

Bausch & Lomb

StereoZoom

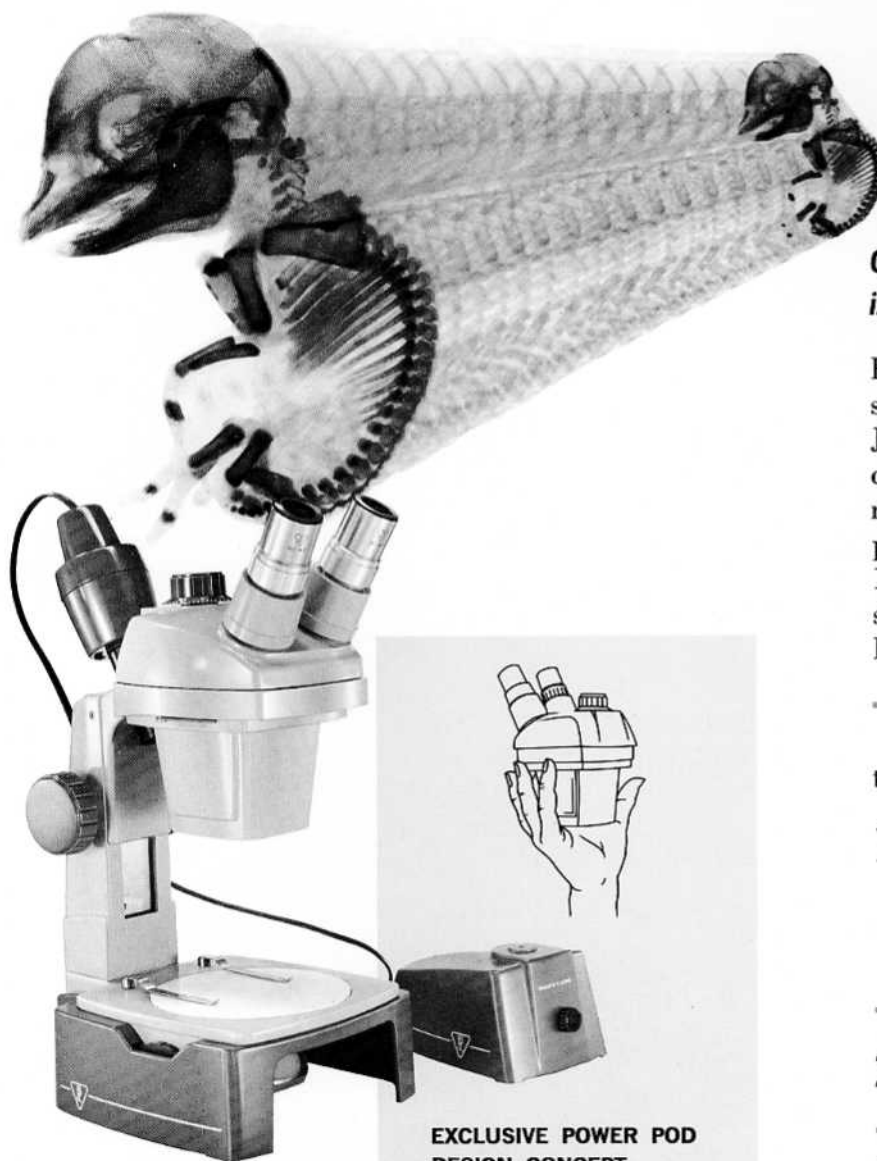
Microscopes



Bausch & Lomb Incorporated

Rochester 2, N.Y., U.S.A.

Bausch & Lomb Stereomicroscopes with STEREOZOOM[®]



Continuously Variable Magnification Optics in sealed Power Pod

Here's a completely new optical concept to speed and simplify work requiring 3D views. Just turn the magnification knob and watch the crisp stereo image zoom to the *exact* size you need. Not just a few fixed powers, but *any* power within the wide stereo ranges (3.5 \times -120 \times). The newest advance in three dimensional microscope design... exclusive with Bausch & Lomb.

