litter·robot® 3

Wire Harness Installation Guide

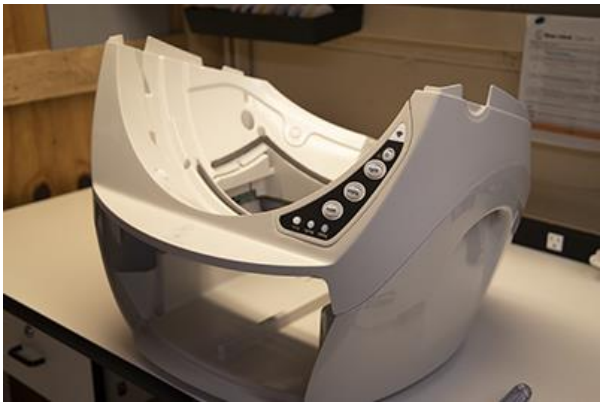
You will need:

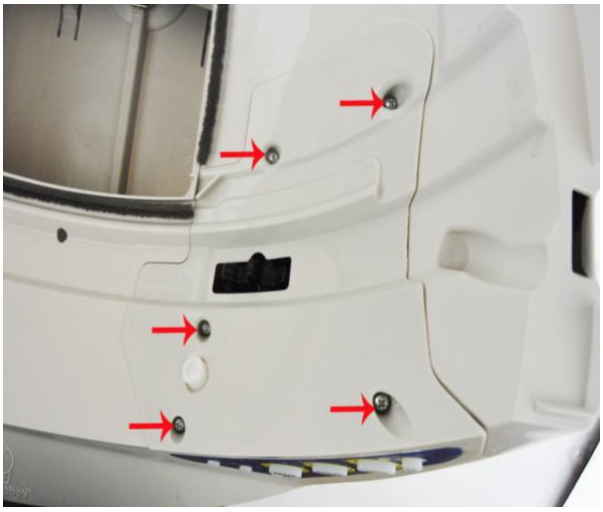
- 8-inch #2 Phillips Screwdriver
- Needle-nose Pliers

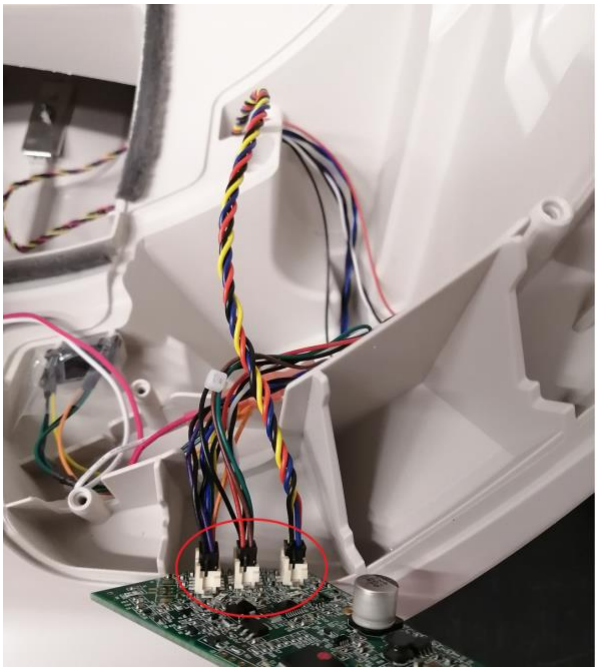
Wire Harness Kit includes:

- Power Jack with Connectors
- Backup Battery Connectors
- Motor Wires
- Hall Effect Sensors
- CATS Sensor Wires
- Bonnet Connector Wires

