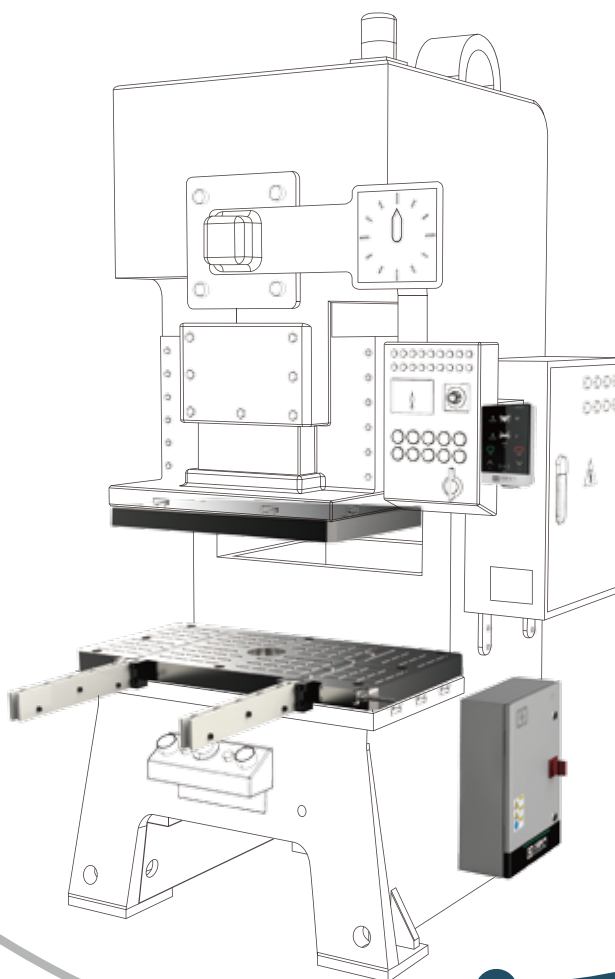




安全/高效/柔性/品质
SAFETY/PRODUCTIVITY/FLEXIBILITY/QUALITY

冲压机快速换模磁力模板 QUICK DIE CHANGE SYSTEM FOR STAMPING MACHINE



青岛力磁电气股份有限公司是注塑机/冲压机快速换模系统（磁力模板）、电永磁夹具（机加工磁力装夹）及控制系统的专业制造商，是磁力装夹与起重搬运的技术应用专家，也是磁力行业技术领先的高新技术企业。

力磁电气是哈尔滨工业大学的产学研合作单位，双方合作成立哈尔滨工业大学磁力技术研究所，专业从事磁力技术的研究与开发。

Qingdao Lici Electric Inc. is a professional manufacturer of QMC system (Magnetic Platen), Electro-permanent clamping & Control System for Injection Molding Machine and Punching Machine. We are magnetic clamping and lifting-handling technology application experts, as well as a leading high & new technology company in magnetism industry

Qingdao Lici Electric Inc. is the University-Industry collaboration with HIT. With the cooperation of HIT, we founded the magnetic technology research institute, which mainly focuses on the R&D of magnetic technologies.

“QDC
Solution
SMED”



磁旧迎新·科技先行

MAGNETIC SCIENCE · TECHNOLOGY FIRST

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完美，尽在掌握！

PERFECT! EVERYTHING IN YOUR CONTROL!



一切为了您的成功!

ANYTHING FOR YOUR SUCCESS!



PRODUCT OVERVIEW

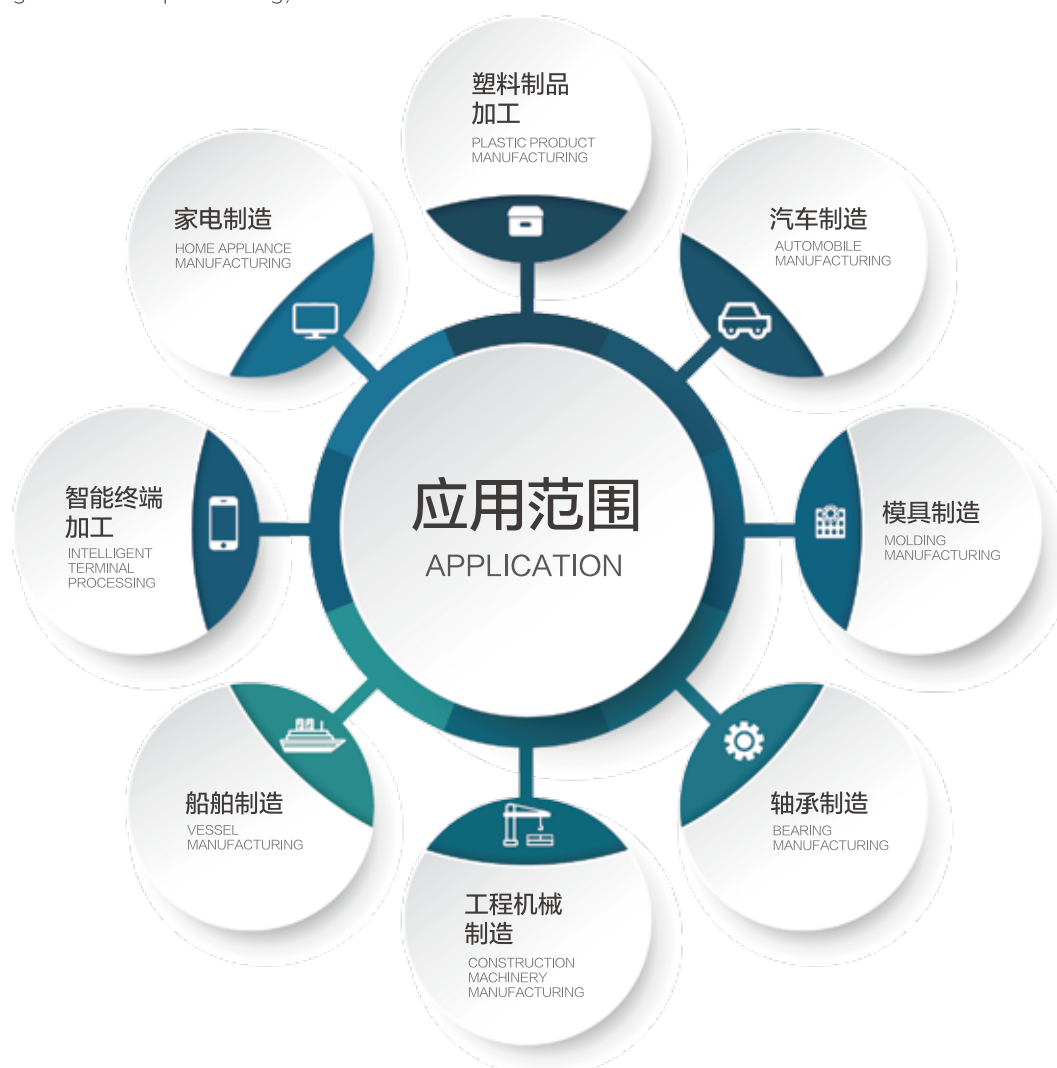
产品概述

公司的主要产品有注塑机、冲压机、合模机等快速换模系统（磁力模板）、电永磁吸盘（机加工夹具）、电永磁吊具（磁力起重与搬运）、快插连接板、换模台车系统、液压夹模、智能模具库、机器人自动化集成、MES系统的系列产品。

Our main products include QMC system (Magnetic Template) for Injection Molding Machine, Stamping Machine and Die Spotting Machine, Electro-permanent chuck (machining fixture), Electro-permanent lifting appliance (magnetic lifting & handling), quick coupling mouldle, mold change and transport vehicle, hydraulic mold clamping system, mould storage system, robotics automation integration, MES(manufacturing execution system).

产品广泛应用在塑料制品加工、家电制造、汽车制造、模具制造、轴承制造、工程机械制造、船舶制造、智能终端加工等领域。

Our products are widely applied in plastic product manufacturing, home appliance manufacturing, automobile manufacturing, mold manufacturing, bearing manufacturing, construction machinery manufacturing, vessel manufacturing and intelligent terminal processing, etc.



OUR STRENGTH

实力展示



与高校合作的磁力技术研究机构

Magnetic technology R&D institute collaborated with HIT

力磁电气与哈尔滨工业大学产学研合作并共同创建磁力技术研究所，全力推进电永磁技术进步！目前拥有几十项电永磁技术相关国家专利，并全面通过ISO9001国际管理体系认证和欧洲CE认证。

We established the magnetic technology university-industry R&D institute with HIT to promote the development of electro-permanent technology. We have already obtained dozens of national patents related to electro-permanent magnetic technology, and also acquired ISO9001 certificate and European CE certification.



获得国家认定的高新技术企业

National recognized new high-tech enterprise

力磁电气在技术研发方面不断投入，努力为客户提供性能更优、质量更好的电永磁产品，帮助客户提高效率、节约成本。

With continuous investment on R&D, we are trying our best to provide better performance & quality electro-permanent products to customers to help them to improve efficiency and save cost.

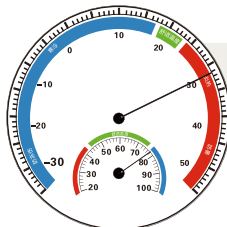


不会磁化模具的双磁极磁力线对流技术

Bipolar magnet technology without magnetization of mold

基于对称磁路的双极性磁极技术，不仅具有磁力强、无散射，磁力均匀的特点，而且不会导致模具背板磁化。融合了高新传感技术使磁力模板系统在安全性、可靠性和使用寿命上更具优势。

Based on the symmetrical bipolar magnet technology, with the feature of strong magnetic force, no scattering, no residual magnet and will not magnetize the backboard of mold. With the blend of high & new sensor technology, the magnetic platen system has more advantages on security, reliability and sustainability.



