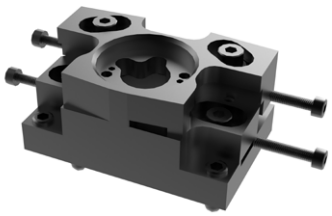
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NC4 non-contact tool setting system accessories















www.renishaw.com/nc4

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Compliance information for this product is available by scanning the QR code or visiting
www.renishaw.com/mtpdoc



Publications

These can be downloaded from our website at **www.renishaw.com**.

Item	Part number	Description
NC4+ Blue installation guide	H-6435-8501	Installation guide for NC4+ Blue non-contact tool setting system.
NC4 installation guide	H-6270-8501	Installation guide for NC4 non-contact tool setting system.
NC4 separates installation guide	H-4114-8501	Installation guide for NC4 separates non-contact tool setting systems.
NCi-6 installation guide	H-6516-8500	Installation guide for NCi-6 interface.
NCSI installation guide	H-6516-8550	Installation guide for NCSI interface.
NCi-E installation guide	H-6861-8501	Installation guide for NCi-E interface.
Compliance information for machine tool probing systems without radio transmission	H-2000-5389	Compliance information for Renishaw machine tool probing systems without radio transmission.

Software

For available software, see the *Probe software for machine tools – programs and features* data sheet (Renishaw part no. H-2000-2298, available at **www.renishaw.com**).

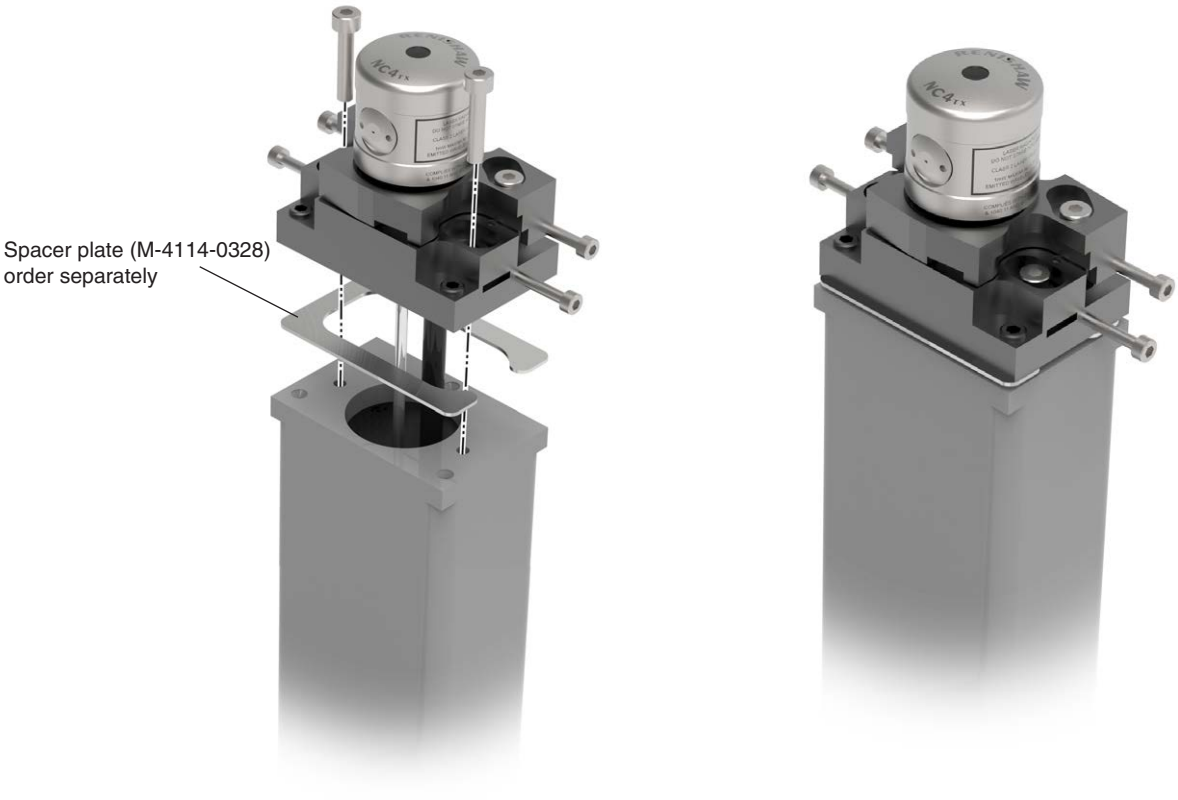
Maintenance and set-up

Item	Part number	Description
NC4 tools	A-4114-4110	Pin spanner, hexagonal wrenches (2 mm, 2.5 mm and 3 mm), bootlace ferrule (× 12), cleaning swab (× 10), cleaning tool, access panel tool.
Cleaning swab	P-AD99-0171	Cleaning swab for cleaning the optics (× 50).
Access panel tool	A-4114-0092	Access panel removal and fitment tool (alternative to pin spanner).
Pin spanner	P-TL09-0005	Pin spanner for removal and fitment of access panels.
NC4 set-up tool	A-4114-8000	Battery-operated tool used for setting up the NC4 system.

