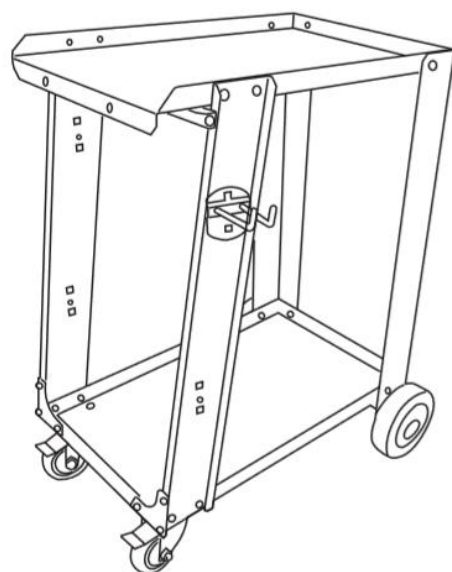
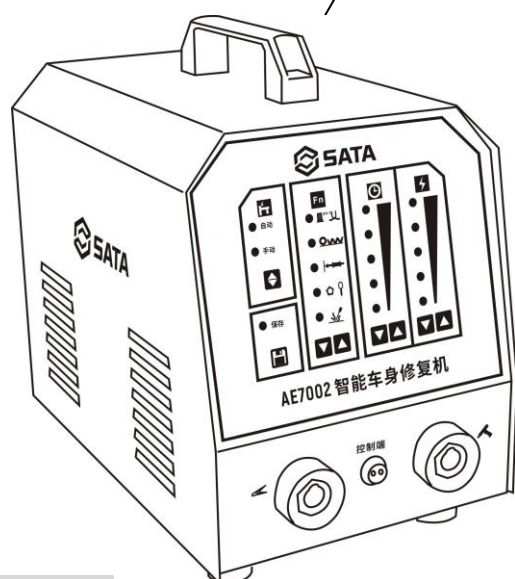




智能车身修复机 说明书



适用型号：

AE7002

版本号：

V-AR-7002-1903-01



请在操作此设备前仔细阅读本手册

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一、安全说明

汽车钣金修复机虽然在设计上充分考虑了安全性，但在使用机器时为了尽量避免受到伤害，使用前请认真阅读使用说明书。

- 机器必须可靠接地
- 不能使用容量不足及绝缘损坏的电缆
- 不允许在卸下机壳的情况下使用
- 不用时，请切断输入电源
- 使用心脏起搏器的人不得靠近机器及作业场所，机器工作产生的磁场会对起搏器的运作产生不良影响
- 请使用绝缘手套
- 工作时，钢板涂层受热会产生有害的烟火和气体，建议使用呼吸保护用具
- 注意预防火灾等灾害的发生
- 焊接和加热钢板有引起火灾的危险
- 电缆连接不良处，接地不良等电流回路不完全接触时，会引起通电发热，有引起火灾的危险

二、技术参数

本公司有权对技术进行不定期修改，恕不另行通知，请以实物为准。相关参数一般在机器铭牌上标示，请仔细查看！

型号	智能车身修复机	AE7002
U20	额定交流空载电压范围	1.6V~7.5V
I2CC	最大短路输出电流	3000A
I2P	连续输出电流	1200A
相数		单相
UIN	额定输入电压	380V
SP	连续功率	1.8KVA
S50	50%负载持续率下的功率	2.5KVA
防护等级		IP21S

三、安装

3.1 设置安装

安置机器于通风地方。任何外来物如尘，泥或其他细小物体进入机器将会干扰机器的排气，影响机器的运作。

3.2 输入电源装置

安装机器的相关细节要求要认真阅读学习。需专业技术人员安装机器。检查维修及保养机器时，要确保断开电源接头。黄绿线要保证良好的接地，不要用水管充当接地导体。要认真检查，确保一切正常才能使用机器。使用的输入电压数必须要符合机器所标明的输入电压数的范围。机器插头要与电源插头要吻合。