装备有恒温恒湿的装配车间

Equipped with constant temperature & humidity workshops

电永磁系列产品在装配过程中不稳定的温度、湿度会导致产品质量不稳定、电气寿命缩短，恒温恒湿的装配环境有力地保证产品的质量和产品寿命。

In the assembly process of the electro-permanent series products, the unstable temperature & humidity will lead to an unstable products and electrical lifetime will be shortened. The constant temperature and humidity environment effectively guarantee the quality & lifetime of products.



人工智能机器人自动装配生产线

Artificial intelligent robot automatic assembling line

力磁电气与中国科学院联合研发的具有人工智能的全自动机器人装配生产线，打破了全球范围内磁力模板自动装配生产线行业空白的局面。

With the cooperation of Chinese Academy of Sciences, we have successfully developed artificial intelligent fully automatic robot assembling line, which is the first automatic assembling line in magnetic industry all over the world.



与众多500强企业建立合作关系

Cooperate with numerous world top 500 enterprises

通过三一重工、北汽福田、比亚迪、东风汽车、吉利汽车、潍柴动力、玉柴动力、海尔集团、海信集团、美的空调、西门子、大连机床等知名企业验厂认证，并成为长期战略合作伙伴。

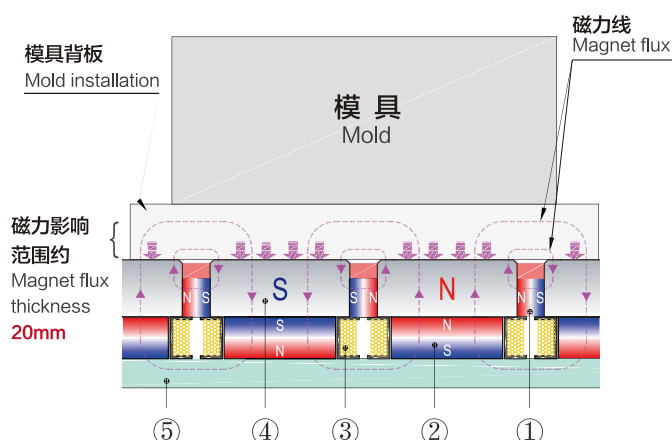
We have passed the factory audit of Sany, Foton, BYD, DMF, Geely automobile, Weichai power, Yuchai power, Haier group, Hisense group, Midea air conditioner, Siemens and DMTG, ect., and become their long-term strategic partners.

WORKING PRINCIPLE

工作原理

因为专注所以专业 CONCENTRATION MAKES PROFESSIONAL

夹紧时（充磁状态）/CLAMPING STATUS (MAGNETIZED)



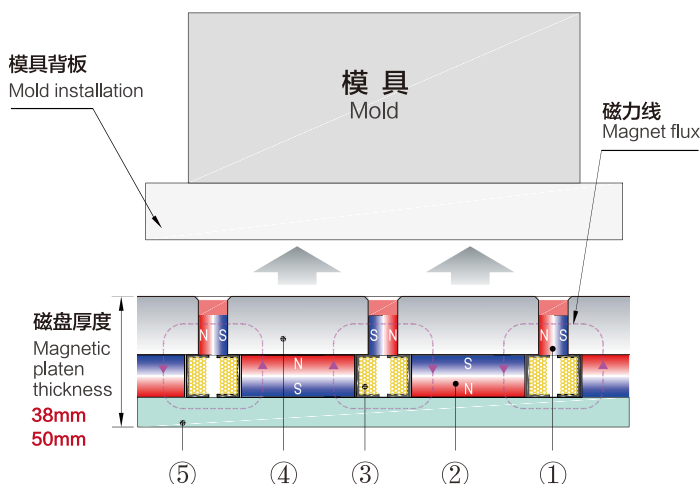
- 1、电磁线圈内通电0.5秒。
- 2、铝镍钴磁铁的磁极方向改变。
- 3、钕铁硼磁铁和铝镍钴的磁极极性相同。
- 4、磁力线集中于磁极表面，与模具形成磁回路，夹紧模具。

材料构成及功能

Material Composition & Function

| | |
|-----------------------|--|
| ① 钕铁硼 强力永久磁石 | NdFeB Permanent magnet |
| ② 铝镍钴 由电永磁线圈改变磁极方向 | AlNiCo Electrical ring change the magnet direction |
| ③ 电磁线圈 改变铝镍钴的磁极方向 | Electrical ring Change the magnet direction of AlNiCo |
| ④ 磁极 强力吸引模具 | Magnetic Pole Clamp the mold with powerful force |
| ⑤ 磁力模板基板 | Magnetic platen base board |

放松时（退磁状态）/RELEASING STATUS (DEMAGNETIZED)



- 1、电磁线圈内通电0.5秒。
- 2、铝镍钴磁铁的磁极方向改变。
- 3、磁极表面磁力线消失（钕铁硼磁铁与铝镍钴磁铁在磁盘内部形成磁场），松开模具。

材料构成及功能

Material Composition & Function

| | |
|-----------------------|--|
| ① 钕铁硼 强力永久磁石 | NdFeB Permanent magnet |
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| ④ 磁极 强力吸引模具 | Magnetic Pole Clamp the mold with powerful force |
| ⑤ 磁力模板基板 | Magnetic platen base board |

QMCS CONFIGURATION

快速换模配置

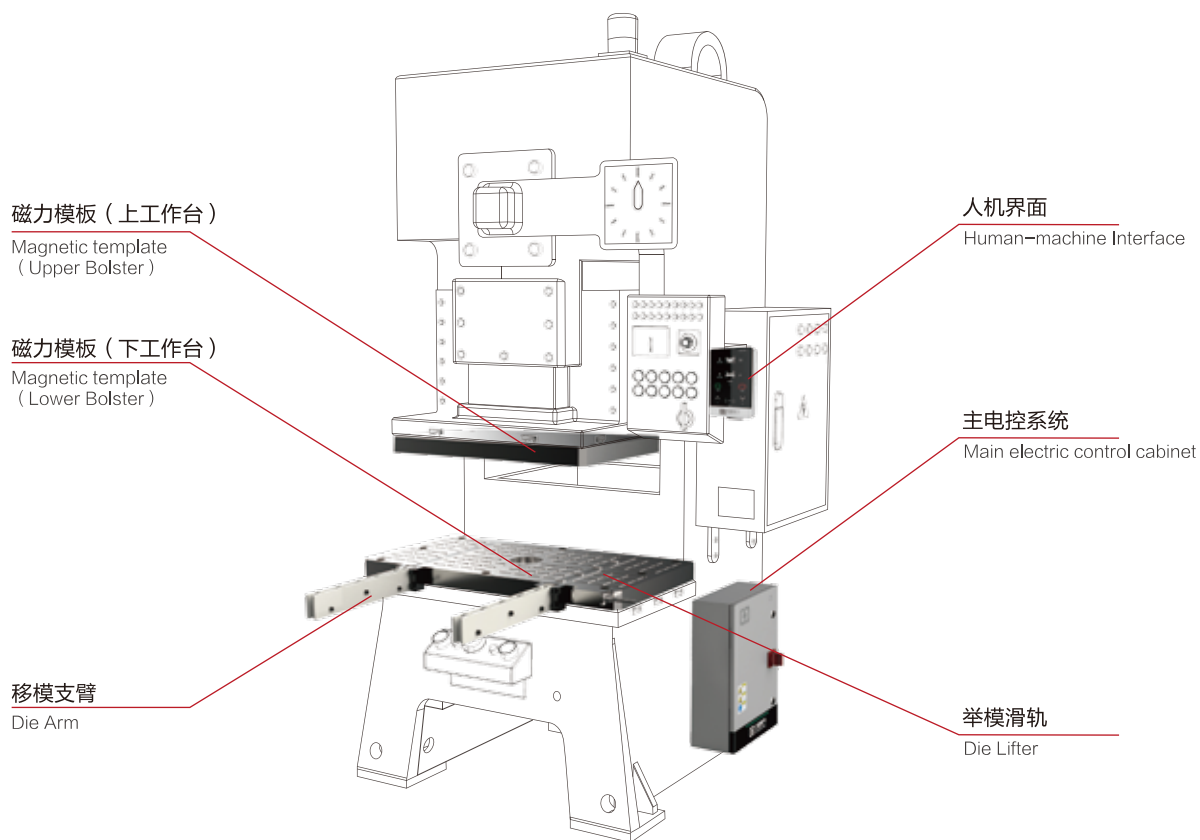
集优化设计完美的产品 PERFECT PRODUCTS WITH OPTIMIZED DESIGN

标准配置 (磁力模板系统通常包含)/STANDARD CONFIGURATION

- ☒ 两片磁力模板（对应上工作台和下工作台）
Two electrical Permanent magnet template each set
- ☒ 人机界面（一套）（注：*QDC200为标准人机界面）
HMI (one set), (QDC200 is standard HMI human machine interface)
- ☒ 主电控箱（一台）
Electrical cabinet (one set)
- ☒ 微距接近传感器（**上、下模板各一套）
Proximity switch sensor

可选配置 /OPTIONAL CONFIGURATION

- | | | | |
|--|---|--|---|
| <input type="checkbox"/> 移模支臂 Die arm | <input type="checkbox"/> 举模滑轨 Die lifter | <input type="checkbox"/> 止挡块 Stopping chunk | <input type="checkbox"/> 定位机构 Locating mechanism |
|--|---|--|---|



