What is pulse heat?
It is Avio’s original process of utilizing resistance heat which is generated by passing an electric current through a metal heating body called a heater chip/heater tool, to instantaneously perform soldering, thermos-compression bonding, and plastic welding with heat and pressure.

Basic flow of the process

1. Press the heater tip/heater tool (Fig. 1) against the target work to pressurize.
2. Apply electric current to the heater tip/heater tool to raise the temperature from room temperature to preset temperature while pressurizing.
3. Hold pressure and heat for the set time.
4. When the set time is over, the welding is stopped, and when the temperature reaches to the preset cool temperature, the pressure is released.
5. The heater tip/heater tool return to room temperature. (Fig. 2)

Features of the pulse heat
The temperature control feeds back the temperature of the heater tip/heater tool and accurately reproduces the set temperature profile.

- The temperature rises quickly and the temperature reproducibility is good.
- Temperature profiles such as pre/main heat can be easily realized.
- Due to local heating, the heat effect to the surroundings is small.
- Since it is cooled while being pressed down, there is no unconnected due to floating.
- It does not depend on skill level of the worker.
Basic configuration and role of the pulse heat unit

The pulse heat unit is a device for soldering electronic parts and welding plastic parts. It consists of a reflow head to press the work for applying pressure, and a pulse heat power supply to apply electric current.

- **Pulse heat power supply:** Apply electric current to heater tip/heater tool.
- **Reflow head:** Press down the work and apply pressure.
- **Heater tip/heater tool:** This is the area to generate heat from the resistance. Relatively small size is called heater tip, and large size is called heater tool.

Also, there are various monitors to measure pressing force.
P5-6 Pulse Heat Power Supply

- Displacement pulse heat power supply
  - Simultaneous control of temperature and position of the heater tip
  - Ideal for highly reliable soldering

- General purpose pulse heat power supply
  - Ideal for soldering, thermocompression bonding, and heat caulking

- High power type pulse heat power supply
  - Ideal for automation of soldering, thermos-compression bonding, and heat caulking

P7-11 Reflow Head

- System Head
- Drive Unit
- Accessory
- Handheld Type Head
- Integrated Type Head

P12-13 Welding Monitor

- Force Monitor
- Digital Force Gauge

P13-14 Heater Tip/Heater Tool

- Heater Tip
- Heater Tool
Pulse Heat Joining Examples

**FPC (Flexible Printed Circuits)**

- **FPC + PCB Soldering**
- **Coated Wire + PCB Soldering**

**Assembly of Coaxial Cable**

**Glass Plate and FPC Thermal Compression Bonding**

**Heat caulking of Circuit Board**

**Heat Caulking of Lens**

**Plastic Casing**

**Soldering on the Ag film of piezoelectric ceramics**
Displacement pulse heat power supply
**TCW-DP100B**

Ultimate Pulse Heat Controller
Concurrency Control of Temperature and Displacement

---

<table>
<thead>
<tr>
<th>Item</th>
<th>TCW-DP100B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive unit</td>
<td>NA-201PB-B</td>
</tr>
<tr>
<td>Heating temperature</td>
<td>Room temperature ~600°C, 7°C step, E type/J type (Option)</td>
</tr>
<tr>
<td>Heating time</td>
<td>0.00 - 99.99sec.</td>
</tr>
<tr>
<td>Rated capacity</td>
<td>750VA Duty cycle 50%</td>
</tr>
<tr>
<td>Heat control</td>
<td>4 steps</td>
</tr>
<tr>
<td>Monitor function</td>
<td>Temperature, displacement, work height</td>
</tr>
<tr>
<td>Motor resolution</td>
<td>1μm</td>
</tr>
<tr>
<td>Moving speed</td>
<td>1 to 250.0mm/sec</td>
</tr>
<tr>
<td>Displacement control resolution</td>
<td>1μm</td>
</tr>
<tr>
<td>Interface</td>
<td>RS-232C, I/O</td>
</tr>
<tr>
<td>Transformer</td>
<td>Built-in</td>
</tr>
<tr>
<td>Transformer secondary voltage</td>
<td>0.88V, 1.24V, 1.75V, 2.47V, 3.5V</td>
</tr>
<tr>
<td>Power source</td>
<td>Single phase AC 200 - 240V ±10% 15A</td>
</tr>
<tr>
<td>Dimensions/Weight</td>
<td>W220 × D45.6 × H338 (Excluding protrusions) ≈ 23Kg</td>
</tr>
</tbody>
</table>

* It must be used in combination with an electric slider drive unit.

