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NC4+ Blue non-contact tool setting range



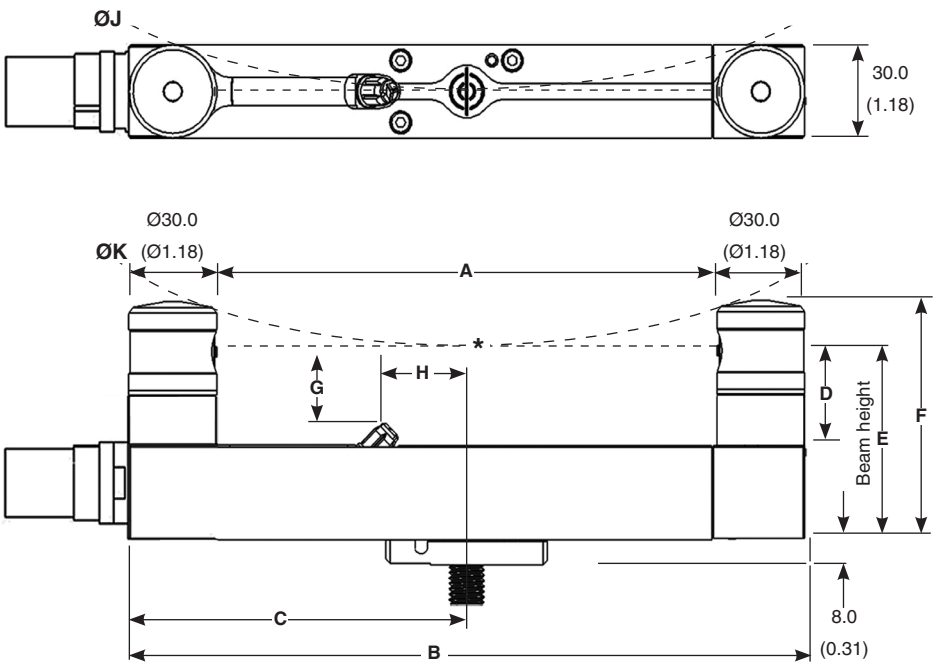
Specification

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	**Third generation systems**	F100 and F100-10	±0.10 µm (4 µin) 2σ
		F145	±0.18 µm (7 µin) 2σ
	Standard systems	F115 and F145	±0.50 µm (20 µin) 2σ
		F230 and F300	±0.75 µm (30 µin) 2σ
Tool setting and tool breakage detection (minimum tool or feature size)	F100-10 systems	Ø5 µm (197 µin)	
	F100 systems	Ø15 µm (591 µin)	
	F115 systems	Ø30 µm (1181 µin)	
	F145 systems	Ø50 µm (1968 µin)	
	F230 systems	Ø100 µm (3937 µin)	
	F300 systems	Ø200 µm (7874 µin)	
Output signal (from NCi-6 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	**Systems with connector:** Connector socket. **Hard-wired systems:** Cable on the end of the unit. 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	**Systems with connector:** cable with bayonet-type plug, connector socket on the end of the unit. **Hard-wired systems:** cable on the end of the unit. Other configurations are available on request.	
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. **Systems with connector:** Ø4.0 mm (0.16 in) air pipe. **Hard-wired systems:** 2 × Ø3.0 mm (0.12 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.		

Specification (continued)

Weight (including 12.5 m (41.01 ft) of cable)	1.1 kg (2.43 lb) to 2.0 kg (4.4 lb) depending on configuration.	
Mounting	**For F100 and F100-10 systems:** Use M4 (× 3) or M10 (3/8 in) bolts for mounting via the adjuster plate. **For F115, F145, F230, and F300 systems:** Use M4 (× 3), M10 (3/8 in), or M12 (½ in) bolts for mounting via the adjuster plate. Bolts are not supplied. Other fixing arrangements are available on request.	
Environment	IP rating	IP65, IP66, IP68. 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)

