

Advancing with technology

ElektroPhysik

Coating thickness
measurement



Coating thickness gauge
PAINT BORER 518 S

- **Universal thickness measuring instrument**
- **Thickness measurement of all coatings on any substrate**
- **Measurement of individual layers of a multi-layer coating**

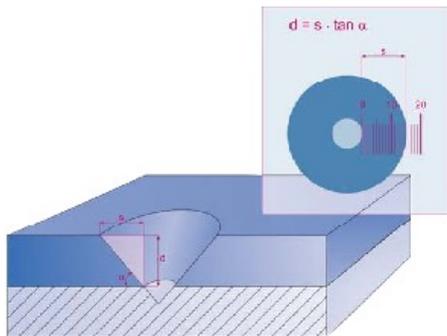
Thickness Measuring Instrument PAINT BORER 518 S



PAINT BORER with specimen platform

The measuring principle

The **PAINT BORER 518 S** operates in accordance with the standardised wedge cut method in which the specimen is cut at a defined angle. From the projected width of the cut face the layer thickness can be calculated making use of a simple geometrical relationship. With **Model 518 S** the damage to the coating is limited to a small conical hole as illustrated in the sectional view. In the measuring microscope a system of concentric circles is visible and from the difference in the radii of the circles which are measured using the measuring microscope, the film thickness can be calculated by multiplying with a known factor.



The measuring instrument

The **PAINT BORER 518 S** is a very compact instrument. All the principal components - the drilling device, the measuring microscope, the specimen illumination and the battery - are enclosed in a sturdy housing. A slide moving on horizontal slide-ways houses the drill and microscope and gives the **PAINT BORER 518 S** its particular feature: the instrument itself does not have to be moved for measuring after drilling.

The drill is spring mounted in the slide so that it can be pressed down onto the specimen with minimum force, the drill being switched on automatically when this is done. The carbide drills are easy to exchange and supplied with different accurately maintained cutting angles for 4 standard measuring ranges. The measuring microscope with a magnification factor of 50 has a measuring scale with 100 lines so that a resolution of 1% is obtained irrespective of the measuring range.

The light switch on the front plate of the **PAINT BORER 518 S** can be set for either continuous or interrupted illumination to prolong battery life. A 9 volt rechargeable battery is employed; mains operation with the charging unit is possible.

Due to the mobility of the microscope into two directional axes (turned by 90° from one another) with the possibility of turning the scale, the **PAINT BORER 518 S** is especially suitable for the evaluation of elliptical holes that arise with curved specimens.

The Operation

The coating thickness measurement with **PAINT BORER 518 S** is very simple: Apply a contrast mark (felt tip pen) and place the measuring instrument on the specimen. Move the drill into position over the test point and lower it causing the motor to switch on. Drill the coating through to the substrate. Move the microscope over the hole and switch the lamp on. Count the number of scale marks between the base material and the contrast mark and multiply this value by the scale factor which gives the measuring results. Special applications (individual layers of a multi-layer system, measurements on curved specimens) are dealt with in the operating instructions.

Technical Data (Model 518 S)

Dimensions (L x W x H):	145 x 55 x 110 mm
Net weight:	ca. 850 g
Measuring accuracy:	1%
Rechargeable battery:	6F 22 (6LR 61)
Min. dimensions of sample:	150 x 25 mm
without specimen table	
with specimen table	10 x 6 mm

Order information

Order-No.	Product description
85-809-0022	PAINT BORER 518 S
Included in the scope of supply:	
<ul style="list-style-type: none"> ◆ drill no. 5 ◆ felt tip pen ◆ screw driver ◆ rechargeable battery (9 V) ◆ charging unit 230 V, 50 Hz (other voltages on request) ◆ carrying case ◆ operating instructions 	

Accessories/Spare parts

Order-No.	Product description
85-808-0058	Drill No. 2 (2 - 200 µm)
85-808-0126	Drill No. 4 (5 - 500 µm)
85-808-0157	Drill No. 5 (3 - 300 µm) – spare part
85-808-0023	Specimen platform for clamping specimen panels of any shape or profile

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