



2. Residential Electricians Manual

General Overview:

Standing experience.

- In residential electrician, the user is tasked with measuring electrical outlets for voltage and installing household appliances.
- The user will need to troubleshoot common electrical problems related to installing appliances such as blown outlets, replacing fuses and fixing split wires.
- The environment is an unfinished basement for a small apartment.

Macros / Shortcut keys:

T = turn teleportation on or off

Wrist Watch: The wrist watch is always on the user's left wrist. When a call is coming in for the user, the icon on the watch will be an orange vibrating phone (Image 1 below). They must place their right hand on top of the watch and a blue circular progress bar will fill up (Image 2 below). Once it is filled, the call will be answered and the watch icon will become a green chat bubble (Image 3 below). When the call is finished, the watch icon will become a yellow question mark (Image 4 below). When the yellow question mark is visible, the user can place their right hand on top of the watch and the narrator will repeat the last set of instructions.



Image 1



Image 2

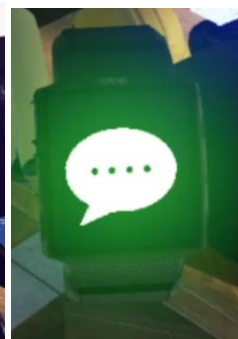


Image 3

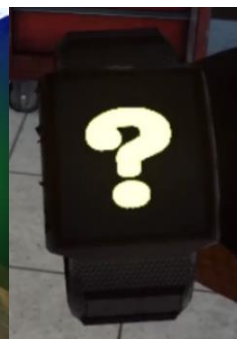


Image 4

Teleportation Map: A map tablet is at every location in the simulation. The user can move around the world using the map tablet when it is activated. When the VR hand is near the tablet, it will automatically point with an index finger which can be used to tap the screen. Tapping on the large boxes with numbers inside of them will move the user to that location. Each location is detailed on the map.



Facilitator Panel: The facilitator panel is an options menu that allows a simulation facilitator to adjust gameplay and accessibility options while a user is inside the experience. To access the facilitator panel during the simulation, press the TAB key.



There are five core options from this menu:

Hint Task: When pressed, the in-game narrator will repeat their most recent instruction, which is helpful if the user misses something or is distracted while in the simulation.

Print Screen: This button will save a screenshot of the current view that the user sees.

Settings: This will bring the facilitator into a separate menu screen where they have multiple options to change the experience. This is detailed below.

Restart: This will restart the simulation from the very beginning.

Quit: This will exit the experience.

Greyed out buttons: Finish Task & Restart Task - These functions are not currently working but will be implemented in the near future.

Settings: The gameplay settings have an additional set of toggles and sliders the facilitator can adjust during the simulation.



Force Grab: If someone is unable to reach something or is running the experience while seated, this option allows the user to grab objects without being directly next to them. The user can point their hands at objects that are far away and pulling the trigger will bring the object into their hand, grabbing it

Teleportation: This will turn on the granular teleportation around the game world. To use teleportation 1) hold down the center thumbpad button (Vive Pro) or push forward on the thumb joystick (Oculus Rift S) to create a blue teleportation arc 2) select a location to go by moving the controller until the blue circle at the end of the arc is in the desired location (A red line means that locations is not valid or blocked) and 3) release the center thumbpad button (Vive and Vive Pro) or thumb joystick (Oculus Rift S) which will cause the screen will quickly fade to black and when it fades back in, the user will be in a new location.

Seated Experience: When turned on, this option will move the user's location in the game world to be higher up, so that if they are sitting down, their view will be similar to a standing position.

Language: This drop-down menu will allow the facilitator to change the language of the experience. When changing language, the simulation will need to restart.

Volume: This slider will adjust the master volume of the game. If the sliding bar is on the right side, the volume will be at 100% and on the left side, the volume will be set to 0%.

Full written walkthrough:

Quest	Task	Description
1	A	Answer your watch by holding your right hand above the watch icon on your left wrist
1	B	Listen to instructions from the narrator.

