

The image features a logo for 'Manfred Automation'. The word 'Manfred' is written in a large, bold, blue, italicized sans-serif font. Below it, the words 'Manfred Automation' are written in a smaller, bold, sans-serif font, with 'Manfred' in blue and 'Automation' in dark grey. The background consists of a light blue gradient with abstract, flowing, wavy lines in shades of blue and white, creating a sense of motion and technology.

# *Manfred*

**Manfred Automation**

# AGENDA

## ➤ General Info.

- Location
- Strength
- About MA

## ➤ Business

- Casting
- Other BUs



Mainland China

Kunshan, Jiangsu    **12,000 m<sup>2</sup>** Workshop (to be expanded)  
Tianjin                **2,000 m<sup>2</sup>** Workshop



United States

After-sales service covers **United States, Europe,**  
and **Southeast Asia.**



Expansion of Our Kunshan  
Manufacturing Plant





Global Project Location



**Strong R&D capability, cooperate with customers to explore new technology.**

**Rich experience in executing overseas projects.**

**Intelligent application, reduce manpower.**

**Self-developed core software helps achieve extreme safety.**

**Quality and safety have been proven at customers' site.**

**Exclusive project team provides life-cycle support and service.**

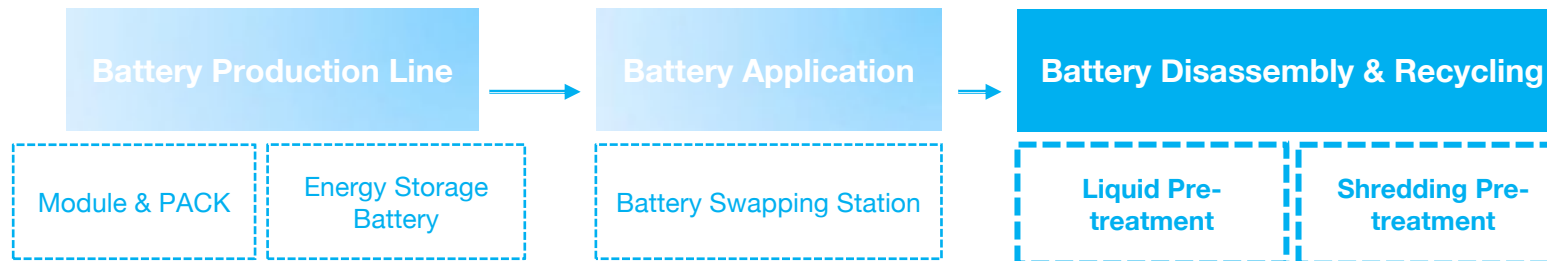
## Customised Process Machine

## Intelligent Factory Solution

### Casting



### Battery



### PV





**Casting**

# Business | Casting Process Machine

*Manfred*

**Trim Press - 4 Columns**



**Trim Press - 3 Columns**



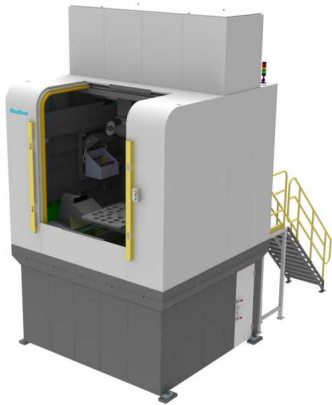
**Tilting Trim Press**



**Sliding Trim Press**



**5 Axis Integrated  
Sawing and Milling Machine**



**5 Axis Servo Sawing  
Station**



**Trimming Tool/Die**



**Giga-castings Trimming  
Machine**



# Business | Casting Process Machine

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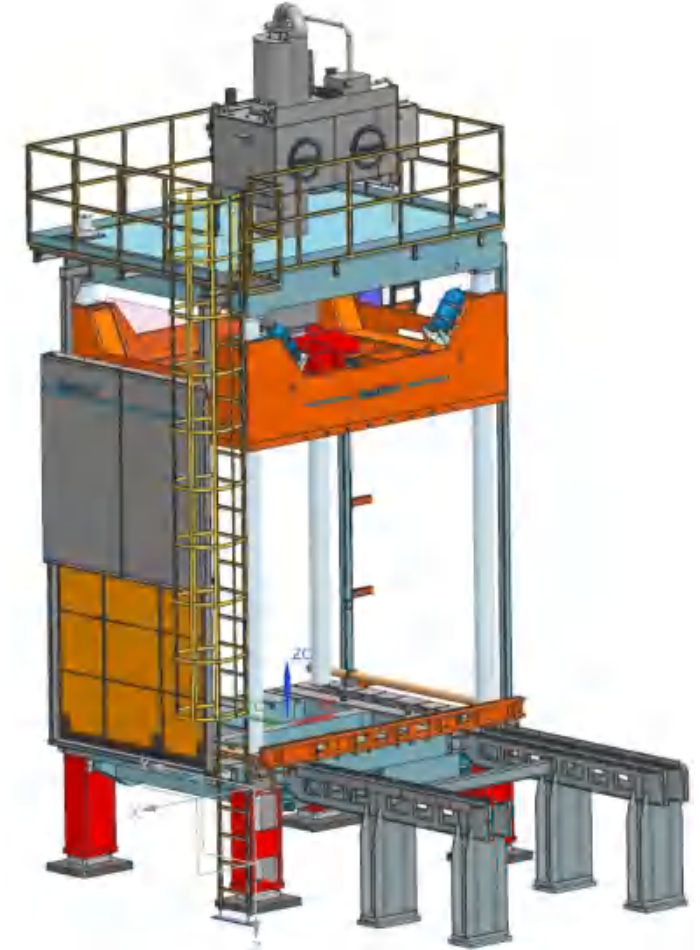
Large tonnage trimming press