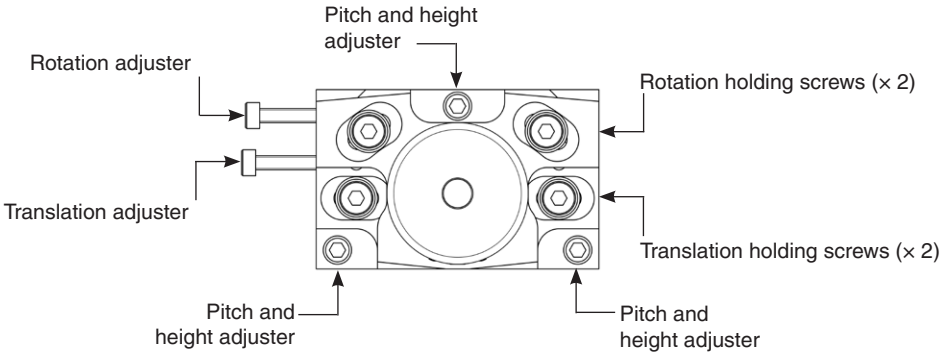
Installation accessories

Item	Part number	Description
Adjuster plate	A-6270-0302	Replacement adjuster pack for fixed system.
Adjuster pack (NC4 separates – 3-plate)	A-4114-3100	3-plate adjuster pack for NC4 separates. Enables rotational, translational, height and pitch adjustment.
Adjuster pack (NC4 separates – single plate)	A-4114-4400	Single-plate adjuster pack for NC4 separates. Enables rotational or translational, height and pitch adjustment.
Spacer plate	M-4114-0328	1 mm thick spacer plate. For use with single-plate and 3-plate adjuster packs.
90° bulkhead manifold block	A-6270-1810	Flanged manifold block providing neat cable routing, air pipe termination and spring cover retention at the machine bulkhead (spring covers and conduit to be ordered separately; see the table on **page 13**, “Electrical cables and conduit”, for further information). For use with NC4 systems with cable connector.
90° bulkhead fitting	P-CA61-0067	Flanged block providing neat cable and air pipe routing at the machine bulkhead. For use with NC4 separates and hard-wired systems (conduit and gland to be ordered separately, depending on NC4 type; see the table on **page 13**, “Electrical cables and conduit”, for further information).

Adjuster pack (NC4 separates – 3-plate) – (A-4114-3100)



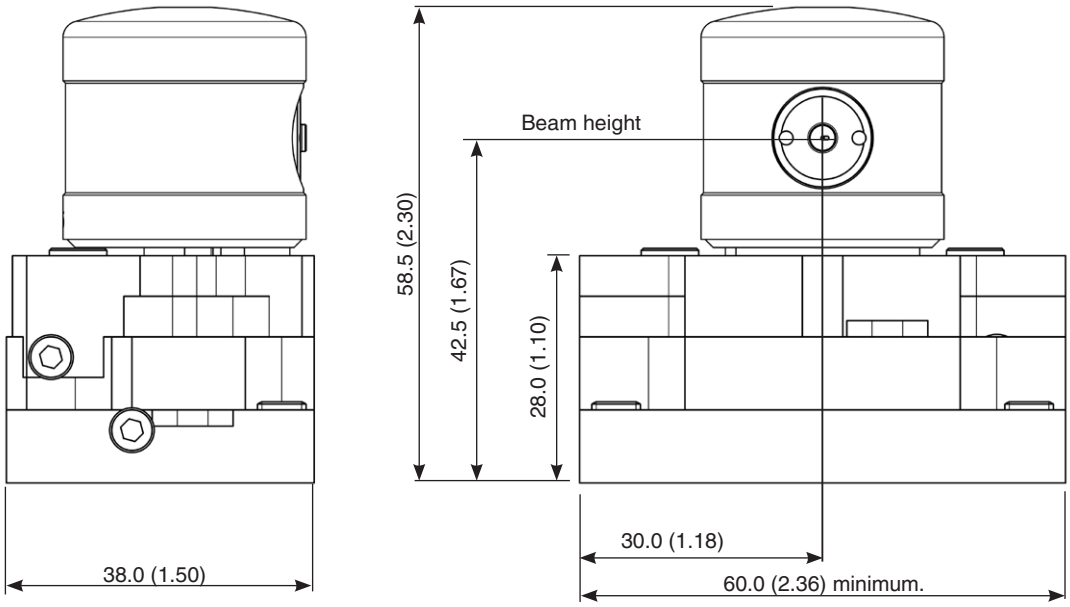
Rotational and translational adjustment



Limits of adjustment	
Rotation	±5 degrees
Translation	±2.5 (±0.098)
Height	±2.5 (±0.098)
Pitch	±5 degrees

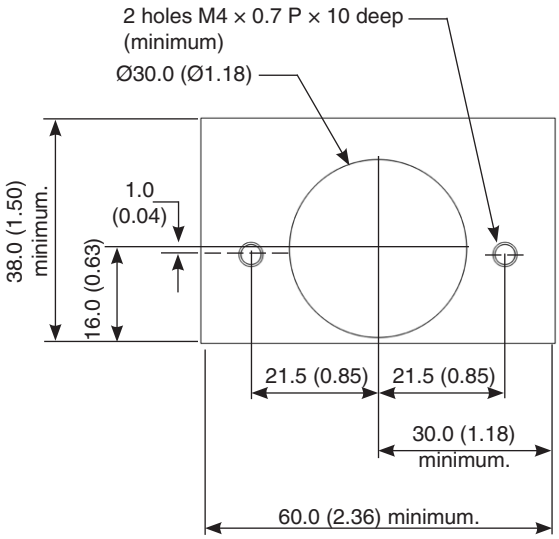
Dimensions given in mm (in)

Dimensions



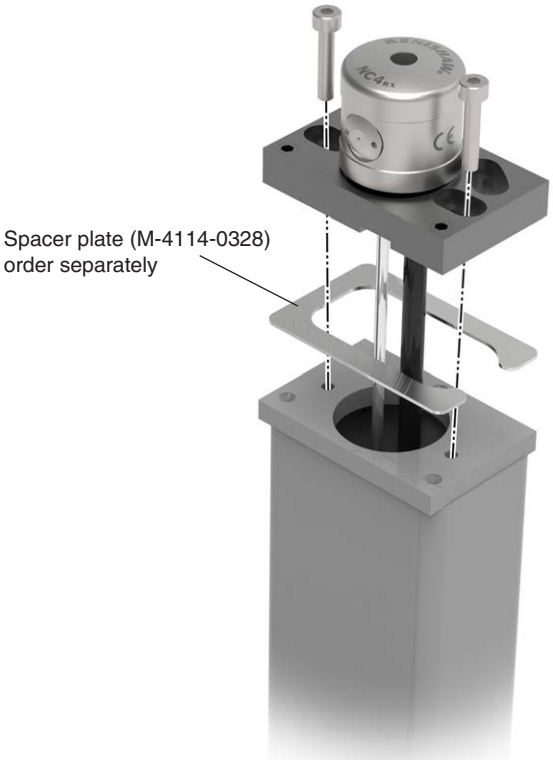
Dimensions given in mm (in)

