

byko-cut universal

Portable instrument providing sufficient accuracy for laboratory use but also usable at construction sites and in workshops. Ideal for customer service technicians and demonstrations. The BYK-Gardner byko-cut is a universal instrument for:

- Measuring film thickness in the range of 2 - 2000 Mm (1/8 - 80 mils) on every substrate (steel, non-ferrous metal, plastics, wood, etc.)
- Capable of multi-layer film thickness analysis
- Adhesion test by means of cross-cut test in accordance with ASTM D 3359; DIN 53 151
- Indentation hardness test in accordance with ISO 2815 (Buchholz)
- Microscopic research for pores, pits, cracks, blisters, flaking, intercoat adhesion of the individual film in coat systems, and quality control of the pretreatment of the substrate

Special features:

- LED illumination
- Ergonomical design
- Guiding wheels for smooth cutting
- Cut finder



Standards

ASTM	D 3002, D 3359
DIN	50 986, 53 151
ISO	2409, 2815
NCCA	II-13, X-1
VTLA	003 Item 9

Ordering Information

Cat. No.	Description
3430	byko-cut thickness, Metric
3431	byko-cut thickness, English
3432	byko-cut no cutters, Metric
3433	byko-cut no cutters, English

Technical Specifications

Lamp	Batteries	Microscope	Dimensions
White LED	1.5 Volts Mignon type	50-fold magnification	110 x 80 x 75 mm (4.3 x 3.2 x 2.9 in)
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Comes complete with:

byko-cut universal film gauge
Revolving rotary head with 3 cutters for film thickness (# 1-3)
Built-in microscope (scale 0 - 2 mm)
LED
Battery
Operation manual

Note: Cutters must be ordered separately for Cat. No. 3432 Tools for cross-cut and hardness must be ordered separately

Info!

For more information on Buchholz hardness see chapter "Hardness"



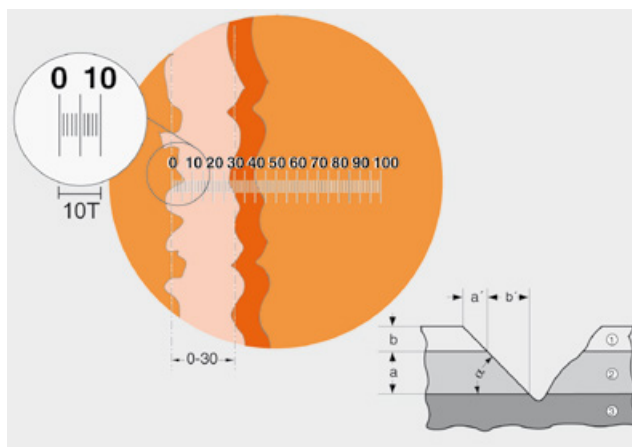
The V-shaped cut can be easily stored as an image with the Digital Pocket Microscope. For more details please see chapter "Microscopes"

Destructive Film Thickness Measurement

Create a V-shaped cut through the coating down to the substrate and measure width of a' (b'), which is proportional to the thickness a (b).

The specially designed blades which are attached to the instrument are used to make a short incision in the film. Then, the depth of the layer is measured with the built-in 50 fold microscope and the film is inspected for flaws.

Each of the cutting tips has two bevels which are made to precision with the mentioned slopes (see table). Since the slope of the cut is known, the measurement of the horizontal distance across this full slope (from the substrate to the top edge of the cut) is also a measurement of true vertical depth.



The thickness of multiple-layered coatings can be easily determined.

Ordering Information

Cat. No.	Description
3421	Thickness Cutter 1, 2000, byko-cut
3422	Thickness Cutter 2, 1000, byko-cut
3423	Thickness Cutter 3, 200, byko-cut
3419	Thickness Cutter 100, byko-cut
3420	Thickness Cutter 3000, byko-cut

Technical Specifications

Slope of Tip* (cutting angle)	Maximum Coating Thickness	1 Division on Reticle Scale Represents (Depth)	Accuracy in Microns ± 1 increment**
45 °	2000 μm (80 mils)	20 μm (1.0 mils)	40
26.5 °	1000 μm (40 mils)	10 μm (0.5 mils)	20
5.8 °	200 μm (8 mils)	2 μm (0.1 mils)	4
3.0 °	100 μm (4 mils)	1 μm (0.05 mils)	
56 °	3000 μm (120 mils)	30 μm (1.5 mils)	

*Note: Angle measured from sample plane.

