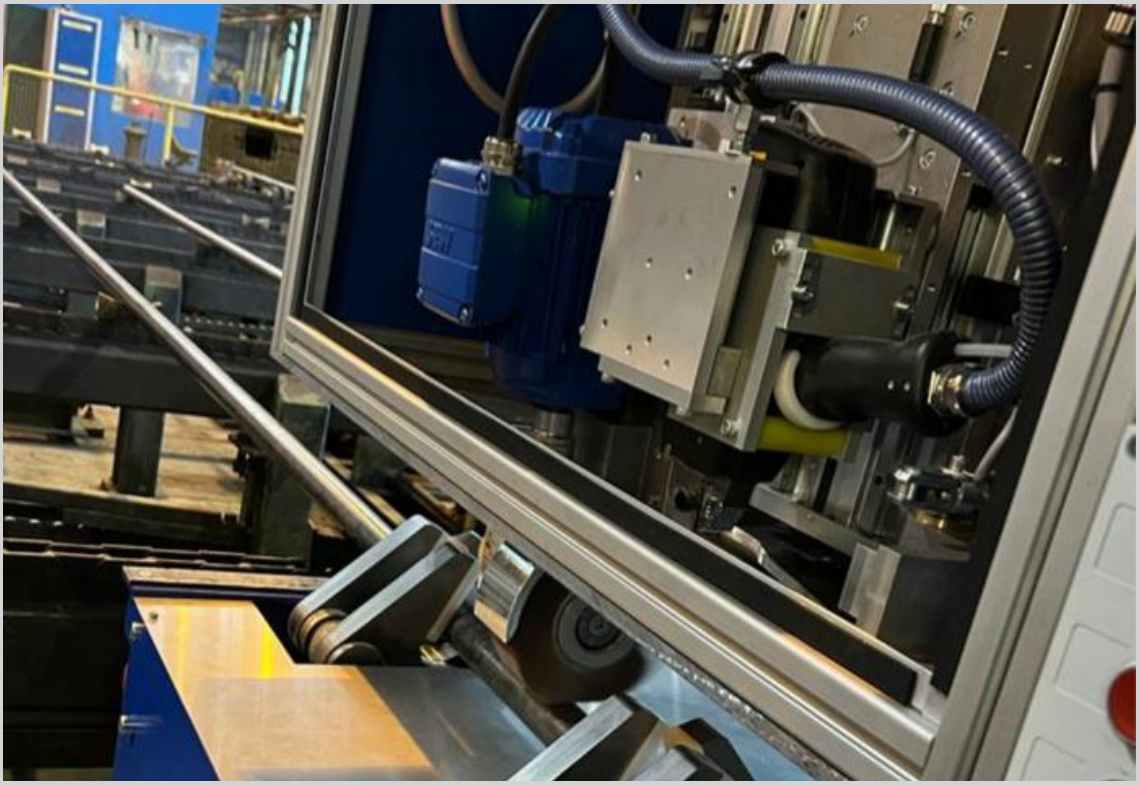


WHY AUTOMATE SPECTROTEST

PMI-OES ROBOTIC (AUTOMATED MOBILE OES)

WHEN YOU CAN'T AFFORD METAL MISTAKES WITHIN ON-THE-SPOT SORTING, IDENTIFICATION, VERIFICATION AND ANALYSIS OF METAL ALLOYS

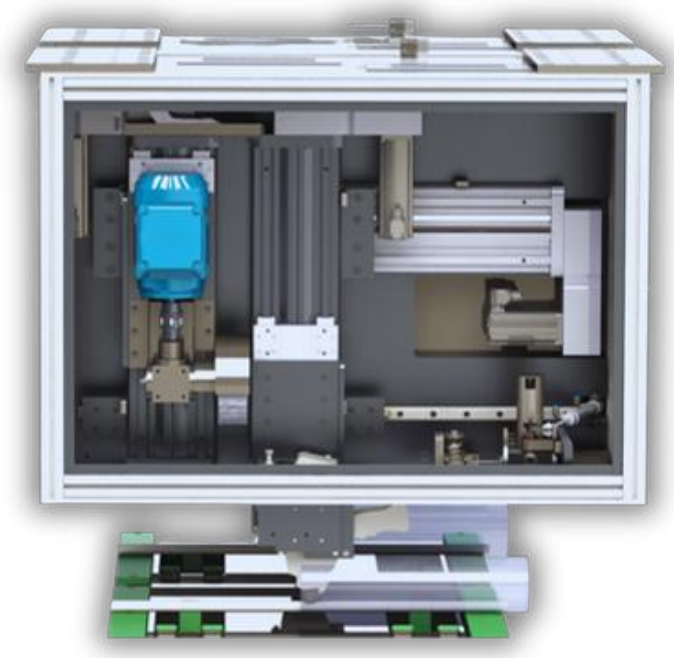
WHY AUTOMATE SPECTROTEST?

