

## IMPORTANT SAFEGUARDS

### Read all instructions.

**When using Electric Tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, personal injury, or death including the following:**

1. Use Hot Wire tools only for their intended use. Use **only** with polystyrene foams. Use on other materials could cause toxic fumes fire or electric shock.
2. Use only in well ventilated areas. Open nearby windows or doors, or use an exhaust fan. If you see or smell smoke coming from the foam, turn the heat control knob down to the proper melting temperature.
3. Wear eye protection at all times the Hot Wire tools are plugged in.
4. Do not allow cord to touch hot surfaces. Never carry tool by cord or yank it to disconnect from outlet. Do not allow cords to touch the cutting wires or knife- this may short them and produce fire or electric shock.
5. Close adult supervision is necessary for any tool being used by or near children. Unplug Power Supply before leaving it unattended.
6. When not in use, tools should be stored in dry, and high or in locked up place-out of reach of children.
7. Don't expose electrical tools to rain. Don't use electrical tools in damp or wet locations. Prevent body contact with grounded surfaces. For example: pipes, or radiators.
8. Do not operate Hot Wire tools in the presence of explosive and/or flammable fumes or materials.
9. Burns can occur from touching the hot cutting wire when it is at normal operating temperature. The Engraving Tool stays very hot for several minutes after the tool is turned off. To reduce risk of burns never touch metal parts of the tools. Never set tools down while they are turned on, as they can cause a fire and short out.
10. Disconnect power cord when changing cutting wire or fuse. Follow the instructions for proper replacement of fuses and cutting wires.
11. Cutting wires and fuses are the only user serviceable parts. Only use special factory provided cutting wires. Replacing with the wrong kind of wire will ruin your unit, and could cause a fire. For any other repair or adjustment return your unit to the factory. Inspect your unit periodically for worn or broken parts.

### LIMITED WARRANTY

**This product is warranted for non commercial use within the fifty states of the USA and the District of Columbia as follows:** For 90 days from the original date of purchase, HWFF INC. will, at its option repair or replace a defective unit free of charge, if the unit is defective due to an original manufacturer's defect.

This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, accident, misuse, abuse or neglect. Except as herein expressly set forth, HWFF INC. shall not, under any circumstances be responsible for any direct, indirect, incidental or consequential damage resulting from the use of the equipment. The consumers' sole remedy shall be such repair or replacement as is expressly provided above.

SHOULD YOUR UNIT REQUIRE SERVICE, please call us at 805-735-9255 for a return authorization number and further instructions.

# Hot Wire Foam Factory

## INSTRUCTION MANUAL 16-Inch & 24-Inch 3D Tables



### Toss out the rules.

*Our 3D Scroll Table will bring you to new dimensions in creativity.*

Built for professional modelers, this tool is a combination Scroll Table, Router, Lathe, and Milling Machine. Your boundless imagination is the only limit to what can be made with this incredible foam cutting table.

### The ultimate multiuse modeling machine.

- Quick and easy straight, freehand or template cutting.
- Change direction of cut instantly.
- Includes Stationary Fence for controlled slicing.
- 11.5" Vertical Blades allow unlimited length horizontal cuts.
- Ultra fine Precision Blades slice foam paper thin.
- 10" Router Blades for contoured moldings of unlimited length.
- Router Blades can be bent with fingers to any shape.
- Angle adjustment of all blades is infinitely variable.
- Unique Travelling Fences for controllable complex angles.
- Vertical Lathe for cylinders, cones, dimensional columns.

