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RSIS 2.0

Roll Surface Inspection System

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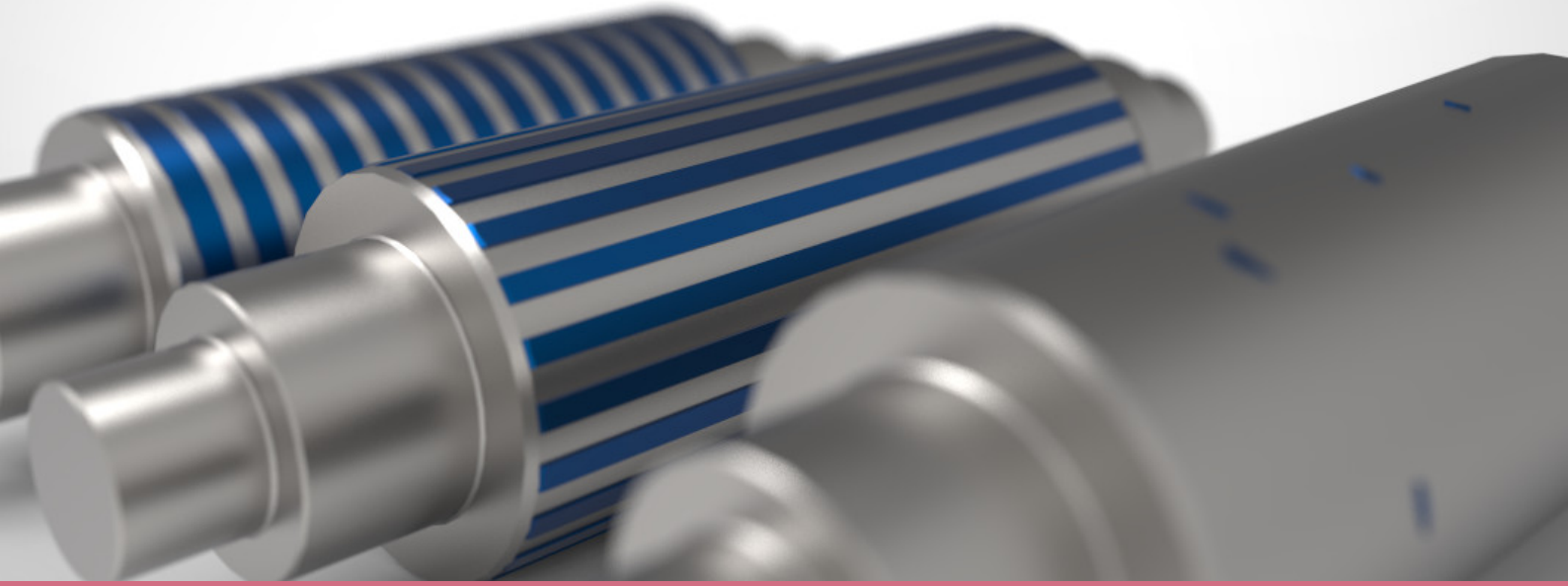

