



# 脉冲电流加热装置系列

*Pulse Heat Unit Series*



NIPPON AVIONICS CO., LTD.

## Avio脉冲电流加热装置的概要

日本 AVIONICS 株式会社的脉冲电流加热装置多年来被广泛的应用于电子机器和电子零件制造的焊锡焊接、ACF 热压接、树脂熔融、热压接等领域并受到一致的好评。

近年来、以手机为代表的电子终端机器的功能和性能的进化迅猛发展。在零件的小型化、高性能化发展的同时，零件高密度组装技术变得尤为重要。要求其中零件制造和组装的关键技术焊锡焊接对应更加小型化和具有高可靠性。

我公司随着技术革新在日新月异的制造业中，迅速对应客户的要求并提供最佳的焊接解决方案。

## Outline of Avio Pulse Heat Unit (Hot Bar Soldering Equipment)

Pulse heat unit from Nippon Avionics Co., Ltd. has been used over the years for various applications, including soldering in manufacturing of electronic equipment or electronic component, ACF bonding, plastic welding and thermo-compression bonding.

In the recent years, improvement of both the function and the performance of mobile devices and other electronic equipment are being accelerated. While the parts are getting smaller and higher in performance, technology to mount parts in high density is becoming very important. Among other things, soldering, which is the key technology in parts manufacturing and assembly, is expected to cope with fine pattern and high reliability.

We are offering suitable micro-joining solutions in a timely manner to satisfy the needs of the customer in the manufacturing industry where technical innovation is remarkable.

### ■ 什么是脉冲电流加热装置？

脉冲电流加热装置是对电子零部件进行焊锡焊接或对树脂零部件进行热熔接的机器。由施加压力的焊头和控制脉冲电流的电源组成。

脉冲电流加热装置是只在熔化焊锡或树脂时瞬间通电的加热方式。

金属制的焊咀有电流通过时产生焦耳热而熔化焊锡或树脂。熔化后停止通电进行冷却。

在加压状态下直到焊锡凝固为止，可以得到高信赖性的没有虚焊、浮起的焊接。

### ■ What is Pulse Heat Unit ?

Pulse heat unit is an equipment used for soldering of electronic components or welding of plastic components. It consists of a reflow head, which holds down the component and applies the force, and a pulse heat power supply, which flows the electric current.

Pulse heat is an instantaneous heating method whereby heating is effected only when melting the solder or the plastic. Solder or plastic is melted by the resistance heat generated by flowing electric current to a heater tip/heater tool made of metal. Once the material is melted, electric current is stopped and cooled.

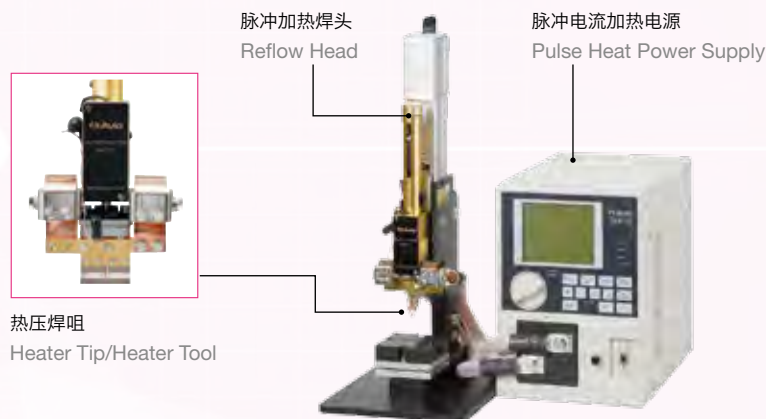
Because the object is held down with pressure until it is solidified, there is no lifting or shifting of parts, and as a result, highly reliable joining can be achieved.

## 脉冲电流加热装置的基本构成和作用

Basic Configuration of Pulse Heat Unit and Role of Each Part

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.



- 脉冲电流加热电源: 电流流过热压焊咀。
- 脉冲加热焊头: 对焊接物加压, 利用弹簧调节压力。
- 热压焊咀: 产生焦耳热的部分, 分为片状焊咀和大型热压焊咀。
- Pulse Heat Power Supply : Electric current is flown to the heater tip or the heater tool.
- Reflow Head :The object to be joined is held down and a force is applied. The applied force is adjusted by a spring.
- Heater Tip & Heater Tool :This is the part which becomes hot by resistance heating. The one with a relatively small area is called "heater tip" and a larger area is called "heater tool".

※其他, 有各种测量压力的监测仪器。

\* In addition to the above, we have various monitors which measure applied pressure

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Pulse Heat Fusing Unit & Other Equipment

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Accessory

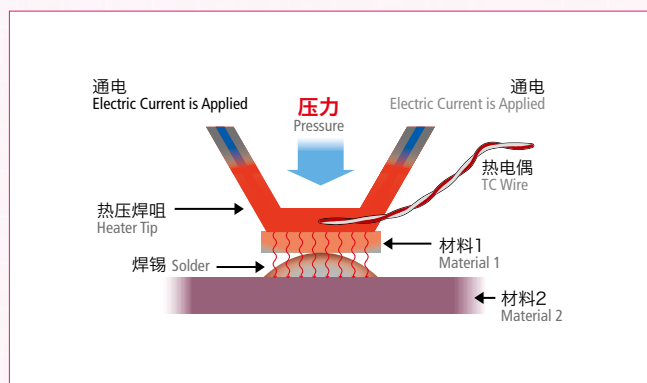
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Digital Force Gauge & Welding Monitor