---

**Time chart**

- Temperature
  - Room temperature
  - Temperature rising, holding
  - Sealing
  - Room temperature

- Pressurizing
  - Standby
  - Pressure holding
  - Pressure release

- Condition of solder
  - Solid
  - Liquid
  - Solid

- Displacement control
  - Temperature profile
  - Heater tip position profile
  - Displacement profile

**Control the amount of penetration**
- Prevention of loose wire (damage reduction)
- Prevention of bridge

Cross section of strand wire

---

**High-precision displacement control**
As displacement amount is controlled by feedback with a resolution of 1 μm, a uniform amount of penetration is achieved.

**Various monitoring functions (temperature/displacement)**

**Digital temperature control**
The digital PID control method realizes a high-speed and high-precision temperature profile, and supports welding of fine wires and fine workpieces.

**Release function**
After heating, it secures the thickness of the solder between the workpieces.

**4-Steps heating**
Various temperature profiles enable to support wide variety of applications.

**Built-in controller function driven by electric slider**

**User interface**
As RS-232C & I/O are equipped as standard, it can be easily connected to external devices and can be mounted on an automatic machine.
General purpose pulse heat power supply

TCW-315 General purpose type
PHU-35 High power type

Best-selling models suitable for various joining such as soldering, thermos-compression bonding, and heat caulking

Large LCD equipped
Temperature profile at a glance

- Highly reliable joining
  Since it heats and cools while being pressurized, it is possible to join with less misalignment of the workpiece.

- Variety of temperature profiles
  Local and instantaneous heating suppresses heat effect on peripheral parts.

- High reproducibility
  Digital PID control provides good temperature and time reproducibility, eliminating the need for operator skill.

- Lead free compatible
  By setting high temperature and long-time heating, lead-free solder can be supported.

- User interface
  As RS-232C & I/O are equipped as standard, it can be easily connect to external devices and can be installed in an automatic machine.

- Various monitoring functions
  - Temperature monitor (Average value, peak value)
  - Abnormality detection (Excessive temperature rise, thermocouple disconnection)

- Other functions
  - Setting condition memory (15 conditions)
  - Electric valve control for heater tip, heater tool
  - Auxiliary thermocouple monitor

<table>
<thead>
<tr>
<th>Item</th>
<th>TCW-315</th>
<th>PHU-35/NT-35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating temperature</td>
<td>Room temperature ~ 600°C 1°C step, E type/J type \ Room temperature ~ 900°C K type (Option)</td>
<td>Room temperature ~ 600°C 1°C step, E type/J type \ Room temperature ~ 900°C K type (Option)</td>
</tr>
<tr>
<td>Heating time</td>
<td>000-999 (×100ms, ×10ms)</td>
<td>000-999 (×100ms, ×10ms)</td>
</tr>
<tr>
<td>Rated capacity</td>
<td>750VA (50%)</td>
<td>3KV (50%)</td>
</tr>
<tr>
<td>Heat control</td>
<td>2 steps</td>
<td>2 steps</td>
</tr>
<tr>
<td>Monitor function</td>
<td>Temperature</td>
<td>Temperature</td>
</tr>
<tr>
<td>Interface</td>
<td>RS-232C, I/O</td>
<td>RS-232C, I/O</td>
</tr>
<tr>
<td>Transformer</td>
<td>Built-in</td>
<td>NT-35</td>
</tr>
<tr>
<td>Transformer secondary voltage</td>
<td>0.88V, 1.24V, 1.75V, 2.47V, 3.5V</td>
<td>1.0V, 2.0V, 3.0V</td>
</tr>
<tr>
<td>Power source</td>
<td>Single phase AC200V ~ 230V×10% 15A (Option: AC100 ~ 115V)*</td>
<td>Single phase AC200V ~ 230V×10% 30A (Option: AC100 ~ 115V)*</td>
</tr>
</tbody>
</table>
| Dimensions/weight        | W200 × D320 × H283mm ≈19.5kg                | PHU-35: W278 × D250 × H120mm ≈7.4kg
  NT-35: W200 × D270 × H220mm ≈25kg |

