



Read this manual fully before using this appliance.

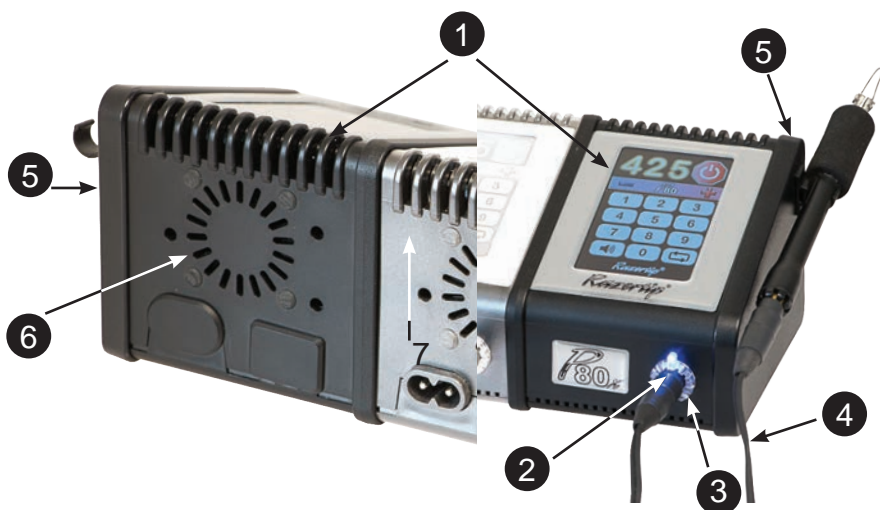
Warnings

- Shock Hazard: Do not open the cabinet. No user serviceable parts inside. Should the unit malfunction it must be repaired by Razertip Industries, its service agent or similarly qualified persons in order to avoid a hazard. For indoor use only. Use only under the supervision of an adult. Keep this and all power tools away from water or sources of moisture.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Keep this and all tools away from children. This tool should not be used by children unless under the direct supervision of an adult. Children should be supervised to ensure that they do not play with the appliance.
- Always be sure to have adequate ventilation. Many materials give off dangerous fumes when burned.
- A fire may result if the appliance is not used with care.
- The hand piece must be placed on its stand (clip) when not in use.
- Do not use excessive pressure on tip. If a deep cut is required, turn the temperature up and let the heat do the cutting. If necessary, heavy-duty handpieces are available. They will withstand considerably more pressure than the standard pens.
- The screen and case can be damaged if contacted by a tip, especially a hot tip. Be careful at all times to avoid touching the screen or case with the tip. Do not touch the screen with anything other than a clean finger, light cotton glove or a stylus designed for use on a touch screen and NEVER attempt to input to the screen with any part of a woodburning pen, cord, other tool or writing instrument at any time.
- Any technical questions concerning this product can be directed to Razertip Industries Inc. (contact information on back page).

Controls and Their Operation

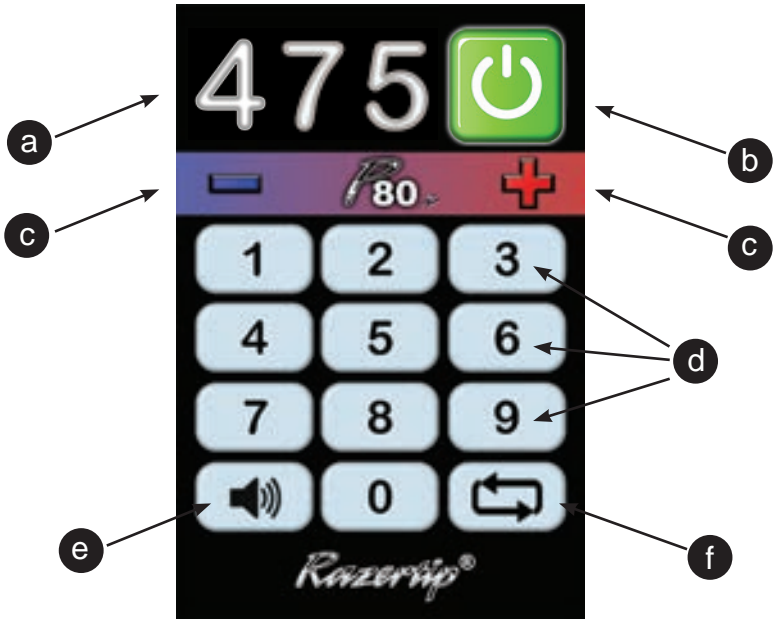
The P80x is an expansion module designed to connect to a Razertip® model P80 base unit. It cannot be used apart from the P80 base unit. For complete operating instructions see the P80 instruction manual (supplied with the P80 or available at www.razertip.com).

