

220/330 - CHARGING STATION

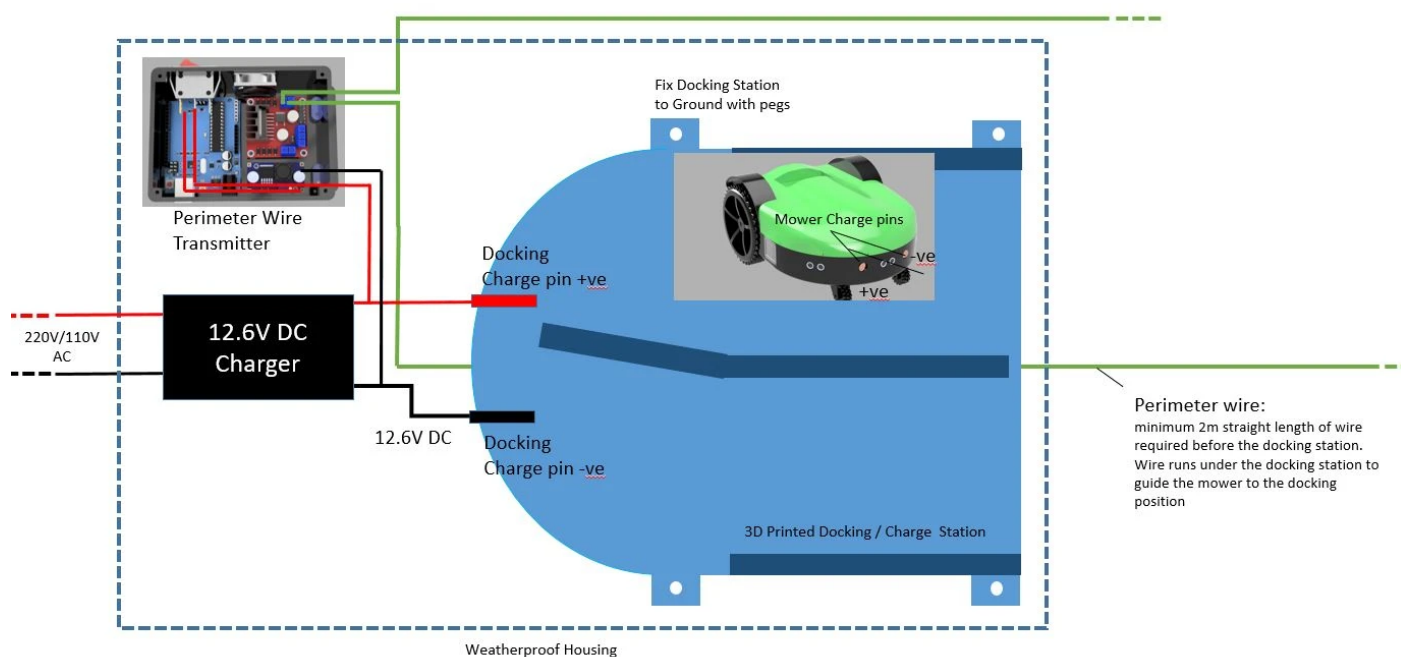
Once the battery is exhausted, the mower tracks the perimeter wire back to the charging station. Here the batteries are re-charged ready for the next mow cycle.#

The charging station is made from 4 large prints bolted together with M3 screws.

The charging pins consist of long M3 bolts with springs to ensure a constant contact to the charge pins on the mower. The charging power supply is connected to the charge pins to provide the charge voltage and amps.

[STL Files for Charging Station](#)

Overview of the Docking / Charging Station Setup



Docking Adjustments

I use a small rubber mat on the docking station to give the rear wheels extra traction when docking.

Docking / Charge Sensing

How does the mower know its reached the charging station....?