热压焊咀 17-18  
Heater Tip&Heater Tool

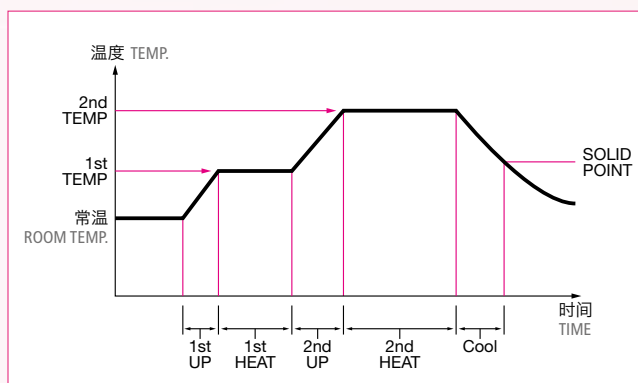
## 脉冲电流加热电源的加热示意图

Pulse Heat Unit Model



## 温度曲线

Temperature Profile



# 脉冲电流加热装置系列 *Lineup of Pulse Heat Unit*

## 脉冲电流加热电源 *Pulse Heat Power Supply*

根据焊接物的材质、形状以及焊接要求，选择最适合的电源功率。

Select a power supply with suitable welding capacity depending on the material or the shape of the object to be joined and the required quality level.

### 标准型 *Standard Type*

位移控制型 *Displacement Type*



通用型 *General Purpose Type*



大功率型 *High Power Type*



### 树脂熔接加工装置 *Pulse Heat Fusing Unit*

手持型 *Handy Type*



大功率型 *High Power Type*



### 脉冲加热焊头 *Reflow Head*

根据焊接物进行加压、选择适合热压焊咀的焊头。

Select a head having a force suitable to the object to be joined and suitable to the heater tip/heater tool to be used.

片状热压焊咀 *Heater Tip Type*



大型热压焊咀 *Heater Tool Type*



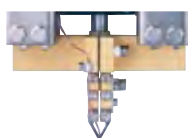
### 热压焊咀 *Heater Tip/Heater Tool*

可以根据焊接物的大小、形状进行选择。也可以加工定做。

主要选择不会沾黏焊锡的高电阻材料。

Select the size and shape suitable to the object to be joined. If necessary, it can be machined for custom shape. A material to which the solder will not stick and easy to heat with high resistance value is used.

片状热压焊咀 *Heater Tip*

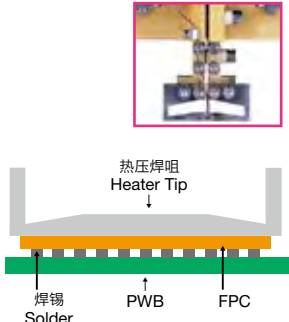
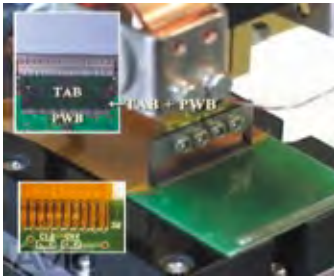


大型热压焊咀 *Heater Tool*



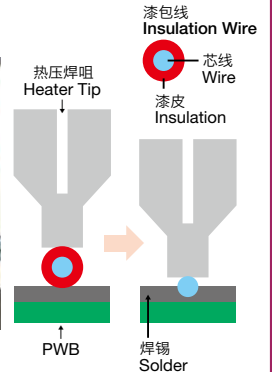
## 漆包线与PWB的焊锡焊接 FPC+PWB Reflow Soldering

FPC (Flexible Printed Circuits)



PWB (Printed Wiring Board)

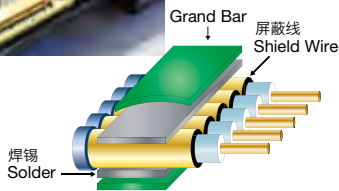
## 漆包线与PWB的焊锡焊接 Insulation Wire + PWB Reflow Soldering



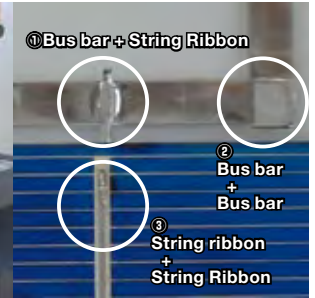
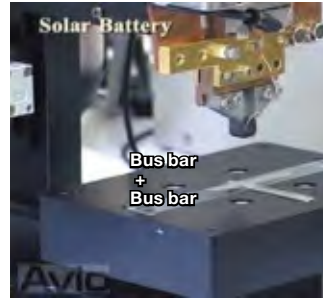
## 同轴电缆/Grand Bar+Wire 焊锡焊接 Co-axial Cable /Grand Bar + Wire Reflow Soldering



热压焊咀  
Heater Tool

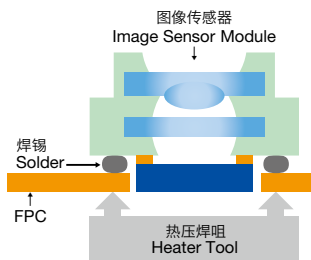


## 太阳能电池模组组装 焊锡焊接 Solar Battery Module Assembly Reflow Soldering

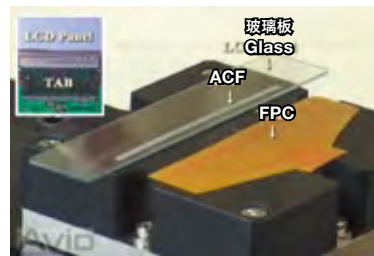


## 照相机模块组装 焊锡焊接 Camera Module Assembly Reflow Soldering

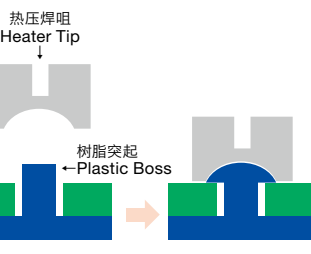
图像传感器  
Image Sensor Module



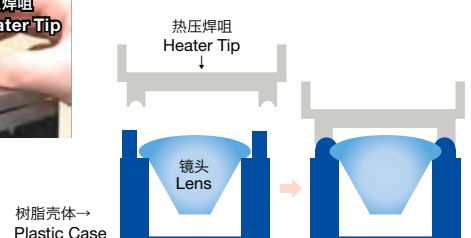
## ACF (玻璃板+FPC) 热压接 ACF (Glass + FPC) Thermal Compression Bonding