- 1. Touch Screen** - Lights when module is attached to the base unit power supply and the main power switch is “on.”
Screen features (see next page):
 - Heat setting display - indicates the current heat setting.
 - Handpiece power on/off - starts/stops heat to pen.
 - “+” and “-” icons - bump heat setting up or down by 15 units.
 - Number keys - used to input desired heat setting.
 - Sound key - to turn keypad beeper on/off.
 - Memory key - cycles through the last 3 input heat settings.
- 2. Cord Jack** - handpiece cord plugs in here.
- 3. Cord Jack Bezel** - lights blue when power is flowing to pen. Flashes on-off-on if there is a broken connection in the cord, pen or tip.
- 4. Handpiece cord** - connects handpiece to cord jack.
- 5. Right end panel** - (not supplied with P80x - use the end panel from the base unit). With expansion module in place the end panel from the base unit is then placed on the right side of the module. It is held in place by a magnet.
- 6. Cooling Fan Vents** - The P80x has an automatic fan to keep the module from overheating. Be careful not to block the fan openings. In the event of overheating the unit will shut down to prevent damage.

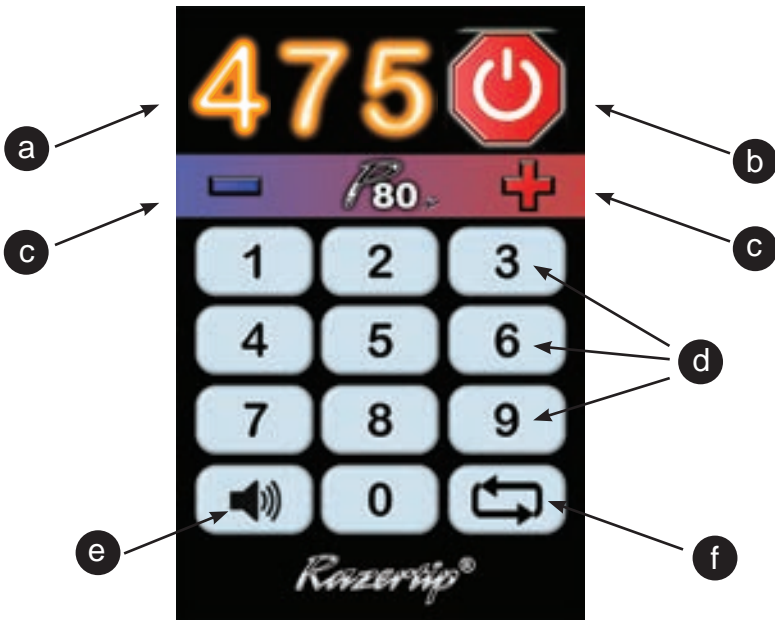


* Pen not included with P80x

Screens and Inputs



Idle (cool) Screen



Active (hot) Screen

Description

The Razertip® P80x expansion is a touch-screen pyrographic control unit designed to be used on a Razertip® model P80 base unit. Together they provide unprecedented versatility, heat stability and repeatability. Both the P80 and P80x are compatible with all standard, heavy duty and interchangeable-tip Razertip® pens. Its design allows you to add modules to make the P80 into a double or triple system, giving each screen its own heat setting and allowing you to switch between pens in only seconds.

Basic Operation

Up to two additional P80x expansion modules can be attached to a P80 base unit, (sold separately) giving you the option of a dual or triple system. Each screen has its own separate heat setting so you can switch pens quickly and easily without having to re-adjust heat settings. The expansion modules use an “either-or” protocol; it is not possible to power more than one pen at a time.