The range of magnification attainable is determined by choice of:

1	a. Power Pods—Four Models Two StereoZoom continuously variable models are available.	1 \times thru 2 \times 0.7 \times thru 3 \times
	b. Two fixed models are available.	1 \times 2 \times
2	Wide Field Eyepieces Three Magnifications	10 \times 15 \times 20 \times
3	Supplementary Lenses Two Magnifications	0.5 \times 2 \times

EXCLUSIVE POWER POD DESIGN CONCEPT

- Sealed to prevent dust and foreign matter from entering optical system!
- No nosepiece!
- No objectives to change!
- No image jump!
- No image blackout!

Since TOTAL MAGNIFICATION equals POWER POD times EYEPIECES times SUPPLEMENTARY LENS, when used, the extended range of magnification possible is easily determined. The limits are 3.5 \times thru 120 \times .

©StereoZoom, Registered, Bausch & Lomb

Beginning a New Tradition in Microscope Design

The optical design of these new instruments is a complete departure from the conventional methods used to achieve magnified, three-dimensional images. All optical elements are completely enclosed in a unitized Power Pod, sealed against dust and all other foreign material. Images are always crisp, and brilliant. The finest details in the object being viewed are quickly and easily resolved, assuring continuous, accurate, speedy work flow.

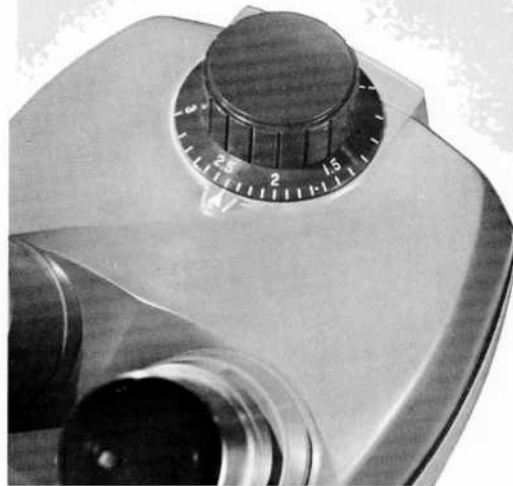
Dual mirrors erect and relay the enlarged images formed by dual magnifying lenses, eliminating prisms and the attendant possibility of prism shift. These first-surface mirrors have an enhanced aluminum coating that increases light reflection and maintains its polished brilliance.

The enclosure containing the optical elements and heretofore often referred to as a "body" or "Optical Head" is so entirely different in concept that these terms no longer apply. Hence, the name "Power Pod"—to signify a complete, self-sufficient unit that is, in essence, the microscope. All Power Pods fit all stands, and are instantly interchangeable from one type of stand to another, can be reversed and in some cases rotated. Such complete versatility keeps the user constantly prepared to meet all needs quickly without heavy investment in additional instruments.

Optics are completely enclosed within the Power Pod on a smoothly functioning, long-wearing cam arrangement in the StereoZoom continuously variable magnification models—permanently fixed in the constant magnification models. There are no objectives to misplace, scratch or break—no sliding, revolving, or rotating drum nosepieces to get out of order or to cause "image blackout" when changing from one magnification to another.

This "phantom" illustration of the 0.7× thru 3× continuously variable Power Pod, shows many optical-mechanical components within the sealed body. While every part in the system is of ample size to assure long life with no maintenance problems, the entire assembly is a marvel of compactness. Turning the StereoZoom Dial actuates shafts and gears which determine spacing of lenses to provide continuously variable magnification.

The StereoZoom Dial on both the 0.7× thru 3× and 1× thru 2× continuously Variable Power models is graduated in magnification increments.





0.5× and 2× Lens Attachments are available. A Clear Glass Shield is furnished on Fixed Power models and optional at extra cost on Variable Power models.

Flat Fields — No Loss of Depth

Because the optical arrangement consists of two complete microscope systems, edge-to-edge flatness of field is assured. There is none of the annoying curvature of field that destroys the 3-D effect and results in inaccurate work and costly rejects. True stereopsis is maintained at all magnifications. No refocusing is necessary when changing from one to another.

