

Warning: Improper assembly can short circuit batteries. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

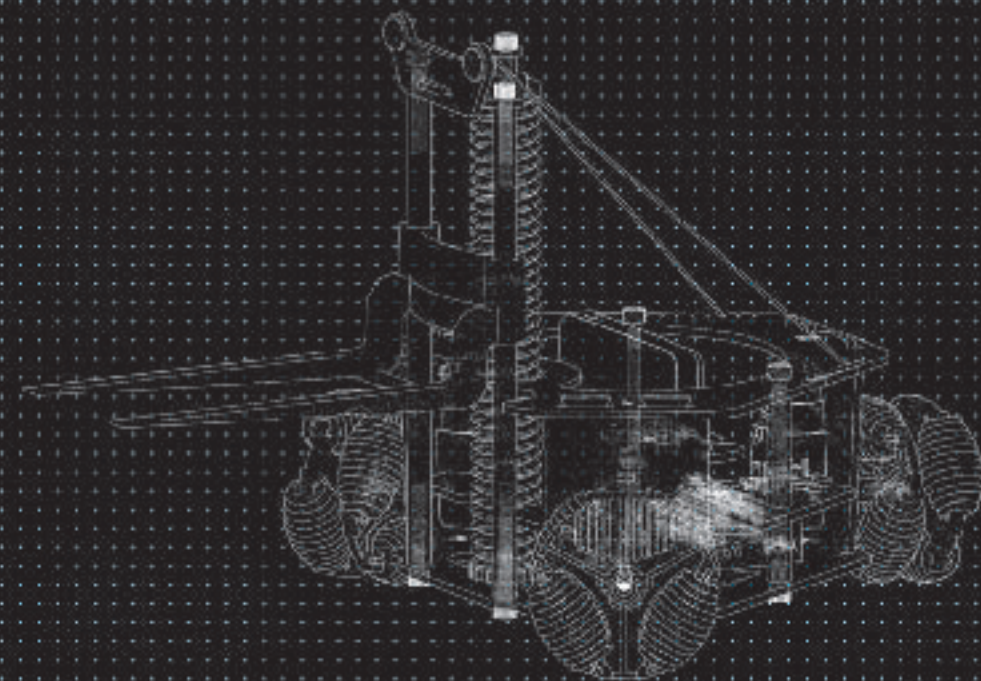
This product contains a coin cell battery. A swallowed coin cell battery can cause internal chemical burns in as little as two hours and lead to death. Dispose of used batteries immediately. Keep new and used batteries away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Robot FCC ID: 2BMCV-CL-HP-OMNIB-R Controller FCC ID: 2BMCV-CL-HP-OMNIB

This toy is intended for use by children over the age of fourteen years. These instructions contain important information, do not throw away.
© 2025 CrunchLabs LLC. All Rights Reserved

CRUNCH
LABS

HACK



011 - OMNIBOT FORKLIFT

230mm

230mm

155mm

BUILD ALONG WITH MARK ROBER



[CRUNCHLABS.COM/OMNIB](https://crunchlabs.com/omnib)

230mm

PARTS

ROBOT CHASSIS



ELECTRONICS



TOOLS & ACCESSORIES

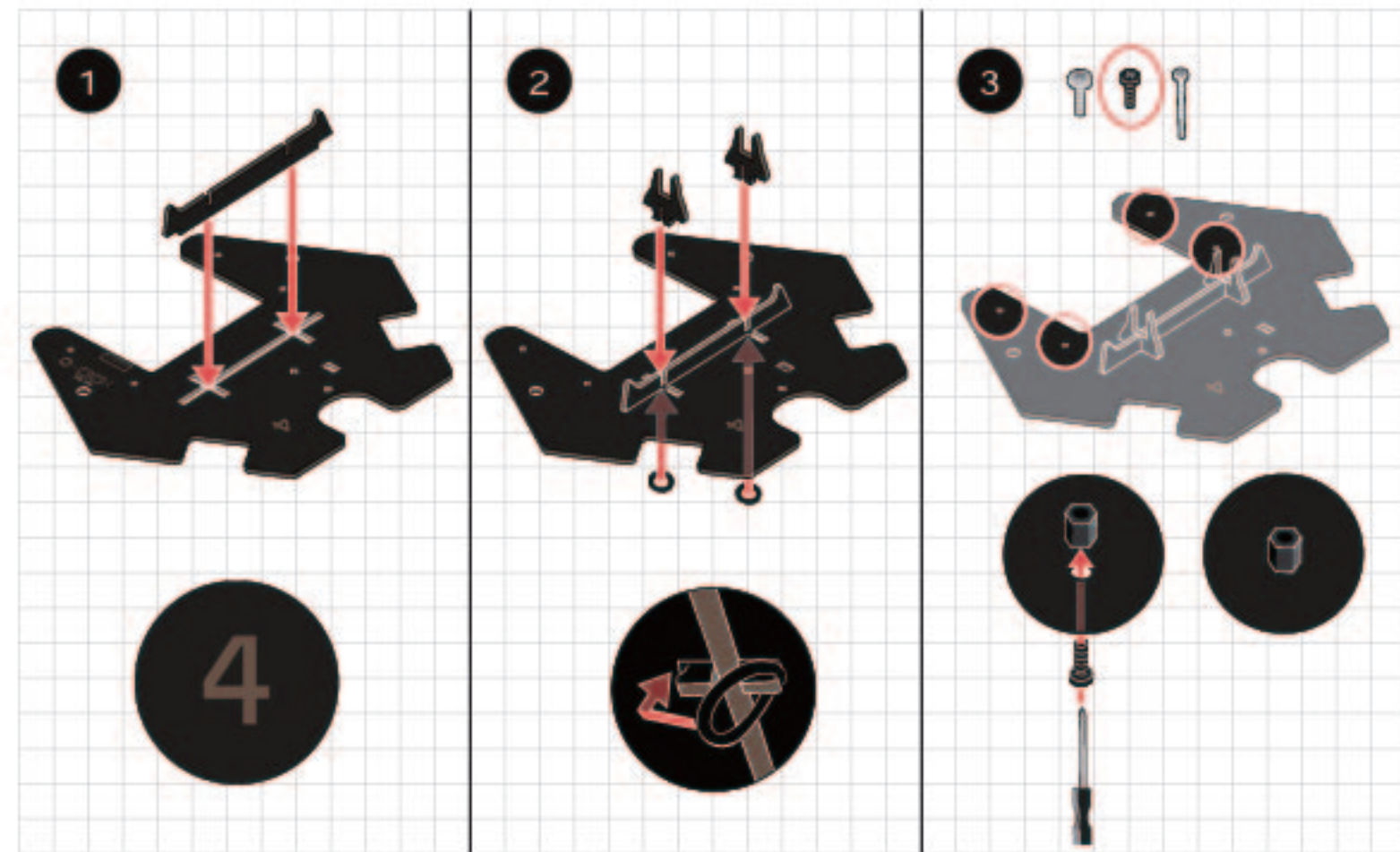


For missing and replacement parts, visit "My Account" at crunchlabs.com and we'll ship them to you for free.

