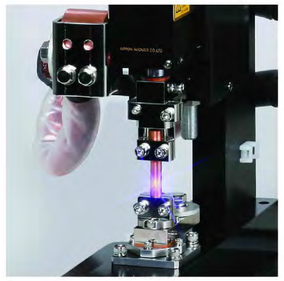
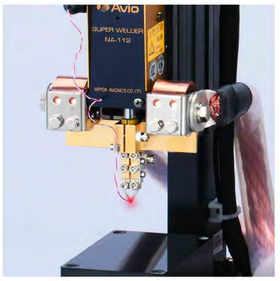
⚠ 产品使用注意

为了正确安全使用，使用之前一定要阅读「操作说明书」。请不要设置在水、湿气、蒸气、油烟等多的场所。有可能引发火灾、触电、故障灯。

⚠ CAUTION

To operate a unit correctly,read operation manual carefully.The Unit should be situated away from the filled with water,moisture,steam,-dust or soot,which may cause a fire,an electric shock,troubles etc.





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Hopoke 产品画册

中国区特约代理
阿比欧精密焊接产品

COMPANY PROFILE

公司简介

广州贺蒲克数控设备有限公司（简称：贺蒲克）是由一批满怀信心的年轻人组成的高科技开发团队。我们一直致力于打造中国自动化精密焊接产业品牌，拓展自动化精密焊接技术应用领域，提供最佳性价比的设备和系统的技术方案。

Guangzhou Hopoke CNC Equipment CO., Ltd (Hopoke for short) is a high-tech development team comprising of a group of young people with full confidence. We have been engaging in building China automation and precision welding brand, extending the application field to provide best cost-effective equipments and systematic technical plans.

公司主要经营产品有日本AVIO焊接系统。AVIO的产品主要包括精密电阻焊接设备系列、脉冲加热装置系列、焊接检测仪系列等。广泛应用于马达制造、电池、电子电器、仪表仪器、光通讯、照明灯饰以及医疗设备等众多行业。尤其在马达制造、汽车电子以及电池等精密焊接领域深具影响力。

Our company mainly trades in AVIO welding system from Japan.AVIO has several series including precision resistance welding equipment series, pulse heating device series and welding monitor series etc. It is applied widely in motor manufacturing, battery, electric apparatus, instrument equipment, optical communication, lighting equipment and medical equipment etc, and especially has a great influence in the precision welding field like motor manufacturer, auto electronic and battery.

经过多年的实践与战略拓展以及对市场的体验，我们与国内的专业机械制造企业签订合作关系，以AVIO焊接控制系统为核心，提供品质可靠、性能卓越、性价比高的非标专用自动化设备，全面满足业界的需求。

After years of practice, extending strategy and the experience of the market, we have made the cooperation relationship with the domestic professional manufacturer, taking the core of AVIO welding control system, high performance and cost-effective non standard automation equipment to entirely meet the demands of the industry.

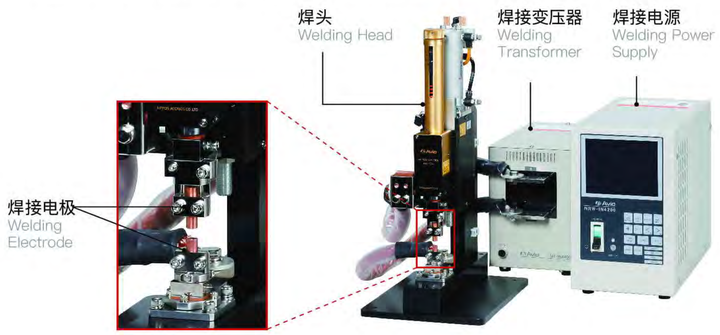
贺蒲克公司处在行业技术革新开拓的前沿，秉承着满足市场需求，保证用户满意的服务宗旨，不断更新和拓展产品。完美的质量和真诚的服务是我们锲而不舍的追求，将和广大客户携手共进，谱写中国焊接领域的新篇章！

Hopoke is in the leading edge of renovation of industrial technology with the aim to meet the market demands, and make sure the satisfaction of the customers. We'll focus on updating and extending products. Perfect quality and sincere what we pursue, engaging a new future in China's welding field.

■ 电阻焊接机的构成

电阻焊接是将被焊接物用电极挟住后，施加压力的同时进行通电。

Resistance welder sandwiches an object to be welded by the welding electrodes, and applies electric current while applying a pressure.



■ 脉冲电流加热装置的基本构成

对焊接物加压的同时通电、利用产生的焦耳热进行焊接的方式。

The object to be joined is held down and the electric current is flown while the pressure is being applied, and a heat is generated by resistance heating.

■ 激光焊接装置的基本构成

利用光纤传导激光振荡器发出光束至较远的距离，并使用镜头聚焦在微细的一点上进行加工。

The laser beam oscillated by the laser oscillator is guided to a distant location by an optical fiber, and focused into one fine spot using a lens for fabrication of material.

目录 Contents

电阻焊接机系列 3-20
Micro Resistance Welder Series

焊接电源&变压器
Welding Power Supply & Transformer

焊头（系统焊头）
Welding Head（System Head）

配件
Accessory

焊接监测仪
Welding Monitor

脉冲热压焊接机系列 21-26
Pulse Heat Unit Series

脉冲电流加热电源
Pulse Heat Power Supply

脉冲加热焊头(系统焊头)
Re ow Head(System Head)

半导体激光装置 27-30
Laser Welder Series

半导体激光焊接机
Laser Diode Welder

激光焊接实例
Examples of Laser Welding Applications

Avio High Power Inverter Type Welding Power Supply 大功率高频电阻焊接机

最适合U形端子的焊接系统

NRW-IN16K4/NT-IN16K4

焊接变压器Transformer
NT-IN16K4

焊接电源 Power Supply
NRW-IN16K4

图像化显示焊接波形
Graphic Display of Welding Waveform

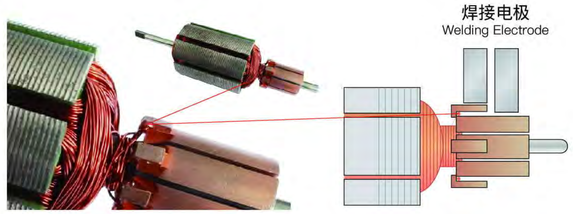
- 最高输出电流 16,000A
- 对应多品种焊接（焊接条件存储 255 种）
- 焊接条件的管理（焊接波形显示、记忆存储功能）
- 各种安全功能（过电流、过温、无通电监测等）
- 丰富的监测功能（电流、电压、功率、电阻、追踪）

- High Output Power – Delivers 16,000 Amperes Maximum Current
- Store Up to 255 Welding Conditions for Multiple Welding Applications
- Easy to Control Welding Conditions (Welding Waveform Display, Memory Function)
- Multiple Safety Features (Detection of Overcurrent, Overheating, No Current, etc.)
- Monitor Important Functions (Current, Voltage, Power, Resistance, Trace)

1800N 弹簧加压
组装压力传感器
1800N Spring Pressure
Example of integration of the pressure sensor into a unit

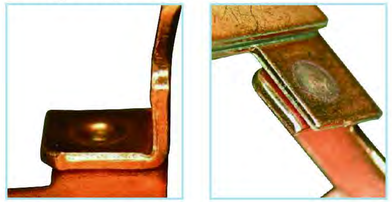
焊接事例 Application Examples

马达线圈和U型端子的焊接
Welding of Large Motor Coil and Terminal



高电导率材料焊接
For Welding of High Conductivity Materials

铜板配线的焊接
Welding of Copper (Cu) Bus Bar



项目	Items	NRW-IN16K4
焊接变压器	Welding Transformer	NT-IN16K4
最大电流	Maximum Current	16000 A(200V Option: 12000 A)
控制频率	Control Frequency	2 kHz
控制方式	Control Mode	Constant Current, Constant Voltage, Constant Power, Fixed Pulse Width
通电时间	Range of Timer Setting	1st, 2nd, 3rd, UP, WELD, DOWN Total Time 1 - 3000 ms
输出设定	Setting Range for Weld Type	Current: 0.4 - 16 KA Voltage: 0.4 - 6.2 V Power: 0.2 - 49.2 KW
电流、电压、功率、电阻、监测功能	Current, Voltage, Power, Resistance, Monitoring	Average / Peak / Profile
追踪监测功能	Trace Monitoring	Current, Voltage, Power, Resistance
波形显示	Display of Waveform	Current, Voltage, Power, Resistance
焊接条件	Number of Condition	255
通信接口	Interface	RS232C
冷却方式	Cooling Method	空气冷却 Forced-air
电源	Power Source	AC380 - 415 V,3Φ (Option: AC200 - 230 V,3Φ)
尺寸 / 重量	Dimension / Weight	W280 × D410 × H470 mm ≈ 35 kg

项目	Items	NT-IN16K4
最大电流	Maximum Current	16000 A(200V Option: 12000 A)
冷却方式	Cooling Method	水冷 Water
尺寸 / 重量	Dimension / Weight	W198 × D420 × H357 mm ≈ 48 kg

大功率焊头 High Power Welding Head

NA–126

项目	Items	NA-126
压力	Pressure Range	300 - 1800 N
加压方式	Pressure Way	Spring
驱动方式	Drive Method	Air
尺寸 / 重量	Dimension/Weight	W309×D315×H908mm≈60kg

选项 Option

自动机器用焊接变压器
Transformer for Integration into Equipment

项目	Items	NT-IN12K4
尺寸、重量	Dimension / Weight	W92×D304.5×H164≒16kg
冷却方式	Cooling Method	水冷 Water

※另外需要电流感应线圈。／A current sensor is additionally required.

