

PLASMA SPRAYED THICKNESS CONTROL WITH HAKO L



HAKO L station can control plasma coated implants:

In Any Area

- 🔥 Measure any area of your part thanks to the tool changing
- 🔥 In areas with curvatures lower than 1mm

With very easy positioning

- 🔥 The system positioning of $\pm 1\text{mm}$ allows to position the parts on supports very easily
- 🔥 No need to have a complex positioning implementation

Automatically

- 🔥 Measure on a complete batch of parts automatically
- 🔥 Set-up very easily your production control cycle

With very high R&R

- 🔥 Being contactless, the measurement allows to measure with a great repeatability and reproducibility

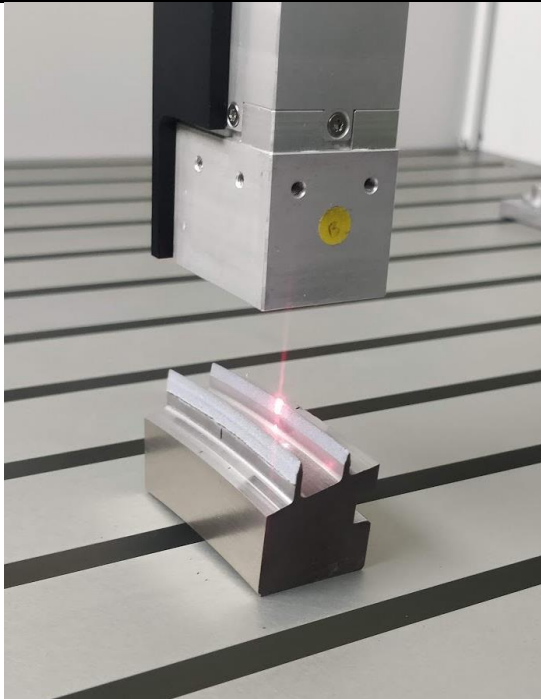
In Any Area

The Enovasense technology allows to measure in any area of your plasma coated spray.

Quality improvement	Cost savings
<ul style="list-style-type: none"> ✓ Provide your customer with an analysis of the most functional zones (edges, faces,...) ✓ Measure parts that were not measurable before 	<ul style="list-style-type: none"> ✓ Limit over deposition in sensitive areas ✓ Reduce machine set-up time

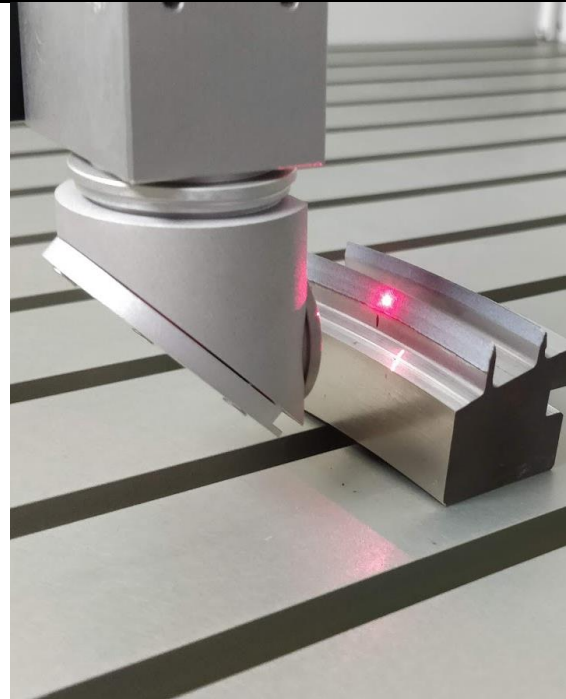
Hereunder we measured two different parts: one using direct measurement and one using a 90° angle measurement tool.

Measurement on the edge



μm	Cross section	Enovasense
Average	150,9	152,2
Standard deviation	Destructive reference	1,2