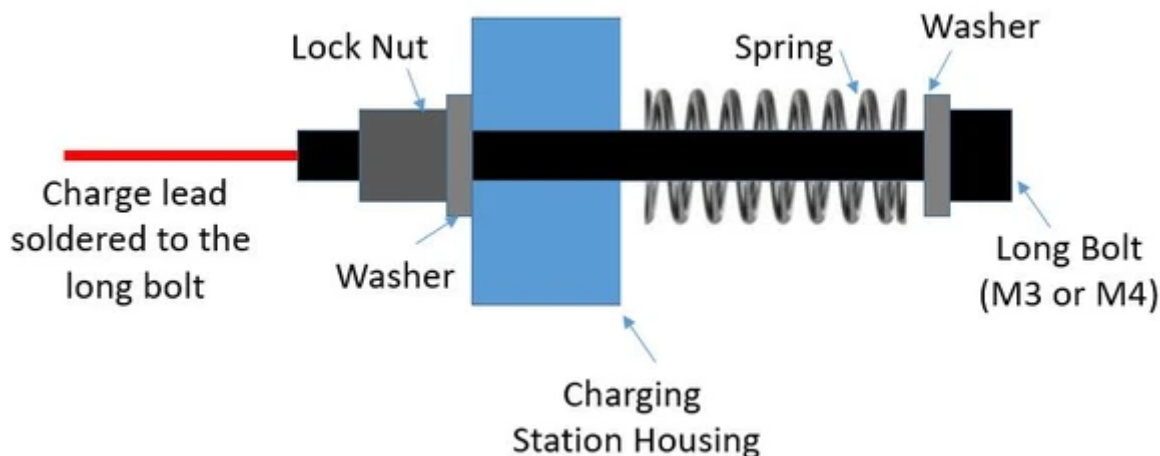
The mower senses the amperage through the charge pins and shuts down the mower. The longer the mower has been running, the more exhausted the battery is and a higher initial amperage is detected.

