

Dear Customer

Thank you for purchasing this Trend product, we hope you enjoy many years of creative and productive use.

Please remember to return your guarantee card within 28 days of purchase.

Please read and follow all safety instructions before turning on this engraver. If you do not understand any statement, please contact Trend.

The data and information in this manual may be subject to change without any prior notice.

Please keep the carton and packaging for further servicing.

The Mini CNC is manufactured on behalf of Trend by BravoProdigy.

This unit is supplied with two manuals provided by BravoProdigy. Please refer to these instruction manuals for full installation and set up of the unit, and the standard software.

(1) BravoProdigy Model No. BC200 CNC Operating Instructions.

(2) BravoProdigy Model No. BC200 EDIT Operating Instructions.

**PLEASE NOTE:** EDIT & CNC software require a PC running Windows XP, Windows Vista or Windows 7, 8 or 10.



**If you require further safety advice, technical information or spare parts, please call Trend Technical Support or visit [www.trend-uk.com](http://www.trend-uk.com)**

## INTENDED USE

The engraver is intended for rotary engraving of wood based products and plastic.

The CNC Rotary is a computer controlled engraver which contains a user friendly software package and easy-to-operate engraver.

This engraver is ideal for beginners who want to learn CNC or for schools & education establishments.

The only requirement is a computer and a digital photo to be engraved on wood or acrylic.

## TECHNICAL DATA

Voltage	UK & Eire	V <sub>AC</sub>	240
Power output		V <sub>DC</sub>	24
		A	6.5
Machine size		mm	635 x 366 x 610
Clamping diameter			
Fixed thimble max.		mm	200
Jaw chuck	Inner	mm	2 - 16
		mm	25 - 60
	Outer	mm	22 - 55
Material length max.		mm	300
Table load max.		kg	5
Max. engraving speed		mm	40 - 2500
Resolution		mm	0.02
Spindle speed	min-1		0 - 17,000
Collet size	mm		4, 6, 35
	inch		1/4
Spindle motor		W <sub>DC</sub>	150
Operating noise level			
	Standby	dB	39.6
	No load	dB	<66dB
Weight		kg	42
Operating environment			
	Temp	°C	5 - 40°C
	Humidity	%	35 - 80%
Interface	USB		2.0
Fuse	UK & Eire		240V 13A in plug

## ITEMS REQUIRED

- Workbench.
- Hand tools.
- PC computer.

**DO NOT** use under wet conditions or in presence of flammable liquids or gases.

Supervision is required when inexperienced operators use this appliance.

This product is not intended for use by persons (including children) suffering from diminished physical, sensory or mental abilities; lack of experience, knowledge or skills unless they are supervised by a person responsible for their safety. Children should never be left alone with this product.

**SAFETY**



**WARNING:**

Observe the safety regulations in the instruction manual of the power tool to be used. Please read the following instructions carefully. Failure to do so could lead to serious injury. When using electric tools, basic safety precautions, including the following should always be followed to reduce the risk of fire, electric shock and personal injury. Also observe any applicable additional safety rules. Read the following safety instructions before attempting to operate this product.

**PLEASE KEEP THESE INSTRUCTIONS IN A SAFE PLACE.**

The attention of UK users is drawn to The Provision and Use of Work Equipment Regulations 1998, and any subsequent amendments.

Users should also read the HSE/HSC Safe Use of Woodworking Machinery Approved Code of Practice and Guidance Document and any amendments.

Users must be competent with woodworking equipment before using our products.

**IMPORTANT NOTE:**

Residual Risk. Although the safety instructions and operating manuals for our tools contain extensive instructions on safe working with power tools, every power tool involves a certain residual risk which cannot be completely excluded by safety mechanisms. Power tools must therefore always be operated with caution!

**General**

1. Disconnect power tool and attachment from power supply when not in use, before servicing, when making adjustments and when changing accessories such as cutters. Ensure switch is in "off" position. Always ensure cutter has stopped rotating.
2. Always mount the power tool, accessory or attachment in conformity with the instructions. Only use attachment and accessories specified in the power tool manual. The tool or attachment should not be modified or used for any application other than that for which it was designed. Do not force tool.
3. Keep children and visitors away. Do not let children or visitors touch the tool, accessory or attachment. Keep children and visitors away from work area. Make the workshop child proof with padlock and master switch.
4. Dress properly. Do not wear loose clothing or jewellery, they can be caught in moving parts. Rubber gloves and non-skid footwear is recommended when working outdoors. Wear protective hair covering to contain long hair.