* Power option is factory setting

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*PHU-35

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TCW-315

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NT-35

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PHU-35

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### Reflow head (System head)

**Heater tip type**

**NA-111, NA-112**

Ideal for precision joining and automation

<table>
<thead>
<tr>
<th>Item</th>
<th>NA-111</th>
<th>NA-112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure range</td>
<td>0.7 ~ 5N</td>
<td>5 ~ 65N</td>
</tr>
<tr>
<td>Pressure method</td>
<td>Spring</td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>It depends on adapted drive unit.</td>
<td></td>
</tr>
<tr>
<td>Drive method</td>
<td>Electrical slider (NA-201PB-B), Air (NA-221), Manual (NA-231)</td>
<td></td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>W106 × D48 × H287mm ≈0.6kg</td>
<td>W106 × D48 × H285mm ≈0.6kg</td>
</tr>
</tbody>
</table>

**Heater tip & shank**

- Since it is a vertical direct pressurization mechanism, it does not bend due to applied pressure
- Stable welding start by using photo sensor

**Reflow head (System head)**

**Pencil type** *(build-to-order)*

It supports multi-point caulking and automation

<table>
<thead>
<tr>
<th>Item</th>
<th>Spring type (300N)</th>
<th>Spring type (65N)</th>
<th>Normal type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>W26.2 × D101 × H196.2mm</td>
<td>W21 × D47 × H192.1mm</td>
<td>W18 × D42 × H166.9mm</td>
</tr>
<tr>
<td>Weight</td>
<td>820g</td>
<td>360g</td>
<td>160g</td>
</tr>
</tbody>
</table>

**Application examples**

- Multi-point heat caulking: Multi-head system

* Please consult us for the number of heads, as it varies with the application.
* There is only one temperature feedback line.
* All weld cables must have the same length.
Heater tool type
NA-151, NA-152, NA-153, NA-154, NA-155

- With air cooling port, with parallelism adjustment function
- Water-cooling shank is equipped as a standard (NA-154, NA-155)
- A heater tip can also be attached with use of a conversion shank

<table>
<thead>
<tr>
<th>Item</th>
<th>NA-151</th>
<th>NA-152</th>
<th>NA-153</th>
<th>NA-154</th>
<th>NA-155</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure range</td>
<td>1.2 ~ 7N</td>
<td>5 ~ 70N</td>
<td>20 ~ 150N</td>
<td>40 ~ 300N</td>
<td>100 ~ 600N</td>
</tr>
<tr>
<td>Pressure method</td>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>It depends on adapted drive unit.</td>
<td></td>
<td></td>
<td></td>
<td>30mm</td>
</tr>
<tr>
<td>Drive method</td>
<td>Electrical slider (NA-201PB-B), Air (NA-221), Manual (NA-231)</td>
<td>Electrical slider (NA-201PB-B), Air (NA-222)</td>
<td></td>
<td>Air</td>
<td></td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>W124 × D54.8 × H298mm ≈1kg</td>
<td>W145 × D64.5 × H332mm ≈2.2kg</td>
<td></td>
<td>W217 × D230 × H700mm ≈20.1kg</td>
<td></td>
</tr>
</tbody>
</table>

We propose an automation system according to needs of customers.
Example of equipment using a pulse heat unit (built-to-order product)

