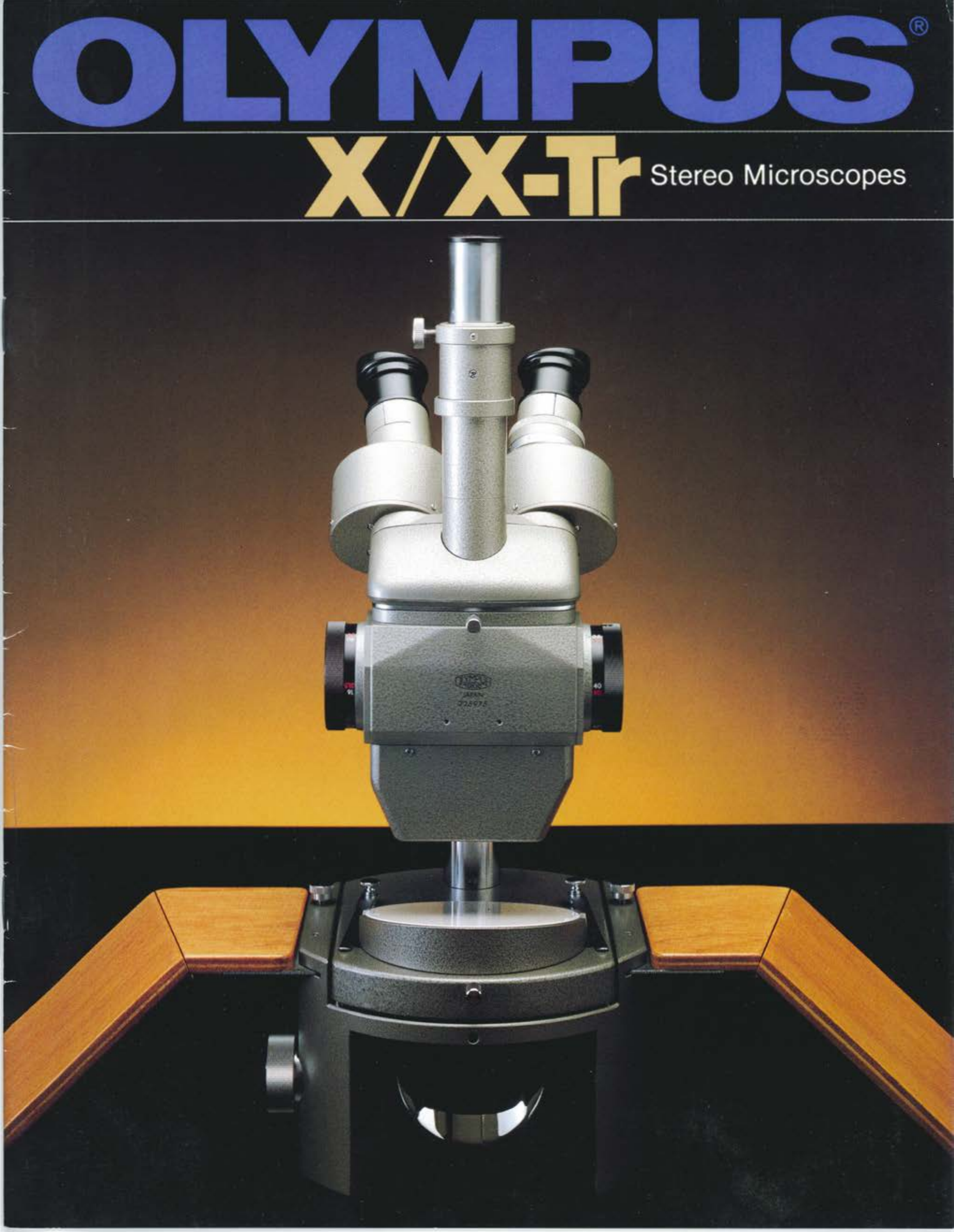
# OLYMPUS®

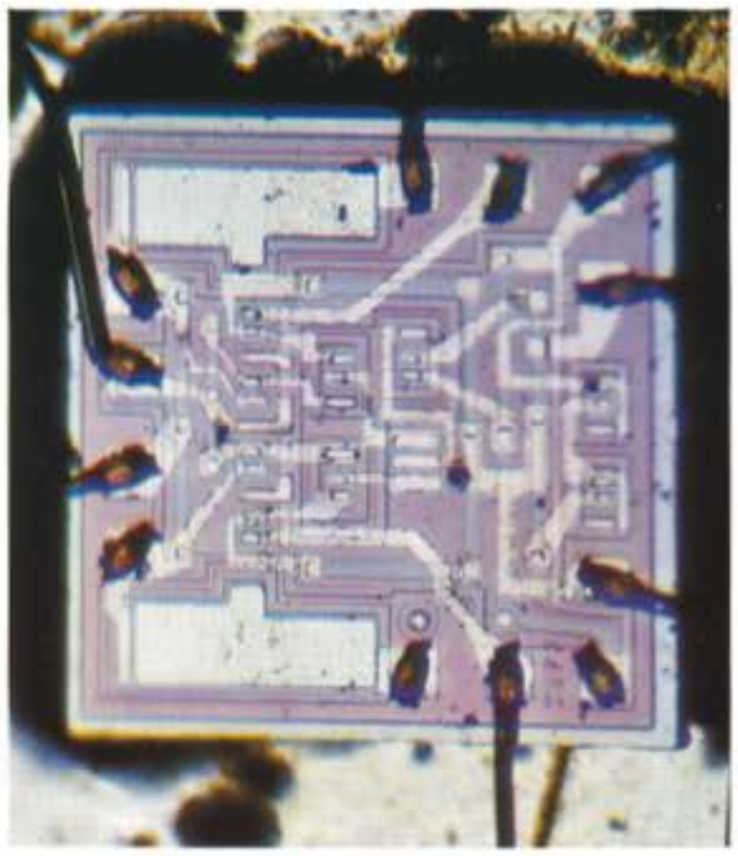
## X/X-Tr Stereo Microscopes

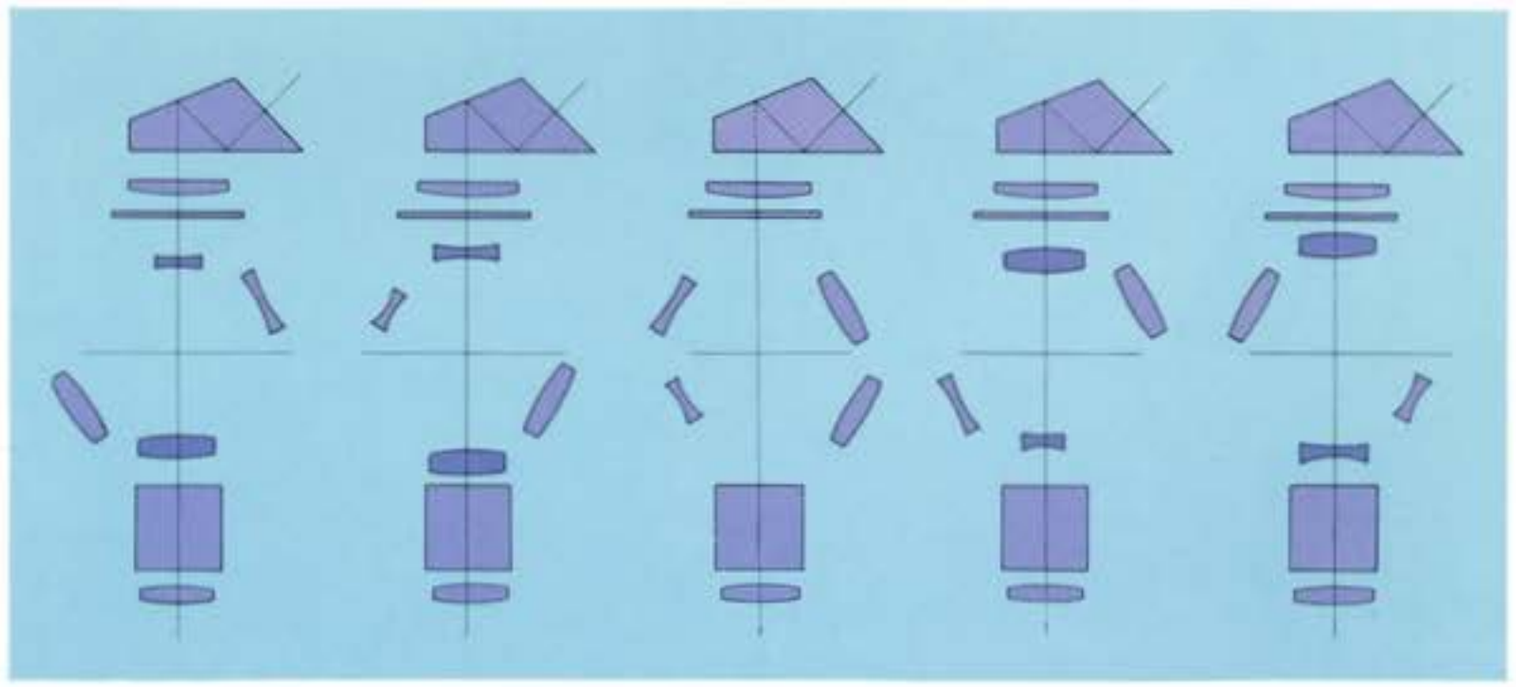


# The Olympus stereo microscope puts three dimensional reality into viewing

## These stereo microscopes give multi-purpose service.

*By employing the Greenough's Principle Olympus has created a completely modern and versatile instrument.*
*The result is a very practical and useful stereo micrscope.*
*The stereo microscope's traditional use was in plant classification, anatomical examination of animals, etc, but today they are also widely used in industrial fields such as the electronics industry.*
*Twin beams pass through two optical paths to converge on the specimen.*
*This results in a three dimensional view of the specimen with the various parts and layers appearing in natural relief.*
*This makes the Olympus X and X-Tr highly valuable for the observation of numerous objects where depth and texture are important aspects of the work and, with the X-Tr, where clearly detailed photomicro-graphic records are desired.*