5. Consider working environment. Do not use the product in the rain or in a damp environment. Keep work area well lit. Do not use power tools near gasoline or flammable liquids. Keep workshop at a comfortable temperature so your hands are not cold. Connect machines that are used in the open via a residual current device (RCD) with an actuation current of 30 mA maximum. Use only extension cables that are approved for outdoor use.
6. The accessory or attachment must be kept level and stable at all times.
7. Keep work area clean. Cluttered workshops and benches can cause injuries. Ensure there is sufficient room to work safely.
8. Secure idle tools. When not in use, tools should be stored in a dry and high or locked up place, out of reach of children.
9. For best control and safety use both hands on the power tool and attachment. Keep both hands away from cutting area. Always wait for the spindle and cutter to stop rotating before making any adjustments.
10. Always keep guards in place and in good working order.
11. Remove any nails, staples and other metal parts from the workpiece.
12. Maintain tools and cutters with care. Keep cutters sharp and clean for better and safer performance. Do not use damaged cutters. Follow instructions for lubricating and changing accessories. Keep handles dry, clean and free from oil and grease.
13. Maintain accessories. Do not use damaged accessories. Only use accessories recommended by the manufacturer.
14. Check damaged parts. Before operation inspect the attachment, the power tool, the cable, extension cable and the plug carefully for signs of damage. Check for alignment of moving parts, binding, breakage, mounting and any other conditions that may effect its operation. Have any damage repaired by an Authorised Service Agent before using the tool or accessory. Protect tools from impact and shock.
15. Do not use tool if switch does not turn it on or off. Have defective switches replaced by an Authorised Service Agent.
16. Don't over reach. Keep proper footing and balance at all times. Do not use awkward or uncomfortable hand positions.
17. Don't abuse the cable. Never carry power tool or accessory by cord or pull it to disconnect from the socket.

Keep cord from heat, oil and sharp edges. Always trail the power cord away from the work area.

18. Connect dust extraction equipment. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.
19. Check all fixing and fastening nuts, bolts and screws on power tool, attachment and cutting tools before use to ensure they are tight and secure. Periodically check when machining over long periods.
20. Stay alert. Watch what you are doing. Use common sense. Do not operate tools when you are tired, under the influence of drugs or alcohol.
21. Personal Protective Equipment (PPE) for eye, ear and respiratory protection must be worn. All PPE must meet current UK and EU legislation.
22. Do not leave tools running unattended. Do not leave tool until it comes to a complete stop.
23. Always clamp workpiece being machined securely.
24. Only use cutting tools for woodworking that meet EN847-1/2 safety standards, and any subsequent amendments.
25. Vibration levels. Hand held power tools produce different vibration levels. You should always refer to the specifications and relevant Health & Safety Guide.

**Routing Safety**

1. Read and understand instructions supplied with power tool, attachment and cutter.
2. Keep hands, hair and clothing clear of the cutter.
3. Remove adjusting keys and spanners. Check to see that keys and adjusting spanners are removed from the router tool, cutter and attachment before turning router on. Make sure cutter can rotate freely.
4. Noise. Take appropriate measures for the protection of hearing if the sound pressure of 85dB(A) is exceeded. Routing sound pressure may exceed 85dB(A), so ear protection must be worn.
5. Eye protection. Always wear eye protection in the form of safety goggles, spectacles or visors to protect the eyes.
6. Respiratory protection. Always wear a face or dust mask, or powered respirator. Dust masks/filters should be changed regularly.
7. Do not switch router on with the cutter touching the workpiece. At the end of the cut, release the router plunge and allow spindle to stop rotating. Never use the spindle lock as a brake

