Zeiss Stereomicroscope SR with 5-step Magnification Changer

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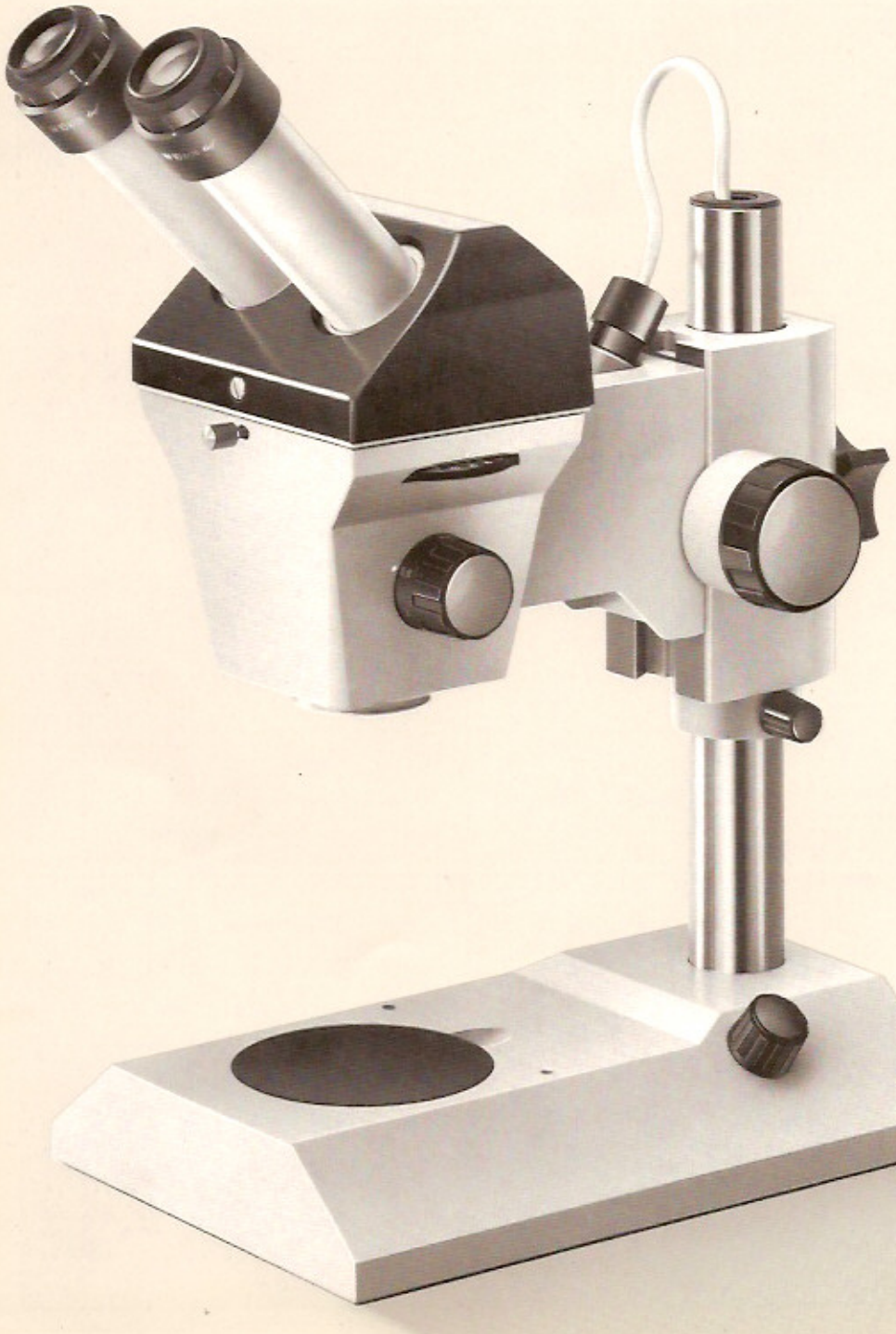

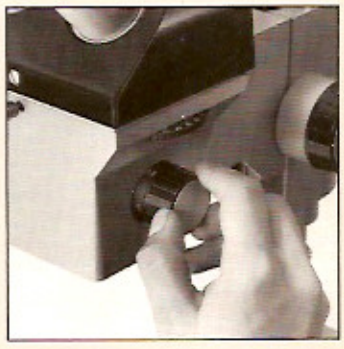

5-step
magnification changer

Stereomicroscope SR for research and industrial application

Unprecedented versatility:
Interchangeable objectives over
widest range of
magnifications and
working distances