## 树脂类部件(PWB)组装时的热铆接 Plastic Parts Fabrication (PWB) Pulse Heat Fusing



## 树脂类部件(镜头)组装时的热铆接 Plastic Parts Fabrication (Lens) Pulse Heat Fusing

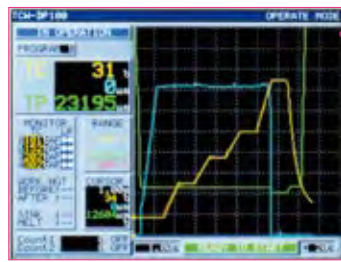


# 位移控制型脉冲电流加热电源 Displacement Pulse Heat Power Supply

## 最佳的焊锡焊接功能！同时控制焊咀的温度和位移！

Ultimate Pulse Heat Controller!  
Concurrency Control of Temperature and Displacement!

### TCW-DP100



- 温度曲线示意图  
Temp. Profile
- 焊咀位置曲线示意图  
Heater Tip Position Profile
- 位移曲线示意图  
Displacement Profile



#### ● 高精度位移控制

分辨率1 μm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，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



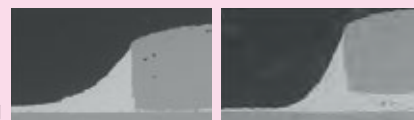
无位移控制 Displacement Control OFF      有位移控制 Displacement Control ON

### 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	1 μm/pulse
位移控制分辨率	Displacement Resolution	1 μm
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	Dimension/Weight	W220 × D400 × H320mm≒23 kg

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

**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！**

*The Best Seller Power Supply Unit Suitable for Soldering, Thermo-Compression Bonding and Heat-Fusing!*

**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



PHU-35

NT-35

- **高信赖性焊接**  
在加压的同时加热、冷却，防止焊接工件移位。
- **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 Temp	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

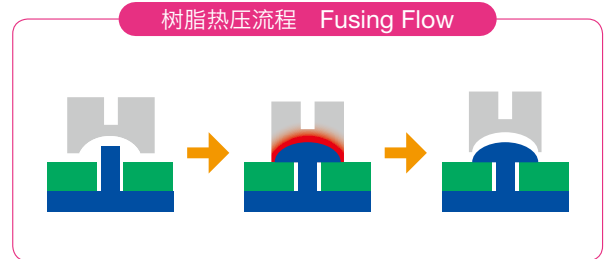
# 手持型树脂熔接加工装置 Handy Type Pulse Heat Fusing Unit

根据温度反馈功能防止树脂抽丝!

Temperature Feedback Prevents Cobwebbing of Plastic!

手持型 Handy Type

NCU-10U/T/H



热压焊咀 Heater Tip



- **冷却功能**  
在树脂凝固状态后结束，所以可以实现没有树脂抽丝的稳定焊接。
- **温度反馈功能**  
可以抑制环境和时间变化引起的温度变动。  
根据温度反馈实现稳定的焊接。  
(不会发生超声波焊接时的树脂溅射、龟裂。)
- **便于携带的手持型**
- **根据多年丰富的经验竭诚为您提供热压焊咀的方案**  
选择与工件材质相吻合的热压焊咀材料。  
平板式、多点同时焊接热压焊咀、特殊涂料等。
- **Cooling Function**  
Because the process ends with the plastic solidified, stable fusing without cobwebbing can be achieved
- **Temperature Feedback Function**  
Temperature variation due to environmental change or passage of time is restrained  
Stable welding by temperature feedback (Plastic sputtering or crack, as in the case of ultrasonic joining, will not occur)
- **Easy to Transport Handy Type**
- **We can Propose the Most Suitable Heater Tip Based on Our Ample Experiences**  
Heater tip material most suitable to the work material  
Flat type, multi-point simultaneous heater tip, special coating, etc

项目	Items	NCU-10U
加热温度	Heat Temperature	Main : Room temp~499℃
		Idling : Room temp~299℃
加热时间	Heat Time	0.1~9.9sec(0.1sec step)
电源	Power Source	AC100V ±10% 1Φ (Option : 200, 230V)
压缩空气	Compressed Air	0.4MPa or more
尺寸/重量	Dimension/Weight	W200×D302×H90mm≒3.5kg

项目	Items	NCU-10T
额定功率	Rated Power	150VA
输出电压	Output Voltage	1.75V, 2.5V, 3.5V
尺寸/重量	Dimension/Weight	W100×D150×H120mm≒3.4kg



# 大功率型树脂熔接加工装置 High Power Type Pulse Heat Fusing Unit

## 最适合自动化设备的大功率型!

High Power Type Suitable for Incorporation into a System!

