

OLYMPUS

ΨScientifica

ILLUMINATION

Nomarski DIC









Thanks to Georges Nomarski (1919-1997), living or stained specimens, which often yield poor images when viewed in brightfield illumination, are made clearly visible by optical rather than chemical means.

NOMARSKI DIC provides High contrast images, and an incredible 3-D relief effect.

What is NOMARSKI DIC?

Differential Interference Contrast converts specimen optical path gradients into amplitude differences that can be visualized as improved contrast in the resulting image. The optical components required for differential interference contrast microscopy do not mask or otherwise obstruct the objective and condenser diaphragms, thus enabling the instrument to be employed at full numerical aperture. The result is a dramatic improvement in resolution (particularly in the direction of the optical axis), elimination of halo artefacts, and the ability to produce excellent images with relatively thick specimens. In addition, DIC produces an image that can be easily manipulated using digital and video imaging techniques to further enhance contrast.

Requirements for NOMARSKI DIC

-  Universal-type objectives (e.g. UPLFL, UPLAPO).
-  Objective specific DIC prisms in Universal condenser.
-  Polariser in the condenser.
-  DIC prism above objectives.
-  Analyser above upper DIC prism.
-  Suitable unstained specimen.

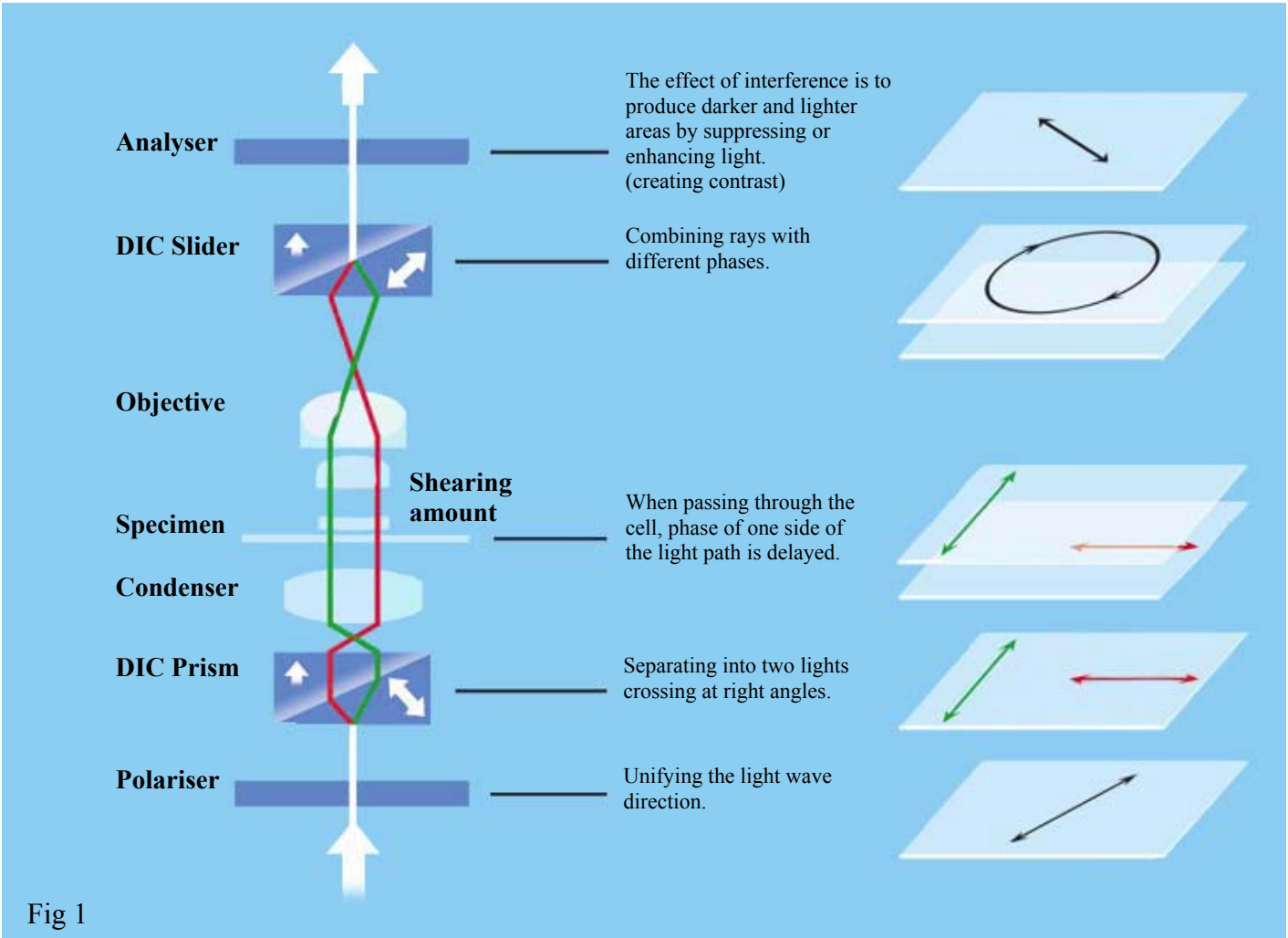
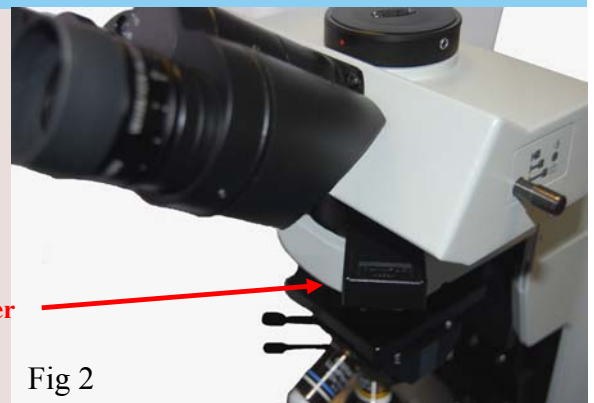


