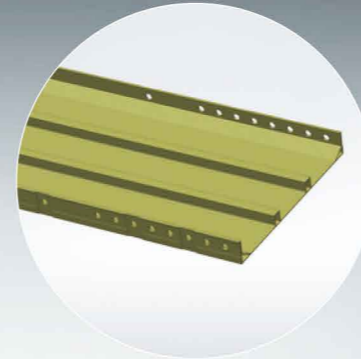


# LMBX-CNC-600×3000

## 铝模板锯冲铣自动生产线

### Automatic Production Line for Cutting, Punching, and Milling Aluminum Formwork



## 中国第 1 台高效、自动的铝模板锯冲铣生产线 First high efficient and automatic aluminum alloy formwork production line in china

天辰股份最新研发的中国第一套铝模板锯冲铣自动生产线，将铝模板锯切、冲孔和铣槽合并到一条生产线上完成，减少了物料的周转，并极大的减少了加工及周转的用工人数，实现了铝模板中标准平面模板的批量高效生产。

#### 生产线用途

主要用于铝模板中标准平面模板（楼面板、墙板）铝型材的锯切下料、两侧面冲孔和铣槽的全自动高效加工。可满足拉片式铝模板锯冲铣工序或拉杆式铝模板锯冲铣工序的批量快速生产。

#### 生产线突出优势

- 产能大幅提升。相当于两台数控锯床、两台液压排冲和两台铣槽机共计六台单机设备的产能总和。
- 节省大量人工。生产线仅用2~3人进行上下料操作，而要达到相同产能时传统单机模式需13名工人。
- 提高加工精度。机械手自动送料、自动切割、自动冲孔、自动铣槽等工序，均由数控系统驱动的高精度齿轮齿条、直线导轨副等运动部件进行精确定位。
- 降低劳动强度。仅需人工进行上下料操作，完全省掉了单机作业中的频繁人工搬运、周转、翻板冲压等大量体力劳动。
- 操作安全可靠。自动化的作业模式，除上下料外，无需多人为干预，锯切、冲孔及铣槽单元均有密封防护罩，确保操作人员安全。
- 可实现柔性加工。锯切尺寸、冲孔铣槽数量及型材宽度变化时，除个别环节需要人工干预外，其余加工环节均可通过数控系统的加工程序变更实现自动调整，无需人为调整锯切定位板及拆装冲针。并可方便的与后续焊接机器人工序进行数据传输及交换，组建铝模板的智能制造系统。

#### 技术参数 Technical Parameters

加工工序	Processing steps cutting, continuous punching, milling slot on both sides	锯切下料, 连续冲孔, 两侧铣槽
适用铝模板型材宽度	Applicable width of aluminum formwork profile	200~600mm
适用于铝模板型材毛坯料长	The length of the aluminum formwork material	1600~6100mm
加工铝模板长度	Processing length of aluminum formwork	750~3000mm
冲孔尺寸	Punching size Φ16.5 mm on both sides of the same punching	Φ16.5 mm 两侧同时冲孔
铣槽深度	Depth of milling groove	1.75±0.25
铣槽宽度	Width of milling groove	36/40
铣槽电主轴数量	Number of milling spindle	12~16台
铣槽电主轴功率	Power of spindle for milling slot	2.2 kW
生产线占地面积	Area	35 × 6m
生产线总功率	Total power	85 kW

Jinan Tianchen has researched and developed the first aluminum template sawing milling automatic production line in China. The production line can finish cutting, punching, and milling of aluminum formwork with the one production line, which has reduced the turnover of the formwork, and reduced the number of workers for processing and turnover. It realizes the batch and efficient production of the standard plane formwork.

#### Function of the production line

Mainly used for cutting, punching on both sides, and milling aluminum formwork in the standard plane formwork (floor panels, wall panels) automatically and efficiently. It can realize batch and rapid production of pull-type aluminum formwork and pull lever aluminum formwork.

#### Main advantage

- A substantial increase in production capacity. The sum of capacity is roughly equivalent to two CNC cutting machine, two hydraulic punching machines and two milling machines, total of six single machines;
- Save a lot of manpower. The production line needs only 2 to 3 people on the Loading and unloading operation, and to achieve the same capacity, it will need 13 workers if we use the traditional stand-alone machines.
- Improve the processing accuracy. This machine can be automatic feeding with manipulator, automatic cutting, automatic punching, automatic milling slot and other processing, are all positioned precisely by the high-precision rack and pinion, linear guide and other moving parts, which are all driven by the CNC system.
- Reduce labor intensity. Only manual loading and unloading operation, it eliminates the frequent manual handling, turnover, flap stamping and other large number of manual labor in the single machine operations, completely.
- Safe and reliable operation. Automatic operation, to ensure the safety of operators, in addition to loading and unloading, without too much human intervention, cutting, punching, and milling are all sealed protective cover.
- Can achieve flexible processing. To achieve automatic adjustment procedures, the cutting size, the quantity of punching slot and profile width changes, its need manual intervention except individual link, other processing can be changed through the CNC system, without any artificial adjustment of the cutting plate and disassembly punching needle. It can also be easily followed by welding robot to process for data transmission and exchange, setting up intelligent manufacturing system of aluminum formwork.

