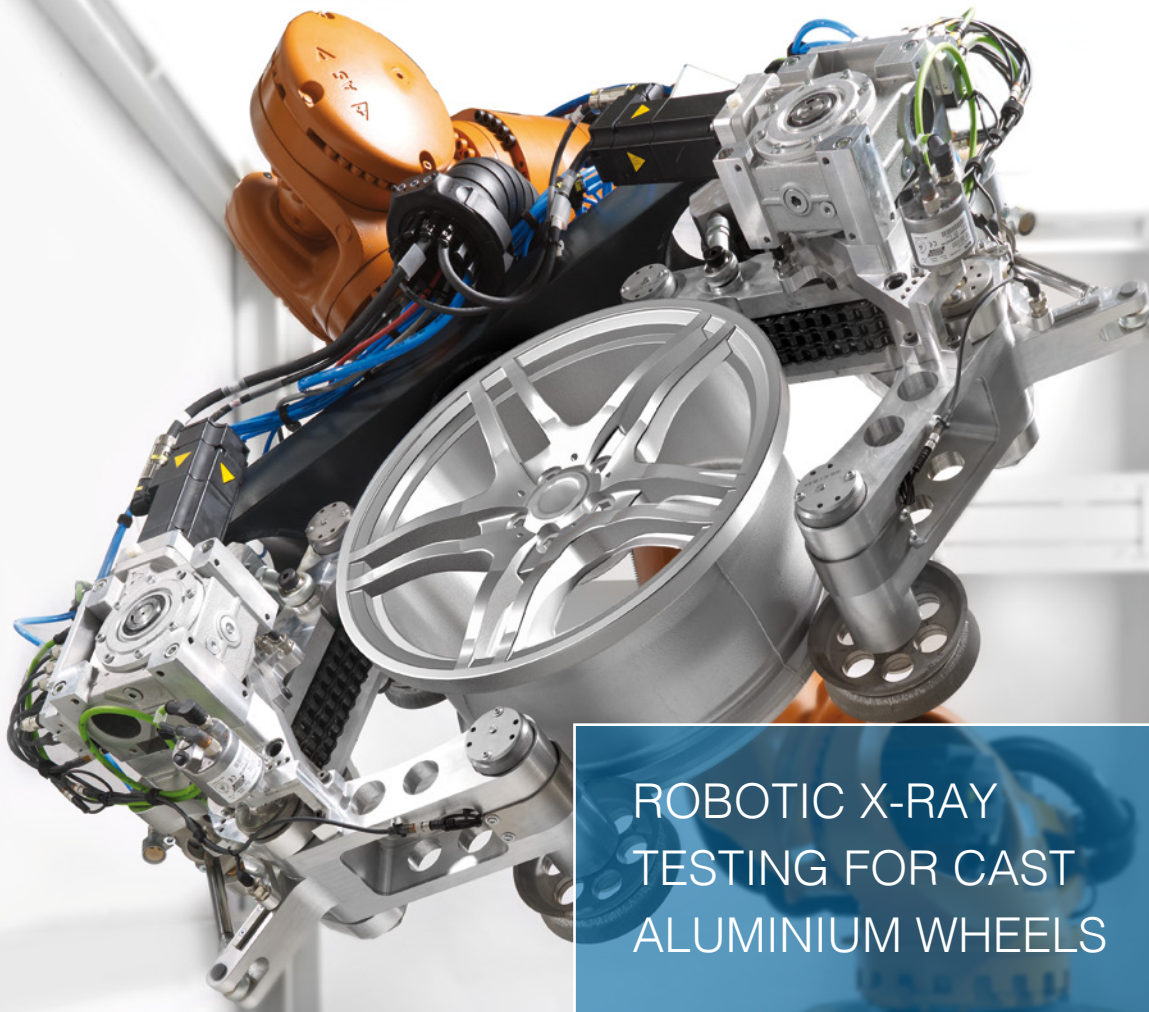
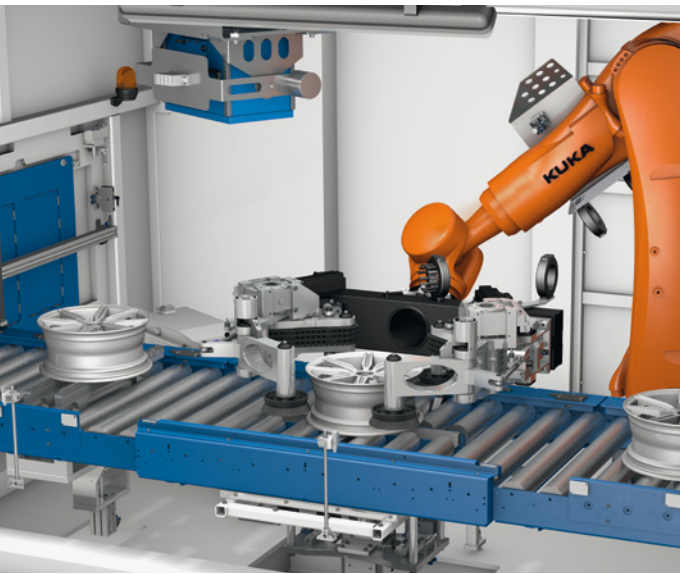


