AUTOMATED ROBOTIC PROCESSES

DETECTION, SANDING UND POLISHING

Efficient and reproducible surface finishing
with Visobot technology

visomax

Efficient surface finishing processes

Precise, secure and automated

Visobot robotic solutions support key tasks in industrial surface finishing, including the detection of paint defects and the processing of marked imperfections.

Defect detection is performed using a line scan camera and specially developed technology lighting, which have been integrated together on the 6-axis robot. This enables defects such as dust inclusions, scratches or paint contamination to be reliably identified.

Polishing untis are available for subsequent processing; these detect marked defects via integrated vision sensors and automatically polsih them out. Functions such as polishing sponge cleaning, automatic polishing sponge change, continuous component cooling and automatic polish supply ensure a stable processing cycle.

Why automated surface finishing?

Visobot Unit - Inspection

Reliable defect detection

The system identifies dust inclusions, scratches and paint defects using a line scan camera and specialised lighting. The robot enables precise contour-based surface scanning, allowing even the smallest defects to be reliably detected.

Integrated defect detection

Detected defects can be marked automatically. Optionally, defects can be sanded directly without the need for a separate work step. This reduces manual intervention and ensures a seamless process.

Visobot Unit - Polish

Flexibility with components & geometrics

The systems are suitable for painted parts, smaller components or free-form surfaces of any kind. Different eometrics can be reliably detected and processed.

Gentle material processing

Continous component cooling protects sensitive painted surfaces during machining. The automatic polishing supply ensures an even and controlled application.

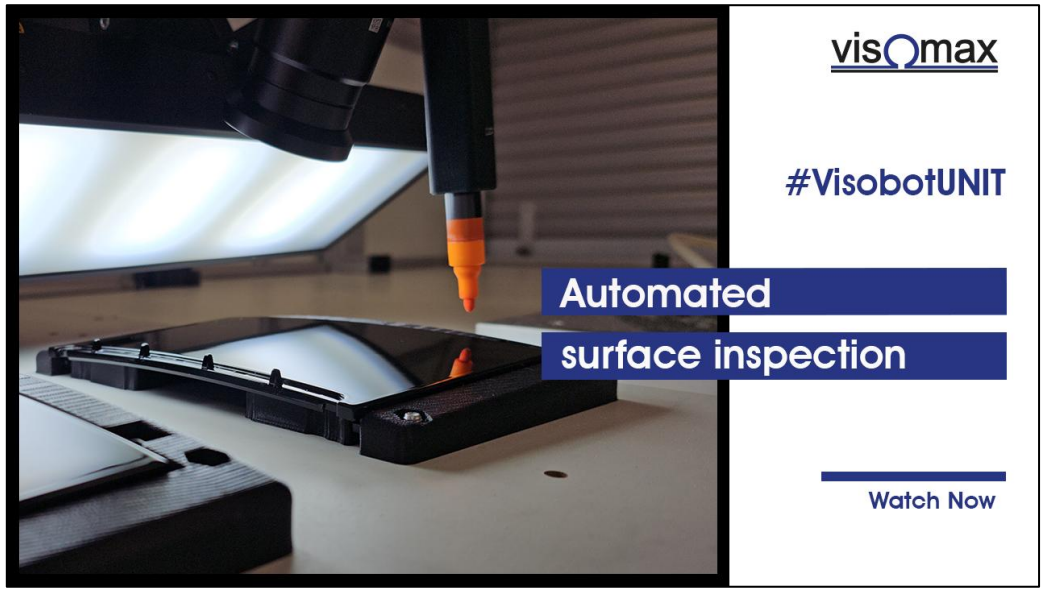
Automated defect detection

Precise detection of surface defects

The Visobot defect detection system is based on a high-resolution line scan camera and a specially developed lighting unit, both mounted on the 6-axis robot. The system captures the surface with precise contouring and identifies defects such as dust inclusions, scratechs or paint contamination. Image processing takes place directly on the controller, without the need for additional external computing power.

