FINAL05 – BASELINE05

National Institute of Standards and Technology

ARIAC NIST
Agile Robotics for Industrial
Automation Competition

Trial Description

- **Task**: Build **1** single shipment from 1 single order.
  - The conveyor belt is used.
  - There are faulty products in the environment.
  - A red pulley must be flipped.
  - Grippers are faulty and will drop products over AGV1.

- **Orders**: This trial consists of 1 order (order_0) with 1 shipment (shipment_0).
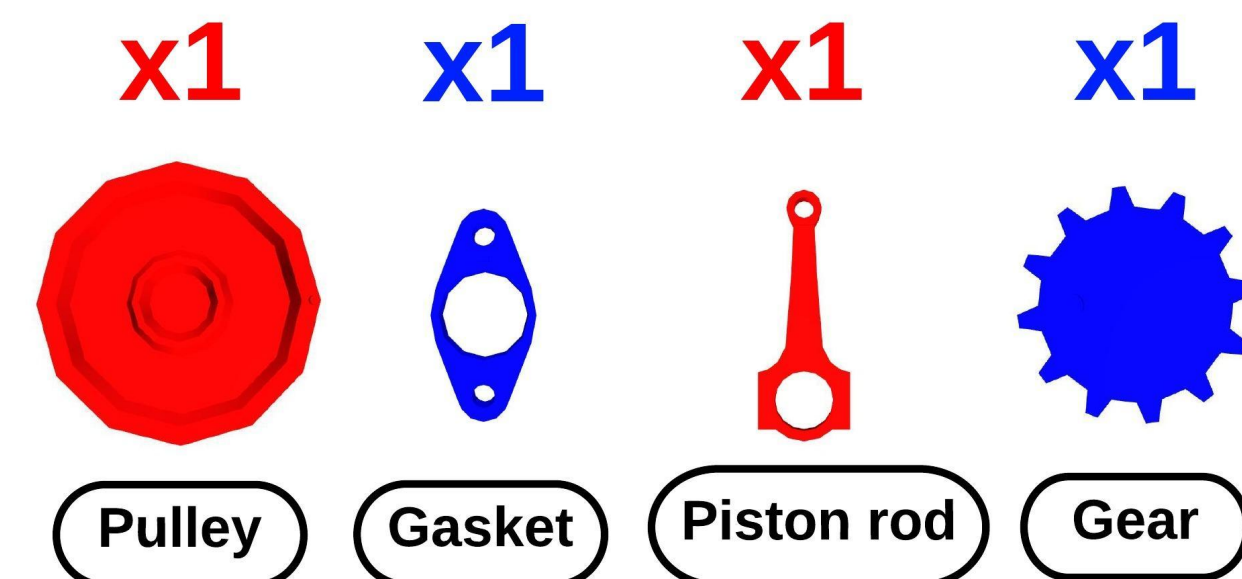 - shipment_0 consists of 4 products in total:

x1	x1	x1	x1
Pulley	Gasket	Piston rod	Gear

Fig. 1: Products used in order_0.

- **Maximum completion score**: 16 pts.
- **Agility challenges**:
  - Faulty products.
  - Flipped products.
  - Faulty gripper: Some products will drop on AGV1 and need to be re-positioned to score points for correct product pose.
- **Product vessels**: bin × 1, shelf × 2, conveyor belt is used.
- **Shipment deliveries**:
  - order_0::shipment_0: AGV1.
- **Time limit**: 500 sim seconds.

