

# Technical Disclosure Commons

---

Defensive Publications Series

---

July 30, 2018

## PRINHEAD TO POWDER SPACE LASER MEASURE TOOL

HP INC

Follow this and additional works at: [https://www.tdcommons.org/dpubs\\_series](https://www.tdcommons.org/dpubs_series)

---

### Recommended Citation

INC, HP, "PRINHEAD TO POWDER SPACE LASER MEASURE TOOL", Technical Disclosure Commons, (July 30, 2018)  
[https://www.tdcommons.org/dpubs\\_series/1380](https://www.tdcommons.org/dpubs_series/1380)



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

## PRINHEAD TO POWDER SPACE LASER MEASURE TOOL

### SUMMARY

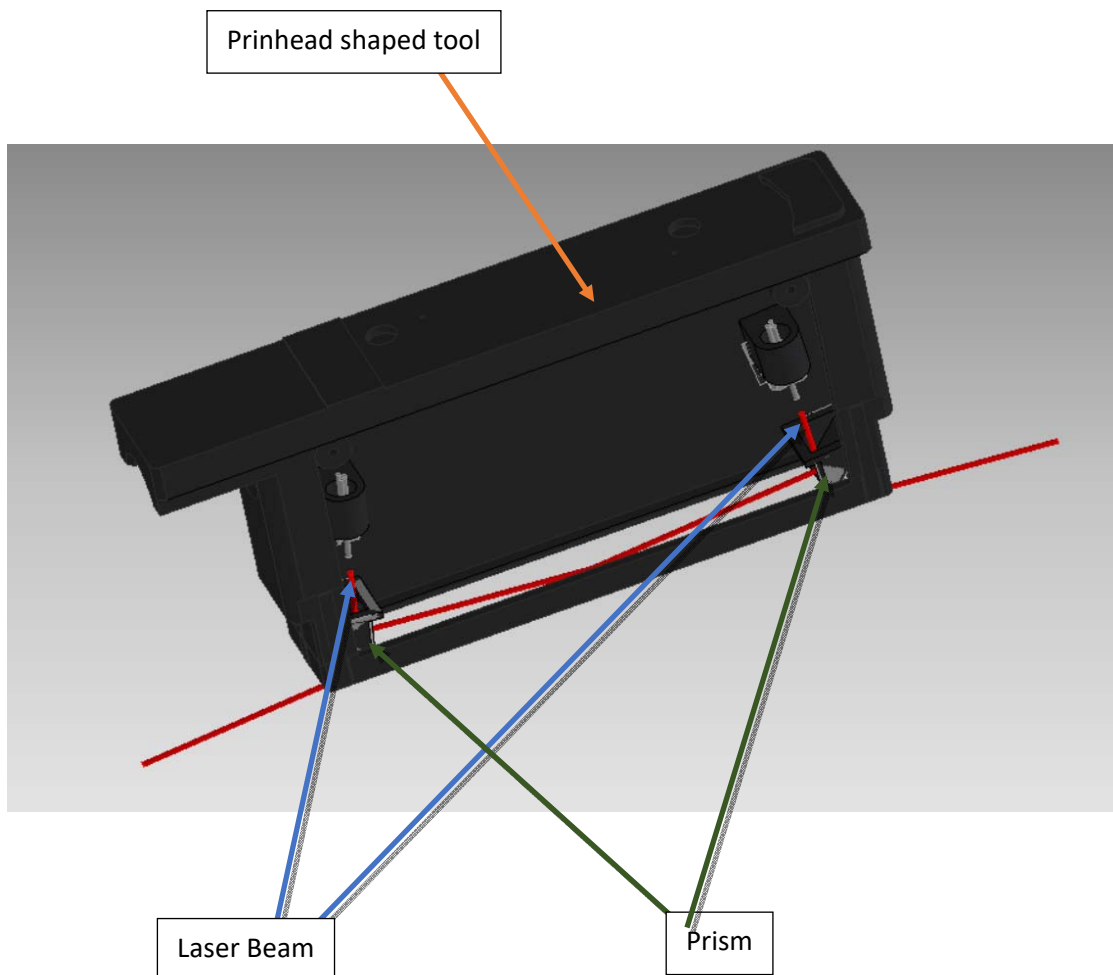
The Prinhead to powder distance (PPD) is critical to ensure part quality.

