TELAVAL



CARL ZEISS
JENA



Microscope TELAVAL®



TELAVAL–a member of the MIKROVAL microscope family–was created for the microscopy of cell and tissue cultures, sediments and suspensions, as well as for the microscopic observation of chemical reactions in larger vessels.

In accordance with these applications, the TELAVAL is an inverted microscope designed for low-to-medium power magnifications. It may be employed for binocular as well as monocular observation, both with standard and extended-field eyepieces. The 6/15 microscope lamp supplied with the instrument is vertically adjustable so as to be adapted to any culture vessel used in practice.

TELAVAL permits the following methods of microscopy:

Visual observation

Measuring and counting

Photomicrography, with or without automatic exposure device

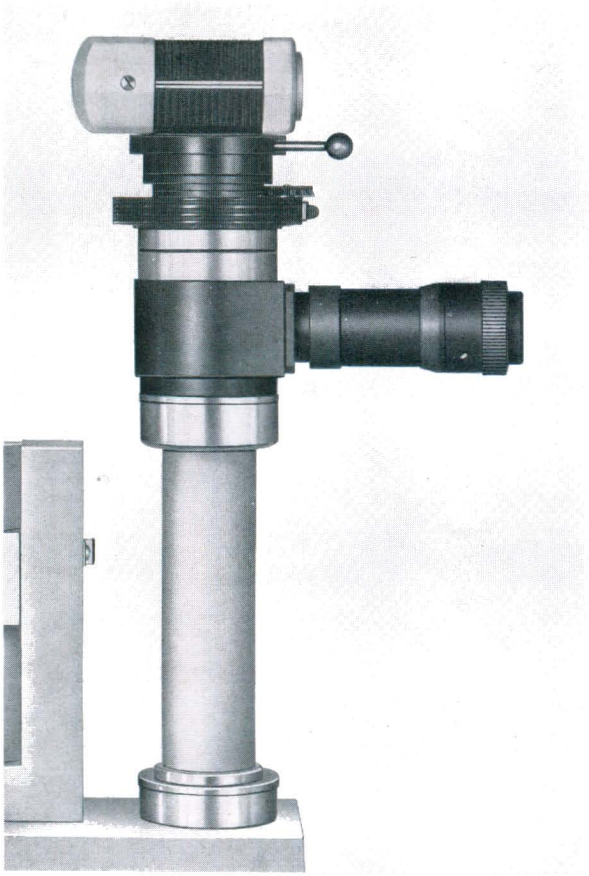
Drawing

The TELAVAL's body magnification for visual observation is 1.6×, which results in the following range of magnifications:

Eyepiece magnification / Image scale of objective	6.3×	8×	10×	12.5×	16×
3.2/0.10	32×	40×	50×	63×	80×
6.3/0.16	63×	80×	100×	125×	160×
10/0.25	100×	125×	160×	200×	250×

The TELAVAL is distinguished by the following merits:

- Upright, non-reversed image
- Amply dimensioned specimen stage to be easily disinfected
- Low-positioned knurled-head controls guaranteeing convenient manipulation with the hand resting on the table top
- Transmission ratio of rack-and-pinion drive adapted to the magnification range
- All objectives, including the low-power objective, are parfocalized
- Unrestrictedly revolving quadruple nosepiece
- Easy extension of the microscope for incident-light and polarization work, with objectives of 160 mm tube length and 45 mm parfocalizing length
- Dead stop of pinion drive precludes destructive collision of the objective with the culture vessel
- Excellent image quality (The objectives 3.2/0.10 and 6.3/0.16 are semi-plane-field achromats.)
- Applicability of high-intensity light sources, which also allows fluorescence microscopy
- Easy determination of particle quantities per unit of area possible by means of special counting eyepiece plates



