

THE KNOW-WOW COMPANY

Exciting solutions

WESTCAM TECHNOLOGIES

Sensorik&ImageProcessing

**BVS-R Image processing- and crack
detection system**

Product family

SINGLE TEST BENCH (STB)

BVS-R **Standard system**

- ✓ Use of 1 to 6 cameras
- ✓ Trigger signal from the test bench, shut down signal to the test bench
- ✓ Automatic crack detection

BVS-R/F **Remote focus**

- ✓ Same as BVS-R additional with software controlled camera focus for focus adjustment

BVS-R/F/S **Mounted direct on the Shaker**

- ✓ Same as BVS-R/F for Shaker operations

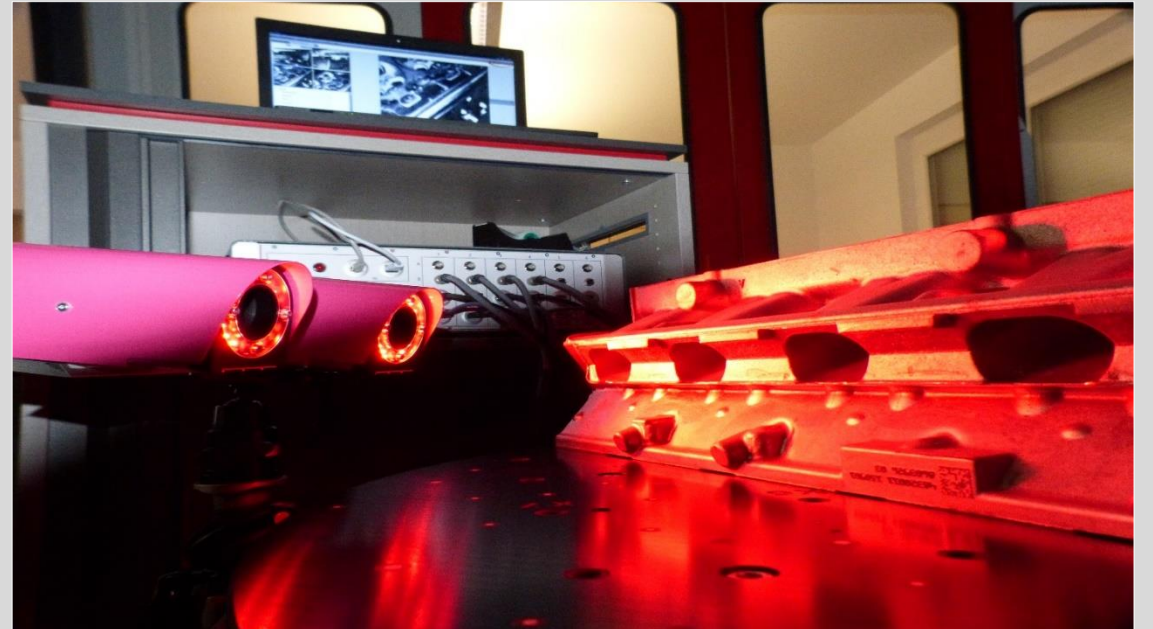
BVS-R/F/S/C **For use in climatic chambers**

- ✓ Same as BVS-R/F/S for test runs under climatic conditions

MULTI TEST BENCH (MTB)