1 C	Select the Appliances tab from the large manual above the offline teleportation map and find the fridge, which will be the first result.
1 D	Move to the kitchen by tapping location 1 on the teleportation map. When your hand is near the tablet, it will automatically point with your index finger which you use to tap the screen.
1 E	Pick up the voltmeter from the toolbelt, located at the base of the teleportation map.
1 F	Grab the black and red probe from the side of the voltmeter with your other hand and insert it into the outlet next to the toolbelt. The voltage should read 120V.
1 G	Tap the upright rectangular box to open it as indicated by a large blue arrow to open the box that contains the fridge.
1 H	Grab the fridge and place it in its location indicated with a hologram of a fridge, next to the outlet you just checked.
1 I	Continue with the tutorial.
1 J	Plug the power cable of the fridge into the outlet. The power cable plug is located near the top of the fridge.
2 A	Select the Appliance tab of the manual and check the voltage requirements of the stove, then check the voltage of the outlet to the left of the fridge using the voltmeter.
2 B	Tap the square box to open it, pick up the stove and place it into the position indicated by the stove hologram. Then, grab the power cable plug and insert it into the outlet to the right of the stove.
2 C	Grab the drill from the toolbelt and remove the four screws from the outlet. This drill will automatically tighten or loosen screws when it comes into contact with one. When the screws are fully removed, a yellow burst of confetti will appear. Grab and remove the broken outlet once all four screws are loose.
2 D	Grab a new outlet from the base of the toolbelt.
2 E	Place the new outlet into the socket and tighten the 4 screws using the drill. This drill will automatically tighten or loosen screws when it comes into contact with one. When the screws are fully tightened, a yellow burst of confetti will appear.
2 F	Move to the fuse box by tapping location 3 on the teleportation map. When your hand is near the tablet, it will automatically point with your index finger.
2 G	Grab two new blue fuses from the box of fuses near the left of the toolbelt. Insert the new blue fuses into the empty sockets in the fuse box, above the tool belt. The empty sockets are the top right two ones.

2	H	Grab the red power lever of the fuse box and slide it up to turn the power back on.
2	I	Move to the kitchen by tapping location 1 on the teleportation map and plug in the stove. When your hand is near the tablet, it will automatically point with your index finger which you use to tap the screen. Plug in the stove's power cable into the outlet located on it's right.
3	A	Move to the living room by tapping location 2 on the teleportation map. When your hand is near the tablet, it will automatically point with your index finger which you use to tap the screen. Look up the power requirements of the television in the Appliances tab of the manual. Then grab the voltmeter from the toolbelt and check the voltage of the outlet using the red and black probes.
3	B	Move to the fuse box by tapping location 3 on the teleportation map. When your hands are near the tablet, it will automatically point with your index finger which you use to tap the screen. Turn the power off by grabbing and sliding the power lever of the fuse box down.
3	C	Move to the living room by tapping location 2 on the teleportation map. When your hand is near the tablet, it will automatically point with your index finger which you use to tap the screen. Grab the yellow wire strippers from the toolbelt. Remove the plastic coating from the split in the wires by touching the split area with the tip of the wire strippers.
3	D	Grab a wire connector from the toolbelt and attach it to the stripped section of wire.
3	E	Grab the blue wire crimpers from the toolbelt and crimp the wire connector. To crimp the wires, touch the wire connector with the tip of the wire crimpers.
3	F	Move to the fuse box by tapping location 3 on the teleportation map. When your hand is near the tablet, it will automatically point with your index finger which you use to tap the screen. Turn the power on by grabbing and sliding the red power lever up.
3	G	Grab the voltmeter from the toolbelt and check the voltage of the outlet using the red and black probes.
3	H	Move to the fuse box by tapping location 3 on the teleportation map. When your hand is near the tablet, it will automatically point with your index finger which you use to tap the screen. Then turn the power off by grabbing and sliding the red power lever down. Grab the yellow wire strippers from the toolbelt. Remove the plastic coating from the split in the wires by touching the split area with the tip of the wire strippers. Grab a wire connector from the toolbelt and attach it to the stripped section of wire. Grab the blue wire crimpers from the toolbelt and crimp the wire connector. To crimp the wires, touch the wire connector with the tip of the wire crimpers.