3.3. 连接地线&地线夹

连接地线及电线夹即可进行焊接工作。确保地线夹与地线已经夹紧。定时检查两者之间的连接是否牢固。连接不牢固会引起漏电或地线夹过热，会引起火灾的危险。请不要故意将电路间接接地。

假如母材须作接地时，接点应该靠近机器地线，而且母材接地线的截面积至少应和机器接地线相同。
注意：电缆过长，或截面积太小都会减少输出电流。

四、面板描述

A—— 焊接模式选择

自动：焊枪与地线构成回路（短接/接触）后，延时约 0.5 秒后输出。

手动：机器输出与否由枪开关决定。

B—— 保存记忆功能

用户当前设定参数记忆，每次开机都会恢复到用户记忆的设置参数。

若想清除记忆的参数，请同时按住 C 和 D 按键 2 秒，机器便清除记忆参数，恢复出厂设置。

C\D——焊接模式选择

 $\Phi 4\sim 5$ 铁钉

 圆形介子和波形线



快速拉拔滑锤



菊形介子/欧式介子

E\F—— 焊接时间设定

调整焊接定时器，焊接次数越高，焊接时间越长。

G\H—— 输出功率调整

数字越高，输出功率越大。

I—— 地线接头

J—— 枪开关航空插座

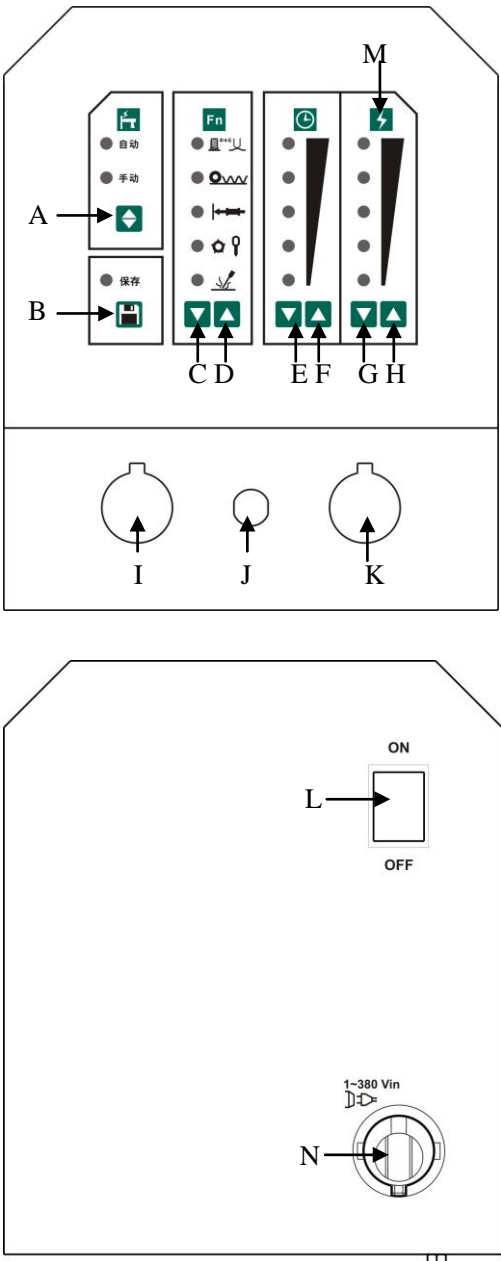
K—— 点焊/植钉焊枪接头

L—— 电源开关

M——可放电指示灯

灯亮时代表电源机已充电完成，可以进行焊接，当机器放电输出后，可放电指示灯会熄灭一段时间后才亮起，灭灯代表电源机在进行充电，并且灭灯时间会随着功率设定提高而延长，灭灯期间假如使用者用手动模式再按枪，机器仍旧允许输出，只是输出功率将有所降低。