Initial Product Placement

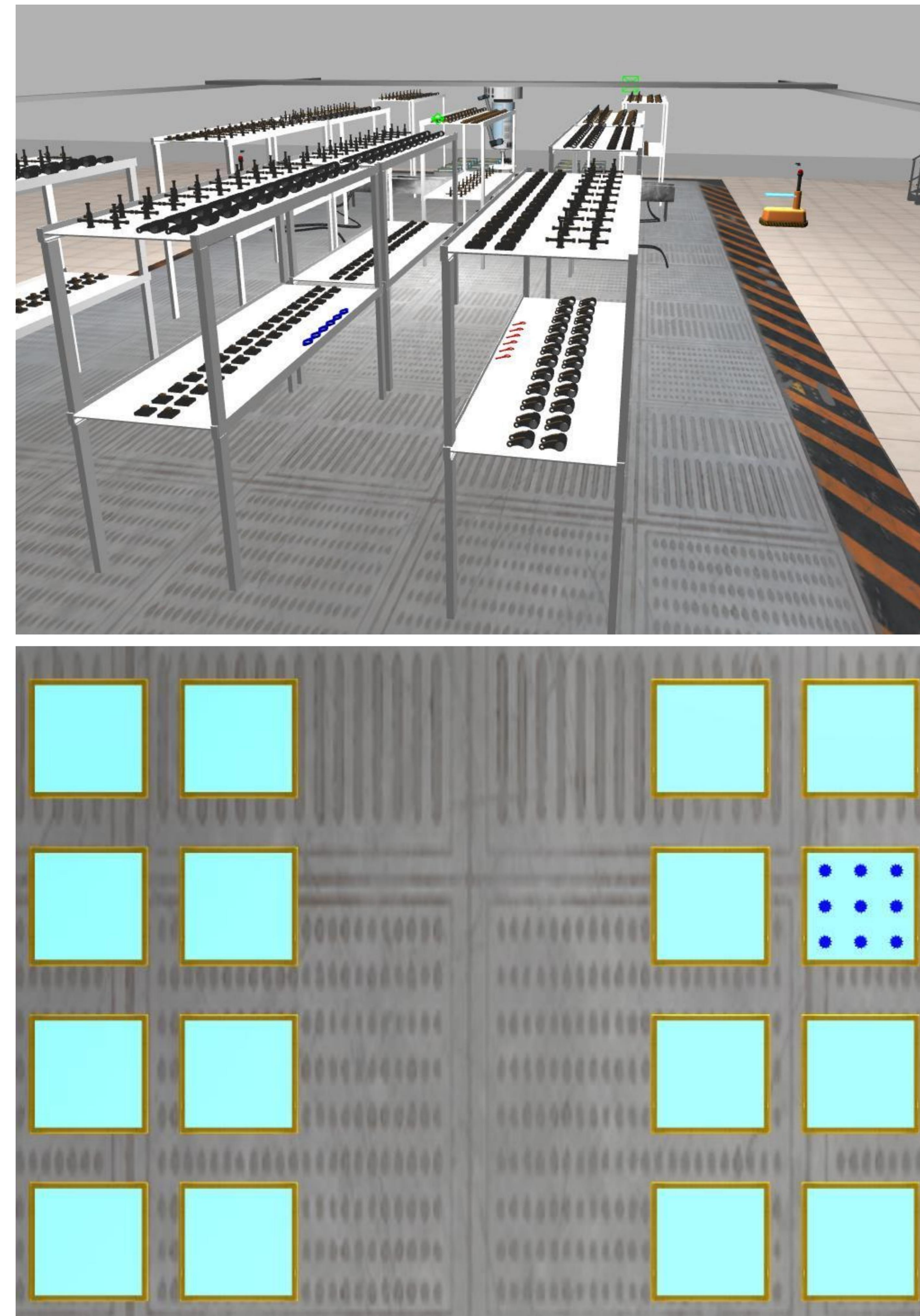
Fig. 2: Initial product placements.

- Conveyor belt spawns a total of 15 red pulleys.