Full range of accessories:
dual observation
documentation
drawing tubes
illuminators, stages

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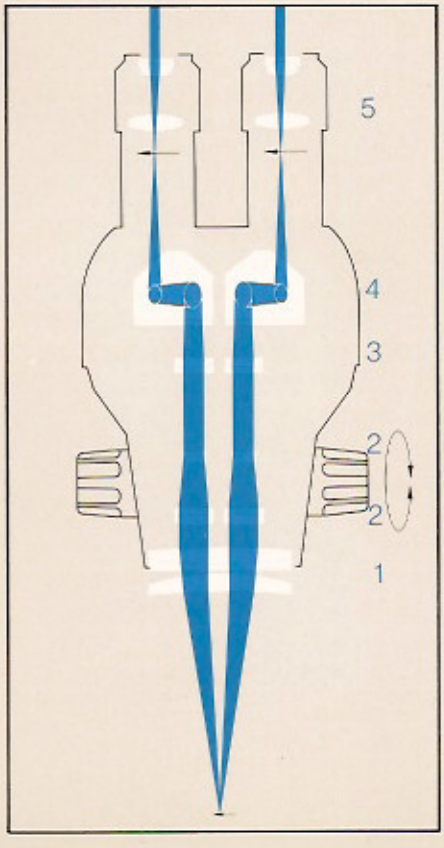
Stereo-microscope SR

Rapid magnification change
The Stereomicroscope SR is ideally suited for all routine and research applications. The 5-step magnification changer covers a range of magnification factors from 1x to 6.3x, while the final magnification is determined by the objectives and eyepieces (see table page 8).

A wide selection of working distances
Seventeen different objectives provide a range of working distances from 50 mm to 2000 mm (2–80″). Working distances may be freely selected, and the microscope easily attached to a variety of machines and control devices – all of which makes it especially well suited for industrial applications.

Ideal for documentation
The microscope body contains a built-in aperture iris diaphragm which creates an optimal depth of field; this is of particular importance for photography. There is also a selection of three automatic attachment cameras (see catalog 41-401-e) and drawing tubes. Adjustable eyepieces can be set to compensate for the observer's ametropia.

Abundant light
The 6 V 10 W Halogen illuminator is located inside the stand and provides abundant light for observation and photography and never interferes with manipulations under the microscope.



Special illuminators
A line of supplementary illuminators is available for incident light as well as for transmitted light, brightfield, darkfield, and polarized light.

Beam path of the Stereomicroscope SR (telescopic type)
The cone of light picked up by the objective (1) is divided into two components. Each component beam is passed through a Galilean-type telescope system pair (2), a tube lens (3), and a prism (4). In addition to erecting the image, the prism provides sufficient separation and inclination of the stereo beams for comfortable binocular viewing (5).

The 5-step magnification change is accomplished with the two Galilean-type telescope system pairs, i.e. without changing objectives. For example, magnifications from 8x to 50x can be attained by combining the telescope systems with the 100 mm objective and 10x eyepieces.

Zeiss also manufactures the moderately priced Greenough-type stereomicroscope models D, DR, DRC, and DV 4 (for further information see catalog 41-603-e).

Zeiss Stereomicroscope SR for incident light for routine and research applications

1 Built-in Halogen Illuminator 10 on Stand L 467253:
The adjustable 6 V 10 W Halogen lamp, built into Stand L, supplies ample light for observing, manipulating, and photographing various specimens (see page 5).

With equipment for transmitted-light illumination (475265), suitable also for investigations in transmitted light.

2 Supplementary illuminators on flexible lamp carrier 475252:
By attaching additional incident-light illuminators via the flexible lamp carrier for stereomicroscopes, special illumination effects can be created, e.g., with a shallow angle of incidence the surface relief is greatly enhanced.

Light sources on flexible lamp carrier 475252

3 Illuminator 10 S, with Halogen lamp 6 V 10 W and transformer 495022
Brightness is controlled by a regulating transformer (392580). By means of the lamp carrier the illuminator is mounted directly to the stand.

