

THCD-12 自动埋弧平焊小车

THCD-12 Automatic submerged arc welding trolley

一、概要及特点:

I. Summary and features:

1、概要:

1. Summary:

THCD-12 自动埋弧平焊小车是一款水平行走埋弧焊接装备，广泛应用于平板和弧形板的埋弧焊对接及水平埋弧角焊。

THCD-12 automatic submerged arc welding trolley is a horizontal submerged arc welding equipment, which is widely used in submerged arc welding butt joint of flat plate and arc plate and horizontal submerged arc corner welding.

小车由行走车体、焊枪夹持装置、埋弧焊剂下料装置、焊剂回收装置组成；车体采用无刷电机驱动、链条传动的行走方式；此款小车体积小、重量轻、移动和使用非常方便，可替代市场上大部分车式埋弧焊焊接设备的焊接工作，提高生产效率并保证焊接质量；无需配置埋弧焊电源，直接使用气体保护焊电源进行焊接，可以选择单枪或双枪进行焊接，使用普通 1.4-1.6 实心焊丝，焊枪应拆下气体保护嘴装夹在摆动器上即可，焊接时无需CO₂气体保护，采用埋弧焊焊剂保护的焊接形式，且自带焊剂回收装置，节约用料成本；小车自带摆动器，可进行摆动埋弧焊接作业。具有熔敷速度高，焊接速度高，生产效率高等特点。

The trolley consists of a traveling car body, a welding gun clamping device, a submerged arc welding agent blanking device and a flux recovery device; The car body is driven by brushless motor and driven by chain. This trolley is small in size, light in weight, and very convenient to move and use. It can replace the welding work of most vehicle-type submerged arc welding equipment in the market, improve production efficiency and ensure welding quality. No submerged arc welding power supply is required, and the gas shielded welding power supply can be directly used for welding. Single gun or double gun can be used for welding, and ordinary 1.4-1.6 solid welding wire can be used. The welding gun should be clamped on the shaker with the gas shielded nozzle removed, and CO₂ gas protection is not required during welding. Submerged arc welding flux protection is adopted, and the flux recovery device is provided, which saves the material cost. The trolley is equipped with a swinging device, which can be used for swinging submerged arc welding. It has the characteristics of high deposition speed, high welding speed and high production efficiency.

此款焊接机主体同我司THCD-9 全位置焊接机，可用于垂直、水平角焊或对接等多

种位置焊作业工件，配合内置高性能永磁体及导向轮，可自动跟踪焊道（如板材筋板、横梁等工件的焊接），其结构特点为：采用蓄电池供电，特别适用于野外及不便于提供小车电源的焊接场合；小车具有重量轻巧，磁吸附具有手柄提拉自动离合功能，方便操作者现场作业；小车具有摆动功能，适用于宽、厚焊缝的焊接；小车运行稳定可靠，即便是无专业技术的操作人员也能获得良好的焊接效果。

The main body of this welding machine is the same as THCD-9 all-position welding machine of our company. It can be used for vertical and horizontal corner welding or butt welding of workpieces in various positions. With the built-in high-performance permanent magnet and guide wheel, it can automatically track the welding path (such as the welding of plates, ribs, beams and other workpieces). Its structural features are: battery power supply, especially suitable for outdoor and welding occasions where it is inconvenient to provide trolley power; The trolley is light in weight, and the magnetic adsorption has the function of automatic clutch by lifting the handle, which is convenient for operators to work on site; The trolley has swinging function and is suitable for welding wide and thick welds; The trolley runs stably and reliably, and even operators without professional skills can get good welding results.

2、特点：

2. Features:

2.1、车体上安装离合装置，可人工快速移动车体。

2.1. Clutch device is installed on the car body, which can manually move the car body quickly.

2.2、数字显示所有的操作功能，方便调整各项参数。

2.2. Digital display of all operation functions is convenient for adjusting various parameters.

2.3、采用程序精密控制行走速度、摆动速度、摆动角度、左、右停留时间等。

2.3. The walking speed, swing speed, swing angle, left and right residence time, etc. are precisely controlled by the program.

2.4、摆动器受程序控制，摆动带左停、右停功能，防止摆动焊接时出现熔池不足的现象；同时焊接时可对焊缝中心进行调整，防止偏焊。

2.4. The swinging device is controlled by the program, and the swinging belt has the functions of left stop and right stop to prevent the phenomenon of insufficient molten pool during swinging welding; At the same time, the weld center can be adjusted during welding to prevent partial welding.

2.5、摆动功能始终从中心开始并自动回中，方便调整。

2.5. Swing function always starts from the center and automatically returns to the center,

which is convenient for adjustment.

2.6、自带焊剂回收装置，减轻工人添加焊剂的工作量，节约用料成本。

2.6. Bring its own flux recovery device to reduce the workload of workers to add flux and save the cost of materials.

2.7、采用 1.4-1.6 普通实芯焊丝做焊材，无需另购埋弧焊焊材。

2.7. 1.4-1.6 ordinary solid-core welding wire is used as welding material, so there is no need to purchase another submerged arc welding material.

2.8、采用普通 500A 气保焊电源作为焊接电源，无需配置埋弧焊电源；焊枪仍为常规 CO₂ 焊枪，无需另购焊枪。

2.8. Ordinary 500A gas shielded welding power supply is used as welding power supply, and submerged arc welding power supply is not required; The welding torch is still a conventional CO₂ welding torch, so there is no need to purchase another welding torch.

