MINI ASRS SYSTEM

USER MAINTENANCE MANUAL

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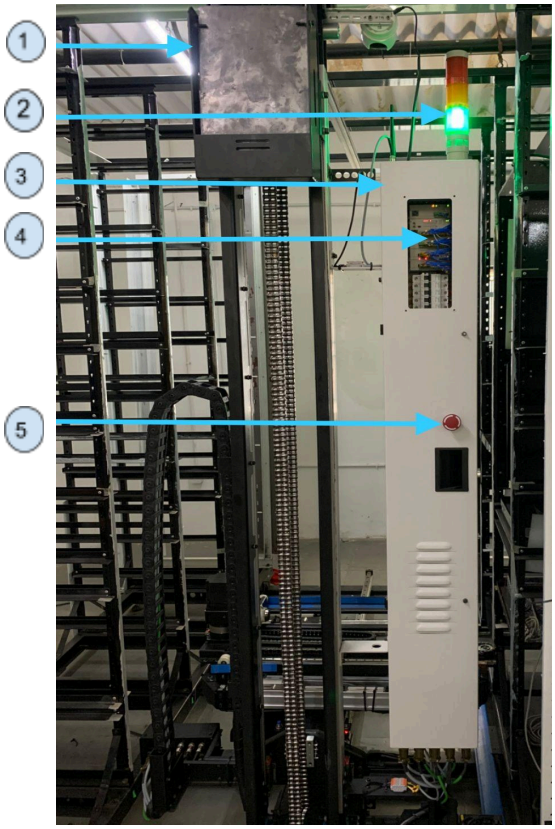
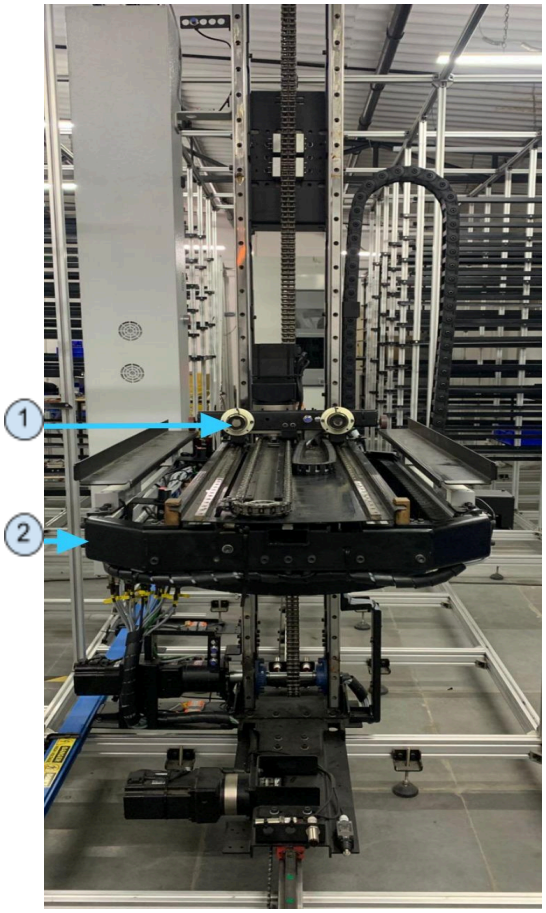
1.1 General information about system

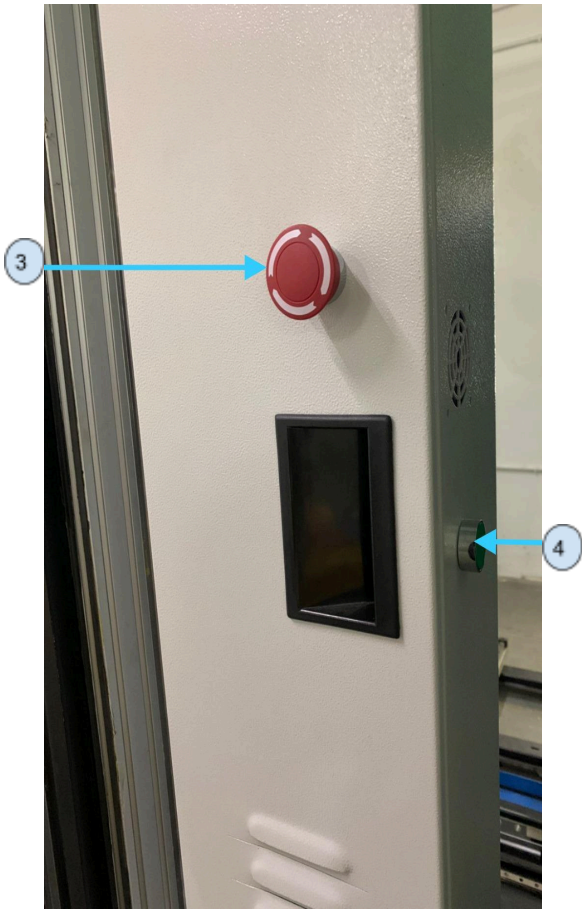
The Automated Storage and Retrieval System (ASRS) is designed to provide an efficient, reliable, and safe method for handling materials within a warehouse or storage environment. This system automatically stores and retrieves items, reducing manual effort, improving accuracy, and increasing overall productivity.