Working distance is a constant 4 inches except when lens attachments are used. The 2× attachment shortens working distance to 1½ inches, the 0.5× attachment extends it to 7 inches. Obviously, the 0.5× attachment can be used only with those models that permit 7 inches of working distance — models in the S, SK, K, and KT series.

In addition to long working distance and flat fields, these instruments also provide wide fields of view enabling users to manipulate tools or dissecting instruments with speed and precision. See pages 26 and 27 for a table of magnifications and field sizes.

Longer Eye-Relief Eyepieces

In keeping with the many other accuracy, time-saving and comfort features of these new instruments, the entirely new, wide-field eyepieces provide a margin of eye-relief that assures comfortable, efficient viewing. They provide wide fields with the sharpest possible focus from center to outside edge, without the “peep-hole gazing” effect of less modern instruments. They can be supplied in 10×, 15× or 20×. The 10× eyepieces with exceptionally long eye-relief are ideal for those who wear eyeglasses. Simplicity of mechanical design permits quick insertion of standard, or special

Long Eye Relief Wide Field Eyepieces come in 10×, 15× and 20× magnifications and permit comfortable viewing even when wearing glasses.



micrometer scales for precise measuring work.

To eliminate bothersome stray light, eyeguards are regularly supplied for use with these eyepieces without extra cost. For those who do not wear eyeglasses, these eyeguards serve to quickly position the eyes at the correct distance from the eyepieces.

Sharpest Possible Images

Whenever the requirements call for the very finest optical elements science can provide, Bausch & Lomb optics are specified. And in this new line of StereoZoom Microscopes, these optics assure sharpest rendition of detail in the most complex material. To insure elimination of internal reflections and flare, thus providing more light, better contrast and definition, all optical elements are anti-reflection coated with Bausch & Lomb BALCOTE.

Inclined Eyepiece Tubes for Comfort and Efficiency

All Power Pods are supplied with eyepiece tubes inclined at a convenient angle. The operator works comfortably and efficiently, fatigue-free for long periods of observation.

Synchronized Eye-Spacing Adjustment

Eyepiece tubes are easily adjusted to conform to individual eye-spacing from 50mm to 80mm. They are synchronized with a large, smoothly acting linkage completely enclosed within the Power Pod—movement of one moves the other the same degree, maintaining the same horizontal axis. Spacing remains as set until purposely changed. This adjustment will not affect focus nor will it destroy calibration during measuring applications.

Inclined Eyepieces make for relaxed, most efficient viewing. Here shown with eyeguards, regularly supplied with all wide field eyepieces at no extra cost.



Acuity Equalizer

One eyepiece can be independently focused to compensate for the difference in visual acuity between the eyes. A fine screw thread permits precise equalization of focus between the left and right eyes.

Instantly Reversible Power Pods

All Power Pods are quickly reversible in any type stand simply by opening two spring clips, lifting the Pod out, and replacing it, so that the eyepieces are facing in the opposite direction. Optics are mounted to withstand everyday use — and abuse.

A rotary arm permitting 360° rotation is available for models in the S, K and KT series and regularly supplied in the SK series. This is especially useful when examining objects too heavy or bulky to be conveniently handled.

Modern Functional Stands

The simple, rigidly-strong, and well-balanced stands of these instruments assure vibration-free support for the Power Pods. They can be used on the production line alongside machinery without resultant image flutter.

There is an immediate and complete response without sign of lag or drag when focusing B&L StereoZoom Microscopes. The focusing rack and pinion gears are chrome-plated steel, making them extremely hard and corrosion-resistant, thus adding considerably to their long-wearing qualities. The rack is extra wide, providing a greater bearing surface and thus assuring more positive focusing. Vibrations cannot cause the stereomicroscope to creep or drift out of focus.

Focusing knobs are also extra large for positive handling, ease of manipulation and critical focusing. These instruments will always



Power Pods are instantly reversible to allow for specific requirements of work to be done.



focus as easily and precisely as the day they passed Bausch & Lomb rigid inspection standards. Tension of the focusing knob can be quickly adjusted to suit the user.

