



**THACO  
INDUSTRIES**

# MECHANICAL CENTER



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## GENERAL INFORMATION

Mechanical Center belongs to Truong Hai Industries Group - THACO INDUSTRIES. With the leading scale in Vietnam, the Center includes Mechanical Complex, Semi-trailers Plant, Precision mechanics and Mold plant, Specialized Equipment Plant and Mechanical and Electrical Refrigeration Company. These companies operate in a highly integrated and complementary model, providing materials, workpiece, molds, mechanics & supporting industries products, mechanical processing & surface treatment services at a large scale through the production process: workpiece processing, welding, surface treatment & painting, assembly.

With state-of-the-art equipment, modern technological lines and closed production process under strict quality control from input to output, the Mechanical Center has obtained important certificates such as Environmental management system ISO 14001:2015, Quality management system ISO 9001:2015,... and meeting all customers' standards.

Mechanical Center serves both domestic and international customers, cooperating with major global brands and exporting to diverse markets including the USA, Australia, Sweden, Finland, Canada, Japan, South Korea, Malaysia, Myanmar...



## PRODUCTION PROCESS





## MECHANICAL CENTER

### 1 MECHANICAL CENTER

### 2 MECHANICAL AND ELECTRICAL REFRIGERATION COMPANY



Area: 145,000 m<sup>2</sup>

Capacity: 200,000 tons of steel and 300,000 mechanical products/year.

Products: Steel material, non-ferrous metal, mechanical products,...

### 3 SEMI - TRAILERS PLANT



Area: 25,000 m<sup>2</sup>

Capacity: 30,000 semi-trailers/year.

Products: Skeleton semi-trailers, semi-trailer components, special semi-trailers.

### 4 MOLDS PLANT



Area: 4,400 m<sup>2</sup>

Capacity: 1,000 sets mold and 2,000 tons of precision mechanical products/year.

Products: Plastic injection mold, plastic extrusion mold, SMC mold, stamping dies, heat press mold, PU foam mold; precision mechanical products.

### 5 SPECIALIZED EQUIPMENT PLANT



Area: 15,140 m<sup>2</sup>

Capacity: 16,800 tons of steel structures and 60,000 agro-industrial equipment, mechanical products/year.

Products: Agro-industrial equipment, lifting and transferring equipment, steel structures, specialized mechanisms, MEP systems.