HeiDetect Wheel Robot



ROBOTIC X-RAY
TESTING FOR CAST
ALUMINIUM WHEELS

HeiDetect Wheel Robot



Impressive, high-performing systems engineering

The HeiDetect Wheel Robot wheel test facility achieves an extremely high throughput thanks to its industrial robot and is therefore ideal for inline operation in the mass production of cast aluminium wheels. Several areas of the wheel can be tested in one testing position by using a larger detector. This benefit means that the number of handling steps can be reduced, thus shortening the test time for each wheel.

Latest X-ray technology for maximum reliability

HeiDetect Wheel Robot is a fully automatic wheel test facility and, through the integration of the ISAR image evaluation software and the XEye detector developed by the Fraunhofer Institute for Integrated Circuits, allows almost pseudo error-free evaluation with stable image quality.

The efficient processing of images allows casting errors such as shrink holes, pores, cavities and foreign matter in the range of 3% of the radiographed wall thickness to be detected and classified. Large areas of oxide can be detected from a size of 1% of the wall thickness.

Further benefits are offered by the automatic wheel detection and by incorporating barcodes. This enables the alignment of the wheels to be specified and monitor the test results.

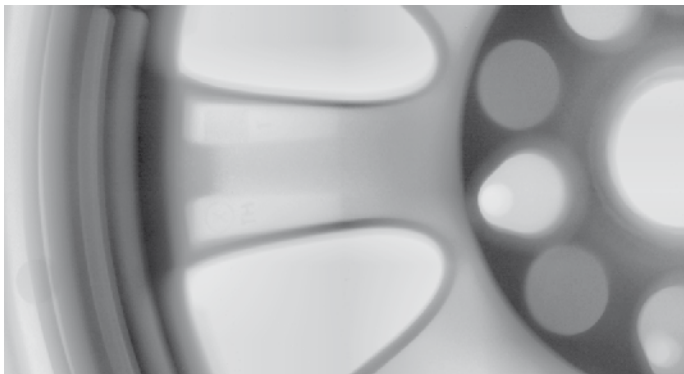
The HeiDetect Wheel Robot wheel test facility from HEITEC meets the latest requirements for the group of wheels and handles wheel sizes from 13" to 24".

The ISAR evaluation software offers an ergonomic Windows-based graphic user interface via which the test parameters can be set specifically for customers. Key data can be transmitted via an existing operating data acquisition system.

Specially prepared test results are transmitted to production in real-time, thereby enabling trend analysis and continuous product quality optimization, aiming to minimize scrapping.

Your advantages at a glance

- › Few test positions due to large detector area (400 x 200 mm)
- › Permanent, stable image quality due to a degradation-free detector
- › Spokes and hub can be captured with a single image
- › No distortion and brightness variation, no reparametrization necessary
- › Almost pseudo error-free detection thanks to state-of-the-art Fraunhofer ISAR image processing
- › New wheel types can be set up within a few minutes during the test operation.
- › Offline remote parametrization during the operation
- › A single test program for multiple systems due to special machine calibration
- › Additional degree of freedom when positioning the wheels by using a 6-axis robot
- › Simple maintenance of the gripper thanks to access from outside the system
- › Use of a standard industrial robot for test piece handling



X-ray of a wheel, recorded by the XEye detector from the Fraunhofer IIS.

Reliable and efficient systems engineering

The small installation space and full enclosure mean that incorporation into the production process is possible, even in extreme conditions in mass production. Further functions such as lasing and labelling can also be incorporated without any problems. As the detector from the Fraunhofer Institute for Integrated Circuits shows an extremely low rate of degradation, a replacement will not be required for at least 10 years or so.

Technical data

Test system		Detector*	
Length	3,840 mm	Type	XEye 4020
Width	2,830 mm	Active surface	400 x 200 mm
Height	2,660 mm	Pixel size	100 - 400 µm
Weight	12.75 t	X-ray tube**	
Max. workpiece weight	40 kg (optional: 50 kg)	Manufacturer	COMET
Wheel diameter	350 - 700 mm	Tube voltage	160 kV
Max. wheel width	385 mm	Tube power	600 W / 1,000 W
Fully automatic data evaluation	Fraunhofer ISAR	*Optionally, further detectors (also various sizes) are possible	
Ambient temperature	up to 50 °C	**Other tubes optionally available	



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