Automotive Body-In-White Assembly System
Project Reference
01 LPR Global BIW Assembly System Overview

Introduction to Automated Body In White Assembly Line Design, Manufacture and Implementation

Major Clients

02 Body In White Assembly Project Reference

Main Body Line | Side Line and Floor Line | Moving Line

Body In White Assembly Line Technical Specification

Main Buck System Layout

Checking Fixture
Automated Body In White Assembly Line Design, Manufacture and Implementation

LPR Global specializes in automated assembly line for automotive body in white, applying various joining methods including spot welding, laser welding, sealing and hemming. Our integral automation assembly system includes main and sub assemblies welding system, pre-welding quality inspection fixture system and body in white and door assembly hemming system. We have 2 manufacturing plants in S.Korea that are both ISO 9001 certified, and a certified corporate research and development center dedicated for technology development.

- **Automotive Body Welding Assembly System**
  (Main Body Line, Floor Line, Side Line, Moving Line, Main Buck System)

- **Inspection Fixture System**
  (B.I.W (Body In White), Aperture Gauge, Moving Assembly (Door, Hood, Tail Gate, etc))

- **Hemming System**
  (Press Hemming System, Table Top Hemming System, Roller Hemming System, Servo Motor Hemming System)

- Head Plant in Ulsan Korea, 8,250 m² with a trial run space of 110m x 30m
- Second Plant in Ulsan, Korea, 3,312 m² with a trial run space of 100mx20m
- R&D center in Siheung Korea, 3000m² with a trial run area of 100m x 20m
<table>
<thead>
<tr>
<th>Country</th>
<th>Major Clients</th>
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<tr>
<td>Russia</td>
<td>GM Motors</td>
</tr>
<tr>
<td>Czech</td>
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<td>India</td>
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<td>China</td>
<td>Hyundai Motors, Kia Motors, Jinbei, Shanghai GM, Geely Automobile Holdings Ltd, Beijing Automotive Industry Holding Co., Ltd</td>
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Global Project Experience

Automotive Body Welding Assembly System

**MAIN BODY LINE**

- Installed in Global Vehicle Maker H**'s S.Korean Production Plant

Application Model:
- 4 Car models assembled on this line. Tool change allows switch between models.

- 40 Stations
  - Body Build Line – 20 Stations
  - Body Respot Line – 20 Stations

Main Equipment:
- Skid : Wind Mill unit (multi-model production capable skids)
- Main Buck : 4 face-Rotary
- Roof Buck : 4 face-Rotary
- Forward/backward System
- Servo Motor Drive
- Robot : 68 sets

- Cycle Time : 55 sec

Automotive Body Welding Assembly System

**FLOOR & SIDE LINE**

- Installed in Global Vehicle Maker H**’s Korean Plant

**Application Model:**
- 4 Car models assembled on this line. Tool change allows switch between models

- 11 stations (Linear Cell: 7 STN)

**Main Equipment:**
- Vehicle type Geo-pallet
- Linear Motor System
- Placed housing type
- Linear Cell
Automotive Body Welding Assembly System

**FRONT FLOOR LINE**

- Installed in Global Vehicle Maker H**’s Korean Plant

**Application Model:**
- 4 Car models assembled on this line. Tool change allows switch between models

**Main Equipment:**
- Vehicle Type Geo-pallet
- Linear Motor System
- Placed Housing Type
- Linear Cell

- Robot: 28 sets
- Cycle Time: 64 sec
Global Project Experience

Automotive Body Welding Assembly System

SIDE OUTER LINE

- Installed in Global Vehicle Maker G**’s Korean Plant

Application Model:
- 3 Car models assembled on this line. Tool change allows switch between models

Main Equipment:
- Manifold Cylinder
- Index Turn Table System

- Robot: 8/8 sets

- Cycle Time : 54 sec
Global Project Experience

Automotive Body Welding Assembly System

**DOOR LINE**

- Installed in Global Vehicle Maker H**’s Korean Plant

**Application Model:**
- 4 Car models assembled on this line. Tool change allows switch between models

**Main Equipment:**
- Hemming Press Body
- Key Jig
- Robot Roller Hemming Used
Global Project Experience

Automotive Body Welding Assembly System

- Installed in Global Vehicle Maker K**’s Korean Plant

Application Model:
- 1 Car models

Main Equipment:
- Turn table Key Jig
- Marriage Jig
- Roller hemming
- Unloading Jig
- Sealing
- 3 Sets of Stationary Spot Welding

- Press Type Hemming
- Robot 8/8 Sets
- Cycle Time 600 sec
Global Project Experience

Automotive Body Welding Assembly System

MAIN BUCK SYSTEM

✓ Installed in Global Vehicle Maker TATA's Indian Plant

Application Model:
✓ 1 Car models

Main Equipment:
✓ Slide Side Gate Buck
✓ Under Shuttle

✓ Cycle Time 1800 sec
Global Project Experience

Press Hemming Systems

1. Installed in Global Auto Makers Plants:

2. Main Equipment:
   - Hemming Die
   - Hemming Press Body
   - Hemming Die Change
   - Hydraulic System

3. Auto Models:
   - FD 5DR, K2, BK F/L, BETA, FDH, LC, LC F/L, NF, XMA, SLC, HM, TD, JB, UN, SM3, H2L, AO, GSC

Table Top Hemming System


2. Main Equipment:
   - Hemming Die
   - Hemming Punch
   - C-Frame
   - Hydraulic System
   - Hemming Pad

3. Model:
Global Project Experience

Robot Roller Hemming System

1. Installed in Global Auto Makers Plants:

2. Main Equipment:
   ✓ Robot
   ✓ Roller Hemming Head
   ✓ Hemming Die
   ✓ Hemming Pad

3. Model:

Servo Hemming System

1. Installed in Global Auto Makers Plants: H**, K**, G**, R**

2. Main Equipment:
   ✓ Hemming Die
   ✓ Hemming Punch
   ✓ Servo Hemming Unit
   ✓ Servo-Motor
   ✓ Hemming Pad

3. Model:
   M2XX, U*, P32R
Global Project Experience – Inspection Fixture System

FEM Aperture Gauge
Installation Plant: DYK** China / Model: Y*C 5DR

Trunk Lid Assembly
Installation Plant: Hyundai Alabama USA / Model: U*

ROOF Aperture Gauge
Installation Plant: DYK ** China / Model: Y*C 5DR

Trunk Lid Assembly
Installation Plant: Hyundai Beijing China / Model: T*C
Global Project Experience – Inspection Fixture System

Door Assembly
Installation Plant: K** Korea / Model: Q* / J*

Front Door Assembly
Installation Plant: H** Turkey / Model: G* 3DR

Hood Checking Fixture
Installation Plant: K**, U** Georgia USA / Model: U*A

Tail Gate Assembly
Installation Plant: H** Turkey / Model: G*
Your connection to Korean manufacturing and industrial equipment