大功率型 High Power Type

### NCU-15/NT-15



NT-15

NCU-15

- 可以对应多头焊头  
同时对应多点热熔接。
- 对应自动机器的大功率焊接变压器  
有 NT-15 (1,500VA)、NT-35 (3,000VA) 两种机型。
- 适合自动机器的笔型焊头  
可以对应窄间距的小型焊头(焊头尺寸 18mm、21mm、26.2mm)。  
附带空气冷却接口。
- 根据过后加热使树脂和焊咀更加容易剥离
- Multi-Heads can be Accommodated  
Multi-point simultaneous fusing can be realized
- Compatible to Large Capacity Transformer for Automated System  
Compatible to two types, NT-15(1,500VA) and NT-35 (3,000VA)
- Pen Type Head Suitable for Automated Systems  
Small head(head width 18mm, 21mm, 26.2mm) applicable to narrow pitch  
With an air cooling port
- After Heat Helps Easy Separation of Plastic and the Heater Tip

### 多焊头系统 Multi Head System



- \* 关于焊头的台数, 根据用法不同会发生变化, 可以商议。
- \* 反馈线只有一条。
- \* 焊接电缆的长度全部相同。
- \* As the number of head will vary depending on the application, please consult with us
- \* There will be only one feedback line
- \* All weld cables have the same length

### 笔型焊头 Pen Type Head



Spring Type (300N)

尺寸 Dimension  
W26.2×D101×H196.2mm  
重量 Weight  
820g



Spring Type (65N)

尺寸 Dimension  
W21×D47×H192.1mm  
重量 Weight  
360g



Straight Type

尺寸 Dimension  
W18×D42×H166.9mm  
重量 Weight  
160g

项目	Items	NCU-15
加热温度	Heat Temperature	Main : Room temp~499°C
		After-Heat : Room temp~299°C
加热时间	Heat Time	0.1~9.9sec(0.1sec step)
电源	Power Source	AC200V ±10% 1Φ (Option : 100, 115, 230V)
压缩空气	Compressed Air	-
尺寸/重量	Dimension/Weight	W200 × D302 × H120mm ≒ 4.1kg

项目	Items	NT-15	NT-35
额定功率	Rated Power	1500VA	3000VA
输出电压	Output Voltage	1.0V, 2.0V, 3.0V	1.0V, 2.0V, 3.0V
尺寸/重量	Dimension/Weight	W160×D220×H200mm ≒14.2kg	W200×D270×H220mm ≒25kg

# 脉冲电流加热装置 *Pulse Heat Machine*

可以对应多种装置!

*It can be Applied to Various Types of Equipment!*

ACF热压接装置 ACF Thermo-Compression Bonder

## TCW-125C



- **热压焊咀对应的半自动装置**  
可以广泛的应用于LCD的ACF、加热带连接等热压接和锡锡焊接。
- **选项可以安装CCD照相机LCD显示屏**  
可以边看CCD照相机边调整工件的位置。
- **Semi-Automatic Equipment Accommodating the Heater Tool**  
It can be used for wide range of applications covering from thermo-compression bonding of ACF or heat seal of LCD to soldering
- **CCD Camera and LCD Monitor can be Connected as Options**  
Work can be positioned while monitoring the image from the CCD camera

项目	Items	TCW-125C
焊接电源	Power Supply	PHU-35
二次电压	Tap Voltage	1.0V, 2.0V, 3.0V
焊咀长度	Heater Tool Length	110mm Max
压力	Pressure	68.6~833N
重量	Weight	180kg

※选项：彩色显示屏，CCD照相机，卤素灯加热台  
※Options: Color monitor, CCD camera microscope, Halogen lamp Heater tool

### ■ 根据用途可以提供自动化设备方案、欢迎随时咨询。

We can Propose an Automated System Satisfying Your Requirement. Please Feel Free to Consult with Us

#### ● 使用脉冲电流加热装置的设备实例

Examples of Equipment Using Pulse Heat Unit



附带XYZ工作台  
XYZ Table Type



附带旋转工作台  
Turn Table Type



三个焊头方式  
Three Head Type



上下式脉冲电流加热装置  
Upper and Bottom Pulse Heat Type

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

最适合精密焊接和自动化设备!

Best Suitable for a Precise Joining & Automation!

片状热压焊咀型 Heater Tip Type

## 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

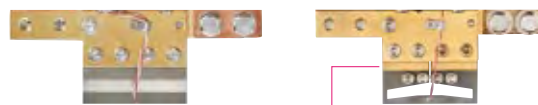
项目	Items	NA-111	NA-112
压力	Pressure Range	0.7~5N	5~65N
加压方式	Pressure Method	Spring	
行程	Stroke	取决于驱动装置 It's up to Drive Unit	
尺寸/重量	Dimension/Weight	W106×D48×H287mm≈0.6kg	W106×D48×H285mm≈0.6kg
驱动方式	Drive Method	Motor(NA-201, 201P), Air(NA-221), Manual(NA-231)	

大型热压焊咀型 Heater Tool Type

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



热压焊咀及支架 Heater Tool & Shank



片状热压焊咀用转换支架

Conversion Shank of Heater Tool Type Head for Heater Tip

- 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-153	NA-154	NA-155
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

# 驱动方式 Drive Unit

## 马达驱动、气缸驱动、脚踏驱动

Motor Drive, Air Drive and Manual Drive

### 马达驱动&控制器

Motor Drive & Controller

- 马达驱动分辨率达到  $1\mu\text{m}$  而支持精密焊接
- 保持稳定的加压状态提高焊接质量, 装配压力稳定功能(专利申请中)
- 根据焊接中的位置控制功能降低加压时的工件损伤
- 最大压力达到300N的高压力低温焊接可降低热损伤(使用NA-202P时)
- 彩色触摸屏和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
- 可保存7种焊接条件
- Motor drive with  $1\mu\text{m}$  resolution supports precise welding
- It equips with a pressure stability function to keep the pressure stable and to improve the quality of welding
- It reduces pressure damage by using a position control function during welding
- It reduces heat damage by using high pressure/low temperature welding processes with a max. 300 N force (When NA-202P is used)
- 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
- Seven operation conditions can be saved



Touch Panel Display



CNT-320A



NA-201P



NA-202P



CNT-310



NA-201

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

### 气缸驱动

Air Drive



NA-221, NA-222

### 脚踏驱动

Manual Drive



NA-231

项目	Items	NA-221	NA-222
驱动方式	Drive Method	空气 / Air	空气 / 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	0.4~0.6MPa	0.4~0.6MPa
尺寸/重量	Dimension/Weight	W78×D83×H280mm $\approx$ 1.3kg	W86×D85×H289mm $\approx$ 2.2kg

项目	Items	NA-231	
驱动方式	Drive Method	脚踏 / 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 $\Rightarrow$ W51×D79×H192mm $\approx$ 1kg	Foot Pedal $\Rightarrow$ W124×D268×H125mm $\approx$ 2.2kg

# 位移控制装置 Displacement Unit

实现了位移控制!