PREPARATION

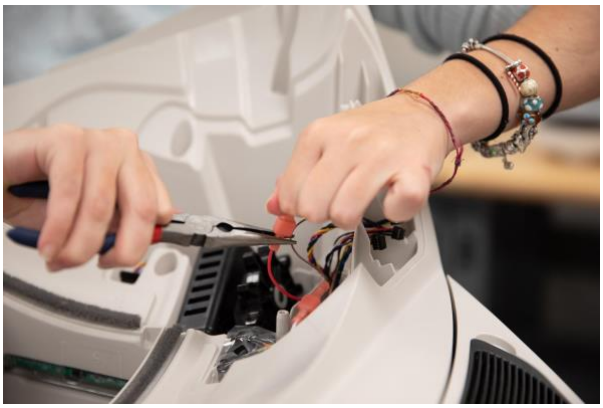
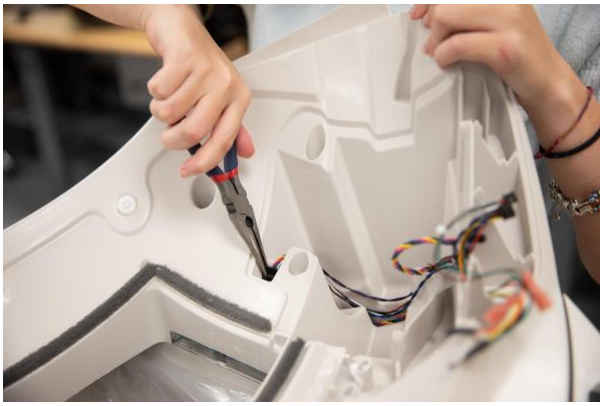
Press the Power button to turn the unit off, and unplug it from the wall. Remove the Bonnet, Globe, and Waste Drawer. The plastic component that covers the Control Panel on the Base is called the Bezel. Unscrew the 5 screws to remove the Bezel.	

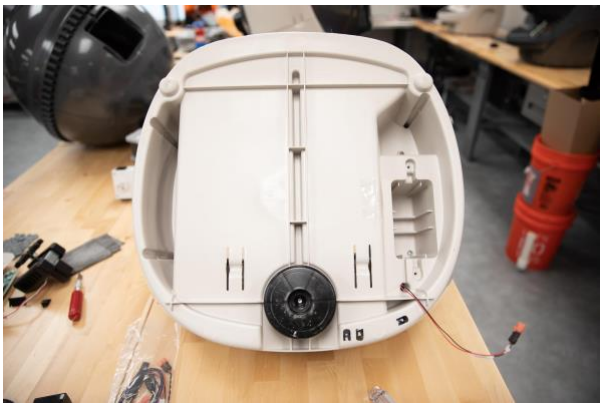
	
Use needle-nose pliers to lift the Bezel out of place. Separate the Bezel from the Control Panel by pushing the buttons through and lifting up. Set the Bezel and screws aside. *Note: The Circuit Board and Keypad may be held in place by a piece of tape (assembly aid). If present, simply remove it; it is not required for reassembly.*	 
Turn the Circuit Board over and unplug the three connectors: 4-pin (DFI Drawer Full Indicator), 6-pin (Motor and Power), and 8-pin (Hall Effect Sensor). Set the Circuit Board aside.	

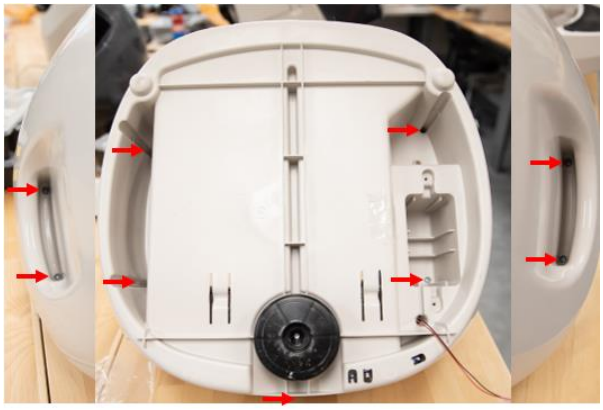
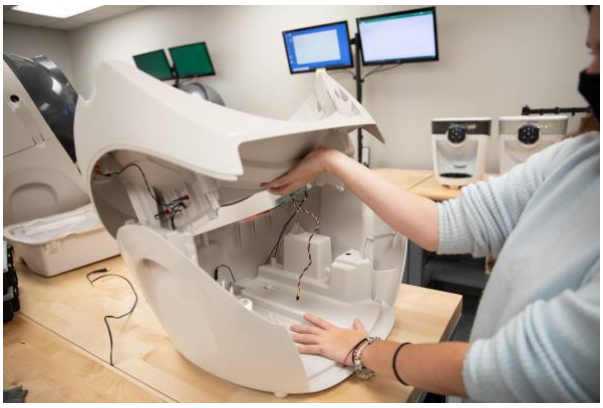
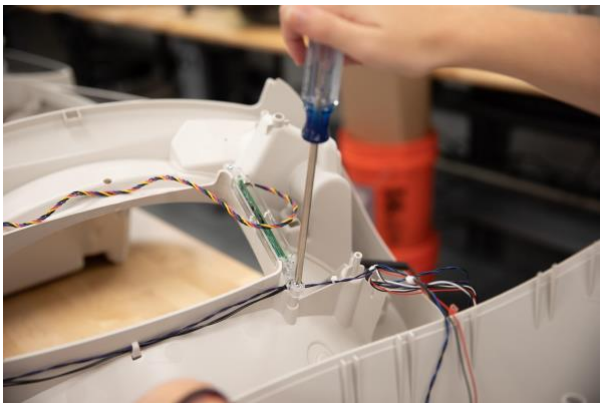
	