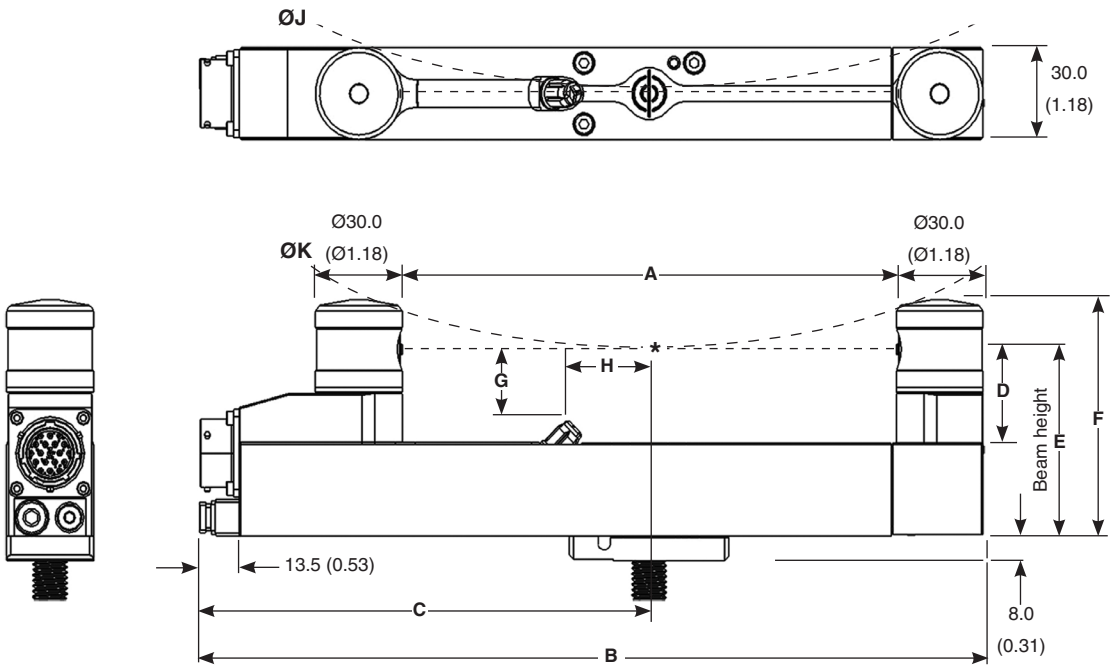
NC4+ Blue hard-wired system dimensions



Model	Dimensions									
	A	B	C	D	E	F	G	H	ØJ	ØK
F145	85.0 (3.35)	145.0 (5.71)	72.5 (2.85)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	20.4 (0.80)	24.5 (0.96)	205.0 (8.07)	147.0 (5.79)
F230	170.0 (6.69)	230.0 (9.06)	115.0 (4.53)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	21.3 (0.84)	25.3 (1.00)	652.0 (25.67)	535.0 (21.06)

Dimensions given in mm (in)

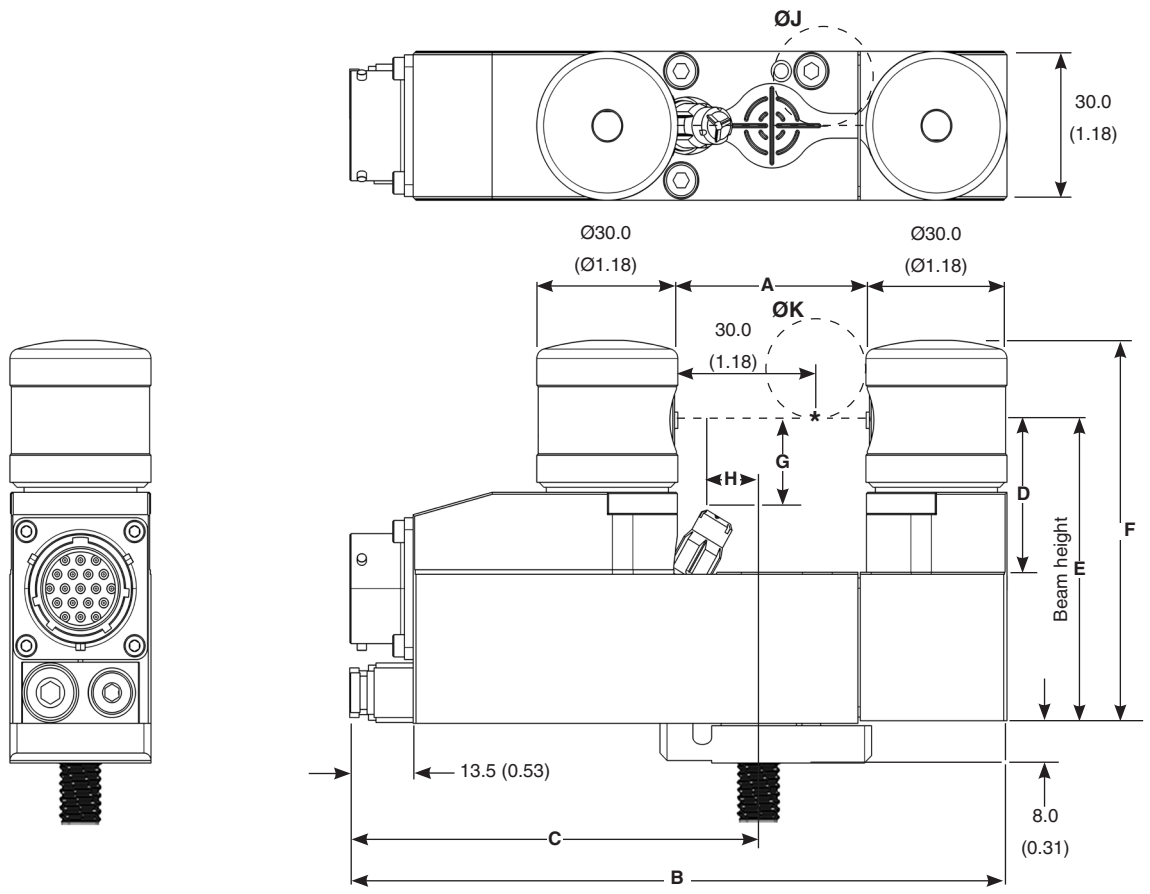
NC4+ Blue system with connector dimensions