*The modern features of the Olympus stereo microscope result in beauti-fully natural erect images.*
*An interesting feature of the X and X-Tr models is the new five-step magnfication changeover made available simply by turning a turret.*
*The optics mounted around a cylindrical turret which, when rotated, give stable and positive magnification changes.*



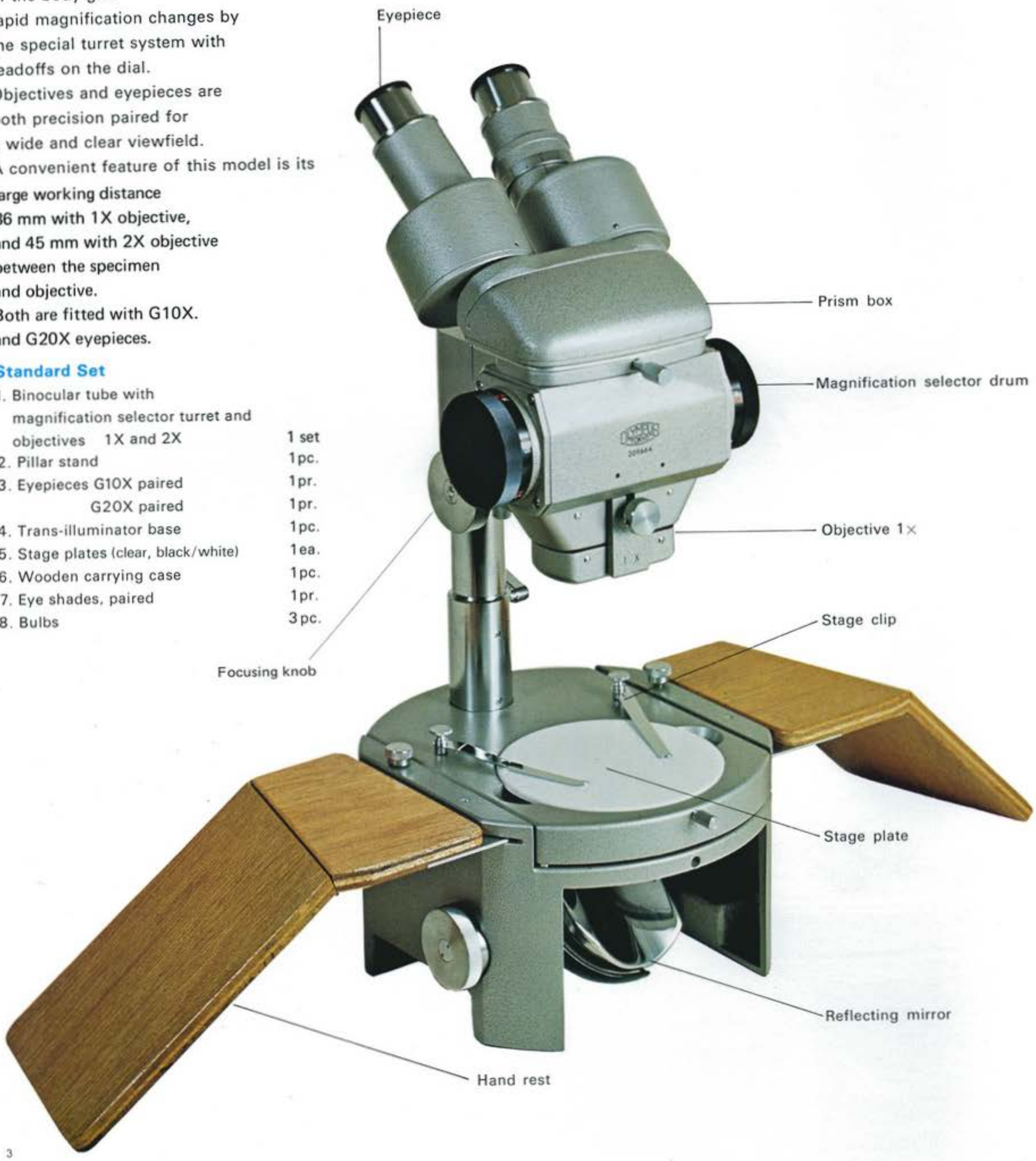


# Model X

Olympus stereo microscope model X has a reversible binocular tube inclined at 45° to the main body to allow the observer optimum working comfort. Large knobs either side of the body give rapid magnification changes by the special turret system with readoffs on the dial. Objectives and eyepieces are both precision paired for a wide and clear viewfield. A convenient feature of this model is its large working distance 86 mm with 1X objective, and 45 mm with 2X objective between the specimen and objective. Both are fitted with G10X. and G20X eyepieces.