Fig 1

Setting Up

1. Set up optical path for brightfield with Koehler illumination. (See Scientifica Koehler illumination guide).
2. Focus on the specimen using 10x objective.
3. Move the DIC slider which is above the objective (fig. 2) and the analyser into the light path.
4. If required; rotate the slider control knob clockwise as far as it will go.



5. Ensure that the condenser is in the BF position, then slide the polariser into the light path.
6. Remove the eyepiece and observe the rear of the objective (back focal plane).

7. Rotate the polariser (fig. 5) until you see a single diagonal black stripe. (fig. 4)
8. Lock the polariser in place, then replace the eyepiece.
9. Rotate the condenser turret to bring the appropriate DIC prism into place.
10. You should now have a DIC image; rotating the knob on the slider will change the background colour.

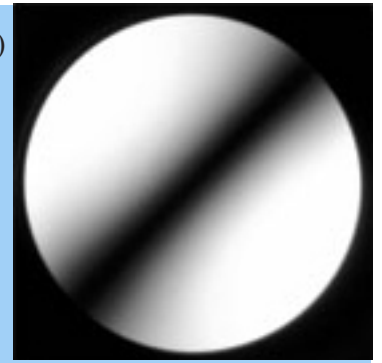


Fig 4



Fig 5

NOTE:

More recent Olympus microscopes may have a selector on the slider, so check that it is in the correct position for the objectives in use:

- ◆ Normal is the position for most objectives, e.g. UPLFL.
- ◆ BFP1 is used only for certain special Apochromatic objectives.

Condenser Control

The Condenser

Centring Control

Filter/Polarizing Turret

Field Iris Diaphragm

Microscope Focus

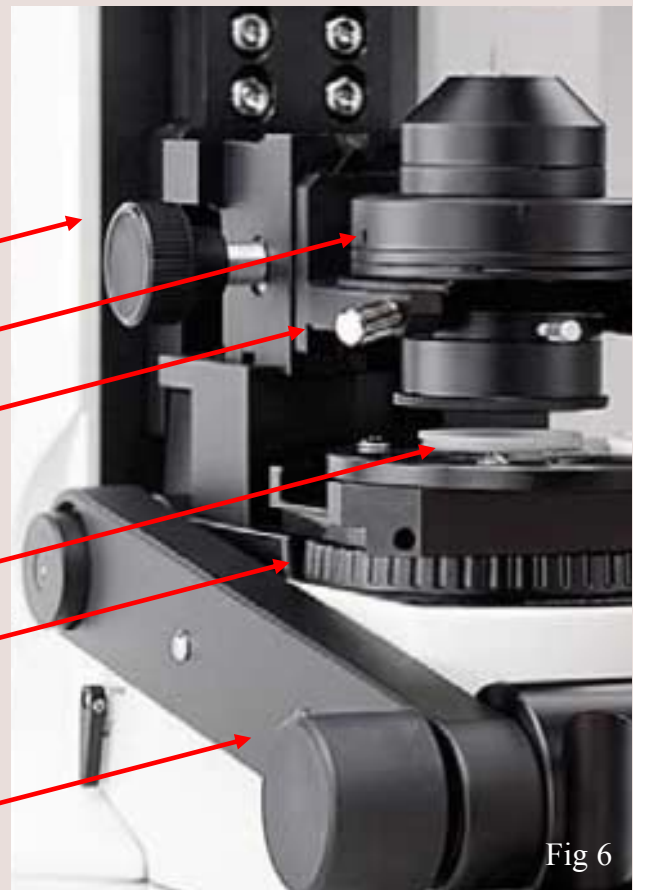


Fig 6

For further advice on Olympus microscopes
and imaging systems contact:

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