200T, 300T with Tilting Function



200T, 300T with Sliding Function



200T, 300T with Die Moving Device

# Business | Casting Process Machine

*Manfred*

## QB Series Standard Trim Press

- Strong mechanical structure with guide column with stable and reliable performance and convenient maintenance.
- Large daylight and stroke, specially designed for robot automatic picking and placing parts.
- Equipped with mold change support and mold lifting guide rail, the mold can be quickly replaced by forklift.
- The maintenance platform for convenient maintenance and repair.



**QB10-300 Trim Press - Three Columns**



**QB13-650 Trim Press - Four Columns**



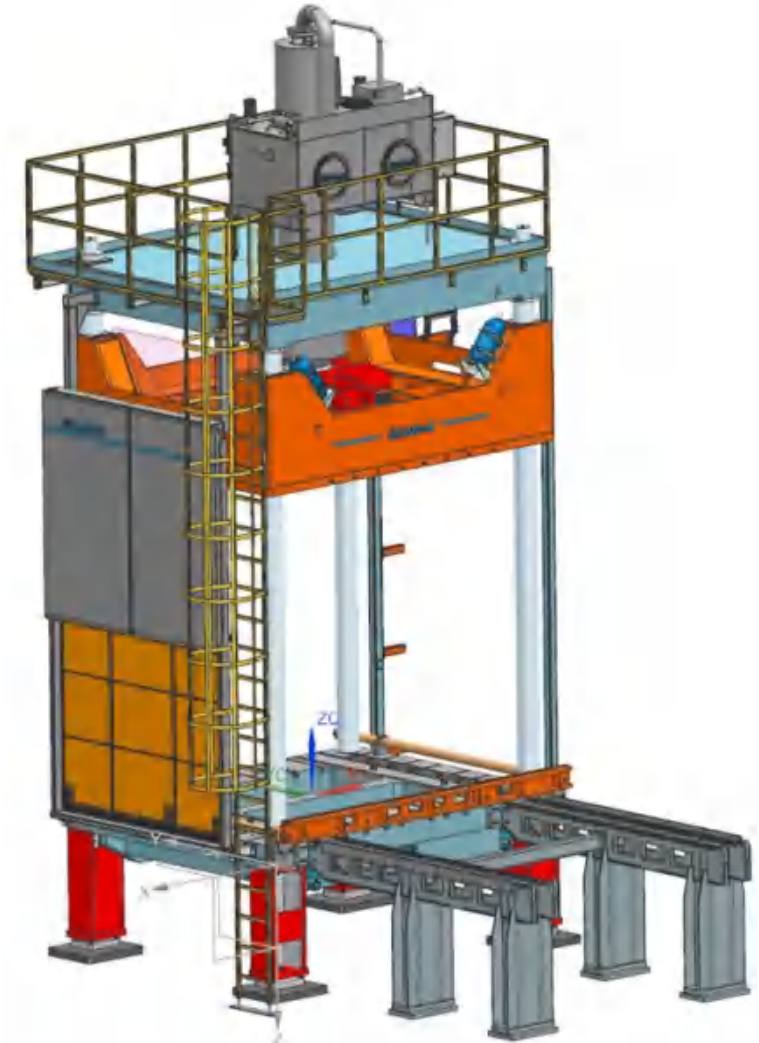
**QB22-2000 Standard Trim Press**

# Business | Casting Process Machine

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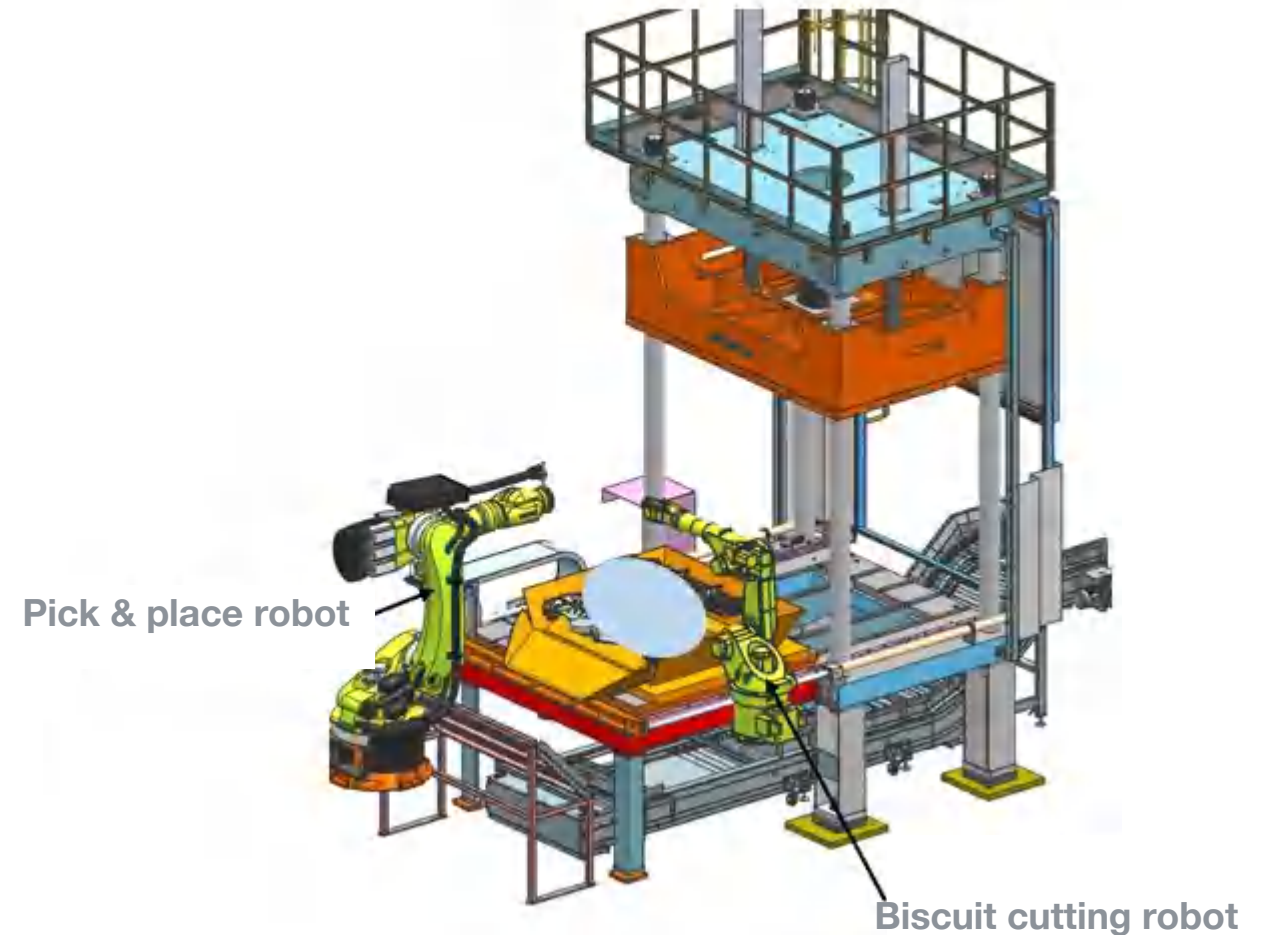
## Standard Large Tonnage Trim Press

- Equipped with a die-pulling mechanism, which is used with a die transfer arm to facilitate the large die installation.
- Specially designed for Giga- castings with a standard table size of 2.6 m. We can also provide larger customised table according to clients needs.
- The design of large blanking hole and configuration of movable bridge support is able to facilitate the trimming actions of different trim tools.



## Sliding Trim press

- The lower table is equipped with a sliding function, which is convenient for the robot to pick-and-place parts, and increases the accessibility of the robot.
- It is convenient for the installation of large trimming die.
- Dual-station design, one station is used for trimming and the other station can be used with other equipment to perform grinding, drilling, plasma cutting and other post-casting cleaning processes.



