3. Main structure of steel cage automatic welding robot:





Figure 3. Steel bar buckle of automatic welding robot for steel cage



No.	Туре	Name	Unit	State
1	HY1-8D	8mm Single winding wire roller	set	8mm winding wire roller, only for single winding wire
2	HY1-10D	10-14mm Single winding wire roller	set	10-14mm winding wire roller, only for single winding wire
3	HY1-8S	8mm Double-wound wire roller	set	8mm winding wire roller,only for double-wound wire
4	HY1-10S	10mm Double-wound wire roller	set	10mm winding wire roller,only for double-wound wire
5	HY1-12S	12mm Double-wound wire roller	set	12mm winding wire roller,only for double-wound wire
6	HY1-KA	Steel card buckle	set	Welding machine head vulnerable parts
7	HY1-HZ	Torch conductive nozzle	рс	Consumable parts of welding gun
8	HY-BT	Welding gun protective cover	рс	Consumable parts of welding gun
9	HY-HQ-3.0	Carbon dioxide protected welding gun	рс	3.0 Represents the total length of the welding torch

Steel cage automatic welding robot part model and name

Figure 4 operation panel of rib cage roller automatic welding robot



Introduction to operation buttons

- Welding suspended: The welding pause function is used to stop welding in the middle of a steel cage where welding is not required, the welding pause head will not return to its original position, the biggest difference with welding stop, the welder stops in the middle position of a steel cage, the welding stop is that a steel cage welding is completed. For example, when the middle reinforcement is applied, it needs the welding pause function.
- Alarm buzzer: Warning and reminding the user of abnormal welding, welding unreasonable, welding equipment failure and other problems.
- Welding start: Corresponding to the welding suspension, when the welding suspension, press

the welding startup equipment to return to the normal welding state.

- Welding stop: When a steel cage is welded, we need to stop the welding and the welding head is retracted for the next steel cage welding.
- Welding preparation: This function is to reset the device and move the welding head to the welding position. The welding head is released and can be moved manually.
- Welding start: The machine is completely in the welding state. Please jam the roller and wrap it.
- Equipment operation of a normal step: according to the welding preparation button equipment wheel stuck up and down around the bar - welding start button - to start the seam welder, automatic welding equipment, a reinforcing cage, press stop welding, welding is complete head back to the starting position.

Welding machine forward button: Control the external motor to run the machine forward. Welding machine back button: Control the external motor to run the machine backwards.

4. Equipment installation dimension diagram:

Figure 5 : Equipment installation dimensions

Installation requirements: The welding head must be installed stably and firmly, and the mounting screw should be added with spring pad to prevent loosening.



5. Equipment wiring diagram:

接线图六



输出回路

输入回路



可以根据电机接线原理不相同重新接线

6. Equipment installation and debugging:

- Step 1: install the steel cage automatic welding robot. (for installation, elastic pad and flat pad must be added)
- Step 2: welding robot is connected to 220V power supply and compressed air (compressed air joint 8).
- Step 3: wiring with the welding machine (please refer to figure 6 for wiring of the welding machine and welding joint)
- Step 4: adjust the nose position and open the" Settings page" . Adjust the "the nose out", When the distance between the nose and the steel cage is about 3-6cm, stop adjusting. Open the "manual page", Press the "Middle position of welded joint" Manually adjust the upper and lower rollers to jam the rebar, Press the "Welding head out" Go back to the "Settings page", Adjust the "the nose out" and "the nose back", Which side is bright red and which side is adjusted, when both turn green, the adjustment is complete. And save the current position as the welding bit "Save as welding bit".
- Step 5: adjust the position of the welding torch, Torch adjustment in the "manual page",

As shown in the figure, the first and second steps of no.1 welding gun and no.2

1 40 10 40	
2号焊枪位置调节	1号焊枪位置调节
第1步结束 2:机头气缸中间位置。	第1步结束 1: 机头准备位置移动。 2: 机头气缸中间位置。
第2步结束 3: 手动滚轮卡住绕筋 在按第2步	第2步结束 3: 手动滚轮卡住绕筋 在按第2步
第3步结束 4: 垂直气缸出	第3步结束 4: 垂直气缸出
第4步结束 5:水平气缸出 (手动卡扣卡住钢筋)	第4步结束 5:水平气缸出 (手动卡扣卡住钢筋)
第5步结束 6: 垂直气缸回 (手动调节焊枪位置)	第5步结束 6: 垂直气缸回 (手动调节焊枪位置)
2号焊机焊接 自动焊接关	1号焊机焊接 自动焊接关
自动焊接时间: 0.00 秒	自动焊接时间: 0.00 秒
确定	确定

welding gun are common.

