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NC4 non-contact tool setter

Rapid
on-machine tool setting and broken tool detection

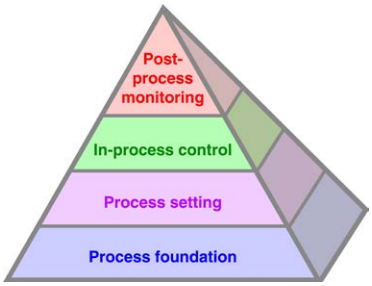
Robust
performance in harsh machining environments

Flexible
non-contact tool setting solutions

NC4 – innovative process control

Tackle process variation at source, and reap the rewards

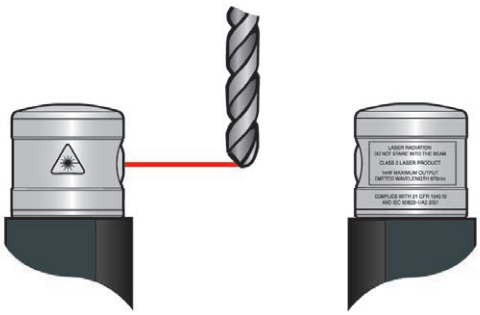
The higher the degree of human involvement in the manufacturing process, the higher the risk for error. Automated in-process measurement using Renishaw probes can help ***eliminate the risk.*** The Renishaw NC4 non-contact tool setter can facilitate the following measures for enhanced management of your production leading to an ***increase in your profits.***



Process setting

Automated on-machine tool setting eliminates manual setting operations.

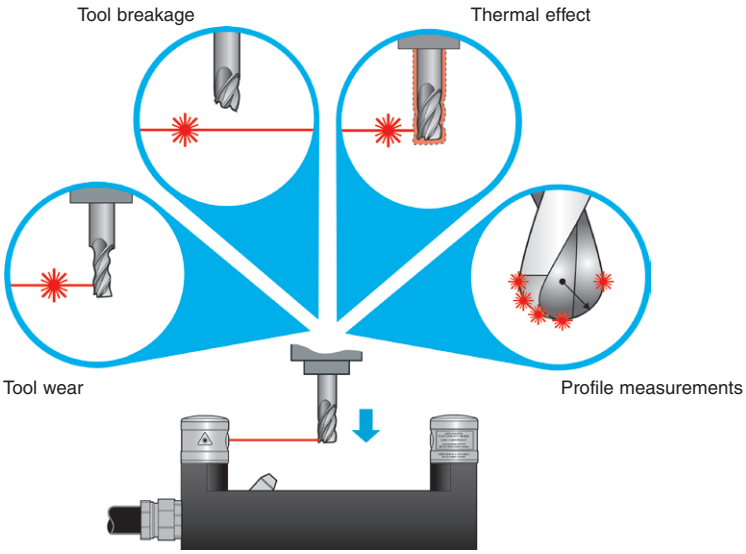
- Establish height offsets and check tool length is within tolerance
- Determine diameter when spinning to establish tool size offsets
- Compensate for dynamic effects on the machine tool
- Eliminate manual setting errors and data entry
- Set up faster, improve quality and reduce scrap



In-process control

Automated tool condition monitoring.

- Improve process capability and traceability
- Detect broken tools in-process
- Compensate for environmental and machine conditions
- Measure tool profiles
- Reduce non-productive time and scrap
- Increase productivity and profits



For further details regarding the benefits of all levels of process control within the Productive Process Pyramid™, please refer to **H-3000-3038 Metrology solutions for productive process control** or visit **www.renishaw.com/processcontrol.**

NC4 for rapid, robust and flexible tool setting operations

Non-contact laser tool setting systems use a beam of laser light passing between a transmitter and a receiver. The systems are positioned within the machine tool so cutting tools can be passed through the beam, providing information to determine a tool's dimensions. These systems can also be used to measure geometry and detect broken tools.