*Displacement is Realized!*

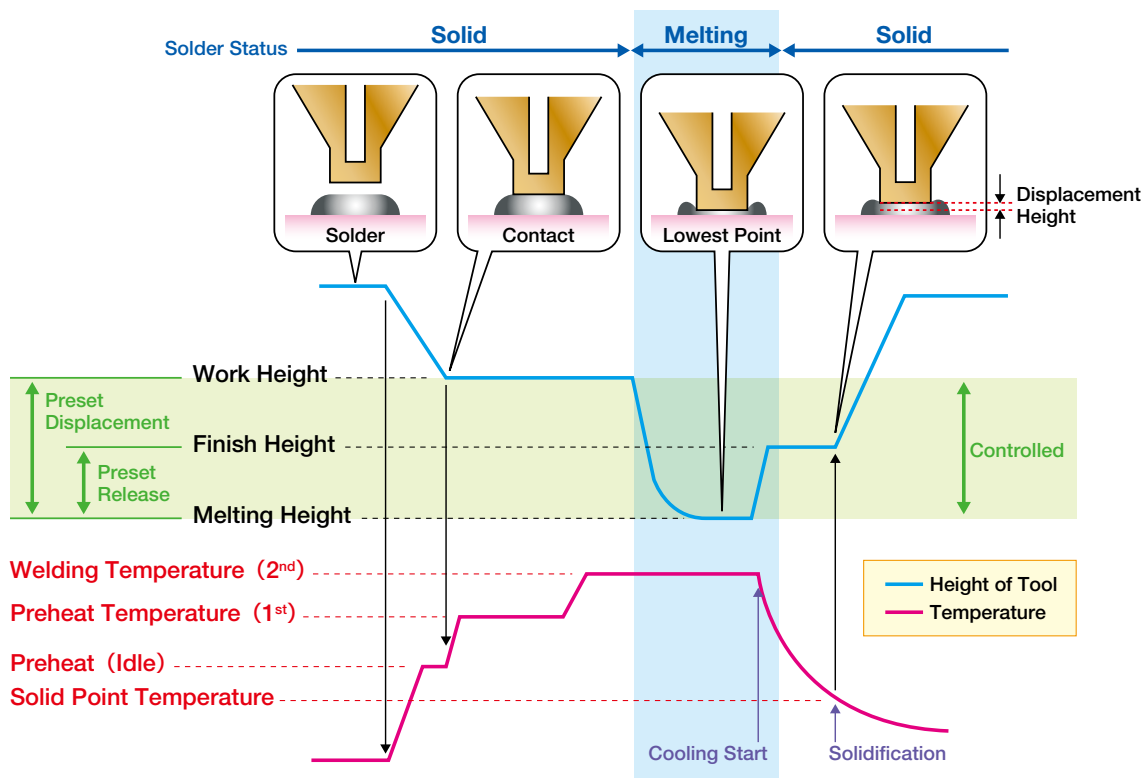
位移控制装置 Displacement Unit

## CNT-500

- 可以连接到 TCW-315、PHU-35、NCU-15
- 简便的触摸屏操作
- 通过控制位移来调整焊接熔化量
- 加热通电转移功能抑制对工件的热影响
- Connectable to TCW-315, PHU-35 and NCU-15
- Easy Operation by Touch Panel Control
- Control of Crushed Amount by Displacement Control
- Because of the Heat Shift Function, Thermal Impact to the Work is Minimized



温度和位移示意图 Temperature and Displacement Image



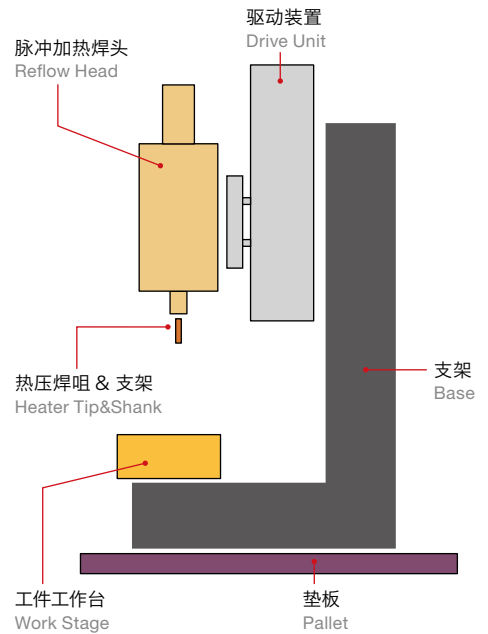
项目	Items	CNT-500
显示方式	Display	触摸屏 / Touch Panel
马达分辨率	Motor Resolution	6.25 $\mu$ m/pulse (NA-201)
位移控制分辨率	Displacement Setting Resolution	1 $\mu$ m/scale (0~8192 $\mu$ m range)
使用环境温度	Use-srounding Temperature	0 $^{\circ}$ C~40 $^{\circ}$ C (without freezing)
使用环境湿度	Use-srounding Humidity	85% or less (without condensation)
电源	Power Source	AC100V~240V
消耗功率	Consumption Power	50W or less
尺寸/重量	Dimension/Weight	W200×D360×H190mm $\approx$ 6.5kg

## 系统焊头配件

### System Head Accessory

#### 系统焊头基本构成

System Head Basic Configuration



#### 支架、工作台

Base and Stage

##### 支架

Base NA-301, 302P



##### 平行度调整工作台

Leveling Stage 11X-B5-F



##### 标准工作台

Stage 11X-B5



##### 微调功能工作台

XYθ Stage 11X-B5-F-MM



##### 加热工作台

Heater Stage 11X-B-H



#### 焊接电缆

Weld Cable



Length: 100mm Step Terminal Shape: D, L, DP

Ex : SFC - 60 - 500 - DD - 99

Material: SFC, WRC, FMC, EFC

Square: 22, 60, 66, 120mmSQ

Hole Size: 7, 9mm

#### 显微镜、垫板

Microscope Set and Pallet

##### 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



##### 垫板

Pallet

S-MP,  
S302-MP



# 脉冲加热焊头(一体型焊头) Reflow Head (Monolithic Type Head)

长年受到惠顾、安心可靠的热销产品!