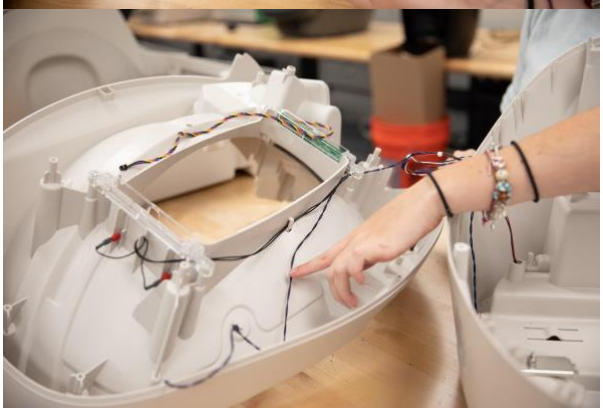
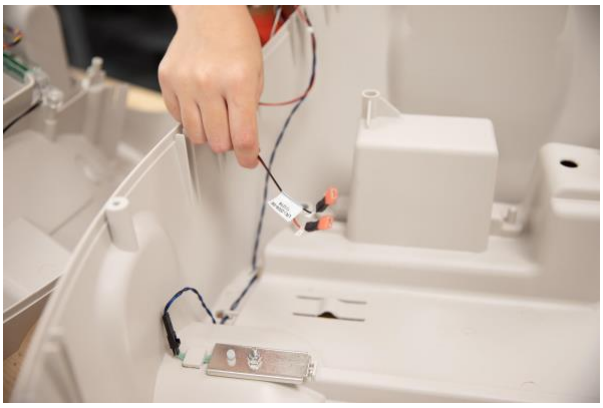
REMOVE OLD WIRE HARNESS

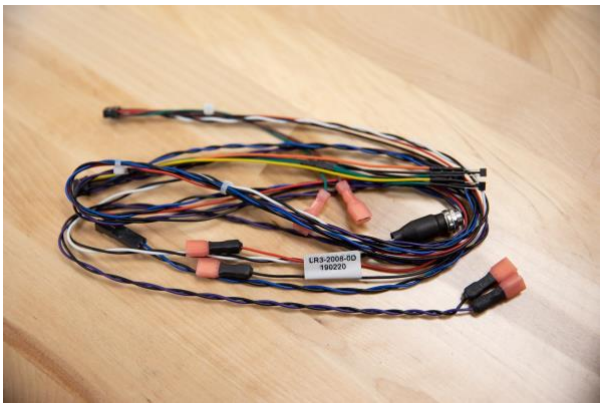
Unplug the Motor wires. Follow the red and white wires which connect to the back of the Motor to where they are attached to the brown and green Circuit Board wires, and disconnect them by pulling apart the Quick Disconnects (the thick, light red object between where the wires connect). Remove the Motor and set it aside. *Note: These can be difficult to pull apart; using the needle-nose pliers may help you to get a better grip.*	

	
To the left of the Motor there is a small plastic bracket with two sensors mounted on it. These are called the Hall Effect Sensors. Remove the tape which holds the Hall Effect Sensors and set it aside. (It will be necessary for reassembly.) Remove the Hall Effect Sensors from their mounting bracket. Remove the mounting bracket and set it aside.	
Where the wires descend into the Base there is a small, black, L-shaped piece. This is called the Bulkhead Plug. Remove the Bulkhead Plug and set it aside.	