Measurement on the side



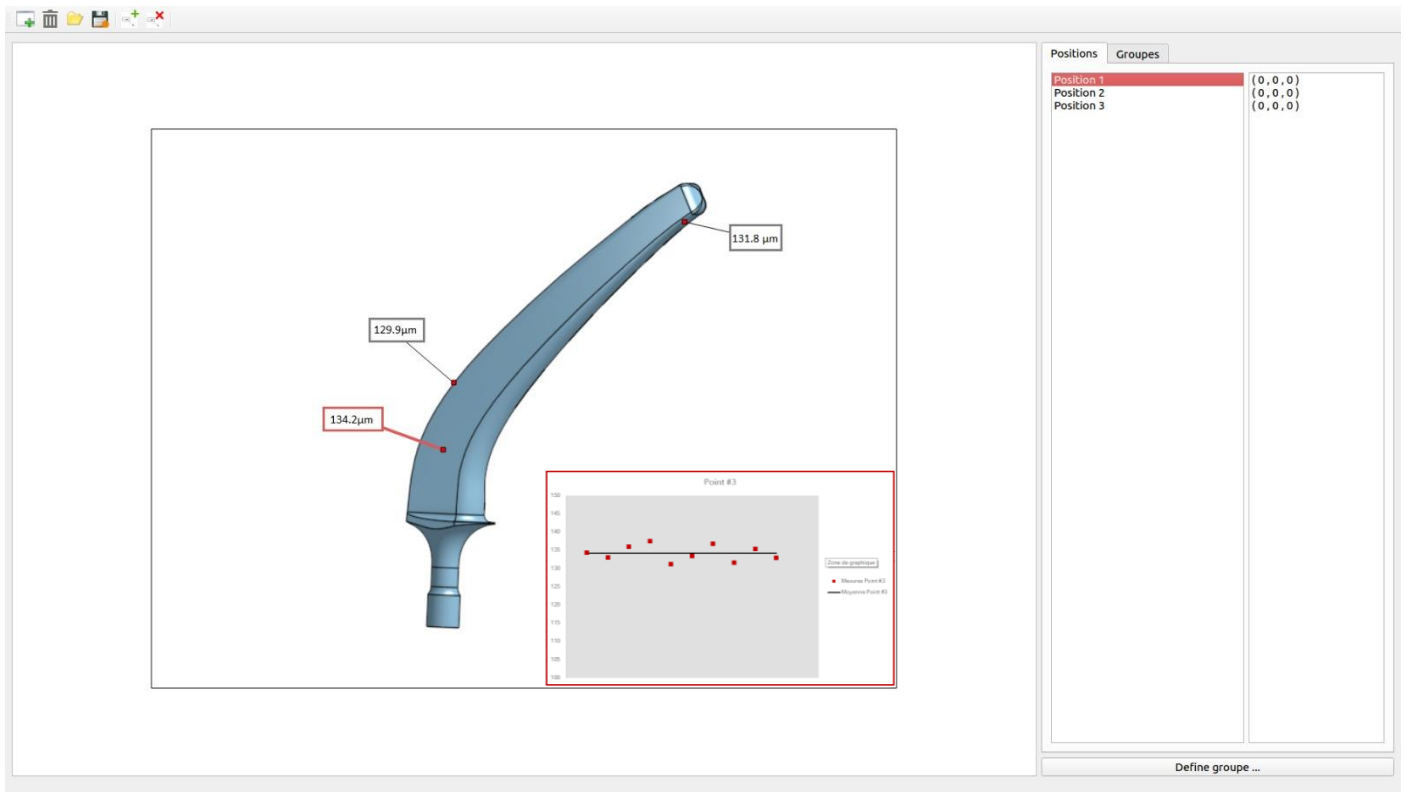
μm	Cross section	Enovasense
Average	120,5	124,3
Standard deviation	Destructive reference	0,8

Automatically

The Enovasense HAKO L Software allows you to define a measurement cycle which is then executed upon request. Due to the large measurement area (450x450x300 mm³) the parts can be disposed in large batches that are fully controlled.

Quality improvement	Cost savings
<ul style="list-style-type: none"> ✓ Move toward 100% of parts tested ✓ Ability to control parts in the most sensitive and functional zones (threads, holes...) 	<ul style="list-style-type: none"> ✓ Reduce operator time for controls

Hereunder we set-up a control routine on a group of 10 parts (hip prosthesis). The routine was executed and the data taken at each point can be displayed very easily by clicking on it.



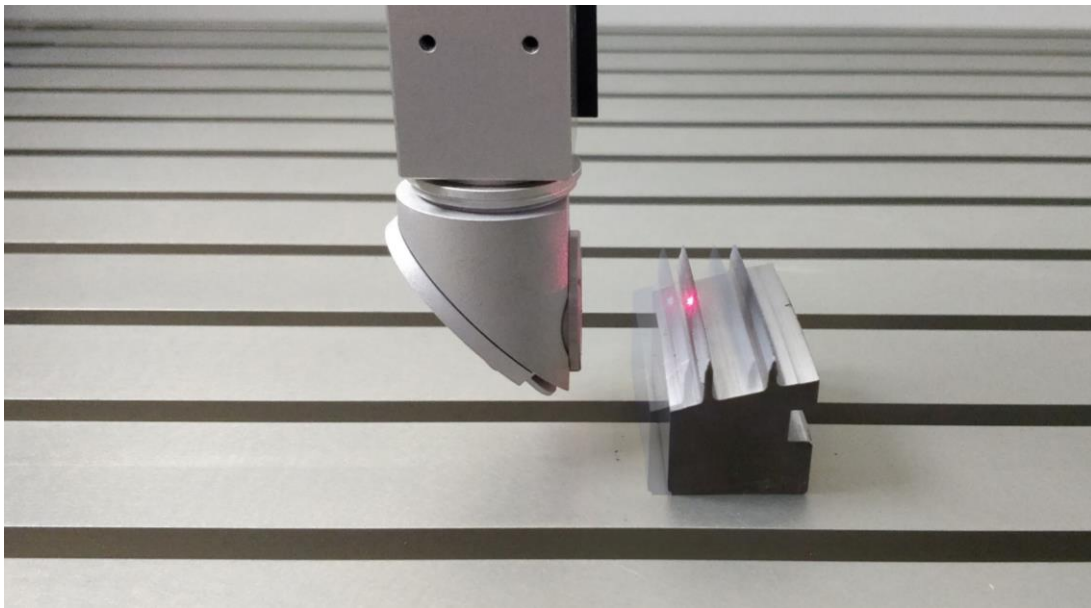
The average and standard deviation are automatically computed. Other key indicators such as ranges, minimum, maximum can be integrated very easily.

