



HONGBO AUTOMATION

Your Turnkey Partner for Automotive Assembly & Testing Solutions

COMPANY PROFILE 2026



COMPANY OVERVIEW

Who We Are

Hubei Hongbo is an automotive automation system integrator specializing in the design, manufacturing, installation, and commissioning of automotive assembly lines and powertrain production systems.

Hongbo has successfully delivered projects for major automotive manufacturers and industrial groups, including BYD, SERES/AITO, Chery, XPeng, Geely, Dongfeng Honda, Bestune, Dongfeng MENGSHI, Weichai Power, and SINOTRUK.

Our core business covers automotive final assembly lines, tire and seat assembly lines, chassis and sub-assembly lines, battery lines, inspection and PDI lines, vehicle rain test lines, and conveyor systems, as well as engine, transmission, transfer case, final drive, wheel-end reducer, and drive axle assembly lines.

With 20+ invention patents and a team of 60+ engineering professionals, Hongbo provides integrated automation solutions from engineering design and equipment manufacturing to installation and commissioning.

Our Mission:

To help manufacturers achieve superior productivity, consistent quality, and unmatched operational flexibility through advanced automation.

No	Customer	Project Name
1	Weichai Power	Weichai Engine Assembly Line
2	Chery Automobile	Chery (Iran) Engine Assembly Line
3	BYD	Engine & Transmission Sub-Assembly Line
4	BYD	Front Subframe Sub-Assembly Line
5	BYD	Phase I Front Axle Sub-Assembly Line
6	BYD	Rear Subframe Sub-Assembly Line
7	BYD	Front Subframe Sub-Assembly Line
8	BYD	Phase II Front Axle Sub-Assembly Line
9	BYD	Phase II Rear Subframe Sub-Assembly Line
10	BYD	Phase II Roller Conveyor Line Project
11	BYD	Front Subframe, Front Axle Pallet and Instrument Panel Gripper Modification

No	Customer	Project Name
12	Seres (AITO)	Battery Pack Sub-Assembly Line
13	Seres (AITO)	Motor Sub-Assembly Line
14	Seres (AITO)	Door Sub-Assembly Line
15	Seres (AITO)	Instrument Panel Sub-Assembly Line
16	Seres (AITO)	Front Chassis Module Sub-Assembly Line
17	Seres (AITO)	Bumper Sub-Assembly Line
18	Seres (AITO)	Seat Sub-Assembly Line
19	Xpeng	Final Assembly Inspection Line
20	Xpeng	Final Assembly Shop PDI Line
21	Xpeng	Final Assembly Shop Rain Test Line
22	Chery	Chery (Wuhu) Tire Line

No	Customer	Project Name
23	Chery	Chery (Wuhu) Seat Line
24	Chery	Chery (Wuhu) Suspension Module Assembly Line
25	Chery	Chery Final Assembly Slat Conveyor Line
26	Chery	Chery Russia Plant – AGS Seat, Rear Bumper and Instrument Panel Lines
27	Chery	Chery EOX Platform Front Chassis Module Assembly Line
28	Chery	Chery EOY Range Extender Module Assembly Line
29	Chery	Chery T1X Platform Front Chassis Module Assembly Line
30	Chery	Chery T1X Platform Front Chassis Module Steering Gear Assembly Tightening Line
31	Bestune Auto	Seat Conveyor Line
32	Bestune Auto	Powertrain Conveyor Line
33	Bestune Auto	Rear Suspension Sub-Assembly Conveyor Line

No	Customer	Project Name
34	Hangtai (Aviation)	Aircraft Engine Pulsed Assembly Line
35	Dongfang Chemical	Feeding, Crushing and Conveying System
36	PanGood Power	Electric Drive Unit Assembly Line
37	PanGood Power	Commercial Vehicle Electric Drive Unit (Wheel-End Drive) Assembly Line
38	Wuxi Xingdrive	Geely 11-in-1 Electric Drive Unit Assembly Line
39	Dongfeng Honda	Engine Block Assembly Line
40	Dongfeng Honda	Engine Assembly Line
41	Dongfeng Honda	Cylinder Head Assembly Line
42	Dongfeng Honda	Engine KD Handling Line
43	Dongfeng Honda	Engine Driveshaft Sub-Assembly Line
44	Dongfeng Honda	Engine Block Kitting Overhead Conveyor Line

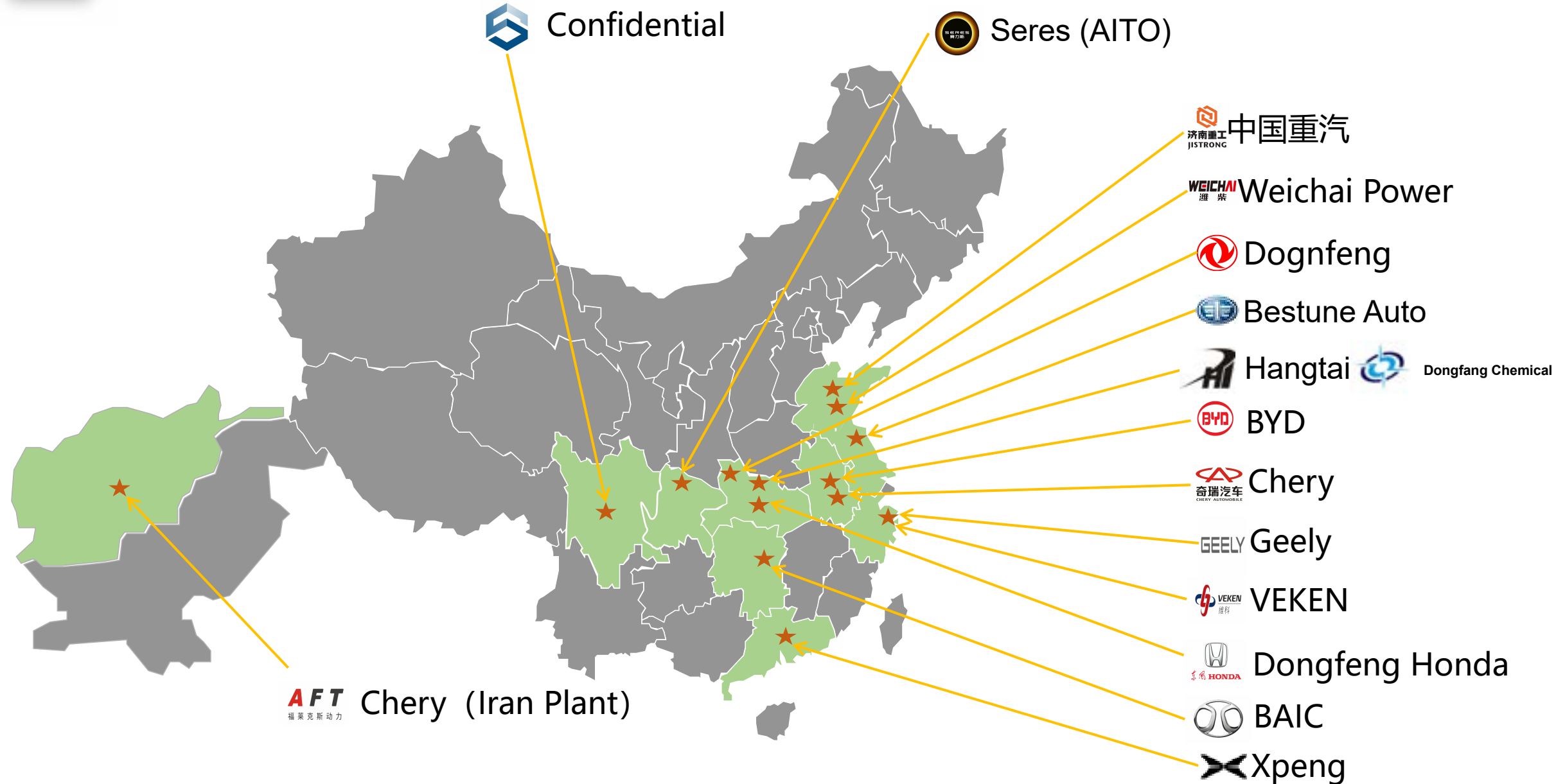


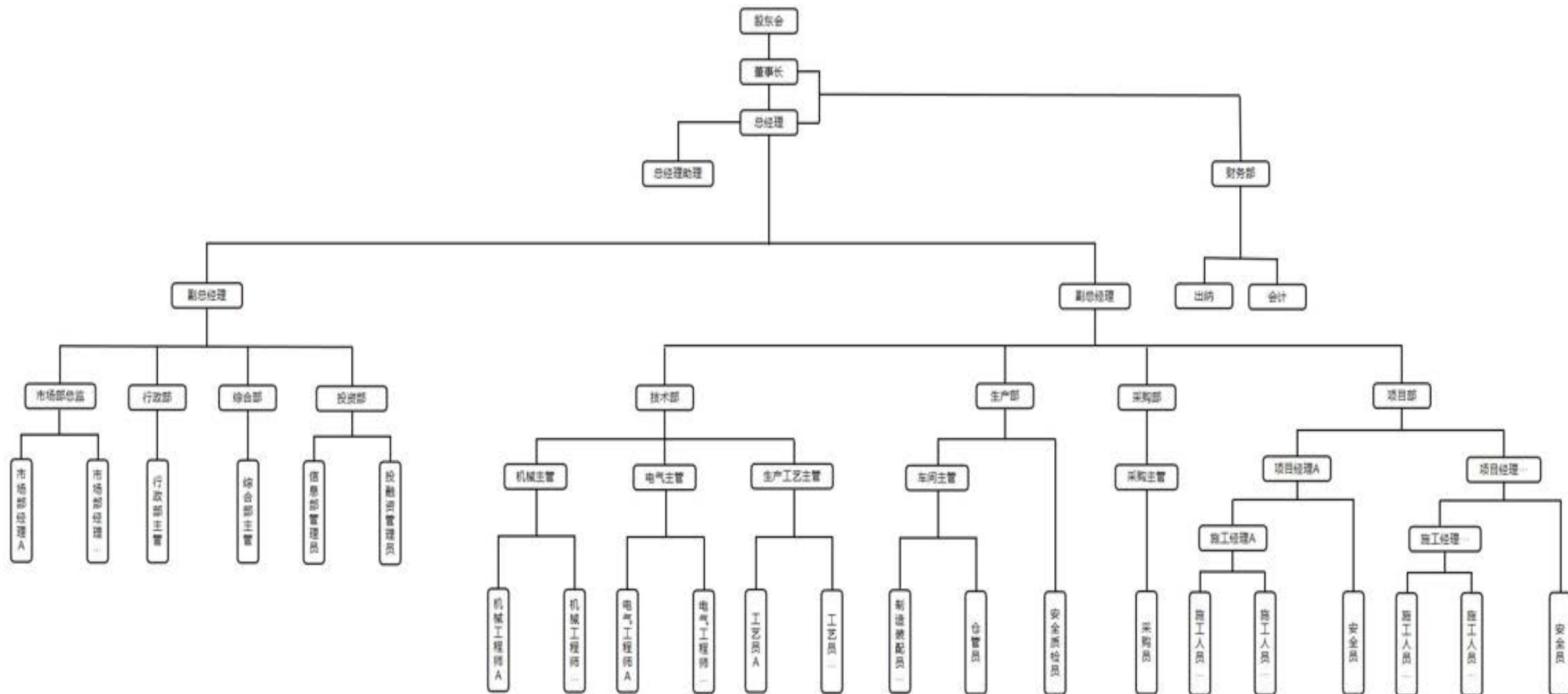
Key Projects



No	Customer	Project Name
45	Dongfeng Honda	Main Assembly EMS Kitting Equipment
46	Dongfeng Honda	Engine Piston Pin Circlip Sub-Assembly Line
47	Dongfeng Mengshi	Hydropneumatic Suspension Cylinder Assembly Line
48	Dongfeng Mengshi	Wheel-End Reducer Assembly Line
49	Dongfeng Mengshi	Rear-Mid Axle Final Drive Assembly Line
50	SINOTRUK	Mining Truck Axle Assembly Line
52	Veken	Automated Pouch Cell Production Line
53	Geely	Geely Paint Shop Conveyor Line Project

Business Distribution







统一社会信用代码
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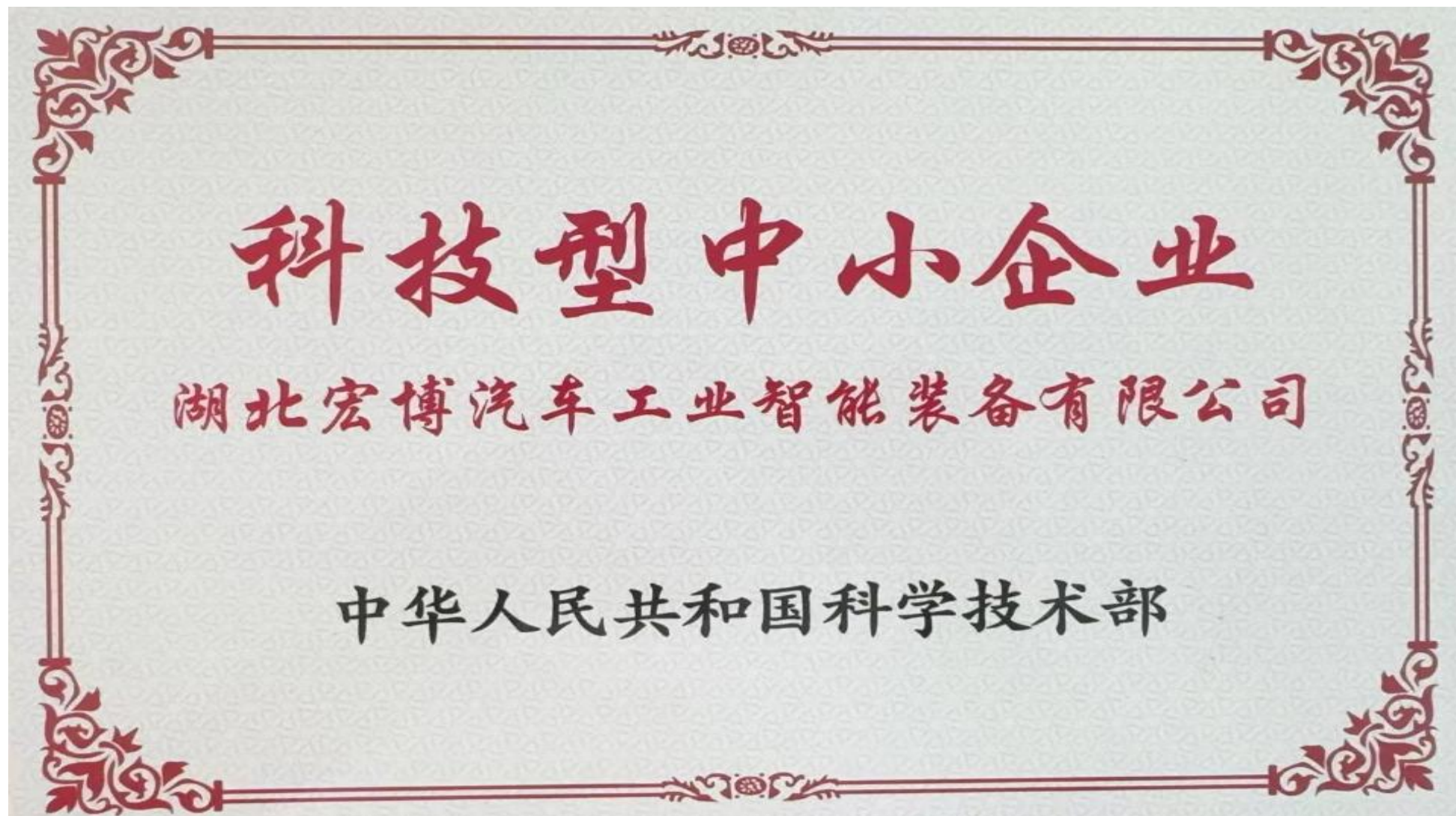
营 业 执 照

 扫描二维码登录“国家企业信用信息公示系统”了解更多登记、备案、许可监管信息。

名 称 湖北宏博汽车工业智能装备有限公司 类 型 有限责任公司（非自然人投资或控股的法人独资） 法定代表人 张绪国 经 营 范 围 一般项目：新能源汽车生产测试设备销售；物料搬运装备制造；智能农机装备销售；电工机械专用设备制造；工程和技术研究和试验发展；工业机器人制造；通用设备制造（不含特种设备制造）；软件开发；智能机器人的研发（除许可业务外，可自主依法经营法律法规非禁止或限制的项目）	注 册 资 本 壹亿圆整 成 立 日 期 2021年01月11日 营 业 期 限 长期 住 所 湖北省十堰市张湾区十堰工业新区彩虹路5号
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登记机关  2022 年 03 月 17 日





13 ISO Certification



14 ISO Certification



15 ISO Certification









一种同步链轮组件自动夹取安装设备



一种浮动定位工装

19 Invention Patents



转轴式工装板输送线及换板系统



拧紧力矩自动检测设备



万能夹具



一种基于流水线生产的双向压装机



一种电机转子轴校正机及校正方法



一种基于小空间压装的压装装置



其他事项参见专利

全自动冷冻机



其他事项参见专利

轴类仓式全自动上料机



车桥悬挂全自动轮辋压机



一种车桥组装机构



种多点定位换向抓取装置



多压头自动压装机



一种轴类仓式全自动储料机



一种自动选垫片设备



一种打标机上料设备



一种物料皮带输送设备

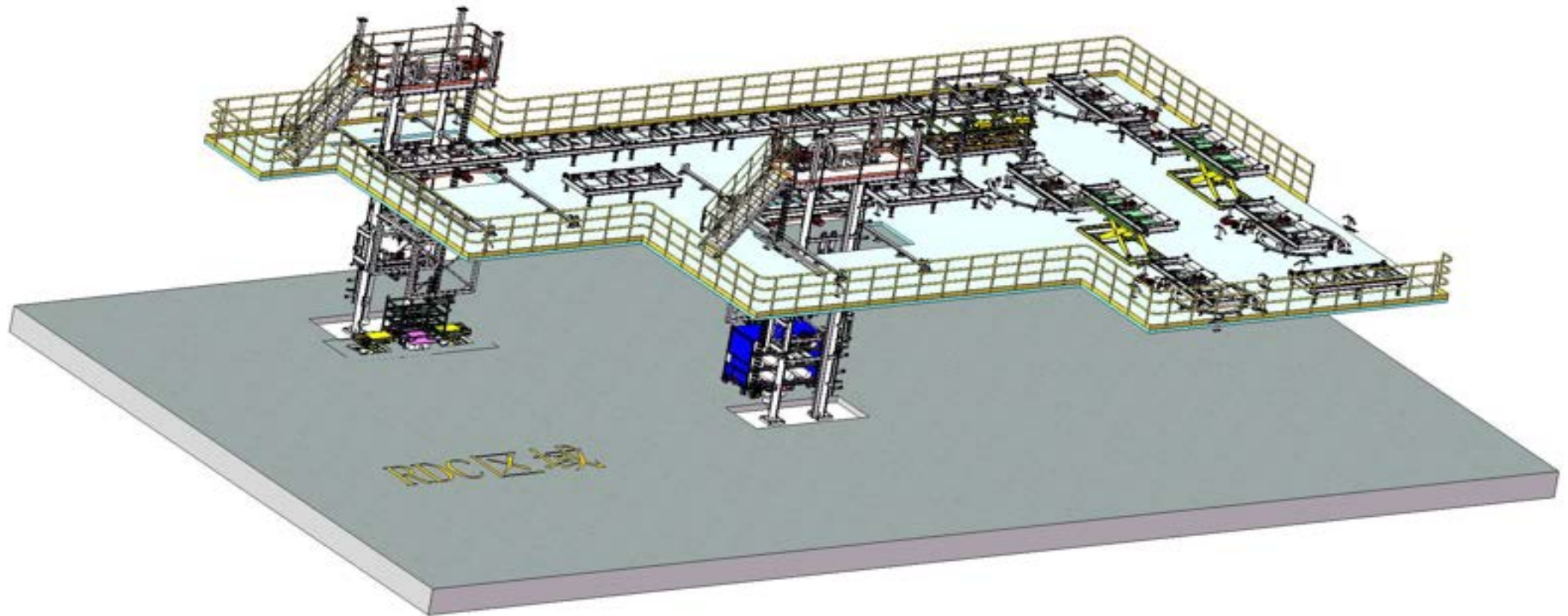


一种零部件加工取料机构



一种物料皮带输送设备

Front and Rear Bumper Final Assembly Conveyor System Design



Final Assembly Line Showcase

BYD - Front Axle Sub-Assembly Line



Final Assembly Line Showcase

BYD-Front/Rear Subframe Sub-Assembly Line



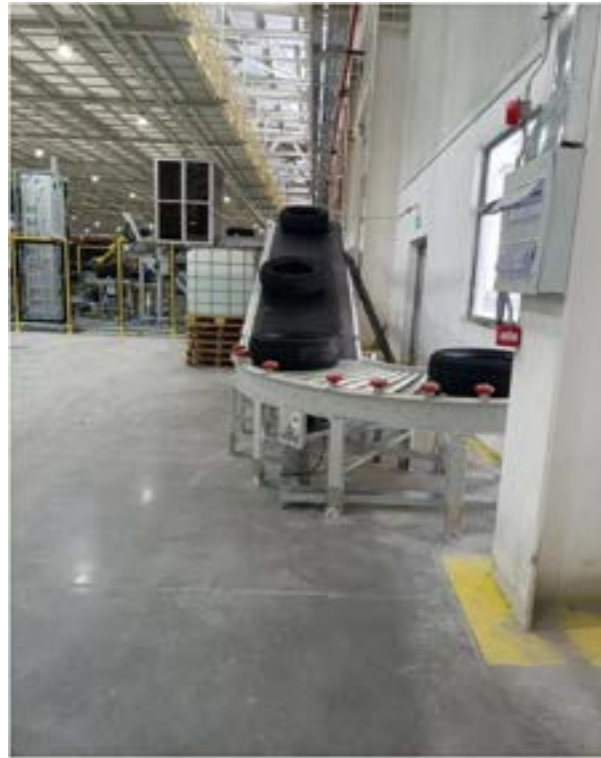
Final Assembly Line Showcase

BYD-Powertrain Assembly Line



Final Assembly Line Showcase

BYD-Tire Assembly Line



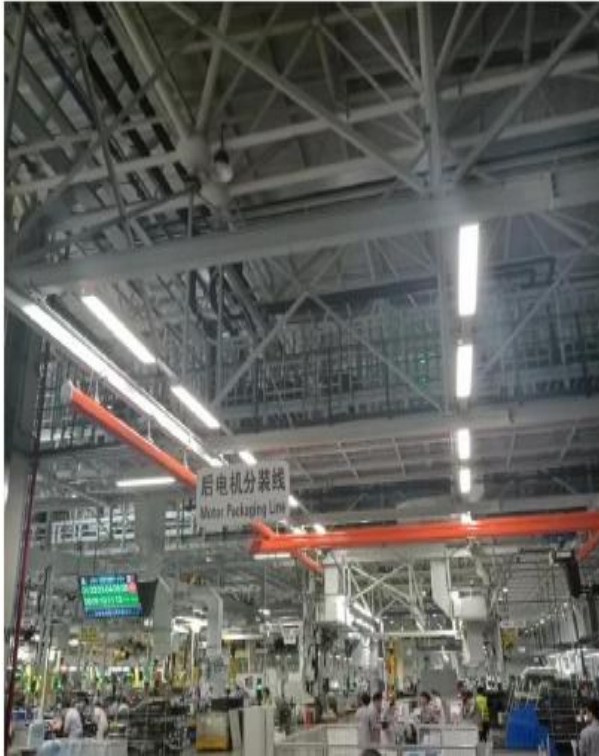
Final Assembly Line Showcase

Seres / AITO New Energy Battery Pack Conveyor Line



Final Assembly Line Showcase

Seres / AITO-New Energy Vehicle Motor Assembly Line



Final Assembly Line Showcase

Seres / AITO - New Energy Vehicle Door Assembly Line



Final Assembly Line Showcase

Seres / AITO - Instrument Panel Sub-Assembly Line



Final Assembly Line Showcase

Seres / AITO - New Energy Vehicle Front-End Module Assembly Line



Final Assembly Line Showcase

Seres / AITO - New Energy Vehicle Bumper Sub-Assembly Line



Final Assembly Line Showcase

Seres / AITO - New Energy Vehicle Seat Sub-Assembly Line



Final Assembly Line Showcase

Chery (Iran) Engine Assembly Line



Final Assembly Line Showcase

Bestune Final Assembly Seat Conveyor Line



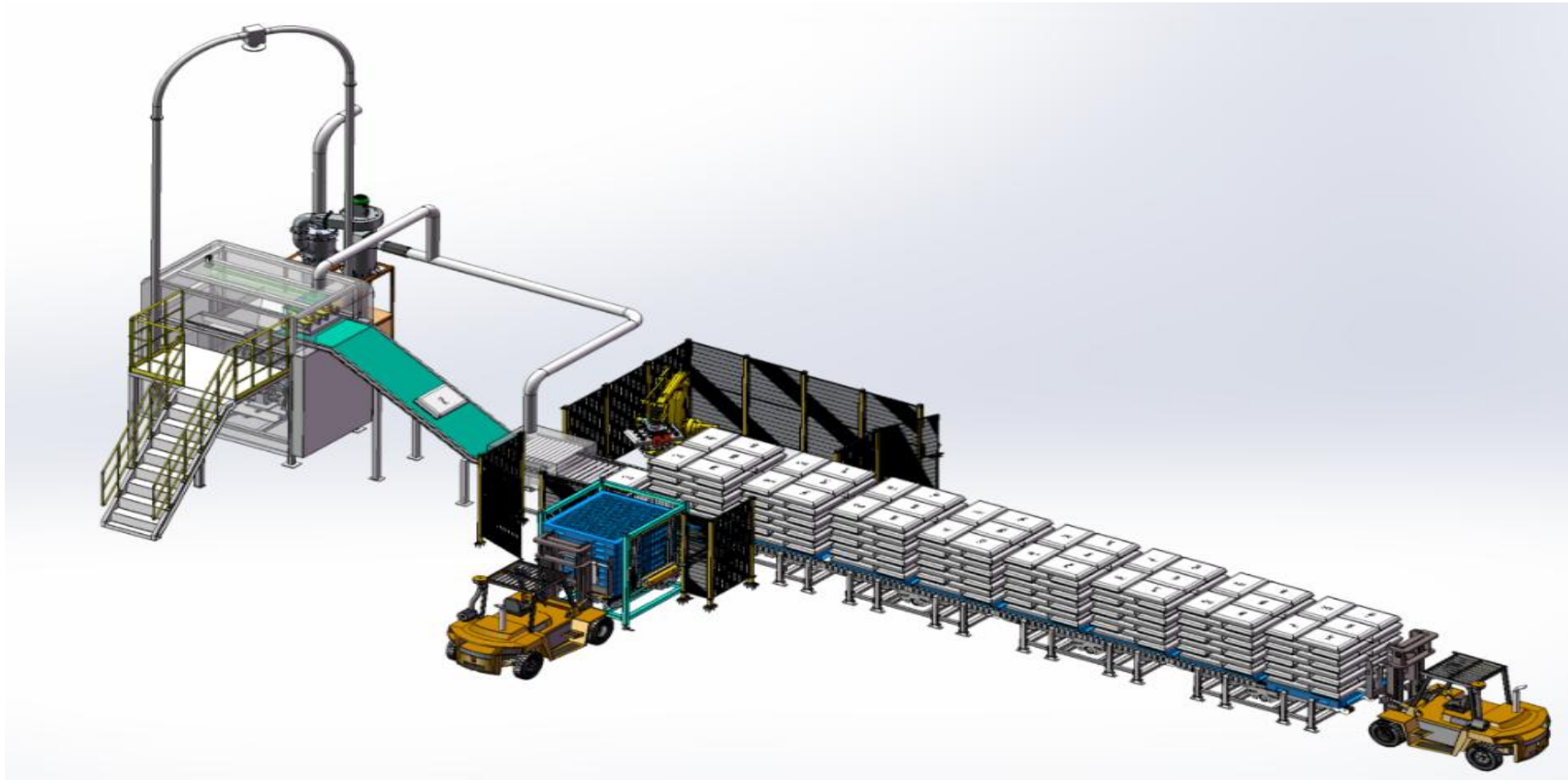
Final Assembly Line Showcase

Bestune - Powertrain and Rear Suspension Sub-Assembly Line



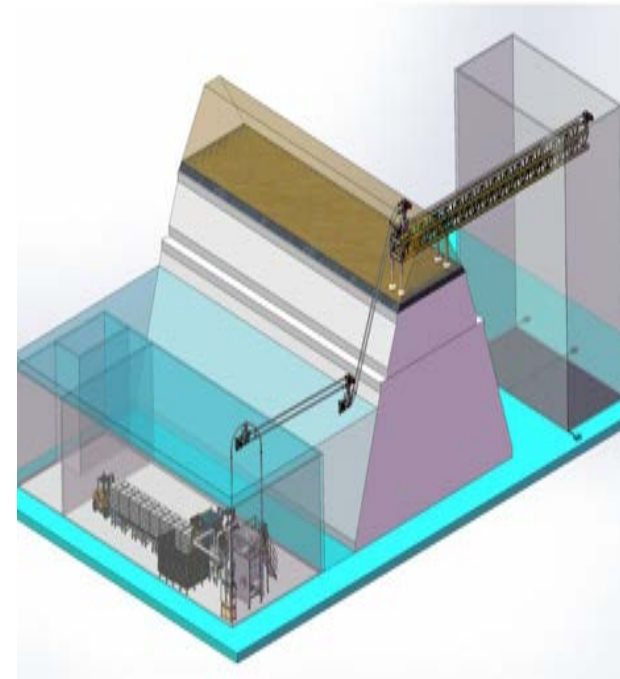
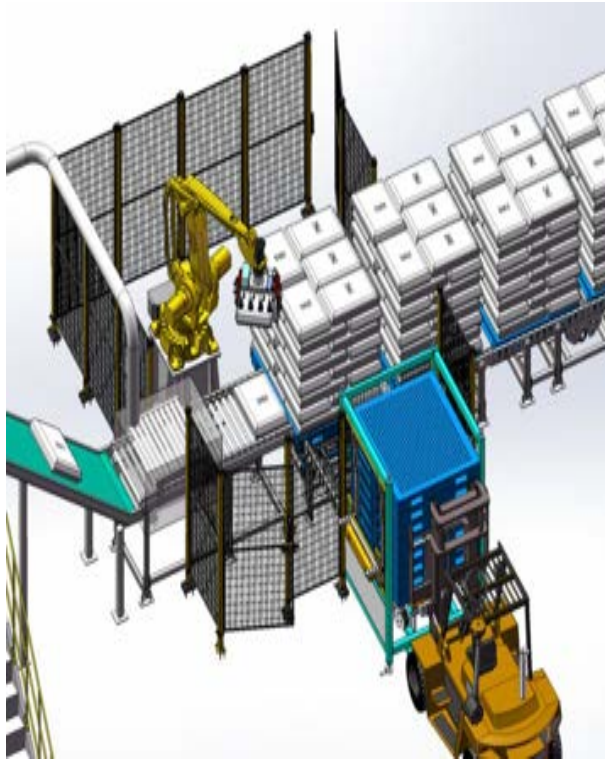
Final Assembly Line Showcase