**QB26-3000Y Sliding Trim Press**

## Tilting Trim Press

- The lower platen is equipped with tilting function, specially designed for trimming large structural parts. It effectively resolves issues of scrap jamming during trimming die blanking.
- Lower platen is able to slide out to increase the robot accessibility.
- The die changing process can be quickly completed by overhead crane.
- The machine adopts a central lubrication system, the lubrication parameters can be set freely in the HMI panel. Grease low level alarm function is provided.



QB16-1000 Tilting Trim Press



QB22-2000 Tilting Trim Press

## Key Features of Manfred Trim Press

- More efficient and energy saving  
Compared with traditional power frequency motor and load sensitive variable pump, Manfred Trim press adopts servo motor pump set, which is more efficient and energy saving.
- Durable, long Life span  
The stainless steel hydraulic oil tank is fully applicable to mineral hydraulic oil and water glycol. Compared with ordinary carbon steel oil tank, it can greatly reduce the pollution of the hydraulic system due to tank corrosion.
- Functional interface  
With multiple sets of side slides core pulling and air blowing interfaces reserved, the system is also equipped with interfaces for mold ID detection, workpiece presence and position detection. Additionally, external tool interfaces such as hydraulic shears can be extended.
- High level of programmability  
The operator can set the trimming action and sequence on HMI and save these set trimming programs to the corresponding formula, which can be recalled later.



