FAT - Vacuum Gripper Robot

Test items:

When in resetting State

1 all the xyzMovement equipment is resetted, the state idle is activated when the equipment is succesfully initialized

When in execute State

2 The robot moves to the eRemovePos position
3 The robot activates the vacuum head
4 The robot moves to the ePlacingPos position
5 The robot deactivates the vacuum head
6 The vertical and horizontal movements return to home pos

ParamCheck

7 If the current state is idle and the CntrCmd == **START**, the next state is not activated if the params aren't OK

Errors

8 The horizontal CNT value hasn't changed while the motor is busy
9 The vertical CNT value hasn't changed while the motor is busy
10 The rotate CNT value hasn't changed while the motor is busy

Test #1 *all the xyzMovement equipment is resetted, the state idle is activated when the equipment is succesfully initialized*

Pre-conditions

1. The current active step is resetting

Test steps

1. None

Expected result

All the Equipment modules are resetted. When:

EM_xyzTransport

Are succesfully initialized the next state (idle) is activated.

Test #2 *The robot moves to the eRemovePos position*

Pre-conditions

1. The current active step is Idle
2. Valid placing and remove position is set

Test steps

1. Set CntrlCmd to **START**

Expected result

The xyzRobot moves to the eRemovePos in the following steps:

rotating to correct position, horizontal extending to correct position, vertical lowering to correct position

Test #3 *The robot activates the vacuum head*

Pre-conditions

1. Test #2 has been concluded succesfully

Test steps

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Expected result

The vacuumhead is at the correct position. The vacuum is activated essentially picking up the piece.

Test #4 *The robot moves to the ePlacingPos position*

Pre-conditions

1. Test #3 has been concluded succesfully

Test steps

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Expected result

The xyzRobot is still at the eRemovePos location. The movement to the placing pos goes as follows:
Horizontal movement raises to home pos, vertical movement retract to home pos, rotating to correct position, horizontal extending to correct position, vertical lowering to correct position

Test #5 *The robot deactivates the vacuum head*

Pre-conditions

1. Test #4 has been concluded succesfully

Test steps

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Expected result

The vacuumhead is at the correct placing position. The vacuum is deactivated essentially freeing the piece.

Test #6 *The vertical and horizontal movements return to home pos*

Pre-conditions

1. Test #5 has been concluded succesfully

Test steps

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Expected result

The xyzRobot is still at the ePlacePos location. The vacuum head needs to go to the homepos. The movement goes as follows:

Vertical movement raising to homepos, horizontal movement retracting to home. The rotating movement doesn't need to go to the home position

Test #7 *If the current state is idle and the CntrCmd == START, the next state is not activated if the params aren't OK*

Pre-conditions

1. The current active step is Idle

Test steps

1. Set CntrlCmd to START

Expected result

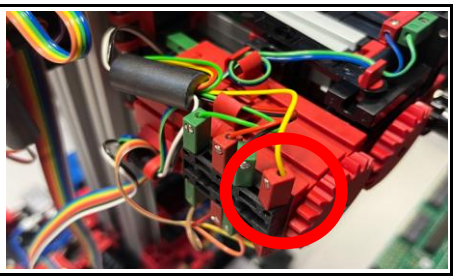
The unit should only start when:

eRemovePiece != ePlacePos, eRemovePos != 536632 station, ePlacePos != 536633 station

Test #8 *The horizontal CNT value hasn't changed while the motor is busy*

Pre-conditions

1. The current active step is Execute
2. Power is removed from CNT signal horizonal motor:



Test steps

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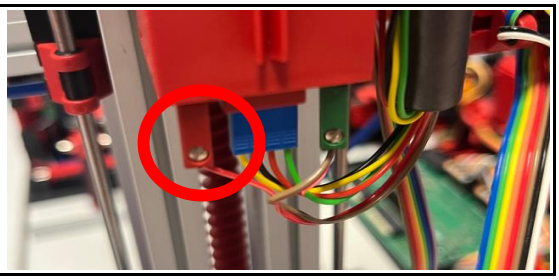
Expected result

The horizontal motor moves, however the CNT value cannot change, causing an error.

Test #7 *The vertical CNT value hasn't changed while the motor is busy*

Pre-conditions

1. The current active step is Execute
2. Power is removed from vertical motor:



Test steps

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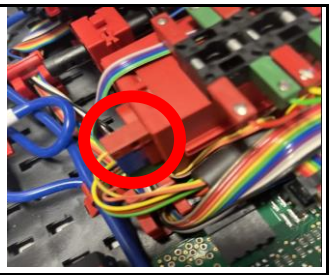
Expected result

The vertical motor won't move, and thus the CNT value cannot change, causing an error.

Test #8 *The rotate CNT value hasn't changed while the motor is busy*

Pre-conditions

1. The current active step is Execute
2. Power is removed from rotate motor:



Test steps

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Expected result

The rotate motor won't move, and thus the CNT value cannot change, causing an error.