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Blind Iron Assembly Instructions V1

Some Things to Consider

- The Blind Iron, while straightforward to construct, currently requires the use of a soldering iron to install threaded inserts and potentially solder wires. This project should be put together by a sighted individual with such experience.
- This current version of the blind iron removes the water-based features of the iron for the sake of compactness. The finished product will not be able to steam or mist clothing.

What You'll Need

[The Prints][1]

- ☐ Grip
- ☐ Shell
- ☐ Backing
- ☐ Test Fit
- ☐ Dial Spindel
- ☐ Dial Label

Electronics (Optional)

- ☐ Buzzer Board
- ☐ 120V AC to 3-5V DC Power Supply
- ☐ 270 Ohm Resistor (Optional)

Hardware

- ☐ [Black+Decker Variable Control Compact Steam Iron, Blue][2] (Model: IR20V)
- ☐ M3 Screws
- ☐ 5.3mm M3 Threaded Inserts
- ☐ Adhesive (double-sided tape or hot glue)

Tools

- ☐ Phillips Screwdriver
- ☐ Soldering Iron
- ☐ Something to cut plastic (dremel, angle cutter, etc.) (Optional)

Printed Links

1. https://github.com/bedrockskeleton/blind-iron/tree/main/Print%20Files
2. https://www.blackanddeckerappliances.com/products/garment-care/compact-irons/IR20V-Variable-Control-Compact-Steam-Iron.aspx

Steps

Deconstruct the Iron

1. Remove the two screws located on the back, along with the one located under the rubber bumper next to the water intake.
2. Pull the backing of the iron off and remove the cable guide from its bracket.
3. To remove the top plastic piece, remove the two white mist and steam buttons from the top of the iron by gripping them by their sides and gently wriggling back and forth while pulling upward. Once removed, there should be an additional screw in the buttons' cavity that will release the top piece.
4. From here, remove the rest of the screw from the iron until you are left with the hotplate, the wiring, and the white/blue plastic pieces wrapped around the cord.

Remove Excess Plastic

5. The white base piece and the blue backing piece are unnecessary. Remove them either by cutting through the plastic holding them around the cords or by desoldering the cord, pulling the pieces off, and resoldering the cords back to the soleplate

OPTIONAL: Install Buzzer

The light on the Black+Decker iron serves to alert users when the iron is finished heating and when it has been left unattended. If these features are important to the visually impaired person that this is intended for, then consider swapping the light for a simple 5V buzzer.

- Clip the wires leading to the light.
- Solder the AC ends of your converter to either end of the clipped wires.
- Solder the positive DC end of your converter to both the +Voltage and S terminals on the buzzer (It is recommended to sandwich a ~270 Ohm resistor between the two to reduce the harshness of the noise).
- Solder the negative DC end of your converter to the G terminal on the buzzer.
- Screw the buzzer board to the backing print using two 8mm long 3M screws. (Screwposts might not align with your particular buzzer board)

Threaded Inserts

6. Screw in the tip that came with your threaded insert kit to your soldering iron.
7. Ensure the tip will work with your inserts while the soldering iron is still cold.
8. Pick an insert length appropriate for each of the six holes (four near the front, two longer ones in the rear).
9. For your first insert, place it on the soldering iron tip and press it towards the intended spot; gradually increasing the heat until the insert slides into the hole.
10. Repeat for all four holes in the front of the iron, ensuring that all the inserts are parallel with each other and perpendicular to their corresponding holes on the shells.
11. Using two more (max: 20mm) inserts, repeat the same process for the two holes on the back of the test fit piece.
12. Once cooled, test your inserts using screws before installing the shell.

Install the New Shell

13. Remove the stock Dial Spindel and replace it with the shorter one that was printed. Ensure that it is spun completely counterclockwise so that installing the dial later is easier.
14. Screw the Test Fit part onto the hotplate using the screws that came out of the three holes. Use one of the ceramic spacers

on the screw post located at the tip of the iron to achieve proper spacing.

15. For ease of installation, it's best to combine the Grip and Shell pieces now. Do so by sliding the two halves of the dovetail joint together, hitting the top with your palm if necessary. Ensure that the two pieces are aligned on the bottom.
16. Slide the whole shell over the Test Fit piece, aligning each screw hole with its corresponding threaded insert.
17. Screw in the sides of the Grip and Shell pieces with four 10mm M3 screws.
18. Take the stock dial and place it on its mounting hole, line up the "Min" option with the raised indicator and press firmly down to lock it in place. If done correctly, you should be able to see the dial connected with the Dial Spindel through the open back of the iron.
19. Ensure all the electronics are inside the shell.
20. Clip the cord guide into its mount on the Backing piece.
21. Press the Backing piece into place on the back of the Shell
22. Screw the bottom two points in with 16mm M3 screws
23. Screw the top two points in with 8mm M3 screws
24. Test the iron to ensure that it heats up.

Dial Label

The dial label is a thin, flat-bottomed print and thus can be attached to the dial in a variety of ways. The first prototype has both sides sanded and adhered together with hot glue, though this provides a rather weak connection. Use what you have on hand, as it will more than likely work better. Just ensure that the minimum marker of the label matches up with the minimum marker of the dial itself, keys for the label can be found below and given to the end user in a medium that best suits their needs (braille paper, email, smartphone note, etc.).

Label Keys

Key goes from top to bottom, corresponding to each braille dot setting as you trace your finger counterclockwise on the dial. The larger circle on the dial highlights the Min setting.

Plain Text

Min
Synth
Nylon Silk
Poly
Blend
Wool
Cotton Linen
Max

Grade 2 Contracted

m9
syn?
nylon silk
poly
bl5d
wool
cotton l95
max