With XYZ table
Top and bottom simultaneous pulse heat type

With turn table
3-head type
ACF thermo-compression bonder
Drive unit
Electric slider & controller
CNT-320B & NA-201PB-B, NA-202PB-B

Touch panel display

- 1µm motor drive resolution supports precision welding
- It is equipped with a pressurization stabilization function that keeps stable pressure to improve welding quality
- Pressure damage is reduced by the position control function during welding
- Thermal damage is reduced by high pressure low temperature bonding with maximum pressure of 300N (when using NA-202PB-B)
- Color touch panel and lever type jog switch provide intuitive operation
- Low-speed soft landing with a moving speed of 0.1 mm/sec is available
- 7 operating conditions can be saved

<table>
<thead>
<tr>
<th>Item</th>
<th>CNT-320B &amp; NA-201PB-B</th>
<th>CNT-320B &amp; NA-202PB-B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatible head</td>
<td>NA-111, NA-112, NA-151, NA-152, NA-153</td>
<td>NA-154</td>
</tr>
<tr>
<td>Drive unit pressure</td>
<td>Max. 150N</td>
<td>Max. 300N</td>
</tr>
<tr>
<td>Drive method</td>
<td>Electrical slider</td>
<td></td>
</tr>
<tr>
<td>Drive stroke</td>
<td>Max. 50mm</td>
<td></td>
</tr>
<tr>
<td>Motor resolution</td>
<td>1µm</td>
<td></td>
</tr>
<tr>
<td>Power source</td>
<td>DC24V ±5% 4A (Option: AC adapt. AC100-240V)</td>
<td></td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>CNT-320B: W120 × D315.9 × H207mm ≅3.7kg</td>
<td>NA-201PB-B: W57.5 × D82.5 × H311.2mm ≅2.0kg, NA-202PB-B: W74 × D103.5 × H368.6mm ≅4.5kg</td>
</tr>
</tbody>
</table>

Air drive
NA-221, NA-222

<table>
<thead>
<tr>
<th>Item</th>
<th>NA-221</th>
<th>NA-222</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatible head</td>
<td>NA-111, NA-112, NA-151, NA-152, NA-153</td>
<td>NA-154</td>
</tr>
<tr>
<td>Drive method</td>
<td>Air</td>
<td>Air</td>
</tr>
<tr>
<td>Stroke</td>
<td>Max. 50mm</td>
<td>Max. 50mm</td>
</tr>
<tr>
<td>Descending speed</td>
<td>By adjusting the air in the cylinder (Tube diameter 4mm)</td>
<td>By adjusting the air in the cylinder (Tube diameter 6mm)</td>
</tr>
<tr>
<td>Air pressure</td>
<td>0.4 ~ 0.6MPa</td>
<td>0.4 ~ 0.6MPa</td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>W78 × D83 × H280mm ≅1.3kg</td>
<td>W86 × D85 × H289mm ≅2.2kg</td>
</tr>
</tbody>
</table>

Foot pedal
Drive unit
Manual drive
NA-231

<table>
<thead>
<tr>
<th>Item</th>
<th>NA-231</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatible head</td>
<td>NA-111, NA-112, NA-151, NA-152, NA-153</td>
</tr>
<tr>
<td>Drive method</td>
<td>Foot operated</td>
</tr>
<tr>
<td>Stroke</td>
<td>Max. 10mm + Height adjustment 40mm</td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>Main body: W51 × D79 × H192mm ≅1.0kg, Foot pedal: W124 × D268 × H125mm ≅2.2kg</td>
</tr>
</tbody>
</table>
System head basic configuration

- Reflow head
- Drive unit
- Slider controller
- Heater tool
- Base
- Work stage

Accessory
System head accessory

Base, stage
- Standard stage
  11X-BS
- Base
  NA-301, 302P
- Fine adjustment stage
  11X-BS-F-MM
- Stage with parallelism adjustment function
  11X-BS-F