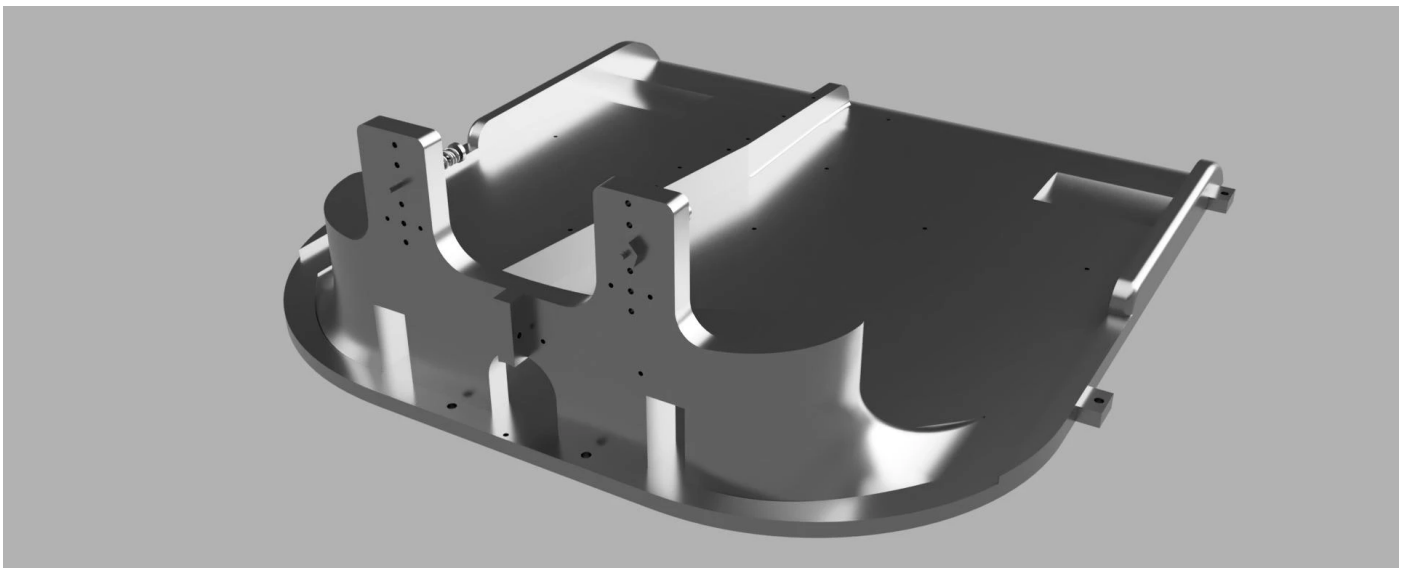
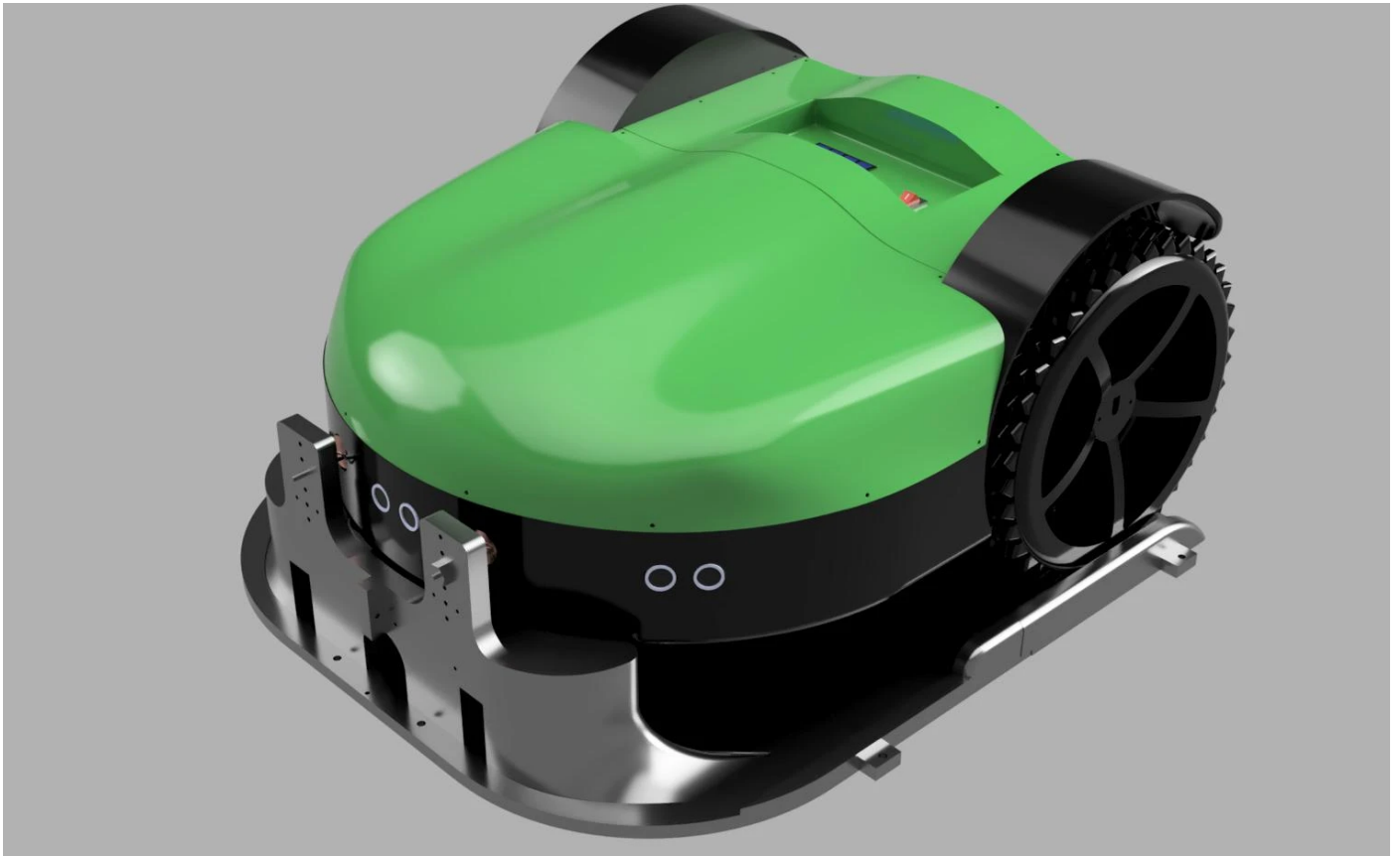
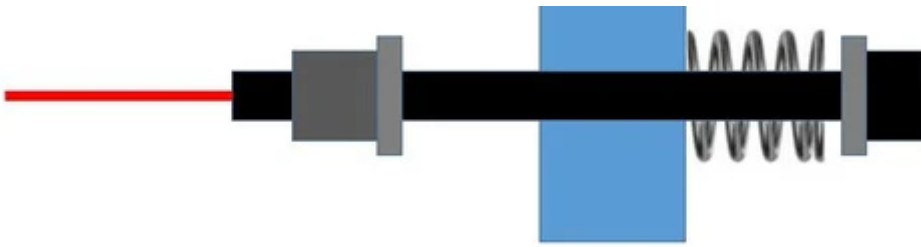
If you fully charge the battery, drive out of the charging station and then immediately back in again. The amp sensor may not detect the charge amperage because the battery is still fully charged. If you are testing the docking procedure please make sure the battery has been ran down a little before testing.