## GRAVITY TABLE

### PARTS

Post Clamps

Vertical Post

Nut & Small Washer

Horizontal Post 1

Horizontal Post 2

Blade Connector

16" or 24" Diameter Table

Stationary Fence

Spindle/Blade Connector

Traveling Fence 1

Traveling Fence 2

U-Clamp

Spindle Pins  
& Magnet

Tool Cord

Bottom View:

Wingnut & Large Washer

Fence Clamps

Lower Blade Connectors

(NOTE: 16-Inch Table  
only has one connector)

### ACCESSORIES

(Sold Separately)

Sled Guide

Foot Switch

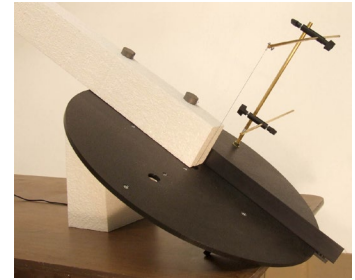
Long Engraver

Hot Knife (Pro or Craft)

### Slicing

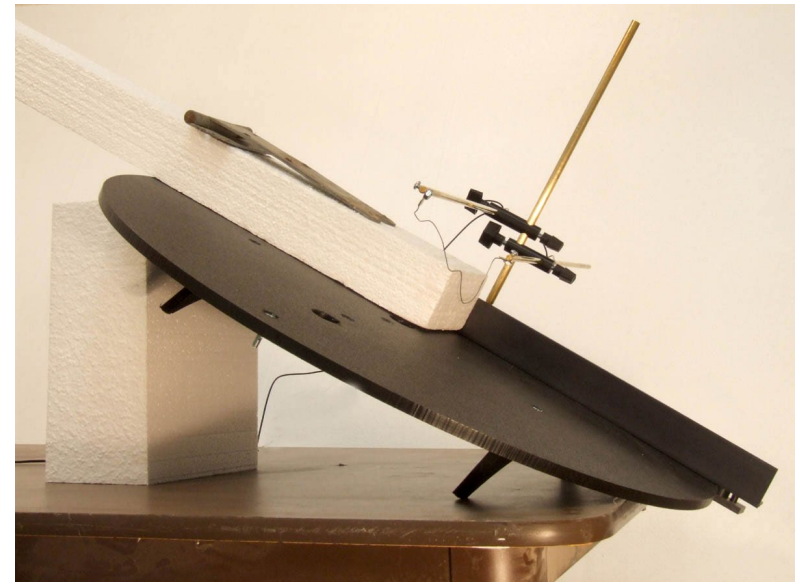
Long accurate cuts can be automated. Turn the 3D Table so its side faces the edge of your workbench. Cut a piece of foam to use as a support under the far side of the table. It should hold the table at approximately a 45 degree angle. It also helps to have the table slightly lower on the side of the Stationary Fence. Check to see if your foam slides freely down the table. Attaching some weight to the foam will help it slide better. Clamp the Stationary Fence the desired distance from the Hot Wire Blade. Place the foam against the Fence and the Hot Wire Blade and turn on the power. The foam will slide through the wire, like magic.

Use the Router or Ribbon Blade to make long pieces of shaped moldings.



### Gravity Mill

This technique can also be used with the Milling Machine setup.



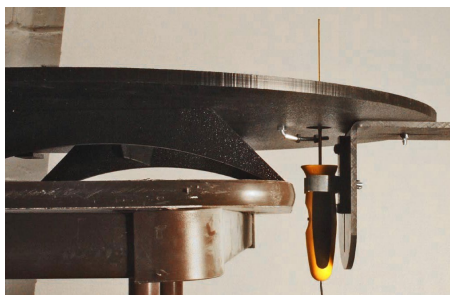
Scan to watch an instructional  
video on our YouTube channel:

## PLUNGE CUTTING

### Setup

**Requires Pro or Craft Hot Knife and Sled Guide, sold seperately.**

Normally you would have to make a small entry hole in the foam, pull the Hot Wire through it to the upper or lower mounting screw, and then pull the Hot Wire back out. This setup allows you to make plunge cuts quickly and easily. Move the entire 3D Table so the front end overhangs your work table by 8". Clip the Hot Knife tool into the holding clip on the sled guide. Mount the Sled Guide and Hot Knife upside down on the bottom of the 3D Table with the included screw and wingnut. The Hot Knife blade should pass through the hole where the Hot Wire would normally pass through the table. You might have to turn the lower mounting screw out of the way. It is okay for the blade to touch this mounting screw. You can now adjust the Hot Knife blade up or down and adjust the angle for the desired cut. As you can see, you will push the foam down onto the blade and pull it off again so you can cut holes quickly.