Reliable Best Seller Head Favored by the Users over the Years!

标准型 Standard Type

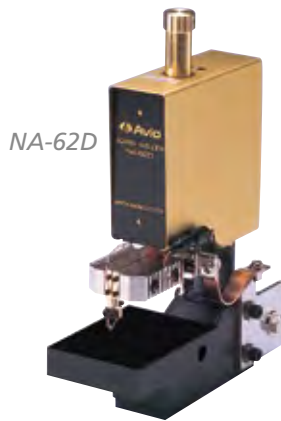
**NA-62D**

气缸驱动型 Air Drive Type

**NA-66**

■ 对应从研究开发到生产的合理的一体型焊头

It is a Monolithic Type Reasonably Priced Head Applicable from R&D to Volume Production



- 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-62D	NA-66
压力	Pressure Range	4.9~44.1N	4.9~44.1N
行程	Stroke	8mm	8mm
尺寸/重量	Dimension/Weight	W77×D212×H275mm≒2.4kg	W77×D212×H360mm≒3.8kg
驱动方式	Driving Method	脚踏 Manual by Foot Pedal	气压 Air

## NA-62D、NA-66用 显微镜、支架、垫板

Microscope, Stand and Pallet for NA-62D or NA-66

8X ~ 50X  
W550×D800×H20mm  
Height : 434mm



# 数码压力计 Digital Force Gauge

小型、轻量、便携

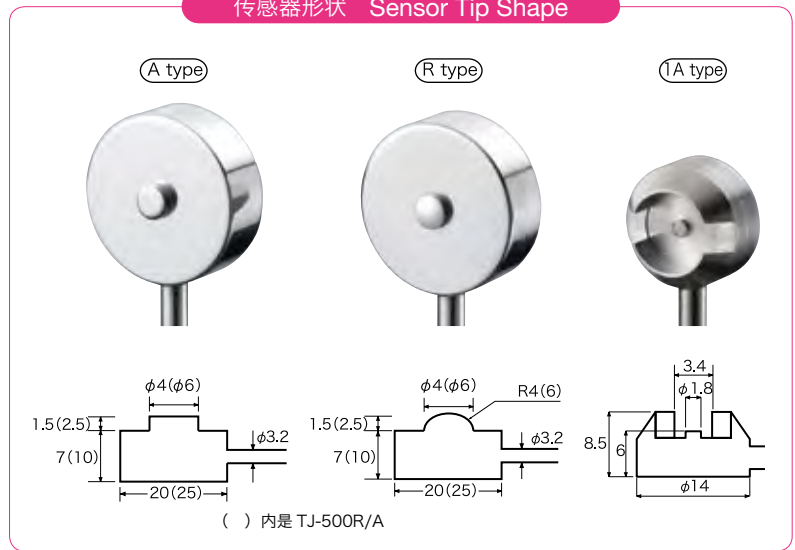
Compact, Light Weight and Handy Type

## FG-400 & TJ series



\* 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



- 小型、轻量
- 三种电源方式
- 显示保持功能
- 简单易行的零位调整
- 自动识别压力传感器的种类
- 装备有判定 (上限、下限) 功能

- Compact and Light Weight
- 3 Ways Power Supply
- Display Hold Function is Equipped
- Easy Zero Adjustment Function
- Automatic Recognition of the Type of Sensor
- Judgment Function (Hi&Low) is Equipped

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
通信接口	Interface	RS-232C
电源	Power Source	三号干电池, 镍氢电池, 专用交流电源适配器 (AC100V~240V) 1φ Use by AA type battery, Ni-H type battery 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-111,112 NA-151,152,153			NA-154 NA-155	

※ 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





# 焊接监测仪 Welding Monitor

## 实时监测位移和压力

Real Time Monitoring of Displacement and Force

压力监测仪 Force Monitor

### QC-100



QC-100

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
  - 与系统焊头组合容易实现自动化
  - 充实的通信功能方便生产管理 (输出测定值和比较判定结果)
  - 感应器的组装方便易行
  - 高精度测量焊接材料的变形量
  - 依据图表分析波形 (1秒 2000次的高速抽样)
  - 用2个条件测量、判定焊接过程 (通电前用A条件, 通电后用B条件测量、判定)
  - 根据压力和位移设定触发信号
- 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
  - 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 Applied Force or Displacement can be Set

项目	Items	QC-100	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 (2000times/sec)	
通电延迟、保持时间	Squeeze, Hold Time	0~0.9sec	
通信接口	Interface	RS-232C, I/O, analog output	
电源	Power Source	DC24V ±10% 2A	
尺寸/重量	Dimension/Weight	W170×D210×H150mm≒3.0kg	W170×D210×H150mm≒3.4kg

# 热压焊咀 Heater Tip / Heater Tool

备有多种类型!