BVS-R/M6 **Multi Test Bench operation**

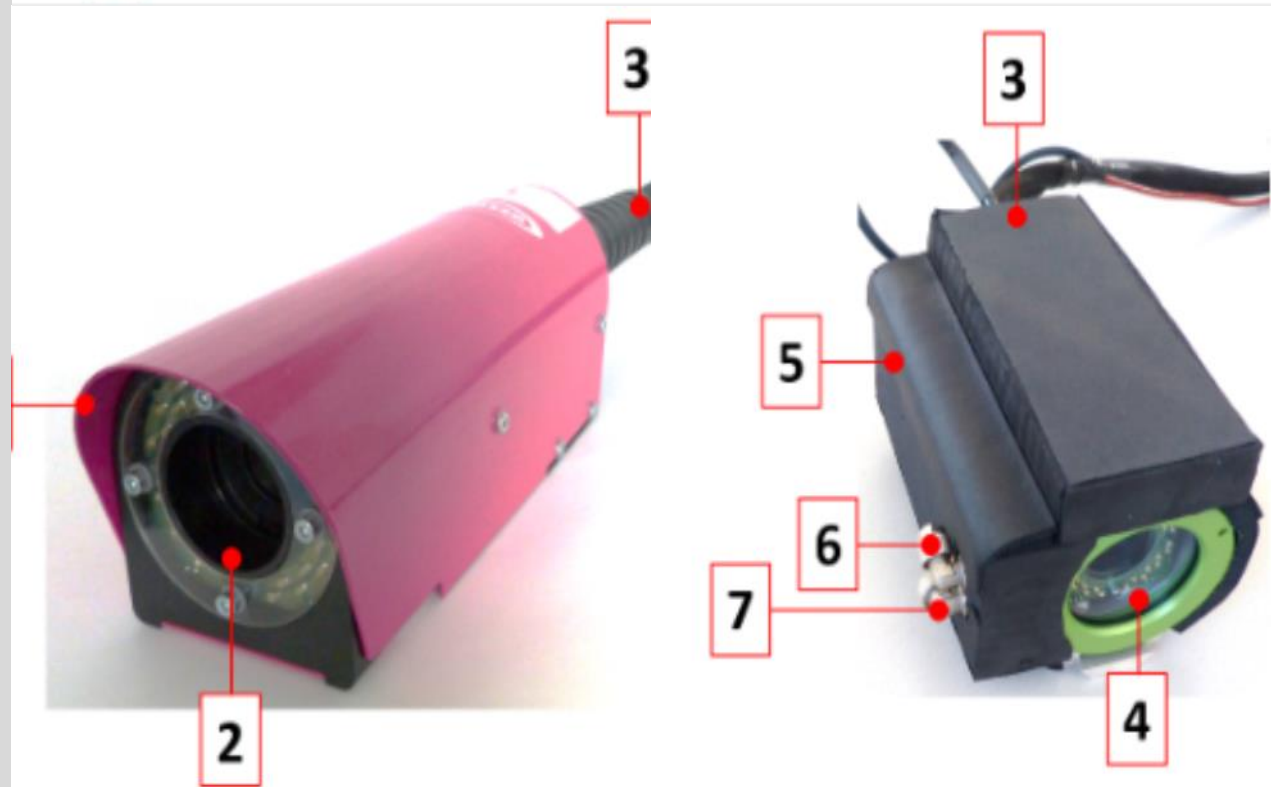
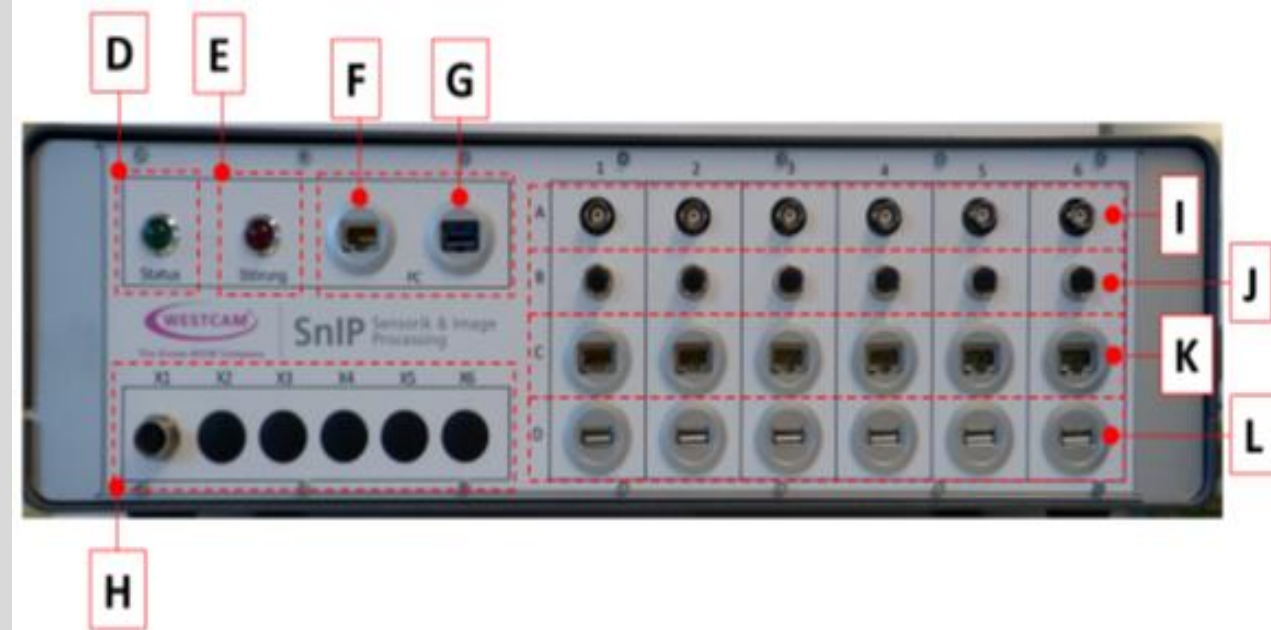
- ✓ Use of one BVS-R systems at up to 6 test benches in parallel
- ✓ Max. 6 cameras are freely assignable to the 6 test benches
- ✓ Application like Singel Test Bench operations