Weld cable
- Ex: SFC - 60 - 500 - DD - 99
  Length: 100mm
  Unit: D, L, DP
  Terminal shape: D, L, DP
  Diameter of terminal hole: 7, 9mmφ
  Cross sectional area of conductor: 22, 60, 66, 120mm²

Microscope set, pallete
- Microscope
  S-SMS
  S-SMS-MS
- LED lighting
  S-SMS-LED
- Pallete
  S-MP,
  S302-MP
One-piece type head, ideal for development applications

Reflow head (Integrated head)

**NA-62D** Standard model
**NA-66** Air drive model

Bestselling head supported by patronage over decades

<table>
<thead>
<tr>
<th>Item</th>
<th>NA-62D</th>
<th>NA-66</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure range</td>
<td>4.9 ~ 44.1N</td>
<td>4.9 ~ 44.1N</td>
</tr>
<tr>
<td>Stroke</td>
<td>8mm</td>
<td>8mm</td>
</tr>
<tr>
<td>Drive method</td>
<td>Foot operated</td>
<td>Air</td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>W77 × D212 × H275mm ≒ 2.4kg</td>
<td>W77 × D212 × H340mm ≒ 3.8kg</td>
</tr>
</tbody>
</table>

**Handheld type**

(Build-to-order item)

<table>
<thead>
<tr>
<th>Item</th>
<th>Handheld type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure method</td>
<td>Manual pressure</td>
</tr>
<tr>
<td>Heat timing</td>
<td>Foot switch</td>
</tr>
<tr>
<td>Cooling method</td>
<td>Forced air-cooling</td>
</tr>
<tr>
<td>Weld cable length</td>
<td>2m</td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>φ32 × 165mm ≒ 250g</td>
</tr>
</tbody>
</table>

Notes: There is a limit to the heater tip size.
Digital force gauge

FG-400 & TJ series

Compact, lightweight and handy type

- Compact and lightweight
- 3 way power supply
- Display hold function is equipped
- Easy zero adjustment
- Automatic recognition of sensor type
- Judgement function (upper limit, lower limit) is equipped

* FG-400 and TJ series are sold separately.

<table>
<thead>
<tr>
<th>Item</th>
<th>FG-400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display function</td>
<td>0000-9999 N</td>
</tr>
<tr>
<td>Zero adjustment</td>
<td>Auto</td>
</tr>
<tr>
<td>Hold function</td>
<td>Sample/Peak</td>
</tr>
<tr>
<td>External output</td>
<td>RS-232C</td>
</tr>
<tr>
<td>Power source</td>
<td>AA batteries, nickel-hydrogen battery, Dedicated AC adaptor (Single phase AC100 - 240V)</td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>W77 × D140 × H27mm ≈ 300g</td>
</tr>
</tbody>
</table>

* A calibration certificate will be issued separately for a fee.

<table>
<thead>
<tr>
<th>Item</th>
<th>TJ-1A</th>
<th>TJ-20R or TJ-20A</th>
<th>TJ-100R or TJ-100A</th>
<th>TJ-500R or TJ-500A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>0 - 10N</td>
<td>0 - 196N</td>
<td>0 - 980N</td>
<td>0 - 4900N</td>
</tr>
<tr>
<td>Limit load</td>
<td>20N</td>
<td>294N</td>
<td>1470N</td>
<td>7350N</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2% of full scale</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sensor tip shape**

![Sensor tip shapes](image)

**Pressure gauge sensor built into equipment**

Example of system head built-in

<table>
<thead>
<tr>
<th>Item</th>
<th>TJS-1R</th>
<th>TJS-20R</th>
<th>TJS-100R</th>
<th>TJS-100A-NA124</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>0 - 10N</td>
<td>0 - 196N</td>
<td>0 - 980N</td>
<td>0 - 980N</td>
</tr>
<tr>
<td>Limit load</td>
<td>20N</td>
<td>294N</td>
<td>1470N</td>
<td>1470N</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±3% of full scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compatible system head</td>
<td>NA-111, 112, NA-151, 152, 153</td>
<td>NA-154, NA-155</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* A separate pusher is required to install in the system head.
Welding monitor
QC-100A Force monitor
Real-time monitoring of force