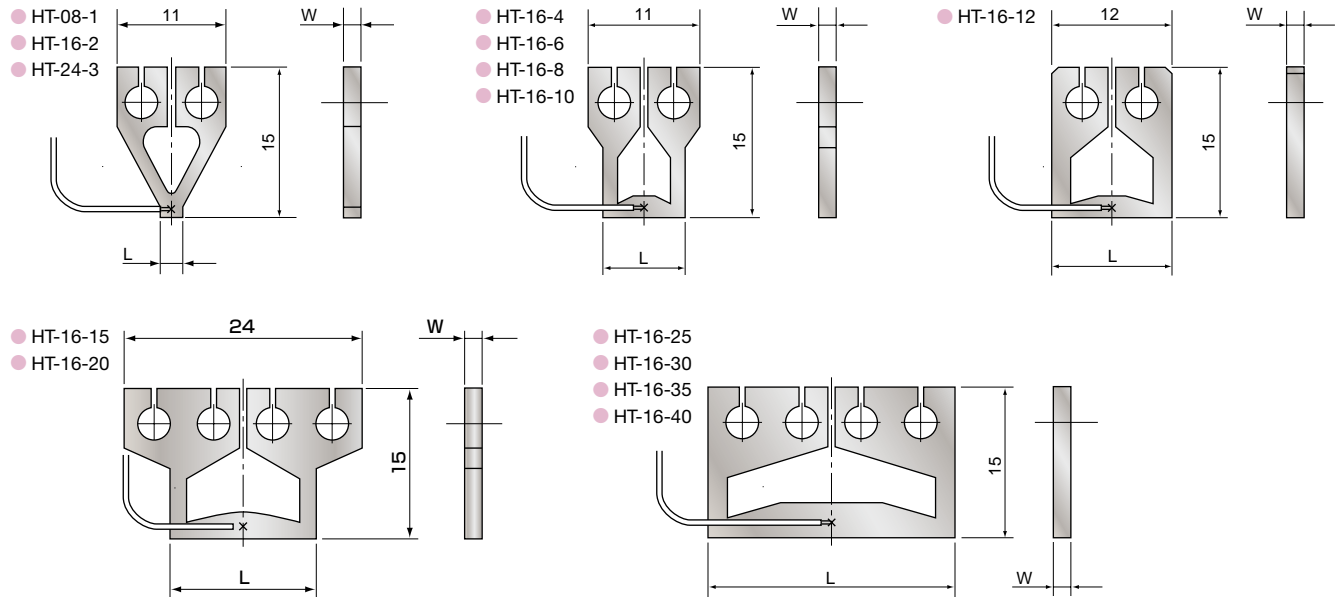
Various Standard Type is Prepared!

## 热压焊咀 Heater Tip

### 标准热压焊咀: HT-W(厚度)-L(长度)

Standard Heater Tip: HT- W(plate thickness)- L(tip length)

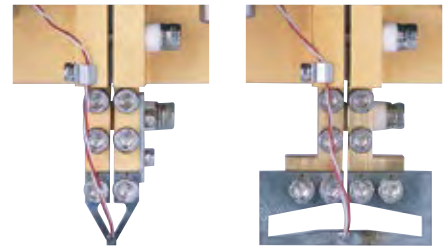
单位: mm  
unit: mm



### 定制品 Custom-ordered Item

※ 可定制的厚度: 0.5 / 0.8 / 1.0 / 1.2 / 1.6 / 2.4 / 3.0 / 3.2 / 4.0  
其他, 焊咀断面、倒角、特殊形状的加工可以事先在图面上指定。

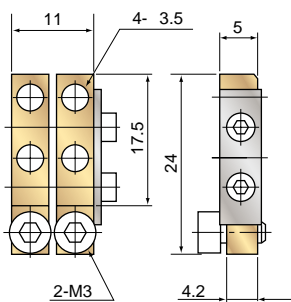
\* Applicable plate thickness: 0.5 / 0.8 / 1.0 / 1.2 / 1.6 / 2.4 / 3.0 / 3.2 / 4.0  
If special requirement like step shape, chamfering or others is required, please consult us by specifying them on the drawing