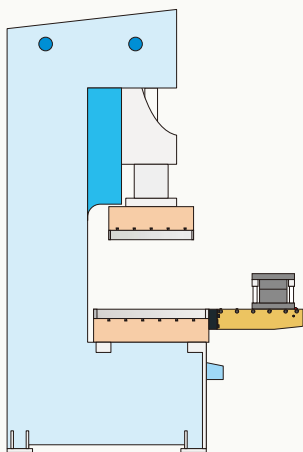
各部分安装位置示意图 Installation diagram

PROCESS OF CHANGING MOLD

快速的模具更换过程

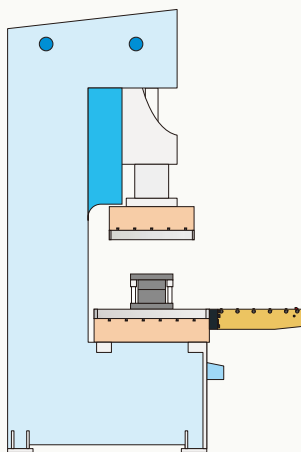
提升您的竞争优势 IMPROVE YOUR COMPETITIVE ADVANTAGE

锁模操作 / CLAMP MOLD OPERATION



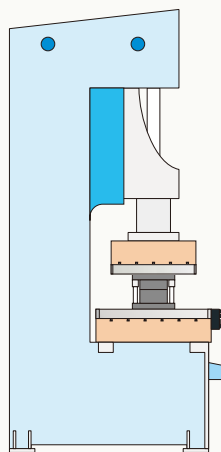
01

将模具放入移模支臂上。
Put mold on the die arm



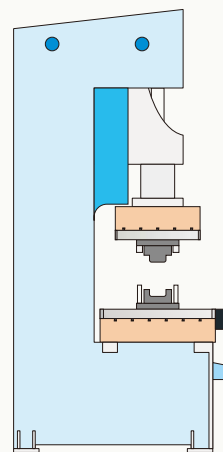
02

将模具移入冲压机,模具
中心与磁盘中心重合。
Move mold into the punch
and center mold with
magnetic panel template



03

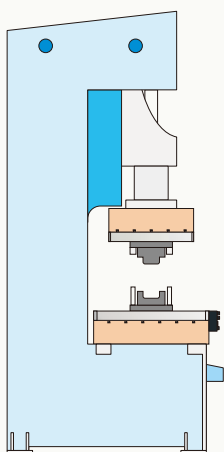
对磁力模板上侧和
下侧分别励磁操作。
Magnetize the upper
and lower template



04

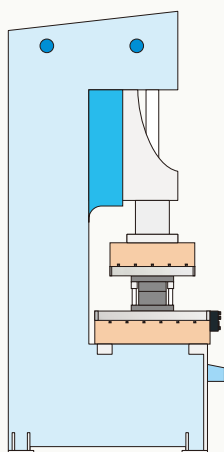
取下移模支臂, 模具解锁,
冲压即可开始工作。
Unload the die arm and
unlock the mold, the punch
can start working

卸模操作 / RELEASE MOLD OPERATION



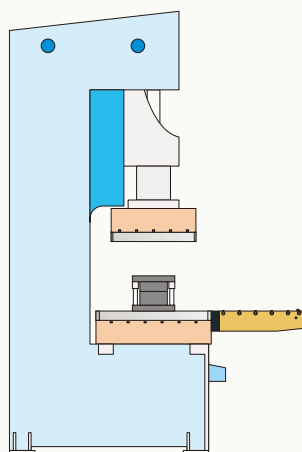
01

模具合拢, 锁闭模具。
Close and lock the mold



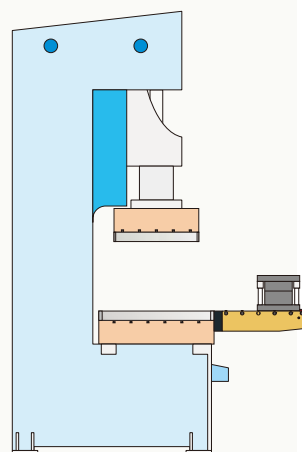
02

对磁力模板上侧和下侧
分别执行消磁操作。
Demagnetize the upper
and lower template



03

上模板后退,
安装移模支臂。
Move the upper template
backwards and install
the die arm



04

模具移出完毕,
冲压待机。
Remove the mold and
the punch stands by

磁力模板规格及 各部分名称

DESCRIPTION OF MAGNETIC TEMPLATE

01 安装孔 / Mounting holes

布局合理的安装孔。

Reserved all mold ejector holes.

02 基板 / Base template

由整块钢板加工而成，刚性更高。

Be composed of one-piece steel plate, higher stiffness.

03 微距接近传感器 / Proximity switch sensor

用于检测有无模具及背板和磁力模板之间的
气隙。主动预警，检测到位移，立即停机报
警，确保人员、设备和模具的绝对安全。

Used for measuring the gap between the electrical
Permanent magnet template and the mold back plate,
alarm at once when detecting the displacement, ensure
staff, equipment and mold safety.

04 全钢密封 / Steel sealing

全钢面板一次成型，无环氧树脂，密封更好，寿命更长。

Steel plate, one-take shaping, better sealing, longer
service lifetime.

05 落料孔 / Blank hole

用于落料及中心定位。

Used for blanking and centre position.

06 磁极 / Magnetic pole

07 集线盒 / Wiring box

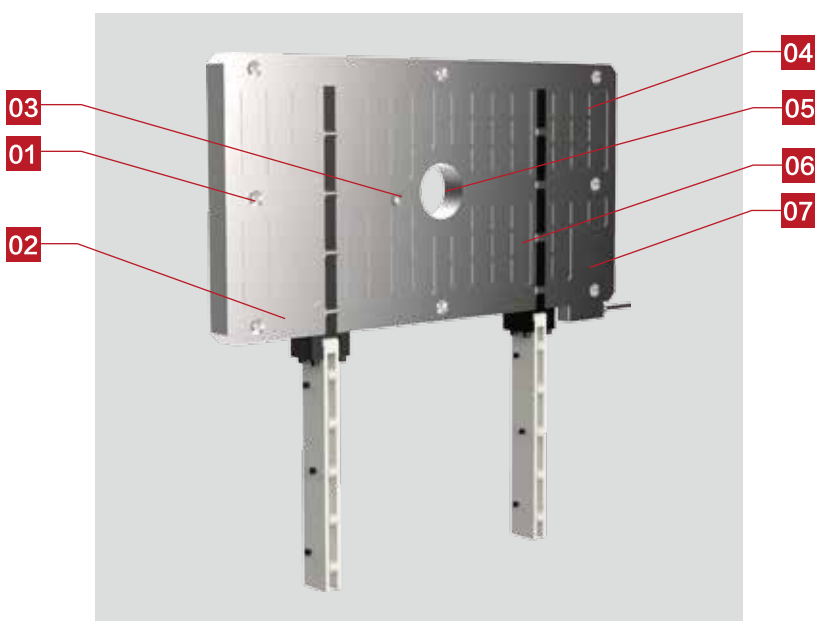
设计合理，便于维护。

Reasonable design, easy to maintain.

磁力模板（可动侧） / Movable magnetic template



磁力模板（固定侧） / Fixed magnetic template



磁力模板规格表 Magnetic template specification

| 序号 Item | 型号 Type | 适用冲压机(Ton) Available | 厚度(mm) IMM thickness (上模upper/下模lower) |
|------------|------------|-------------------------|--|
| 01 | EPP-15 | 15 | 上模/upper 40 下模/lower 65 |
| 02 | EPP-25 | 25 | |
| 03 | EPP-35 | 35 | |
| 04 | EPP-45 | 45 | |
| 05 | EPP-60 | 60 | |
| 06 | EPP-80 | 80 | |
| 07 | EPP-110 | 110 | |
| 08 | EPP-125 | 125 | |
| 09 | EPP-160 | 160 | |
| 10 | EPP-200 | 200 | |
| 11 | EPP-250 | 250 | 下模/lower 65 |
| 12 | EPP-260 | 260 | |
| 13 | EPP-300 | 300 | |
| 14 | EPP-350 | 350 | |
| 15 | EPP-400 | 400 | |

供电电源 / Power supply

AC380V $\pm 10\%$ 50Hz $\pm 1\%$

其他电压及频率可定制

Other voltage can be customerized

特殊规格产品可以定制

Special Specification can be customerized

● 磁力模板描述

Magnetic Template Description

01 电控永磁技术设计，断电永久保磁

Electro-permanent magnet technology design keeps magnet permanent.

02 整块钢板加工而成，刚性好

Processed by one-piece steel plate, higher stiffness.

03 采用“双极性磁力线对流技术”设计，磁力线集中无散射，磁力模板基板为中性不带磁，不会磁化模具

The templates apply bipolar magnetic line convection technology design, which makes magnetic force centered without scattering. The base plate is neutral and free of magnetized, which will not magnetize the mold.

04 全密封多层防水耐油设计、确保使用寿命

Multi-layer sealing for waterproof and oil-proof design to ensure product's lifetime.

05 内置多种传感器，实时监控工作状态

Numerous integrated sensors to monitor real-time working status.

● 快速换模系统集成化方案

QMC Integrated Soultion

01 磁力模板: 覆盖式安装or嵌入式安装

Magnetic template: Cover installation or integrated installation.

02 电控系统: 外置操作系统or集成于注塑机控制系统内部

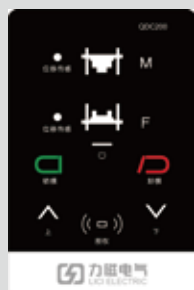
Control system: External operation system or integrated into IMM internal control system.