## ULTRA RIGID KNIFE BLADE

**(Requires Pro/Craft Hot Knife & Sled Guide, sold seperately.)**

You might have noticed that even with the Hot Wire mounted very tightly there is sometimes variation between the upper and lower part of your cut. Although this can be controlled by cutting more slowly, the setup described here will eliminate variation even when cutting more quickly. Pull one of the Horizontal Post's down so the Hot Knife blade passes through the screw hole. Gently turn the Post so the Hot Knife blade is tight, and tighten the Post Clamp. You now have an ultra rigid blade.



## FOOTSWITCH

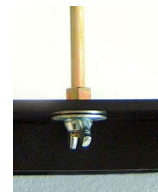
Leaves both hands free. The power stays on only while you hold your foot down on the switch. Can be purchased seperately.



## ASSEMBLY

### Vertical Post

Screw the Nut onto the threaded end of the Vertical Post, then slide the Small Washer onto the threads and insert the Post vertically into the mounting hole in the rear of the Table. Slide the Large Washer and then the Wingnut onto the Post under the Table and tighten the Wingnut by hand. Now slide the two Post Clamps onto the Post so they are perpendicular to the wire mounting holes. Lightly hand-tighten the knobs that lock the Post Clamps to the Vertical Post. Over-tightening will knurl the shaft.



### Horizontal Post & Clamp

Now slide the two horizontal posts through the open Post Clamp holes. No need to tighten these yet. The Horizontal Posts should point toward the front of the Table.



## Cutting Blades



Precision Blade  
Long Blade  
Router Blade



Pull Horizontal Post 1 out of the way. Thread the Precision Blade through the desired wire connection in the Table and slide the Blade's end connector onto the Lower Blade Connector. Hold the top connector straight up and adjust the Horizontal Post 2 so that the Upper Blade Connector is 1 inch above the Blade. Pull the end of the arm down and insert the Connector screw through the Blade's ring. The tension will hold the blade in place with or without the Connector nuts. You can adjust the Blade in-and-out or back-and-forth to get any angle. Lightly tighten the Post Clamp.



## Tool Cord



Press one electrical connector onto Horizontal Post 2 behind the Post Clamp. Pull the other connector under the Table then onto the same Lower Blade Connector's round receiver that you have connected your blade to. Plug the Tool Cord into the Power Station and start cutting. Never let the two connectors touch each other. Never attach both connectors to the same post. Always disconnect Tool Cord from the Pro Power when connecting or disconnecting from the Post Clamps.





## HOT WIRE BLADE CHOICES

**Precision:** This thin 10" Hot Wire Blade is for precision cutting.

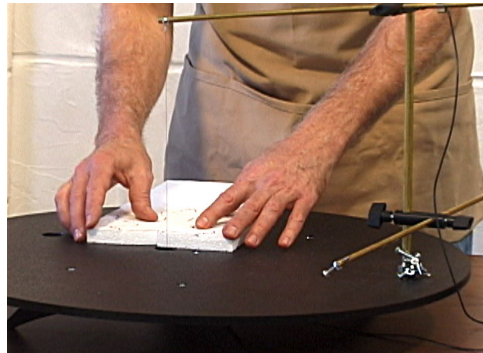
**Long:** This long 11.5" Hot Wire Blade is for cutting tall pieces of foam.

**Router:** This thick 10" Hot Wire Blade can be made into any shape desired.

**Ribbon:** This flat 10" Hot Wire Blade is for making long molding type shapes.

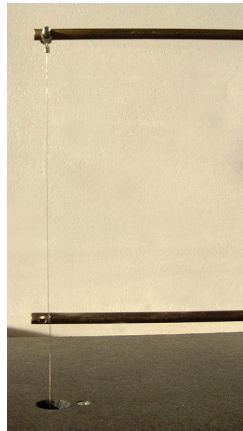
### Freehand and Template Cutting

Trace or freehand draw your pattern on the surface of the foam with a water-based ink pen. You can also pin on a template made from poster board if you plan to keep reusing the same pattern. The Precision Blade will make the cleanest cut, and the Long Blade is best for big cuts and is more difficult to break. Just follow the pattern that you have drawn. If you have to cut out the inside of an object, make a hole, then remove the top Blade connection and feed the Blade through the hole. Turn the Power Station on and make the inside cut. A useful trick is to make a zigzag cut through the foam, make the inside cut, then make a zigzag cut out the other side. When the object is glued together the zigzag entry and exit are nearly invisible.