NT–IN12K4

Avio Inverter Type 三相高频电阻焊接机

高速焊接提高生产效率能！

NRW-IN8400A

5.7英寸TFT液晶彩屏

焊接变压器Transformer
NT–IN8444

焊接电源 Power Supply
NRW–IN8400A

■ **1ms 以内停止通电：**
降低工件位移量的误差

■ **任意设定脉动通电时间・输出**
可任意设定 24 次脉动通电
降低对工件的热影响实现最理想的焊接。

■ **CAUTION 功能**
配合 PLC 根据位移和温度数据的变化
可以增减通电输出
抑制电阻值变动时的影响

■ **脉冲宽度计测功能**
显示高频输出脉冲宽度的平均值
实现到达最高输出为止的裕度可视化

■ **焊接条件设定 255 种**
可以对应多品种的焊接条件设定

■ **水冷焊接变压器**
利用水冷焊接变压器提高使用率

■ **丰富的计测功能**
检查二次电流・电压・功率・电阻值
判定焊接结果

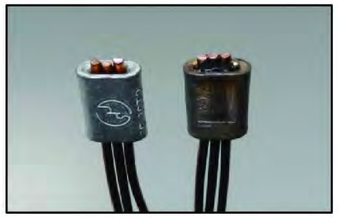
■ **操作简单、画面鲜明**
5.7 英寸 TFT 彩屏显示图像参数

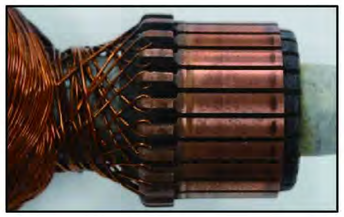
高频焊接电源规格 Specification for high frequency welding power supply

项目	Items	NRW- IN8400A
控制频率	Control Frequency	2KHz
控制方式	Control Mode	Constant Current, Constant Peak Curremt , Constant Voltage , Constant Power, Fixed Pulse Width
通电时间	Range of Timer Setting	1 st, 2nd, 3rd,UP, WELD, DOWN Total Time 0.5~3000ms (0.5 ms STEP) 脉动通电功能
输出设定	Setting Range for Weld Type	电流:0.4~8.2KA(1A STEP) 电压:0.4~6.2V(0.001 V STEP) 功率:0.2~24.6KW(1W STEP)
电流、电压、功率、电阻、监测功能	Current, Voltage, Power, Resistance, Monitoring	Average/ Peak /Profile
追踪检测功能	Trace Monitoring	Current, Voltage, Power, Resistance
波形显示	Display of Wave Form	Current, Voltage, Power, Resistance
焊接条件	Number of Condition	255
通信接口	Interface	RS232C
冷却方式	Cooling method	空气冷却
电源	Power Source	AC200～240V 3ϕ Option:AC380～440V 3ϕ
尺寸、重量	Dimension / Mass	W190×D322×H275mm ≒18 Kg

焊接变压器规格 Welding transformer specification

项目	NT- IN4400		NT- IN4448		NT- IN8400		NT- IN8444	
额定容量	8.8 kVA		23.2 kVA		30 kVA		50.6 kVA	
额定电压	300 V	600 V	300 V	600 V	300 V	600 V	300 V	600 V
二次空载电压	8.4V (220V时)		12.9V (220V时)		14.1V (220V时)		14.1V (220V时)	
变压器线圈比	37：1	74：1	24：1	48：1	22：1	44：1	22：1	44：1
频率	2 kHA		2 kHA		2 kHA		2 kHA	
最高焊接电流	4000 A		4000 A		8000 A		8000 A	
使用率（通电时间）	冷空气5% (50 ms)		冷空气5% / 水冷10% (1000 ms)		冷空气5% (50 ms)		冷空气5% / 水冷10% (1000 ms)	
冷却方式	空气冷却		空气冷却/水冷		空气冷却		空气冷却/水冷	
尺寸/重量	W150×D267×H210mm ≒12Kg		W170×D312×H235mm ≒18.4Kg		W210×D342×H210mm ≒18.0Kg		W190×D322×H275mm ≒25.6Kg	





Avio Inverter Type 三相高频电阻焊接机

高速焊接提高生产效率！

NRW-IN4200/NT-IN4400
NRW-IN8400/NT-IN8400

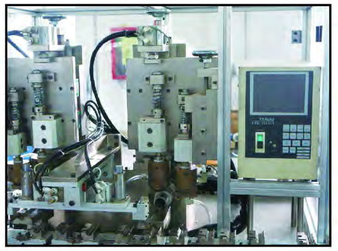
焊接电源
Power Supply
NRW–IN4200
NRW–IN8400

焊接变压器
Transformer
NT–IN4400
NT–IN8400

多通道焊接变压器系统 Multi–transformer System

- 多种控制方式(定电流、定电压、定功率) — Multi control mode (constant– current, voltage, power)
- 预通电焊接判断功能 — Pre–weld check function
- 长时间通电功能(最长可达 3 秒) — Long–time welding (maximum 3sec)
- 大屏幕彩色液晶显示焊接波形图像 — Graphic display of welding wave form on large LCD
- 多种监测功能 — Multi monitoring function
- 焊接波形存储功能 — Welding wave form–Memory function

自动化生产线 Automated Production Lines



高频焊接电源规格 Specification for high frequency welding power supply

项目	Items	NRW-IN4200	NRW- IN8400
焊接变压器	Welding Transformer	NT-IN4400	NT-IN8400/NT-IN4400
最大电流	Maximum Current	4000A	8000A/4000A
控制频率	Control Frequency	2KHz	
控制方式	Control Mode	Constant Current, Constant Voltage, Constant Power, Fixed Pulse Width	
通电时间	Range of Timer Setting	Pre 1st, 2nd, 3rd, UP, WELD, DOWN Total Time 0.5～3000ms	
输出设定	Setting Range for Weld Type	Current： 0.4～4.1kA Voltage： 0.4～4.1V Power： 0.2～8.2kW	Current： 0.4～8.2kA / 0.4～4.1kA Voltage： 0.4～6.2V / 0.4～4.1V Power： 0.2～24.6kW / 0.2～8.2kW
电流、电压、功率、电阻、监测功能	Current, Voltage, Power, Resistance, Monitoring	Average/ Peak /Profile	
追踪检测功能	Trace Monitoring	Current, Voltage, Power, Resistance	
波形显示	Display of Wave Form	Current, Voltage, Power, Resistance	
焊接条件	Number of Condition	31	
通信接口	Interface	RS232C	
冷却方式	Cooling method	空气冷却 Forced-air	
电源	Power Source	AC200～230V 3ϕ	AC380～415V 3ϕ (Option: AC200～230V 3ϕ)
尺寸、重量	Dimension / Weight	W170× D350× H265mm ≒14kg	W186× D490× H265mm ≒19kg

项目	Items	NT-IN4400	NT-IN8400
冷却方式	Cooling Method	空气冷却 Forced-air	
尺寸、重量	Dimension / Weight	W150×D267×H210mm ≒12kg	W210×D342×H210mm ≒18kg

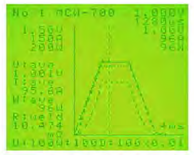
项目	Items	TS-IN4000	TS-IN4400
尺寸、重量	Dimension / Weight	W150× D245× H210mm ≒5kg	W200×D260× H210mm ≒10kg