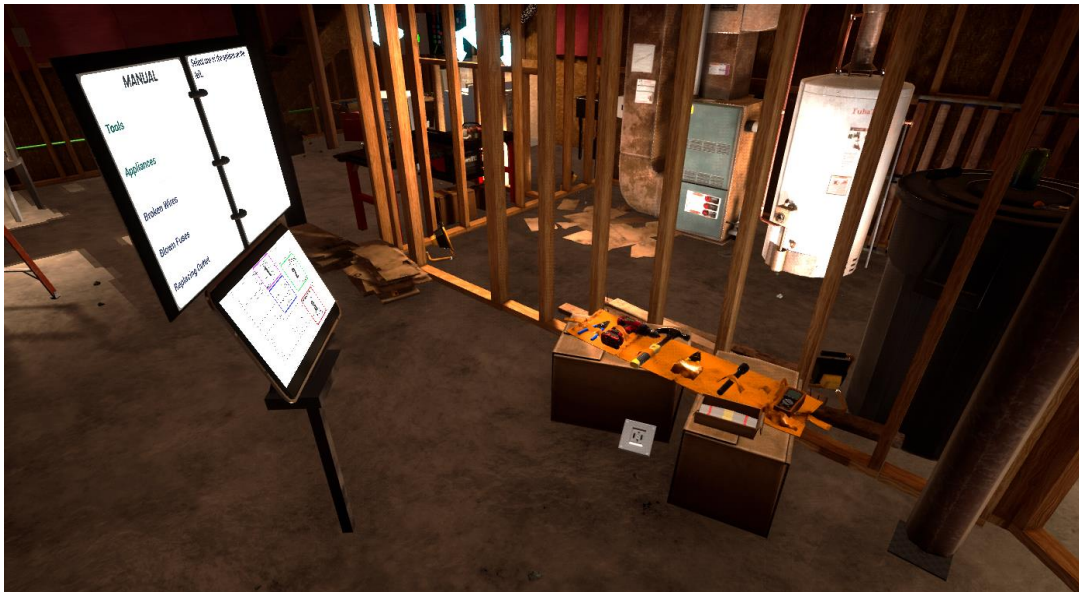
3	I	Turn the power on by grabbing and sliding the red power lever up. Then move back to the living room by tapping location 2 on the teleportation map. When your hand is near the tablet, it will automatically point with your index finger which you use to tap the screen. Tap on the rectangular box to open it, grab the television and place it in position as indicated by the television hologram. Grab the power cable and plug it in to the outlet.
4	A	<p>Move to the laundry room by tapping location 3 on the teleportation map. When your hand is near the tablet, it will automatically point with your index finger which you use to tap the screen. Check the voltage of the two outlets here using the voltmeter, then open up the two large boxes. Grab and place both washer and dryer into position as indicated by the holograms of those machines. Grab their power cables and plug them in. An outlet will break. Follow the same procedure in the manual to replace the broken outlet. Grab the drill from the toolbelt and remove the 4 screws from the outlet. This drill will automatically tighten or loosen screws when it comes into contact with one. When the screws are fully removed, a yellow burst of confetti will appear. Grab and remove the broken outlet. Grab a new outlet from the base of the toolbelt. Place the new outlet into the socket and tighten the 4 screws using the drill. Grab two new gray fuses from the box of fuses to the left of the toolbelt. Insert the new gray fuses into the empty sockets in the fuse box, above the tool belt.</p> <p>The empty sockets are the bottom right two ones. Grab the red power lever of the fuse box and grab and slide it up to turn the power back on. Plug in the power cable back into the replaced outlet.</p>
4	B	Listen to the final tips from the narrator

Map

The user will be working in an unfinished basement where they need to install appliances and fix electrical problems.



