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PRINHEAD TO POWDER SPACE LASER MEASURE TOOL

HP INC

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SUMMARY

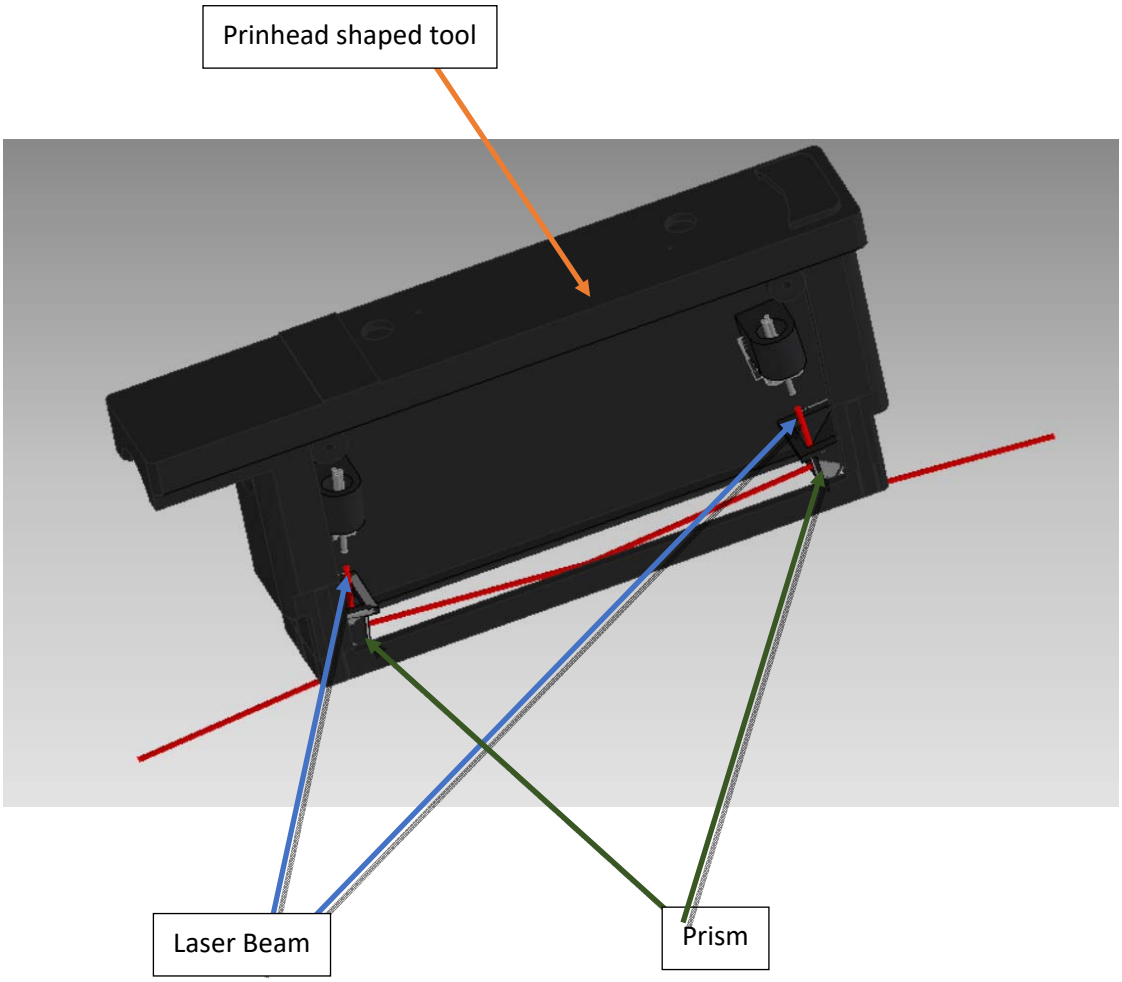
The Prinhead to powder distance (PPD) is cirtical to ensure part quality.