Avio Transistor Type 晶体管式电阻焊接机

精密焊接的希望！

MCW-700 & MCW-750

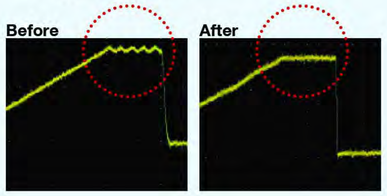
MCW–700



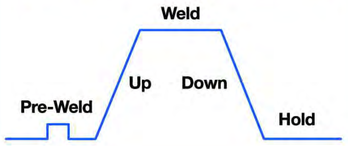
直观的焊接波形
Real Time Welding Wave From Display

MCW–750

PID调整 PID Adjustment



通电波形 Welding Waveform



- 高速线性制御实现稳定的精密焊接
- 三种控制方式：定电流、定电压、定功率
- 高速焊接：5 次 / 秒
- 预通电焊接检测功能防止溅射
- 同时显示电流、电压、功率的波形图像

- Consistent and precise welding by high speed linear control.
- 3 control modes:constant current, voltage, and power.
- High productivity by high speed welding : 5 shots / sec
- Pre–weld check function reduces spark problem.
- Simultaneous graphic display of V, I and W wave form

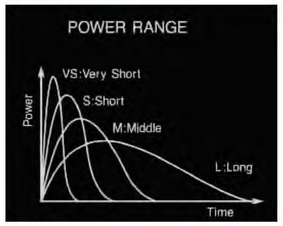
项目	Items	MCW-700	MCW-750
最大电流	Maximum Current	500A	1800A
最大电压	Maximum Voltage	2V	4V
定电流模式	Constant Current Mode	10～500A（1A STEP）	10～1800A（1A STEP）
定电压模式	Constant Voltage Mode	0.001～2V（1mV STEP）	0.01～4V（10mV STEP）
定功率模式	Constant Power Mode	10～500W（1W STEP）	10～3600W（1W STEP）
通电时间：Up	Weld Time:Up	0～999×0.01ms or ×0.1ms	
通电时间：Weld	Weld Time:Weld	0～999×0.01ms or ×0.1ms	
通电时间：Down	Weld Time:Down	0～999×0.01ms or ×0.1ms	
通电时间：Squeeze&Hold	Weld Time:Squeeze&Hold	9.99s（maximum）	
预通电检测	Pre- check	Resistance / Current	Resistance / Current
焊接次数/秒	Shot / Sec	5shots / sec : 500W 2ms	5shots/sec : 3600W 2ms
监测器：波形显示	Monitor : Wave form	Current / Voltage / Power	Current / Voltage / Power
监测器：电流	Monitor : Current	Average / Peak	Average / Peak
监测器：电压	Monitor : Voltage	Average / Peak	Average / Peak
监测器：功率	Monitor : Power	Average / Peak	Average / Peak
焊接条件存储	Number of Conditions	15	15
通信接口	Interface	RS-232C, I/O, analog output	RS-232C, I/O, analog output
电源(选项)	Power Source (Option)	AC100～120V (option AC200～240V) 1φ	AC100～120 (option AC200～240V) 1φ
尺寸	Dimension	W200×D350×H300mm	W200×D350×H400mm
重量	Weight	≒20Kg	≒27Kg

Avio Capacitor (DC) Type 直流储能电阻焊接机

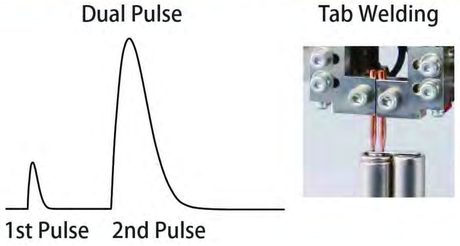
最适合于电池片的焊接和铝、铜等的焊接！

NRW-DC150

NRW–DC150



配置双脉冲功能！Dual Pulse Function



大功率电容器的充电能量瞬间放电的方式
Rapid Release of Energy Using High Capacitance Storage

- 双脉冲通电功能可抑制焊接火花而得到稳定的质量。
- 适合于铝、铜等不同种类焊接困难的金属。
- 短时间通电方式抑制工件的变形、烧损，适合小型部件的精密焊接。
- 高速充电提高生产效率（焊接速度 75W・S 时，120 次 / 分钟）
- VS（Very Short）模式实现 150W・S 的设定可得到 200W・S 的峰值电流。

- Dual Pulse Function Minimizes Welding Spark and Improves Welding Quality
- Suitable for Aluminum, Copper, as well as other Welding Materials
- Deformation and Burning is Minimized due to Short, Concentrated Energy Burst
- Fast charging time improves productivity (Welding Speed 75W・S 120Shots/min)
- VS(Very Short) mode allows to obtain peak welding current same as 200W・S type

项目	Items	规格 Specifications
焊接变压器	Welding Transformer	内置（Built- in type）
充电能量	Stored Energy	1- 150W·S(0.1 Step)
最大输出（W·S）	Maximum Output Power	VS Pulse 5500A 2.1ms S Pulse 4500A 3.2ms M Pulse 3600A 4.3ms L Pulse 2600A 6.2ms
通电次数	Duty Cycle	25W・S 200 shots/min 75W・S 120 shots/min 150W・S 80 shots/min
双脉冲功能	Dual Pulse Function	Standard Specification
通电延迟时间	Squeeze Time	0.01～9.99sec
通电结束保持时间	Hold Time	0.01～9.99sec
电源	Power Source	AC200～230V ±10% 1φ ※Option AC100V
尺寸/重量	Dimension / Weight	W220×D400×H347mm / ≒31kg

Avio System Head 系统焊头

最适合精密焊接的稳定加压的高性能小型焊头

对碰式类型 Opposed Type

NA-121

NA-122

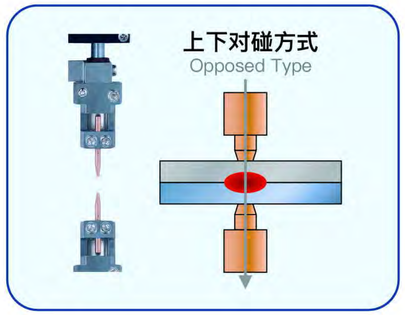
NA-124

NA-125

NA-126

项目	Items	Opposed Type			
		NA-121	NA-122	NA-123	NA-124
压力（方式）	Pressure Range(Way)	0.7- 5N (Spring)	5- 65N (Spring)	20- 150N (Spring)	40-300N (Spring)
驱动方式	Drive Method	选项 / Option: Motor, Air, Manual	选项 / Option: Motor, Air, Manual	选项 / Option: Motor, Air, Manual	选项 / Option: Motor, Air
适用电极直径	Diameter of Electrode	Φ1.6mm	Φ3.2mm	Φ6.4mm	Φ8.0mm
尺寸、重量	Dimension / Weight	W74×D48×H285mm ≒0.6kg	W82×D50×H301mm ≒0.8kg	W82×D50×H301mm ≒0.8kg	W97.8×D56.6×H326mm ≒1.5kg

项目	Items	Opposed Type	
		NA-125	NA-126
压力（方式）	Pressure Range(Way)	100-600N (Spring)	300～1800 N (Spring)
驱动方式	Drive Method	Air	Air
适用电极直径	Diameter of Electrode	专用电极 / Dedicated Electrode Attached (EH-F-02)	专用电极 / Dedicated Electrode Excluded (EH-200)
尺寸、重量	Dimension / Weight	W212.2×D204.0×H794.5mm ≒21.5kg	W309×D315×H908mm ≒60kg



并列式类型 Parallel Gap Type

NA-131

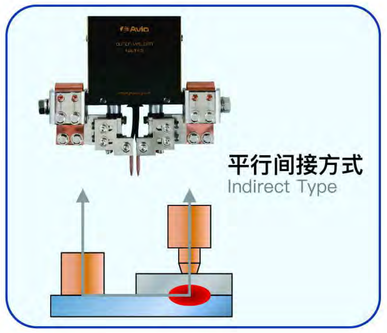
NA-132

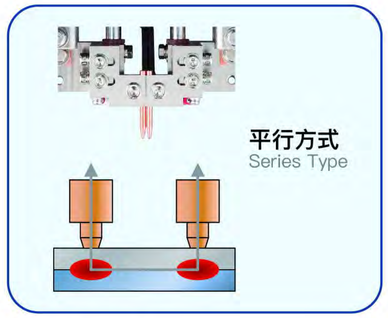
项目	Items	Parallel Gap Type	
		NA-131	NA-132
压力（方式）	Pressure Range(Way)	0.7-5N (Spring)	5-65N (Spring)
驱动方式	Drive Method	选项 / Option: Motor , Air , Manual	选项 / Option: Motor , Air , Manual
适用电极直径	Diameter of Electrode	Φ3.2mm	Φ3.2mm
尺寸、重量	Dimension / Weight	W76×D51×H299mm ≒0.7kg	W76×D51×H299mm ≒0.7kg