N—— 电缆线（使用前请确认本机电源电压）



焊接模式设定说明

1)自动模式

当选择自动模式。机器能自动焊接，不用按下焊枪开关。只要焊枪和工件地线等接触良好，等待焊接延时结束后，机器开始输出，进行焊接。当焊接到达预设的焊接时间，机器会停止输出，此时焊枪必须离开工件。若果焊枪再次接触工件，机器会再次进行输出焊接。

注意：焊接结束后，焊枪不能一直接触工件。当焊接结束，而焊枪一直和工件接触，机器会进入保护状态和发出报警提示。面板的 LED 灯会闪烁报警，直到焊枪离开工件，才能再次进行焊接。

2)手动模式

焊枪接触工件，按下焊枪开关，就可以进行焊接。

如果选择定时焊接，到达焊接时间后机器会停止输出。

如果选择连续焊接，机器会一直输出，直到用户放开焊接开关，才停止。

五、操作方法

5.1 介子片熔植

5.1.1 电源开启后选择工作模式

自动模式，手动定时模式

5.1.2 依工作状况，调整功率大小

5.1.3 地线固定后，即可开始作业

5.1.4 介子片熔植后，将凹面拉出平整，用拉拔器钩住介子片就脱离钣金面

注意：介子片与地线接点距离越短越好

5.2 局部整形

5.2.1 电源开启后选择工作模式

自动模式，手动定时模式

5.2.2 依工作状况，调整功率大小

5.2.3 凹面拉出后之小凸点，经烫平动作即可将凸点熔平，同时可作收缩作用

5.3. 植焊不良的原因

下列的任一项都会成为熔植焊不良的原因，所以要改正后再做熔植焊

- 1) 接地线与母材接触不完全
- 2) 植焊枪与接地线卷绕成圈形状
- 3) 螺柱钉与夹头的口径不合或夹头损伤时
- 4) 母材有污垢、生锈、涂漆以及有妨害通电的表面处理
- 5) 熔植焊电压的调整不适当
- 6) 熔植焊瞬间(加压时)母材产生变形或移动