User requirements

Tasks

- ✓ Automatically continuous progress surveillance w/o testing personnel
- ✓ 7/24 monitoring of the test bench including crack detection and tracking
- ✓ **Monitoring**
 - Synchronized with excitation frequency
 - Non-synchronized – Timed
- ✓ **Archiving**
 - Stored as photo series
- ✓ **Measurement**
 - Crack length in pixel (with new SW also in [mm])
- ✓ **Automatic shut down**
 - Deactivating signal at defined crack progress



System description BVS-R

Camera Module

- ✓ Modular design – camera / lens / filter / illuminating ring / mounting device
- ✓ 1 – 6 cameras per system

Option

- ✓ Shaker / climate housing
- ✓ Electric focus lens
- ✓ Tele centric lens

Evaluation Unit

- ✓ Single Test Bench - simultaneous 1 to 6 cameras
- ✓ Multi Test Bench - simultaneous 1 to 6 test benches
- ✓ Metering the symmetry of oscillation (Trigger signal per camera / test bench)
- ✓ Disabling signal to the testing bench

Software

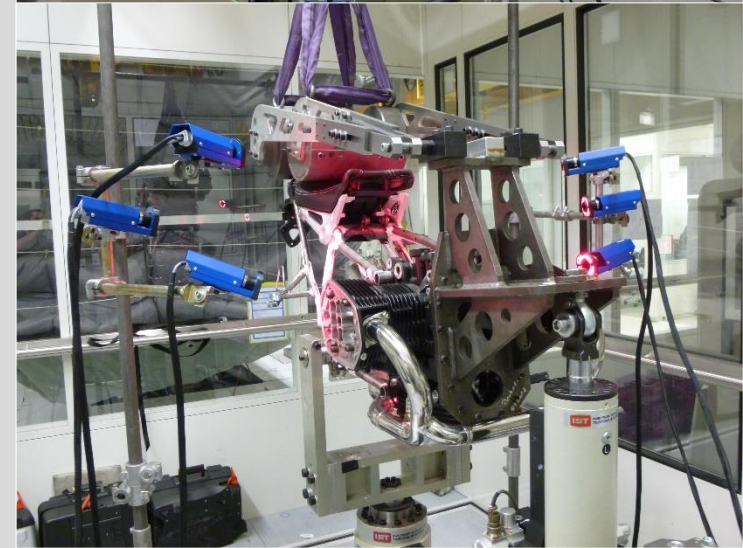
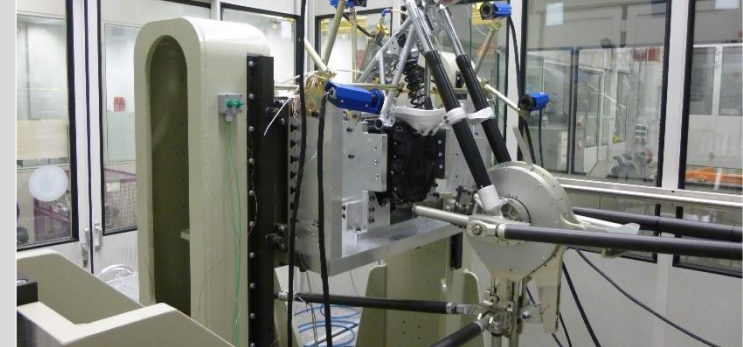
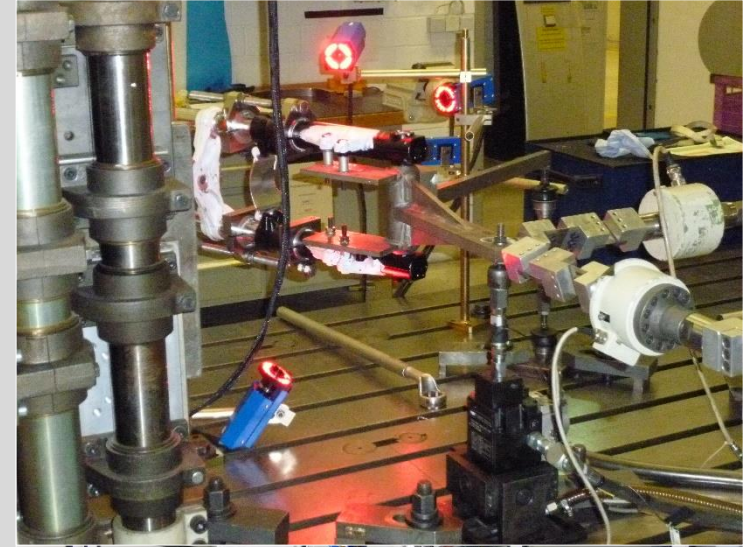
- ✓ Recording up to 6 cameras simultaneously for each test series or 6 test benches
- ✓ Individually adjustable test field for the inspection of the relevant test specimen section
- ✓ Automatic crack detection and growth process monitoring - ONLINE
- ✓ Cycle, picture number and time stamp for each image
- ✓ Crack length measuring in pixel (option: metric analysis)
- ✓ OFFLINE retrospective crack evaluation
- ✓ Runs on a notebook or PC with Windows system