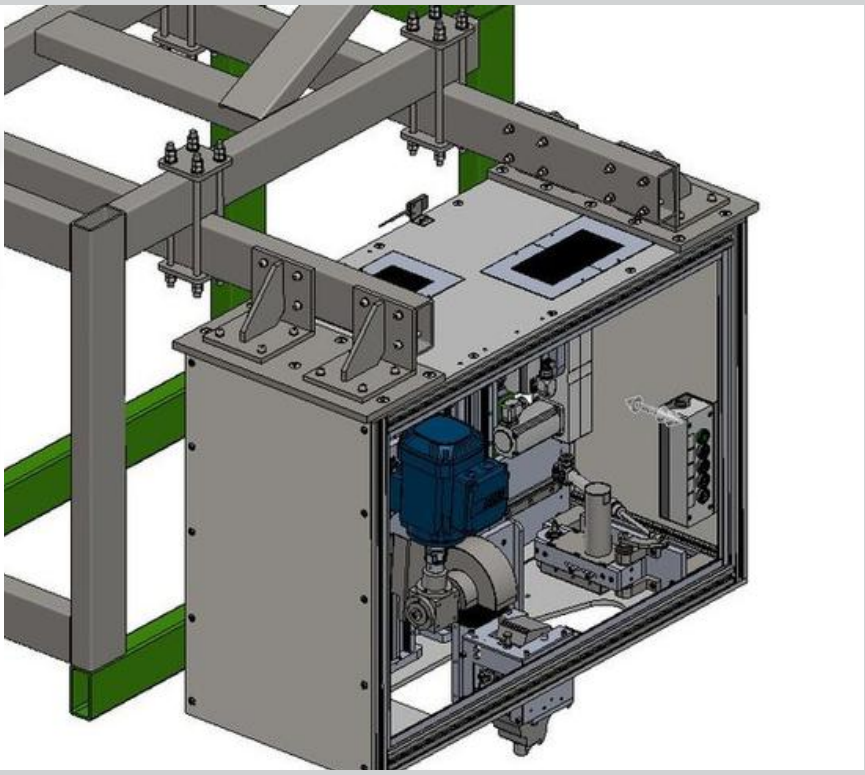
n the area of material specifications, the media has repeatedly reported mismeasurements, mistakes and scandals in various industries. It is becoming increasingly clear that companies cannot afford to hand over responsibility for material verification to external providers. Verifying the metallic properties of incoming and outgoing components has become a critical quality control task for companies worldwide. Often testing is carried out manually using partial random samples of parts and assemblies. However, partial testing alone is too risky and often insufficient. Accurate sorting, identification and verification of metals is crucial to meet the chemical composition requirements of customers or industries. For companies operating in the fields of metal production, processing, recycling or as service providers in particular, an error such as alloy mix-up on the shipping dock or during production can result in considerable costs for rework - and in the worst case, even lead to a loss of image and orders.