Machining details for typical 3-plate mounting



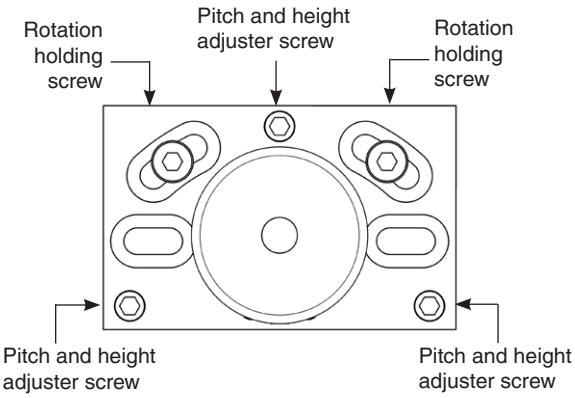
Dimensions given in mm (in)

Adjuster pack (NC4 separates – single-plate) – (A-4114-4400)





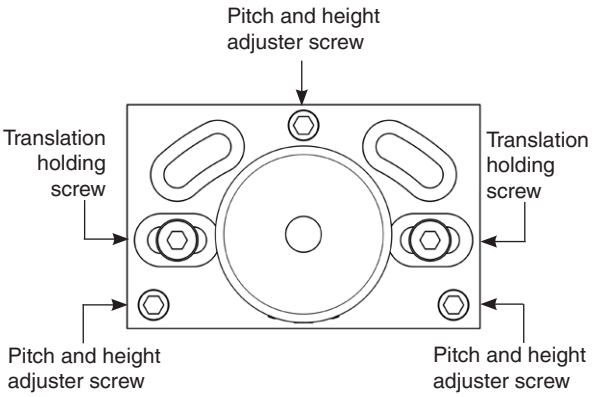
Rotational adjustment



Limits of adjustment	
Rotation	±7 degrees
Height	±2.5 (±0.098)
Pitch	±5 degrees

Dimensions given in mm (in)

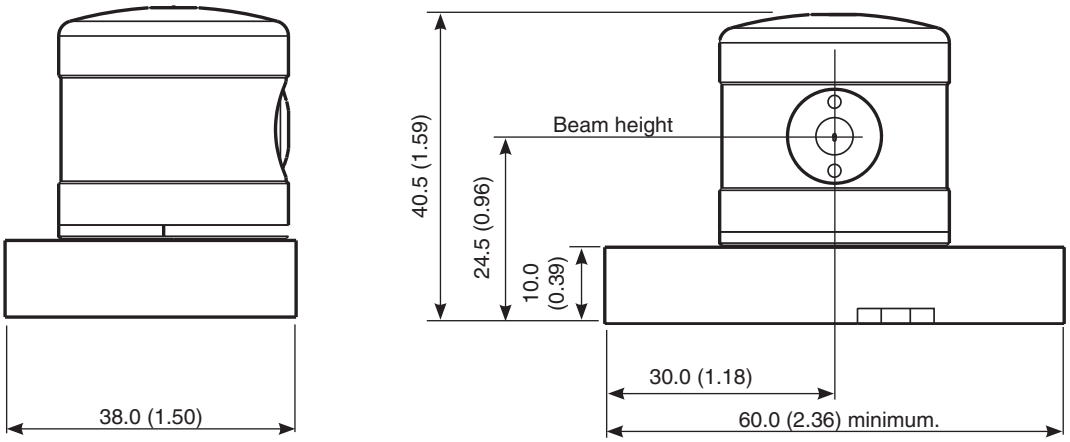
Translational adjustment



Limits of adjustment	
Translation	±2.5 (±0.098)
Height	±2.5 (±0.098)
Pitch	±5 degrees

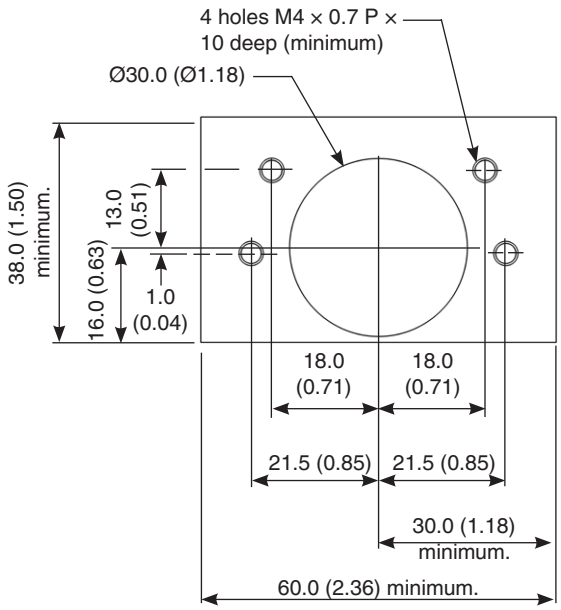
Dimensions given in mm (in)

Dimensions



Dimensions given in mm (in)

Machining details for typical single-plate mounting

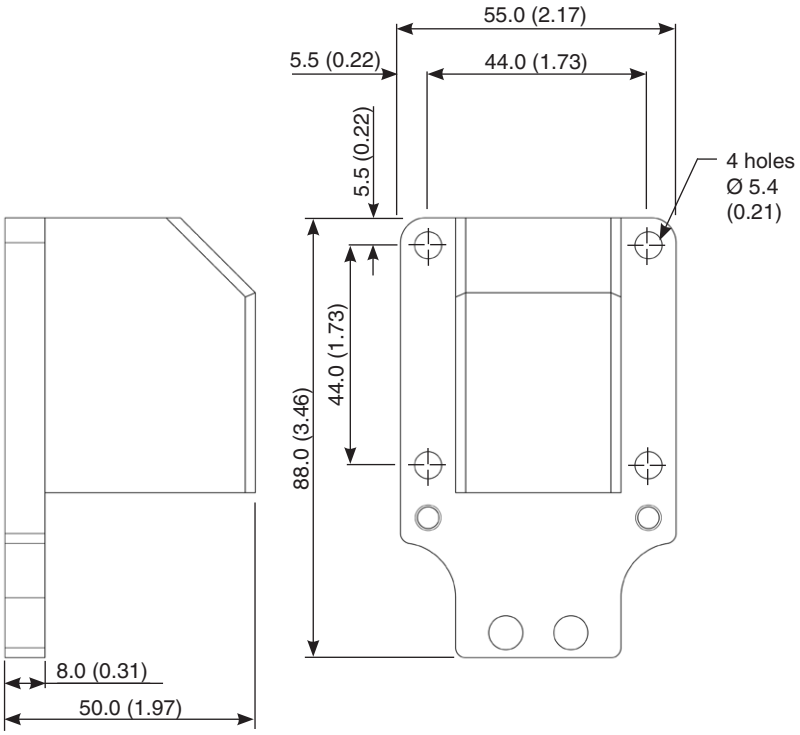


Dimensions given in mm (in)