With very easy positioning

Due to the very large positioning tolerance of the Enovasense technology it is able to measure parts without expensive part clamping.

Quality improvement	Cost savings
✓ Ensure that your thickness value will be good even with a fast positioning	✓ No requirement for precise part positioning ✓ Use cost effective fixtures.

Hereunder is a view of how different positioning for the same part will give the same thickness value.



This allows to position part batches with very simple and cost-effective fixtures.

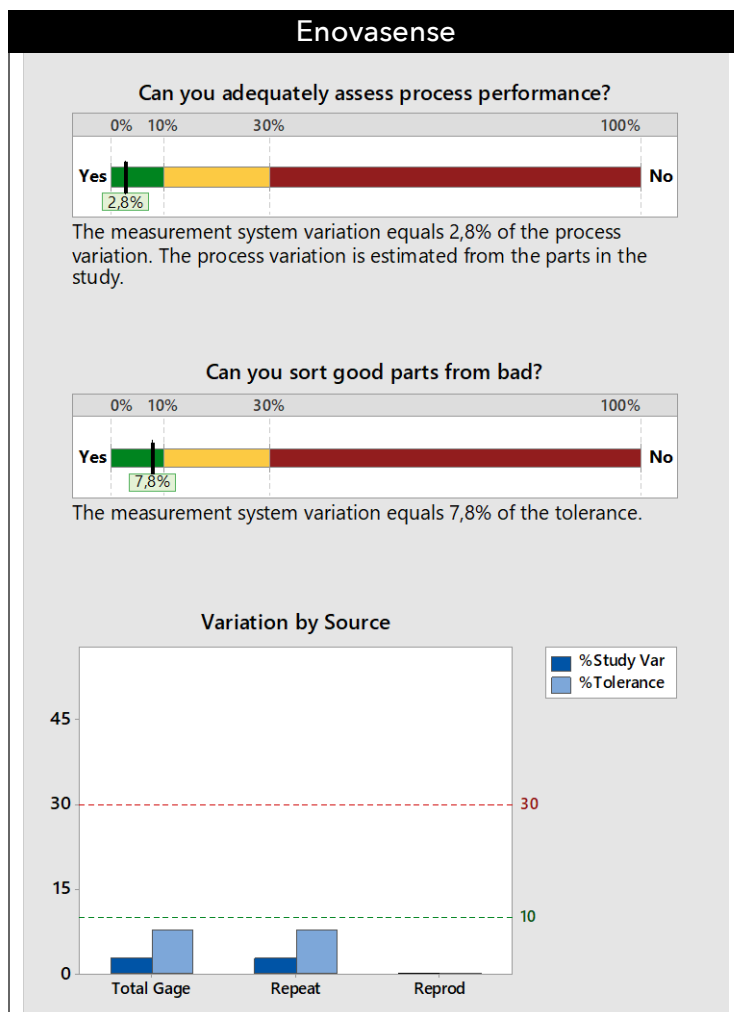
With very high R&R

With its noncontact and automated laser probe, the Enovasense HAKO L control station for plasma sprayed coatings reaches high measurement repeatability and reproducibility levels. In comparison with contact manual probes where the way the operator applies the contact, the Enovasense probe is independent of the way it is applied.

Quality improvement

- ✓ Remove the operator's impact: the measurement is reproducible in all conditions, time and locations
- ✓ Reduce conformity classification errors

Hereunder we proceed to an R&R gage on 2 parts with 3 operators with the Enovasense Hako L system:



Performances values given in this document are typical values obtained with this device but can vary from one application to another. For a diagnosis of those performances on specific samples, please contact Enovasense.

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