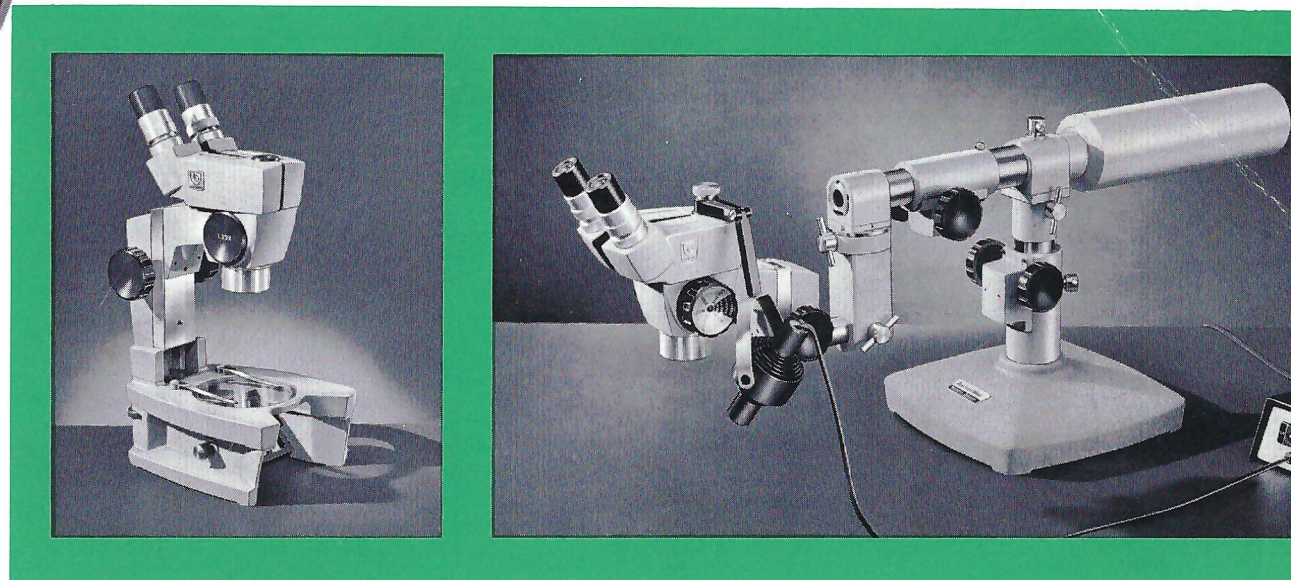
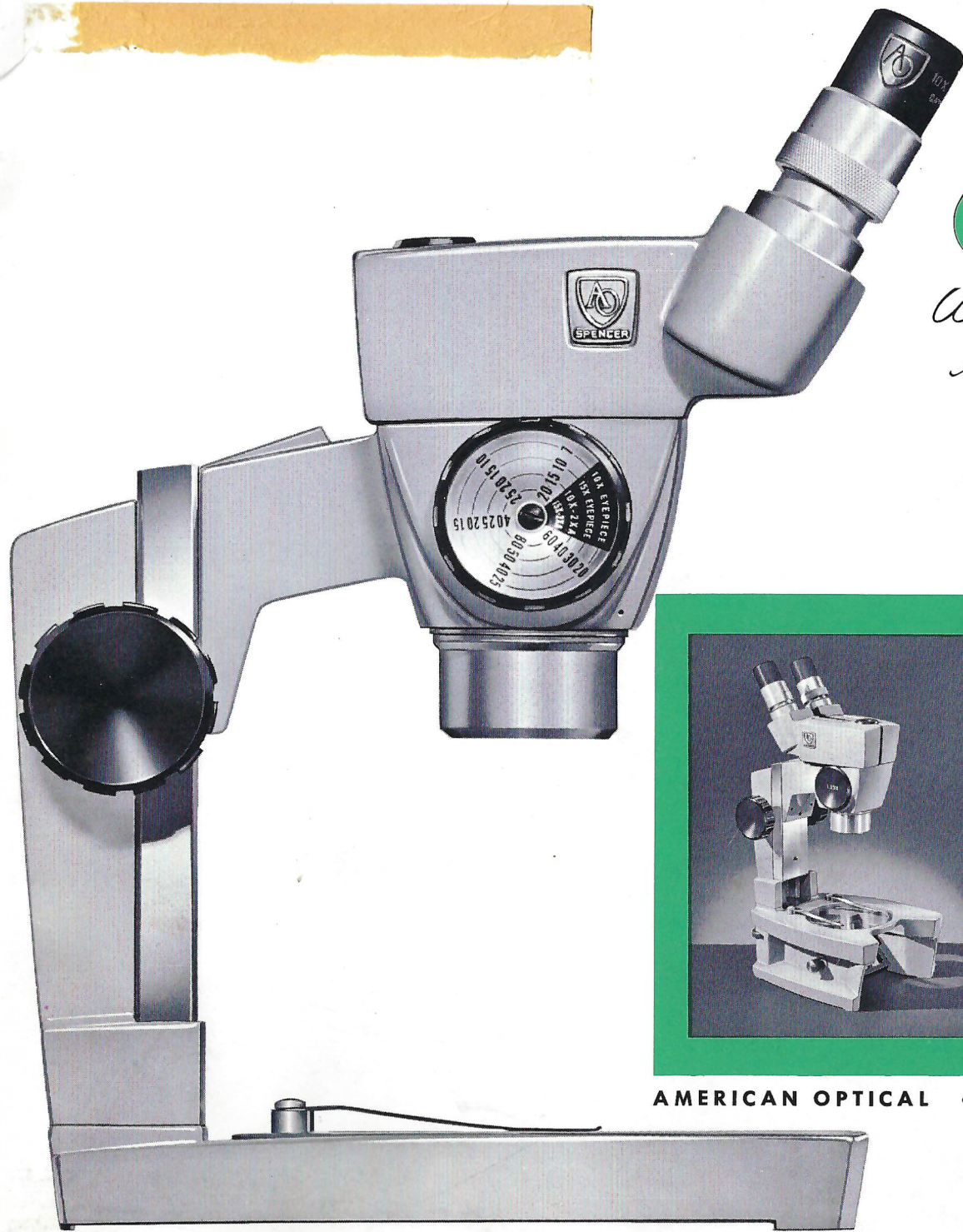


Mr. Seminski



CYCLOPTIC

World's most modern... versatile... and complete line of **STEREOSCOPIC MICROSCOPES!**



AMERICAN OPTICAL • INSTRUMENT DIVISION • BUFFALO 15, NEW YORK



CYCLOPTIC

... an exciting new concept

The stereoscopic microscope has been universally established as a necessary instrument for the effective examination and measurement of microscopic details. It enables the user to binocularly observe his specimen . . . provides a true three-dimensional erected image . . . offers long working distance . . . a wide field of view . . . and optimum objective-eyepiece combinations to meet specific magnification needs.

Industrial, Educational and Research workers are constantly striving to improve production methods and quality control techniques on a great variety of problems and applications ranging from the inspection of tremendous castings to the dissection of fruit flies.

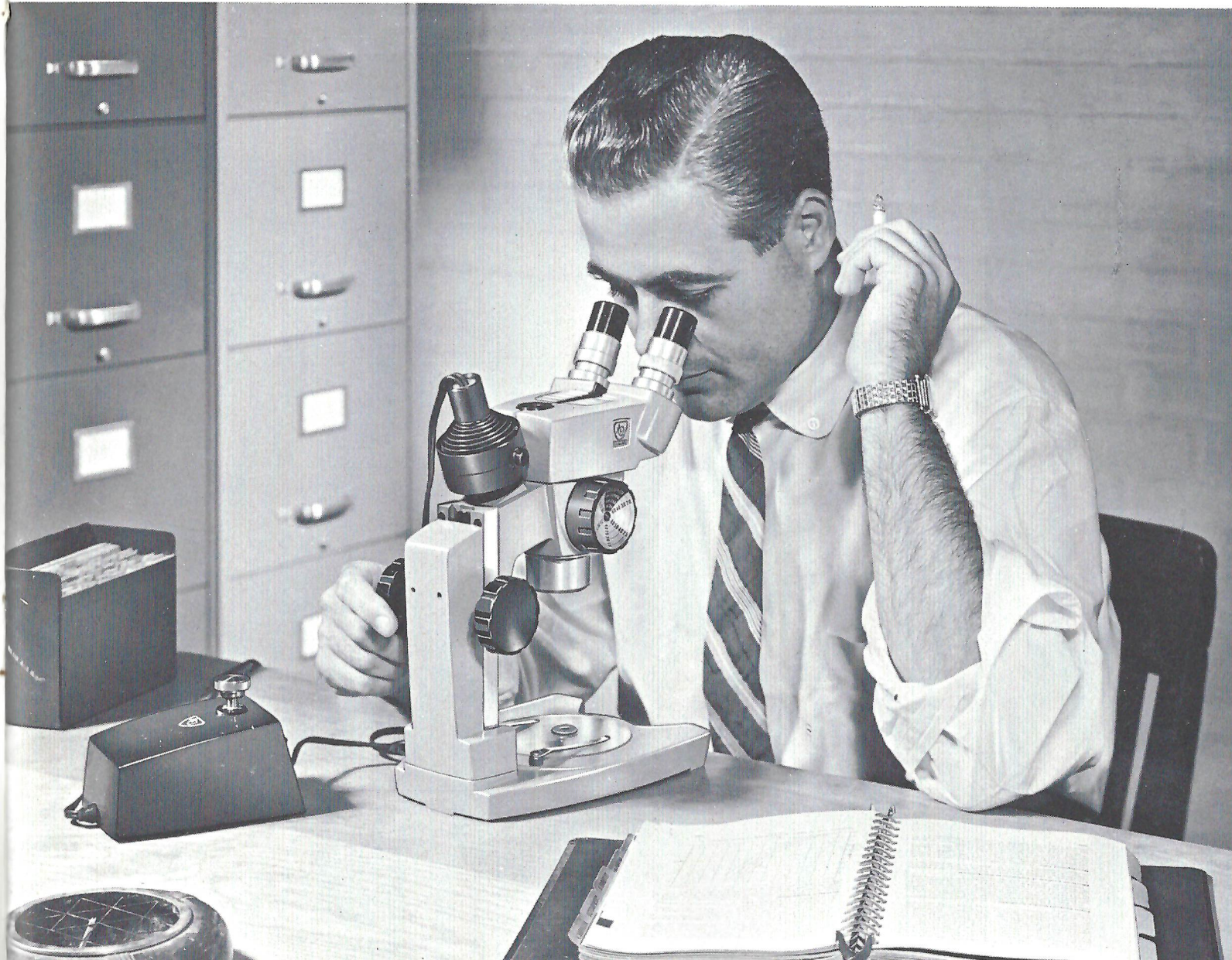
American Optical realized the need for a wider and more flexible selection of stereoscopic microscopes to satisfy these many diversified and increasing applications. Surveys were made among extensive users of microscopes in industry, education and research to determine how stereoscopic microscopes should be further improved. Many valuable and constructive ideas were obtained from the survey and engineered into a NEW CONCEPT in stereoscopic microscopes—the CYCLOPTIC MICROSCOPE.

AO Spencer is justifiably proud to continue recognized leadership in microscopes by the addition of this exciting new CYCLOPTIC Series. You, too, will appreciate the numerous advantages offered by the world's most modern . . . versatile . . . and complete line of stereoscopic microscopes. Why not ask for a demonstration today! You'll quickly agree that American Optical offers near-perfection in optical and mechanical design . . . a model to suit every application.



again sets the pace with a new standard of excellence

t in stereoscopic microscopes!



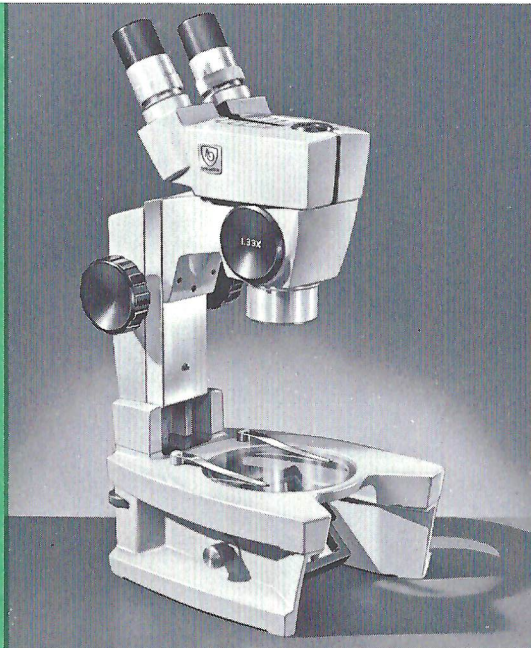
In Industry, Education and Research . . . applications range from the dissection of fruit flies to the inspection of tremendous castings.

Outstanding **CYCLOPTIC** Microscope features . . .

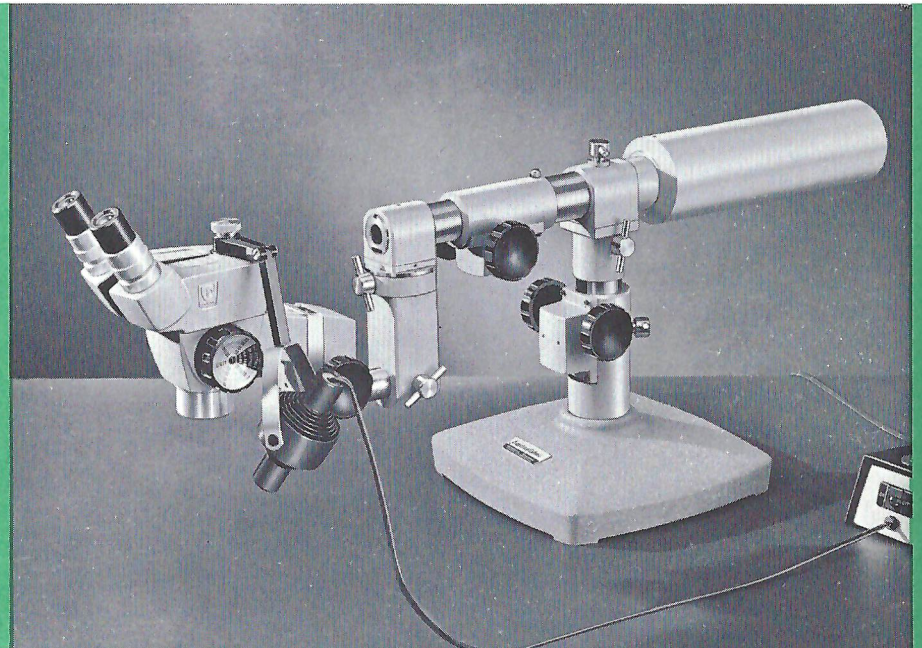
1. *Reversible and inclined body*
2. *Long working distance*
3. *Large field of view*
4. *Wide range of magnifications*
5. *Erected and unreversed image*
6. *Top quality optics . . . low reflection coated*
7. *Enhanced stereoscopic view*
8. *Adjustable for interpupillary and eye-refraction differences*
9. *Rigid, well balanced stands*
10. *Advanced styling and design*
11. *Dove-gray EPOXY finish*



