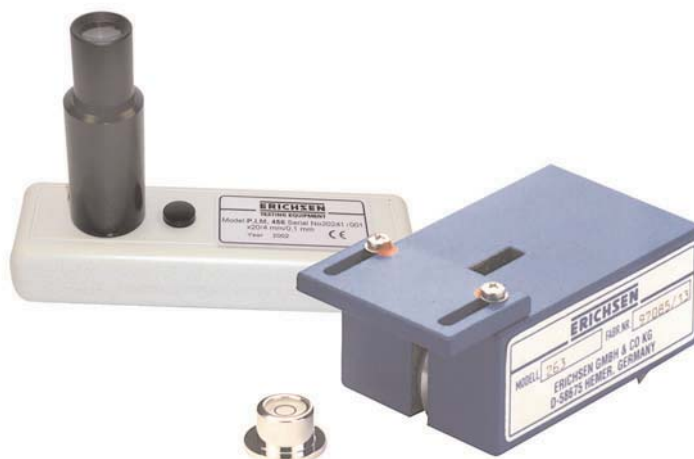


*Reference Class*

**Indentation  
Hardness Tester  
acc. to Buchholz  
Model 263**

*Test Apparatus  
with Measuring  
Microscope*



台北市吉林路51巷11號1F  
資 商  
貿 易 有 限 公 司  
TEL: (02) 2511-7382  
FAX: (02) 2551-0883

testing equipment for quality management

**ERICHSEN**

## Technical Description and Operating Instructions

EN ISO 2815

## Testing Principle

In the Buchholz indentation test a test body of specified geometry acts for a prescribed time on the specimen using a defined test load. After a specified recovery time the length  $l$  of the resulting indentation is measured using the microscope. Based on the indentation length  $l$  in mm, it is possible to calculate:

- Buchholz indentation resistance =  $100/l$  (1)
- indentation depth ( $\mu\text{m}$ , approx.) =  $8 \times l^2$  (2)

Both results are rounded to the nearest integers.

## Application Range

The Buchholz indentation test is applicable whenever the following marginal conditions are fulfilled:

- The coating to be tested must be even and smooth with a clean surface and applied to a level substrate which will resist the test force.
- There must be an adequate coating thickness (i.e. to exceed the indentation depth acc. to (1) above by at least  $10 \mu\text{m}$ ).
- For comparison testing the specimens should have the same coating thickness; and the conditioning and testing of the specimens should be conducted under identical ambient conditions.

Since the indentation test causes only insignificant damage to the coating, testing is also possible on finished products.

## Design

The Indentation Hardness Tester, **Model 263**, consists of a metal block in which two pointed feet and the indenter are imbedded. The indenter of hardened steel comprises a wheel of which the blade-type edge has been ground to  $120^\circ$ . The testing load is set to  $(500 \pm 5) \text{ g}$  (equivalent to approx. 5 N).

The measuring microscope with a magnification factor of 20 and integrated illumination has a measuring range of 4 mm with 0.1 mm graduation.

## Technical Data

### Instrument

Dimensions (L x B x H) 100 x 50 x 40 mm  
Net weight approx. 1 kg

### Mikroscope

Dimensions (L x B x H) 125 x 35 x 76 mm  
Net weight approx. 0,18 kg

## Test and Evaluation

The Buchholz indentation test is conducted in compliance with EN ISO 2815, as follows:

- One of the templates provided with the instrument is affixed to the specimen in such a way that
  - i) the Buchholz impression in the circular cut-out appears in the appropriate position on the specimen, and
  - ii) the measuring microscope, to be oriented at right angles to the impression, can be set up in a stable position.
- Align the specimen using the spirit level.
- Position the instrument in such a way that the points correspond with the centres of the small circles on the template.
- Lower the instrument slowly, setting the indenter gently and without impact onto the specimen.
- After  $30 \pm 1 \text{ s}$ , the instrument is lifted vertically from the specimen.
- Position the microscope above the indentation on the specimen in such way that the integrated lamp, which is switched on with the black button, illuminates the indentation from the side.
- First focus the reticle by rotating the ocular of the microscope, then raise/lower the tubus to adjust the surface of the specimen.
- Move the microscope until the cross-lines of the template correspond with those of the reticle in the ocular.
- $(35 \pm 5) \text{ s}$  after lifting the instrument measure the length of impression.
- Calculate the indentation depth (2) on the basis of the indentation length  $l$  in mm and determine whether the method is applicable in this case.
- Calculate the Buchholz indentation resistance with (1) based on the indentation length  $l$ .

### Ordering Information

Order No.	Name of Product
0058.01.31	<b>Indentation Hardness Tester, Model 263, "REFERENCE CLASS"</b>
	Included in scope of delivery: <ul style="list-style-type: none"> <li>• Measuring microscope</li> <li>• 9 V-Battery</li> <li>• Spirit level</li> <li>• Selfadhesive Templates (100 pcs.)</li> <li>• Plastic case</li> <li>• Operating Instructions</li> </ul>



technical modifications.  
BE + BAE 263 - XII/03