4 Surface Illuminator S with power supply 495018
The surface illuminator provides shadow-free illumination of large surface areas. It accepts two fluorescent tubes of 4 W each. The dimensions of the illuminating area are 115 mm x 45 mm.

5 Illuminator 6 V 15 W with regulating transformer 495019
This is a very efficient, focusable low-voltage lamp with a color temperature of 2850° K at 6 V. Slip-on filter holders (32 mm dia.) make it possible to insert any of the filters from the Standard Microscope line. Ground glasses can also be inserted for even illumination of the field.

For examinations in shadow-free incident light

6 Fluorescent ring light Mic-o-lite with power supply 110 V 466023 or with 220 V 466022
This fluorescent light supplies shadow-free illumination of the specimen. It is clamped directly onto the main objective and is especially well suited for routine tasks.

Fiber illuminators
For craggy surfaces and/or heat-sensitive specimens the adjustable cool-light KL 150 B, 15 V 150 W illuminator with flexible light conductor is the ideal light source. Shadow-free incident light is supplied by the four-point ring illuminator(Fig. 9) (also usable with equipment for transmitted-light darkfield) and by the vertical illuminator (Fig. 10). An especially effective illumination of small surfaces is accomplished with the aid of a one-, two-, three-armed, flexible, focusable light guide which can be equipped with filters (Figs. 9, 11).

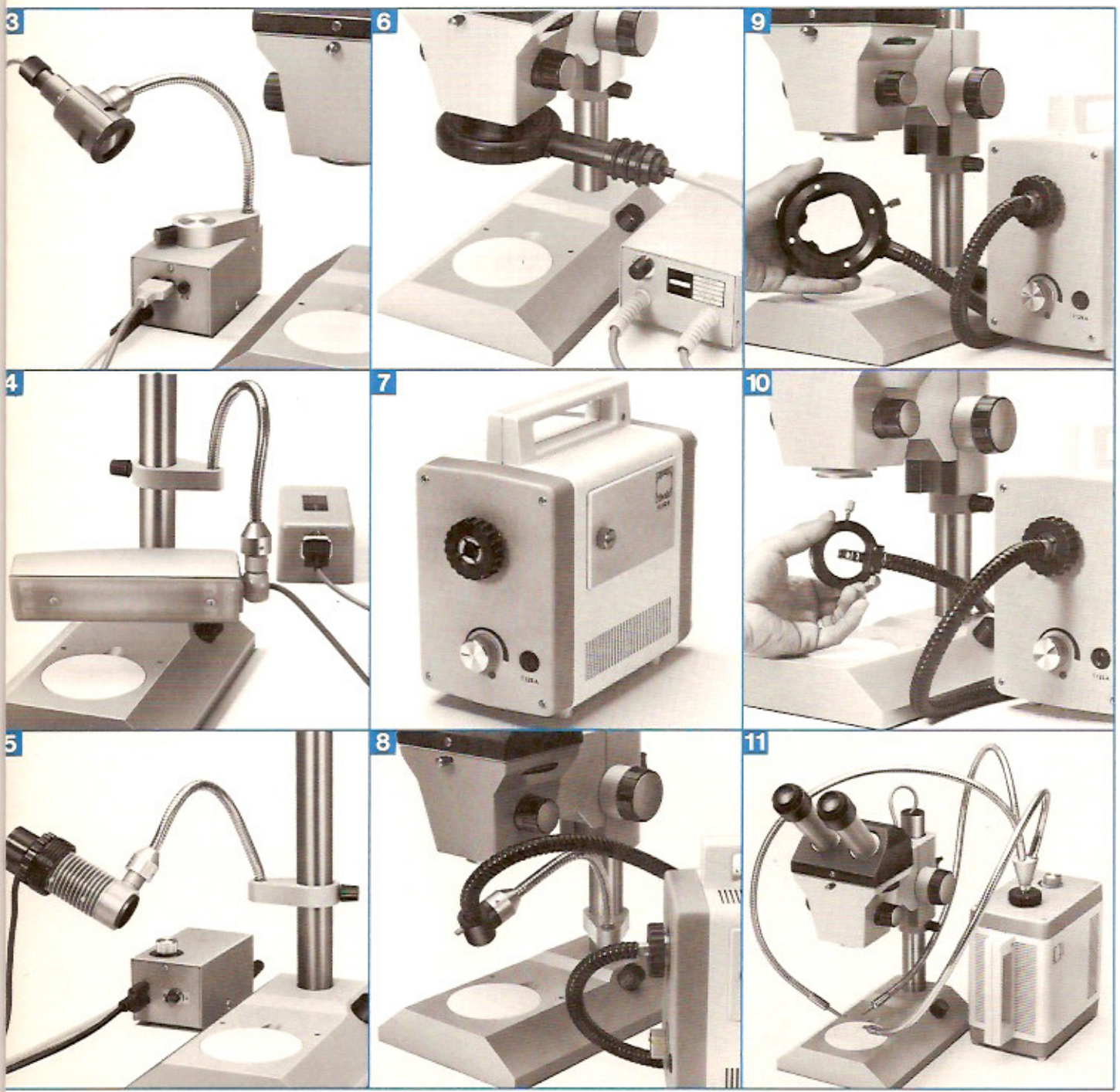
7 Cool-light source Schott KL 150 B, 15 V 150 W 417050
with connector for light guides up to 14 mm external dia. Intensity can be continuously controlled.