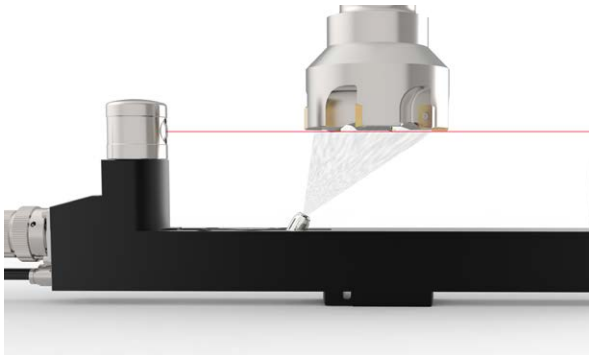
Highly robust in harsh machining environments

Dual measurement mode

The NCi-6 interface is used in conjunction with the NC4 range. Combined with macro software cycles, its dual measurement mode ensures short cycle times and robust measurement performance in wet conditions.

Efficient removal of debris and coolant

The NC4's integrated air blast enables swift and efficient removal of machining debris and coolant from the tool prior to measurement, ensuring accurate results.



NC4 range

The NC4 is available in a range of configurations. Fixed-mount systems are available with an operating gap of up to 240 mm, two beam heights (the greater beam height providing increased access and mounting flexibility), and hardwired or connector-based installation. Separate-mount systems are available with an operating gap of up to 5 m.

NC4+ improved measurement accuracy

NC4+ technology is found within fixed-mount systems with an operating gap of up to 85 mm. This provides improved tool-to-tool accuracy and makes these systems particularly suitable for small and fragile tools.

For further details, please refer to the data sheet *NC4 non-contact tool setting system (integral air blast)* (Renishaw part no. H-6270-8200).

NOTE: Class 2 laser product. Laser radiation – do not stare into beam. 1 mW maximum output emitted wavelength 670 nm.

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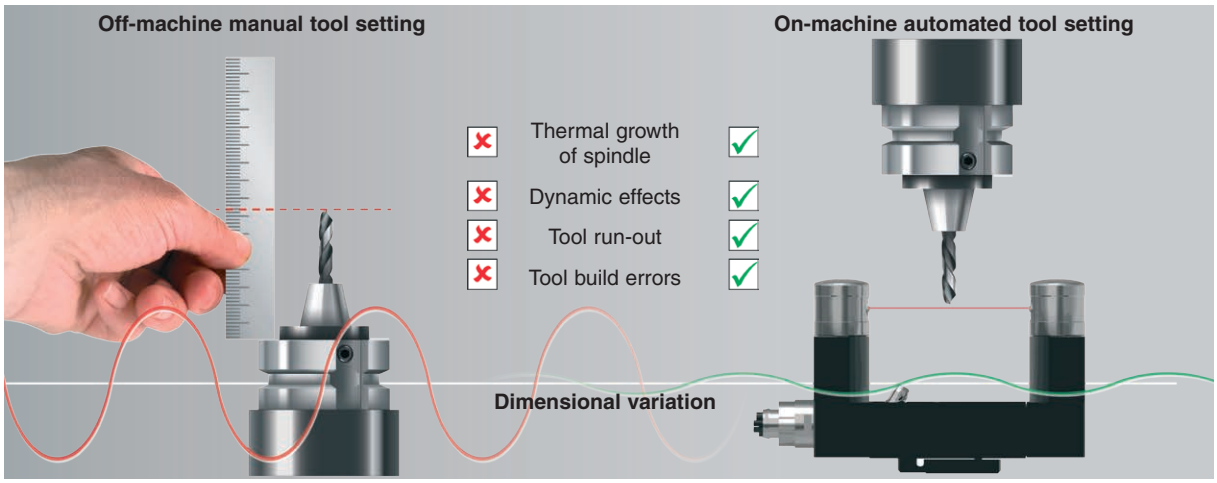
NC4 – more than just tool setting!

