

# Installing Electrical Board for RQBS

## Electrical Board Options

There are two options provided in the RQBS for electrical boards with 4 sizes provided for each.

- Option 1 - This option uses two thin strips to support a rectangular board above the top of the chassis.
- Option 2 - This option uses a board with a U-shaped cutout to accommodate the battery box when mounting inside the chassis.

Sizes:

- Testing - This size accommodates the chassis if assembled un-cut. This is the recommended configuration for RQBS where teams do not yet have enough information about their design to make a decision about robot sizing. **Note: This size is not a competition legal robot size**
- The other 3 options correspond to the cut chassis sizes described in the AM14U documentation

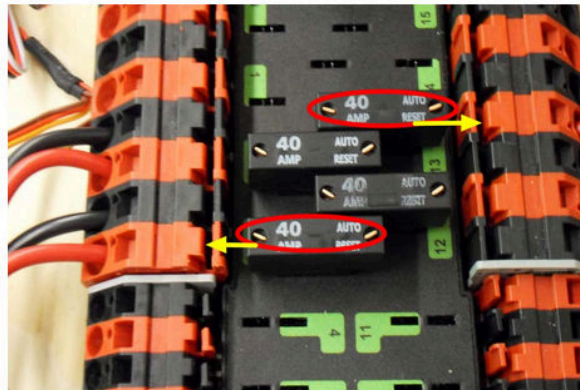
## AM14U preparation

Unlike prior years it is recommended to complete the AM14U chassis construction prior to installing the electronics. This is true for either "option".

# Installing Electrical Board for RQBS

## Electrical board preparation

Circuit Breakers



Requires: 4x 40A circuit breakers

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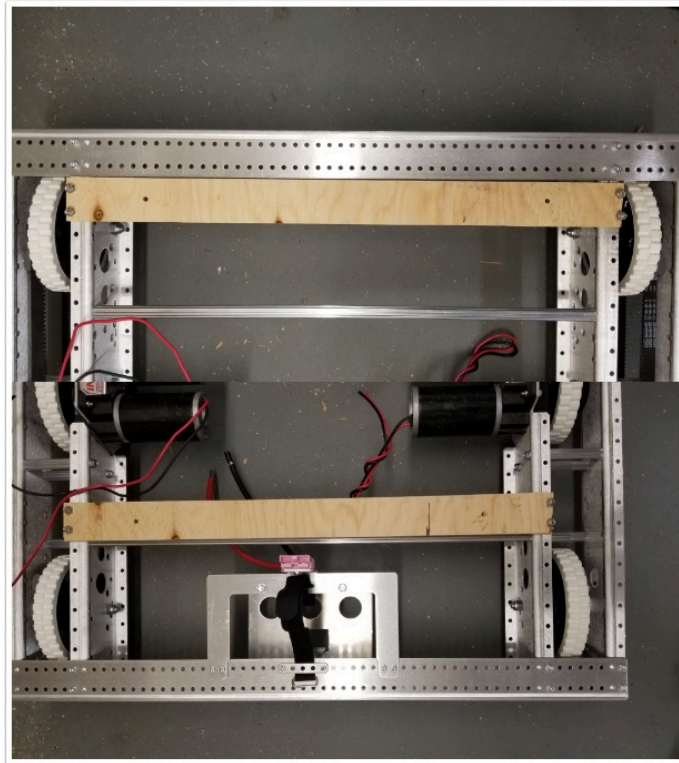
Insert 40-amp Circuit Breakers into the positions on the RDP corresponding with the Vago connectors the Talons are connected to. Note that all Talons 22 / 27 are connected to the nearest positive (red) terminal (see graphic above). All negative terminals on the board are directly connected internally.

Complete the "Wiring the FRC Control System" assembly instructions up to and including the circuit breakers step.