## Standard Set

| | |
|---|---|
| 1. Binocular tube with magnification selector turret and objectives 1X and 2X | 1 set |
| 2. Pillar stand | 1pc. |
| 3. Eyepieces G10X paired | 1pr. |
| G20X paired | 1pr. |
| 4. Trans-illuminator base | 1pc. |
| 5. Stage plates (clear, black/white) | 1ea. |
| 6. Wooden carrying case | 1pc. |
| 7. Eye shades, paired | 1pr. |
| 8. Bulbs | 3pc. |

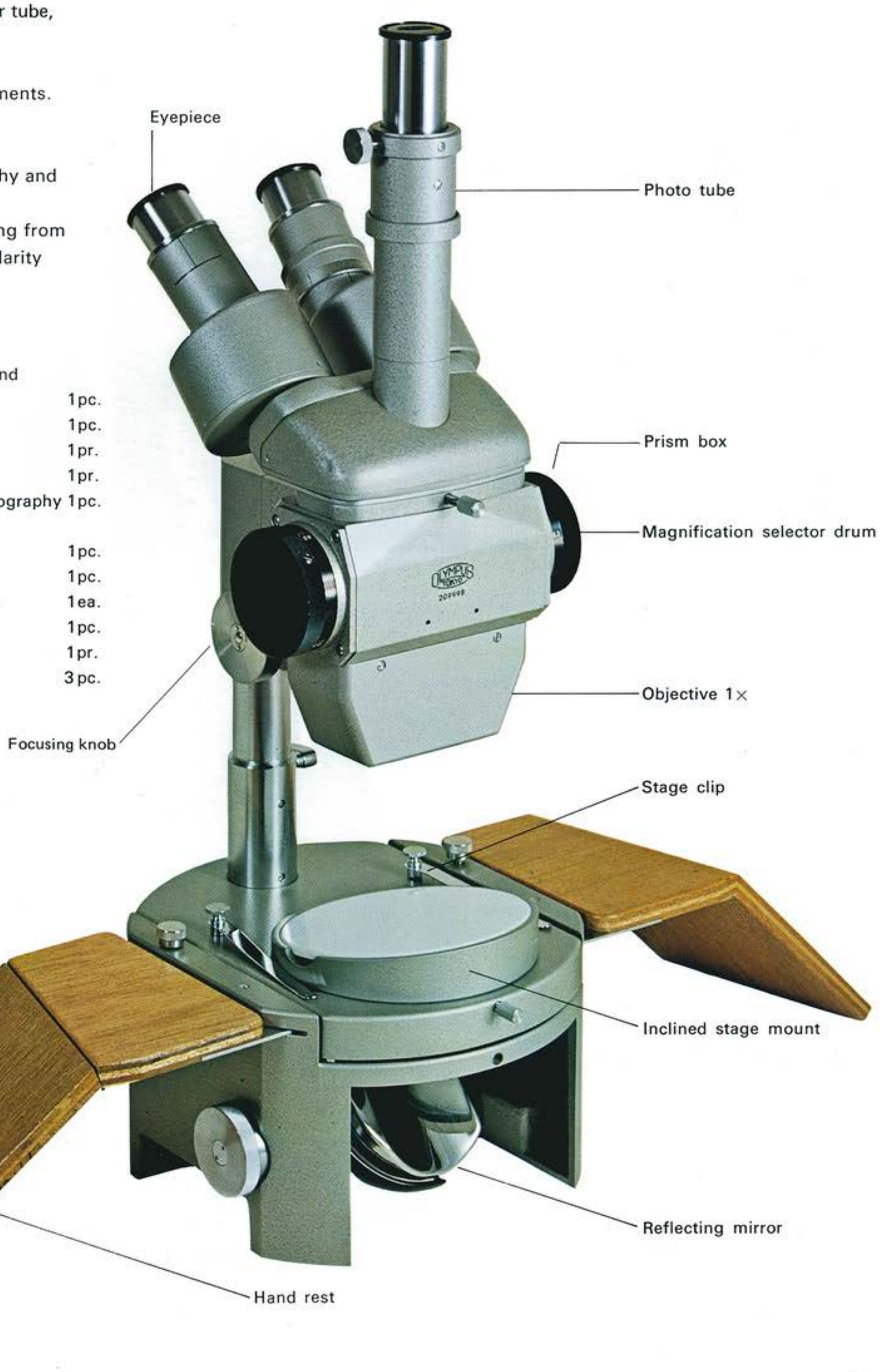


# Model X-Tr

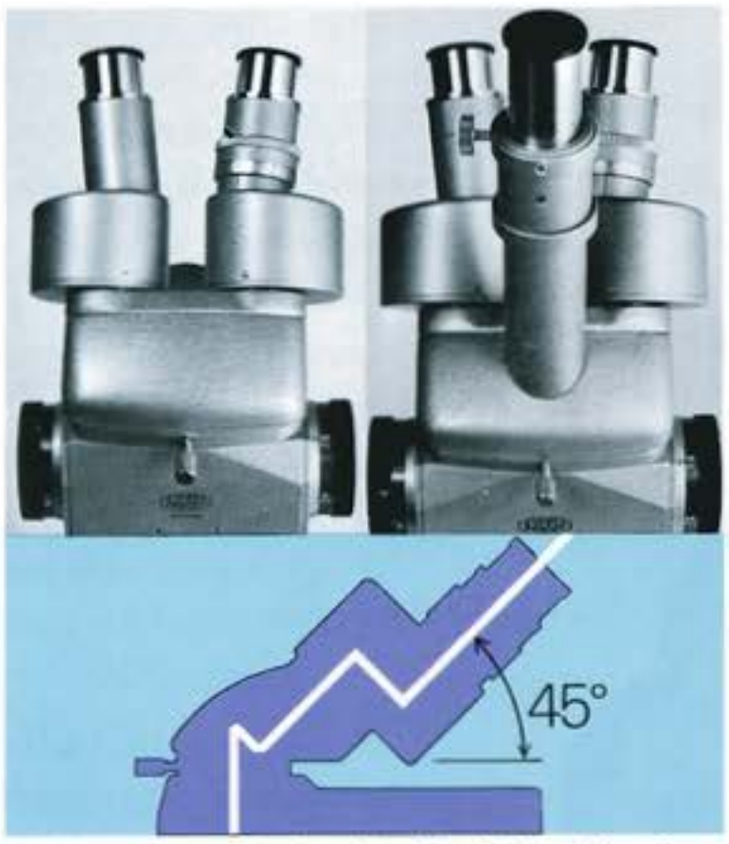
The model X-Tr offers basically the same stereo microscopic ability as the model X, except a trinocular tube, and fixed objective 1X.
The vertical photo tube is for photomicrographic attachments.
The significant advantage of the X-Tr is that it permits simultaneous photomicrography and stereoscopic viewing.
The photomicrographs resulting from this microscope have all the clarity of the original image.