8. The direction of routing must always be opposite to the cutter's direction of rotation. Do not back-cut or climb-cut.
9. Check before cutting that there are no obstructions in the path of the router. Ensure there are no obstacles beneath workpiece when cutting full thickness, and that a sacrificial work surface is used.
10. Hold power tool by insulated gripping surfaces, because the cutter may contact its own cord. Cutting the "live" wire may make exposed metal parts of the power tool "live" and shock the operator.
11. Use clamps or another practical way to secure and support the workpiece to a stable platform. Holding the work by your hand or against the body leaves it unstable and may lead to loss of control.
9. Cutter shanks should be inserted into the collet all the way to the line indicated on the shank. This ensures that at least  $\frac{3}{4}$  of the shank length is held in the collet. Ensure clamping surfaces are cleaned to remove dirt, grease, oil and water.
10. Observe the correct assembly and fitting instructions in the router instruction manual for fitting the collet, nut and cutter.
11. Tool and tool bodies shall be clamped in such a way that they will not become loose during operation. Care shall be taken when mounting cutting tools to ensure that the clamping is by the shank of the cutting tool and that the cutting edges are not in contact with each other or with the clamping elements.
12. It is advisable to periodically check the collet and collet nut. A damaged, worn or distorted collet and nut can cause vibration and shank damage. Do not over-tighten the collet nut.
13. Do not take deep cuts in one pass; take several shallow or light passes to reduce the side load applied to the cutter and router. Too deep a cut in one pass can stall the router.
14. In case of excessive vibrations whilst using the router stop immediately and have the eccentricity of the router, router cutter and clamping system checked by competent personnel.
15. All fastening screws and nuts should be tightened using the appropriate spanner or key and to the torque value provided by the manufacturer.
16. Extension of the spanner or tightening using hammer blows shall not be permitted.
17. Clamping screws shall be tightened according to instructions provided by the manufacture. Where instructions are not provided, clamping screws shall be tightened in sequence from the centre outwards.
18. Do not touch the cutter immediately after operation; it may be extremely hot and could burn your skin.
5. Whenever possible use a work holding device or jig to secure component being machined. Ensure any attachment is securely fitted to the workbench, with table surface at approximately hip height.
6. Use a No-Volt Release Switch. Ensure it is fixed securely, easily accessible and used correctly.
7. In router table (inverted) mode, stand to the front right of the table. The cutter will rotate anti-clockwise when viewed from top so the feed direction is from the right (against the rotation of the cutter). In overhead mode, stand to the front left of the machine table and the feed direction is from the left.
8. Do not reach underneath table or put your hands or fingers at any time in the cutting path while tool is connected to a power supply.
9. Never thickness timber between the back of the cutter and the backfence.

### Router Cutter Safety

1. Cutting tools are sharp. Care should be taken when handling them. Do not drop cutters or knock them against hard objects. Handle very small diameter cutters with extra care. Always return cutter to its packaging after use.
2. Always use cutters with a shank diameter corresponding to the size of the collet installed in your tool.
3. The maximum speed (n.max) marked on the tool, or in instructions or on packaging shall not be exceeded. Where stated the speed range shall be adhered to. Recommended speeds are shown in the Trend Routing Catalogue and/or website.
4. Always use router cutters in a router. Drill and boring bits must not be used in a router. Router cutters must only be used for the material cutting application for which they are designed. Do not use on metal or masonry.
5. Never use cutters with a diameter exceeding the maximum diameter indicated in the technical data of the power tool or attachment used.
6. Before each use check that the cutting tool is sharp and free from damage. Do not use the cutting tool if it is dull, broken or cracked or if in any other damage is noticeable or suspected.
7. Cutters should be kept clean. Resin build up should be removed at regular intervals with Resin Cleaner. The use of a PTFE dry lubricant will reduce resin build up. Do not use PTFE spray on plastic parts.
8. When using stacked tooling (multi-blade, block and groover etc.) on a spindle arbor, ensure that the cutting edges are staggered to each other to reduce the cutting impact.

12. It is advisable to periodically check the collet and collet nut. A damaged, worn or distorted collet and nut can cause vibration and shank damage. Do not over-tighten the collet nut.
13. Do not take deep cuts in one pass; take several shallow or light passes to reduce the side load applied to the cutter and router. Too deep a cut in one pass can stall the router.
14. In case of excessive vibrations whilst using the router stop immediately and have the eccentricity of the router, router cutter and clamping system checked by competent personnel.
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17. Clamping screws shall be tightened according to instructions provided by the manufacture. Where instructions are not provided, clamping screws shall be tightened in sequence from the centre outwards.
18. Do not touch the cutter immediately after operation; it may be extremely hot and could burn your skin.