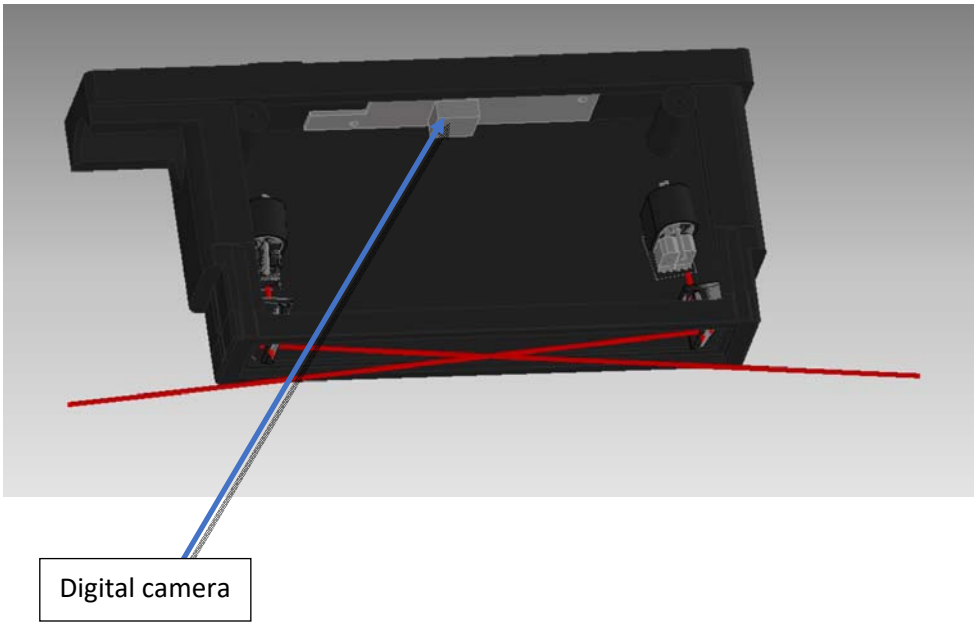
With this tool we provide a way to check PPD on costumers site. With this tool you can measure also is possible to recalibrate PPD after a mechanical repair.

This tool gives a way to measure PRS in operational conditions (hot machine, and with powder)

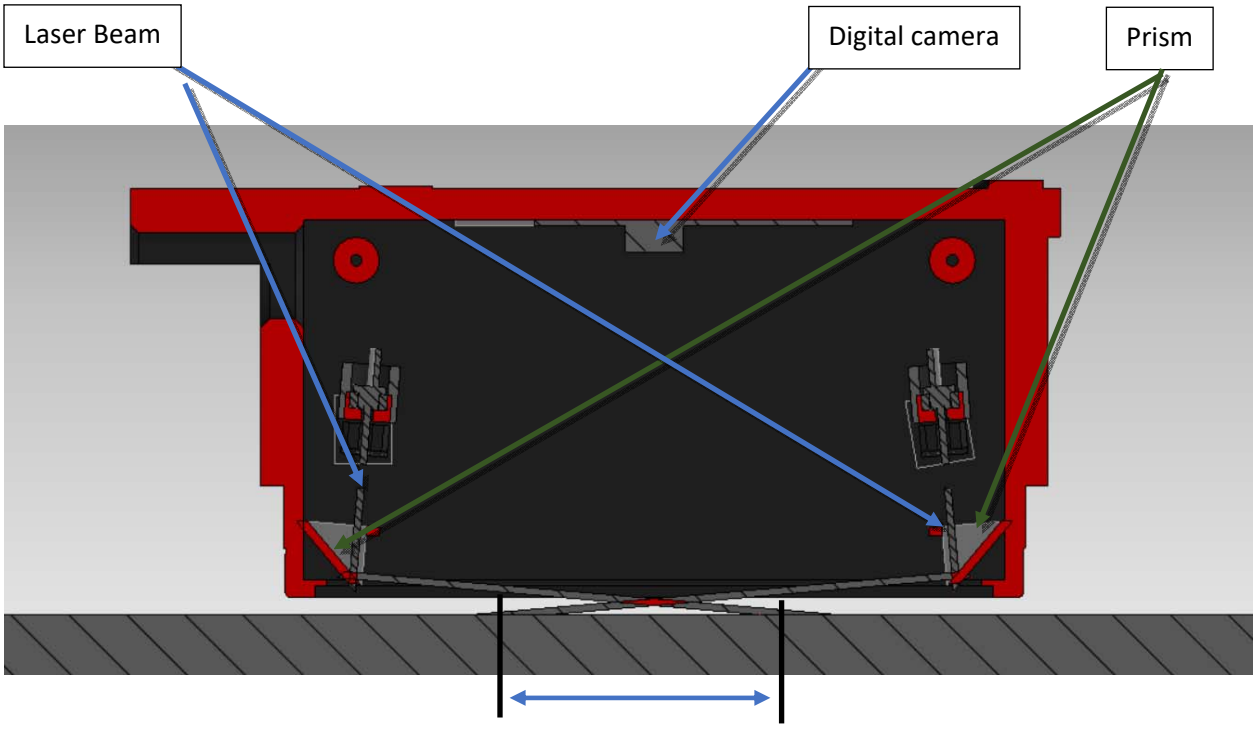
DESCRIPTION

Using a printing pen shaped tool with two beam laser crossed is possible to measure with a camera the distance between them and calculate the distance between the Prinhead and the powder.