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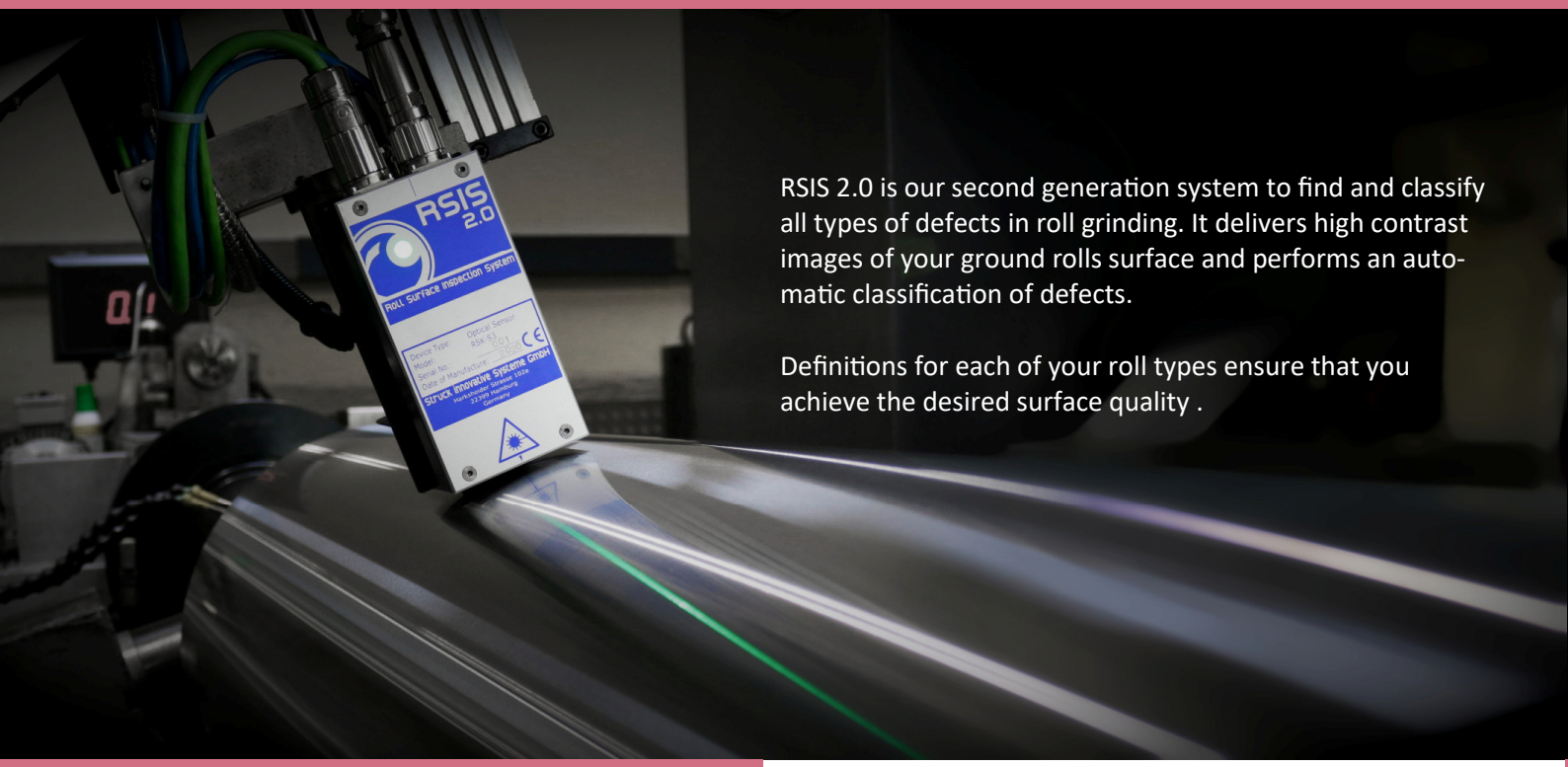


RSIS 2.0 is our second generation system to find and classify all types of defects in roll grinding. It delivers high contrast images of your ground rolls surface and performs an automatic classification of defects.

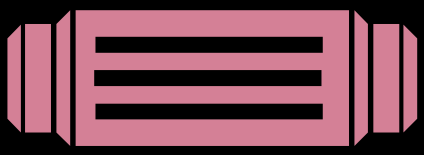
Definitions for each of your roll types ensure that you achieve the desired surface quality .

Field of Application

The typical application is to inspect the cleaned surface after grinding a Roll. You receive reproducible, archievable evaluations of the surface quality. A high-contrast image of the surface supports the operator in his work and helps to optimize the process.

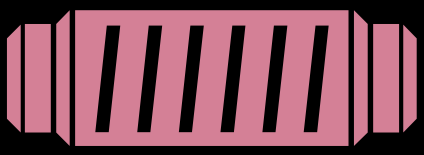
Although RSIS 2.0 was developed for ground steel rolls, it can also be used to evaluate EDT rolls, high glance rolls and coated rolls.

