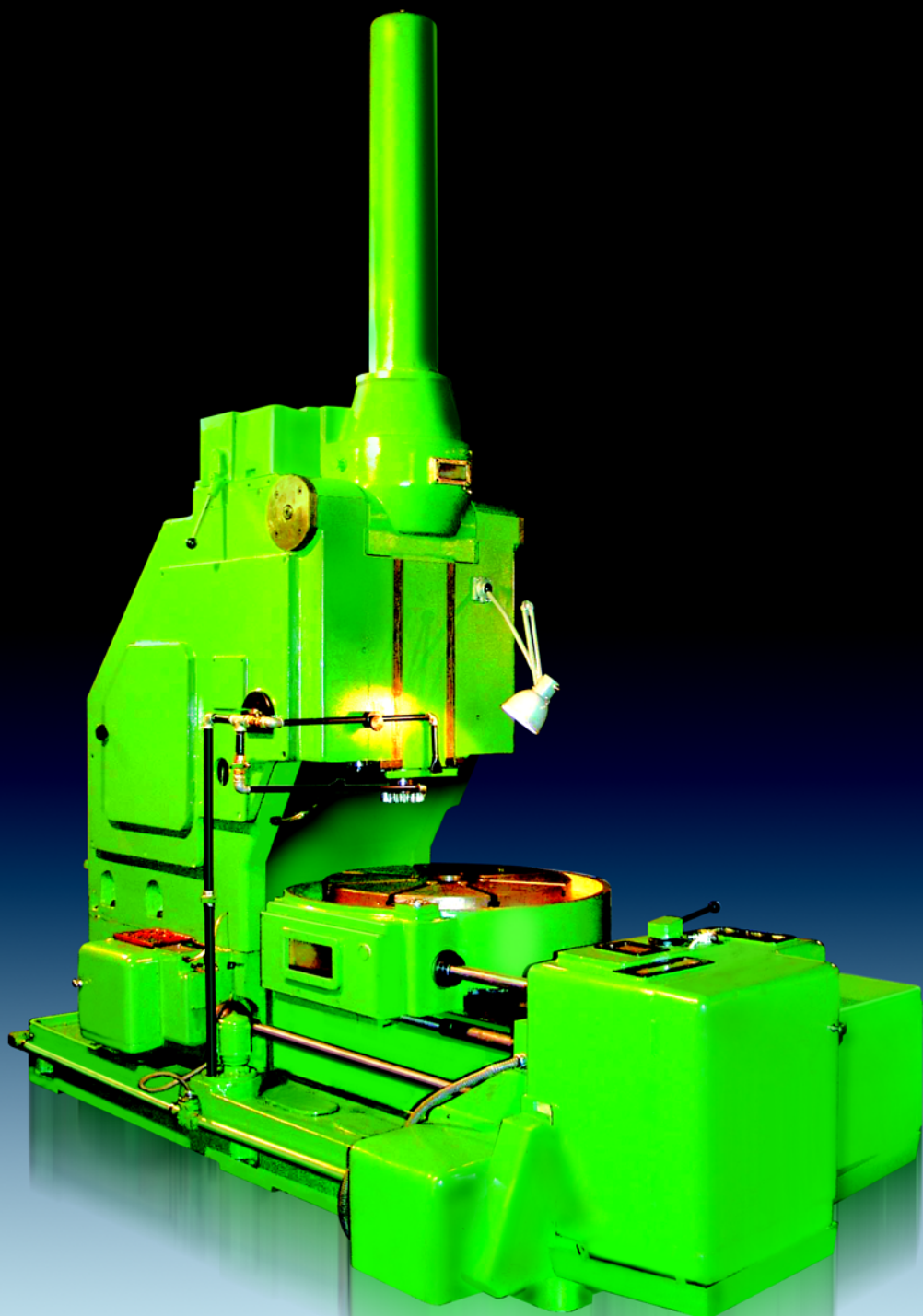


# Y58A

插齿机  
GEAR  
SHAPING  
MACHINE



中国天津第一机床总厂  
Tianjin No.1 Machine Tool Works, China



# Y58A 插齿机

## 一. 机床的使用领域

本机床为中等规格重型插齿机，特别适用于工程机械、冶金、矿山机械、大型减速机、机床制造、军工等行业使用。

本机床特别适合用于加工大直径内齿圈，双联或多联齿轮，特别是角度变位齿轮更容易实现。采用螺旋导轨和带有螺旋齿的插齿刀（特殊订货），可加工斜齿圆柱齿轮，采用特殊刀具可加工多种齿形的结合子和渐开线花键。