Cycloptic Series 56



Cycloptic Series 58



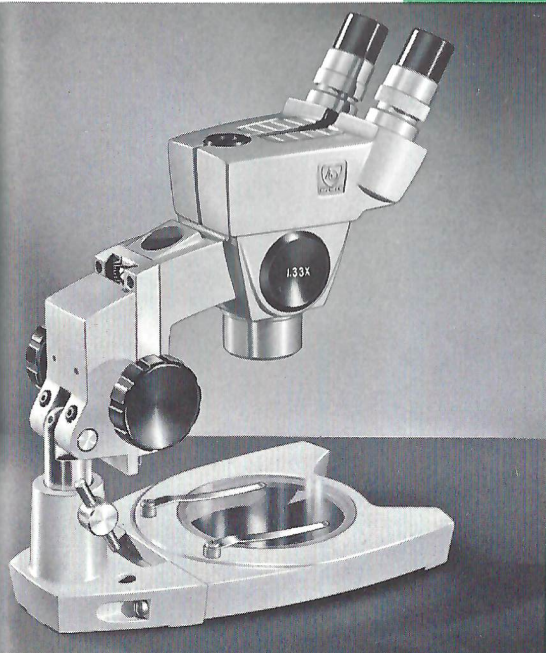
Cycloptic Series 53

*Broad selection of models
gives unmatched versatility!*

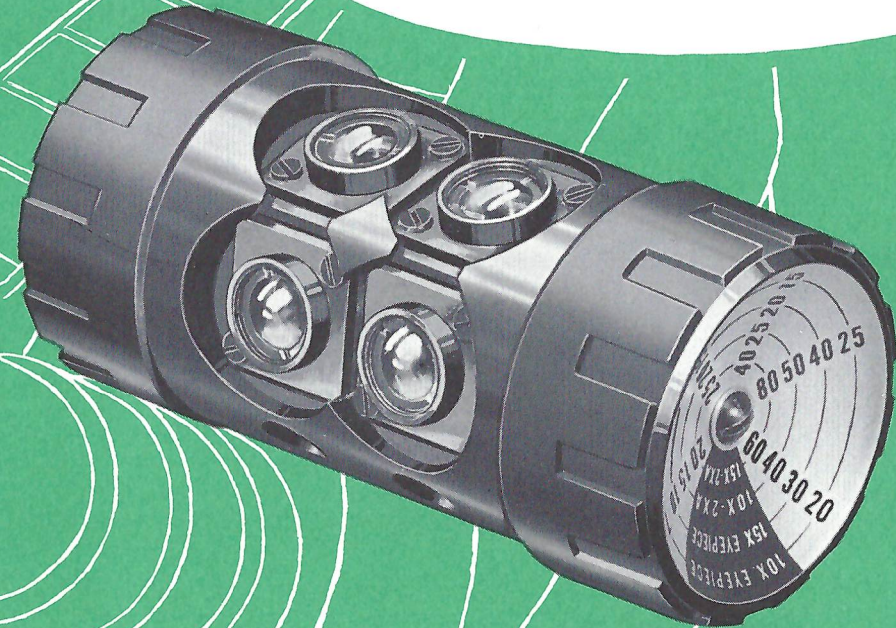
plus . . .

the revolutionary

MAGNI-*Changer*

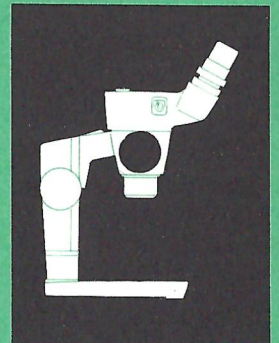


Cycloptic Series 59



Magnifications Simply "Dialed-In"

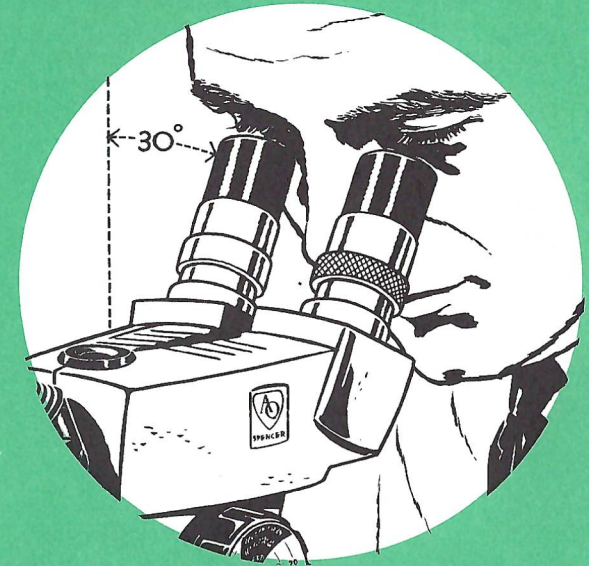
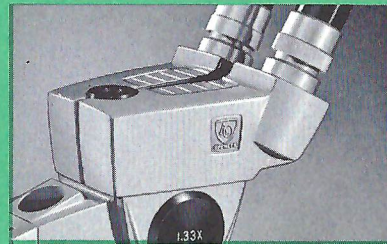
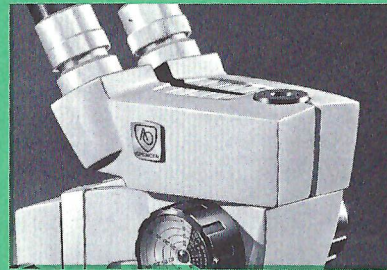
Resultant magnifications range of 3.5X to 80X is available. Desired magnification can be selectively "dialed-in" by simple rotation of the MAGNI-CHANGER to indicated values. The MAGNI-CHANGER is supplied in all "M" model CYCLOPTIC microscopes . . . contains 16 achromatically corrected optical elements . . . offers five different magnifications for each eyepiece-objective combination. Intermediate magnifications are conveniently obtainable by rotation of the MAGNI-CHANGER, insertion of other powered eyepieces or substitution of basic objectives and auxiliary lens-attachments. Other CYCLOPTIC models are supplied with a fixed body magnification (1.33X) and resultant magnification can be varied by substitution and addition of eyepieces, objective, or auxiliary lens-attachments.





REVERSIBLE and INCLINED BODIES

Binocular bodies are readily reversible to suit user preference . . . inclined at optimum angle of 30° from vertical for comfort . . . and adjustable for interpupillary distances 48mm to 78mm. One of the eyepiece tubes is adjustable for correction of eye-refraction differences. Each body section houses a securely mounted one-piece prism sealed against moisture and foreign particles.



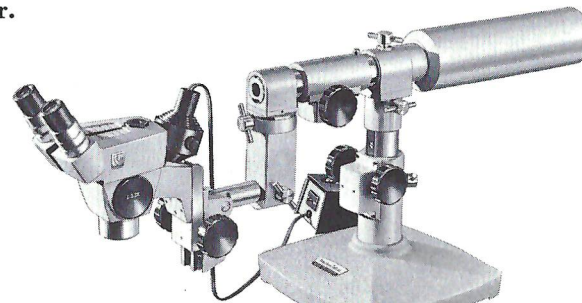
BROAD SELECTION OF RIGID WELL-BALANCED STANDS

The stands—the structural units which support all optical components and adjustments—are rigid and well balanced for stability . . . withstand hard usage and handling . . . and insure lasting optical alignment. Adjustment controls are rationally positioned for fatigue-free operation. A wide selection of microscope stands is offered to meet your requirements.

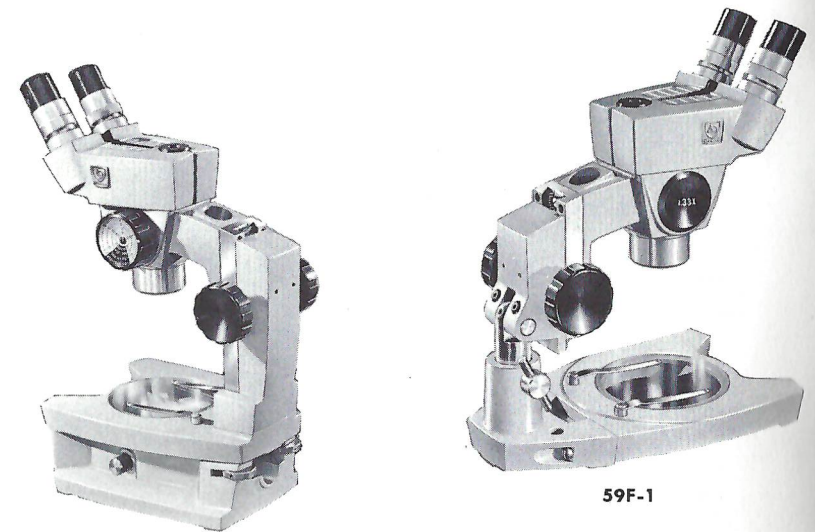
NEW EPOXY FINISH—Remarkably smooth, durable . . . EPOXY . . . unequalled for resistance to chemicals, abrasion and mechanical impact. Pleasing dove-gray color.



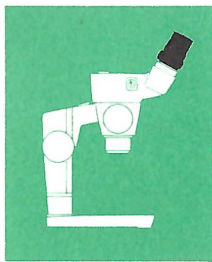
56F-1



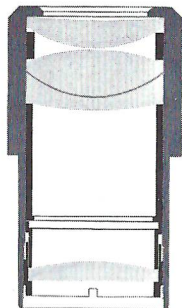
58M-1



59F-1



WIDE FIELD EYEPIECES



Completely new four-optical-element wide field eyepieces offer superior image quality . . . wide field of view . . . full chromatic, curvature and distortion correction . . . comfortable eye relief even for eyeglass wearers. A pair of eyeshields is supplied with each CYCLOPTIC microscope. Micrometer disc or reticule can be conveniently inserted into eyepieces.



APOCHROMATIC OBJECTIVES

Two special wide angle high quality objectives have been designed for the CYCLOPTIC Series Microscopes. These three-lens apochromats are superbly corrected for chromatic and spherical aberrations . . . present a crisp, true enhanced stereoscopic image over the full field of view.

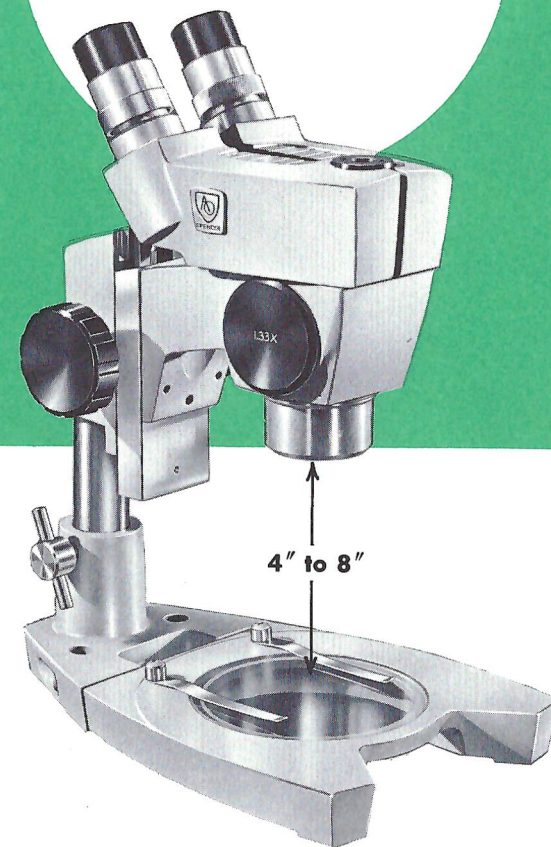


ACHROMATIC AUXILIARY LENS-ATTACHMENTS



Two achromatically corrected auxiliary lens-attachments are available . . . readily attachable to the basic objective . . . and extend the useful range of magnifications.

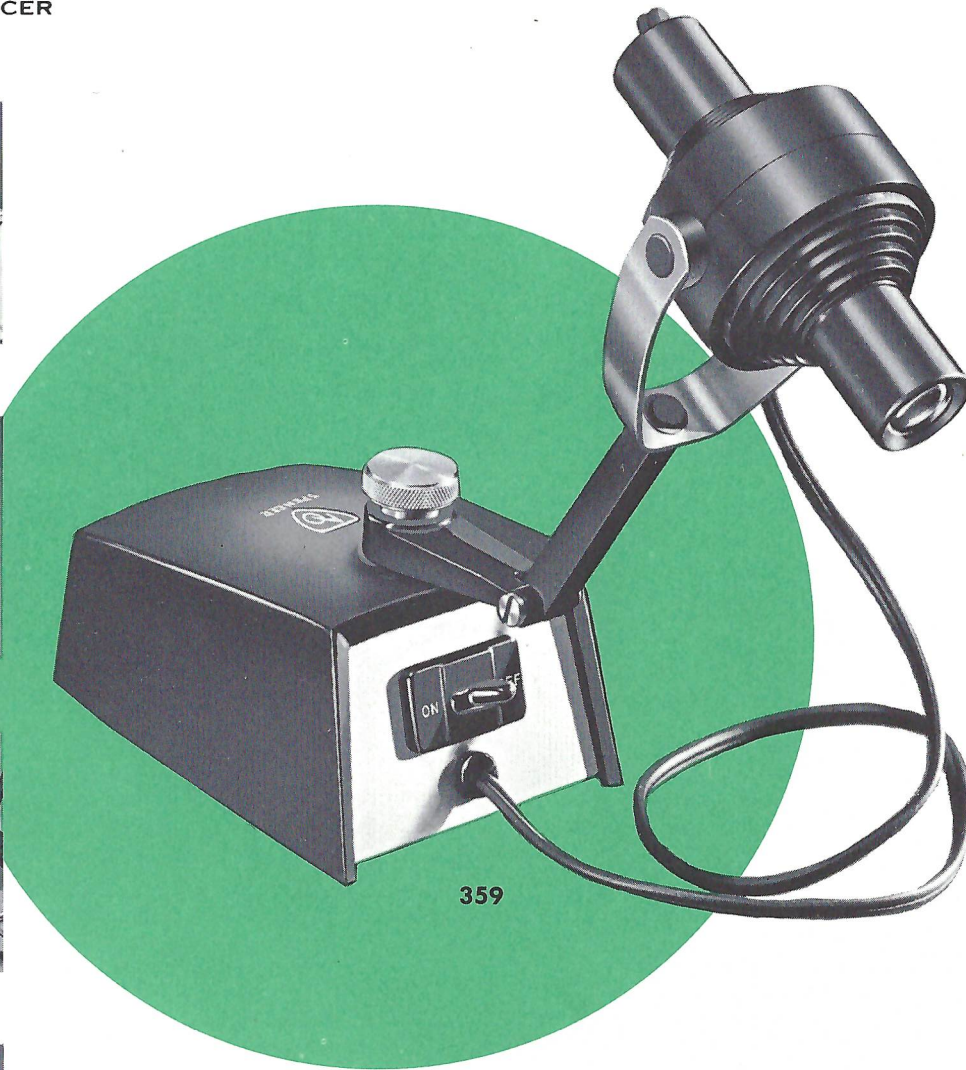
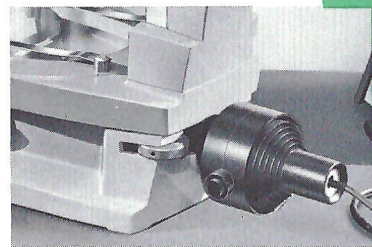
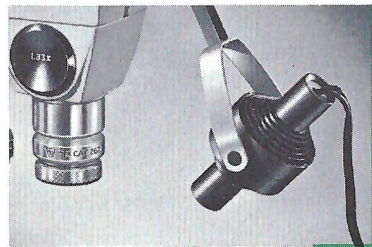
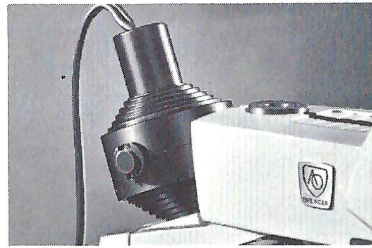
LONG WORKING DISTANCES



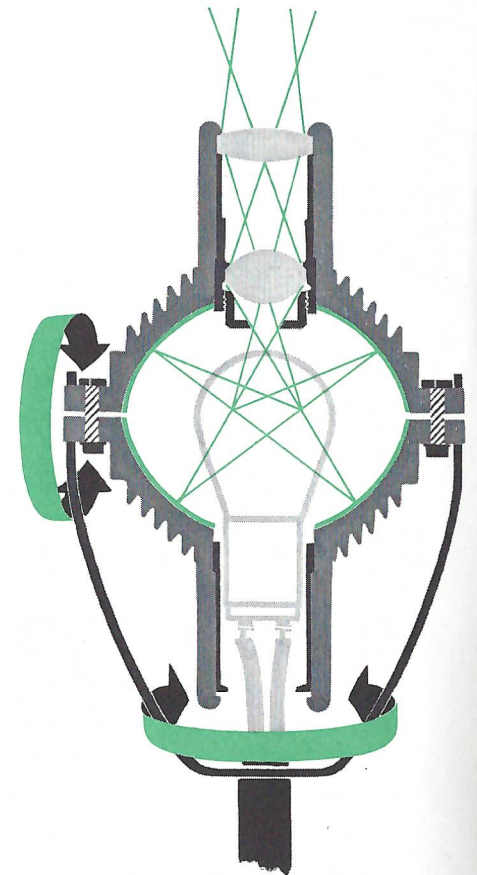
Standard CYCLOPTIC microscopes provide remarkable constant long working distance of 4" between specimen and objective; an extraordinary long working distance of 8" is attainable by use of 1/2X objective and is available on CYCLOPTIC Series 53, 55, 59. These unusually long working distances permit efficient illumination and effective manipulation of specimens.