Model	Dimensions									
	A	B	C	D	E	F	G	H	ØJ	ØK
F100C	40.0 (1.57)	140.0 (5.51)	87.0 (3.43)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	18.0 (0.71)	10.9 (0.43)	66.0 (2.60)	44.0 (1.73)
F115C	55.0 (2.17)	155.0 (6.10)	97.3 (3.83)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	18.0 (0.71)	13.8 (0.54)	105.0 (4.13)	70.0 (2.76)
F115C-R	55.0 (2.17)	155.0 (6.10)	97.3 (3.83)	50.0 (1.97)	80.0 (3.15)	96.0 (3.78)	35.1 (1.38)	12.3 (0.48)	105.0 (4.13)	70.0 (2.76)
F145C	85.0 (3.35)	185.0 (7.28)	112.3 (4.42)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	21.3 (0.84)	25.3 (1.00)	205.0 (8.07)	147.0 (5.79)
F145C-R	85.0 (3.35)	185.0 (7.28)	112.3 (4.42)	50.0 (1.97)	80.0 (3.15)	96.0 (3.78)	37.1 (1.46)	24.7 (0.97)	205.0 (8.07)	147.0 (5.79)
F230C	170.0 (6.69)	270.0 (10.63)	155.0 (6.10)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	21.3 (0.84)	25.3 (1.00)	652.0 (25.67)	535.0 (21.06)
F230C-R	170.0 (6.69)	270.0 (10.63)	155.0 (6.10)	50.0 (1.97)	80.0 (3.15)	96.0 (3.78)	40.3 (1.59)	44.3 (1.74)	652.0 (25.67)	535.0 (21.06)
F300C	240.0 (9.45)	340.0 (13.39)	190.0 (7.48)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	21.3 (0.84)	25.3 (1.00)	1200.0 (47.24)	1043.0 (41.06)
F300C-R	240.0 (9.45)	340.0 (13.39)	190.0 (7.48)	50.0 (1.97)	80.0 (3.15)	96.0 (3.78)	40.3 (1.59)	44.3 (1.74)	1200.0 (47.24)	1043.0 (41.06)

Dimensions given in mm (in)