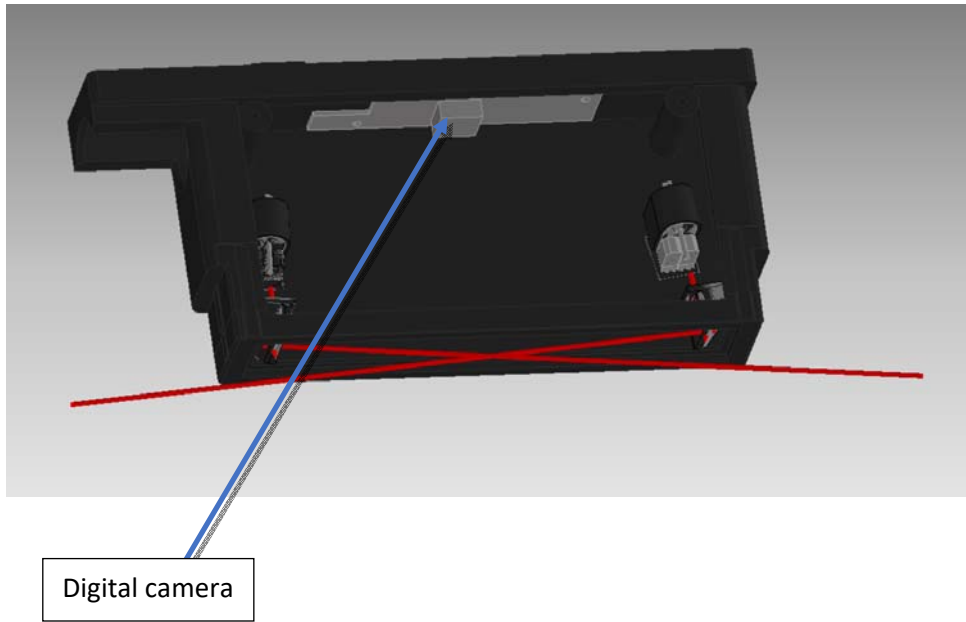
With this tool we provide a way to check PPD on customers site. With this tool you can measure also is possible to recalibrate PPD after a mechanical repair.

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

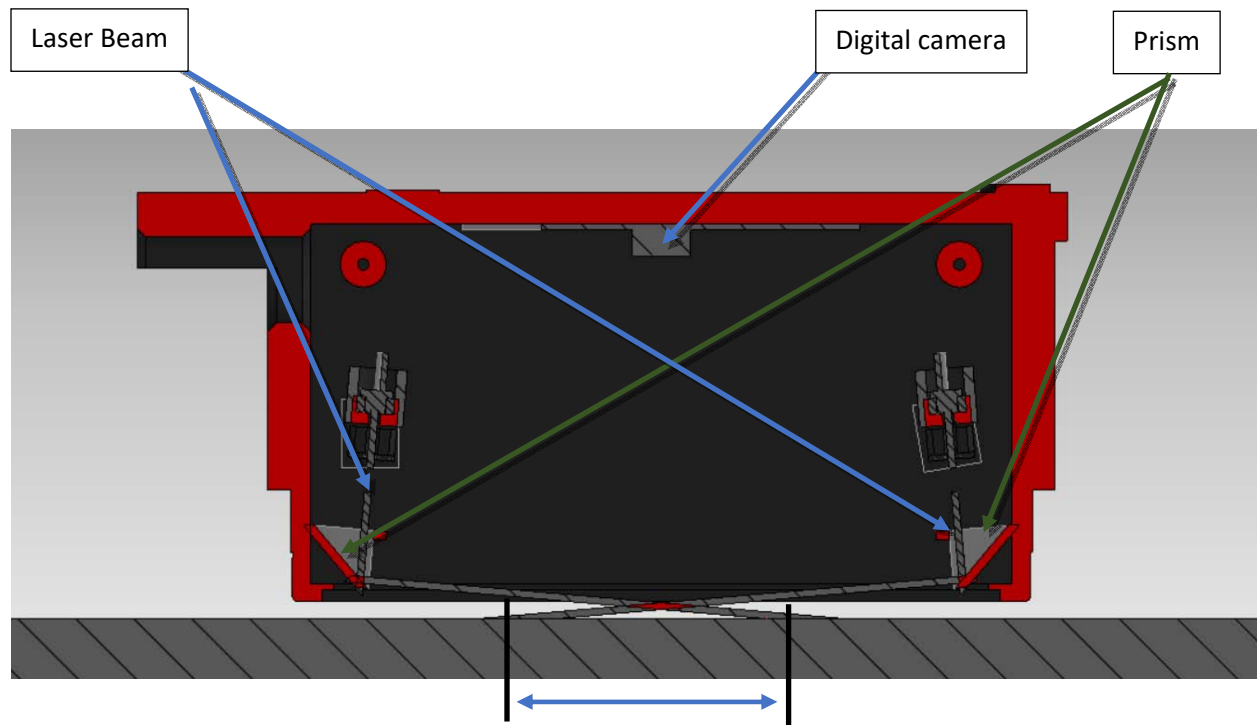
### DESCRIPTION

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 Printhead 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.