90° bulkhead manifold block for NC4 systems with cable connector – (A-6270-1810)

Mounting hole details



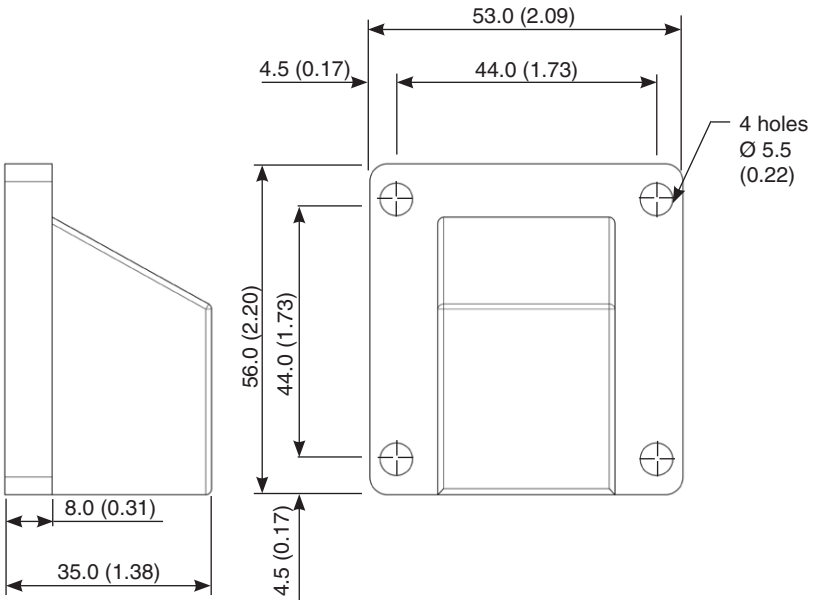


Dimensions given in mm (in)

90° bulkhead fitting for NC4 separates and hard-wired systems – (P-CA61-0067)

Mounting hole details





Dimensions given in mm (in)

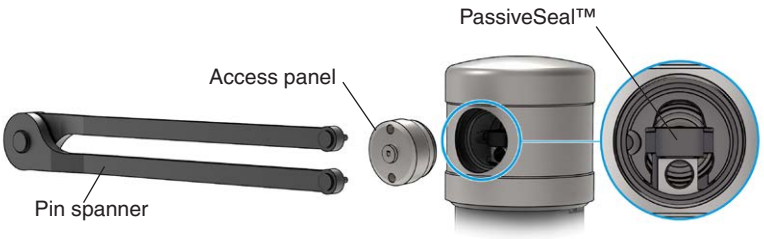
Access panels

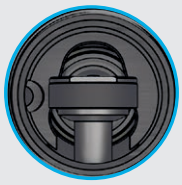
Item	Part number	Description
10 access panel	A-6270-0310	Access panel with 10 identification marking.
18 access panel	A-6270-0315	Access panel with 18 identification marking.
20 access panel	A-6270-0320	Access panel with 20 identification marking.
40 access panel	A-6270-0335	Access panel with 40 identification marking.
+40+ access panel	A-6270-0340	Access panel with +40+ identification marking.
+50+ access panel	A-6270-0350	Access panel with +50+ identification marking.
3•0 access panel	A-6861-0330	Access panel with 3•0 identification marking.
5•0 access panel	A-6756-0350	Access panel with 5•0 identification marking.
60 access panel	A-6270-0360	Access panel with 60 identification marking.

Access panel identification markings

The access panel of each NC4 transmitter and receiver unit is engraved with identifying markings. The access panel information for each type of NC4 unit is shown in the tables on pages 9 and 10. The access panels of both the NC4 and NC4 separate units are compatible with both PassiveSeal types.

NC4+ Blue units



		Identification marking	
Unit	PassiveSeal™ type	Tx access panel	Rx access panel
NC4+ Blue F115		5•0	
NC4+ Blue F145			
NC4+ Blue F230			
NC4+ Blue F300			
NC4+ Blue F115		+50+	
NC4+ Blue F145		+40+	

NC4 units

	Identification marking	
Unit	Tx access panel	Rx access panel
NC4+ F115	+50+	
NC4+ F145	+40+	
NC4 F230	20	18
NC4 F300	20	

NC4 separate units

	Identification marking	
Unit	Tx access panel	Rx access panel
NC4 S300-S500	20	40
NC4 S500-S800	40	20
NC4 S800-S1500		40
NC4 S1500-S2000		60
NC4 S2000-S3000	60	40
NC4 S3000-S5000		60