二、适用工件及形状：

Second, the applicable workpiece and shape:

1、一般多用于平面对接焊埋弧焊、埋弧角焊等。

1. Generally, it is used for submerged arc welding, submerged arc fillet welding, etc.

2、焊接小车行走宽度应大于 400mm，焊接时应为小车留有足够的行走位置。

2. The walking width of the welding trolley should be greater than 400mm, and sufficient walking position should be reserved for the trolley during welding.

3、焊缝母材间隙应保持一致，打底焊应采用小间隙，否则影响焊接效果；

3. The gap between the weld base material should be consistent, and the backing weld should adopt a small gap, otherwise it will affect the welding effect;

4、工件应为导磁材料，若不具导磁性则轨道磁体无法吸附于工件上，会造成小车运行不稳。

4. The workpiece should be made of magnetic conductive material. If there is no magnetic conductivity, the track magnet can't be adsorbed on the workpiece, which will cause the unstable operation of the trolley.

5、适用于Φ1.6mm以下实芯焊丝。

5. It is suitable for solid welding wire with ϕ below $\Phi 1.6\text{mm}$.

6、水平对接焊接行走时需安装轨道，用于角焊时应该安装导轮。

6. Track should be installed when walking in horizontal butt welding, and guide wheel should be installed when it is used for fillet welding.

三、设计标准：

III. Design Standards:

Q/320114 DRDJ 010-2016 《H系列自动焊接机》

Q/320114 DRDJ 010-2016 H Series Automatic Welding Machine

四、规格及技术参数:

IV. Specifications and technical parameters:

- 1.电源: XC-24040-2 锂电池组 标称电压 24V, 充电限制电压 25.2V
1. power supply: nominal voltage of XC-24040-2 lithium battery pack is 24V
电池容量 4.0Ah、The battery capacity is 4.0Ah, The limiting voltage is 25.2V
- 2.行走速度: $V_{\max}=930\text{mm/min}$ $V_{\min}=35\text{mm/min}$
2. Walking speed: $V_{\max}=930\text{mm/min}$ $V_{\min}=35\text{mm/min}$
- 3.驱动与跟踪方式: 4 轮驱动 选配导轨仿形行走
3. Driving and tracking mode: 4-wheel drive with optional guide rail for copying walking.
- 4.摆动参数: 摆动角度 $0\sim\pm 8^\circ$ 最大摆动速度(摆动器输出轴转速): 5.4r/min, 左、右停留时间: $0\sim 2.5\text{s}$,
4. Swing parameter: Swing angle $0\sim 8$, maximum swing speed (rotating speed of output shaft of oscillator): 5.4r/min., Left and right residence time: $0\sim 2.5\text{s}$.
- 5.焊枪调节: 横向移动 40mm+30mm 垂直移动 40mm, 焊夹绕 X 轴转动(指车轮运动方向 $\pm 45^\circ$ 焊夹绕 y 轴转动 $\pm 30^\circ$)
5. Welding torch adjustment: 40mm horizontally+30 mm vertically, The welding clamp rotates around the X axis (referring to the wheel movement direction of 45, the welding clamp rotates around the Y axis of 30)
- 6.焊剂回收方式: 压缩空气真空回收
6. Flux recovery method: compressed air vacuum recovery.
- 7.焊剂料斗容量: 3KG, .吸附力: 32kg,
7. Flux hopper capacity: 3K, Adsorption force: 32kg
- 8.外形尺寸: 长×宽×高 480×400×680mm
- 8、 dimensions: length× width× height 480×400×680mm.

五、检查及维护:

V. Inspection and maintenance:

为了安全、长期使用自动焊接小车，要定期进行设备维护。

In order to use the automatic welding trolley safely and for a long time, the equipment should be maintained regularly.

1、清除控制盒面板、焊枪调整部位的飞溅：经常清理控制盒面板、焊枪调整部位的飞溅，防止出现线路板损坏、焊枪无法调整的现象。

1. Remove the splash from the control box panel and welding torch adjustment part: always clean the splash from the control box panel and welding torch adjustment part to prevent the circuit board from being damaged and the welding torch from being unable to be adjusted.

2、清除焊渣：经常清除导向轮、驱动轮、轨道、磁铁和滑块部位的焊渣及异物。

2. Removal of welding slag: Always remove welding slag and foreign matter from the guide wheel, driving wheel, track, magnet and slider.

3、固紧焊枪夹具和导向轮的螺钉：如果出现松动，会造成行走不稳及焊接不良等现象。

3. Fasten the screws of the welding gun fixture and the guide wheel: if they are loose, they will cause unstable walking and poor welding.

4、经常检查插头、焊枪控制线是否损坏，蓄电池是否能正常充、放电。

4, often check whether the plug, welding torch control line is damaged, whether the battery can charge and discharge normally.

5、经常检查行走电机、摆动电机、行走机构等部位的运行状况，确认是否有异常的发热或杂音。

5. Regularly check the running status of the traveling motor, swing motor, traveling mechanism, etc. to confirm whether there is abnormal fever or noise.

六、产品外形图

VI. Product outline drawing