# Installing Electrical Board for RQBS

## Option 1

### Support Strips



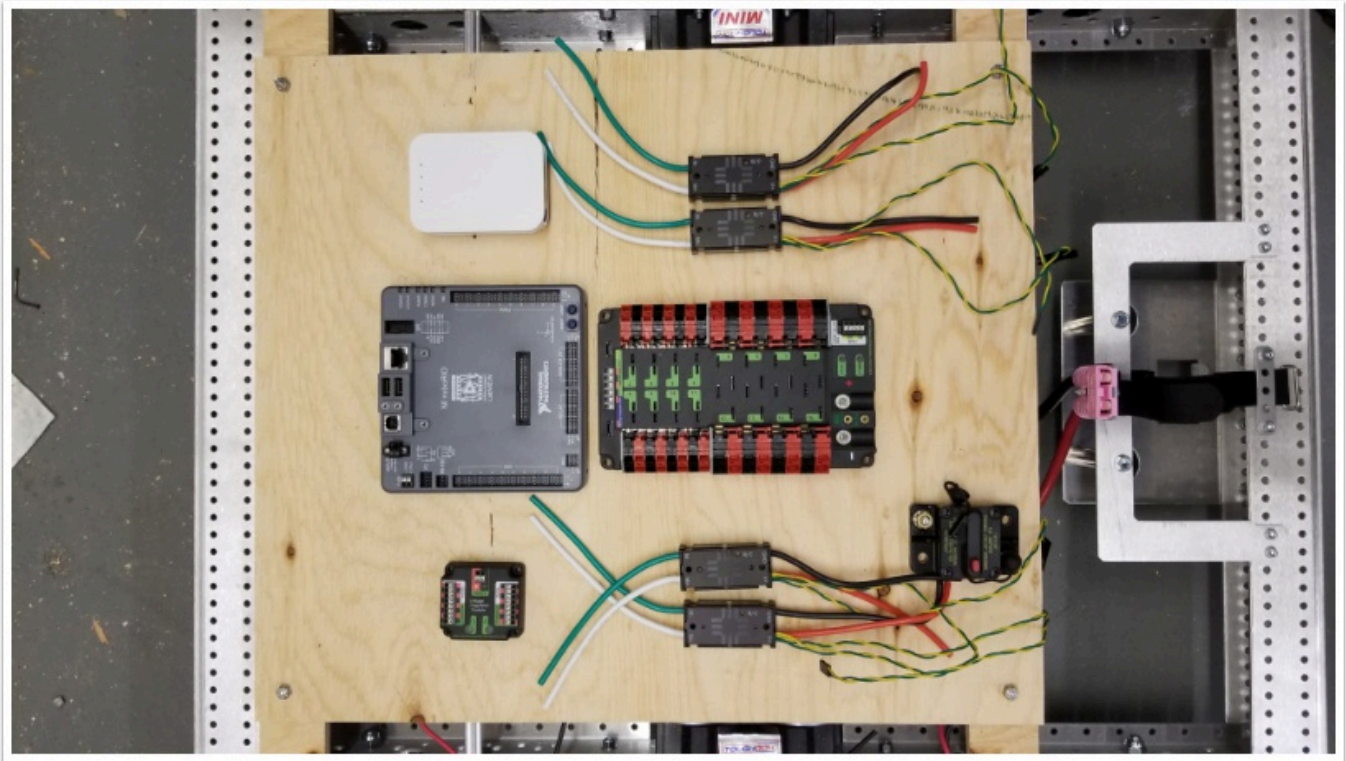
Requires: drill, 3/16" drill bit, (8) 10-32 x 1" pan philips head machine screw, (8) 10-32 nylock nuts, philips head screw driver, wrench

Locate the 2 support strips on the chassis as shown: Flush with the front rail on the front of the robot, 6 holes forward on the back on the robot (the back of the board is approximately centered on the churro tube).

Drill holes in the support boards matching the chassis holes (it's recommended to mark/punch the holes from below, then remove the board to drill) and fasten using 10-32 machine screws.

