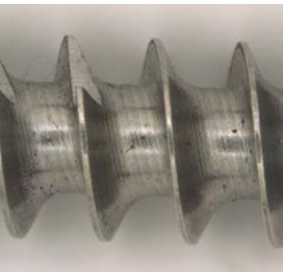
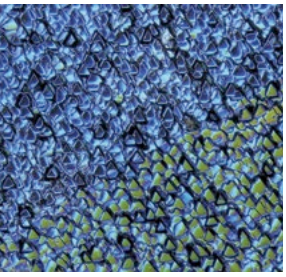
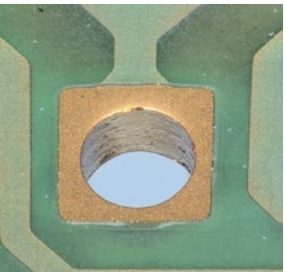
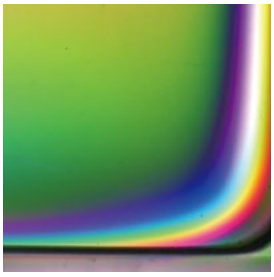
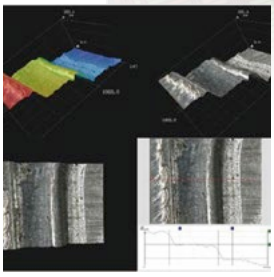
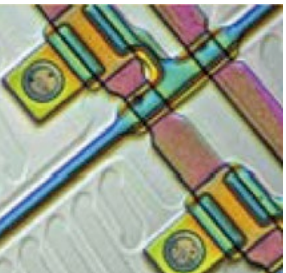
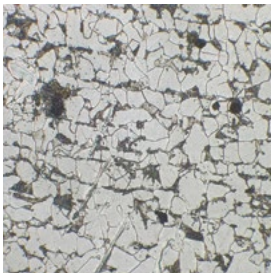
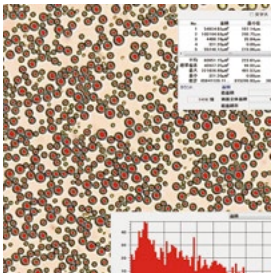
KEYENCE

What's Possible with
Digital Microscopes
Application Examples

Unique ways to use microscopes

This guide introduces new microscope application examples that are not widely known.

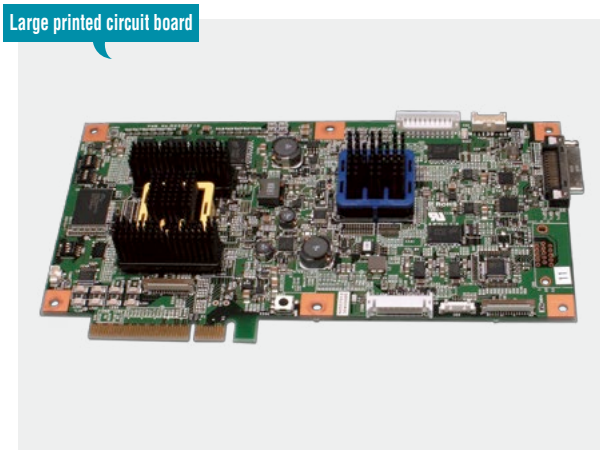

Example 1

Measurement of Large Samples

Do you have trouble imaging and measuring large samples?

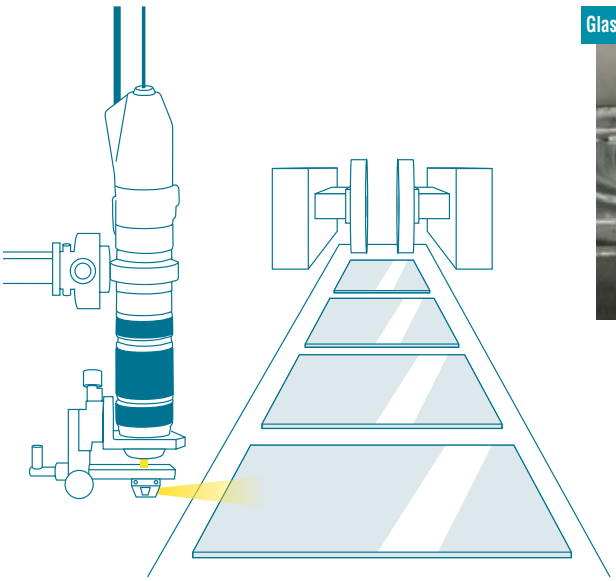
With the macro lens, VH-Z00T, it's possible to observe areas larger than 400 mm.