平行式类型 Series Type

NA-142

NA-143





项目	Items	Series Type		
		NA-141	NA-142	NA-143
压力（方式）	Pressure Range(Way)	0.5-5N (Spring	5-65N (Spring)	40-150N (Spring)
驱动方式	Drive Method	选项 / Option: Motor , Air , Manual	选项 / Option: Motor , Air , Manual	选项 / Option: Motor , Air
适用电极直径	Diameter of Electrode	Φ3.2mm	Φ3.2mm	Φ3.2mm
尺寸、重量	Dimension / Weight	W135.2×D49.8×H268mm ≒1.3kg	W152.2×D49.8×H268mm ≒1.6kg	W174.2×D61.8×H302mm ≒2.7kg

Avio Welding head 焊接机头

满足高压力的机构部件及多股线的焊接！

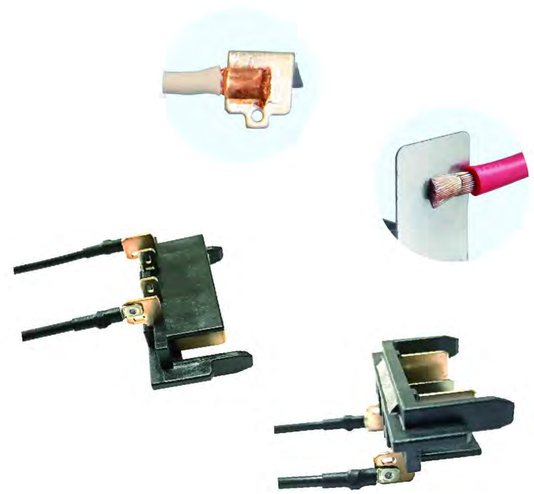
NA-80C/100C

功能介绍 Function introduction

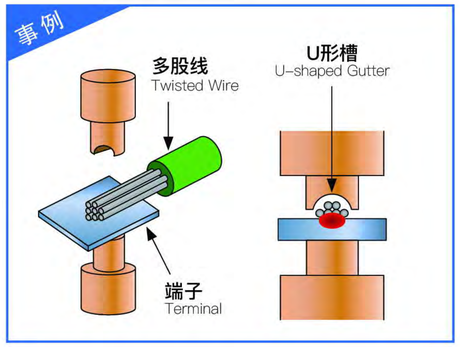
在电阻焊过程中，加压力与焊接电流及通电时间都是决定焊接质量的重要因素之一，因为焊接时的发热量也取决于电极与工件接触时产生的接触电阻。

NA-80C/100C适用于要求高压力的机构部件、多股线的焊接。重点用于汽车线束、汽车电子部件、动力电池组引线压方焊接等高精密、要求的焊接。电极选用直接水冷的方式，更有效地使工件快速冷却，同时配置专用的焊接电极头，更换电极方便、快捷。

NA-80C
标准焊接机头



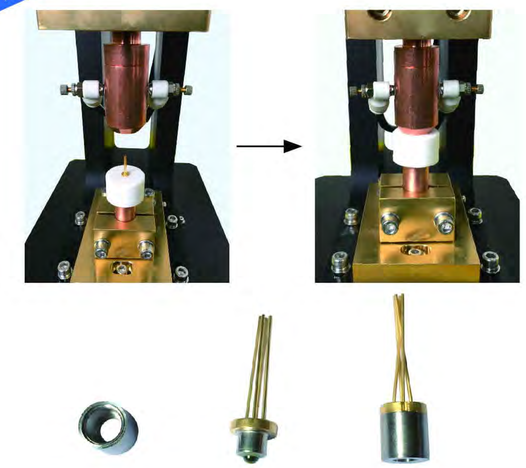
事例



- 高达784N的加压力且优异的追从性。气缸和加压追从机构的一体设计紧凑高效，在提供大压力的同时也能保证追从性。
- 配置使用ϕ16直径的电极，可直接使用直接水冷的冷却系统，通过水冷的方式带走焊接时工作产生的多余热量，使工件快速冷却，从而提高焊接效率以及焊接一致性。
- 特别适用于多股线及编织线的焊接。

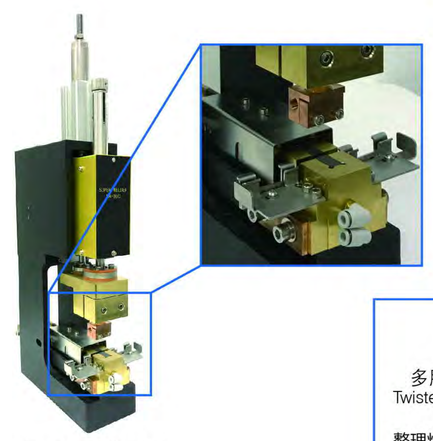
NA-100C

事例



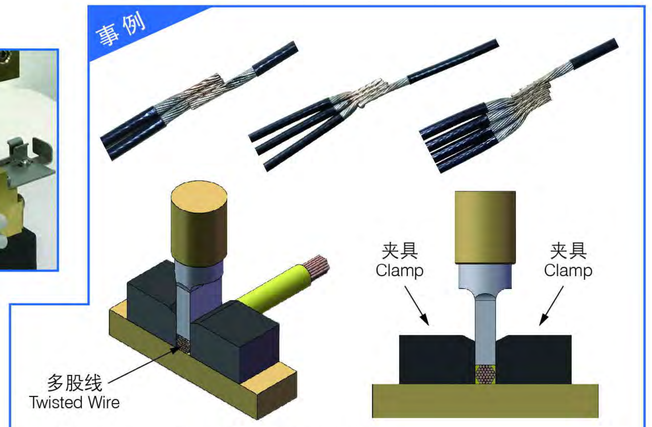
项目	Items	NA-80C	NA-100C
驱动方式	Drive Method	Weight 空气驱动	
压力范围	Pressure Range	98-784N	98-980N
电极行程	Electrode Stroke	Max60mm	Max80mm
电极最大间距	Depth Dimension of Pocker	120mm	150mm
适用电极直径	Diameter of Electrode	ϕ16mm	
外形尺寸	Dimension	320mmW/190D/720H	320mmW/190D/750H
重量	Weight	15 Kgs	16.8Kgs

方压焊接机 Square pressure welding machine



NA-80C/100C
压方焊接机头

事例



整理焊接：针对多股先端子加压加热整理成矩形
Compacting:Perform welding on the terminal of twisted wire by adding pressure and heat.

Avio Various welding heads 各种焊头

焊头

通用型：General Purpose Type

NA-60A

NA-60A

■ NA-60A被广泛应用于有高信赖、高精度要求的各种电子零件、开关、继电器接点、钟表、照相机和各种机构部件的焊接。是应用最广泛的焊头。

■ NA-60A is general purpose weld head which application is widened from various kinds of electronic parts that require reliability and accuracy, that is, switches, relay contacts, watches, components among camera etc. and various kinds of mechanical parts.

项目	Items	NA-60A
压力	Pressure Range	9.8-132.3N
电极行程	Electrode Stroke	max12mm
电极最大间隔	Depth Dimension of Pocket	98mm
驱动方式	Driving Method	脚踏／Foot※1 气动／Air※1
适用电极直径	Diameter of Electrode	ϕ6.4mm／ϕ3.2mm※1
尺寸、重量	Dimension / Weight	W72×D175×H285mm≒2.8kg

※1 选件　Option
※2 动力电源　Power Source：AC100V
配管选择：内径Φ6mm／Applicable hose : internal diameterΦ6mm

手持型：Hand Piece Type

NA-54A, NA-54LA, NA-57A, NA-58A

■ 在不能使用固定式焊头的场所，有丰富的手持型焊头供选择使用。有左右不振动的电极构造、小型轻便的特点。

■ The welding machine series of various handy types are arranged to weld a difficult object to weld by a fixed type weld head like at a jamming area.
No side-to-side rocking motion of electrodes. Operable with light power due to its compact and lightweight size.