Software Copyright

# Business | Casting Process Machine

**Manfred**

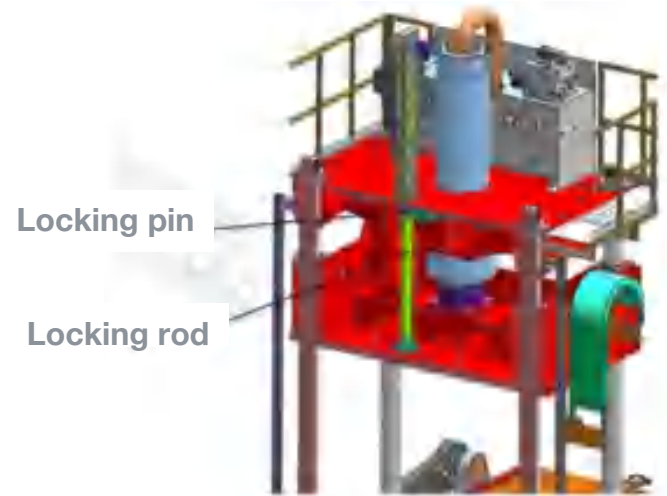
## Key Features of Manfred Trim Press

- **High safety performance**

The upper formwork is installed with an anti-drop lock device to prevent accidental dropping.

The lower end of the safety door with balance weight is equipped with a safety contact to prevent accidental pinching.

The hydraulic system adopts servo hydraulic system in which the oil pressure can be double protected by program and relief valve.



Locking pin

Locking rod

**Anti-drop device**

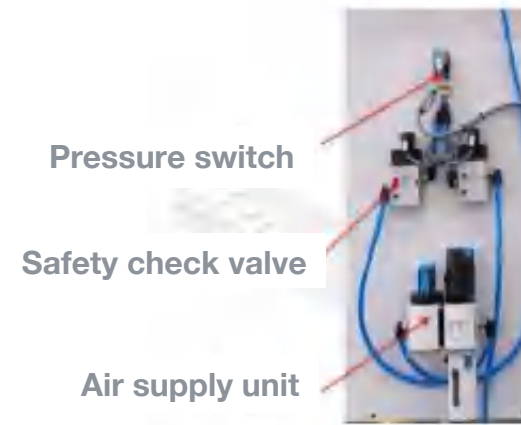


Liftable door

Protective shield

Safety rim

**Safety door**



Pressure switch

Safety check valve

Air supply unit

**Pressure Detection**

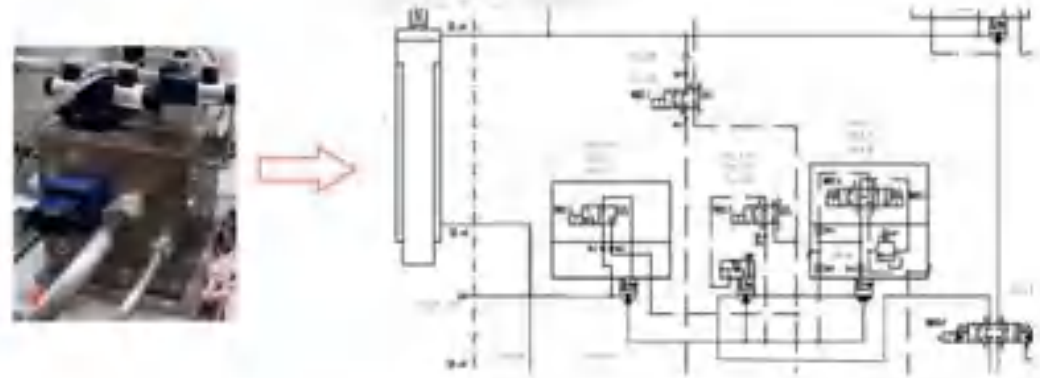
## Key Features of Manfred Trim Press

- **High safety performance**

The stop locking of the main oil cylinder is controlled by the locking valve, with accurate positioning to prevent falling.

The safety signal adopts a double circuit design which is connected to the safety relay, and to each action designed for safety interlock.

The system is equipped with emergency stop button.