With Renishaw's NC4 enabling faster and more accurate tool setting, the additional in-process benefits are significant and easy to understand. During machining processes, dimensional accuracy is dependent upon a number of variables, including tool size deviation, tool/holder run-out and tool breakage.

Renishaw NC4 non-contact tool setter can:

- compensate for variation during the machining process
- update the machine's controller automatically to account for actual effects, e.g. tool wear
- automatically stop the process when broken tools are detected
- reduce rework, concessions and scrap
- measure small and fragile tools without risk of incurring damage



Ease of installation

A secure connector and push-fit pneumatic fittings facilitate quick and simple retrofit of NC4 hardware, especially on complex machines.

The NC4 smartphone app makes configuring and supporting the NC4 system simple. Engineers have a single point of reference for maintenance and troubleshooting tasks at their fingertips.

Ease of operation

Generate measurement commands in minutes with the intuitive and easy to use GoProbe smartphone app and Set and Inspect on-machine app.

Renishaw smartphone apps are available globally, offer support in over 15 languages and are available free of charge (for iOS and Android™) on the App Store® and on Google Play.

Download on the App Store

GET IT ON Google Play

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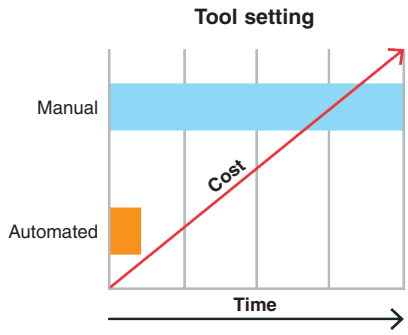
Tool setting pays ...

Machine tools that are optimised to cut more metal, more reliably and more accurately will quickly ***maximise productivity, profits and your competitive edge.***

Automated tool setting with the Renishaw NC4 non-contact tool setter is up to 10 times faster than manual methods, which means immediate and ***significant cost savings.***



Scrap and rework reduce productivity and profits.
The Renishaw NC4 non-contact tool setter helps guarantee "right first time" parts which means ***reduced waste and increased profits.***

NC4 key features

- Integrated air blast as standard
- Optional connector for ease of installation
- Choice of beam height for increased access and mounting flexibility
- Fail-safe IPX8 environmental protection
- Robust and reliable operation
- Minimal M-codes required
- Compact design minimises space required within the machine tool

... the Renishaw way

Renishaw, an established world leader in metrology solutions invented the touch-trigger probe in the 1970s.

Decades of customer focus and investment in development, coupled with our own manufacturing experience enables us to provide innovative and exceptional products that are unmatched for technical excellence and performance.

Customer comment

"The NC4 allows us to check for breakages of small tools used to make keys and other reference points on the cam, which are vital if the engine is to operate properly. If it wasn't for the Renishaw system, the machine could, for example, operate with a broken cutting tip, with disastrous results."

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About Renishaw

Renishaw is an established world leader in engineering technologies, with a strong history of innovation in product development and manufacturing. Since its formation in 1973, the company has supplied leading-edge products that increase process productivity, improve product quality and deliver cost-effective automation solutions.

A worldwide network of subsidiary companies and distributors provides exceptional service and support for its customers.

Products include:

- Additive manufacturing and vacuum casting technologies for design, prototyping, and production applications
- Dental CAD/CAM scanning systems and supply of dental structures
- Encoder systems for high-accuracy linear, angle and rotary position feedback
- Fixturing for CMMs (co-ordinate measuring machines) and gauging systems
- Gauging systems for comparative measurement of machined parts
- High-speed laser measurement and surveying systems for use in extreme environments
- Laser and ballbar systems for performance measurement and calibration of machines
- Medical devices for neurosurgical applications
- Probe systems and software for job set-up, tool setting and inspection on CNC machine tools
- Raman spectroscopy systems for non-destructive material analysis
- Sensor systems and software for measurement on CMMs
- Styli for CMM and machine tool probe applications

For worldwide contact details, visit www.renishaw.com/contact

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