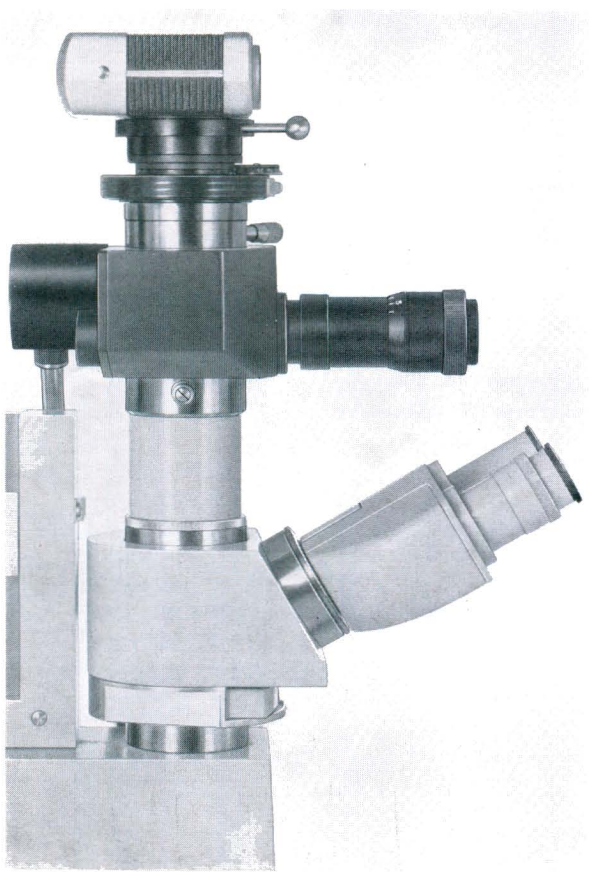
For Photomicrography:
TELAVAL plus mf Attachment Camera

An attachment camera that can easily be assembled of modular units of our **mf** Photomicrographic Equipment permits the quick and convenient photographic recording of the microscopic images.

The camera is attached to the microscope by means of an **mf** tube or an **mf** adapter, a changeover tube allowing quick changing from binocular observation to photomicrography. Correct optical adaptation of the camera is achieved by **mf** projection eyepieces, which are corrected to match the optical length of the **mf** camera. Projection eyepieces of different image scales are available, both with compensating action and without.

All **mf** basic bodies have identical focussing systems, which allow to observe a large surrounding field in addition to the image area recorded by the camera. Apart from the standard **mf** body there are available the **mf** basic body and **mf** basic body pol, both with supplement for photoelectric exposure determination.

Photographs may be taken either on 35-mm film, or on 6.5 cm × 9 cm plates or sheet film.



mf·matic Automatic Exposure Device

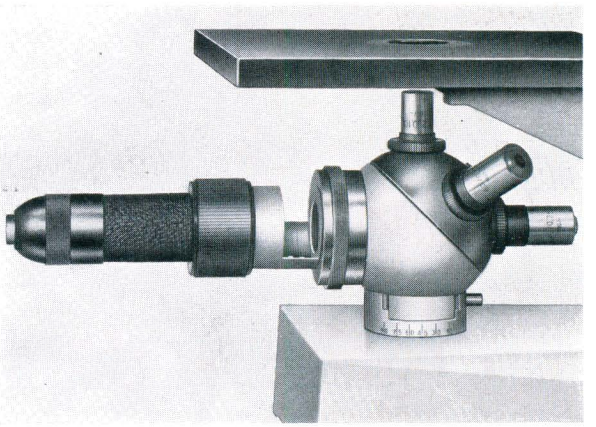
The **mf·matic** equipment implements fully automatic control of exposure times.

The **mf·matic** equipment uses a special **mf** basic body, which in addition to the focussing system common to all **mf** basic bodies features a specially designed electromagnetic shutter. The shutter is controlled by pulses coming from a timing unit, which may be set to film speeds ranging from –2 to 34 DIN and which contains all components necessary for exposure time control including the multistage photomultiplier. The photomultiplier is enclosed in a hermetically sealed housing; and transmission is via a fibre-optical light guide. Perfect function of the automatic system, uninfluenced by climatic conditions, is thus guaranteed.

The **mf·matic** operates with all illumination methods, all image scales, and all diaphragm settings on the microscope. It covers exposure times from $^1/_{100}$ sec. up to several hours. The **mf·matic** is applicable to 35-mm and medium-format photography. Much to the convenience of the microscopist, pressing the release is the only operation necessary for photographic recording, while he or she can devote undivided attention to the examination of the specimen.