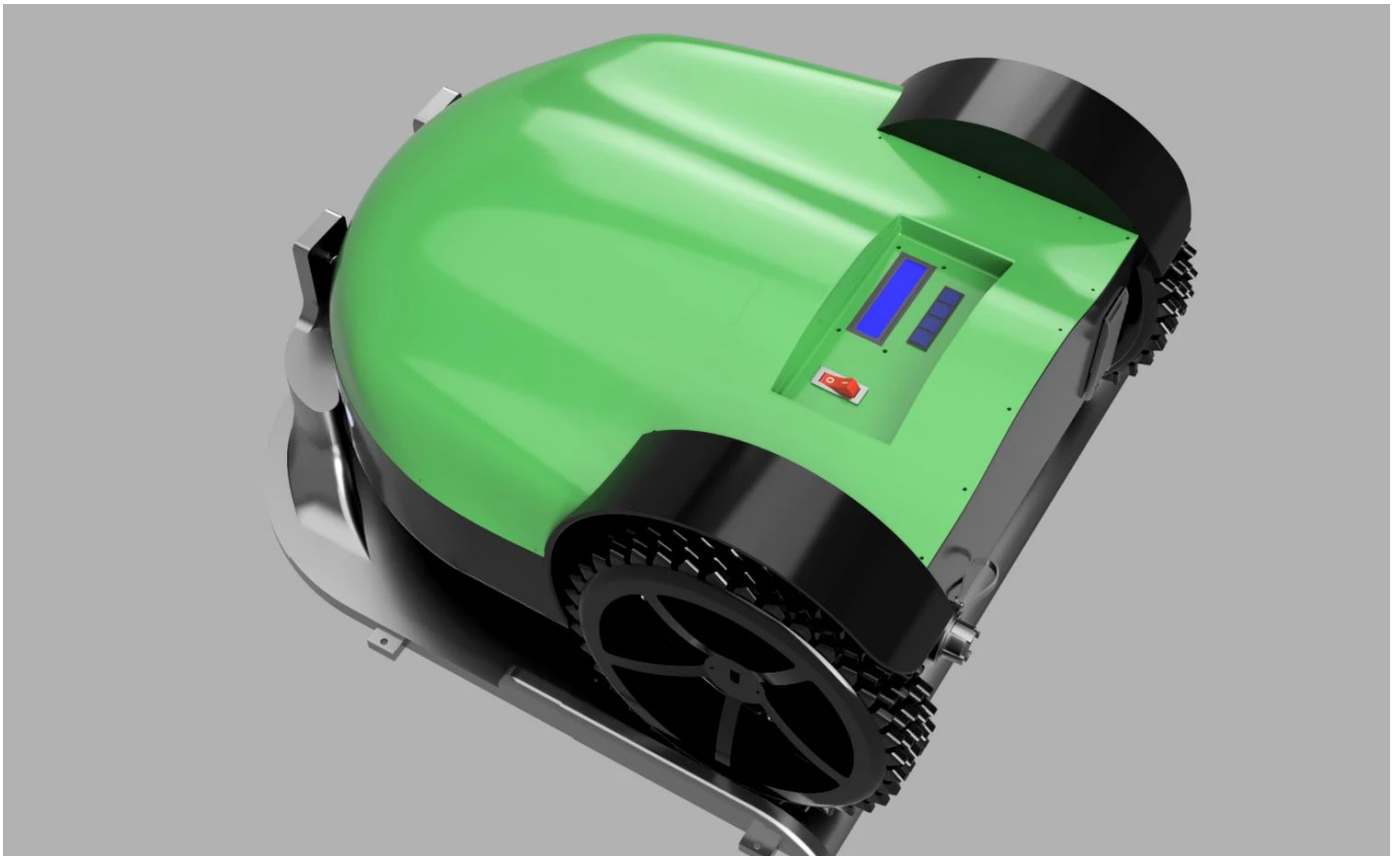
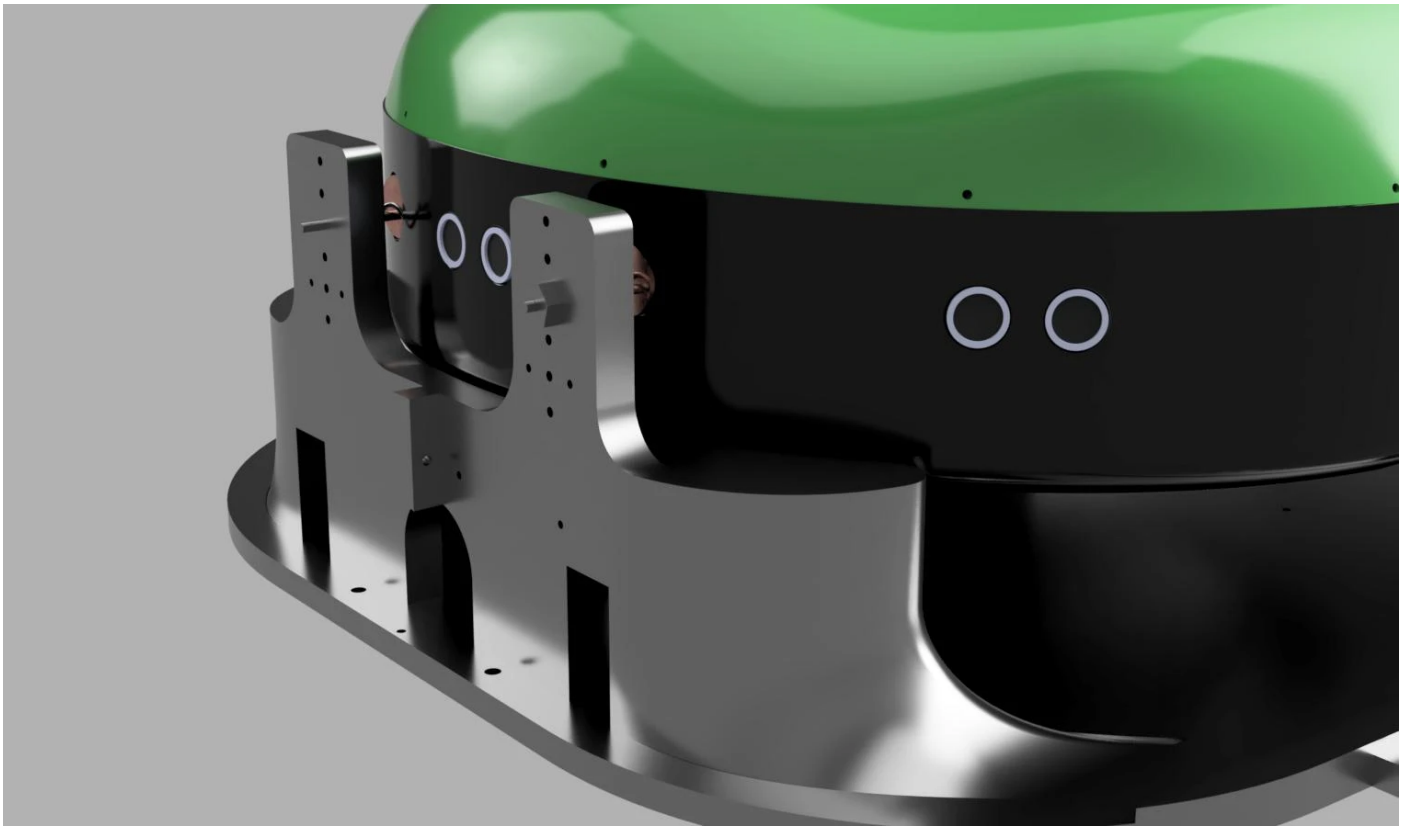
Charge Pins