TARGET OF AUTOMATING THE SPECTROTEST

Unlike a manual PMI, our PMI-OES Robotic can be integrated into the entire production process - from the quality inspection of incoming material to process control during the production of alloys and their final inspection before dispatch - without having to stop production. Full automation makes it possible to carry out material tests even in bulky or difficult-to-access areas. This ensures over several work shifts:

- that the materials you supply comply with the correct standards and specifications
- that the chemical composition of the metal parts has the right percentage of key elements and that the corrosion resistance meets customer requirements





PRODUCT PROCESSING AND OVERVIEW

PMI-OES ROBOTIC

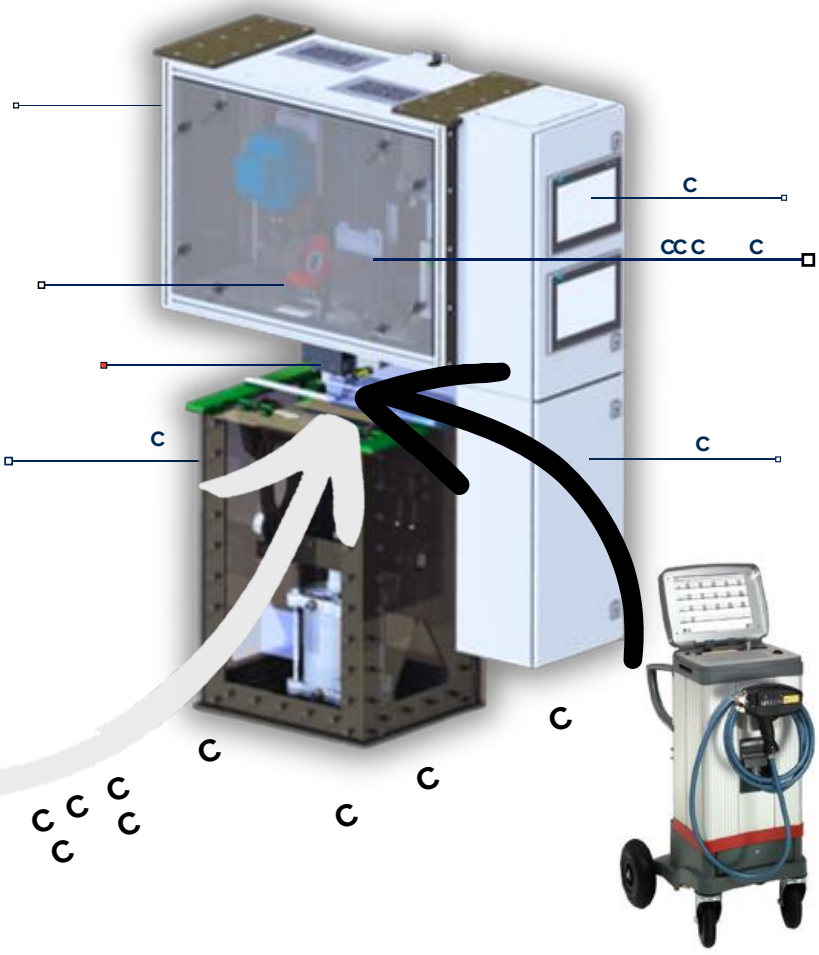
FLEXIBLE IN INSTALLATION AND FAST ANALYTICAL RESULTS

We integrate mobile metal analyzers from leading analysis manufacturers, such as the SPECTROTEST from Spectro Analytical.

PRODUCT PROCESSING

1. Recalibration saves target values of elements
2. Rods/tubes are fed in in the exact position.
3. Material is fixed during the process with clamping unit
4. Scale is removed from the surface.
5. OES-measurement and immediate logging in software
6. Cycle repetition if the target values deviate
7. Automatic electrode cleaning of SPECTROTEST

COMPONENTS OVERVIEW



PMI-OES ROBOTIC (APPLICATION 1)