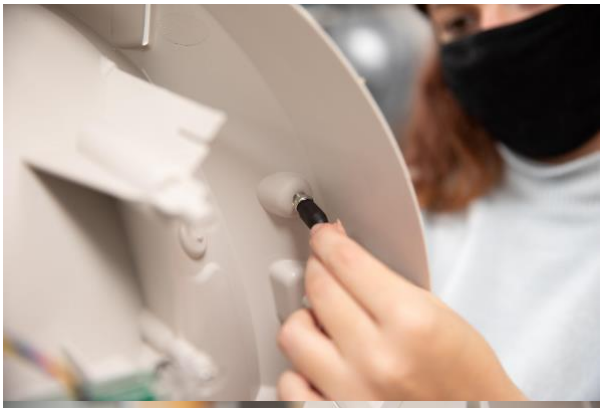
Reach in through the opening for the Waste Drawer and pull the disconnected wires into the Base. *Note: These can be tricky to pull through. Try pulling the 4-pin DFI connector through first, followed by the 6-pin (Motor and Power), and finally the 8-pin (Hall Effect Sensor).*	
Flip the Base upside down.	
If the unit has a Backup Battery, remove the Backup Battery. Remove the two screws holding the Backup Battery bracket in place. Set the bracket to the side. Unplug the red and black wires from the battery at the Quick Disconnects. Set the battery aside.	

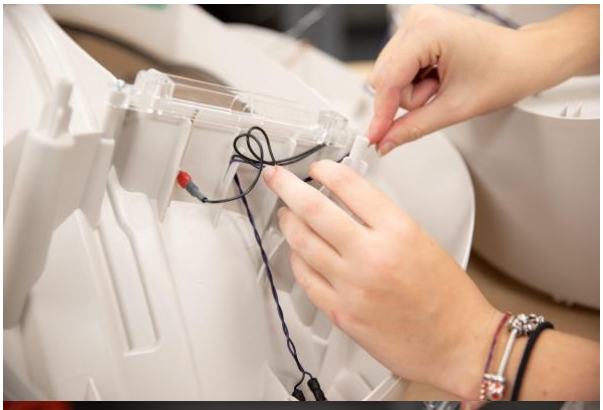
	
Remove the 9 screws from the bottom of the Base.	
Flip the Base back upright and gently remove the top part of the Base. Pull up on the front of the top half of the Base and flip it towards the back of the unit, keeping in mind that wires will still be attached.	
The clear brackets on either side of the opening in the top of the Base are the DFI Harnesses. Remove one screw from each of the DFI Harnesses, on the side nearest where the purple and black wires are routed. *Note: Do NOT remove the entire DFI Harness.*	

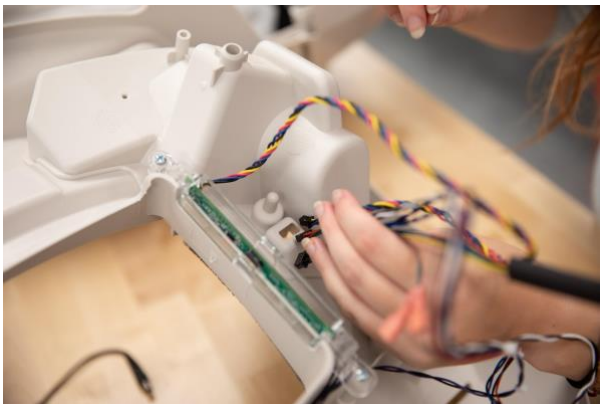
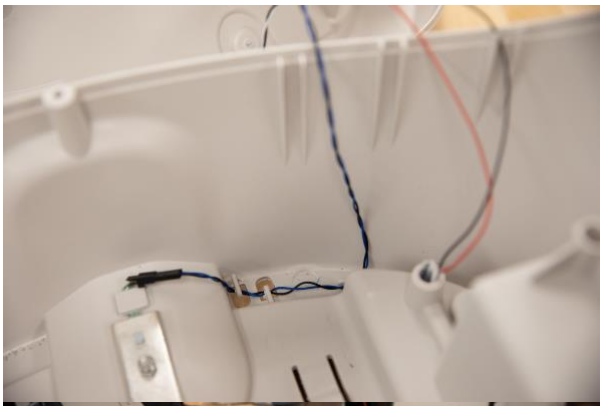
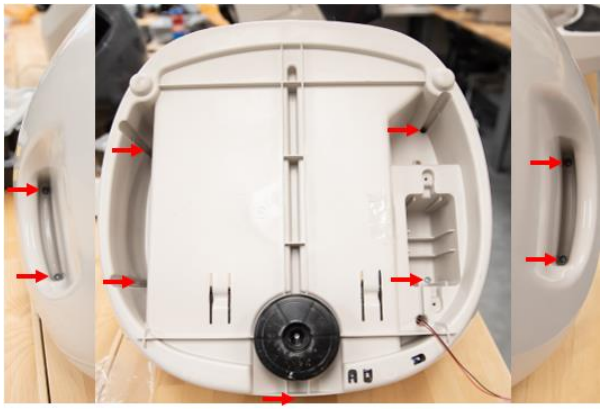
	
