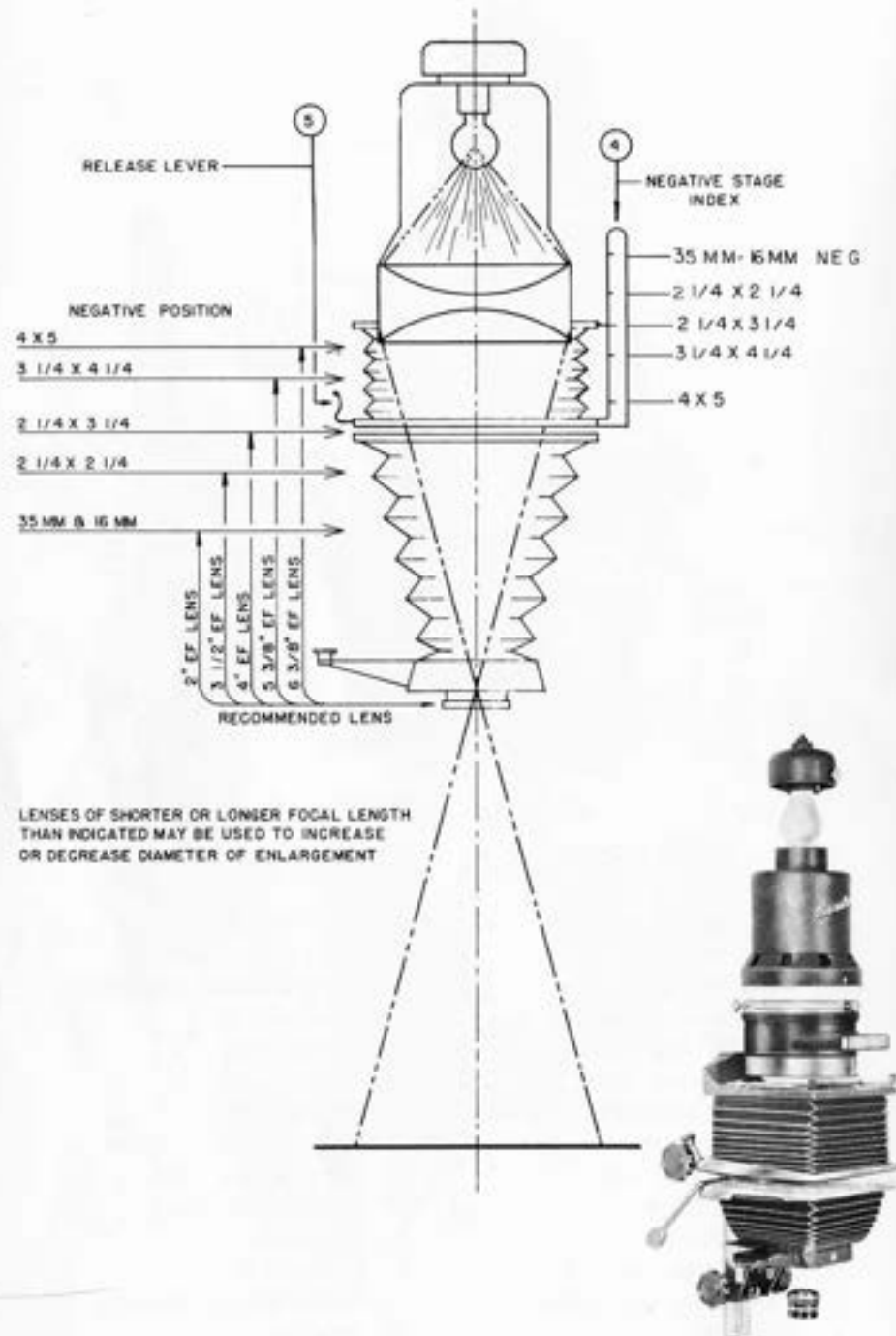
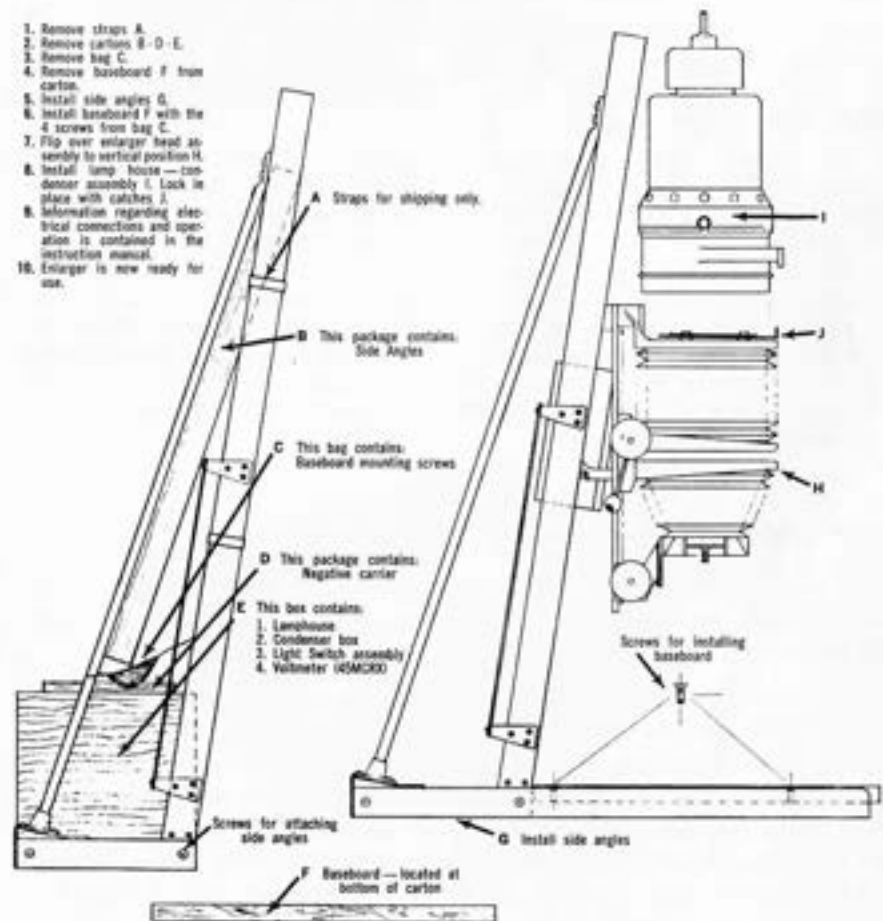
- | | |
|-------------------------------|--------------------------------------|
| 1. Lamp House Cap | 14. "Resistrol" Outlet |
| 2. Lamp House | 14-A. Lamp Switch Outlet |
| 3. Condenser Housing | 14-B. Resistrol Voltage Control Knob |
| 3-A. Bescolor Compartment | 14-C. Voltmeter Outlet |
| 4. Negative Stage Guide | 14-D. Lamp Outlet |
| 5. Negative Stage Lock | 15. Horizontal Arm |
| 6. Negative Stage Lever | 16. Negative Carrier |
| 7. Negative Stage | 17. Condenser Housing Clamp |
| 8. Negative Stage Knob | 18. Lateral Support Tube |
| 9. Elevation Knob | 19. Focusing Rack |
| 10. Filter Drawer | 20. Carriage Bar |
| 11-L. Lens Stage Knob (left) | 21. Calibrated Strip |
| 11-R. Lens Stage Knob (right) | 22. Manual Elevation Control |
| 12. Lens Stage | 23. Red Area |
| 13. Lens Stage Brake | 24. Lens Stage Adjusting Screw |