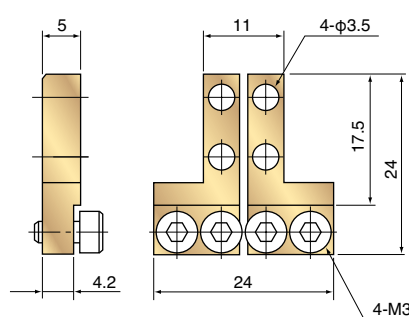
### 系统焊头用支架

Shank for System Head Series

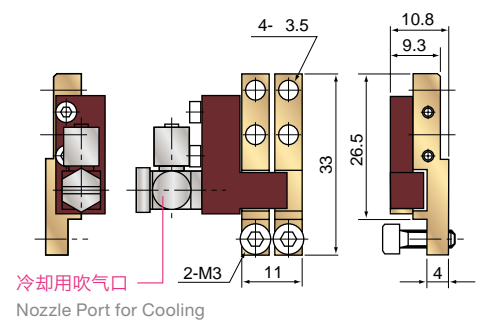
#### SHTH-S



#### SHTH-L

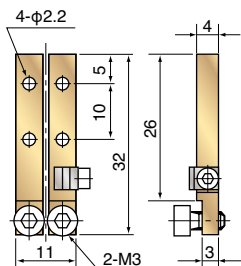


#### SHTH-S-T5-BL

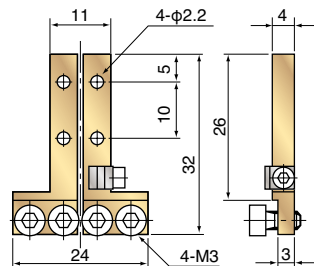


■ NA-62D、NA-66 用支架  
Shank for NA-62D or NA-66

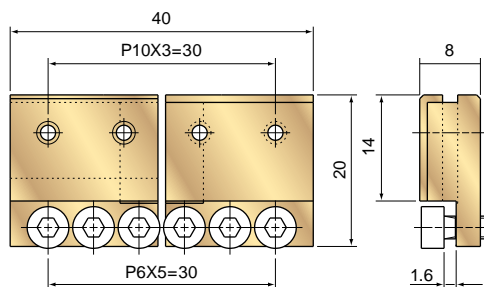
HTH-S



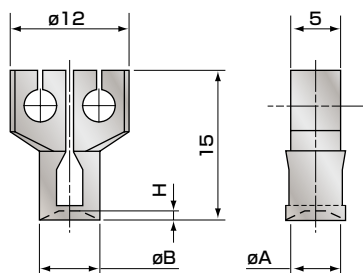
HTH-L



■ 系统焊头 (NA-15X 系列) 用转换支架  
Conversion Shank for System Head NA-15X Series



热铆接用焊咀 Heater Tip for Fusing Unit



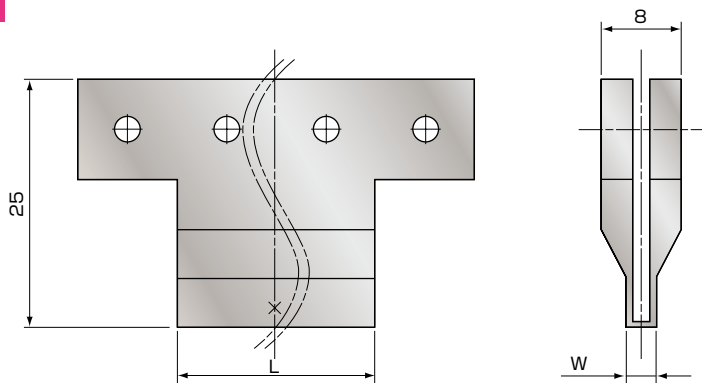
■ 参考形状 Heater Tip Dimension and Guideline for Boss Size

	尺寸 (Dimension)			树脂凸起参考尺寸 (Guideline for Boss Size)	
	φ A	φ B	H	φ	H
CHT-20	2.0	3.0	0.38	0.7	1.8
CHT-30	3.0	4.0	0.57	1.2	2.1
CHT-40	4.0	5.0	0.76	1.7	2.5
CHT-50	5.0	6.0	0.95	2.3	2.6
CHT-60	6.0	7.0	1.15	2.9	2.8

上記以外の焊咀形状、材質也可特殊定制。  
Sizes or Material of Heater Tip Other Than the Above are Available on Custom Order Basis  
也可以定制多点同时热压焊咀。  
Multi-point Simultaneous Heater Tip is Available on Custom Order Basis



热压焊咀 Heater Tool



此类型的热压焊咀只有定制品

W(厚度) × L(长度)  
W: 标准加工时为1.5mm以上  
断面加工时为0.6mm以上

※ 对于复杂的形状及使用条件, 需要事先询问后进行实验验证。

**This type Tool is a custom-ordered item**

W(tip thickness) × L(tip length)  
W: 1.5mm or more at the standard shape  
0.6mm or more at the step shape

\* When complicated shape or severe operating condition is required, it is recommended to consult us or conduct sample test by using actual parts before ordering

# 样品实验 Sample Test

公司设有实验室。

针对所提供的样品进行试验后返还并提供实验报告作为机型选择和性能评价的依据。

We will be pleased to test your sample with our proposed joining method, and return it with a report.

## ●实验室所在地

〒224-0053

日本AVIONICS株式会社 新横浜事业所

地址:横滨市都筑区池田町4206番地

## ●交通

从JR横滨铁路鸭居车站徒步7分钟

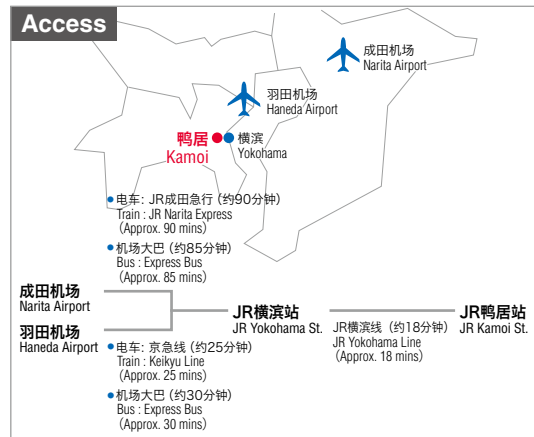
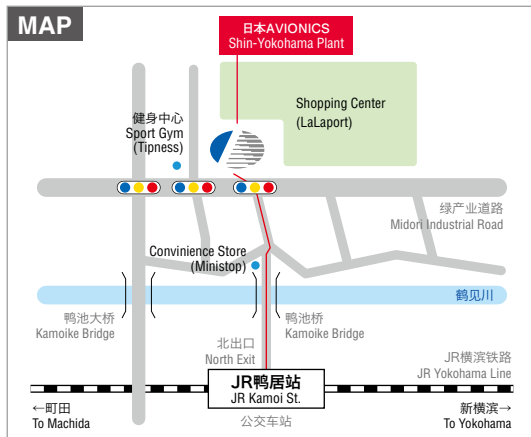
## ●Evaluation Laboratory

Nippon Avionics Co., Ltd. Shin-Yokohama Plant

Address: 4206, Ikonobe-cho, Tsuzuki-ku, Yokohama, 224-0053, JAPAN

## ●Direction

7 minutes on foot from JR Kamoi Station



## ⚠ 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、故障等。

※产品图片仅供参考，以实物为准。如外观及技术参数发生变化，恕不另行通知。

## ⚠ CAUTION

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

The appearance and specifications are subject to change without notice.

# NIPPON AVIONICS CO., LTD.

## Welding Products Division Sales Department

4206, Ikonobe-cho, Tsuzuki-ku, Yokohama,  
224-0053, Japan

TEL +81-45-930-3596

FAX +81-45-930-3597

URL <http://www.avio.co.jp/>



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