Dongfang Chemical – Feeding, Crushing and Conveying Line



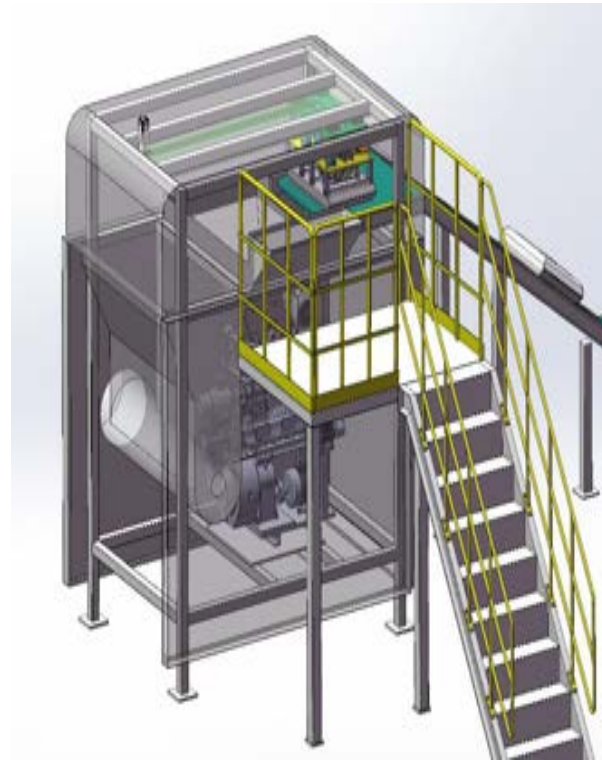
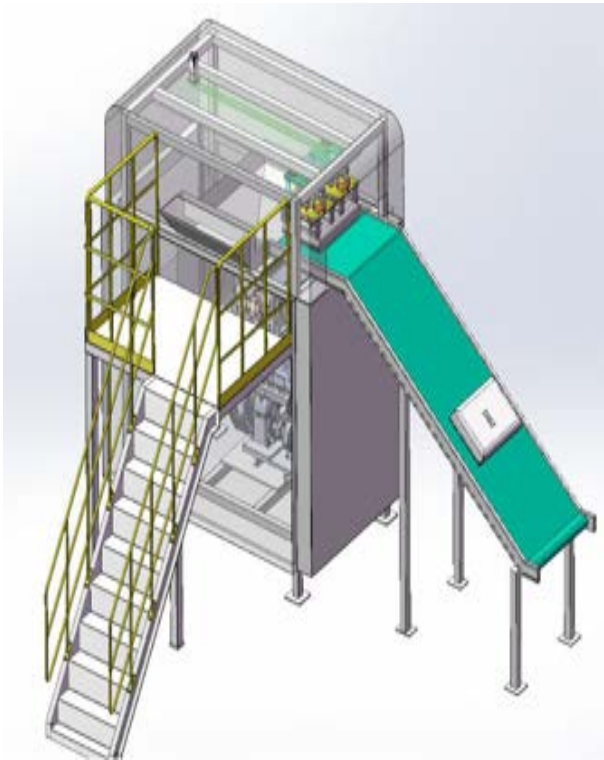
Final Assembly Line Showcase

Dongfang Chemical – Feeding, Crushing and Conveying Line

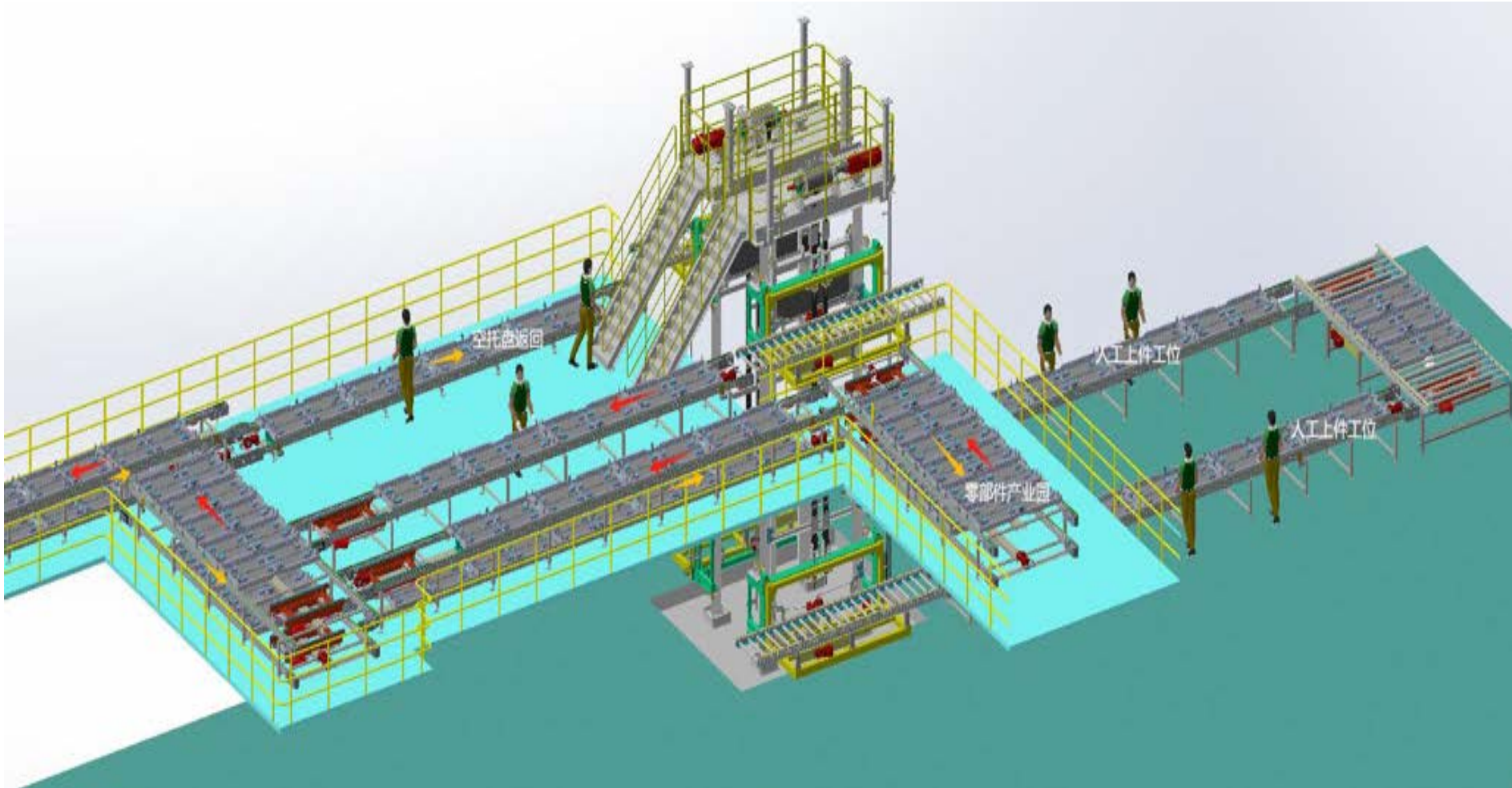


Final Assembly Line Showcase

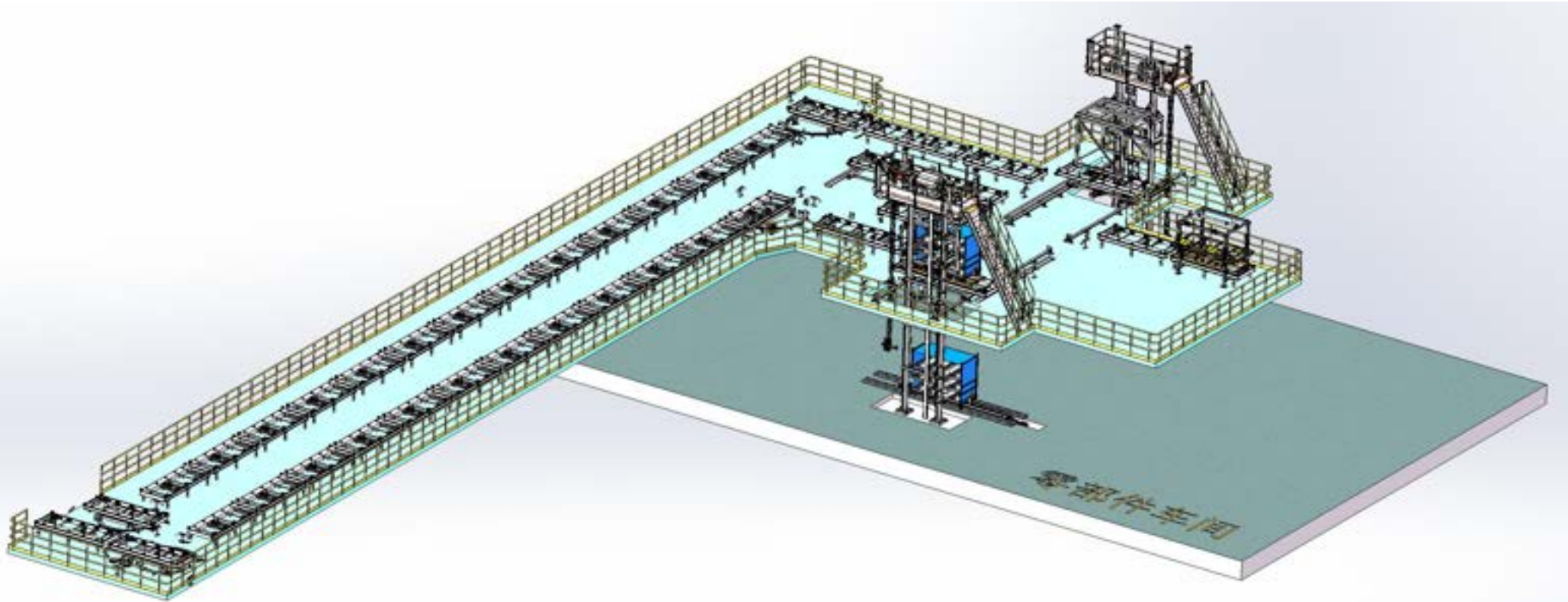
Dongfang Chemical – Feeding, Crushing and Conveying Line



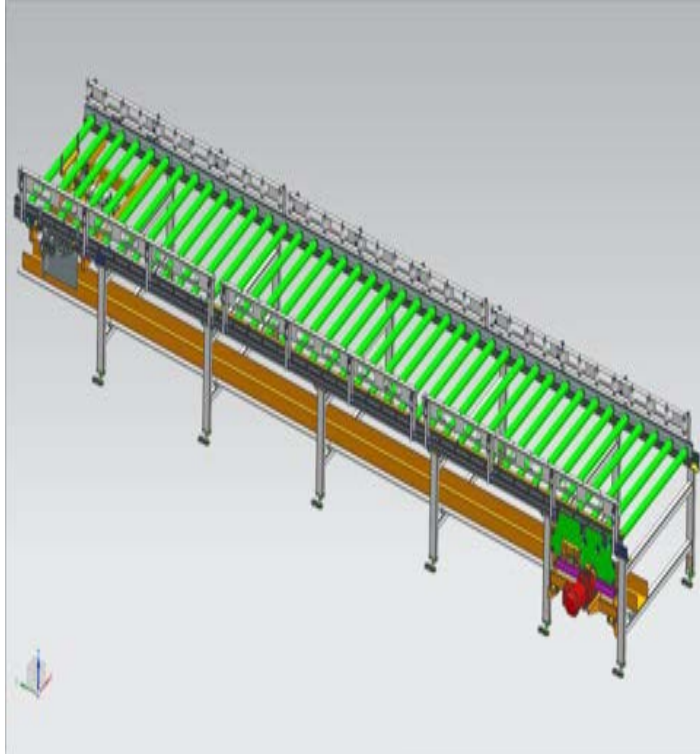
Automotive Tire and Seat Final Assembly Conveyor Design Showcase



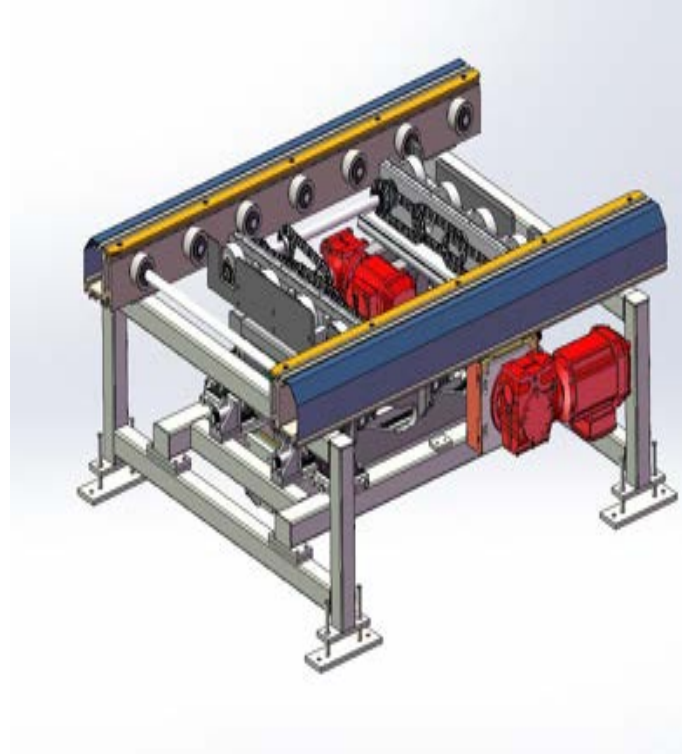
Automotive Final Assembly Conveyor Design Showcase