Instructions for operating the Beseler 45 MCR Enlarger

GETTING READY

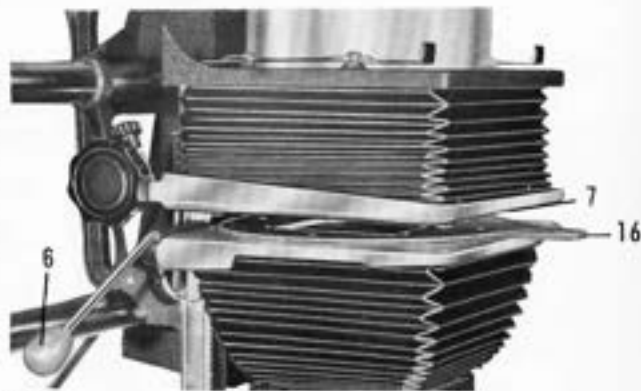
The Beseler Model 45MCR Enlarger is shipped in a single carton, partially assembled and ready for use immediately after it is unpacked and prepared as follows:

1. Remove straps A.
2. Remove cartons B-D-E.
3. Remove bag C.
4. Remove baseboard F from carton.
5. Install side angles G.
6. Install baseboard F with the 4 screws from bag C.
7. Flip over enlarger head assembly to vertical position H.
8. Install lamp house — condenser assembly I. Lock in place with catches J.
9. Information regarding electrical connections and operation is contained in the instruction manual.
10. Enlarger is now ready for use.



When the desired negative is placed into its proper negative carrier (16) and the enlarging lens is inserted into the lens stage (12), your Beseler Model 45MCR is ready.

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



THE NEGATIVE STAGE

The negative stage consists of a flat platform that divides the upper and lower bellows (#7). It is opened by pulling down the negative stage lever #6. Depressing this lever to its lowest position permits the negative stage to remain open. The negative stage will close when lever #6 is released.

If the lens stage (#12) is close to the negative stage, it is necessary to lower the lens stage in order to open the negative stage. This is done by simply turning the lens stage knob (#11-L or #11-R) slightly. When the lens stage is open, insert the negative carrier into it, with the four locating pins on the under side. These pins place the negative carrier into the proper optical position of the negative stage—and serve 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 16 MM to 4" x 5". 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 four locating pins on the underside of the lower disc act 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 and is notched to facilitate quick separation.

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 #6.

A Rapid Shift type negative carrier, glassless, is also available, #1670 RN. This unit incorporates "arms" at each side to hold the curled negative. It is available in any one film aperture size from 16mm to 2 1/4" x 3 1/2".

A Universal glass type negative carrier, #1645 UN, is available for all negatives up to 4" x 5".

NEW—"NEGAFLAT" Glassless 4 x 5 negative carrier #9750.

For printing wet negatives as well as dry negatives.

Provides the flatness of a glass type carrier without the cleaning problems. Negative is placed in the nest (1) and is gripped on the edge by the clamp jaws (2), which are opened and closed with the lever (3) mounted in handle.

These jaws, when closed, gently hold the negative taut and flat.

4 x 5 film pack is accommodated as well as sheet film. The size of the opening is controlled by a simple slide lock.

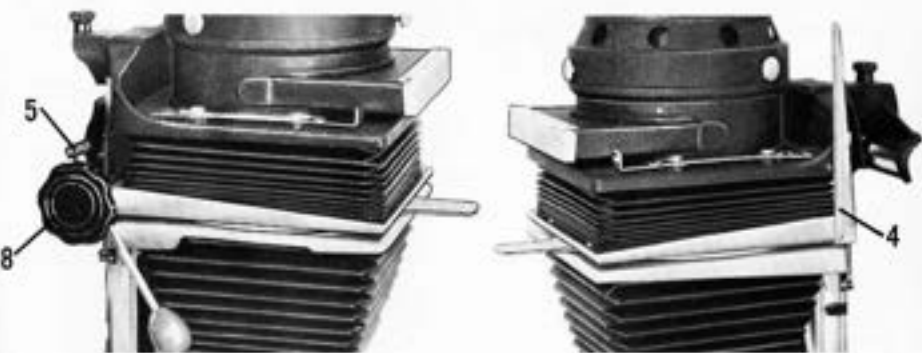


USING VARIOUS SIZE NEGATIVES

Any size negative, from 8MM (Minox) to 4" x 5" may be used in the Beseler 45MCR Enlarger without changing the condenser unit or altering its position in any way. This is accomplished by locating the negative stage in its proper focal plane position for the size of the negative used.