To Attach a P80X Expansion Module.

1. Make sure the P80 main power switch is off and all pens are removed from pen clips. The P80's right-hand end panel is held in place by a strong magnet; remove this end panel by pulling it away from the case.



2. Align the expansion module with the base unit. There are 5 pins projecting from the left side of the expansion module. Align these pins with the corresponding 5 holes on the right side of the base unit. Once aligned push base unit and module together firmly.

A built-in magnet on the module will help secure the units together.



3. Attach the right-hand end panel (removed in step 1) on to the right side of the module. Turn on the main power switch. All screens will be ready to operate after approximately 8 seconds.

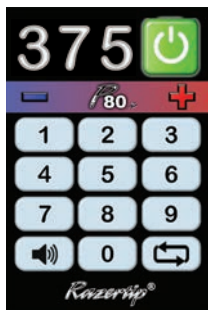


4. Input heat settings as desired. Touching any of the green buttons will activate the handpiece attached to that screen. You can then either touch the red button to de-activate the handpiece or you can touch a green button on a different screen to activate a different handpiece. When you activate a new handpiece the previously -used handpiece will automatically be de-activated. The P80 system will not allow more than one handpiece to be activated (hot) at a time.

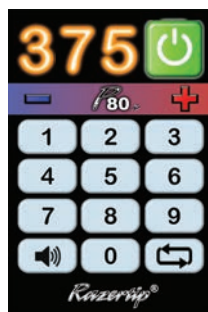


The Base Unit and each module maintains its own memory and heat settings. The P80 and P80X modules have been designed to function with no more than two modules attached. While it is possible to attach more than 2 expansion modules, it is not recommended as you may encounter contact and stability problems.

The Razertip® P80 and P80x are very easy to use. Attach the power cord to the P80 base unit, attach module(s) and connect to a power source. Attach the handpiece cords (note: the cord end with the ferrite bead attaches to the P80). Be sure that the connectors are fully seated (see page 11). Turn the P80 main power switch “on”. The input screens will take around 8 seconds to become operational. Once the screens are ready you can input a heat setting via the touch screen, activate power to handpiece and begin burning. *Note: The P80 and P80x may be shipped with a protective cover on the screen. Remove prior to using the unit.*



1. Input heat setting. When powered up each screen will display the heat setting that was last used. Heat setting input is always a 3-digit input. Settings range from “100” (coolest) to “800” (hottest). Once you have used the P80x for a while you will become familiar with the heat setting you prefer for each of your pens or tips. Start somewhere in the low to mid-range, between “300” and “400”. For example, to input a heat setting of “375”, input **3** then **7** then **5**. The heat setting is accepted as soon as the third digit is touched. If the first digit input is “0”, a “MIN100” warning will display for 2 seconds then heat setting will revert to previously displayed setting. If less than 3 digits are input the screen will revert to previously-used heat setting after 2 seconds. If you try to input a heat setting above “800” a warning “MAX 800” will display over the heat setting display for 2 seconds and the heat setting will revert to the previously-displayed heat setting.



2. Activate power to the handpiece. Touching the green button beside the heat setting starts power flowing to the handpiece and changes the screen to “active”. The handpiece power button now turns red and the heat setting numbers change from a cool blue colour to a hot orange glowing colour. Also the cord jack bezel (front of unit) will glow solid blue if everything is working properly. If flashing blue there is a broken connection somewhere in the pen or cord. (note that the light may not flash at settings below “150”). Most pens take only a few seconds to heat up, but pens with heavier tips may take longer.



3. Adjust the heat setting. Heat setting can be changed at any time, whether pen is powered or not, simply by inputting a new 3-digit heat setting. If heat setting is changed while pen is powered the pen’s tip temperature will change immediately after the 3rd digit is input. If you wish to “bump” the heat setting up or down a slightly you can use the **—** or **+** icons

located just above the number keypad. Touching the **+** will increase the heat setting by 15 units each time it is touched. Touching the **—** will lower the heat setting by 15 units each time it is touched. This is a useful feature for fine-tuning until you determine the ideal heat setting for a particular pen or tip. Note that different pen/tip shapes use different heat settings to attain the desired tip heat. Small standard tips use lower heat settings and large or heavy duty tips need a higher setting.








