

IMPORTANT: Read before use!



# Operating and Safety Instructions

## Woodburning Pen



### Call for consumer information

#### Customers from outside the U.S.

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Translation of the original Operating and  
Safety Instructions

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**NOTICE**

All instructions, warranties and other collateral documents are subject to change at the sole discretion of STEPCRAFT GmbH & Co. KG. For up-to date product literature, visit [www.stepcraft.us](http://www.stepcraft.us) for customers from North America and Mexico or [www.stepcraft-systems.com](http://www.stepcraft-systems.com) for customers from the rest of the world and click on the service & support tab for this product.

**Meaning of Special Language**

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product: The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and their explanations, deserve your careful attention and understanding. The safety warnings themselves do not eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

- NOTICE** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.
- CAUTION** Procedures, which if not properly followed, create a probability of physical property damage AND a possibility of serious injury.
- WARNING** Procedures, which if not properly followed, create a probability of property damage, collateral damage, serious injury or death OR create a high probability of superficial injury.
- !** Safety Alert: Indicates caution or warning. Attention is required in order to avoid serious personal injury.

**WARNING** Read the ENTIRE instruction manual in order to become familiar with the features of the product and how to operate them. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury, electric shock and/or fire.

This is a sophisticated hobby and semi-professional product for advanced craftsmen with previous experience in the operation of tools such as electric drills, routers and computerized tools like CNC routers or 3D printers. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this product in a safe and responsible manner could result in personal injury or damage to the product or other property. This product is not intended for use by children. Do not attempt disassembly, use with incompatible components or augment product in any way without the approval of STEPCRAFT GmbH & Co. KG or STEPCRAFT, Inc. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

**Age Recommendation: For advanced handcrafters ages 18 and above. This is not a toy.**

**SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.**

**Should you encounter any doubts or require any further information, please do not hesitate to contact us before commissioning of the Woodburning Pen. Our contact details can be found on the front page of this manual.**

**General Safety Warnings for the Woodburning Pen**

**Work Area Safety**

<b>NOTICE</b>	<b>Keep work area clean and well lit.</b> Cluttered or dark areas invite accidents.
<b>CAUTION</b>	<b>Do not operate the Woodburning Pen in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.</b> The Wood Burning Pen creates high temperatures, which may ignite the dust or fumes.
<b>NOTICE</b>	<b>Store the Wood Burning Pen out of reach of children and other untrained persons.</b> Injury can occur in hands of untrained users.

**Electrical Safety**

<b>WARNING</b>	<b>The Wood Burning Pen's plug must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with the Woodburning Pen.</b> Unmodified plugs and matching outlets will reduce the risk of electric shock, defect and malfunction.
<b>WARNING</b>	<b>Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.</b> There is an increased risk of electric shock if your body is grounded.
<b>WARNING</b>	<b>Do not expose the Woodburning Pen to rain or wet conditions.</b> The cutter is only suitable for indoor use. Water entering the Woodburning Pen will increase the risk of electric shock.
<b>WARNING</b>	<b>Avoid using the Woodburning Pen during an electric storm.</b> There may be a remote risk of a power surge from lightning that may result in electric shock hazard.
<b>WARNING</b>	<b>In case of emergency unplug the Wood Burning Pen from outlet.</b>

**Personal Safety**

<b>CAUTION</b>	<b>Stay alert, watch what you are doing and use common sense when operating the Woodburning Pen. Do not use the Woodburning Pen while you are tired and / or under the influence of drugs, alcohol or medication.</b> A moment of inattention while operating the Woodburning Pen may result in serious personal injury.
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<b>NOTICE</b>	<b>All persons who operate the Woodburning Pen must have read and fully understood all relevant operating instructions.</b> Misunderstandings may result in personal injury.
<b>⚠ WARNING</b>	<b>Use personal protective equipment.</b> The use of protective equipment, such as heat resistant gloves, will reduce the risk of personal injuries.
<b>NOTICE</b>	<b>Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.</b> Loose clothes, jewelry or long hair can be caught in moving parts.