**Safety control of the main cylinder**



**Safety relay**

**Safety interlock control**



**Button**

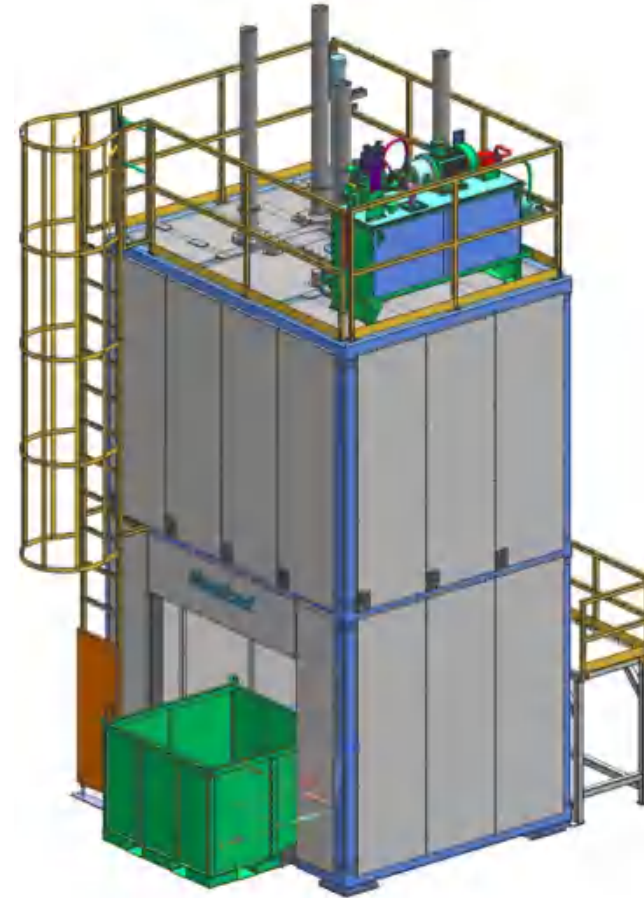
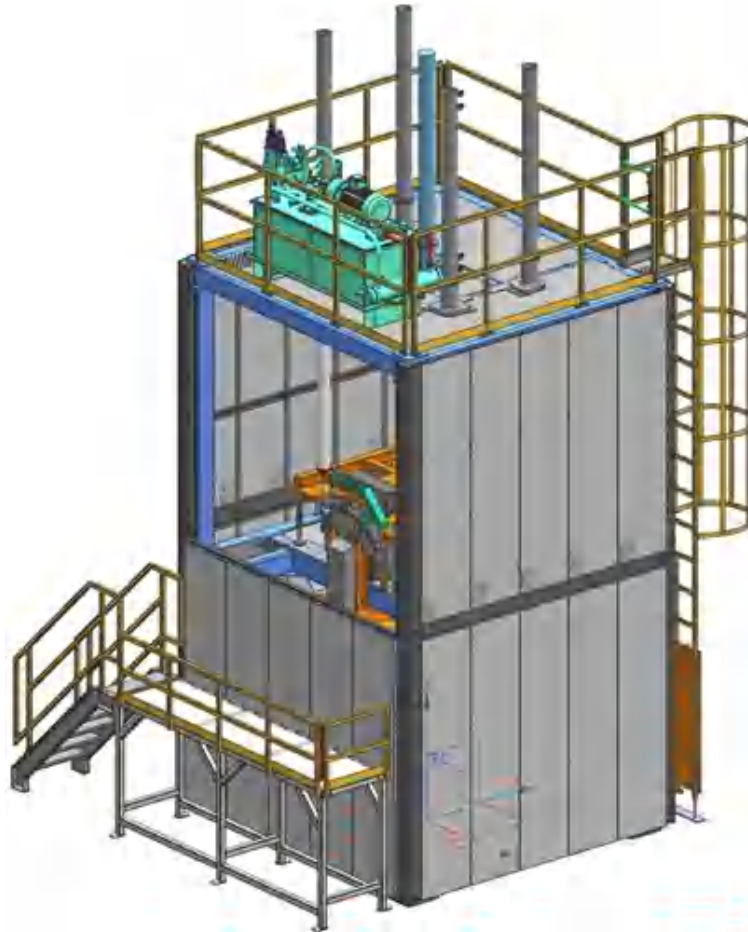
**Emergency stop**

# Business | Casting Process Machine

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## Special Cleaning Machine for Giga-castings overflow removal

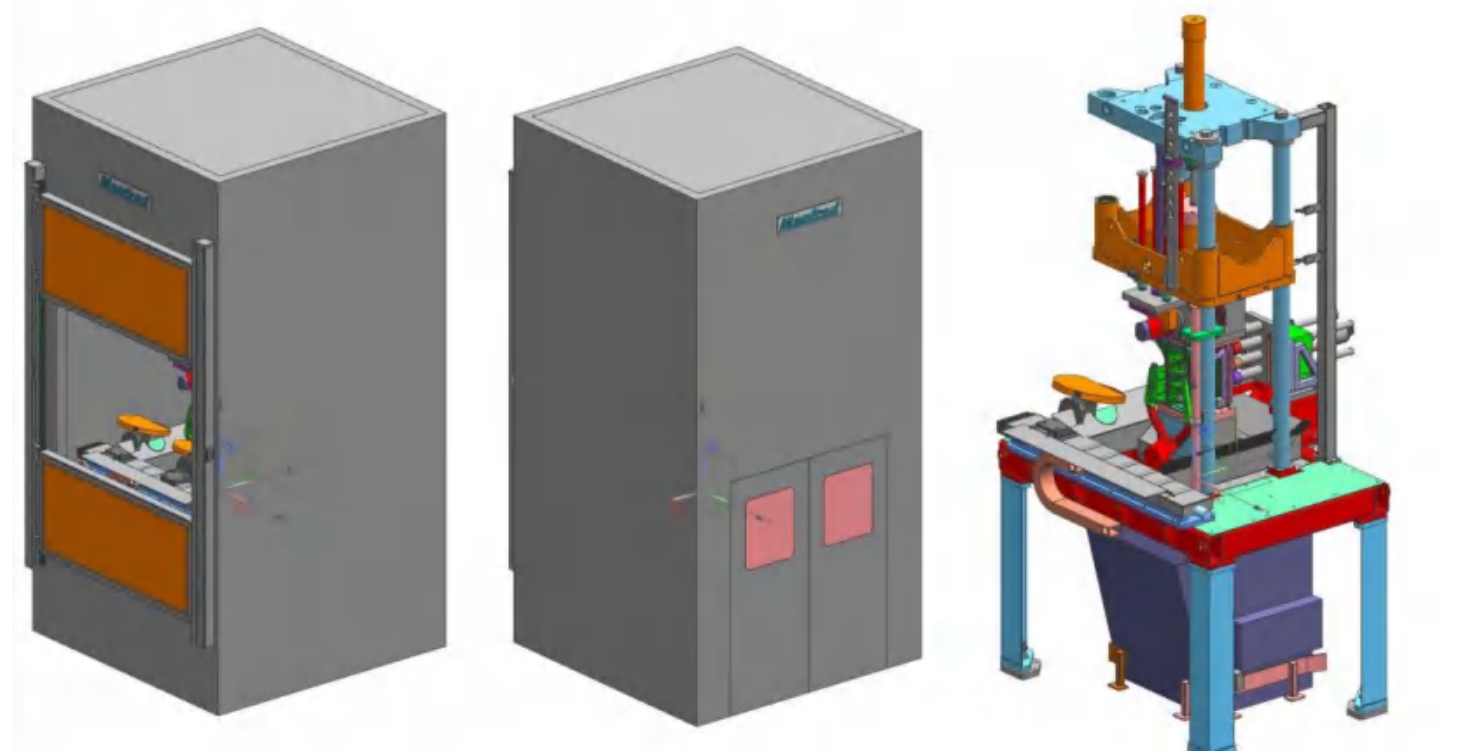
- Remove overflow of Giga-castings by knives



