















ASSEMBLY AUTOMATION SOLUTION

ETEK
TOTAL AUTOMATION SOLUTIONS

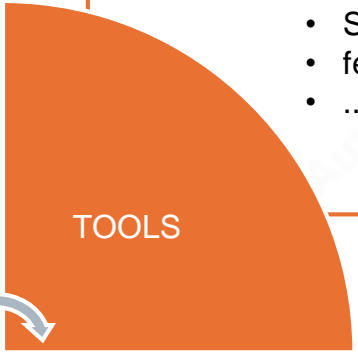
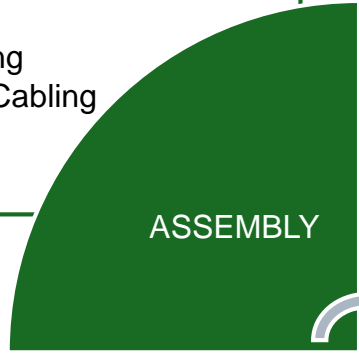
Assembly Overview

Solution	Technology	Industrial target
 <ol style="list-style-type: none"> 1. Dispensing and Gluing 2. Fastening & Bolt & nut 3. Riveting 4. Nailing and Stapling 5. Screw Driving 6. Click Fitting 7. Clinching 8. Press Fitting 9. Wiring and Cabling 10. Other: Soldering, Clamping, ... 	 <ol style="list-style-type: none"> 1. Robot 2. Automatic dispensing 3. Force control 4. Anti-jet 5. Image processing 6. Feed nails and screws automatically 7. Wave soldering 8. Auto soldering 9. Control product quality and assembly process 	<div>  <div>Home Appliances</div>  </div> <div>  <div>Automotive & Components</div>  </div> <div>  <div>Energy</div>  </div> <div>  <div>3C Computer Communication, Consumer Electronics</div>  </div> <div>  <div>Medical</div>  </div>

Assembly Eco-system



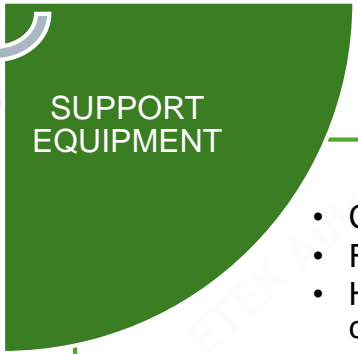
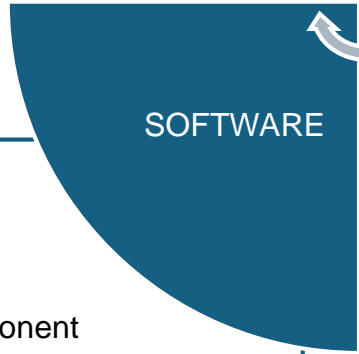
- Dispensing and Gluing
- Screw Driving
- Wiring and Cabling
- ...



- Dispenser
- Screw drive
- feeder
- ...



- Step 7
- Vision Suite
- Visual component
- Torque management



- Conveyor
- Feeder
- Heater, drying, cleaning
- ...



3C



- Computer
- Communication,
- Consumer Electronics

Vehicle



- Car
- Motorbike
- Electric bicycle

Home application



- Television
- Air conditioning
- Fridge
- Washing machine
- Microwave oven, ...

Industrial equipment and components



- Relay
- Circuit breaker
- Buttons
- Controller, ...

Industrial tools and instruments



- Power tools
- Industrial robot, Cobot
- Circuit board

Lamps and lighting equipment



- LED
- Chandelier
- Street lights, ...

Energy equipment



- Solar panel
- Wind turbine
- Batteries

Industrial machinery



- CNC machine
- Die casting machine
- Cutting machine
- Welding machine, ...

- Medical equipment
- Testers, ...

A collage of various electronic measuring instruments. It includes a large yellow digital multimeter at the top left showing '6500'. Below it are two smaller blue digital multimeters. To the right of the large yellow one is a silver mechanical instrument, possibly a balance scale or a similar precision measurement device. Further right are two more yellow digital multimeters, one standing vertically and one horizontally. At the bottom center is a blue digital multimeter with a circular analog gauge attached. To its right is another blue digital multimeter with a circular analog gauge. On the far right is a black tripod-mounted device, likely a surveying level or theodolite. Other smaller components like probes and cables are also visible.

- Electronic scale
- Microscope
- Telescope, ...

A collection of office supplies. On the left, there is a black and silver calculator with a small LCD screen. Above it is a light blue pen holder containing several pens in orange, blue, and pink. To the right of these items is a group of four office copiers of various sizes and models, including a large floor-standing unit and several smaller desktop units.

- Scanner
- Printer
- Ballpoint pens
- Pencil case, ...

- Electricity toy
- Model, ...

- Machine gun
- Radar
- Unmanned aerial vehicle
- Perforated nib

- Roller skates
- Skateboard
- Tread
- Mill Mic, ...

Assembly process

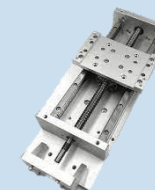
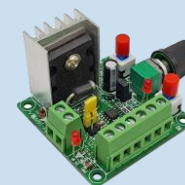
Products



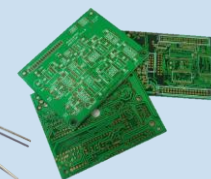
Equipment



Units



Components





Assembly Method

Dispensing & Gluing Solution



Overview

Pain-point

Customers need high-precision gluing and gluing for equipment, and common gluing joints need to be tight and leak-proof. Bonding requires a level of aesthetics

Solution

Glue injection system, precise moving robot,

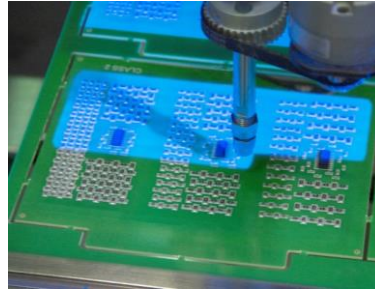
Benefit

Fully automotive, High productivity. Uniform quality, save raw materials



Industry

- Home application
- 3C- Computer- Communication, Consumer Electronics
- Automotive
- Medical



Dispenser



Porting



Taping



Gluing



Equipment

- Gluing heed
- Glue mixer
- Taping machine
- Drying and curing
- Cleaning
- Appearance check



Customer



Partner



Pressing Solution



Overview

Pain-point

Customers need to assemble by pressing method, requiring precision in pressing force and pressing stroke
Save the pressing parameters

Solution

Hydraulic pressing, Electrical Joint, Pneumatic hydraulic hybrid press, Pneumatic press

Benefit

Fully automatic, High productivity.
Uniform quality, Press force control
Control the pressing stroke



Industry

- Home application
- 3C- Computer- Communication, Consumer Electronics
- Automotive



