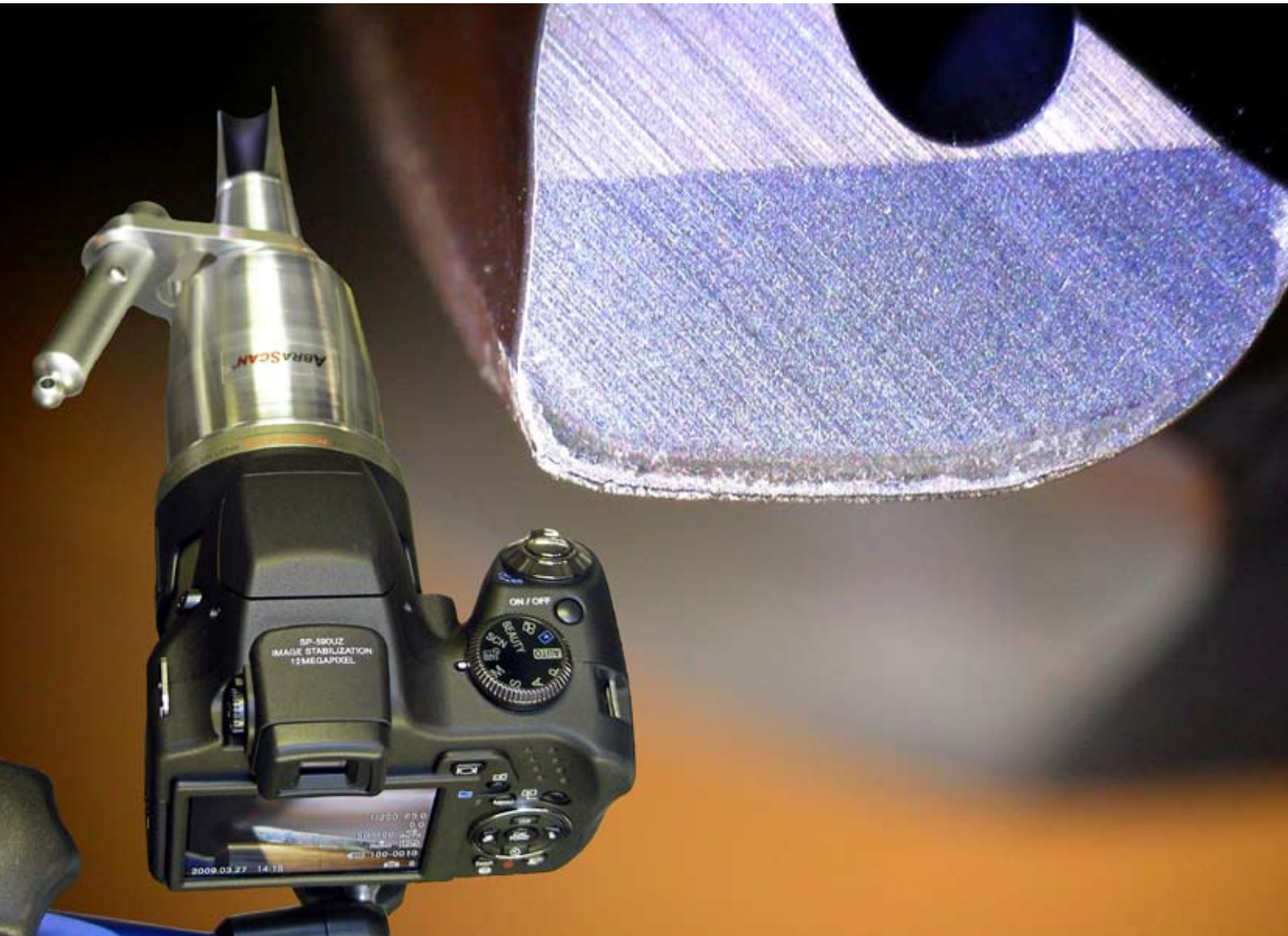


LEADING INNOVATIONS



ABRASCAN[®]

Abrasion measuring system
with analysis software

Product Description

ABRASCAN® Content

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Content of the abrasion measuring system **ABRASCAN®**