Locate where the purple and black wires plug into the metal Bonnet Sensing tabs. Unplug these wires and remove them from under the DFI Harnesses and any tabs holding them in place.	 
Pull the red and black Backup Battery wires up through the bottom of the Base. *Note: Pulling these wires out one at a time may make this easier.*	

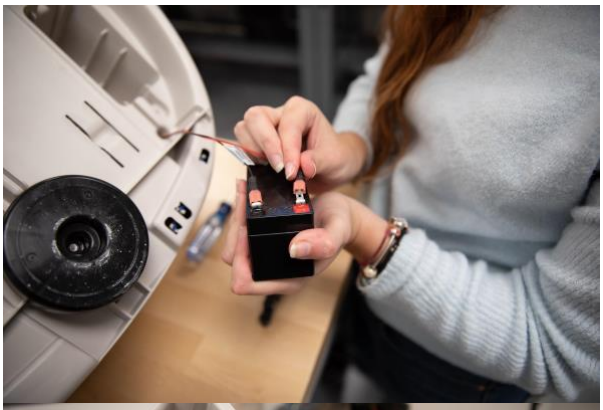
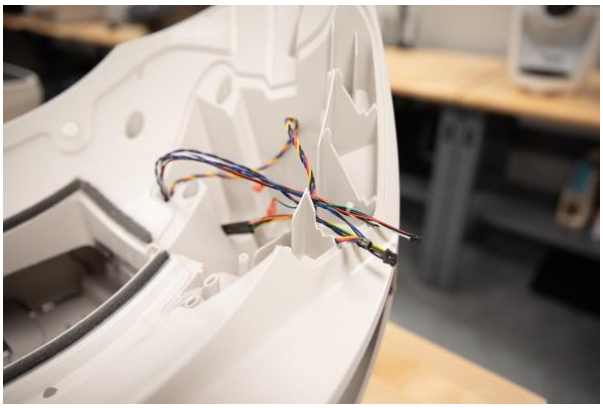
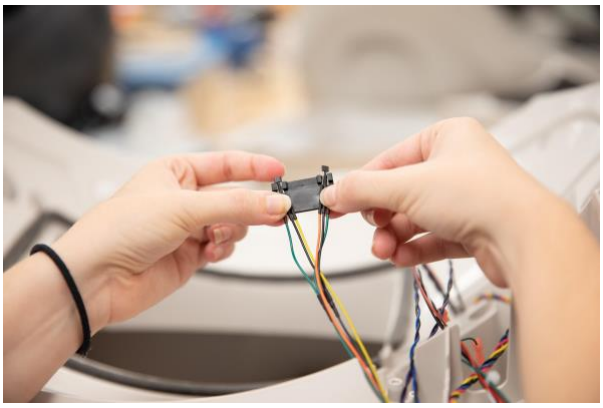
The port where the Power Cord plugs into the back of the unit is called the Power Jack. Unscrew the nut which is attached to the outer side of the Power Jack. Remove the nut and washer and set them aside. Push the Power Jack through its mounting hole into the Base. Put the nut and washer back onto the detached Power Jack. *Note: The needle-nose pliers may make it easier to hold the nut while you unscrew it.*	
The silver plate in the back-center of the Base is called the CATS Sensor. Unplug the CATS Sensor at the back block where it connects to the blue and black wires. Be careful not to bend the force sensor. The wires will be tucked under routing tabs along the back of the unit. Make sure to remove the wires from under these tabs.	 
Everything should now be disconnected. Remove the old Wire Harness from the unit.	