Equipment

Pressing joint

Control system

Jig fixture, tool

Measure system

Auxiliary system

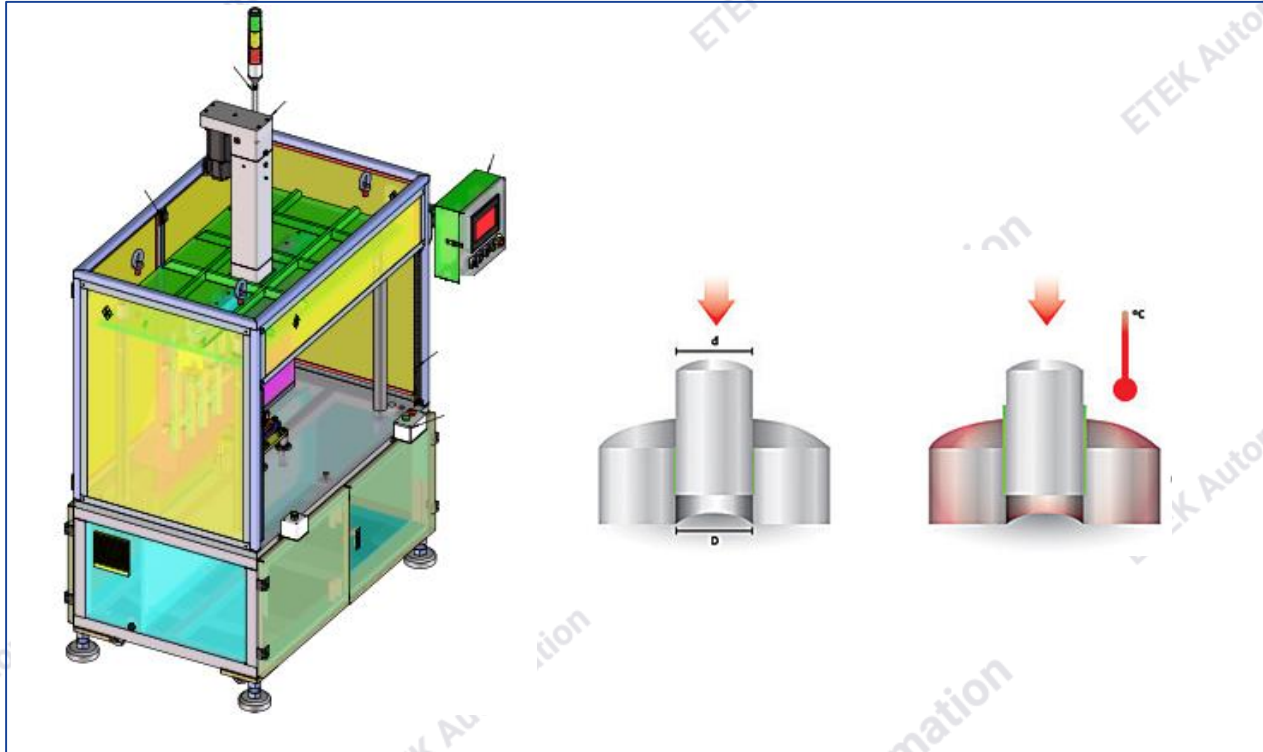
Measure system



Customer



Partner



Screw Driving Solution



Overview

Pain-point

Install regular screws, Assembly requires controlling the tightening force, Assembly requires controlling the number of tightening turns, need to automatically evaluate the quality of screw joints

Solution

Automatic screw tightening controls force, tightening angle, and sequence

Benefit

Fully automatic, High productivity. Uniform quality,



Equipment

Screw driver

Screw feeder

Moment control

Angle control

Sequences control



Ngành nghề

- Home application
- 3C- Computer- Communication, Consumer Electronics
- Automotive
- Medical



Khách hàng



Đối tác



NAILING & STAPLING



Overview

Pain - point

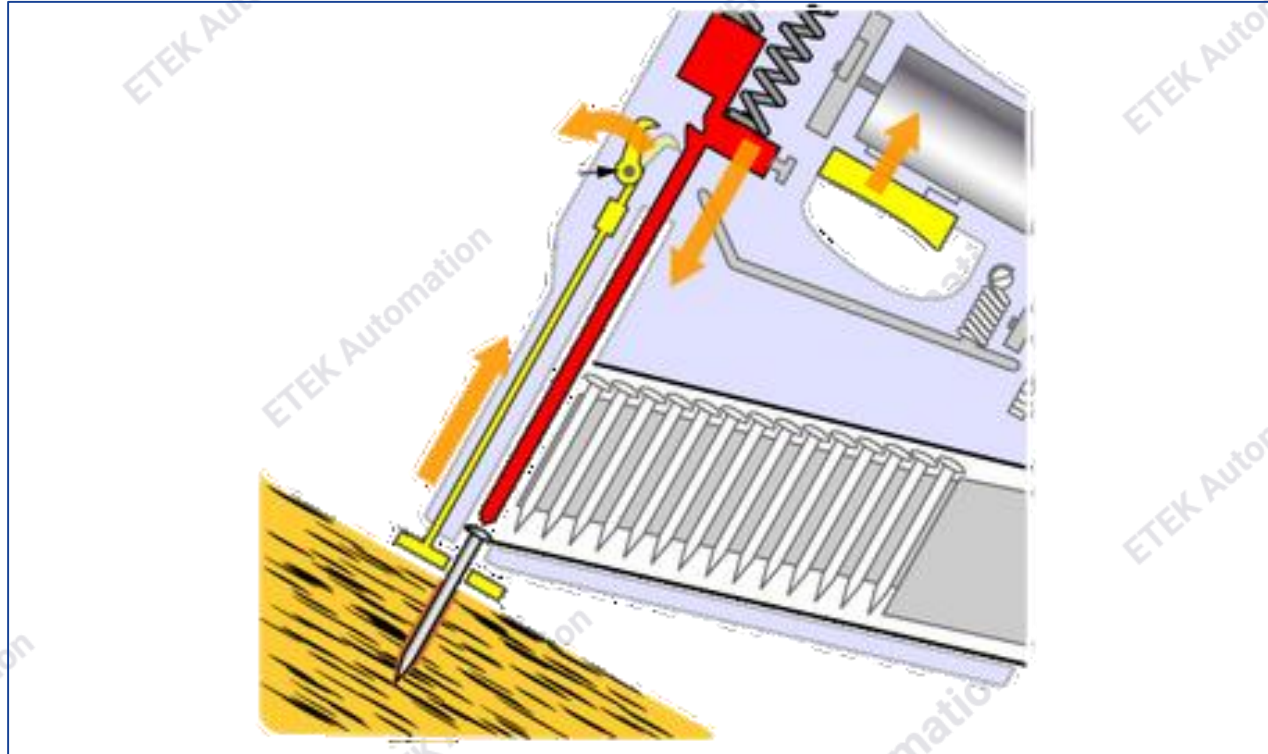
- Quick assembly
- Reduce cost

Solution

Using nails to connect and fixed the position of the material. Used for toy assembly, construction and wood material assembly

