Robot Quick Build Required Materials

The 2022 sizing rules accommodate all 3 configurations of the AM14U5 chassis. With the AM14U5 there are 2 options for electronics boards for each configuration. Option 1 requires three pieces cut from ½ inch plywood and the electronics board will sit on top of the chassis over the motors. Option 2 is one piece of plywood but requires some additional cutting to get around the battery tray. Instructions for both options are provided for electronics boards to accompany any of these chassis configurations. Although the Drive base has been upgraded to the AM14U5, the Battery tray and bumper Mounts from the AM14U4 have not changed and work with the AM14U5. Instructions to build those items can be found on AndyMark website or in the 2022 Robot Quick build folder.

If you have any questions about the 2022 Robot Quick Build, please let us know in the comments.

*****Please remind teams to pay attention to the box they have received. Some Drive base kits did not come with the 800-5M-15 belts (needed for long orientation). They can submit a replacement parts request via the teams Dashboard for these parts. They can only make one replacement parts request, so it is HIGHLY encouraged they do a full inventory of their kickoff kit prior to submitting the request. *****

- If a team is missing the belts needed for the long orientation, they can still build the drive base in a quick build without cutting the sides. Use the holes and belts labeled for the square orientation in the AM14U5 instruction booklet and do not cut the sides. When the team receives the drive belts via replacement parts request, they can remove the outside plate and change the belts and wheel location to the long orientation if that is what the teams preference is for the season.

Room/Presentation Material

- Assembly Room
  - Large room with tables for full robot assembly
  - PA system with microphone (optional based on # of teams)
- Cutting Room
  - Room with aluminum chop saw, band saw, or hand saws for cutting frame rails (teams spend very little time in this room)
- Electronics Room
  - Room with tables for electronics board assembly
  - PA system with microphone (optional based on # of teams)
- Programming Room
  - Room with internet access (can be wireless)
  - Presentation equipment (projector, screen, etc.)
  - Tables and chairs

Hardware Items Needed for Each Team

- Assembly Room
  - Pan Philips Head Machine Screws with nuts
    - Option 1 requires (8) 10-32 x 1in and (4) 10-32 x 1.5in
    - Option 2 requires (4) 10-32 x 1in
  - Bumpers (Optional)
    - Pool Noodles (comes with rookie kit)
    - ¾” x5” pieces of plywood cut to necessary length
    - Bumper Fabric (in rookie kit this year)
    - Tape

- Electronics Room
    - ¼" – ½" Plywood control boards (see drawing PDFs for sizes)
    - For veteran teams only (all items listed below are included in the rookie kit)
        - Computer to use as Driver Station (can also be used for programming)
        - Joysticks (1 required, 2 recommended)
        - PDP
        - VRM
        - roboRIO
        - PCM
        - Speed Controllers (x2 additional, x2 in kit)
        - Battery mount parts – Plywood scraps, 10 2" long wood screws
        - Battery
        - SB50 Battery connector with 6AWG wire with terminal ends
        - Main breaker

Note: If the team does not know what configuration they would like to use for the season, use the testing layout files. This will allow them to cut their board later to meet their desired configuration.

Tools

- Assembly Room
    - Please see accompanying document for recommended tools for AM14U5 assembly
    - For bumpers (optional) – Staple Gun
- Electronics Room
    - Wago Tool or other medium flat-head screwdriver, very small flat-head screwdriver, and Philips head screwdriver
    - 2. 5mm Hex key (3/32" may work if metric is unavailable, but use carefully) and a 1/16" hex key
    - Wire cutters, strippers, and crimpers
    - 7/16" box end wrench or nut driver
    - Drill with 1/8" drill bit and Philips head bit
    - 6 AWG wire crimper or vise is necessary to crimp compression lugs for the battery, PDP and 120A breaker.
    - USB A male to USB B male cable for imaging and programming the roboRIO