4. Stop power to de-activate the handpiece. Touch the red button at top of screen to stop the flow of power to the handpiece. Display will immediately revert to “idle”. Note: Tips can remain hot to touch for some time after power has been stopped, so be careful not to touch the tip until you are sure it has cooled completely. If you activate a handpiece connected to a different screen by touching the green power button on that screen, this will automatically de-activate the previously-active pen.



5. Main power off. If you won't be using the unit for some time you can save energy and prolong screen life by turning off the main P80's power switch. (30 minutes or more)



Using the memory function.

The Razertip P80 and P80x each have a built-in automatic memory function that allows you to recall the 3 most recently-input keyed in heat settings. Every time you input a heat setting it is automatically stored in the memory, along with the last two stored settings. To access the memory feature you simply touch the  key once to display the most recent memory setting. Touching it again will allow you to cycle through the 3 stored heat settings. Keying in a new heat setting will remove the “oldest” setting. Note that heat settings will only be stored if they are input using the 3-digit input. Heat settings that are established by using the “+” or “-” buttons will not go into the memory. To get such a setting into the memory you must input it. For example: you start at “475” and bump the heat down to “445” by touching the  key twice. To get “445” into the memory you must input    . Now “475” will be stored in the memory as the 2nd place setting to “445”. You can deliberately store 3 settings simply by keying them in one after the other. For example, you want to store “380”, “425” and “510” into memory. Simply input all 3 settings in succession and they will be in the memory, over-writing the previously stored settings. The last 3 memory settings will be retained even after power is switched off.

Sound on/off.

The P80x has a “beeper” that helps confirm input of any active key. The beeper can be silenced if desired by touching the  key once. The Beeper Mute icon  will display. Touching it again will turn the beeper back on.

FAQ's (Frequently Asked Questions)

Q. *What's the difference between "Heat Setting" and "Tip Temperature"? Aren't they the same thing?*

A. They are quite different. The heat setting is the amount of power the P80x is providing to the pen/tip. There are 700 different heat settings ("100" to "800"). A given heat setting will give different actual tip temperatures, depending on the type and size of the tip being used. For example, a small standard tip might have an actual tip temperature of 500°C at a heat setting of "400", while a heavier shading tip might have an actual tip temperature of only 300°C at a heat setting of "400". Think of it this way: at a heat setting of "400" the P80/P80x is supplying 400 "units of power" to the pen. The tip does whatever it can with those 400 units of power. Small tips are more efficient so they will have a higher tip temperature. The important thing is that the 400 units of power output will always be exactly the same, regardless of the input voltage (between 100V and 240V).

Q. *Do the heat setting numbers have any significance? Why not use "100" to "999" for example?*

A. While it's true that the heat settings do not indicate actual tip temperature, they are still based on a standard. We used a standard large skew fixed tip (#F1L) to calculate approximate tip temperatures in °C, so using an F1L pen at a heat setting of "600" will give a tip temperature of approximately 600°C. Note that this is only a calculated approximation, but it does give a baseline for tip temperature reference. The range of actual measured values for a typical F1L pen would measure from 80-90°C (at "100") to 800°C (at "800"). Smaller tips will run hotter while heavier tips will run cooler.

Q. *Can I change pens while they are hot (i.e. getting power)?*

A. Yes. While pens are "hot-swappable" without damaging the power supply, it is recommended that you power-off the pen before changing it. Should you accidentally short-circuit the connector on the cord end it may cause the power supply to overload and shut down (screen goes black). Should this happen you can re-start the power supply after a minute or so by turning main switch "off" and then "on".

Q. *What happens if I start to input the wrong setting? Can I correct it?*

A. Yes. You can complete the input using any 3 digits (between 100 & 800). Once they are accepted you can then re-input the correct value, or if you've only entered one or two digits you can wait 3 seconds and the setting will revert to previously displayed heat setting. You can then input the desired value.