5.4 碳棒整形操作

(1)电源开启后选择工作模式：手动连续模式

(2)依工作状况，调整电流大小。

(3)设定工作模式后，焊枪开关按住，正极碰到母材后，开始通电，放开开关，就停止通电。经由本动作加热后可使金属容易敲打。



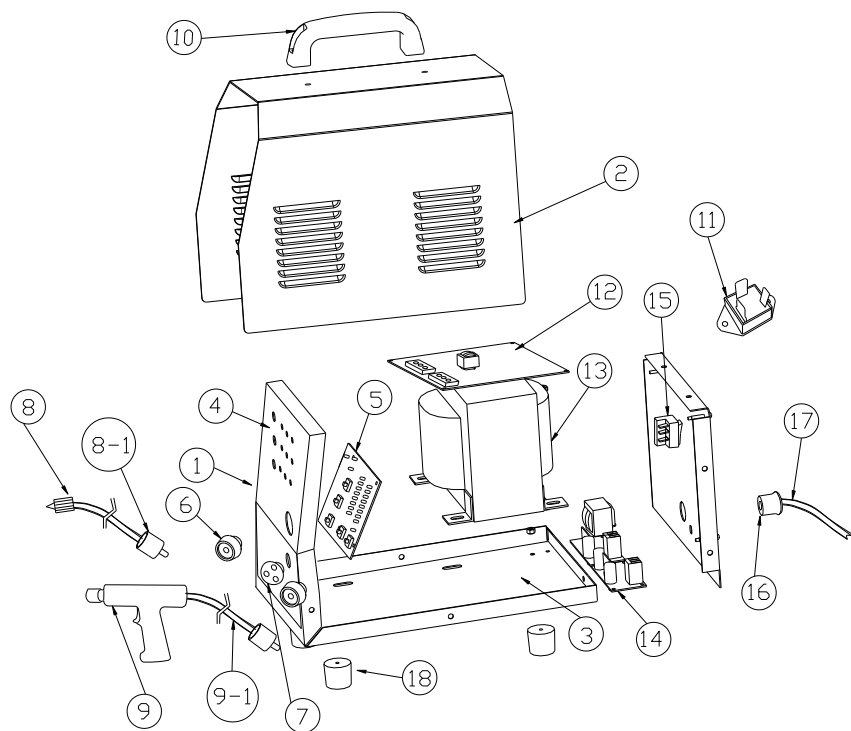
此段功能不可长时间连续输出使用，连续输出使用会导致变压器损坏。

六、保护措施介绍：

本产品的定义为钣金修复用设备，并非生产用的点焊机，尽管因为改善了功率控制系统，使得新机的使用率大大提升，整机温度控制也十分优异，但仍须做到良好的保护措施，以防范错误的操作使用，并维护操作人员的安全。其功能如下：

- 1.变压器过热保护：定义在摄氏85度，以防变压器过热烧毁，过热时面板LED将会全面闪烁示警，并切断一切工作
- 2.自动功能下的短路警示功能：当用户选择自动点焊功能焊接完毕时，若焊枪仍与母材接触产生短路，电流显示LED将会闪烁示警，直至焊枪与母材分开后才会解除警告，并允许重新焊接。

七、爆炸图及配件：



序号	世达配件编号	维修配件名称	序号	世达配件编号	维修配件名称
1	PAE7002-1	前板	9-1	PAE7002-9-1	50 平方电缆线 （2 米/条）
2	PAE7002-2	上盖	10	PAE7002-10	握把
3	PAE7002-3	底板	11	PAE7002-11	晶闸管
4	PAE7002-4	面板贴纸	12	PAE7002-12	驱动板
5	PAE7002-5	主控制板	13	PAE7002-13	主变压器
6	PAE7002-6	欧式快插	14	PAE7002-14	电源板
7	PAE7002-7	控制插座	15	PAE7002-15	电源开关
8	PAE7002-8	螺纹接地件	16	PAE7002-16	电源线扣
8-1	PAE7002-8-1	快插头	17	PAE7002-17	电源线（2 米/条）
9	PAE7002-9	SPOT 铜头插座	18	PAE7002-18	脚垫

八、耗材配件及选配配件：

世达配件编号	耗材/选配配件名称	世达配件编号	耗材/选配配件名称
PAE7002-19	圆头铜头 紫铜	PAE7002-29	铁介子平面型
PAE7002-20	菊形介子	PAE7002-30	铁介子 90°扭转
PAE7002-21	M10 介子	PAE7002-31	点焊介子夹头
PAE7002-22	M5 拉拔钉	PAE7002-32	SPOT 碳棒
PAE7002-23	介子拉拔器	PAE7002-33	卡簧拉杆
PAE7002-24	三角介子	PAE7002-34	手转双柱拉拔器
PAE7002-25	M5 钉拉拔器	PAE7002-35	手转双柱拉拔器/轴承式
PAE7002-26	三角介子夹头	PAE7002-36	桥式手转四脚拉拔器 850
PAE7002-27	介子连发器 (含 20 个介子)		
PAE7002-28	包胶介子夹头		

IMPORTANT: BEFORE STARTING THE EQUIPMENT, READ THE CONTENTS OF THIS MANUAL, WHICH MUST BE STORED IN A PLACE FAMILIAR TO ALL USERS FOR THE ENTIRE OPERATIVE LIFE-SPAN OF THE MACHINE. THIS EQUIPMENT MUST BE USED SOLELY FOR WELDING OPERATIONS.

1. Although safety is fully considered in the design of the auto sheet metal repair machine, please do carefully read the operation manual before using the machine in order to avoid injury.
2. The machine must be reliably grounded.
3. DO not use cables with insufficient capacity or damaged insulation.
4. It is not allowed to be used when the casing is removed.
5. Cut off the input power when not in use
6. Cardiac pacemakers should not be near the machine and the workplace , the magnetic field generated by the word of the machine will have a bad impact on the operation of the pacemaker.
7. Use insulating gloves.
8. When working, steel plate coating will produce harmful fireworks and gas when heated ,it is recommended to use respiratory protective equipment.
9. Pay attention to the prevention of fire and other disasters.
10. Welding and heating steel plates may cause fire hazard.
11. Where the cable is not connected properly and the current loop is not fully connected, it will cause electrification and heat, which may cause fire hazard.