DIFFERENT MOLD CHANGE METHOD MAKES PRODUCTION EFFICIENCY DIFFERENT

换模效率即是生产效率

人机界面 / Human-machine Interface

QDC200 标准版 / QDC200 Standard Configuration



| 型号 Type | 长 Length | 宽 Width | 高 Height |
|---------|----------|---------|----------|
| QDC200 | 160 | 104 | 40 |

01 数字式全触控操作面板设计

Digital touch operating panel.

02 界面操作简捷，易学易懂，工作状态一目了然

Easy operation panel, working status can be read easily.

03 优化设计使换模操作更安全、更便捷

Optimized design makes operation much safer and more convenient.

04 内置声光报警系统

Integrated acoustic and optical alarm system.

05 授权，便于管理和规范操作

RFID authorization control for easy management and operation.

主电控系统 / Main electric control cabinet

C3 (小吨位) / Small tonnage



| 型号 Type | 长 Length | 宽 Width | 高 Height |
|---------|----------|---------|----------|
| C3 | 326 | 256 | 86 |

单位(mm)

01 高度集成化设计便于更换维护

Highly integrated design to make replacement and maintenance easily.

02 接口丰富方便联机控制

Plurality of interface makes online control convenient.

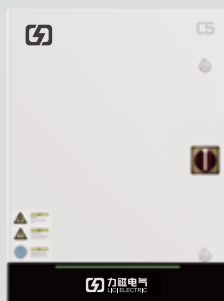
03 磁力模板工作状态及温度监控功能

Monitoring working status and temperature of magnetic platen.

04 紧凑型设计，体积小，安装更灵活

Compact design, small size, flexible installation.

C5 (大吨位) / Large tonnage



| 型号 Type | 长 Length | 宽 Width | 高 Height |
|---------|----------|---------|----------|
| C5 | 550 | 400 | 175 |

单位(mm)

01 高防护等级设计，适应工业现场环境密封要求

High protection grade, suitable for industry environment.

02 多种安装方式，可独立安装也可集成式安装

Two installation methods, separated installation and integrated installation.

03 设计显示屏幕方便维护及故障判断

Display design makes the maintenance and problem diagnosis convenient.

04 与冲压机通讯，实时交换数据

With the communication between punch and magnetic platen realize the data communication.

05 安全预警功能，杜绝隐患

Safe pre-warning function, eliminate hidden dangers.

06 可实现远程监控与故障诊断

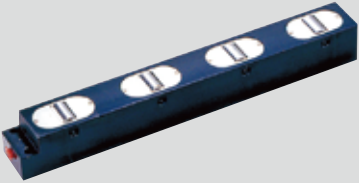
Remote monitoring and fault diagnosis.

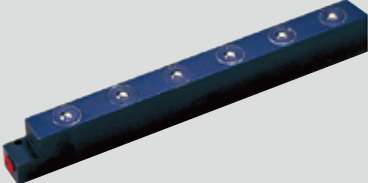
DIE LIFTER (HYDRAULIC)

举模滑轨（油压式）

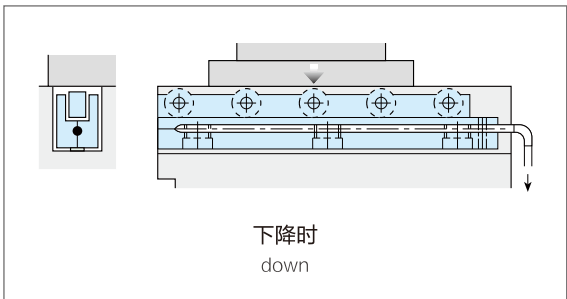
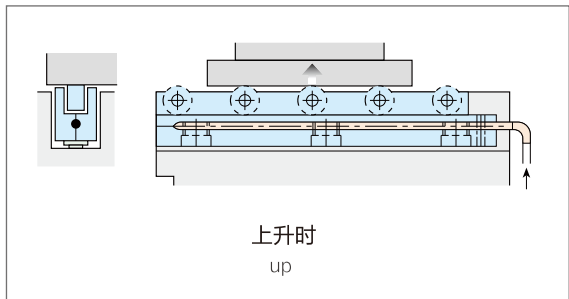
MODEL DL · DB

★ 可依客户使用需要制作特殊规格
Any specific size is available based on the needs of the customers.

| DL (滚轮式) / DL (Roller type) | | |
|---|----------------------|-----------------------|
|  | | |
| 型式 Model | 滑轨宽度 Width of lifter | 滑轨长度 Length of lifter |
| DL | 28mm | 200-1900 |

| DB (滚珠式) / DB (Ball type) | | |
|---|----------------------|-----------------------|
|  | | |
| 型式 Model | 滑轨宽度 Width of lifter | 滑轨长度 Length of lifter |
| DB | 50mm | 200-2300 |

| 滑轨全长 Length of lifter (mm) | DL28系列 | | DB50系列 | |
|----------------------------------|---------------|----------------------------|-------------|----------------------------|
| | 滚轮数 Roller | 油压缸数 Hydraulic cylinder | 滚珠数 Ball | 油压缸数 Hydraulic cylinder |
| 200 | 3 | 2 | 4 | 2 |
| 300 | 5 | | 6 | |
| 400 | 6 | | 9 | |
| 500 | 8 | 3 | 11 | 3 |
| 600 | 9 | | 13 | |
| 700 | 11 | | 16 | |
| 800 | 12 | 4 | 18 | 4 |
| 900 | 14 | | 20 | |
| 1000 | 15 | 5 | 23 | 4 |
| 1100 | 16 | | 25 | |
| 1200 | 17 | | 27 | |
| 1300 | 18 | 6 | 29 | 5 |
| 1400 | 19 | | 31 | |
| 1500 | 20 | | 33 | |
| 1600 | 22 | 7 | 35 | 6 |
| 1700 | 24 | | 38 | |
| 1800 | 25 | 8 | 40 | 6 |
| 1900 | 27 | | 42 | |
| 2000 | | | 44 | 7 |
| 2100 | | | 46 | |
| 2200 | | | 48 | |
| 2300 | | | 50 | |



- 01** 通过使用机座的T型，U型槽，把模具从工作台上抬起（上浮），能够顺畅地将模具移入和移出。
The mold can be smoothly moved in and out by lifting (floating) the mold from the worktable by using the t-shaped and u-shaped grooves of the frame
- 02** 油压式的举模滑轨靠油压将滚珠（滚轮）顶起。油压撤出，滚珠（滚轮）靠自重下降复位。
The oil pressure type lifting die slide rail pushes up the ball (roller) by oil pressure. Oil pressure to withdraw, the ball (roller) by weight down reset.

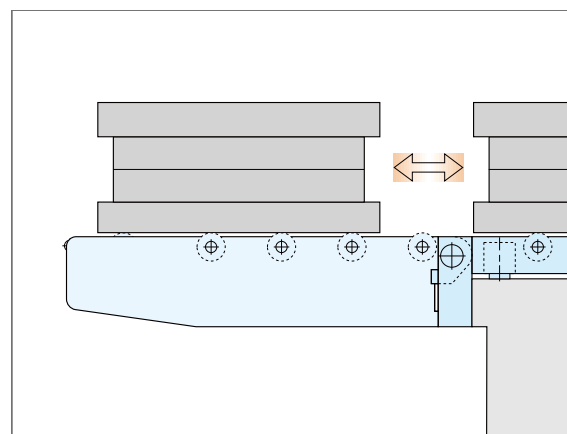
DIE ARM

移模支臂

MODEL RC · RD · RE · RF · RS

型式选定 / Model selection

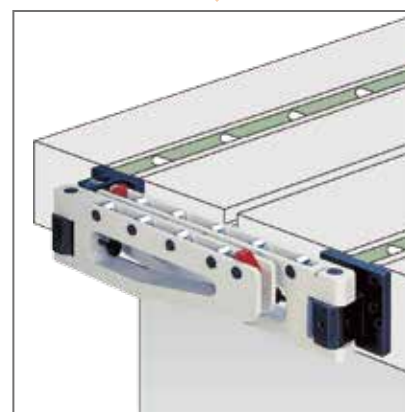
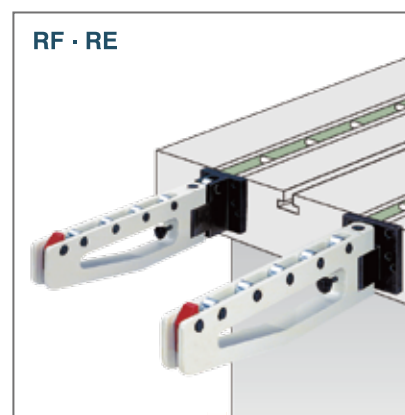
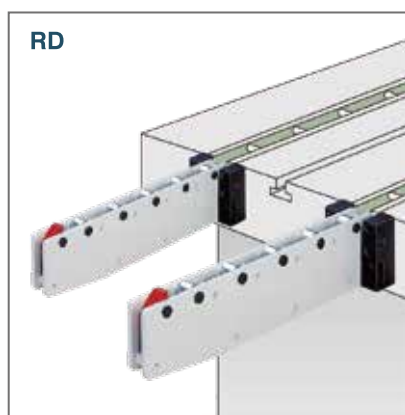
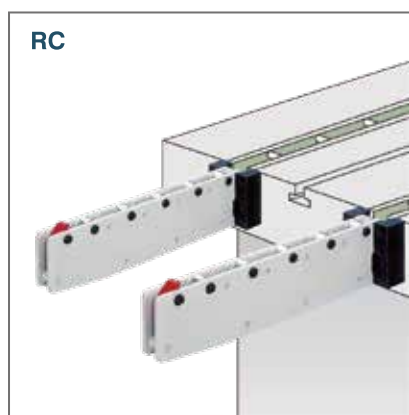
| 型式 Model | 方式 Storage Method | 规格 Specification |
|-------------|--------------------------|---------------------|
| RC | Dismantling 拆卸式 | 580 |
| RD | Hanging 折下式 | 760 |
| RE | Folding (short) 折叠式 (短座) | 880 |
| RF | Folding (long) 折叠式 (长座) | 990 |



★ 移模支臂配合二段式举模滑轨使用时，固定座需改用加长 (S) 型，(例: RC-16 → RC16S, RC16H → RC-16HS)

The support should be changed into lengthening (S) model when using die arm cooperated with two-stepped die lifter.