Benefits

Fully automatic, High productivity.
Uniform quality,



Equipment

- Nail gun
- Nail feeder
- Safety system
- Controller



Industry

- Toy assembly
- Wood product



Khách hàng



Đối tác



Riveting Solution



Overview

Pain-point

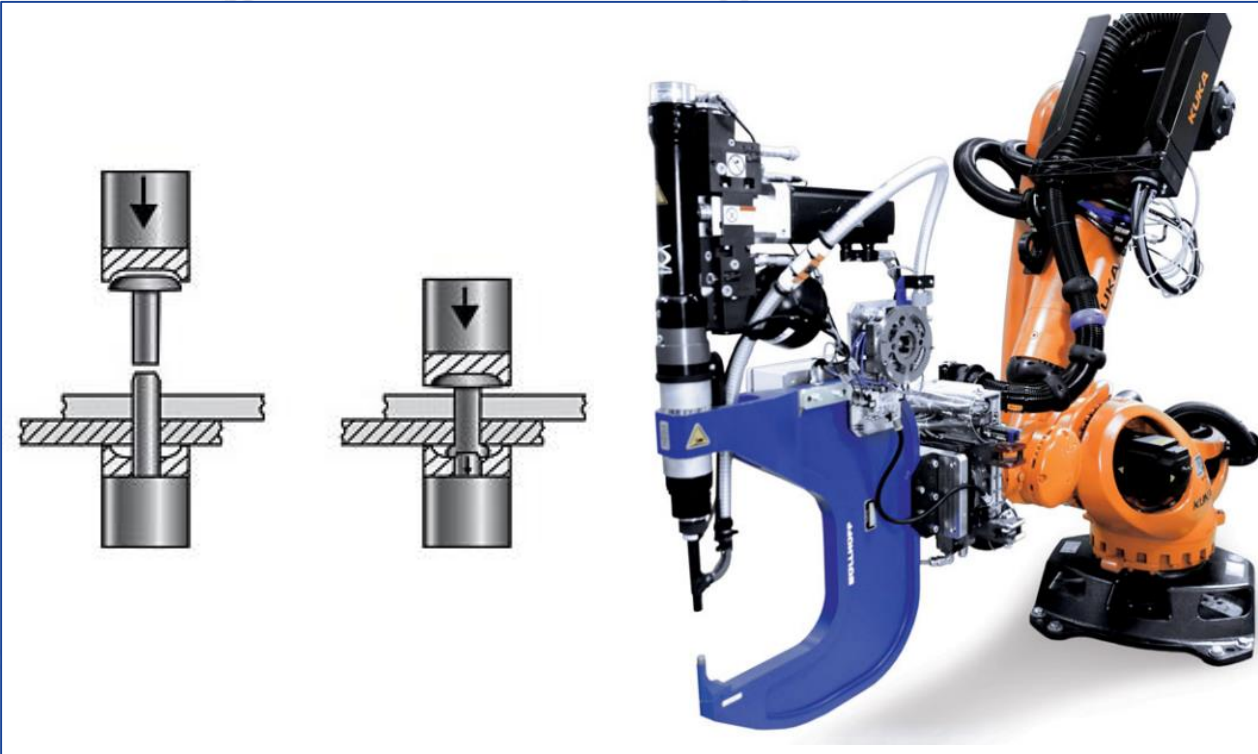
Customers are in need of an automatic riveting system for products with large sizes, a large number of riveting joints, and need high precision and quality of riveting joints.

Solution

Using a 6-axis robot and a screwdriver mounted on the robot

Benefit

Fully automatic, High productivity.
Uniform quality,



Equipment

Riveting feeder

Riveting heat

Riveting Robot

Auxiliary system

Appearance check

Control system



Industry

- Home application
- 3C- Computer- Communication, Consumer Electronics
- Automotive



Customer



Partner



Soldering Solution



Overview

Pain-point

Need to connect electronic components and devices The connection ensures good signal transmission and electrical conductivity

Solution

Using solder, create connections that can transmit electrical signals well. Often used in circuit boards and electrical equipment

Benefit

Does not affect electronic components
Good signal transmission and electrical conductivity



Industry

- Home application
- 3C- Computer- Communication, Consumer Electronics
- Automotive



Laser soldering



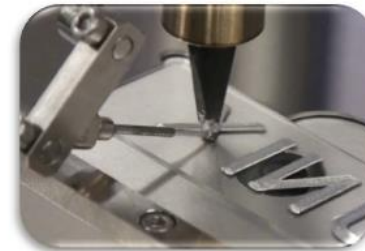
Spot soldering



Head over



Wave soldering



Ultrasonic soldering



Equipment

Heating

Tin provider

Smoke treatment

Cleaning

Quality check



Customer



Partner



CLINCHING



Overview

Pain - point

It's hard to do assembly process in hazardous environment like high temperature, high moisture, dusty place ...

Solution

Use press force to create mechanical connection. Usually use on metal sheet assembly

Benefits

- Can be apply on hazardous enviroment
- Reduce cost



Indutry

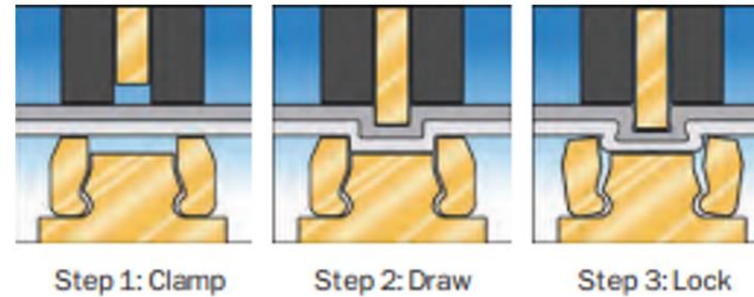
- Home application
- 3C- Computer- Communication, Consumer Electronics
- Automotive



Customer



Partner



Equipment

- Clinching head
- Press mold
- Controller
- Press system

HEAT STAKING



Overview

Pain - point

- Solid mechanical connection that other assembly method can't apply
- Complex aluminum parts
- Reduce assembly cost