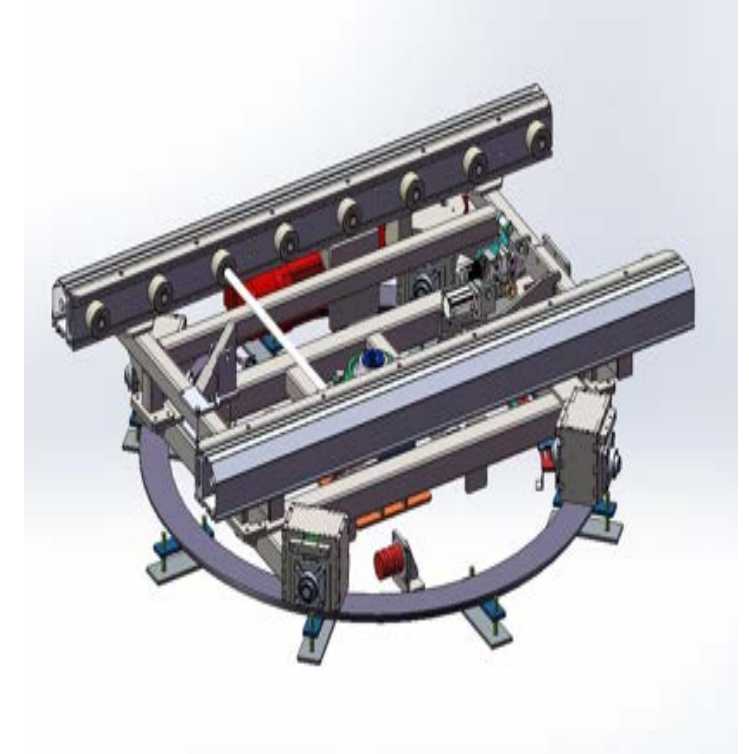
Conveyor Line Equipment



Roller Conveyor Line

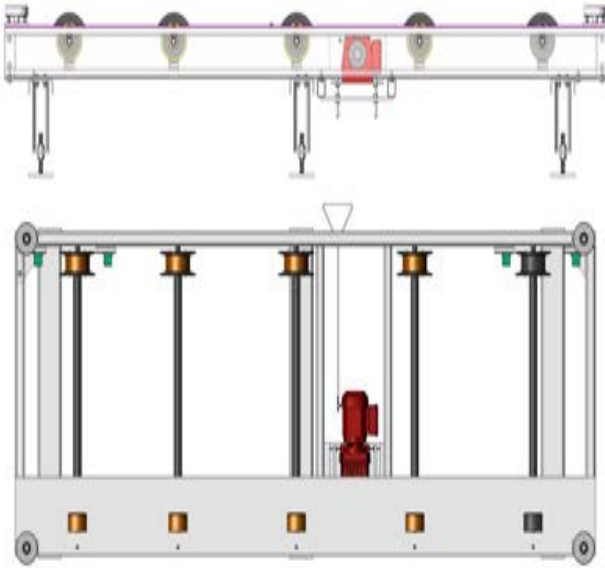


Roller Conveyor Unit

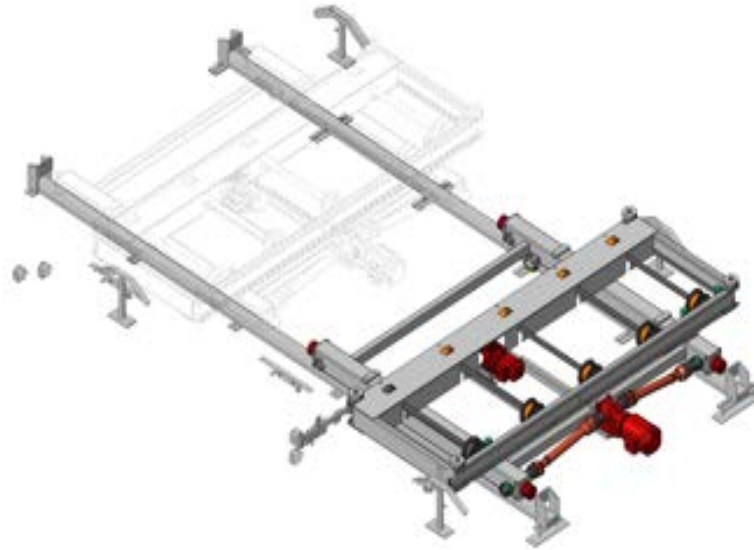


Conveyor Turntable

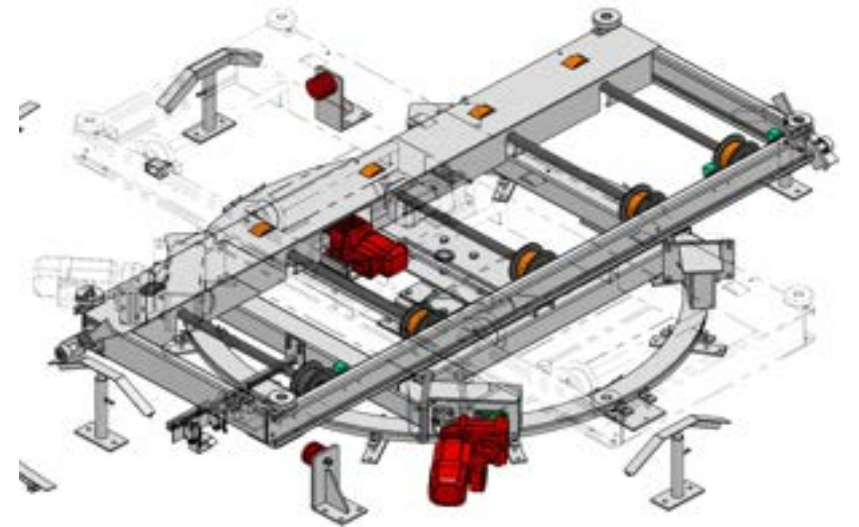
Conveyor Line Equipment



Belt-Driven Roller Conveyor

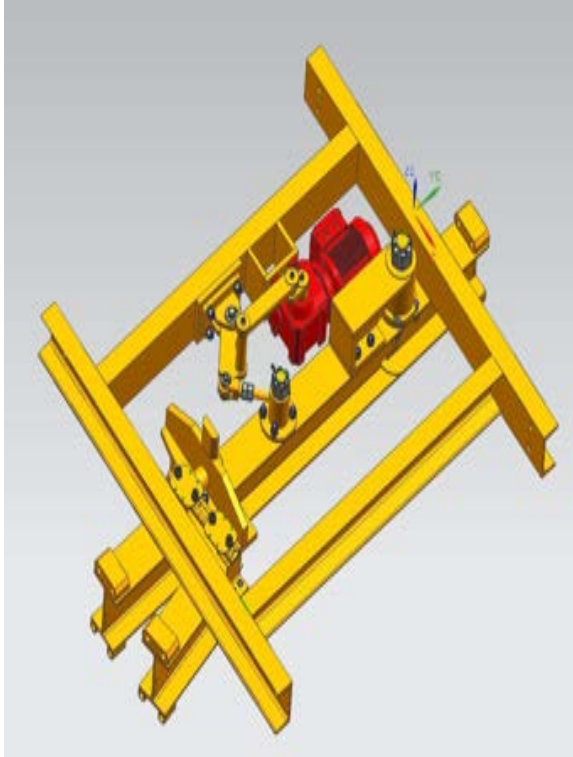


Transfer Roller Conveyor

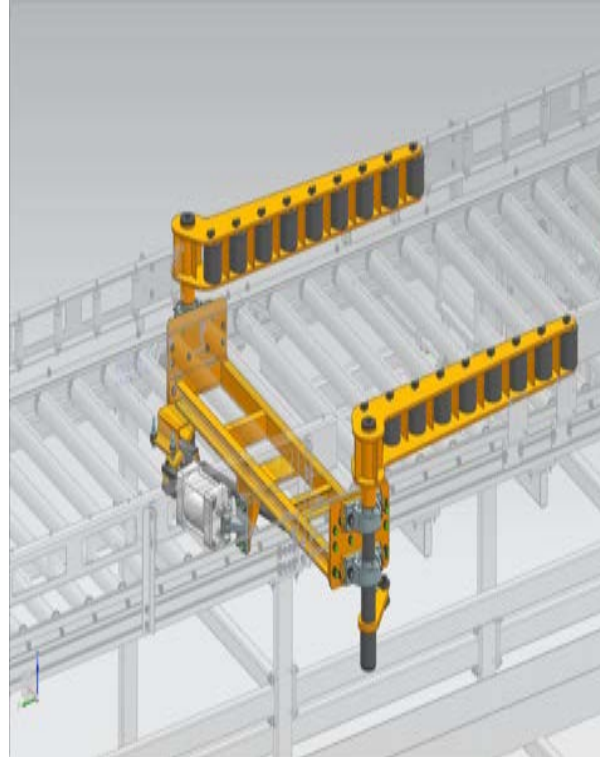


Rotating Roller Conveyor

Conveyor Line Equipment



Conveyor Track Switch

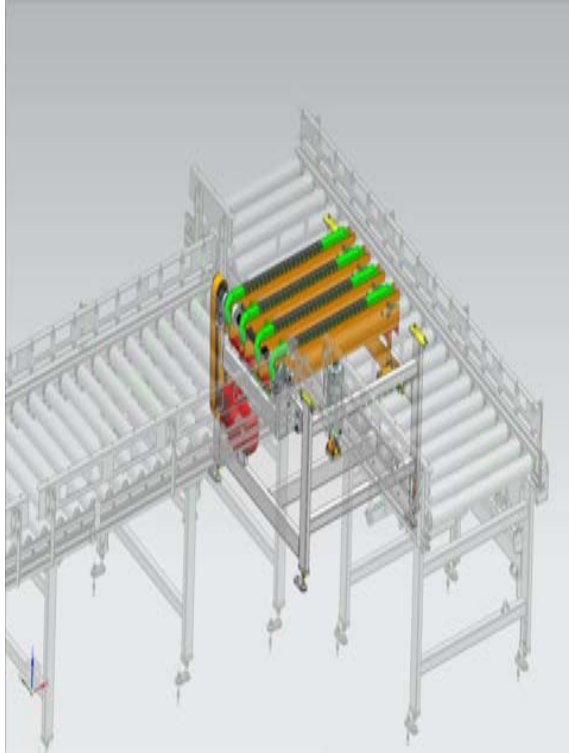


Conveyor Centering Device

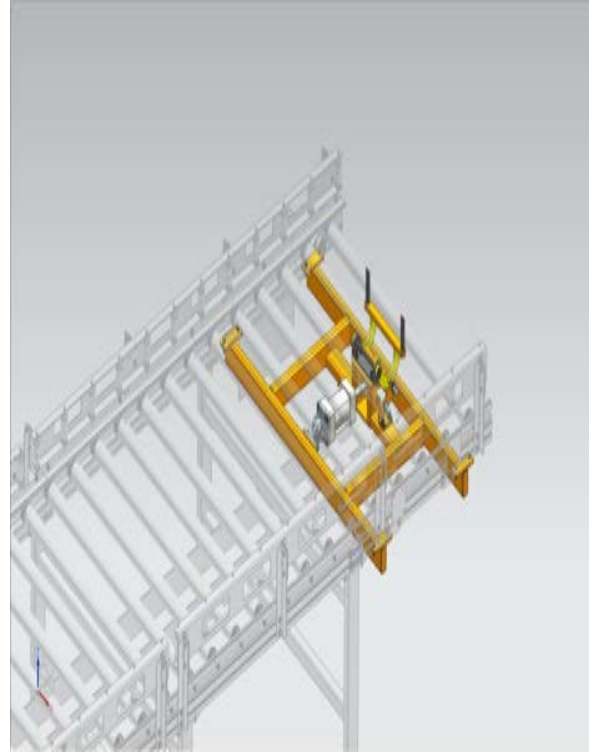


Conveyor Curve

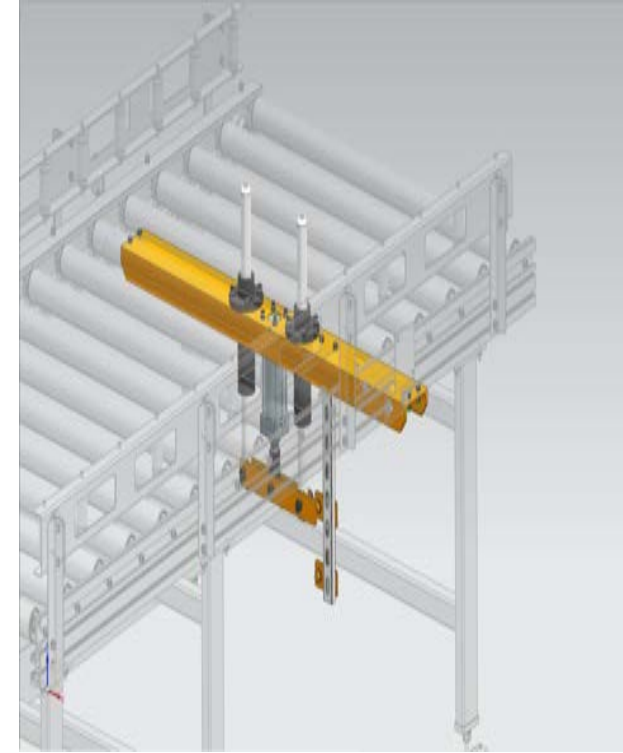
Conveyor Line Equipment



Lift-and-Transfer Unit

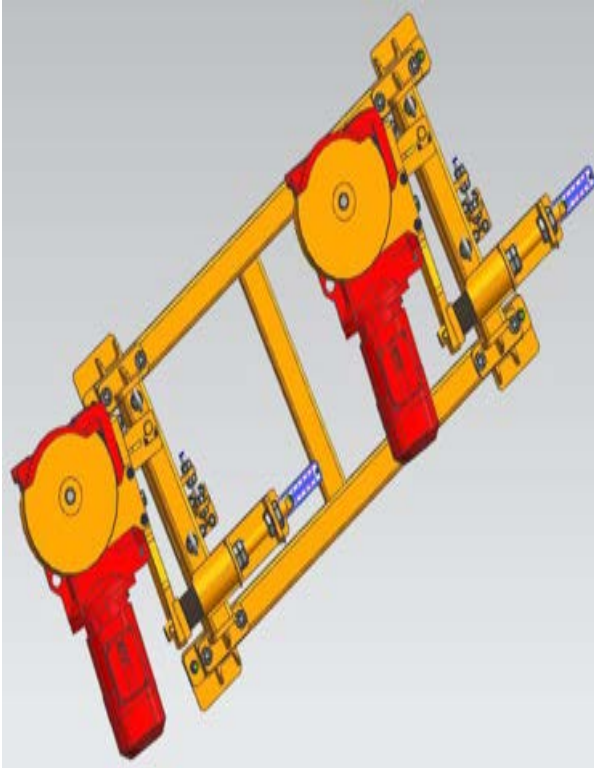


Hook-Type Stopper

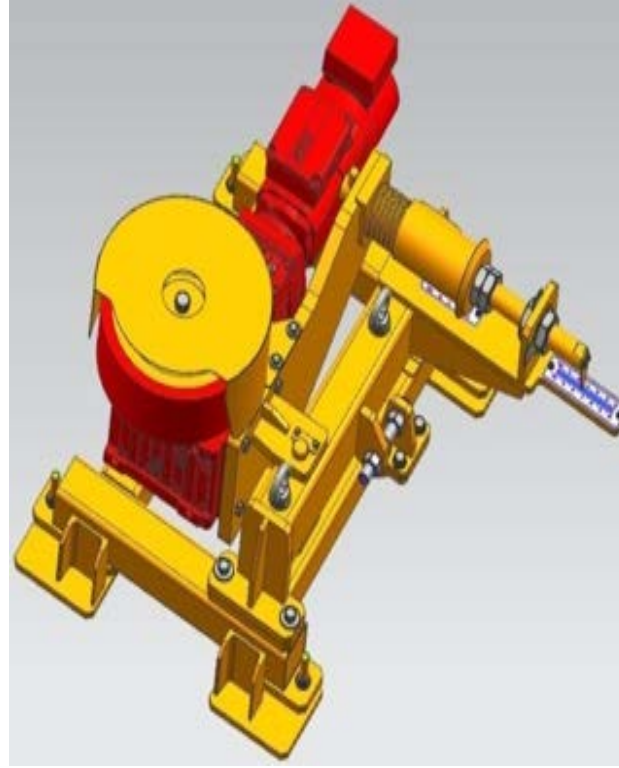


Post-Type Stopper

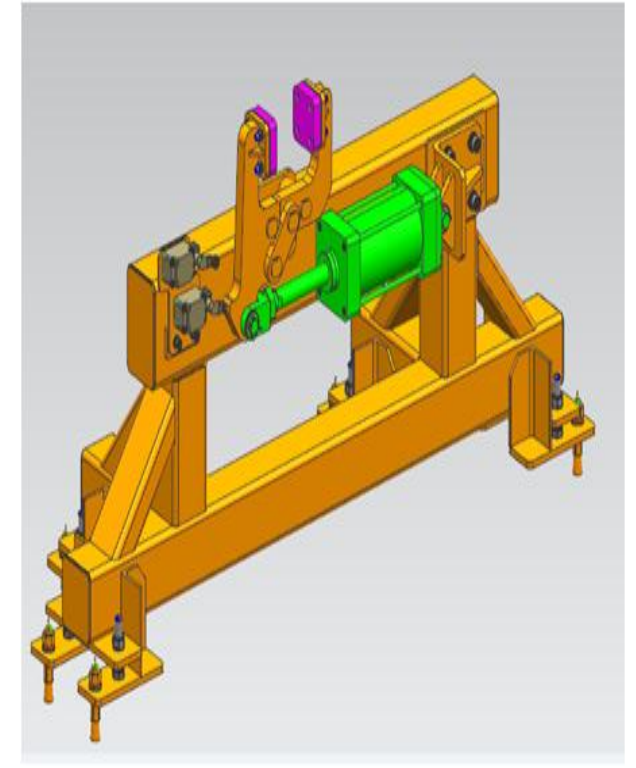
Conveyor Line Equipment



Interior Trim Line Drive Unit

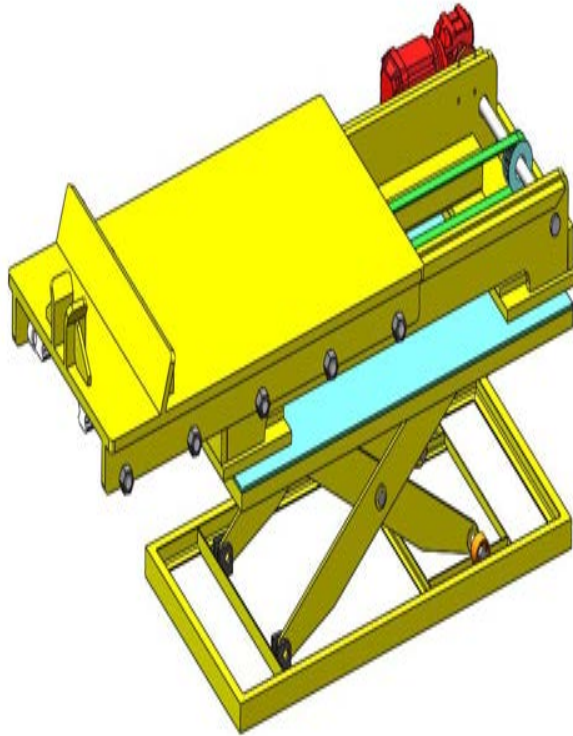


Interior Trim Line Braking Unit

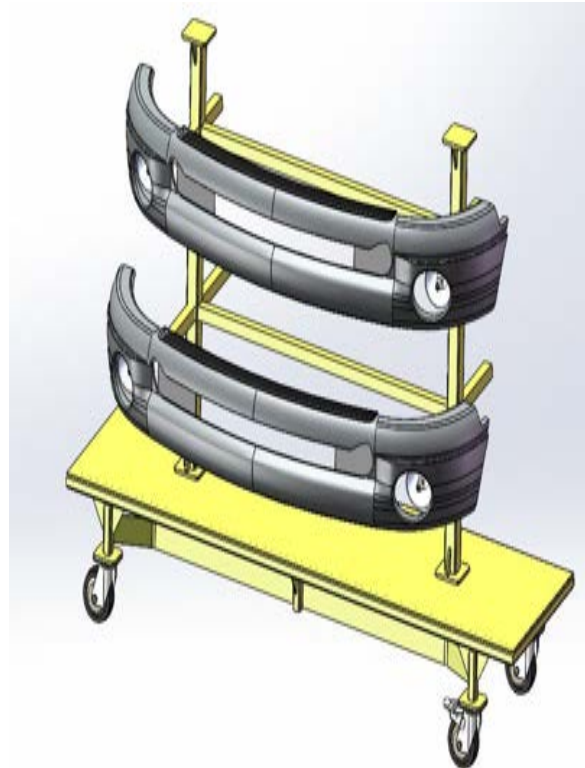


Interior Trim Line Clamping Unit

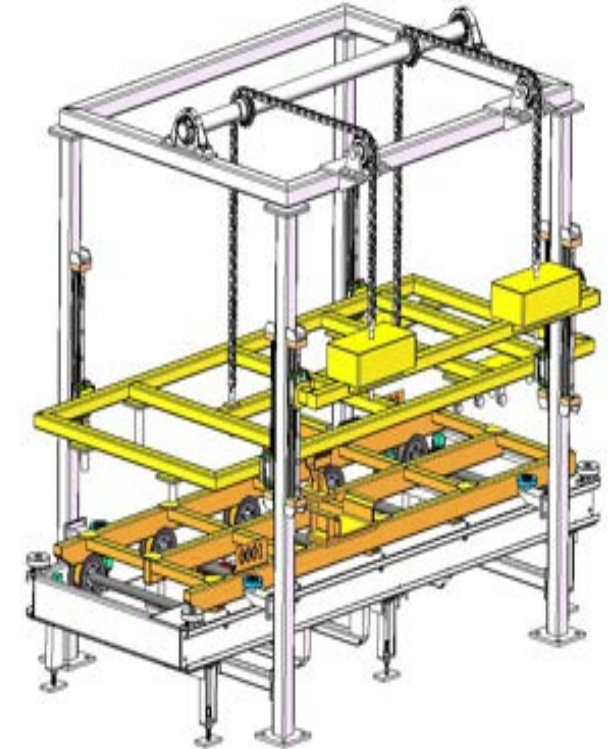
Conveyor Line Equipment



Hanger Transfer Unit



Sub-Assembly Trolley

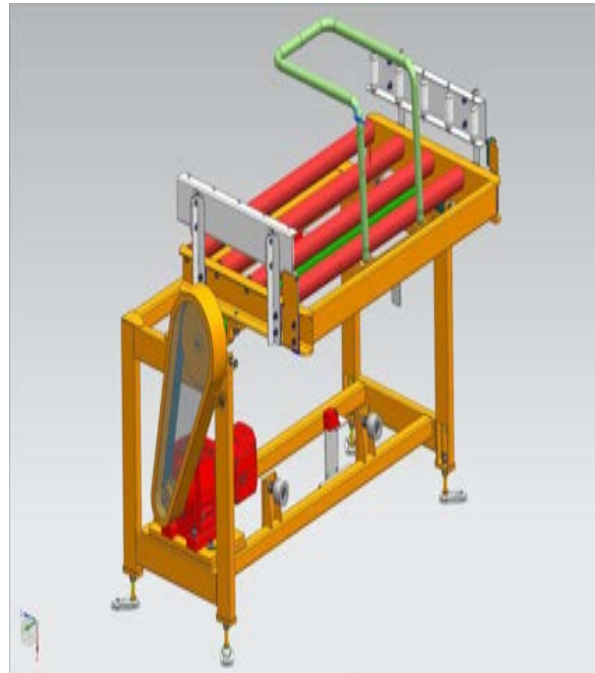


Skid Inspection Fixture

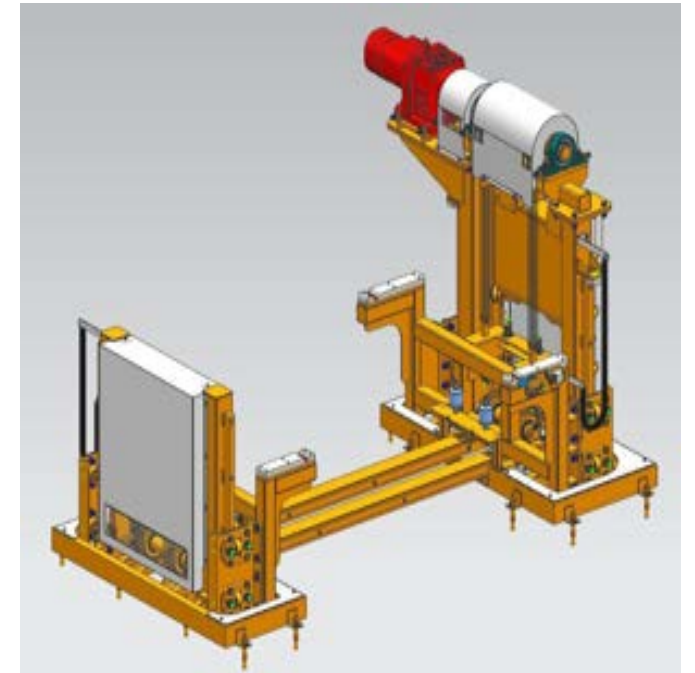
Conveyor Line Equipment



180-Degree Turning Machine

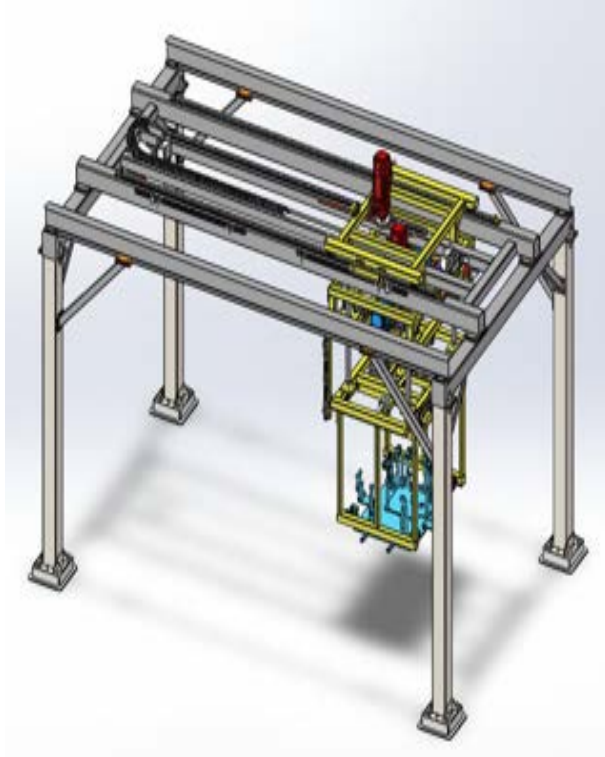