2 GENERAL TECHNICAL DESCRIPTIONS

2.1 SPECIFICATIONS

This manual has been prepared with the intent of instructing the operator on how to install, operate, and properly maintain this spot welding machine.

Upon receiving and unpacking the machine, make a careful inspection to ensure that there are no damaged parts.

Should there be a claim for losses or damages it must be made by the purchaser directly to the shipper who handled the goods.

When requesting information about this welding machine please state the machine's part number and serial number to ensure receiving accurate information relating to your machine.

2.2 DESCRIPTION OF TECHNICAL SPECIFICATIONS

The content are just for your reference.

Please be subject to the actual products if anything different or updated.

MODEL	AE7002
U_{20} range of rated ac no-load voltage and number of adjustable steps	1.6V~7.5V
I_{2CC} maximum short circuit current of the output corresponding to the minimum impedance	3000A
I_{2P} Continuous Output Current	1200A
phase	1PH
U_{IN} Rated input voltage	380V
S_P Continuous power	1.8KVA
S_{50} power at 50% duty cycle	2.5KVA
Protection level	IP21S

3 INSTALLATION

3.1 SETUP

Place the machine in a ventilated area.

Dust, dirt, or any other foreign material that might enter the machine may restrict the ventilation which could affect the machine's performance.

3.2 INPUT POWER CONNECTIONS

All sections concerning the installation of this machine must be read carefully.

This machine must be installed by skilled personnel.

Make sure that the input power plug has been disconnected before inspecting, maintaining, or servicing.

Connect the yellow-green wire to a good electrical ground.

Do not use water pipes as earth conductor.

After a final inspection, the machine should be connected to the input supply voltage marked on the input power cord.

Mount a plug on the power supply cable that corresponds to the input power drawn by the machine.

3.3 Connecting the work return lead clamp

Attach the work return clamp to the work to be welded.

Make sure that the ground clamp is tightly fastened to the work return cable and periodically check that this connection remains well tightened. A loose connection can cause weld current drops or overheating of the work return lead and clamp which, in turn, creates the risk of burns from accidental contact with the work return lead. The weld circuit must not be placed deliberately in direct or indirect contact with the ground conductor if it is not in the work to be welded.

If the work to be welded is attached deliberately to the ground by a protection lead, then the connection must be the most direct possible and it must be done using a lead that has a cross section that is at least equal to the cross section of the work return lead being used for the weld circuit. The protection lead must also be attached to the work at the same spot as the work return lead. To do so, a second ground clamp, fitted to the protection lead, must be attached next to the ground clamp of the work return lead.

NOTE

Small cross section and long extension cable will reduce the output current.

4 DESCRIPTION OF CONTROLS






A--- There is two modes for choice, Auto mode and Manual mode.

B--- Save

Save the customer setting. The machine will load the save settings every operation.

Press C and D for 2 seconds, the machine will clear the save settings.

C\D---Welding function selection.

-  $\Phi 4\sim 5$ steel stud
-  round washer/wiggle wire
-  quick puller slide hammer
-  star washer/steel tab
-  carbon heating/carbon shrink rod

E\F--- Welding time adjustment

Adjust the welding timer, the larger number the longer welding time.

