

THCD-10 智能爬行多功能型导轨小车

THCD-10 Automatic vertical railed fillet welding carriage

一、概要及特点:

I. Summary and features:

1、概要:

1. Summary:

1.1、此款小车是集平直钢板对接与角焊无盲区焊接，切割、气刨为一体多功能自动化智能小车。配导上定位装置，通过调节定位杆可快速定位角焊缝或工件对接拼焊；

1.1、 This car is a multi-functional self-cutting, flat steel plate butt welding and corner welding without blind spot welding. Intelligent car. Equipped with a positioning device, the fillet weld or workpiece butt welding can be quickly positioned by adjusting the positioning rod;

1.2、轨道固定开关磁座为强磁吸附结构，位置可调满足钢板预留孔的跨越安装，适合于跨越区筋板、拉码及板上有孔及洞等.....障碍物及狭窄位置的结构工件；广泛应用于船舶、机车、石油化工、钢结构焊接工程；

1.2、 The magnetic seat of the rail fixed switch is of strong magnetic adsorption structure, and its position can be adjusted to meet the requirements of spanning installation of the reserved hole of the steel plate. It is suitable for the structural workpieces in the crossing area, such as reinforcing plates, pulling codes and plates with holes and holes, etc ... obstacles and narrow positions; Widely used in welding engineering of ships, locomotives, petrochemicals and steel structures;

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。轨道传动齿条采用耐磨的钢制齿条，提高了使用寿命。

2.1. Clutch device is installed on the car body, which can manually move the car body quickly. The track rack is wear-resistant. The steel rack improves the service life.

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、摆器伸出轴两端可根据工状需用装夹一把焊枪或同时装夹两把焊枪实现两端无盲区焊接；

2.3. Two ends of the pendulum extension shaft can be clamped with one welding torch or

two welding torches at the same time according to the working conditions to achieve blind spot welding at both ends;

2.4、小车导轨吸附力 $\geq 132\text{Kg}$,能各类对接与角焊缝,切割、碳刨工件,轨道标准长度为 1200mm,可按工件长度要求定制特殊长度的轨道。

2.4. The trolley guide rail has an adsorption force of $\geq 132\text{Kg}$, which can butt weld and fillet weld, cut and carbon plane workpieces. The standard track length is 1200mm, and the track with special length can be customized according to the requirements of workpiece length.

2.5、采用大容量锂蓄电池供电,无需外接电源,一次充电可满足 10 小时以上连续作业;

2.5. High-capacity lithium battery is used for power supply, and no external power supply is needed. One charge can satisfy continuous operation for more than 10 hours;

2.6、导轨设计有导上定位装置,通过调节定位杆可快速定位角焊缝或工件对接拼焊;

2.6. The guide rail is designed with a guide positioning device, which can quickly position fillet welds or butt welding of workpieces by adjusting the positioning rod;

2.7、定位快速简单,节省测量与定位时间、提高劳动效率;

2.7, the positioning is quick and simple, which saves the measurement and positioning time and improves the labor efficiency;

2.8、焊枪夹持机构具有摆动功能,适用于宽、厚焊缝的焊接(薄板不开摆动功能);

2.8. The welding gun clamping mechanism has the swing function, which is suitable for welding wide and thick welds (the thin plate does not have the swing function);

二、适用工件及形状:

Second, the applicable workpiece and shape:

2.1、一般多用于一般多用于横焊、平面对接焊、立向对接焊、角焊等。适合于跨越区筋板、拉码及板上有孔及洞等.....障碍物及狭窄位置的结构工件

2.1. Generally used for horizontal welding, plane butt welding, vertical butt welding, fillet welding, etc. It is suitable for the structural workpieces in the crossing area, such as reinforcing plates, pulling codes, holes and holes on the plates, obstacles and narrow positions.

2.2、焊接小车行走宽度应大于 350mm，焊接时应为小车留有足够的行走位置。

2.2. The walking width of the welding trolley should be greater than 350mm, and there should be enough walking position for the trolley during welding.

2.3、焊缝母材间隙应保持一致，不应大于 3mm，否则影响焊接效果；

2.3. The gap between the weld base material should be consistent and should not be greater than 3mm, otherwise the welding effect will be affected;

2.4、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甚至掉落损毁。

2.4. 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 trolley to run unsteadily or even fall and be damaged.