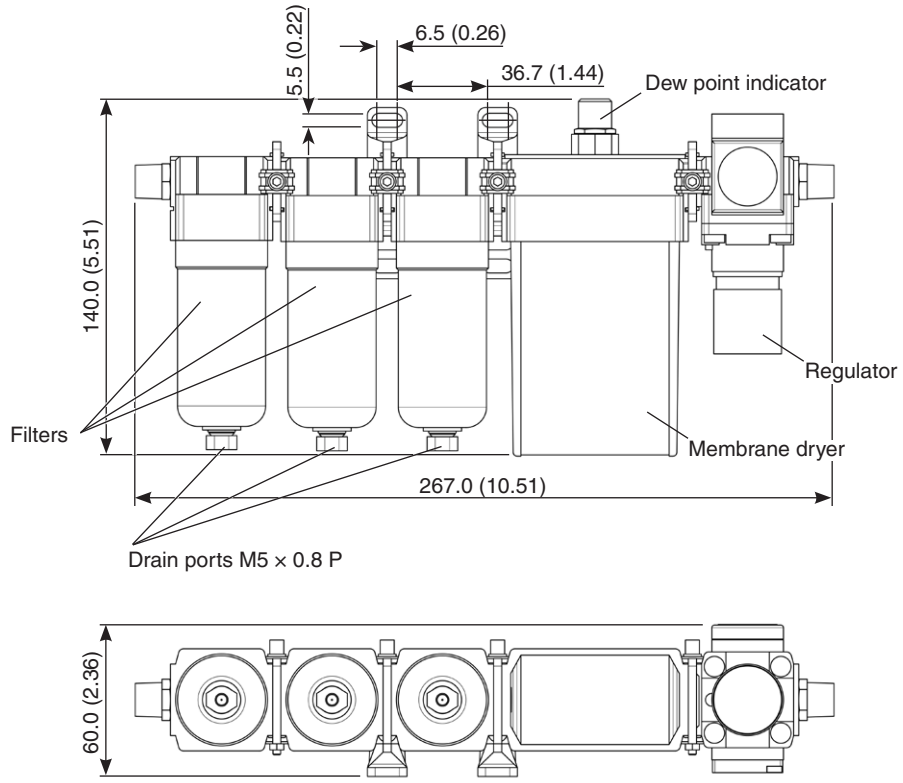
Air blast spares and accessories

Item	Part number	Description
Air preparation pack for air blast	A-5450-2000	Filter/regulator for air blast (solenoid sold separately). Supplies air conforming to BS ISO 8573-1 Class 1.7.2.
Solenoid pack	A-5299-2933	Solenoid valve pack to control air supply to the integral air blast.
Air blast nozzle replacement pack	A-6270-0395	Air blast nozzle assembly and fitting tool.
Blanking plug pack	A-6270-0399	Air blast blanking plug, fitting tool and hexagonal key.

Pneumatic components and tubing

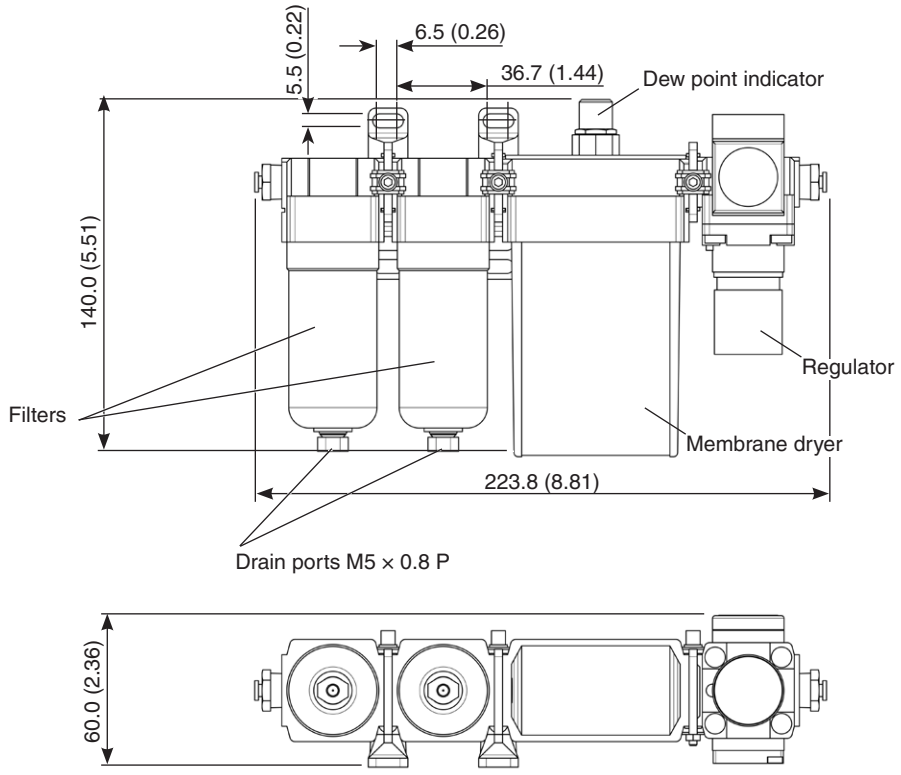
Item	Part number	Description
Air preparation pack for barrier air (standard)	A-6435-4000	Filters (× 3, 5 µm, 0.3 µm and 0.01 µm)/dryer/regulator. Supplies air conforming to BS ISO 8573-1 Class 1.4.2. Variety of pneumatic fittings: Ø0.125 in (× 2) Ø0.250 in (× 2) Ø4.0 mm (× 2) Ø6.0 mm (× 2)
Air preparation pack for barrier air (small)	A-6435-4500	Filters (× 2, 0.3 µm and 0.01 µm)/dryer/regulator. Supplies air conforming to BS ISO 8573-1 Class 1.4.2. Variety of pneumatic fittings: Ø0.125 in (× 2) Ø0.250 in (× 2) Ø4.0 mm (× 2) Ø6.0 mm (× 2) For use as an alternative to A-6435-4000 when installation space is limited. **NOTE:** Air supply to this pack must be pre-filtered to 5 µm or less, to prevent premature clogging of the pack filters.
Air filter service pack	M-3060-0933	Replacement filters for air filter/regulator unit.
Membrane dryer service pack	M-3060-0943	Replacement membrane cartridge and dew point indicator.
Equal tee fitting	P-PF04-0010	Ø4.0 mm (0.16 in) push-fit pneumatic adaptor.
Straight fitting Ø6.0 mm (0.24 in) to Ø6.0 mm (0.24 in)	P-PE02-0295	Ø6.0 mm (0.24 in) to Ø6.0 mm (0.24 in) push-fit pneumatic adaptor.
Straight fitting Ø6.0 mm (0.24 in) to Ø4.0 mm (0.16 in)	P-PE02-0388	Ø6.0 mm (0.24 in) to Ø4.0 mm (0.16 in) push-fit pneumatic adaptor.
Straight fitting Ø4.0 mm (0.16 in) to Ø4.0 mm (0.16 in)	P-PE02-0020	Ø4.0 mm (0.16 in) to Ø4.0 mm (0.16 in) push-fit pneumatic adaptor.
Straight fitting Ø4.0 mm (0.16 in) to Ø3.0 mm (0.12 in)	P-PE02-0019	Ø4.0 mm (0.16 in) to Ø3.0 mm (0.12 in) push-fit pneumatic adaptor.
Ø4.0 mm (0.16 in) tube installation pack	A-6270-0365	Ø4.0 mm (0.16 in) × 5.0 m (16.40 ft) air tube, Ø4.0 mm (0.16 in) to Ø4.0 mm (0.16 in) straight fitting, blanking cap.
Ø6.0 mm (0.24 in) tube installation pack	A-6270-0366	Ø6.0 mm (0.24 in) × 5.0 m (16.40 ft) air tube, Ø6.0 mm (0.24 in) to Ø6.0 mm (0.24 in) straight fitting, blanking cap.
Ø3.0 mm (0.12 in) tube installation pack	A-4114-0057	Ø3.0 mm (0.12 in) × 5.0 m (16.40 ft) air tube, Ø4.0 mm (0.16 in) to Ø3.0 mm (0.12 in) straight fitting, blanking cap.
PU tube Ø6.0 mm (0.24 in)	P-PF26-0070	Ø6.0 mm (0.24 in) air tube. Order by the metre.
PU tube Ø4.0 mm (0.16 in)	P-PF26-0076	Ø4.0 mm (0.16 in) air tube. Order by the metre.
Nylon tube Ø3.0 mm (0.12 in)	P-PF26-0014	Ø3.0 mm (0.12 in) air tube. Order by the metre.
Air preparation pack connector fitting M5 to Ø6.0 mm (0.24in) tube	P-PF07-0025	Male connector from M5 to Ø6.0 mm (0.24in) tube.
Metal filter bowl	P-FI01-0107	Metal filter bowl with auto drain for air preparation pack.