230mm

155mm

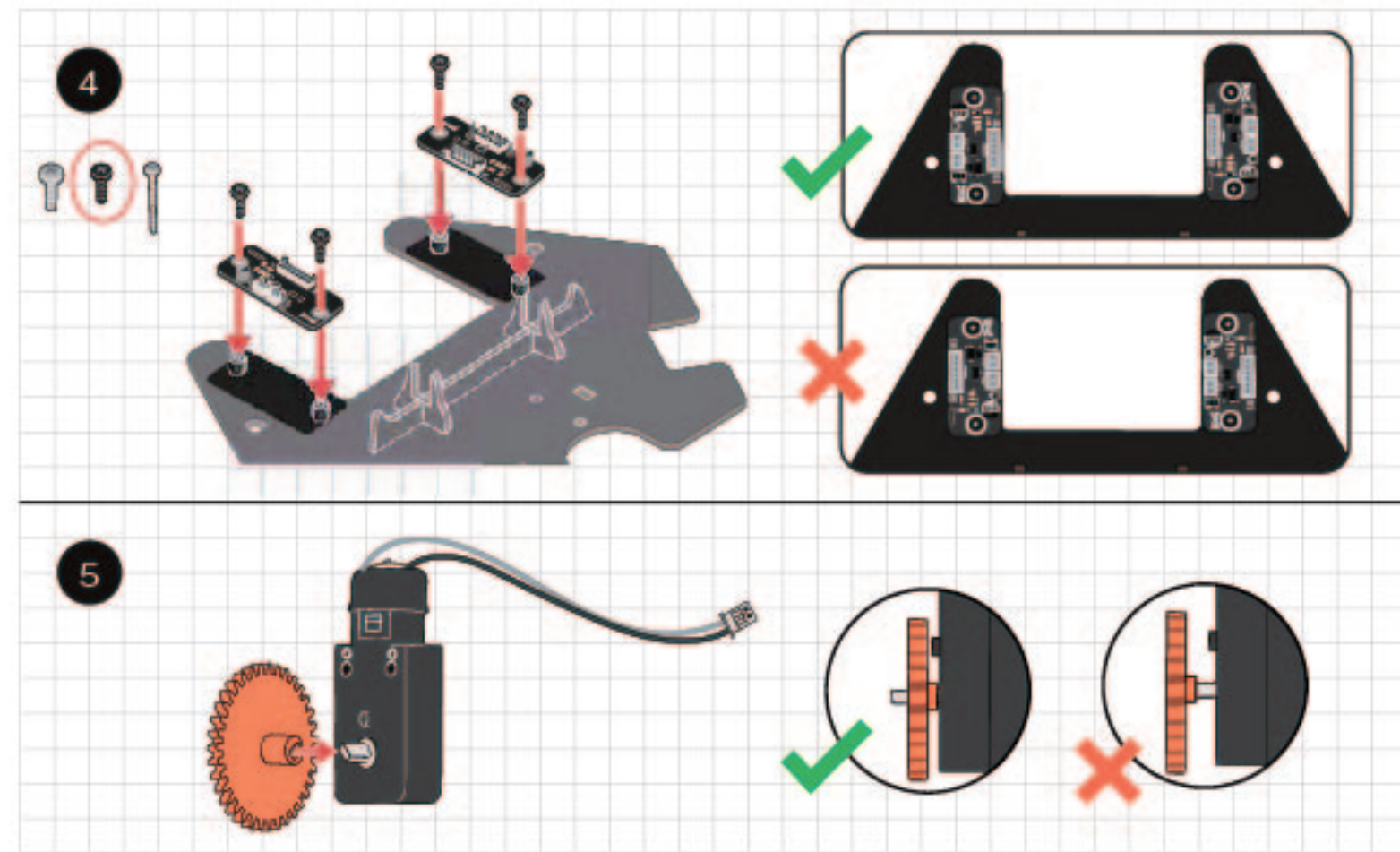
BUILD



4

230mm

BUILD

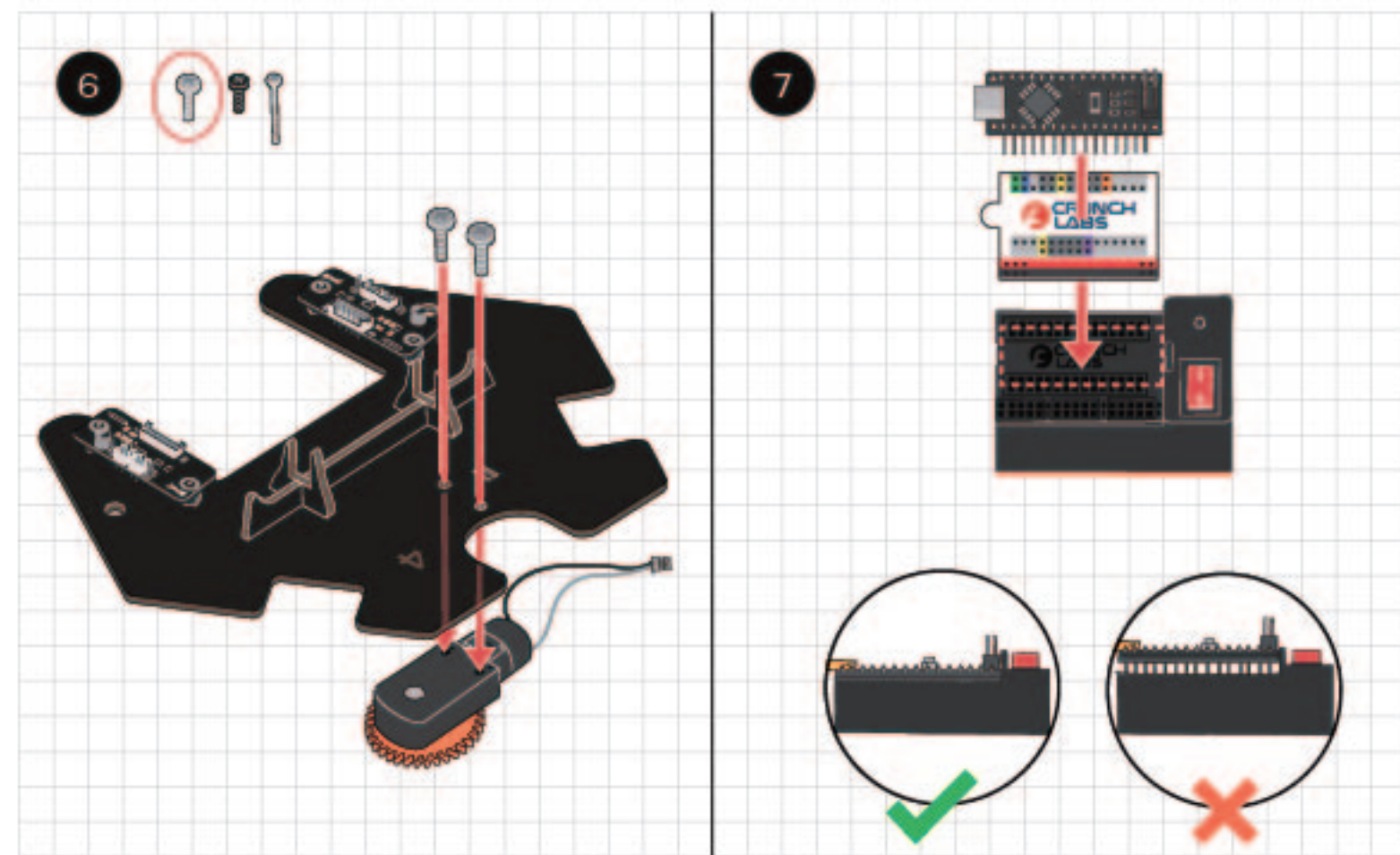


5

230mm

155mm

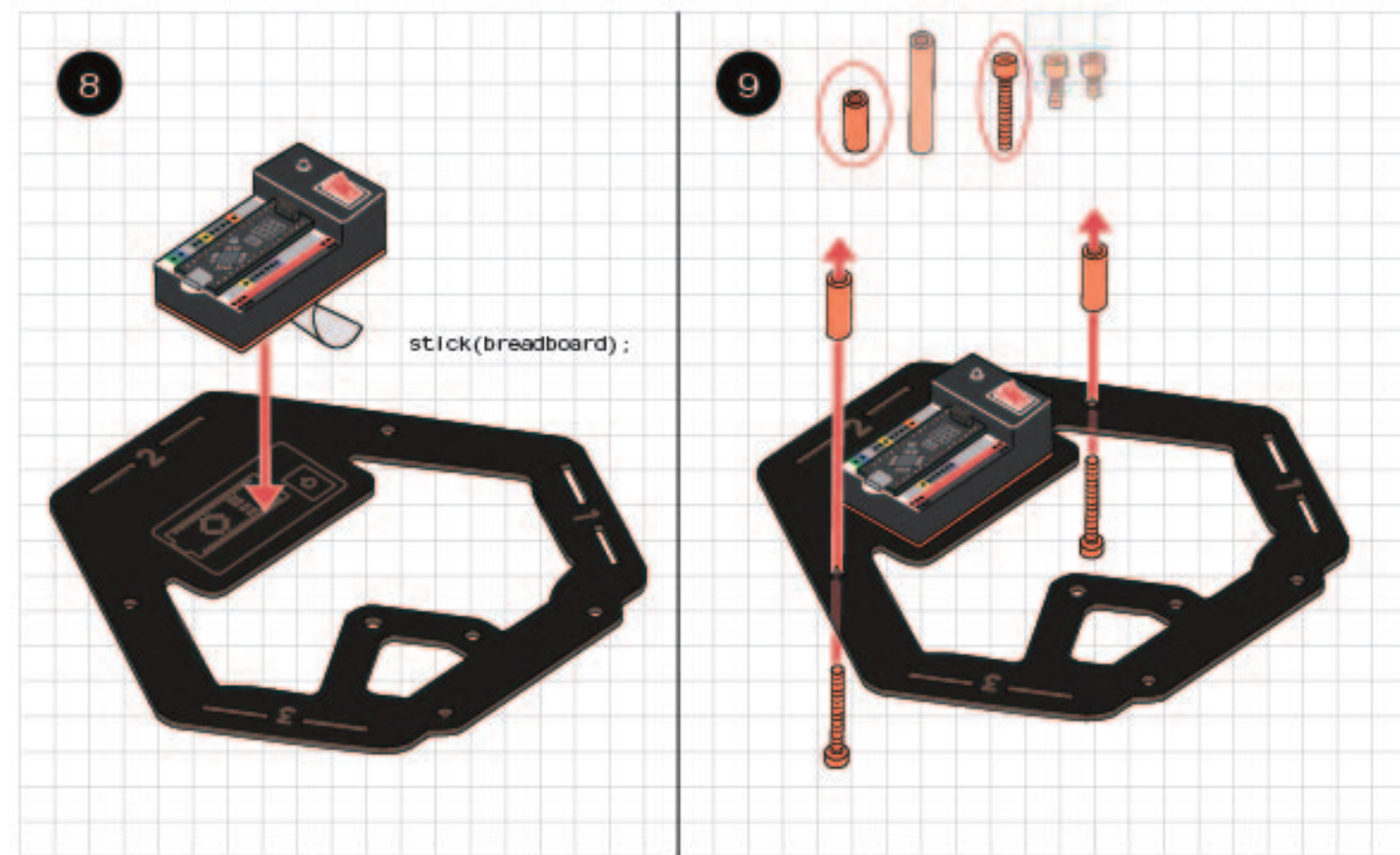
BUILD



6

230mm

BUILD

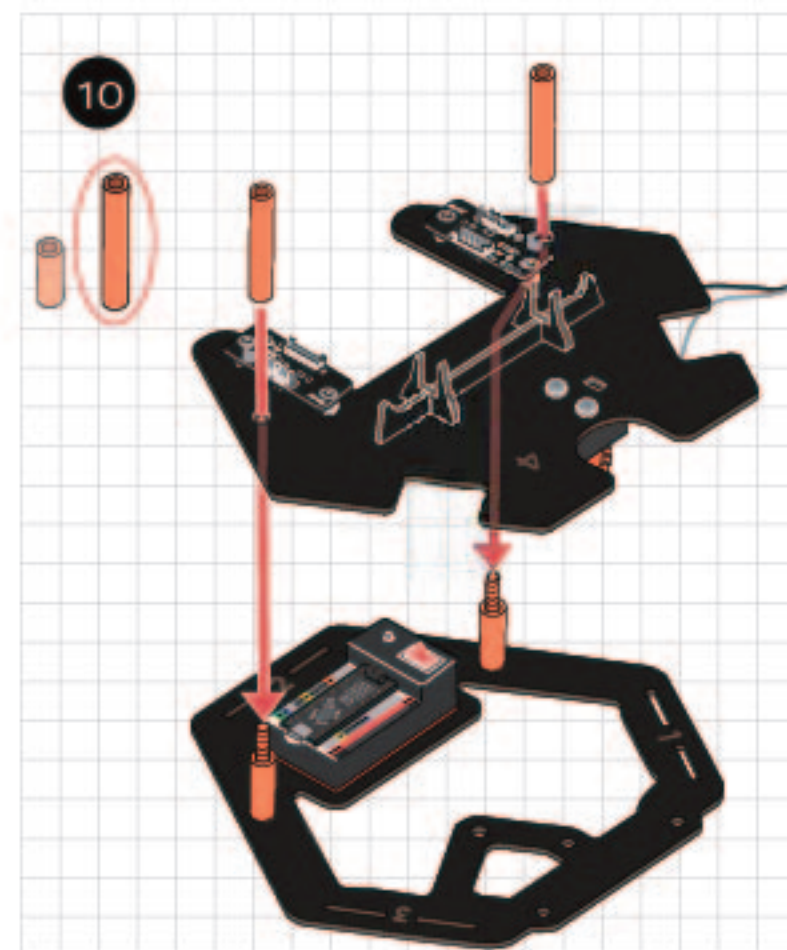


7

230mm

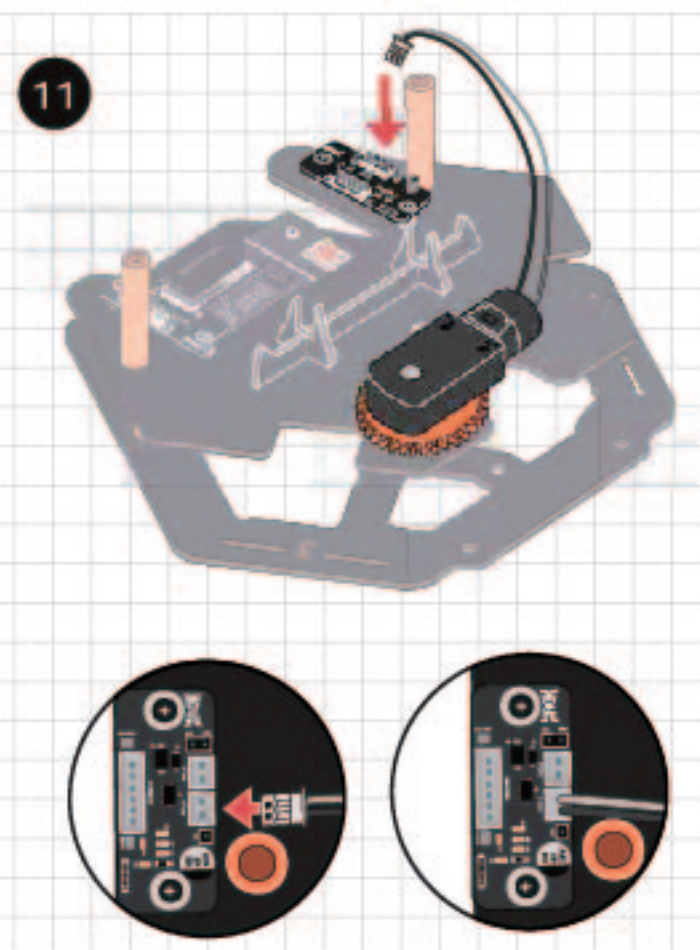
155mm

BUILD

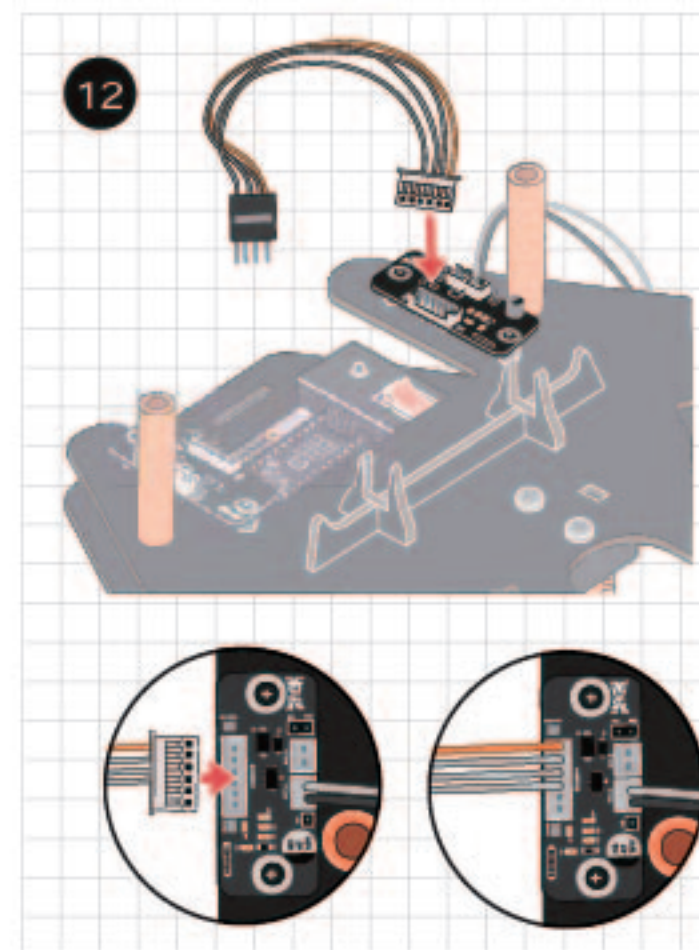


8

230mm

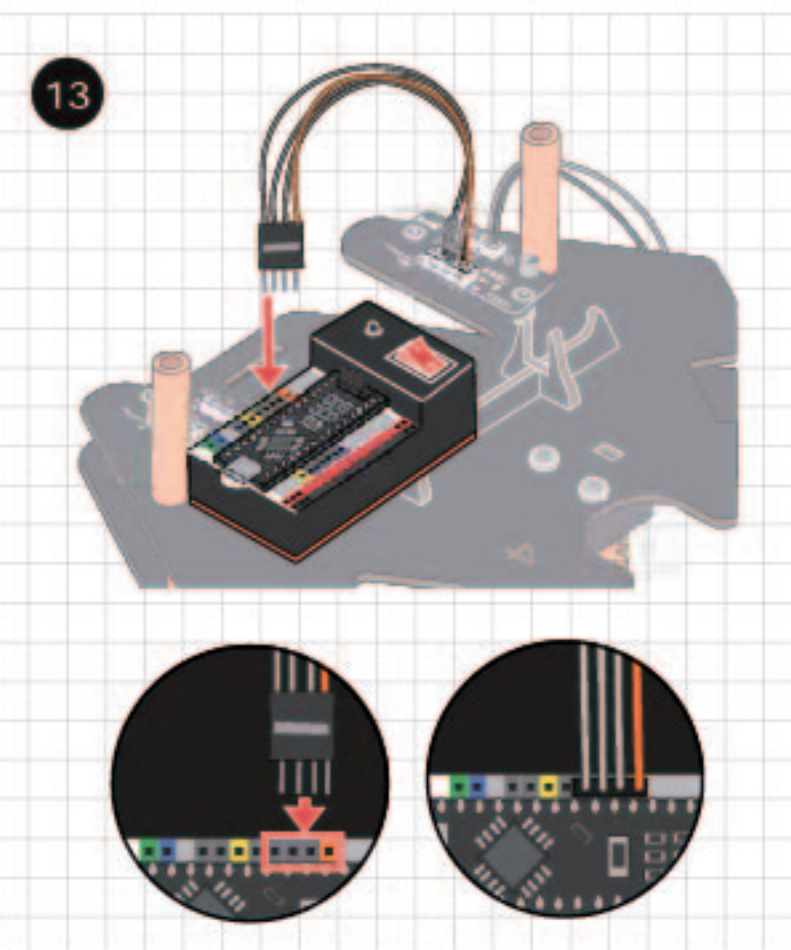


BUILD



9

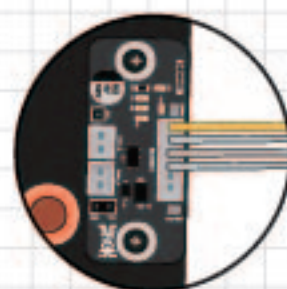