## Standard Set

1. Trinocular tube with magnification selector turret and fixed 1X objective — 1pc.
2. Pillar stand — 1pc.
3. Eyepieces G10X paired — 1pr.
   G20X paired — 1pr.
   P10X for photomicrography — 1pc.
4. Inclined stage mount for photomicrography — 1pc.
5. Trans-illuminator base — 1pc.
6. Stage plates (clear, black/white) — 1ea.
7. Wooden carrying case — 1pc.
8. Eye shades, paired — 1pr.
9. Bulbs — 3pc.

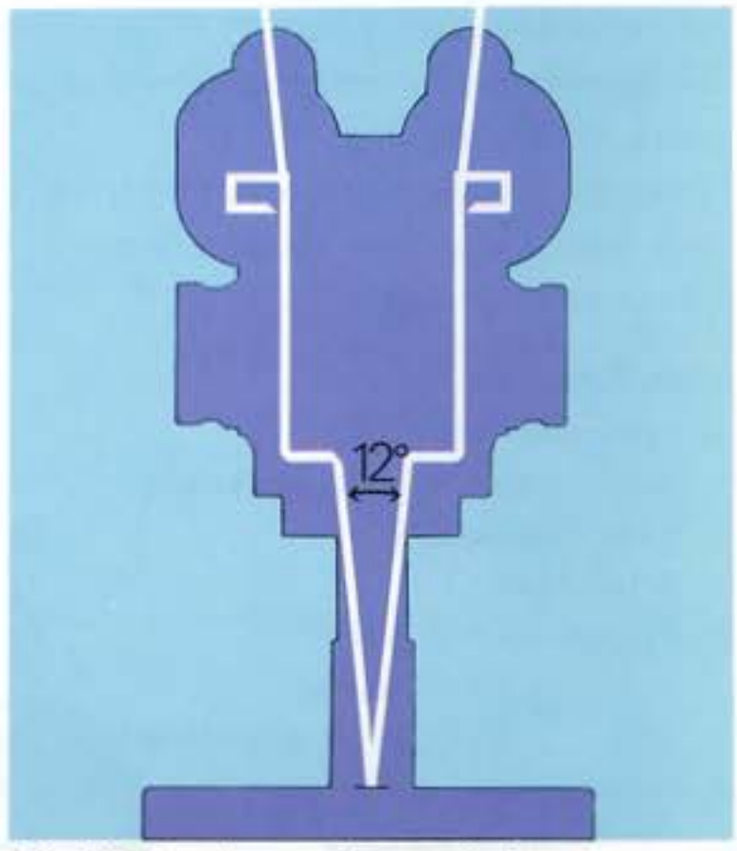


# Features:




1. Binocular tube for X with 45° inclination. Detachable and reversible 180°. Trinocular tube for X-Tr.

5. Interpupillary distance adjustment from 46 to 80 mm for optimum personal setting.

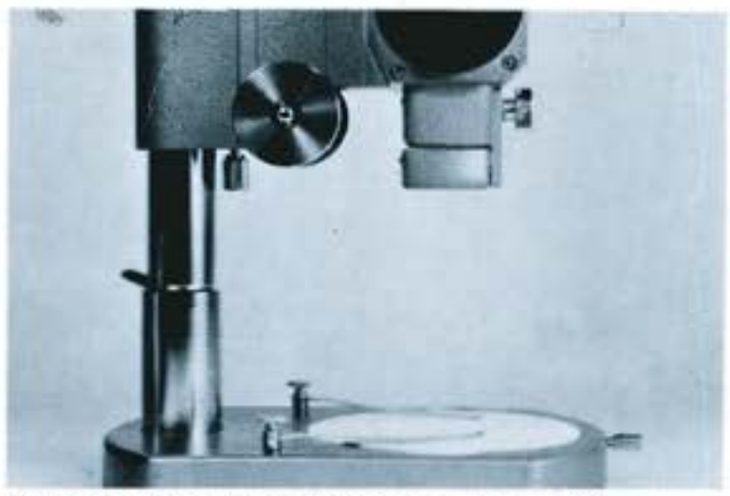



8. 12° visual axes give realistic stereo image.

2. Rapid change magnifications through 5 click stops. Right and left adjusting knobs with readoffs. 6.3X to 80X range for X-Tr, and 6.3X to 160X

6. Diopter adjustment ranging between +2.5 and −2.5

9. Model X-Tr available for coordinating stereo microscopy with photo-micrography.



3. Large working distance - up to 86 mm with 1X objective, 45 mm with 2X objective.

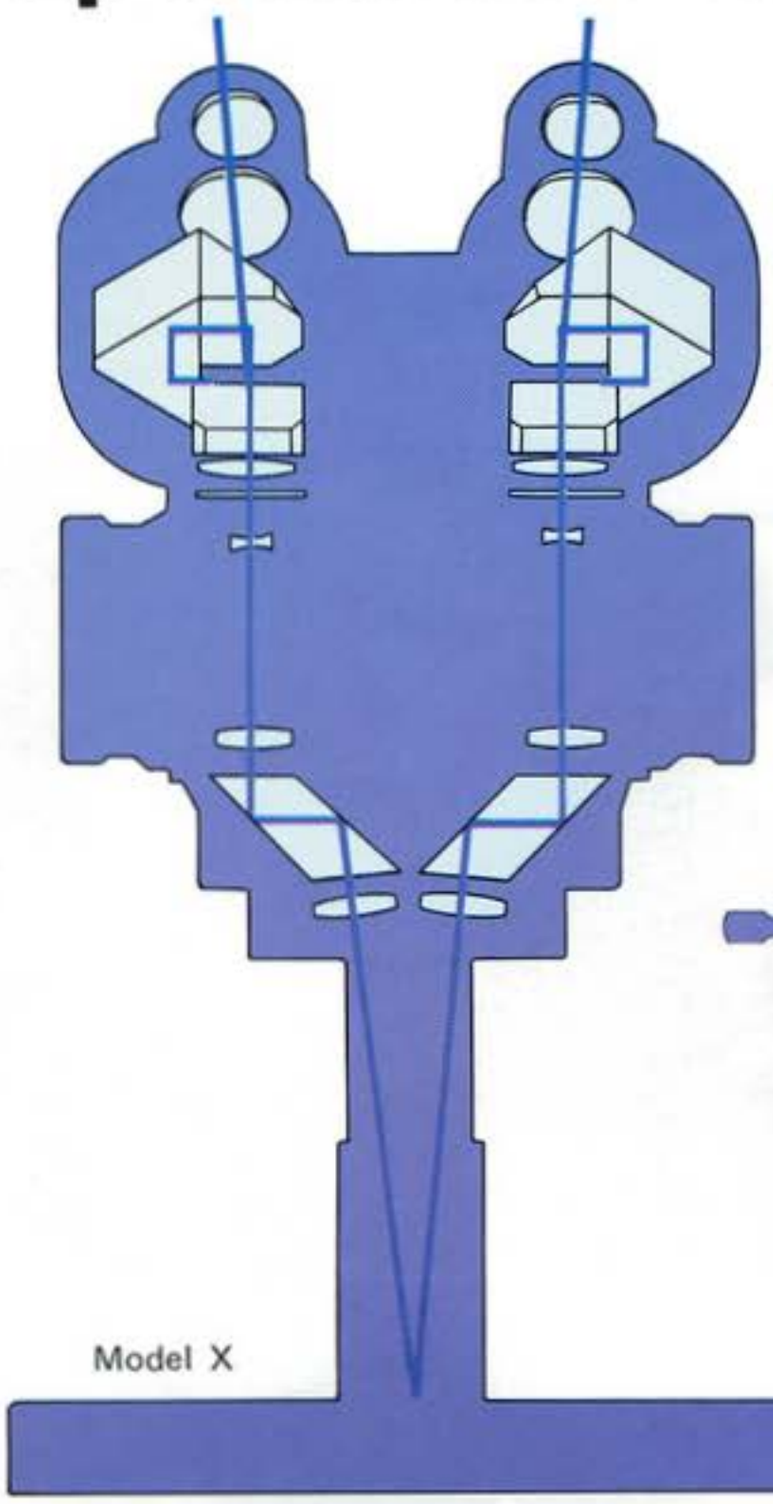
4. Easy-to-observe erect image.