# Installing Electrical Board for RQBS

## Main Board



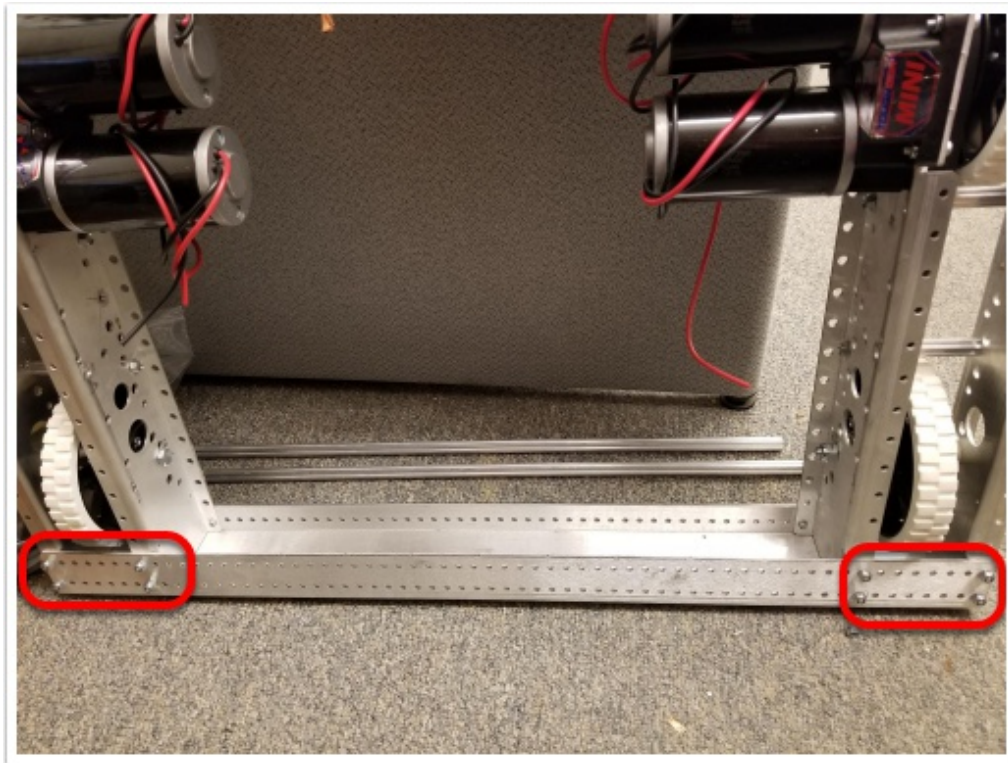
Requires: drill, 3/16" drill bit, (4) 10-32 x 2" pan philips head machine screw, (4) 10-32 nylock nuts, philips head screw driver, wrench

Locate the main board above the support strips as shown. Near each corner, match drill a hole through both pieces of wood. Secure with 10-32 hardware.