Steel coil



Steel & non-ferrous metal sheets

**MECHANICAL PROCESSING PRODUCTS**



Precision mechanical products



Box steel tube



Steel tube



Metal forming products



Flange components



Laser cutting items



Aluminum casting products



# PRODUCTS

## MOLDS INJECTION MOLDS



Bus wheel rim cover mold



Truck front bumper mold

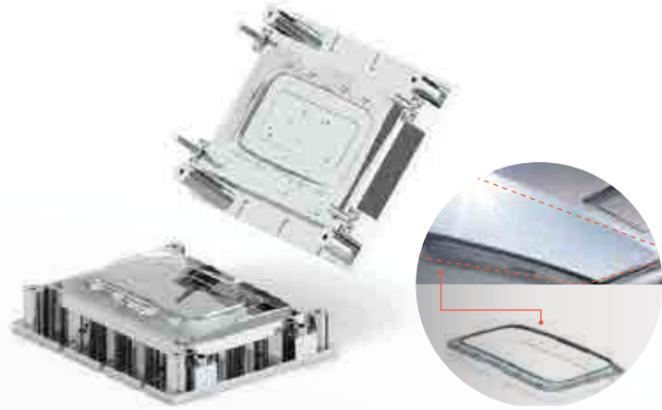


Truck grille mold

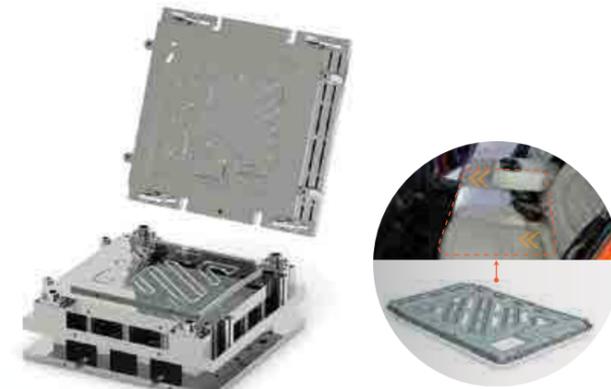


Cage ventilation fan mold

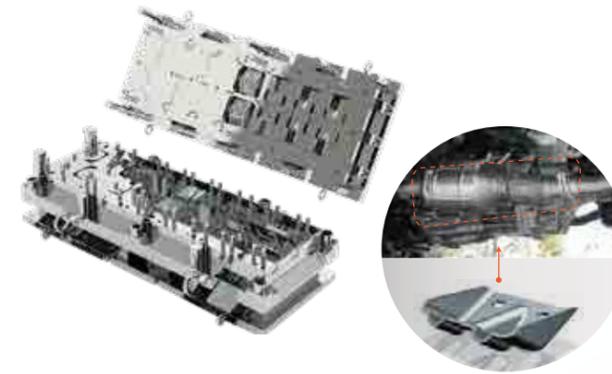
## STAMPING DIES



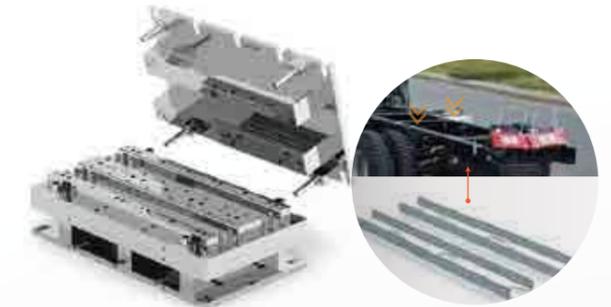
Passenger car sunroof frame stamping die



Passenger car chair frame stamping die

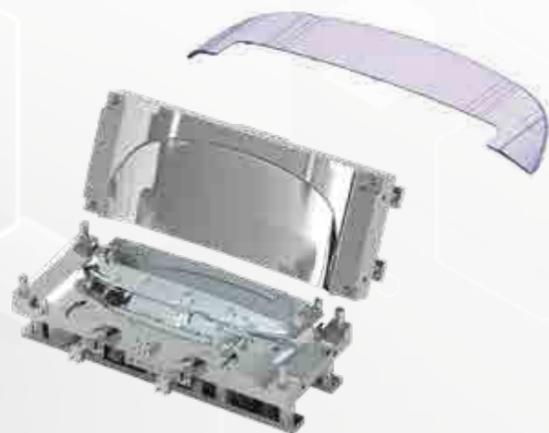


Truck front pipe exhaust hanger progressive die

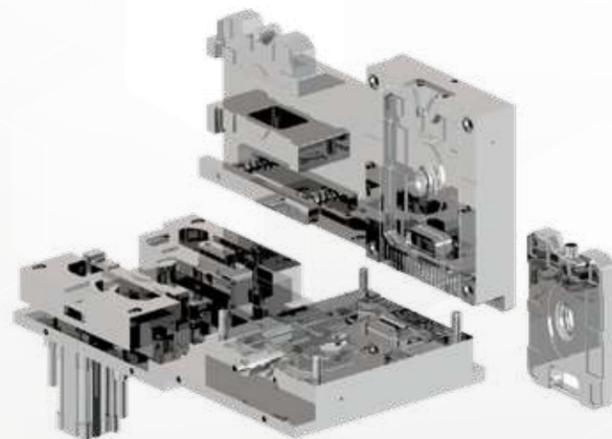


Truck chassis frame stamping die

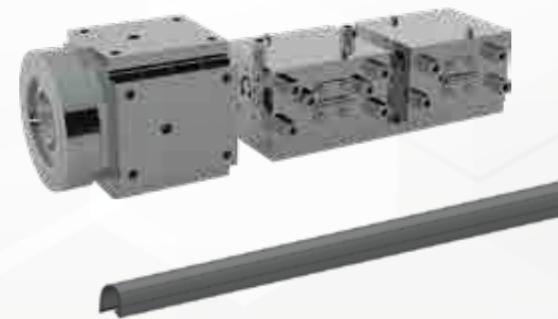
## EXTRUSION MOLDS - EXTRUSION BLOW MOLDS



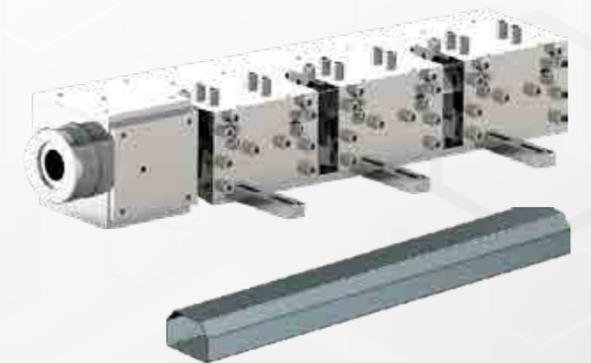
Extrusion blow mold for spoiler passenger car



