KidsAbility

Autobat System

Understanding the System:

On the top surface of the system, there is a purple line marked “START, with a similar vertical line on the bat post. As the system enters brake mode for safety when powered, ensure that these two lines are colinear prior to powering. This ensures consistency in operation.

When the system is powered, a green light on the pushbutton switch marked ”2” will illuminate, indicating both the Arduino Uno and motor controller are live.

An additional bright red LED signal light is included in the “SAFE ZONE” to alert the user and bystanders of the fact that the system will launch.

Note that three flashes of this red indicator LED will occur before the bat swings. This is the equivelant to about 3 seconds, and the light will remain stable when the ball is being launched.

After long operation cycles, the bat’s position may drift. Take the time to manually move the bat post to the “START” position if the system starts misbehaving.

Warnings of Operation:

If any lights are illuminated, ensure that all individuals are within the “SAFE ZONE”, labelled at the area where the buttons are located. This ensures that the rotational trajectory of the bat is unobstructed, eliminating a possibility of injury or distress. The possible impact zone is a longitudinal circle with the radius of the bat’s length.

Any wires exiting the system are fully insulated, however take caution in that there is high current travelling through them. As with other electronic systems, avoid situations where the system may be in the vicinity of water.

Ensure that users understand the potential dangers in touching or moving live wires as well, not only risking malfunction, but increasing the risk of shock.

In the case of malfunction or error, immediately press the big red emergency stop button, to cut battery power to the system. **When powering off the system, ensure the emergency and power switches are closed.**

Contact “aabjosh0singh@gmail.com” if any questions or concerns arise.

How to Power the System:

1. Untwist the red emergency button labelled “1”
2. Press the button on the right of the power panel labelled “2” such that it illuminates
3. Ensure that the red indicator LED flashes quicly, signifying the Arduino is powered
4. Insert the 3.5mm jack of the Jellybean switch into the input labelled “3”

Operating the System:

1. Power the system as described previously
2. Secure the bat into its cutout block by removing the block screws
3. Ensure that the bat block is re-secured and the bat is constrained
4. Press the Jellybean button to signal the control board to launch
   A. Ensure all are in the “SAFE ZONE” outlined in the “Warnings of Operation”
5. Wait for three 0.5 second flashes of the red LED to occur for the system to launch
   A. The bat will return to its approximate starting position

Charging the System:

1. Ensure the system is powered off, as outlined in the “Warnings of Operation” section
2. Using an SAE connector 12V charger, plug into the connector on the “BATTERY” drawer
   A. This is marked by a “+ - 12V” label on the top-right
3. Should the battery need to be removed, the system must be opened
   A. Contact the previosly given email to recieve further instructions/guidance