# Installing Electrical Board for RQBS

## Option 2

### Remove chassis front

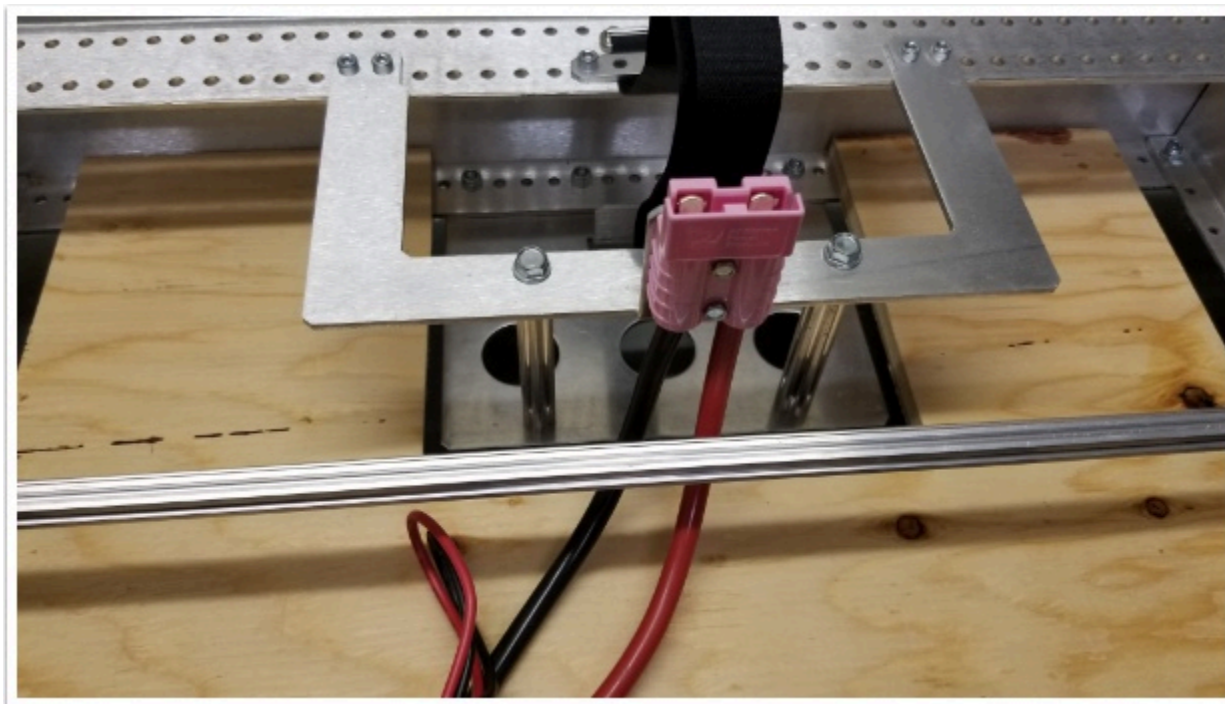


Remove the front channel from the chassis by removing all fasteners (top and bottom) and sliding the channel away from the remaining chassis pieces.



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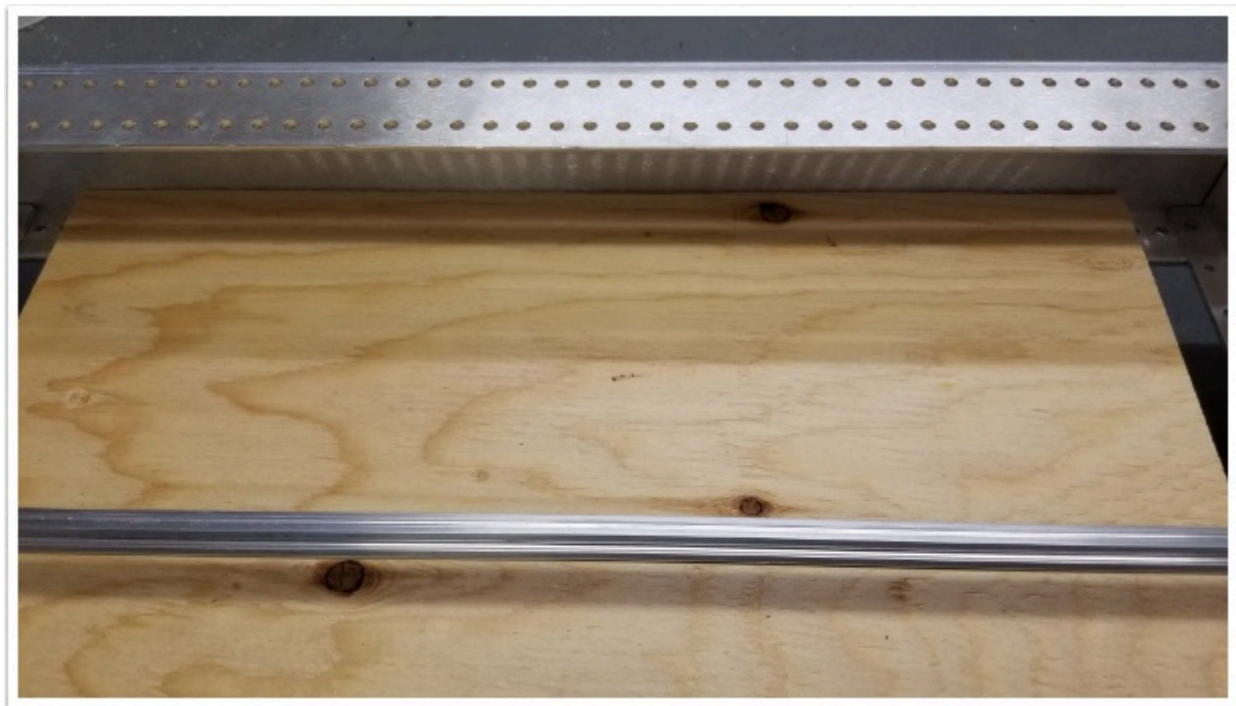
## Board placement



Insert the board into the chassis so the U-shaped cutout surrounds the battery tray.