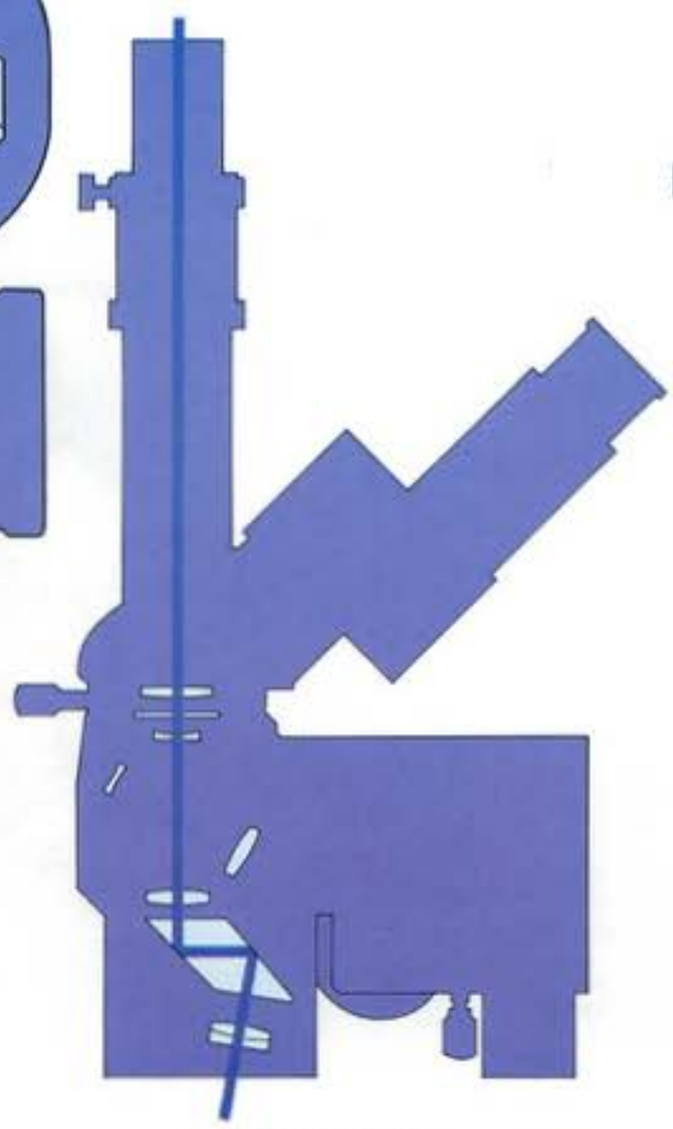
7. High resolving power Olympus eyepieces and objectives used throughout for maximum clarity.

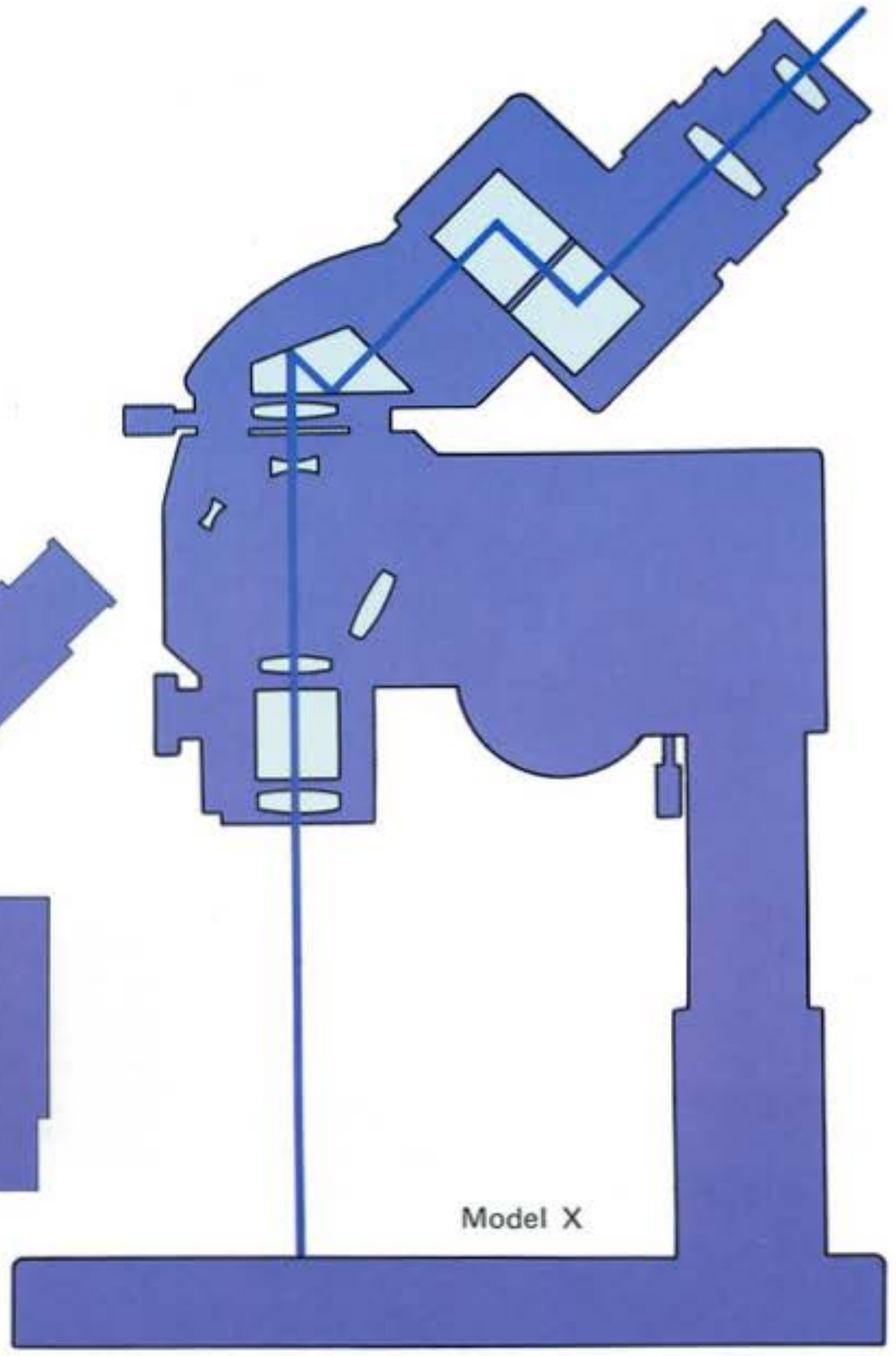
10. Trans-illuminator base provided with 20 watt bulb.

