

电磁阀全自动线圈生产线

Full-automatic production line of coil for solenoid valve



全自动电磁阀线圈生产线主要由自动绕线机（2台），自动沾锡机三大部分组成，是集自动上料，自动送料，自动绕线，自动沾锡，自动检测，自动下料于一体的全自动绕线机。

全自动绕线机：因绕线时间较长为合理利用上料及沾锡机此处配制两台绕线机。绕线机系四轴联动，绕线圈数精确可设定，绕线速度自动可调，主轴标准转速10，000rpm，最高转速可达18，000rpm,对于较细线径产品的绕线，可选配捻线机构，捻线股数，捻线转速及捻线圈数可调。

全自动沾锡机：自动沾锡机为8工位转盘式，绕线机自动联机，由传送机构将绕好的线圈自动送到沾锡机工作位，实现自动沾助焊剂、自动沾锡，自动冷却，自动检测，自动下料等多种功能。沾锡液面高度自动控制，采用高精度锡面传感器，实现自动送锡丝功能，能够很好的保证端子沾锡高度的一致性。沾锡温度260~500° C可调，温度控制精度±5° C。沾锡时间0~5秒可调，调整精度0.1秒。

主轴电机采用进口高性能伺服电机，主轴轴承采用高精度，高转速进轴承，三轴运动部件采用进口高精度丝杆及线性轴承保证导针的重复定位精度。所有关键元器件采用国际知名品牌。控制上采用进口的控制器和人机界面，方便参数设定。故障自动报警，并提示故障点，保证了绕线和沾锡的质量。

The full-automatic production line of coil for solenoid valve is mainly composed of 2 automatic winding machines and one automatic soldering machine, integrating the functions such as automatic loading, automatic feeding, automatic winding, automatic soldering, automatic detecting and automatic unloading.

Full-automatic winding machine: Due to long winding time, two winding machines are provided in order to make full use of loading and soldering machine. The winding machine has a four-spindle linkage. The number of turns can be set precisely and the winding speed is adjustable. The standard spindle speed is 10,000 rpm, while the maximum spindle speed is 18,000 rpm. For winding of coil with small wire diameter, twisting unit with adjustable number of strands, rotating speed and number of turns is optional.

Full-automatic soldering machine: Featuring an eight-station rotating disk, the soldering machine can be connected to the winding machine automatically. The conveying mechanism automatically delivers the coil wound with wire to the working station of the soldering machine, achieving multiple automatic functions such as soldering flux dipping, soldering, cooling, bending, detecting and unloading. Due to automatic control of soldering liquid level and high-precision tin surface sensor, the tin wire can be automatically fed, which ensures the consistence of terminal soldering height. Its soldering temperature is adjustable between 260℃ to 500℃ with a temperature control accuracy of ±5℃. The soldering time is adjustable from 0 to 5 seconds with an adjustment accuracy of 0.1 second.

Spindle motor adopts imported servo motor with high performance, spindle bearing adopts high-precision and high-speed imported bearing, and moving parts of three spindles adopt imported and high-precision screw rod and linear bearing in order to ensure the repeated positioning accuracy of guide pin. All key components employ internationally renowned brand. Imported controller and human-computer interface are employed for control to facilitate parameter setting. Moreover, automatic fault alarm and fault point prompt ensure the winding and soldering quality.

型号 (Model)	HFRA2450(双绕线机) (With two winding machines)
主轴数 (Spindle number)	24*2
主轴转速 (Spindle speed)	标准 (Standard): 10,000rpm MAX: 18,000rpm
主轴间距 (Spindle interval)	50
绕线线径 (Wire diameter)	Φ 0.02"~Φ 0.3mm(依主轴间距和转速而异) (variable according to spindle interval and speed)
控制系统 (Control system)	方式: 可编程控制器(PLC),工控机(PC) (Mode: Programmable logic controller, industrial personal computer)
控制轴数 (Number of control spindle)	4 轴 (Four spindles)
主轴电机功率 (Spindle motor power)	5.8KW
电机总功率 (Total motor power)	9KW
电源 (Power supply)	380V(三相五线制),50Hz 中国大陆标准电网 (380V (three-phase five-wire), 50Hz, standard power grid of Mainland China)
气源 (Air supply)	0.4—0.6MPa
最大回转直径 (Max. swing diameter)	Φ 45mm(依主轴间距而异)
功能 (Function)	自动上料、自动送料、自动绕线、自动沾锡、自动打弯、自动检测、自动下料、张紧力自动调节、主轴转速连续可调、绕线圈数可调。(Automatic loading, automatic feeding, automatic winding, automatic soldering, automatic bending, automatic detecting, automatic unloading, automatic tension adjustment, continuously adjustable spindle speed and adjustable number of turns.)