Hard shell gel ice pack mold



Extrusion mold for trim part



Hydroponically pipe mold



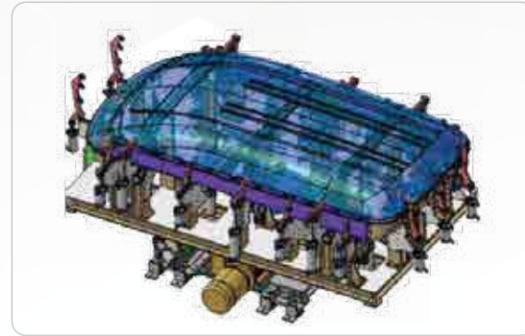
# PRODUCTS

## INDUSTRIAL EQUIPMENT FOR AUTOMOBILE MANUFACTURING

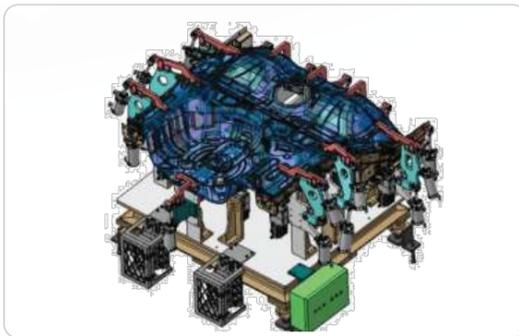
### WELDING LINE



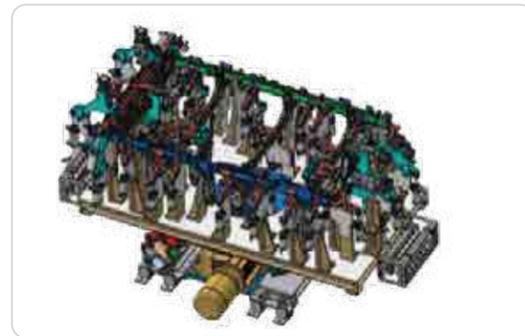
Quarter upper turntable jig



Roof top key turntable jig



Rear floor complete key jig

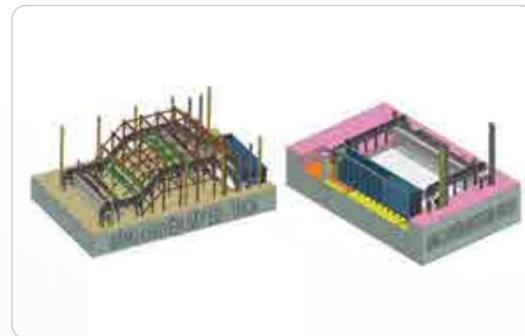


Roof top frame turntable jig

### DÂY CHUYỂN SƠN TÍNH ĐIỆN



Hanger system



Conveyor system

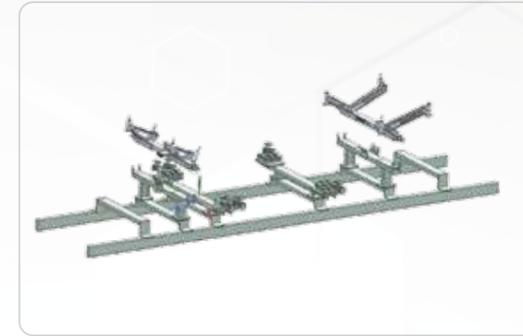


E-coat oven



E-coat oven cooling

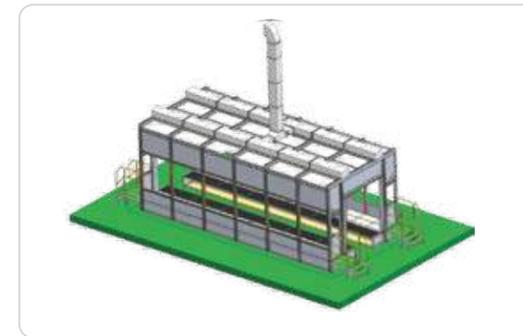
### PAINTING LINE



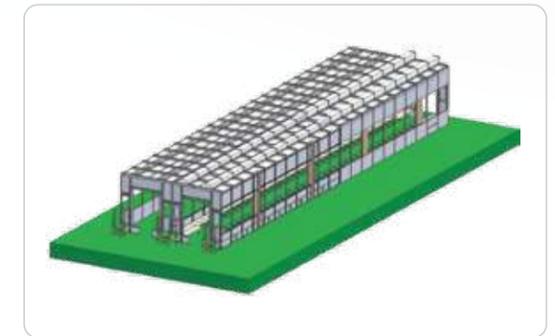
Car body skid



Hanger change skid



Moist sanding room



Polishing room

### ASSEMBLY LINE



Tilt station



Marriage station



Slat conveyor



Final quality gate



**SLITTING LINE**  
Maximum thickness: 12 mm  
Width: 50 - 1,200 mm  
Quantity: 03 lines



**LASER CUTTING LINE**



**CO<sub>2</sub> LASER CUTTING MACHINE**  
Maximum thickness: 16 mm  
Cutting dimension: 6,000 - 2,000 mm



**BOX & TUBE STEEL LASER CUTTING MACHINE**  
Cutting dimension: □20 - 220 mm; Ø20 - 220 mm  
Thickness: 10 mm (steel); 5 mm (stainless steel)  
Quantity: 03 machines



**SHEET STEEL LASER CUTTING MACHINE**  
Power: 15,000 W  
Cutting size: 6,200 - 2,500 mm



**SHEET STEEL LASER CUTTING MACHINE**  
Power: 15,000 W  
Cutting size: 6,200 - 2,500 mm



**CNC MACHINING LINE**



**ELECTRICAL DISCHARGE & WIRE CUTTING LINE**



**5 AXIS CNC MILLING MACHINE**  
Max load on table: 25,000 kg  
Max workpiece size: 3,600 x 2,000 x 1,800 mm  
Accuracy:  $\pm 0.005$  mm



**5 FACES CNC MILLING MACHINE**  
Max load on table: 25,000 kg  