Q. *Can I use a heavy-duty handpiece cord on the P80x?*

A. Yes you can. However, the P80x's unique power output means that HD cords are no longer needed to make a difference when burning with heavier tips. The included handpiece cord (#CORD1P) will perform the same as an HD cord in all respects.

Q. *Is tip recovery time any different than other Razertip burners?*

A. Yes. The P80/P80x will provide tip heat recovery up to 3 times faster than previous burners, meaning that your tips will heat up faster and provide more even burning while in contact with your burning surface. In most cases you will also notice that your pens are slightly cooler on your fingers than when used on previous burners.

Q. *Can I use all of my old pens, cords and tips on the P80x?*

A. Yes. Any pen, cord or tip that you used on earlier or current models of Razertip burner is compatible with the P80x. However, the included CORD1P is required to comply with current safety and electromagnetic interference regulations.

Care and Maintenance

The Razertip® P80 and P80x require very little maintenance, but must be kept clean in order to function reliably. Use only indoors and do not use in excessively dusty areas. Check the units regularly to make sure the fan vents are not plugged and are operating properly. Your fingers should be clean when touching the screen. The screen can be cleaned with a soft cloth and a suitable computer screen cleaner. Never use harsh or abrasive cleaners on the screen. If nothing else is available you can use a damp cloth to lightly wipe the screen. The case can be cleaned with a damp cloth as necessary. Prevention is always better than cleaning!

The front cord connectors as well as the connectors on the cord and pen are critical for reliable operation of the unit. Keep them absolutely clean at all times, and be sure that all connectors are fully seated before using the burner (see page 11).

- ✓ For longest tip life, be sure to turn off heat to the tip when not in use.
- ✓ Hot-wire pyrography is an "indoor sport". Even a slight breeze can cause a hot tip to cool, resulting in poor or inconsistent pen performance.

Useful Procedures & Accessories

✓ **Versatility.** Razertip® pyrographic tools are versatile and useful for many varied applications including:

- signing & stamping craft objects (woodturnings, carvings).
- burning detail on wood, leather, paper, and gourds.
- cutting stencils and paper.
- detailing, welding, and cutting plastics.
- shaping, sculpting, and melting jeweller's wax.

✓ **Heat Settings.** For best results, longest tip life, reduced carbon build-up, and maximum comfort, always use the lowest heat setting that will do the job.

✓ **Extra handpiece?** If your burning techniques require high heat settings, consider buying another handpiece. When one gets too warm to hold, switch to the other. Let the warm one cool for 10 minutes.

✓ **Fixed vs. Interchangeable.** Fixed-tip handpieces are the most convenient to use, and they offer small size and very solid tips. Should you ever want or need to replace the tip on your Razertip® fixed-tip pen, simply return the pen to us* and we will install the tip of your choice for a very reasonable fee (or no charge under warranty). Razertip's #BPH Interchangeable-tip pen will accept all Razertip® tips and allows use of almost any thickness of tip wire. The BPH pen is the same size as our HD pens, and it uses reliable stainless-steel connectors to hold your tips in place, assuring reliable electrical contact and a solid, secure tip. The BPH pen is also one of the coolest-on-the-fingers of any hot-wire pyrographic pen.

✓ **Carbon Build-up.** Carbon build-up on knife-edge tips can be quickly and effectively removed with one or two passes over a Razertip tip cleaner/scrapper. This economical cleaner won't wear out your tip, and you can leave your burner on when using it. One hand operation means you don't have to put your work down, either. Tips that are round or blunt are best cleaned with a dense brass brush. You should never use abrasives (sandpaper, emery, rouge) to clean your tip - they will wear it out prematurely, and will actually cause *quicker* carbon build-up.

✓ **Extending your reach.** When working in confined areas, on your project you can reach further with your standard handpiece by sliding the foam grip back on the pen. Extra or replacement grips are available, as are extra-thick grips.

✓ **Consistent Heat.** For the most consistent heating, always burn in a location that is free from drafts or wind. Air movement will cause the fine tip to cool more quickly. Even lightly blowing on the tip will cool it.

✓ **Cooler fingers.** For better finger comfort, hold the pen in such a way that your fingers are not directly above the hot tip.