- Steel Cold Rolling Work Rolls
- Skin Pass Work Rolls
- Stainless Steel Z-Mill Work Rolls
- Aluminium Rolling Work Rolls
- Texturized Work Rolls
- Backup Rolls
- ...



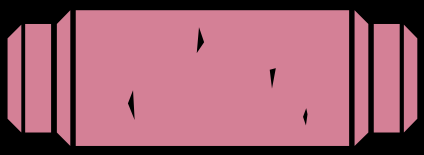
Chatter Marks

Chatter marks are widespread and they occur in a wide range of variations.



Feed Lines

Often patterning of any kind is a criterion for customers to reject the roll or the rolled material.



Single Defects

From small scratches on a polished surface, over commas on a ground roll, to blank and dark spots.

Non-Contact Optical Inspection

Roll Scan Workflow

After machining the Sensor Head is positioned at the beginning of the roll. It is placed at a distance of 3mm from the cleaned surface.
The roll rotates and the sensor head calibrates itself.

The sensor head is now guided along the rotating roll and the system scans the surface with a fine laser. A high-resolution, high-contrast image of the entire surface is captured and analysed for defects.

The laser has less than 1mW, therefore minor optical safety precautions are necessary.

Roll Size

Whether it is a small 60mm diameter roll or a large backup roll does not matter. Up to 15m² of surface can be covered with standard resolution.

A typical work roll with 400mm diameter and 2000m length is inspected for just under 6 minutes.