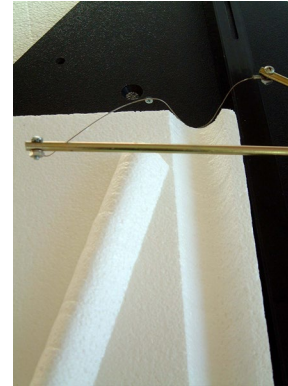
### Extra Precision Blade Support

Even when the Hot Wire is guitar string tight it will move slightly when you try to cut too fast. You will notice for example that when you make a curved cut the top cut might not be exactly the same as the bottom cut. This can be minimized by positioning the lower Horizontal Post 2 close to the top of the foam to be cut and wrapping the Hot Wire once around Post 2 before mounting the Hot Wire to the upper Post 1. The Tool Cord must be connected to the Lower Blade Connector under the Table and to the upper Horizontal Post 1. Never wrap the Hot Wire more than once around, and never move the Tool Cord connector to the lower Post 2 during this setup, as this will short out the Power Station.



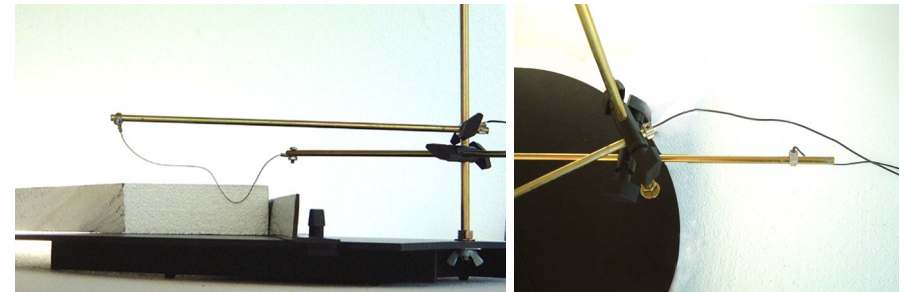
## MILLING MACHINE

### Overhead Planing With Router Wire



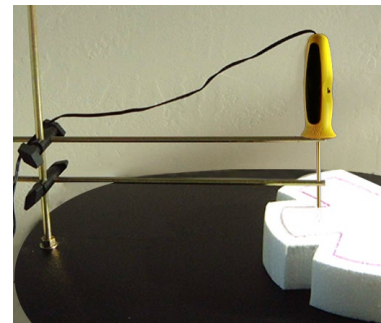
Mount the Router Blade between the two Horizontal Posts. Secure the Router Blade ends with the nuts. Move the Tool Cord connector from under the Table and clip it onto the Horizontal Post 2 that normally has no power connector. The other Horizontal Post 1 should also be connected to the Tool Cord.

**CAUTION:** Do not let the two Horizontal Posts touch each other or touch the Hot Wire Blade. Shape the Router Blade down below the two bars. Adjust the depth of the downward cut and then tighten the two Post Clamps. You can now turn on the power and slide the foam on the table and the Router Blade will plane the top surface of the foam.



### Overhead Engraving

**Requires Long Engraver Tool, sold seperately.**



This setup allows you to make controlled same-depth engravings on the surface of a flat piece of foam.

Position the two Horizontal Posts directly over each other, remove the end screw and spindle, and make sure that the screw holes in the ends lign up with each other. Tighten the Post Clamps. Drop the Engraver blade down through both holes. Turn on the power and you are ready to do accurate surface engraving.

## VERTICAL LATHE

### Setup

This setup is similar to Cones and Cylinders except use a Router Blade instead of a Long or Precision Blade.