2.5、适用于 $\Phi 1.6\text{mm}$ 及以下普通焊丝及药芯焊丝。






2.5. Applicable to common welding wires and flux-cored wires with $\phi \Phi 1.6\text{mm}$ and below.

三、规格及技术参数：

III. Specifications and technical parameters:

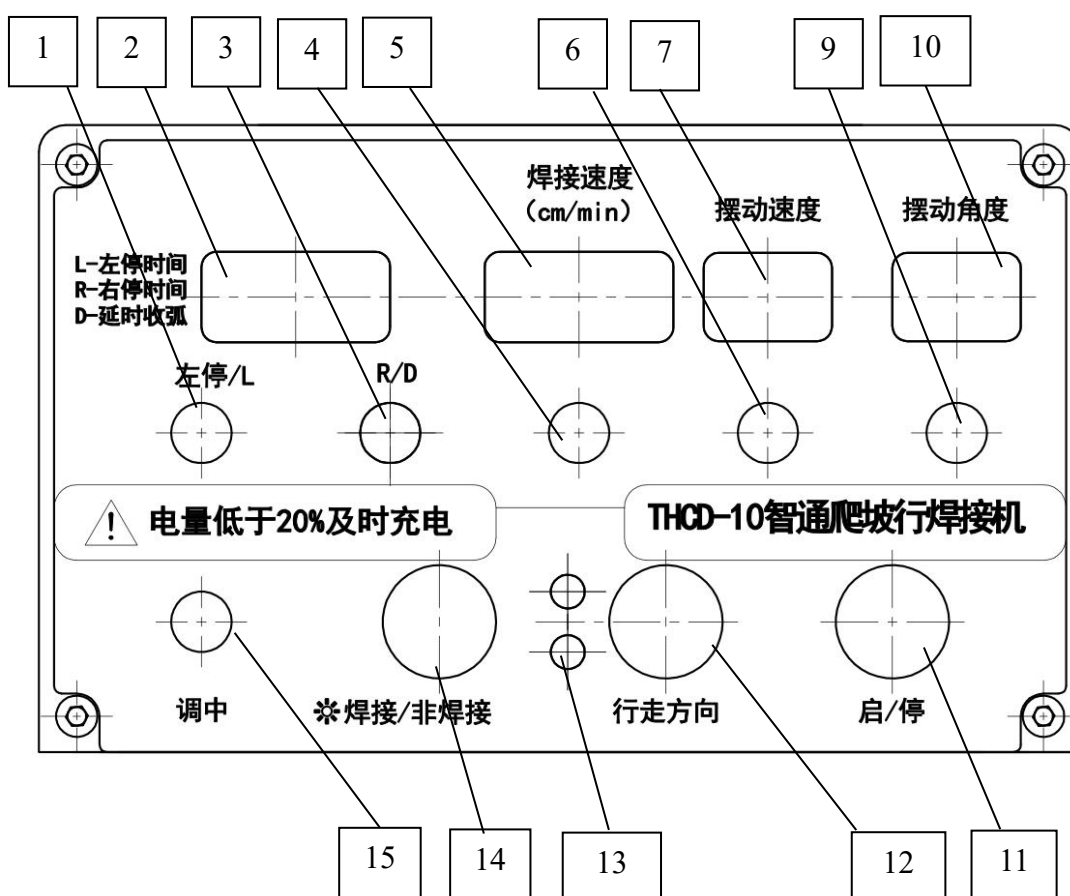
序号	项 目		参 数 内 容
1	适用工件		铁质工件、角焊缝、对接焊缝
2	行走方式		轨道式
3	轨道长度		1200mm（可定制）
4	驱动方式		齿轮、齿条传动
5	吸附力		200kg
6	行走速度		35 — 800 (mm/min)
7	摆动速度		0—65周/分
8	摆动角度		0— $\pm 5^\circ$
9	左停时间		0—2.5S
10	右停/延时起弧时间		0—2.5S
11	摆动模式		
12	焊枪	横向	40mm