# Installing Electrical Board for RQBS

## Re-attach front rail

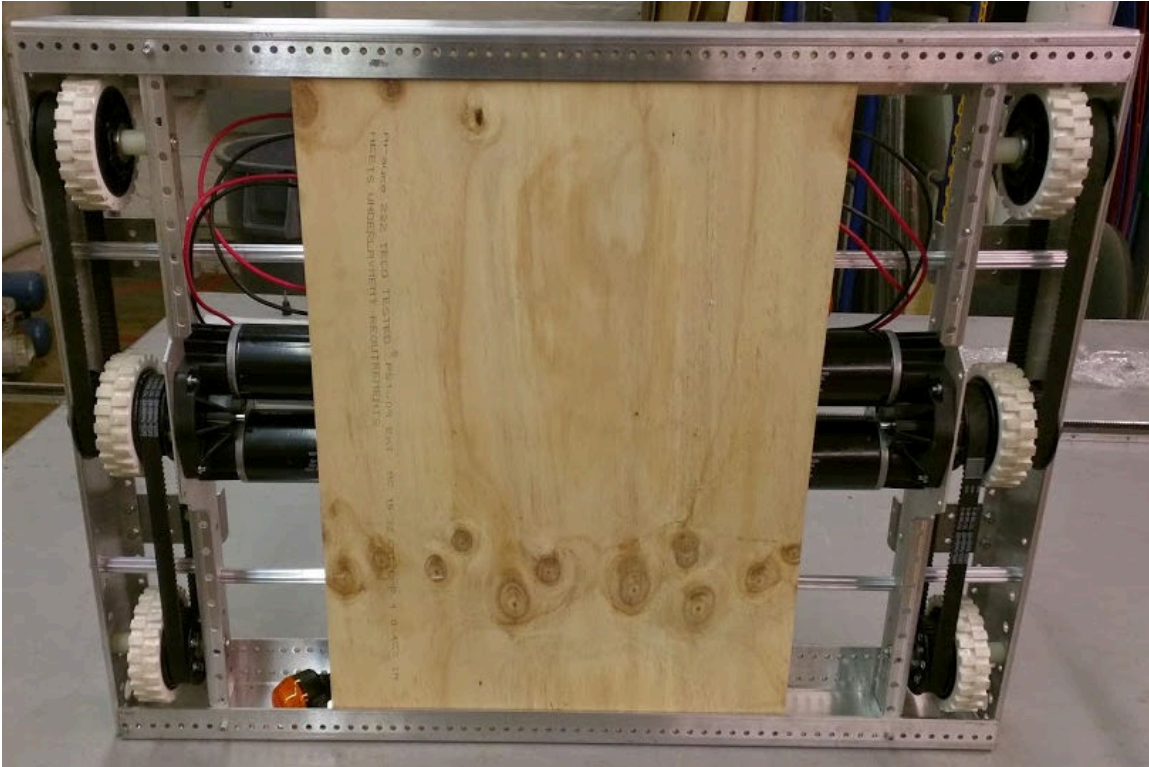


Re-attach front rail of chassis.