NEW CYCLOSPOT ILLUMINATOR



The new CYCLOSPOT is outstanding for epi- and trans-illumination . . . may be efficiently used in five different positions . . . includes two-element condenser system, fixed transformer . . . detachable universal arm . . . and 6.5V, 2.75 amp lamp.



Cross section illustrates 6.5 volt 2.75 ampere lamp (G.E. No. 1497), first surfaced spherical mirrors and pre-focused two lens projection system. Yoke permits easy and quick positioning of light beam and unique venting assures cool operation.

New, easy-to-follow

CYCLOPTIC MICROSCOPE CODE



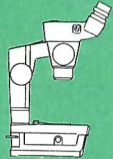








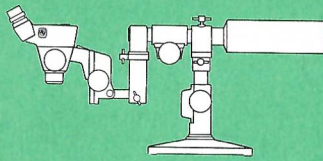
For example: Model 58M-T3

58 = 58 basic stand

T = 2/3X Auxiliary Lens-Attachment

M = Magni-Changer

3 = 10X and 15X Wide Field Eyepieces

Basic Stand	Body Magnification	Auxiliary Lens-Attachment	Eyepieces
56 			1  10X Wide Field
58 	F  Fixed Body Magnification with standard objective	T  2/3X	2  15X Wide Field
59 	M  MAGNI-CHANGER with standard objective	D  2X	3  10X Wide Field and 15X Wide Field
55 			
53 			

HYPHEN

TABLE OF RESULTANT MAGNIFICATIONS, FIELDS OF VIEW AND WORKING DISTANCES

FIXED BODY MAGNIFICATION—1.33X (with Standard Objective)

Eyepiece	Auxiliary Lens-Attachment	Magnification	Field of View*	Working Distance*
10X	—	15X	0.60"	4.0"
15	—	20	0.50	4.0
10	2X	25	0.30	1.5
15	2	40	0.25	1.5
10	2/3	10	0.90	4.4
15	2/3	15	0.75	4.4

MAGNI-CHANGER, VARIABLE BODY MAGNIFICATIONS—with Standard Objective

10X	—	7X	1.20"	4.0"
	—	10	0.90	
	—	15	0.60	
	—	20	0.40	
	—	25	0.30	
15X	—	10X	1.00"	4.0"
	—	15	0.75	
	—	20	0.50	
	—	30	0.33	
	—	40	0.25	
10X	2X	15X	0.60"	1.5"
		20	0.45	
		25	0.30	
		40	0.20	
		50	0.15	
15X	2X	20X	0.50"	1.5"
		25	0.37	
		40	0.25	
		60	0.17	
		80	0.13	
10X	2/3X	4.5X	1.75"	4.4"
		6	1.33	
		10	0.90	
		15	0.60	
		18	0.45	
15X	2/3X	7X	1.50"	4.4"
		10	1.12	
		15	.75	
		20	.50	
		25	.37	

SPECIAL LONG WORKING DISTANCE COMBINATIONS FOR CYCLOPTIC SERIES 53, 55, 59 ONLY

FIXED BODY MAGNIFICATION—1.33/2X (with Special 1/2X Objective)





10X	—	7X	1.20"	8.0"
15X	—	10	1.00	8.0

MAGNI-CHANGER, VARIABLE BODY MAGNIFICATIONS—Special 1/2X Objective

10X	—	3.5X	2.40"	8.0"
	—	5	1.80	
	—	7	1.20	
	—	10	0.80	
	—	15	0.60	
15X	—	5X	2.00"	8.0"
	—	7	1.50	
	—	10	1.00	
	—	15	0.66	
	—	20	0.50	

SPECIAL LONG WORKING DISTANCE COMBINATIONS

available on series 53, 55, 59

Basic Stand	Body Magnification	Auxiliary Lens-Attachment	Eyepieces
59 55 53	FL Fixed Body Magnification with Special 1/2X objective 		1  10X Wide Field
	ML MAGNI-CHANGER with Special 1/2X objective 		2  15X Wide Field

HYPHEN

*To convert inch values to millimeters: multiply by 25.4

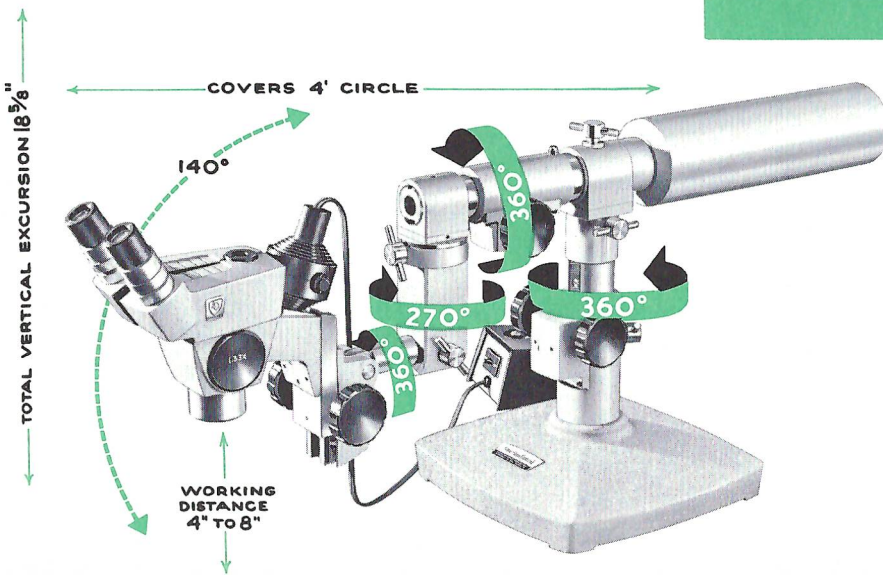
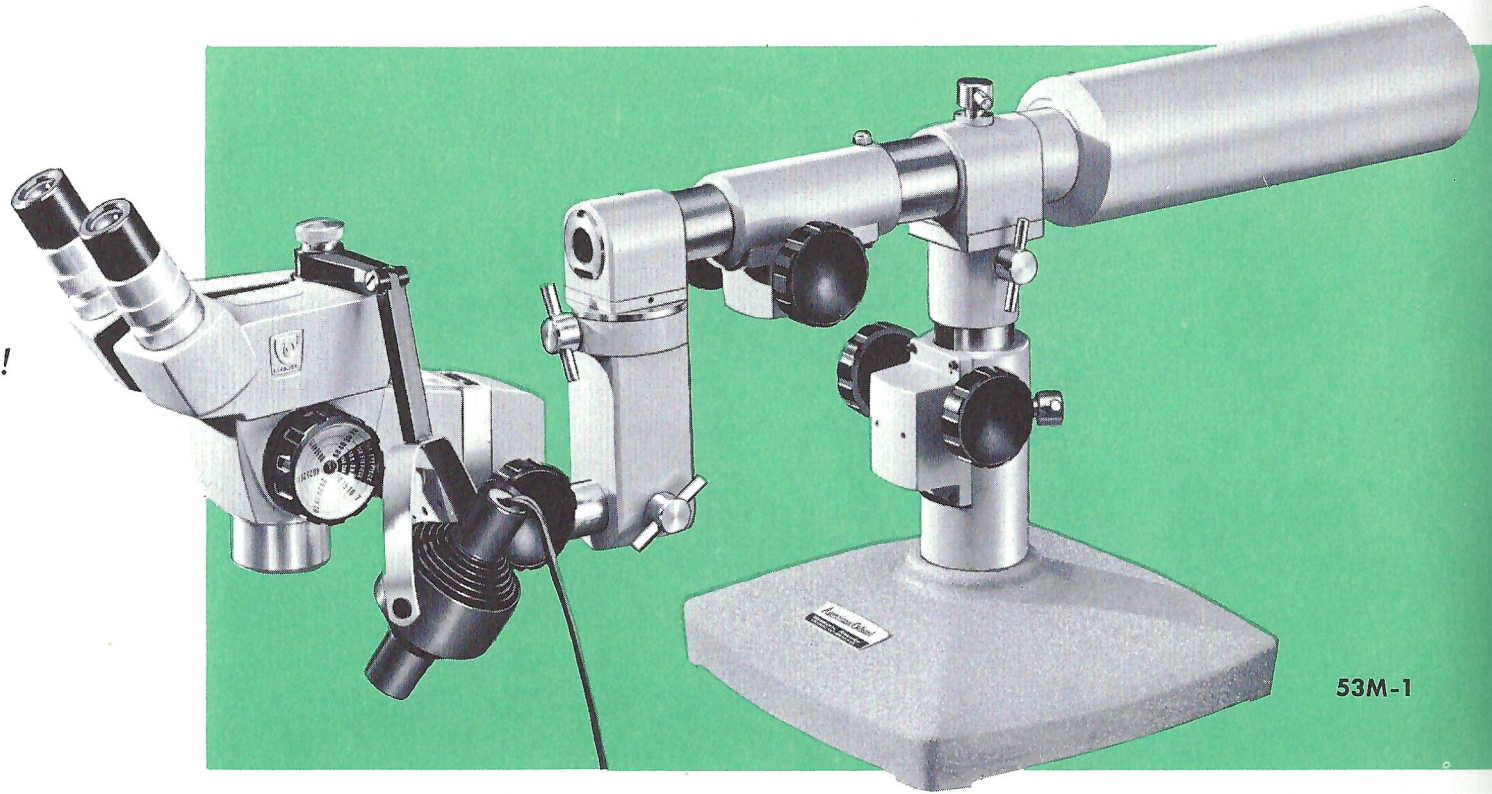


SPENCER

CYCLOPTIC MICROSCOPE...SERIES 53F and 53M

NEW UNIVERSAL TABLE STAND

*...widest range
of adjustments ever offered!*





CYCLOPTIC MICROSCOPE Series 53F and 53M are supplied with inclined, reversible binocular bodies; standard apochromatic objective or special long working distance 1/2X apochromatic objective as selected; eyepieces and auxiliary lens-attachments as selected; wide, durable, diagonally-cut rack and pinion focusing and positioning adjustments; large universal table stand. CYCLOPTIC MICROSCOPE Series 53F has a fixed body magnification of 1.33X.

CYCLOPTIC MICROSCOPE Series 53M is equipped with a unique MAGNI-CHANGER offering quick and easy selection of five body magnifications. Resultant magnifications are indexed on the positioning dial.

A wide selection of CYCLOPTIC MICROSCOPES Series 53F and 53M is available to satisfy your specific needs. Illustrated models 53M-1 and 53F-1 ... and tabulation of additional models on page 11 are presented to simplify your final selection.

AO SPENCER CYCLOPTIC...SERIES 53F and 53M

Catalog Number	Body Magnification	Auxiliary Lens-Attachment	Eyepieces Wide Field	Magnifications	Working Distance
SERIES 53F					
 53F	1.33X	None	None	—	—
53F-1	1.33X	None	10X	15X	4"
53F-2	1.33X	None	15X	20X	4"
53F-3	1.33X	None	10X, 15X	15X, 20X	4"
53F-T1	1.33X	2/3X	10X	10X, 15X	4", 4.4"
53F-T2	1.33X	2/3X	15X	15X, 20X	4", 4.4"
53F-T3	1.33X	2/3X	10X, 15X	10X, 15X, 20X	4", 4.4"
53F-D1	1.33X	2X	10X	15X, 25X	1.5", 4"
53F-D2	1.33X	2X	15X	20X, 40X	1.5", 4"
53F-D3	1.33X	2X	10X, 15X	15X, 20X, 25X, 40X	1.5", 4"
SERIES 53M					
 53M	Magni-Changer	None	None	—	—
53M-1	Magni-Changer	None	10X	7X, 10X, 15X, 20X, 25X	4"
53M-2	Magni-Changer	None	15X	10X, 15X, 20X, 30X, 40X	4"
53M-3	Magni-Changer	None	10X, 15X	7X, 10X, 15X, 20X, 25X, 30X, 40X	4"
53M-T1	Magni-Changer	2/3X	10X	4.5X, 6X, 7X, 10X, 15X, 18X, 20X, 25X	4", 4.4"
53M-T2	Magni-Changer	2/3X	15X	7X, 10X, 15X, 20X, 25X, 30X, 40X	4", 4.4"
53M-T3	Magni-Changer	2/3X	10X, 15X	4.5X, 6X, 7X, 10X, 15X, 18X, 20X, 25X, 30X, 40X	4", 4.4"
53M-D1	Magni-Changer	2X	10X	7X, 10X, 15X, 20X, 25X, 40X, 50X	1.5", 4"
53M-D2	Magni-Changer	2X	15X	10X, 15X, 20X, 25X, 30X, 40X, 60X, 80X	1.5", 4"
53M-D3	Magni-Changer	2X	10X, 15X	7X, 10X, 15X, 20X, 25X, 30X, 40X, 50X, 60X, 80X	1.5", 4"
SPECIAL LONG WORKING DISTANCE COMBINATIONS					
53FL-1	Special: 1.33/2	None	10X	7.5X	8"
53FL-2	Special: 1.33/2	None	15X	10X	8"
53ML-1	Magni-Changer and 1/2X Objective	None	10X	3.5X, 5X, 7.5X, 10X, 12.5X	8"
53ML-2	Magni-Changer and 1/2X Objective	None	15X	5X, 7.5X, 10X, 15X, 20X	8"

Cabinets are not available for CYCLOPTIC Series 53F and 53M.