	调节 范围	垂直	40mm
		焊枪绕X轴转动	$\pm 45^{\circ}$
		焊枪绕Y轴转动	$\pm 20^{\circ}$
13	主体材质		铝合金
14	输入电源		24V-3AH锂电池
15	小车尺寸		长×宽×高: 1200×356×330
16	小车重量		车体7kg, 轨道5.6 kg

serial number	Item	Parameter internal capacity	
1	Applicable workpiece	Iron workpiece, fillet weld, butt weld	
2	Walking mode	Track type	
3	Track length	1200mm (customizable)	
4	type of drive	Gear and rack transmission	
5	adsorption capacity	200kg	
6	Traveling speed	35 — 800 (mm/min)	
7	Swing speed	0-65 cycles/min	
8	Swing angle	0—±5°	
9	Left stop time	0—2.5S	
10	Right stop/delay arcing time	0—2.5S	
11	Swing mode	—     	
12	Welding torch adjustment range	crosswise	40mm
		be on the perpendicular	40mm
		Rotate around x axis of welding gun.	±45°
		The welding gun rotates around the Y axis.	±20°
13	Material	aluminium alloy	
14	Input power supply	24V-3AH lithium battery	
15	Trolley size	Length× width× height: 1200×356×330	
16	Weight	7kg car body, 5.6 kg track	

四、控制面板操作说明：

IV. Operating instructions of the control panel:



编号	名 称	功能
1	焊接工艺时间 调节电位器	电位器旋轴带按下功能，用于显示参数标记的切换； 旋转电位器旋轴以调节与显示参数标记相对应的时间 参数，顺时针参数增加，逆时针参数减小；
2	显示数码管	常规模式下，显示焊接工艺时间，格式为为 X Y.Z，其中： X 为显示标记 L — 摆动左极限位置停留时间；R—摆动右极位置停留 时间；d — 焊接收弧时间。 Y.Z 为上述标记对应的时间具体数值，显示范围：0 - 2.5。显示格式为X Y.Y
3	焊接工艺时间 调节电位器	电位器旋轴带按下功能，用于显示参数标记的切换； 旋转电位器旋轴以调节与显示参数标记相对应的时间 参数，顺时针参数增加，逆时针参数减小；
4	行走速度 调节电位器	旋转电位器旋轴以调节行走速度大小，顺时针数值增 加，逆时针数值减小。
5	行走速度 显示数码管	显示格式为XX.X，用于实际显示行走速度大小；
6	摆动速度 调节电位器	旋转电位器旋轴以调节摆动速度大小，顺时针数值增 加，逆时针数值减小。
7	摆动速度 显示数码管	显示格式为XX，用于比例显示摆动器摆动速度；
9	摆动角度 调节电位器	旋转电位器旋轴以调节摆动角度大小，顺时针增 加，逆时针减小；
10	摆动角度 显示数码管	显示格式为XX，用于比例显示摆动角度。
11	启停开关	用于切换小车的启停状态，每按动一次开关，则 小车在启停状态间切换一次；
12	焊接/非焊接控 制开关	用于控制焊接状态，将开关拨到“焊接”，则焊 接与小车同步，启动小车时焊接电源同步动作（起弧 延时时间仍然有效，同时需小车焊枪端口与电源送丝 机正确连接）
13	行走方向控制 开关	用于切换小车的行走方向，每按动一次，小车行走方 向在左右方向间切换一次，同时行走方向灯完成对应 显示切换。
14	行走方向指示 灯	显示小车的行走方向，灯亮小车右行，灯灭小车主 行；

15	调中电位器	用于调节摆动器摆动中心的位置，顺时针右偏， 逆时针左偏；
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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：经常清除导轨、驱动轮、磁铁和滑块部位的焊渣及异物。

2. Removing welding slag: Always remove welding slag and foreign matters from the guide rails, driving wheels, magnets and sliders.

3、固紧焊枪夹具和角度调整的螺钉：如果出现松动，会造成行走不稳及焊接不良等现象。

3. Fasten the welding gun fixture and the screw for angle adjustment: if it becomes loose, it 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.

6、蓄电池长期不用，需三个月充电一次，保证电池有电存放。

6. If the battery is not used for a long time, it needs to be charged once every three months to ensure that the battery has electricity for storage.

六、照片

VI. Photos