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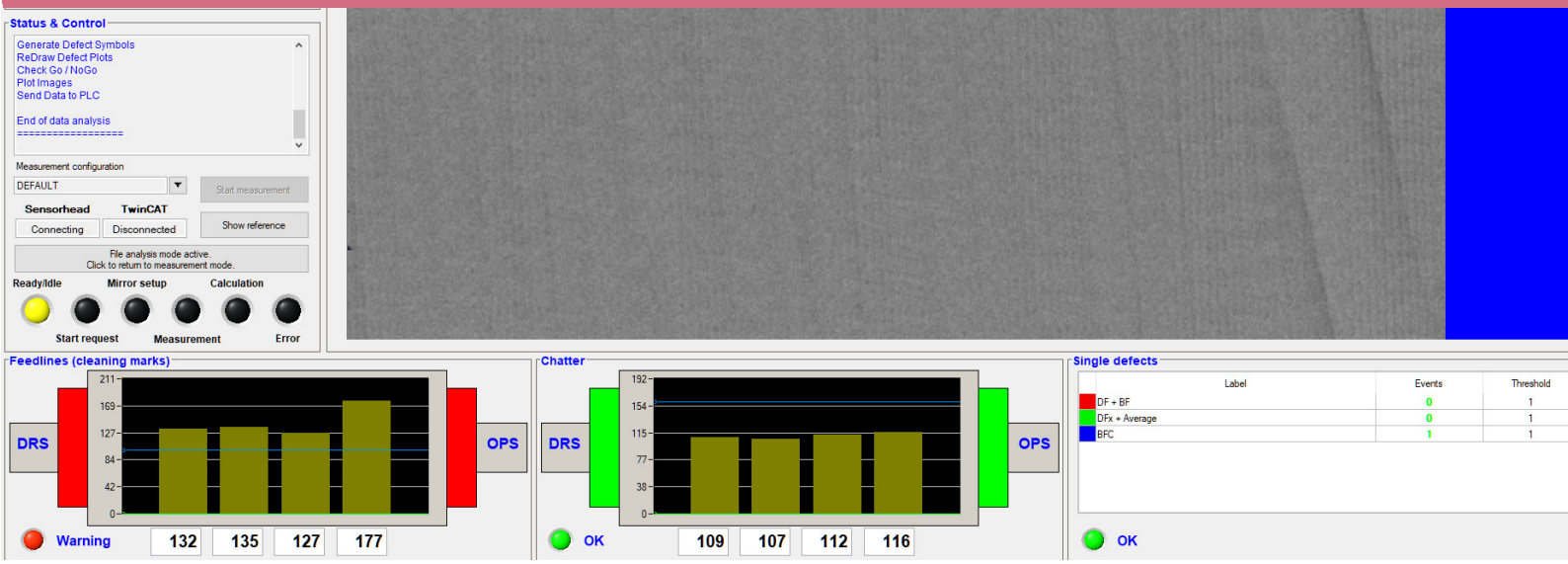
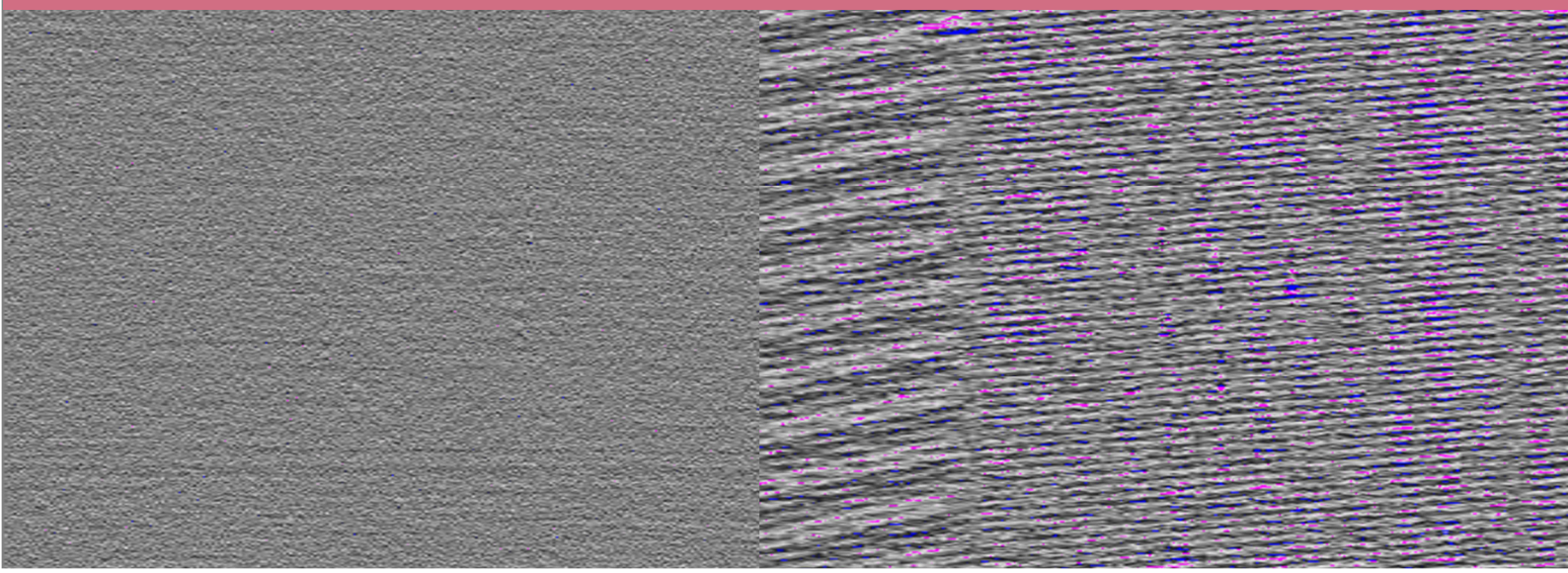
Summary



The Summary view shows the most important information. The operator can see at a glance whether the roller is in perfect condition or not.