8 Lamp carrier (475252) with light guide of 8 mm dia. (417063).

9 Four-point Ring Illuminator (466024) with light guide of 8 mm dia. (417063).

10 Vertical illuminator (475254) with light guide of 8 mm dia. (417063).

11 Flexible three-armed goose-neck light guide of 3.5 mm dia. and 800 mm length in self-supporting metal tubes (417057).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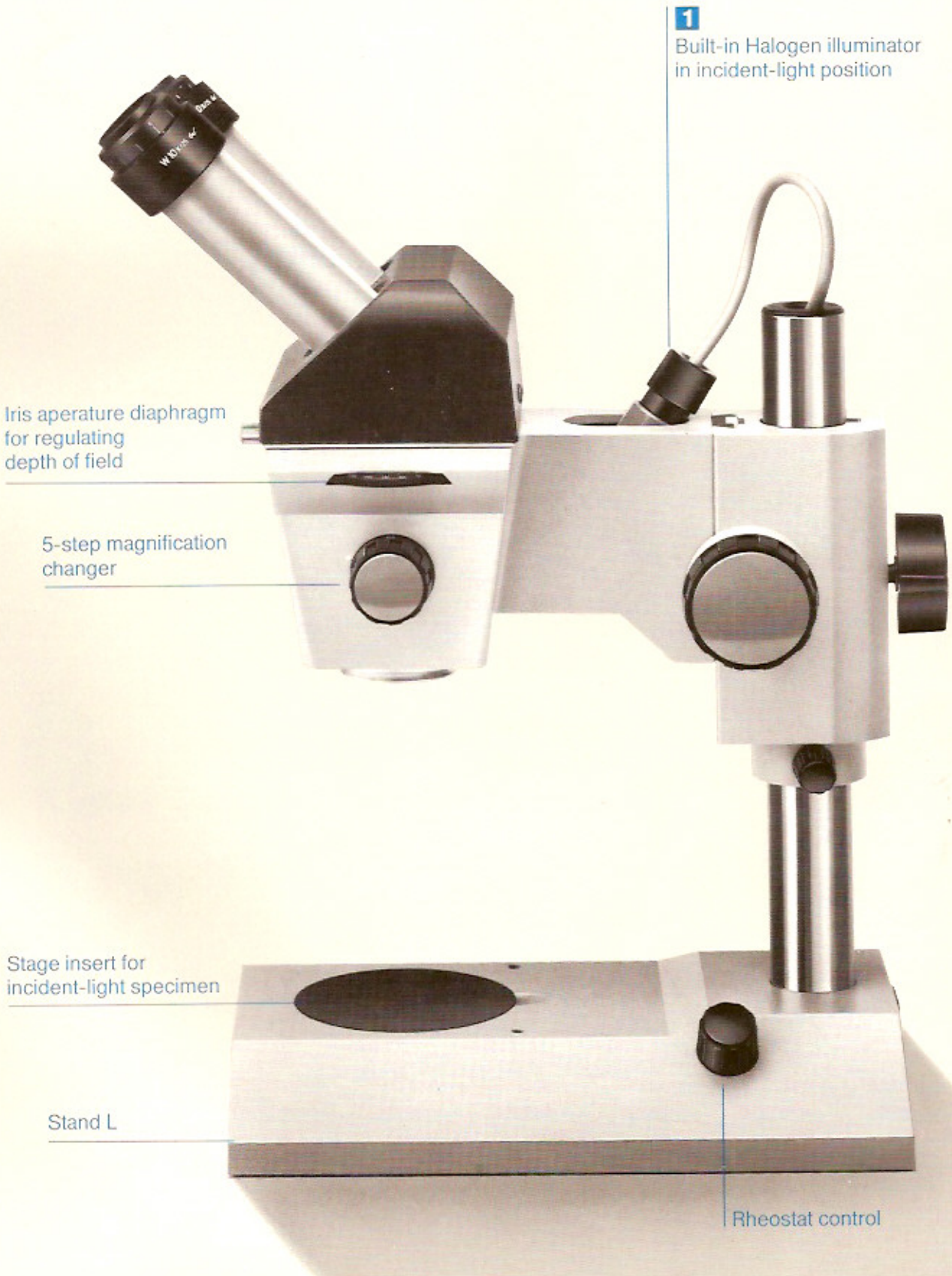
1
Built-in Halogen illuminator
in incident-light position
Iris aperature diaphragm
for regulating
depth of field
5-step magnification
changer
Stage insert for
incident-light specimen
Stand L
Rheostat control