Watch the video:

Click to watch:



BENEFITS

- **Reliable detection of surface defects**
  Imaging via an 8K line scan camera with up to 142,800 lines per second
- **Complete surface capture**
  Robot scans free-form surfaces with precise contour tracking and maintains a constant distance from the surface
- **Automated defect response**
  Detected deffect are automatically marked or, optionally, sanded immediately
- **Compact, integrated system architecture**
  Data capture and classification of the smallest defects from 0.33 mm
- **Wide range of applications**
  Suitable for painted parts, components or free-form surfaces of any kind

Automated sanding

Spot and full-surface treatment of painted surfaces

Automated sanding enables both spot treatment of paint defects and full-surface sanding of larger areas. Controlled process parameters such as force, speed and processing time ensure a consistently high-quality results in areas with high surface finish requirements.

BENEFITS

- **Reproducible sanding process**
  The automated process ensures consistent sanding results across all components
- **Uniform sanding pattern**
  Constant parameters and automated movement ensure a uniform sanding pattern
- **Maximum efficiency**
  Automated parameters reduce processing time and increase higher output
- **Controlled process parameters**
  Force, speed and processing time are automatically controlled, ensuring consistently high quality
- **Spot and full-surface sanding**
  Both, localised defects and large areas, can be processed automatically

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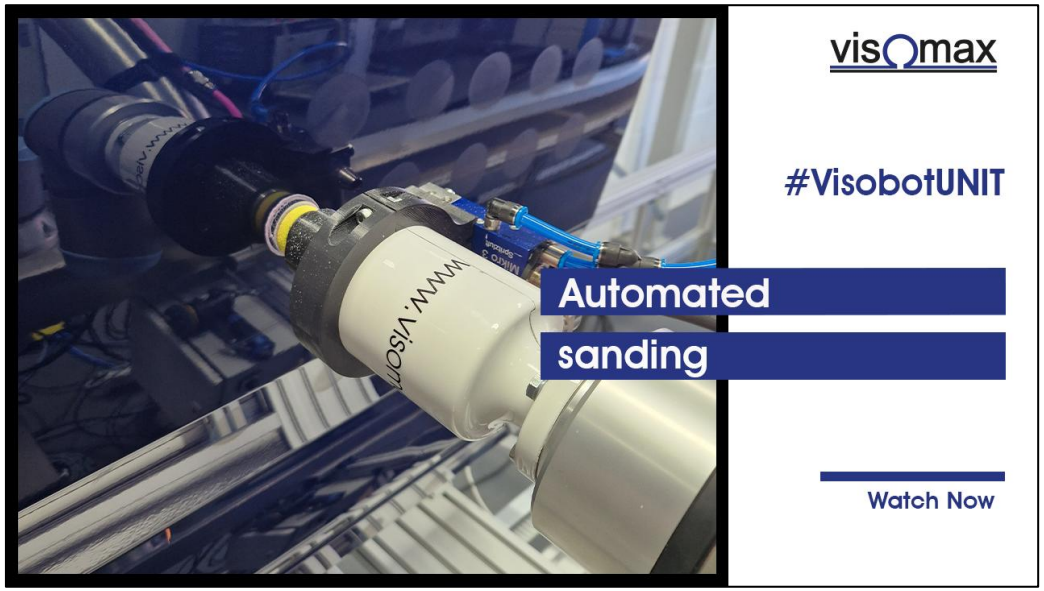


Automated polishing

Automated processing of marked defects

The Visobot Polish (VBU-P) is responsible for removing sanding marks and detects marked defects via an integrated camera system. These are then automatically polished out.