1.1.1 Get familiar with the system



1. Counterweight
2. Tower lamp
3. Vertical control panel
4. PLC module
5. Emergency push button(For robot)

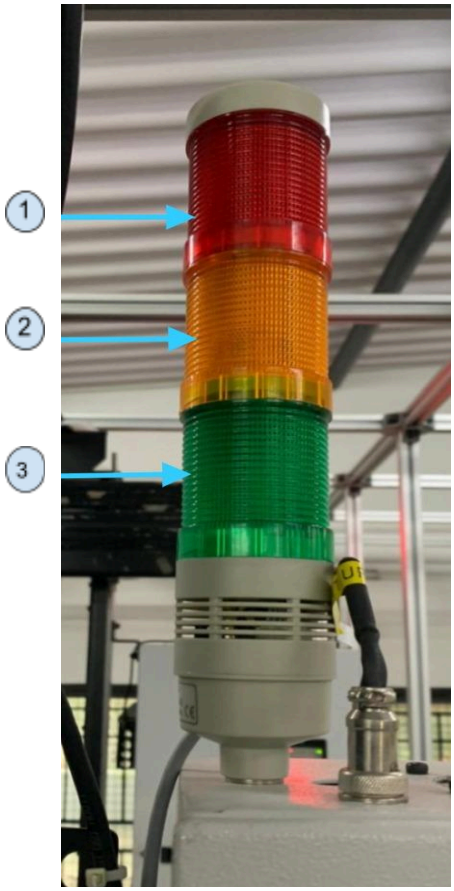




1. Push pull magnet
2. Push pull system
3. Emergency push button(For robot)
4. Manual homing momentary push button

1. Display
2. Bay door
3. Emergency push button(Hard stop)
4. Tablet
5. Scanner

1.1.2 Tower lamp indication



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1. Critical alarm (RED)
2. Homing not performed -Idle condition(YELLOW)
3. System up(GREEN)

1.2 Maintenance checks

Regular maintenance is essential to ensure the reliable operation, safety, and long service life of the Automated Storage and Retrieval System (ASRS). Proper upkeep minimizes unexpected breakdowns, improves system efficiency, and reduces overall operating costs.

The ASRS contains electrical, mechanical, and control components such as motors, drivers, sensors, and a PLC. Each of these requires periodic inspection and servicing to maintain optimal performance. Maintenance should only be performed by qualified personnel familiar with the system's operation and safety requirements

The following steps need to be followed before entering / any maintenance checks.

1.2.1 Safety precaution

Personal Protective Equipment (PPE)

- Wear safety shoes while working on electrical parts
- Get in contact with the panels/system with dry hands
- Use insulated tools when handling live circuits (if unavoidable).

1.2.2 Hard shutdown the system

In case of any Higher priority emergency/maintenance the first thing to be done is to shut the power of the system. As mentioned in 1.1.1, an Emergency push button(Hard stop) must be pressed which will cut the power to the system.

Note: This emergency will not cut the 230V AC , it only cuts the power to the robot.After pressing the push button Wait at some 5 minutes to allow capacitors in drivers and power supplies to discharge fully.

1.2.3 System recovery

In case of any failures the user should be concerned about the following things.

- Check the condition of the tower lamp and make sure that it is updated to the customer support team.
- Make sure the Emergency push button(For robot) as mentioned in 1.1.1 is pressed.
- Make sure that tray/bin is not on the shuttle,If there, remove and keep it in some safe place.
- Check the PLC module as mentioned in 1.1.1 is getting the power by seeing whether it is lighted up.
- If all the above steps are followed follow the manual homing procedure for checking whether the system is operational.

1.2.3.1 Manual homing

Follow the below steps to perform the manual homing.

- Release the Emergency push button(For robot) which has been pressed in the above step .
- Wait for 3 seconds, after that press the Manual homing momentary push button one time and check whether the system starts moving.

1.2.4 System failure

If the system recovery fails in the above steps it should be treated as a hard failure, contact the support team and maintenance team will reach out to the customer site.