Zero position sensors

There are 4 zero position sensors on the robot. They are used by the robot to determine the absolute positions of the tower, telescope, arm and nozzle. The position of these sensors are taught during the homing procedure.

Tower

The tower sensor is located under the hood in front of the tower pipe. The sensor detects a magnet that is mounted on the tower pipe. The zero position is where the tower points straight ahead (parked). This means that any position errors (due to for example the friction clutch releasing) will be zeroed when the tower goes back to parked position.

Telescope

The telescope sensor is located underneath the telecope protective sides at the back of the telescope. The sensor detects a magnet that is mounted on the middle part of the telescope. The zero position is where the tower is fully retracted.

Arm

The arm sensor is located in the black box at the root of the arm. The sensor detects a magnet that is mounted inside the nozzle gear. The zero position is where the arm is extended about 15 degrees from parallel to the boom (parked). This means that any position errors (due to for example the friction clutch releasing) will be zeroed when the arm goes back to parked position.

Nozzle

The nozzle sensor and magnet is located inside the nozzle motor. The zero position is set where the nozzle points downwards when the arm is parked. However, this position depends on the angle the nozzle has been fastened with at the end of the arm.

Boom

There is no zero position sensor for the boom. Instead the robots determines the boom zero position by sensing the position where the boom cannot be lowered any further. After a recipe, the boom is always lowered in order to zero out any position errors.

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