Interchangeable objectives and eyepieces add versatility for every application

Thanks to a wide selection of objectives the Stereomicroscope SR can be employed in a variety of applications. Working distances of 50 mm to 2000 mm provide space for large objects and room for manipulation.

A large selection of illuminators guarantees proper illumination of specimens. All fine detail can thus be captured in image and photograph. This is at times indispensable for industrial inspections of materials or in scientific research.

Objective (focal length in mm = working distance)	Click-stops of magnification changer	**Total-magnification** / Field-of-view diameter of **eyepieces** (in mm)			
		10x / 20 foc*	**W 10x / 25 Br foc**	**W 16 x 16 Br**	**W 25x / 10.5 foc**
100 (included in basic equipment)	0.8	**8** / 25	**8** / 31.3	**12.8** / 12.5	**20** / 5.3
	1.2	**12** / 16.7	**12** / 20.8	**19.2** / 8.3	**30** / 3.5
	2	**20** / 10	**20** / 12.5	**32** / 5	**50** / 2.1
	3.2	**32** / 6.3	**32** / 7.8	**51.2** / 3.1	**80** / 1.3
	5	**50** / 4	**50** / 5	**80** / 2	**125** / 0.8
50	0.8	**16** / 12.5	**16** / 15.6	**25.6** / 6.2	**40** / 2.6
	1.2	**24** / 8.3	**24** / 10.4	**38.4** / 4.3	**60** / 1.8
	2	**40** / 5	**40** / 6.3	**64** / 2.5	**100** / 1.1
	3.2	**64** / 3.1	**64** / 3.9	**102.4** / 1.6	**160** / 0.7
	5	**100** / 2	**100** / 2.5	**160** / 1	**250** / 0,4
150	0.8	**5** / 40	**5** / 50	**8** / 20	**12.5** / 8.4
	1.2	**8** /25	**8** / 31.1	**12.8** / 12.5	**20** / 5.3
	2	**13** / 15.4	**13** / 19.2	**20.8** / 7.7	**32.5** / 3.2
	3.2	**21** / 9.5	**21** / 11.9	**33.6** / 4.8	**52.5** / 2
	5	**33** / 6.1	**33** / 7.6	**52.8** / 3	**82.5** / 1.3
200	0.8	**4** / 50	**4** / 62.5	**6.4** / 25	**10** / 10.5
	1.2	**6** / 33.3	**6** / 41.7	**9.6** / 16.7	**15** / 7
	2	**10** / 20	**10** / 25	**16** / 10	**25** / 4.2
	3.2	**16** / 12.5	**16** / 15.6	**25.6** / 6.3	**40** / 2.6
	5	**25** / 8	**25** / 10	**40** / 4	**62.5** / 1.7
250	0.8	**3** / 66.7	**3** / 83.3	**4.8** / 53.3	**7.5** / 14
	1.2	**5** / 40	**5** / 50	**8** / 20	**12.5** / 8.4
	2	**8** / 25	**8** / 31.3	**12.8** / 12.5	**20** / 5.3
	3.2	**13** / 15.4	**13** / 19.2	**20.8** / 7.7	**32.5** / 3.2
	5	**20** / 10	**20** / 12.5	**32** / 5	**50** / 21