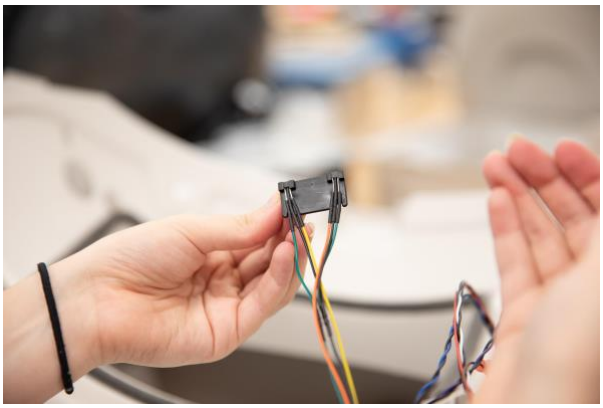
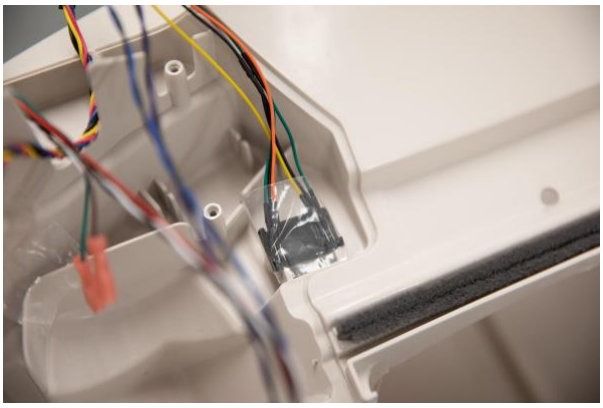
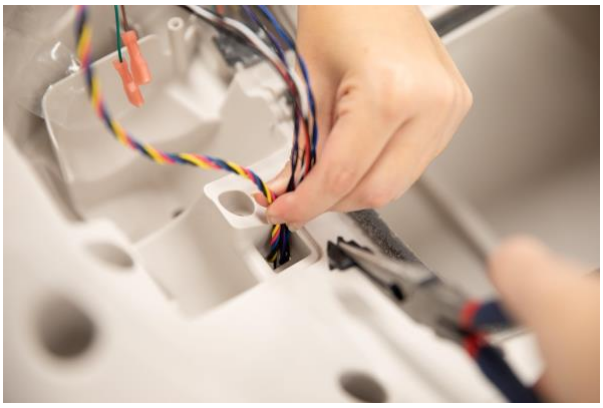
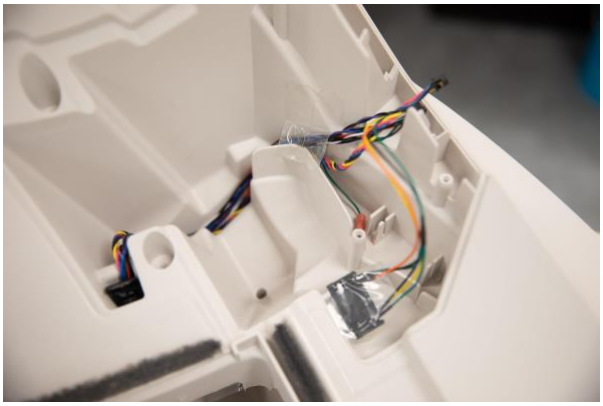
INSTALL NEW WIRE HARNESS