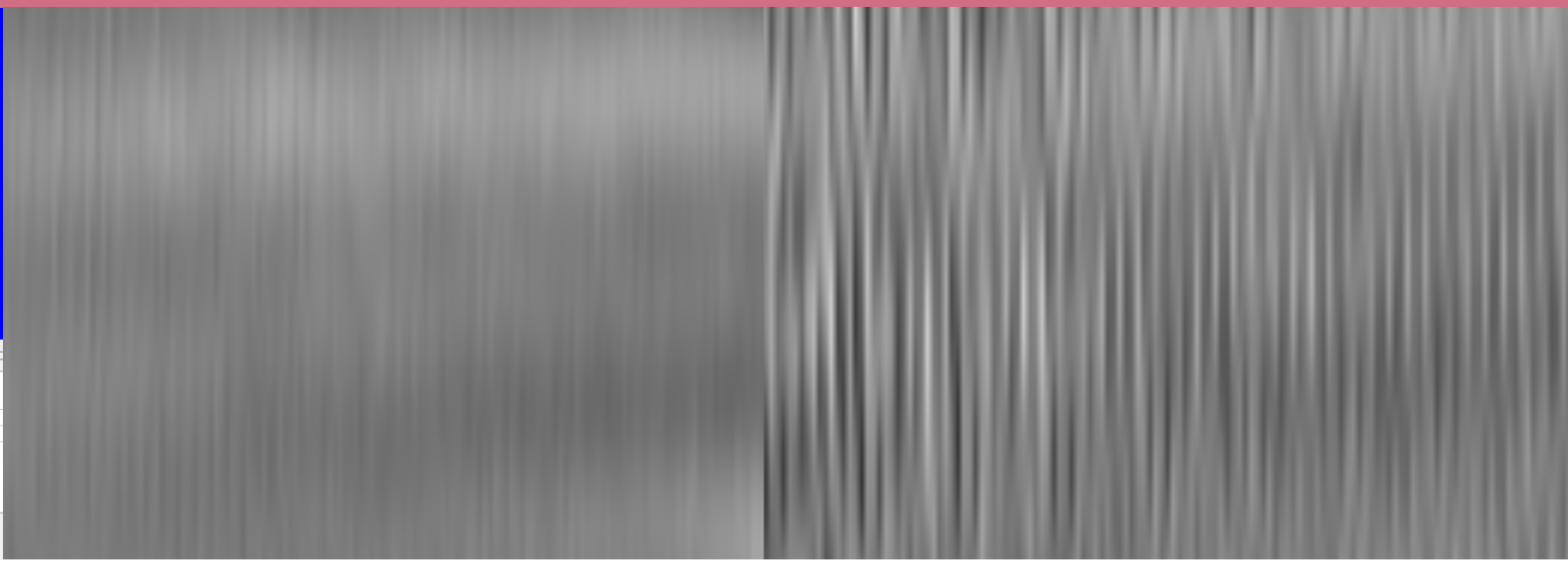
Individual pages for each error type provide more detailed information.

Chatter Marks



The left figure shows a roll without significant chatter marks. The right figure shows short wavelength chatter marks. In the left area there is a long wavelength chatter frequency below the short wavelength chatter mark.