90-Degree Turning Machine

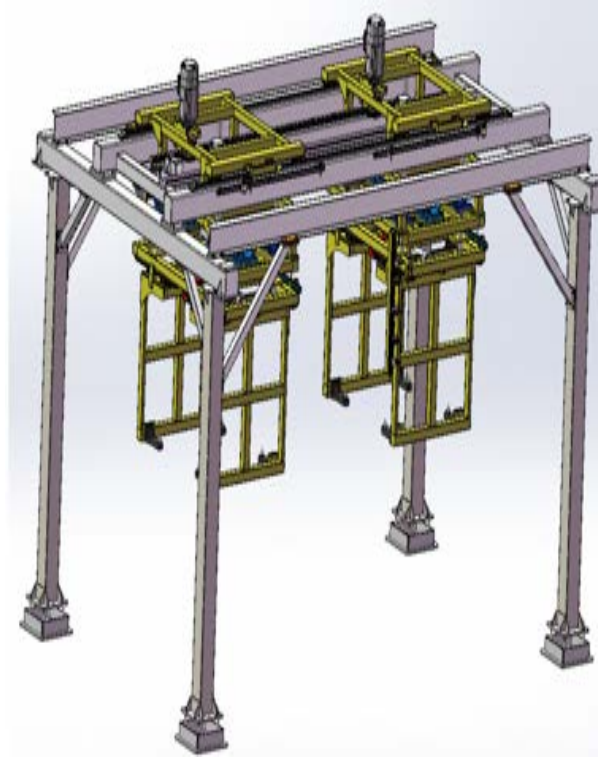


Side Lifting Unit

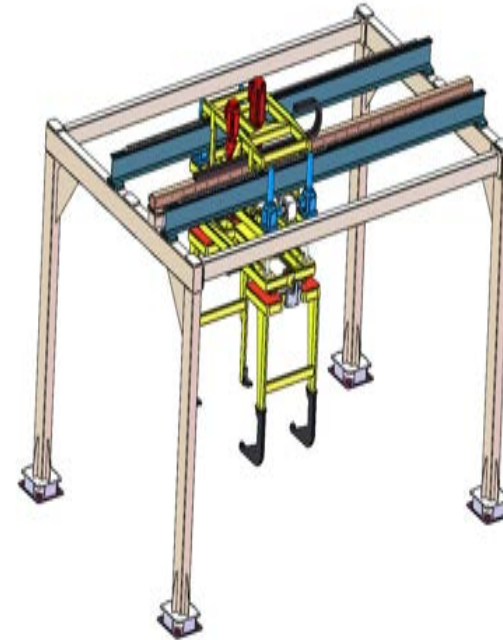
Overhead Transfer Unit



Overhead Transfer Unit

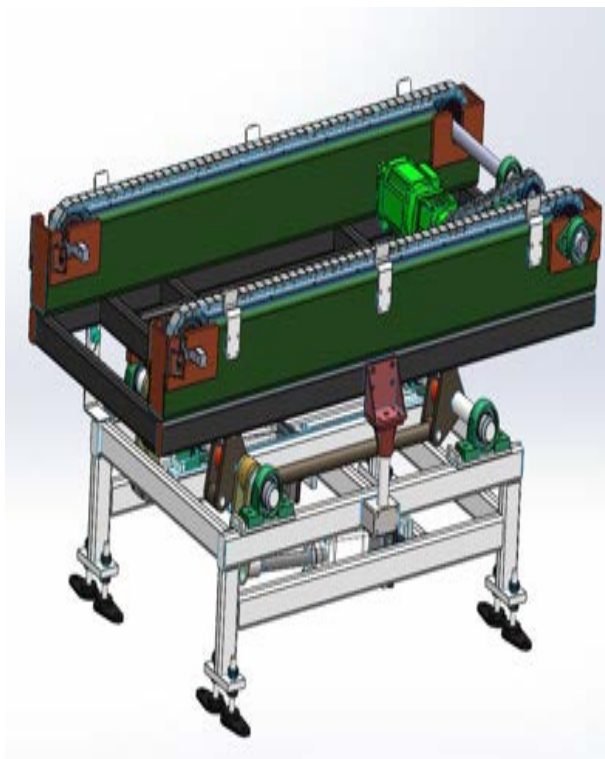


Overhead Transfer Unit

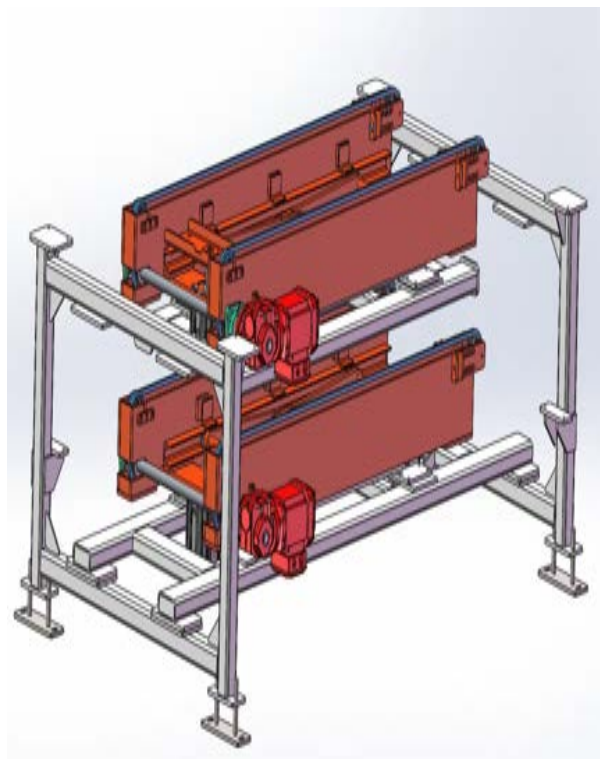


Overhead Transfer Unit

Transfer Unit



Lift-and-Transfer Unit

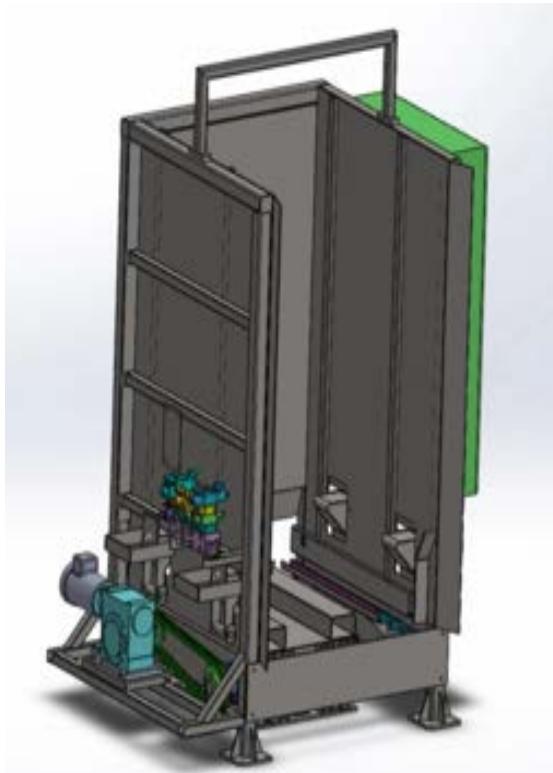


Lift-and-Transfer Unit

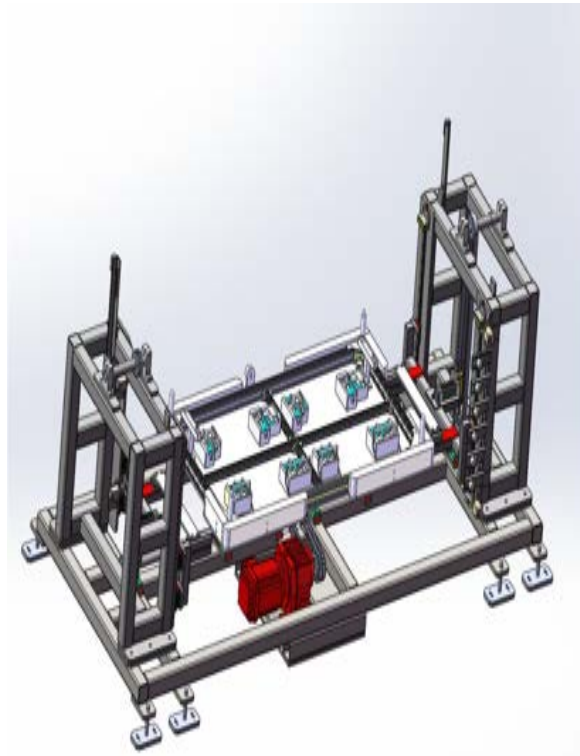


Side-Push Transfer Unit

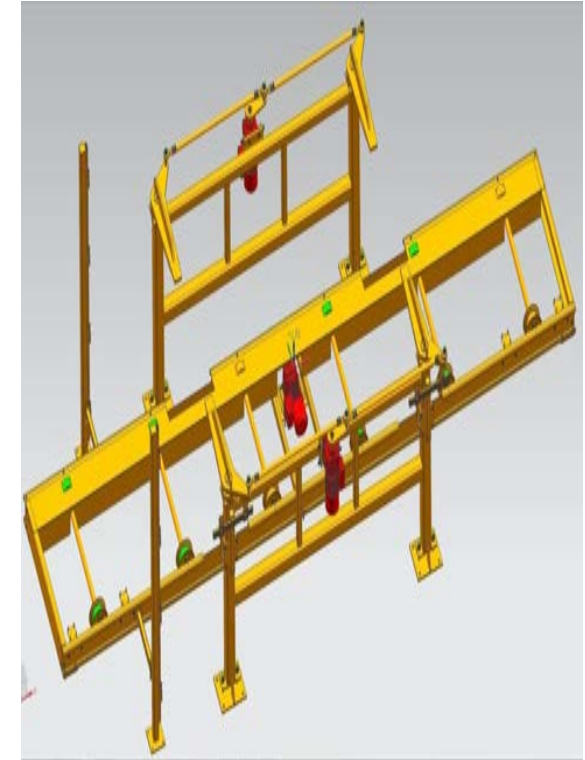
Stacker Crane



Stacker Crane

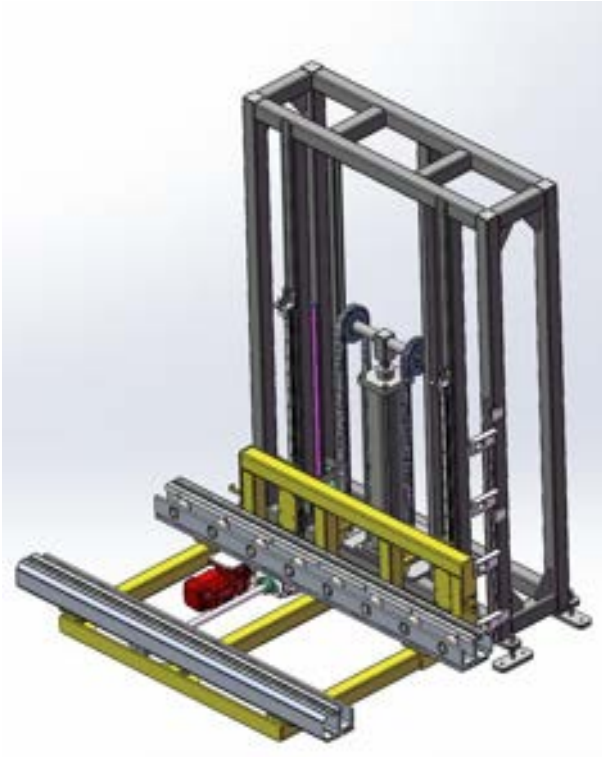


Stacker Crane

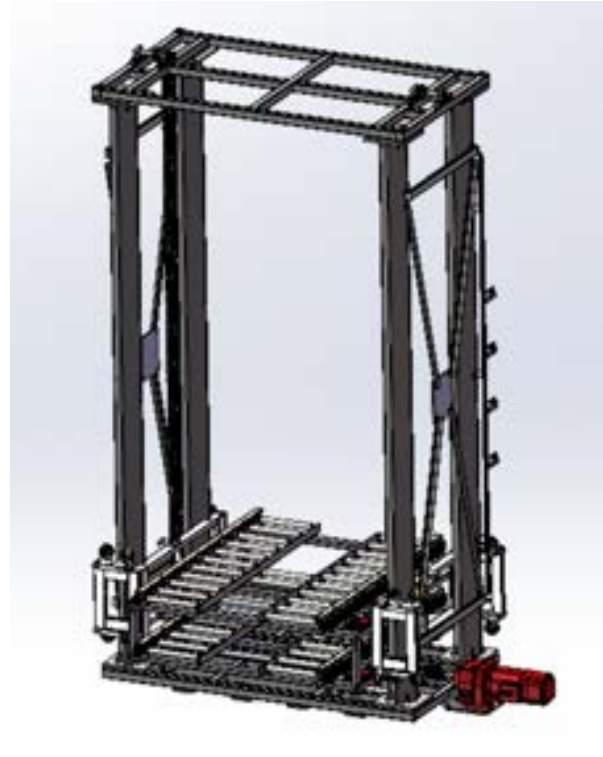


Stacker Crane

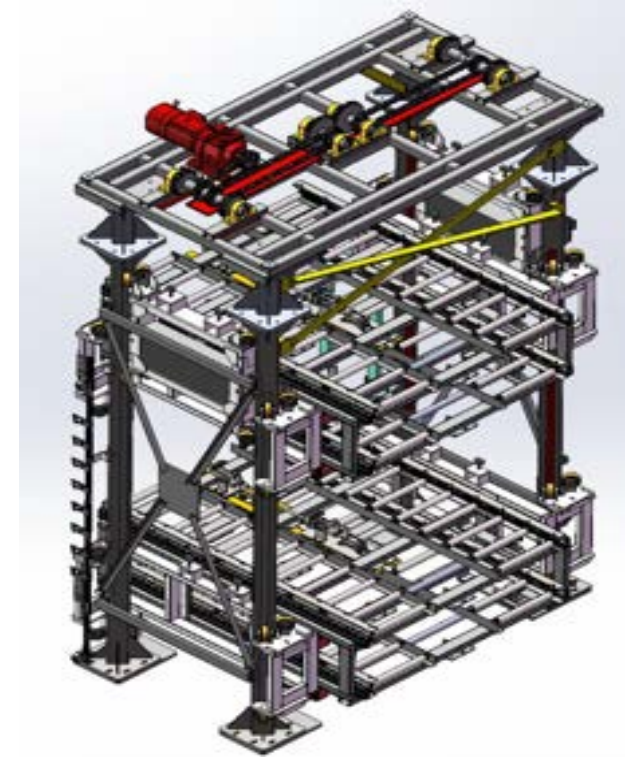
Lifting Table



Lifting Table

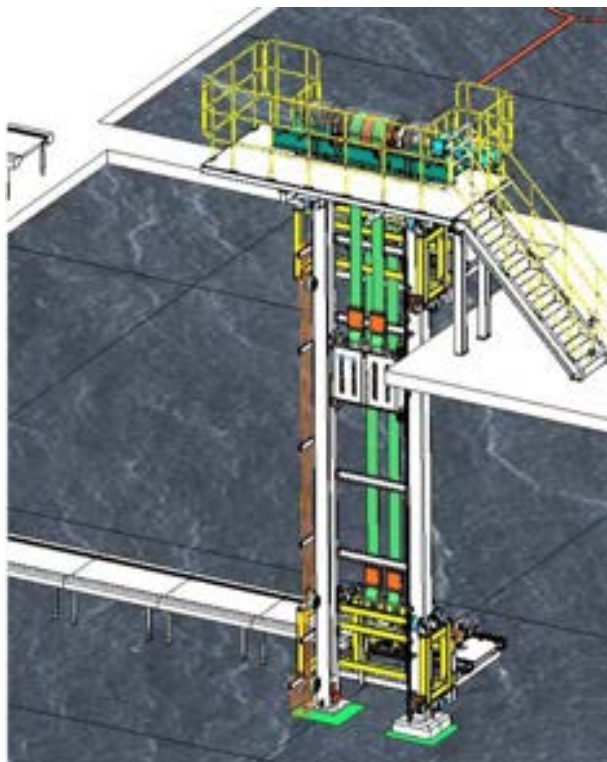


Lifting Table

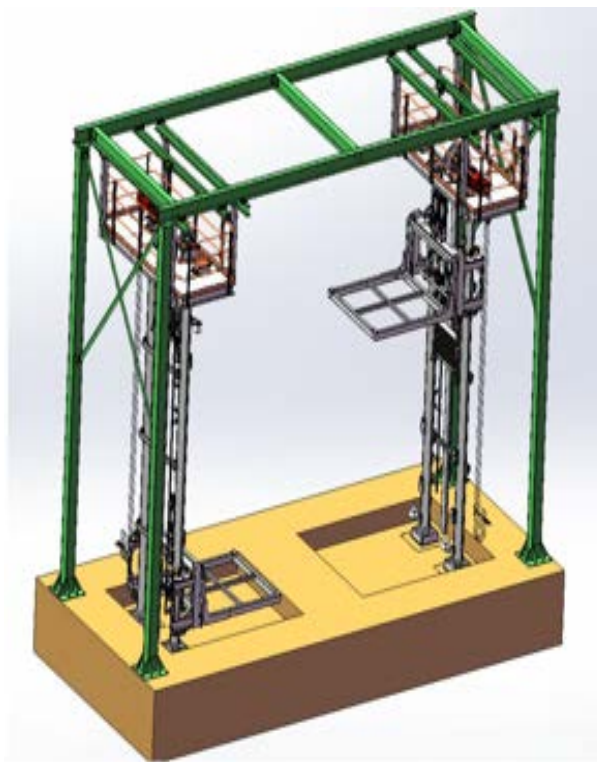


Double-Deck Lifting Table

Vertical Lift



Vertical Lift



Vertical Lift



Vertical Lift

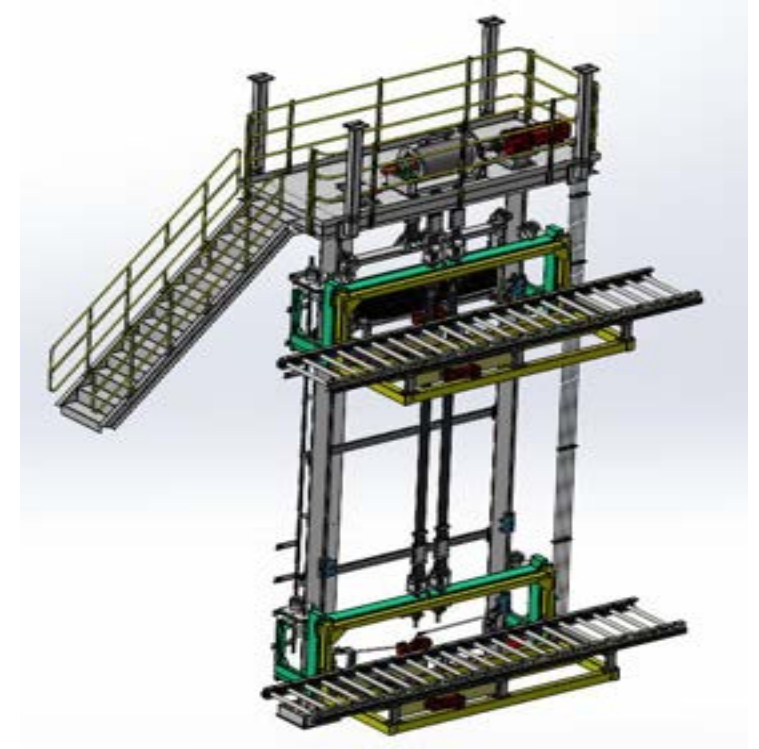
Custom Lift



Z-Type Vertical Lift

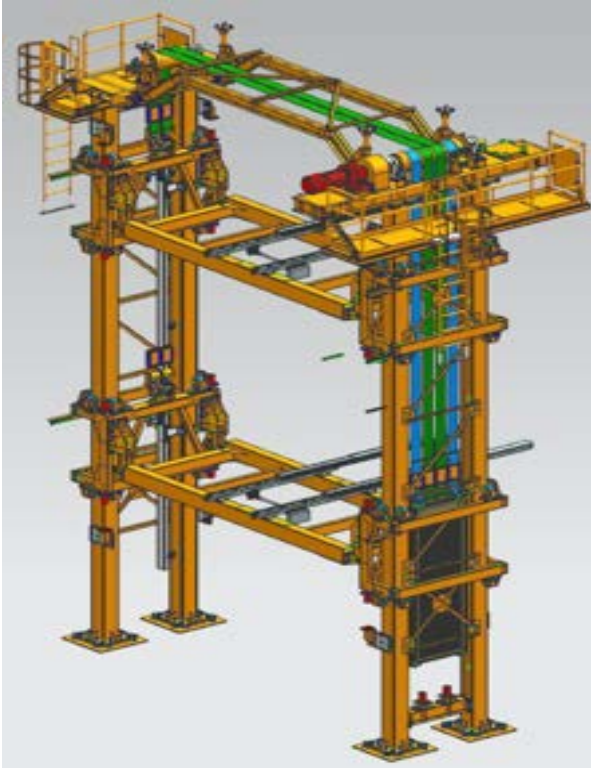


Fixture Lift



Roller Conveyor Lift

Custom Lift



Fork-Type Transfer Lift

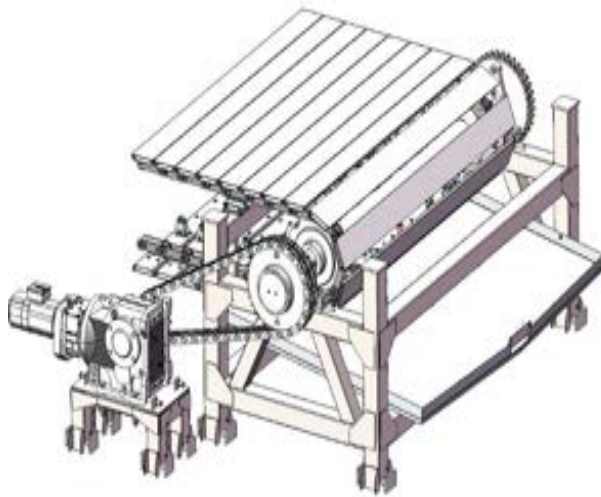


Two-Post Belt-Driven Roller Conveyor Lift

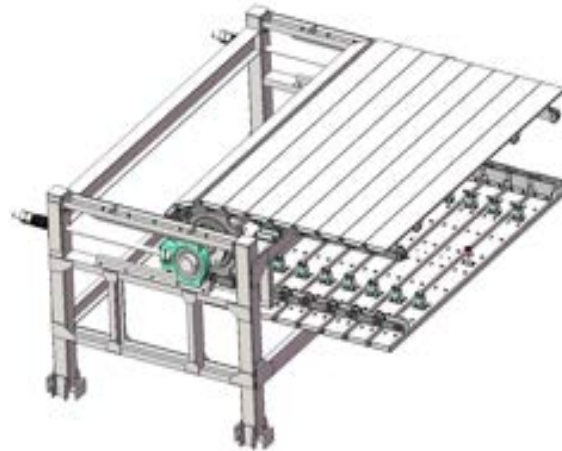


Continuous Pallet Lift

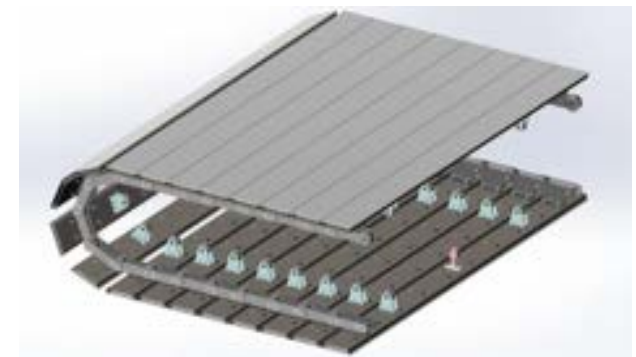
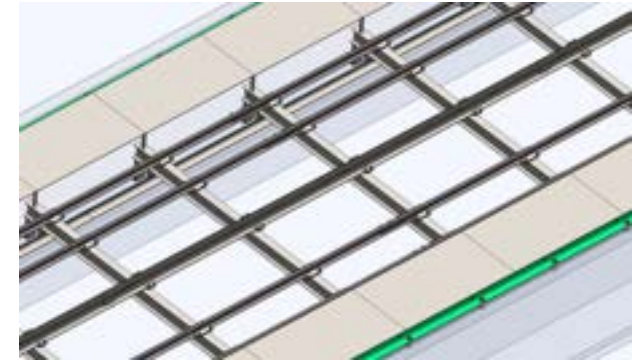
Slat Conveyor Line – Inspection Line & PDI Line



