

# CNC COMBINATION MACHINES

High performance combined Lathes, Machining Centres and Routers designed for educational and training installations



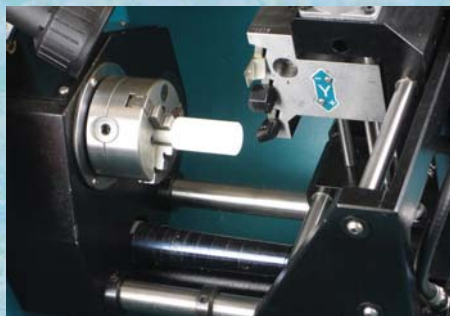
The Boxford range of Combined Lathes, Machining Centres and Routers are ideally suited to fulfil all levels of education and training requirements. Featuring a high-end machine controller, utilising the latest motion control technology, they can satisfy all your Turning, 2½D milling or routing and 3D milling or routing requirements.

## FOR ALL YOUR MACHINING REQUIREMENTS

The innovative and unique Boxford range of combined Lathes, Machining Centres and Routers offers educational users unrivalled performance and ease of use. Within a matter of minutes, both lathe components incorporating external and internal profiles, including screw threads, and 2½D mill/router components incorporating pockets, slots, holes and text can be designed, simulated and manufactured in a variety of materials. Amazing 3D hologram photos can also be produced using the included 'ImageRelief' software wizard.

Utilising the included '3DGeoCAM' software wizard, complex 3D solid models created in virtually any CAD package can be imported and again machined in a variety of materials.

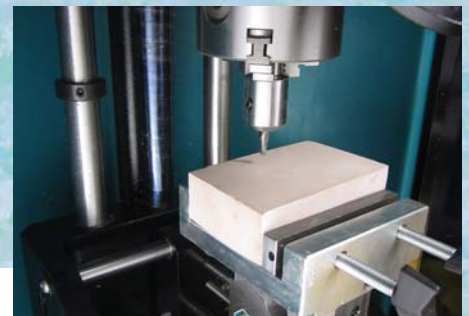
These Combination machines utilise industrial level programming codes and are ideal for vocational engineering training.



DUETi Lathe Mode



DUETi Mill Mode



MT2i Lathe Mode



MT2i Mill Mode



A3RTCmi<sup>2</sup> Router Mode



A3RTCmi<sup>2</sup> Lathe Mode



# DUETi

Bench top PC controlled Combined CNC Lathe and Vertical Machining Centre



Shown with optional Portable Cabinet Base and optional Laptop Shelf

- Entry level bench top combined CNC Lathe and Vertical Machining Centre suitable for machining wax, plastics and other synthetic materials.
- Slant bed configuration in lathe mode.
- 10 Position automatic lathe tool changer.
- 80mm dia. precision 3 jaw self-centring chuck.
- Quick change vice for mill workholding.
- Full 2D and 3D capability.
- Unique conversion from lathe to mill in less than one minute. Machine can be oriented vertically for milling.
- Single, totally enclosed cabinet housing the integrated electronic controller facilitates easier movement between rooms.

# MT2i

Floor Standing PC controlled Combined CNC Lathe and Machining Centre



Shown with optional Flood Coolant

- Rigid cast iron construction, incorporating high quality precision components, facilitates the machining of mild steel, alloys, plastics and other synthetic materials to close tolerances.
- Precision ground linear slides on all axes.
- 100mm dia. precision self-centring chuck.
- Generous 400mm between centres with optional tailstock steady.
- Unique conversion from lathe to mill in less than one minute.
- Integrated lockable storage cupboards.
- Includes removable laptop shelf (shown).

# A3RTCmi<sup>2</sup> & A3RTCmi<sup>2</sup>Ex

Bench top PC controlled Combined CNC Router and Lathe



Shown with optional Portable Cabinet Base

- Bench top combined CNC Router and Lathe. Suitable for machining hardwood, softwoods, manufactured boards, plastics and other synthetic materials. Also capable of machining aluminium alloys and brass when operating in router mode.
- Precision ground linear slides on all axes.
- 8 position automatic lathe tool changer.
- 80mm dia. precision 3 jaw self-centring lathe chuck.
- Unique conversion from lathe to mill in a few minutes.
- Single, totally enclosed cabinet housing the integrated electronic controller facilitates easier movement between rooms.