Agility Challenges

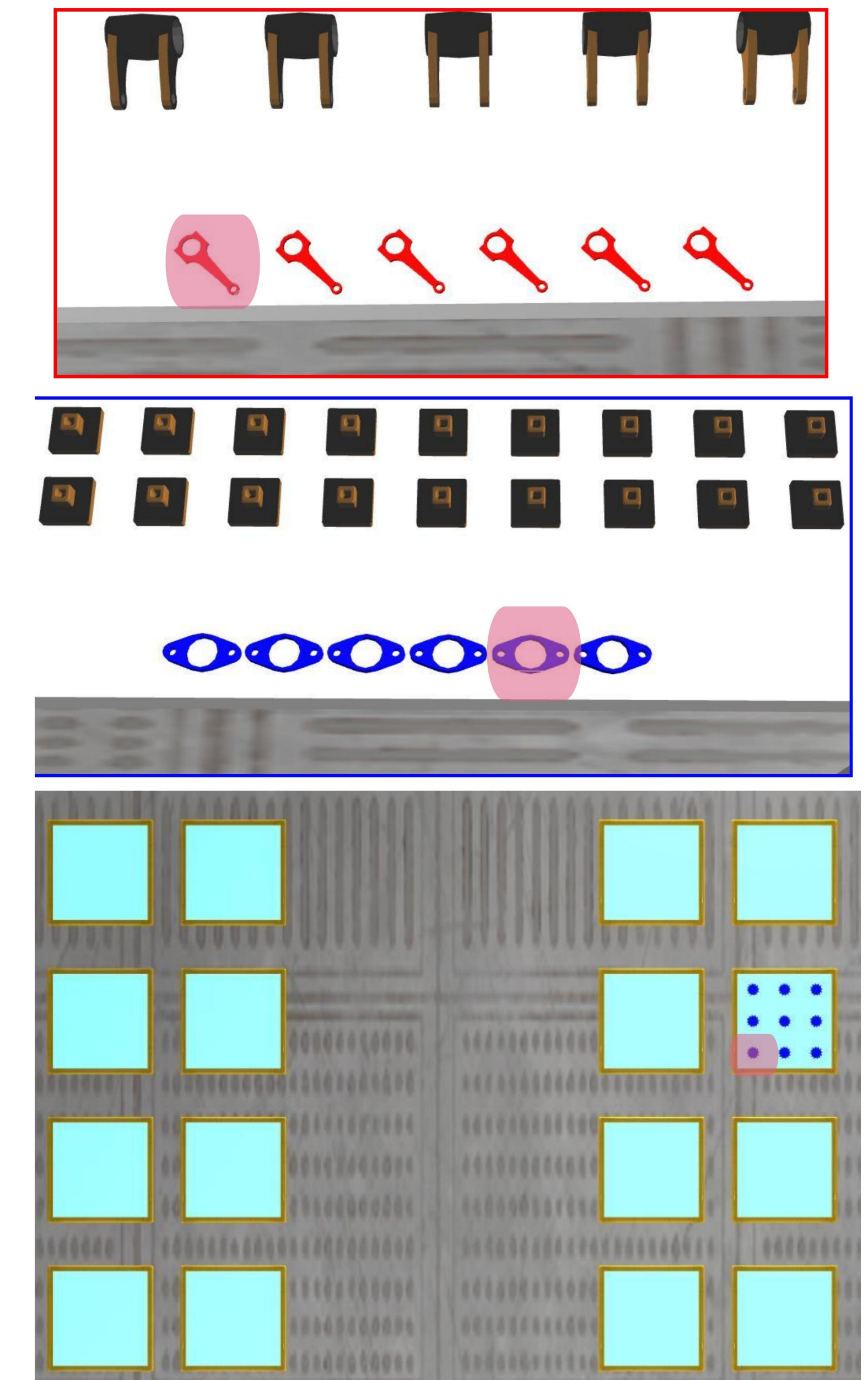- Faulty products: There are 3 faulty products in the environment.

Fig. 3: Faulty products in the environment.

- Flipped products: A red pulley needs to be flipped for the shipment. Figure 4 highlights the flipped pulley.
- Dropped products: 1 blue gear and 1 blue gasket are expected to be dropped over AGV1.

Orders