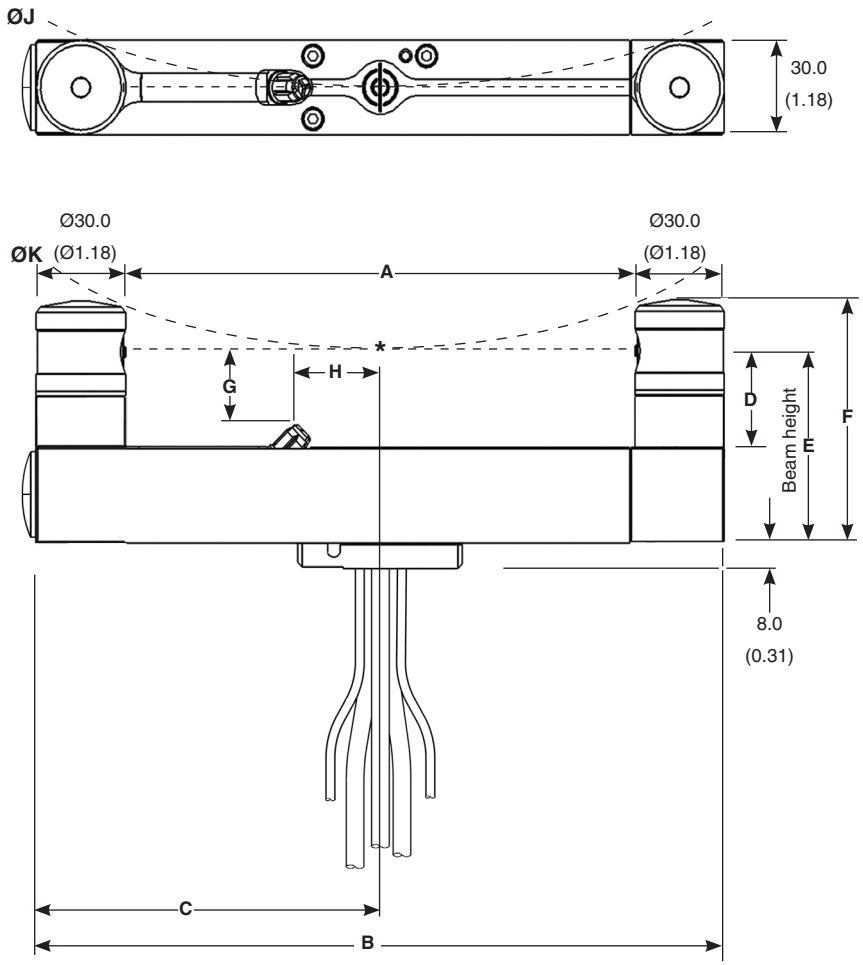
NC4+ Blue F100-10C system with connector dimensions



Model	Dimensions									
	A	B	C	D	E	F	G	H	ØJ	ØK
F100-10C	40.0 (1.57)	140.0 (5.51)	87.0 (3.43)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	18.0 (0.71)	10.9 (0.43)	25.0 (0.98)	19.5 (0.77)

Dimensions given in mm (in)

NC4+ Blue bottom exit system dimensions

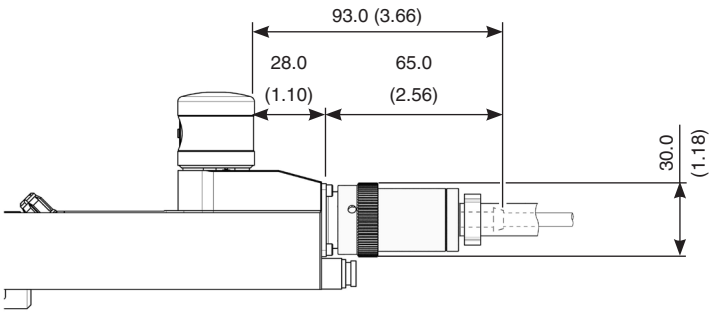


Model	Dimensions									
	A	B	C	D	E	F	G	H	ØJ	ØK
F145	85.0 (3.35)	145.0 (5.71)	72.5 (2.85)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	20.4 (0.80)	24.5 (0.96)	205.0 (8.07)	147.0 (5.79)
F230	170.0 (6.69)	230.0 (9.06)	115.0 (4.53)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	21.3 (0.84)	25.3 (1.00)	652.0 (25.67)	535.0 (21.06)

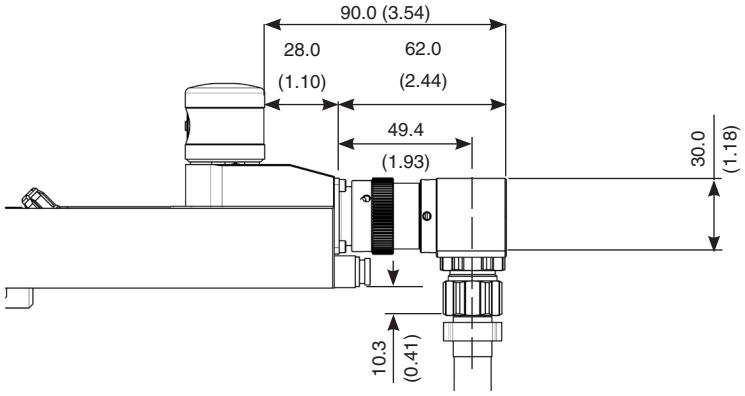
Dimensions given in mm (in)

