

Next-generation blue laser technology

Engineered for ultra-precision machining

Discover the latest evolution of Renishaw's NC4+ Blue laser tool setter, now equipped with our third-generation, blue-laser technology. This best-in-class innovation has exceptional metrology performance, setting a benchmark for cutting tool measurement.

The new NC4+ Blue F100 models enable precise measurement of tool features and defects as small as $5\text{ }\mu\text{m}$ at production feeds and speeds. The smaller separation between heads allows for improved performance which minimises tool-to-tool measurement errors across a wide range of cutting tools — even micro tools. Combined with an industry-leading repeatability of $\pm 0.1\text{ }\mu\text{m } 2\sigma$, manufacturers can confidently produce the highest quality 'right first time' parts.

Renishaw has also enhanced the efficiency and optimised the air flow in the NC4+ Blue F100 models. By reducing the tool setter's barrier air consumption by over 50%, there is a significant reduction in energy required for air compression, lowering operational costs for manufacturers.

Enhanced performance

NC4+ Blue F100C systems offer exceptional measurement repeatability of $\pm 0.1 \mu\text{m } 2\sigma$.

Optimised tool-to-tool accuracy

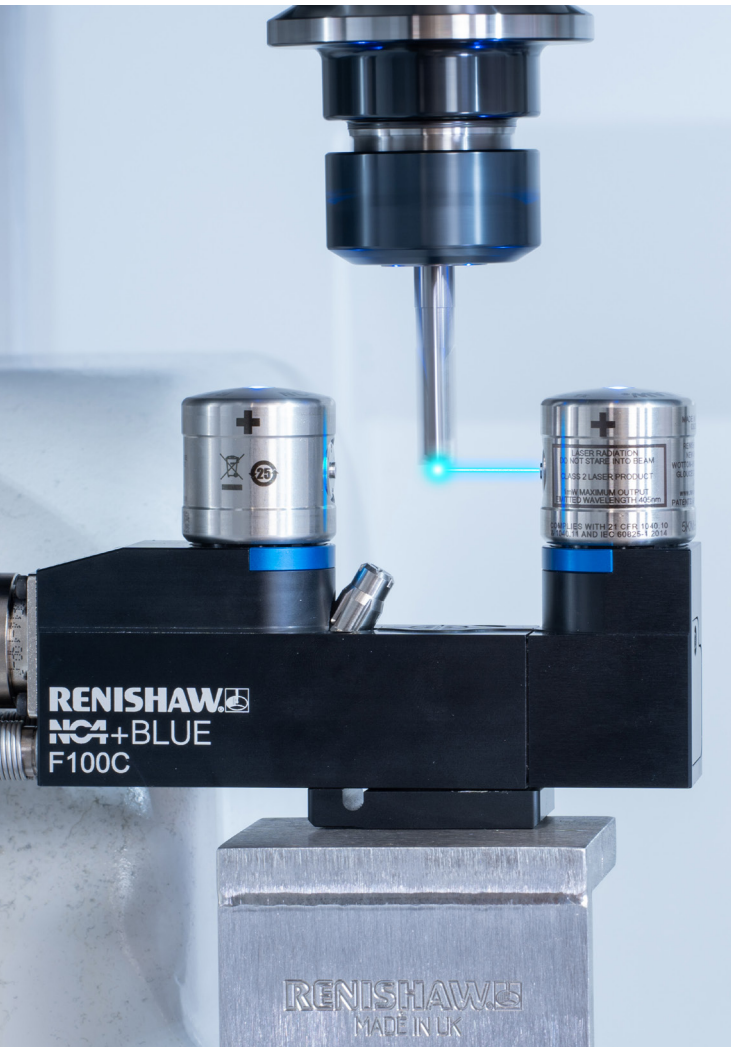
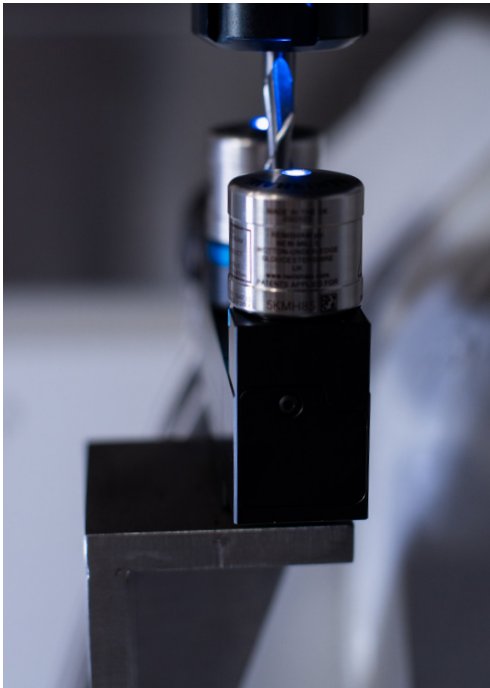
With tool-to-tool accuracy of $15 \mu\text{m}$ for the F100C and just $5 \mu\text{m}$ for the F100-10C, these systems offer superior precision — especially important when working with a wide range of cutting tools.

