

TROUBLESHOOTING

REPLACING THE DRIVE BELT

The drive belt is the small internal belt at the heart of each of the robots axis. The belt is responsible for transferring the motion of the motor to the set of drive gears, which then transfer the motion to the main shaft. Sounds more complicated than it actually is, but having a system of belts and gears (rather than a direct connection) helps to better manage the power and speed of the robot's movement... resulting in a more accurate instrument.



The drive belts are small and usually made of a plastic or rubber, with steel or fiberglass reinforcement. Over time, the plastic or rubber can wear out and become brittle. Cracks will form on the belt, exposing the internal reinforcement to the elements... eventually causing the belt to tear and not function properly. Looking at the picture to the left, you can see a crack on the outside of the drive belt; this is common in older belts and should be replaced before they cause more problems.

Replacing this belt can be tricky, so be sure to pay attention to what you're doing and don't rush. Start by exposing the internals of the axis, and locate the three main screws holding the assembly together (Figure "1" below). With the screws off (Figure "2"), the back plate can be pulled off (Figure "3"). The belt can now be removed and replaced.



1



2



3

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With the new belt around the outside gears (should be in a similar position as the belt in figure “3” on the previous page), the back plate can be placed back on. It should fit tight together, and the motor and screws can be put back on. Please note, the motor has two different screw holes, one is longer than the other (circled in figure “A” below). This allows you to move the motor to make the belt tight, which it should be after a proper installation.



A



B

Once completed, be sure to test the axis with a PARK command, as you may need to adjust the switch or tighten the belt some more once you see it in action.