- Digital camera, resolution > 12 mega pixel
- Microscope device type 3.0
- USB-cable, accumulator charger, reserve accumulators
- Memory card 2 GB
- Adapter for LED-lamp
- LED-lamp incl. 1 set of reserve batteries (type AG13, LR44, V13GA)
- Adjustable magnetic holder
- Steel base plate
- Reticle for calibration
- Case (dimension: 335 x 290 x 155 mm, total weight 5,8 kg)
- Mastic to clean the tools
- Analyses software ABRASCAN® incl. CD

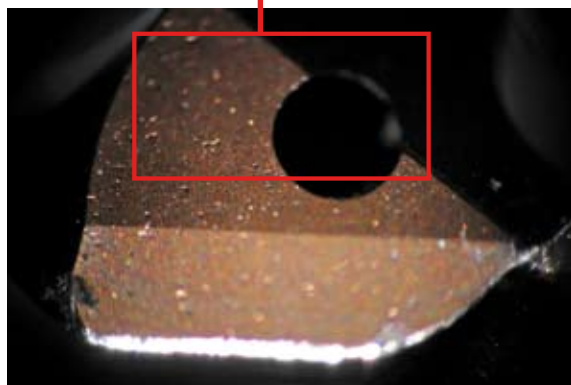
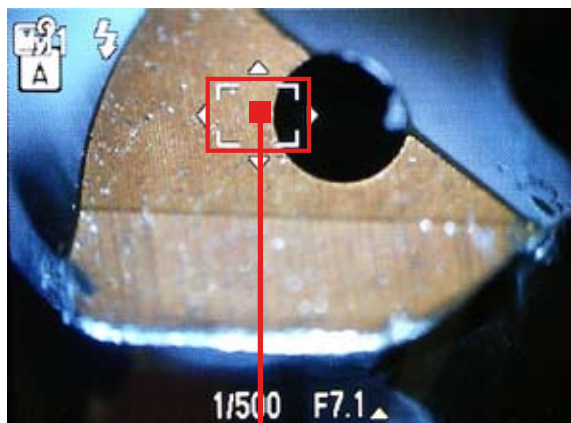
ABRASCAN® measuring setup



- The milling tool stands on the table or like you can see here, is measured direct into the machine tool.
- The camera will be positioned by the adjustable magnetic holder on the base plate or into the machine room.
- Take a photo with the digital camera.
- Transfer of the photos on a PC (UBS-cable).
- Definition of the flank wear by measuring the flank land wear with the provided analysing software ABRASCAN®

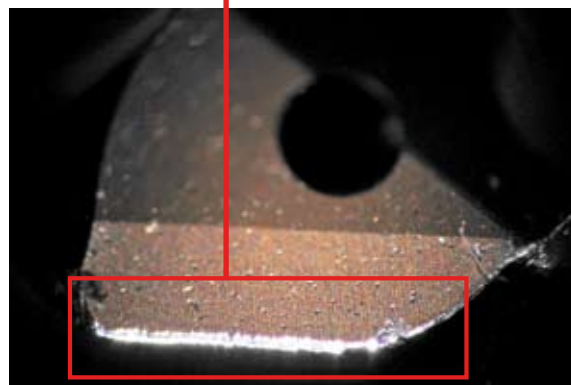
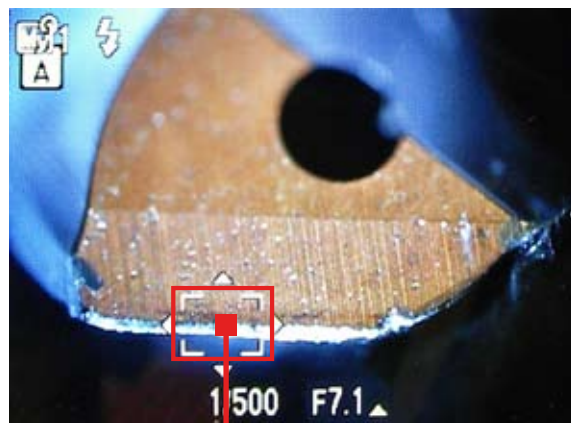
Example for focussing on the tool under test