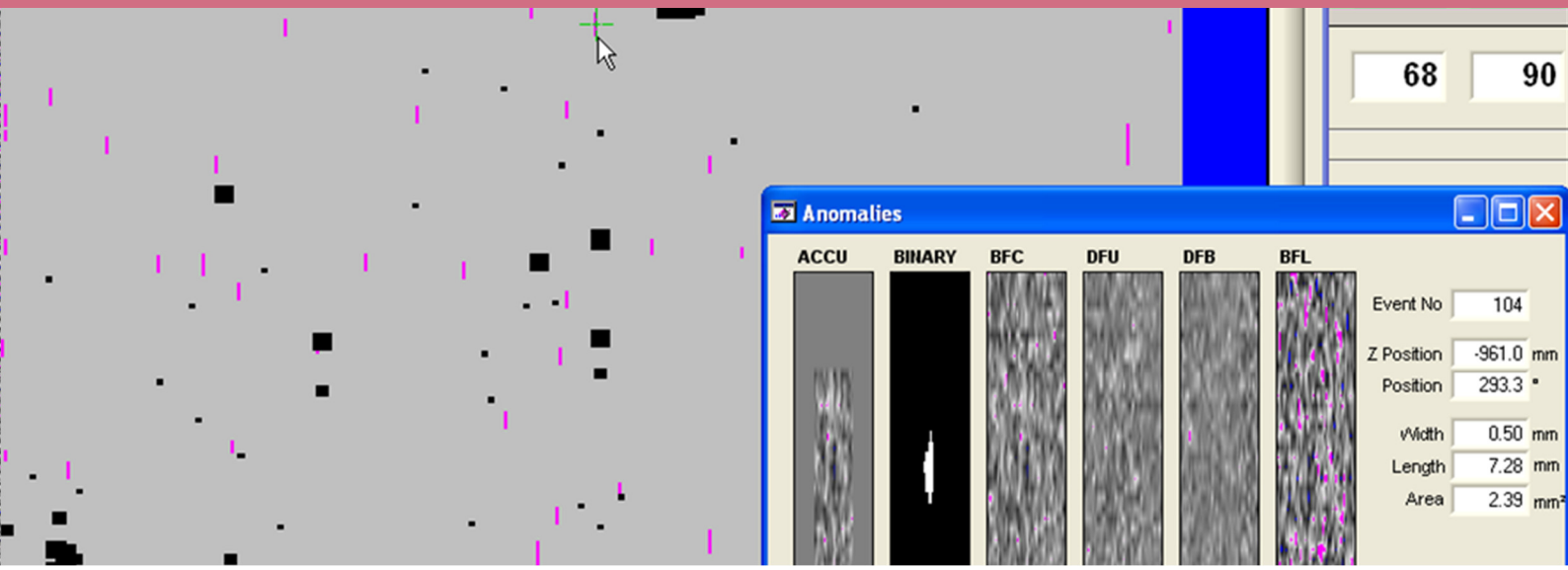
Feed Marks



On the left side we see an almost perfect surface. Slight feed structures are visible.

The right side shows strong feed marks.

Single Defects



Different classes of Single Defects will be detected and classified through a flexible set of filters.

The defect list with coordinates can be used to locate the defects on the roll.

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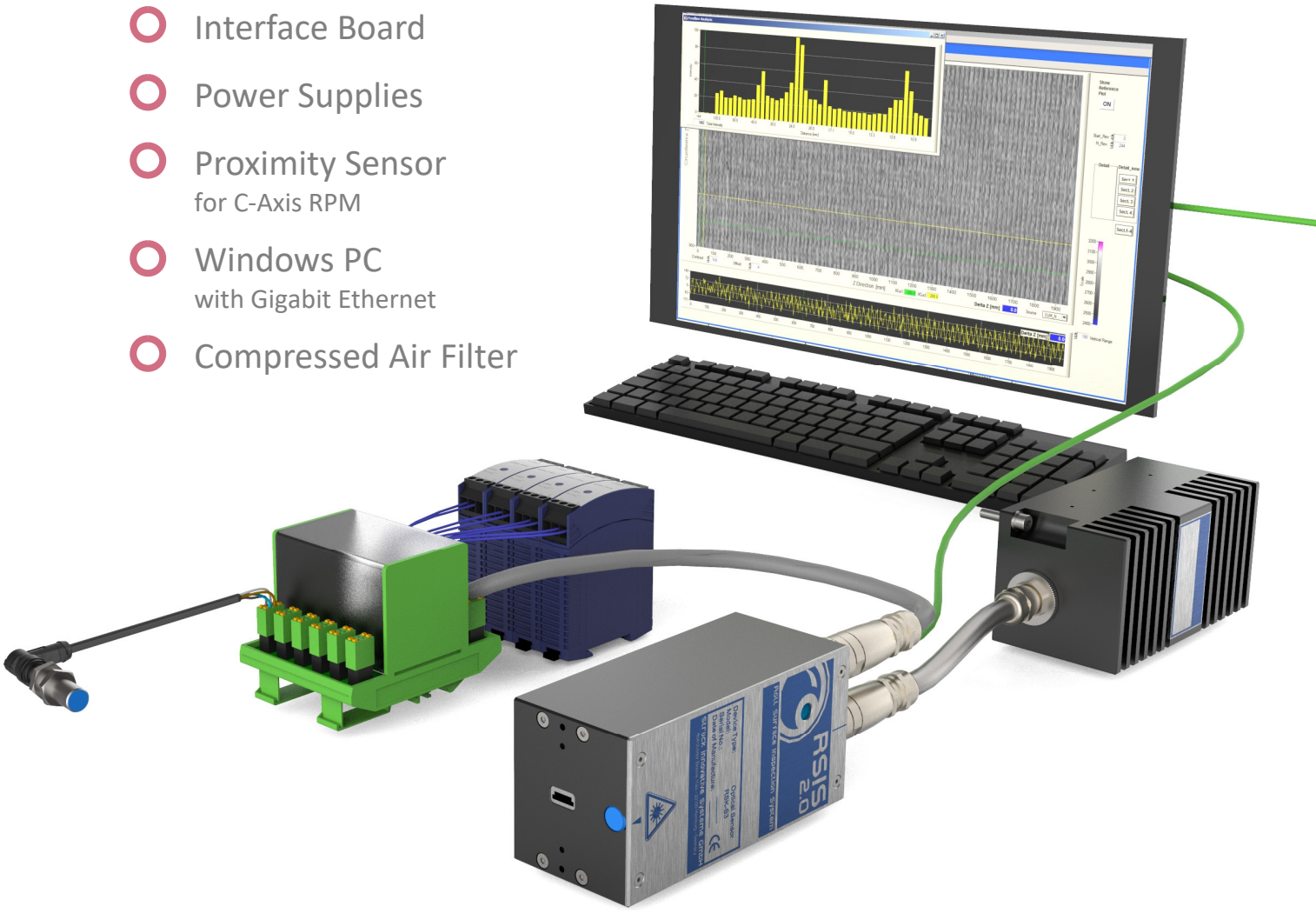
What you need

