2017 Robot Control Manual

Other Joystick (Left)

Moving joystick forward and backward controls motor for the lifter

Throttle controls the speed of the lifter.

Button 2 toggles whether door is open or closed

Trigger toggles whether gear pusher is in or out.

When the piston is out and the door is open, pushing either the trigger or button 2, will both retract the gear pusher and close the door.

There is a safety feature which prevents the user from closing the door when the gear piston is out and from pushing out the piston while the door is closed.

Button 9 turns on the manual override for the safety feature for 5 seconds.

The climbing motor will stop if it is drawing more than 40 amps of current.

Turn Joystick (Center)

Moving joystick sideways turns the robot

Pushing button 11 reverses which side of the robot is the front (so the front of the robot becomes the back and vice-versa).

If SmartDashboard is running, the user can see whether the robot is in forward or reverse mode.

Move Joystick (Right)

Moving joystick forward and backward moves the robot forward and backward.

Moving joystick left and right moves the robot sideways.

Moving joystick diagonally moves the robot diagonally in the direction the joystick is pointing.

The throttle controls the speed of the motors, when it is on.

Pushing the Button 2 toggles the throttle on and off.

Pushing Button 11 toggles throttle lock.

Throttle Lock keeps the throttle value at a certain value regardless of whether the physical throttle moves.

The following three buttons are not recommended to be used and will probably be removed from the code. They change the way a person drives the robot:

[Button 3 puts the robot in its default mode of being driven with two joysticks.

Button 4 puts the robot in a mode where it turns based on the twisting of the move joystick. The concern we have with this is that the driver might accidentally turn.

Button 5 puts the robot in tank drive mode, which does not work.

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If the user has throttle lock on and turns the throttle off, the robot will drive at full speed. When the throttle is back on, the speed will be the same as it was last when the throttle is on.

If SmartDashboard is running on the computer, the driver can see whether throttle lock is on or off and whether the throttle is on or off.

Autonomous

On the SmartDashboard, there are two sets of radio buttons to choose what the robot does in autonomous. The first set is used to select what lift the robot will deliver the gear to or whether the robot should only cross the baseline.

The second set of radio buttons are for choosing what side the return loading station is on. "Auto" chooses what side the loading station is on based on what alliance our team is on. The user can also choose "Left" or "Right" based on where the return loading station is.

Terminology

Note: the buttons on the joystick are labeled with numbers.

Button 2: the button that the thumb naturally rests on when the joystick is in your right hand

Trigger: the button on the back of the joystick, where the pointer finger usually is

Button 9: one of the buttons on the base of the joystick

Button 11: another one of the buttons on the base of the joystick

Throttle: the "dial" on the base of the joystick