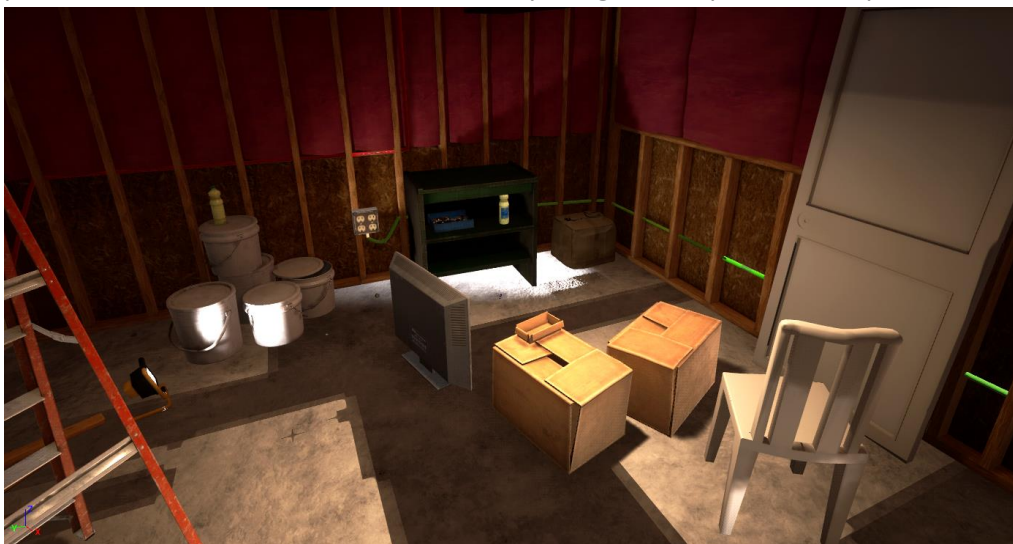
Home Location - Starting Location: This is where the user begins the experience. They have a tool belt here with some of the tools they will need in tutorial mode and all of the tools in free play. From here, the user can look through the pages in the manual to learn about how to solve problems and move to the other locations by using the teleportation map.



Location 1 - Kitchen: In the kitchen, the user will install the fridge and stove. Installing the fridge causes no problems but when installing the stove, one of the outlets will blow and the user must replace the outlet and the blown fuses. They have a tool belt here with some of the tools they will need in tutorial mode and all of the tools in free play. From here, the user can look through the pages in the manual to learn about how to solve problems and move to the other locations by using the teleportation map.



Location 2 - Living Room: In the living room, the user will install the television. When installing the television, there will be two broken wires that the user must fix before power can get to the television. They have a tool belt here with some of the tools they will need in tutorial mode and all of the tools in free play. From here, the user can look through the pages in the manual to learn about how to solve problems and move to the other locations by using the teleportation map.



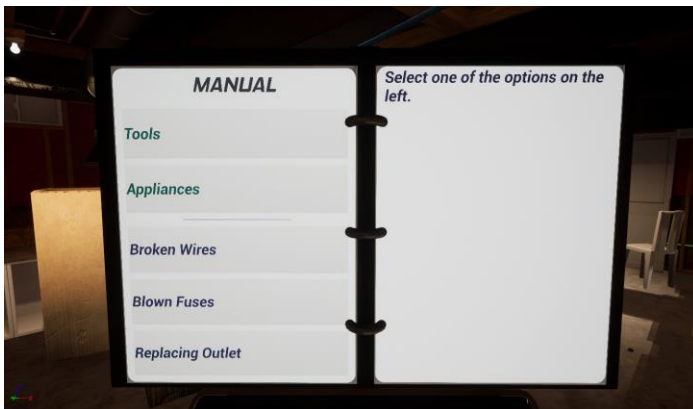
Location 3 - Fuse Box and Laundry Room: They can replace blown fuses at this location with new ones from a large box. They can install the washer and dryer at this location. The top outlet will cause no problems but the bottom one will blow and the user must replace the outlet and the blown fuses. They have a tool belt here with some of the tools they will need in tutorial mode and all of the tools in free play. From here, the user can look through the pages in the manual to learn about how to solve problems and move to the other locations by using the map tablet.



Key Objects

Note: Some tools will not be visible at the beginning of the tutorial and will only appear when they are required.

Manual: The manual is located above the teleportation map at every location in the simulation. It contains information about the tools available to the user, information about the appliances and a list of common breakdowns and how to fix them. When the user's hand is near the manual, it will automatically point with the index finger which they can use to tap the screen. The specific information inside the manual for common breakdown is listed further down in this manual.



Tool Belt: There is a toolbelt at every location, found at the base of the teleportation map and manual stand. It holds all the tools the user will need, with some tools not appearing visible during the initial part of the tutorial until they are required.