NA-54A

NA-54LA

NA-57A

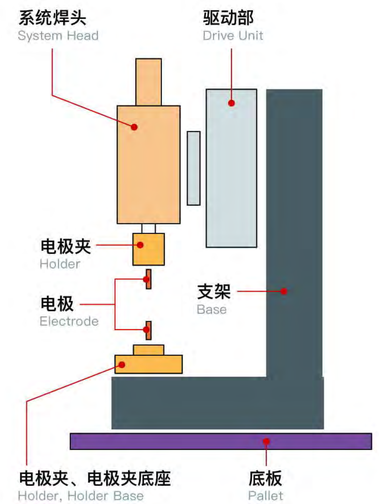
NA-58A

项目	Items	NA-54A	NA-54LA	NA-57A	NA-58A
压力	Pressure Range	7.8-44.1N	7.8-44.1N	9.8-49N	手动加压／manual
电极行程	Electrode Stroke	max10mm	—	—	max1mm
电极最大间隔	Depth Dimension of Pocket	50mm	—	—	75mm
驱动方式	Driving Method	手动／manual	手动／manual	手动／manual	手动／manual
适用电极	Applicapable Electrode	EL-125系列 EL-125 series	EL-54L	EL-57A专用 Specialized for NA-57A	EL-58A专用 Specialized for NA-58A
尺寸	Dimension	W30×D195×H47mm	W30×D195×H47mm	36ϕ×D207mm	W24×D16×H157mm
焊接电缆	Weld Cable	1500mm	1500mm	1500mm	1100mm

Avio Accessory 配件

系统焊头配件

■ 系统焊头的基本构成
System Head Basic Configuration



■ 支架、底板、显微镜 Base, Pallet and Microscope Set

支架 Base
NA-301,302P

底板 Pallet
S-MP, S302-MP

显微镜、显微镜支架、LED照明
Microscope, Microscope Mounting Stand, LED Light
S-SMS, S-SMS-MS, S-SMS-LED

■ 下部工作台
Lower Stage

标准工作台
Stage　11X-BS

平行度调整工作台
Leveling Stage　11X-BS-F

微调整功能工作台
11X-BS-F-MM

■ 焊接电缆 Weld Cable

Length: 100mm Step
Material: SFC, WRC, FMC, EFC
Terminal Shape: D, L, DP
例 Ex：SFC - 60 - 500 - DD - 99
Square: 22, 60, 66, 120mmSQ
Hole Size: 7, 9mm

■ 下部电极配件
Lower Holder Accessory

下部电极夹
Lower Holder
S12X-16BHD

下部电极夹底座
Lower Holder Base
12X-B-F

下部电极夹
Lower Electrode Stage
143-BS

■ 印刷线路板修理装置
PWB Repair Machine

ELP支架、LED显微镜
ELP Type Base, Microscope LED Lighting Set NA-311,
S311-SMS

※焊接电源、焊头、驱动装置另外销售

Avio Drive Unit 驱动方式

马达驱动、气缸驱动、脚踏驱动

Motor Drive & Controller

马达驱动&控制器

- 马达驱动分辨率达到1μm而支持精密焊接
- 彩色触摸屏和杠杆式旋转开关实现直观的操作
- 0.1mm/秒的低速移动功能可以实现软接触动作
- 对应最大300N的高压力焊接(使用NA-202P)
- 可保存7种焊接条件

- Motor drive with 1μm resolution supports precise welding
- It provides intuitive operation by color touch panel and lever jog switch
- Soft-landing process with a slow moving speed of 0.1mm/sec is provided
- Compatible to high pressure welding processes up to max. 300 N force (When NA-202P is used)
- Seven operation conditions can be saved

CNT-320A

项目	Items	CNT-320A & NA-201P/NA-202P	CNT-310 & NA-201
驱动方式	Drive Method	Motor	
行程	Stroke	Max 50 mm, 1μm Step	Max 50 mm, 10μm Step
电源	Power Source	DC24V±10% 4A Option : AC Adapter AC100～240V	DC24V±10% 2A Option : AC Adapter AC100～240V
尺寸、重量	Dimension/Weight	CNT-320A: W120×D230×H207mm≒3kg NA-201P: W52.5×D78.5×H276.1mm≒2kg NA-202P: W69×D99.5×H336.3mm≒4.2kg	CNT-310: W80×D211×H188mm≒2kg NA-201: W50×D82.5×H320mm≒2kg

Air Drive

气缸驱动

NA-221, 222

项目	Items	NA-221	NA-222
驱动方式	Drive Method	Air	Air
行程	Stroke	Max 50mm	Max 50mm
速度调整	Speed Control	with Speed Controller (Φ4mm Tube)	with Speed Controller (Φ6mm Tube)
气压	Air Pressure	0.05～0.6MPa	0.4～0.6MPa
尺寸、重量	Dimension / Weight	W78×H280×D83mm ≒1.3kg	W86×H289×D85mm ≒2.2kg

Manual Drive

脚踏驱动

NA-231

项目	Items	NA-231	
驱动方式	Drive Method	Manual by Foot Pedal	
行程	Stroke	Max 10mm	
高度调整	Hight Control	Range 40mm	
尺寸、重量	Dimension / Weight	Drive Unit : W51×H192×D79mm ≒1kg	Foot Pedal : W124×H125×D268mm ≒2.2kg

Avio Digital Force Gauge 数字式压力计

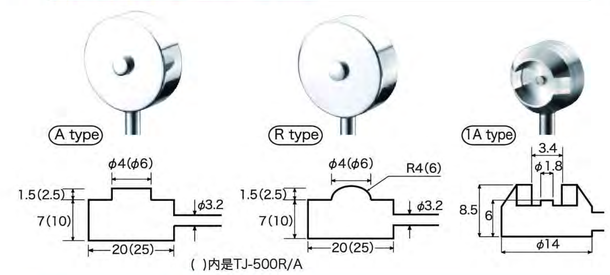
小型、轻量、便携

FG-400 & TJ series

- 小型、轻便 / Compact, and light weight
- 三种供电方式 / 3 ways power supply
- 显示保持功能 / Display hold function is equipped
- 简单易行的零位调整 / Easy zero adjustment function
- 自动识别压力传感器的种类 / Automatic recognition of the type of sensor
- 判断(上限、下限)功能 / Judgement function (Hi & Low) is equipped

※FG-400与TJ系列分别销售。
FG-400 and TJ series are sold separately.

传感器形状 Sensor Tip Shape



( )内是TJ-500R/A

项目	Items	FG-400
表示功能	Display	4 digit(0000-9999)N:newton
零位调整	Zeroing Adjustment	使用SW自动调整 Automatic regulation by switching
保持功能	Hold Function	抽样值/峰值 sample/peak
信号接口	Interface	RS-232C
电源	Power Source	5号电池、镍氢电池、专用交流电源适配器(AC100V～240V) 1φ Use by AA type buttery, Ni-H type buttery or Dedicated AC adapter(AC100V～240V)
尺寸、重量	Dimension / Weight	W77× D140× H27mm ≒300g

※有关FG-400的校对证明书的发行，需要额外收费对应。／Calibration certificate for FG-400 is not free of charge. Please ask sales representative for quotation.

项目	Items	TJ-1A	TJ-20R or TJ-20A	TJ-100R or TJ-100A	TJ-500R or TJ-500A
测量范围	Measuring Range	0～10N	0～196N	0～980N	0～4900N
极限压力	Critical Load	20N	294N	1470N	7350N
精确度	Accuracy	±2% (of full scale)			

设备组装用压力传感器 Pressure Sensor for Incorporation into Equipment

项目	Items	TJS-1R	TJS-20R	TJS-100R	TJS-100A-NA124	TJS-500A-NA126
测量范围	Measurement Range	0～10N	0～196N	0～980N	0～980N	0～4900N
极限压力	Critical Load	20N	294N	1470N	1470N	7350N
精确度	Accuracy	± 3%(of full scale)				
适配系统焊头	Applicable Welding Head	NA-121,122,123 NA-131,132,142			NA-124 NA-125	NA-126

※组装到系统焊头内时另外需要垫片配件。／A pusher is optionally required for integration into the Welding Head.