Solution

Use heat staking system and press system to create connection between parts

Benefits

- Very quick, reduce cycle time
- Doesn't need auxiliary equipment



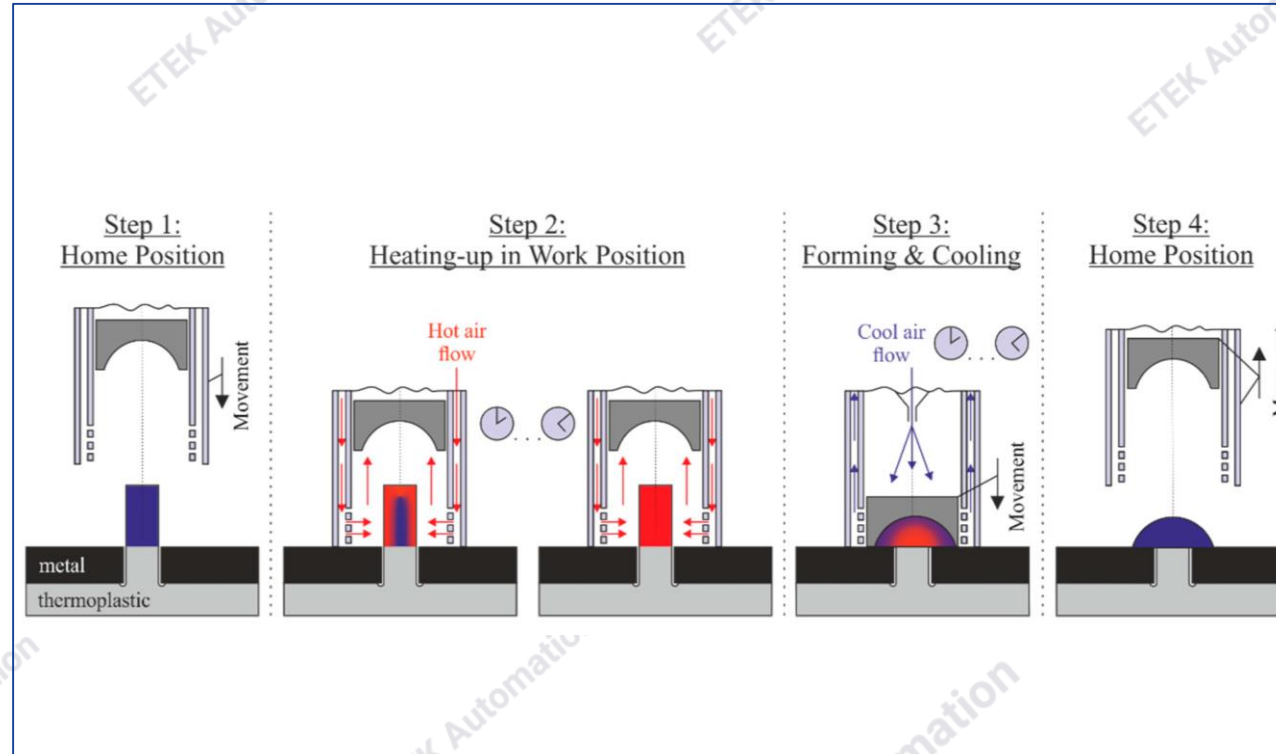
Industry

- Automotive
- Medical equipment
- Home appliances
- Toy



Equipment

- Heat staking system
- Pressure system
- Cooling system
- Controller
- Heat staking jig



Customer

Canon

SAMSUNG

**TANA
DAITHANH**



Partner

EMERSON

EV Controller Box Assembly Line

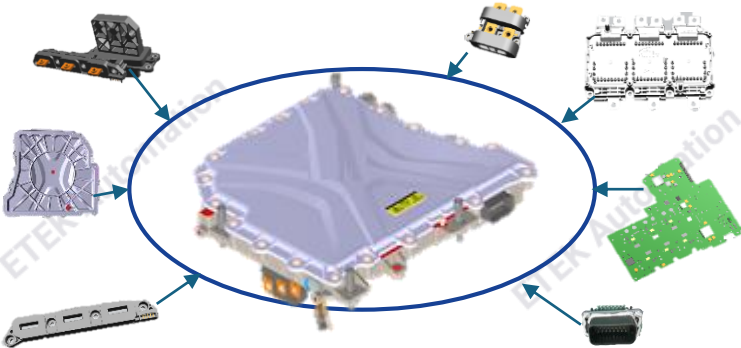


Overview

- Applications: Loading, Applying Glue, Tightening Screws, Mounting,...
- Output: 40 Products/Hour
- Size: 8x32 (m²)
- Details: Circuit board, battery cell,...
- Automation rate: 65%

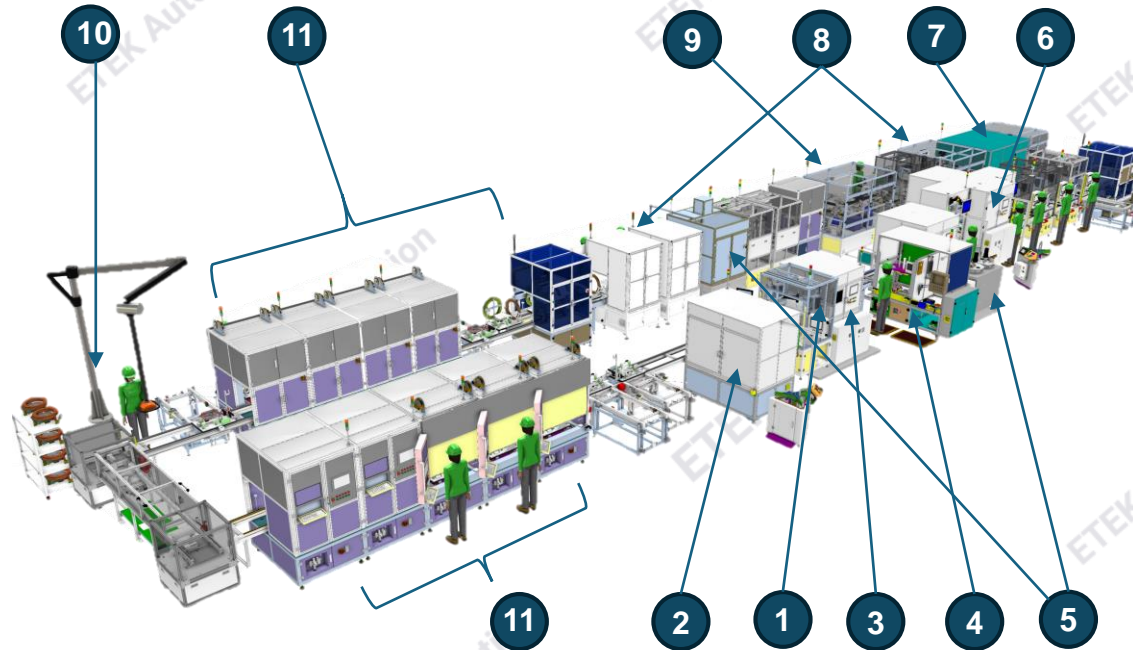


Products



Industrial

- Automotive
- Electrical



Process

1. Loading
2. Gluing 1st
3. Laser marking
4. Pressing, screwing
5. Gluing 2nd
6. Assembly and porting
7. Mounting
8. Screwing
9. Soldering
10. Loading/unloading
11. Aging



EV Battery Pilot Pack line



Overview

- Applications: Sorting, Inserting, Welding, Screwing, Testing
- Output: 3 - 5 Products/Shift
- Dimensions: 42 x 15 (m²)
- Details: Cell Battery, Cold Pipe, Factory connect

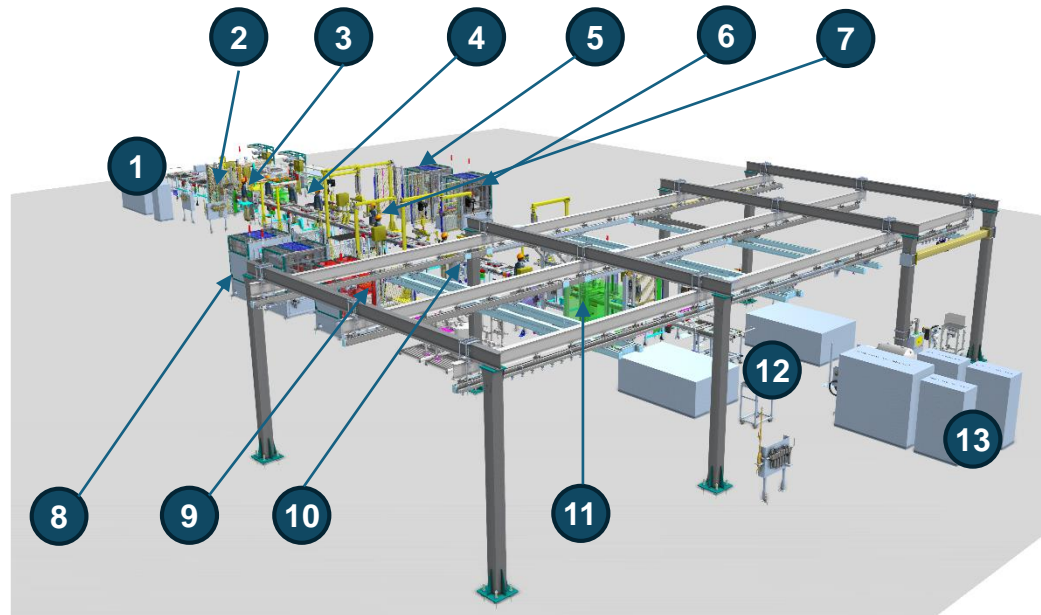


Product



Industry

- Automotive, E-vehicle
- Electrical
- Power



Process

1. Cell sorting
2. Label tape
3. Cell insert
4. Cooling pipe press
5. Leak test
6. Vision pope check
7. Cleaning
8. Bus bar insert
9. Sport welding
10. Gluing
11. Screwing, BMS assembly
12. Function test module
13. Pack modules
14. Final Function test, leak test



