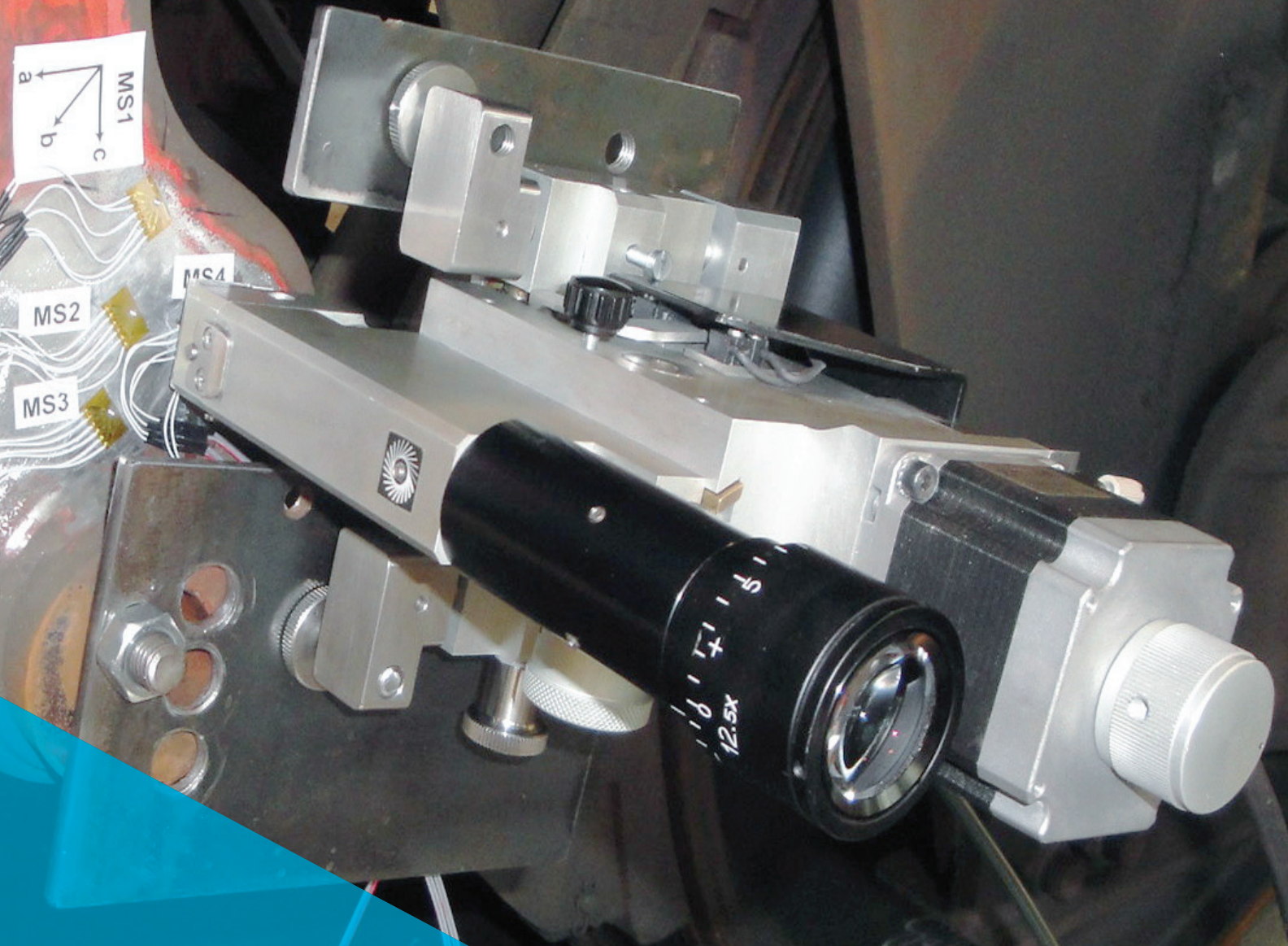


Residual stress measurements



Residual stress measurements
by the hole-drilling strain-gage
method in compliance with the
ASTM E837-20
nis.siempelkamp.com

Intelligent engineering
for future generation



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Method

In the hole drilling method, the residual stress state at the component surface is partially resolved by inserting a blind hole in the center of a borehole rosette. The strain changes that occur as a result of material relaxation are determined by means of strain gauge rosettes. This is used to calculate the principal normal stresses and their directions. Incremental drilling is used to evaluate the residual stress distribution in depth. Various evaluation methods are available, such as standard ASTM E837, integral method, Kockelmann method (MPA Stuttgart).

Technique

Drilling unit with microscope attachment from SINT Technology® allows automatic, PC-controlled measuring process with high accuracy

Measuring chain consisting of control system, measuring amplifier and laptop with digital signal processing

Online visualization of strain as a function of drilling depth

Borehole rosettes with six HBM® grids guarantee high measurement accuracy

Portable and fast measurement technology

Can be used anywhere due to compact design

Application

Measurement of residual stresses in cast iron components

Comparative evaluation of residual stress measurements with results of numerical simulation

Design of wall thicknesses and component contours during the engineering process to suit the stresses involved

Optimization of process parameters during casting production and heat treatment

Residual stress analyses on welded seams, press components, forgings, rolled products, pipes, fittings, vehicle axles, wheelset shafts etc.

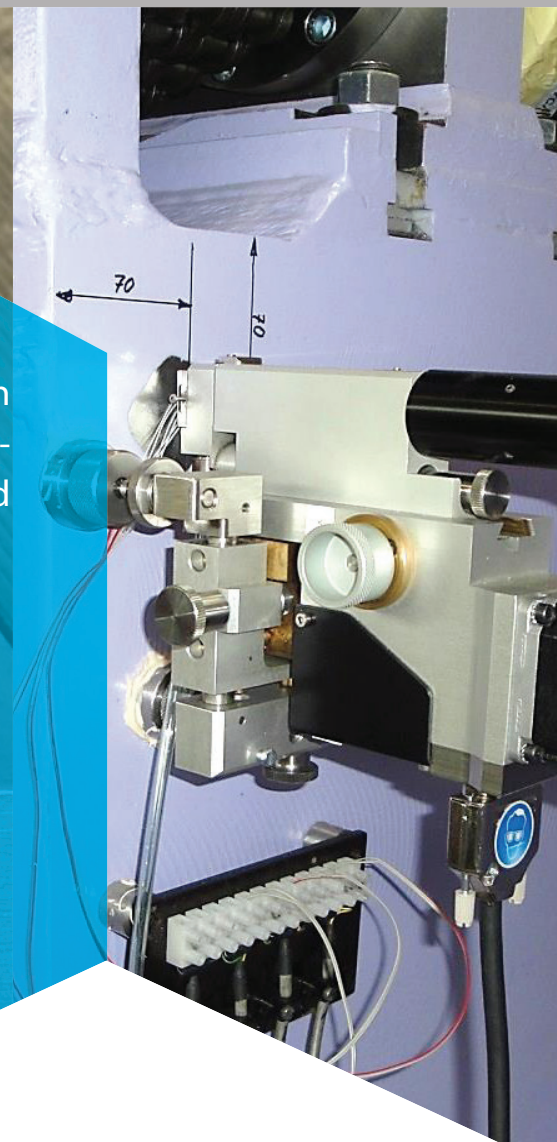


Do you have any questions?
We have the answers

We offer you our expertise in measuring residual stresses on your components. We have years of experience in both measuring and evaluating residual stresses. We have compiled more information about our services for you here:



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