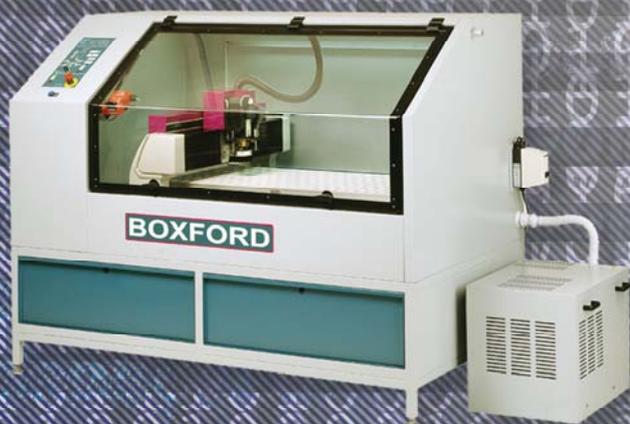


# CNC ROUTERS

High performance routers specifically designed for educational and training installations



The Boxford range of 3-axis CNC high performance routers are ideally suited to fulfil all levels of education and training requirements. The rigid machine construction, incorporating high quality precision components, facilitates the use of high material removal rate strategies, giving a component throughput that lower quality machines of lighter construction cannot match.

## UNRIVALLED VERSATILITY...

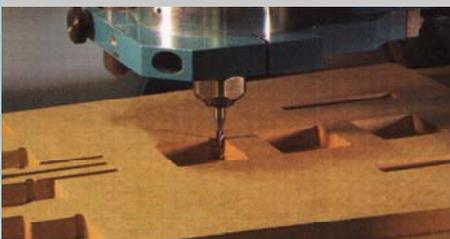


The Boxford range of routers offers educational users unrivalled performance and versatility. In standard configuration, the machines are ideal for a variety of 2½ and 3D machining to manufacture components incorporating blind machining, through machining and full 3D surfacing to produce, for example, Vacuum Forming and Injection moulds. Amazing 3D hologram photographs can also be produced using the included 'ImageRelief' software wizard.



Utilising the optional accessories, multi-sided, full 4 axes and PCB board machining can easily be produced. No other manufacturing technology, even Lasers, can offer this level of versatility.

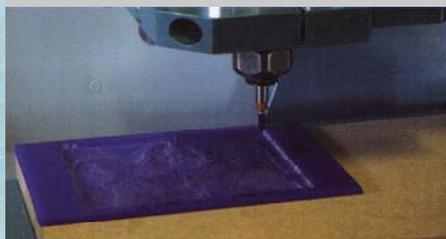
2½D Profiling and  
Blind Pocketing



3D Machining  
(Subtractive Rapid Prototyping)



Machining 3D  
Hologram Photographs



4th Axis Rotary  
Machining



PCB 'Isolation'  
Machining



Metal Cutting with A3HSRmi²  
(Aluminium Alloys and Brass)



# A3HSR<sup>i</sup>2

Bench top PC controlled CNC router



- Bench top CNC router suitable for machining hardwood, softwoods, manufactured boards, plastics and other synthetic materials.
- Single, totally enclosed cabinet housing the integrated electronic controller facilitates easier movement between rooms.
- Extended Z-axis facilitates the machining of tall components.
- Powerful 1.1kw fixed speed motor facilitates the high speed machining of hardwoods at significant depths of cut.
- Up to 8.5m/min true 3D motion.

# A3HSR<sup>mi</sup>2

Bench top PC controlled CNC router



In addition to the features listed for the A3HSR<sup>i</sup>2, the A3HSR<sup>mi</sup>2 also includes the following:

- 1kw high frequency, constant duty and variable speed spindle motor.
- Increased rigidity Z axis facilitates the machining of Aluminium Alloys and Brass.

# A1HSRi<sup>2</sup>

Free standing PC controlled CNC router



- Large format floor standing router suitable for machining hardwood, softwoods, manufactured boards, plastics and other synthetic materials.
- Can be installed through a standard single doorway.
- Ideal for machining full size furniture when equipped with the optional removable vacuum and pump unit (shown to the right of the machine opposite) as well as large scale 3D work.
- Removable T-Slotted table and selection of workholding clamps.
- Optional vacuum table sucks through a 6mm MDF sacrifice board (no holes) to clamp the sheet material for blind and through machining.
- Shrouded cutting head for 'at source' dust and chip removal.
- Optional transparent rear viewing panel allows the machine to be positioned away from walls for maximum student viewing.
- Up to 10m/min true 3D motion.