✓ **Melting materials.** If your application calls for burning any material that melts, you must use a fixed-tip pen. Molten material will often cause a loss of tip contact on interchangeable-tip pens. Be sure to work in well-ventilated conditions at all times when burning, but especially while melting substances. Many materials give off dangerous fumes when melted or burned.

✓ **Smoke in your eyes?** Try burning in front of a fan (we recommend the Razaire 530). Be sure the fan is sucking the air away from you, not blowing towards your work as the moving air will cool the tip too quickly.

* ✓ **Returning pens for service.** Should you need to send a pen back for service, remove the foam grip before mailing. Mail the pen back without the grip or clear tube, and mail it in a padded envelope or between two pieces of thin cardboard.

A thin package (under 2cm thick) will cost much less to mail.

Important Information:

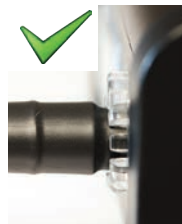
Use only Razertip® handpiece cords (item #CORD1P, FL or HD). Other cords (even if they have similar connectors to the Razertip® cord) may not operate properly or at all. It is also essential that all connectors are clean and fully seated in order for your burner to function properly. If the cord end (plug) is not fully inserted into the jack on the power supply and the jack on the back of your pen you may experience inconsistent heat from your burner. The illustrations below show what a properly seated connector should look like. Note that on new burners the jacks are sometimes quite tight and may require significant insertion force in order to seat, especially the first time. Symptoms of poor connection are:

1. Erratic or inconsistent heating.
2. The cord jack bezel may flash on-off-on-off when power is applied.
3. Increasing or decreasing the heat setting to get the same tip temperature.
4. Excessive heat build-up at the point of poor connection. If not corrected this heat build-up may cause damage to the plug or jack.
5. Pen may not heat at all.

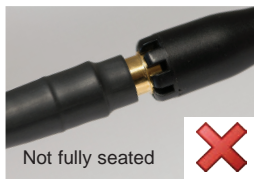
If your burner exhibits any of the above symptoms and you are sure that the plugs are all properly seated, please contact Razertip Industries.



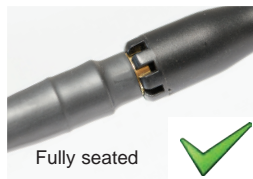
Not fully seated



Fully seated



Not fully seated



Fully seated

For your records, please record the date of purchase and your Razertip dealer information below. Should your Razertip product ever require service you can contact your dealer or send the product directly to Razertip Industries. (Address on back page)

P80x Serial # _____ Purchase Date _____

Dealer Name _____

Address _____

Phone # _____ Email _____

Warranty Information

Your Razertip® P80x has a warranty period of three (3) years on the power supply, and one (1) year on the handpiece cord. Handpieces are warranted for one year, and interchangeable tips for 90 days. This warranty provides for repair or replacement, at the manufacturer's option, of any defective components. This warranty is limited to the actual cost of repairs and will not cover shipping costs or any consequential damages resulting from failure of the unit or its components to perform as stated. All warranty work must be done by Razertip Industries. Razertip will not cover the costs of repairs done elsewhere.

Warranty will be voided if unit has been tampered with, altered or repaired by unauthorized persons or companies. In the event that your Razertip product should need service, our average repair turn around time is only one day in shop. For in or out-of-warranty servicing, return the complete unit **including any cord(s), pen(s) and/or tip(s)** to your dealer or send it directly (prepaid) to Razertip Industries Inc. at the address below.

Technical Data

Type: Touch screen digital hot-wire pyrographic tool expansion module

Model: P80x **Input:** 12VDC (from P80 power supply), 4.0A

Output: 6VDC, 8.0A DC max.

Wattage: Max. 48 watts **Operating tip temperature:** (approx.) 80°C to 800°C

Operating temperature (ambient) 0°C-40°C

Size: 4.5"x4.5"x3.6" (115mm x 115mm x 91mm) **Weight:** 9.9oz. / 280g.

Safety Certification: ETL C-US

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Razertip Industries Inc.

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More Questions? Don't hesitate to contact us - that's what we're here for!