This is done by raising or lowering the negative stage so that it rests at the correct point within the cone of light that emanates from the enlarger head and condensers. 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. Then, release the negative stage lock by loosening lock #5. Simultaneously, raise or lower the negative stage to its correct position by rotating knob #8. When the



proper position is reached as indicated on guide #4, tighten knob #5 and the negative is in its optically correct position for use. Five positions are indicated on guide #4, but any size negative may be used within its range:—

4" x 5" position.....	4" x 5" negatives
3 1/4" x 4 1/4" position.....	3 1/4" x 4 1/4" negatives 9 x 12 CM negatives
2 1/4" x 3 1/4" position.....	2 1/4" x 3 1/4" negatives 6 x 9 CM negatives
2 1/4" x 2 1/4" position.....	2 1/4" x 2 1/4" negatives 2" x 2" negatives Bantam negatives Vest Pocket negatives 1/2 Vest Pocket negatives
35 MM position.....	35 MM. B & W negatives 35 MM. Kodachrome Transparencies 1" x 1" negatives 16 MM. negatives Minox negatives

LENSES AND THE LENS STAGE

Any lens of focal length from 2" to 6 3/8" may be used in the Beseler 45MCR Enlarger without the need of negative spacers, or special lens boards. The standard 4" square lens board supplied with the Beseler 45MCR will accommodate any of these lenses and will operate perfectly with its corresponding negative. A special 1" lens is available for "Minox."

The lens board is inserted into the lens stage #12 by simply 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 simply pressing it back against its retainer spring and letting the front edge drop out of the forward retainer.

The lens stage can be pivoted, as illustrated, to permit distortion correction. A spring loaded detent assures return to proper position. The lens stage can be adjusted by loosening the lens stage adjusting screws #24.

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

Negative Size	Lens
4" x 5".....	6 3/8" focal length
3 1/4" x 4 1/4".....	5 3/8" focal length
2 1/4" x 3 1/4".....	4" focal length
2 1/4" x 2 1/4".....	3 1/2" focal length
35 MM.....	2" focal length
16 MM or 8 MM (Minox).....	1" focal length

Baseboard Magnifications on the Beseler 45MCR Enlarger are:—

Negative Size	Focal Length Lens	f:	Approximate Magnification	
			Maximum	Minimum
4" x 5"	6 3/8"	4.5	3 1/2X	1X
4" x 5"	5 3/8"	4.5	5X	1X
3 1/4" x 4 1/4"	5 3/8"	4.5	5X	1X
2 1/4" x 3 1/4"	4"	4.5	7X	1.5X
2 1/4" x 3 1/4"	3 1/2"	4.5	8X	2.5X
2 1/4" x 2 1/4"	3"	4.5	9X	2X
35 MM (1" x 1 1/2")	2"	4.5	15X	4.5X
16 MM	1"	4.5	32X	12X
Minox	1"	4.5	32X	12X

*Not quite adequate for complete coverage and for some magnifications may result in slight vignetting at the corners.

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 45MCR lamphouse is accomplished automatically by pressing control knob #9. Pressing it up, will cause the lamphouse to rise. Pressing it down will cause the lamphouse to descend. The speed of lamphouse motion is pre-set at the factory and calculated to be correct for its use. Safety stops are provided to limit the travel of the lamphouse within the normal scope of its Baseboard Magnification as reflected by the table on page 11.

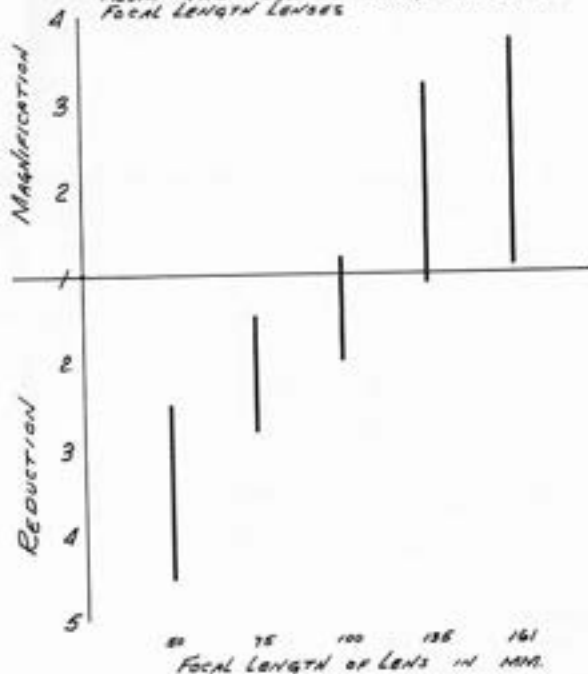
REDUCTIONS

Reduction prints may be made without need of "attachments." Reduction ratios up to 1:4 or better may be achieved simply by inserting the lens of proper focal length into the lens stage, extending the lower bellows to its proper length, and then lowering the lamphouse assembly to its proper distance from the baseboard or easel. To accomplish some of these reductions, the easel must be elevated from the baseboard.

The capacity of the bellows and focusing assembly in the Beseler Model 45MCR Enlarger makes reductions possible as shown on the chart below:—

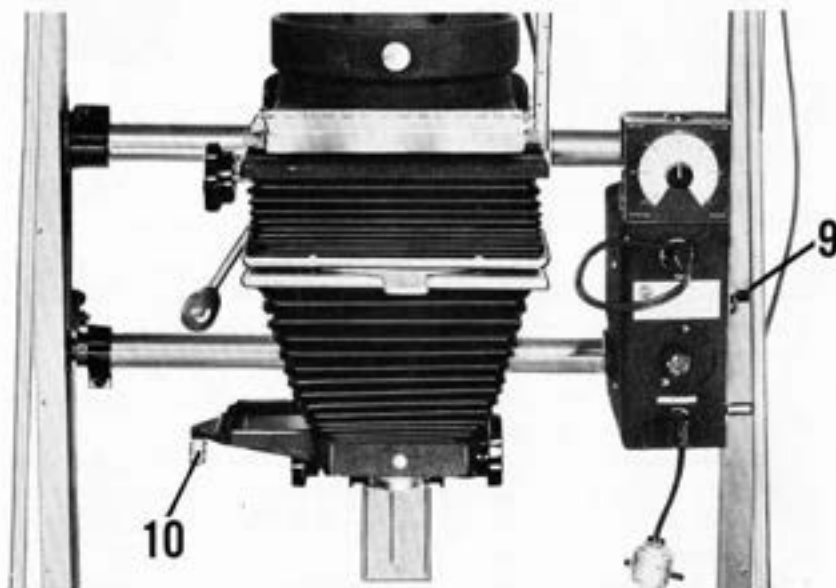
BESELER 45MCR ENLARGER

RANGE OF MAGNIFICATION AND REDUCTION FROM 4x5 NEGATIVE USING DIFFERENT FOCAL LENGTH LENSES



IMPORTANT

The metal parts of your Model 45MCR 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 automatic control unit is necessary. Its working parts have been properly and permanently lubricated at the factory.