## STANDARD FEATURES ON ALL COMBINATION MACHINES

- Integrated touch sensitive control panel incorporating illuminated push buttons allows manual machining.
- Interlocked solenoid guarding cannot be opened when spindle is running. Open guard inhibits slide movement and spindle rotation.
- Pre-loaded anti-backlash ball screws on all axes.
- Precision self-centring 3-jaw chuck.
- Incorporates a high-end machine controller utilising the latest motion control technology to produce smooth and fast 3-axis simultaneous movement.
- Integrated machine electrics.
- Integrated machine lighting.
- Lathe spindle speeds in RPM, metres/min or inches/min.
- Lathe feedrates in mm/min, inches/min, mm/rev or inches/rev.
- USB interface.
- Single seat of Boxford 'CAD/CAM Design Tools' software (PC not included) incorporating integrated both LatheCAD and Techsoft 'Mill Design' CAD software and automatic design processing to a machining routine. Import wizards for creating 2, 3 and 4 axes machining routines from 2D and 3D CAD Files, JPEG and BMP image files, and PCB Gerber files. Also includes conversational and manual programming, ideal for vocational training. (Optional site/network licence upgrade).

ACCESSORIES	DUET <sub>i</sub>	MT2 <sub>i</sub>	A3RTC <sub>mi</sub> <sup>2</sup> (Ex)
Comprehensive Lathe Tooling Set	✓	✓	✓
Comprehensive Mill Tooling Set	✓	✓	
Comprehensive Mill Tool Holder Set	✓	✓	
Comprehensive boxed set of router bits			✓
Set of tools for 3D machining and photo engraving	✓	✓	✓
Machine Vice	STD	STD	✓
Air Mist Coolant*			✓
Flood Coolant		✓	
Tailstock Steady c/w rotating centre	✓	✓	✓
4th axes workpiece rotary indexing fixture (manual or auto)			✓
Vacuum clamping table (removable) and pump unit			✓
Extraction options			✓
Portable Cabinet Base	✓		✓

\*Requires a 6 Bar, 70/90 PSI compressed air supply



### Comprehensive Lathe Tooling Set

A package of external and internal tooling ideal for populating the automatic tool changers. Includes a selection of spare inserts.



### Comprehensive Mill Tooling Set

A package consisting of 7 off 3-flute TiCN coated slot drills, 1 off facing cutter and 2 off ball end cutters.



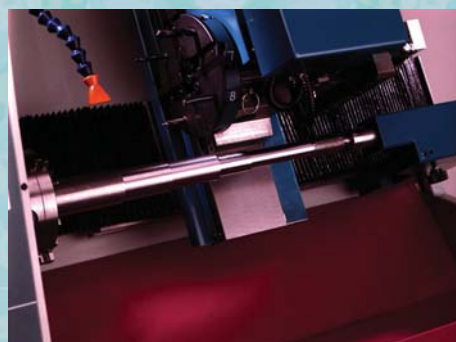
### Comprehensive Mill Tool Holder Set

Set of tool holders to accommodate the comprehensive mill tooling set.



### Machine Vice

Incorporates replaceable jaws. Other work holding options available including chucks on base plates.



### Manual Tailstock Steady

Includes a rotating centre for supporting longer work pieces.