Wide stages accommodate even the larger parts or specimens to provide an extended range of usefulness for these instruments.

Models Exactly Fitted to Your Job

Choosing a model that is custom tailored to your present application and which can be quickly adapted to future requirements is simplicity itself. Six basic stands are available which will accept any one of the 4 Power Pods, to make up 24 different models.

These are divided into 6 series — A, B, K, KT, S and SK — each series consisting of 4 models made up from a basic stand and one of the 4 Power Pods.

Series A

For examination of opaque specimens. Stand has a port at the top of the microscope arm for insertion of the B&L Nicholas Illuminator. Supplied with newly designed, scratch and reagent resistant contrast plate — black on one side, white on the other.

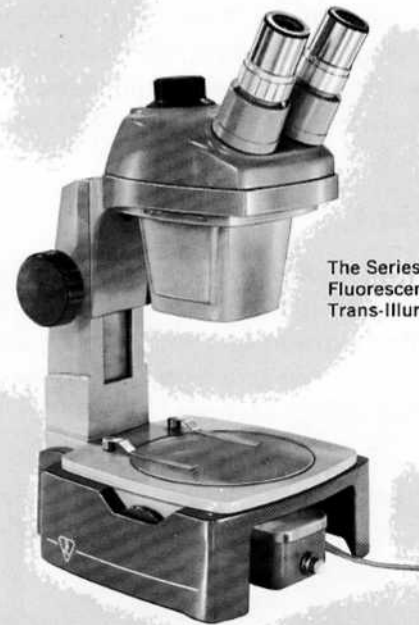
Series B

Same stand as in Series A with the addition of a locked-on, removable base for transmitted light work. Supplied with a clear glass stage plate. Contrast plate can be furnished at slight added cost for optimum efficiency when doing opaque work.

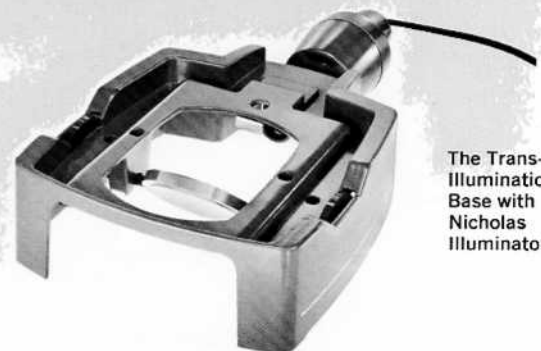
In the base is a concave mirror with a diffusing reflector on the reverse side, rotatable by either of two dials recessed in the base for best possible reflection of the light source. The mir-



The Series A. Here fitted with Reflector Illuminator.



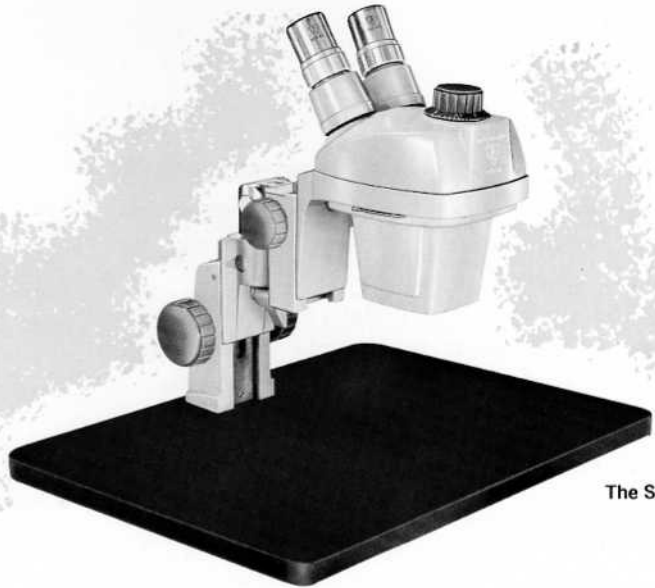
The Series B. Showing Fluorescent Illuminator in Trans-Illumination Base.



The Trans-Illumination Base with Nicholas Illuminator.