Additional objectives with focal length up to 2000 mm see magnification table E 41-604/I-e

*) foc = focusing eyepiece (to compensate for refractive differences in either eye of the observer)
W = widefield eyepiece
Br = high-eyepoint eyepieces for eyeglass wearers

Stereomicroscope SR

Total magnifications and object fields
(Objective f_1 = 50 mm to 2,000 mm, tube f_2 = 200 mm

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D-7082 Oberkochen
West Germany

Magnification table

Objective (focal length in mm)	Magnification changer set to	Total magnification/Object field of **eyepieces**			
		10x/20 foc*	**W**10x/25 Br foc**	**16x/16**	**25x/10.5 foc**
50	0.8	16 /13	16 /16	26 / 6.3	40 / 2.6
	1.3	25 / 7.9	25 / 9.9	40 / 3.9	63 / 1.7
	2	40 / 5	40 / 6.3	64 / 2.5	100 / 1.1
	3.2	64 / 3.1	64 / 3.9	102 / 1.6	160 / 0.7
	5	100 / 2	100 / 2.5	160 / 1	250 / 0.4
100	0.8	8 /25	8 /31	13 /13	20 / 5.3
	1.3	13 /16	13 /20	20 / 7.9	32 / 3.3
	2	20 /10	20 /13	32 / 5	50 / 2.1
	3.2	32 / 6.3	32 / 7.8	51 / 3.1	80 / 1.3
	5	50 / 4	50 / 5	80 / 2	125 / 0.8
125	0.8	6.4/31	6.4/39	10 /16	16 / 6.5
	1.3	10 /20	10 /25	16 /10	25 / 4.2
	2	16 /13	16 /16	26 / 6.3	40 / 2.6
	3.2	26 / 7.8	26 / 9.8	41 / 3.9	64 / 1.6
	5	40 / 5	40 / 6.3	64 / 2.5	100 / 1.1
150	0.8	5.3/38	5.3/47	85 /19	13 / 7.9
	1.3	8.4/24	8.4/30	13 /12	21 / 5
	2	13 /15	13 /19	21 / 7.5	33 / 3.2
	3.2	21 / 9.4	21 /12	34 / 4.7	53 / 2
	5	33 / 6	33 / 7.5	53 / 3	83 / 1.3
175	0.8	4.6/44	4.6/55	7.3/22	11 / 9.2
	1.3	7.2/28	7.2/35	12 /14	18 / 5.8
	2	11 /18	11 /22	18 / 8.8	29 / 3.7
	3.2	18 /10	18 /14	29 / 5.5	46 / 2.3
	5	29 / 7	29 / 8.8	46 / 3.5	71 / 1.5
200	0.8	4 /50	4 /63	6,4/25	10 /11
	1.3	6.3/32	6.3/40	10 /16	16 / 6.7
	2	10 /20	10 /25	16 /10	25 / 4.2
	3.2	16 /13	16 /16	26 / 6,3	40 / 2.6
	5	25 / 8	25 /10	40 / 4	63 / 1.7
225	0.8	3.6/56	3.6/70	5,7/28	8,9/12
	1.3	5.6/36	5.6/45	9 /18	14 / 7.5
	2	8.9/23	8.9/28	14 /11	22 / 4.7
	3.2	14 /14	14 /18	23 / 7	36 / 3
	5	22 / 9	22 /11	36 / 4,5	56 / 1.9
250	0.8	3.2/63	3.2/78	5,1/31	8 /13
	1.3	5 /40	5 /50	8,1/20	13 / 8.3
	2	8 /25	8 /31	13 /13	20 / 5.3
	3.2	13 /16	13 /20	21 / 7.8	32 / 3.3
	5	20 /10	20 /13	32 / 5	50 / 2.1
275	0.8	2.9/69	2.9/86	4,7/34	7,3/14
	1.3	4.6/44	4.6/55	7,3/22	12 / 9.2
	2	7.3/28	7.3/34	12 /14	18 / 5.8
	3.2	12 /17	12 /22	19 / 8,6	29 / 3.6
	5	18 /11	18 /14	29 / 5,5	46 / 2.3