**Tool Use and Care**

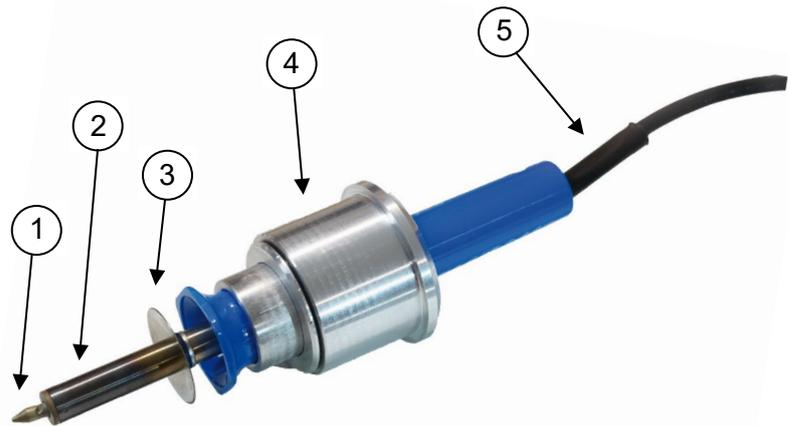
<b>⚠ CAUTION</b>	<b>Store the idle Woodburning Pen out of the reach of children and do not allow persons unfamiliar with the Woodburning Pen or these instructions to operate the unit.</b> Woodburning Pens are dangerous in the hands of untrained users.
<b>⚠ WARNING</b>	<b>Do not alter or misuse tool.</b> Any alteration or modification is a misuse and may result in serious personal injury.
<b>NOTICE</b>	<b>The Woodburning Pen is designed as a system-guided tool and has be operated in a CNC router.</b> The handheld operation of the Woodburning Pen may result in serious personal injury. STEPCRAFT is only selling the Wood Burning Pen to be used as a system-guided attachment.
<b>⚠ CAUTION</b>	<b>Only use the Woodburning Pen when the workpiece is securely clamped.</b> Never attempt to hold the workpiece with your hands while using the Woodburning Pen.
<b>⚠ CAUTION</b>	<b>Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the Woodburning Pen.</b> Such preventive safety measures reduce the risk of getting burn injuries from Woodburning Pen accidentally.
<b>⚠ CAUTION</b>	<b>Do not touch the metal parts of the Woodburning Pen during operation until it has been unplugged for a minimum of 15 minutes and has cooled down.</b> Contact with the metal heat elements during or after operation before the Woodburning Pen has cooled down, may result in personal injury.
<b>⚠ CAUTION</b>	<b>Do not reach inside the working area of the Woodburning Pen while it is in operation.</b> Contact with the moving parts during operation may result in poor build quality, equipment damage or personal injury.
<b>⚠ CAUTION</b>	<b>Do not leave the Woodburning Pen unattended during operation.</b> Use of Woodburning Pen by persons unfamiliar with these warnings and instructions may result in equipment or property damage and personal injury. <b>NOTE:</b> The Wood Burning Pen does not power off when the job is finished.
<b>NOTICE</b>	<b>Ensure small objects created by Woodburning Pen are not accessible to young children.</b> Small objects are potential choking hazards for young children.
<b>⚠ CAUTION</b>	<b>Do not use Woodburning Pen to create objects intended for use with candles, liquid fuels, and other heat sources.</b> Plastic may melt when exposed to fire or other heat sources. Such use of objects created by Woodburning Pen may result in fire, property damage and personal injury.
<b>⚠ CAUTION</b>	<b>Only use original spare parts.</b> Usage of unqualified heating element tips to danger of overheating and thus to fire hazard.
<b>NOTICE</b>	<b>The Woodburning Pen is suitable for the following materials: hard and soft woods and leather.</b> Do not use with plastics, foam or other synthetic materials as the fumes emitted can be hazardous to your health if breathed in.

**Additional Safety Warnings**

<b>⚠ CAUTION</b>	Depending on the application field of the machine (private or commercial), you need to observe the applicable occupational safety and health, safety and accident prevention and environmental regulations.
<b>⚠ WARNING</b>	<b>Use clamps or another practical and secure way to support and attach the workpiece to the machine table.</b> Holding the workpiece with your hands leaves it unstable and may lead to loss of control.

## Parts and Functions of the Woodburning Pen

- 1) Woodburning Pen
- 2) Heating Element
- 3) Heat Shield
- 4) Spring-loaded Mounting Unit
- 5) Power Cable 230 V



## How to use the Woodburning Pen on the Machine

1. Mount the Woodburning Pen into the 43 mm tool holder of the STEPCRAFT CNC system as shown in the picture on the right.
2. Load your design into your CAM software.
3. Create a "tool" in your CAM programs tool library for the Woodburning Pen. For best results, copy a V-Bit with a 3 mm diameter. This works best because the tip of the Woodburning Pen works in the same manner as a V-Bit.
4. Create a profile toolpath to move "on the line" for woodburning outline designs. Or create a pocket toolpath for filling in (shading) areas of your design. When pocketing, it is best to use a 10% overlap.
5. Set your cut depth in your CAM software to 0,1 mm.
6. Adjust your feed rate to obtain the desired burn intensity. A good place to start is at 25 mm/sec, which is 50% of the maximum speed of the STEPCRAFT D-Series (version 2). You can adjust the speed while the machine is running in UCCNC or WinPC-NC to increase or decrease the burn intensity.
7. Clamp your workpiece onto the STEPCRAFT CNC-System.
8. Move the tip of the Woodburning Pen to the desired XY start position using the arrow keys on the keyboard or the buttons on the screen in UCCNC or WinPC-NC. When you have reached your starting point, press the buttons to zero both the X- and Y-axis on UCCNC or WinPC-NC.
9. To set the Z zero point, lower the Z-axis using the PgUp resp. PgDn keys on the keyboard or the on-screen buttons in UCCNC or WinPC-NC until the tip of the pen makes contact with the surface of the material.
10. Lower the Z-axis by another 3 mm. This allows the spring mechanism to keep a constant pressure on the Woodburning tip while operating. Zero the Z axis by pressing the respective button on the UCCNC / WinPC-NC screen.
11. **IMPORTANT:** Once you zero the Z-axis, you **HAVE TO** raise the Z-axis so that the tip of the Woodburning Pen no longer makes contact with the workpiece surface. Failing to do so will excessively burn the workpiece and can risk a fire.
12. Plug in the Woodburning Pen into a 230 V outlet. It will take about 5-10 minutes to heat up to operating temperature.
13. Press „Start Job“ to begin your woodburning project.

