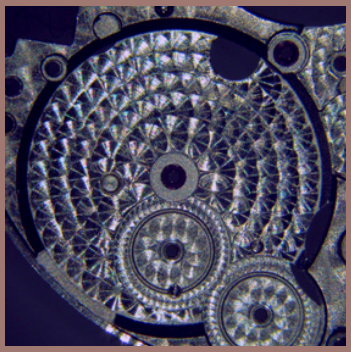
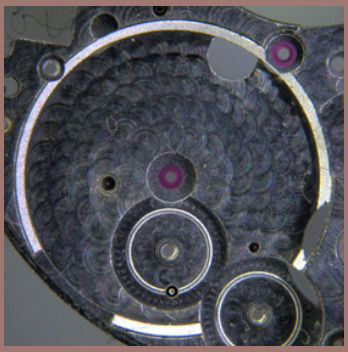
APPLICATION NOTE WATCHMAKING





INSPECTION OF A METALLIC WATCH PLATE

PRECISE DIMENSIONAL MEASURING IN IMAGES

AVOIDING REFLECTIONS AND COLOUR FRINGES CONTRASTING SURFACE STRUCTURES

Using standard LED illuminations to inspect metallic parts often creates reflections on the surface, and in many cases even colour fringes will appear in the image as clearly illustrated with a lit watch plate herewith on Fig.1.

FEATURES OF L.E.S.S. LIGHTING SYSTEMS

- Darkfield illumination
- Easy adjustment of working distance
- Darkfield illumination in "Brightfield Mode" thanks to variable Darkfield height
- Uniform and diffuse illumination with neutral white light (5400 °K)
- Clear contrasting of cavities, drill holes and surrounding chamfers
- Free view and easy access to the specimen

SWISS MADE

APPLICATION

Fig.1 has been taken with a customary 80 LED ring light, at a working distance of about 100 mm. Disturbing reflections and colour fringes appear on the surface of the plate. The structure of the surface is hardly visible.

Fig.2 has been taken with the L.E.S.S. Darkfield illumination at an adjusted working distance of 25 mm, slightly above the sample (in "Brightfield mode"). In this configuration, the light is hitting the sample at low angle, from the side: reflections and colour fringes disappear, while the structure of the surface is clearly visible. Defects or metal chips are easy to detect.

Because of the crisp and clear contrasting at the borders of drill holes and cavities, this illumination is also the best choice to achieve precise dimensional measurements in the image.

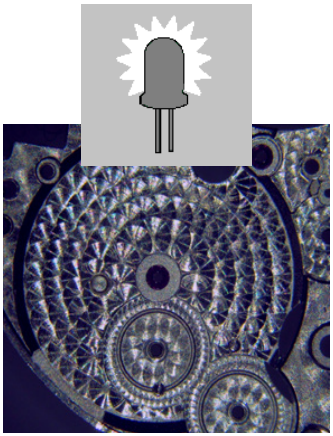


Fig.1

Watch plate lit by an 80 LED ring light Darkfield

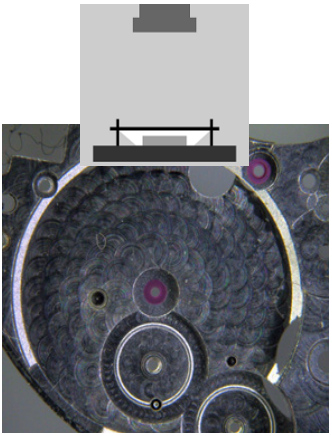


Fig.2

Watch plate lit by L.E.S.S. Darkfield

L.E.S.S. SA
Av. de Longemalle 13
CH-1020 Renens, Switzerland
Tel : +41 21 552 07 10

LESS
BE BRILLIANT