NC4+ Blue connector dimensions

Straight connector



90° connector

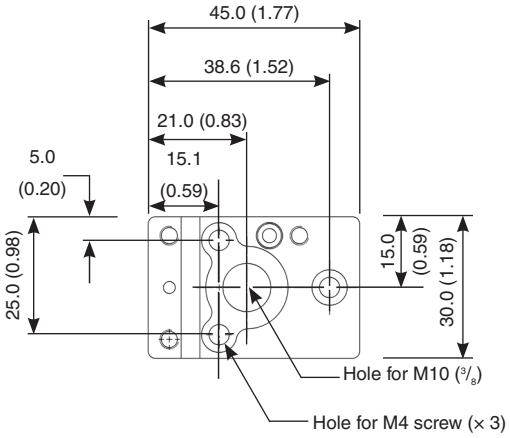


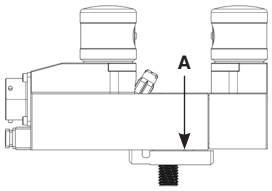
Dimensions given in mm (in)

NC4+ Blue adjuster plates mounting and dimensions

Mounting plate for F100 systems only

Mounting/adjuster plate

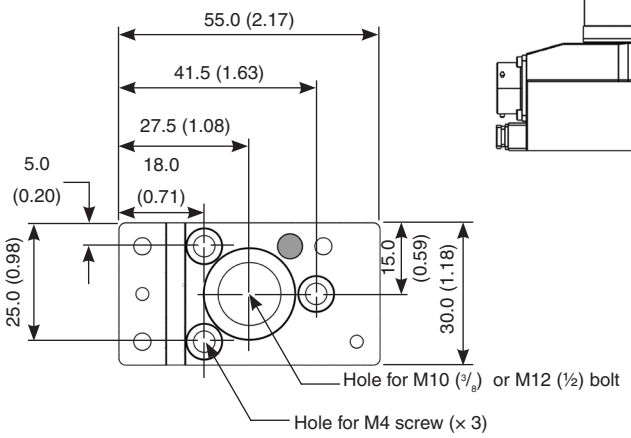


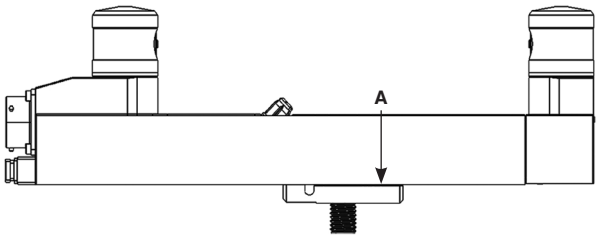


View on A

Mounting plate for F115, F145, F230 and F300 systems

Mounting/adjuster plate

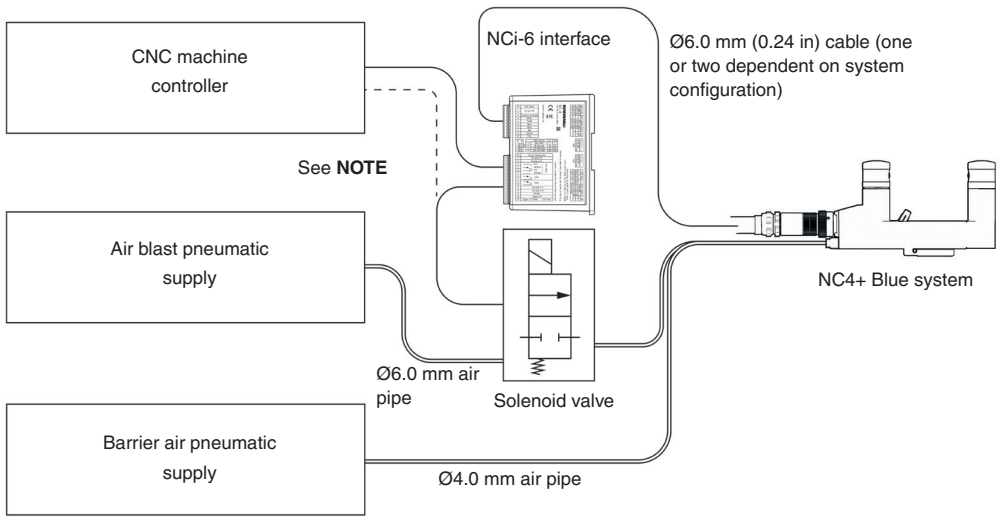




View on A

Dimensions given in mm (in)

Electro-pneumatic integration



NOTE: Solenoid valve can be controlled by an M-code connected using the auxiliary relay on NCi-6, CN2 pins 3, 4, 5 and 6, or connected directly to the solenoid valve.

Spare parts and accessories

A full range of spare parts and accessories is available; see the *NC4 non-contact tool setting accessories* data sheet (Renishaw part no. H-2000-2223).

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