Reduced air consumption

Both models are engineered to minimise compressed air usage, helping to reduce overall energy costs in your machine shop.

Ultra-compact design

The compact footprint and miniaturised electronics of the F100 series make them ideal for machines with limited space, without compromising on measurement capability.



Discover more about the NC4+ Blue laser tool setter

Renishaw's NC4+ Blue laser tool setter range is engineered for performance, delivering high-speed, high-precision non-contact tool setting and breakage detection across a wide variety of machine tools. Available in multiple beam heights and separations, the range offers flexibility for different machine configurations.

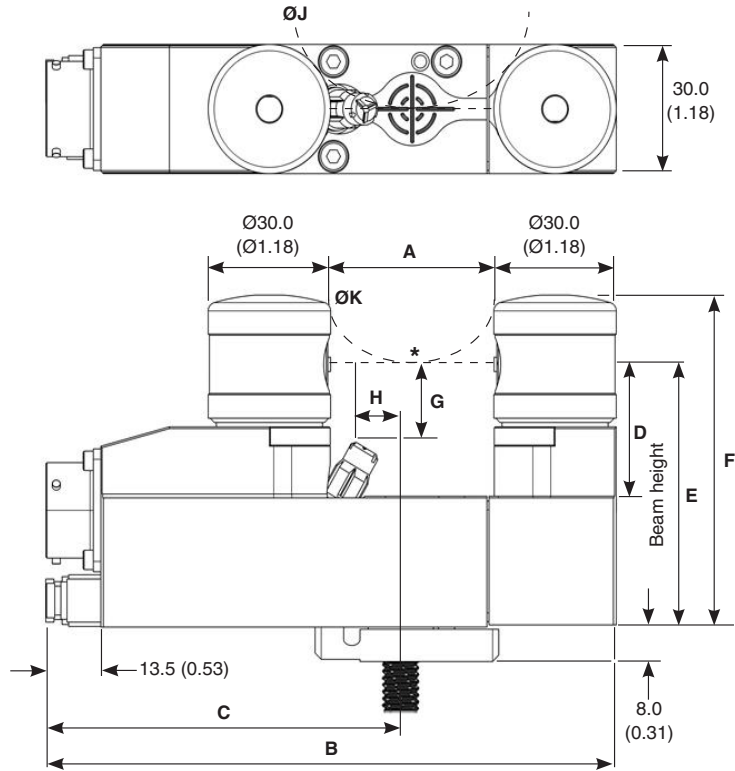
The latest addition, the F100 series, takes this performance further. It delivers:

- Ultimate precision in an ultra-compact format. Designed for space-constrained environments
- Enables fast, accurate, automated tool measurement while helping to reduce operational costs.
- Compact transmitter and receiver heads, This maximises the tool measurement area without compromising valuable machining space.

System dimensions

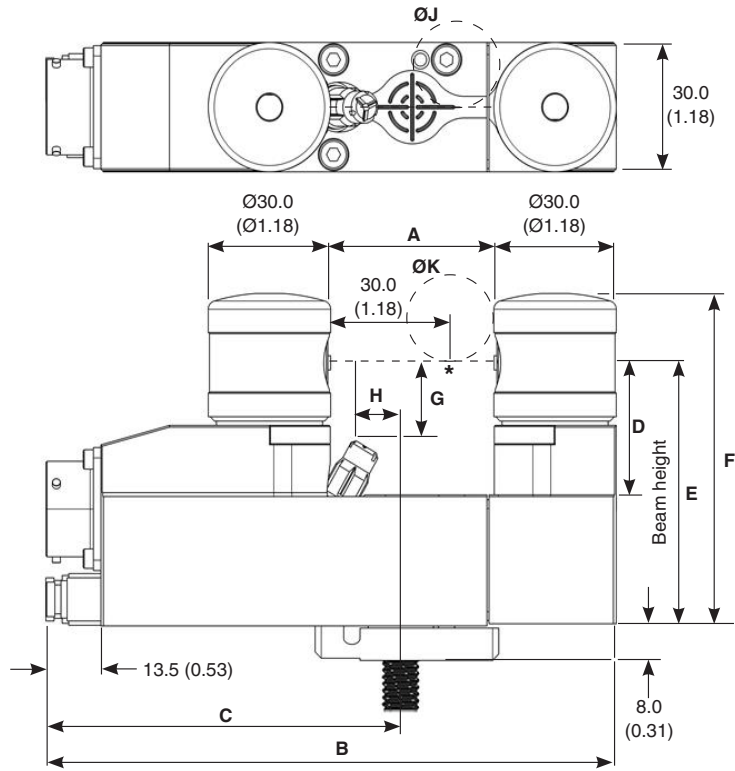
The NC4+ blue F100 models reduced footprint and smaller separation combines sub-micron level precision with a compact, energy-efficient design.