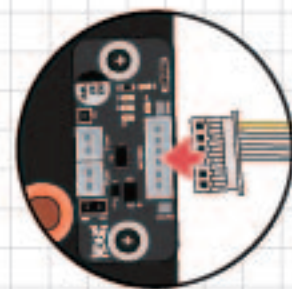
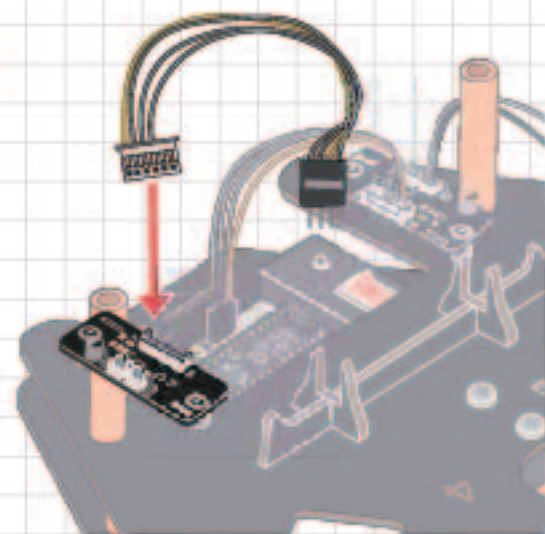
230mm



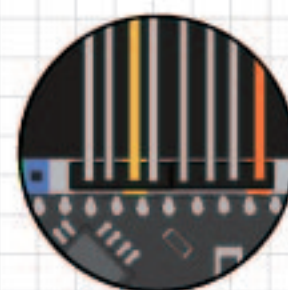
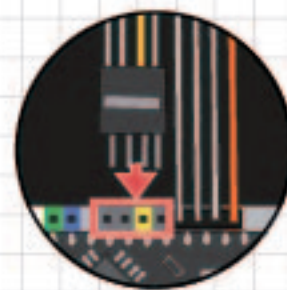
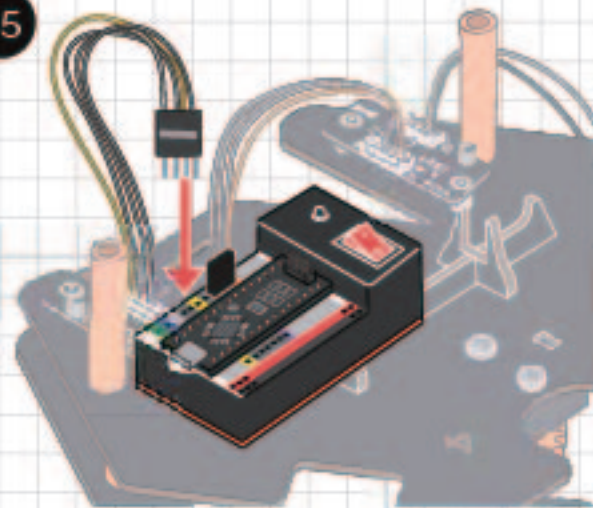
155mm

BUILD

14



15

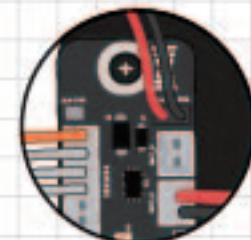
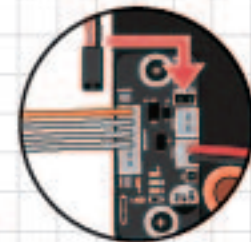
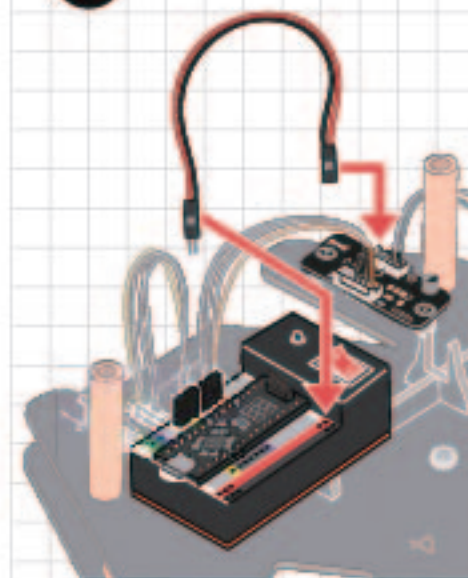


10

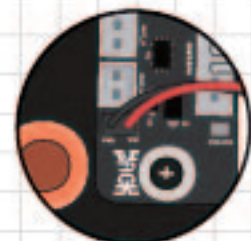
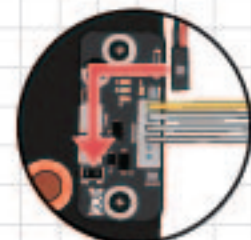
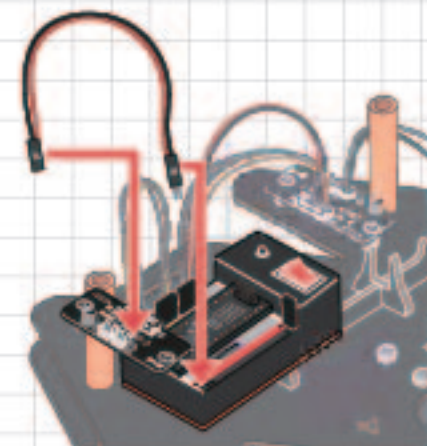
230mm