6. Device operation interface:

Steel cage automatic welding robot touch screen home surface 7



Automatic welding robot touch screen home page:

3:



actually measured by the sensor. The theoretical speed of the reinforcement cage is the theoretical speed of the size of the welded reinforcement cage input by the user, the

Actual speed of steel cage. The speed

number of reinforcement bars and the welding time. When the actual speed is greater than the theoretical speed, we can reduce the speed of the cage, to ensure that the actual speed of the cage is lower than the theoretical speed of automatic welding to keep up with the speed of the cage.

Status display and welding mode selection

Status display: There are 4 states of the device that correspond to each function of the device:

1 In the manual: Indicates that the machine is in the manual state and can be adjusted manually. The function key corresponding to the manual page can be started normally. 2 Welding preparation: At present, the welder is preparing for welding. At present, only the stop button is useful.

3 Welding preparation finish: Indicates that the machine can be welded normally, and the head can now be manually positioned.

4 In the welding: Represents the state in which the machine is being welded.

welding mode selection: There are three welding methods to choose:

1. The full welding: Means that each node of the rebar is welded to the main rebar.

2. Small plum welding: Means that after welding 2 nodes, one node is skipped to weld

 $2 \ {\rm nodes}, \ {\rm and} \ {\rm one} \ {\rm node} \ {\rm of} \ 3 \ {\rm nodes} \ {\rm cannot} \ {\rm be} \ {\rm welded}.$

3. The plum blossom welding: Means that when welding a node, one node is skipped before welding the next node, and one node of the two nodes cannot be welded.

 5: 焊接时间: 0.80 秒 Reasonable welding time can ensure welding quality.
Steel cage automatic welding robot touch screen setting page 8



Steel cage automatic welding robot touch screen manual page 9



Steel cage automatic welding robot touch screen alarm page figure 10



7. Treatment of common faults (description and solution of common

faults of the equipment)

Questions	Probable cause	solution
Wrong welding position	The position of the welding torch	Reset the torch position
	is not adjusted well	
The steel bar clasp does not hold the	1: The winding roller does not	1: Re-adjust the winding roller
steel bar	extend out to the right size	2: reduce the speed of the
	2: The steel cage rotates too	reinforcement cage.
	fast₀	
Welder random welding	Wrong welding connection	rewiring
Always block the welding gun	1: The conductive mouth is of	1:buy conductive mouth from
	poor quality	manufacture
	2: The gas is not right	2: Using a mixture of gases
	3: The position of the welding	3: Reset the torch
	torch is not adjusted properly	4 : Replace with a conductive
	4: The conductive mouth wears	nozzle (replace with a half wire)
	away too quickly	5: Replace welding torch control
	5: Torch control relay failure	relay
	1: The welder is too fast	1: Reduce speed of welder
滚筒速度太快,请降低滚筒速度	2: There is something wrong	2 : Re-set the steel cage
(滚筒速度太快,影响焊接质量,减小变频器数值)	with the steel cage specification	specifications
关闭		

8. Device main configuration list:

No.	Name	Unit	Quantity	Model
1	Steel cage welding robot	set	1	Chengdu Huayan Machinery Works Co., Ltd.
2	10-12mmWire roller	set	2	Chengdu Huayan Machinery Works Co., Ltd.
3	Steel card buckle	set	2	Chengdu Huayan Machinery Works Co., Ltd.
4	Torch conductive nozzle	рс	10	Chengdu Huayan Machinery Works Co., Ltd.
	Control system	set	1	Chengdu Huayan Machinery Works Co., Ltd.
F	PLC	рс	1	Mitsubishi
5	Motor	рс	3	Top brands in Taiwan
	Pneumatic system	set	1	AirTAC, CKD

9. List of main wearing parts of equipment:

No.	Name	Unit	Model
1	Steel card buckle	Set	Chengdu Huayan Machinery Works Co., Ltd.
2	Torch conductive nozzle	Set	Chengdu Huayan Machinery Works Co., Ltd.
3	Wire roller	Set	Chengdu Huayan Machinery Works Co., Ltd.
4	Welding gun protective cover	Set	Chengdu Huayan Machinery Works Co., Ltd.