Mount the Blade. Press one of the supplied Lower Spindles (small pin) through one of the holes in one of the Traveling Fences. Push this spindle through the center of your foam. Set the Traveling Fence against the Stationary Fence and move it close to the Super Router Blade. Turn on the Power Supply and slide the foam into the Blade just shy of the desired depth. If it's a tall piece of foam pull the Horizontal Arm without the blade above the center of the top of the foam and lightly screw the Spindle into the foam. Now slowly turn the foam one full circle. If you go too fast you will pull the Router Blade out of shape. Turn off the power and peel off the outer shell. If you are satisfied with the results turn the power back on, but not too high, slide the foam all the way to the desired depth, use the U-Clamp to clamp the Traveling Fence to the Stationary Fence, and make the final cut. This advanced technique takes practice. You will produce some cool shapes while in the process of learning, so be patient and enjoy the creative process as it unfolds.



### Scalloping

Set up the Vertical Lathe, but don't clamp the Traveling Fence. Move the Lathe in and out at regular intervals while turning the foam. You might want to make guide marks on the foam.

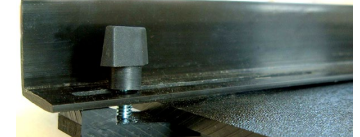
### Spiralling Columns

Make a foam column. Spiral a length of masking tape from top to bottom. Mount the Router Blade with the desired shape pointing toward the back of the Table. Lay the column horizontally against the Stationary Fence. Turn on the Power and push the Fence and column so the Blade enters one end of the column to the desired depth. Clamp the Stationary Fence in place. Slide the column along the Fence and roll it at the same time using the tape as a guide until the Blade exits the bottom of the column. With some practice you will be making beautiful spiralled columns.

## FENCES

### Vertical & Angle Cuts

Place the Stationary Fence the desired distance from the Blade and tighten the Fence Clamps to the Table. By adjusting the Blade to the desired angle, you can make straight or angled cuts. Turn on the Power and slide the foam across the Blade, keeping the foam pressed lightly against the Fence.



### Infinite Cuts

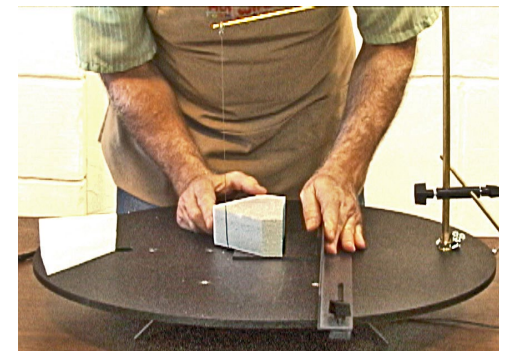
Place some supports at Table height on both sides of the Table. You can cut any length foam because the round Blades allow you to cut in any direction.

### The Cloner

Cut your shape from a thicker than needed piece of foam. Place the Stationary Fence the desired distance from a vertically mounted Blade. Slide the foam along the Fence. Move the Fence closer to the Blade and cut the next slice. Keep repeating until you run out of foam. This set-up can make paper thin slices. Plus, flipping one of the cut slices over gives you a mirror of your pattern.

### Traveling Fence

These are used to cut complex angles, where your foam pieces do not have an existing straight-edge parallel to the edge to be cut. A piece of foam can be placed onto the guide at any angle. Set the Travelling Fence with it's back flat against the Stationary Fence. Push 3 of the Spindle Pins up through the holes in the Fence, and push the foam to be cut onto the Pins



at the desired angle and distance in relation to the Blade and Stationary fence. You might have to adjust the Stationary Fence closer or farther from the blade at this time. The smaller of the Traveling Fences will work for small to medium size pieces of foam. The small Fence can also be turned upside down and run along the edge of the table when cutting small pieces.