The position of the lamphouse is firmly secured at any point when control knob #9 is released. Any desired position may be reached with precision by lightly "wiggling" the control knob.

A calibrated strip #21, 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 #9 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 control knob is operated.

The electrical controls within the automatic mechanism operates on 110-120 volts, A.C. or D.C.

THE FILTER DRAWER (#10)

A standard red safety filter is normally supplied with the Beseler 45MCR Enlarger. The filter will be found in the compartment of Filter Drawer #10. 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, and Polycontrast, 3 color, density, diffusion, etc. Its capacity is 2 1/4" x 2 1/4" to 2 3/4" x 2 3/4".



BESCOLOR COLORHEAD ASSEMBLY

Color printing requires the use of color correction filters, in order to obtain the proper color balance on the enlarger.

The Bescolorhead contains a heat absorber filter, two condensing lenses and a filter support assembly. The support assembly is located between the two elements of the condensing system. It is placed there for these reasons:

1. Filters are between the lamp and negative, outside of the image forming rays of light.
2. Plastic color printing filters are used. They are more durable.
3. This is the correct position as light rays are parallel between the condensers, resulting in maximum light transmission and minimum dispersion.
4. A filter holder is provided into which the filter pack may be placed quickly and accurately.

Color filters are used in Bescolor head as follows: clear plastic sheet (1) rests on filter holder frame (2) and supports filter foils (3). Wire bail (4) holds filters flat. Entire assembly slides into door in metal casting (5).



LENS STAGE BRAKE

A special brake (#13) is provided for securing the lens stage 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 45MCR lamphouse may be opened for lamp replacement by loosening the screw at the top, and lifting the lamphouse cap up from its base. A #212 lamp (150 watts) is furnished as standard.



VARIGAM-POLYCONTRAST ENLARGING PAPERS

Plastic filters for Varigam-Polycontrast are available for use in the Filter Drawer of Beseler Enlargers. They are furnished in a square format, which makes possible quick insertion and removal in the filter drawer. Each of the filters bears an embossed number on the frame.

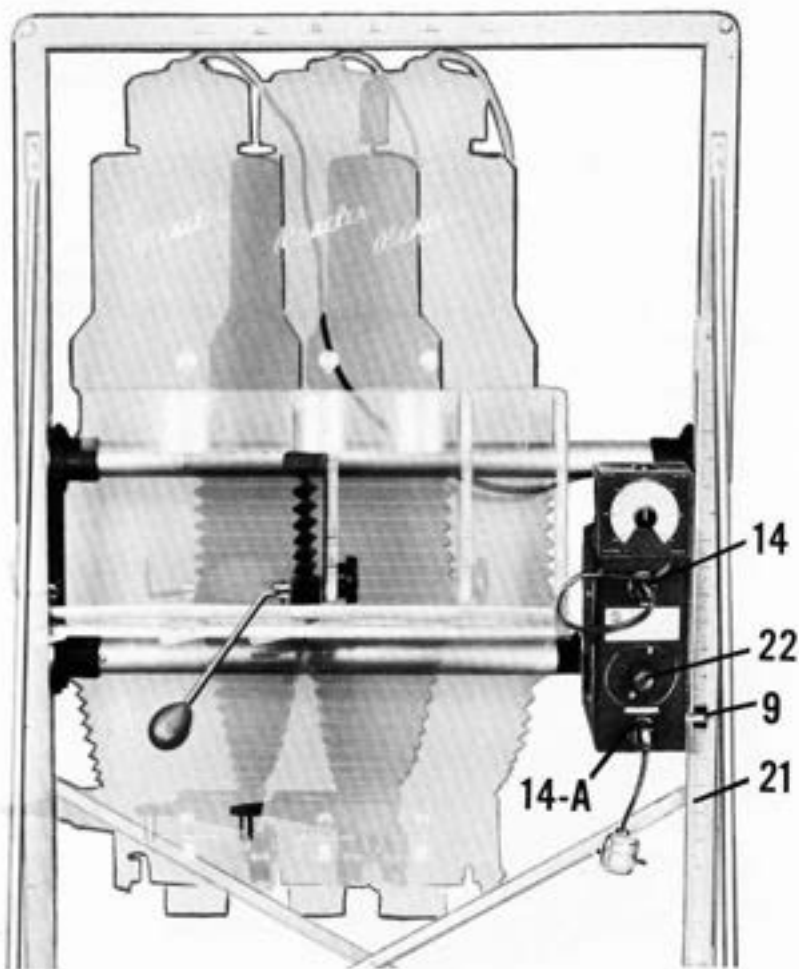
Varigam—Catalog #407A—A set of 10 filters, mounted in plastic frames