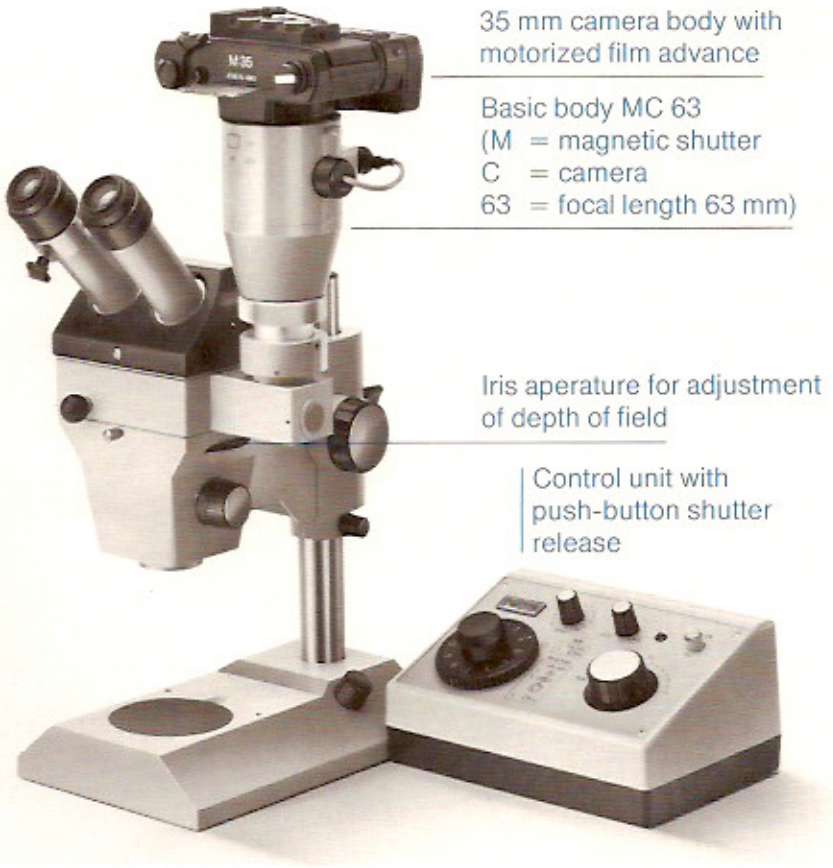
*foc = focusable
**W = wide-angle eyepiece
Br = high-eyepoint eyepieces