Special Cleaning Machine for Overflow Removal

## Sawing Station

- Hydraulic sawing station - vertical sawing + punching Cylinder liners skin.
- It is a vertical sawing machine specially designed for gearbox housing or engine block, cutting in-gate and punching the Cylinder liners skin.
- The main action is pressing product, sawing ingate, punching skin.



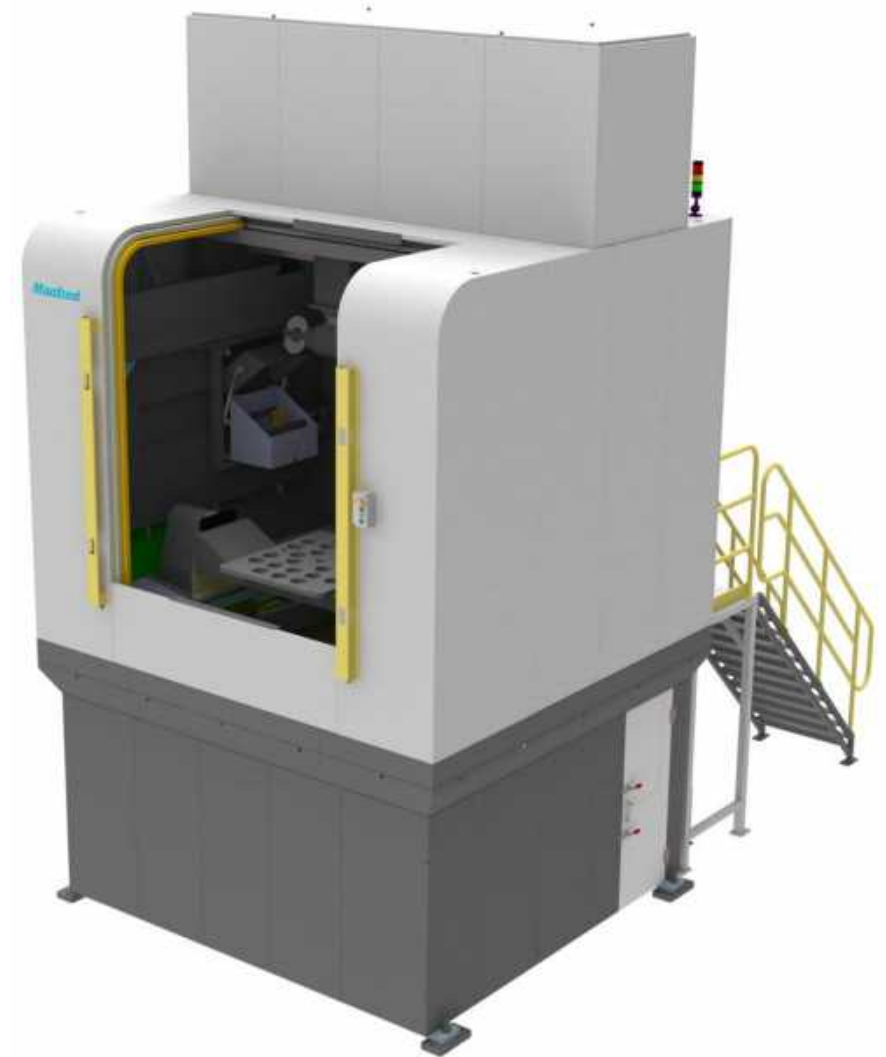
**Special Integrated Sawing and Trimming Machine**