Disadvantage without BVS-R System

- In general a test run takes 7 days up to 4 weeks
- Daily inspection cycle necessary (test bench will be stopped manually)
- Or every 25% of the test run time (test bench will be stopped automatically)

Difficulties:

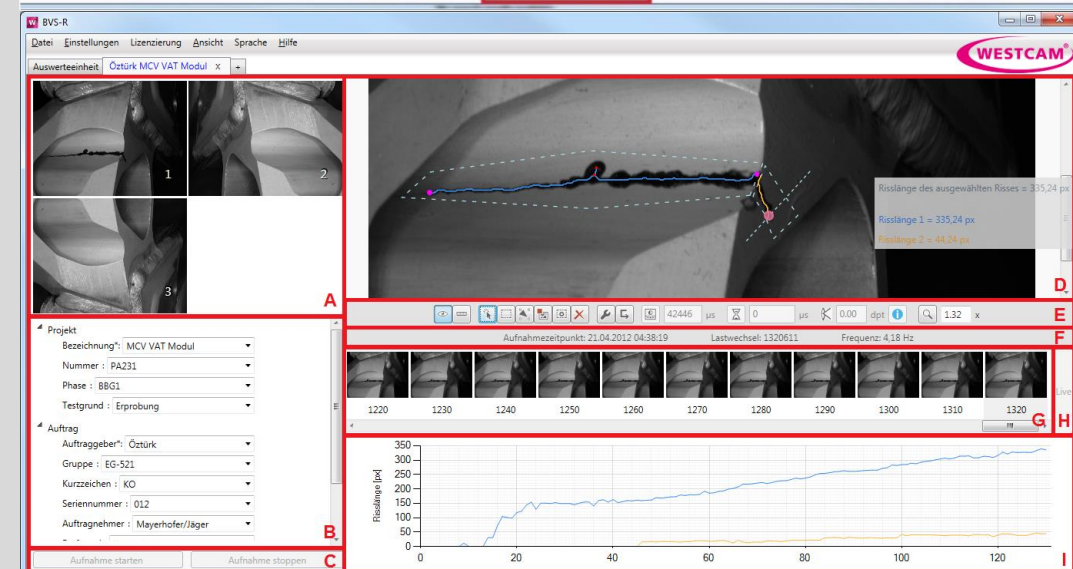
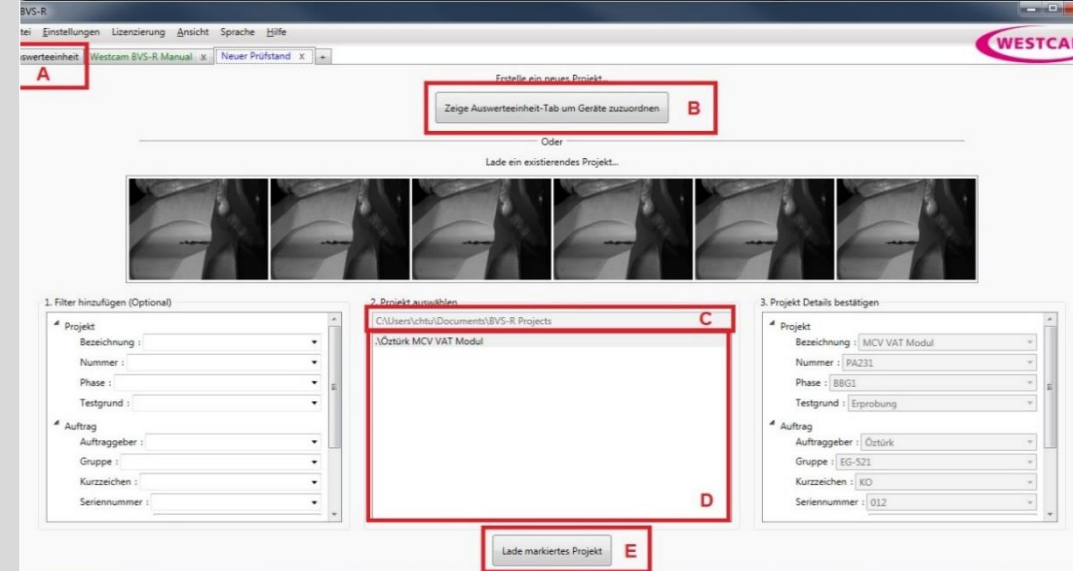
- Crack detection of an incidence only possible in inaccurate range
- Displacement and force drop measurement too inaccurate for determination
- The testing period extends due to unusable weekends / nights and inspection time
- Manual control due to accessibility to the critical points mostly problematic



Advantage with BVS-R System

- ✓ Precise definition of the events / times for the recording of the picture series
- ✓ Test run runs completely automated without breaks
 - ➔ 15% time saving on average
- ✓ Reduction of the inspection effort
 - ➔ approx. 4 hours of time savings per test run
- ✓ Crack formation and the crack development can be determined precisely within one percent
- ✓ Automatic stop of the test run when a predefined crack length is reached
- ✓ Crack formation and crack propagation are clearly documented
- ✓ Cracking video from the individual recordings