Slat Conveyor Drive End

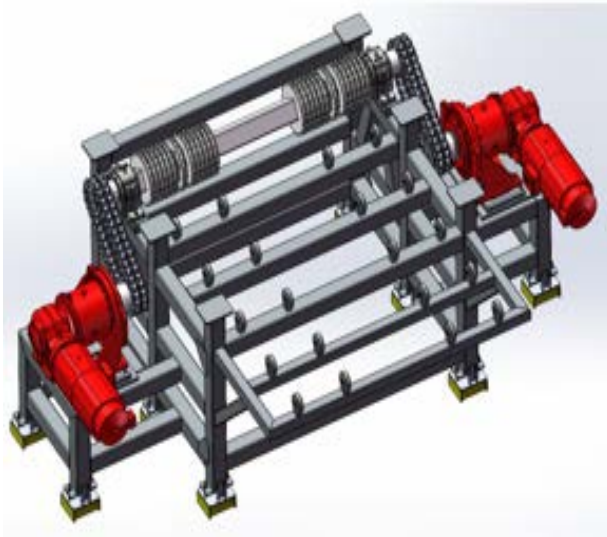


Slat Conveyor Tensioning End

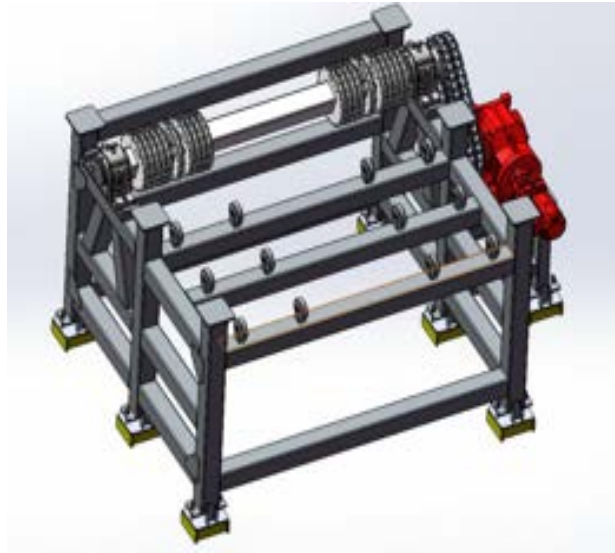


Slat Conveyor Center Support and Slats

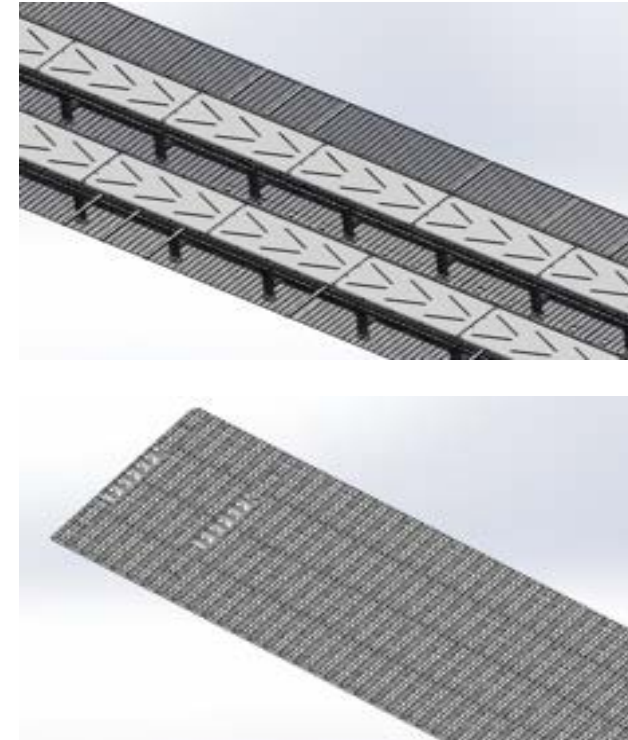
Rain Test Line



Rain Test Line Drive End

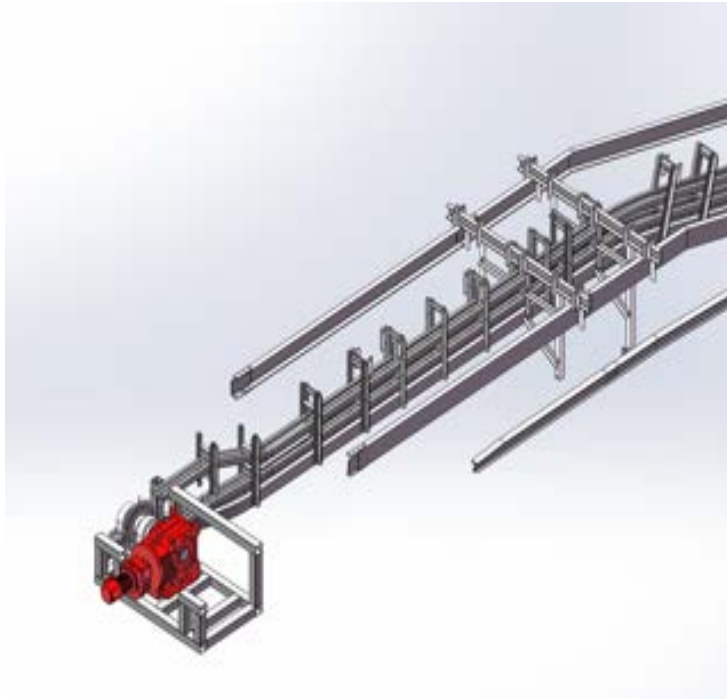


Vehicle Rain Test Line Idler End

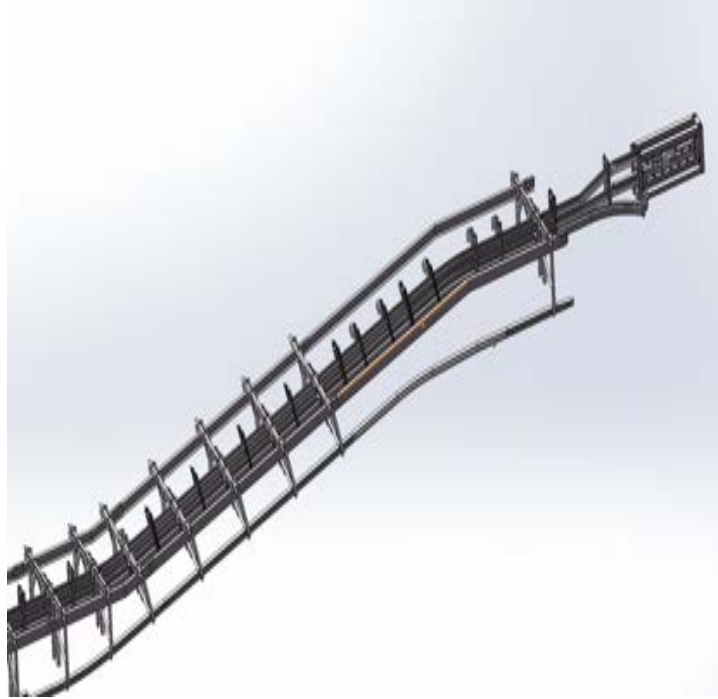


Vehicle Rain Test Line Center Support and Slats

CPC Conveyor Line



CPC Conveyor Drive End

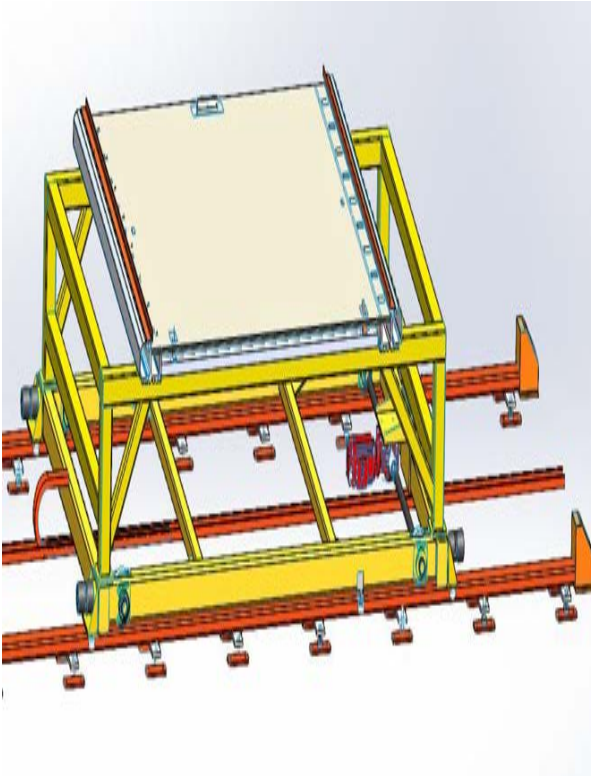


CPC Conveyor Idler End

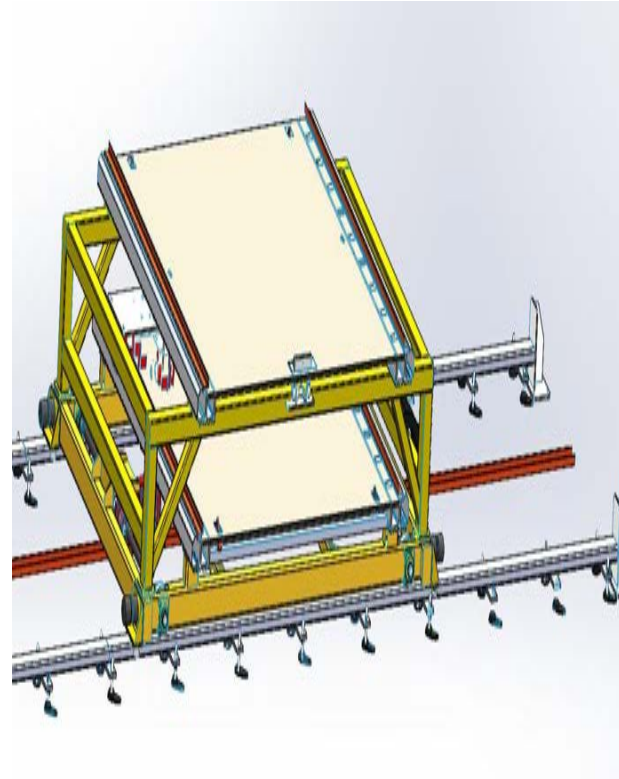


CPC Conveyor Section

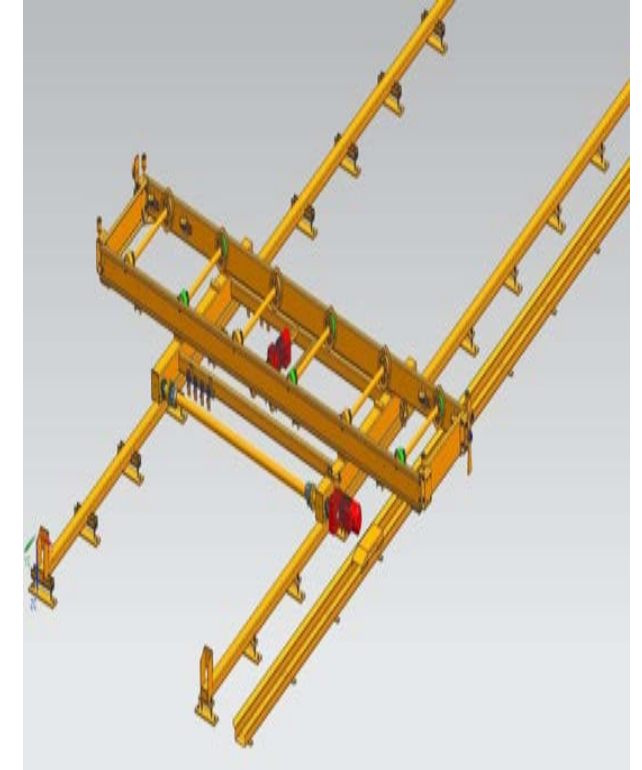
Transfer Car



Single-Deck Transfer Car

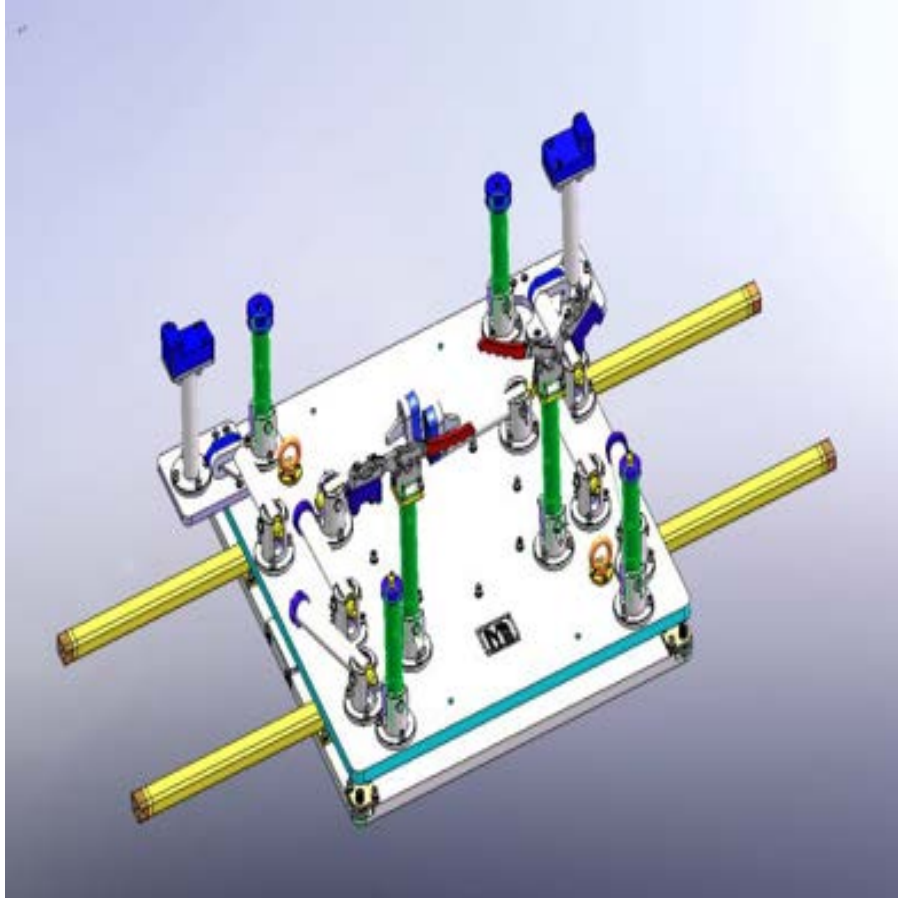


Double-Deck Transfer Car

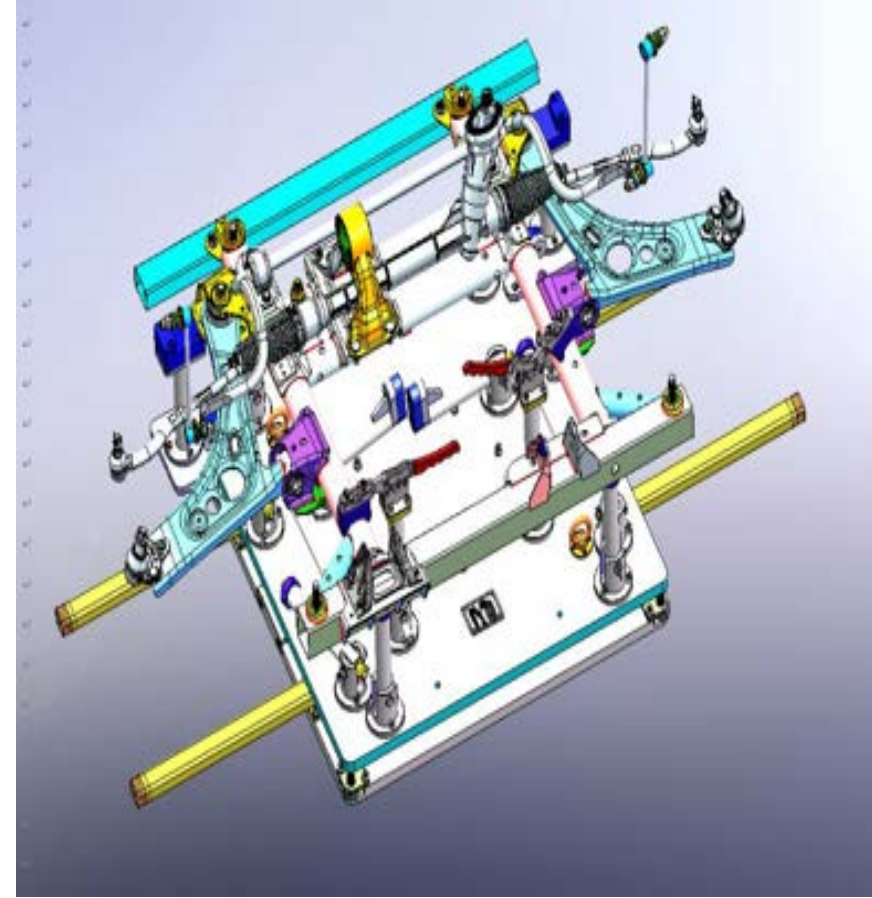


Roller Conveyor Transfer Car

Pallet

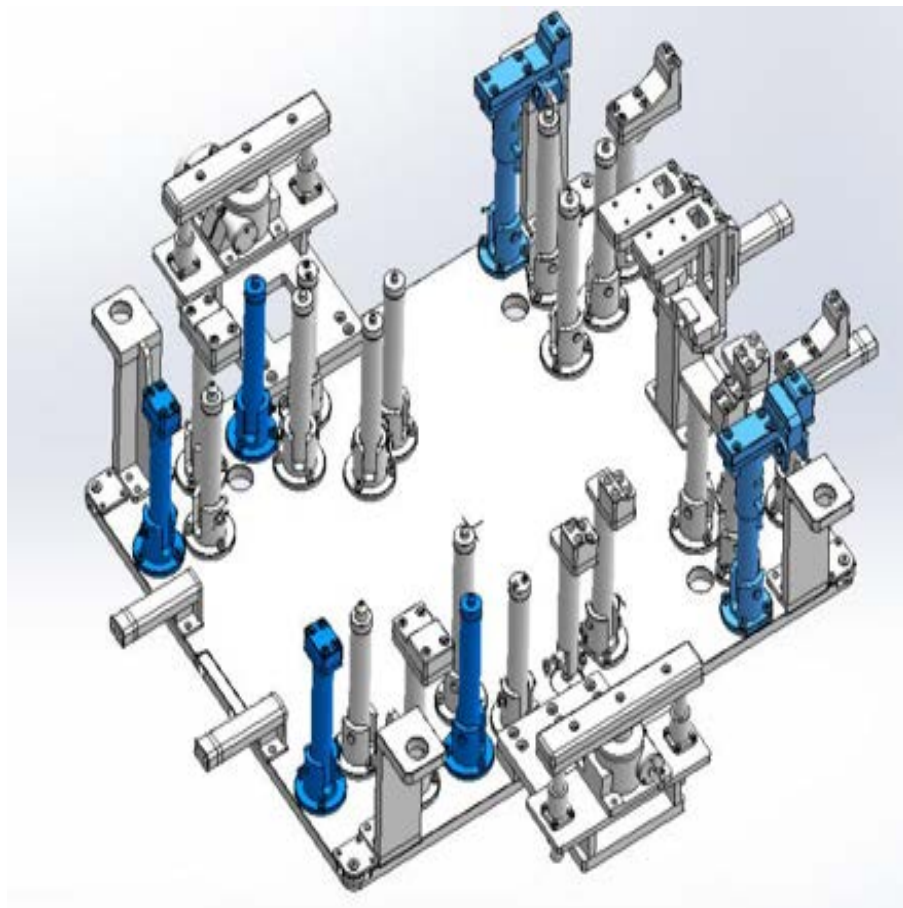


Front Subframe Pallet – Empty

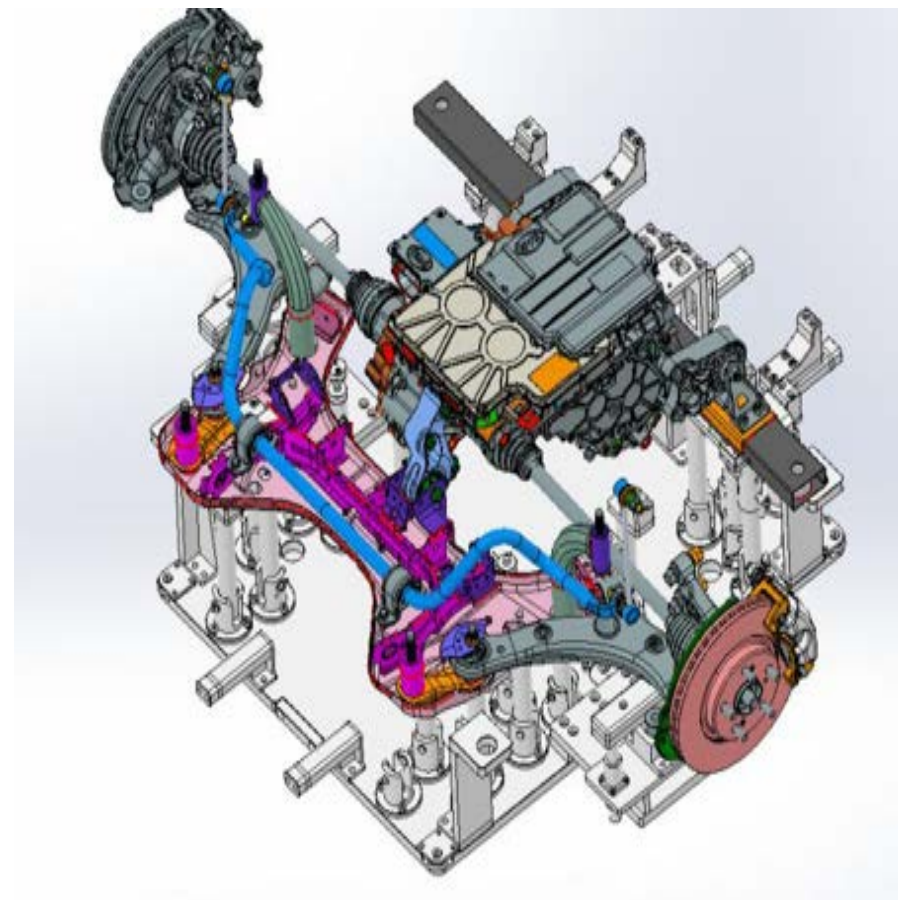


Front Subframe Pallet – Loaded

Pallet

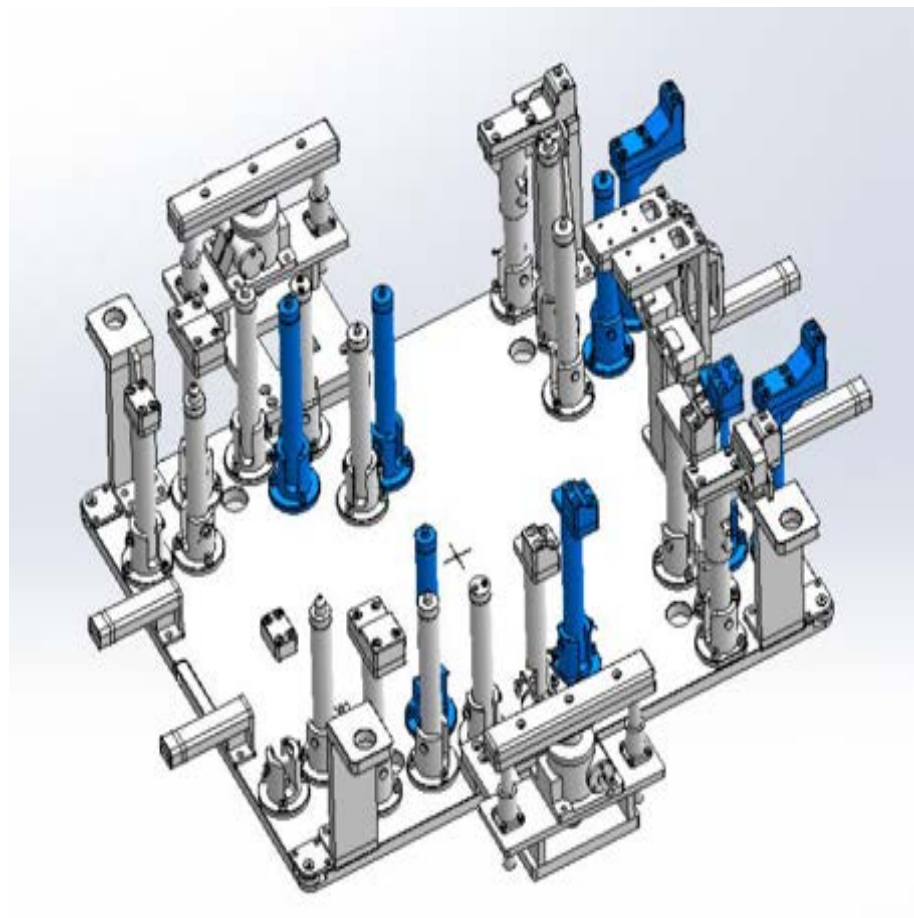


Front Subframe Pallet – Empty

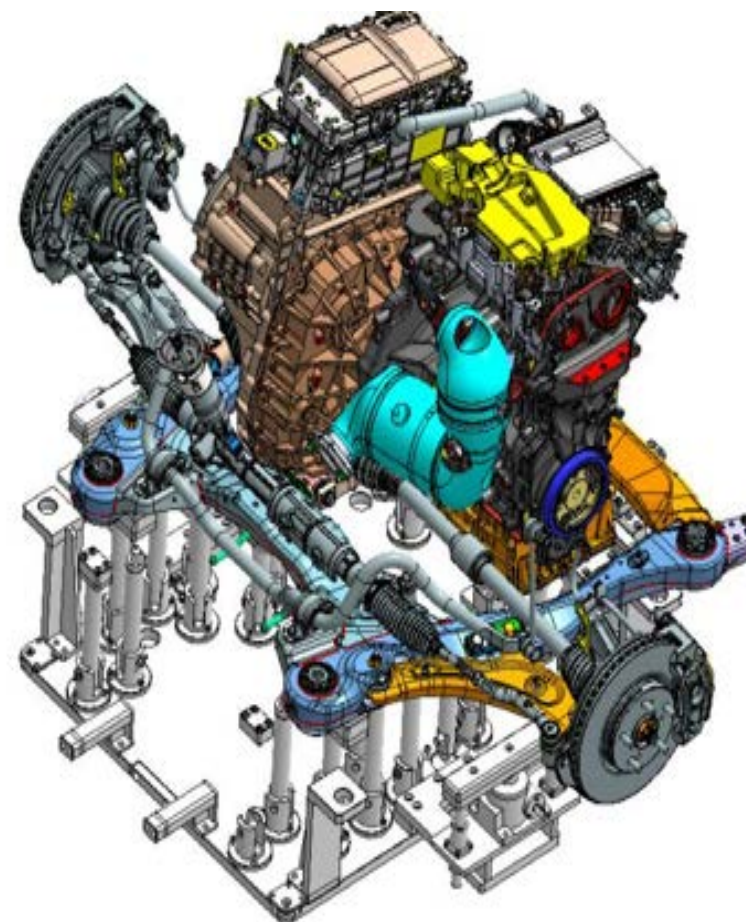


Front Subframe Pallet – Loaded

Pallet



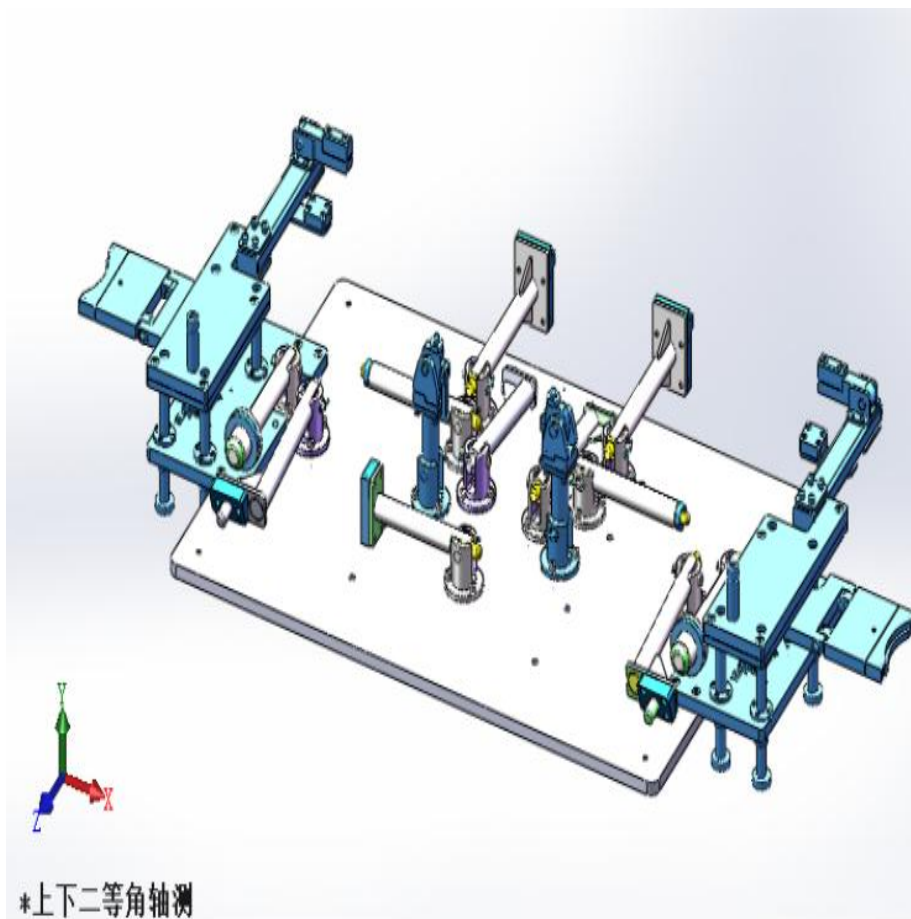
Front Subframe Pallet – Empty



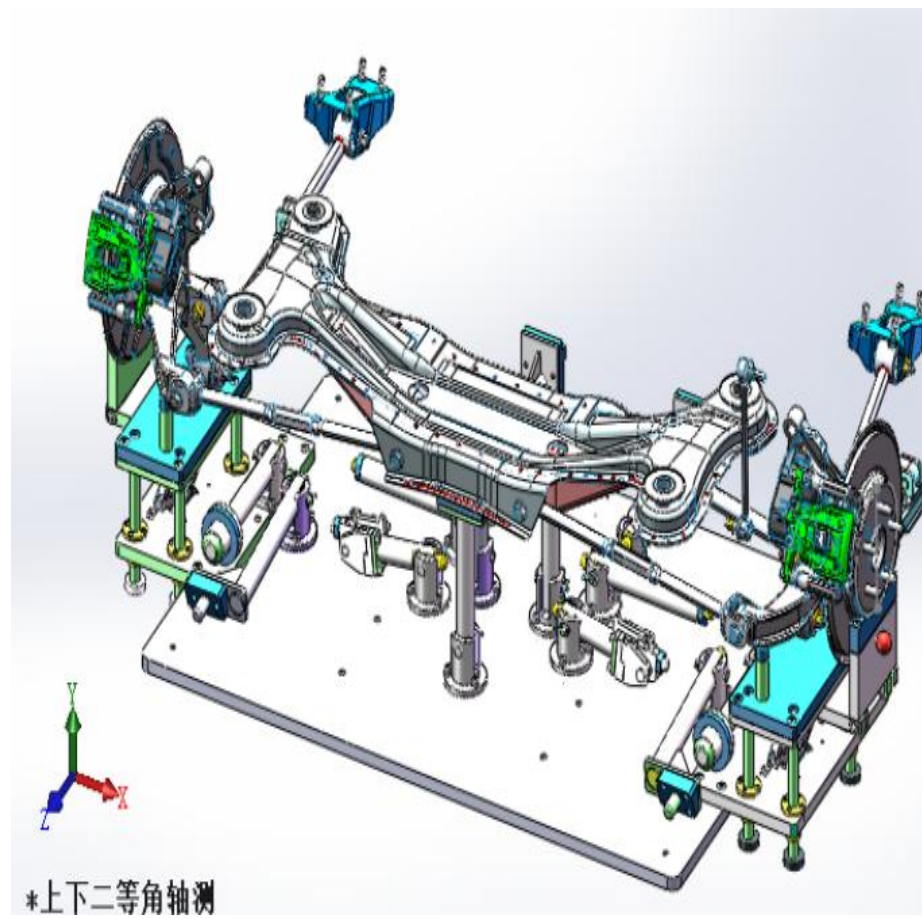
Front Subframe Pallet – Loaded

一款托盘可同时适配多款产品

Pallet

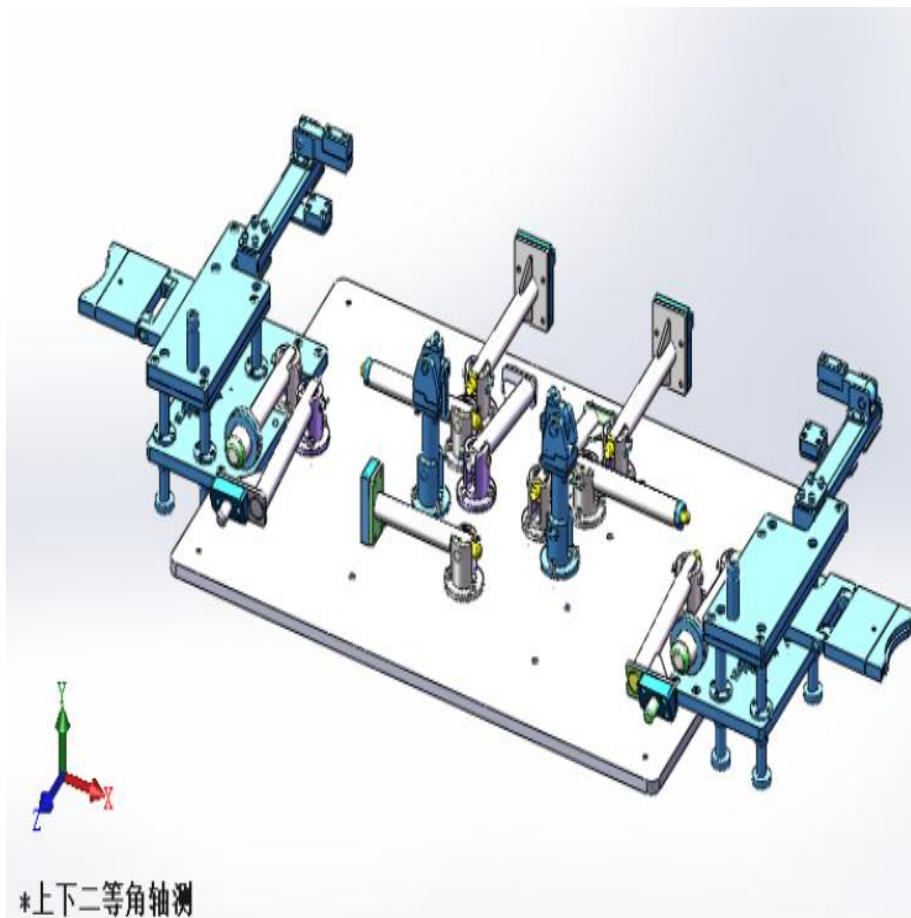


Rear Subframe AGV Pallet – Empty

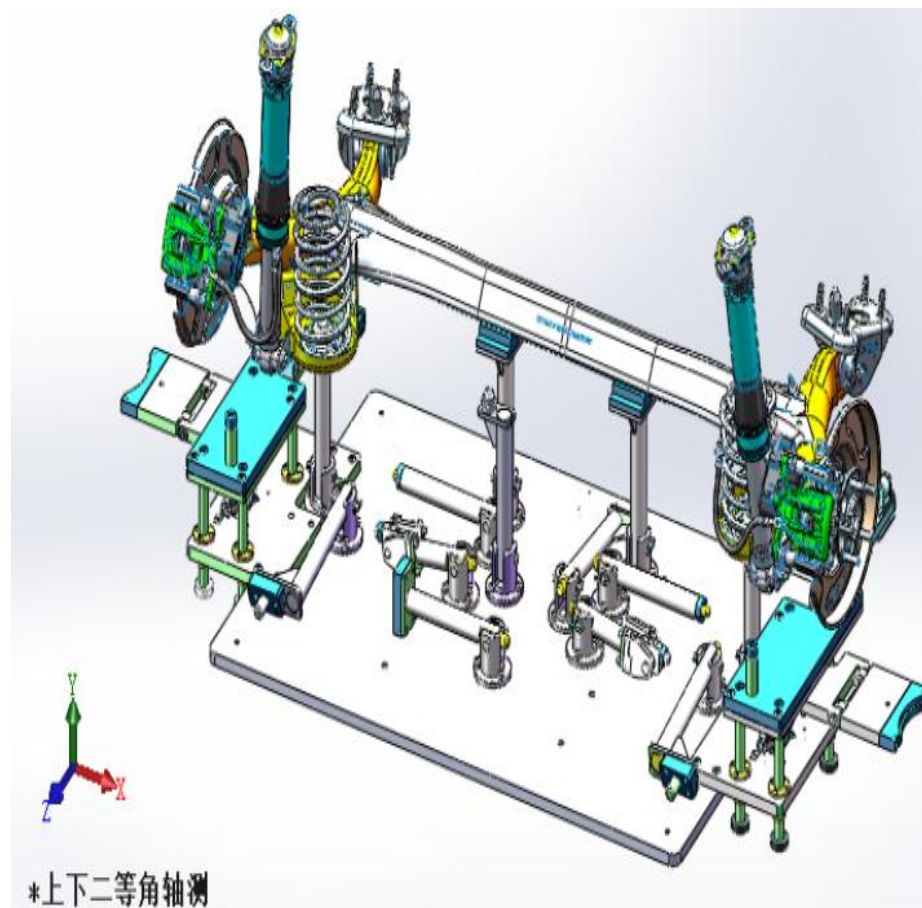


Rear Subframe AGV Pallet – Loaded

Pallet

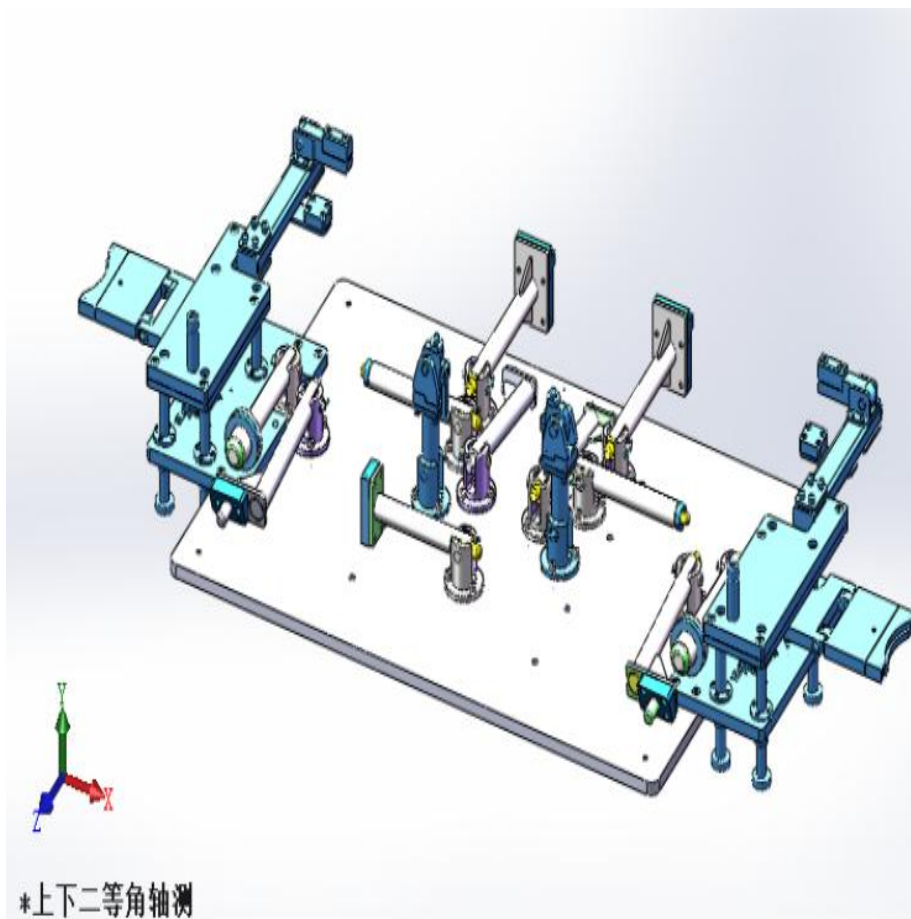


Rear Subframe AGV Pallet – Empty

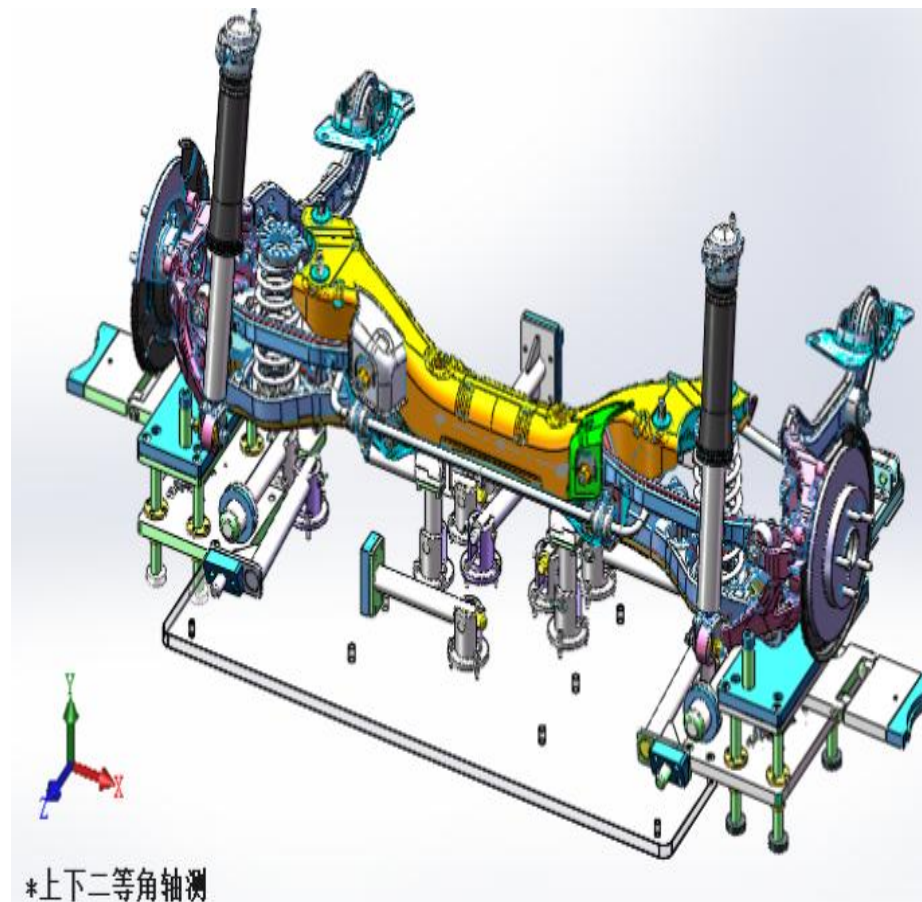


Rear Subframe AGV Pallet – Loaded

Pallet



Rear Subframe AGV Pallet – Empty

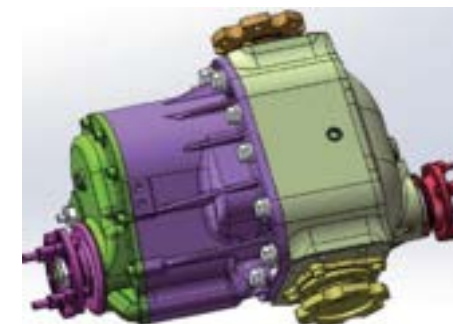


Rear Subframe AGV Pallet – Loaded

Dongfeng MENGSHI Transmission Assembly Line Equipment Manufacturing



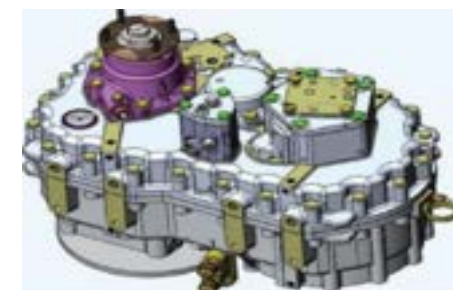
①轮边减速器总成



②主减中桥驱动桥总成



③主减前、后驱动桥总成



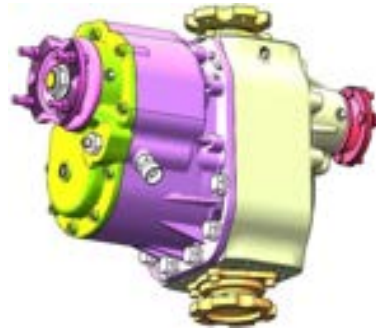
④分动箱总成

The complete powertrain production equipment for the four major MENGSHI drivetrain assemblies—including ① wheel-end reducers, ② center-axle final drive assemblies, ③ rear-axle final drive assemblies, and ④ transfer case assemblies—was independently developed and supplied by Hongbo.

