

Y 9050B

# 锥齿轮淬火机

BEVEL GEAR QUENCHING PRESS



中国天津第一机床总厂

TIANJIN NO.1 MACHINE TOOL WORKS

# Y9050B 锥齿轮淬火机

## 一. 机床的性能和用途

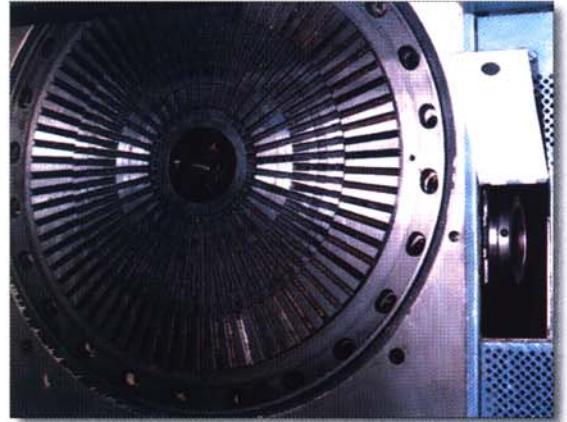
本机床是对汽车、工程机械、拖拉机、冶金等行业锥齿轮进行淬火的热处理设备，同时对其它盘状零件也可以在本机上进行淬火。

本机床是由 PLC 控制，除工件装卸外，其它运动都可自动完成的淬火设备。该机床采用电、液相结合控制机床的自动工作循环，有利于被淬火零件的精度控制和质量的稳定，又可减轻工人的劳动强度。

本机床工作台（下模）采用液压传动，可在上下料位置与工作位置间移动，将加热至淬火温度的零件逐个送入本机床，在机床内冷却，完成淬火工序。

本机床具有如下结构性能，保证了淬火质量和变形控制。

- 淬火时零件的外环、内环和内孔可以分别施加压力（分别可调）。
- 施加的压力可选固定压力或脉动压力（脉动频率可调）。
- 工作台（下模）平面具有凹凸调整装置。
- 在淬火过程中可实现分段喷油冷却（油量和时间可分别调整）。



## Main Features and Usage of Machine

This machine is a kind of heat treatment equipment for quenching bevel gears used in automotive, construction machinery, tractor, metallurgic machinery and other industries. At the same time, the round and flat parts can also be hardened on this machine.

The machine is equipped with a PLC control. Except the workpiece loading and unloading, the machine can be put into operation automatically. Electric and hydraulic controls are used for the operation in an automatic quenching cycle so as to increase the accuracy and stabilize the quality of quenched parts, with the operators' labour being lightened.

The worktable (lower die) of machine moves between the loading position and working position of workpiece by hydraulic control, in order to transfer the workpiece heated to quenching temperature to the working position of machine one after another and to be cooled in the machine. After that, the quenching operation is finished.

For ensuring the quenching quality and controlling the distortion of workpiece, the machine is with following constructional features.

- When workpiece being quenched, outer ring, inner ring and hole will be pressured separately (separate setting).
- The pressure can be selected as fixed pressure or pulsing pressure which can be adjusted.
- A concave & convex setting equipment is provided on the worktable (lower die).
- During the quenching operation, cooling oil in different step can be realized with oil flow and time setting separately.



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## 二. 机床技术规格 Specifications of Machine

### ● 机床基本型主要技术参数

#### Specifications for Basic Type Machine

|   |        |                    |
|---|--------|--------------------|
| 最大工件直径<br>Max. diameter of work   | mm     | 500                |
| 扩张器压杆安装基面至下模平面距离<br>Distance between mounting surface of expander pressing rod and bearing surface of lower die |        |                    |
| 最高<br>Maximum   | mm     | 280                |
| 最低<br>Minimum   | mm     | 250                |
| 内外压环安装基面至下模平面距离<br>Distance between mounting surface of inner & outer rings and bearing surface of lower die    |        |                    |
| 最高<br>Maximum   | mm     | 165                |
| 最低<br>Minimum   | mm     | 140                |
| 下模平面可凹凸调整直径范围<br>Range of diameter for adjusting concave & convex on lower die                                  | mm     | Φ 160- Φ 430       |
| 凹 (在Φ 160mm 直径处)<br>Concave (at dia.160mm)  | mm     | 0.6                |
| 凸 (在Φ 160mm 直径处)<br>Convex (at dia. 160mm)  | mm     | 0.6                |
| 最大压力<br>Maximum pressure  |        |                    |
| 外压环<br>Outer ring   | kg     | 7500               |
| 内压环<br>Inner ring   | kg     | 7500               |
| 扩张器<br>Expander   | kg     | 3500               |
| 冷却油<br>Cooling oil  |        |                    |
| 容量<br>Volume  | L      | 1300               |
| 流量<br>Flow  | L/sec  | 27.5               |
| 电动机<br>Electric Motor   |        |                    |
| 液压泵用<br>Hydraulic pump  | Kw rpm | 4 1440             |
| 冷却泵用<br>Cooling pump  | Kw rpm | 7.5 2900           |
| 外形尺寸 (长 × 宽 × 高)<br>Overall dimensions (L × W × H)  | mm     | 2880 × 1237 × 2622 |
| 净重<br>Net weight  | kg     | 5300               |

