

Product: Acrylic Led Keychain



Materials:

Part Code	Part Description	Quantity
001	Transparent Acrylic Plate of 6mm (2.20 x 1.40)	2
002	Loctite Glue	1
003	Led Keychain	1
004	Batteries (v?)	3

Specifications:

- 12 mm thickness approx.
- 5 x 5
- N available designs

Background:

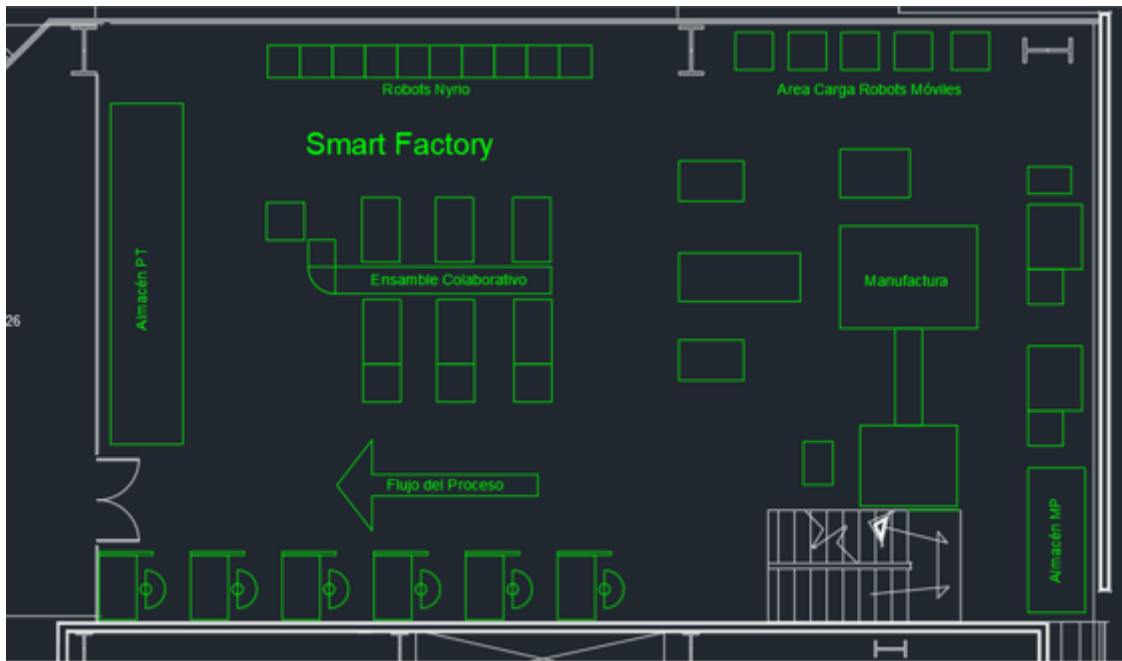
1. Humans receive raw materials.
2. Humans prepare raw materials on preparation station.P
3. Humans place raw materials in bins.

Process:

MACHINE TENDING

1. A human transfers the bins to RM warehouse (low level).
 - a. Acrylic is transported in small plates and is piled up in RM.

- b. Glue is transferred to RM warehouse.
 - c. Keychain is transferred to RM warehouse.
- 2. The carousel (low level) moves the bins to the bin picking station.
- 3. Kuka robot does bin picking of the raw materials.
- 4. Storage of raw material containers in RM warehouse (upper level).
- 5. OMRON robot does retrieval of acrylic plates located on low level RM warehouses.
- 6. OMRON robot transfers acrylic plates to the milling machine.
- 7. OMRON robot places an acrylic plate on the milling machine.
- 8. Milling machine holds the acrylic plates.
- 9. Milling machine clips and engraves the figures.
- 10. Milling machine releases the acrylic plates.
- 11. DASHGO B1 grabs the clipped acrylic plates.
- 12. DASHGO B1 transfers the clipped acrylic plates to the assembly station.
- 13. DASHGO B1 puts the clipped acrylic plates on the assembly station.
- 14. KUKA robot separates surplus from the clipped acrylic plates.
- 15. KUKA robot places surplus in trashcan.
- 16. KUKA robot polishes the figure surface.
- 17. KUKA robot places the figures on the assembly line.
- 18. Assembly line moves the figures from UR robot station to the YUMI robot station.
 - a. RM storage retrieves keychain container from the upper level.
 - b. DASHGO B1 grabs the keychain container.
 - c. DASHGO B1 transfers the container to the assembly station.
 - d. DASHGO B1 puts the container in the UR robot station.
 - e. Who takes out the keychain from the container?
- 19. UR set base figure over workbench prop.
- 20. UR glues upper and lower figures.
- 21. UR robot places the glued figure on the assembly line.
- 22. Assembly line moves the glued figures from UR robot station to the YUMI robot station.
- 23. YUMI robot grabs the glued figure.
- 24. YUMI robot glues the keychain.
- 25. YUMI inserts the keychain in the figure.
- 26. YUMI places the product on the assembly line.
- 27. Assembly line moves the product from KUKA robot station to the BAXTER robot station.
- 28. BAXTER robot grabs the product from the assembly line.
- 29. BAXTER robot places the product in a container.
- 30. DASHGO B1 grabs the container from the BAXTER robot station.
- 31. DASHGO B1 transfers the container to the FP warehouse.
- 32. Storage of products container in the FP warehouse.



SIPOC

<https://miro.com/welcomeonboard/bcM8AwzkYTiNFc0jkggnK1lbGeTVua9SIJ7WUuiLVjMnUNtagd7FB1Zy1d6PmKjI>

Robots

ur - 1

kuka- 3- bin picking

b1 + 2 x arm brazos (por cada robot) (1-4) para bins y producto terminado

OMRON - 1

yumi - 1

baxter - 2 para meterlo a las cajas (empaquetar)

Robots

2 kuka (necesita celda)





1 omron

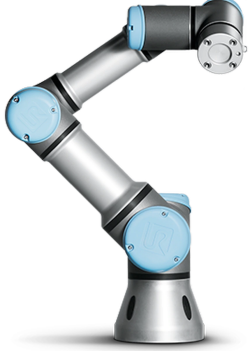
1 yumi

1 ur

1 baxter

Robot	Function	Image
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<p>OMRON</p>	<p>Transfer raw materials (Ex. acrylic to milling machine).</p>	
<p>YUMI</p>	<p>Set figure on workbench prop. Spread glue on figure outline.</p>	
<p>BAXTER</p>	<p>Box product.</p>	
<p>Dashgo B1</p>	<p>Transfer of clippings from milling machine to assembly line.</p> <p>Transfer Led Keychain to finished product warehouse.</p>	

UR	<p>Spread glue on the figure.</p> <p>Spread glue on cylinder outline.</p> <p>Insert keychain to acrylic.</p>	
Kuka	Bin Picking, línea de ensamble	