Compatible Products for Dongfeng MENGSHI Drivetrain Assembly Line



Wheel-End Reducer



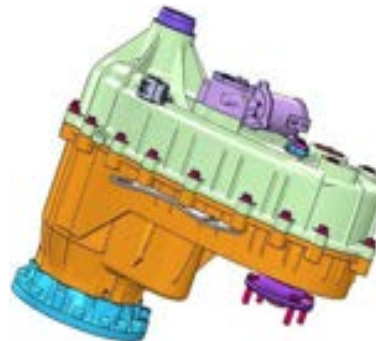
Center-Axle Drive Assembly



Rear-Axle Drive Assembly



Transfer Case Powertrain Assembly



M20 Universal Transfer Case
Powertrain Assembly



Wheeled Vehicle Transfer Case
Powertrain Assembly

Compatible Products for Dongfeng MENGSHI Drivetrain Assembly Line



5T18H Automotive Transmission Assembly Line



6T30 Transmission Assembly Line



2T07 New Energy AMT Transmission Assembly Line

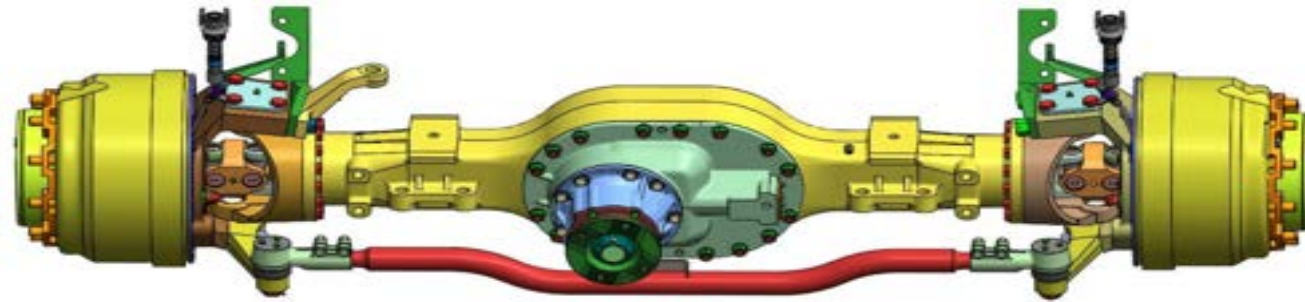


6TR32 Transmission Assembly Line

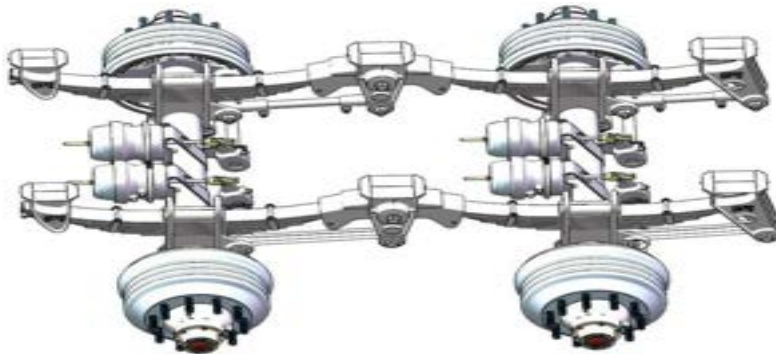


5TR15 Series Five-Speed Mini-Vehicle Transmission Assembly Line

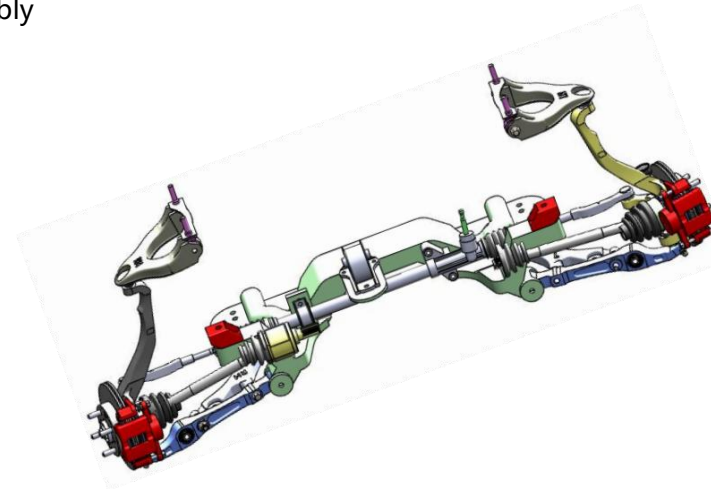
Compatible Products for Dongfeng MENGSHI Drivetrain Assembly Line



Drive Axle Assembly



Trailer Axle



Front Axle Suspension Assembly

Dongfeng MENGSHI Drivetrain Assembly Line – Wheel-End Reducer Assembly Line



Equipment Overview:

The system integrates a comprehensive range of automated assembly, inspection, handling, and testing equipment, including oil and air seal installation, snap ring pressing, rear wheel hub air-tightness testing, bearing outer race cryogenic assembly, wheel hub bolt pressing, brake disc pressing, brake disc bolt tightening, encoder ring and oil seal pressing, transfer and turning, differential housing insertion, breakaway torque testing, parallelism inspection, axle shaft assembly, sun gear assembly, adhesive application, planetary gear needle roller assembly, planetary carrier assembly, oil filling, and final test benches.

Dongfeng MENGSHI Drivetrain Assembly Line – Rear-Axle / Center-Axle Final Drive
Assembly – Rod Transfer Conveyor Line



Equipment Overview

The complete production line integrates a comprehensive range of automated assembly, inspection, handling, marking, sealing, filling, and testing equipment for rear-axle and center-axle final drive assemblies. The equipment covers bearing outer race pressing, inner race pressing and assembly for the drive pinion bearings, drive pinion assembly installation, inter-axle differential assembly, shift fork assembly, differential housing assembly, piston assembly, oil seal pressing, flange assembly, bevel gear differential assembly, drive pinion runout inspection, drive gear backlash inspection, drive gear tooth contact pattern inspection, adhesive application, marking, axle housing assembly, transfer and turning, left- and right-hand axle shaft assembly, through-drive axle shaft assembly, oil seal pressing, output flange assembly, shift fork sensor assembly, gear-shifting testing, air-tightness testing, oil filling, and final test bench testing.

Dongfeng MENGSHI Drivetrain Assembly Line – Transfer Rod Conveyor Line



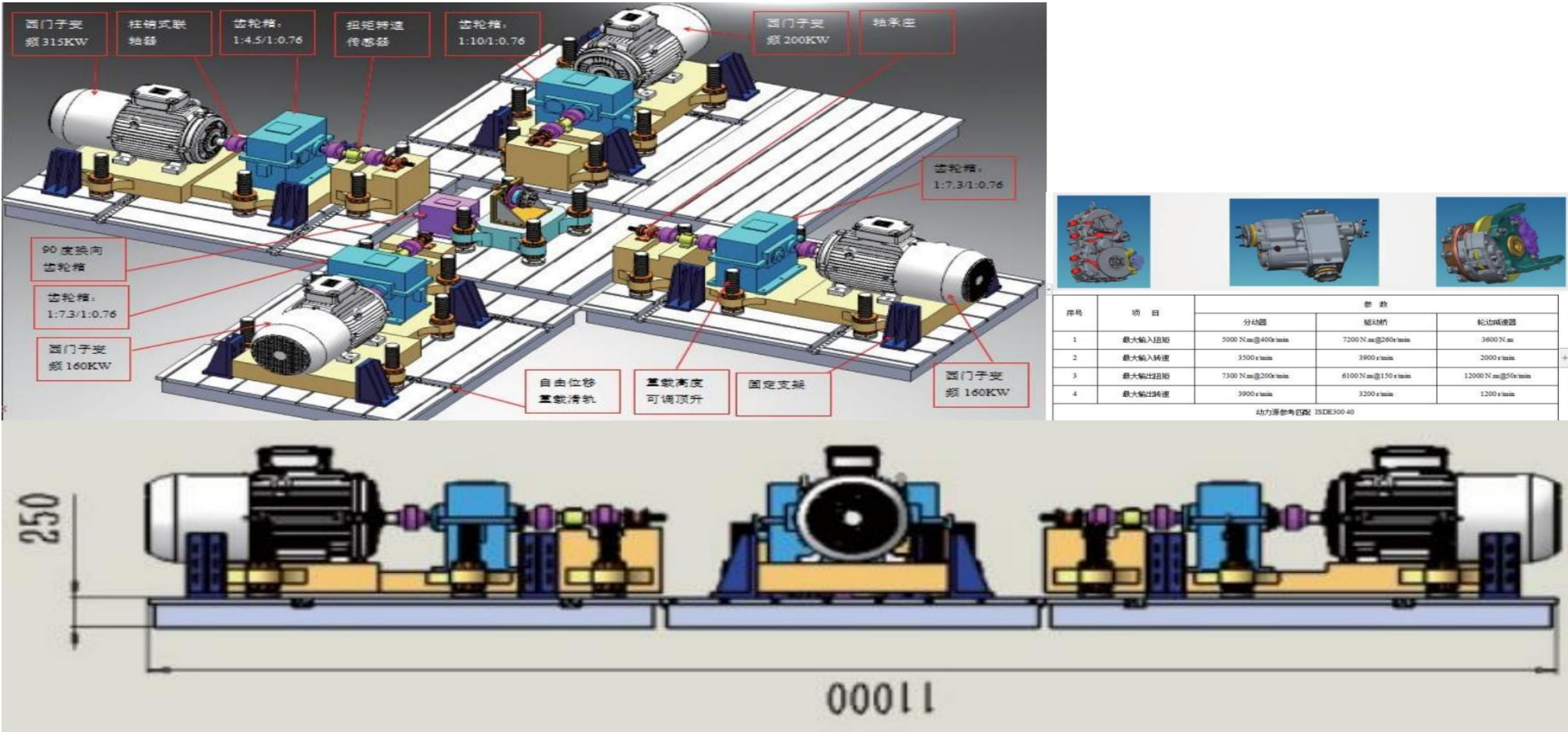
Dongfeng MENGSHI Drivetrain Assembly Line – Transfer Rod Conveyor Line



Dongfeng MENGSHI Drivetrain Assembly Line – Transfer Case Assembly Line



Dongfeng MENGSHI Wheel-End Reducer and Front, Rear & Center Drive Axle Durability and Functional Test Bench



Transmission Assembly Line



Equipment Overview:

The project consists of a transmission assembly and testing line and an axle shaft differential sub-assembly line. The integrated solution is designed around the principles of automated production, flexible assembly, and digital production management. Energy efficiency and emissions reduction are incorporated throughout the intelligent production line. The system is designed to achieve the targeted annual production capacity of a single production line, following the overall design concept of “one-time design, two-phase implementation.”

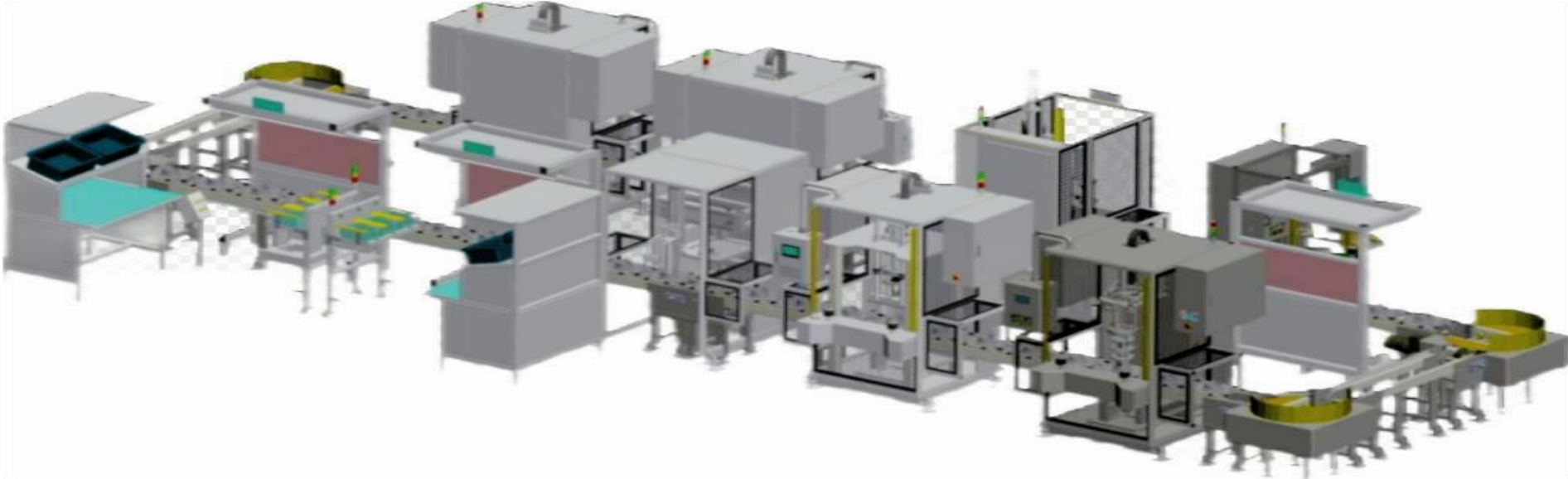
Transmission Assembly Line – End-of-Line Transmission Leak Testing Equipment



Equipment Features:

- Recirculating power-and-free chain conveyor line, equipped with an oil collection tray, oil extraction pump, and level gauge.
- Conveyor pallets equipped with a horizontal rotation function.
- Oil Hose/Tube Connector Removal Station.
- Oil Draining Station, equipped with a lifting docking mechanism and oil extraction pump.
- Bolt Installation Station.
- Automatic Leak Testing Station, featuring automatic mechanical docking and leak testing.
- Data acquisition and storage.
- Alarm message logging and clearing functions.
- All record files are protected by password-based access control.
- Safety protection functions to ensure safe equipment operation.

Transmission Assembly Line – Clutch Assembly Line Equipment

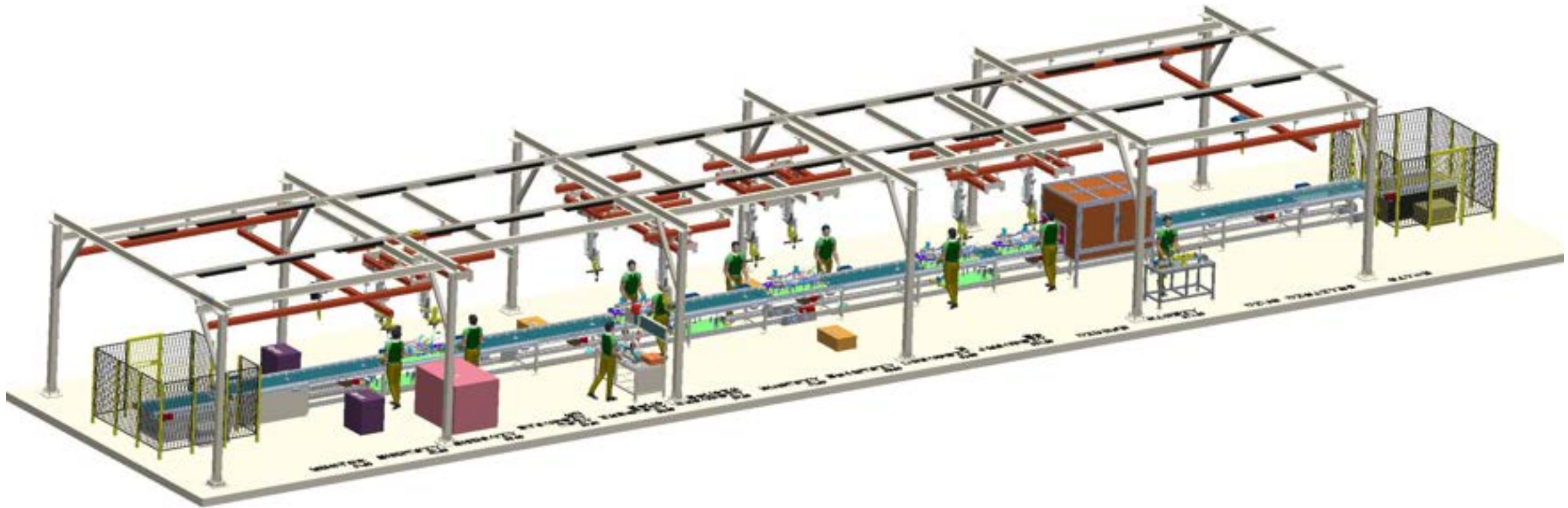


Equipment Overview

The line is designed for clutch assembly, using workpiece pallets as carriers. A friction roller accumulation conveyor is used for transfer between workstations, with automated transfer mechanisms connecting the individual stations. The complete line consists of dedicated equipment including press-fitting machines, tightening machines, measurement systems, and leak testing machines.

Each workpiece pallet is equipped with an RFID tag, while manual workstations are provided with barcode scanners. When a pallet enters the production line, relevant production information from the MES system is automatically written to the RFID tag. Subsequent workstations read the information from the tag and automatically determine the corresponding assembly operations, enabling information-based production management throughout the entire line.

Chery Front Chassis Module Assembly Line



Weichai Engine Block Assembly Line Equipment



Weichai Engine Block Assembly Line



Automatic 180° Engine Block Turning Equipment



Automatic 90° Engine Block Turning Equipment

Weichai Engine Block Assembly Line



Automatic Engine Block Press-Fitting Equipment



Automatic Engine Block Press-Fitting Equipment

Weichai Engine Block Assembly Line Equipment



Air-Tightness Testing Equipment



Engine Block AGV Transfer Equipment

Weichai Engine Block Assembly Line Equipment



Robotic Automatic Oil Spraying System



Robotic Automatic Pick-and-Place Device

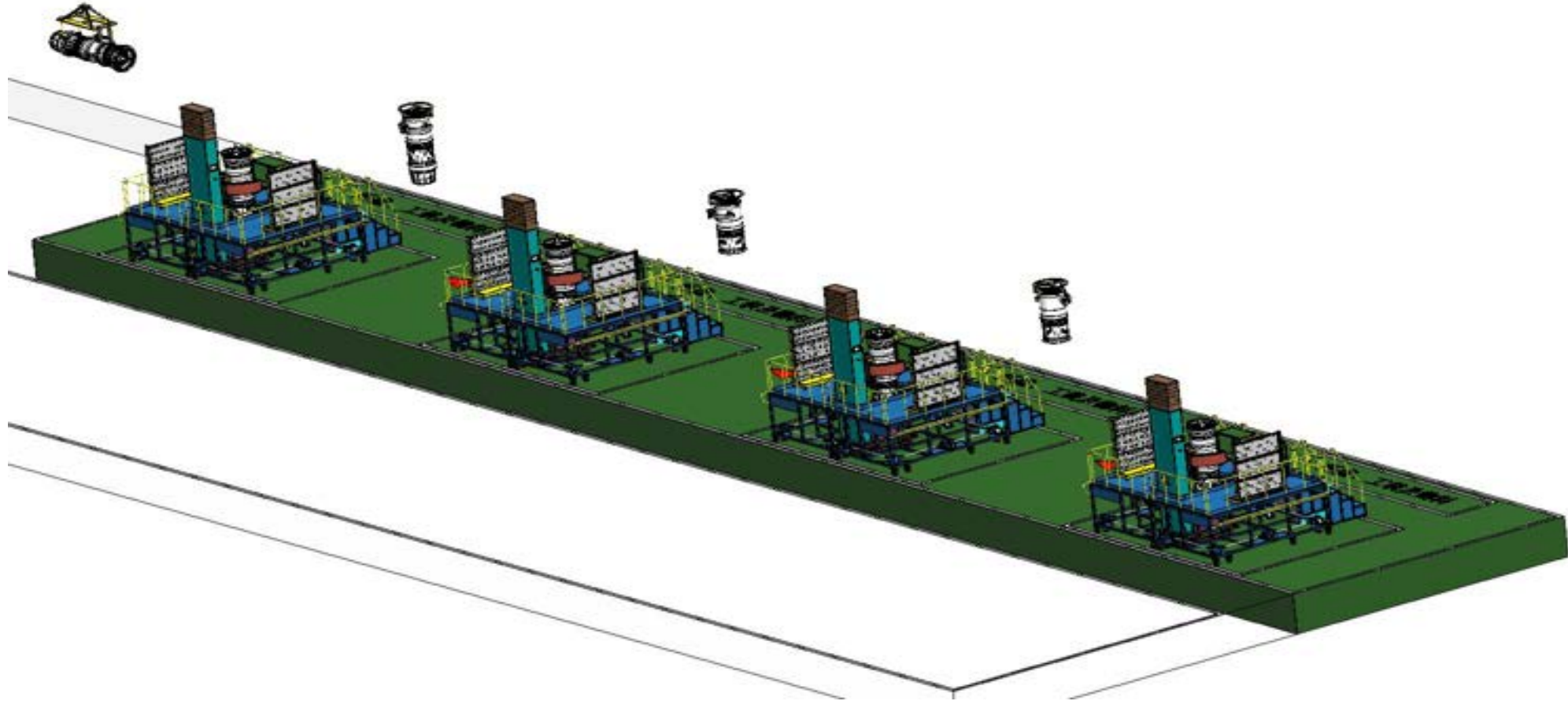
Powertrain AGV System



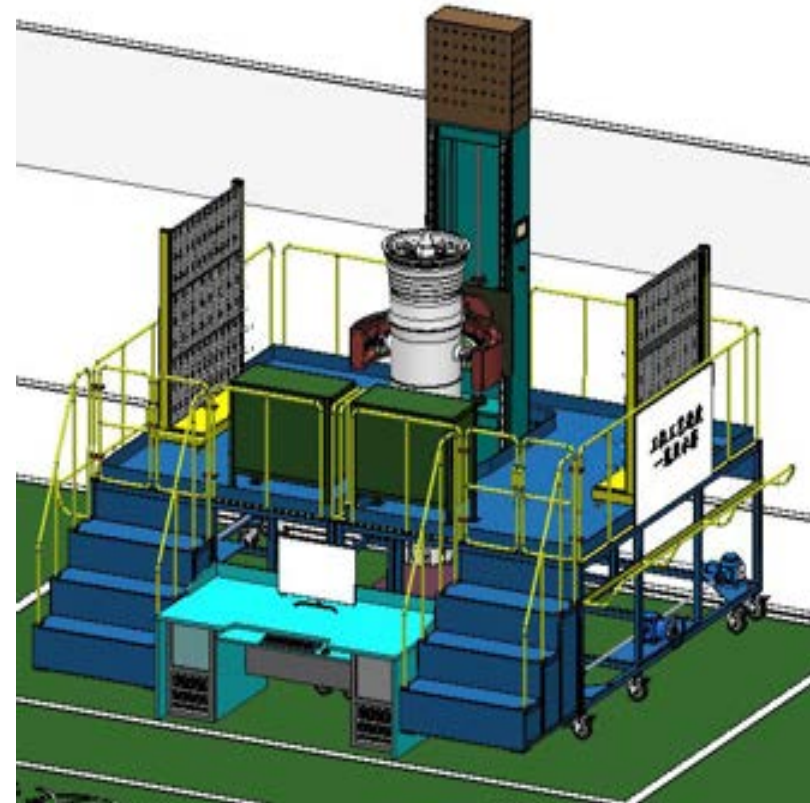
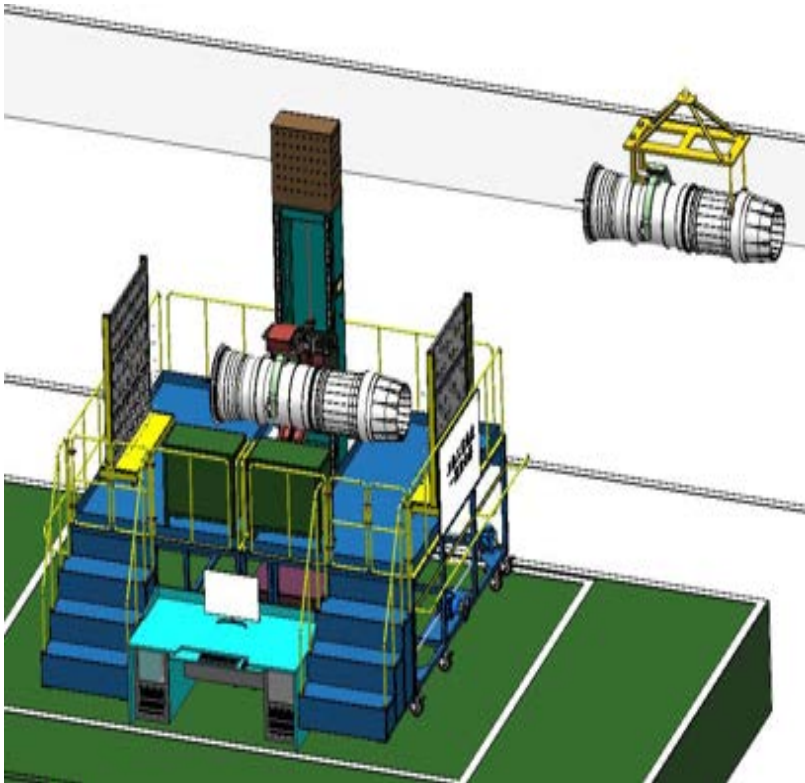
Chery (Iran) Engine Assembly Line



