Ensuring Process Stability through Efficient Application Technology

10th April 2025

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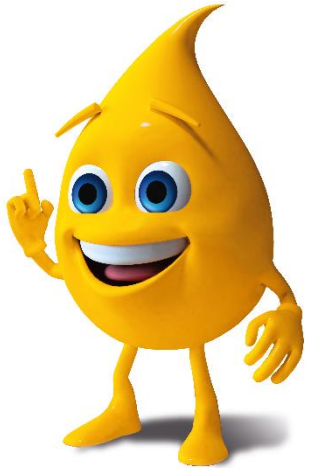
2nd Czech-German Business Meeting: Transforming Industry with Intelligent Production and Energy Solutions

Sustainability & process stability united

Challenges & goals of today and tomorrow

Growing Challenges:

- Geopolitical events
- Resource scarcity
- Globalization
- Climate goals



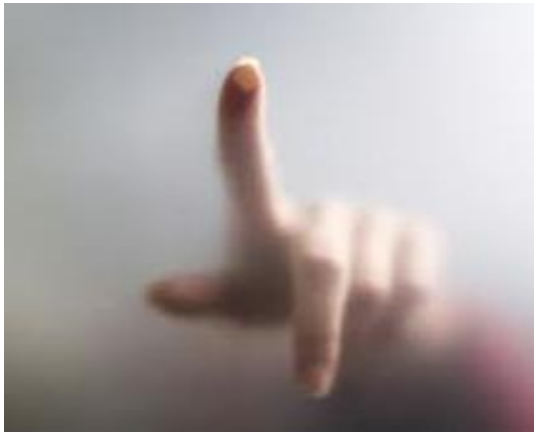
Producing economically:

- Capturing process fluctuations
- Adjusting parameters
- Creating uniform manufacturing conditions
- -Reducing wear & increasing service life

Capture order quantities, **classify** them process-specifically & **optimize** their settings

Methods for capturing consumption quantities

Conventional solutions for oil film determination



„Calibrated finger “

- Visual gloss level inspection
- Manual surface touch
- Offline, cost-effective
- User-dependent, not calibratable

Gravimetry

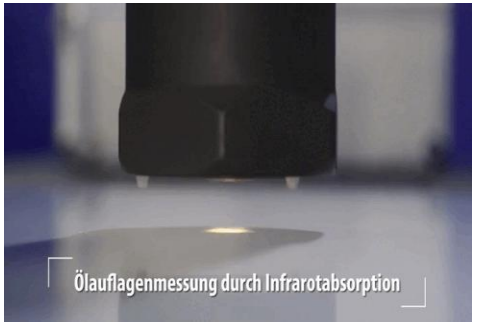
- Weight measurement with precision scale of oiled, cleaned surfaces
- High accuracy of oil quantity
- Offline, sampling required
- No info about spatial distribution

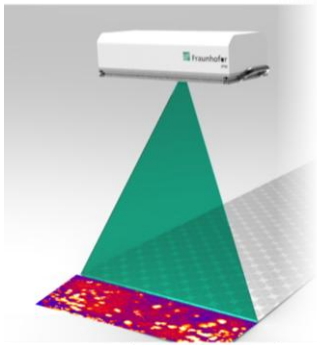
Flow measurement

- Measurement of transported oil volume flow
- Online, no sampling required
- Consideration of distribution & reflection

Other optical measurement methods

Subheadline





Coating thickness gauge:

- Commonly used in the field
- Suitable for checking oiling and correct application quantity
- 0.1 - 5 g/m²
- Single & average measurement

Fluorescence Analysis with F-Scanner:

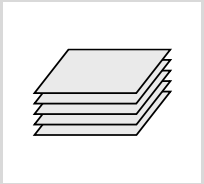
- High-resolution representation of oiling thickness
- Compatible with post-oiling
- From 0.01 g/m²Inline measurement

Fluorescence measurement technology

Practical application

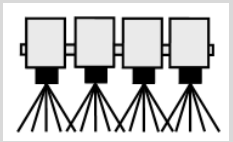
Ordering coils or sheets for the stamping and forming process with pre-oiling from the manufacturer

- Corrosion protection
- Dry lubricant
- Hot melt



No reuse of pre-oiling possible

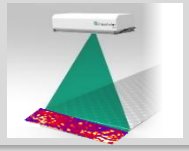
-> Cleaning of the material



Oiling of the material with suitable lubricant

Reuse possible, but
Made difficult by diffuse pre-oiling

➔ Capture of current state through measurement technology

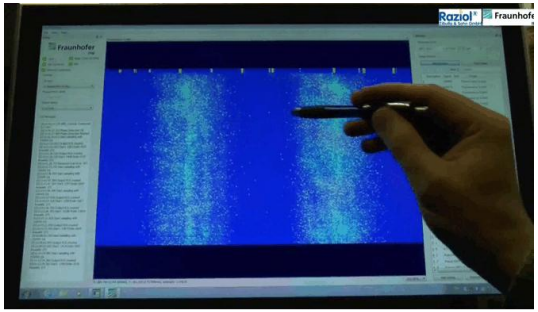


Oiling of the material at the required locations for homogeneous surface wetting

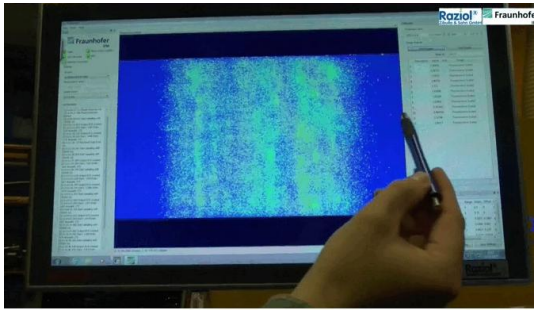
Fluorescence measurement technology

Practical application

Setting the required oiling with the oiling editor



Detection of pre-oiling using fluorescence measurement technology



Adjusting and creating the required oiling depending on the pre-oiling

Dosing and Cleaning Technology in the Press Shop

Oiling system with upstream cleaning brush

Spraying system with upstream cleaning brush and integrated suction for use in the press shop for formed parts with high precision and process stability requirements.