# Installing Electrical Board for RQBS

## Securing the electrical board

### Chassis orientation

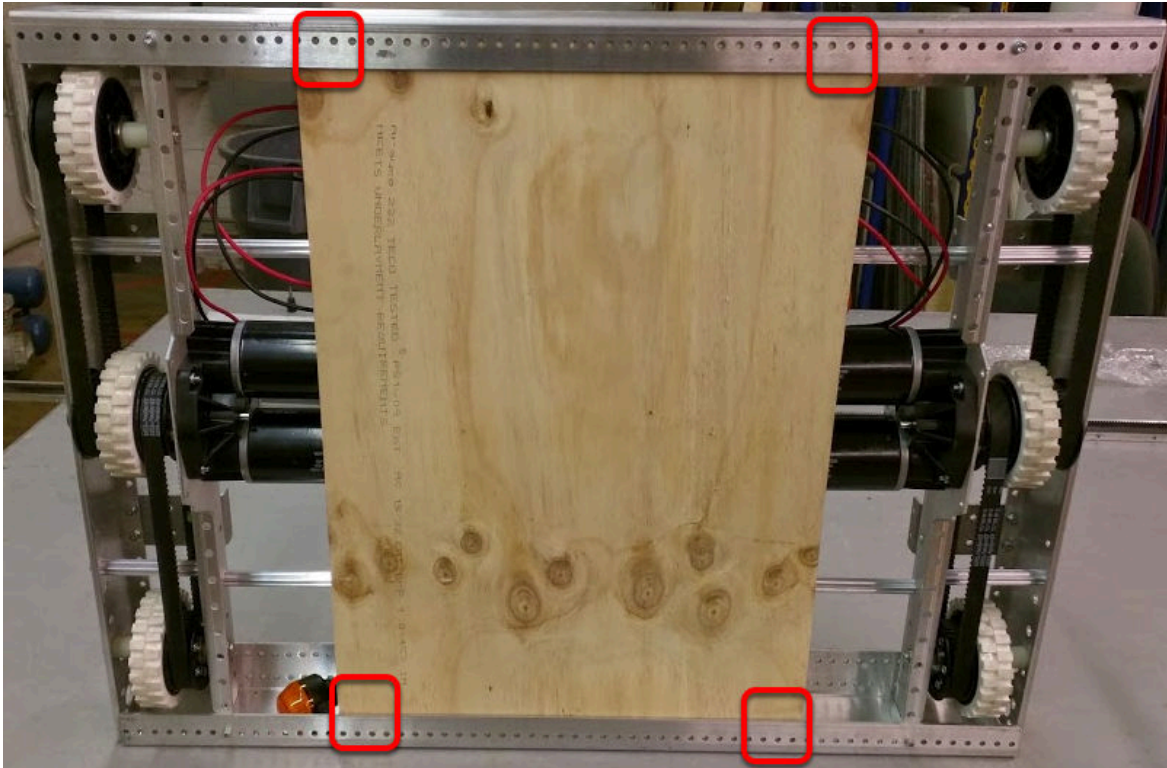


Flip the drive base so that the bottom of the electrical board is exposed.



# Installing Electrical Board for RQBS

## Drilling holes



Requires: drill, 3/16" drill bit

Drill 4 holes in the corners of the electrical board using a 3/16" drill bit and the hole pattern on the end rails as a guide.

# Installing Electrical Board for RQBS

## Installing fasteners



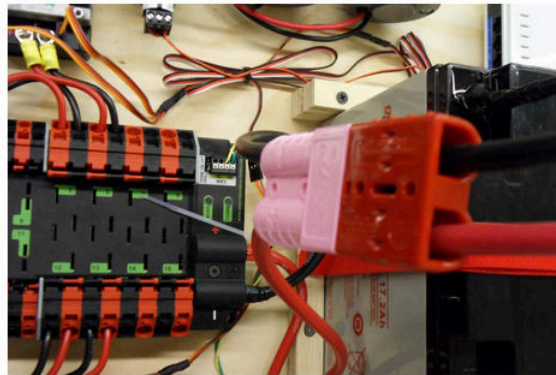
Insert 4, 10-32 x 1" Philips pan head machine screws from the bottom of the electrical board through both the end rail and the board. Secure them from the top with 4, 10-32 nylock nuts.

# Installing Electrical Board for RQBS

## Electrical board wiring



Connect Battery



Connect the battery to the robot side of the Andersen connector. Power on the robot by moving the lever on the top of the 120A main breaker into the ridge on the top of the housing.

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Complete the remaining steps in the "Wiring the FRC Control System" (motor power and battery connections)