(Ex: RC-16 → RC-16S, RC-16H → RC-16HS)

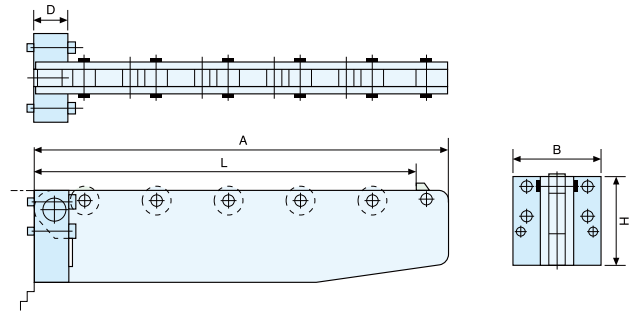
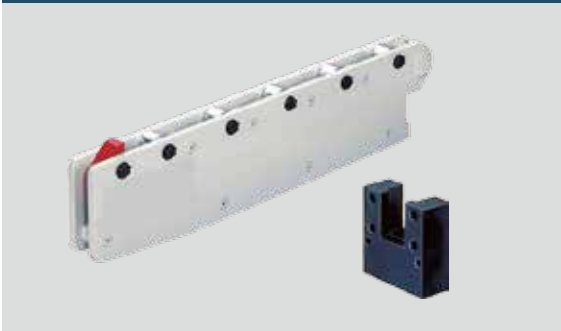


★ 特殊型式依实际需要另行定制

Any specific size is available based on the needs of the customers.

移模支臂 (RC、RD) / Die arm (RC、RD)

RC (拆卸式) / RC (Dismantling)

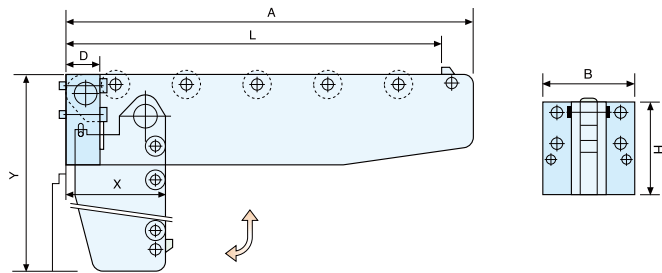


★ RC型支臂本体与固定座可分开个别使用。

The arm itself and the support in Model RC can be used separately.

| 型式 Model | 固定座型式 Model of support | 模具使用长L(mm) Length needed of the die | 最大荷重W(kg) Max.capacity | 总长A(mm) Total length | 固定座尺寸 Size of support | | | 滚轮个数 Number of roller |
|-------------|---------------------------|---|---------------------------|-------------------------|-----------------------|-----|-----|--------------------------|
| | | | | | D | B | H | |
| RC-580 | RC-12 | 500 | 800 | 550 | 48 | 115 | 118 | 5 |
| RC-760 | | 700 | 600 | 750 | | | | 7 |
| RC-880 | RC-16 | 800 | 800 | 850 | | | 158 | 8 |
| RC-990 | RC-20 | 900 | 900 | 950 | | | 188 | 9 |
| RC-05125 | RC-14H | 500 | 1250 | 550 | 55 | 130 | 138 | 7 |
| RC-05160 | RC-16H | | 1600 | | | | 158 | |
| RC-05200 | RC-18H | | 2000 | | | | 178 | |
| RC-07125 | RC-14H | 1250 | 750 | 138 | | | 9 | |
| RC-07160 | RC-16H | 1600 | | 158 | | | | |
| RC-07200 | RC-18H | 2000 | | 178 | | | | |
| RC-08125 | RC-16H | 800 | 1250 | 850 | | | 158 | 10 |
| RC-08160 | RC-18H | | 1600 | | | | 178 | |
| RC-08200 | RC-20H | | 2000 | | | | 188 | |
| RC-09160 | RC-22H | 900 | 1600 | 950 | | | | 218 |

RD (拆下式) / RD (Hanging)



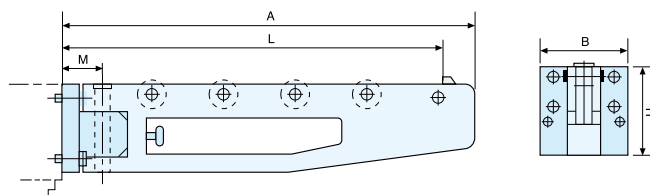
★ 适用RD型其折下之长度(Y)需小于台面距地面之高度

The hanging length(Y) Model RD should be less than the height between the plate and the ground

| 型式 Model | 模具使用长L(mm) Length needed of the die | 最大荷重W(kg) Max.capacity | 总长A(mm) Total length | 折下尺寸 Size of hanging | | 固定座尺寸 Size of support | | | 滚轮个数 Number of roller |
|-------------|--|---------------------------|-------------------------|----------------------|------|-----------------------|-----|-----|--------------------------|
| | | | | X | Y | D | B | H | |
| RD-580 | 500 | 800 | 550 | 140 | 620 | 52 | 115 | 118 | 5 |
| RD-760 | 700 | 600 | 750 | | 820 | | | 158 | 7 |
| RD-880 | 800 | 800 | 850 | 180 | 960 | | | 158 | 8 |
| RD-990 | 900 | 900 | 950 | 220 | 1100 | | | 188 | 9 |

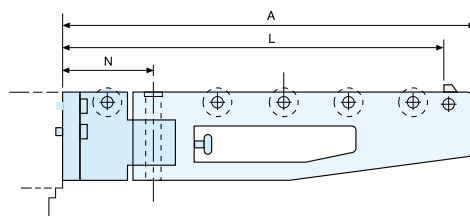
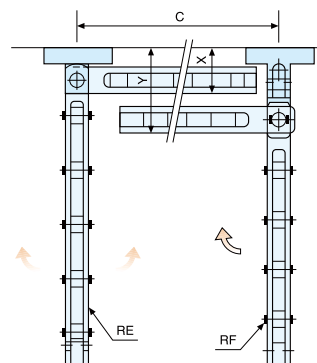
移模支臂 (RE、RF) / Die arm (RE、RF)

RE (折叠式) / RC (Folding)



- ★ RE型可单独任意左右旋转存放使用。
Model RE itself can be turned left or right and stored

RF (折叠式) / RC (Folding)



- ★ 适用RE, RF型两支臂安装之距离需大于安装最小间距(C)。

The distance for installing the two arms of Model RE and RF should be more than the distance between the installations(C).

| 型式 Model | 模具使用长L(mm) Length needed of the die | 最大荷重W(kg) Max.capacity | 总长A(mm) Total length | 安装最小间距C(mm) Min.distance for installation | 折叠尺寸 Size of fold down | | 固定座尺寸 Size of support | | 滚轮个数 Number of roller | M | N | |
|-------------|---|---------------------------|-------------------------|---|---------------------------|-----|--------------------------|---|--------------------------|----|-----|-----|
| | | | | | X | Y | B | H | | | | |
| RE,RF-580 | 500 | 800 | 550 | 525 | 90 | 150 | 115 | | 5 | 57 | 120 | |
| RE,RF-760 | 700 | 600 | 750 | 725 | | | | | 118 | | | 7 |
| RE,RF-880 | 800 | 800 | 850 | 825 | | | | | 158 | | | 8 |
| RE,RF-990 | 900 | 900 | 950 | 925 | | | | | 188 | | | 9 |
| | | | | | | | | | | | | |
| RE,RF-05160 | 500 | 1600 | 550 | 525 | 105 | 170 | 130 | | 158 | 5 | 74 | 140 |
| RE,RF-05200 | | 2000 | | | | | | | 178 | | | |
| RE,RF-07160 | 700 | 1600 | 750 | 725 | | | | | 158 | 9 | | |
| RE,RF-07200 | | 2000 | | | | | | | 178 | | | |
| RE,RF-08160 | 800 | 1600 | 850 | 825 | | | | | 188 | 10 | | |
| RE,RF-08200 | | 2000 | | | | | | | 218 | | | |
| RE,RF-09160 | 900 | 1600 | 950 | 925 | | | | | 248 | 11 | | |
| RE,RF-09200 | | 2000 | | | | | | | | | | |



再扩大您的优势 / IMPROVE YOUR ADVANTAGE

最大限度地利用机器的容模空间

Use the machine's space of the mold ultimately.

电永磁快速换模磁力模板系统因为没有压板和其他气动、液压部件，所以节省出更多的空间，大大提高了冲压机的容模尺寸，同时也使得冲压机的外围设备更便于维护和操作。

No need mechanical clamber and other pneumatic or hydraulic parts, will save more spaces, which enlarges the molarity of mold and easy to maintain and operate.

优势所在 / ADVANTAGES

便于操作

由于没有使用压板等使得模具外围设备（电路、油路、气路）都便于维护和操作。

Easy to operate

Easy to maintain due to free of mechanical clamber with additional oil or compressed air.

降低成本

制造过程中能使库存保持在较低水平，也使仓库、运输成本和效率最优化。

Lower the cost

Keep the inventory in a very low level, make the warehouse, transportation and efficiency optimal.