Voltmeter: The voltmeter will read the voltage of the two types of outlets in this simulation. The user can pick up the voltmeter by grabbing the main body of the device in one hand. The user can grab the black and red probe from the side of the voltmeter with their other hand. Insert these probes into any outlet and the main device will display the voltage coming from that outlet.



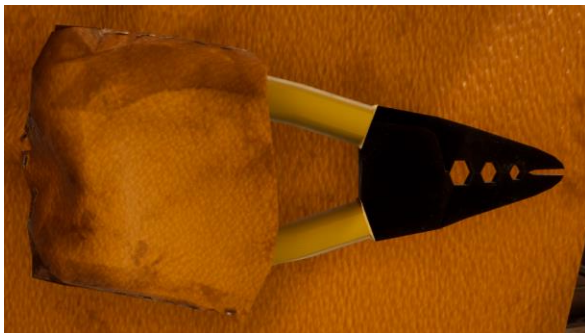
Drill: The drill is located on the toolbelt and can tighten or loosen the four screws that hold the outlets in place. This drill will automatically tighten or loosen screws when it comes into contact with one. When the screws are fully removed or secured, a yellow burst of confetti will appear.



Screws: The screws are located around the simulation and are part of the outlets. They cannot be grabbed or picked up and only interact with the tip of the drill. They can be loosened or tightened using the drill and a yellow burst of confetti will appear when they are fully loose or tight.



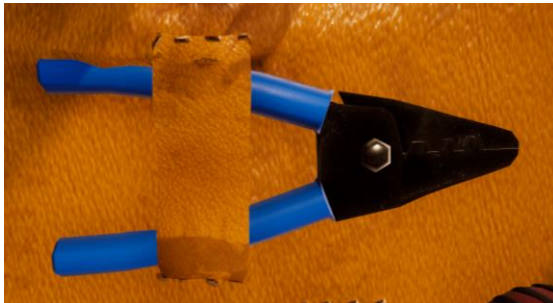
Wire Strippers: The yellow wire strippers are located on the toolbelt. They can remove the plastic coating from split wires by picking up and then touching the split area with the tip of the wire strippers.



Wire Connector: The wire connectors are located in a box by the toolbelt. They can attach to the stripped section of wire, fixing the split.



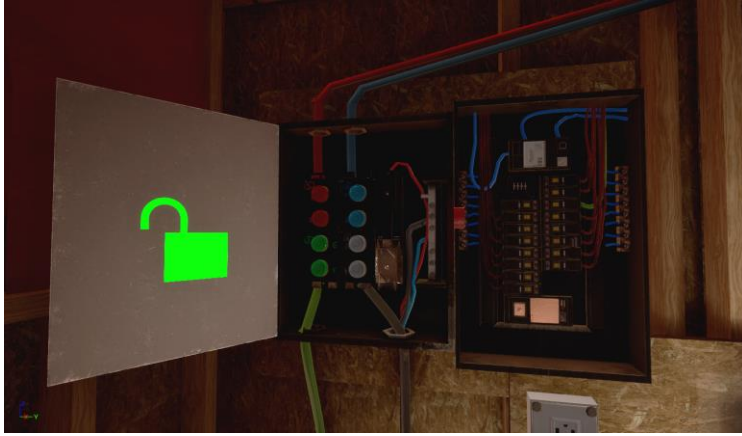
Wire Crimper: The blue wire crimpers are located in the toolbelt and can crimp the wire connector. To crimp the wire connectors, grab the crimpers and then touch the wire connector with the tip of the wire crimpers.



Fuses: The fuses are located in a large box in the fuse box and laundry room, location 3. There are four types of fuse and each type is colour coded, either gray, blue, green or red. When a fuse blows in the fuse box, the user needs to grab two replacement fuses of the appropriate color and place them back into the fuse slots on the fuse box.



Fuse Box: The fuse box is located in the fuse box and laundry room, location 3. The fuse box has eight fuse slots, two of each color. There is a large power lever that can be grabbed and slide up to turn the power on or down to turn the power off. When a fuse blows, the power lever is moved into the down position and the fuses must be replaced with the correct color.