Technical details

- Dimensions: 2550mm x 2255 mm x 1980 mm
- Mobile and flexible in use
- Individually height-adjustable work surface
- Low energy consumption <1 KW/h
- Max. component size: 1400 mm x 500 mm (on the standard cell)
- Customised system design according to customer requirements

Features & functions

- Integrated inspection light
- Configurable process paramteres
- Defect analysis
- Support via remote maintenance
- Simple, intuitive operation of the system
- Low maintenance requirements

Automated Polishing

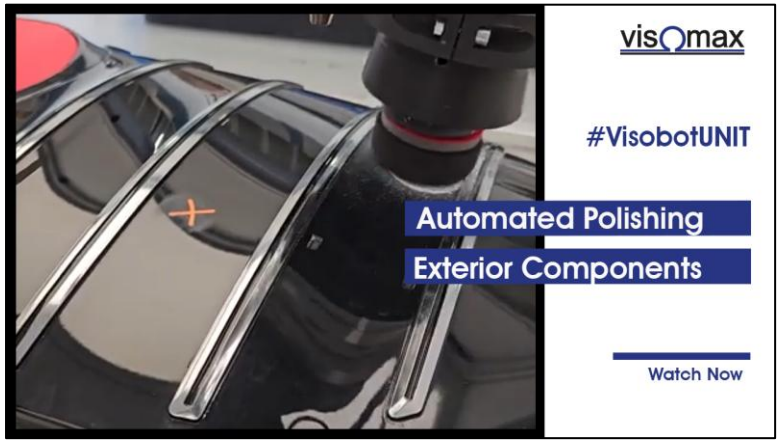
Automated processing of marked defects

Visobot polishing solutions can be used on both large exterior components and delicate interior surfaces.

BENEFITS

- **Automated processing of marked defects**
  Marked defects are detected and polished out
- **Automated sponge cleaning & sponge replacement**
  The Pad is cleaned between cycles, automatically stripped and reloaded.
- **Gentle processing thanks to cooling & precise polishing supply**
  Continuous component cooling and precise polishing agent application enable gentle paintwork processing
- **Separat units for different requirements**
  VBU-P enables the removal of sanding marks with a single-step polishing process; VBU-HG has been specially developed for extreme high-gloss surface
- **Predictable, transparent process structure**
  Stable, predictable and transparend process structure

Click to watch:



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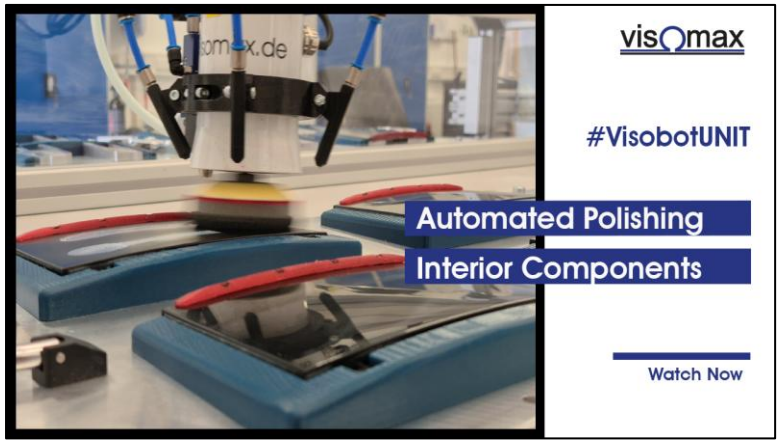
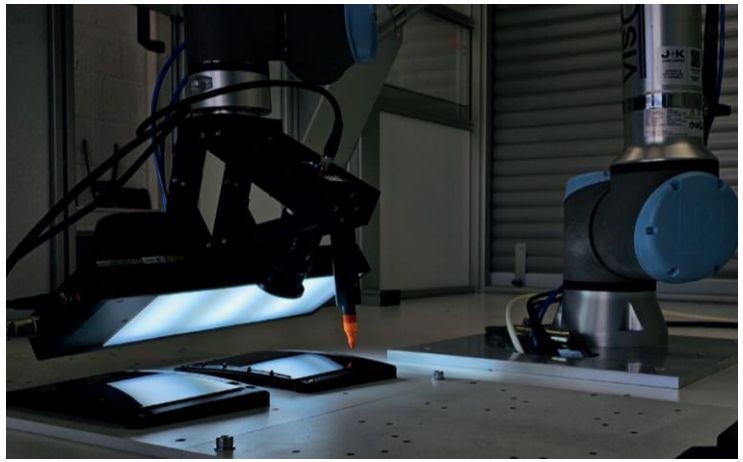