系统焊头组装实例

Example for integration of the sensors into the Welding head

Avio Welding Monitor 焊接监测仪

位移·压力监测

压力监测仪 Force Monitor
QC-100

QC–100

■ 适合于自动设备 Beat for Automation

- ■ 可切换数字显示和图像显示
- ■ 与系统焊头配合容易实现自动化
- ■ 丰富的通信接口方便于生产管理（输出测量、比较判定结果）
- ■ 传感器安装方便
- ■ 可根据压力设定触发

- ■ Selectable display:digital or graphic
- ■ Easy automation by combination with system head
- ■ Easy QC by enhancement of communication function (Output of measured value & Monitoring result)
- ■ Easy installation of force sensor
- ■ Trigger by applied force can be set

位移监测仪 Displacement Monitor
QC-200

QC–200

■ 最适合高信赖性的品质管理
High Reliability for QC

- ■ 可切换数字显示和图像显示
- ■ 高精度测量焊接物的变形量
- ■ 图示波形解析（1 秒 2000 次的高速抽样）
- ■ 焊接过程中有两种条件进行测量、判定（通电前用 A 条件，通电后用 B 条件进行测量、判定）
- ■ 可根据位移设定触发

- ■ Selectable display:digital or graphic
- ■ High accuracy measurement for displacement of welding material
- ■ Wave analysis by graphic display (High speed sampling at 2000 times/sec)
- ■ Measurement & judge by 2 conditions for welding process (Measurement & judge for before/after welding)
- ■ Trigger by displacement can be set

项目	Items	Force Monitor QC-100	Displacement Monitor QC-200
测量范围	Measurement Range	0~1000N	0~7.5mm 分辨率/Resolution:1μm
精确度	Accuracy	±3%（of full scale）	±1%（of full scale）
抽样时间	Sampling Time	0.5ms(2000time/sec)	
通电延迟时间、保持时间	Squeeze,Hold Time	0~0.9 sec	
通信接口	Interface	RS-232C,1/O,analog output	
电流	Power Source	DC24V ±10% 2A	
尺寸、重量	Dimension /Weight	W170×D210×H150mm ≒3.0kg	W170×D210×H150mm ≒3.4kg

Avio High performance welding monitor 高性能焊接监测仪

焊接过程的可视化确保高信赖性

QC-450

QC–450

■ 测量项目:

电压、电流、功率、电阻、相位、位移、压力、通电时间、外接模拟电压信号两套（热电偶、温度等）

- ■ 采样周期50kHz（最小分辨率0.02ms）
- ■ 最长通电时间3sec(选项:5kHz时30sec)
- ■ 同时测量2段通电
- ■ 显示10个项目(测量值/计算值/计数值)
- ■ 图表显示
  推移过程的可视化
- ■ 模拟信号测量项目
  11种(单位22种)
- ■ 推移过程的可视化
  1.电极消磨·更换的时机推测
  2.焊接条件切换的时机推测
  3.设备老化程度的把握
  4.早期维护的实行维持品质稳定
- ■ 累积推移数据的比较/分析
  1.把握批次产品的差异
  2.反馈结果至前工序进行改善
  3.把握工厂之间的倾向
  4.统一维持/管理全世界工厂的产品质量
- ■ I/O信号输出10个端子(任意7点)、 可变控制输出6个端子(任意6点)
  焊接过程中利用达到位移量后通电停止等的输出反馈功能保持均一的品质

项目		QC-450
测量项目		电流 (RMS/PEAK)、电压 (RMS/PEAK)、通电时间（通电期间）、位移、压力、相位、外部模拟信号 x2
监测数值显示项目		电流 (RMS/PEAK)、电压 (RMS/PEAK)、通电时间（通电期间）、位移、外部模拟信号 x2 压力、相位、功率、电阻、计算值
监测波形显示项目		REAL 电流、AVE 电流、REAL 电压、AVE 电压 功率、电阻、位移、压力、外部模拟信号 x2
图表显示项目		REAL 电流、RMS 电流、REAL 电压、RMS 电压 功率、电阻、位移、压力、外部模拟信号 x2、计算值、时间
电流测量范围		50 ～ 2,000A、100 ～ 20,000A、1,000 ～ 100,000A
时间测量范围		0.00 ～ 300.00ms、0.0 ～ 300.0CYC
显示屏		5.7 英寸彩色液晶触摸屏
条件数量		255
打印机		内置感热式
通信接口	I/O	DC24V NPN、PNP、对应外部电源 判定输出 :10 套系统 可变控制输出 :6 套系统
	通信	Ethernet
	存储	CF 卡
电源		AC100 ～ 240V ±10% 50/60Hz
重量		5.6kg
尺寸		W170×H265×D338mm

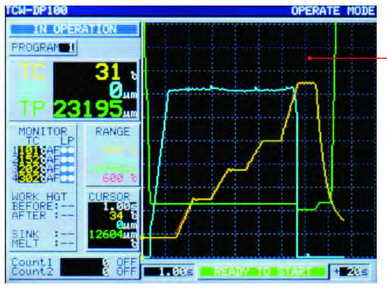
※ 测量位移 · 压力时，选项对应控制板。所有的传感器均为另外销售。

CF CARD

Avio Displacement Pulse Heat Power Supply 位移控制型脉冲电流加热电源

最佳的焊锡焊接功能！同时控制焊咀的温度和位移！

TCW-DP100



温度曲线示意图
焊咀位置曲线示意图
位移曲线示意图

TCW-DP100

■ **高精度位移控制**
分辨率 1μm 的位移反馈进行熔化下降量的控制，从而实现均一的熔化量。

■ **丰富的监测功能(温度 · 位移)**

■ **数码温度控制**
根据数码式 PID 增益实现高速、高精度的温度控制，对应微细线和微小工件。

■ **返回功能**
加热后，确保工件间的焊锡厚度。

■ **四段加热**
具有丰富多彩的温度曲线，对应多种多样的应用。

■ **内置马达控制功能**

■ **用户界面**
标准配置 RS-232C&I/O，方便于自动化机器的配置和与外部机器的连接。

■ High Precision Displacement Control
Overtravelling amount is controlled by feedback of displacement amount in 1 μm resolution, and uniform melting amount can be realized

■ Wide Variety of Monitoring Functions
(Temperature, Displacement)

■ Digital Temperature Control
High speed and highly accurate temperature control is realized by the digital PID control method, making the unit suitable for fine wires and micro-miniature works

■ Release Function
After heating, the solder thickness between the works can be secured

■ Four Stage Heating
Various temperature profiles are realized to cope with the diversified applications

■ Built-in Motor Control Function

■ User Interface
RS-232C&I/O is standard equipped making the unit easy to interface with the external equipment such as the case of incorporating in an automated system

■可以控制熔化下降量
Melting Amounts Control

极细同轴线缆 / Micro Coaxial Cable

■防止线材散乱（减少损伤）
No Spread Wire(Damage Reduction)

■防止搭接短路
No Solder Bridge

无位移控制
Displacement Control OFF

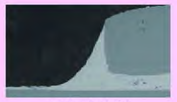
有位移控制
Displacement Control ON

■可以控制焊接间隙
Joining Gap Control

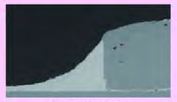
太阳能电池模块 / Solar Panel Module

■增加焊接强度
Enhancement of Joining Strength

■抑制残留应力
Reduction of Residual Stress



无位移控制
Displacement Control OFF



有位移控制
Displacement Control ON

＊ 需要和专用的马达驱动焊头（型号: NA-201P）组合使用。
＊ Reflow head motor drive unit Model NA-201P is required for use with Model TCW-DP100

项目	Items	TCW-DP100
加热温度	Heating Temperature	Room temp～600˚C in 1˚C step, E type/J type（option） Room temp～900˚C, K type（option）
加热时间	Heating Time	0.00～99.99 seconds
额定功率	Rated Capacity	750 VA, 50% duty cycle
加热控制	Heating Steps	4 steps
监测功能	Monitor	Sink amount, Temperature, Work height
马达分辨率	Motor Resolution	1μm/pulse
位移控制分辨率	Displacement Resolution	1μm
通信接口	Interface	RS-232C, I/O
焊接变压器	Transformer	Built-in
二次电压	Tap Voltage	0.88 V, 1.24 V, 1.75 V, 2.47 V, 3.5 V
电源	Power Source	AC 200～240 V ±10%, 1 ϕ, 50/60 Hz, 15 A
尺寸／重量	Dimention／Weight	W220× D400× H320mm≒23 kg

