

SW-3500-20/SH-H3K7

Ultrasonic Metal Welder



Highly Reliable Welding of Aluminum Cables to Copper Terminals Welds Copper/Aluminum Harnesses, Bus Bars, and Foil Laminates

- **Spring Pressure Sync Mechanism**

Excellent response to the pressure variations prevents slip between horn and work, reduces ultrasonic energy loss and minimizes dust and waste.

- **High Rigidity Pressure Mechanism**

Maintains very small deflections to ensure uniform weld side pressure.

- **Unique, Original Design Ultrasonic Oscillation Frequency Automatic Tracking System**

Ensures stable vibration amplitude during high loads.

- **High Performance Depth Control (1 μ m Resolution Linear Scale)**

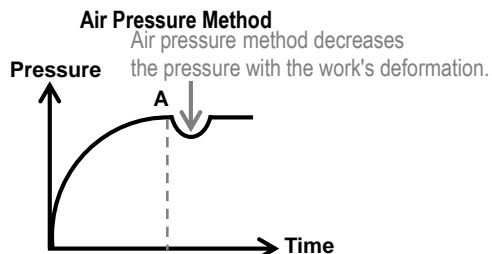
Oscillation is controlled by feedback of sinking of work and work height.

- **4 Types of Oscillation Control Method**

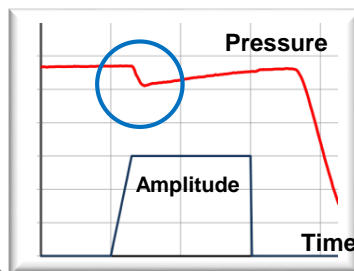
Time, Work Sinking Value, Work Height, Applied Energy



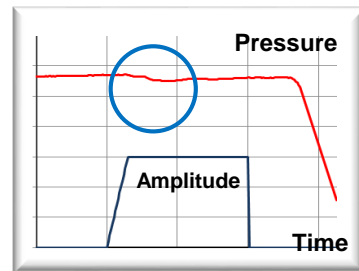
Spring Pressure Sync Mechanism



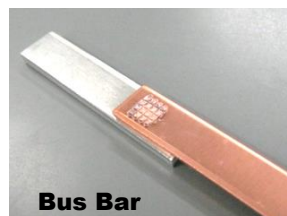
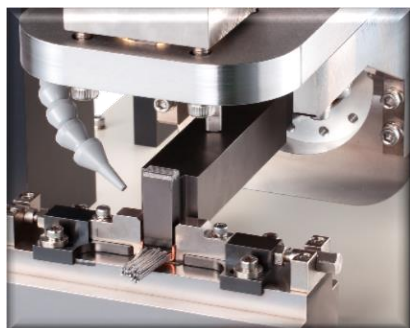
Without Spring Sync Function



With Spring Sync Function (Avio)



Oscillation Time 0.1 sec



NIPPON AVIONICS CO., LTD.

SW-3500-20/SH-H3K7 Ultrasonic Metal Welder

- **Easy Management**
- **Easy Operation**
- **Easy System Integration**

- Easy Management with Graphic Monitor Function

- Ultrasonic Peak Output
- Ultrasonic Energy
- Sinking Amount of the Work
- Work Height

- Simple Operation, Easy-to-read Display

- 7-inch LCD Touch Panel
- Intuitive Operation
- Graphic Display

- Setting and Management of Data via Serial Communication (RS-232C)

- Weld Conditions
- Monitor Value
- Judgment Result

| Model | Feature | Specification |
|------------------------------------|------------------------------|---|
| Ultrasonic Generator SW-3500-20 | Maximum Output Power | 3,500 W |
| | Nominal Frequency | 20 kHz |
| | Oscillation Method | Automatic Tuning Hold Master Oscillator System (ATHMOS) |
| | Amplitude Adjustment | Variable (30 - 100%, 1% step) |
| | Control Mode | Time/Depth/Height/Energy |
| | Power Source | 3 ϕ AC 200 V, 20 A |
| | Dimension | W250 x D450 x H375 mm |
| | Weight | 20 kg |
| Ultrasonic Head SH-H3K7 | Pressure Follow-up Mechanism | Spring + Air |
| | Adjustable Pressure Range | 1,700 N - 3,700 N |
| | Stroke | 50 mm |
| | Supply Air Pressure | 0.5 MPa (Clean, Dry Air) |
| | Dimension | W380 x D600 x H935 mm |
| | Weight | 102 kg (Horn and Anvil excluded) |

Operation Screen

The Operation Screen displays the following information:

- OPERATE** (Title)
- PRG. No 0** and **PRG. NAME**
- MENU** button
- OSC. CONTROL** and **TIMER** tabs
- WELD MONITOR** with **OK** button
- OSC. TIME**: 0.000 sec
- DEPTH**: 0.000 mm
- HEIGHT**: 0.000 mm
- ENERGY**: 0 J
- PEAK POWER**: 0.0 W
- FREQUENCY**: 0.000 kHz
- TD SPEED**: 0.000 mm/s
- WELD COUNTER** with **SET UP** button
- COUNT1**: 0, **COUNT2**: 0
- ACT IN** buttons
- CURSOR** and **SCALE** settings
- TIME**: 0.000, **SCALE**: 0.3 sec
- DEPTH**: 0.000, **HEIGHT**: 0.000, **ENERGY**: 0, **POWER**: 0, **FREQUENCY**: 0.000, **SPEED**: 0.000
- SET AMPLITUDE**: 0.000
- GRAPH** showing a waveform
- TEST MODE**, **CONDITION**, and **GRAPH SETTING** buttons
- ORG** and **STOP** buttons

Welding Condition Setting Screen

The Welding Condition Setting Screen displays the following information:

- DATA SET (TIMER)** (Title)
- BACK** button
- HELP** button
- DOWN** button
- OSC. BEFORE PRESS** checkbox
- AMPLITUDE**: 0.000, **HEIGHT**: 0.000, **UP TIME**: 0.000
- OSC. TIME OUT** checkbox
- OSC. TIME**: 0.000, **AMPLITUDE**: 0.000, **RELEASE**: 0.000
- AFTER BURST** checkbox
- OSC. TIME**: 0.000, **AMPLITUDE**: 0.000, **RELEASE**: 0.000
- DATA SAMPLING**: 1.0msec
- WELD MONITORING** checkboxes: **OSC. TIME**, **DEPTH**, **HEIGHT**, **ENERGY**, **PEAK POWER**, **FREQUENCY**, **TD SPEED**
- OSC. TIME**: 0.000, **DEPTH**: 0.000, **HEIGHT**: 0.000, **ENERGY**: 0, **PEAK POWER**: 0, **FREQUENCY**: 0.000, **TD SPEED**: 0.000
- AMPLITUDE SETTING** section with **1st AMPLITUDE** and **2nd AMPLITUDE** buttons
- WORK DETECTION** section with **TD TRIGGER** and **HEIGHT** buttons
- FIRST AMPLITUDE** section with **AMPLITUDE**: 0, **UP TIME**: 0.000, **WELD TIME**: 0.000
- SQUEEZE TIME**: 0.000
- TOTAL OSC.TIME**: 0.000
- HOLD TIME**: 0.000
- OPERATE** button

CAUTION

BEFORE OPERATION, read the Operation Manual carefully. This unit should be located away from water, moisture, steam, dust and soot to prevent fire, electrical shock, and operational problems.

*The appearance and specifications are subject to change without notice.

**Requests for Sample Testing are Welcomed.
Please Contact Us.**



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