The basic system consists of a small number of components.

- Sensor Head
- Scanner Driver
- Interface Board
- Power Supplies
- Proximity Sensor
  for C-Axis RPM
- Windows PC
  with Gigabit Ethernet
- Compressed Air Filter



What else is added depends on how you want to integrate the system into your machine.

Fully Integrated

Permanently installed systems are used for seamless monitoring of production.
For automated operation, you need a probe unit that moves the sensor head precisely into its working position for measuring and retracts it into a parking position during machining.
The PLC of the machine controls the RSIS and the results of the measurement are returned.

RSIS 2.0 is available as integrated system with new grinders from the HerkulesGroup.
Retrofits for grinders older than 5 years, standalone systems or portable systems (see below) may be available through Struck on request and after coordination with the HerkulesGroup.

Portable

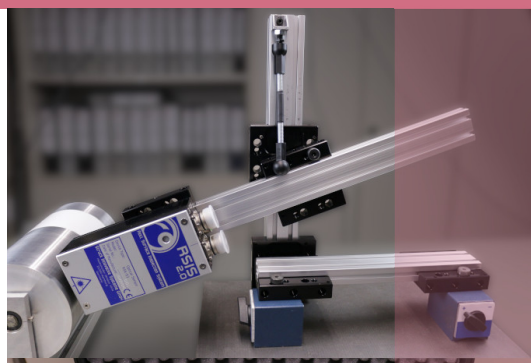
Portable systems are primarily used to optimize the machining processes or when measurements need to be taken at a specific location.

The sensor head is placed manually for the measurement and the system is controlled by hand.

We offer a portable system in a trolley that can be used as airline luggage.
Everything you need to perform measurements in a temporary installation is included.

All that is missing is a Windows PC with Gigabit Ethernet port for running the RSIS Software and a place for mounting at the machine, that will move along the z-axis with constant feed.

Interested? Contact us at info@struck.de



In times when quality of products becomes more and more important for the success on the market,
it is of great advantage to give operators a tool that supports them to always do a perfect job.
Results of an automated machine inspection of the surface quality are easy to archive and provide certainty.

Contact

Struck Innovative Systeme GmbH
Harksheider Str. 102A
22399 Hamburg
Germany

www.struck.de
info@struck.de
+49 40 6087305 0

QUALITY SYSTEM CERTIFICATION
DNV
ISO 9001