Avio General Purpose Type Pulse Heat Power Supply 通用型脉冲电流加热电源

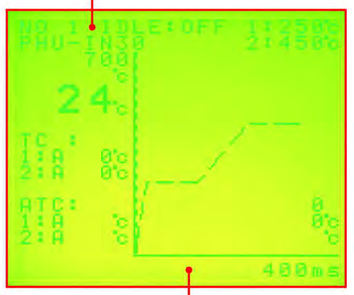
最适合焊锡焊接、热压接、树脂热熔接等多种焊接的畅销机器！

通用型 General Purpose Type

TCW-315

■ **配置大尺寸液晶屏**
Large Size LCD
一目了然的温度曲线
Real Time Temperature Profile

TCW-315



大功率型 High Power Type

PHU-35

NT-35　　PHU-35

■ **高信赖性焊接**
在加压的同时加热、冷却，防止焊接工件偏位。

■ **丰富多彩的温度曲线**
局部瞬间加热方式、抑制对周围零部件的热影响。

■ **高度重复性**
根据数码 PID 增益控制、温度和时间的重复性好、不需要熟练工即可操作。

■ **对应无铅焊锡**
根据高温长时间加热的设定实现无铅焊锡对应。

■ **用户界面**
标准配置 RS-232C&I/O 接口、与自动机器的装配等外部机器的连接更加方便可行。

■ **充实的监测功能**
温度监测：上下限（平均值・峰值）、曲线
监测报警：过加热冲击、热电偶断线等

■ **其他标准功能**
设定条件存储数量 :15; 焊头上下 & 冷却空气控制信号、辅助热电偶输入、计数器功能

■ **High Reliability Joining**
Because heating and cooling take place while the pressure is being applied, the work position will not be shifted during joining

■ **Variable Temperature Profile**
Because the heating is local and instantaneous, thermal impact to the peripheral components is restrained

■ **High Reproducibility**
Digital PID control enables good reproducibility of temperature and time. As a result, no skill of the operator is required

■ **Pb Free Compatible**
Pb free solder is accommodated by setting to high temperature and long heating time

■ **User Interface**
RS-232C&I/O is standard equipped, making the unit easy to be connected to external equipment such as incorporating into an automated system

■ **Ample Monitoring Functions**
Temperature monitoring: Upper and lower limit (average, peak), Profile Detection error: Over-heat, Thermocouple disconnection, etc

■ **Other Standard Functions**
Number of stored settings: 15, Head vertical and cooling air control signal, Auxiliary thermocouple input, Counter function

项目	Items	TCW-315	PHU-35	NT-35
加热温度	Heating Temperature	Room temp～600℃ 1℃ step E, J type Room temp～900℃ K type（option）	Room temp～600℃ 1℃ step E, J type Room temp～900℃ K type（option）	–
加热时间	Heating Time	000-999（×100ms,×10ms）	000-999（×100ms,×10ms）	–
额定功率	Rating Power	750VA	–	3KVA
焊接变压器	Transformer	内置 Built-in	–	–
二次电压	Tap Voltage	0.88V, 1.24V, 1.75V, 2.47V, 3.5V	–	1.0V, 2.0V, 3.0V
电源	Power Source	1φ、AC200V～230V±10% （AC100-115V : option）	1φ、AC200V～230V±10% （AC100-115V : option）	–
尺寸/重量	Dimension/Weight	W200×D320×H283mm ≒19.5kg	W278×D250×H120mm ≒7.4kg	W200×D270×H220mm ≒25kg

Avio Reflow Head(System Head) 脉冲加热焊头(系统焊头)

最适合精密焊接和自动化设备!

片状热压焊咀型 Heater Tip Type

NA-111, NA-112

NA-111 NA-112

热压焊咀及支架 Heater Tip & Shank

- 因为是垂直式结构、不会因为加压发生弯曲变形
- 因为使用光电传感器从而更加耐用
- Because of the Vertical Direct Force Application Mechanism, There is No Deflection by the Applied Force
- Long Life is Realized by Use of a Photo Sensor

项目	Items	NA-111	NA-112
压力	Pressure Range	0.7~5N	5~65N
加压方式	Pressure Method	Spring	
行程	Stroke	取决于驱动装置 It's up to Drive Unit	
尺寸/重量	Dimension/Weight	W106×D48× H287mm≒0.6kg	W106×D48×H285mm≒0.6kg
驱动方式	Drive Method	Motor(NA-201, 201P), Air(NA-221), Manual(NA-231)	

大型热压焊咀型 Heater Tool Type

NA-151, NA-152, NA-153, NA-154, NA-155

NA-151
NA-152
NA-153
NA-154
NA-155

热压焊咀及支架 Heater Tool & Shank

- 附带空气冷却口、平行度调节功能
- 标准配备水冷却支架（NA-154、NA-155）
- 使用转换支架可以安装片状热压焊咀
- Provided with Air Cooling Port and Flatness Adjustment Function
- Water Cooled Shank is Equipped as Standard (NA-154, NA-155)
- Heater Tip can be Used by Use of a Conversion Shank

项目	Items	NA-151	NA-152	NA-154	NA-155	NA-156
压力	Pressure Range	1.2~7N	5~70N	20~150N	40~300N	100~600N
加压方式	Pressure Method	Spring				
行程	Stroke	取决于驱动装置 It's up to Drive Unit				30mm
尺寸/重量	Dimension/Weight	W124×D54.8× H298mm≒1kg			W145×D64.5×H332mm≒2.2kg	W217×D230×H700mm≒20.1kg
驱动方式	Drive Method	Motor(NA-201, 201P), Air(NA-221), Manual (NA-231)			Motor (NA-202P), Air (NA-222)	Air

脉冲加热焊头(一体型焊头)

Reflow Head(Monolithic Type Head)

气缸驱动型 Air Drive Type

NA-66

NA-66

- 驱动部・加压部一体型焊头
- 使用热压焊咀
- 脚踏驱动和气缸驱动两种
- Monolithic Head with Integrated Drive Section and Force Application Section
- Heater Tips are Accommodated
- Two Types, Manual Driven and Air Driven

项目	Items	NA-66
压力	Pressure Range	4.9~44.1N
行程	Stroke	8mm
尺寸/重量	Dimension/Weight	W77× D212× H360mm≒3.8kg
驱动方式	Driving Method	气压 Air

Avio Laser Diode Welder 半导体激光焊接机

应用于丰富多彩的焊锡焊接、树脂熔接中!

LW-D30A / LW-D100

- **对应多种多样的材料和形状**
  配备三种输出模式（曲线波形、连续、脉冲）
- **激光输出波形可视化**
  设定的数据可以通过波形变化来表示
  实际的输出波形可以追踪表示
- **简单操作**
  按开始键可以立即发射激光
  配备操作性良好的旋转纽
  确认激光输出的导光设备
- **最适合自动化设备的装配**
  配备 RS-232C、I/O
  丰富的监测报警功能
- **台式**
- **对应无铅焊锡**

- Applicable to Various Shapes and Material
  Three types of output mode are available(Profile, Continuous, Pulse)
- Laser Output Waveform is Visualized
  Preset numerical data is converted into waveform and displayed
  Actual output waveform is trace displayed
- Simple Operation
  Laser can be output immediately after switch ON
  Easy-to-operate jog dial is equipped
  Guide light to confirm laser output position is provided
- Suitable to be Equipped on Automated Machine
  RS-232C, I/O equipped
  Various monitoring (alarm) functions
- Desk Top Type
- Compatible to Pb Free Solder