- **Autofocus frame**
in the area of the bore



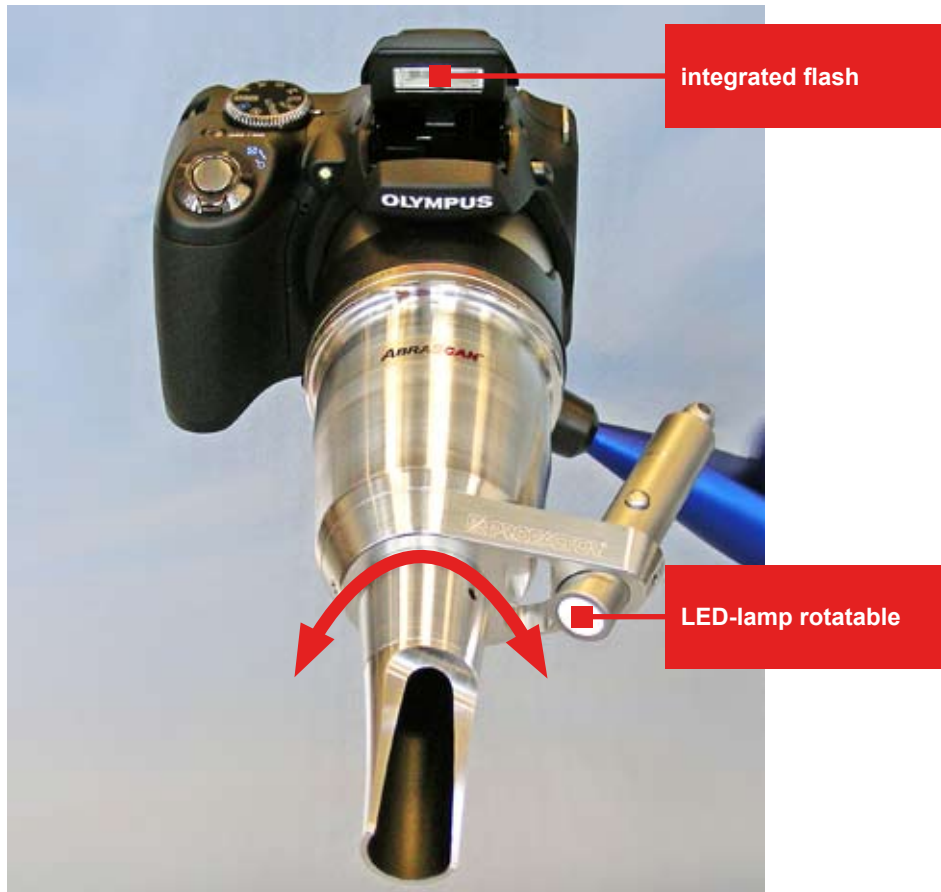
- **Result:**
The section in the area of the bore is pictured sharply.

- **Autofocus frame**
in the area of the cutting edge



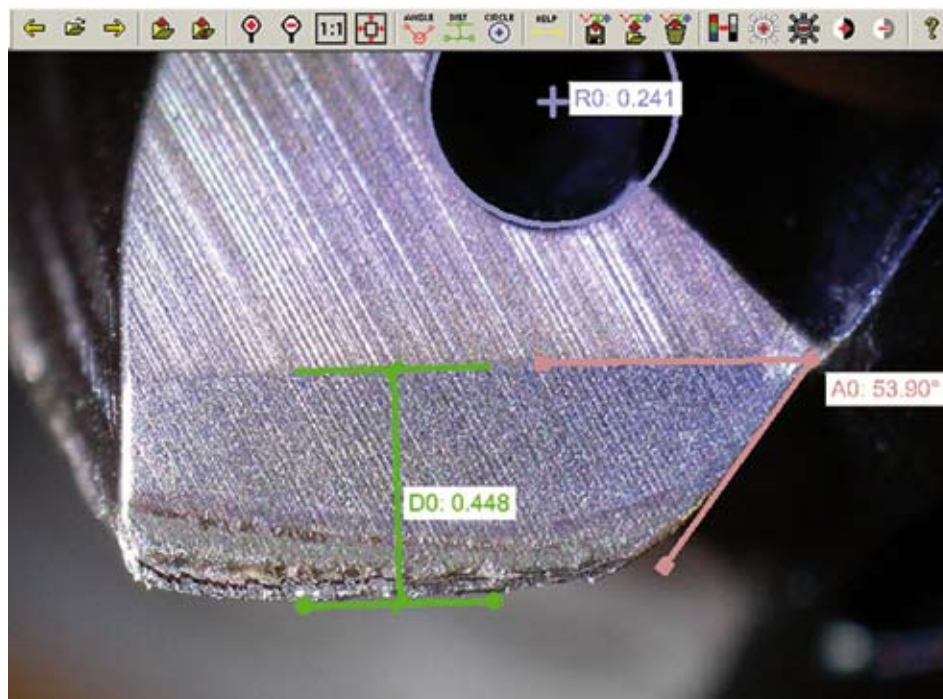
- **Result:**
The section in the area of the cutting edge with flank wear is pictured sharply.