PRINCIPLE OF WORK



The top camera measures the number of pixels the distance between the two laser beams.

As the Prinhead to the surface space changes this distance changes too.

The multiplicative effect given by the prism angle make it easy to measure small distances. Resolution depend on camera number of pixels.

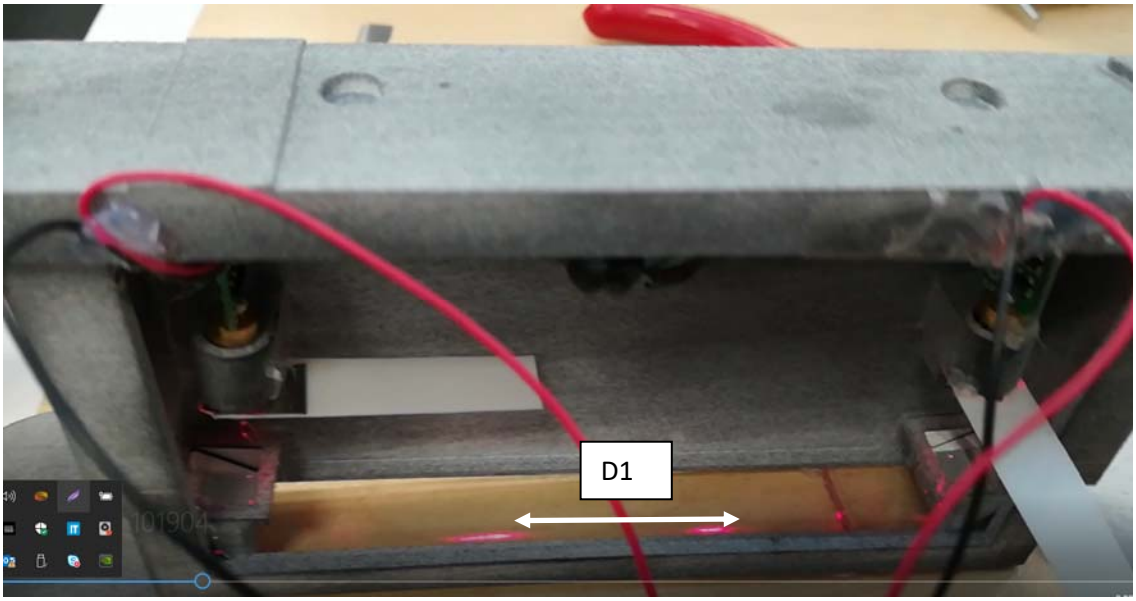
A software will translate image to distances.

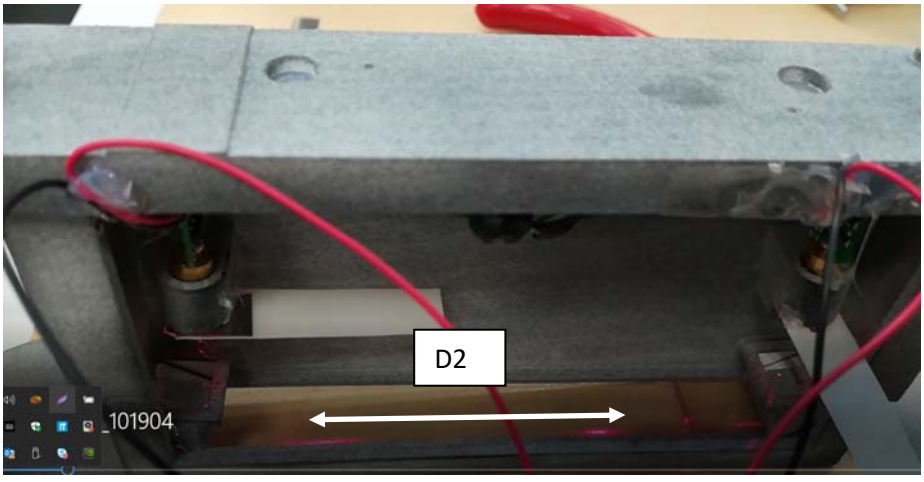
This tool is calibrated at factory giving a known relationship between pixels and microns.

PROTOTYPE

A prototype has been produced to show this principle

D1 and D2 are different as distance varies between the prinhead and the measured surface (a table in this case) → principle of work is validated





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