### Using Routers In A Fixed Position

1. Attention should be made to the HSE's Safe Use of Vertical Spindle Moulding Machines Information Sheet No.18 and any revisions.
2. After work, release the router plunge to protect the cutter.
3. Always use a push-stick or push-block when making any cut less than 300mm in length or when feeding the last 300mm of the cut.
4. The opening around the cutter should be reduced to a minimum using suitably sized insert rings in the table and closing the back fence cheeks or

### Useful Advice When Routing

1. Judge your feed rate by the sound of the motor. Feed the router at a constant feed rate. Too slow a feed rate will result in burning.
2. Trial cuts should be made on waste material before starting any project.
3. When using some attachments e.g. a router table or dovetail jig, a fine height adjuster is recommended.
4. When using a template guide bush, ensure there is sufficient clearance between cutter tip and inside edge of bush and that it cannot come into contact with collet and nut. Ensure cutter and guide bush are concentric.

### Router Cutter Repair/Maintenance

1. Repair of tools is only allowed in accordance with the manufacturers instructions.
2. The design of composite (tipped) tools shall not be changed in process of repair. Composite tools shall be repaired by a competent person i.e. a person of training and experience, who has knowledge of the design requirements and understands the levels of safety to be achieved.
3. Repair shall therefore include, e.g. the use of spare parts which are in accordance with the specification of the original parts provided by the manufacturer.
4. Tolerances which ensure correct clamping shall be maintained.
5. Care shall be taken that regrinding of the cutting edge will not cause weakening of the body and the connection of the cutting edge to the body.

**ELECTRICAL SAFETY**



**Power Supply**

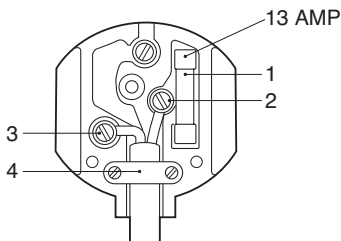
The electric motor has been designed for one voltage only. Always check that the power supply corresponds to the voltage on the rating plate. Machines marked for 230 volt can also be operated from a 220 volt supply.

**Mains Plug Replacement (UK & Ireland only)**

Always check the condition of the cable and plug before starting with your work.

Should your mains plug need replacing and you are competent to do this, proceed as instructed below. If you are in doubt, contact an authorised Trend repair agent or a qualified electrician.

- Disconnect the plug from the supply.
- Cut off the plug and dispose of it safely; a plug with bared copper conductors is dangerous if engaged in a live socket outlet.
- Only fit 13 Amperes BS 1363A approved plugs fitted with a 13 Amp A.S.T.A approved BS 1362 fuse (1).
- The cable wire colours, or a letter, will be marked at the connection points of most good quality plugs. Attach the wires to their respective points in the plug (see below). Brown is for Live (L) (2) and Blue is for Neutral (N) (3).
- Before replacing the top cover of the mains plug ensure that the cable restraint (4) is holding the outer sheath of the cable firmly and that the two leads are correctly fixed at the terminal screws.



**Never use a light socket. Never connect the live (L) or neutral (N) wires to the earth pin marked E or ⚡.**

**Using an Extension Cable**

- If an extension cable is required, use an approved triple core extension cable suitable for the power input of this tool (see technical data).
- When using a cable reel, always unwind the cable completely.
- Also refer to the table below.

Conductor size (mm <sup>2</sup> )	Cable rating (Amperes)
0.75	6
1.00	10
1.50	15
2.50	20
4.00	25

	Cable length (m)					
	7.5	15	25	30	45	60
230	0 - 2.0	6	6	6	6	6
	2.1 - 3.4	6	6	6	6	6
	3.5 - 5.0	6	6	6	10	15
	5.1 - 7.0	10	10	10	15	15
	7.1 - 12.0	15	15	15	20	20
	12.1 - 20.0	20	20	20	25	-

**EC DECLARATION OF CONFORMITY**



Trend declare that this product mentioned above is in compliance with 2006/42/EC.

This product also complies with Directives 2014/35/EU, 2014/30/EU, 2011/65/EU and the following harmonised standards EN 60204-1:2006/AC:2010, EN ISO 12100:2010, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 61000-6-2:2005, EN 61000-6-4:2007/A1:2011.

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01.04.2018

## RESIDUAL RISKS

In spite of the application of the relevant safety regulations and implementation of safety devices, certain residual risks cannot be avoided.

These are:-

- Impairment of hearing.
- Risk of personal injury due to flying particles.
- Risk of burns due to accessories becoming hot during operation.
- Risk of personal injury due to prolonged use.

## MARKINGS ON TABLE

The following pictures are shown on the tool.