Scooter Battery Pack line

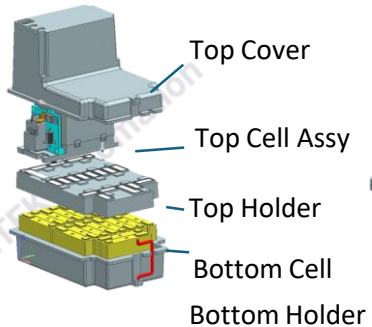


Overview

- Application: Sorting cell, insert, laser welding, soldering, screwing, pressing, leak test, Battery function test.
- Output: 37 Products/hour
- Layout size: 15 x 50 (m²)
- Cycle time: 96.1 (s)



Products



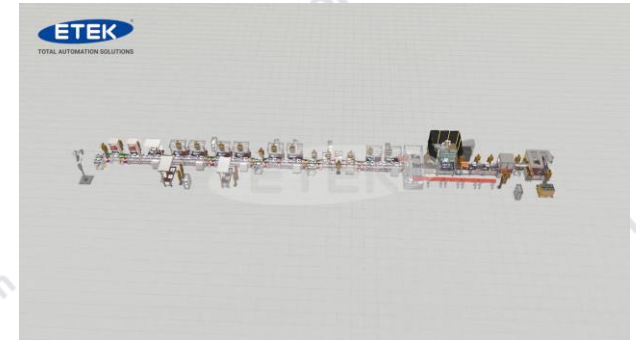
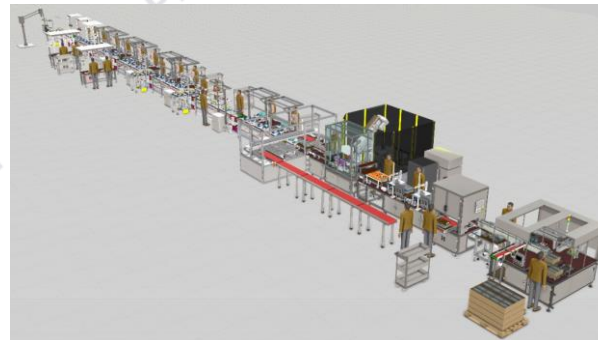
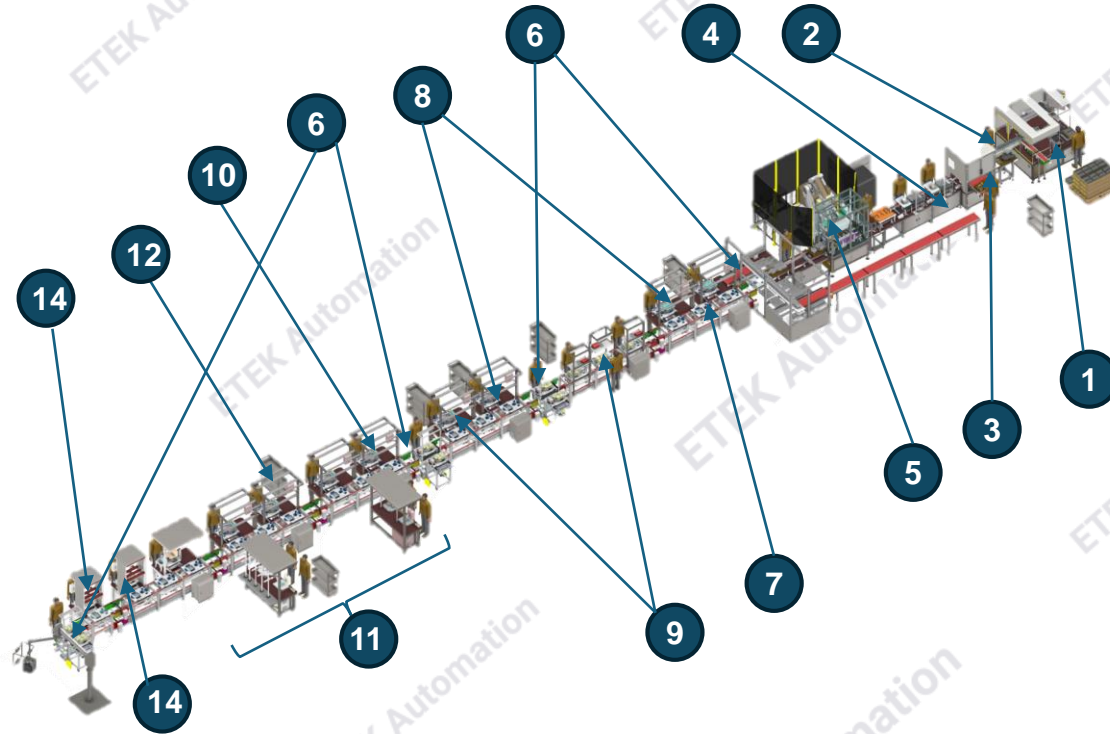
Industry

- E-Vehicle
- Electrical



Process

1. Cell sorting
2. Cell insert
3. Vision pope check
4. holder assembly
5. Laser welding
6. Appearance check
7. Sensor wiring layout
8. Gluing
9. Soldering
10. Screwing
11. Cover assembly
12. Safety check
13. Leak test and subsides assembly
14. Final function check



Electric Car Backup Battery Pack Line

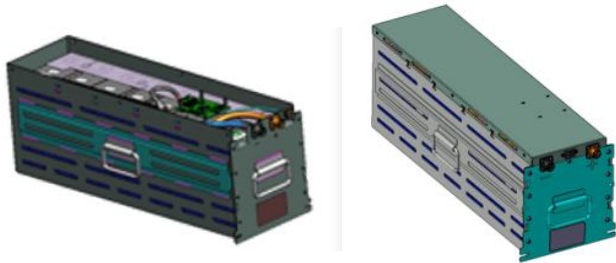


Overview

- Application: Sorting cell, insert, laser welding, soldering, screwing, pressing, leak test, Battery function test.
- Output: 30 Products/hour
- Layout size: 25 x 60 (m²)
- Cycle time: 90 (s)