**Note: For film thickness below 15 μm , accuracy is $\pm 1.5 \mu\text{m}$

DPM 300

Digital Pocket Microscope

Features of DPM 300 Digital Pocket Microscope

- High resolution CCD-Camera offering clear images
- Very portable and easy to use
- USB Cable connection for the data transfer
- Auto Gain function to adjust the lightness differences
- 4 LED Illumination for better viewing
- Capture button to save image

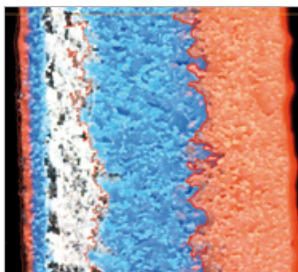
Destructive Film Thickness

The V-shaped cut from the byko-cut can be easily stored as an image with film thickness info in mm. Also the width from the cut can be detected and recalculated to the film thickness of the coating depending on the cut-Angle.



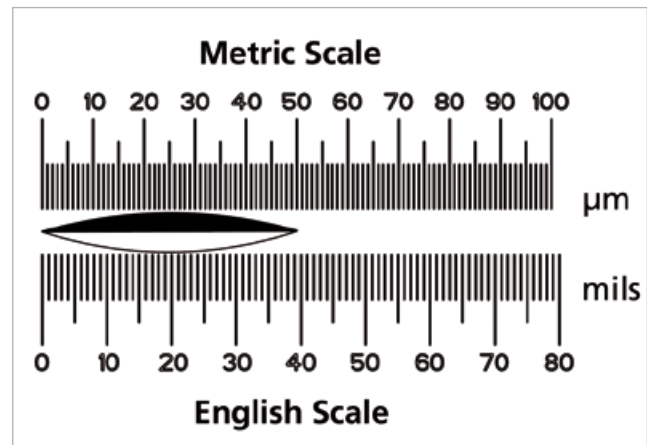
Info!

For more information on DPM 300 please see section microscopes



Buchholz Indentation Hardness

Place the byko-cut universal equipped with tool (Cat. No. 3427) and slip-on weight (Cat. No. 3434) on measuring position in accordance with standard. After 30 seconds measure indentation length using the built-in microscope.



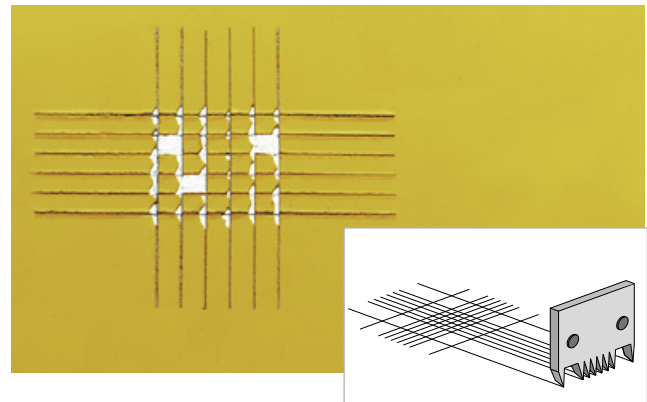
Ordering Information

Cat. No.	Description
3427	Buchholz Tool, byko-cut
3434	Buchholz Slip-on Weight, byko-cut

Technical Specifications

In accordance with DIN 53153 and ISO 2815
Increases weight of byko-cut universal to the standard weight of 500 g \pm 5g

Multi-Cut Tool for Cross-Cut Test



Ordering Information

Cat. No.	Description
3429	Cross-Cut Tool 11, 1-edge 1 mm
3424	Cross-Cut Tool 11, 1-edge 1.5 mm
3425	Cross-Cut Tool 6, 1-edge 1 mm
3426	Cross-Cut Tool 6, 1-edge 2 mm

Technical Specifications

Standard	Cutter Spacing	No. Of Cutters
ASTM	1 mm (0.04 in)	11
ASTM	1.5 mm (0.06 in)	11
DIN, ISO	1 mm (0.04 in)	6
ASTM, DIN ISO	2 mm (0.08 in)	6



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