BUILD

16



17

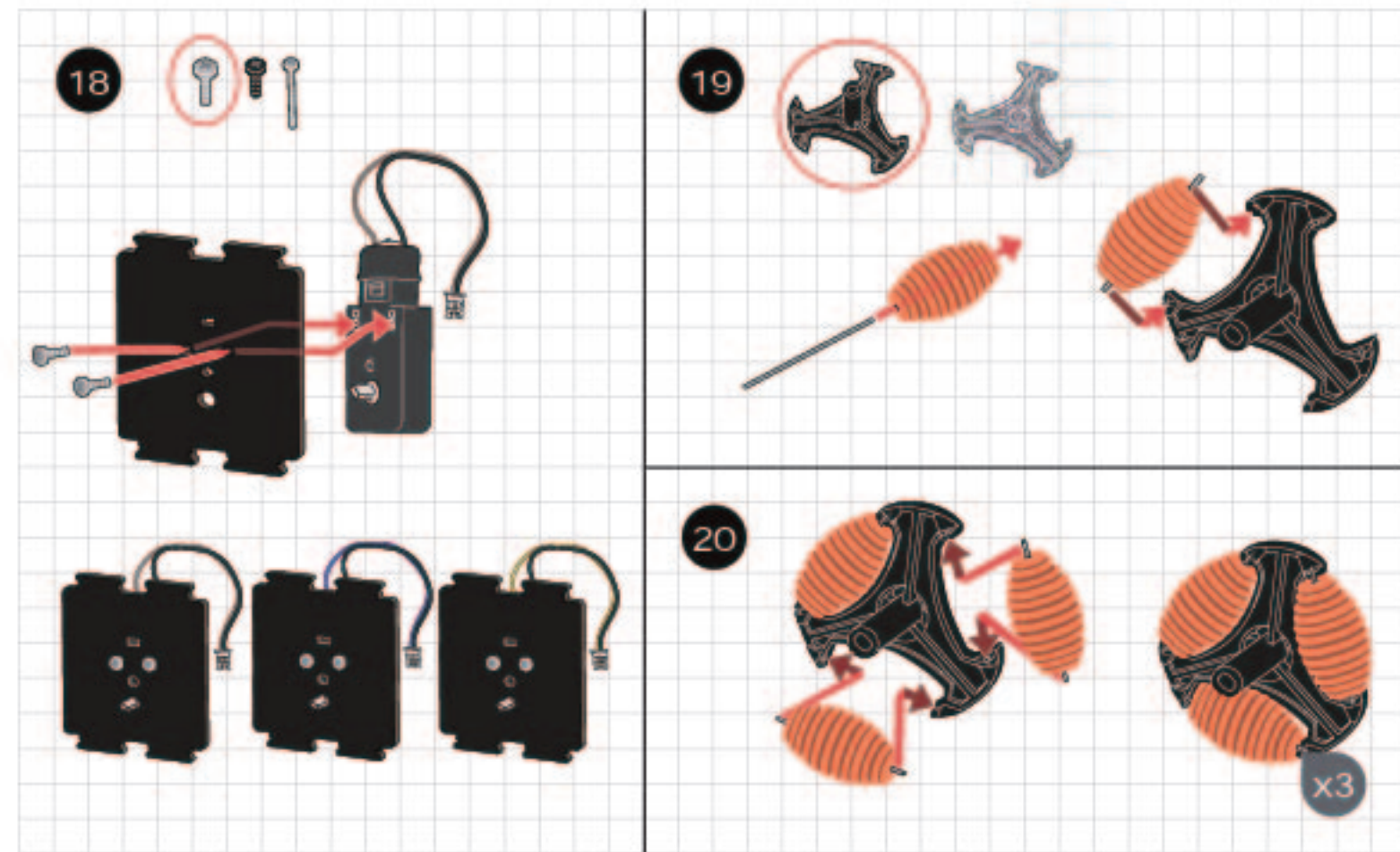


11

230mm

155mm

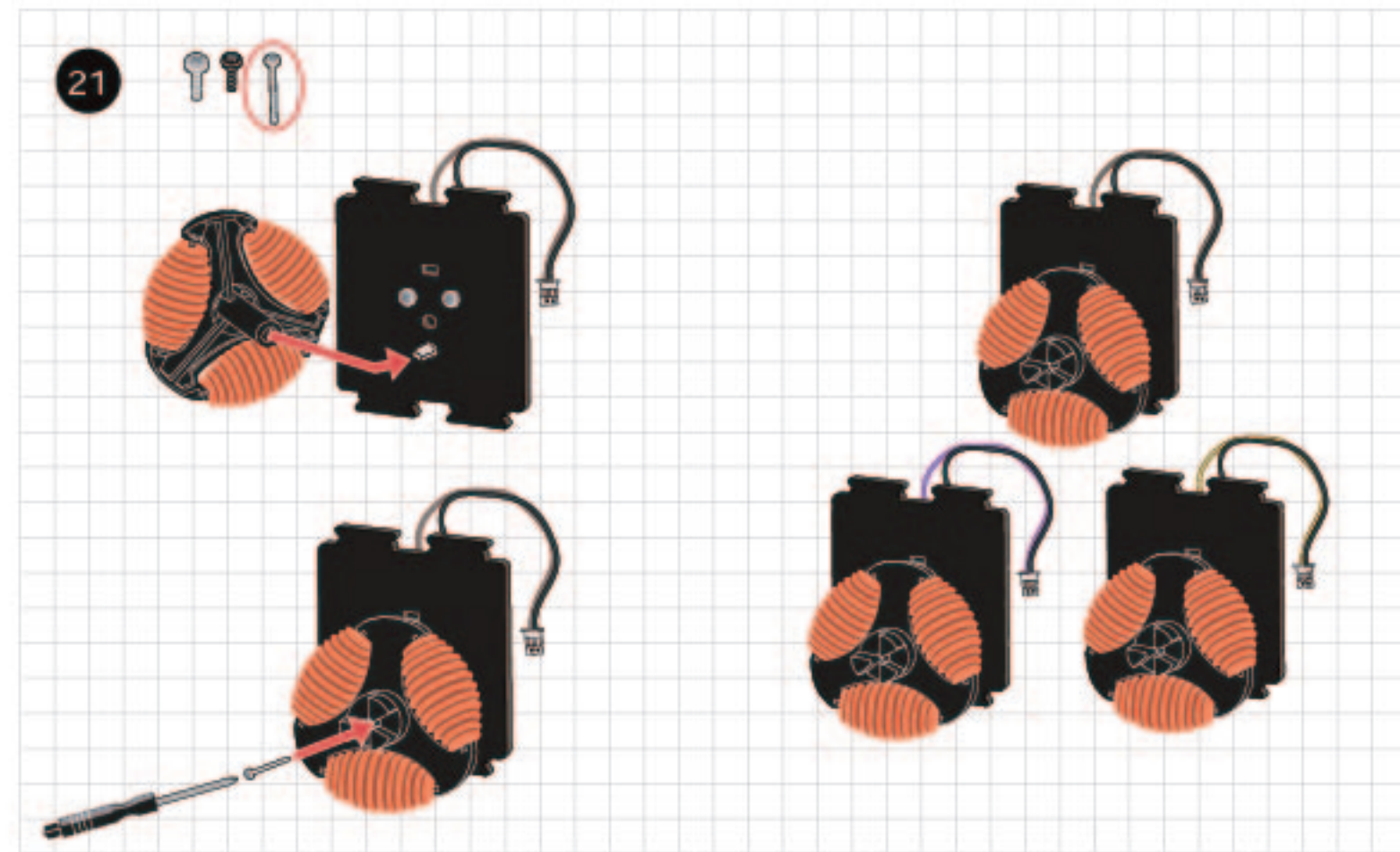
BUILD



12

230mm

BUILD

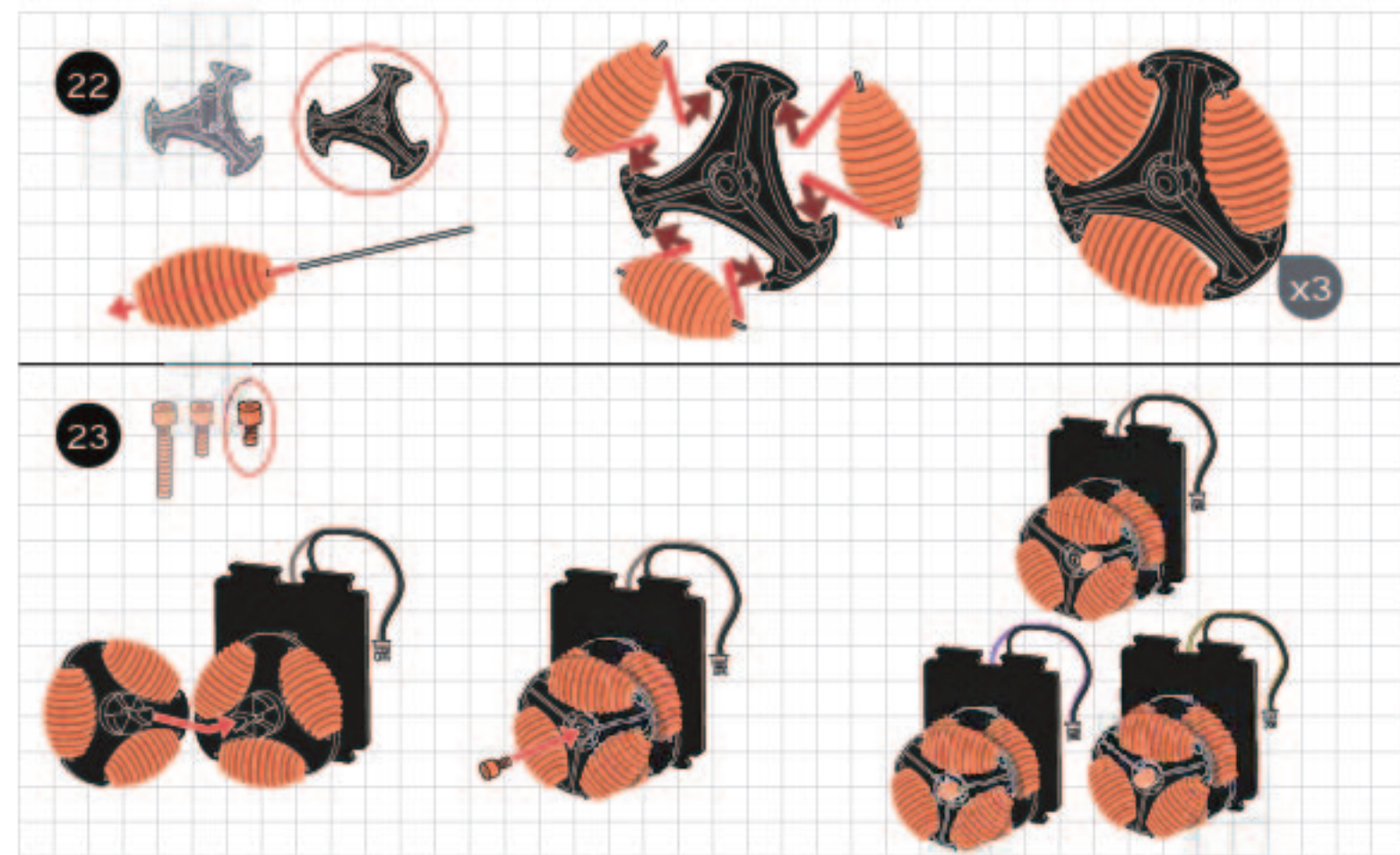


13

230mm

155mm

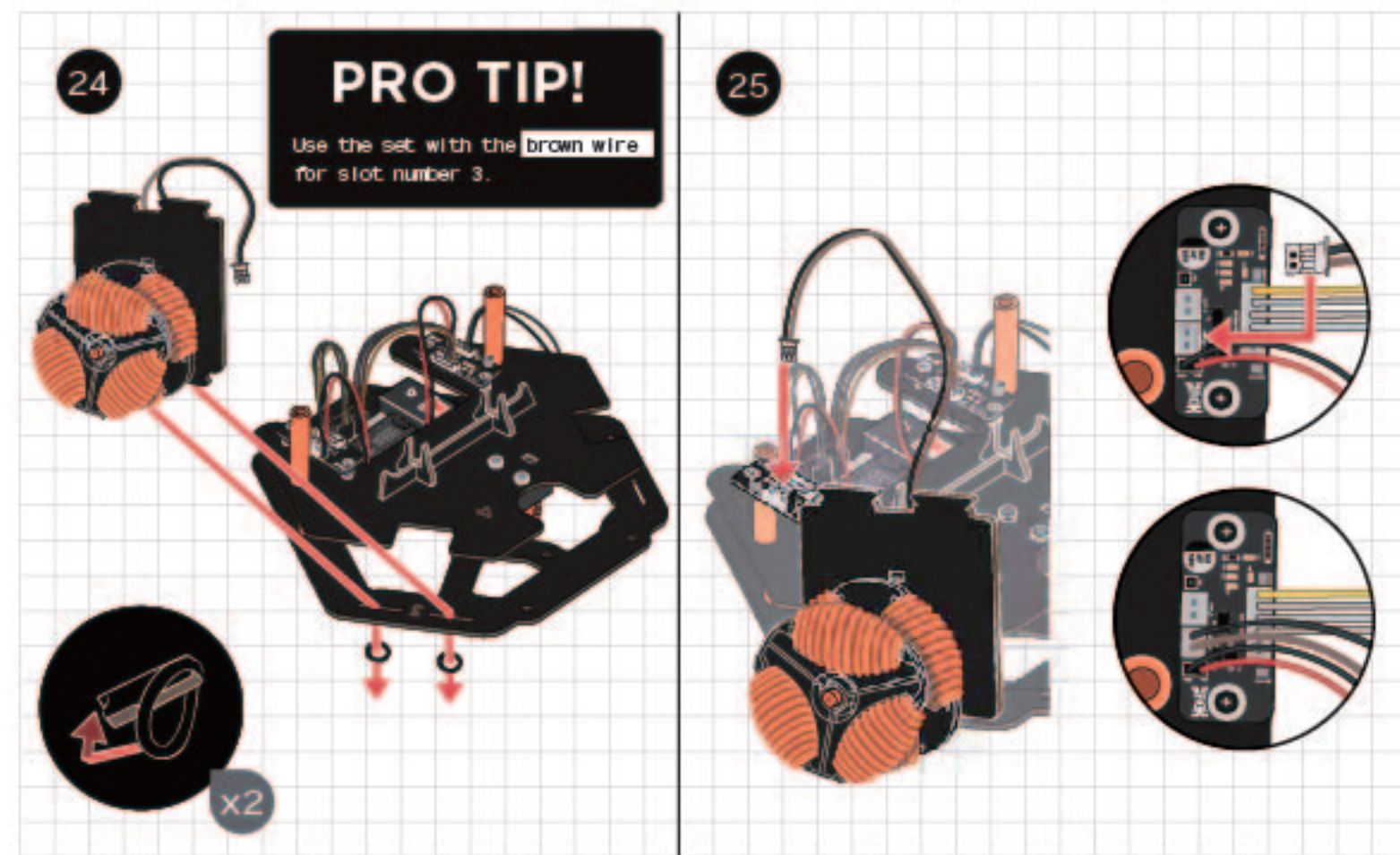
BUILD



14

230mm

BUILD

