THERMOPROFIL**SCANNER**
INLINE WELD SEAM MONITORING

WELD QUALITY
YOU CAN MEASURE

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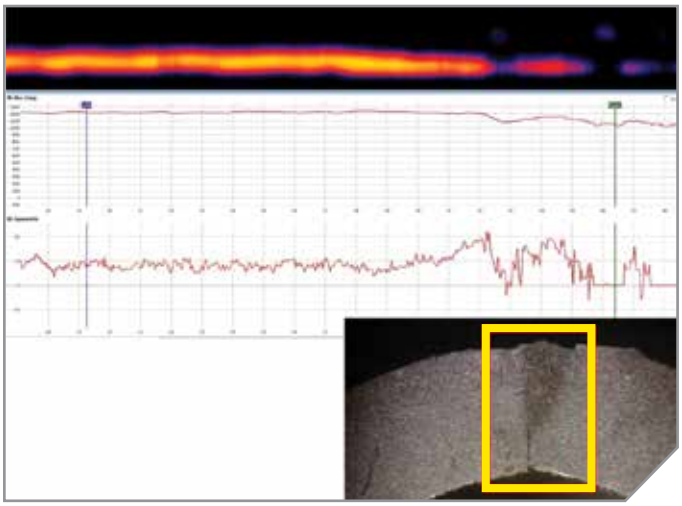
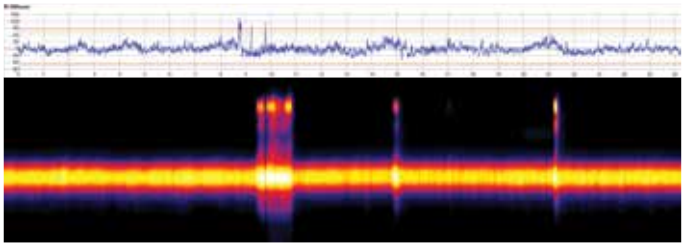
Fault Detection, Documentation, Monitoring

The ThermoProfilScanner (TPS) is a patented infrared line camera which uses passive thermography to perform volumetric non-destructive testing of the complete weld seam.



Asymmetric penetration: detected in the thermal field.

ThermoProfilScanner in a laser mill



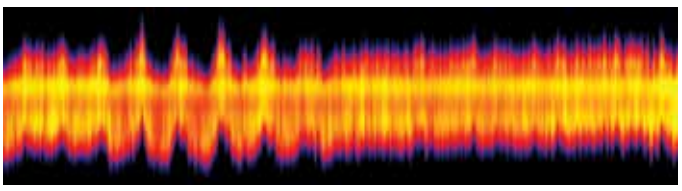
CO_2 - laser welding with plasma disturbances: detected in the thermal field.

- **Incomplete penetration**
- **Asymmetrical penetration**
- **Misalignment problems**
- **Holes**
- **Porosity**
- **Plasma disturbances**

DETECTS

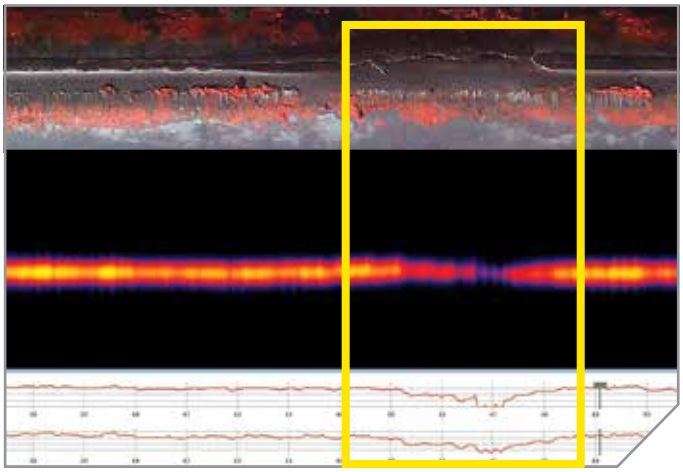
CO_2-Laser welding (off-axis)

GUI during welding with automated seam evaluation.



