# Grand Blanc High School Robotics Team

2016 VEX Robotics Team – Initial Member Level

Electrical Deliverables – Component Board Wiring

Clinton Bolinger
cbolinger@gmail.com
810.394.3273

Brandi Bolinger
bbolinger@gmail.com
248.249.1983

*This set of Training is designated for Students who did not hold membership on the FRC Team in the 2015-2016 Season.*

Mentor(s) to ask if you have questions about this Challenge: Clinton Bolinger or Cathy Fillwock

Gather the following Materials:

1. See Brandi in the Conference Room to check out a Component Board Wiring Deliverables Kit (if available).
    1. Check to ensure that you have all of the materials and tools on the checklist (included in the kit).
    2. If any materials or tools are missing, please inform one of the Mentors listed above BEFORE you get started with build.

Challenge Instructions:

1. You may build in the Wood Shop, Back Room, or Lunch Room.
2. Document your progress in your Engineering Notebook as you work.
3. SEE THE INSTRUCTIONS ON THE NEXT PAGE **BEFORE** ATTEMPTING TO USE THE WAGO TOOL.
4. Attach the red "dynamite sticks" to the underside of the component board.
5. Using zip-ties, attach all of the components in the kit to their appropriate location(s) on the component board.
6. Using the wire provided in the kit, effectively and efficiently wire all of the components:
    a. Connect the two Jags to two of the 40amp circuits on the Power Distribution Board,
    b. Connect the two Jag PWM wires to the Digital Sidecar,
    c. Connect the main Power Breaker to the Power Distribution Board,
    d. Connect the Anderson Battery Connector to the Main Breaker,
7. You will NOT need to attach a power source.
8. At the end of the meeting, you MUST:
    a. Check the kit back in with Brandi – WHETHER OR NOT YOU ARE DONE.
        i. If you were not able to finish, please indicate so on the sign-in/sign-out sheet.
        ii. If you were not able to finish, the kit will be reserved for you for up to two meetings.
        iii. If you do not show up for two consecutive meetings, the kit will be assigned to someone else.
    b. Clean your workspace AND the floor around you:
        i. Wipe off tables
        ii. Push in Chairs
        iii. Sweep the floor

Engineering Notebook Entry Instructions:.

1. Draw an illustration of the final result:
    a. Label all components,
    b. Label all wires.
2. COPY DOWN and answer the following questions:
    a. What difficulties did you run into while wiring the components?
    b. What did this task teach you about wiring that may assist you if you are a member of the programming or mechanical team?
    c. Why are proper wiring techniques important?
    d. Why is it important to use the right tool and the right materials for each job?

**Grand Blanc High School Robotics Team**
2016 VEX Robotics Team – Initial Member Level
Electrical Deliverables – Component Board Wiring

Clinton Bolinger
cbolinger@gmail.com
810.394.3273

Brandi Bolinger
bbolinger@gmail.com
248.249.1983

To Complete Your Challenge:

1. Ensure that your Engineering Notebook entry is completed.
2. Find one of the Mentors listed above and escort them to your workstation to inspect your completed work.
3. Ask one of the Mentors listed on this deliverable to approve your Engineering Notebook entry and have your deliverables checklist validated.
4. After you have completed the task and your Engineering Notebook has been validated, please:
    1. Detach all wires from the components (do not cut wires),
    2. Cut zip-ties to remove components from the board. Throw away used Zip-Ties,
    3. Detach the "Dynamite Sticks" from the component board,
    4. Return all components and tools to the designated areas in the bin,
    5. Cross-reference the checklist and ensure that all of the items on the list are included. If anything is missing, please inform Brandi when you check the kit back in,
    6. Clean your workspace AND the floor around you:
        1. Wipe off tables
        2. Push in Chairs
        3. Sweep the floor
    7. Return the kit to the Conference Room and see Brandi to sign the check-in/check-out log.
        1. If Brandi is not present, see one of the Mentors listed on this deliverable to check the materials back in.

# Using the Wago Connector Tool:

1. Take care to insert directly at a fixed angle, pressing straight in
2. Do not pry.
3. The goal is to open the spring by pressing in the tool, not by prying