ABRASCAN® lighting



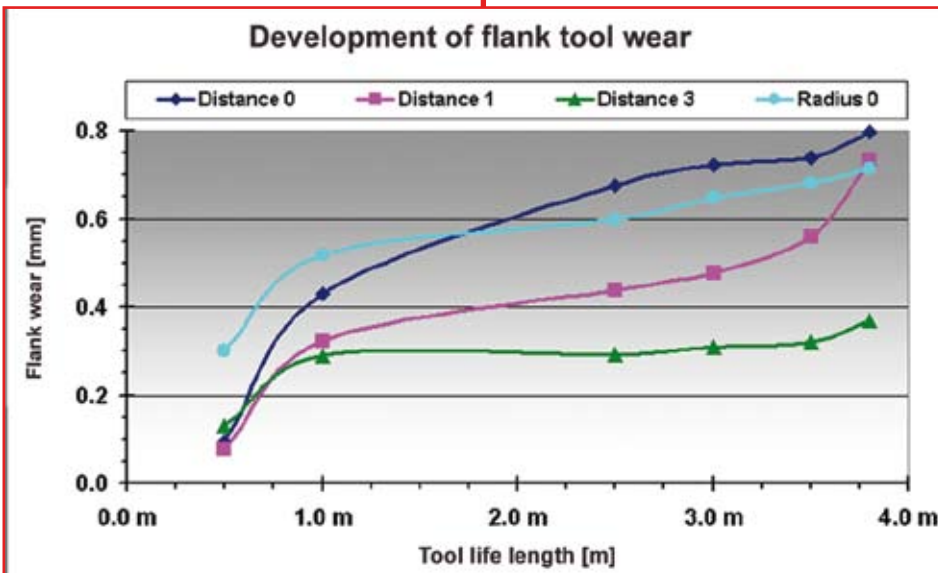
In order to get an optimal lighting, an integrated flash and a rotatable LED-lamp is used. Furthermore, it is possible to twist the distance piece.

ABRASCAN® analysis software



- With the included analysis software ABRASCAN® it is possible to register various measuring points. It is possible to measure distances, angles and radius. The measurement objectives can be used for repetitive uses by saving the used settings. Other useful options like brightness, contrast, grey scale images and picture shifting for comparisons etc. are also present.
- The positioning of the measuring objects can be carried out by mouse or keyboard.
- The keyboard handling is especially advantageous when working with laptop without a mouse.

Flank wear		Tool life length [m]					
		0.5 m	1.0 m	2.5 m	3.0 m	3.5 m	3.8 m
Measuring object	Distance 0	0.094	0.431	0.677	0.723	0.740	0.798
	Distance 1	0.077	0.322	0.438	0.476	0.560	0.734
	Distance 3	0.130	0.289	0.293	0.308	0.320	0.369
	Radius 0	0.301	0.518	0.600	0.649	0.680	0.714



Export of measured data:

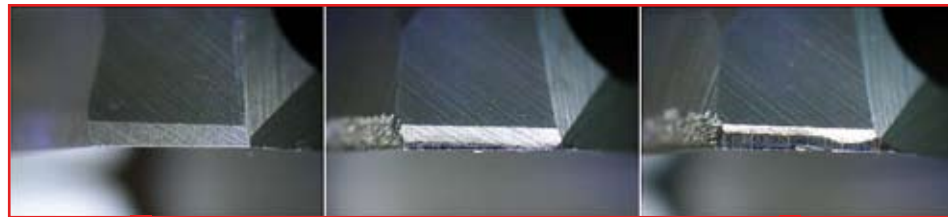
The numeric data of the measuring objects could be exported easily for tool wear analyzing in a spread sheet or a graph.