SPENCER

CYCLOPTIC MICROSCOPE . . . SERIES 56F and 56M

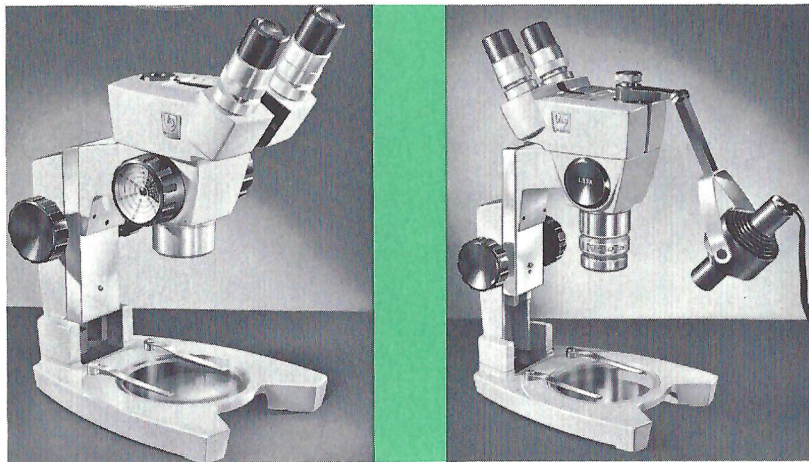
CYCLOPTIC MICROSCOPE Series 56F and 56M are supplied with inclined, reversible binocular bodies; standard apochromatic objective; eyepieces and auxiliary lens-attachments as selected; wide, durable, diagonally-cut rack and pinion focusing adjustment . . . adjustable tension; heavy duty slideways . . . extra long excursion; standard base-stage with glass insert and stage clips.

CYCLOPTIC MICROSCOPE Series 56F has a fixed body magnification of 1.33X.

CYCLOPTIC MICROSCOPE Series 56M is equipped with a unique MAGNI-CHANGER offering quick and easy selection of five body magnifications. Resultant magnifications are indexed on the positioning dial.

Series 56F and 56M are convertible to Series 58F and 58M by addition of 58S base.

A wide selection of CYCLOPTIC MICROSCOPE Series 56F and 56M is available to satisfy your specific needs. Illustrated models 56F-1, 56M-1 and 56F-T1 . . . and tabulation of additional models on page 13 are presented to simplify your final selection.



56M-1

56F-T1



56F-1

AO SPENCER CYCLOPTIC . . . SERIES 56F and 56M

SERIES 56F



Catalog Number	Body Magnification	Auxiliary Lens-Attachment	Eyepieces Wide Field	Magnifications	Working Distance
56F	1.33X	—	—	—	—
56F-1	1.33X	—	10X	15X	4"
56F-2	1.33X	—	15X	20X	4"
56F-3	1.33X	—	10X, 15X	15X, 20X	4"
56F-T1	1.33X	2/3X	10X	10X, 15X	4", 4.4"
56F-T2	1.33X	2/3X	15X	15X, 20X	4", 4.4"
56F-T3	1.33X	2/3X	10X, 15X	10X, 15X, 20X	4", 4.4"
56F-D1	1.33X	2X	10X	15X, 25X	1.5", 4"
56F-D2	1.33X	2X	15X	20X, 40X	1.5", 4"
56F-D3	1.33X	2X	10X, 15X	15X, 20X, 25X, 40X	1.5", 4"

SERIES 56M



56M	Magni-Changer	—	—	—	—
56M-1	Magni-Changer	—	10X	7X, 10X, 15X, 20X, 25X	4"
56M-2	Magni-Changer	—	15X	10X, 15X, 20X, 30X, 40X	4"
56M-3	Magni-Changer	—	10X, 15X	7X, 10X, 15X, 20X, 25X, 30X, 40X	4"
56M-T1	Magni-Changer	2/3X	10X	4.5X, 6X, 7X, 10X, 15X, 18X, 20X, 25X	4", 4.4"
56M-T2	Magni-Changer	2/3X	15X	7X, 10X, 15X, 20X, 25X, 30X, 40X	4", 4.4"
56M-T3	Magni-Changer	2/3X	10X, 15X	4.5X, 6X, 7X, 10X, 15X, 18X, 20X, 25X, 30X, 40X	4", 4.4"
56M-D1	Magni-Changer	2X	10X	7X, 10X, 15X, 20X, 25X, 40X, 50X	1.5", 4"
56M-D2	Magni-Changer	2X	15X	10X, 15X, 20X, 25X, 30X, 40X, 60X, 80X	1.5", 4"
56M-D3	Magni-Changer	2X	10X, 15X	7X, 10X, 15X, 20X, 25X, 30X, 40X, 50X, 60X, 80X	1.5", 4"

No. 1656 Cabinet for CYCLOPTIC microscope Series 56F and 56M is available at additional cost. See price insert.



CYCLOPTIC

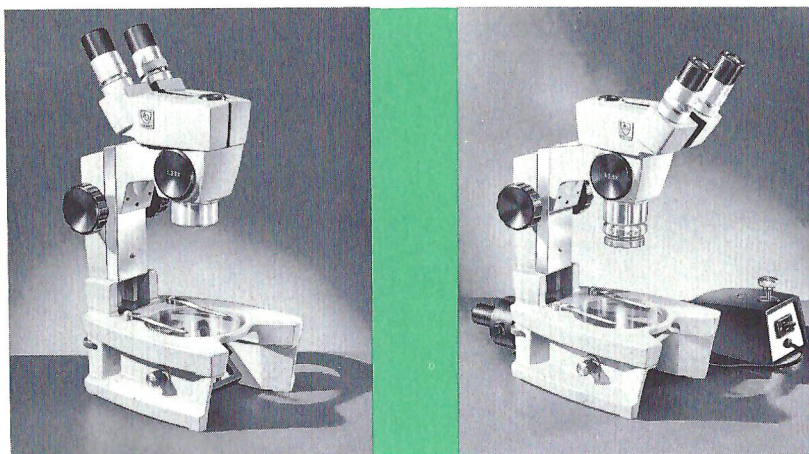
MICROSCOPE ... SERIES 58F and 58M

CYCLOPTIC MICROSCOPE Series 58F and 58M are supplied with inclined, reversible binocular bodies; standard apochromatic objective; eyepieces and auxiliary lens-attachments as selected; wide, durable, diagonally-cut rack and pinion focusing adjustment . . . adjustable tension; heavy duty slideways . . . extra long excursion; standard stage with glass insert and stage clips; detachable trans-illuminating substage base.

CYCLOPTIC MICROSCOPE Series 58F has a fixed body magnification of 1.33X.

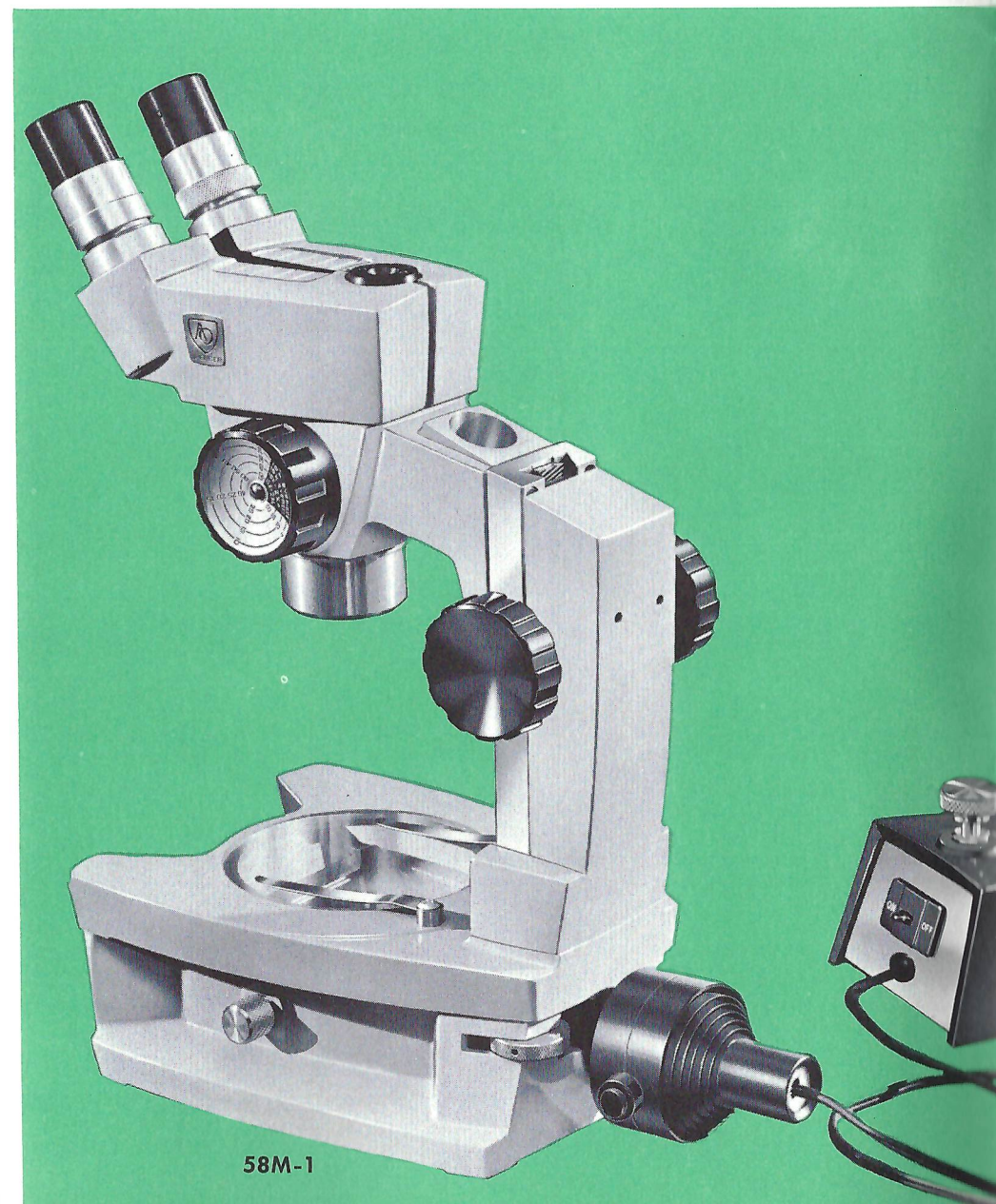
CYCLOPTIC MICROSCOPE Series 58M is equipped with a unique MAGNI-CHANGER offering quick and easy selection of five body magnifications. Resultant magnifications are indexed on the positioning dial.

A wide selection of CYCLOPTIC MICROSCOPES Series 58F and 58M is available to satisfy your specific needs. Illustrated models 58M-1, 58F-1 and 58F-T1 . . . and tabulation of additional models on page 15 are presented to simplify your final selection.



58F-1

58F-T1



58M-1

AO SPENCER CYCLOPTIC . . . SERIES 58F and 58M

SERIES 58F



Catalog Number	Body Magnification	Auxiliary Lens-Attachment	Eyepieces Wide Field	Magnifications	Working Distance
58F	1.33X	—	—	—	—
58F-1	1.33X	—	10X	15X	4"
58F-2	1.33X	—	15X	20X	4"
58F-3	1.33X	—	10X, 15X	15X, 20X	4"
58F-T1	1.33X	2/3X	10X	10X, 15X	4", 4.4"
58F-T2	1.33X	2/3X	15X	15X, 20X	4", 4.4"
58F-T3	1.33X	2/3X	10X, 15X	10X, 15X, 20X	4", 4.4"
58F-D1	1.33X	2X	10X	15X, 25X	1.5", 4"
58F-D2	1.33X	2X	15X	20X, 40X	1.5", 4"
58F-D3	1.33X	2X	10X, 15X	15X, 20X, 25X, 40X	1.5", 4"

SERIES 58M



58M	Magni-Changer	—	—	—	—
58M-1	Magni-Changer	—	10X	7X, 10X, 15X, 20X, 25X	4"
58M-2	Magni-Changer	—	15X	10X, 15X, 20X, 30X, 40X	4"
58M-3	Magni-Changer	—	10X, 15X	7X, 10X, 15X, 20X, 25X, 30X, 40X	4"
58M-T1	Magni-Changer	2/3X	10X	4.5X, 6X, 7X, 10X, 15X, 18X, 20X, 25X	4", 4.4"
58M-T2	Magni-Changer	2/3X	15X	7X, 10X, 15X, 20X, 25X, 30X, 40X	4", 4.4"
58M-T3	Magni-Changer	2/3X	10X, 15X	4.5X, 6X, 7X, 10X, 15X, 18X, 20X, 25X, 30X, 40X	4", 4.4"
58M-D1	Magni-Changer	2X	10X	7X, 10X, 15X, 20X, 25X, 40X, 50X	1.5", 4"
58M-D2	Magni-Changer	2X	15X	10X, 15X, 20X, 25X, 30X, 40X, 60X, 80X	1.5", 4"
58M-D3	Magni-Changer	2X	10X, 15X	7X, 10X, 15X, 20X, 25X, 30X, 40X, 50X, 60X, 80X	1.5", 4"

No. 1658 Cabinet for CYCLOPTIC microscopes Series 58F and 58M is available at additional cost. See price insert.