Air preparation pack for barrier air (standard) – (A-6435-4000)



Dimensions given in mm (in)

Air preparation pack for barrier air (small) – (A-6435-4500)



Dimensions given in mm (in)

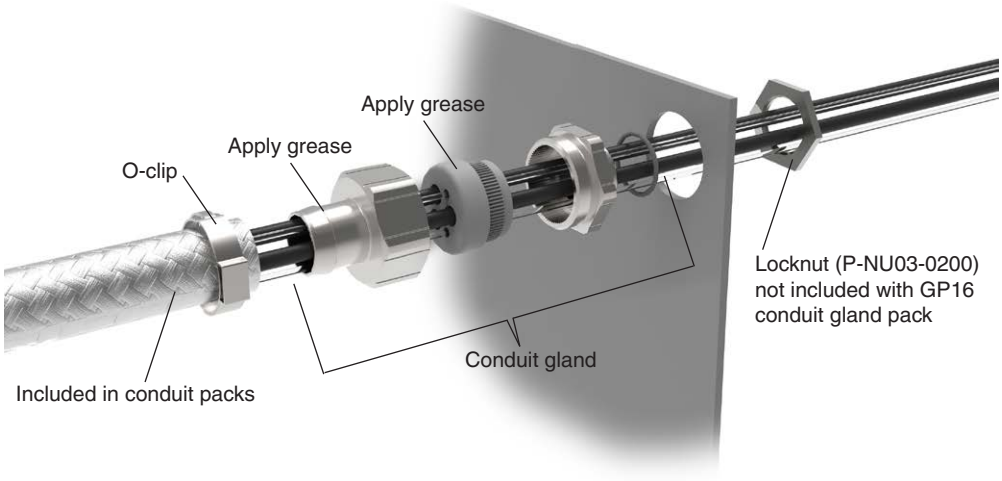
Electrical cables and conduit

Item	Part number	Description
Cable with connector assembly (straight, no conduit) - 12.5 m (41.01 ft)	A-6270-0480	12.5 m (41.01 ft) cable with straight connector.
Cable with connector assembly (90°, no conduit) - 12.5 m (41.01 ft)	A-6270-0490	12.5 m (41.01 ft) cable with 90° connector.
Cable with connector assembly (straight, with conduit) - 12.5 m (41.01 ft)	A-6270-0485	12.5 m (41.01 ft) cable with straight connector, 4.0 m (13.12 ft) of GP9 conduit, O-clip, P-clips (× 2) and conduit gland.
Cable with connector assembly (90°, with conduit) - 12.5 m (41.01 ft)	A-6270-0495	12.5 m (41.01 ft) cable with 90° connector, 4.0 m (13.12 ft) of GP9 conduit, O-clip, P-clips (× 2) and conduit gland.
Cable with connector assembly (straight, no conduit) - 20.0 m (65.62 ft)	A-6270-0481	20.0 m (65.62 ft) cable with straight connector.
Cable with connector assembly (90°, no conduit) - 20.0 m (65.62 ft)	A-6270-0491	20.0 m (65.62 ft) cable with 90° connector.
Cable with connector assembly (straight, with conduit) - 20.0 m (65.62 ft)	A-6270-0486	20.0 m (65.62 ft) cable with straight connector, 4.0 m (13.12 ft) of GP9 conduit, O-clip, P-clips (× 2) and conduit gland.
Cable with connector assembly (90°, with conduit) - 20.0 m (65.62 ft)	A-6270-0496	20.0 m (65.62 ft) cable with 90° connector, 4.0 m (13.12 ft) of GP9 conduit, O-clip, P-clips (× 2) and conduit gland.
Hard-wired 90° conversion pack	A-6270-0380	Parts required to convert hard-wired system to 90° exit.
Conduit pack (GP18) - 4.0 m (13.12 ft)	A-6270-0390	Conduit pack (GP18) for hard-wired integral air blast systems. Contains: 4.0 m (13.12 ft) conduit length, P-clip (× 2) and conduit gland pack.
Conduit pack (GP11) - 4.0 m (13.12 ft)	A-4114-4150	Conduit pack (GP11) for NC4 separates. Contains: 4.0 m (13.12 ft) conduit length, P-clip (× 2) and conduit gland packs (× 2).
Conduit pack (GP16) - 4.0 m (13.12 ft)	A-4114-4200	Conduit pack (GP16) for hard-wired legacy systems. Contains: 4.0 m (13.12 ft) conduit length, P-clip (× 2).
Conduit (GP18) per metre	M-6270-0278	Conduit (GP18) for hard-wired integral air blast systems. Order by the metre.
Conduit (GP9) per metre	P-HO01-0010	Conduit (GP9) for NC4 systems with cable connector. Order by the metre.
Conduit (GP11) per metre	P-HO01-0008	Conduit (GP11) for NC4 separates. Order by the metre.
Conduit (GP16) per metre	P-HO01-0011	Conduit (GP16) for hard-wired legacy systems. Order by the metre.
Conduit P-clip (GP18)	P-CA70-0220	Clamp for GP18 and GP16 conduit.
Conduit P-clip (GP9)	P-CA71-0045	Clamp for GP9 conduit.
Conduit P-clip (GP11)	P-CL36-0016	Clamp for GP11 conduit.
Conduit O-clip (GP18)	P-HO01-0081	O-clip for GP18 conduit.
Conduit O-clip (GP9)	P-HO01-0083	O-clip for GP9 conduit.
Conduit O-clip (GP11)	P-HO01-0082	O-clip for GP11 conduit.