减少废料

模具的快速更换提高了生产力，同时维持了机器温度而减少冲压废料的产生量。

Less material waste

QMC system improves the productivity, keeps the machine's temperature, lower the waster of injection material.

持续受益

不需要对机器做任何修改，一次性投入即可长效收益，不需要额外投入。

Continuous profit

No modification to the machine, one-time investment, continuous profit.

节能环保

系统不使用油、气等外部能源，使得工作环境无任何污染源。

Energy saving and environmental protection

No need of oil or air, make the electro-permanent magnetic template to be environmental protection and energy saving.

PRODUCT APPLICATION EXAMPLES

部分应用展示

Our consistence will be your greatest benefit

我们的坚持将是您最大的收益



01

冲压机下模板

Lower template of the
punching machine

02

举模滑轨

Lower template

03

超工作台装夹模具

Super workbench clamping mold



04

冲压机上模板

Upper template of the punching
machine

05

110吨冲压机

Upper template of the punching
machine

06

160吨冲压机

Punching machine(160 ton)



CONTRAST OF CLAMPING MEANS

装夹方式对比

IMPROVE YOUR COMPETITIVE ADVANTAGE

提升您的竞争优势

新型磁力装夹方式 / ELECTRO-PERMANENT MAGNETIC CLAMPING MEAN

换模时间节省90%

适应当前“批多量少”的高速竞争时代，有效提升企业的竞争力，做到快速、准时交货，有效降低生产成本，节省财力与物力。

01 适应性更强

不同尺寸与形状的模具，不需要做任何修改即可直接在磁力模板上使用。使用电永磁快速换模系统，不受模具背板尺寸的限制，扩大了模具的适用范围。

02 均匀完美的吸持力

超强的磁力均匀分布在背板的接触面上，使模具受力均匀（面受力），更好地保证了合模精度，大大降低模具损耗，提高模具的使用寿命。

03 操作简便

简洁的操作流程，磁力模板励磁仅在几秒钟内完成，即可产生强大的吸力夹紧模具，并不需要持续供电，也不产生热量；磁力模板通入反向电流脉冲，即可瞬间消磁释放模具。

04 经济环保，免维护

系统仅在励磁与消磁的瞬间（1-5秒钟）使用电能，工作中不使用任何能源即可产生安全、强劲、高效的吸持力，省却了传统液压、气动夹具所需的油路及气路，避免了环境污染，也节省了维护成本。

Save mold change time by up to 90%

It matches the current business concept of more batches, less quantities, thus enhancing the competitiveness, achieving fast delivery with lower production cost.

01. More flexible

It suits almost all the mold size without any modification, which greatly widens the range of the mold applied to the machine.

02. Evenly distribution of clamping force

Super strong clamping force is distributed on the mold back plate evenly, thus ensuring the mold closing precision with lower mold worn-out and extending the mold's life.

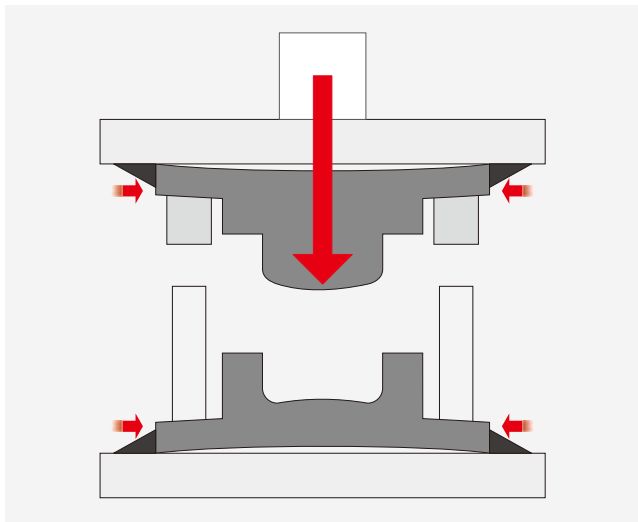
03. Easy operation

The process of clamping and releasing mold can be accomplished within several seconds. No continuous electrical supply is needed, no heat produced.

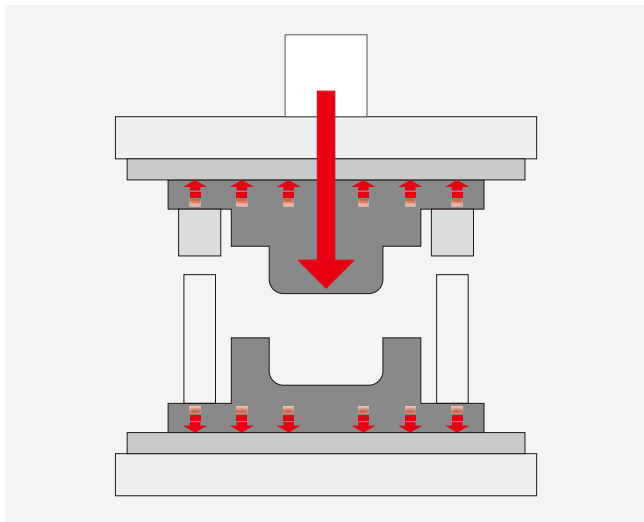
04. Economic and no environmental pollution, free of maintenance

Only consume little electricity during the magnetizing and demagnetizing process, which can be done within 5s. No more electrical power is needed during the machining; however keep providing strong clamping force to the mold. Compared with hydraulic clamping, no need oil and air, no environment pollution therefore, saving maintenance cost.

传统装夹方式 / Traditional clamping method



新型磁力装夹方式 / New clamping method



BENEFIT FOR CLIENTS

客户应用效益

投资使用QDC系统可以帮助您：
USE A QDC SYSTEM WILL HELP YOU:

- 01 提升您的企业形象**
Improve your company image.
 - 02 增强您的竞争优势**
Improve your competition.
 - 03 减少停机时间，提高机器生产力**
Reduce halting time, improve productivity.
 - 04 节约劳动成本，优化制造成本**
Save labor cost, optimize manufacturing cost.
 - 05 降低库存，增加灵活性，响应更快**
Decrease inventory, more flexible, fast reaction.
 - 06 提高安全系数**
Improve safety factor.
-

案例 Example

以一台160吨冲压机为例：

传统的换模方式大约需要1个人1小时才能完成，使用定制化的快速换模磁力模板以后只需要1个人用时5-6分钟即可完成模具更换。

Take a 160 ton stamping machine as an example.

It takes about 1 people for 1 hour to complete the mold change, how ever it takes only 1 people for 5-6 minutes to complete the mold change after using the magnetic template for quick mold change.

智能化您的生产系统

Make your production system Intelligent !

智能化您的制造过程

Make your manufacturing process Intelligent!

OVERTURN THE TRADITIONAL MOLD CHANGE METHOD

颠覆传统换模方式

磁力模板与液压换模比较

Comparison Between Electro-permanent magnetic Platen System & Hydraulic Mold Change Method

| 序号 NO. | 比较内容 Contents | 磁力模板换模 QDC by Electro-permanent Magnetic template | 液压换模 Hydraulic Mold Change |
|-----------|--------------------------------|---|--|
| 1 | 安全性 Safety | <input checked="" type="checkbox"/> 智能型 <input type="checkbox"/> 非智能性 智能型控制系统，在模具工作不正常时提前停机报警，工作过程不用电，不受停电影响。 <input checked="" type="checkbox"/> Intelligent <input type="checkbox"/> Unintelligent Intelligent control system which alarms before abnormal operation of the mold, no electricity consumption during operation, no influence even power off. | <input type="checkbox"/> 智能型 <input checked="" type="checkbox"/> 非智能性 非智能型，模具工作不正常时只有出现故障时才能发现，后果严重。停电后，液压压力下降容易造成事故。 <input type="checkbox"/> Intelligent <input checked="" type="checkbox"/> Non-intelligent Non-intelligent, can only be noticed when the abnormal has occurred, may cause serious consequences. When power is down, hydraulic presser will decrease and cause accident. |
| 2 | 可靠性 Reliability | <input checked="" type="checkbox"/> 好 <input type="checkbox"/> 不好 无任何运动部件且工作中不用电，因此无任何易损部件，无需维护。工作过程中有实时反馈信号，检测工具状态是否正常，可保证工作的可靠性。 <input checked="" type="checkbox"/> Good! <input type="checkbox"/> Not good! No movable parts and consumes no electricity while working, thus no damageable parts, free maintenance. Real time feedback signal during working process, test for normal status, guarantee the reliability. | <input type="checkbox"/> 好 <input checked="" type="checkbox"/> 不好 液压系统经常需要维修和更换液压部分，油路易堵塞或漏油，液压压板易磨损，夹紧自锁后，压板有时打不开而影响卸模具。工作状态无任何反馈信号，无法保证工作的可靠性。 <input type="checkbox"/> Good! <input checked="" type="checkbox"/> Not good! Hydraulic system often requires to repair and replace the hydraulic components, hydraulic circuit is easy to be blocked or leak oil, hydraulic pressure plate is easy to wear and tear, clamp lock, linking piece sometimes can't open and affect the mold unloading. Working status has no any feedback signal to guarantee the reliability. |
| 3 | 夹紧点位 Clamping point | <input checked="" type="checkbox"/> 多 <input type="checkbox"/> 少 模具背板与磁力吸盘的所有接触点都是夹紧的，特别是在模具背板的中心部位有很大的夹紧力，保证工作过程中模具的夹紧刚性。 <input checked="" type="checkbox"/> More <input type="checkbox"/> Less More clamping point. All contact points of mold back and magnetic chuck is clamping point, especially in the center of the mold back there is a lot of clamping force, to ensure the working process of mold clamping rigidity. | <input type="checkbox"/> 多 <input checked="" type="checkbox"/> 少 一般只夹4-6点，夹压力只作用在模具背板周边的夹压点上，而模具背板最需要工作夹紧力的中心部位却无夹紧力，工作过程中模具易变形。 <input type="checkbox"/> More <input checked="" type="checkbox"/> Less Less clamping point. Normally 4 to 6 points, the pressure just lay on mold back nearby clamping point, while there is no clamping force on the center of mold back which the clamping force most needed, which will easily result in mold deformation. |
| 4 | 夹压效果 Clamping effect | <input checked="" type="checkbox"/> 均匀 <input type="checkbox"/> 不均匀 所有接触点的夹紧力都是完全一致的，可以避免模具安装上的变形。 <input checked="" type="checkbox"/> Even <input type="checkbox"/> Uneven Even & well-proportioned. The clamping force on all the contact points is completely consistent, which can avoid mold deformation on the installation. | <input type="checkbox"/> 均匀 <input checked="" type="checkbox"/> 不均匀 由于夹点及压板的磨损，各压点的夹紧力不完全一致，造成模具安装上的变形。 <input type="checkbox"/> Even <input checked="" type="checkbox"/> Uneven Uneven & un-uniform. Because of the abrasion of clamping point and pressing plate, the clamping force is not completely consistent, which will result in deformation of mold installation. |