CYCLOPTIC

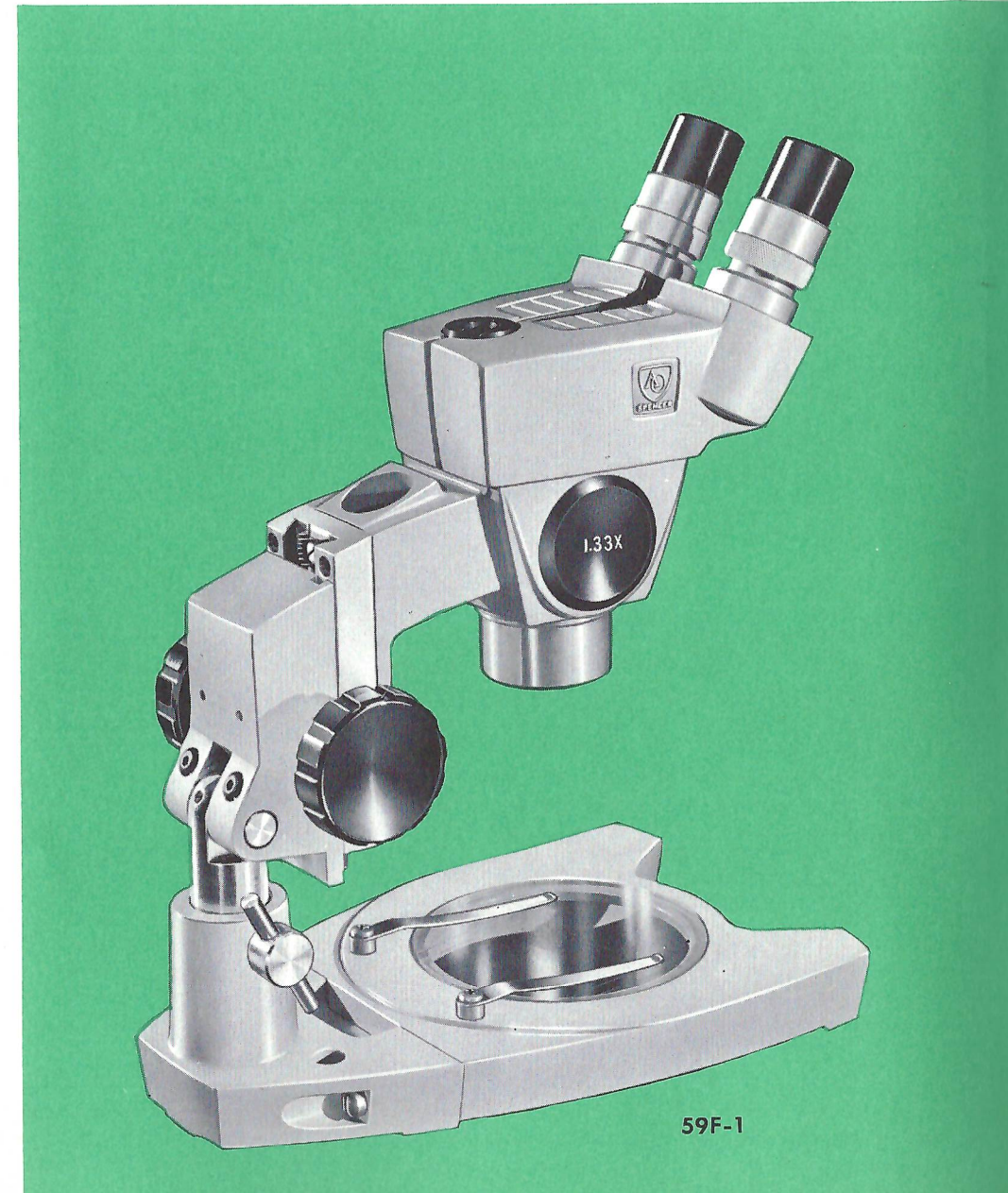
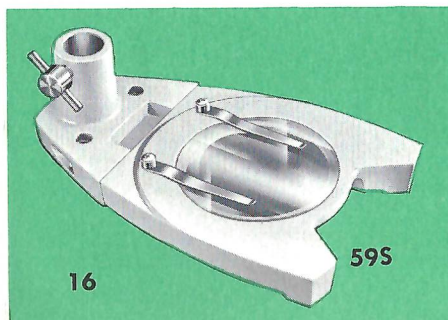
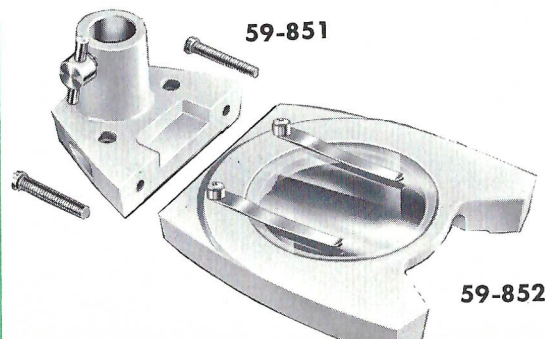
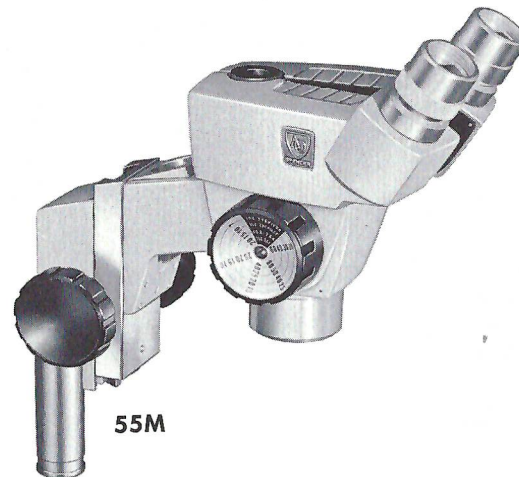
MICROSCOPE . . . SERIES 59F and 59M

CYCLOPTIC MICROSCOPE Series 59F and 59M are supplied with inclined, reversible binocular bodies; standard apochromatic objective or special long working distance 1/2X apochromatic objective as selected; eyepieces and auxiliary lens-attachments as selected; wide, durable, diagonally-cut rack and pinion focusing adjustment . . . adjustable tension; heavy duty slideways; yoke and pillar; detachable base-stage with glass insert and stage clips.


CYCLOPTIC MICROSCOPE Series 59F has a fixed body magnification of 1.33X.

CYCLOPTIC MICROSCOPE Series 59M is equipped with a unique MAGNI-CHANGER offering quick and easy selection of five body magnifications. Resultant magnifications are indexed on the positioning dial.

A wide selection of CYCLOPTIC MICROSCOPES Series 59F and 59M is available to satisfy your specific needs. Illustrated model 59F-1 and component parts 55M and 59S . . . and tabulation of additional models on page 17 are presented to simplify your final selection.



AO SPENCER CYCLOPTIC . . . SERIES 59F and 59M

Catalog Number	Body Magnification	Auxiliary Lens-Attachment	Eyepieces Wide Field	Magnifications	Working Distance
SERIES 59F					
 59F	1.33X	—	—	—	—
59F-1	1.33X	—	10X	15X	4"
59F-2	1.33X	—	15X	20X	4"
59F-3	1.33X	—	10X, 15X	15X, 20X	4"
59F-T1	1.33X	2/3X	10X	10X, 15X	4", 4.4"
59F-T2	1.33X	2/3X	15X	15X, 20X	4", 4.4"
59F-T3	1.33X	2/3X	10X, 15X	10X, 15X, 20X	4", 4.4"
59F-D1	1.33X	2X	10X	15X, 25X	1.5", 4"
59F-D2	1.33X	2X	15X	20X, 40X	1.5", 4"
59F-D3	1.33X	2X	10X, 15X	15X, 20X, 25X, 40X	1.5", 4"
SERIES 59M					
59M	Magni-Changer	—	—	—	—
59M-1	Magni-Changer	—	10X	7X, 10X, 15X, 20X, 25X	4"
59M-2	Magni-Changer	—	15X	10X, 15X, 20X, 30X, 40X	4"
59M-3	Magni-Changer	—	10X, 15X	7X, 10X, 15X, 20X, 25X, 30X, 40X	4"
59M-T1	Magni-Changer	2/3X	10X	4.5X, 6X, 7X, 10X, 15X, 18X, 20X, 25X	4", 4.4"
59M-T2	Magni-Changer	2/3X	15X	7X, 10X, 15X, 20X, 25X, 30X, 40X	4", 4.4"
59M-T3	Magni-Changer	2/3X	10X, 15X	4.5X, 6X, 7X, 10X, 15X, 18X, 20X, 25X, 30X, 40X	4", 4.4"
59M-D1	Magni-Changer	2X	10X	7X, 10X, 15X, 20X, 25X, 40X, 50X	1.5", 4"
59M-D2	Magni-Changer	2X	15X	10X, 15X, 20X, 25X, 30X, 40X, 60X, 80X	1.5", 4"
59M-D3	Magni-Changer	2X	10X, 15X	7X, 10X, 15X, 20X, 25X, 30X, 40X, 50X, 60X, 80X	1.5", 4"
SPECIAL LONG WORKING DISTANCE COMBINATIONS					
59FL-1	Special: 1.33/2	—	10X	7.5X	8"
59FL-2	Special: 1.33/2	—	15X	10X	8"
59ML-1	Magni-Changer and 1/2X Objective	—	10X	3.5X, 5X, 7.5X, 10X, 12.5X	8"
59ML-2	Magni-Changer and 1/2X Objective	—	15X	5X, 7.5X, 10X, 15X, 20X	8"

No. 1659 Cabinet for CYCLOPTIC microscope Series 59F and 59M is available at additional cost. See price insert. If 59S base-stage is not desired, substitute catalog number 55F or 55M in place of 59F or 59M in the above table. Series 55F and 55M are readily adaptable to large universal table stand number 53S. Cabinets are not available for CYCLOPTIC Series 55F and 55M.



SPENCER

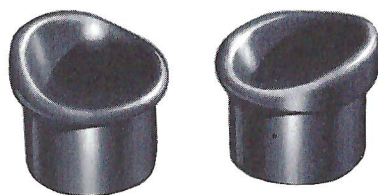
CYCLOPTIC**MICROSCOPE ACCESSORIES****WIDE FIELD EYEPIECES**

146

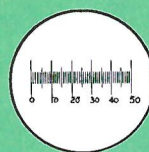
147

Catalog No.	Description	Eyepoint
146	10X Single	19mm
147	15X Single	17mm

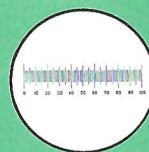
Two required for each microscope. Magnification and field sizes controlled in production . . . pairing unnecessary.

EYESHIELDS

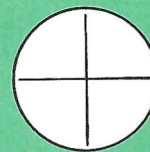
149 Eyeshield for 146 and 147

MEASURING AND COUNTING ACCESSORIES FOR 146 or 147

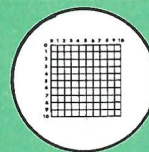
1405A



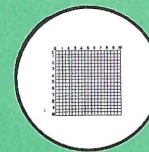
1406A



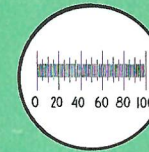
1427



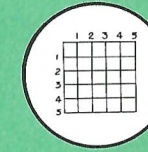
1408A



1409A



1410A



1421A

148



469

**Catalog No.****Description**

1405A

Micrometer Disc 5mm Scale divided into 50 units

1406A

Micrometer Disc 10mm Scale divided into 100 units

1407A

Micrometer Disc 10mm Scale divided into 200 units

1408A

Net Micrometer Disc 10mm square subdivided into 100 squares

1409A

Net Micrometer Disc 10mm square subdivided into 400 squares

1410A

Micrometer Disc 5mm Scale divided into 100 units

1421A

Net Micrometer Disc 5mm square subdivided into 25 squares

1427

Cross-Hair Disc

148

Micrometer Disc Mount for No. 147 15X W.F. Eyepiece

469

Spanner Wrench for No. 146 10X W.F. Eyepiece

400

Stage Micrometer 2mm Scale divided into 200 .01mm units. Mounted on 25mm x 75mm slide. For calibration of eyepiece micrometer discs and fields of view

APOCHROMATIC OBJECTIVES

268

Standard objective



266

1/2X Special long working distance objective for 53, 55, 59 only

ACHROMATIC AUXILIARY LENS-ATTACHMENTS

267



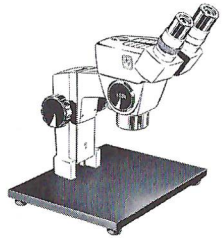
267 2/3X Auxiliary Lens-Attachment

265

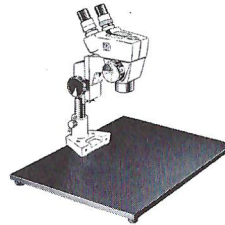


265 2X Auxiliary Lens-Attachment

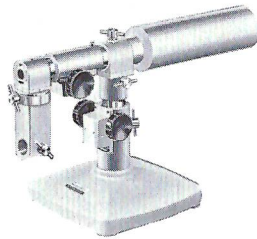
BASES, STANDS, MECHANICAL STAGES



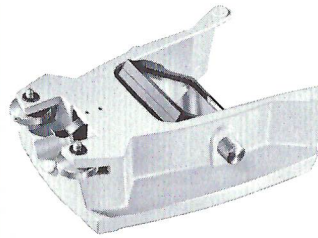
30A
Phenolic-resin base-
board 7½" x 9½"



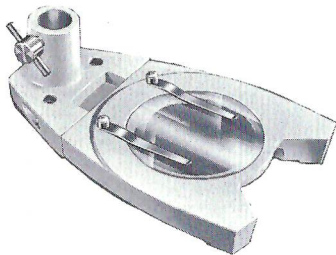
30B
Phenolic-resin base-
board 12" x 17"



53S
Universal Table Microscope Stand for 53, 55, 59



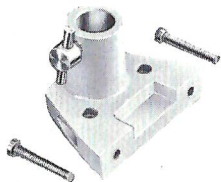
58S
Transilluminating
substage base with
mirror for 56 and 58



59S
Base-stage for 53, 55,
59



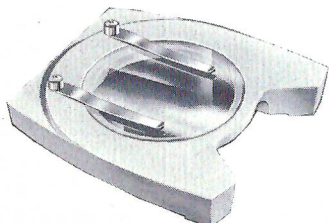
1556
Ungraduated
Mechanical stage



59-851
Post receptacle with locking
lever for 53, 55, 59



584
3" Extension rod for 55, 59

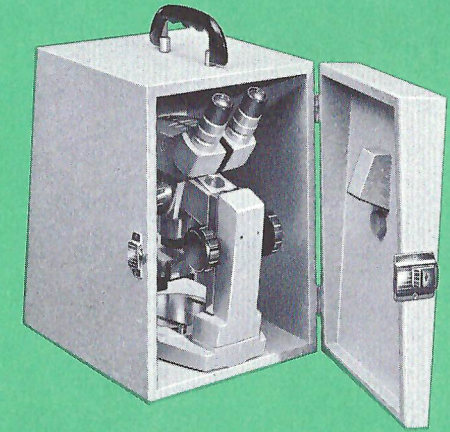


59-852
Stage segment of
59S



585
Lens protecting window and cell

CABINETS



Catalog No.	Description
1656	Cabinet for 56
1658	Cabinet for 58
1659	Cabinet for 59

ILLUMINATORS



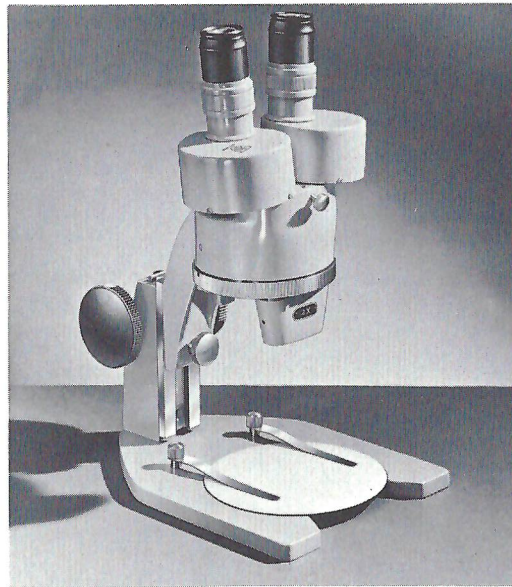
Catalog No.	Description
359	CYCLOSPOT Microscope Illuminator with prefocused two-lens condensing system, detachable universal arm, base-transformer, 6.5 volt, 2.75 ampere clear glass lamp.
355	Replacement lamp 6.5V 2.75 amp. (G.E. Number 1497)



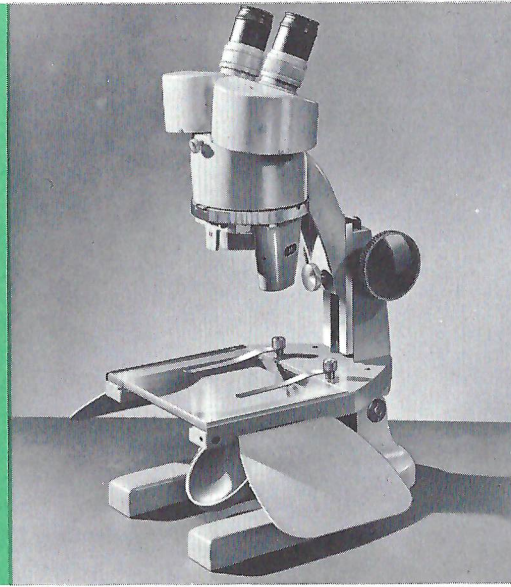
SPENCER

STEREOSCOPIC MICROSCOPES

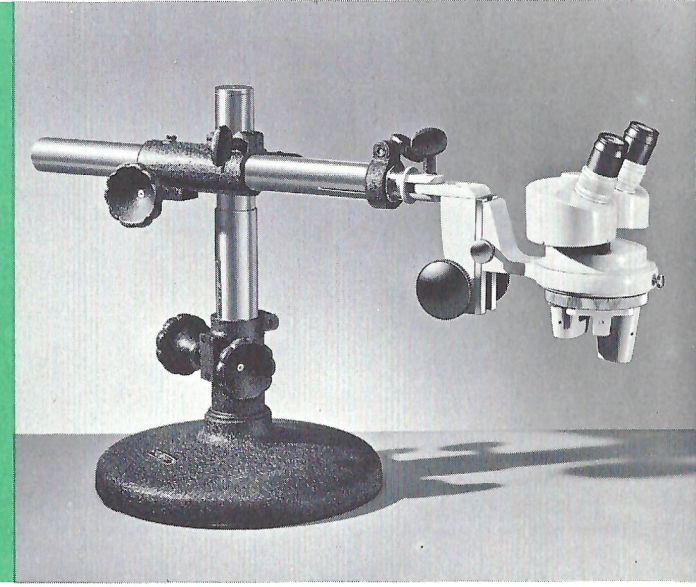
SERIES 20, 21, 23, 25, 26, 27, 28



Series 21



Series 25



Series 23

Outstanding Features

- *Conventional styling and design*
- *Inclined or vertical body*
- *Rigid and well balanced microscope stand*
- *Double extension dovetail slides*
- *Large field of view*
- *Top quality optics*
- *Conventional working distance*
- *Wide range of magnifications*
- *Interpupillary and eye-refraction adjustments*
- *Erected and unreversed image*
- *Dust-proof revolving nosepiece*
- *Interchangeable objectives*
- *Enhanced stereoscopic view*
- *Dove-gray Epoxy finish*
- *Broad selection of models*

Top Quality Optics



World-famed AO SPENCER optical design assures clear, sharp and erect stereoscopic images . . . wide field eyepieces feature high eyepoints for eyeglass wearers . . . greater eye comfort for prolonged observations.