Read instruction manual before use.

### Date Code Position

The year of manufacture is on a label next to the rating plate.



**CAUTION: Ensure working position is comfortable and that the machine is secured to a workbench at a suitable working height. Ensure workbench is stable and secure.**

## MAINTENANCE



Please use only Trend original spare parts and accessories.

The CNC Rotary has been designed to operate over a long period of time with a minimum of maintenance. Continual satisfactory operation depends upon proper tool care and regular cleaning.

### Cleaning

- Regularly clean the machine with a soft cloth and vacuum after every use.
- Remove tool from the spindle and remove debris and dust.

### Lubrication

- The CNC Rotary needs regular lubrication oil applied to the rails that components move along.

### Storage

- After use remove tool from the spindle and store in a dry and clean case.
- To avoid damage to the tool be careful not to drop or incur impact on the tip.
- If the machine is not in use for a long period of time, please disconnect all cables for safety and store them within the machine.
- **DO NOT** store the machine outside or in a damp or wet location.

## ENVIRONMENTAL PROTECTION

**Recycle raw materials instead of disposing as waste.**

Accessories and packaging should be sorted for environmental-friendly recycling.



Separate collection.

This product must not be disposed of with normal household waste.

### Household User

Local regulations may provide for separate collection of electrical products from the household, at municipal waste sites or by retailer when you purchase a new product.

Please call Trend Customer Services for advice as to how to dispose of unwanted Trend electrical products in an environmentally safe way or visit [www.trend-uk.com](http://www.trend-uk.com)

### Business Users


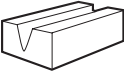

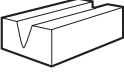
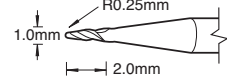
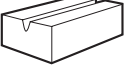


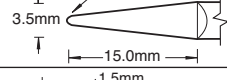

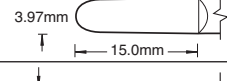

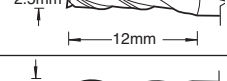



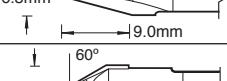

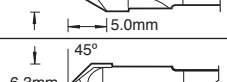

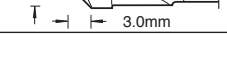
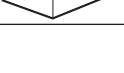
Please call Trend Customer Services for disposal of unwanted Trend electrical products.

## GUARANTEE

The unit carries a manufacturers guarantee in accordance with the conditions on the enclosed guarantee card.

For the location of your nearest Trend Service Agent, please call Trend Customer Services or see our stockist locator at [www.trend-uk.com](http://www.trend-uk.com).

# MINI ENGRAVER CUTTERS

Description	Dimensions (not to scale)	Profile shape	Engraves material	Tool preset code	Product Ref.
R0.25mm conical radius, two flute up-cut spiral			Wood, Acrylic & ABS	4025C150	S66/1X4MMSTC
R0.5mm conical radius, two flute up-cut spiral			Wood, Acrylic & ABS	4050C150	S66/2X4MMSTC
R0.25mm ball nose, two flute up-cut spiral			Acrylic & ABS	4025A020	S66/3X4MMSTC
R0.5mm ball nose, two flute up-cut spiral			Acrylic & ABS	4050A020	S66/4X4MMSTC
R0.5mm half conical, radius single flute flat			Wood	4050E150	S66/5X4MMSTC
R1.5mm half radius, single flute flat			Wood	4150E150	S66/6X4MMSTC
2.5mm end mill, two flute up-cut spiral			Wood, Acrylic & ABS	4250B120	S66/10X4MMSTC
3.96mm end mill, two flute up-cut spiral			Wood, Acrylic & ABS	4400B150	S66/11X4MMSTC
30° included angle, v-groove two flute			Wood	4635V030	CNCM/1X4MMTC
60° included angle, v-groove two flute			Wood	4635V060	CNCM/2X4MMTC
90° included angle, v-groove two flute			Wood	4635V090	CNCM/3X4MMTC

LEAF/CNCR/1 v1.0



RECYCLABLE

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Our policy of continuous improvement means that specifications may change without notice.

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© All registered trademarks acknowledged.



**ORIGINAL  
INSTRUCTIONS**

**CNC**

*Rotary*

**CNC/ROT/1**



***trend***<sup>®</sup>  
*routing technology*



**Please read these instructions before use.**

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.