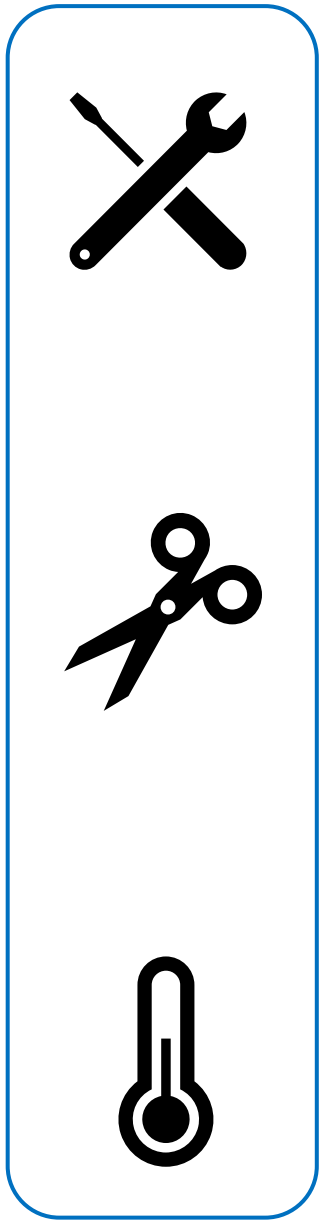

SCUTTLE Tools Guide

For Educators, Makers, and Learners

revised 2021.11.15

Questions: info@SCUTTLErobot.org

Shared Tools (Recommended for Lab)

- Easy to use
- Wide availability
- Instructional videos online

Throughout the design of the SCUTTLE robot, we co-selected tools and connectors to achieve a repeatable fabrication setup in a classroom environment. Achieve industrial quality without industrial tools.

PowerPole Crimpers

DuPont Crimpers

Spade Terminal Crimper

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Shared Tools (Recommended for Lab)

- Easy to use
- Wide availability
- Instructional videos online

Flush Cutters

Scissors

Wire strippers

Questions: info@SCUTTLErobot.org

Lab Recommendation:

- We recommend that you outfit your lab with 1 set of "shared tools" for every 4 robots in your lab.
- Also, 5S your labs by printing the previous slides out, laminating, and lining your shelves.

Additional Hand Tools

- Ferrules and crimper
  - Instead of tinning the ends of wires, add a ferrule for robust and consistent exposed ends.

Tools for the Maker

Recommended for all Roboticists!

- TS100 programmable soldering iron
- Safety Glasses (for all soldering work)
- Hot Glue Gun with temp control
- DC Power supply
  - (capable of 10A output at 30v)
- Rosin flux pen
- Solder
  - Leaded
  - 0.8mm diameter

Tools for the Maker

Recommended for all Roboticists!

- Powerwerx (or imitation brand) power meter
  - Know if your MCU board has an issue
  - Know how much your custom actuators pull during use
  - Find out if your battery is charging or finished
- USB power meter
  - Verify that your USB source is not limiting the power to your device (raspberry pi, cell phone, etc)
  - Check the power consumption of added devices (usb camera, LED's, WiFi dongle, etc.
- Electric Screwdriver
  - We've bought multiple brands from Amazon and the highest ratings don't have much impact for this product.
  - The best value (currently) that we found is linked in the image.

Kits (suggested with each robot):

- Allen Key
  - 6mm for M8 bolt
  - 4mm – for M6 screws
  - 2mm for M3 screws
- SCUTTLE wrench (13mm hex wrench built in)
- Phillips #1 hex-shank bit (for M2 course screws)

These tools make teardown and rebuild of the SCUTTLE robot quick and easy. We recommend that a lab is outfitted with 1 set for each robot.