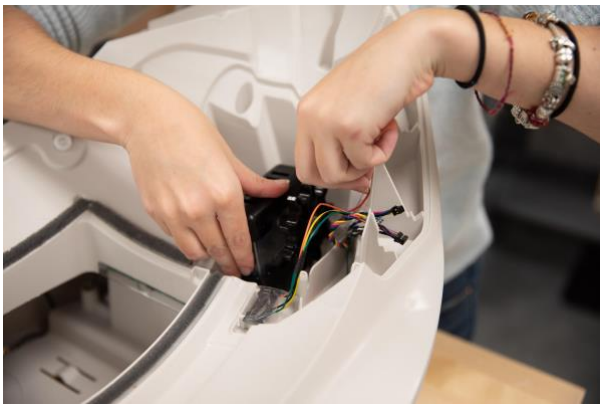
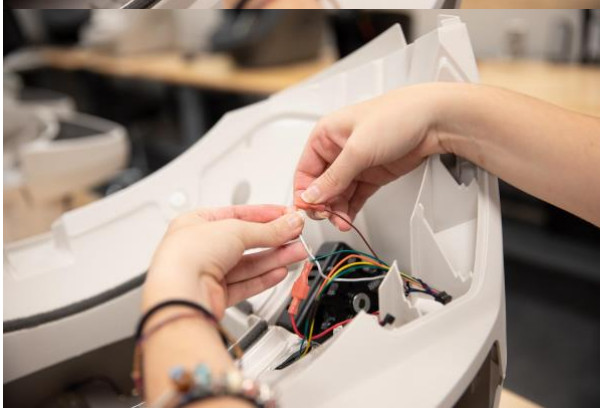
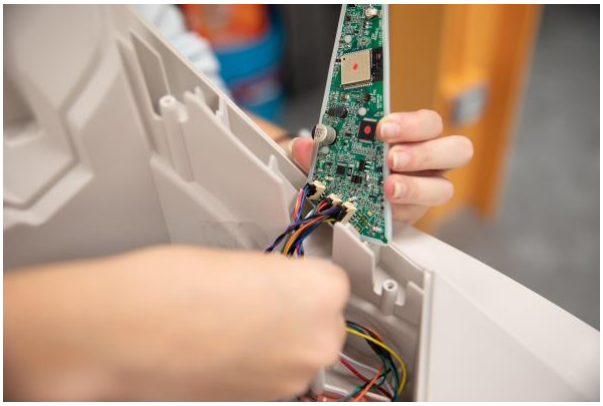
Remove the Wire Harness from its packaging. Locate the black sleeve which covers the Hall Effect Sensors. Make sure that this sleeve stays over the sensors until they are ready to be connected.	
Remove the nut and washer from the new Power Jack and set them aside. Insert the Power Jack into the mounting hole at the back of the Base. Place the washer and then the nut back onto the end of the Power Jack which is now coming out of the Base, and tighten the nut so that the Power Jack doesn't wiggle. *Note: The needle-nose pliers may help to grab the nut while you tighten it down.*	 
Plug in the CATS Sensor. Using the black L-shaped connector at the end of the black and blue wires, plug in the CATS Sensor, with the thickest portion of the connector pointing towards the front of the Waste Drawer cavity. Tuck the blue and black wires under the three tabs along the back side of the Base.	

Push the red and black Backup Battery wires through the hole at the bottom of the Base. *Note: This may be easier if you push the wires through one at a time.*	
Plug in the Bonnet Sensor. Locate the metal tabs along the side of the upper Base. Take the purple and black wires and attach them to these tabs. The purple wire should plug in closer to the side where the wires are routed. Make sure that the metal tabs are flat against the top face of the Base once you have them plugged in. *Note: These tabs are flexible, and holding them down from the top side of the Base will prevent them from bending or moving when you plug the wires in.*	
Route the purple and black wires from the harness along the same path as the black wires which are already connected to the DFI. Reattach the screws which were removed from the DFI Harnesses.	 

Feed the connectors up through the top of the Base. Start by feeding through the black sleeve which contains the Hall Effect Sensors. Then feed through the 8-pin connector (Hall Effect Sensors), followed by the 6-pin connector (Motor and Power), and finally the 4-pin connector (DFI).	
Ensure that all wires are tucked to the back right of the Waste Drawer cavity. Flip the top of the Base back onto the bottom of the Base and make sure that it nests correctly.	 
Flip the entire Base upside down and replace the 9 screws into the bottom of the Base.	