ACHIEVE REVOLUTIONARY EFFICIENCY IMPROVEMENT

实现革命性效率提升

磁力模板与液压换模比较

Comparison Between Electro-permanent magnetic Platen System & Hydraulic Mold Change Method

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|-----------|--|--|--|
| 5 | 产品品质 Quality | <input checked="" type="checkbox"/> 好 <input type="checkbox"/> 不好 由于可以避免夹压变形且模具背板中心部位有均匀的夹紧力，因此打出的产品一致性好。 Due to avoiding deformation and the even clamping force on center of mold back, the products are of good consistency. | <input type="checkbox"/> 好 <input checked="" type="checkbox"/> 不好 由于夹压的变形和模具背叛中心部位无夹紧力，因此打出的产品一致性不好。 Due to deformation of clamping pressure and no clamping force in the center of mold back, the consistency of products is not good. |
| 6 | 模具的适用性 Applicability of the mold | <input checked="" type="checkbox"/> 好 <input type="checkbox"/> 不好 不需要固定尺寸的模板背板，甚至可以装夹比机器模板大的模具，适应性极强。模具外围无任何干涉空间，不影响任何模具管路的安装。 <input checked="" type="checkbox"/> Good! <input type="checkbox"/> Not good! Good applicability. Don't need a fixed size of the mold back, can even clamping a mold larger than machine templates, strong adaptability. No any interference on surroundings will not affect any mold pipeline installation. | <input type="checkbox"/> 好 <input checked="" type="checkbox"/> 不好 由于夹紧点是固定的，因此模具背板均要做成同样规格的，费用高且适应性差。液压压板位置影响模具外管路的安装。 <input type="checkbox"/> Good! <input checked="" type="checkbox"/> Not good! Bad applicability. As the clamping point is fixed, the mold back must be in same specifications, high cost and poor applicability. The position of hydraulic pressing plate will affect the install of the outside pipeline. |
| 7 | 对模具寿命的影响 Impact on the mold lifetime | <input checked="" type="checkbox"/> 无影响 <input type="checkbox"/> 有影响 由于夹压和长时间工作过程中不会造成模具变形，所以延长了模具的使用寿命。 <input checked="" type="checkbox"/> No influence <input type="checkbox"/> Has influence Because the clamping pressure and long working time will not cause deformation of mold in process, the service lifetime of mold is prolonged. | <input type="checkbox"/> 无影响 <input checked="" type="checkbox"/> 有影响 由于夹压和长时间工作过程中会造成模具变形，模具的使用寿命将缩短。 <input type="checkbox"/> No influence <input checked="" type="checkbox"/> Has influence Because the clamping pressure and long working time cause deformation of mold in process, the service lifetime of mold is shortened. |
| 8 | 环境清洁性 Environment cleanness | <input checked="" type="checkbox"/> 好 <input type="checkbox"/> 不好 无任何泄露，无需人工清洁。 <input checked="" type="checkbox"/> Good! <input type="checkbox"/> Not good! No any leakage, no need manual cleaning. | <input type="checkbox"/> 好 <input checked="" type="checkbox"/> 不好 经常漏油，需要人工清洁。 <input type="checkbox"/> Good! <input checked="" type="checkbox"/> Not good! Often oil leakage, need manual cleaning. |
| 9 | 节能环保性 Energy saving & Environmental protection | <input checked="" type="checkbox"/> 好 <input type="checkbox"/> 不好 工作过程中不消耗任何能源。无泄漏，无噪音，无能耗。 <input checked="" type="checkbox"/> Good! <input type="checkbox"/> Not good! There is no any energy consumption, during working process. No leakage, no noise, no energy consumption | <input type="checkbox"/> 好 <input checked="" type="checkbox"/> 不好 液压油泵需长期工作，耗能大。漏油，油泵噪音大。 <input type="checkbox"/> Good! <input checked="" type="checkbox"/> Not good! The hydraulic oil pump must work for a long time, too much energy consumption. Leak oil, the oil pump is very noisy. |
| 10 | 经济性 Economic | <input checked="" type="checkbox"/> 好 <input type="checkbox"/> 不好 无需定期维护，无需额外投入。 <input checked="" type="checkbox"/> Good! <input type="checkbox"/> Not good! Free regular maintenance, no additional cost. | <input type="checkbox"/> 好 <input checked="" type="checkbox"/> 不好 需定期维护，更换密封器件。 <input checked="" type="checkbox"/> Good! <input type="checkbox"/> Not good! Needs regular maintenance, replace sealing components. |

FREQUENTLY ASKED QUESTIONS

常见问题释疑

01 停电会掉模吗？

磁力模板为电控永磁技术原理设计，其最大的优点就是断电永久不失磁性。电能只在磁力模板励磁与消磁的瞬间转换磁路时使用（仅1-3秒钟），其他时间仅系统运转使用电。

01. Will power off lead to mold creep down?

No. The design principle of magnetic platen is electro-permanent control technology, its greatest advantage is to keep the magnet permanently even there is emergency power off. Electric energy is only used for magnetizing or demagnetizing process which is just 1-3seconds.

02 磁力能保持多久？

众所周知，磁铁磁性能的衰减是一个非常漫长的过程，所以磁力模板的使用年限能超过三十年，甚至更长。

02. How long could the magnetic force keep?

The magnet force could keep more than 30years.

03 大型的模具能吸住吗？

磁力模板内部使用了高磁能积的稀土永磁材料——钕铁硼，作为稀土永磁材料发展的最新结果，由于其优异的磁性能而被称为“磁王”。钕铁硼磁性材料是钕、氧化铁等的合金，又称磁钢。钕铁硼具有极高的磁能和矫顽力。磁力模板的设计是单片模板可以承受整套模具的重量。即使是重量为30-45吨的大型汽车保险杠模具，也能轻松装夹在磁力模板上使用。

03. Could the large-sized mold be clamped?

The material used in magnetic platen is NdFeB, which is called “King of magnet” due to its excellent performance. Every single magnetic platen is designed to hold the whole weight of the mold. Even a big bumper mold which is about 30-45tons could be clamped easily.

04 需要改造模具吗？加装了隔热板的模具能使用吗？

安装电永磁快速换模磁力模板后，大部分模具可以直接使用，但对于异形的非对称模具需要咨询厂家，进行评估后方可使用。另外，加装了隔热板的模具不可以直接使用磁力模板系统。一般制作模具隔热板的材料为热传导性差的非铁磁性材料，所以是不能直接使用的，如果将隔热板安装在磁力模板和注塑机墙板之间的位置是完全可以的。

04. Does the mold need modification? Could the mold be workable with an insulation board?

For electro-permanent platen of QMC system, most of the mold could be used directly. For the non-symmetric molds, please enquire for estimation. Besides, for the mold with insulation board can not install the magnetic platen. However, if the insulation plate is placed between IMM back plate and magnetic platen, it is workable.

Non-ferric material is not workable.

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06 工厂电源不稳定能使用吗？

磁力模板仅在励磁与消磁的瞬间使用电能，其他时间不消耗电；控制器系统在设计时，为智能型恒流控制输出，即使在外部电源不稳定时也可以使用。

06. If the power supply in factory is not stable, can the magnetic platen be used?

Electric energy is only used for magnetizing or demagnetizing process, no electricity consumption in working status. The control system is intelligent constant current output, even when the external power supply is not stable still can be used.

07 实时监控和停机系统可靠吗？

电永磁快速换模系统采用的欧规EuroMap70.0或70.1接口，其逻辑关系严密可靠，被广泛应用在快速换模设备上。

07. Is the real time monitoring and E-stop system reliable?

Yes. The Electro-permanent QMC system adopts Euromap 70.0 or 70.1, which logical relationship is very strict and have been widely used on injection molding machine.

08 后期维护和使用成本高吗？

因为系统仅在励磁和退磁的瞬间使用电能，所以各种器件的老化速度非常慢，而且产品内部无运动部件，所以磁力模板不需要频繁而繁琐的维护和检修，使用成本几乎为零。

08. Is the usage and maintenance cost high?

Electricity only needed for magnetizing and demagnetizing process, which is just 1-3seconds. The device aging is very slow. There is no wearing parts inside the product, so the magnetic platen does not need frequent or complicated maintenance & repair, which makes the cost negligible.

09 成本能节省多少？

以160吨冲压成型机为例：

人工节省：传统机械式锁紧模具，需要1个人，耗时1小时左右；

QDC系统仅需1个人，耗时约5-6分钟即可。

人力节省：1人x1小时xPM（人力小时成本）

机器节省：1小时xM（冲压小时成本）

09. How much cost can the electro-permanent magnetic platen save?

Take 160 ton stamping machine mold change as an example.