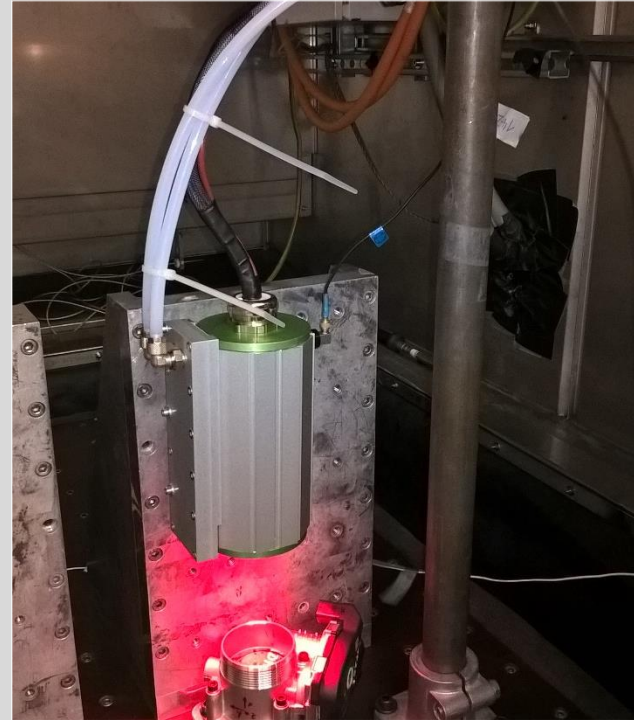
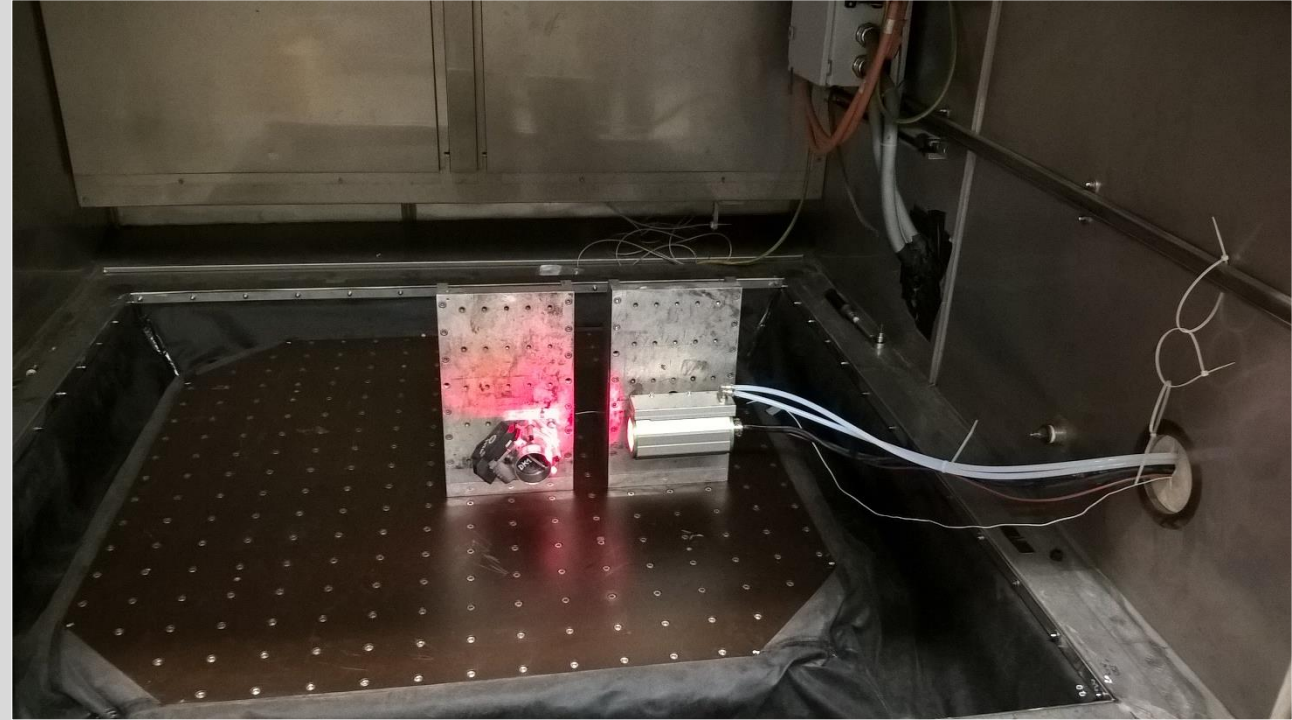
Produkt	lizenziert	Anforderungscode	Lizenzschlüssel	gültig bis
BVS-R	True	765498	0aqDyuFOYR	permanent
BVS-R/F	False	8129dc	42oxkFgaLR7	permanent
BVS-R/M3	False	8688a4	42oxkFgaLR7	permanent
BVS-R/M6	True	86cfc0	kXSge+KdRL	permanent
BVS-Rx	True	8170f8	g4d6BTS25M	permanent



Technische Specs

Image processing / Cameras:

- ✓ Resolution: 1.296 x 964 px
- ✓ Projection surface: 87 x 117 mm
- ✓ Object distance: 100 – 300 mm
- ✓ Frequency range: up to 60 Hz
- ✓ Load: max. 20 g
- ✓ Temperature: tested at -25°C to +75°C
- ✓ Humidify: tested at 5%
- ✓ Processing: 6 pictures per second
- ✓ Crack detection: at 0,1 – 0,4 mm crack length



OHNE BEGEISTERUNG

IST NOCH NIE

ETWAS **Großes**

ERREICHT WORDEN!