Polycontrast—Catalog #411A—A set of 7 filters, mounted in plastic frames



LATERAL ADJUSTMENT OF LAMP HOUSE

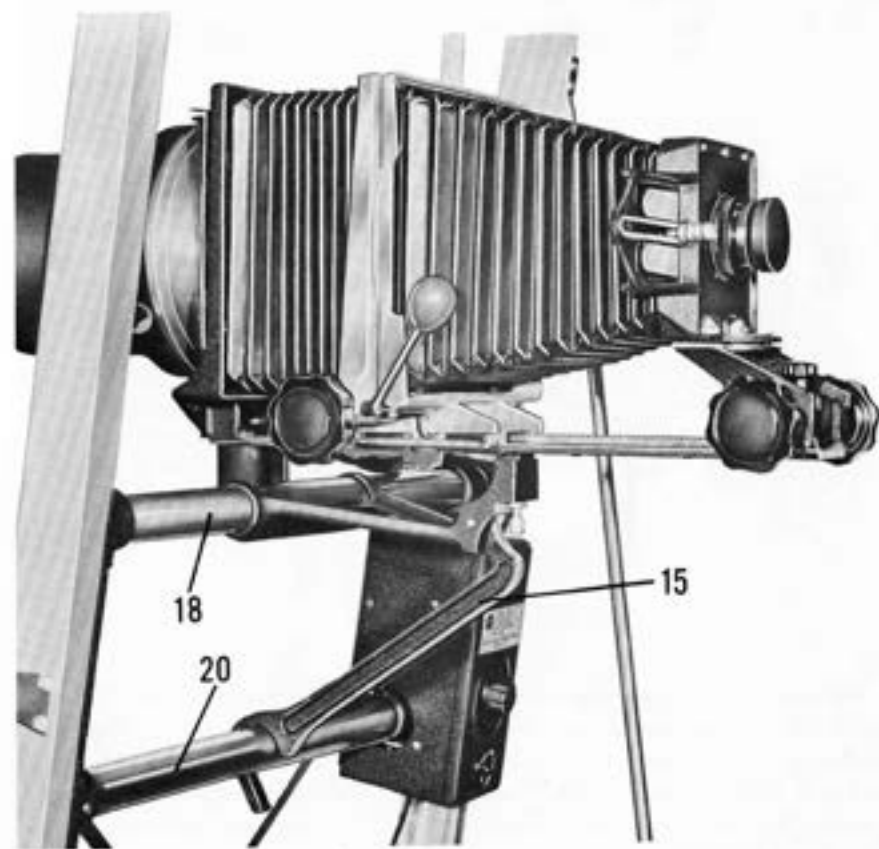
When necessary, the entire lamphouse assembly may be moved laterally by grasping the lamphouse at its base and shifting it to the right or left. This unique adjustment is available when it is desired to enlarge only a portion of a negative without disturbing the position of the easel. In normal use, the lamphouse assembly should be located at the center of its framework. A knob on the rear support of the lamphouse assembly permits instant locking of the assembly in any desired position.



HORIZONTAL PROJECTION (MURALS)

For enlargements of a size exceeding that possible on the baseboard, the Beseler 45MCR Enlarger may be quickly adjusted for wall projection. This is done by raising or lowering the lamphouse until control knob #9 is within the RED area 23 on the calibrated strip #21, then swinging the entire lamphouse assembly on its axis slowly, permitting the Horizontal Support arm (#15) to locate itself on the carriage bar (#20). In its final position, the hook at the end of support arm #15 will engage itself around bar #20 to hold the lamphouse assembly firmly in a horizontal position. To return the lamphouse to its vertical position, raise support arm #15, disengaging it from carriage bar to #20, and slowly lower the lamphouse to its vertical position. The support arm will automatically re-locate itself in a neutral position.

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



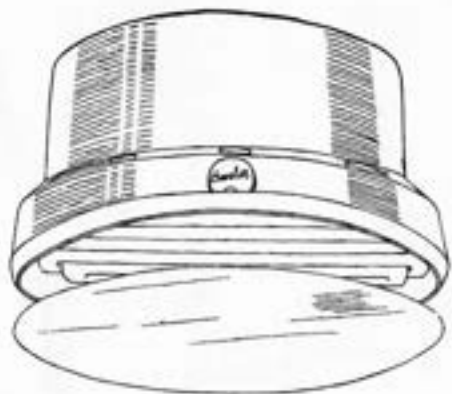
BESLITE ILLUMINATION

A cold cathode light source is available and interchangeable with the regularly equipped Beseler 45MCR Lamp House, where it is desired. This light source, embodied in the BESLITE Lamp House, fits into the enlarger Lamp House base and replaces the incandescent lamp and condensers.

With BESLITE illumination all negatives used in the Beseler Model 45MCR must be positioned at the "4x5" position shown on negative stage guide 4. This is the top position in the enlarger bellows assembly and brings the negative into closest proximity to the BESLITE light source.

Beslite produces a cool, even source of illumination of a slightly diffused nature, and is ideal for portrait work or where needle-point sharpness is not demanded. The nature of this light source tends to reduce negative defects. Its operating temperature is 110°F, and tone gradations are faithfully reproduced. Its life rating is 10,000 burning hours with practically no discoloration or change in color temperature.

Beslite starts instantly with hand or foot switch or timing device.



Although Cold Light Lamps will go on and off instantly, they depend upon the vaporization of mercury of maximum brilliance. A 3 to 5 minute warm-up (depending on unit size) is recommended in order for the lamp to reach its full output. This is usually done while solutions are being prepared. Once the light has reached its peak, you may proceed to work in your usual manner.

The Beslite Assembly incorporates a thermostatically controlled heater for maintenance of the tube temperature so that the light output remains constant. The short power cord is plugged into TOP outlet of control box, with jumper plug in bottom outlet. The heater is automatically energized until the required temperature is reached and then a thermostat cuts off the current to the heater. In this way, the current is intermittently supplied to the heater, as required, as long as the short power cord is connected to this source of current.

In using the Beslite, proceed as follows.

A. Plug long cord which controls lamp, into either

- (1) wall outlet and use cord switch to make exposures, or
- (2) Timer, with cord switch in on position, exposure is made through timer.

Note: When you are through using the enlarger, disconnect it from the power supply, otherwise current will continue to be fed to the heating circuit. The pilot light has been incorporated in the unit as an indication that current is being fed to the heating circuit.

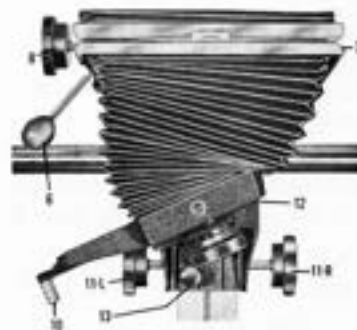
The pilot light is a very long-life neon lamp (over 5,000 hours). However, if it should burn out, it can be replaced by removing the top of the Beslite unit, and then removing the lighting unit. The lamp is then accessible for replacement.

PORTRAIT SOFT FOCUS FILTER

The Portrait Soft Focus Filter (Catalog #401A) is available and may be placed into the filter drawer (#10) 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.

NEGATIVE DISTORTION CONTROL

The lens stage of the Model 45MCR may be tilted in order to introduce corrective means when it is desired to correct or alleviate distortion in the negative. It may also be used to *create* distortion for unusual effects.