11. Broad range of optional accessories for diversified use in many fields.

# Specifications:




1. Reversible and detachable binocular tube for X, trinocular tube for X-Tr
2. Five different magnifications attainable by magnification selector turret
3. Eyepieces: G10X and G20X
4. Objectives: X-Tr: 1X fixed
   X: 1X and 2X interchangeable
5. Magnifications: X-Tr: 6.3X–80X
   X: 6.3X–160X
6. Inclination of binocular tube: 45°
7. Angle of visual axes: 12°
8. Interpupillary distance adjustment: 50—80 mm (1.97—3.15″) with G10X
   46—80 mm (1.81—3.15″) with G 20X
9. Working distance: 86 mm and45 mm (3.39″ and 1.77″)
10. Range of microscope body movement (up and down): 85 mm (3.35″) Fine adjustment by rack and pinion: 38 mm (1.50″)
    Coarse adjustment by sliding movement of inner tube in pillar: 47 mm (1.85″)
11. Swinging movement of microscope body (pivoted at pillar): 100 mm (3.94″) (80°)

## Table of Optics

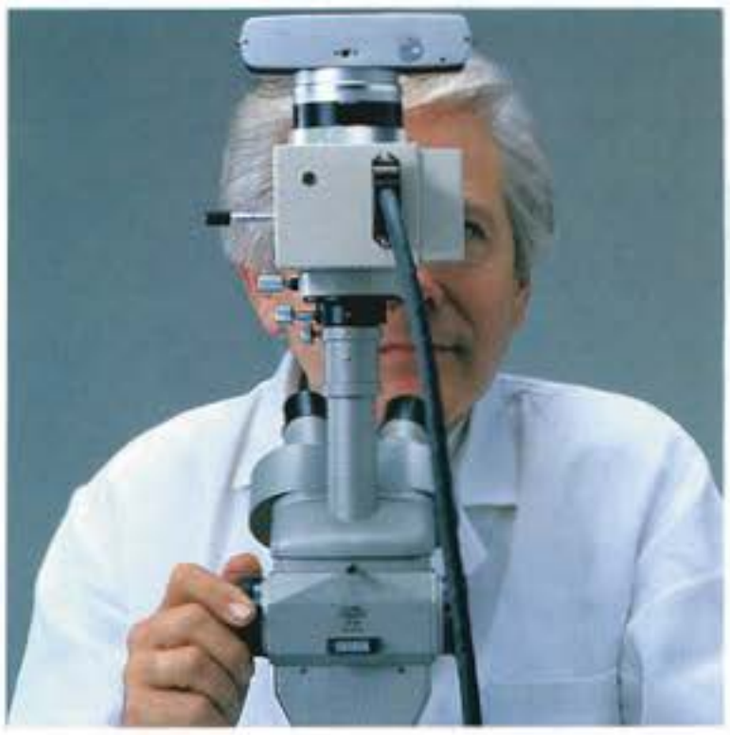
| | Objectives | Eyepieces | Magnification |
|---|---|---|---|
| X | 1X & 2X | G10X | 6.3X—160X |
| X-Tr | 1X | G20X | 6.3X—80X |

| | Objectives | Working Distance | Eyepieces | | | |
|---|---|---|---|---|---|---|
| | | | G10X | | G20X | |
| | | | Magnification | Field of view | Magnification | Field of view |
| X<br>X-Tr | 1X | 86 mm (3.39″) | 6.3X | 32 mm (1.26″) | 12.6X | 16.0 mm (0.63″) |
| | | | 10X | 20 mm (0.79″) | 20X | 10.0 mm (0.39″) |
| | | | 16X | 12.5 mm (0.49″) | 32X | 6.25 mm (0.25″) |
| | | | 25X | 8.0 mm (0.31″) | 50X | 4.0 mm (0.16″) |
| | | | 40X | 5.0 mm (0.20″) | 80X | 2.5 mm (0.10″) |
| X | 2X | 45 mm (1.77″) | 31.5X | 6.3 mm (0.25″) | 63X | 3.15 mm (0.12″) |
| | | | 50X | 4.0 mm (0.17″) | 100X | 2.0 mm (0.08″) |
| | | | 80X | 2.5 mm (0.10″) | 160X | 1.25 mm (0.05″) |

# Used wherever precision is at a premium

## Industry

Iron and steel,
wire,
incandescent bulbs,
clocks and watches,
IC's and transistors,
paint and lacquer,
plastics,
pottery,
ceramics and abrasives,
tanneries and leather manufacture,
textiles,
food preservatives and confectionery,
wood pulp and paper.

