

While reading the rules or watching the game animation, you may hear something about an “autonomous period”. I will explain this in today’s video.

What is the autonomous period?

Every VRC match starts with a 20 second autonomous period. During the autonomous period, robots operate on only pre-programmed commands, not remote control. The alliance that scores the most points in the autonomous period gets a ten point bonus.

Why would I do it?

If you have watched matches in person or online, you may notice that many teams do not even attempt the autonomous period! This makes it a great opportunity to get a head start and pick up some extra points while no robots are interfering. Once the autonomous period is over, the bonus cannot be lost, even if a robot later de-scores your rings.

How do I get started?

Start by looking at the field. See if there is anything the robot can use to locate itself such as lines, colored tiles, etc. Think about what sensors you could use. Another thing to consider is that rule <SG1> states that, in their starting position, robots must be placed such that they are touching their colored starting square. It does not say that the robot has to be completely in the colored area. Use this rule to your advantage by placing your robot as close to the rings as possible.

Keep in mind that there are four different places from which you may be starting. Try to identify a series of movements that will score points no matter where you start from. You can also use jumpers to tell your robot where it is starting from. If you look at the field, notice that, facing to the left of the blue squares, you can grab a stack of rings without even moving. Then, if you turn right, you would be pointing straight at a goalpost. For red, you could do the very same thing, just turning the opposite direction. Try to find scenarios like this while looking at the field. You could use a jumper to tell the robot if it was blue or red and shaft encoders to measure distance.

How do I create the program?

First, get to know how RobotC works by watching tutorials or reading the help. The CORTEX Video Trainer is a great set of video tutorials that I highly recommend. After you figure it out, open RobotC and click File > New > Competition Template. Read the comments in the template to figure out how to fill it in. The template is necessary so that the competition controller at the competition will be able to start the program.

Make sure you test that your autonomous code works and that it will work under actual game conditions. A robot may work great in practice with two rings, but stall at the competition because four rings are too heavy. There is a competition controller simulation window available at Robot > Debugger Windows > Competition Control.