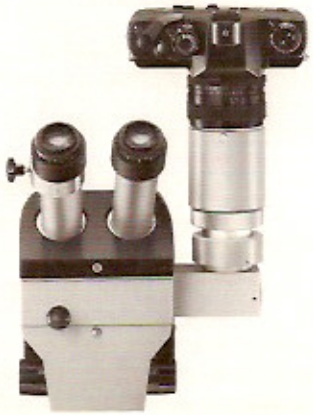
Objective (focal length in mm)	Magnification changer set to	Total magnification/Object field of **eyepieces**			
		10x/20 foc*	**W**10x/25 Br foc**	**16x/16**	**25x/10.5foc**
300	0.8	2.7/75	2.7/94	4.3/38	6.7/16
	1.3	4.2/48	4.2/60	6.7/24	11 /10
	2	6.7/30	6.7/38	11 /15	17 / 6.3
	3.2	11 /19	11 /23	17 / 9.4	27 / 3.9
	5	17 /12	17 /15	27 / 6	42 / 2.5
320	0.8	2.5/80	2.5/100	4 /40	6.3/17
	1.3	3.9/51	3.9/ 64	6.3/25	9.8/11
	2	6.3/32	6.3/ 40	10 /16	16 / 6.7
	3.2	10 /20	10 / 25	16 /10	25 / 4.2
	5	16 /13	16 / 16	25 / 6.4	39 / 2.7
350	0.8	2.3/88	2.3/109	3.7/44	5.7/18
	1.3	3.6/56	3.6/ 69	5.8/28	9 /12
	2	5.7/35	5.7/ 44	9 /18	14 / 7.4
	3.2	9 /22	9 / 27	15 /11	23 / 4.6
	5	14 /14	14 / 18	23 / 7	36 / 2.9
375	0.8	2.1/94	2.1/117	3.4/47	5.3/20
	1.3	3.4/60	3.4/ 74	5.4/30	8.4/13
	2	5.3/38	5.3/ 47	8.5/19	13 / 7.9
	3.2	8.5/23	8.5/ 29	14 /12	21 / 4.9
	5	1.3/15	1.3/ 19	21 / 7.5	33 / 3.2
400	0.8	2 /100	2 /125	3.2/50	5 /21
	1.3	3.1/ 64	3.1/ 79	5 /32	7.9/13
	2	5 / 40	5 / 50	8 /20	12 / 8.4
	3.2	8 / 25	8 / 31	13 /13	20 / 5.3
	5	1.3/ 16	1.3/ 20	20 / 8	31 / 3.4
500	0.8	1.6/125	1.6/156	2.6/63	4 /26
	1.3	2.5/ 79	2.5/ 99	4.1/40	6.3/17
	2	4 / 50	4 / 63	6.4/25	10 /11
	3.2	6.4/ 31	6.4/ 39	10 /16	16 / 6.6
	5	1 / 20	1 / 25	16 /10	25 / 4.2
800	0.8	1 /200	1 /250	1.6/100	2.5/42
	1.3	1.6/127	1.6/159	2.5/ 64	3.9/27
	2	2.5/ 80	2.5/100	4 / 40	6.3/17
	3.2	4 / 50	4 / 63	6.4/ 25	10 /11
	5	6.3/ 32	6.3/ 40	1 / 16	16 / 6.7
1250	0.8	0.6/313	0.6/391	1 /156	1.6/66
	1.3	1 /198	1 /248	1.6/ 99	2.6/42
	2	1.6/125	1.6/156	2.6/ 63	4 /26
	3.2	2.6/ 78	2.6/ 98	4.1/ 39	6.4/16
	5	4 / 50	4 / 63	6.4/ 25	10 /11
2000	0.8	0.4/500	0.4/625	0.6/250	1 /105
	1.3	0.6/317	0.6/397	1 /159	1.6/ 67
	2	1 /200	1 /250	1.6/100	2.5/ 42
	3.2	1.6/125	1.6/156	2.6/ 63	4 / 26
	5	2.5/ 80	2.5/100	4 / 40	6.3/ 17

*foc = focusable
**W = wide-angle eyepiece
Br = high-eyepoint eyepieces

Attachment Camera MC 63 for photomicrographs of unprecedented image quality

Stereomicroscope SR with Attachment Camera MC 63





Stereomicroscope SR with SLR camera

An economical alternative is the use of a commercially available SLR camera with standard lens.

The Attachment Camera MC 63 takes superb photomicrographs with utmost ease. The camera interferes in no way with the visual observation and is instantly ready for action.

The control unit with push-button shutter release is seperate from the microscope. The few manual operations required prior to exposure are clearly marked with easy-to-read symbols on the control unit. You can choose between automatic exposure control or manual override with automatic compensation for reciprocity failure.

The Attachment Camera System is available in three models:

MC 63 with electronically controlled shutter for fully automatic exposure and manual override.
MC 63 A with electronically controlled shutter for fully automatic exposure only.
MC 63 C with automatic exposure control and manually released shutter.
Camera Attachment M 35 for 35 mm film.
Camera Attachment M 4x5 for
9x12 cm cassettes
4x5″ cassettes

For instant photography:
Polaroid film pack 405
(format 3¼x4¼″)
Polaroid film holder 545
(format 4x5″)
Kodak instant film pack
(format 6.7 x 9 cm) – in preparation.
For more information ask for catalog 41-401-e.

Accessories:

Carl Zeiss
D-7082 Oberkochen
West Germany

Drawing Tube for Stereomicroscope SR

In place of the phototube this drawing tube can be inserted between the microscope body and binocular tube. The image scale can be continuously varied from 1x to 1.9 x by turning a locking ring. Specimen field and drawing surface appear simultaneously in the field of view. This drawing device is especially useful for the comparison of speciem details with existing standards. (For further information ask for catalog 41-470-e).

For the systematic scanning of specimens

Stage carrier for Stands L and LO	475238
with attachable mechanical stage with graduation	413302

All stages of the Standard Microscope line can be mounted on a stage carrier.

We reserve the right to change design or extent of instrumentation in the course of advanced development.