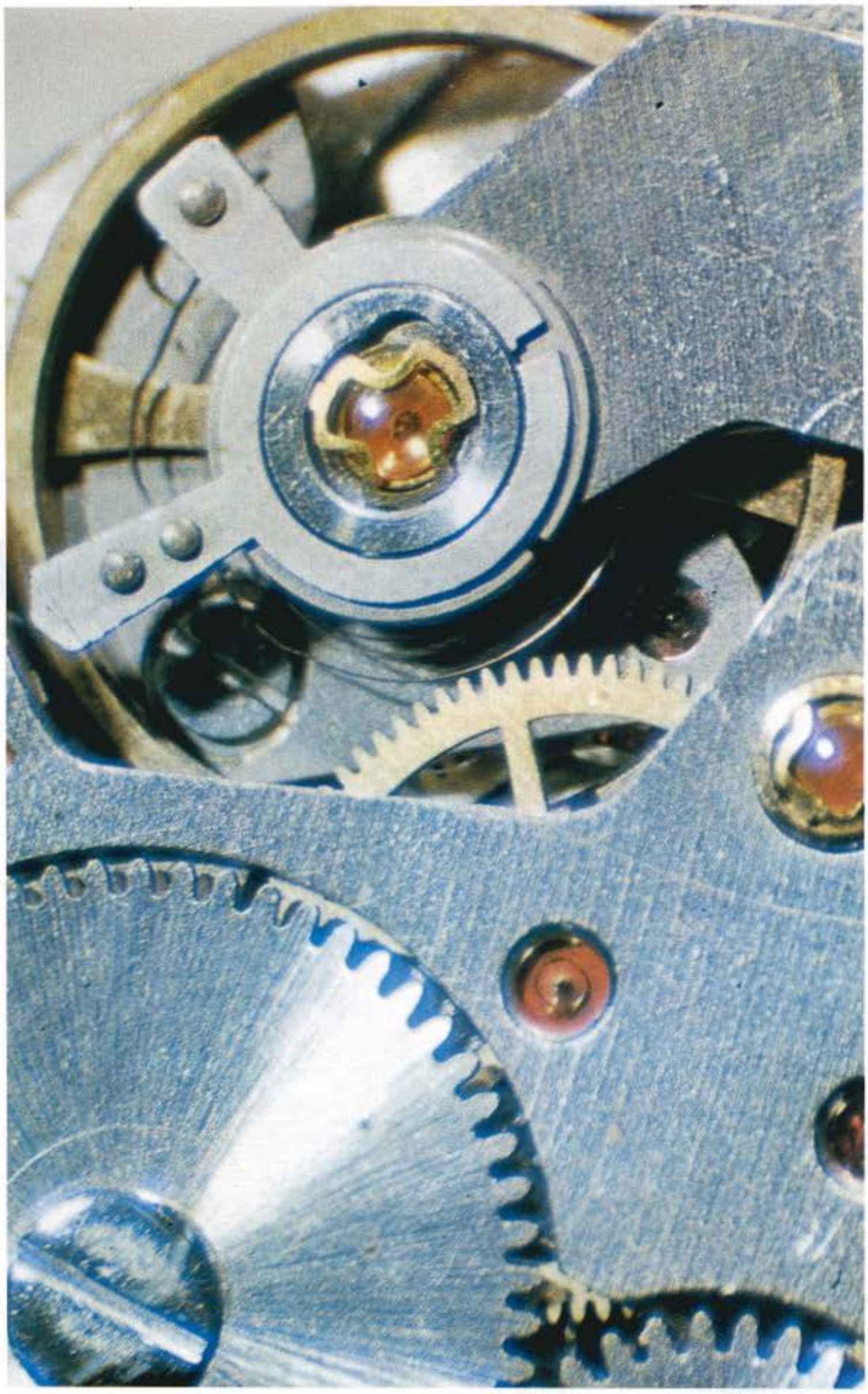


## Biology and medicine

Botany, zoology,
entomology,
parasitology,
anatomy,
embryology,
pathology,
dermatology,
histology.

Petrography and mineralogy.

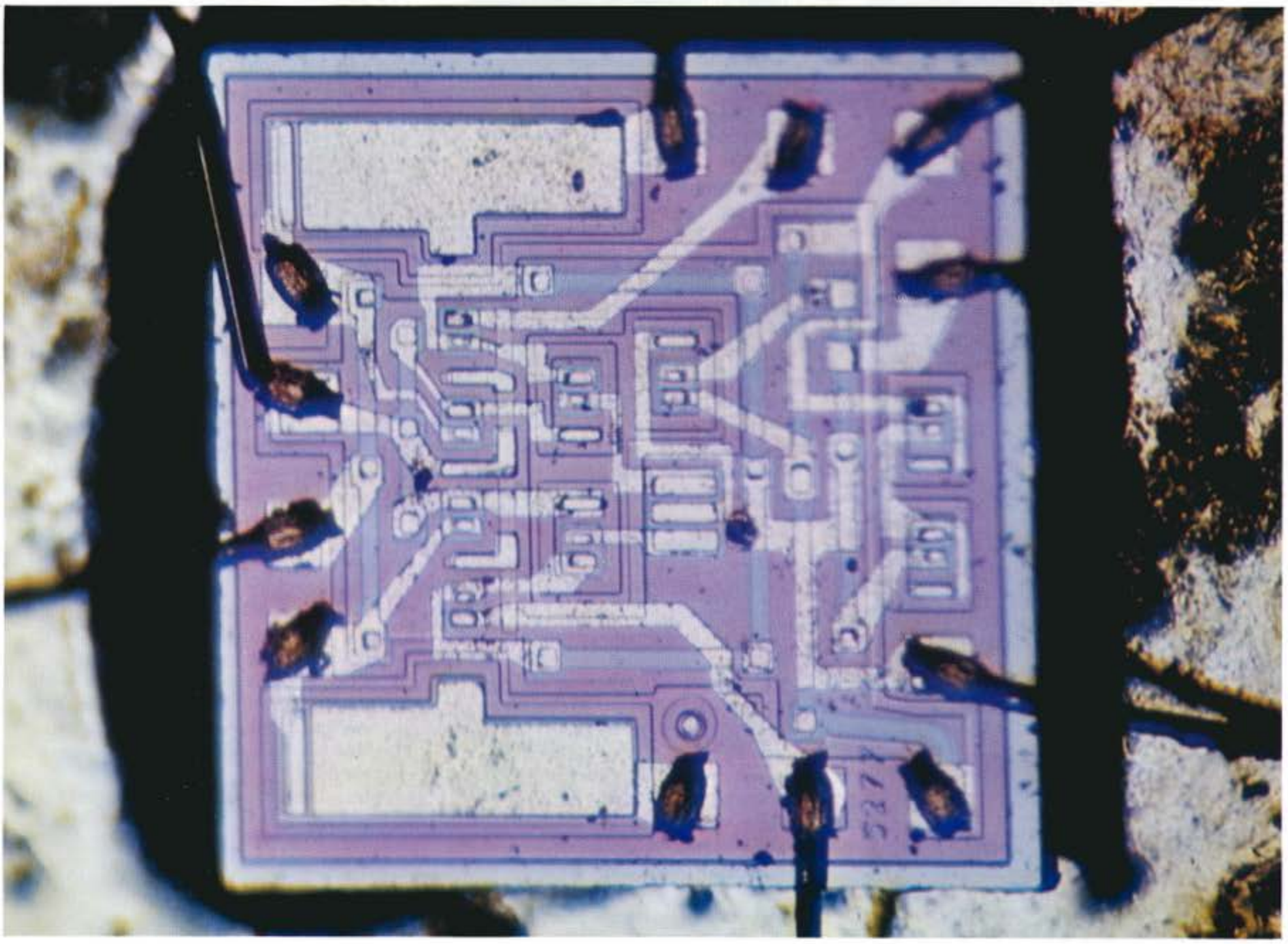
Agriculture,
archaeology,
palaeontology,
criminology, etc.