Max workpiece size: 3,600 x 2,500 x 1,500 mm  
Accuracy:  $\pm 0.005$  mm



**EDM MACHINE**  
Max load on table: 14,000 kg  
Max axis travel: 3,600 x 1,800 x 1,000 mm  
Accuracy:  $\pm 0.01$  mm



**GRAPHITE CNC MILLING MACHINE**  
Max load on table: 1,200 kg  
Max axis travel: 1,350 x 600 x 500 mm  
Accuracy:  $\pm 0.005$  mm



**ALUMINUM CASTING MACHINING LINE**



**DCR 350R ALUMINIUM DIE CASTING MACHINE**

Max product volume: 2.5 kg  
Max mold volume: 650 x 650 mm  
Mold height: 300 - 700 mm



**DCR 250R ALUMINIUM DIE CASTING MACHINE**

Max product volume: 2 kg  
Max mold volume: 580 x 580 mm  
Mold height: 300 - 600 mm

**VACUUM IMPREGNATION LINE**



The vacuum impregnation system is a specially designed system for impregnation under vacuum pressure conditions.  
Compressed air pressure: 4-7 Bar  
Origin: India  
Maximum capacity: 1,000 kg/h



**VACUUM IMPREGNATION SYSTEM**

Pool size: O900 x 1,100 x 10 mm  
Working condition: Vacuum  
Pressure: 4-7 bar  
Temperature: 15-20°C



**WASHING SYSTEM**

Injection pressure: 0.1 mpa  
Maximum rotation speed: 20 rpm  
Solidification temperature: 90°C



**HYDRAULIC PRESS MACHINE**

Press range: 60 - 1,000 tons  
With Robots/Automatic transfer system  
Quantity: 60 machines



**CNC BENDING MACHINE**

Maximum power: 51,800 W  
Maximum bending diameter: Ø110 mm  
Quantity: 02 machines



**CNC PRESS BRAKE MACHINE**

Thickness: 0.6 - 12 mm  
Workable length: 12,000 mm  
Quantity: 30 machines



**SHEET METAL BENDING MACHINE**

Bending force: 33 tons  
Bending length: 2,180 mm  
Material thickness: 2.5 - 4 mm



**ROBOT WELDING LINE**

Quantity: 100 robots



**WELDING ROBOT STATION**

Utilize MIG/MAG welding technology  
Quantity: 4 - 12 robots/stations  
Robot arm reach: 2,000 mm