Watch the video:

System architecture & process flow of Visobot robot solutions

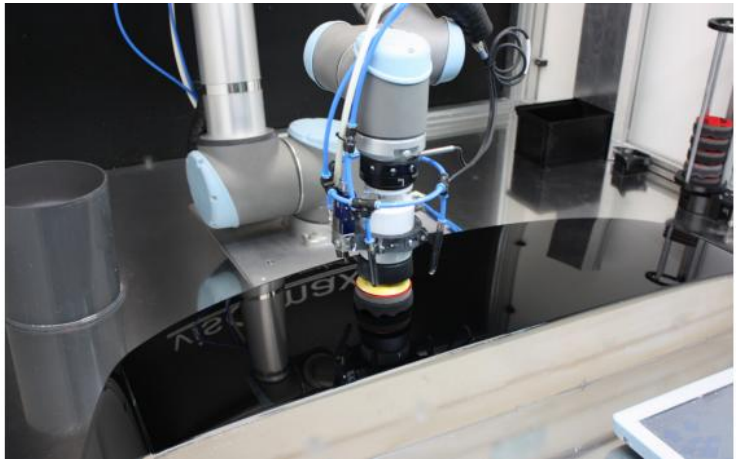
Defect detection with the Visobot Unit - Inspection

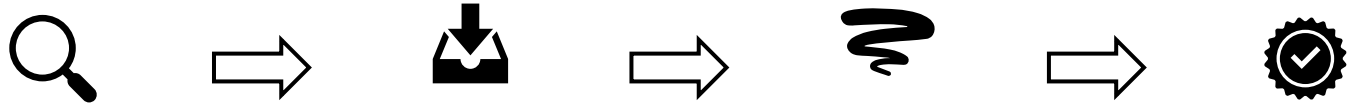
Defect detection utilises a line scan camera and specialised lighting, both mounted on the 6-axis robot scans the free-form surfaces with precise contour tracking, maintaining a constant distance from the surface. The system can automatically mark detected defects or sand them directly. Image processing takes place directly on the controller, without the need for external computing power.



Polishing with the Visobot Unit - Polish

The Polish Unit detects marked defects via an integrated camera system and polishes them autonomously. Regular sponge cleaning and automatic sponge replacement enhance process tability. Component cooling and automatic polsih supply enable gentle processing. The robot cells offer a stable, predictable and transparent process structure.





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Why Visobot?

Your partner for automated surface processes

CUSTOMER BENEFITS

Consistent quality
Automated processes ensure reproducible results

Reduction in scrap rates
Defects are reliably detected and processed

Predictable, stable processes
Through defined process parameters and automated steps

Reducing the workload on staff
Visobot units take over repetitive tasks, thereby reducing the workload on staff

Quick to integrate
Modular cell concepts enable short project times

WHY VISOMAX, WHY VISOBOT?

Over 20 years‘ experience
Proven expertise in the field of paint finishing & surface treatment

Deployed in over 26 automotive plants worldwide
Long-standing collaboration with OEMs as well as TIER1 and TIER2 suppliers

International partners
Ttechnical sales partners in Europe, the USA, Mexico, China, etc.

Complete solution from one source
Feasibility → Component mounting → cell construction
Programming → Training →

In-house development & manufacturing expertise
Design & manufacture of custom component holders

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Get in touch now & book an appointment!

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