The Series K



The Series KT

ror is easily removable for substitution of the B&L Fluorescent Illuminator which clips into the base in automatic centration. Or if preferred, a port at the rear of the base permits insertion of the Nicholas Illuminator for use in conjunction with the mirror, to provide greater intensity of illumination when working with dense material.

Series K

Heavy, recessed cast base, an inclinable joint and two continuously adjustable slides providing extra long working range, make instruments in this series particularly well suited to industrial applications.

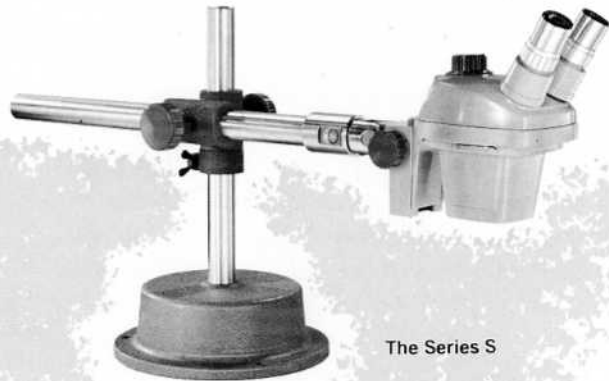
Series KT

A 12" x 16" Composition Baseboard, plus an inclinable joint and the extra vertical travel provided by the additional slide feature on K models. For examination of large, opaque objects.

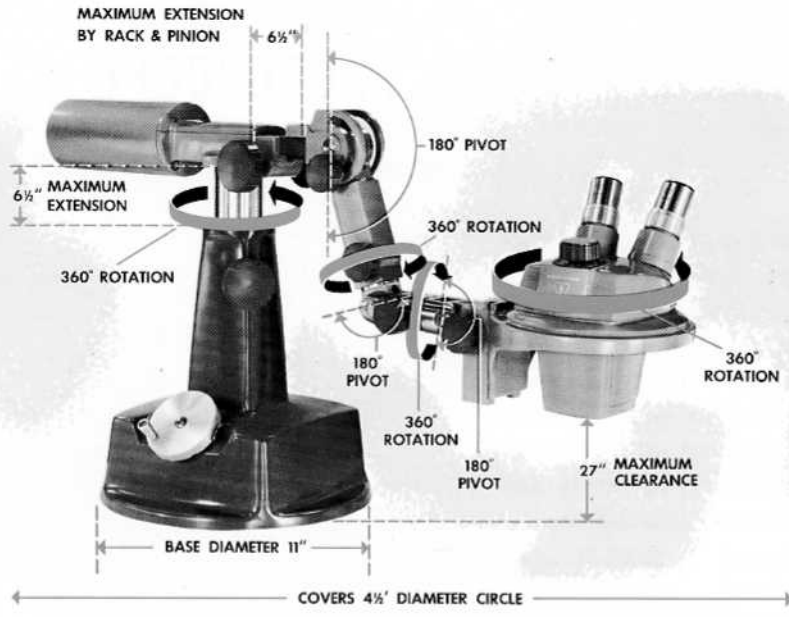
Series S

For use in applications requiring greater flexibility of movement during opaque examinations than provided by instruments in the A, B, K or KT series.

Massive cast base assures rigid stability even with horizontal arm supporting Power Pod, fully extended. Horizontal arm, adjust-



The Series S



The Series SK has 7 pivoting or rotating actions.

able up or down on heavy steel shaft, can be turned through a complete circle. Tilting pivot joint secures the arm to the rack and pinion focusing mechanism to permit convenient examination of sloping surfaces.

Series SK

Providing complete flexibility for examining opaque objects in *any plane*. 360° rotatable ring for support of the Power Pod. Balanced, horizontal rotatable arm with rack and pinion radial adjustment; fitted with 5 tension joints and provided with 3 pivoting, 4 rotating and 3 linear actions for universal adjustment in any plane. Heavy cast base with vertical column adjustable in height by ball-bearing nut mechanism actuated by handle and brake.