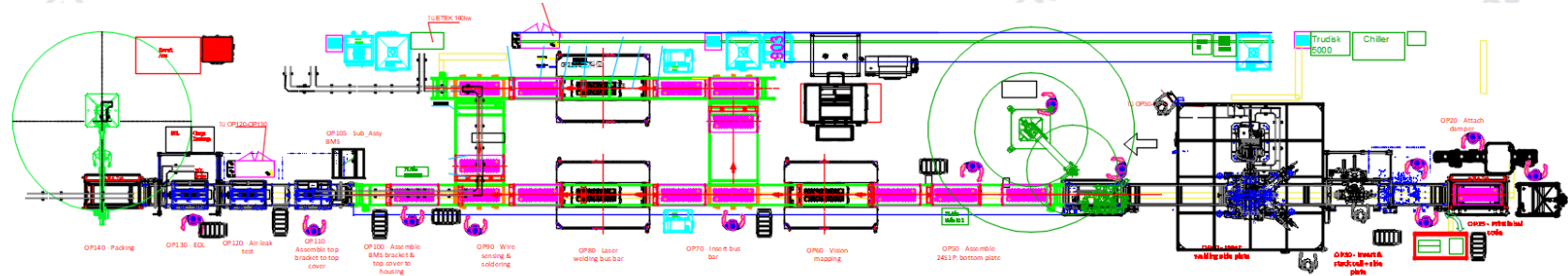


Products



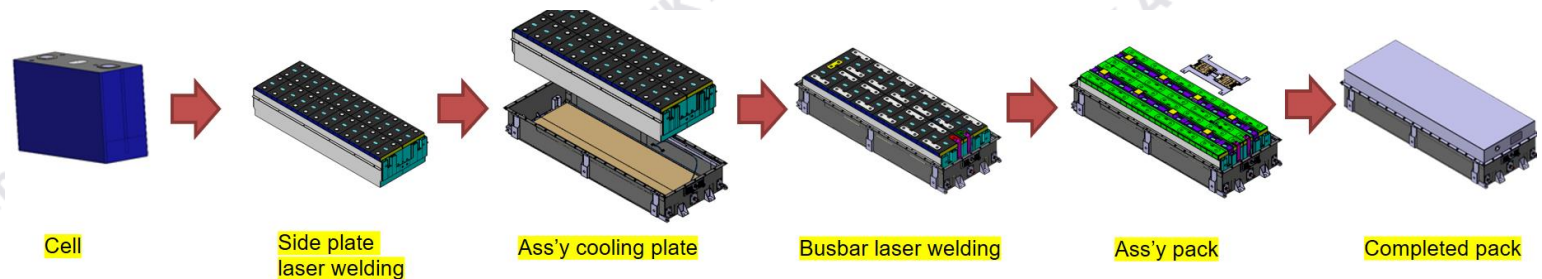
Industry

- E-Vehicle
- Electrical



Process

1. Cell sorting
2. Cell insert
3. Vision pope check
4. holder assembly
5. Laser welding
6. Appearance check
7. Sensor wiring layout
8. Gluing
9. Soldering
10. Screwing
11. Cover assembly
12. Safety check
13. Leak test and subsides assembly
14. Final function check



Water Heater Assembly line

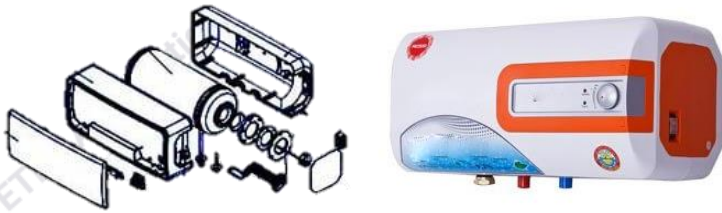


Overview

- Applications: Tightening screws, Labeling, Applying glue,...
- Output: 288 Products/Hour
- Size: 26 x 60 (m²)
- Details: Plastic shell, Anode bar, Conductor,...
- Total number of stages: 28 stages



Products



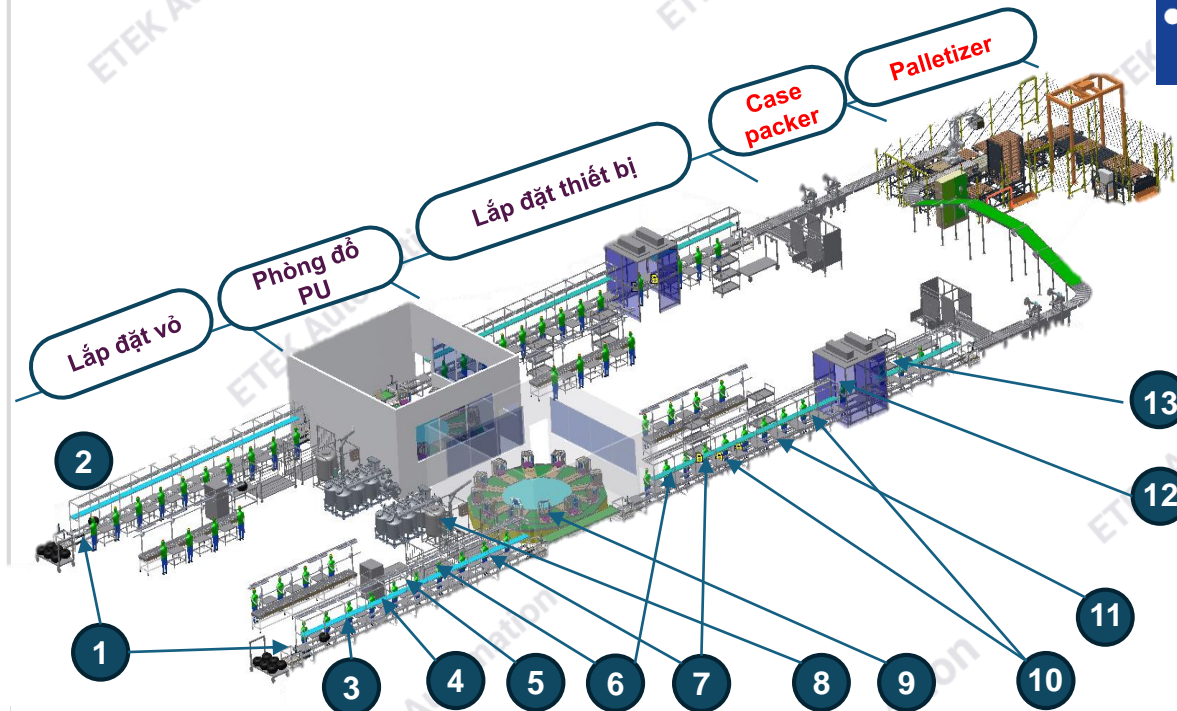
Industry

- Home application



Process

1. Check the inner tank
2. Install the heat bar and anode bar
3. Labeling
4. Leak test
5. Tighten the outer cover screws
6. Screwing
7. Remove burrs
8. PU foaming
9. Curving foam
10. Screwing
11. Screwing
12. Final test
13. Clean



Speaker assembly line



Overview

- Applications: Welding, Gluing, Pasting,...
- Output: 37 Products/Hour
- Details: Yoke, Magnet, Spider, Diaphragm, Voice Coil
- Automation rate:85%