Labour cost saving: the conventional mechanical clamping takes 1 people and for about 1 hour to complete it.

The quick mold change system requires only 1 people, and it takes about 5-6 of the time.

Manpower saving: 1 people X1 hours xPM (manpower cost per hour)

Machine saving: 1 hours xM (hour cost of injection molding machine)

10 磁力对人体有危害吗？

磁力模板励磁后，工作面会有磁场存在，其为永磁场而非电磁场，对正常人体危害微乎其微。磁力线的辐射空间也是有限范围的几十毫米内。若体内植入医疗器械的人员，需咨询医生。另外，磁力模板对于铁磁性材料均会产生吸力，如榔头、扳手、手表等，并且严禁信用卡、身份证等靠近，以免造成消磁失效。

10. Is the magnet force harmful?

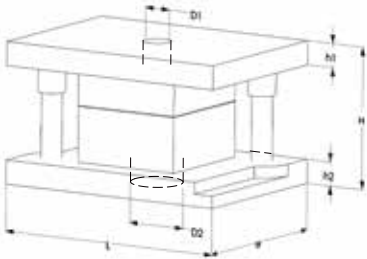
No. After magnetized, the magnet field is a permanent magnet field, it won't hazard to our body. The radiation of the magnetic force lines are limited, just within the scope of a few millimeters. However, for the personnel who implant medical devices in the body, should consult the physician. In addition, the magnetic platen has suction for ferro magnetic material, such as hammer, wrench, watches, etc. The credit card and ID card are forbidden to close up, in case to cause demagnetization.

PRE-SALES INFORMATION SHEET

磁力模板售前客户调查表

请认真填写以下列表, "*"为必填项, 谢谢!

Please fill the form carefully, and the columns marked with "*" are necessary ! Thank you!

| 客户基本信息 Customer Information | | | | | |
|--|--|---|--|---------------------------|------------------------|
| * 公司名称 Company name | | 地址 Address | | 电话 Tel | |
| * 联系人 Contact | | 邮箱 E-mail | | * 手机 Mobile | |
| * 生产类型 Production Type | <input type="checkbox"/> 冲压制品生产 Plastic products | | <input type="checkbox"/> 其他 Others | | |
| 冲压机信息 Punching Machine Information | | | | | |
| * 冲压机生产厂家/型号 Mono/Multi-color of IMM | | * 新购机/既有机 Machine manufacturer/model | <input type="checkbox"/> 新购机 Vertical <input type="checkbox"/> 既有机 Horizontal | | |
| * 开式冲压机/闭式冲压机 Vertical or Horizontal machine | <input type="checkbox"/> 开式冲压机 Vertical <input type="checkbox"/> 闭式冲压机 Horizontal | * 工作台是否可移出 Vertical or Horizontal machine | <input type="checkbox"/> 是 Yes <input type="checkbox"/> 否 No | | |
| * 机械式/液压式 Electric/Hydraulic | <input type="checkbox"/> 机械是冲压机 Electric <input type="checkbox"/> 液压式冲压机 Hydraulic | * 冲压力 Electric/Hydraulic | _____ ton | | |
| * 落料机构 Electric/Hydraulic | <input type="checkbox"/> 下工作台中心落料 Electric <input type="checkbox"/> 模具支架式落料 Hydraulic | * 开模力 Electric/Hydraulic | | | |
| * 电源 Electric/Hydraulic | 电压: _____ V 频率: _____ Hz | | * 换模频率 Electric/Hydraulic | | |
| 模具信息 Mold Information | | | | | |
| * 模具背板 Electric/Hydraulic | <input type="checkbox"/> 平板 Electric <input type="checkbox"/> 格子状或条状 Hydraulic | * 有/无定位模柄 Electric/Hydraulic | <input type="checkbox"/> 是 Yes <input type="checkbox"/> 否 No | * 模柄尺寸 Electric/Hydraulic | 直径: _____ 高度: _____ |
| * 参数 Electric/Hydraulic | * 最大模具背板尺寸 | * 最小模具背板尺寸 |  | | |
| L(mm)长 | | | | | |
| W(mm)宽 | | | | | |
| H(mm)高 | | | | | |
| (kg)重量 | | | | | |
| 备注 Mold Information | | | | | |
| * 请提供 Electric/Hydraulic | ①、冲压机工作台详细图纸 (包括下台面图、上滑块图); ②、冲压机电气原理图。 | | | | |
| 力磁电气联络人资料 LICI Contact Information | | | | | |
| 姓名 Name | | | 职位 Position | | |
| 手机 Mobile | | | 邮箱 E-mail | | |
| 地址 Address | 青岛市城阳区春阳路88号天安数码城27号总部楼 27 Building ,No.88 Chunyang Road,TianAn Cyber Park,Chengyang District,Qingdao,China | | | | |
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EPI for injection molding machine

EPP冲压机磁力模板

EPP for Punching machine

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SPS50/70 electro-permanent magnetic template with a full steel plate

SPB电永磁吸盘

SPB magnetic chuck

EP50/70铣用电永磁吸盘

EP50/70 for milling machine

EPB电永磁吸盘

EPB magnetic chuck

EPG磨用电永磁吸盘

EPG for grinding machine

EPR立车用电永磁吸盘

EPR for Vertical lathe

EPS立磨用电永磁吸盘

EPS for Vertical grinding

EPL电永磁钢板吊具

EPL for steel plate lifting

EPC冲锻压线喂料磁盘

EPC for forging machine

EPQ物料搬运

EPQ for materials handling

EPD手机壳体加工电永磁吸盘

EPD electro-permanent magnetic
platen for processing cell phone shell

EPX玻璃加工电永磁吸盘

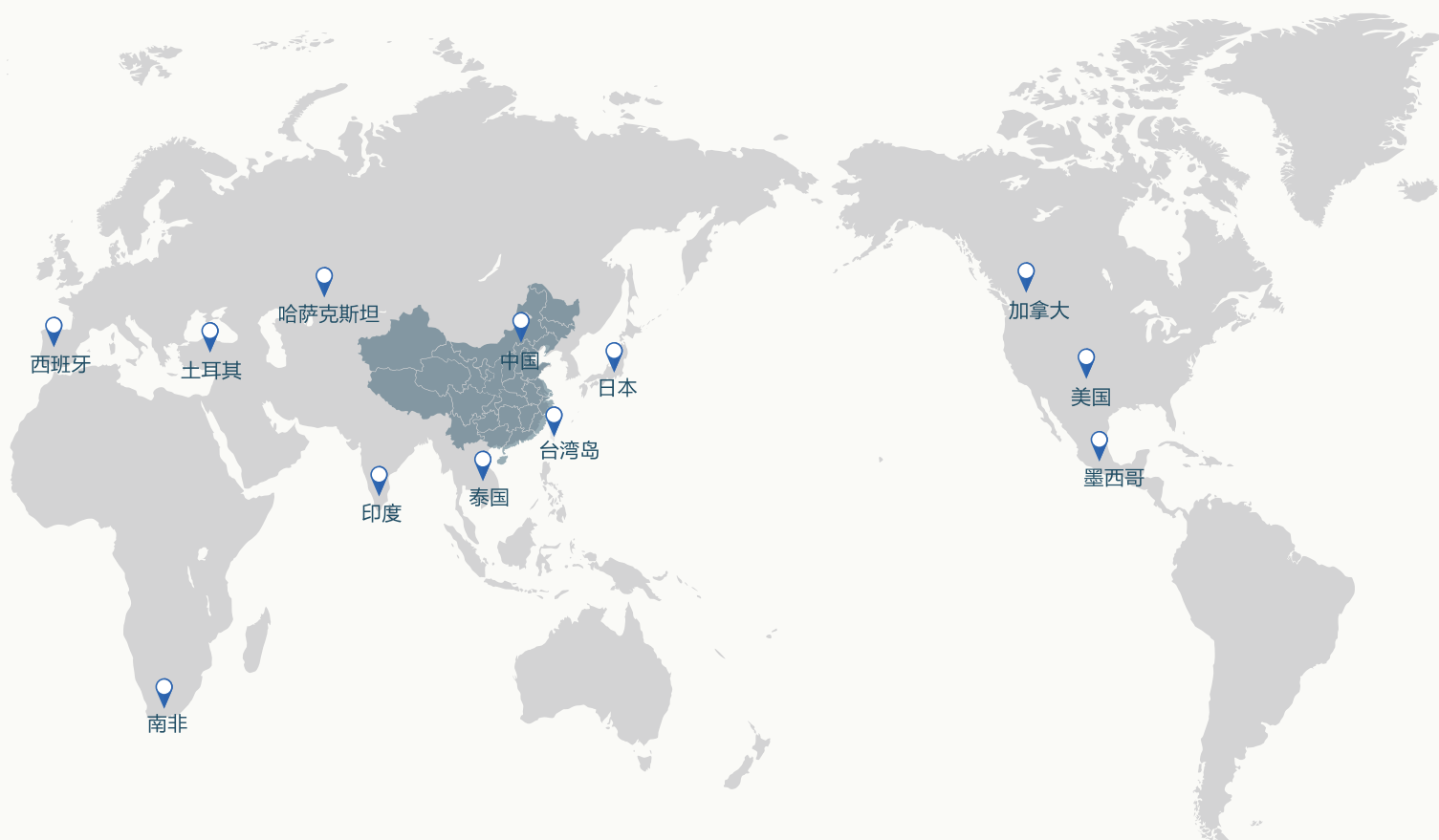
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platen for processing glass

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