G\H--- output power adjustment

The larger number the higher output power

I---Socket for work clamp

J---Control socket for torch

K---Socket for torch

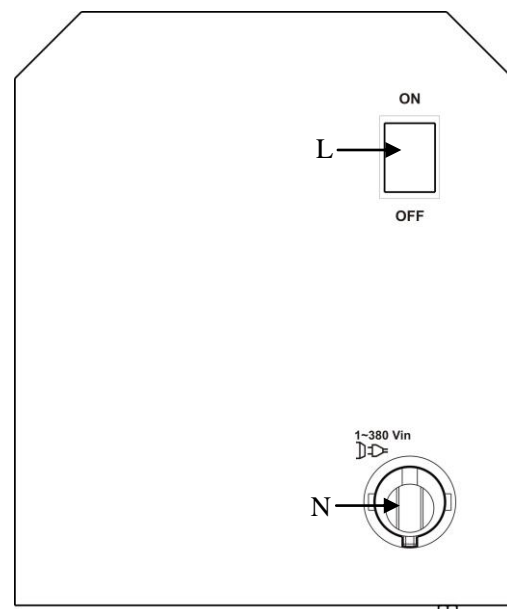
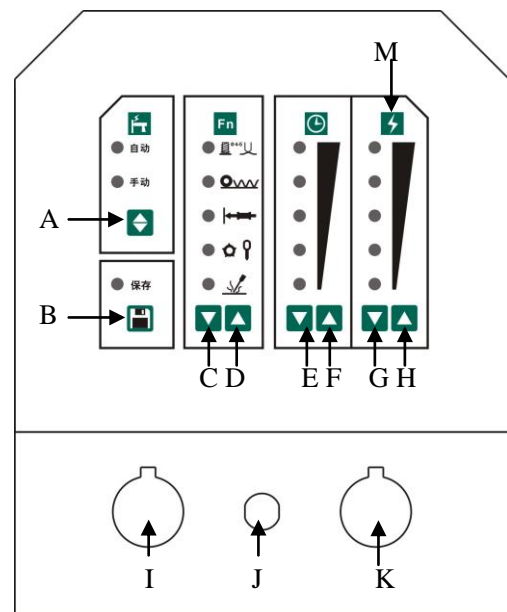
L---Power switch

M---Discharge indicator

When the indicator is light up, it means the machine charge is

finish, The machine can welding operation. After discharge operation, the discharge indicator will light off for a few moment. When the discharge indicator is light off, it means the machine is charging. The time of light off will increase, following of the more setting power. If in manual mode, the user trigger on the torch when the discharge indicator will light off ,the machine can output, but the it will reduce output power.

N---Input power cable(Confirm the power voltage before use)



5 INSTRUCTION FOR CAR REPAIR WORK

5.1 Spot Welding

- (1) Power switch on, then push the button(B1) of function.
 - (2) Adjust the knob (H) setting the spot welding current
 - (3) Setting work clamp
 - (4) Spot-welding the washer. Washer drawing with slide hammer.
- Attention: The work clamp need near the welding spot.

5.2 Sheet upsetting

- (1) Push the button(B2) of function.
- (2) Setting output current
- (3) Setting work clamp
- (4) Sheet upsetting

5.3 Stud welding trouble

The following situation may cause the trouble, please remedy them before use the machine.

- (1) The earth cable and the metal are not good connection.
- (2) Torch cable or earth cable is winding.
- (3) The torch is not suitable for the base metal (material or diameter).
- (4) The base metal dirty, rusty, paint or other problem interfere with electricity conductivity.
- (5) The stud welding voltage is not correct.
- (6) Base metal distortion or move, when welding.

5.4 Sheet warming

- (1) Power switch on, Select automatic mode or manual mode.
- (2) Welding time adjustment. Adjust the welding timer, the larger number the longer welding time.
- (3) Press the trigger of torch.

The output power is "ON" continually.