CO_2 - laser welding with disturbances of the process gas detected in the thermal field.

ERW / HFI WELDING APPLICATIONS



Cold welds detected in the thermal field.

ThermoProfilScanner behind the welding point

Detect Cold Welds: Where conventional/common Eddy-Current systems fail, the TPS shines. **The utilisation of passive thermography enables the TPS system to detect critical cold welds in ERW/HFI mills.** Austrian tube and pipe manufacturers therefore established the standard **ÖNORM M 10893-13 2018-11-01.**

Application in ERW welding

- Seam monitoring for **reproducible quality**
- **Automatic marking** of faulty parts
- **Visualisation** of the welding process
- Reducing setup time
- Documentation and traceability of NDT results

- **Cold welds**
- **Roll pressure**
- **Edge offset**
- **Power drops**
- **Damaged coil edges**

DETECTS

- **100% monitoring of weld seam**
- **Scrap reducing by real-time monitoring**
- **Reliable seam quality**

Different control cabinets for your specific needs

A LOOK INTO **THE WELDING SEAM**

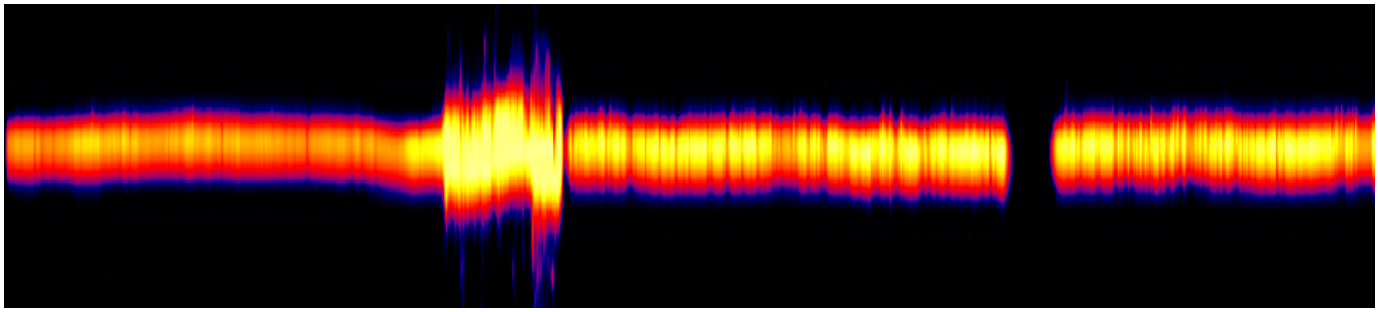
Key Features: ThermoProfilScanner

- **Volumetric non-destructive testing** of the weld seam based on **thermography**
- Measurement of the thermal field and calculation of seam parameters such as temperature, width and symmetry in real-time
- **Automatic evaluation, marking and sorting of faulty tubes and pipes**
  - No additional time/work is needed since NDT is performed directly during the welding process
  - Reduces the need for destructive testing as process shifts are detected
- **Inline testing** gives instant feedback for engineers and operators to:
  - **Detect** faults, deviation and disturbances of the welding process and mill
  - **React** to problems as soon as they occur
  - **Reduce** setup times
  - **Optimise** the welding process
- **Designed to withstand harsh welding environments:**
  - **Resistant** against smoke, heat, vapour, shocks and spatters
  - **Low maintenance** construction

Application Possibilities

- **Endless tube and pipe mills**
- **Processes:** TIG, PLASMA, LASER and Electric-Resistance-Welding / High-Frequency-Induction-Welding
- **Wall thicknesses:** 0.05 to 25 mm
- **Welding speeds:** up to 180 m/min
- **Materials:** steel, stainless-steel, copper, titanium and other alloys with a melting point above 900°C
- **Application fields:**
  - Automotive supply
  - Construction and engineering tubes and pipes
  - Medical equipment
  - Energy industry
  - Aerospace

TPS – improving Tube & Pipe Mills worldwide since 2007.



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GLOBALLY CERTIFIED MANAGEMENT SYSTEMS

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