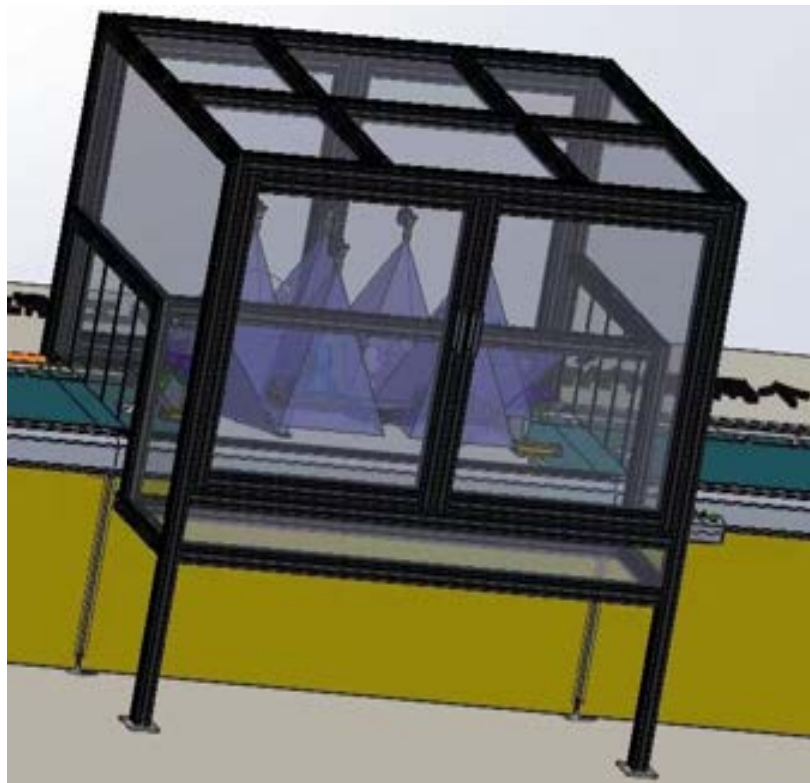
Aircraft Engine Pulsed Assembly Line



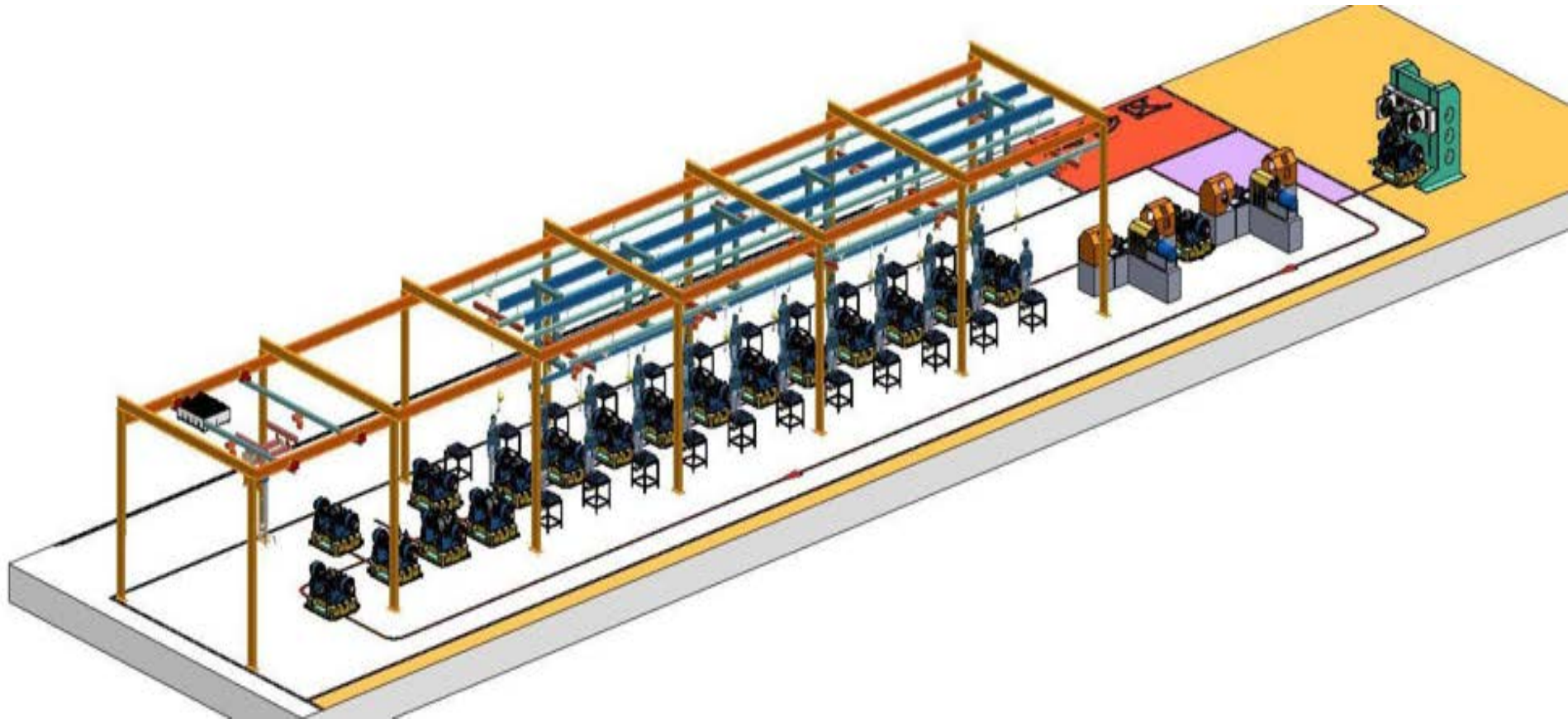
Aircraft Engine Pulsed Assembly Line



Aircraft Engine Pulsed Assembly Line-Error-Proofing and Missing-Part Detection Device



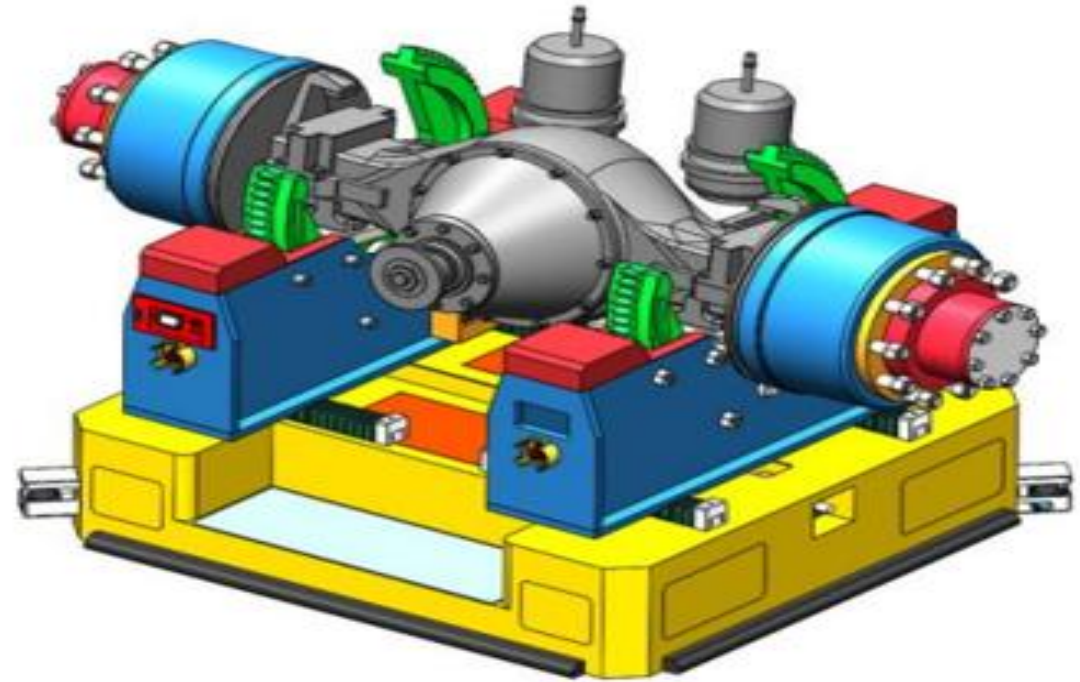
Sinotruk – Mining Truck Axle AGV Assembly Line Project



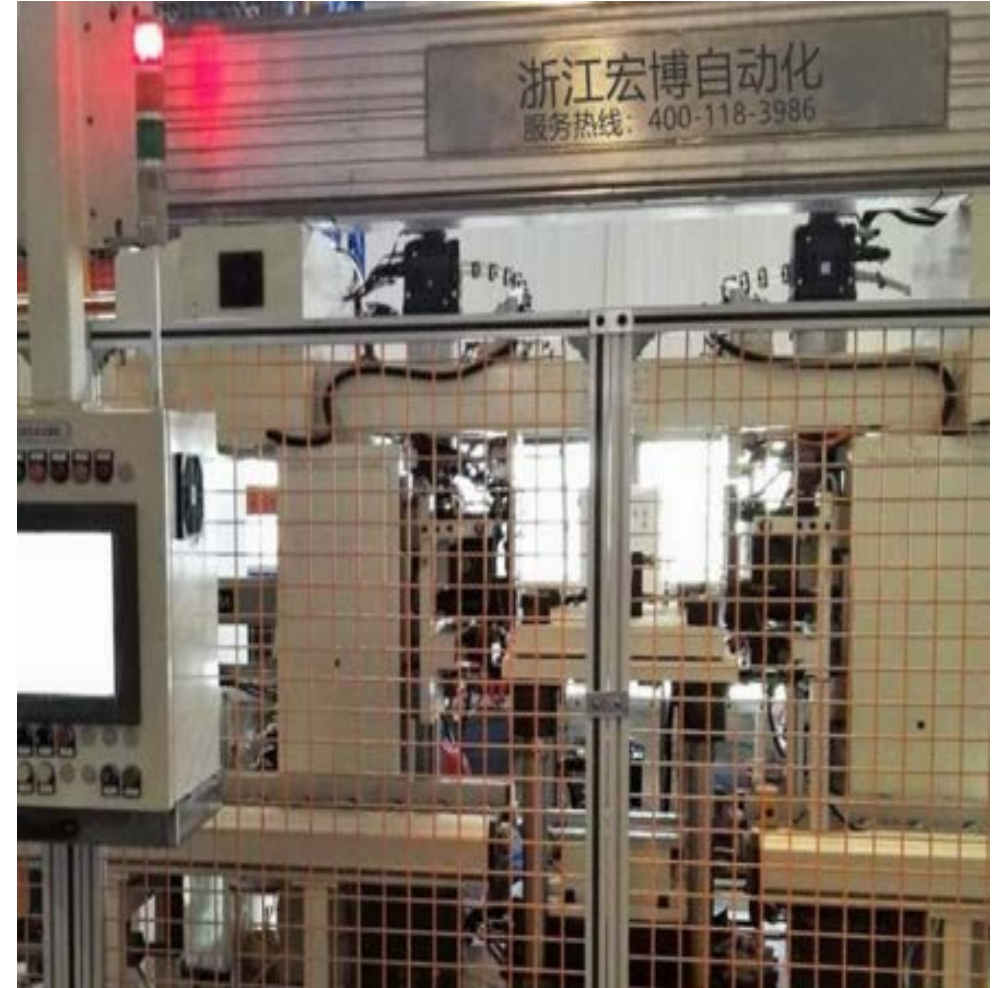
Sinotruk – Mining Truck Axle AGV Assembly Line Project



Sinotruk – Mining Truck Axle AGV Assembly Line Project



Cylinder Head Valve Guide and Valve Seat Press-Fitting Machine



Cylinder Head Valve Guide Press-Fitting Machine



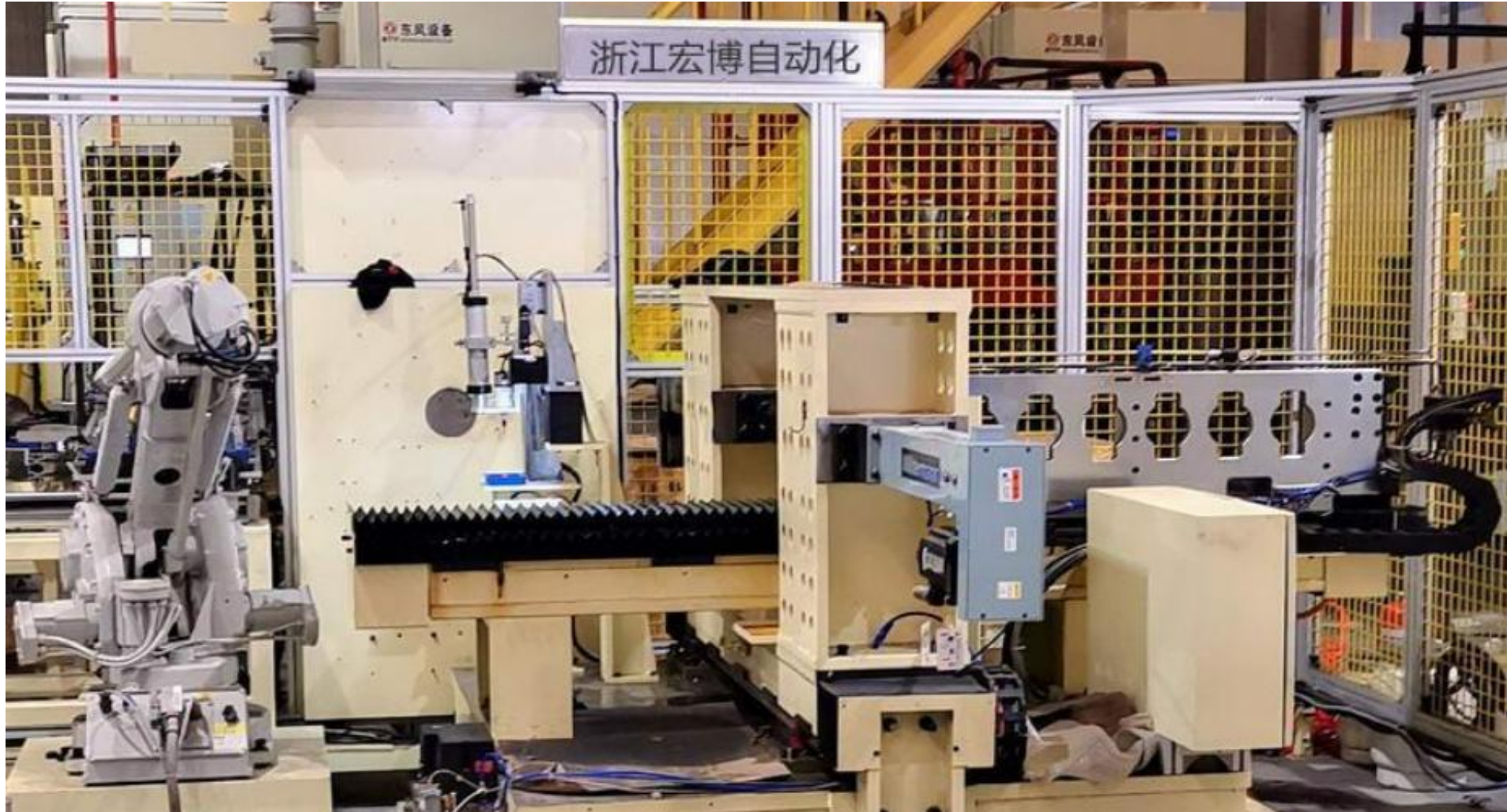
Tightening Equipment



Valve Lock Retainer Press-Fitting Machine



Cylinder Head Injector Sleeve Press-Fitting Machine



Automatic Piston Ring Assembly Machine



Powertrain Stand-Alone Equipment



Engine Piston Pin Circlip and Propeller Shaft Sub-Assembly Line



Breakaway Torque Testing Equipment

Powertrain Stand-Alone Equipment



Friction Skid Conveyor System



Bearing Outer Race Press-Fitting Equipment

Powertrain Stand-Alone Equipment



Torque Reaction Arm for Chassis Assembly



Drive Pinion Bearing Inner Race Press-Fitting Equipment

Powertrain Stand-Alone Equipment



Parallelism Inspection Equipment



Oil Seal and Encoder Ring Press-Fitting Equipment

Powertrain Stand-Alone Equipment

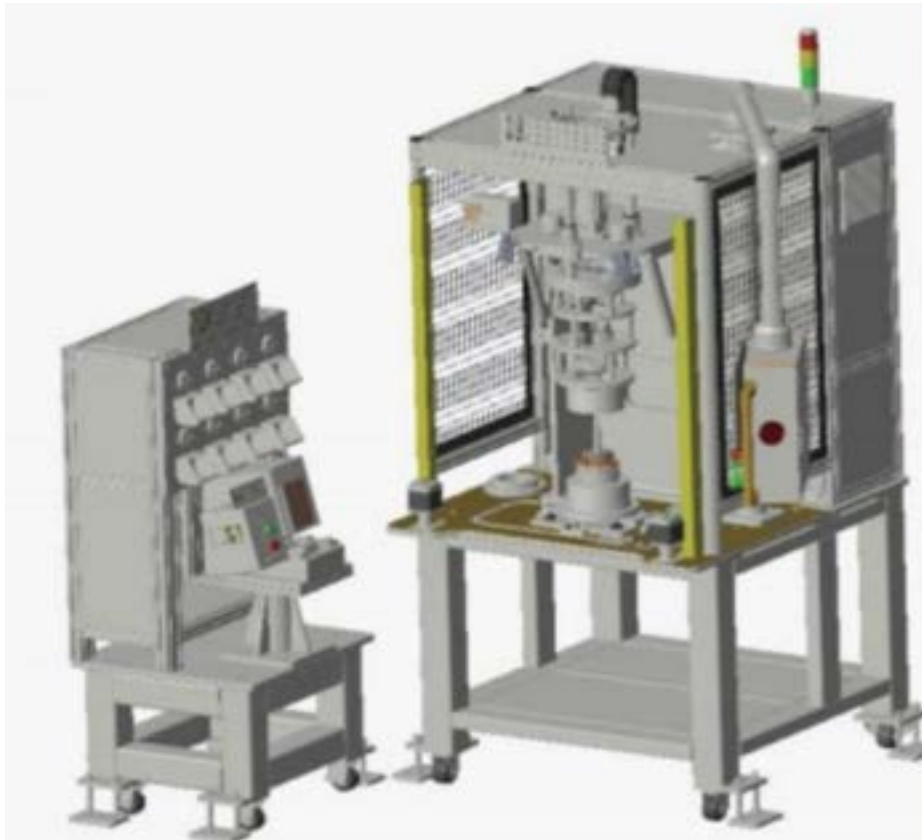


Planetary Gear Needle Roller Assembly Equipment



Battery Edge Voltage Testing Equipment

Transmission –
Differential Side Gear Shim, Tapered Bearing Shim and Input Shaft Front Snap
Ring Shim Measurement Machine



Equipment Features:

- 1.The equipment includes: a dynamic measurement machine for differential side gear shims, a dynamic measurement machine for tapered bearing shims, and a measurement machine for input shaft front snap ring shims.
- 2.The measurement machines shall use complete systems from internationally recognized manufacturers such as MARPOSS, NIEBERDING, J.W. Froehlich, and HEINZ&FELD.
- 3.The operator interface shall be user-friendly. The operating interface shall include "Currently Being Assembled" and "To Be Assembled" views. In the event of a fault, the corresponding fault message shall be displayed at the bottom of the screen. A dedicated observation window shall be provided for viewing shim measurement data, shim selection data, and the actual measurement values from the measuring probe.
- 4.An intelligent shim storage system shall be used. Based on the measurement results, the system indicates the required shim to be picked and subsequently verifies the selected shim through a re-inspection mechanism. This ensures accurate shim selection. If an incorrect shim is selected, the equipment shall issue audible and visual alarms and activate a safety interlock to prevent the machine from proceeding to the next cycle.
- 5.Repeat measurement accuracy: ± 0.005 mm.
- 6.Wear-prone components shall adopt a modular split design to facilitate replacement and maintenance.
- 7.The measurement machine shall provide a measurement compensation function, together with documentation describing the measurement principle and calculation algorithm.
- 8.Parameter adjustment through the operator panel shall be simple and straightforward. Depending on the inspection requirements, necessary parameters such as dimensional tolerance limits, timing adjustments, assembly quantity, measurement quantity, and drive speed shall be configurable to meet the requirements for automated workpiece inspection.
- 9.The equipment shall provide statistical analysis, printing interfaces, data storage, and information input/output functions to support systematic management of the inspection process.
- 10.The measurement machine shall record and store the actual measured value of each shim and write the data to the corresponding electronic tag.
- 11Dynamic Measurement Machine for Tapered Bearing Shims: The machine shall select the appropriate tapered bearing adjustment shim based on the measurement results and apply a specified preload to the tapered bearing, initially set at 200 N. This ensures that the required differential breakaway torque is achieved. During dynamic measurement, the differential shall rotate at a speed of not less than 200 rpm, with the rotational speed adjustable within the range of 0–300 rpm.

Transmission –
Measurement Equipment for Measuring the Distance from the Inner Bottom Face
of the Brake Drum to the Bottom Plane of the Oil Pump



Equipment Overview:

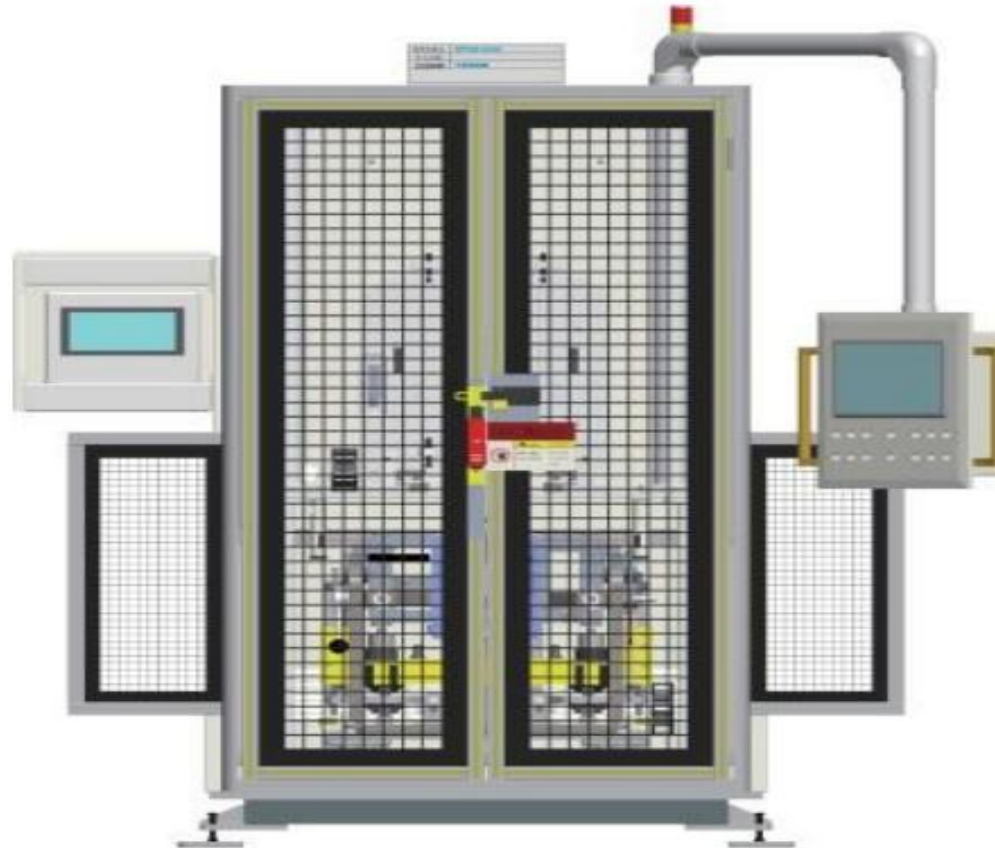
1. Overall dimensions: 2100 × 1588 × 2290 mm
2. The equipment is an in-line, fully automatic measurement system.
3. The measurement system uses high-precision displacement sensors for dimensional measurement.
4. The equipment measures the distance from the inner bottom face of the brake drum to the housing end face. The assembly is positioned naturally by gravity so that the brake drum rests against the bottom reference surface, while the relative displacement between the assembly and the measuring head is used to determine the required dimension.
5. The measuring mechanism is equipped with a micrometer fine-adjustment mechanism for precise calibration and adjustment.
6. The measurement system supports measurement verification, with a two-point zero reference that can be monitored to ensure measurement accuracy.
7. The relative positional reference can also be monitored and controlled to ensure measurement stability and repeatability.

Transmission – In-Line Press-Fitting Equipment

**Equipment Specifications:**

- 1.The press-fitting machine shall be safe and reliable, ensuring operator safety and eliminating potential safety hazards.
- 2.The equipment shall incorporate error-proofing (Poka-Yoke) functions to verify whether components and fixtures have been picked up and correctly installed, as well as to check their status and orientation. Where required, the error-proofing system shall interface with the equipment PLC and electrical control system. Audible and visual indicators shall be provided to indicate error conditions. When an error occurs, the machine shall remain in its current state until the error is cleared. Error-proofing shall use laser distance sensors or photoelectric sensors, with products from equivalent manufacturers such as Banner, KEYENCE, and Cognex.
- 3.All press-fitting machines shall provide press-fit force and displacement control. Pressure-displacement curves shall be acquired and analyzed using dedicated measurement equipment, with the system automatically determining whether the press-fitting operation is qualified.
- 4.Press-Fit Force Management System: During the pressing process from the working-feed point to the judgment point, multiple critical positions can be configured for force-displacement curve monitoring.
- 5.If the measured curve exceeds the predefined evaluation area, the system shall issue an alarm and maintain the current machine state. The HMI shall allow configuration of parameters including rapid-feed speed, working-feed speed, return speed, working-feed position, judgment position, upper and lower force limits, upper and lower displacement limits, force-displacement curve evaluation zones, return pressure, pressure-holding time, assembly quantity, and rejected quantity.
- 6.Each press head shall support multiple sets of press-fitting parameters, which can be automatically switched according to pallet identification information or manually selected and configured through the HMI.
- 7.The press-fitting machine shall use an electronic servo press.
- 8.The press-fitting machine shall provide functions including pressing to a specified relative or absolute displacement, pressing to a specified relative or absolute force, waiting for and pressing upon receipt of an external input signal, pressure holding and pressure-delay functions, optional dual pressure sensors, press maintenance status notifications, and logging of all parameter modifications and operator actions.
- 9.Force accuracy: $\leq 3\text{ N}$
Displacement accuracy: $\leq 0.01\text{ mm}$
- 10.The press head mechanism and the secondary pallet positioning mechanism shall incorporate adjustable and lockable horizontal positioning mechanisms in the X and Y directions, facilitating adjustment and fixation of coaxiality.
- 11.Oil seal press-fitting speed: $\leq 100\text{ mm/min}$. After press-fitting, the end-face runout of oil seals shall meet the following requirements:
Oil seal diameter $> 30\text{ mm}$: $\leq 0.2\text{ mm}$
Oil seal diameter $\leq 30\text{ mm}$: $\leq 0.1\text{ mm}$
- 12.Each press-fitting machine shall be equipped with appropriate safety protection measures, including two-hand control buttons and safety light curtains, to protect operators during operation.
- 13.All press heads, locating pins, locating references, and other components that come into contact with the workpiece shall be manufactured from bearing steel or low-carbon alloy steel. The surface hardness shall be not less than 60 HRC, with hard chrome plating applied to the working surfaces.

Transmission Assembly Line – Transmission Assembly Leak Testing Equipment



Equipment Specifications:

- 1.The equipment is used for leak testing of transmission assemblies on the final assembly line.
- 2.The system shall provide leak test data storage.
- 3.The transmission assembly is automatically sealed and clamped, followed by pressurized air leak testing. The sealing fixtures shall be replaceable and compatible with different product models.
- 4.The equipment shall be equipped with status indicator lights and support semi-automatic operation, jog operation, and emergency stop functions.
- 5.If an abnormal test pressure or zero-point drift of the measuring instrument is detected, the system shall automatically issue an audible and visual alarm and display the corresponding fault information. The test results shall be automatically evaluated, with "PASS" and "FAIL" indicator lights provided.
- 6.The sealing materials used on all sealing components shall have good elasticity, high toughness, wear resistance, and oil resistance to ensure reliable sealing.
- 7.The equipment shall be equipped with a dedicated secondary air-treatment unit and a low-air-pressure alarm to ensure that the test air supply is clean and dry.
- 8.Test parameters shall be adjustable according to different testing requirements.
- 9.The equipment shall be provided with calibration reference parts for daily calibration of the leak tester. Each shift, the leak tester shall be calibrated using designated reference parts, including both a qualified reference part and a micro-leak reference part. Two storage carts shall be provided for the calibration reference parts. The operator manually connects the reference part to the loading roller conveyor and presses the calibration button. The reference part is then automatically loaded into the leak tester, calibrated automatically, and discharged to the storage cart after calibration is completed.

Transmission Assembly Line – Transmission Rear Housing Sealant Application Equipment



Equipment Specifications:

- 1.The equipment shall use a metered adhesive dispensing system to ensure a stable and consistent adhesive output.
- 2.The adhesive dispensing speed shall be adjustable through parameters on the HMI. The system may adopt a configuration such as a Graco PCF system, servo motor with gear pump, servo motor with metering cylinder, or an equivalent system.
- 3.In the event of a rejected part, the equipment shall provide an audible and visual alarm. If a preset number of consecutive parts are rejected, the system shall issue an audible and visual alarm and transmit the relevant information to the MES system. The number of consecutive rejects shall be configurable.
- 4.The in-line vision inspection station shall provide local image storage and upload inspection images to the line-wide data acquisition system.
- 5.The equipment shall incorporate an anti-drying system to prevent cured adhesive from accumulating inside the adhesive supply and dispensing lines.
- 6.A nozzle anti-drying box containing paraffin wax/kerosene shall be provided at the adhesive dispensing position, together with an air-blowing device to remove residual paraffin wax/kerosene from the nozzle.
- 7.After the dispensing head is removed from the anti-drying box, it shall undergo adhesive scraping, air blowing, brushing, and other cleaning processes before dispensing, ensuring consistent adhesive application quality.
- 8.The equipment shall provide a point-to-point adhesive dispensing function.
- 9.More...