Conduit O-clip (GP16)	P-HO01-0084	O-clip for GP16 conduit.
Conduit gland pack (GP18)	A-6270-1818	Cable/conduit gland for hard-wired integral air blast systems (M20 × 1.5P). Includes a grease sachet, O-clip and locknut.
Conduit gland pack (GP9)	A-6270-0383	Cable/conduit gland for NC4 systems with cable connector (M20 × 1.5P). Includes a grease sachet, O-clip and locknut.
Conduit gland pack (GP11)	A-6270-1811	Cable/conduit gland for NC4 separates (M20 × 1.5P). Includes a grease sachet, O-clip and locknut.
Conduit gland pack (GP16)	A-6270-1816	Cable/conduit gland for hard-wired legacy systems (M20 × 1.5P). Includes a grease sachet and O-clip.
Locknut	P-NU03-0200	Locknut for use with cable/conduit glands (M20 × 1.5P).

Electrical cables and conduit (continued)

Item	Part number	Description
Spring cover Ø4.0 mm (0.16 in)	M-6270-0248	4.0 m (13.12 ft) length to protect Ø4.0 mm (0.16 in) air tube.
Spring cover Ø6.0 mm (0.24 in)	M-6270-0249	4.0 m (13.12 ft) length to protect Ø6.0 mm (0.24 in) air tube.

Conduit gland installation (GP18, GP9, GP11 and GP16)



Interface and terminal blocks

Item	Part number	Description
NCi-6 interface pack	A-6516-2000	NCi-6 interface and box with DIN rail mounting and two terminal blocks.
NCi-6 terminal block (10-way)	P-CN25-1053	10-way socket terminal block, for use with NCi-6 interface.
NCi-6 terminal block (15-way)	P-CN25-0009	15-way socket terminal block, for use with NCi-6 interface.

Additional information

NOTE: Lightweight models for most of the products in this document are available upon request; contact your local Renishaw representative.

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Part no.: H-2000-2223-04-A
Issued: 10.2024

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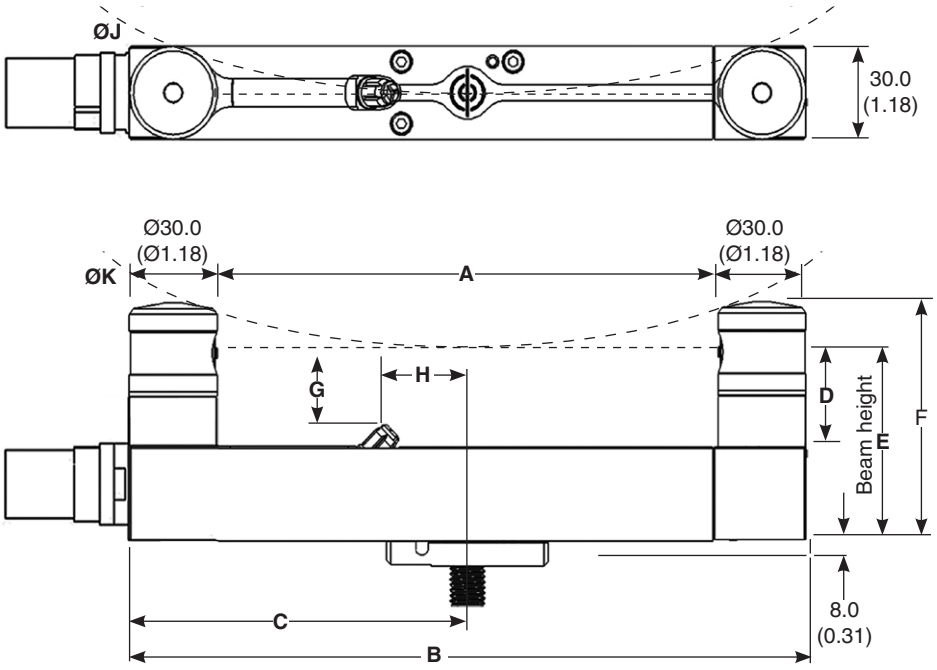
NC4 non-contact tool setting range



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	
Repeatability	±1.0 µm (39.37 µin) 2σ	
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 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	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	Cable on the end of the unit. Other configurations are available on request.
NC4 barrier air pneumatic supply	Air supply to the NC4 must conform to BS ISO 8573-1: 2010 Class 1.4.2. 6.0 bar (87.02 psi) maximum. Ø3.0 mm (0.12 in) × 5.0 m (16.40 ft).	
Air blast pneumatic supply	Air supply to the air blast must conform to BS ISO 8573-1: 2010 Class 2.9.4. Ø6.0 mm (0.24 in) air pipe × 5.0 m (16.40 ft), 6.0 bar (87.02 psi) maximum.	
Laser type	Class 2 laser product: 1 mW maximum output emitted wavelength 670 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)	1080 g (2.38 lb) to 2000 g (4.4 lb) depending on configuration.	
Mounting	M4 (× 3), M10 (3/8 in) or M12 (½ in) bolts for mounting via adjuster plate (not supplied). Other fixing arrangements are available on request.	
Environment	IP rating	IPX6 and IPX8, BS EN 60529:1992+A2:2013 (IEC 60529:1989+A1:1999+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 unit dimensions