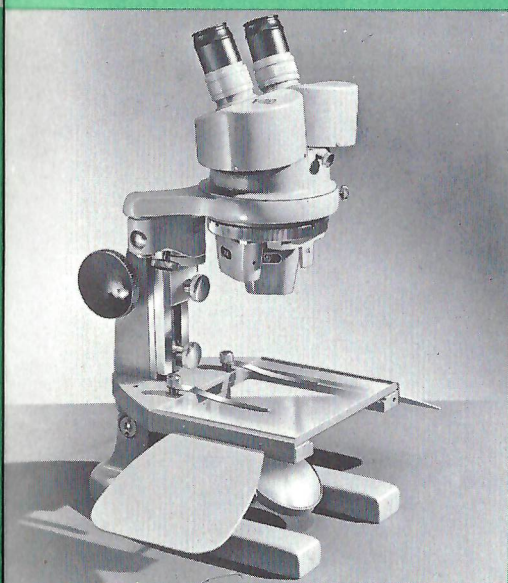
Wide Range of Magnifications



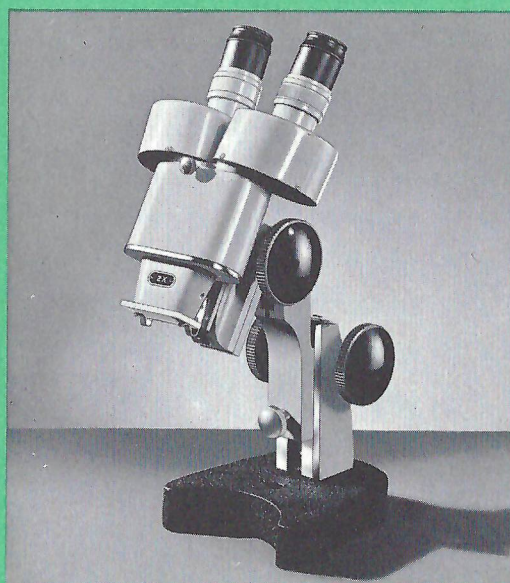
Resultant magnification range of 6.3X to 144X is available. Intermediate magnifications are obtainable by various eyepiece-objective combinations. Objectives and paired eyepieces are instantly and easily interchanged.

Rigid, Well-Balanced Microscope Stands

A wide selection of microscope stands is offered to meet your requirements. All are well-balanced, rigid . . . designed to withstand hard usage . . . insure lasting optical alignment. Adjustment controls are sensibly positioned for fatigue-free operation.

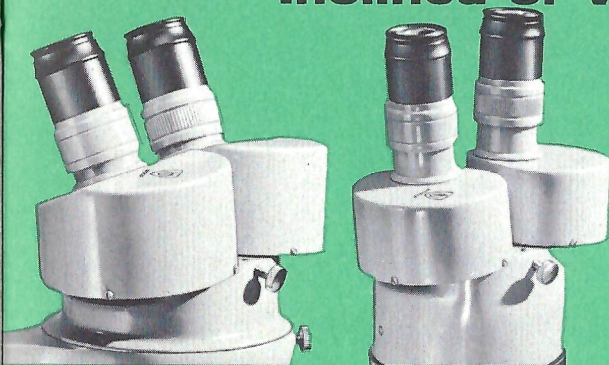


Series 28



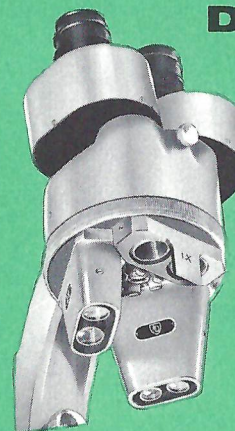
Series 27

Inclined or Vertical Body



Both vertical and 22° inclined binocular bodies are available . . . adjustable for interpupillary and eye-refraction differences . . . securely house Porro prism erecting system. Reversed bodies are available upon special request at no extra charge.

Dust-Proof Revolving Nosepiece



Three nosepieces are available: triple, double revolving and single objective adapter. Objectives accurately revolve around a vertical axis . . . internal optical and mechanical parts are dust-proofed. Objectives in use always foremost . . . uninterrupted path for efficient illumination and effective manipulation of specimen.



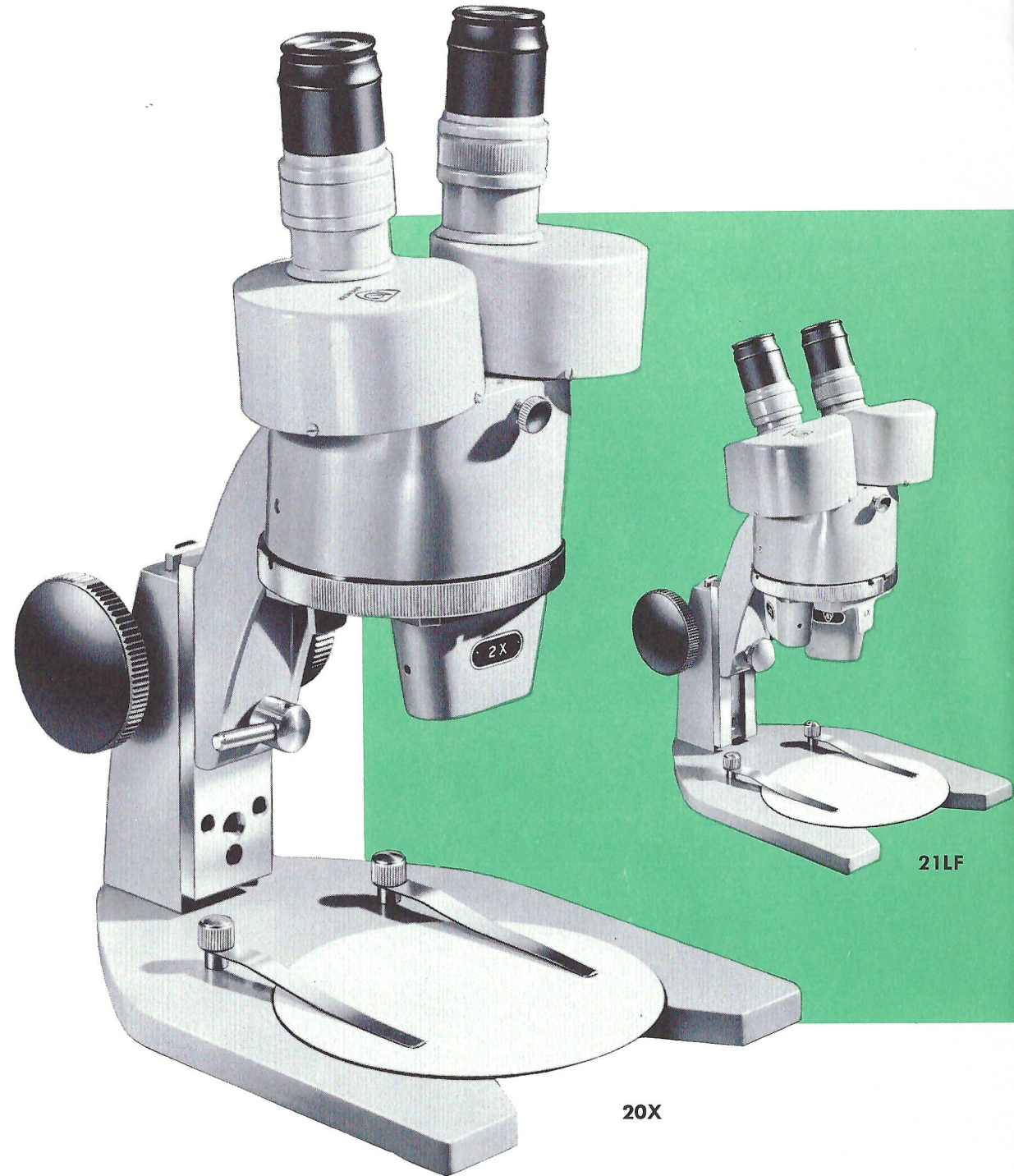
SPENCER

STEREOSCOPIC MICROSCOPE SERIES 20 and 21

STEREOSCOPIC MICROSCOPE Series 20 and 21 are supplied with vertical or inclined binocular bodies; triple, double revolving nosepiece or single objective adapter as selected; paired eyepieces and objectives as selected; rack and pinion focusing adjustment; heavy duty slideways; all metal base-stage with reversible black and white insert plate . . . with stage clips; and cabinet.

STEREOSCOPIC MICROSCOPE Series 21 has a variable intermediate dovetail slide with locking thumb screw which permits microscope body to be conveniently locked in any position. Series 20 has three alternate body locking positions.

A wide selection of STEREOSCOPIC MICROSCOPES Series 20 and 21 is available to satisfy your specific needs. Illustrated Models 20X and 21LF . . . and tabulation of additional models on page 23 are presented to simplify your final selection.



20X

21LF

AO SPENCER STEREOSCOPIC MICROSCOPES... SERIES 20 and 21

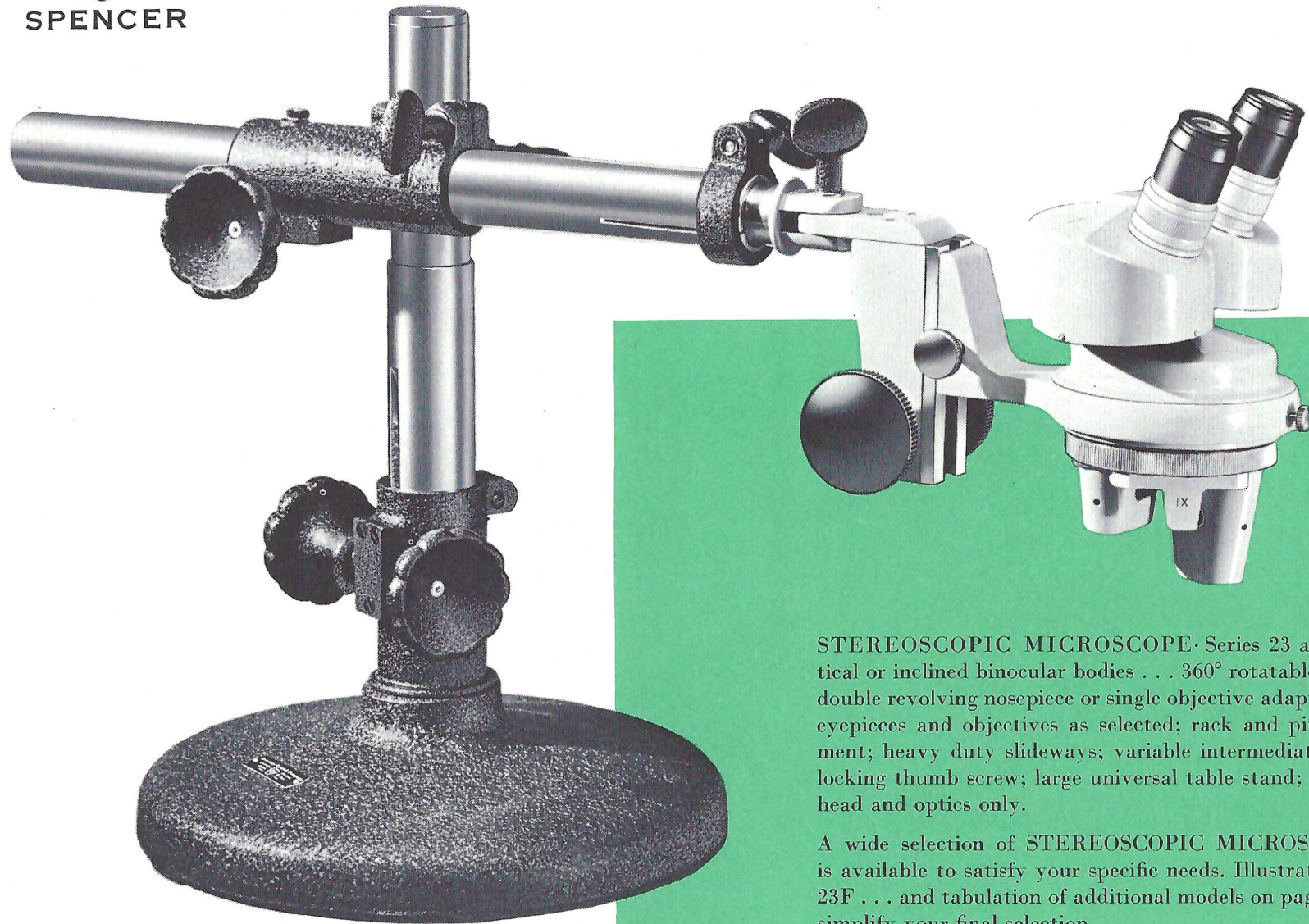
Catalog Number	Binocular Body	Nosepiece	Paired Achromatic Objectives	Paired Eyepieces	Magnification Range
SERIES 20					
20A	Vertical	Single	—	—	—
20E	Vertical	Double	—	—	—
20B	Vertical	Triple	—	—	—
20X	Vertical	Double	1.0X, 2.0X	9X W.F.	9X and 18X
20F	Vertical	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
20G	Vertical	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X
20LA	Inclined	Single	—	—	—
20LE	Inclined	Double	—	—	—
20LB	Inclined	Triple	—	—	—
20LX	Inclined	Double	1.0X, 2.0X	9X W.F.	9X and 18X
20LF	Inclined	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
20LG	Inclined	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X
SERIES 21					
21A	Vertical	Single	—	—	—
21E	Vertical	Double	—	—	—
21B	Vertical	Triple	—	—	—
21X	Vertical	Double	1.0X, 2.0X	9X W.F.	9X and 18X
21F	Vertical	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
21G	Vertical	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X
21LA	Inclined	Single	—	—	—
21LE	Inclined	Double	—	—	—
21LB	Inclined	Triple	—	—	—
21LX	Inclined	Double	1.0X, 2.0X	9X W.F.	9X and 18X
21LF	Inclined	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
21LG	Inclined	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X

Cabinet 1621 is supplied with Stereoscopic Microscopes Series 20 and 21. If not desired, see price insert for deduction.