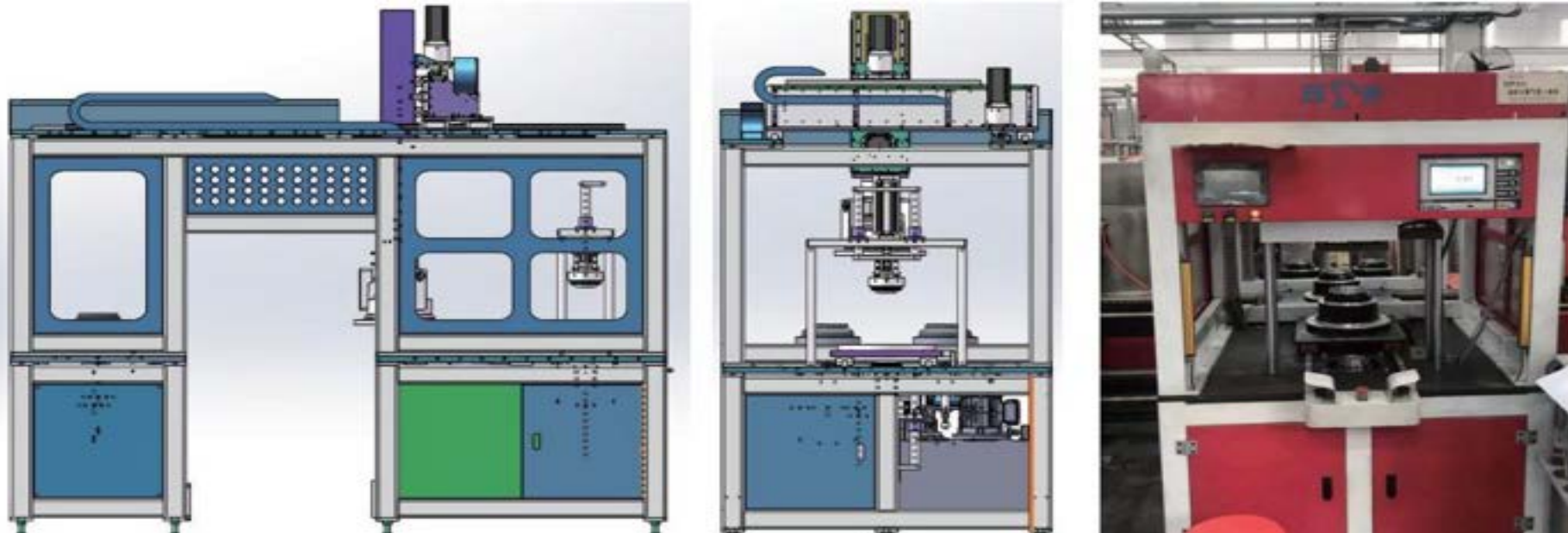
Automatic Reversing Assembly Equipment



Equipment Overview:

This equipment is designed for assembly stations on closed-loop conveyor lines and provides an automatic in-line workpiece reversing function. It features a high degree of automation, excellent operational stability, convenient operation, and strong compatibility with different product variants.

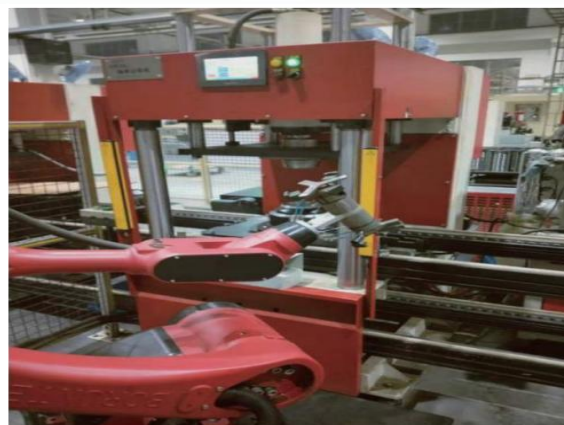
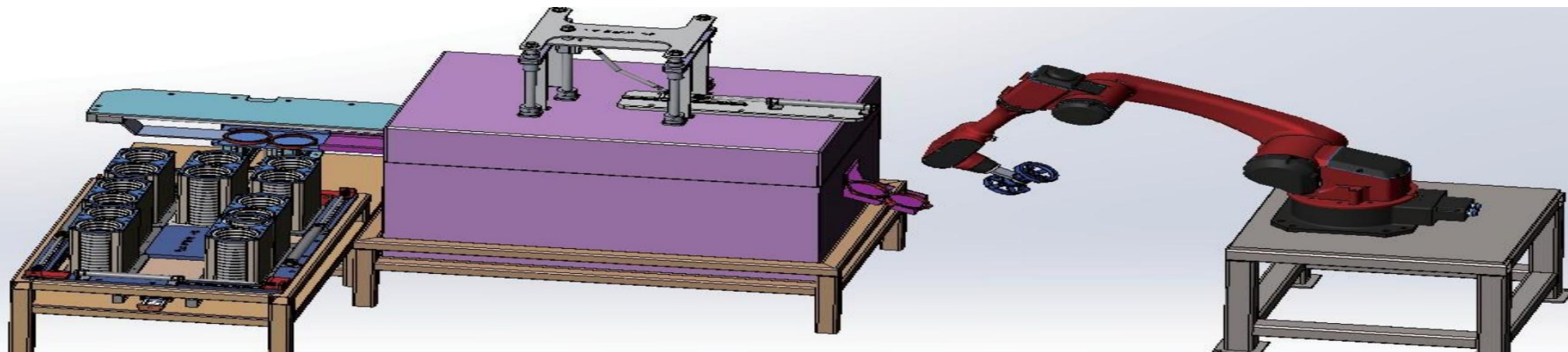
Integrated Snap Ring and Oil/Air Seal Press-Fitting & Air-Tightness Testing Machine



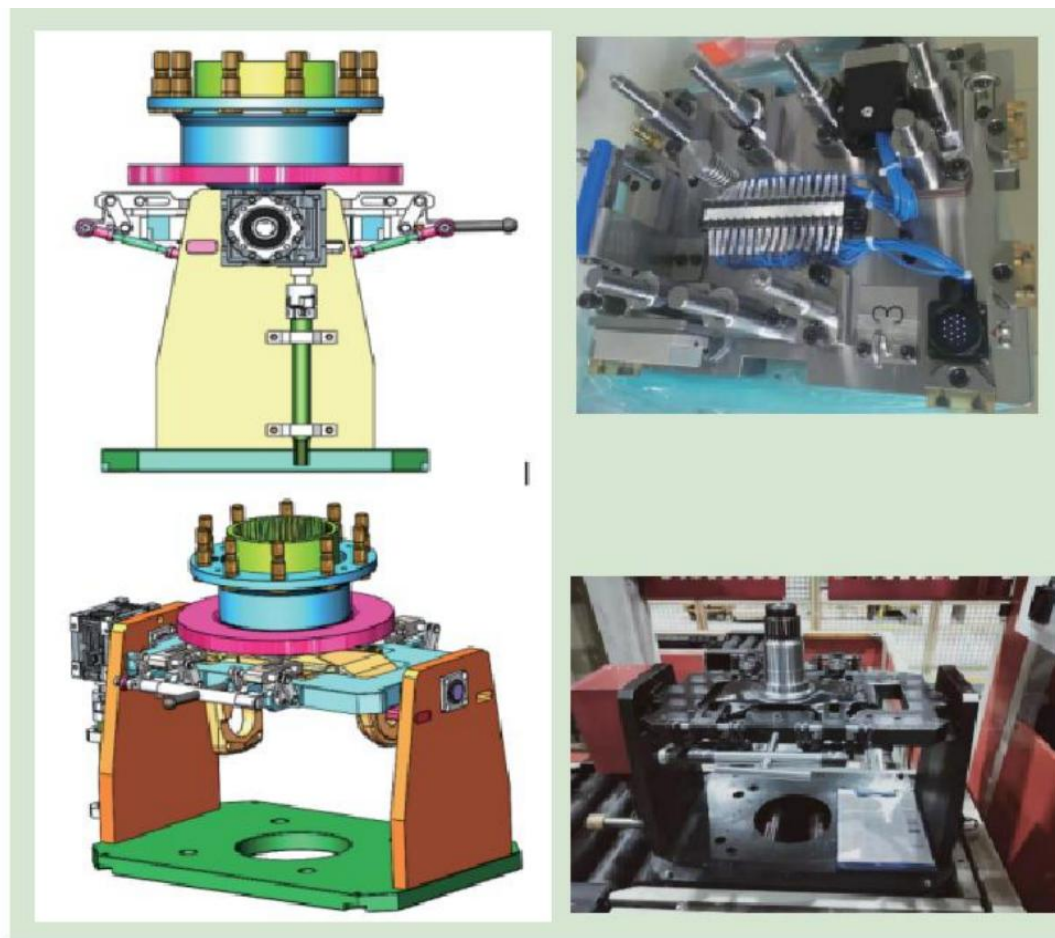
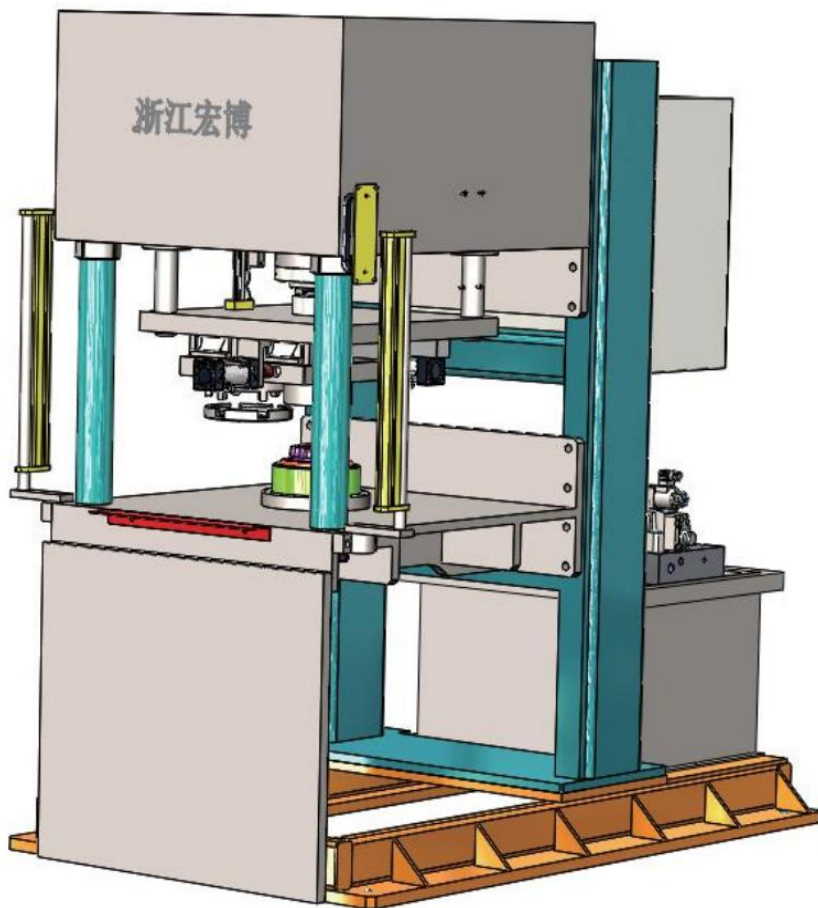
Equipment Overview:

The equipment integrates snap ring installation, oil and air seal press-fitting, and air-tightness testing into a single workstation, providing an integrated solution for these assembly processes. It effectively addresses the challenges associated with automatic snap ring press-fitting and enables the one-step installation of the snap ring and oil/air seals.

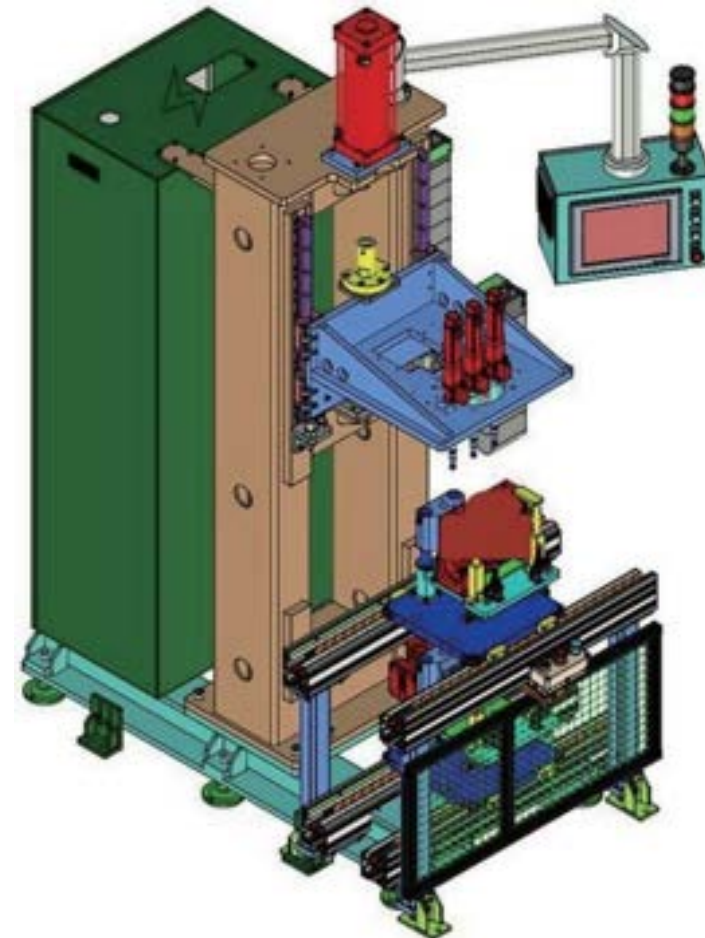
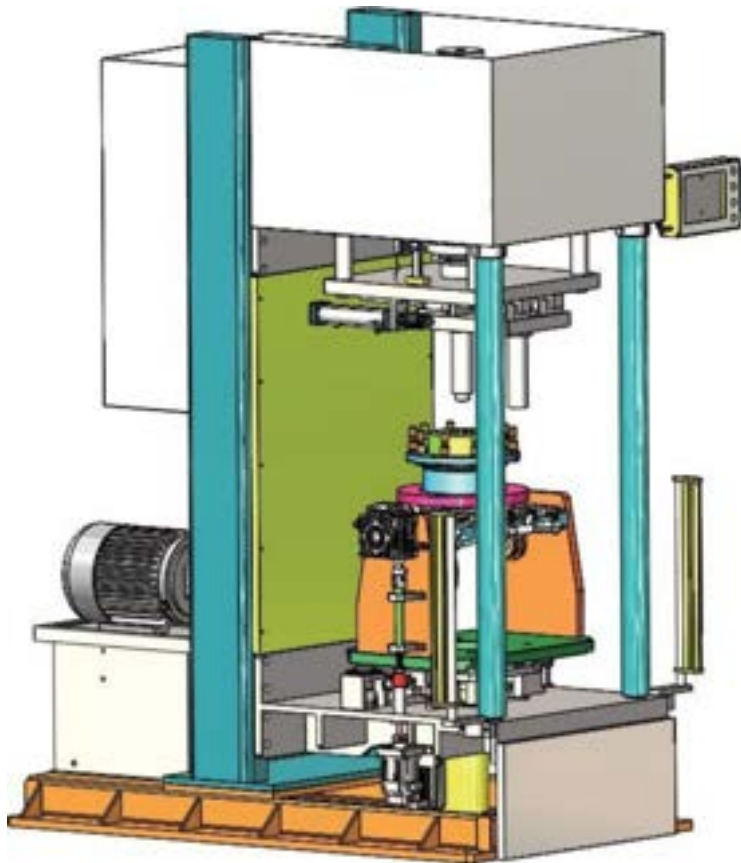
Fully Automatic Bearing Outer Race Cold Assembly Machine
(Invention Patent No. ZL201910068500.1)



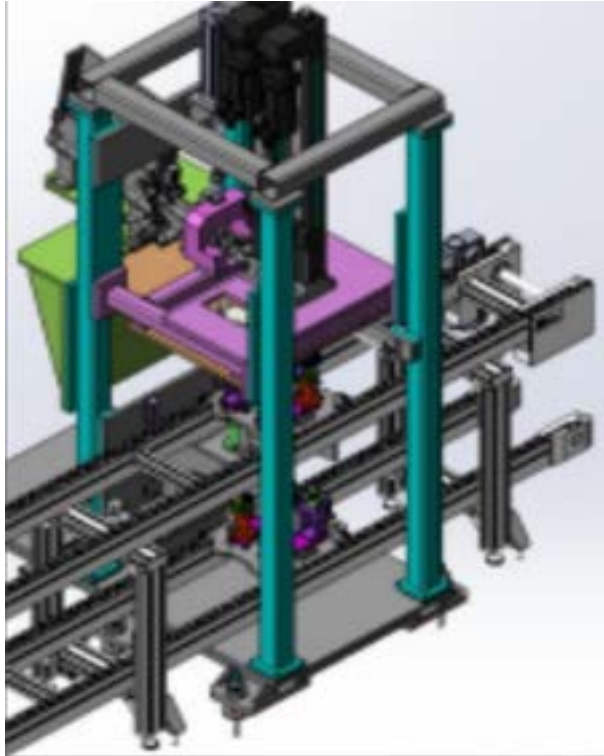
Multi-Head Press-Fitting Machine (National Invention Patent No. ZL201910069321.X)



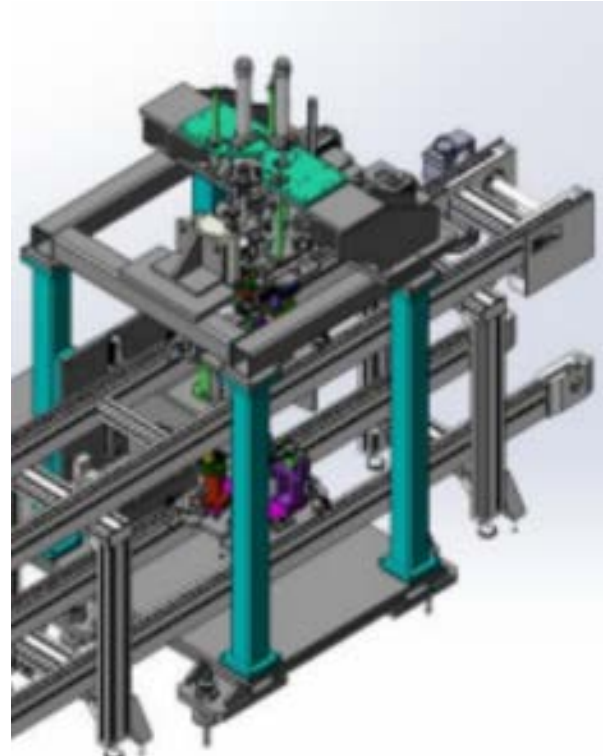
Multi-Head Reversible Two-Way Press-Fitting Machine
(National Invention Patent No. ZL201910069308.4)



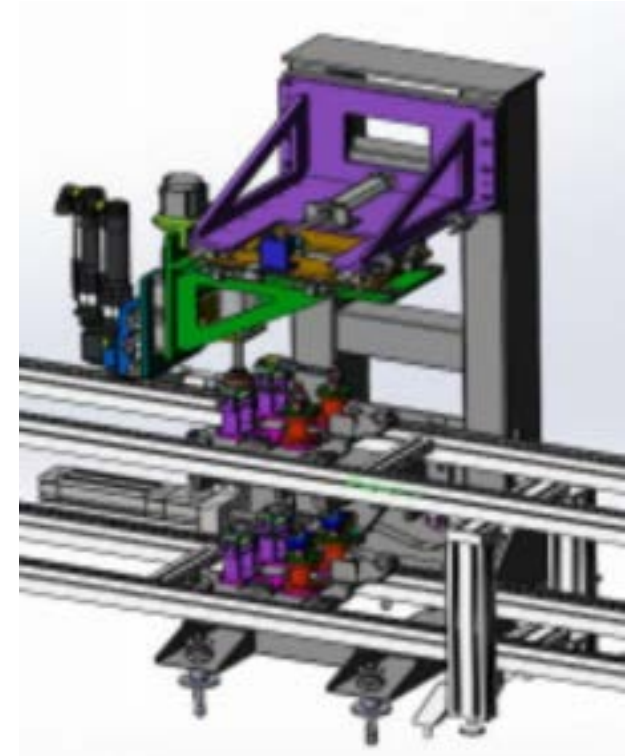
Powertrain Stand-Alone Equipment



Engine Assembly Line – Piston Pin Press-Fitting

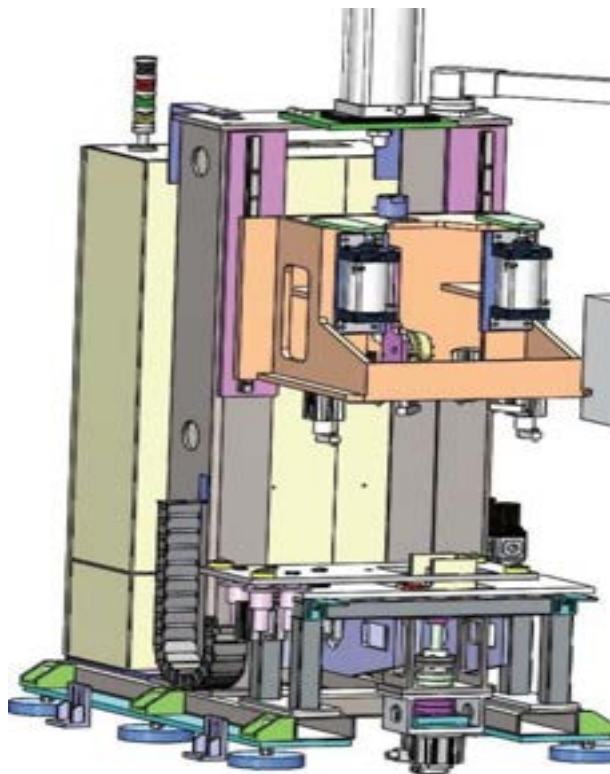


Engine Assembly Line – Circlip Press-Fitting

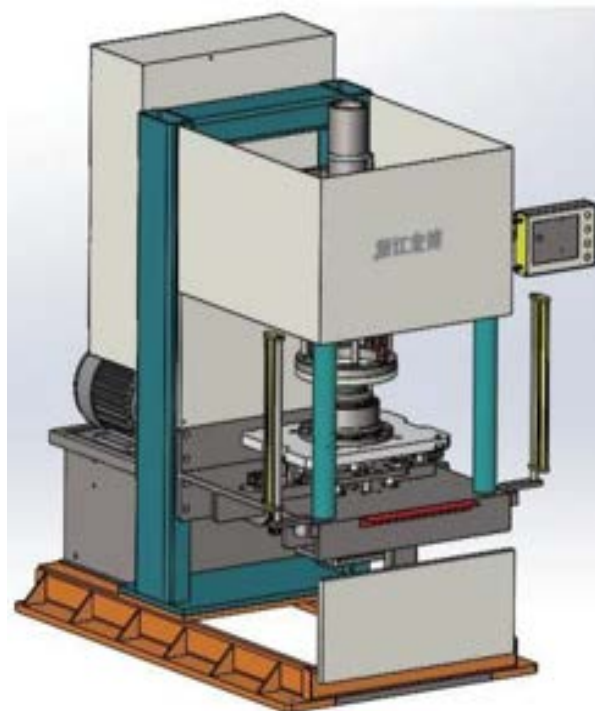


Engine Connecting Rod Bolt Loosening Unit

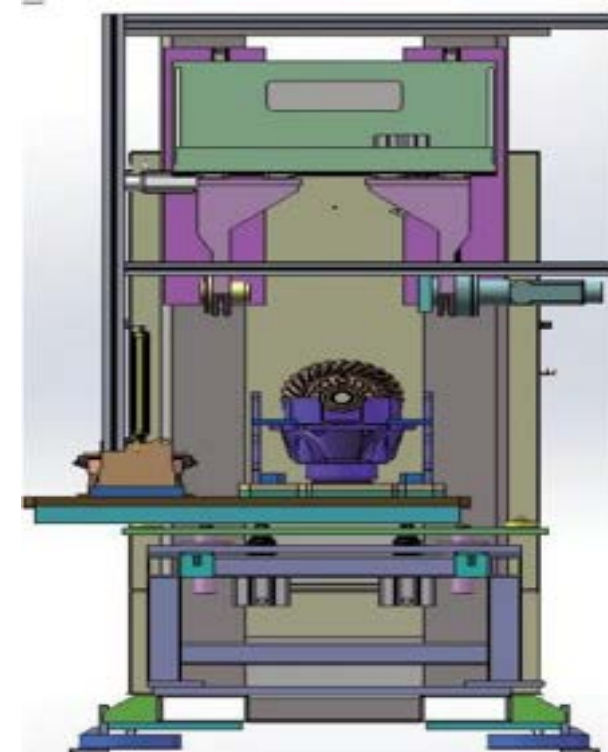
Powertrain Stand-Alone Equipment



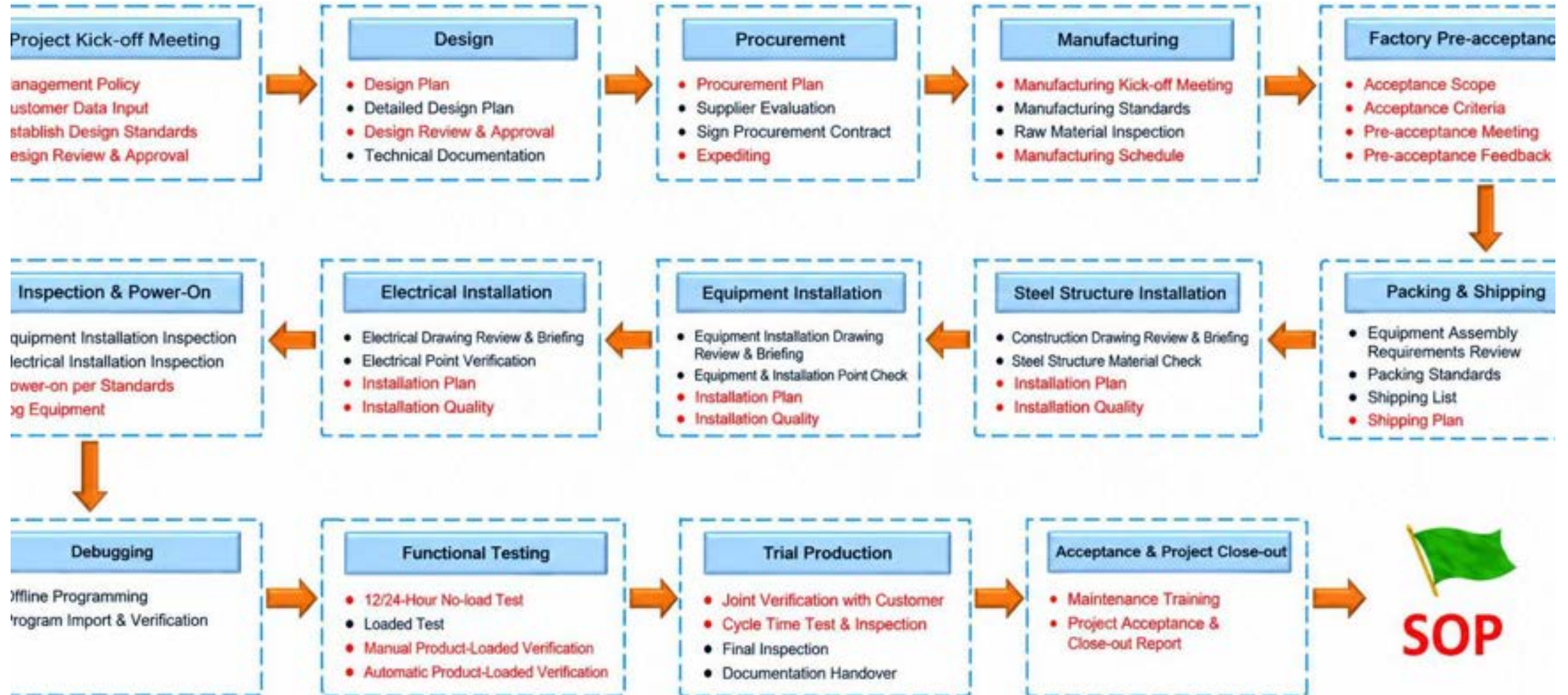
Piston Pin Circlip Inspection



30-Ton Servo-Hydraulic Bolt Rotary Multi-Point Press-Fitting Machine



Engine Connecting Rod Bolt Loosening Unit



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No. 43, Pulin Industrial Park, Maojian District, Shiyan City,
Hubei, China



+86 15072902306 (whatsapp)



sales@hongboautomation.com



www.hongboautomation.com



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