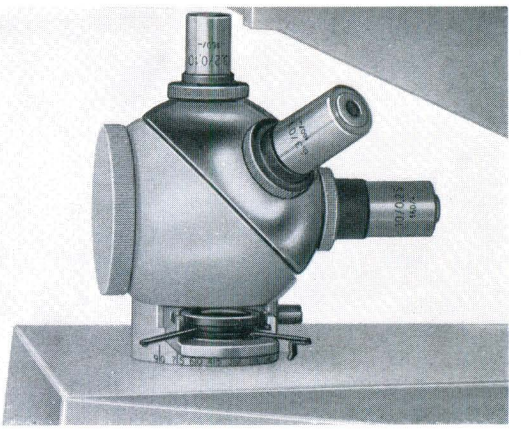
Incident-Light Equipment

A few manipulations convert the TELAVAL into an incident-light microscope. After unscrewing a protective cap on the revolving nosepiece, an adapter can be inserted which contains a planoparallel glass plate and a filter holder. The microscope lamp 6/15 with collector, otherwise used for transmitted-light work, can then be taken off the lamp holder and attached to the adapter. All 160/– objectives supplied with the TELAVAL are also applicable to observations in incident light with the inverted microscope.



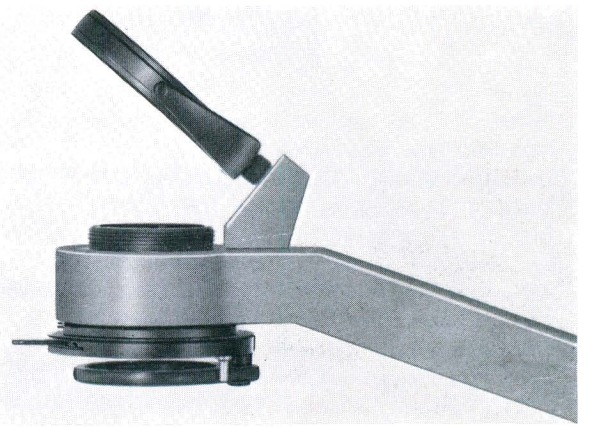
Polarization Equipment

Occasionally, polarized light may be required for observations with the TELAVAL. A simple polarization filter arrangement is available, which suits both transmitted and incident light requirements. The polarizer is inserted into the filter holder of the lamp, and the analyzer into a slot below the revolving nosepiece. The analyzer is designed to take up λ an $\lambda/4$ compensators. A scale for analyzer rotation is provided below the nosepiece.