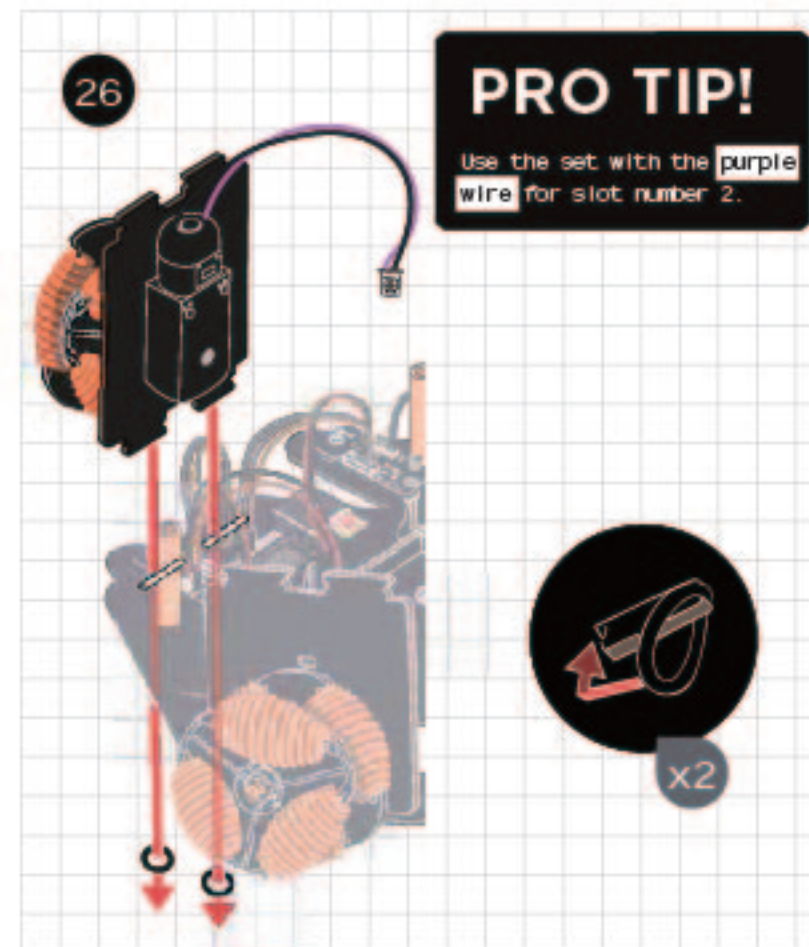


15

230mm

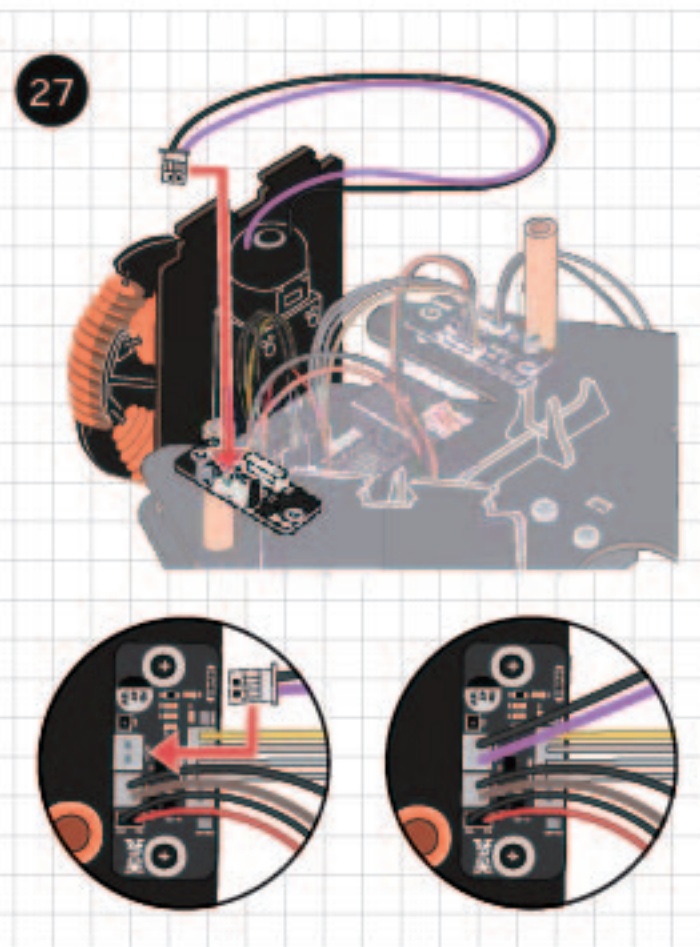
155mm

BUILD

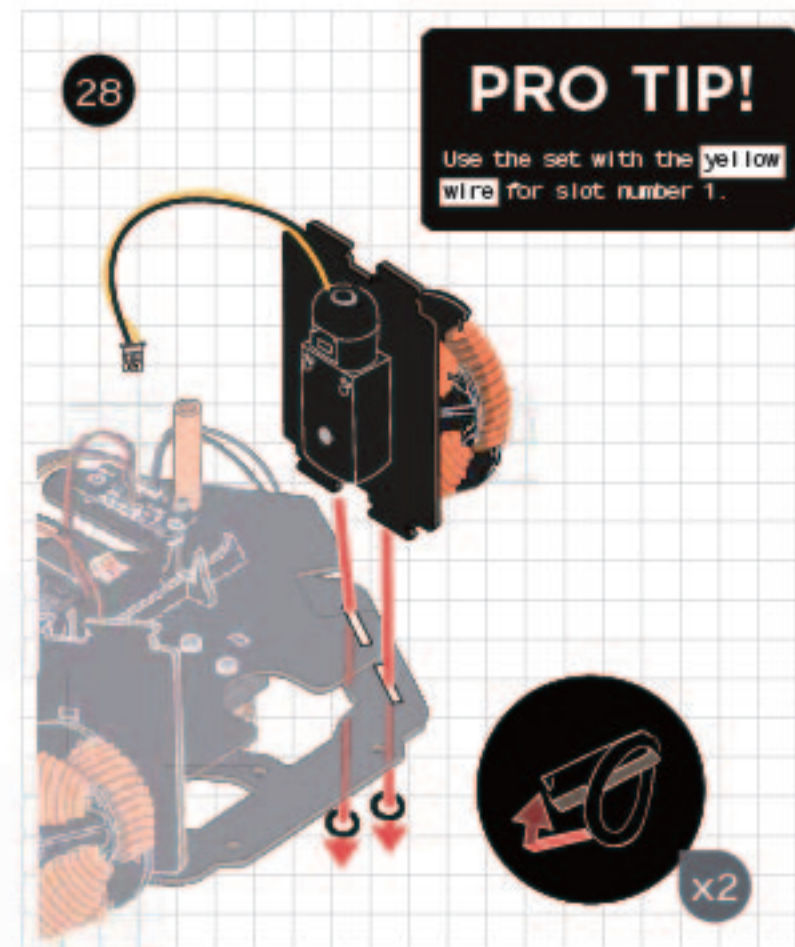


16

230mm



BUILD

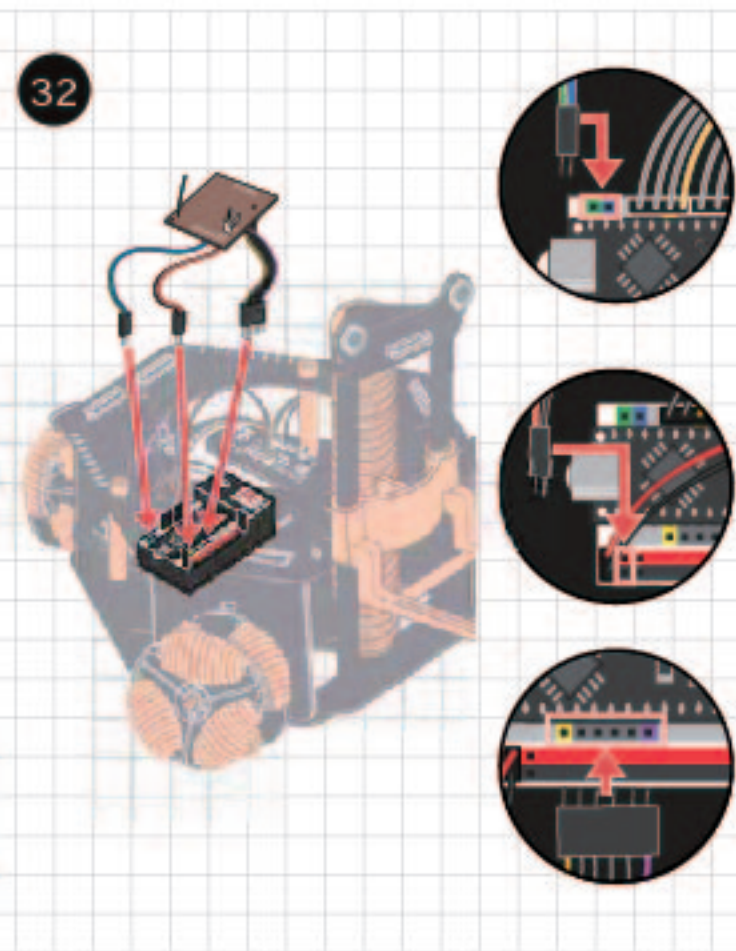
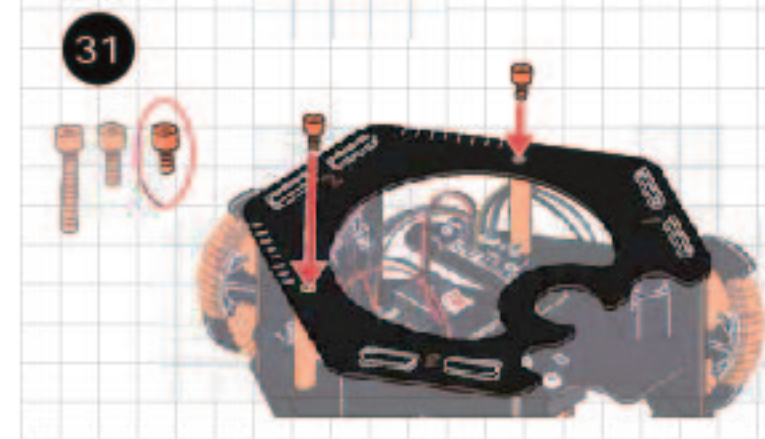
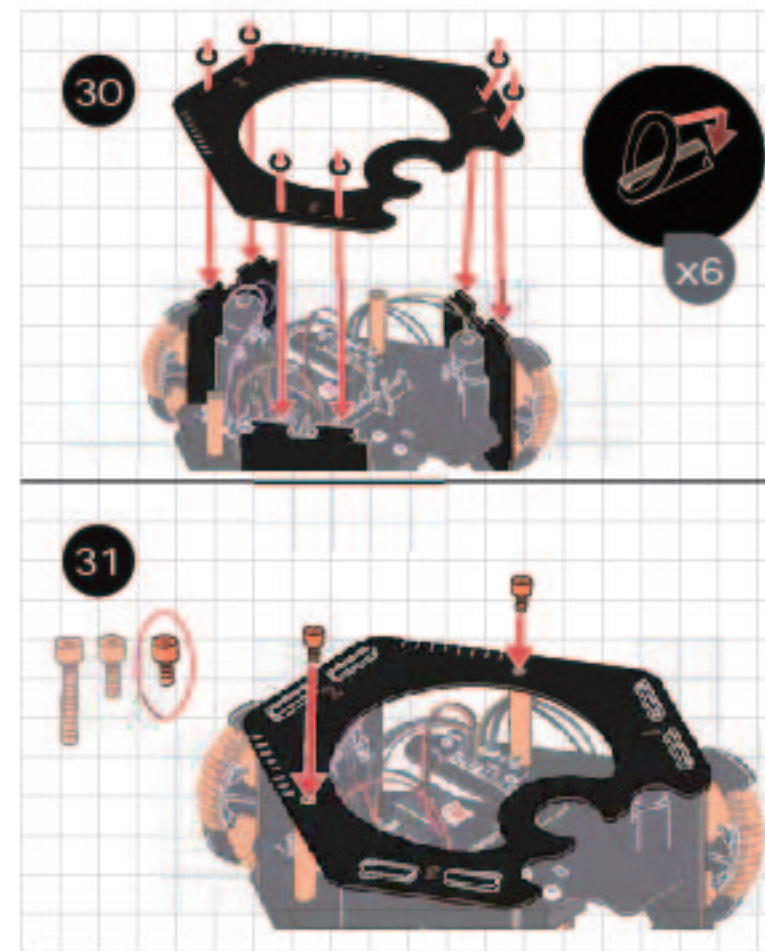


