# Dynamic contour detection - sophisticated coating solution

Contour laser scan

Dynamic contour detection is a sophisticated technology that allows new automation solutions of powder coating systems. The solution detects the most complex object geometries, aligns each gun to the correct position to coat the complex of components.

The highlight of this solution is the ability for full detection of the object outline contour with a new laser scanning system.

This intelligent component in combination with a corresponding master control unit automatically translates object shapes, matches the coating parameters and adjusts multiple axes equipped with guns to achieve outstanding coating results on complex geometries. The requirement for manual coating is reduced to a minimum.
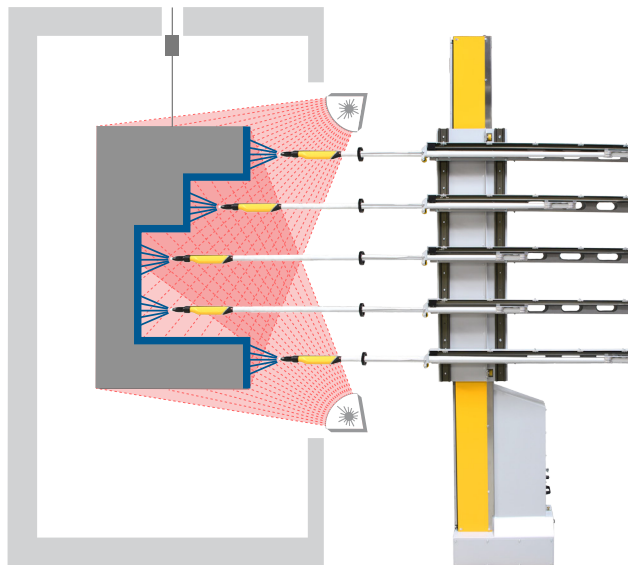
Key features:

- Fully integrated contour laser scanner module in the master control platform MagicControl
- Outline contour measurement of the object
- Automated positioning of U-axes and gun triggering
- Repeatability of the object contour measurement < +/- 2 cm
- Detection of thin struts or projections of > 3 cm up to line speeds of 5 m/min
- Fixed or oscillating gun operation
- Ease of switching between part detection with light barriers and dynamic contour detection with the laser scanner

Customer benefits:

- High level automation of the application process
- Automated recognition of complex geometries for both the front and rear of the object
- Optimized coating quality
- Powder savings and reduction in overspray
- Drastic reduction of the manual coating operation
- Automated programming of U-axes. No time consuming axes adjustments.

Your global partner for high quality powder coating

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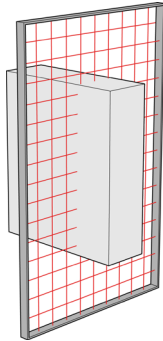
Part detection:
Located at the booth entrance, height and width oriented light barriers detect the outer shape of an object.
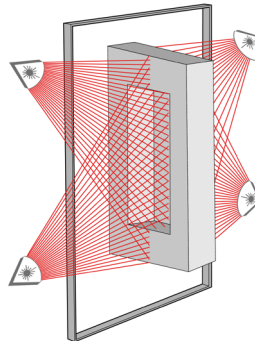
Dynamic shape detection:
The laser scanners, which are also fixed at the booth entrance, operate in a two-dimensional area. They measure distances in front of them and calculate the outline of the object. This data is tracked with the help of an encoder to the MagicControl unit.
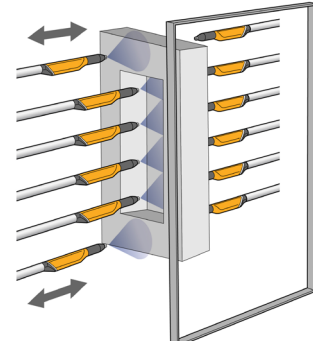
Dynamic shape coating:
The scanned object is segmented according to the gun arrangement and translated into an accurate axis position and gun adjustment. The encoder synchronizes the object position with each axis independently positioned. Powder coating is started and stopped automatically.
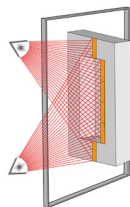
The scanned object contour is translated in several segments in order to position and activate each single gun accordingly.
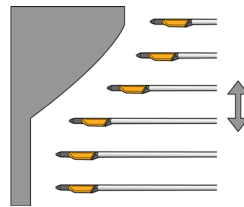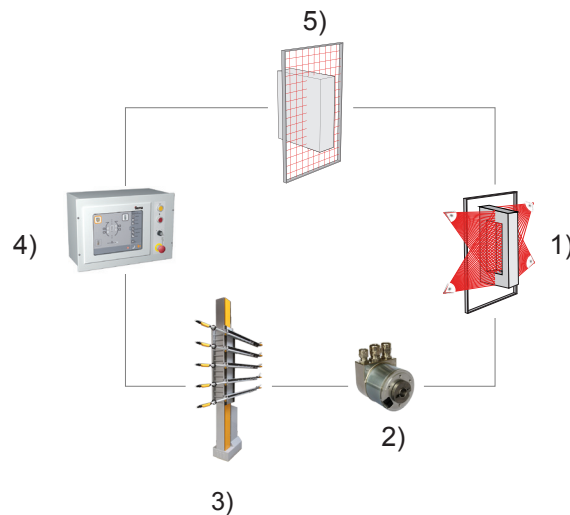
Depending on part geometries the guns may oscillate up and down or remain in a fix position.

3 cm
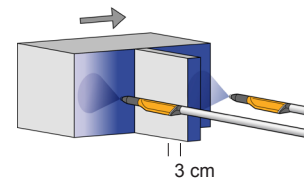
Detection of struts or projections > 3 cm up to line speeds of 5 m/min.

System components:

1) Laserscanner
2) Encoder
3) ZA13 vertical axis / UA04 gun axis
4) MagicControl CM30
5) Light barrier (height/width)

Gema Switzerland reserves the right to make technical changes without prior notice!

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