



State machine diagram description

States:

- 1) Idle (I): Initial state, waiting for the START command.
- 2) Rotate (R): The disc rotates counterclockwise for one position.
- 3) Pick (P):
 - a) the gripper moves from EP1 to EP2 (position 1),
 - b) the gripper grasps a steel cylinder in position 1.
- 4) Deliver (D):
 - a) the gripper moves from EP2 to EP1,
 - b) the gripper drops the steel cylinder into the bin.
- 5) Reset (X): The system is being set back to its original state after all cylinders are in the bin.

Transitions:

- I to R: Start command received and Steel cylinder detected at position 4.
- R to P: The disc has rotated counterclockwise for one position,
- P to D: The gripper has picked up a cylinder,
- D to R: Cylinder has been delivered into the bin, and the system is ready for the next rotation,
- D to X: All 6 cylinders have been dropped into the bin,

Variables and commands:

- Start_pressed: start button is pressed, i.e. start command is given,
- S_out: Sensor S output, if S_out==1, there is a cylinder in position 4,
- num_del_cyl: number of cylinders delivered into the bin.