Large printed circuit board



VH-Z00T (0× to 50×)

The VHX can even perform observations of samples that don't fit on the stage.
The VHX's detachable camera makes it easy to observe targets of any size, or targets that are in process. KEYENCE works with third-party manufacturer's to provide seamless integration of our systems.



Glass cross-section

Example 2

Observation of Metal Structures

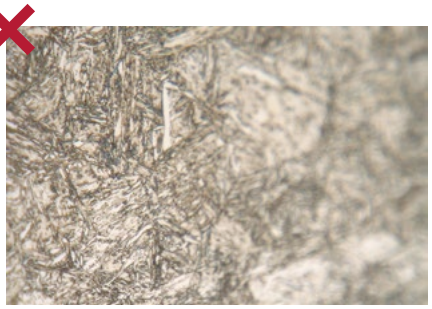
Did you know that you can use KEYENCE microscopes as metallurgical microscopes?

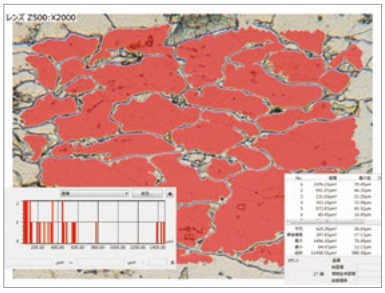
The VH-Z500T, which can perform observations at magnifications up to 5000×, can be used to perform observations as a metallurgical microscope.

Metal structure (1000×)

VH-Z500T (500× to 5000×)

The VHX has a depth composition function. This makes it possible to obtain clear images of materials whose polished surfaces are rough. The VHX takes only a few seconds to complete high-speed depth compositions, which eliminates the stress of waiting for processing to complete.





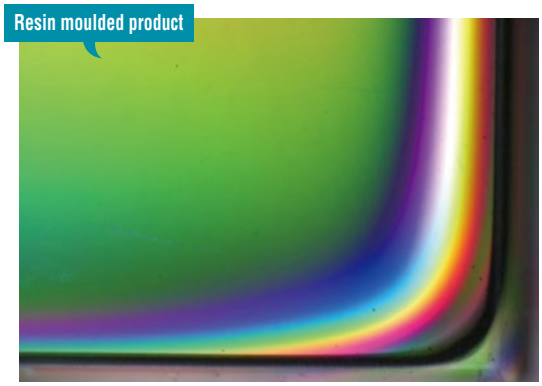
What's more, the VHX's automatic area measurement function makes it possible to measure grain ss and graphite spheroidising ratios.

Example 3

Polarised and Differential Interference Contrast Observation

Did you know that you can easily observe residual stress conditions?

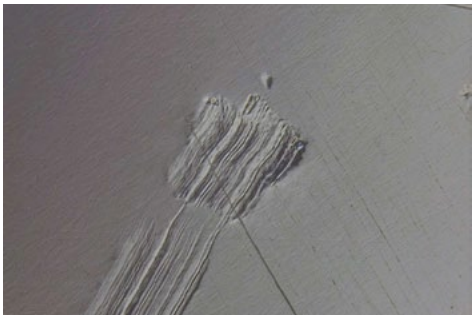
To observe residual stress, polarised observation with transmitted illumination is required. The VHX stand supports transmitted illumination and polarised filters. This makes it possible to use the VHX as a polarised microscope.



Have you ever been unable to see subtle scratches, projections, and depressions on the surface?

The VHX supports differential interference contrast observation, making it possible to observe, normally invisible, subtle scratches in high contrast.