- Selectable between digital display and graphic display
- Easy to automate in combination with system head
- Easy quality management with enhanced communication functions (output of measured values and judgment results comparison)
- Easy installation of sensor
- High-precision measurement of displacement amount of the welding material
- Waveform analysis by graphic display (High speed sampling at 2000 times/sec)
- Welding process is measured and judged under 2 conditions (Measure and judge under A condition before welding, under B condition after welding)
- Trigger can be set by applied force and displacement

Heater Tip/Heater Tool
Heater Tip
Variety of standard type is available.

- **Standard heater tip: HT-W (plate thickness) – L (tip length)** Unit: mm
  - HT-08-1, HT-16-2, HT-24-3
  - HT-16-4, HT-16-6, HT-16-8, HT-16-10
  - HT-16-12
  - HT-16-15, HT-16-20

- **Custom order items**
  - Specifiable plate thickness: 0.5 / 0.8 / 1.0 / 1.2 / 1.6 / 2.4 / 3.0 / 3.2 / 4.0
  - In case of special shape requirement such as stepping, chamfering, etc., please specify it in the drawing.

<table>
<thead>
<tr>
<th>Item</th>
<th>Force monitor QC-100A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>0 ~ 1000N</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±3% of full scale</td>
</tr>
<tr>
<td>Sampling time</td>
<td>0.5ms (2000 times/sec)</td>
</tr>
<tr>
<td>Squeeze, hold time</td>
<td>0 ~ 0.9sec</td>
</tr>
<tr>
<td>Interface</td>
<td>RS-232C, I/O, Analog output</td>
</tr>
<tr>
<td>Power source/weight</td>
<td>DC24V ±10% 2A</td>
</tr>
<tr>
<td>Dimensions/weight</td>
<td>W170 × D210 × H150mm ≈ 3.0kg</td>
</tr>
</tbody>
</table>

* A calibration certificate will be issued separately for a fee.
* TJS series force sensor is used.
Shank for system head  Unit: mm

**SHTH-S**

**SHTH-L**

**SHTH-S-T5-BL**

Shank for NA-62D, NA-66  Unit: mm

**HTH-S**

**HTH-L**

Conversion shank for system head  (NA-15X series)  Unit: mm

**15X-SHTH-L-T1.6**

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**Heater Tip/Heater Tool**

**Heater tip for heat caulking**

**Reference shape**

<table>
<thead>
<tr>
<th>Dimensions (mm)</th>
<th>Volume (mm³)</th>
<th>Guideline for boss size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>φA</td>
<td>φB</td>
<td>H</td>
</tr>
<tr>
<td>CHT-20</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>CHT-30</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>CHT-40</td>
<td>4.0</td>
<td>5.0</td>
</tr>
<tr>
<td>CHT-50</td>
<td>5.0</td>
<td>6.0</td>
</tr>
<tr>
<td>CHT-60</td>
<td>6.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Other heater tip shapes and materials are also available on custom order basis. Multi-point simultaneous heater tip is available on custom order basis.

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**Heater Tip/Heater Tool**

**Heater Tool**

This type of tool is custom order item

W (Tip thickness) × L (Tip length)

W: 1.5mm or longer at standard processing

0.6mm or longer at step shape processing

* When complicated shapes or usage under severe condition is required, it is recommend to consult us in advance, or conduct a sample test before ordering.
Information on sample test
Avio laboratory offers you to perform sample test using actual equipment for welding evaluation and model selection. We also support remote sample test using web conferencing tools. It is also possible to make a test with samples you sent, and we return them after the test. Please see our website for details.

Location of laboratories

Shin-Yokohama Plant
4206, Ikonobe-cho, Tsuzuki-ku, Yokohama, 224-0053, Japan
Access
7 minutes on foot from JR Kamoi station

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TEL +81-45-930-3596
FAX +81-45-930-3597
URL https://www.avio.co.jp/english/

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.