If the unit has a Backup Battery, plug the battery back in. Make sure that the wires route through the small channel near the battery and into the cavity with the battery resting on top of the wires. Replace the black bracket which holds the battery in place by reattaching the screws located at each end.	 
Flip the Base back upright and pull the wires gently to make sure they are taut. There should be plenty of slack for wire routing.	
Replace the Hall Effect Sensors. Take the black bracket which mounts the Hall Effect Sensors to the Base, and insert the sensors into the two grooves on the bracket. This is done by putting the wires through the grooves in the bracket, and then GENTLY pulling the Hall Effect Sensors back so that they nest into the bracket. Facing the bracket with the mounting grooves at the top edge, the wires should be oriented so that the yellow and orange wires are the middle two wires, with	

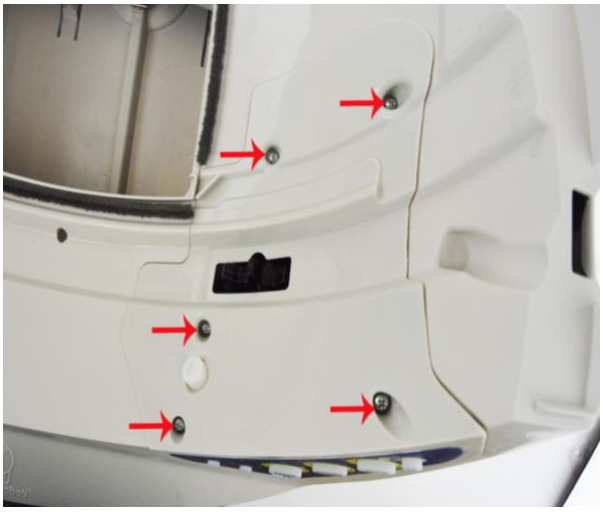
the yellow wire on the left and the orange wire on the right.	
While holding the Hall Effect Sensors in place, insert the pegs on the bottom of the bracket into the two holes in the top of the Base. When done correctly, the Hall Effect Sensors should be directly next to the two ribs which lead out from the mounting holes. Using the tape which was removed when the old sensors were removed, tape the sensor bracket down, making sure that the tape stays within the indentation for the Bezel.	
Locate the hole that leads from the inside of the Base which the wires are routed through. Hold the wires against the edge of this hole, and reinstall the Bulkhead Plug.	
Route the wires through the channel which runs through the Motor cavity. Then orient the Motor so that the gear is toward the front face of the unit. Tuck the red and white wires underneath the Motor, and place it into the cavity so it holds the wires in place. Make sure that no wires interfere with the gear on the Motor.	

	
Plug the red and white wires from the back of the Motor into the brown and green wires from the Wire Harness. The red wire should be connected to the green wire, and the white wire should be connected to the brown wire.	 
Reattach the three wire connectors to the Circuit Board. The 4-pin connector goes on the 4-pin header, the 6-pin connector goes on the 6-pin header, and the 8-pin connector goes on the 8-pin header. With the headers facing you, you will not use the header on the far right of the Circuit Board. Each connector is keyed with a top and a bottom so that it will only fit in one way. If you feel any resistance, flip the connector over and try to attach it again.	

Make sure the wires attached to the Circuit Board are tucked behind it in the wire channel.	

REASSEMBLE

Reassemble the Bezel onto the Circuit Board and Keypad by holding the Circuit Board upright and fitting the Bezel over it, so that the buttons come through the Control Panel. Make sure to keep the silicone Keypad wrapped around the edges of the Circuit Board.	
Make sure the edges of the Bezel rest flush with the Base. Once in place, look through the opening where the black gear protrudes and confirm that no wires are visible. If wires are visible, remove the Bezel, tuck them into the wire channel, and secure them with stretchable tape.	

Attach the Bezel by tightening the 5 screws. Do not overtighten.	
Reassemble the Glove, Bonnet, and Waste Drawer. Plug the unit in, power it on, and let the initial Clean cycle finish. The Globe should return to the Home Position with the blue Ready light on.	 

TROUBLESHOOTING

If your unit does not cycle or does not cycle properly, review your installation:

- *If the blue light is flashing quickly, check that the 4-pin connector (that holds the DFI wires) is secured to the Circuit Board in the correct orientation.*
- *If the red light is flashing, check that the 8-pin connector (that holds the Hall Effect Sensor wires) is secured to the Circuit Board in the correct orientation.*
- *If the unit will not turn on and appears to have no power, check that the 6-pin connector (that holds the wires to the Motor and Power) is secured to the Circuit Board in the correct position.*
- *If the unit starts and stops with only a slight movement, remove the 4-pin connector from the header which it is in, and reattach it to the other 4-pin header.*
- *If the lights are blinking sequentially, either blue-yellow-red, or red-yellow-blue, or if the unit does not return to the correct Home position, check that the Hall Effect Sensors are installed in the correct orientation.*