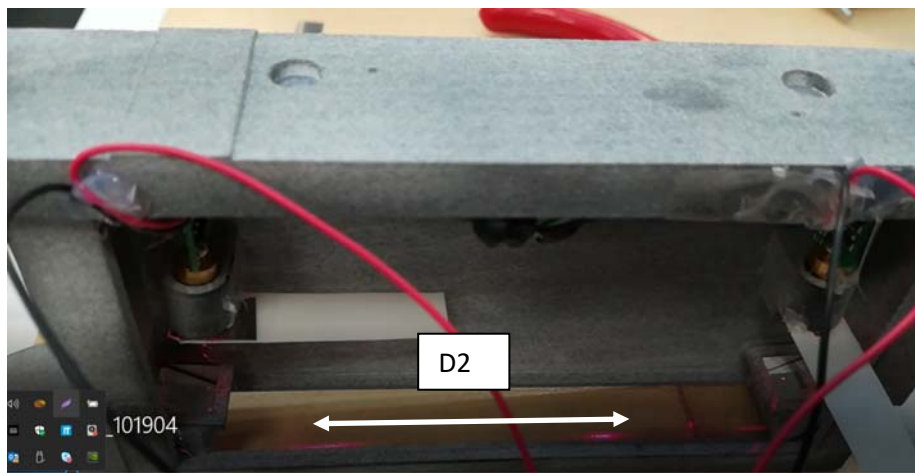
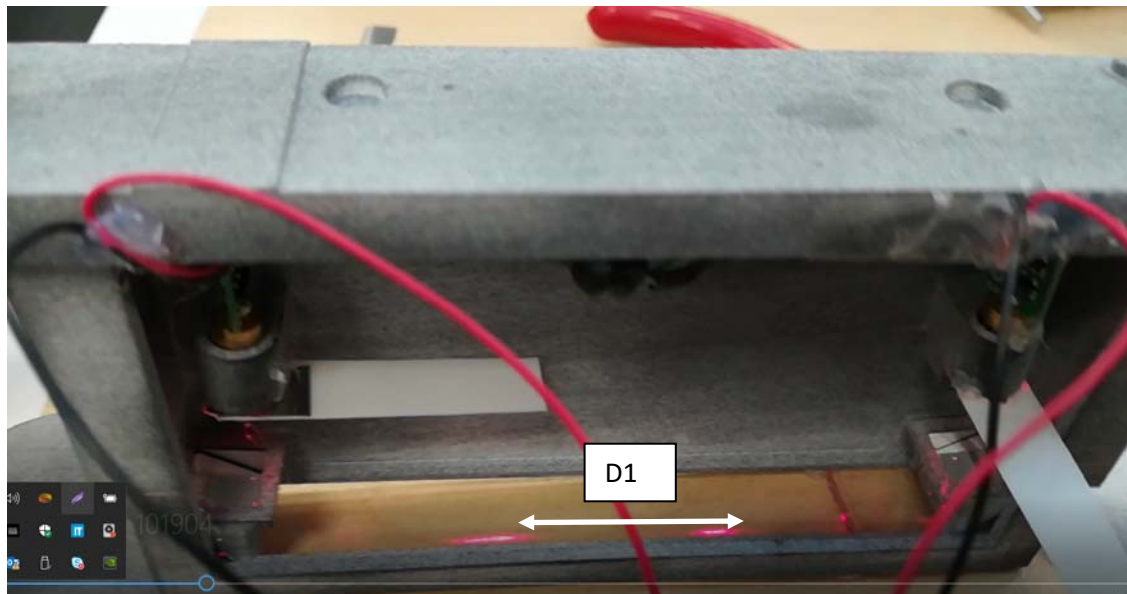
A software will translate image to distances.

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 printhead and the measured surface (a table in this case) → principle of work is validated



***Disclosed by Victor Ruiz, Segi Culubret and Gemma Bolumar Barrera, HP Inc.***