Outlets: There are two types of outlets, one is 120V and one is 240V. The 120V outlets are used for the television and the fridge and the 240V outlets are used for the stove, washing machine and dryer. They are located around the simulation at each main location. Only the 240V outlets can break. Replacement 240V outlets are located at the base of the toolbelt. The voltage of these outlets can be checked with the voltmeter. If an outlet is blown, the user must remove the four screws that keep them in place using the drill then grab a replacement outlet and socket it in place. Then, using the drill, secure them on the socket.



120V

240V

Hammer: The hammer is located in the toolbelt. This object is not required to complete the simulation.



Flashlight: The flashlight is located in the toolbelt. This object is not required to complete the simulation. When it is grabbed, the light will turn on.



Appliances: There are five types of appliances the user will use in this simulation. They all come in large boxes of similar size to their real size and can be opened by tapping on the box. The tutorial mode will lock the ability to open these boxes until required and on freeplay all boxes can be opened right away. All appliances go in a specific location as indicated by a hologram version of that appliance. They all have a power cable and plug that can be plugged into an outlet of the correct type near their final location.

The Fridge: The fridge is installed in the kitchen, location 1 and requires a 120V outlet.



The Stove: The stove is installed in the kitchen, location 1 and requires a 240V outlet.



The Television: The television is installed in the living room, location 2 and requires a 120V outlet.



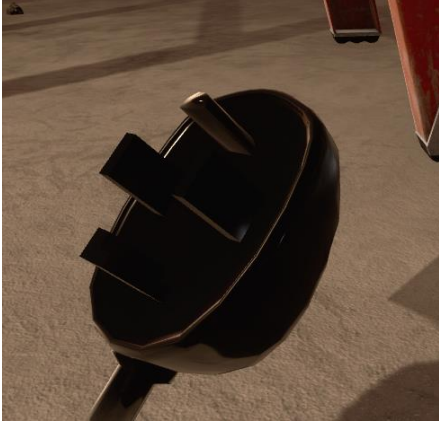
The Washing Machine: The washer is installed in the fuse box and laundry room, location 3 and requires a 240V outlet.



The Dryer: The dryer is installed in the fuse box and laundry room, location 3 and requires a 240V outlet.



Power Cable Plugs: Each appliance will have a power cable plug that will appear next to the appliance when it is put into its correct place. Each power cable plug can be plugged into outlets. When the power is on and the outlet is working, plugging in the power cable will turn on the appliance.



The information from the manuals

Common Breakdowns:

Split Wires: If the wires are broken, first head to the fusebox in the laundry room and turn the power off. Then, use the wire strippers to remove the insulation off the split in the wires. Grab a wire connector from the box by the toolbelt and use it to connect the two sides of the wire together. Crimp the wire using the crimp tool and turn the power on.

Replace Fuses: Check the colour of the missing fuses on the fusebox. Grab two fuses with the correct colour from the fuse container and plug them in. Once they've been replaced, turn the power back on using the large lever.

Broken Outlet: Unscrew the broken outlet using the power drill and replace it with a new one. Replacement outlets are located at the base of the toolbelt. Remember it needs to be the same type as the old one. Once the outlet has been replaced, screw the new outlet in and then head to the fusebox to see if any fuses were blown. See instructions on Blown Fuses for information on how to do that.

Freeplay vs. Tutorial:

In the tutorial mode, the user will be instructed on how to install the five main appliances step-by-step. They will be instructed to move to the kitchen first and install the fridge and stove. When installing the stove, the outlet will break and the user must replace the outlet and replace the fuses at the fuse box. Then, the user moves to the living room where they must install a television. The wires that lead to the fuse box for the television outlet will break as the user progresses and the narrator will show the user how to fix those split wires. Finally, the user must install the washer and dryer in the laundry room without any guidance.

In freeplay, the user must install all five appliances without any guidance. Similar breakdowns will occur, which the user must fix. If the user is stuck, they can check the manual for instructions.

Common Issues:

Issue 1: Can't fix the split wires with the wire strippers.

Fix: Check that the power has been turned off as it's dangerous to work on split wires when the power is on. Grab the power lever at the fuse box and pull it down and a yellow burst of confetti will appear, which means the power is off.