If release the trigger of torch, the output power is "OFF"



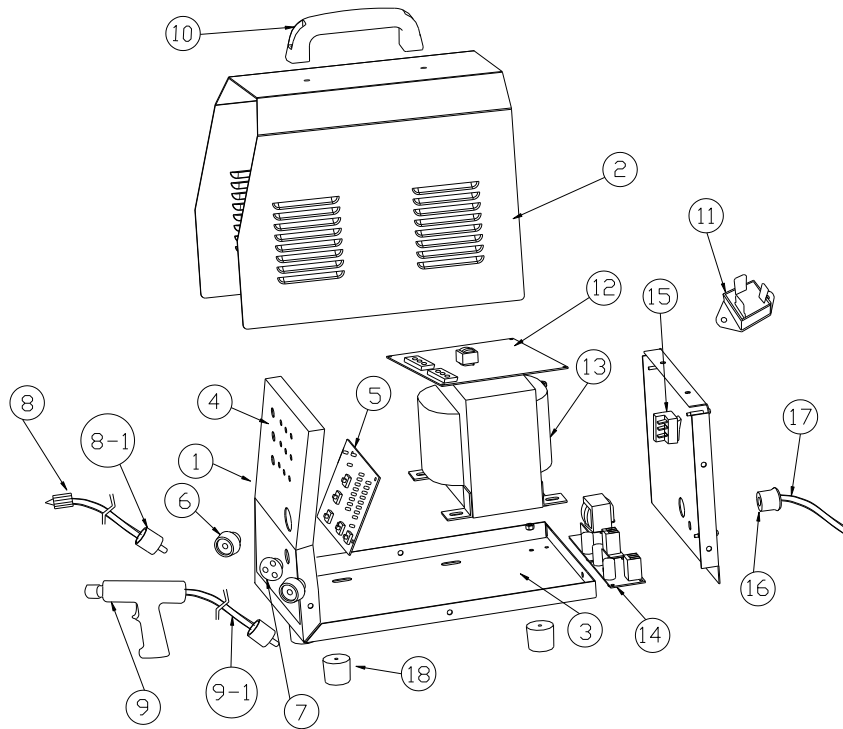
Do not use continuously this function for long time, or else that will damage the transformer.

6. Introduction of protective measures

This product is defined as sheet metal repair equipment, not spot welding machine for production.

1. Transformer Overheat Protection: Defined at 85 degrees Celsius to prevent the transformer from overheating and burning out. When overheated, panel LED will flash warning and cut off all work.
2. Short-circuit warning function under automatic function: When the user chooses automatic spot welding function to complete welding, if the welding torch still contacts the base metal to produce short-circuit, the current display LED will flash warning, until the torch is separated from the base metal, the warning will be lifted, and re-welding will be allowed.

7. AE7002



NO.	Code	Description	NO.	Code	Description
1	PAE7002-1	front panel	9-1	PAE7002-9-1	Output cable
2	PAE7002-2	top cover	10	PAE7002-10	handle
3	PAE7002-3	bottom board	11	PAE7002-11	Thyristor
4	PAE7002-4	front panel paster	12	PAE7002-12	triac
5	PAE7002-5	driver board	13	PAE7002-13	main transformer
6	PAE7002-6	socket	14	PAE7002-14	Power PCB board
7	PAE7002-7	Control socket	15	PAE7002-15	Main switch
8	PAE7002-8	Earth clamp	16	PAE7002-16	cable holder
8-1	PAE7002-8-1	plug	17	PAE7002-17	power cable
9	PAE7002-9	SPOT brass head socket	18	PAE7002-18	Food pad

8. Accessories

Code	Description	Code	Description
PAE7002-19	washer	PAE7002-29	Washer[Planar]
PAE7002-20	Star washer	PAE7002-30	Washer (90°)
PAE7002-21	M10 washer	PAE7002-31	electrode
PAE7002-22	M5 rounded electrode	PAE7002-32	Carbon rod
PAE7002-23	Hok puller slide hammer	PAE7002-33	pulling rod
PAE7002-24	triangle washer	PAE7002-34	Puller L300/2PT
PAE7002-25	Euro type slide hammer	PAE7002-35	puller
PAE7002-26	triangle washer	PAE7002-36	Puller
PAE7002-27	Tab shooter	PAE7002-29	
PAE7002-28	electrode		



智能车身修复机 说明书

适用型号：AE7002

版 本 号：V-AR-7002-1903-01

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