SPENCER

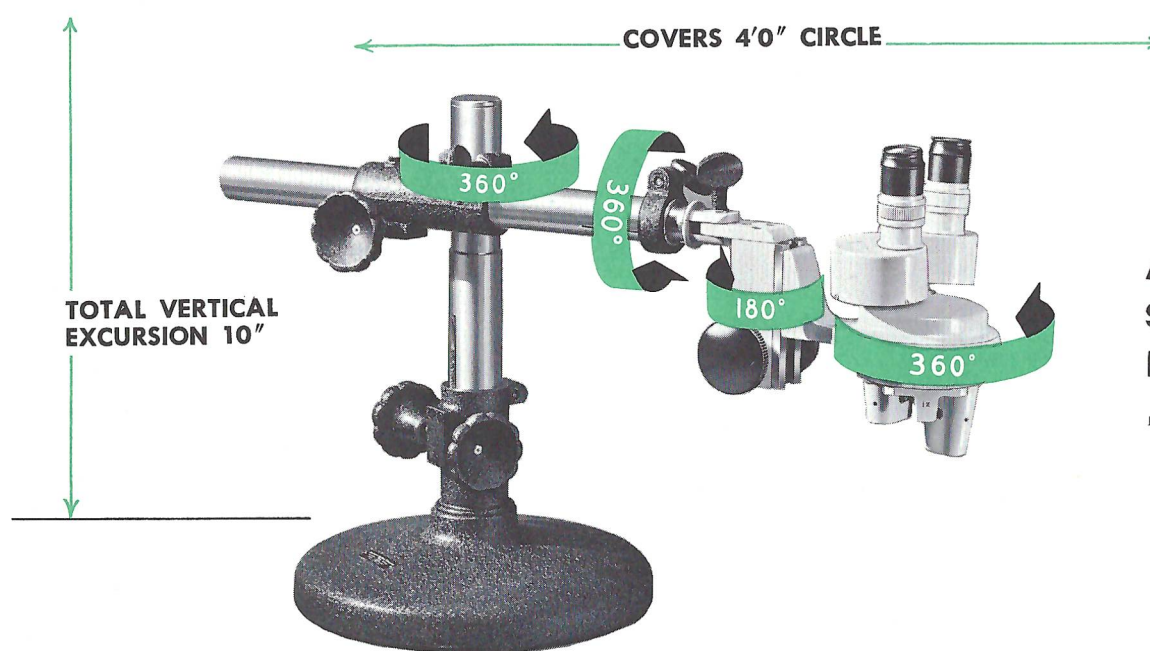
STEREOSCOPIC MICROSCOPE SERIES 23



23LF

STEREOSCOPIC MICROSCOPE. Series 23 are supplied with vertical or inclined binocular bodies . . . 360° rotatable optical head; triple, double revolving nosepiece or single objective adapter as selected; paired eyepieces and objectives as selected; rack and pinion focusing adjustment; heavy duty slideways; variable intermediate dovetail slide with locking thumb screw; large universal table stand; cabinet for binocular head and optics only.

A wide selection of STEREOSCOPIC MICROSCOPES SERIES 23 is available to satisfy your specific needs. Illustrated models 23LF and 23F . . . and tabulation of additional models on page 25 are presented to simplify your final selection.



**AO SPENCER
STEREOSCOPIC
MICROSCOPES
... SERIES 23**

Catalog Number	Binocular Body	Nosepiece	Paired Achromatic Objectives	Paired Eyepieces	Magnification Range
23A	Vertical	Single	—	—	—
23E	Vertical	Double	—	—	—
23B	Vertical	Triple	—	—	—
23X	Vertical	Double	1.0X, 2.0X	9X W.F.	9X and 18X
23F	Vertical	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
23G	Vertical	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X
23LA	Inclined	Single	—	—	—
23LE	Inclined	Double	—	—	—
23LB	Inclined	Triple	—	—	—
23LX	Inclined	Double	1.0X, 2.0X	9X W.F.	9X and 18X
23LF	Inclined	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
23LG	Inclined	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X

Cabinet 1623 is supplied for binocular head and optics. If not desired, see price insert for deduction.



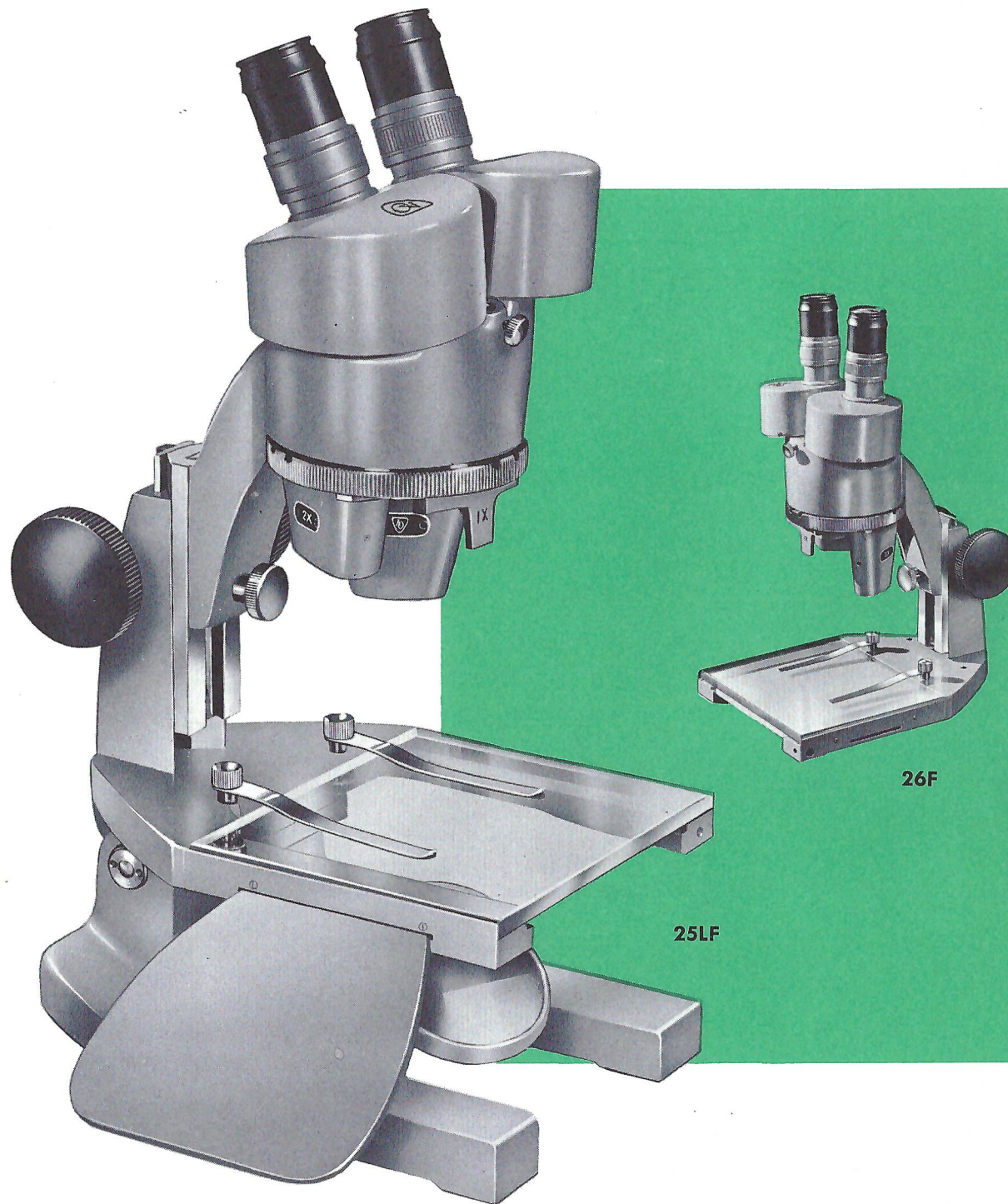
SPENCER

STEREOSCOPIC MICROSCOPE SERIES 25, 26

STEREOSCOPIC MICROSCOPE Series 25 and 26 are supplied with vertical or inclined binocular bodies; triple, double revolving nosepiece or single objective adapter as selected; paired eyepieces and objectives as selected; rack and pinion focusing adjustment; heavy duty slideways; intermediate dovetail slide with locking thumb screw; standard stage with removable glass stage, stage clips, and interchangeable black opaque and white translucent background plates; and cabinet.

STEREOSCOPIC MICROSCOPE Series 25 are identical to Series 26 except that Series 25 are supplied with Number 24 detachable horseshoe base unit, mirror, mirror-fork, hand rests, and larger cabinet.

A wide selection of STEREOSCOPIC MICROSCOPES Series 25 and 26 is available to satisfy your specific needs. Illustrated models 25LF and 26F . . . and tabulation of additional models on page 27 are presented to simplify your final selection.



AO SPENCER STEREOSCOPIC MICROSCOPES . . . SERIES 25 and 26

	Catalog Number	Binocular Body	Nosepiece	Paired Achromatic Objectives	Paired Eyepieces	Magnification Range
SERIES 26	26A	Vertical	Single	—	—	—
	26E	Vertical	Double	—	—	—
	26B	Vertical	Triple	—	—	—
	26X	Vertical	Double	1.0X, 2.0X	9X W.F.	9X and 18X
	26F	Vertical	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
	26G	Vertical	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X
	26LA	Inclined	Single	—	—	—
	26LE	Inclined	Double	—	—	—
	26LB	Inclined	Triple	—	—	—
	26LX	Inclined	Double	1.0X, 2.0X	9X W.F.	9X and 18X
	26LF	Inclined	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
	26LG	Inclined	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X
SERIES 25	25A	Vertical	Single	—	—	—
	25E	Vertical	Double	—	—	—
	25B	Vertical	Triple	—	—	—
	25X	Vertical	Double	1.0X, 2.0X	9X W.F.	9X and 18X
	25F	Vertical	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
	25G	Vertical	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X
	25LA	Inclined	Single	—	—	—
	25LE	Inclined	Double	—	—	—
	25LB	Inclined	Triple	—	—	—
	25LX	Inclined	Double	1.0X, 2.0X	9X W.F.	9X and 18X
	25LF	Inclined	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
	25LG	Inclined	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X

Cabinet 1625 is supplied with Stereoscopic Microscopes Series 25; Cabinet 1626 is supplied with Series 26. If not desired, see price insert for deduction.



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STEREOSCOPIC MICROSCOPE... SERIES 27

STEREOSCOPIC MICROSCOPE Series 27 are supplied with vertical binocular body; paired eyepieces and objectives as selected; objective protecting glass; two rack and pinion focusing adjustments . . . variable intermediate dovetail slide with locking thumb screw; heavy duty slideways; 90° vertical inclination joint; heavy casted base; and cabinet.

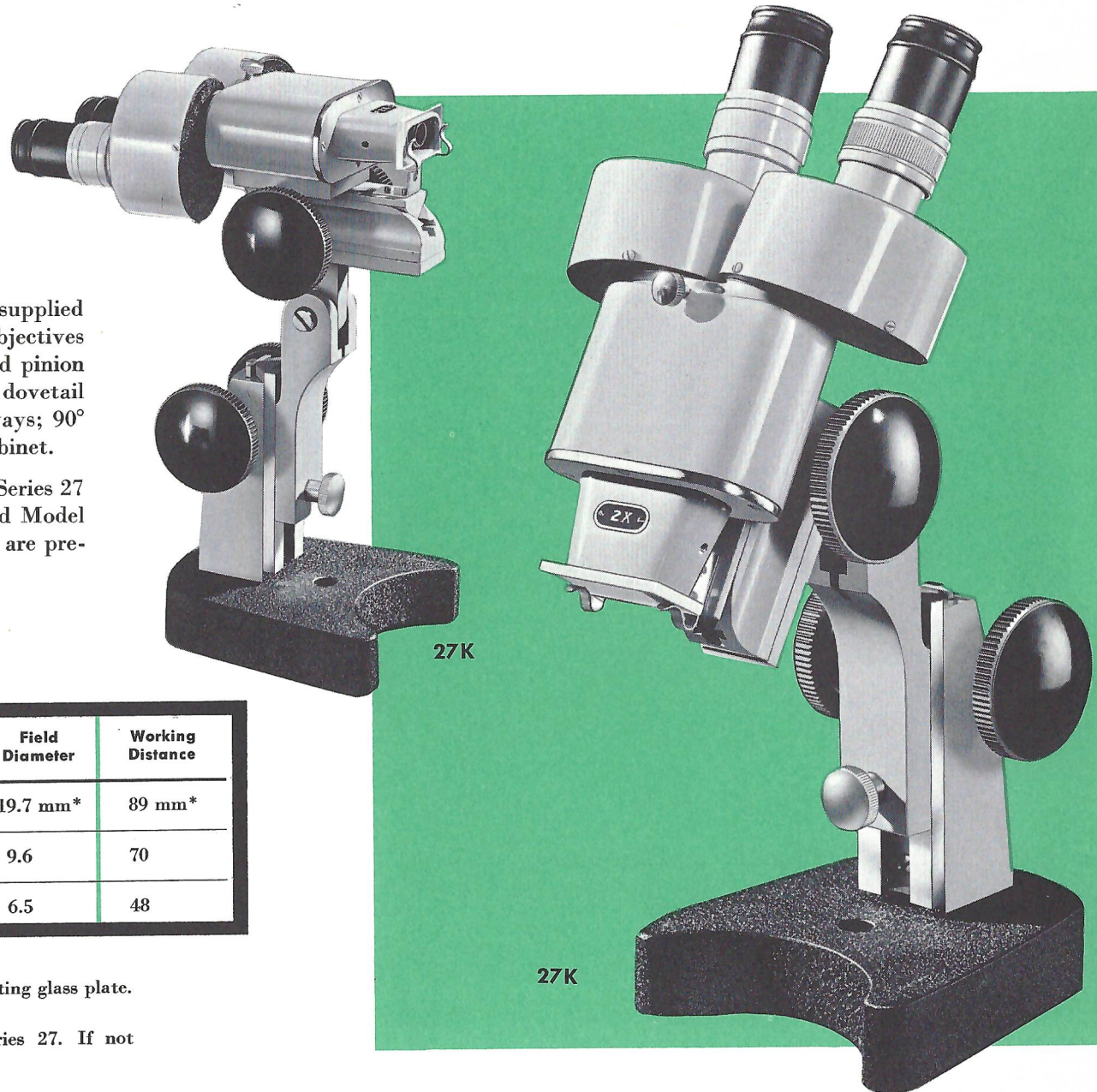
A selection of STEREOSCOPIC MICROSCOPES Series 27 is available to satisfy your specific needs. Illustrated Model 27K . . . and tabulation of additional models below are presented to simplify your final selection.