**CHASSIS WELDING LINE**

Capacity: 20,000 units/year

Quantity of machines and equipment: 43



**H-BEAM WELDING MACHINE**

Dimension: 12,000 x 1,000 x 700 mm

Welding speed: 150 - 1,000 mm/min



**I-BEAM WELDING MACHINE**

Dimension: 2,500 x 2,500 x 1,630 mm

Welding speed: 100 - 1,000 mm/min



**TECHNOLOGY**  
SURFACE TREATMENT & PAINTING



**SHOT BLASTING BOOTH**  
Max material dimension: 15,000 x 8,925 x 11,078 mm  
Max load: 5,000 kg



**ED COATING LINE**  
Max material dimension: 17,000 x 1,600 x 3,700 mm  
Salt mist resistance: 1,000 hours



**POWDER COATING LINE**  
Max dimension: 20,900 x 9,200 x 7,140 mm  
Max load: 4,000 kg



**TECHNOLOGY**  
ASSEMBLY



**TRUCK BOX ASSEMBLY LINE**



**PLANT OVERVIEW**



**AUTOMATIC WELDING EQUIPMENT**  
Working length: 40,000 mm  
Quantity: 40 robots



**ROBOT PAINTING LINE**  
Capacity: 30,000 products/year

**SEMI-TRAILERS EXPORT MARKETS**



20'/40' City Combo Tandem



20'/40' Combo Tridem



40'/45' Extendable Tandem



53' Gooseneck Tandem



Water Tanker



Dolly Tandem

**DOMESTIC MARKETS**



40' Skeletal Tandem, 8 Twist Locks



Dump Semi-trailer (heavy tare weight)

**STEEL STRUCTURES**



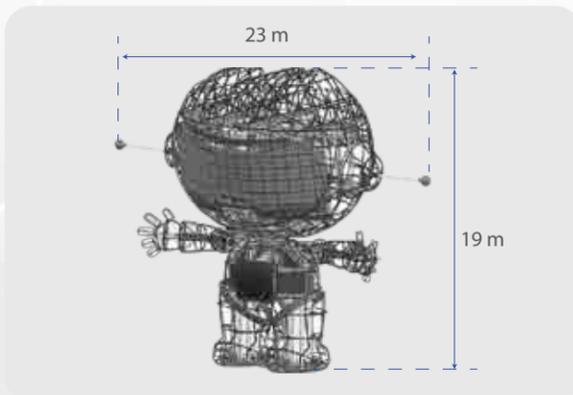
Building steel structure

**MEP SYSTEMS**



Heating, Ventilation and Air Conditioning & Fire protection systems

**EQUIPMENT INSTALLATION SERVICE**



Robotic steel structure



Ba Son Bridge's steel structure



**PLANT OVERVIEW**



**CNC 4-AXIS LATHE MACHINE**  
Maximum thickness: 13 mm



**CNC OXY-FUEL AND PLASMA CUTTING MACHINE**  
Maximum thickness: 150 mm  
Cutting dimension: 15,000 - 3,200 mm



**GANTRY WELDING MACHINE**  
Welding thickness: 6 – 80 mm  
Welding speed: 200 – 1,500 mm/minute



**ROBOT WELDING LINE**  
Max load: 12 kg  
Accuracy:  $\pm 0.03$  mm



## R&D ACTIVITIES

To rapidly develop and diversify products, meeting customers' unique demands, the Mechanical Center emphasizes on R&D activities by constantly training and developing its high-skilled engineers and experts, effectively applying modern designs, calculation and simulation software (NX, Hyperworks, Catia, Moldflow,...) in research and production, researching new products and technologies to step by step standardize and optimize production lines.



## PRODUCT DESIGN & SIMULATION



Application of many modern software in design, calculation, testing and simulation

# QUALITY CONTROL

## MATERIAL EXPERIMENT



Material hardness testing machine



Universal mechanical properties of material



Ultrasonic welding point machine



Optical emission spectrometer

## PRODUCT TESTING



CMM (Coordinate Measuring Machine)



Q-FOG salt spray testing chamber



Surface roughness testing machine



Accelerated weathering testing machine

## CERTIFICATES



QUALITY MANAGEMENT SYSTEM (IATF 16949:2016)



ENVIRONMENTAL MANAGEMENT SYSTEM (ISO 14001:2015)



EUROPE STANDARD EN 1090 | CE MARKING



QUALITY MANAGEMENT SYSTEM (ISO 9001:2015)



## EXPORT MARKETS



## CUSTOMERS