# Business | Casting Process Machine

**Manfred**

## Servo sawing and milling integrated machine

- Tool changing: automatically replace milling cutter or saw blade according to processing requirements
- Multi-axis: meet the sawing requirements of different castings in multiple positions;
- Expandable offline generation of machining path trajectories, enhancing programming efficiency
- Convenient programming: modify, increase or decrease the position points and store the path program by manual demonstration
- Precise positioning: equipped with the teaching pendant for manual close and precise position adjustment;
- Parameters: rotation speed, feed speed etc., can be easily set in HMI;
- Long life-span: equipped with micro-lubrication and centralized lubrication systems to extend the life-span



## Sawing Cell

- This project is a sawing cell used for casting sawing and rough milling.
- The main equipment includes a robot, a set of processing tools (including a saw and a milling station), two feeding slides, a two axis servo saw, a waste collection and transportation conveyor, a sound insulation housing and four sets of product fixtures.
- Sawing and cleaning of various castings.



Sawing Cell

# Business | Casting Process Machine

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## Sawing Station On-site Photos



# Business | Casting Process Machine

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## Trim Press On-site Photos



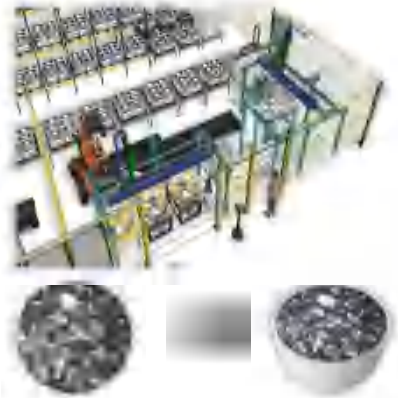
# Business | Casting Process Machine

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Trim Press On-site Photos