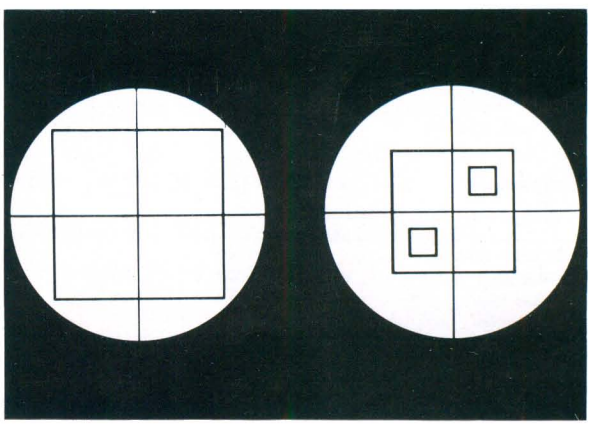
Illuminating Mirror

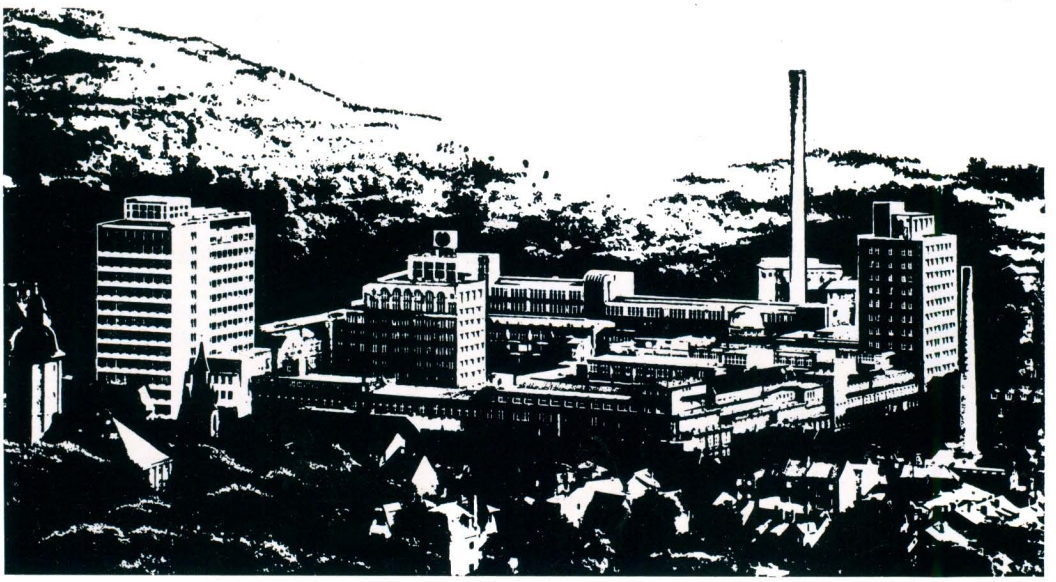
It is possible to use light sources of higher intensity with the TELAVAL. If the lamp 6/15 and the collector are removed from the lamp holder, and a mirror holder with mirror is fitted in their place, any microscope illuminant (e.g. with gas discharge lamp) can be arranged next to the microscope.



Counting Plates

Counting plates, to be inserted into the measuring eyepiece A 12.5× supplied with the TELAVAL, serve for convenient determination of the number of particles per unit of area. The lengths of the counting fields are adapted to the optical system and the tube factor of the TELAVAL. Depending on the objective used, specimen fields are 1, 0.5, 0.25, 0.1, 0.05, 0.025 or 0.01 mm².





VEB Carl Zeiss JENA

German Democratic Republic

Präzision aus Jena

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CARL ZEISS JENA LTD
PRICE LIST

PRICE LIST NO. 13

TISSUE CULTURE MICROSCOPE TELAVAL

SPECIFICATION	CATALOGUE NO.	£	P
Inverted Microscope TELAVAL			
consisting of:			
Stand Telaval	301105:501.26	419.10	
Binocular inclined tube 23.2/120 Factor 1.6	305000:006.24	109.22	
Semi-Planefield Achromat 3.2/0.10 160/-	302221:001.26	10.03	
Semi-Planefield Achromat 6.3/0.16 160/-	302222:001.26	24.13	
Achromat 10/0.25 160/-	302223:001.26	25.40	
2 Eyepieces A 6.3x	303107:001.24	16.76	
Eyepiece A 12.5x	303110:001.24	13.97	
Eyepiece A 12.5x, adjustable	303113:002.24	17.78	
Eyepiece counting disc 10/5 in container	305710:008.26	15.24	
Eyepiece counting disc 7.2/3.6 1.6 in container	305710:009.26	24.13	
Conversion filter C311	304755:311.00	3.42	
Green filter V233 32mm ø	304755:233.00	3.42	
Attenuation filter D282	304755:282.00	3.42	
Frosted glass 3°	304755:333.00	3.42	
2 Filament bulbs T-P5 6v 15w clear	681.34	6.34	
Low voltage transformer 15VA 240/6v	680.36	13.97	
Standard Equipment:	300070:003.20	709.75	

Price lists of additional accessories available on request, i.e.

Mf Photomicrographic Equipment
Drawing Equipment
Eyepieces
Accessories for Measuring and Counting.

Prices valid as from: 1st. February 1978.

SK/JT

N.B. Prices do not include V.A.T. which will be charged at the usual rate. Whilst every effort is made to maintain prices, we reserve the right to increase prices without prior notice. Goods will be invoiced at the prices ruling at the date of delivery.

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