NC4+ Blue F100C



Dimensions	
A	40.0 (1.57)
B	140.0 (5.51)
C	87.0 (3.43)
D	31.0 (1.22)
E	61.0 (2.40)
F	77.0 (3.03)
G	18.0 (0.71)
H	10.9 (0.43)
ØJ	66.0 (2.60)
ØK	44.0 (1.73)

NC4+ Blue F100-10C

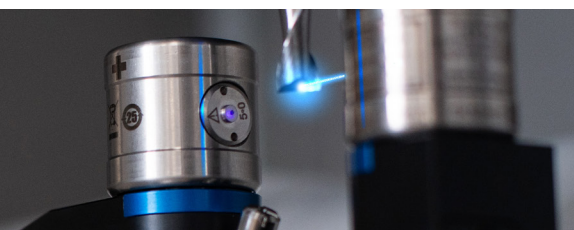


Dimensions	
A	40.0 (1.57)
B	140.0 (5.51)
C	87.0 (3.43)
D	31.0 (1.22)
E	61.0 (2.40)
F	77.0 (3.03)
G	18.0 (0.71)
H	10.9 (0.43)
ØJ	25.0 (0.98)
ØK	19.5 (0.77)

Specification

Principal application	High-precision, high-speed non-contact tool setting and tool breakage detection on all sizes of vertical and horizontal machining centres, multi-tasking machines and gantry machining centres.	
Transmission type	Hard-wired transmission	
Compatible interfaces	NCi-6, NCSI, NCi-E	
Repeatability	±0.1 µm (4.0 µin) 2σ	
Tool setting and tool breakage detection (minimum tool or feature size)	F100 systems	Ø15.0 µm (590.6 µin)
	F100-10 systems	Ø5.0 µm (196.8 µin)
Output signal (from interface unit)	Two voltage-free, solid-state relays (SSR). Each can be either normally open or normally closed (selectable via a switch). Current (maximum) 50 mA, voltage (maximum) ±50 V. The interface contains an auxiliary relay which can be used for switching the output between the NC4+ Blue and a spindle probe. This relay can also be used to control an air blast solenoid (optional).	
Supply voltage (to interface)	11 Vdc to 30 Vdc	
Supply current (to interface)	120 mA @ 12 Vdc, 70 mA @ 24 Vdc	
Supply protection	Resettable fuses in interface. Reset by removing power and cause of fault.	
Electrical connection arrangement	Connector socket. Other configurations are available on request.	
Cable (to interface)	Specification	Ø6.0 mm (0.24 in), two twisted pairs, two individual cores plus screen, each core 18 × 0.1 mm insulated.
	Length	12.5 m (41.01 ft)
	Electrical connection	Cable with bayonet-type plug, connector socket on the end of the unit.
Barrier air pneumatic supply	Air supply must conform to BS ISO 8573-1: 2010 Class 1.4.2. 6.0 bar (87.02 psi) maximum. Ø4.0 mm (0.16 in) air pipe.	
Air blast pneumatic supply	Air supply must conform to BS ISO 8573-1: 2010 Class 2.9.4. 6.0 bar (87.02 psi) maximum. Ø6.0 mm (0.24 in) air pipe.	
Laser type	Class 2 laser product: 1 mW maximum output emitted wavelength 405 nm. WARNING: Laser radiation. Do not stare into beam.	
Laser beam alignment	The unit is supplied with an adjustable mounting plate on the underside.	
Weight (including 12.5 m (41.01 ft) of cable)	1094 g (2.41 lb).	
Mounting	M4 (× 3) or M10 (3/8 in) bolts for mounting via adjuster plate. Other fixing arrangements are available on request.	
Environment	IP rating	IPX5, IPX6 IPX8 dependent on barrier air pressure. BS EN 60529:1992+A2:2013
	Storage temperature	−25 °C to +70 °C (−13 °F to +158 °F)
	Operating temperature	+5 °C to +55 °C (+41 °F to +131 °F)

For more information about the NC4+ Blue and other Renishaw products, visit our website or contact your local sales representative.



www.renishaw.com/nc4



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