Catalog Number	Paired Objective	Paired W.F. Eyepieces	Total Magnification	Field Diameter	Working Distance
27J	1X	9X	9X	19.7 mm*	89 mm*
27K	2	9	18	9.6	70
27L	3	9	27	6.5	48

Working distance is measured from object to front of protecting glass plate.

*To convert to inches: divide by 25.4

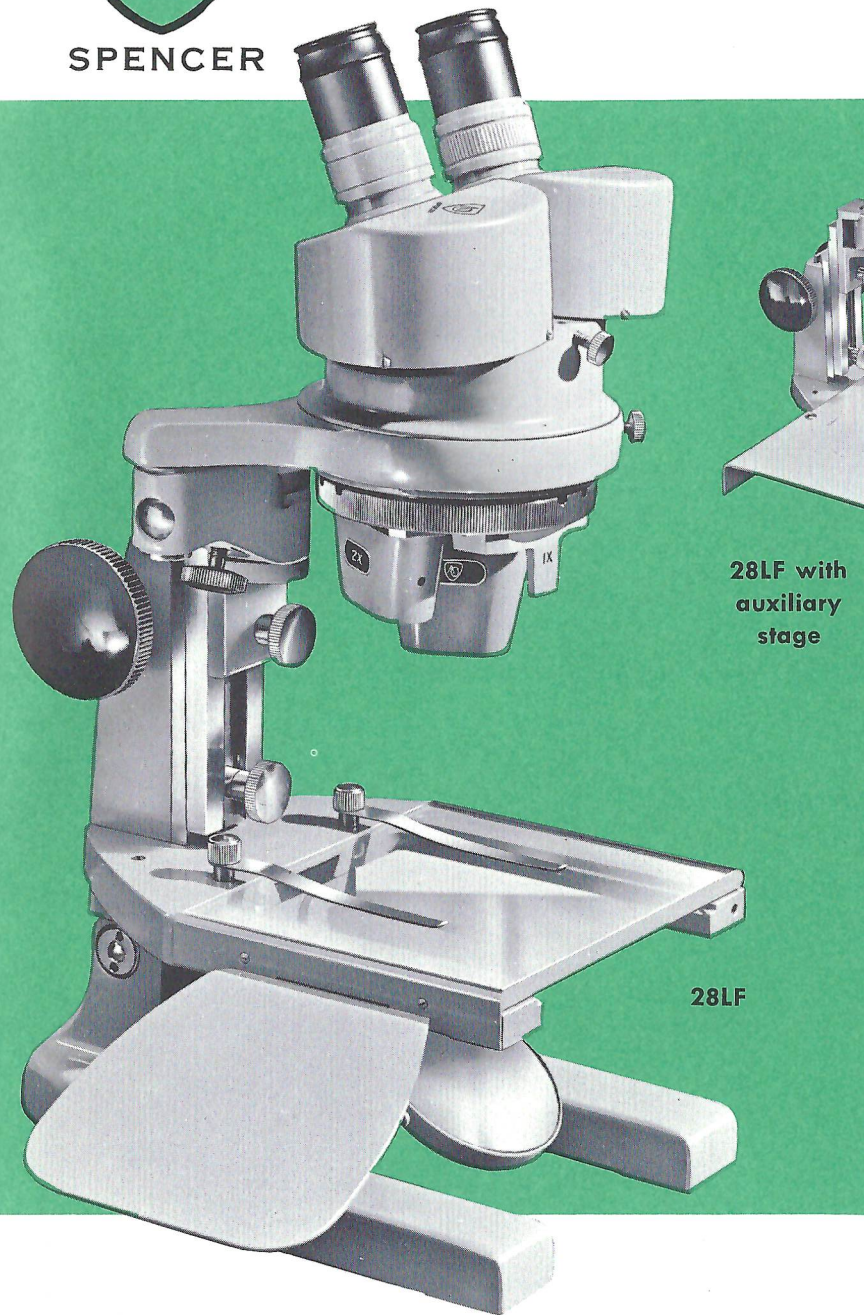
Cabinet 1627 is supplied for Stereoscopic Microscope Series 27. If not desired, see price insert for deduction.





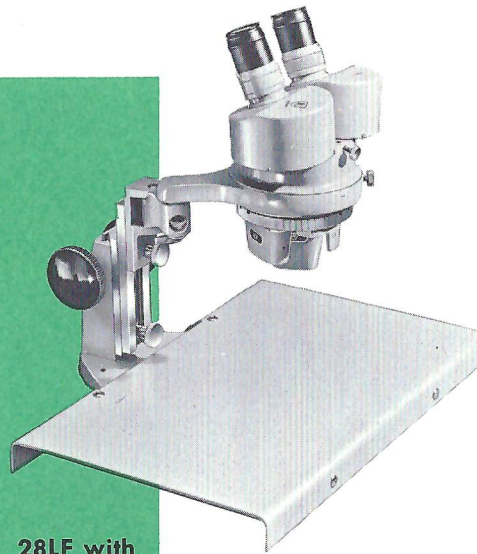
SPENCER

STEREOSCOPIC MICROSCOPE . . . SERIES 28



28LF with
auxiliary
stage

28LF



STEREOSCOPIC MICROSCOPE Series 28 are supplied with vertical or inclined binocular bodies . . . 360° rotatable optical head . . . double swivel horizontal scanning arm; triple, double revolving nosepiece or single objective adapter as selected; paired eyepieces and objectives as selected; rack and pinion focusing adjustment; heavy duty slideways; double extension intermediate slides with locking thumb screws; standard stage with removable glass stage, stage clips, interchangeable black opaque and white translucent background plates; detachable horseshoe base unit, mirror, mirror-fork, hand rests . . . 8" x 12½" metal auxiliary stage; and cabinet.

A wide selection of STEREOSCOPIC MICROSCOPES Series 28 is available to satisfy your specific needs. Illustrated model 28LF . . . and tabulation of additional models on this page are presented to simplify your final selection.

Catalog Number	Binocular Body	Nosepiece	Paired Achromatic Objectives	Paired Eyepieces	Magnification Range
28A	Vertical	Single	—	—	—
28E	Vertical	Double	—	—	—
28B	Vertical	Triple	—	—	—
28X	Vertical	Double	1.0X, 2.0X	9X W.F.	9X and 18X
28F	Vertical	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
28G	Vertical	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X
28LA	Inclined	Single	—	—	—
28LE	Inclined	Double	—	—	—
28LB	Inclined	Triple	—	—	—
28LX	Inclined	Double	1.0X, 2.0X	9X W.F.	9X and 18X
28LF	Inclined	Triple	1.0X, 2.0X, 3.0X	9X, 12X W.F.	9X to 36X
28LG	Inclined	Triple	1.0X, 3.0X, 6.0X	9X, 15X W.F.	9X to 90X

Cabinet 1628 is supplied with Stereoscopic Microscope Series 28. If not desired, see price insert for deduction.

PAIRED ACHROMATIC OBJECTIVES



Catalog Number	Description
271	1.0X for 27
272	2.0X for 27
273	3.0X for 27
294	0.7X for 20, 21, 23, 25, 26, 28
295	1.0X for 20, 21, 23, 25, 26, 28
296	2.0X for 20, 21, 23, 25, 26, 28
297	3.0X for 20, 21, 23, 25, 26, 28
298	4.0X for 20, 21, 23, 25, 26, 28
299	6.0X for 20, 21, 23, 25, 26, 28
300	8.0X for 20, 21, 23, 25, 26, 28

PAIRED EYEPIECES

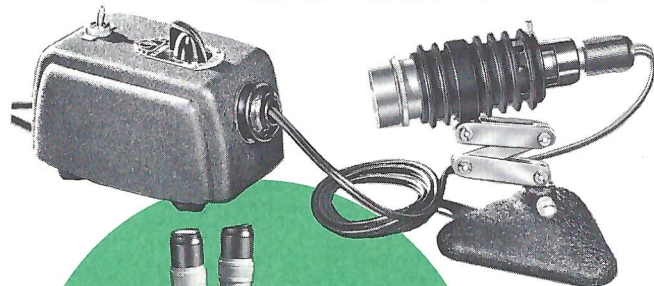


Catalog Number	Description
1184	9X Paired Wide Field
1185	12X Paired Wide Field
1186	15X Paired Wide Field
1187	18X Paired Wide Field
1141	10X Paired Huygenian

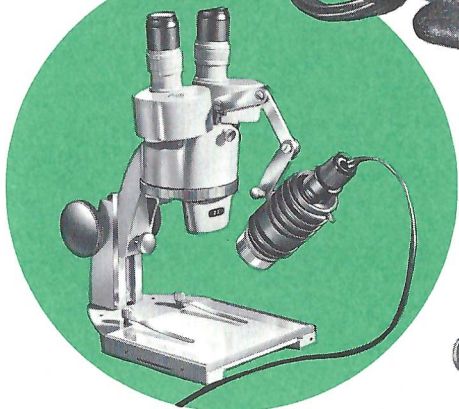


SPENCER

ACCESSORIES FOR STEREOSCOPIC MICROSCOPES



353



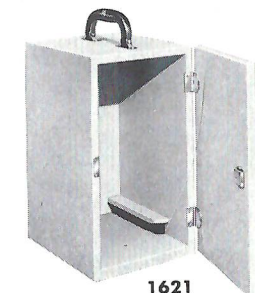
370A



ILLUMINATORS

Catalog Number	Description
353	Universal Microscope Illuminator with three-link jackknife standard and base; three-lens focusable condensing system; 6.5 volt, 2.75 ampere, clear glass lamp; blue glass; and UL approved variable transformer.
354	Iris diaphragm for 353.
478	Bracket for attaching 353 to stage of 25, 26, 28.
360	Replacement lamp 6.5 volt, 2.75 ampere (G.E. 1493) for 353.
370A	Adjustable Microscope Illuminator with iris diaphragm, blue and ground glass filters, 2 lens condensing system, adjustable ring stand, 100 watt, 120 volt bayonet base lamp and 5 foot cord with switch.
375	Replacement lamp 100 watt, 120 volt, bayonet base for 370A (G.E. 100G16½/29SC-120).
359	CYCLOSPOT (See page 8).

CABINETS



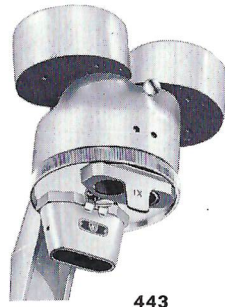
1621

Catalog Number	Description
1621	Cabinet for 20 and 21.
1623	Cabinet for 23 optical head only.
1625	Cabinet for 25.
1626	Cabinet for 26.
1627	Cabinet for 27.
1628	Cabinet for 28.

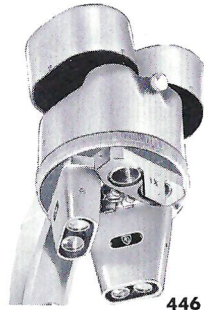
NOSEPIECES



442



443



446

Catalog Number	Description
442	Single Adapter for 20, 21, 23, 25, 26, 28
443	Double Revolving for 20, 21, 23, 25, 26, 28
446	Triple Revolving for 20, 21, 23, 25, 26, 28

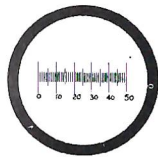
TABLE OF MAGNIFICATIONS AND FIELDS OF VIEW

Catalog Number	OBJECTIVES			EYEPIECES							
	Magnification	Working Distance	9X Catalog No. 1184	12X Catalog No. 1185		15X Catalog No. 1186		18X Catalog No. 1187			
				Magnif.	Field*	Magnif.	Field*	Magnif.	Field*	Magnif.	Field*
294	0.7X	95mm	6.3X	26.2mm	8.4X	24.6mm	10.5X	24.0mm	12.6X	16.5mm	
295	1.0	95	9.0	19.7	12.0	18.3	15.0	16.8	18.0	12.0	
296	2.0	75	18.0	9.6	24.0	9.0	30.0	8.4	36.0	6.0	
297	3.0	55	27.0	6.5	36.0	6.0	45.0	5.6	54.0	4.0	
298	4.0	43	36.0	4.9	48.0	4.5	60.0	4.2	72.0	3.0	
299	6.0	27	54.0	3.3	72.0	3.0	90.0	2.8	108.0	2.0	
300	8.0	21	72.0	2.5	96.0	2.2	120.0	2.1	144.0	1.5	

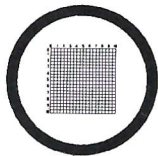
*To convert millimeter values to inches: divide by 25.4

SERIES 20, 21, 23, 25, 26, 27 and 28

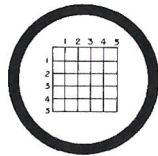
MEASURING AND COUNTING ACCESSORIES



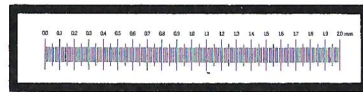
1405



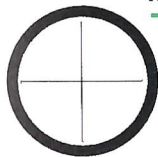
1409



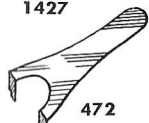
1421



400



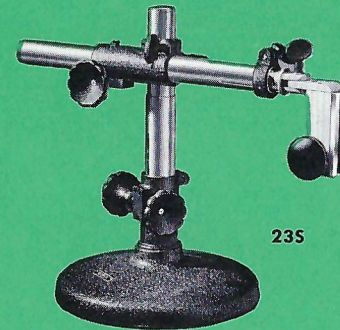
1427



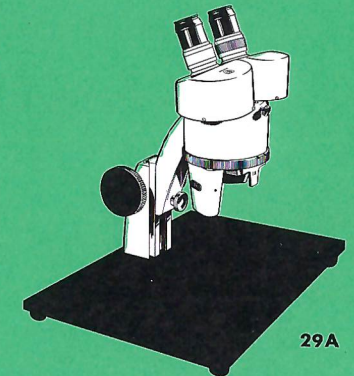
472

Catalog Number	Description
1405	Micrometer Disc 5mm scale divided into 50 parts.
1406	Micrometer Disc 10mm scale divided into 100 parts.
1407	Micrometer Disc 10mm scale divided into 200 parts.
1408	Net Micrometer Disc 10mm square subdivided into 100 squares.
1409	Net Micrometer Disc 10mm square subdivided into 400 squares.
1410	Micrometer Disc 5mm scale divided into 100 parts.
1421	Net Micrometer Disc 5mm square subdivided into 25 squares.
1427	Cross-Hair Disc
472	Spanner Wrench, one included with each of above disc ordered.
400	Stage Micrometer 2mm scale divided into 200 .01mm units. Mounted on 25mm x 75mm slide for calibration of eyepiece micrometer discs and fields of view.

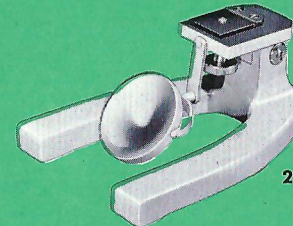
BASES, STANDS, MECHANICAL STAGES



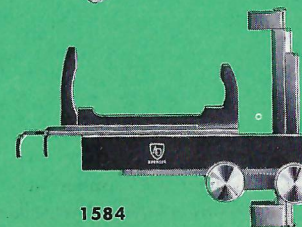
235



29A



24



1584

Catalog Number	Description
235	Microscope stand and base for 23.
24	Horseshoe base unit with mirror for 25.
29A	Phenolic-resin baseboard 7½" x 9½".
29B	Phenolic-resin baseboard 12" x 17".
1584	Mechanical stage, ungraduated, with case, for 25, 28.
586	Objective protecting glass for 1X and 2X objectives, for 27.
587	Objective protecting glass for 3X objectives, for 27.

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