## STANDARD FEATURES ON ALL ROUTERS

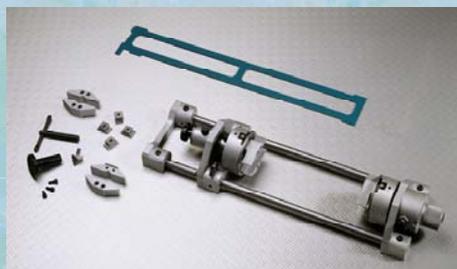
- Integrated touch sensitive control panel incorporating illuminated push buttons allows manual machining.
- Interlocked solenoid guarding cannot be opened when spindle is running. Open guard inhibits slide movement and spindle rotation.
- Precision ground linear slides on all axes.
- Linear ball bearings on all axes.
- Large diameter pre-loaded anti-backlash ball screws on all axes.
- Incorporates a high-end machine controller utilising the latest motion control technology to produce smooth and fast 3D movement.
- Integrated machine electrics.
- USB interface.
- Outlet for standard dust extraction connection.
- T-Slot table and 'Off Centred Cam' workholding clamping system.
- Tooling Starter Pack.
- Single seat of Boxford 'CAD/CAM Design Tools' software (PC not included) incorporating Techsoft 'Mill Design' and 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	A3HSR $mi^2$	A3HSR $i^2$	A1HSR $i^2$
Comprehensive boxed set of router bits for 2½D machining.	✓	✓	✓
Set of router bits for 3D machining and photo engraving.	✓	✓	✓
4th axes workpiece rotary indexing fixture (manual or auto).	✓	✓	✓
Machine vice.	✓	✓	✓
80mm 3 jaw self-centring chuck and back plate.	✓	✓	✓
Vacuum clamping table (Removable) and pump unit.	✓	✓	✓
Floating head kit for PCB machining.	✓	✓	✓
Extraction manifold kit with optional high performance extractor.	✓	✓	✓
Standard extractor.	✓	✓	✓
Portable cabinet base.	✓	✓	✓
Portable workstation.	✓	✓	✓



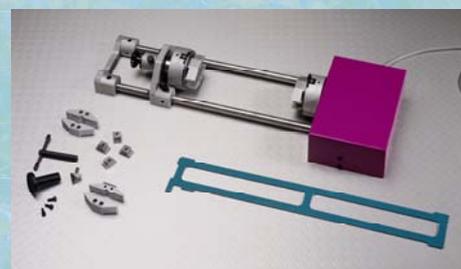
#### Removable Vacuum Bed

Fitted/Unfitted in a matter of minutes. Sucks through an MDF sacrifice board (no holes) and clamps sheet material for through machining.



#### Manual Rotary Indexer

4-Position manual indexer facilitating accurate multi sided component machining. Ideal for F1 car manufacture.



#### Auto Rotary Indexer

Facilitates both accurate multi-sided component machining and full 360 degree 4 axes machining.



#### PCB Floating Head Kit

Designed for producing large format or batches of smaller PCB boards, the removable floating head maintains a very accurate cut depth, irrespective of uneven surfaces. Includes tooling for both track isolation engraving and hole drilling.



#### Portable Workstation

Workstation (bench) with braked castors to accommodate a bench top router and PC. 1700mm x 650mm x 755mm high.



#### Portable Cabinet Base

Incorporating a shelved storage cabinet and braked castors to accommodate a bench top router. Optional Laptop shelf available (shown above). Option to fit vacuum bed pump in base whilst retaining a single shelved storage compartment.



#### Extraction Manifold Kit

Provides 2 x 100mm dia. outlets for connection to an external extraction system. Includes cabinet air inlets, airflow deflectors, manifolds and an electrical interface. Must be ordered with a high performance extractor.



#### High Performance Extractor

Removes all debris from the router cabinet into a drawer in the base of the unit for removal by suitably equipped personnel. Interfaced with the router to turn on/off with the spindle or be manually operated from the router control panel.



#### Standard Extractor

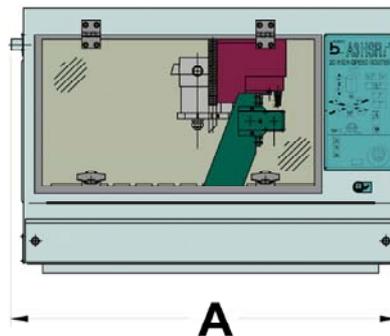
Supplied with a single manifold and air inlet when used with the A3HSR $i^2$  and A3HSR $mi^2$  machines. Connects directly to the standard fit extraction connection on the A1HSR $i^2$ .

SPECIFICATIONS		A3HSR <sup>i2</sup>	A3HSR <sup>mi2</sup>	A1HSR <sup>i2</sup>
Axis Travel	X (Longitudinal)	575mm	575mm	1235mm
	Y (Cross)	325mm	325mm	625mm
	Z (Verticle)	130mm	130mm	130mm
Table Area		750x400mm	750x400mm	1295 x 720mm
Spindle Motor		1100 watts	1000 watts high frequency constant duty	1000 watts high frequency constant duty
Spindle Speed		23000rpm	8000 - 23000rpm	8000 - 23000rpm
Electrics		110/220/240 V 1Phase	110/220/240 V 1Phase	110/220/240 V 1Phase
Programmable Feed		5000mm/min	5000mm/min	6000mm/min
Rapid Feed Rate at 100%		5000mm/min	5000mm/min	6000mm/min
3D-Profiling Up-to		8500mm/min	8500mm/min	10000mm/min
Aluminium Alloys/Brass		✗	✓	✗

#### Machine Dimensions

A	1050mm	C	740mm
B	750mm	D	380mm

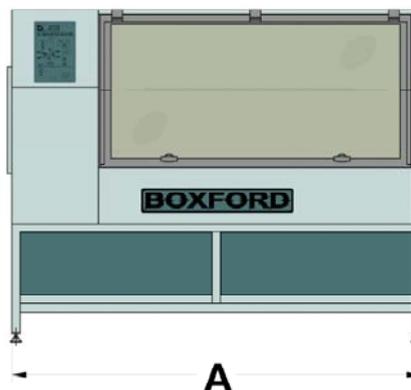
Machine Weight - 150kg (330lbs)



#### Machine Dimensions

A	1890mm	C	1540mm
B	1200mm	D	530mm

Machine Weight - 530kg (1170lbs)



A3HSR<sup>i2</sup> & A3HSR<sup>mi2</sup>

A1HSR<sup>i2</sup>



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