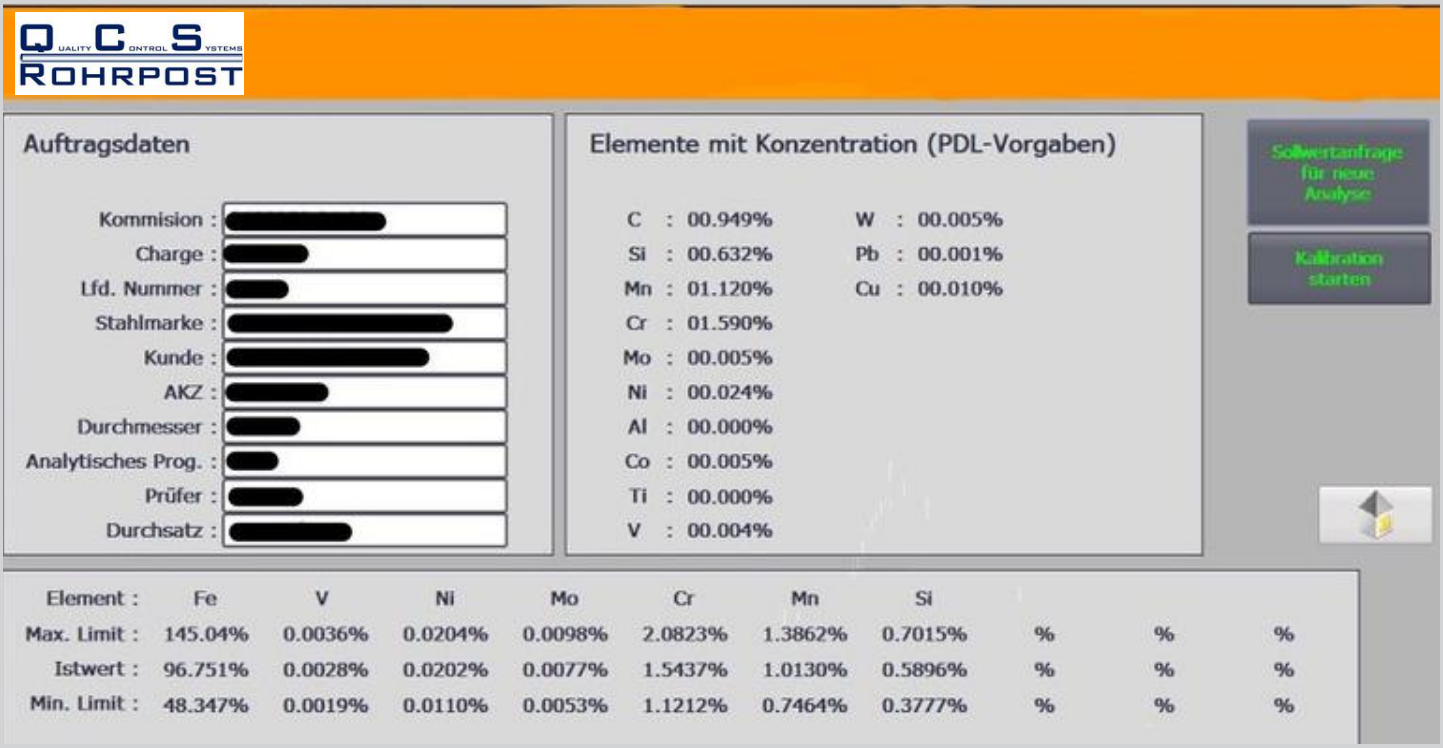
RAPID PASS/FAIL SORTING OR GRADE IDENTIFICATION

To ensure representative stability during the OES analysis, the scale layer of the metal object to be tested is removed with our grinding unit. The spark of SPECTROTEST is then aimed at the material to be tested with millimeter precision using programmed servo axes.
The first measurement appears on the display within a total cycle time of 18 seconds. If the results are not within the specified requirements, a second cycle can be performed.

If the test is carried out in-line, we also offer to fix the metal objects to be tested, such as pipes with different diameters, in our clamping unit. This ensures the grinding accuracy and ultimately the representativeness of the measurement results.

CONTROL SYSTEM

In addition to the positioning and recalibration settings, you can switch to manual operation at any time using the **"BTA Manual"** button. Furthermore, the grinding wheel can be changed with one click and the electrode cleaning of the SPECTROTEST can be automated with a stored time interval. You also get an overview of the statistics of pass and fail materials at any time to increase your efficiency in production and logistics.