Watch components. *Magnification, 4.41X; Film speed, ASA 64; Shutter speed, 2 sec.*

Liverworts
*Magnification, 4.41X;*
*Film speed, ASA 64;*
*shutter speed, 1 sec.*

Glutamin.
*Magnification, 6.3X;*
*film speed, ASA 64;*
*shutter speed, ½ sec.*



IC. *Magnification, 30X, Film speed, ASA 64; shutter speed, 2 sec.*

# Photomicrographic Equipment

**PM-10AD**
(PM-10 35AD-2)

**PM-CBAD**
(Automatic Exposure Control Unit of PM-10AD)

**PM-10M**
(PM-10 35M)

**EMM-7**

*There are three basic systems available depending on exposure regulation and film format.*

| | Exposure Mode | | Film Format | | | |
|---|---|---|---|---|---|---|
| Model | Auto | Manual | 35mm | 3¼" x 4¼" Polaroid | 4" x 5" | 16mm cine and 35mm time lapse |
| PM-10AD | ○ | ○ | ○(35AD-2) | ○(L2AD-2) | ○(L1AD-2) | ○ |
| PM-10M | | ○ | ○(35M) | ○(L2M) | ○(L1M) | |
| PM-6 | | ○ | ○ | | | |

### PM-10AD Photo and Cinemicrographic System

- Automatic exposure range
  1/5,000 second (electronic flash) to 2 hours
- Manual exposure
  1 second to 40 minutes plus time exposure
- Range of ASA settings
  35mm: 6–6,400, L: 12–6,400, 16mm: 6–5,400
- Automatic correction for reciprocity failure
- Automatic correction for specimen characteristics (bright/dark field adjustment)
- Precise and durable non-contact electro-magnetic shutter
- Automatic film advance in 35mm camera back
- Color temperature regulation
  2,500K° to 10,000K°
- Automatic exposure lock
- Multiple exposures
- Camera focusing and film format indication
  By either focusing telescope on the exposure body or through focusing eyepiece in binocular tube.
- Orderly arranged controls on slanted panel
- Audible and visible warnings
  Over- and under-exposure, end of 35mm film, etc.
- LED displays of exposure time at various stages
  Estimated exposure time.
  Remaining exposure time. Actual exposure time. Recall of previous actual exposure time.

### PM-10M Photomicrographic System

- Shutter speed settings
  1/250 second to 1 second in 9 steps plus time exposure
- Shutter on cushioned mount for anti-vibration
- 35mm camera back with manual film advance. Data imprinting device provided.
- Automatic film counter on 35mm camera back
- Light measuring port to accept probes of model EMM-7 for determination of both exposure time and color temperature.
- Easy exchange of camera back

### PM-6 Photomicrographic Camera

- Shutter speed settings
  1/250 second to 1 second in 9 steps plus time exposure
- Shutter on cushioned mount for anti-vibration
- 35mm camera back with manual film advance. Data imprinting device provided.
- Automatic film counter on 35mm camera back
- Light measuring port to accept probes of model EMM-7 for determination of both exposure time and color temperature.

### EMM-7 Photomicrographic Exposure Meter

The model EMM-7 assures accurate control of both exposure time and color temperature rating with Olympus photomicrographic cameras such as PM-10M and PM-6

- Range of exposure measurement
  35mm—High 1/250 second to 1/2 second
  Low 1/2 second to 32 seconds
  L— High 1/30 second to 4 seconds
  Low 4 seconds to 128 seconds
  Exposure time is directly read out on the meter face.
- Film speeds
  ASA film speed selector knob 6, 16, 25, 32, 50, 80, 100, 160, 200, 400 (3000).
- Color temperature measurement
  Color temperature regulating knob (with fine adjustment in 4 increments for both daylight and tungsten type films)
- Direct reading with meter—PM-10M and PM-6
- Measurement with index charts—PMT-35 and MG

# Optional Accessories:

### G15X Eyepieces
Ideal eyepiece for wide field viewing with full chromatic and distortion correction. 16.7 mm focal length. Ultra precise lens to match Olympus stereo microscope components. Field number 13.


### Photographic Eyepieces P7X and P15X
Flat-field eyepieces corrected for photomicrography.


### Epi-illuminator LSG-II with Transformer TF
For crisp stereoscopic images of opaque specimens. Employs a 6V 2A illumination lamp with transformer. Quick mounting.

### Fluorescent Illuminator Model VL-FL with Starter TK
Special U-shaped illuminator with a fluorescent 6 watt lamp attached around microscope body for illumination of specimen.

### Universal-Illuminator Model LSD with Transformer TE-II
For incident illumination. Condenser rack-and-pinion travels 18 mm to permit converging, diverging and parallel adjustments of light beam. Facilitates Koehler illumination. Lamp, 6V 5A.

### Universal Arm Model VS-IV
Suitable for the examination of large objects, particularly good for stereo microscopy. Holds complete microscope, has easy clamping system.

An unwavering will to remain
at the forefront of scientific discovery,
and an uncompromising commitment
to quality have made the name
of Olympus a synonym for high performance
and reliability all over the world.
From cameras and microcassette recorders,
through to microscopes for various applications,
fiberscopes, and facsimiles,
Olympus has kept abreast
of the most advanced technologies
and discoveries, constantly striving
to develop products which meet the new
and more complex needs
of our rapidly changing society.
Precision engineering,
a long experience,
and R&D activities tuned to the requirements
of man in his search for a better life,
have earned Olympus its unparalleled position
in the medical profession, in the photographic industry,
in the laboratory and the classroom,
and in the eyes of all those who benefit
from the functionality, accuracy,
versatility and economy of its products.

**Progress through Precision**

*As we are continually improving and developing our products, the equipment supplied may not agree in all details with the descriptions and/or illustrations shown in this catalog.*

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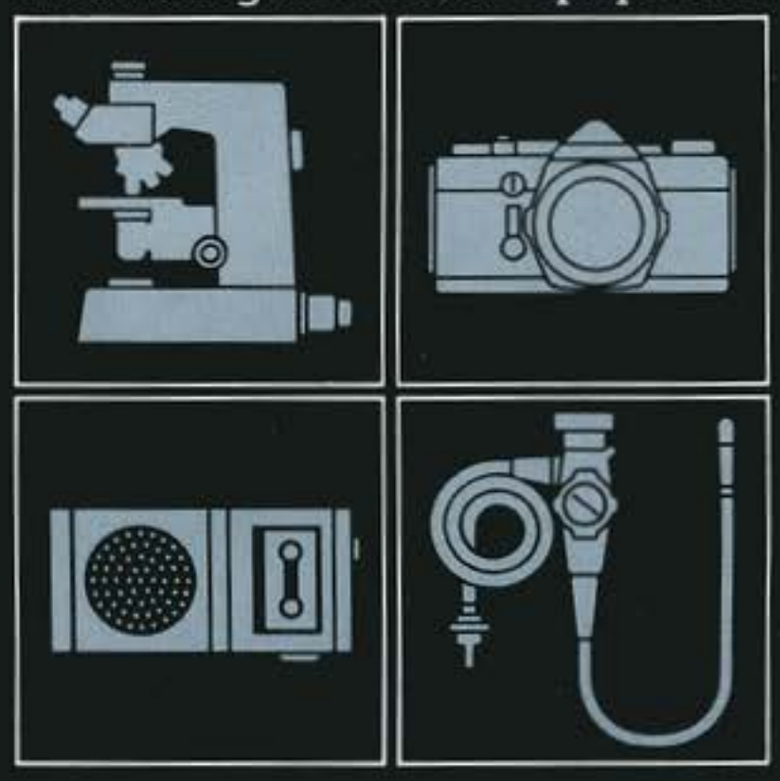
Photographic,
Medical,
Microscopic,
Measuring & Audio Equipment



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