Oiling system with upstream cleaning brush

Entry and exit from the press line for oil-free production and optimal accessibility during maintenance work.

Simplified by automatic coupling of the efficient extraction concept.

Depending on the requirements profile, the extraction can also be integrated directly into the system.

Entry and exit-side wiper blades

In addition to structural drainage channels, this significantly increases the prevention of droplet formation.

Media recirculation

Oiling system with upstream cleaning brush

Enclosed supply unit for reduced maintenance effort and security against unauthorized access.

All important indicators and instruments in view.

Easy monitoring and quick troubleshooting.

A "digital twin" of the system enables user-friendly control and monitoring of the system via a control PC or service handheld device.

Ready for all digitalization requirements using the OPC UA interface.

Oiling system with upstream cleaning brush

Accessibility of the spray nozzles for quick adjustment.

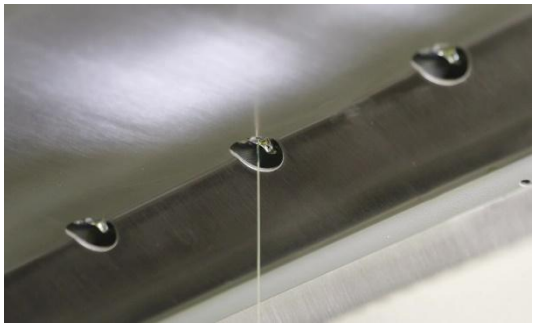
Access to the heart of the spray chamber without the need for tools.

Fast and intuitive removal enables repair and cleaning without long downtimes of the press line.

Determining the optimal oil quantity for the forming process.

Checking and calibrating each individual nozzle.

Quick and easy overview.



Oiling system with upstream cleaning brush

Creating lubrication patterns based on imported .dxf files.

Influencing material flow by partially adjusting the application quantity.

Savings of lubricant in areas of components that do not require oil.

Utilization of QR codes for innovative maintenance.

Enabling quick access to documentation, checklists, and schematics for efficient upkeep.

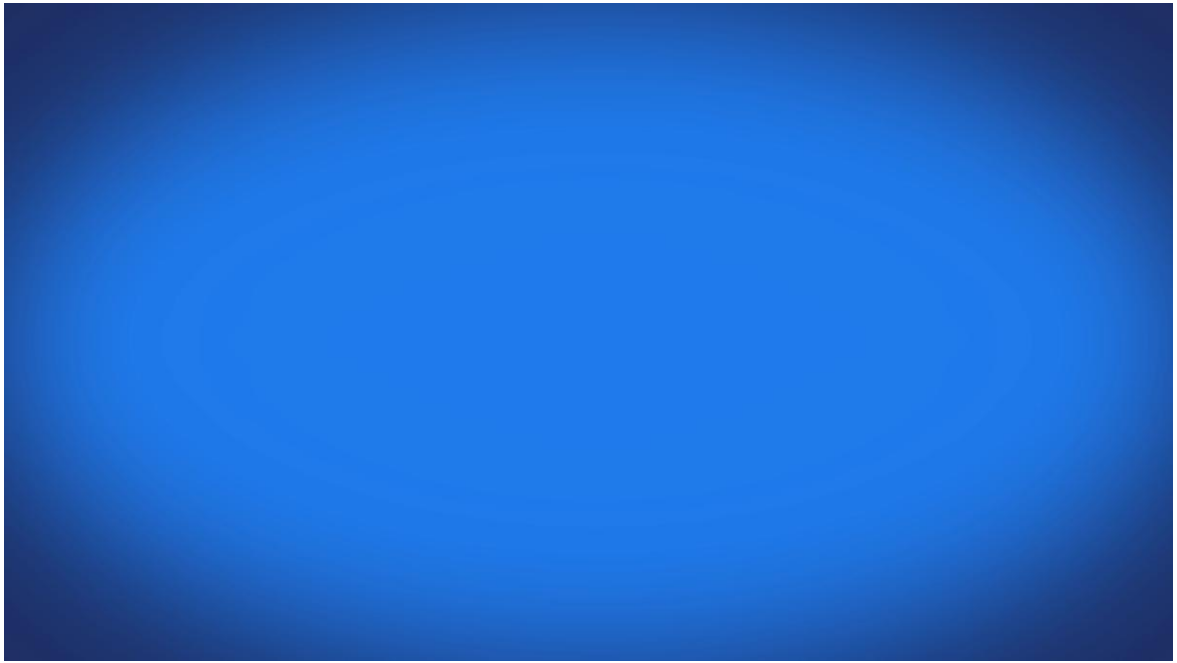
Contribution to sustainable, paperless manufacturing.

Einstein Nozzle – a small quantum leap in spray technology

Quantum leap in nozzle technology with the Einstein Nozzle

Servo controlled nozzle flow

- Patented precision
- Apply very small amount of lubricant at slow progression or transfer speeds just as it can for high quantities, high speed applications
- Independently from the viscosity
- Speeds at 3m/s with freely adjustable settings per nozzle
- Significantly reduced air consumption



Overview of Your Benefits

- Simplified maintenance
- Longer tool lifespans
- Better workpiece quality & reduced scrap
- Reduced lubricant consumption
- Optimal starting point for subsequent processes

Thank you very much for your attention!

Děkuji vám velmi za vaši pozornost!

Vielen Dank für Ihre Aufmerksamkeit!