17

230mm

155mm

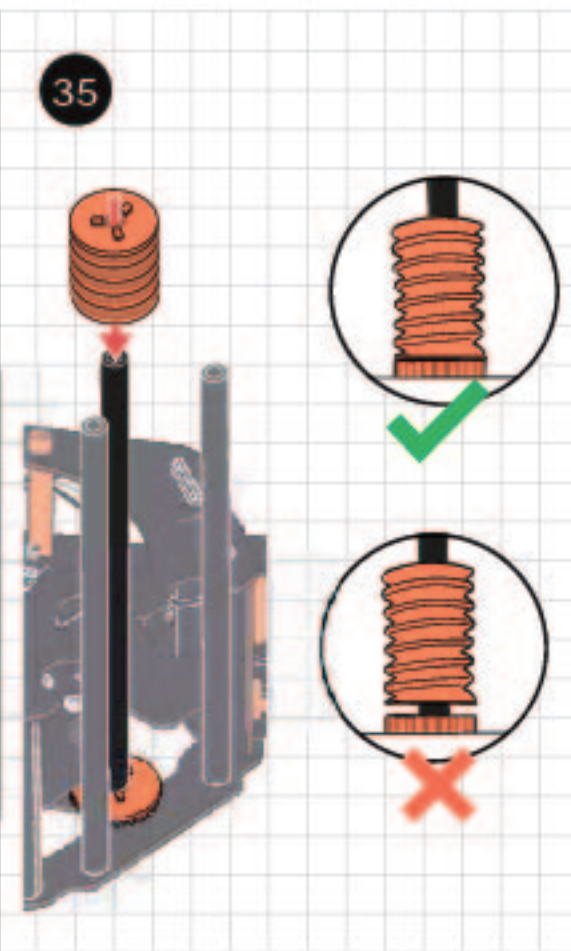
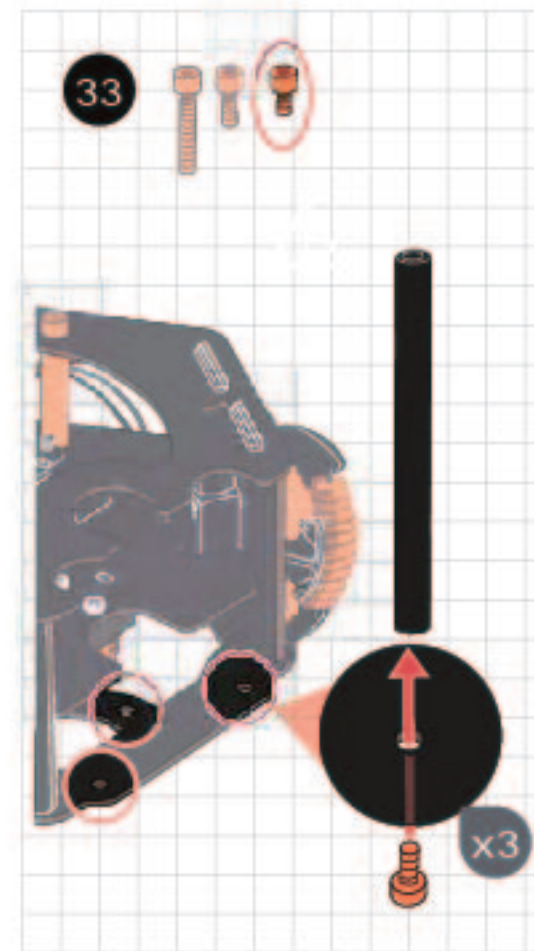
BUILD



18

230mm

BUILD

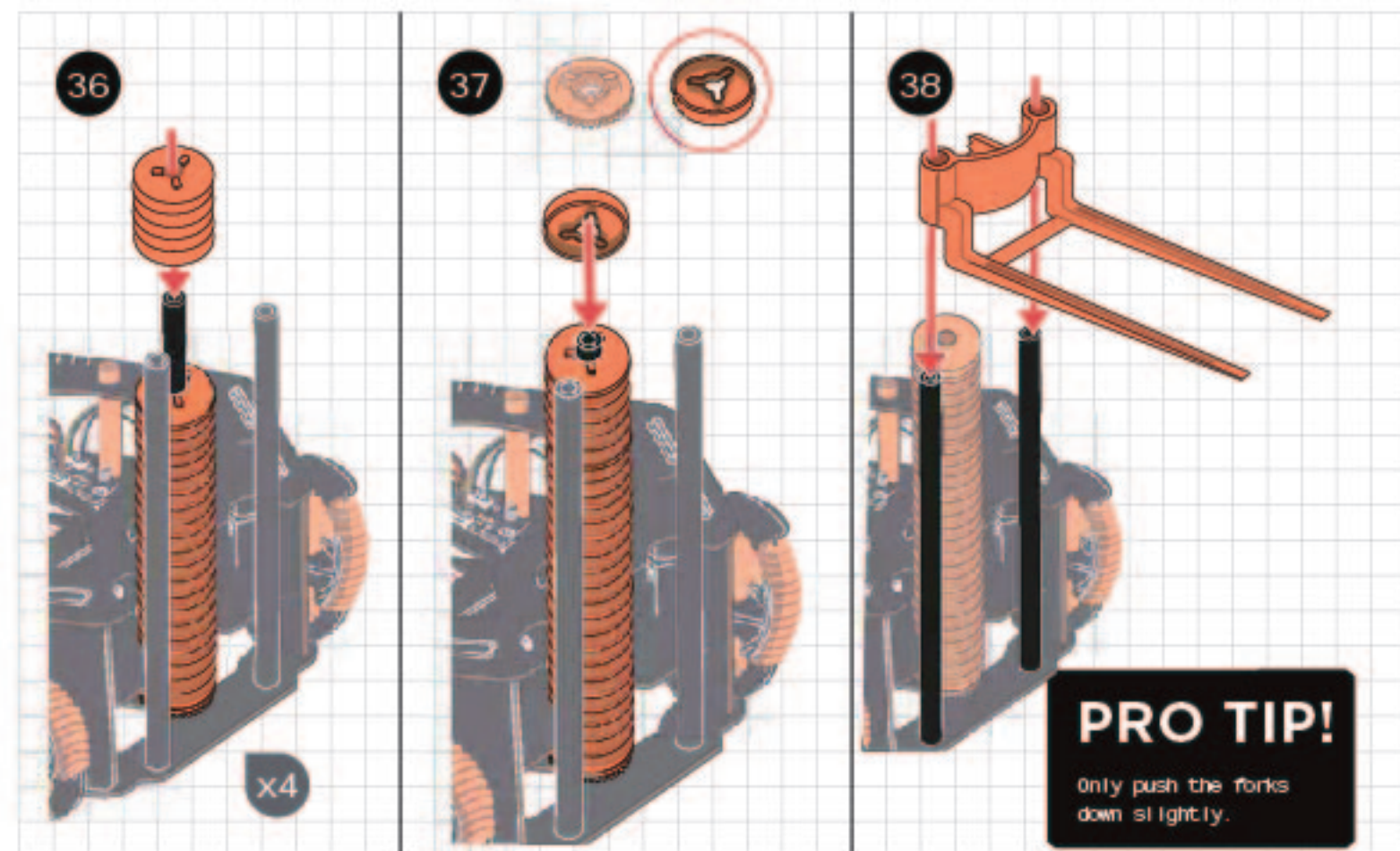


19

230mm

155mm

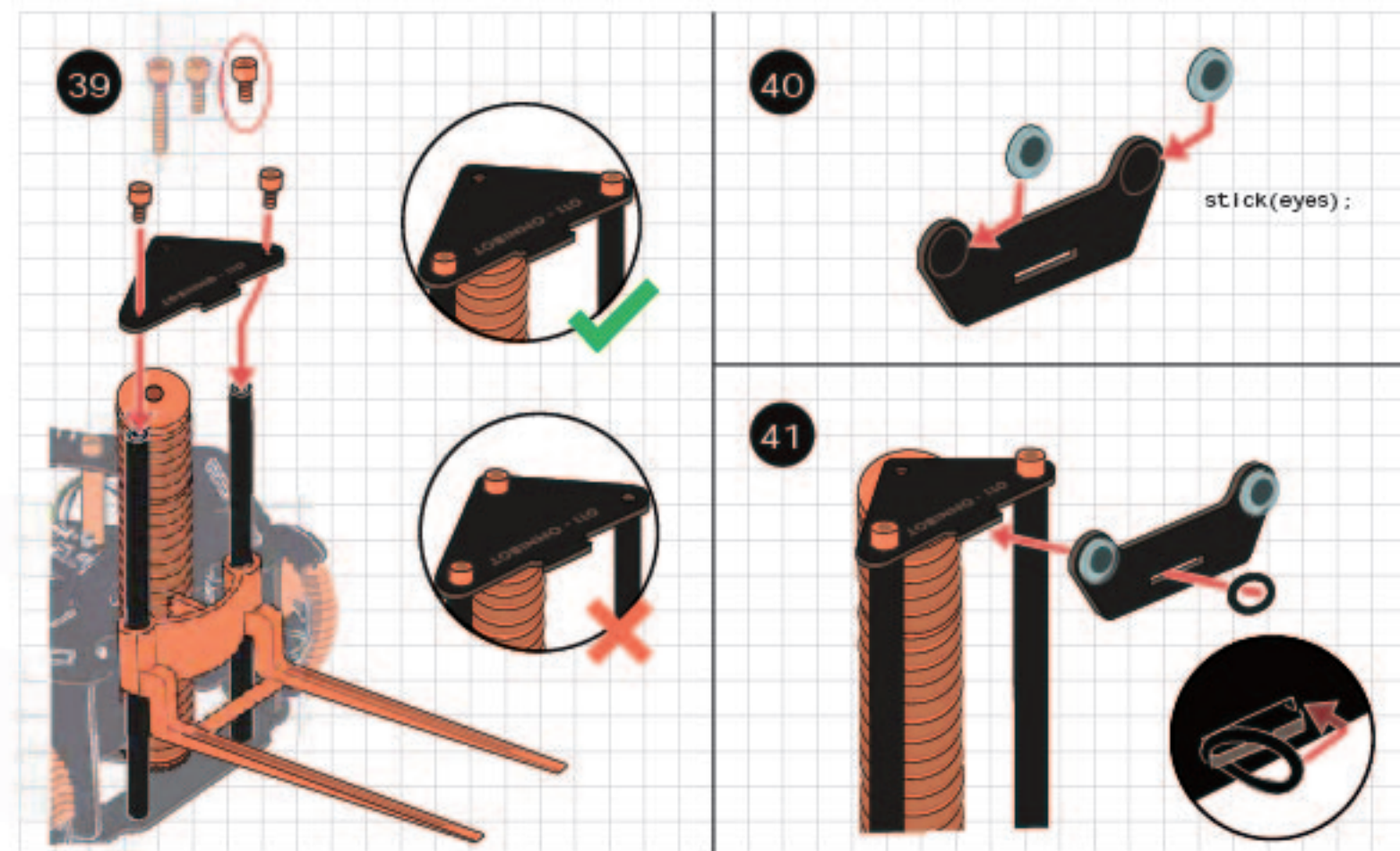
BUILD



20

230mm

BUILD



21

230mm

155mm

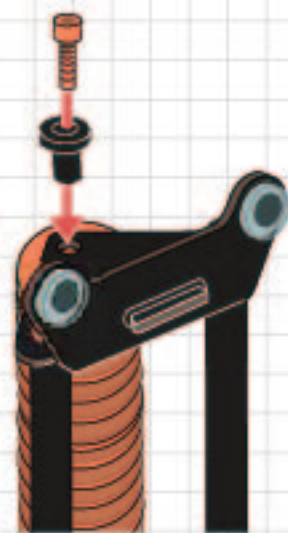
BUILD

42

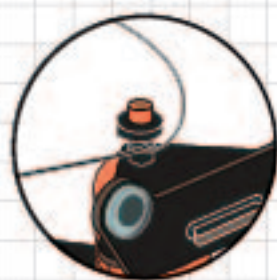
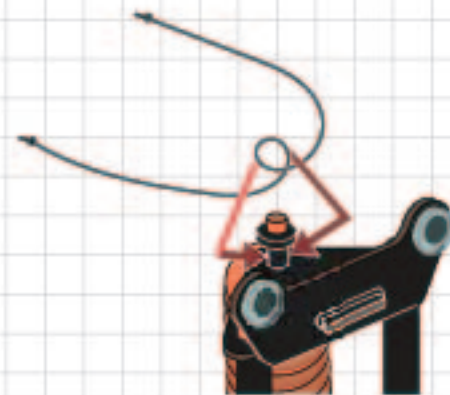


PRO TIP!

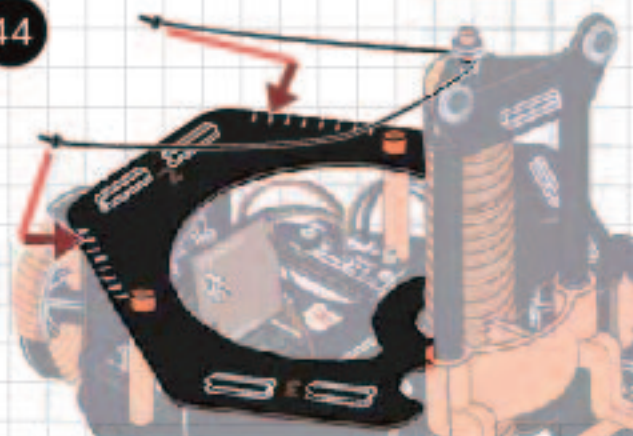
Don't overtighten the bolt.