LW-D30A

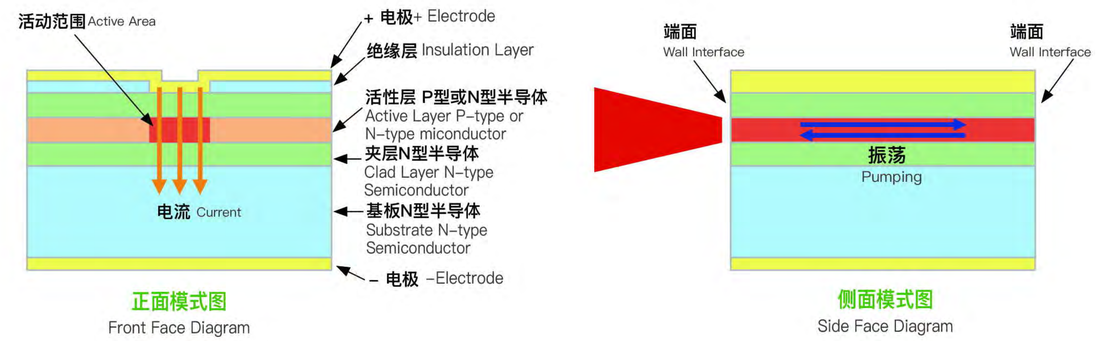
LW-D100

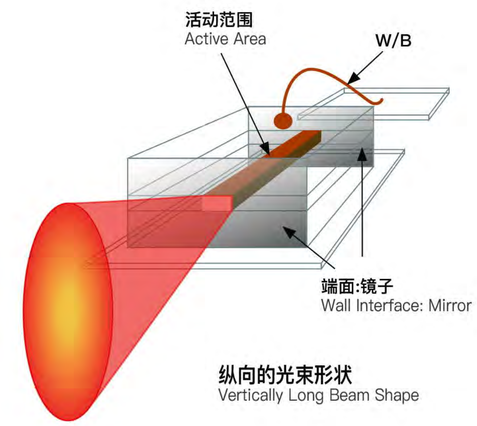
产品系列 Lineup

项目	Items	LW-D30A	LW-D100
最大额定输出	Max Rated Power	26W	100W
特点	Features	•微小光径高能量密度 除标准光径模式外(MinΦ800μm)增加了微小光径(MinΦ400μm)的可选镜头。 •轻量・空冷・小型 设置面积减少，确保作业空间,为配备装置的小型化 •作出了贡献标准配备输出头 •Small spot diameter and high power density In addition to the standard spot diameter model (MinΦ800μm), small spot diameter with optional lens (MinΦ400μm) is available, too •Light weight, air cooled, compact Small foot print contributes in securing work area and smaller size of the total machine •Output head is attached as standard	•完全空冷时最大100W的高输出 •微小光径高能量密度 除标准光径模式外(MinΦ400μm)增加了微小光径(MinΦ200μm)的可选镜头。 •Completely air cooled with high output of maximum 100W •Small spot diameter and high power density In addition to the standard spot diameter model (fiber core diameter Φ400μm), small spot diameter model (fiber core diameter Φ200μm) is available, too

振荡器结构 Oscillator Structure

半导体激光元件断面模式图（双外差振荡器举例）
Laser Diode Chip Cross-sectional Diagram (Example of double hetero-structure)





※根据半导体层的结构添加需要的层数，实际上更复杂。
※Regarding the semiconductor structure, more layers are added as necessary making the structure more complicated.

Avio独自的波形输出

Avio Unique Profile Output

可以瞬时对应工件的形状、厚度的变化。

The output can adapt itself instantaneously to the changes in shape and thickness of the work.

输出程序波形 Profile Mode

项目	Items	LW-D30A	LW-D100
波长	Wave Length	980 nm	
最大功率	Max Rated Power	26 W (Class 4)	100 W (Class 4)
输出头	Output Head	附件 Attached	选项 Sold Separately
光纤的纤芯直径	Optical Fiber Core Diameter	ϕ400μm	Two types, Φ400μm、Φ200μm
集光径	Core Diameter	使用标准附件输出头时: When standard output head is used: ϕ800μm(WD 80 mm) 使用追加选项镜头时: When additional option lens is used: ϕ400μm(WD 35 mm)	使用选项输出头时:(成像倍率可随意切换 1 倍、2 倍) When separately sold output head is used: (imaging magnifcation switchable between ×1 and ×2) ・光纤纤芯直径Φ400μm 型 Fiber core diameter Φ400μm type ×2 Φ800 μm / ×1 Φ400 μm ・光纤纤芯直径Φ200μm 型 Fiber core diameter Φ200μm type ×2 Φ400 μm / ×1 Φ200 μm ・When×2 WD 185 mm / When×1 WD 83 mm
引导光	Guide Beam	635 nm	
输出条件	Output Condition	15个条件 15 Data	
输出设定范围	Output Setting Range	电流 Current: 3.0 - 56.4 A(0.1 A step) 功率 Power: 0.0 - 26.0 W(0.1 W step)	电流 Current: 0.10 - 10.30 A(0.01 A step) 功率 Power: 0.0 - 100.0 W(0.1 W step)
时间设定范围	Time Setting Range	0.000 - 99.999 s(1 ms step)	
通信接口	Interface	I / O、 RS-232C (max 57600 bps)	
输出控制模式	Output Mode	CW 输出、脉冲输出(单脉冲、连续脉冲)、曲线波形输出(最多可设定 256 点) CW output, Pulse output, Profle waveform output (max 256 point setting)	
监测显示	Monitor Display	LD 驱动电流值、激光输出值(数码显示、图形显示) LD drive current value, Laser output value (Digital display, Graphic display)	
警报功能	Alarm Function	闭锁错误、控制错误、过电流错误、功率超限错误、LD高温错误、FET高温错误 Interlock error, Control error, Over current error, Over power error, LD high temperature error, FET high temperature error	
冷却方式	Cooling Method	空气冷却 Air	
电源	Power Source	AC 100 V ±10%、50/60 Hz	AC 100 - 240 V ±10%、50/60 Hz
最大功耗	Max Power Consumption	800 W	
尺寸/重量	Dimension / Weight	W200×D430×H280 mm(不包含突起部位和光学系统 excluding protrusion and optical system) 19 kg(不包含光学系统 excluding optical system)	W435×D430×H255 mm(不包含突起部位和光学系统 excluding protrusion and optical system) 30 kg(不包含光学系统 excluding optical system)

Dual Spot Unit

双点照射装置

- 追加标准输出头后，可以同时焊接间隔较窄的2点。
- 间隔可以依据客户需求定制。
- 间隔：约0.45mm(固定) 焊点：约0.34mm
  WD：约34mm

- By adding a standard output unit, simultaneous joining of two points with narrow pitch is enabled
- As the pitch can be customized, please consult with us
- Pitch : Approx. 0.45mm (fixed)
  Spot : Approx. 0.34mm
  WD : Approx. 34mm

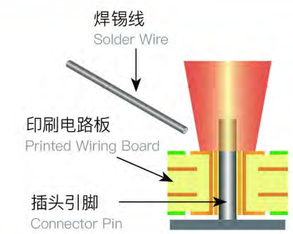
Auto Calibration Kit

自动校正配套装置

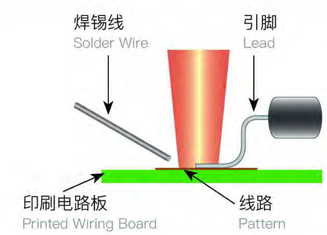
- 与 LW-D30A 连接可以自动校正输出
- 焊头尺寸：W66 × D38 × H60mm
  *LW-D100 用请另外咨询。
- By connecting to LW-D30A, the output can be calibrated automatically
- Head External Dimension : W66×D38×H60mm
  *Please consult us for LW-D100 separately

焊锡焊接 Soldering

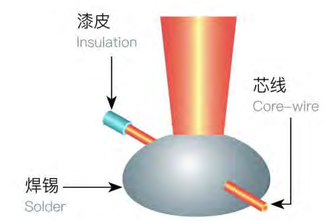
引脚 + 穿孔
Pin + Through-hole



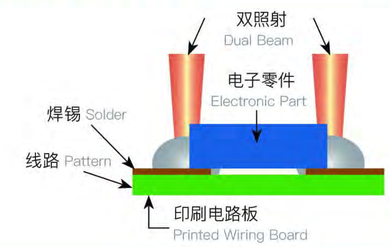
引脚 + 印刷板线路
Lead + Pattern



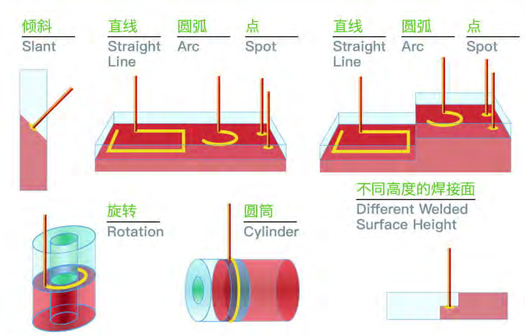
漆包线 + 线路
Insulation Wire + Pattern



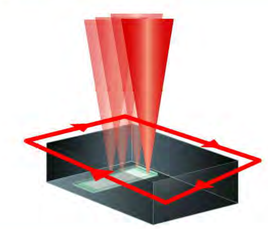
端子 + 线路
Terminal Pad + Pattern



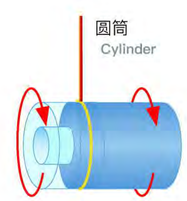
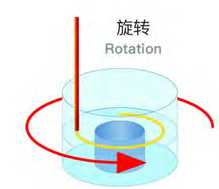
树脂熔接 Plastic Welding



框部的封装
Sealing of Window Frame



树脂管 + 树脂管
Pipe + Pipe



圆片 + 圆片
Disk + Disk