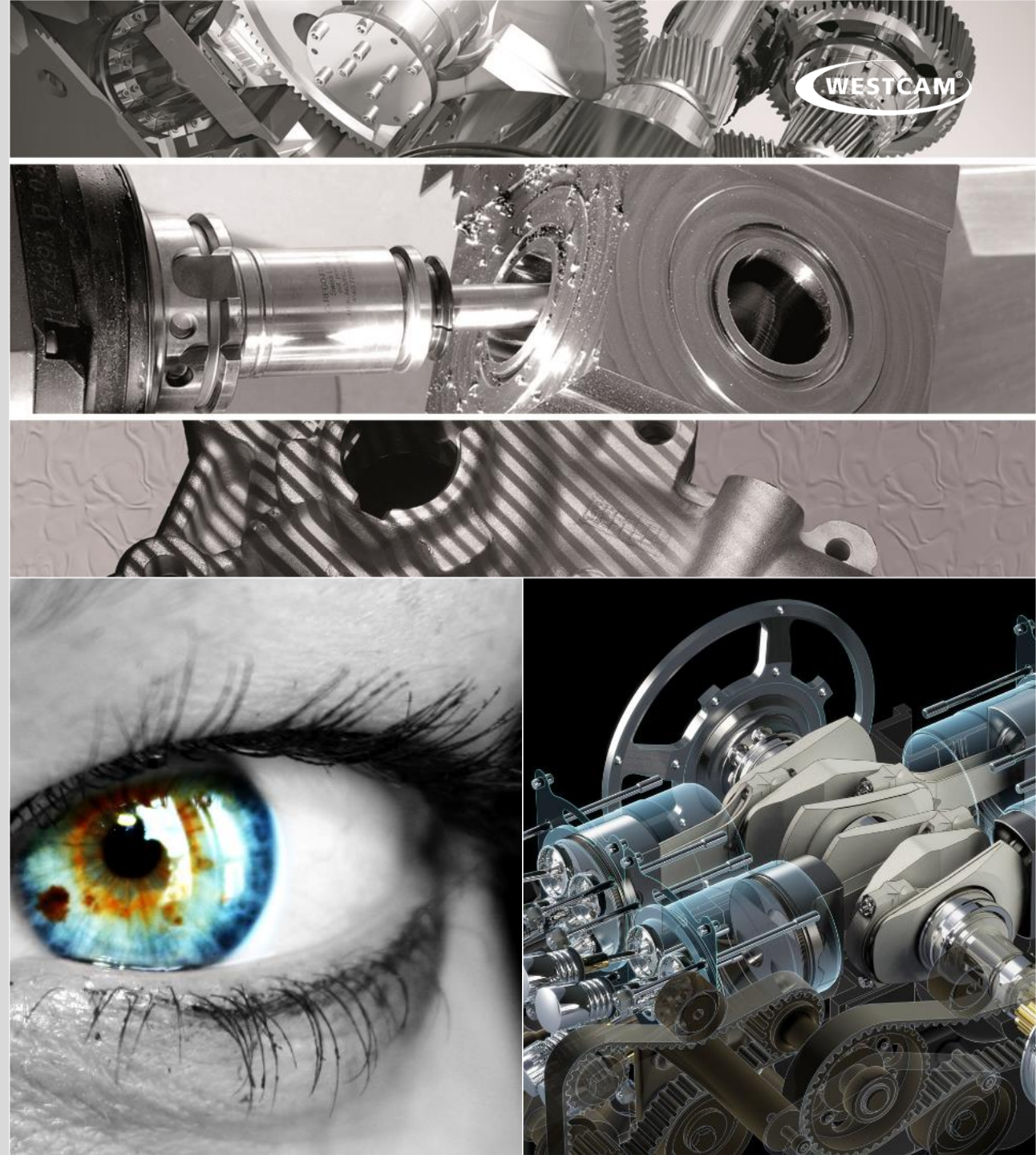
(Ralph Waldo Emerson)

Your challenges at the test bench

- Short test cycles
- High validity of the test results
- High quality in the documentation
- Cost-savings required

Our solution

- ✓ Automated image processing
- ✓ Automated crack detection
- ✓ Automated measuring
- ✓ Efficient operation with Multi Test Bench



Your direct contact to WESTCAM Technologies



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WESTCAM – The Know-WOW Company

Begeistert lösungsstarke Technologien

AUF VIELE GEMEINSAME WOW-ERLEBNISSE