The lens stage is movable on its axis which is located at its center. By slight pressure on the filter drawer, the lens stage can be rotated through a 20° arc either upwards or downwards. Tilting the easel to a correct angle, parallel with the lens board, will create corrective results when it is desired to correct distortion in the negative. Familiarity with this feature will reveal many possibilities for distortion correction or creation as desired for each particular negative.

THE BESELER CAMERA BACK

The Beseler Camera Back, #204C, available as an accessory, converts the Model 45-M Series Enlarger into an efficient copying camera.

The Beseler Camera Back is designed around a 4" x 5" Graflok® back and accepts all Graphic® 4" x 5" holders for sheet, roll or pack film, the Grafmatic film holder and the Polaroid Land® 4 x 5 Film Holder. It is equipped with a Field Lens for brilliant images.

It will also accept the Polaroid Land® Back and enable you to do copying work on a "picture-in-a-minute" basis. The Polaroid Land Back attaches to the Camera Back in a few seconds and a dark slide permits its removal at any time for conventional copying work.

To install the Beseler Camera Back, remove the Lamp House assembly and Condenser Housing by opening the Condenser Housing clamp #17. Lock the negative stage in the 4" x 5" position as described on page 10, then place the Beseler Camera Back into the opening, securing it by the side clamps #17. The camera back is now ready to function.

NEGATIVE STAGE CLOSURE

The movement of the lower negative stage (#7) during the opening and closing operation is immaterial. However, with the negative carrier (#16) in place and the negative stage closed, both the upper and lower portions of the negative stage should be parallel to and in close proximity with each other. Adequate tension to insure this condition is provided by means of tension springs 4612-1 & 2 located behind the negative stage. In the event that the negative stage closure is improper, e.g., excessive space between the forward edges of the upper and lower negative stages, then these tension springs should either be replaced or their tension recreated. Remove the springs and after the tension is recreated by careful manipulation with pliers, replace them. Note that the amount of tension should be only sufficient to maintain proper closure of the negative stage but retaining smooth, free vertical operation of the negative stage assembly.

RESISTROL

RESISTROL is a voltage control unit which when properly connected as shown in the illustrations 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 control lamp intensities 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 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.

A quick and dependable means for such evaluation may be made by inserting a voltmeter into outlet (located at the top of control for this very purpose). The special voltmeter, the BESTROL METER, Catalog #4415-7 is for A. C. only.



TIMERS

A mechanical timer or a foot switch may be connected to the Beseler Enlarger by removing the lamp switch cord and inserting the mechanical timer or foot switch into lamp switch outlet #14A.

Electronic timers (e.g. Time-O-Lite), must be connected directly to the power outlet and the lamp cord disconnected from outlet #14, then connected directly into the receptacle of the electronic timer. An extension cord

may be necessary for this purpose and lamp switch #14A becomes inoperable when the above modification is made.

MOTOR CONTROL HOUSING

The reduction gear box located within the motor control housing has been lubricated at the factory. Under extremes of heat, it is possible that a slight leakage of this lubricant may occur. This phenomenon is non-recurring and will disappear. If it occurs, it is suggested that the rear cover plate of the motor control housing, #4599, be removed and with a swab or soft cloth, wipe the residue of this lubricant from the bottom of the motor control housing.

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 nylon contact located immediately behind the lenstage casting (4576P). 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 focusing rack (#4571) is reached. This position may be determined by a carpenter's square with one side placed on the surface of focusing rack (#4571) and its base on the baseboard.
2. In normal operation, lenstage #12 in "zero" position should be flat and parallel with negative stage #7 and the baseboard. If its neutral position is not exactly parallel to the negative stage, adjustment can be made by loosening lenstage screws (#24 on Page 4) slightly. (Do not remove screws, but loosen sufficiently to get free movement of the lenstage). At this point, with the aid of a carpenter's square or other device that will indicate its level position as parallel to the negative stage and while holding the lenstage in this position firmly, tighten the lenstage adjusting screws.
3. **DIFFUSION:** To make a diffused portrait—first focus the negative as sharply as possible on the enlarging easel. Then take a sheet of .060 fine ground glass and lay it on the sensitized paper with the ground side up.

The result will be a pleasing soft picture. But one hint: use a paper one degree contrastier than the negative normally calls for because this method has a tendency to flatten out the highlights somewhat.



THE BESELER ENLARGER GUIDE BY CHARLES COLE

124 pages of facts and advice on how to get best results from your Beseler Enlarger. Profusely illustrated and clearly written by one of America's leading photographic enlarger users.

Available at your dealer at.....\$1.95

BESELER ENLARGER MODEL CODE

45: accepts negatives up to 4" x 5" (from 8mm).

M—MOTOR: automatic electric motor raises and lowers lamphouse.

C—COLORHEAD: Bescolor Colorhead accepts color filter material between condensers.