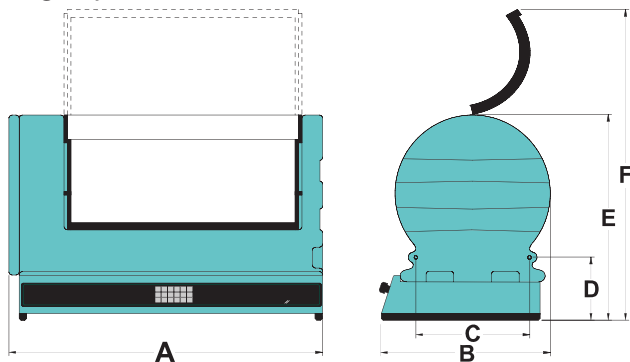


### Portable Cabinet Base

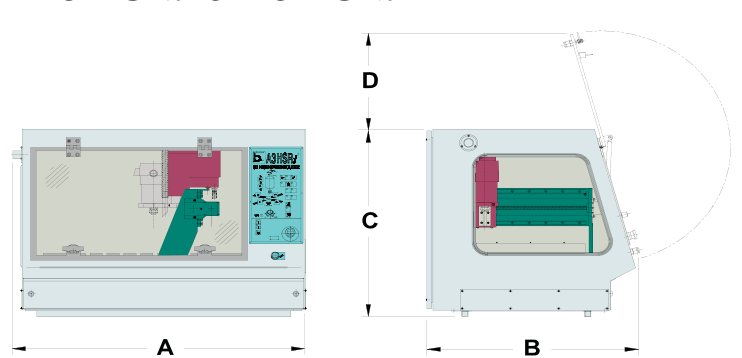
Incorporating a shelved lockable storage cabinet to accommodate a bench top machine. Optional laptop shelf available (shown above).

SPECIFICATIONS	DUETi	MT2i	A3RTCmi <sup>2</sup> (Ex)
<b>LATHE MODE</b>			
Swing Over Bed	225mm	210mm	130mm
X Axis Travel	125mm	150mm	130mm
Z Axis Travel	360mm	350mm	360mm (710mm)
Spindle Bored to Pass.	20mm	25mm	20mm
Distance Between Centres	330mm	400mm	230mm (580mm)
<b>MILL or ROUTER MODE</b>			
X Axis Travel (Longitudinal)	125mm	150mm	575mm (925mm)
Y Axis Travel (Cross)	75mm	110mm	325mm
Z Axis Travel (Vertical)	260mm	320mm	130mm
Table Area	180 x 110mm	180 x 110mm	750 x 400mm (1100 x 400mm)
<b>GENERAL</b>			
Spindle Motor	380 watts	1100 watts	Lathe - 380 watts Router - 1000 watts
Infinitely Variable Spindle Speeds	200 - 3500rpm	200 - 4000rpm	Lathe - 200 - 2500rpm Router - 8000 - 23000rpm
Electrics	110/220/240 V 1 Phase	110/220/240 V 1 Phase	110/220/240 V 1 Phase
Programmable Feed	0 – 1000 mm/min	0 – 1500 mm/min	0 - 5000 mm/min
Rapid Feed Rate at 100%	1000 mm/min	1500 mm/min	5000 mm/min

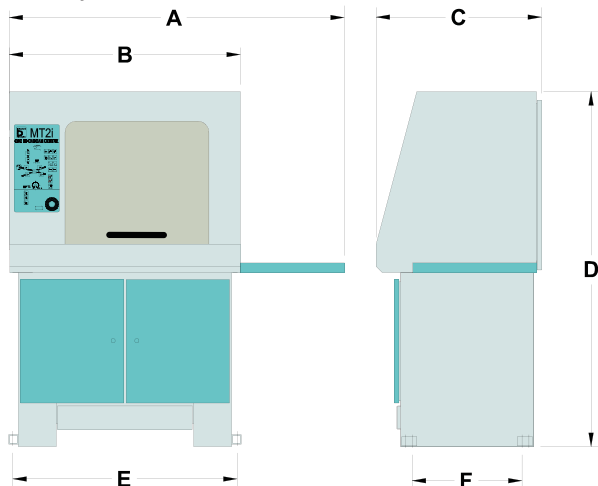
### DUETi



### A3RTCmi<sup>2</sup> & A3RTCmi<sup>2</sup>Ex



### MT2i



#### Machine Dimensions

	DUETi	MT2i	A3RTCmi <sup>2</sup> (Ex)
A	890mm	1500mm	1050(1400)mm
B	480mm	1000mm	750mm
C	350mm	720mm	740mm
D	190mm	1530mm	380mm
E	590mm	965mm	-
F	960mm	476mm	-
Weight	80kg	310kg	165kg (205kg)



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