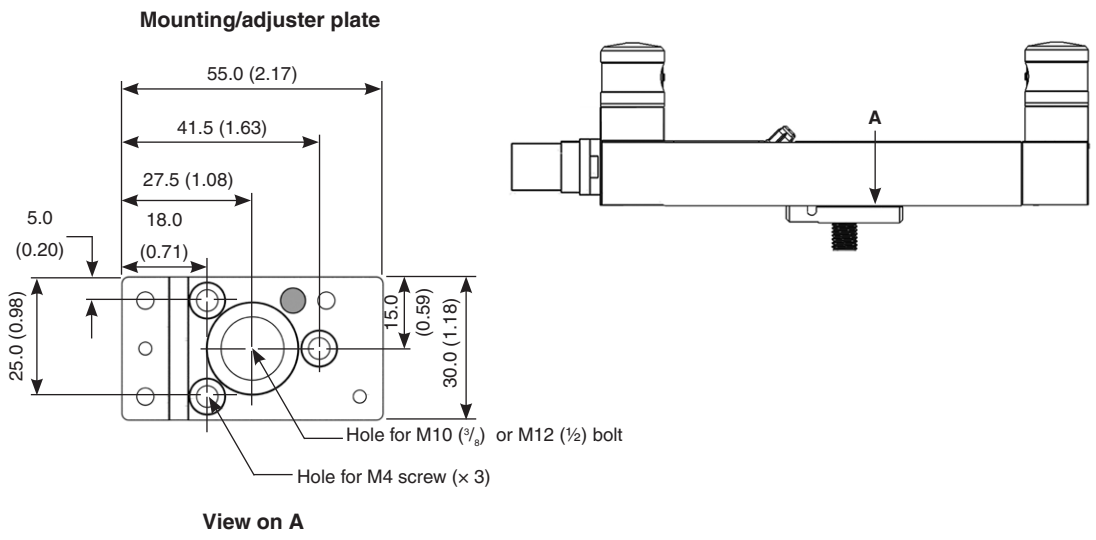


Dimensions given in mm (in)

Model	Dimensions									
	A	B	C	D	E	F	G	H	ØJ	ØK
NC4+ F115	55.0 (2.17)	115.0 (4.53)	57.5 (2.26)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	18.0 (0.71)	13.7 (0.54)	105.0 (4.13)	70.0 (2.76)
NC4+ F115-R	55.0 (2.17)	115.0 (4.53)	57.5 (2.26)	50.0 (1.97)	80.0 (3.15)	96.0 (3.78)	35.6 (1.40)	12.5 (0.50)	105.0 (4.13)	70.0 (2.76)
NC4+ 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)
NC4+ F145-R	85.0 (3.35)	145.0 (5.71)	72.5 (2.85)	50.0 (1.97)	80.0 (3.15)	96.0 (3.78)	37.5 (1.48)	25.0 (0.98)	205.0 (8.07)	147.0 (5.79)
NC4 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)
NC4 F230-R	170.0 (6.69)	230.0 (9.06)	115.0 (4.53)	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)
NC4 F300	240.0 (9.45)	300.0 (11.81)	150.0 (5.91)	31.0 (1.22)	61.0 (2.40)	77.0 (3.03)	21.4 (0.84)	25.4 (1.00)	1200.0 (47.24)	1043.0 (41.06)
NC4 F300-R	240.0 (9.45)	300.0 (11.81)	150.0 (5.91)	50.0 (1.97)	80.0 (3.15)	96.0 (3.78)	40.4 (1.59)	44.4 (1.75)	1200.0 (47.24)	1043.0 (41.06)

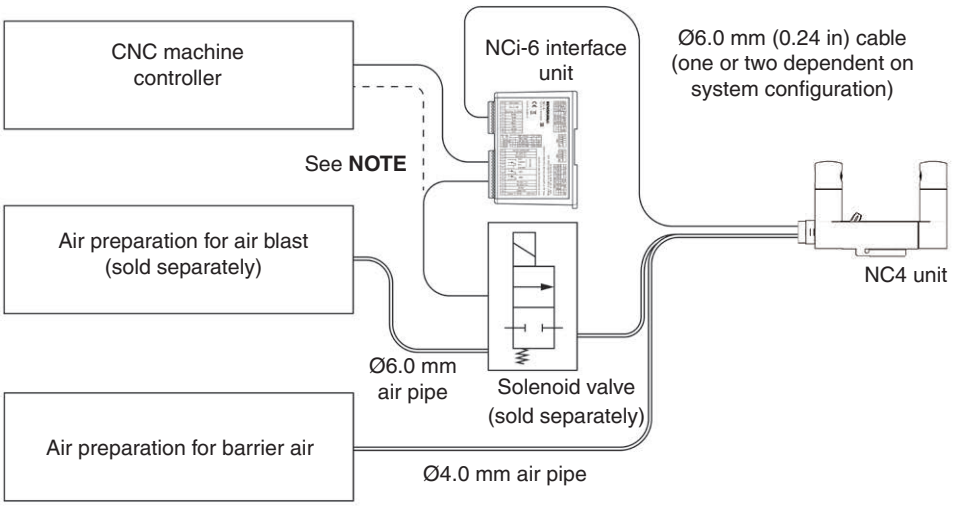
Dimensions given in mm (in)

NC4 adjuster plate mounting and dimensions



Dimensions given in mm (in)

Electro-pneumatic integration



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

Spare parts and accessories

A full range of spare parts and accessories is available. Contact Renishaw for a full list.

www.renishaw.com/contact **#renishaw**

+44 (0) 1453 524524 **uk@renishaw.com**

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