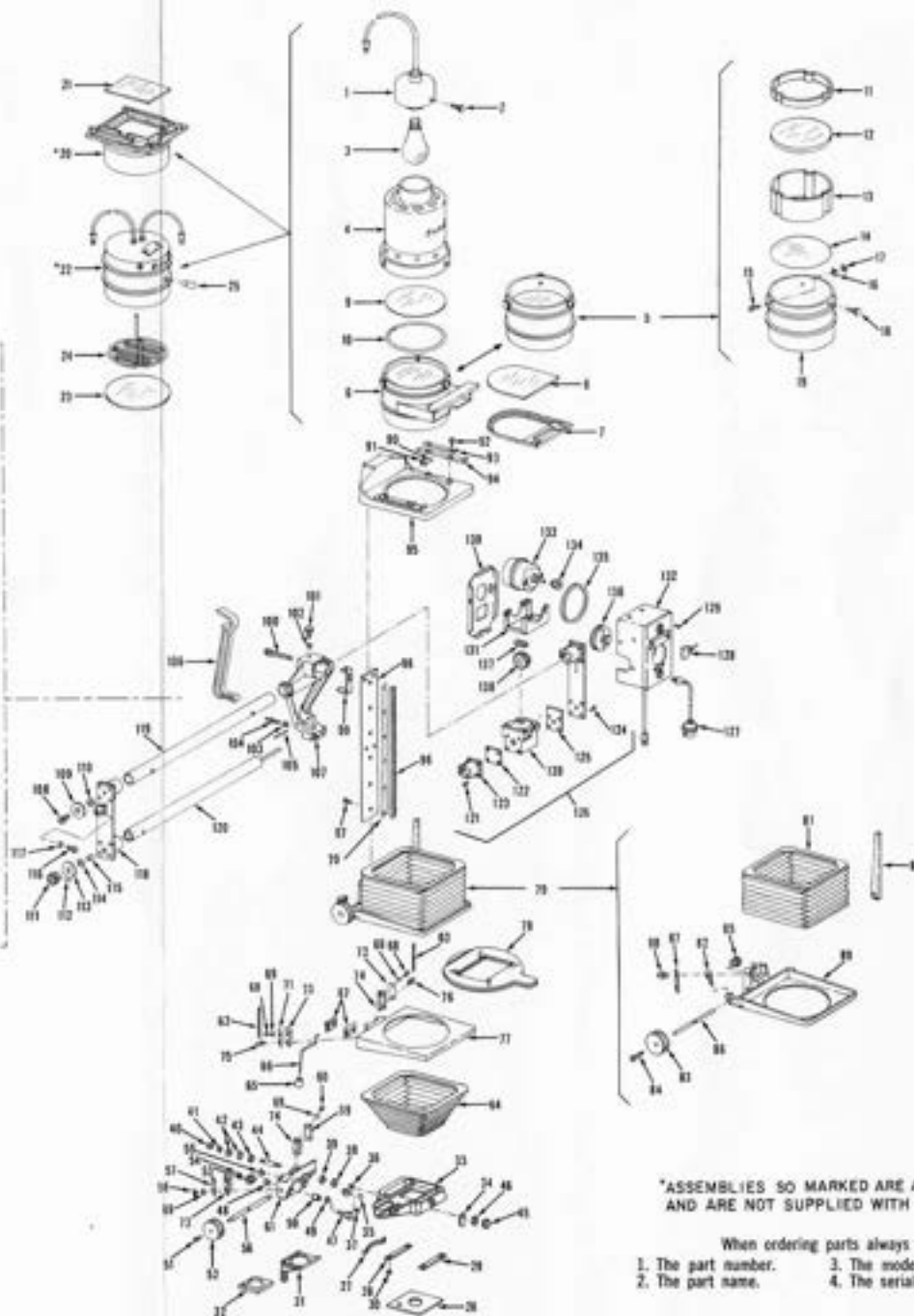
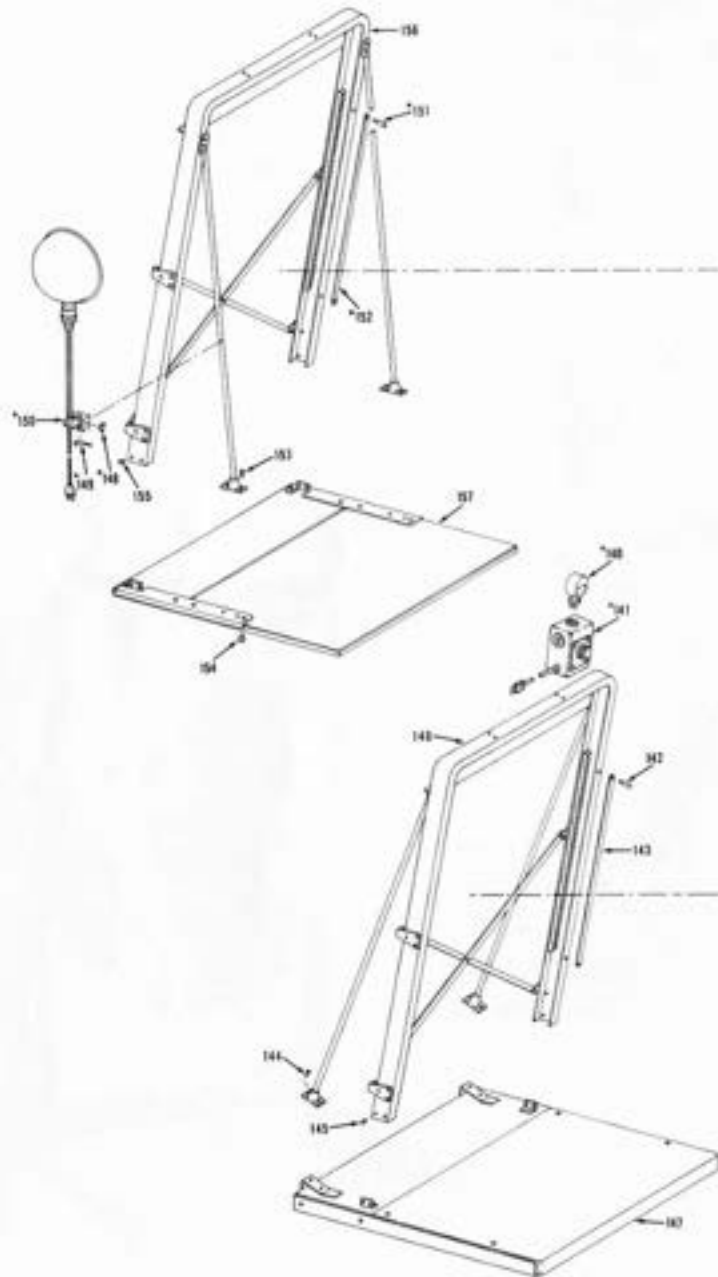
R—RESISTROL: Resistrol Unit varies voltage entering enlarger lamp—up to maximum line voltage.

X—REAR SUPPORT TRUSS: Extra reinforcement rear baseboard extension.

AF—AUTOMATIC FOCUSING.

B—BESLITE: Lamphouse with cold cathode grid light source instead of condensers.

AG—BESELER AGFA COLORHEAD.



*ASSEMBLIES SO MARKED ARE ACCESSORIES AND ARE NOT SUPPLIED WITH ENLARGER.