The charge pin is a simple bolt with a spring mechanism. The spring ensures constant contact of the charge pin to the charge pad on the mower. You need to make 1 charge pin for the +ve lead and 1 pin for the -ve charge lead.

Ensure the pin can move freely through the hole in the docking station housing. Choose a spring that can be compressed by the weight of the mower and that the spring doesn't "eject" the mower from the docking station when parked.







Normal docking procedure:

1. Mower Stops mowing
2. Turns to the home compass Direction
3. Finds the wire
4. Follows the wire to the dock
5. Mower detects a charge amperage on the docking pins and powers down

ReP_AL 3D Printed Mower - Docking sequence



Tricky docking procedure:

(The mower will persistently try to get home - Never Quit!)

1. Mower Stops mowing
2. Turns to the home compass Direction
3. Finds the wire (wire is under the trampoline) and follows the wire going nowhere good.

6. Turns (again) to the home compass Direction
7. Finds the wire (again)
8. Follows the wire to the dock
9. Misses the charge pins
10. Gets stuck and realises due to the wheel spins being counted.
11. Stops and resets the docking procedure
12. Turns to the home compass Direction (again)
13. Finds the wire (again)
14. Follows the wire to the dock
15. Mower detects a charge amperage on the docking pins and powers down

Never Quit!! Robust docking logic gets it home ...



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