System requirements:

- Operating system: Microsoft XP or Vista 32 Bit
- Processor requirements: Pentium III or higher
- RAM-storage: at least 128 MB
- Hard disk storage unit: approx. 50 MB free memory capacity
- CD-ROM drive
- USB port

Documentation of the tool wear development

Deep hole drill with 8 mm diameter



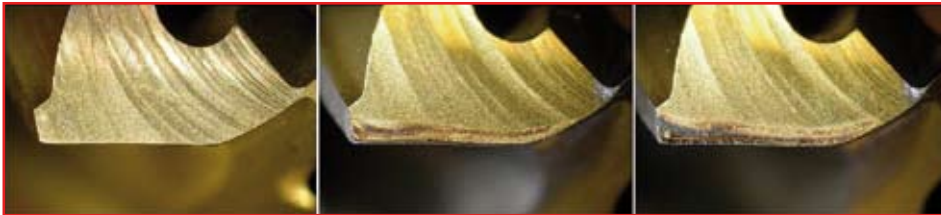
Development of tool wear



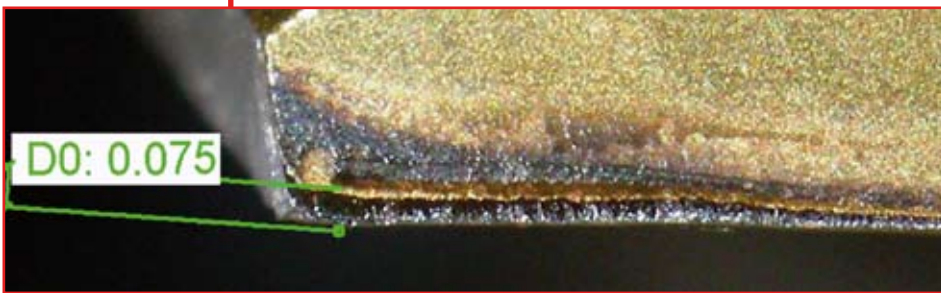
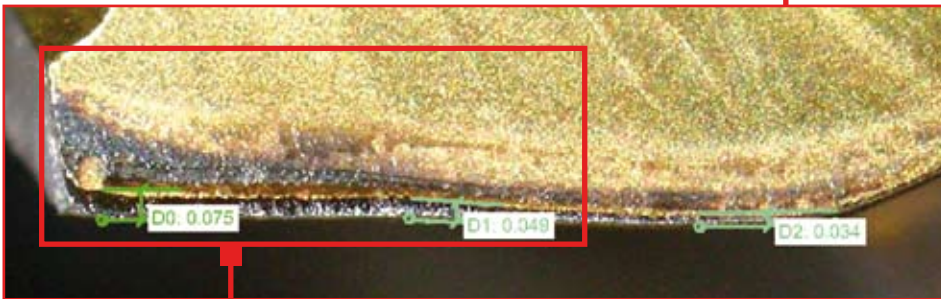
You can see a crack, which will lead to a tool breakage.

It is an enormous advantage for the tool optimization that the whole tool life cycle can be documented directly on the machine with ABRASCAN®. Already smallest indication of tool wear can be detected.

Solid carbide twist drill with 6,8 mm diameter



Development of tool wear

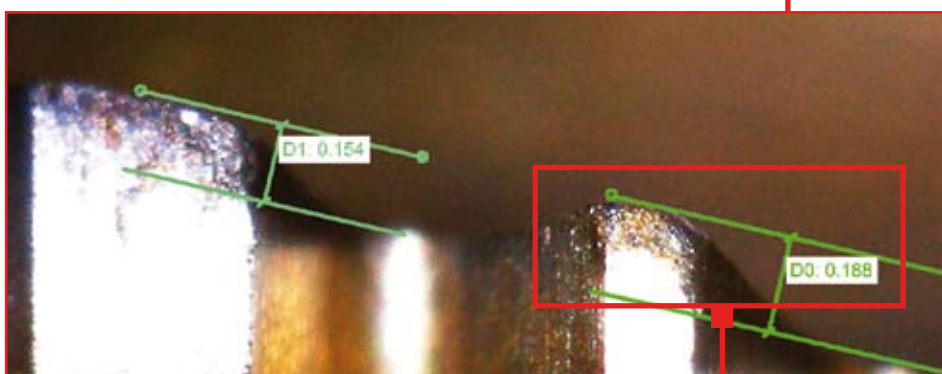


Tool wear increases in the area of the cutting edge.

