A N T A R E S

20X BRINELL SCOPE

ernst

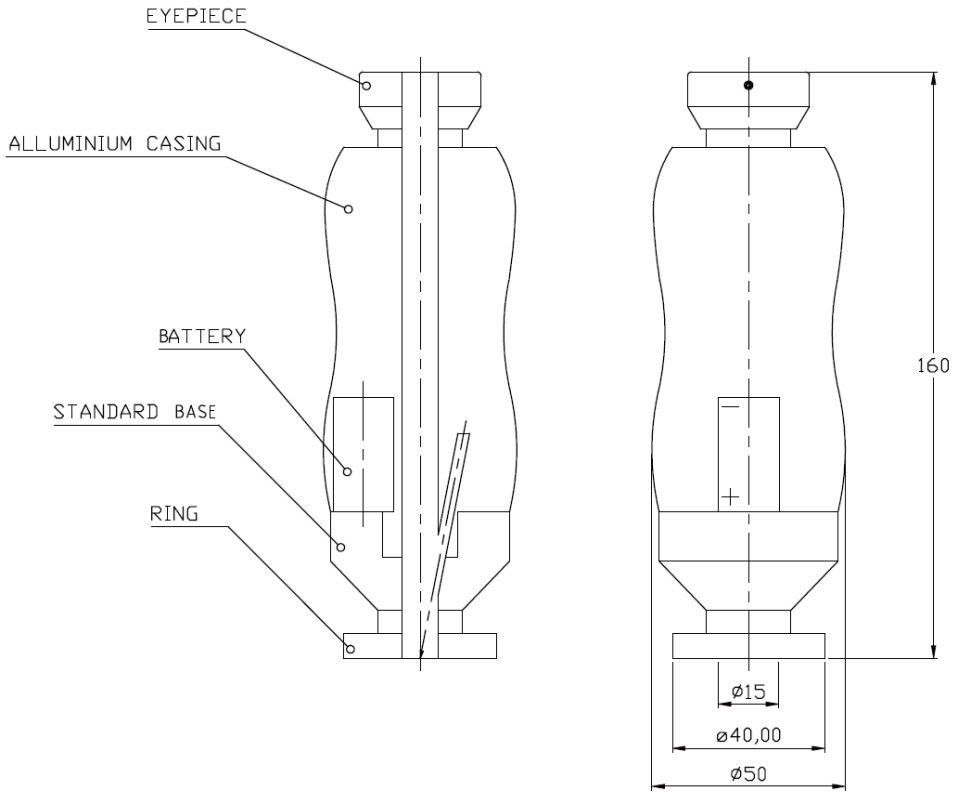
DESCRIPTION OF THE ERNST ANTARES 20X BRINELL SCOPE

The Ernst ANTARES Brinell scope is one of the best instruments for optical reading of the Brinell indentations.
The scope is very easy to handle thanks to its ergonomic shape, dimensions (ø=50 - h=160mm), and light weight (~ 700g).
The Ernst ANTARES scope allows the operator an accurate and quick reading of the Brinell indentation thanks to the 20x magnification and the 0-7mm graduation.
The Ernst ANTARES scope has a led illumination system that ensures 50 hours continuous operation.

In addition to the standard base, the scope has also a ring that can be applied to the base for improved stability on large surfaces.

TECHNICAL DETAILS

- Magnification	20X
- Graduation	0-7mm
- Resolution	.05
- Field Diameter	8 mm
- Dimensions	ø 50mm - h=160mm
- Weight	~ 700g (scope)
with box	~ 1.5 Kg
- Battery type	3 V -CR2



USING THE SCOPE

1) Before using the Ernst ANTARES 20x scope, please consider whether you need to use or not the ring on the base. This depends on the area on which you read the indentation. For a very small surface, remove the ring.

CAUTION: To properly remove the ring, it is recommended to loosen the screw on the side.

In case you want to use the ring, please slightly tighten it to prevent it from falling during use.

2) Screw the stainless steel base until it touches the aluminium casing to turn on the light. An internal battery activates the LEDs and you can start using the microscope to read your indentations.

CAUTION: Make sure that the steel base is fully in contact with the aluminium casing. Forgetting this may not turn on the LEDs and could make it difficult to properly focus the scope.

3) Place the scope on the test surface and frame the Brinell indentation in the visual field of the scope.

4) Rotate the eyepiece on the upper part of the scope to properly focus the indentation.

CAUTION: for proper focus and for good reading of the indentation, you need to clearly see both the indentation and the graduated scale.

5) Align the graduated scale with the maximum diameter of the impression and measure the diameter. Rotate 90 degrees and re-measure.

6) Take the average of the obtained values.

7) Calculate the Brinell hardness according to the below formula or using the Brinell conversion chart that comes with the scope.

$$HB = \frac{2F}{\pi D(D - \sqrt{D^2 - d^2})}$$

where HB= Brinell Hardness Number
F= Test Force Applied (Kgf)
D=Penetrator Ball Diameter (mm)
d=Indentation Diameter (mm)

MAINTENANCE

1) Avoid contact with lenses. If you need to clean the lenses, use a soft cloth lightly moistened with a solution of alcohol.

2) Replacing the battery:
- Completely loosen the stainless steel base to access the battery.
- Replace the battery with a similar one (3V, type CR2, lithium).

CAUTION: take care to insert the battery in the proper way; otherwise the scope may not work.

3) If the scope is used in corrosive environments it is advisable to occasionally clean the contact surface of the metal base.

WARRANTY

The product is fully warranted for defects in material and workmanship for a period of ONE YEAR from the date of purchase.
During the term of this warranty, ERNST will repair (at its facilities) or replace any defective parts of the product purchased under this warranty at no additional charge.

This warranty does not cover:

- Battery
- Products which have been damaged or rendered defective as:
  a result of accident, misuse or abuse
  a result of service by anyone other than ERNST
- Transport fees to and from our facilities

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