43



44

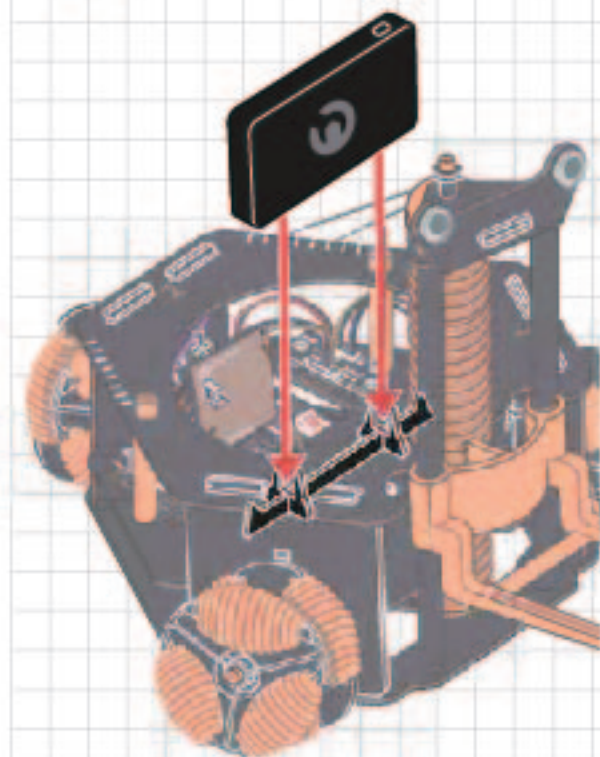


22

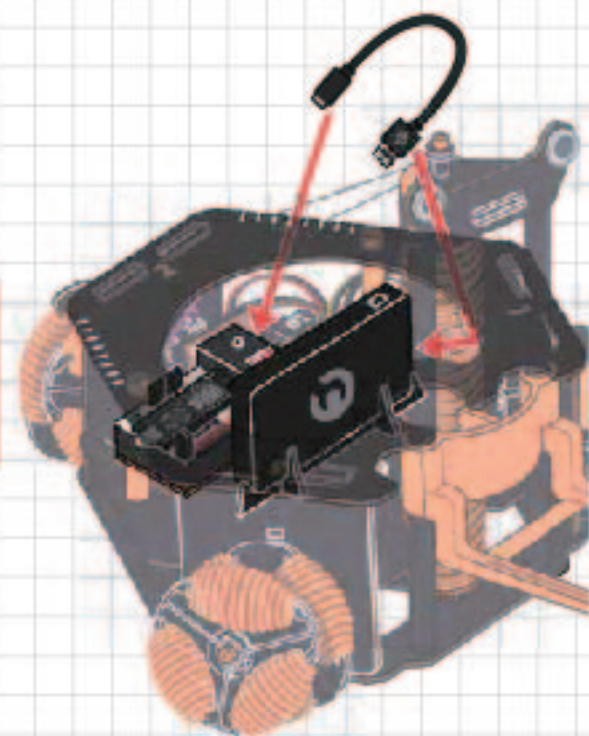
230mm

BUILD

45



46



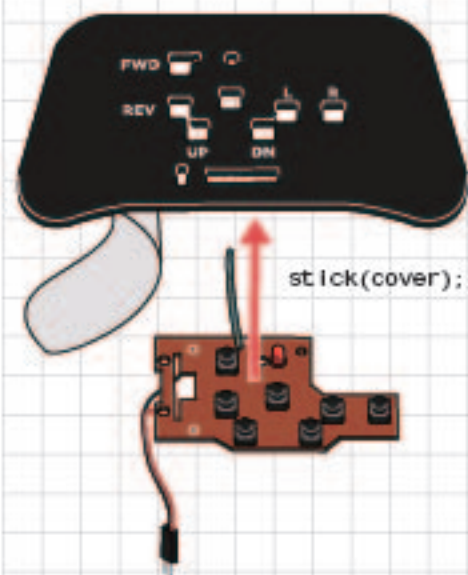
23

230mm

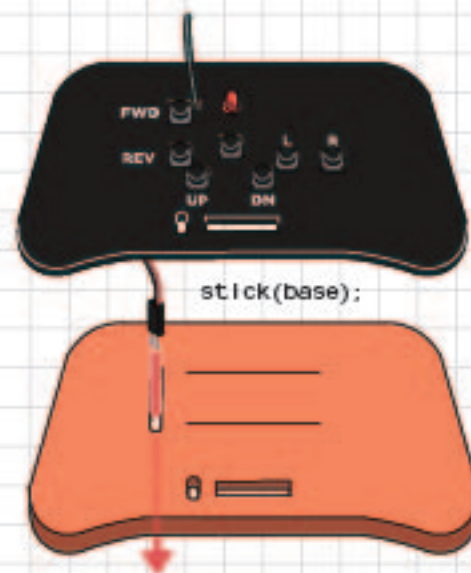
155mm

BUILD

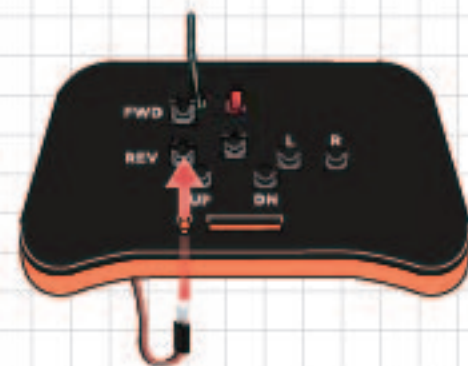
47



48



49



24

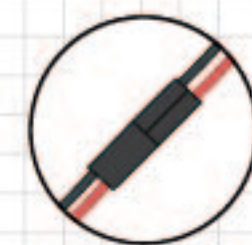
230mm

BUILD

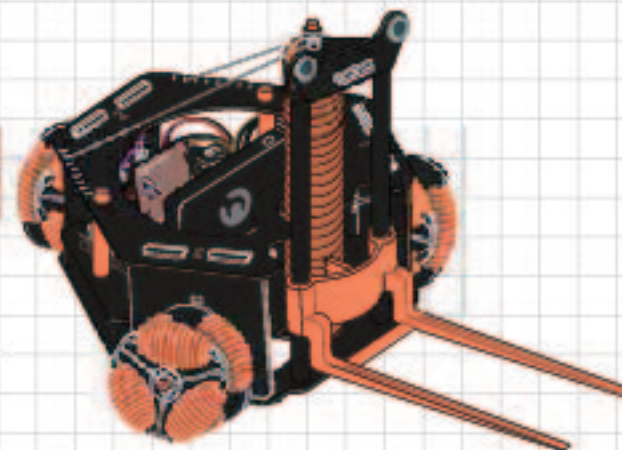
50



51



BUILT!