Screw tap M8



Development
of tool wear

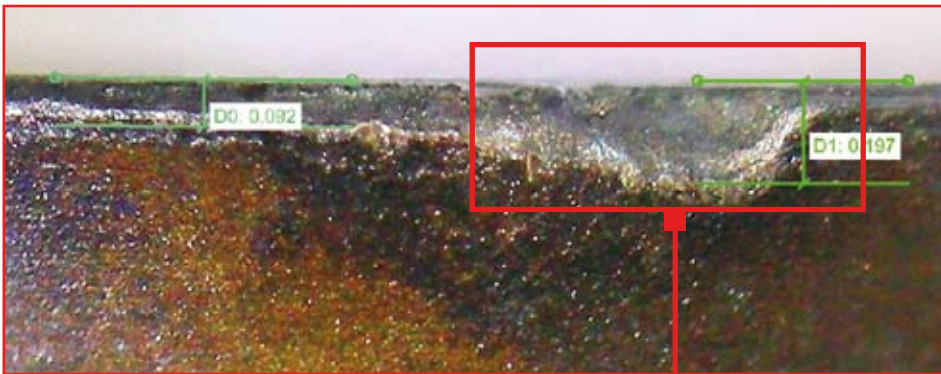


Flank wear
on a screw tap

Carbide reversing plate with 7 mm diameter



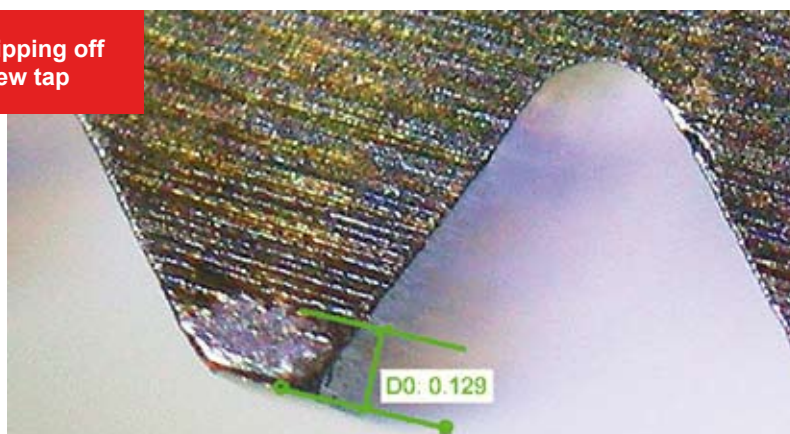
Development of tool wear



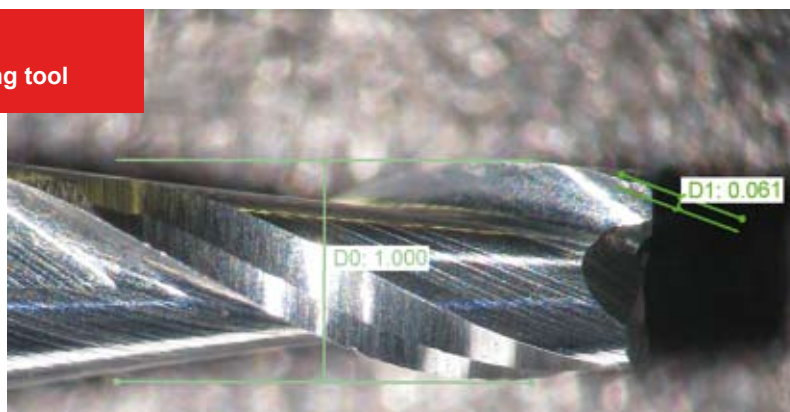
Intense flank wear

Further measuring examples

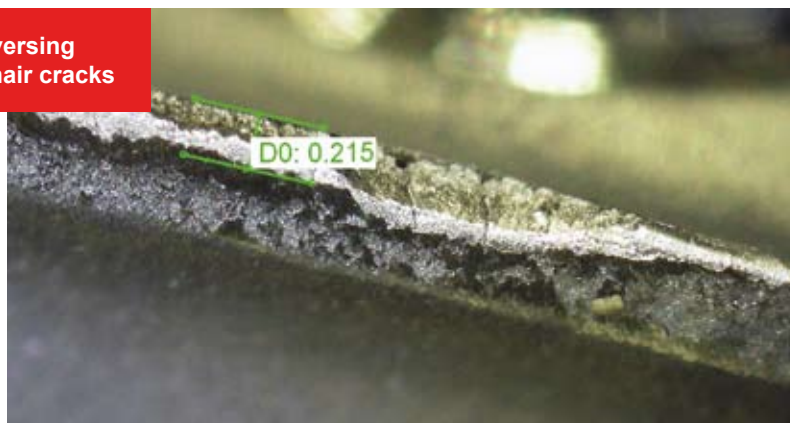
