

- uniform colour interference with high (variable) image shearing effect (prisms Nos. 3 and 1);
- uniform interference field differential interference (prism No. 1);
- fringe interference with high (variable) image shearing effect (prism No. 2);
- fringe field differential interference (prism No. 2).

Chapter 2

DESIGN FEATURES OF SPECIAL POLARIZING INTERFERENCE MICROSCOPE COMPONENTS

The BIOLAR PI Microscope incorporates some characteristic components as referred to hereinbelow:

- a) Interference head;
- b) Condenser with slit diaphragm;
- c) Condenser with compensators;
- d) Polarizer complete with its housing;
- e) Auxiliary microscope;
- f) Interference filters: $\lambda=546$ nm; $\lambda=590$ nm;
- g) Polarizing interference objectives;
- h) Measuring eyepiece $\times 12$ including 10/100 microscopic plate.

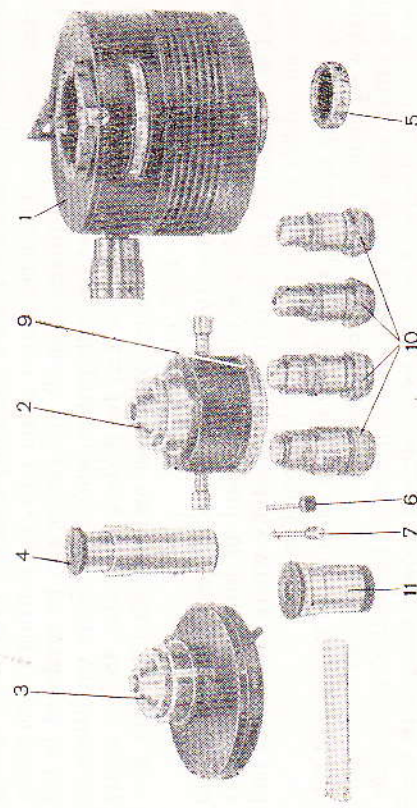


Fig. 10: Basic components of a polarizing interference system
 1 — Interference head; 2 — Condenser with slit; 3 — Condenser with compensators; 4 — Auxiliary microscope; 5 — Interference filter; 6 — Key for the adjustment of compensators; 7 — Key for tightening condenser with compensators in a condenser holder; 8 — Clamping screw; 9 — Polarizer enclosed in a housing; 10 — Polarizing interference objectives; 11 — $\times 12$ measuring eyepiece

Interference Head (Fig. 11) to be installed between the microscope head and binocular or monocular attachment. Inside the lower part of the head a conically shaped element has been introduced to mount the head in a microscope socket. The top part accommodates a seat for the eyepiece attachment and a clamping screw.

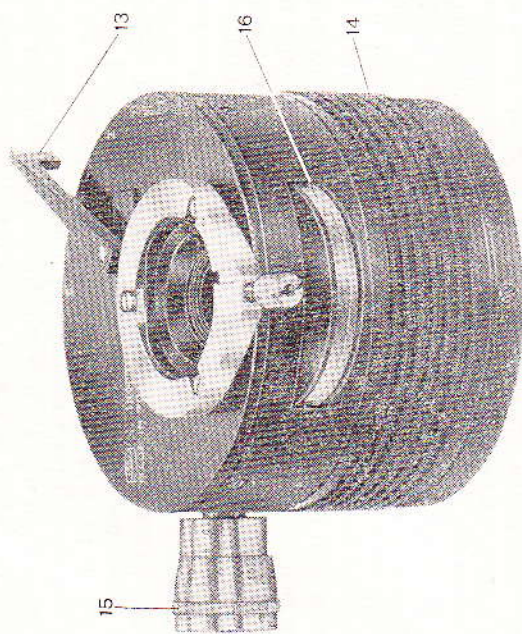


Fig. 11: Interference head
 13 — Prism operating lever; 14 — Knurled ring for moving prisms in parallel to the optical axis; 15 — Micrometer screw for perpendicular adjustment of prisms in relation to optical axis; 16 — Abolysier in its housing

The interference head houses three birefringent prisms and an analyzer.

Birefringent prisms are located in a revolving disk switchable by means of lever 13 of the rotatable type. On top plate figures have been marked to indicate successive positions of the birefringent prisms (1, 2, 3), and an index „0” has been provided corresponding to the free passage of light beam (prism out of operation).

Each of the three interference methods discussed above requires that a separate prism is employed.

Prism No. 1 is being used to carry out uniform colour examination by the differential interference method. Prism No. 2 is reserved for the fringe field interference method, and prism No. 3 for the uniform colour method with a high image shearing effect. In addition to the possibility of a successive engagement (Fig. 11) of prisms in the optical system of the microscope, these prisms can also be moved in two different direc-