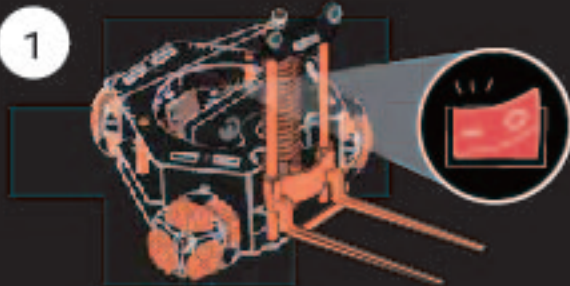


25

230mm

155mm

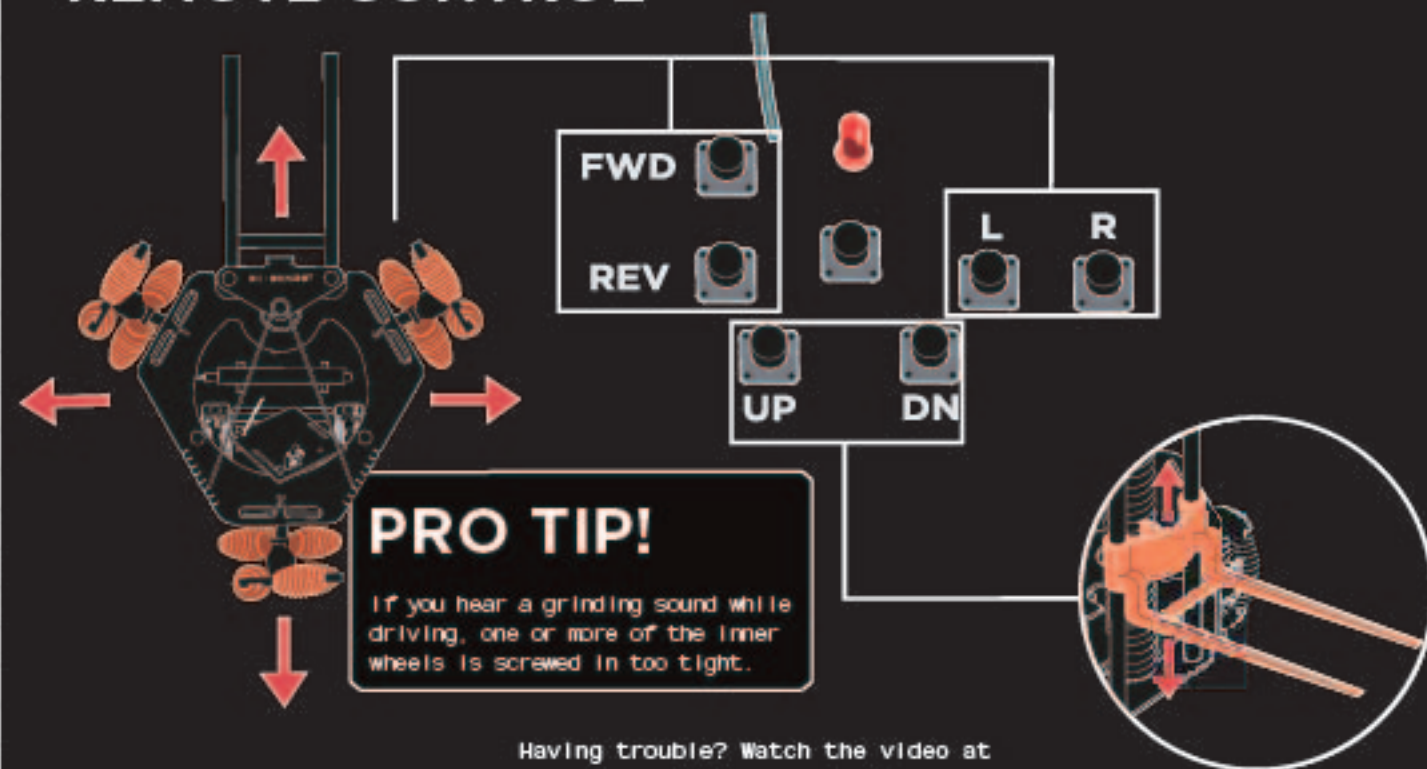
TURNING ON YOUR BOT



Having trouble? Watch the video at
crunchlabs.com/omnib



REMOTE CONTROL



Having trouble? Watch the video at
crunchlabs.com/omnib

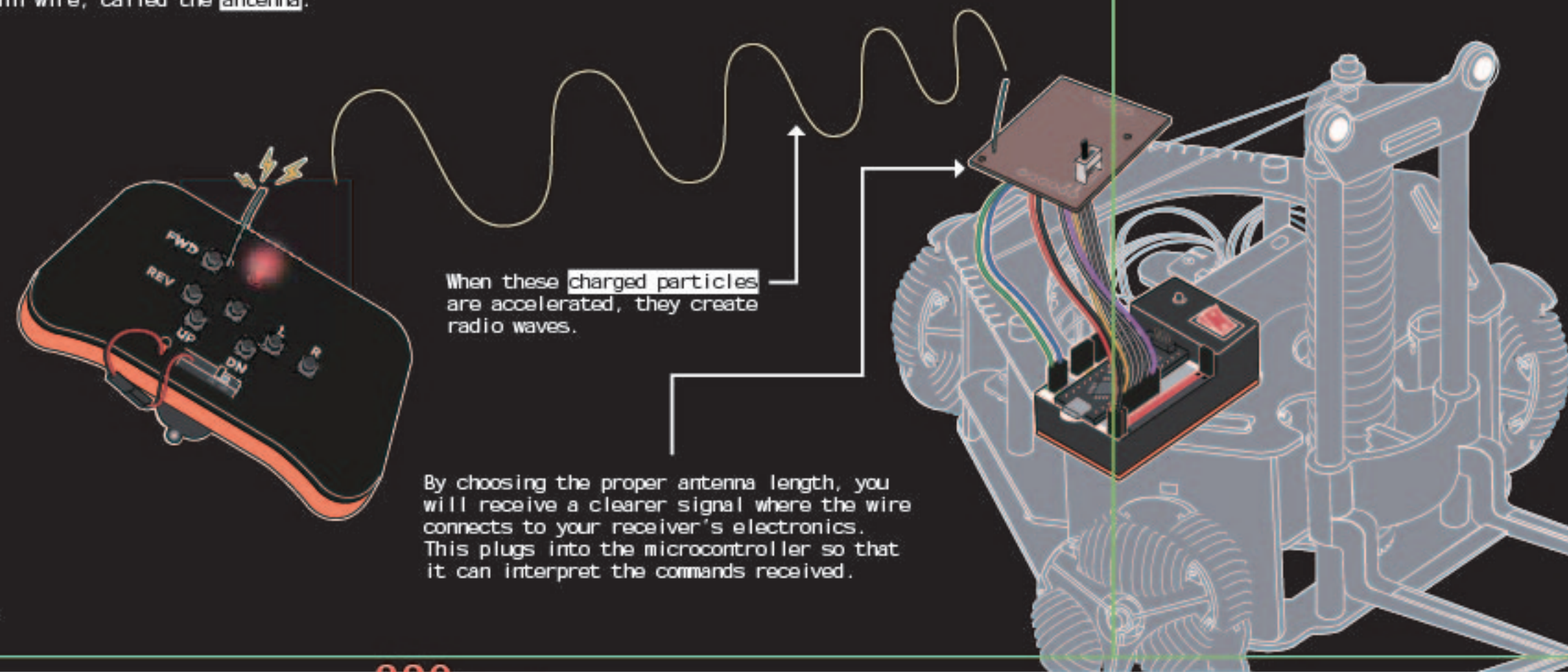
230mm

230mm

155mm

THINK

Radio waves are generated by moving electrons back and forth in the **transmitter** by applying an oscillating current to a thin wire, called the **antenna**.



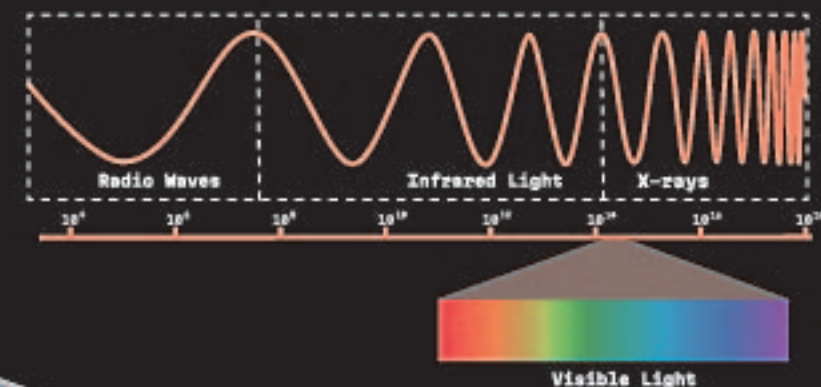
When these **charged particles** are accelerated, they create radio waves.

By choosing the proper antenna length, you will receive a clearer signal where the wire connects to your receiver's electronics. This plugs into the microcontroller so that it can interpret the commands received.

THINK

Individual radio receivers operate in a narrow range of frequencies so multiple parallel channels can be used together without interference.

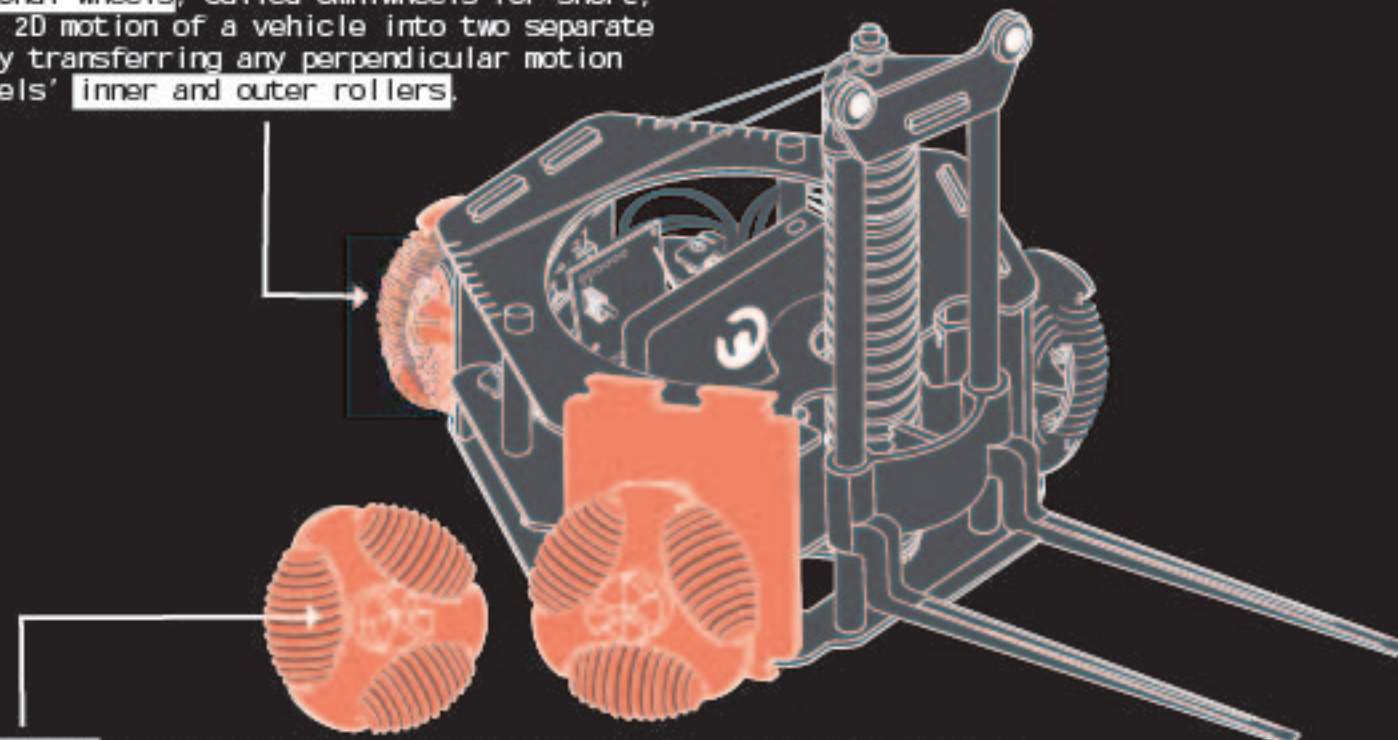
Radio waves are part of the **electromagnetic spectrum** which means they are actually a form of light!



THINK

WHEELS

Omni-directional wheels, called omniwheels for short, break up the 2D motion of a vehicle into two separate components by transferring any perpendicular motion into the wheels' inner and outer rollers.

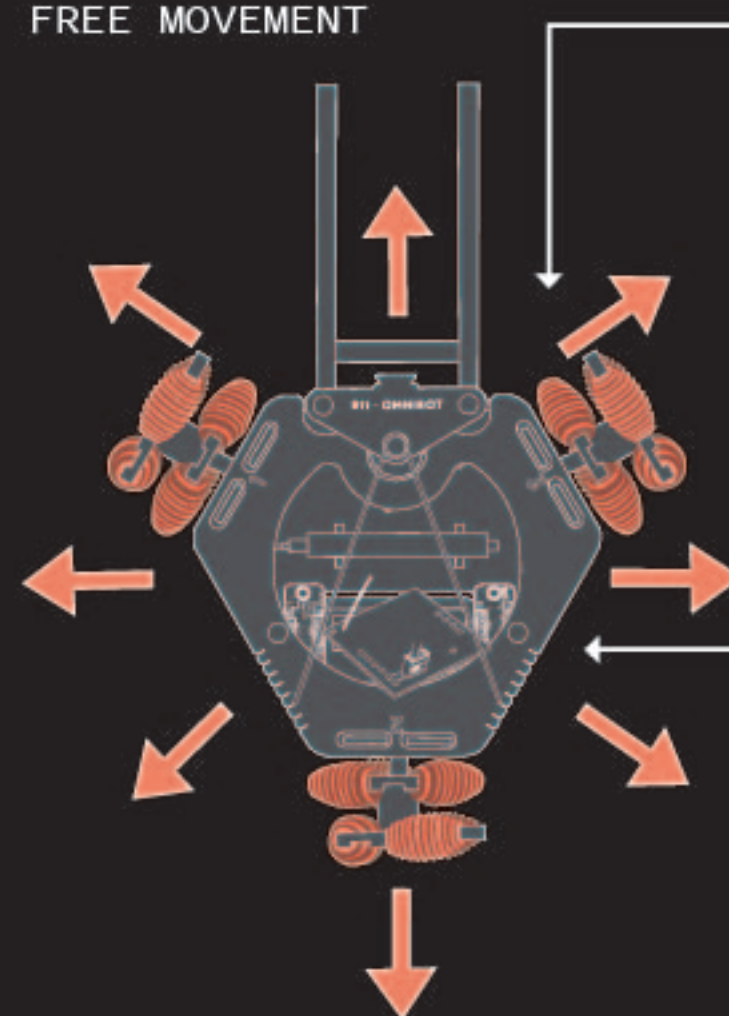


A single omniwheel does not have much control on its own, but many omniwheels facing different directions can combine their movement to generate any type of 2D motion for the overall system.

230mm

THINK

FREE MOVEMENT



Omniwheeled robots are special because they can drive in any direction while facing in any direction. This cool property allows you to parallel park by sliding sideways, or drive in a straight line while doing donuts!

In robotic manipulation tasks, this freedom of movement can drastically simplify path planning problems by allowing the robot to move directly to the desired position.

230mm

155mm

HACK

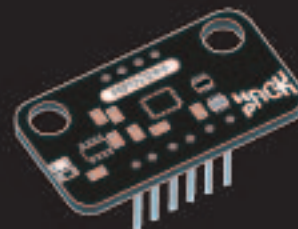


SOFTWARE



FIELD ORIENTED DRIVE

Attach the MPU from Balance Bot to Omnibot Forklift so that you can use the full potential of the omniwheels.



DANCE MOVES

Create dance moves or saved routes so the Omnibot can help you out with tasks automatically.

HACK



HARDWARE



COMBINE BOTS

Combine the Omnibot's base with different "heads", like stacking IR Turret on top.



RADIO WAVES

Use the radio receiver and controller pair to control other Hack Pack robots! For example, use the controller for an Etch-A-Sketch String Plotter, or a wireless Domino Robot.

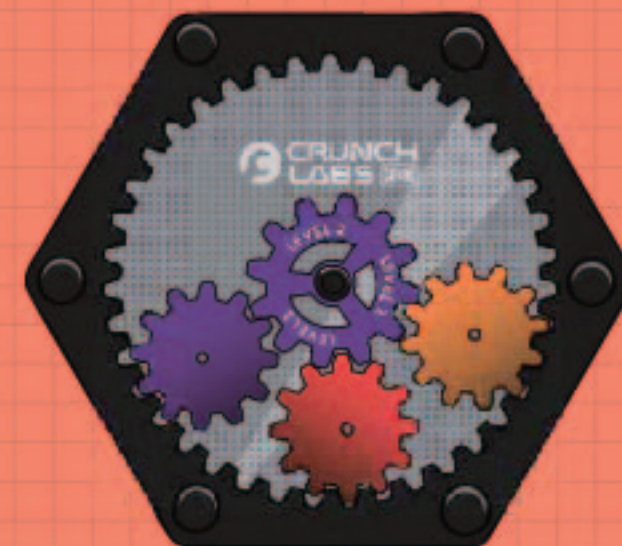
SHARE

SHOW OFF YOUR HACKS

Share your software mods and explore more ways to hack your Omnibot Forklift at crunchlabs.com



ADD THE OMNIBOT FORKLIFT GEAR BADGE TO YOUR HACK PACK DIPLOMA



155mm

230mm

230mm