APPLICATION 2: DEMANDING GRADE VERIFICATION / ANALYSIS

PMI-OES ROBOTIC (APPLICATION 2)

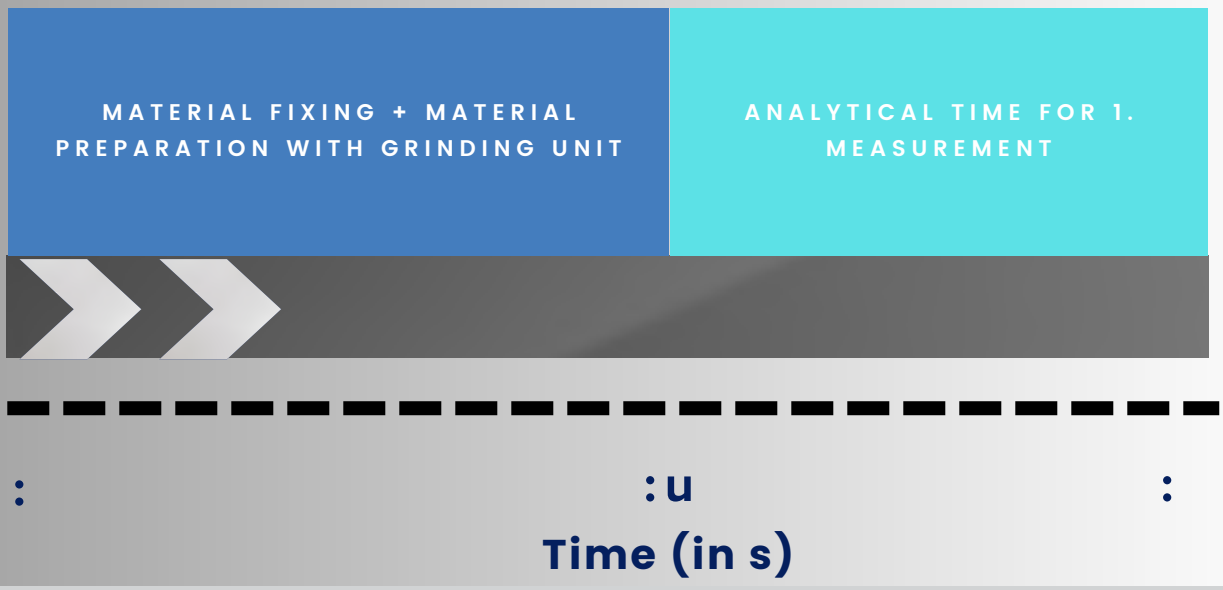
DEMANDING GRADE VERIFICATION OR ANALYSIS

The cycle can be carried out in a similar way to the pass/fail test with or without a grinding unit. The actual chemical composition is measured, including the determination of additional elements such as carbon, phosphorus or sulphur. The PMI-OES Robotic also enables routine analyses for alloys based on iron, aluminum, copper, nickel, cobalt and titanium. All necessary elements for a comprehensive metal analysis during production can be covered and displayed in our software. This includes the measurement of the nitrogen content in ferrous-based alloys such as duplex steels or detection of small amounts of lithium and sodium in aluminum-based materials. This is also used for tin, zinc, lead and magnesium based alloys.

WATCH PROCESSING OF PMI-OES ON VIDEO

TOTAL CYCLE TIME

The total cycle time depends largely on the chemical elements to be determined.



ADVANTAGES: MEASUREMENT RESULTS IN 18 SECONDS

PMI-OES ROBOTIC

AUTOMATIZED MEASUREMENT RESULT IN 18 SECONDS AND OTHER ADVANTAGES

Eliminate interruptions to daily operations that have a direct impact on your sales and increase your efficiency by minimizing time and increasing the frequency of quality checks. Our PMI-OES Robotic provides you with your test result within **approx. 18 seconds.**

YOUR ADVANTAGES:

- ☑ Maximum safety compliance is ensured through automation.
- ☑ Enables you to test materials even in places that are difficult to access.
- ☑ Test positions can be controlled in a targeted manner and increase measurement accuracy.
- ☑ Valuable production time is used efficiently, even over several work shifts.
- ☑ If you need a record of your material testing, certificates of analysis can be generated automatically and transferred within seconds.
- ☑ Our software solutions offer an application interface that is easy to use. You have the option to customize the data fields and user profiles to create workflows that are tailored to your company's requirements.

Prevent costly customer complaints and minimize production scrap or potential product failure during manufacturing. Ensure 100% that your products are of the right alloy quality and meet your customer requirements across multiple shifts. Prevent risk of injury to employees who often have to spend several hours in bulky and harsh environmental conditions during manual PMI. Automated and timely detection to avoid repetitive errors.