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## • 机床变型可选功能技术参数

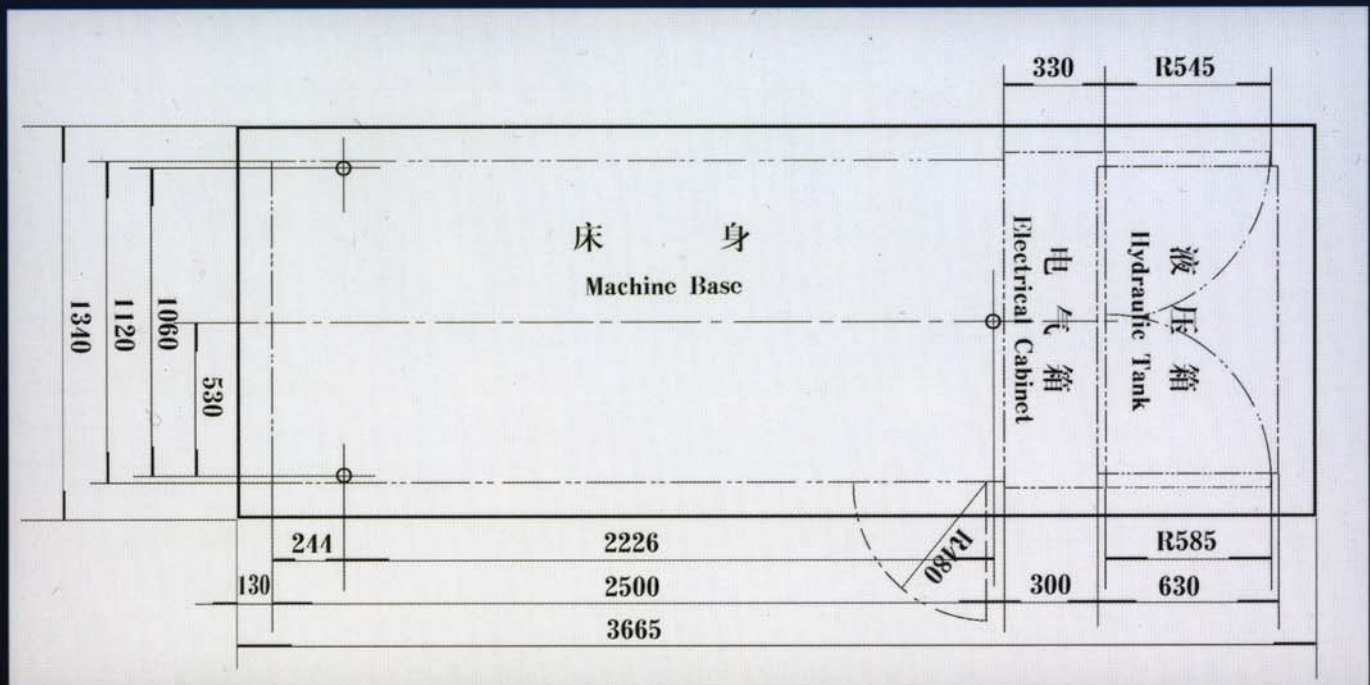
Specifications for option function machine

|  |    |              |
|--|----|--------------|
| 最大工件直径<br>Max. diameter of work  | mm | 625          |
| 最大压力<br>Max. pressure  |    |              |
| 外压环<br>Outer ring  | kg | 9800         |
| 内压环<br>Inner ring  | kg | 9800         |
| 扩张器<br>Expander  | kg | 4500         |
| 下模平面可凹凸调整直径范围<br>Range of diameter for adjusting concave & convex on lower die | mm | Φ 152- Φ 510 |

注：随着产品技术不断提高，以上规格仅供参考。

Note: The specifications are for you reference only, because of the continuous development of our product.

## 机床安装图 Machine Erection Drawing



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