## CONES & CYLINDERS

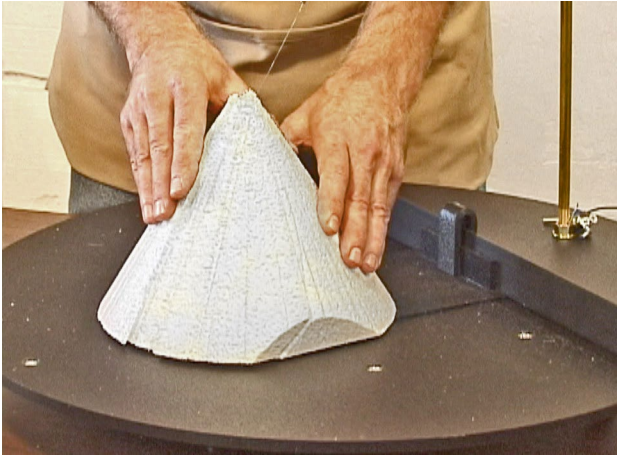
### Bottom Fence Spindle

Push one of the Spindle Pins up through one of the small holes in one of the Travelling Fences. The larger Travelling Fence is for big pieces of foam. Set the Travelling Fence down on the 3D Table. Push the foam you wish to cut onto the Spindle Pin, making sure the Pin goes through the center of the foam.

Choose the Long or Precision Blade and mount it to the Horizontal Post 1, and to the Lower Blade Connector under the Table. Keep it at right angles to the table if you want to make a cylinder. Mount it at the desired angle if you wish to make a cone.

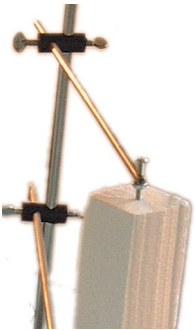
Turn on the power and push the foam, Fence and all, toward the blade, stopping when you get to the desired depth. Turn off the power, clamp the Fence to the Table, then U-Clamp the Travelling Fence to the Stationary Fence. Turn the power back on and finish your cut.

It's a good idea to make the first cut a little shallow, remove the outside layer of foam, then make the final cut at the desired depth.



### Top Post Spindle

For more accuracy, especially when cutting tall cones and cylinders, move the top Horizontal Post over the top center of your foam piece and screw the Spindle down into the foam. Be sure to tighten the Post Clamp before making your cut.



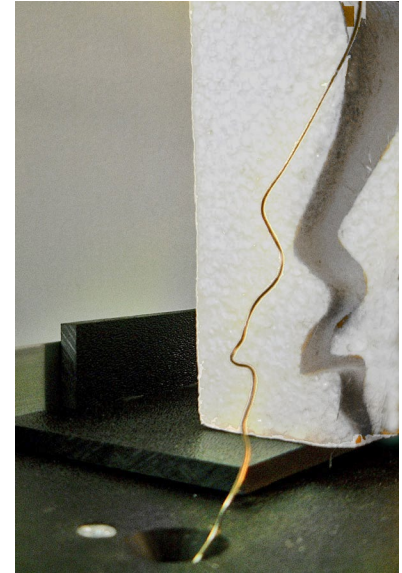
### Negative Cuts

A traditional lathe pulverizes the outside layers. The 3D Table will only leave one thin cut in the outer layer where the blade enters and exits, leaving you with a usable negative of your cylinder or cone.

## ROUTER

### Routing

Mount one end of a Router Blade to the Blade Connector under the table and connect the upper end of the Router Blade to the short screw on the Horizontal Post 2. Tighten down both ends with nuts. Leave the Post Clamp loose so it can be adjusted up or down and in or out while bending the Router Blade into the desired shape. Tighten the Post Clamp after you have finished shaping the Router Blade. You are now ready to turn on the power and make shaped cuts.



### Ribbon Blade

The Ribbon Blade is usually used for making long shaped cuts, like crown molding. Mount and shape it just like you would the Round Blade, but with the narrow part of the blade facing into the cut. The Ribbon Blade holds its shape better and does faster unidirectional cutting. Try this blade for making long straight cuts too.

### Molding

Make a long rectangular strip of foam using the Stationary Fence and a straight Blade. Mount a Router or Ribbon Blade to the lower Blade Connector and tighten down with the nut. Bend the Blade into the desired shape. Position Horizontal Post 2 so the Blade mounts into the mounting screw and tighten down with the nut. Position the Stationary and/or the Travelling Fence. Slide the foam along the blade. Also see sections on Infinite Cuts and Gravity Table.

