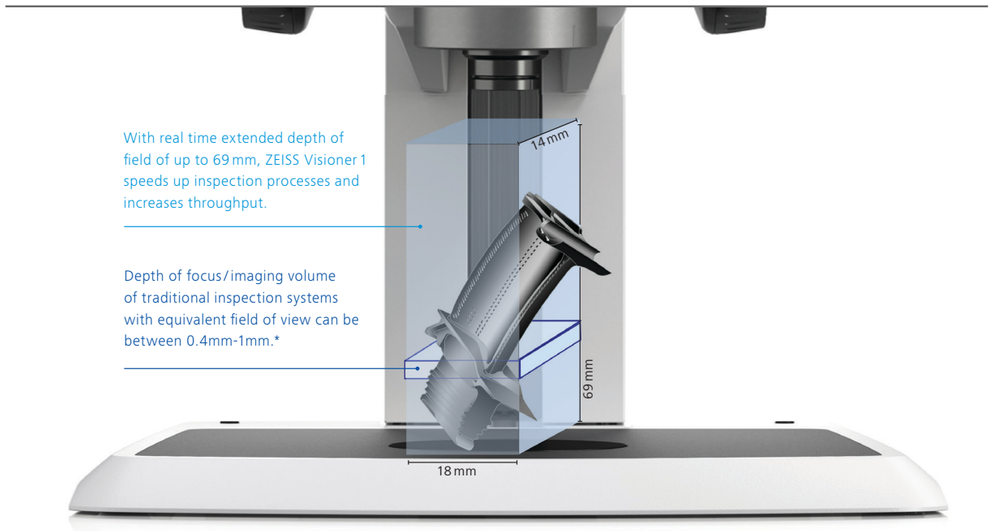
Aerospace – Compressor Blade Inspection
ZEISS Visioner 1

Application Note

Seeing beyond

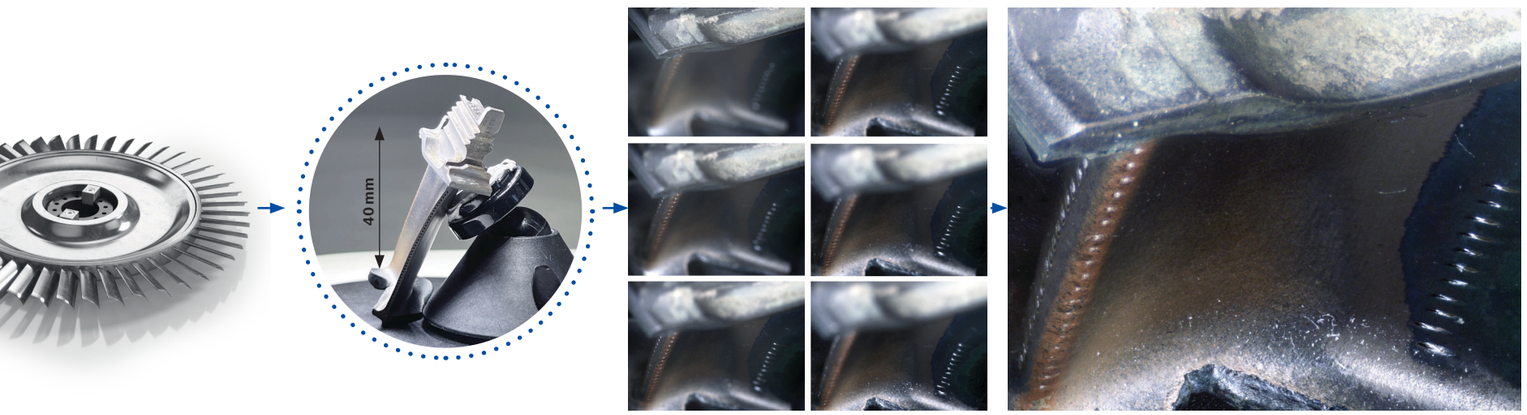
Compressor Blade Inspection:
for increasing throughput with ZEISS Visioner 1



Real time extended depth of field of up to 69mm can be achieved with the .35x objective.

Higher throughput and significant cost savings.
Existing systems are not ergonomic and can cause wrist aches due to the amount of physical movement of the blade to keep regions of interest within this shallow focus point, and the number of inspections needed. With such a large, usable inspection volume for the respective fields of view, the Visioner 1 allows the blade to be freely rotated, and angled to enable the user to inspect the whole sample for defects without the need to constantly re-focus. The business case shows an increase in throughput that can lead to a saving of 218,400 EUR over 3 years.

Standard digital microscope vs. ZEISS Visioner 1
With a stereo / standard digital microscope, the operator would need to keep adjusting the focus to inspect the blade across the angle for the potential defects, and document several images in the process.



Standard microscope: Constant re-focusing is needed to inspect the blade, and multiple images are needed for documentation.

With ZEISS Visioner 1 only one image is needed to document any findings and failures.

Business Case
Stereo/standard digital microscope vs. ZEISS Visioner 1

Business Case with Stereo/standard digital microscope
Our Aerospace customer is currently using traditional stereo microscopes to inspect the compressor blades and needs to inspect 100 blades a day. One person can typically inspect seven products in one hour, or 49 products a day. So, this task takes two people to complete at a rate of €30 per hour.

Total Costs:
€ 480 per day
€ 124,800 per year**

Business Case with ZEISS Visioner 1
With Visioner 1, 20 blades can be inspected in one hour by one person. This will take one person typically five hours to inspect 100 blades, freeing up the second person to conclude other lab / inspection tasks, OR increase the throughput enabling flexibility for the departments needs. This reduces the cost of the inspection tasks significantly.

Total costs:
€ 150 per day
€ 39,000 per year**
€ 39,000 Visioner 1

This results in:

Payback in under 4 months
€ 218,400 Saving over 3 years

Price is reflective of the configuration required for this application for this particular customer. Please contact your local ZEISS representative for an accurate quotation for a system for your requirements.

	Labour costs with a Stereo	Labour costs with a Visioner 1	Less Capital Outlay for Visioner 1	Yearly Savings
Year 1	124,800	39,000	39,000	46,800
Year 2	124,800	39,000		85,800
Year 3	124,800	39,000		85,800
			TOTAL	**€218,400**

**For illustration purposes only, actual depth of field of traditional systems may vary depending on make and model*
***Labour cost based on 2 people, on 8 hour shifts, salaried for a 52 week year with 48 working weeks*

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