本机床使用范围广泛，操作简便，使用可靠，并且有足够的刚性和功率，以保证机床工作时选用较佳的切削用量，特别适用于多品种齿轮加工。

## 二. 机床主要性能和结构特点

1. 机床为纵向布局，床身、立柱、刀架、工作台具有优良的结构，机床刚性好。
2. 工作台在三条矩型导轨上实现径向进给，进给速度调整范围大。
3. 机床采用刀架摆动双向让刀机构，让刀方向调整方便，且让刀量可调，运动平稳，噪音低。
4. 机床刀架和工作台采用高精度蜗轮副，蜗轮副均有可视窗口，可直观润滑状况。
5.  $\Phi 800$  的花盘工作台安装卡具，装卸工作十分便利。
6. 机床装有快速电机，调整机床时，工作台能快速移动，安装工件时工作台可以快速回转，从而提高了生产效率，减轻了操作者的劳动强度。
7. 机床刀轴直径  $\Phi 130\text{mm}$ ，有足够的切削刚性，高精度大直径插刀转接套，安装方便可靠，定心精度高，适合各种大直径插刀安装。
8. 机床配备了高精度垂直精度检测棒，可供用户检测机床精度，保证高精度的齿向误差。
9. 机床具备两路冷却喷头，利于内、外齿加工的冷却。
10. 机床可加高变型，适用于轴类齿轮加工，还可个性化配置。
11. 本机床除装卸工件外，工作过程全部自动。

## 1. Main Application of the Machine

This machine is of a medium-sized heavy Gear Shaping Machine and it is specially used for the construction machinery, metallurgical & mineral machineries, heavy-duty gear reducers, Machine Tool and Military industries, etc.

It is most suitable for the production of internal gears with larger hole diameters and cluster gears, and it is specially used for cutting the gears with modified center distances. When the helical guide and cutter are employed (special order required), the helical gear can be produced while special cutter being used, the gear clutch and involute spline will be machined.

# Y58A GEAR SHAPING MACHINE

The machine has a wide applications with easy operation and reliability. At the same time, the machine has an enough rigidity and power for selecting the optimized cutting parameters. The machine is specially used for the varieties of gear productions.

## 2. Main Performance and Structural Characteristics of the Machine

1. The machine is longitudinally arranged. All of the machine bed, column, cutter head and worktable have an excellent strictures and rigidities.
2. The radial feed of worktable is realized on three (3) rectangular guide ways and is adjusted in a wide ranges.
3. The oscillated cutter relieving mechanism is adopted for the cutter bidirectional relief in order to obtain the convenient operation, adjustable relieving amount, stable and lower noise.
4. Two high precision worm and worm wheel sets are used for the cutter head and worktable. There are viewing windows for looking at the working conditions and the oil lubrications of worm and worm wheel sets.
5. The fixture is mounted on the worktable of 800mm diameter, which is very easy and convenient for the operator to load or un-load the work pieces.
6. Two (2) high-speed motors are equipped on the machine for the fast movement of worktable when setting up the machine and for the fast rotation of worktable when loading the work pieces in order to have a high productivity and release the working load of operator.
7. The diameter of cutter spindle is 130mm for having an enough rigidity. The cutter adapters can also be provided for mounting the large cutters. It is easy and convenient to set up the adapters with high alignment of center lines between the cutter spindle and adapter.
8. A high precision test mandrel with perpendicularity is supplied with the machine for checking the machine accuracy by client in order to guarantee the lead error of gears being cut.
9. There are two (2) cooling nozzles on the machine for internal and external cuttings.
10. The machine can be modified with an increased block between the bed and column for increasing the distance between bearing surface of cutter and surface of worktable in order to have the possibilities for cutting the shaft gears and also for setting up the specific allocations.
11. All of the working cycles are automatic except the loading and un-loading of the work pieces.

## 三. 机床规格参数 Specifications of the Machine

最大加工直径 Maximum diameter of work	外齿 External 内齿 Internal	mm	800 1000
最大加工模数 Maximum module of work		mm	12
最大工件齿宽 Maximum face width		mm	170
加工斜齿的常用螺旋角（当装置螺旋导轨时特殊订货） Normal helical angle of gear to be cut (with special ordered helical guide way)			23° , 15°
插齿刀刀轴轴线至工作台轴线的距离 Distance between cutter axis and axis of work spindle		mm	0~700
插齿刀支承面至工作台台面的距离 Distance between bearing surface of cutter and surface of worktable		mm	150~350
插齿刀冲程最大行程长度 Maximum length of cutter stroke		mm	200
机床变型加高规格(特殊订货) Specifications of increasing height(special ordere required)		mm	100,200,300,400,500
插齿刀回程时的让刀量不小于 Minimum relief of cutter (during cutter return stoke)		mm	0.65
插齿刀每分钟往复行程数（无级） Number of cutter strokes per minute (stepless)			25~150
插齿刀每往复行程圆周进给量 Rotary feed per stroke of cutter		mm	0.17~1.5
插齿刀每往复行程径向进给量 Radial feed per stroke of cutter		mm	0.03~0.57
工作台花盘直径 Diameter of worktable		mm	800
插齿刀的二种承接套直径 Diameter of two cutter adapters		mm	Φ 88.90-0.005 Φ 101.60-0.005
主电机功率 Power of main motor		kw	7.5
机床外形尺寸（长×宽×高） Overall dimensions of machine (L × W × H)		mm	3552 × 1763 × 3792
净重 Net weight		kg	11000

注：随着产品不断更新，技术数据将有所变更，届时请联系我们。

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

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