- When ordering parts always give:
- | | |
|---------------------|-----------------------------------|
| 1. The part number. | 3. The model number. |
| 2. The part name. | 4. The serial number of enlarger. |

PARTS LIST - 45M SERIES ENLARGERS

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
1	Lamp Cap Assembly	4506	79	Upper Negative Stage Assembly	4514
2	Thumb Screw	B.S.2.2-60-1	80	Negative Size Indicator	4564
3	Lamp #212—150 Watts	301A	81	Upper Bellows	4654
4	Lamphouse Assembly	4507	82	Knob—Locking	4514-10
5	Condenser Assembly (Standard)	4508	83	Knob	B.S.2.11-2
6	Bes-Colorhead Assembly	4760	84	Screw 8-32 x 1/2	4514-8
7	Filter Holder	8155	85	Gear	4635
8	Filter Support	B.S.1.6-19	86	Shaft	4560
9	Heat Absorber Glass	B.S.1.6-20	87	Strip - Bearing	8118
10	Spacer Ring	4757	88	Stud	4613
11	Spacer—Upper	4647	89	Upper Negative Stage	4532
12	Condenser—Top	B.S.1.2-81	90	Screw 42 x 3/16	4513-1
13	Spacer	4648	91	Indicating Pointer	4563
14	Condenser—Bottom	B.S.1.2-80	92	Screw—Shoulder	B.S.2.2-63
15	Screw 82 x 1/2	4508-1	93	Latch Spring	4562
16	Retaining Pad	4536	94	Latch (Pair)	4561
17	Nut #8 Tinnerman	4508-2	95	Condenser Support Stage	4540-1
18	Thumb Screw	B.S.2.2-60-1	96	Rack—Lens Focus	4572
19	Condenser Housing	4528	97	Screw 6-32 x 3/8	4516-1
20	Camera Back Attachment*	4660	98	Stage Mounting Bar	4571
21	Ground Glass	10091	99	Bracket	4579
22	Beslite 45—Cold Light Head*	4785	100	Bolt 3/8-16 x 2-3/4	4500-1
23	Glass Diffuser	B.S.1.7-23	101	Knob	4517-30
24	Grid Light	4663	102	Washer #10	4517-18
25	Pilot Light	NE-51	103	Nut 1/4-20	4517-26
26	Lensboard—Blank	4520-1	104	Adjusting Screw Assembly	4657
27	Spring	4543	105	Driv-Lok Pin	4517-1
28	Retainer—Rear	4542	106	Horizontal Arm Supp.	4557
29	Retainer—Front	4541	107	Enlarger Head Carriage	4535
30	Screw 42 x 1/4	4512-10	108	Shoulder Screw	B.S.2.2-65
31	Filter Drawer Assembly	4519	109	Wheel	4582
32	Filter—Safety	B.S.1.7-20	110	Washer—9/32	4589-3
33	Lens Stage	4677-1	111	Pinion	4566
34	Ball Retaining Spring	4608	112	Roll Pin	4517-3
35	Ball	4512-5	113	Wheel	4582
36	Wear Plate	4609	114	Washer—25/64	4517-17
37	Screw 6-32 x 1/8	4512-11	115	Bearing	4589-4
38	Washer—1/4	4512-14	116	Shoulder Screw	4585
39	Washer—Fibre 25/64	4512-12	117	Side Wheel	4586
40	Nut 1/4-20	4512-1	118	Bracket Assembly—Right	4589
41	Lockwasher 1/4	4512-16	119	Upper Tube	4583
42	Bow Washer 1/4	4512-4	120	Lower Counterbalance Assembly	4565
43	Washer—25/64	4512-13	121	Screw—8-32 x 3/8	4588-1
44	Shaft	4574	122	Bushing Retainer	4594
45	Nut Acorn 1/4-20	4512-6	123	Clamp Collar	4590-2
46	Lockwasher 1/4	4512-16	124	Screw—8-32 x 5/8	4588-6
47	Knob	4512-20	125	Spacer	4593
48	Cartridge—Locking	4645	126	Bracket & Gear Box Assembly	4588
49	Washer #10	4512-21	127	Light Switch Assembly	4523
50	Spacer—Locking	4646	128	Motor—Switch	4596-1
51	Screw #8-32 x 1/2	4512-17	129	Screw—6-32 x 1/4	4517-25
52	Focusing Knob	B.S.2.11-2	130	Motor Rear Cover	4599
53	Gear	4635	131	Motor Mtg. Bracket	4582
54	Roll Pin	4512-18	132	Motor Cover Assembly	4596
55	Bow Washer	4512-2	133	Motor—115 Volt	B.S.3.5-15
56	Focusing Shaft	4551	134	Small Pulley	4581
57	Strip - Bearing	8118	135	Belt	B.S.2.17-1
58	Screw - 4-40 x 1/4	4512-22	136	Large Pulley	4580
59	Strip - Bearing	8118	137	Worm	4606
60	Screw - 4-40 x 1/4	4512-22	138	Worm Gear	4567
61	Lens Stage Carriage	4576	139	Gear Box	4595
62	Spring (Stage) Left	4612-2	140	Volt Meter	4415-7
63	Spring (Stage) Right	4612-1	141	Resistor	4415
64	Lower Bellows	4656	142	Stop Pin	4628
65	Knob	4515-1	143	Elevating Scale	4630
66	Stage Opening Lever	4611	144	Screw 10-32 x 5/16	4728-6
67	Bracket	4610	145	Screw 10-32 x 1/4	4728-3
68	Screw - 4-40 x 1/4	4515-6	146	Frame and Board Assembly	4728
69	Hex Nut - 4-40	4515-4	147	Baseboard (only)	4740
70	Spacer - Rack	4668-1	148	Wing Nut 10-32	4425-1
71	Strip - Bearing	8118	149	Clamping Hook	4431
72	Stud	4613	150	Copy Light Assembly	4425
73	Bearing	11017	151	Stop Pin	4628
74	Bearing	11017	152	Elevating Scale	4630
75	Stud	4613	153	Screw 10-32 x 5/16	4518-3
76	Stud	4613	154	Tee Nut 1/4-20	4518-6
77	Lower Negative Stage	4533	155	Screw 10-32 x 1/4	4518-1
78	Negative Carrier	4698	156	Frame & Board Assembly	4518
			157	Baseboard—Front or Rear	4619



**MODEL 45M
ENLARGER**



**MODEL 45MCXAG
ENLARGER
with
BESELER-AGFA
COLORHEAD**