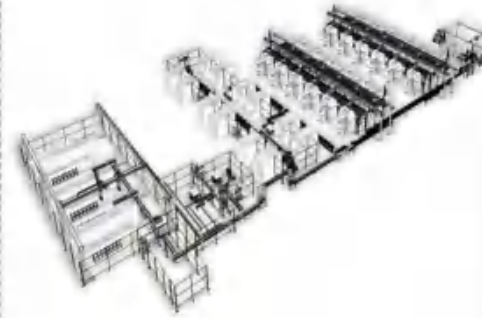
Crucible Charging Automation



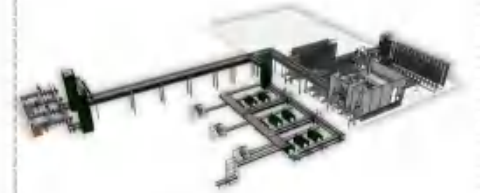
Hopper Charging Automation



Machining Automation



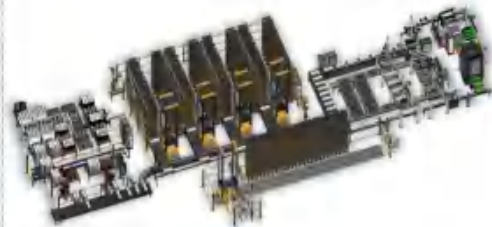
Recycled Material Automation



Silicon Brick Palletizing Automation



Gluing Automation



Wafer Processing Automation



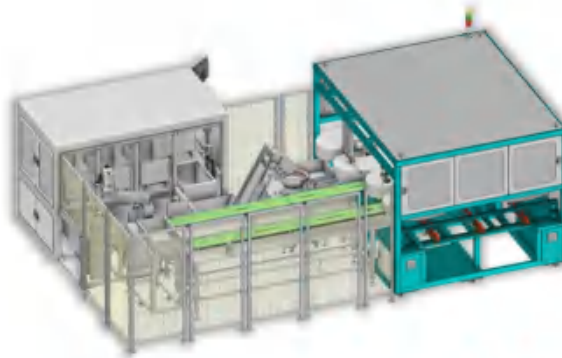
Wafer Packaging Automation



Junction Box Automated Covering Machine



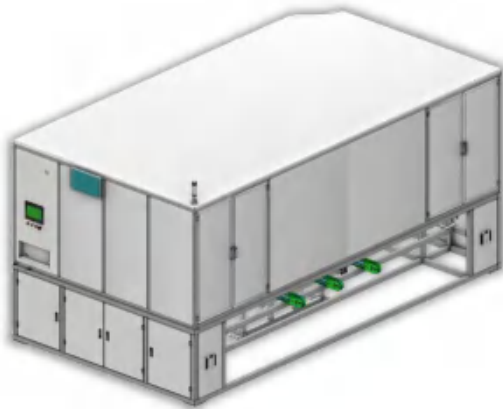
Junction Box Automated Assembly Machine



Aluminium Frame Filing Machine



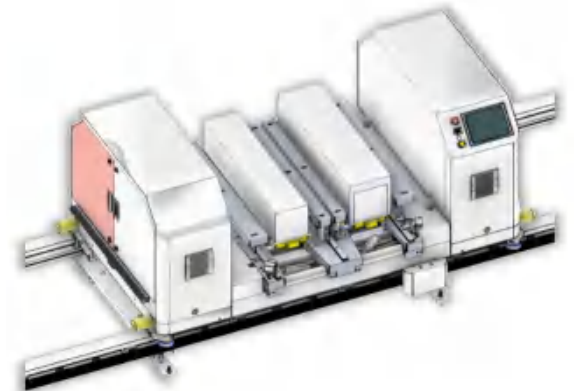
Mounter



Automated Cleaning Machine for Silicon Bricks

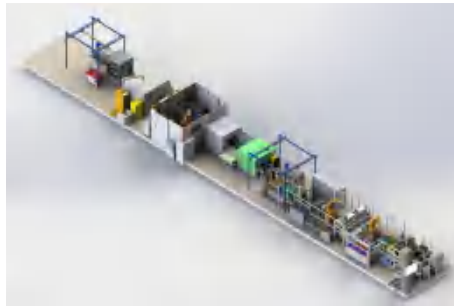


RGV Vehicle

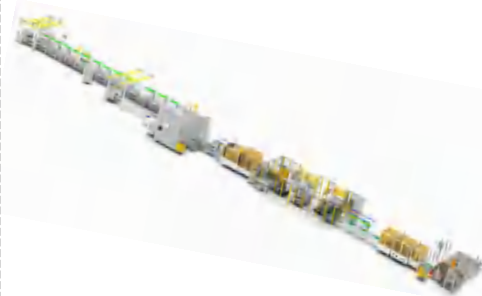


## Battery Assembly Line ( BEES & Power Battery)

Pouch Cell Module Line



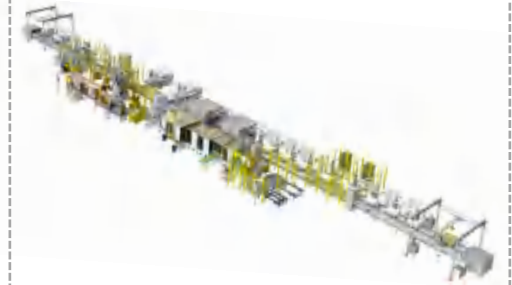
Prismatic Cell Module Line



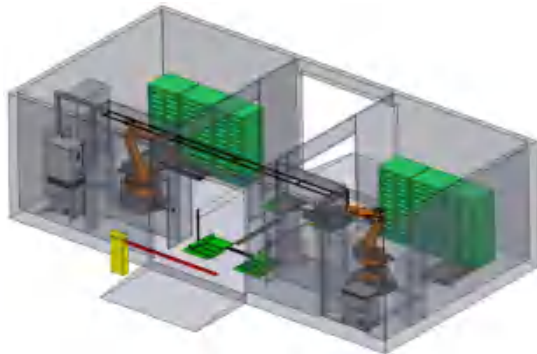
Cylindrical Cell Module Line



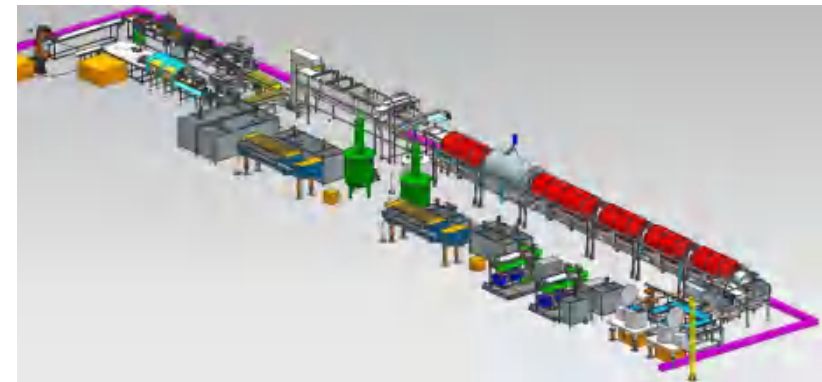
PACK Line



Battery Swapping Station



Battery Disassembly and Recycling Line



**Cell Discharge Equipment**



**Automatic Milling Equipment  
for Module Busbar**



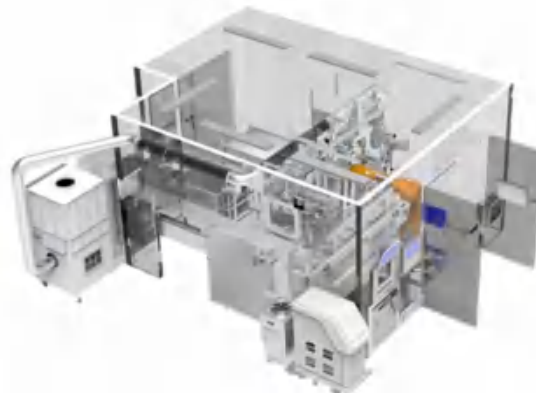
**Aluminum-Plastic Film Removing  
Equipment for Pouch Cell**



**Plasma Cleaning Equipment**



**Laser Welding Station  
for Battery Module and PACK**



**Automatic Cluster Station  
for Energy Storage Battery**



# THANK YOU !

win-win

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