Special Depth-Measuring Model

This instrument makes use of the observer's sense of depth perception to make accurate measurements of surface details without physically touching the object. Two identical stereo reticles cause image fusion at a definite plane in space. Depth is measured with a dial indicator which reads the travel of the focusing mechanism. Dial range is 1" with least reading of 0.001". Repeatability is to within $\pm .0004$ ".

The Better for You to See With

Given the finest microscope in the world, its efficiency is considerably reduced by inadequate or improper illumination. The quality of images provided by this new line of stereomicroscopes can be fully realized only by using illuminators developed especially for them. There are three of these and they are pictured and described on pages 24-26.



The Model ADM Depth Measuring Stereomicroscope.

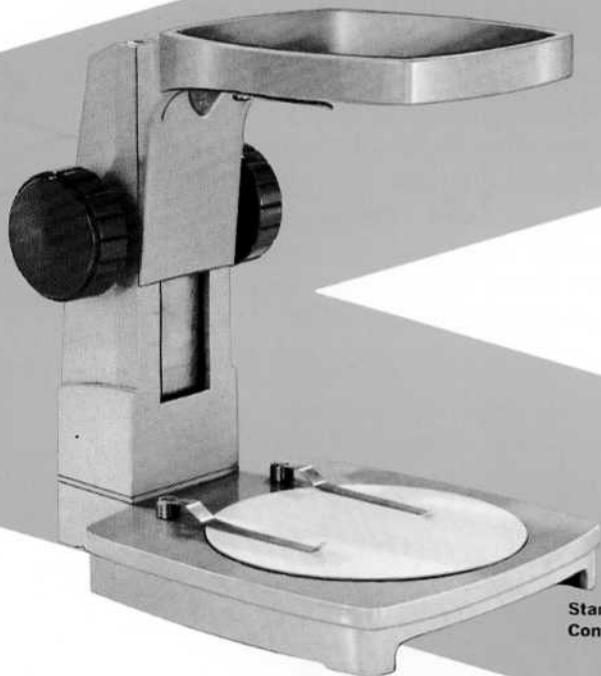
THE SERIES

A

STEREOZOOM MICROSCOPE

For opaque objects

Bausch & Lomb StereoZoom Microscope, Balcoted; sealed Power Pod with inclined eyepieces, reversible, synchronized interpupillary distance adjustment, acuity equalizer; continuous positive focus by extra wide rack and pinion; constant 4" working distance; 4 locations for integral illumination; large stage with clips and reversible black and white contrast plate; 10× paired wide field eyepieces with eyeguards; plastic dust cover; reference and maintenance manual; corrugated carton; specific models as listed below:



Stand—31-26-88 with
Contrast Plate—31-26-87



1× Fixed Power Pod—31-26-91
2× Fixed Power Pod—31-26-92



0.7× thru 3× StereoZoom Power Pod—31-26-94
1× thru 2× StereoZoom Power Pod—31-26-93

OPTICAL SPECIFICATIONS

Total magnifications as shown can be changed by using other eyepieces or lens attachments. See pages 26-27.

Cat. No.	Model	Description
31-26-29-01	Model AFB-1	1× Fixed Power Pod (total magnification 10×)
31-26-29-02	Model AFB-2	2× Fixed Power Pod (total magnification 20×)
31-26-29-12	Model AVB-12	1× thru 2× StereoZoom Variable Power Pod (total magnification 10× thru 20×)
31-26-29-73	Model AVB-73	0.7× thru 3× StereoZoom Variable Power Pod (total magnification 7× thru 30×)

Bausch & Lomb Series **A**

StereoZoom Microscopes



Model AFB-1. 1X-31-26-29-01
 Model AFB-2. 2X-31-26-29-02

ILLUMINATORS—Harmonizing Design

Cat. No.	Description
31-33-53	Nicholas with adjustable transformer
31-33-56	Nicholas with fixed transformer
31-33-36	Fluorescent
31-33-24-01	Reflector
31-34-83	Vertical



Model AVB-73. 0.7X thru 3X-31-26-29-73
 Model AVB-12. 1X thru 2X-31-26-29-12

See pages 24-26 for complete descriptions of illuminators.