Coating chipping off
at a M8 screw tap



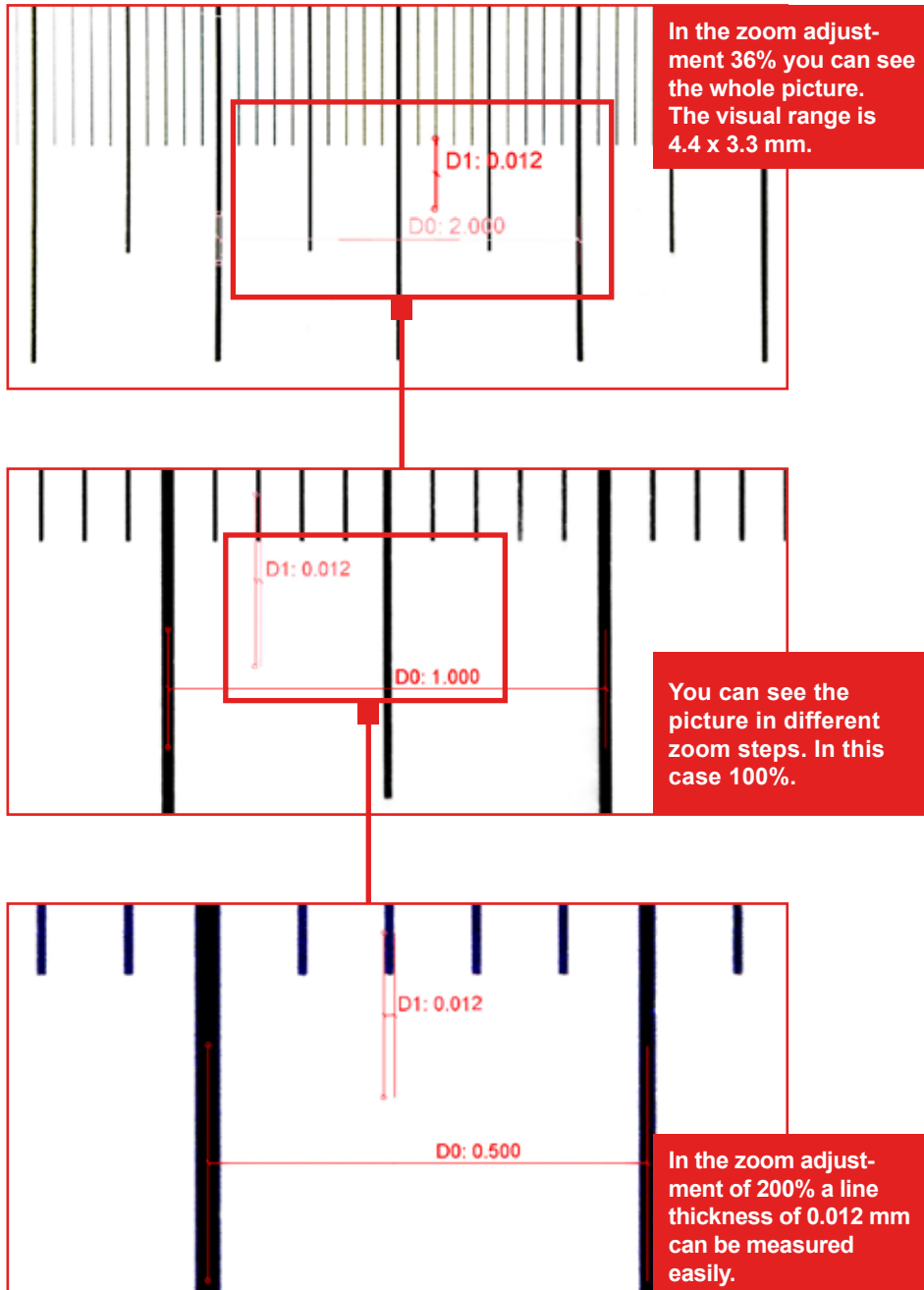
Wear at a
1 mm milling tool



Carbide reversing
plate with hair cracks



ABRASCAN® measuring accuracy



- The maximum resolution is 1.1 $\mu\text{m}/\text{pixel}$.
- The depth of focus range is about 0.2 mm
- Up to 200 fold magnification

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