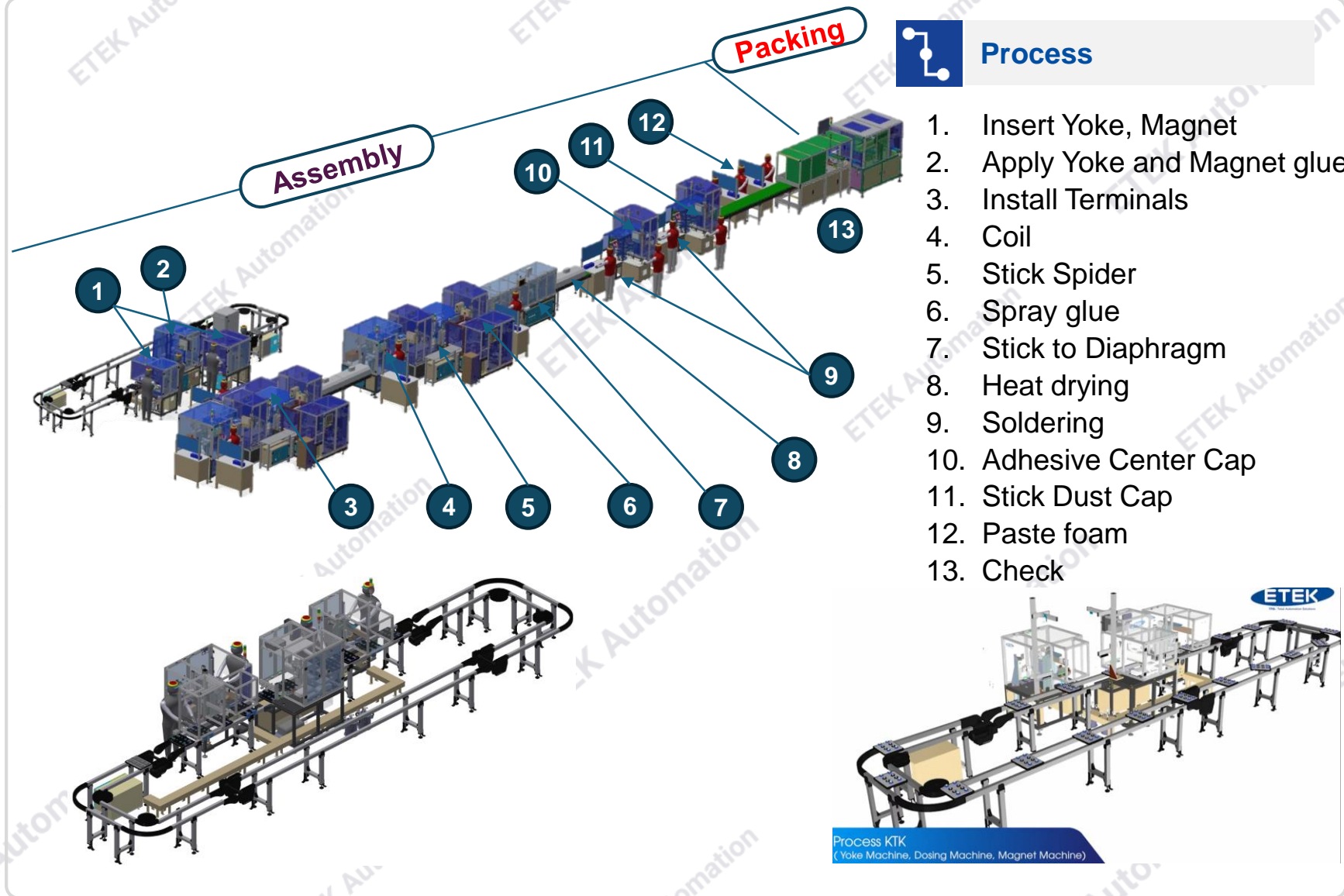


Product



Industry

- 3C (Computers, Telecommunications, Consumer Electronics)
- Electronic, Automotive



Printer Power Source Assembly Line

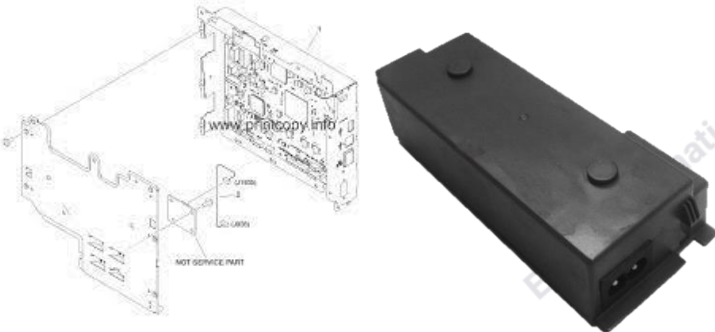


Overview

- Applications: Circuit board cutting, Circuit board mounting, Tightening, Screw tightening, Aging testing
- Output: 1200 Products/Hour
- Dimensions: 9 x 2 x 1.8 (m²)
- Details: PCB circuit board, Plastic case, Screws
- Period: 3 (s)
- Automation level 85 %



Product



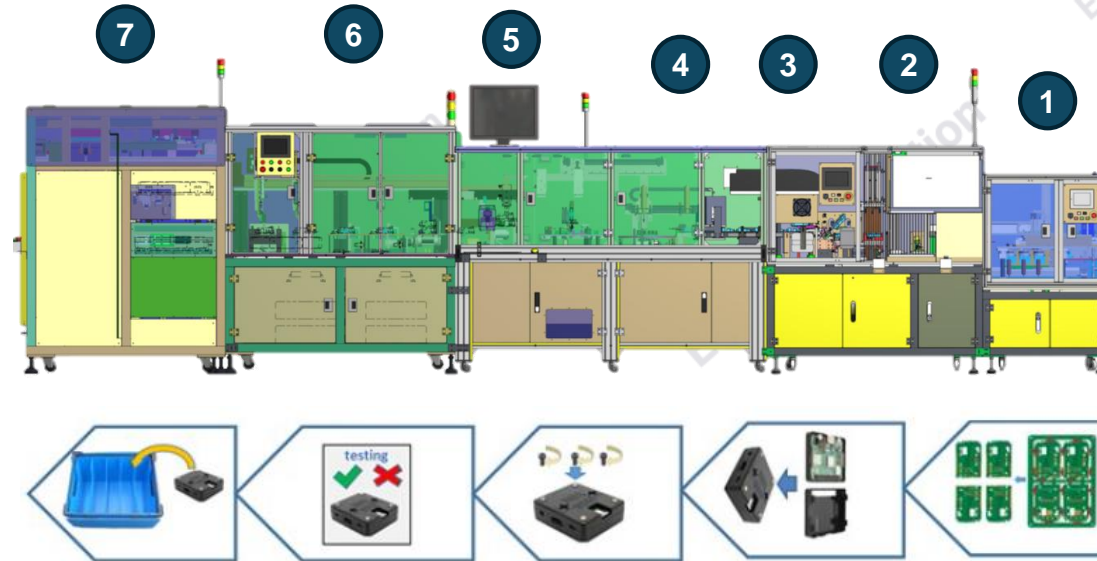
Project

- 3C (Computers, Telecommunications, Consumer Electronics)
- Electronic



Process

1. Cut Router
2. Attach the circuit board
3. Install tightly
4. Laser engraving
5. Tighten the screw
6. Aging test
7. Pack



Radiator Fan Assembly Line



Overview

- Output: 600 Products/Hour
- Dimensions: 3936 x 1649 x 1444 (mm)
- Details: Housing, Swing, Washer, C-Ring
- Period: 6 (s)
- Voltage: 380 (V)