THE SERIES **B** STEREOZOOM MICROSCOPE

For opaque and transparent objects

Bausch & Lomb StereoZoom Microscope, Balcoted; sealed Power Pod with inclined eyepieces, reversible, synchronized interpupillary distance adjustment, acuity equalizer; continuous positive focus by extra wide matched rack and pinion; constant 4" working distance; 5 locations for integral illumination; large stage with clips and clear glass plate; locked on removable base with substage illuminator port, concave mirror with angle adjustment controls; 10× paired wide field eyepieces with eyeguards; plastic dust cover; reference and maintenance manual; corrugated carton; specific models as listed below:

1× Fixed Power Pod—31-26-91
2× Fixed Power Pod—31-26-92



Stand—31-26-88 with
Base—31-26-84-86



0.7× thru 3× StereoZoom Power Pod—31-26-94
1× thru 2× StereoZoom Power Pod—31-26-93

OPTICAL SPECIFICATIONS

Total magnifications as shown can be changed by using other eyepieces or lens attachments. See pages 26-27.

Cat. No.	Model	Description
31-26-30-01	Model BFB-1	1× Fixed Power Pod (total magnification 10×)
31-26-30-02	Model BFB-2	2× Fixed Power Pod (total magnification 20×)
31-26-30-12	Model BVB-12	1× thru 2× StereoZoom Variable Power Pod (total magnification 10× thru 20×)
31-26-30-73	Model BVB-73	0.7× thru 3× StereoZoom Variable Power Pod (total magnification 7× thru 30×)



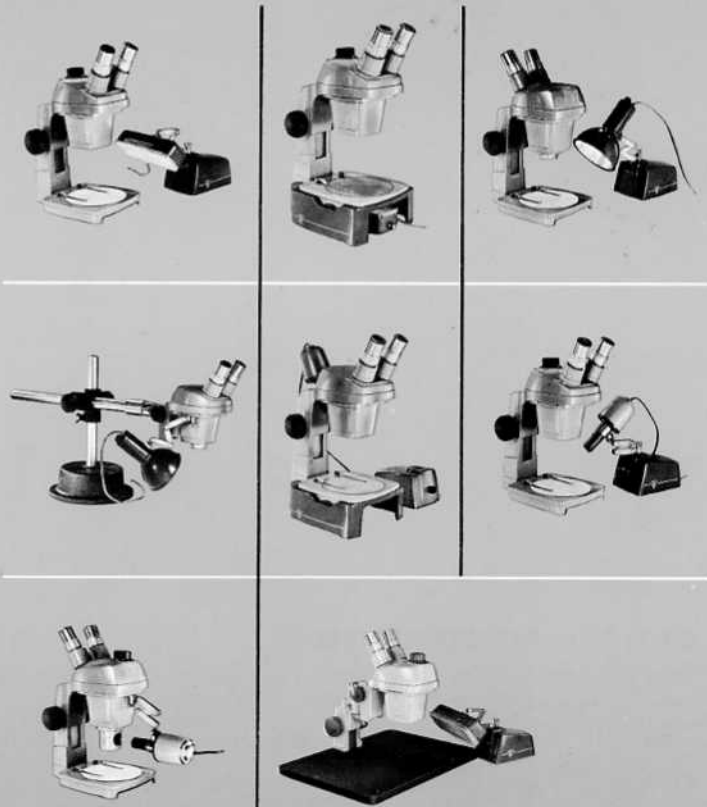
Model BFB-1. 1 \times -31-26-30-01
Model BFB-2. 2 \times -31-26-30-02



Model BVB-73. 0.7 \times thru 3 \times -31-26-30-73
Model BVB-12. 1 \times thru 2 \times -31-26-30-12

ILLUMINATORS—Harmonizing Design

Cat. No.	Description
31-33-53	Nicholas with adjustable transformer
31-33-56	Nicholas with fixed transformer
31-33-36	Fluorescent
31-33-24-01	Reflector
31-34-83	Vertical



See pages 24-26 for complete descriptions of illuminators.

