Griffin DriverOp User Guide

Initialization Sequence

1. Power up both phones (Driver Station and Robot Controller)
2. Install the Robot Controller into the robot.
3. Connect the Robot Control phone to the Rev Robotics Expansion Hub #2 (facing the tail of the robot) using the USB cable. The Robot Controller program *should* start up automatically. (If it does not, start it manually.)
4. Plug a Logitech F310 Game Controllers into the phone using a multiple type-A female input to micro-B male output hub.
5. Start the FTC Driver Station software on the Driver Station phone.
6. If the Driver Station and Robot Control phones are properly matched, the Driver Station phone *should* connect to the Robot Control phone automatically.
7. Select the TeleOp menu and the Griffin Driver OpMode menu entry.
8. Press the Init button on the Driver Station phone.
9. Press the Start button (white triangle pointing right) on the Driver Station phone.

Operational Modes

The Driver software only maintains the two modes: Init (initialization) and Play. The Init mode operates completely automatically to initialize all robot subsystems, with no user input. The following sections describe Play mode.

Play Mode

Play mode operates using three main collections of user inputs, namely, robot motion, claw operation, and beam operation. Robot motion is controlled from Game Pad 1, whereas claw and beam operations are controlled from Game Pad 2.

Robot Motion - Game Pad 1

Terminology:

1. “Port” means the left side of the robot when facing from the tail towards the claw.
2. “Starboard” means the right side of the robot when facing from the tail towards the claw.
3. “Aft” means the rear of the robot, that is, where the tail is found.
4. “Bow” means the front of the robot, that is, where the claw is found.

Robot motion controls are all found on Game Pad 1. The robot motion controls are as follows:

1. The left bumper causes the robot to turn to the left, that is, in a counterclockwise motion, in a slow and precise manner.
2. The left trigger causes the robot to turn to the left, that is, in a counterclockwise motion at a variable rate based on the degree to which the trigger is depressed.
3. The right bumper causes the robot to turn to the right, that is, in a clockwise motion, in a slow and precise manner.
4. The right trigger causes the robot to turn to the right, that is, in a clockwise motion at a variable rate based on the degree to which the trigger is depressed.

5. In cases when both the trigger and bumper are depressed, the trigger (precise rotation) takes control.
6. The left joystick controls coarse (high speed) movement of the robot.
7. The right joystick controls precise (low speed) movement of the robot.
8. When both joysticks are pressed, it is the right (precise) joystick that is used.
9. Motion of the joystick is set up to mirror the motion of the robot.
10. Pushing the joystick forward causes the robot to move forward, that is, in the direction of its claw (the bow of the robot).
11. Pulling the joystick back towards the driver causes the robot to move backward, that is, in the direction of its tail (the aft section of the robot).
12. Pulling the joystick to the left causes the robot to move laterally toward its port side (that is, the left side of the robot when facing forward).
13. Pulling the joystick to the right causes the robot to move laterally toward its starboard side (that is, the right side of the robot when facing forward).
14. The joysticks control lateral motion. Turning must be accomplished with the left and right bumpers and triggers.

Claw Operation - Game Pad 2

Controls for operating the claw are all found on Game Pad 2. The robot claw operation controls are as follows:

1. 'X' closes the claw.
2. 'B' opens the claw.
3. 'Y' raises the claw.
4. 'A' lowers the claw.

Beam Operation - Game Pad 2

Controls for operating the beam, beam claw and beam claw swivel are all found on Game Pad 2. The robot beam operation controls are as follows:

1. DPAD Left - extend the beam
2. DPAD Right - retract the beam
3. DPAD Up - swivel the beam claw up
4. DPAD Down - swivel the beam claw down
5. Left bumper - close beam claw
6. Right bumper - open beam claw