Product



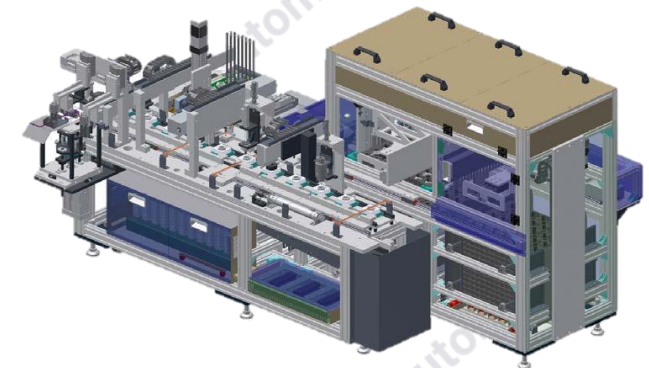
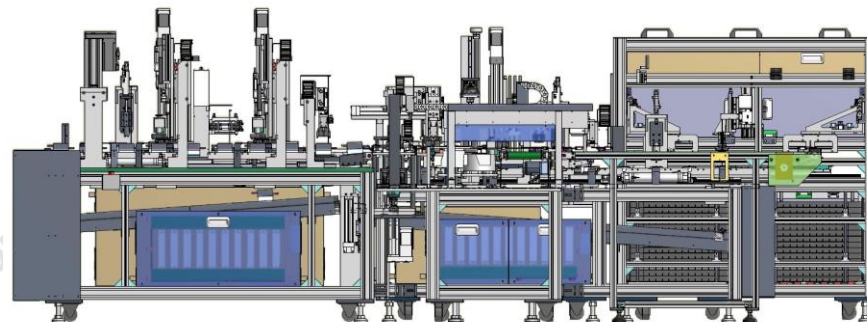
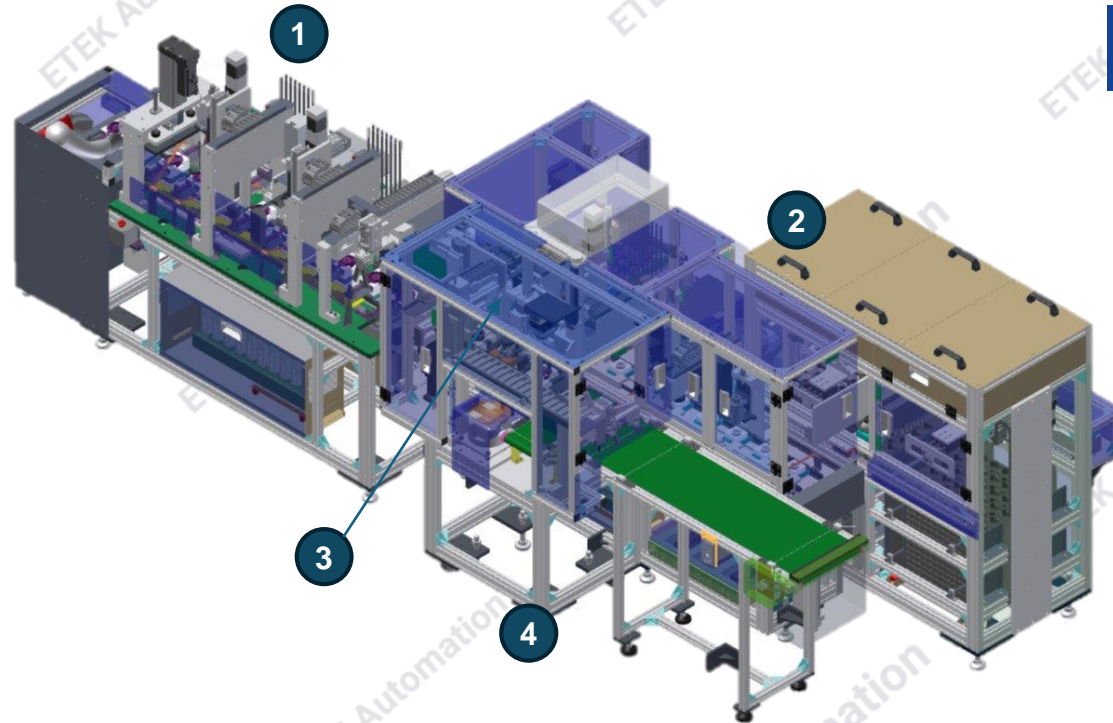
Industry

- 3C (Computers, Telecommunications, Consumer Electronics)
- Electronic



Process

1. Check circuit and bearings
2. Install the warping pad and bearings into the component
3. Fix the casing and impeller
4. Appearance Check



Wheel Assembly Line



Overview

- Applications: Barcode stickers, tire and rim mounting, etc.
- Output: 200 Products/Hour
- Dimensions: 69.5 x 28.4 (m²)
- Details: Rims, tires
- Period: <18 (s)
- Voltage: 380V – AC, 50Hz
- Capacity: 513.48 KW



Product

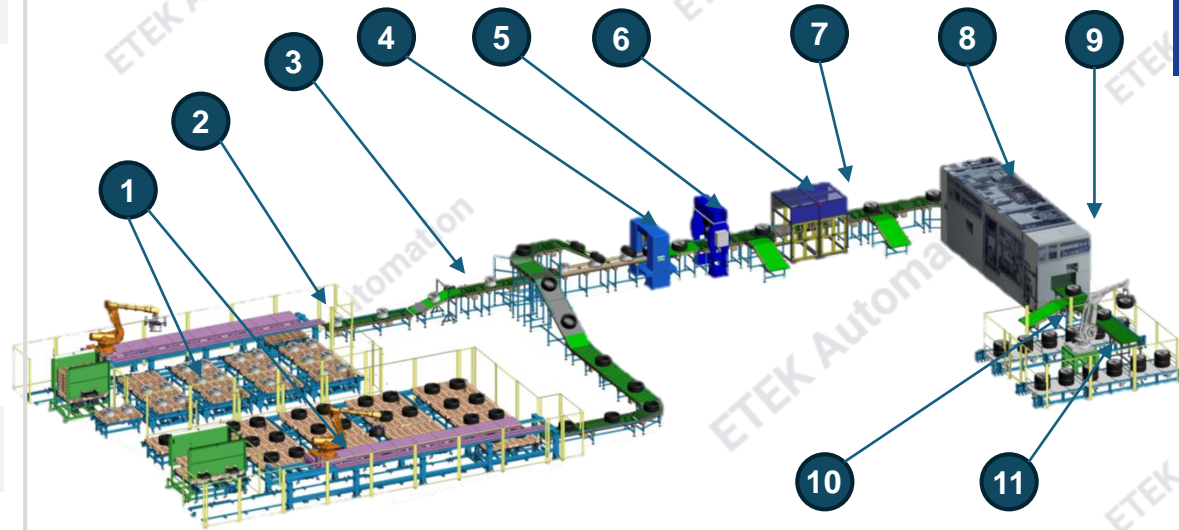


Industry

- Automotive & vehicle



Process



1. Loading
2. Paste the Barcode
3. Read Barcodes
4. Attach rims and tires
5. Adjust rim and tire position
6. Inflatable
7. Check assembly
8. Adjust tire structure evenly
9. Check balance
10. NOK Unloading
11. Unloading



Thank
you

ETEK
TOTAL AUTOMATION SOLUTIONS

ETEK AUTOMATION SOLUTIONS JSC

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