Metal surface scratch (bright-field; 300×)



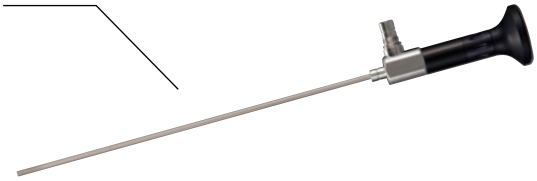
Metal surface scratch (differential interference contrast)

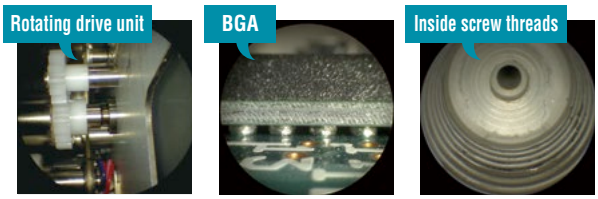
Example 4

Borescope and Fiberscope Observation

Did you know there is an observation method that does not require you to disassemble equipment?

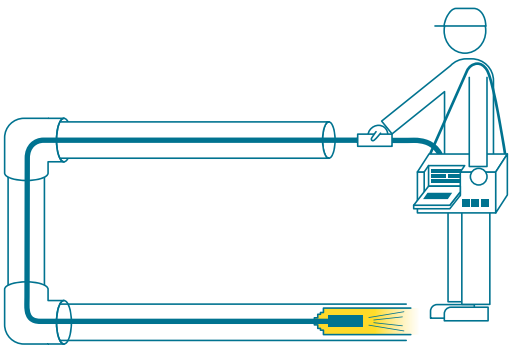
The VHX bore lens comes in diameters as small as 1.8 mm. This makes it possible to observe within equipment without needing to disassemble it.

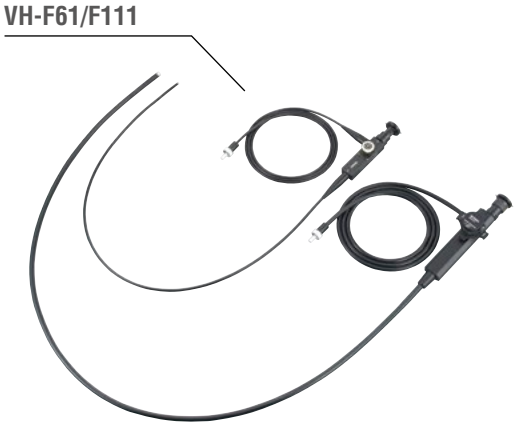




Is it difficult for you to observe the inside of narrow, twisted tubes?

Controller operations remotely bend the tips of VHX fibrescopes.
Even hard to reach locations can be observed easily.





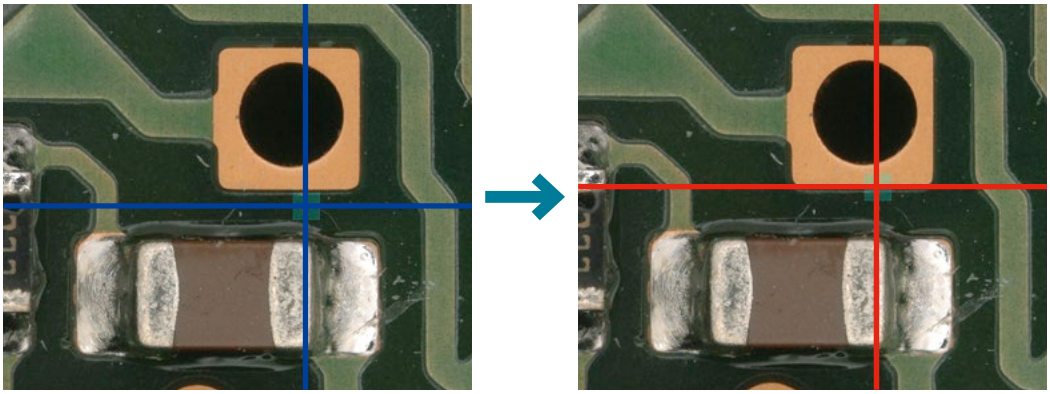
Example 5

Measuring Microscope

Did you know that the measurement accuracy can be guaranteed?

With an encoded stage, we can accurately measure over a range of 100 mm × 100 mm, even at 5000× magnification. The edges can be captured clearly with high depth-of-field lenses, and edge detection processing makes it possible to perform measurements without contracting a third party.

The high depth-of-field lenses ensure that edge positions are determined accurately. Furthermore, the edge detection function can find edges automatically, which eliminates user error.



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SAFETY INFORMATION
Please read the instruction manual carefully in order to safely operate any KEYENCE product.

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