WELDING & LASER MACHINE
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PALLET CHUCK
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WELDING & LASER MACHINE

METROLOGY

CHEMICAL

POLLUTION SOLUTION
The high-power YAG laser with a maximum power of 120 W and one pulse energy of 90 Joules realizes high-precision welding with a variety of metals and alloys. Moreover, it comes equipped with a triple safety system with a filter glass for the YAG laser and two electronic shutters. It also has a binocular microscope with crosshair marker for pinpoint micro welding, and an indication beam essential for high-precision welding. We offer reliable performance in fully equipped units at the best prices in the industry.

Full security and safety functions added!

The powerful laser must be handled carefully to avoid the risk of blindness. The SW-L120 was designed for reliability and comes equipped with a triple safety system using two electronic shutters in addition to a filter glass for the YAG laser.
Accurate welding! Astonishing prices!

YAG Laser Mold Padding Welder

**Indication beam for precise, accurate welding!**

The indication beam enables precise, accurate welding. Radiation of the indication beam to the target point enables precise welding of the target area.

**Simple operation for accurate welding!**

Setup can be finished simply by specifying the welding parameters on the control panel. In addition, the binocular microscope has a crosshair marker. Common use of the indication beam assures precise, accurate welding. Furthermore, welding materials specifically for a laser are available for more efficient operation.

**High-power welder at an astonishing price!**

The high-power YAG laser with a maximum power of 120 W and one pulse energy of 90 Joules enables high-precision welding of a variety of metals and alloys. The welder can be used for 0.2 mm micro welding up to 0.5 mm padding. Furthermore, our original distribution system has resulted in an astonishingly low price. In addition, after-sale technical service will certainly achieve customer satisfaction. Compare performance, equipment, price, and service with other manufacturers.
**WELDPRO**

**SW-L20**

**SANWA WELD PRO**

**Ultra-precision YAG Laser Mold Padding Welder**

**Broad Application Range**

- Aluminum mold
- Plastic mold
- Die casting mold
- Press mold
- Glass mold
- Blow mold
- Rubber mold
- Copper alloy mold

**Diverse Purposes**

- Parting line part, slide edge areas where shocks are applied
- Pin-gate areas, tunnel-gate areas
- Repair of ejector-holes, thin edge areas
- Smoothing pinholes and surface depressions after argon welding
- Padding after electric discharge machining, nitriding, and tufftride processing

**Example of correction process**

1. Groove W 1mm D 0.3mm
2. Padding weld material 0.4mm 0.2mm from surface
3. Rough finish # 1,000
4. Mirror finish # 8,000

**Repair Examples**

1. Corner edge
2. Thin part
3. Parting line

**Reliable total support**

**Quality + Service = Trust**

Our duty is not only to simply sell our products but also to deliver products where quality is strictly controlled to ensure customer safety and to help improve efficiency. Furthermore, we support our customer by providing reliable after-sale service, including inspection and repair, and by supplying consumables as long as our products are used. Our greatest pleasure is achieving satisfaction and trust from customers.
Accurate welding! Astonishing prices!

YAG Laser Mold Padding Welder

Repair Examples

- Capable of welding uniform and accurate straight lines
- Aluminum mold

Configuration (Include option)

```
<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tool Box</td>
</tr>
<tr>
<td>2</td>
<td>Replacement filter for water-cooled machine.</td>
</tr>
<tr>
<td>3</td>
<td>Filter replacement tool.</td>
</tr>
<tr>
<td>4</td>
<td>Wire rod for laser welding machine.</td>
</tr>
<tr>
<td>5</td>
<td>Foot switch for laser.</td>
</tr>
<tr>
<td>6</td>
<td>Foot switch for worktable.(option)</td>
</tr>
<tr>
<td>7</td>
<td>Protective glasses for YAG.</td>
</tr>
<tr>
<td>8</td>
<td>Screwdriver</td>
</tr>
<tr>
<td>9</td>
<td>Gsa gauge</td>
</tr>
<tr>
<td>10</td>
<td>Purified water for water-cooled machine.</td>
</tr>
<tr>
<td>11</td>
<td>Worktable.(option)</td>
</tr>
</tbody>
</table>
```

Wire rod for laser welding machine.

This is a straight-rod welding material suitable for laser welding machines. The rod, which is not wound around a reel, can be used as a straight rod. It is convenient for micro welding.

```
0.5mm
0.4mm
0.3mm
0.2mm
```

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>YAG</th>
<th>YAG pulse output time.</th>
<th>0.5~20ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser beam</td>
<td>YAG</td>
<td>Laser wavelength</td>
<td>1.06 μm</td>
</tr>
<tr>
<td>Laser wavelength</td>
<td></td>
<td>Pulse frequency</td>
<td>0.5~20Hz</td>
</tr>
<tr>
<td>Maximum output</td>
<td>120W</td>
<td>Focal diameter</td>
<td>0.2~2mm</td>
</tr>
<tr>
<td>Pulse energy</td>
<td>90J</td>
<td>Input Voltage</td>
<td>AC200V</td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
<td>W 595 X D 680 X H 1020 (mm)</td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td></td>
<td>W 350 X D 1035 ~ 1300 X H 1000 ~ 1170 (mm)</td>
<td></td>
</tr>
<tr>
<td>Head</td>
<td></td>
<td>W 475 X D 710 X H 810 (mm)</td>
<td></td>
</tr>
<tr>
<td>Cooled machine</td>
<td></td>
<td>W 450 X D 500 X H 635 ~ 785 (mm)</td>
<td></td>
</tr>
</tbody>
</table>

* The specifications and the external shape may change without advance notice due to revisions and enhancement of the product.
## Welding materials

<table>
<thead>
<tr>
<th>Type</th>
<th>Wire</th>
<th>Hardness after welding HRC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ø 0.5</td>
<td>Ø 0.4</td>
</tr>
<tr>
<td>Plastic mold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAK-80</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>STAVAX</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Die cast mold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAS-1</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>QRO-90</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Press mold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKH-51</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>SKD-11</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

- These items may partially change depending on the contents of the customer's work.

## Optinal materials

<table>
<thead>
<tr>
<th>Type</th>
<th>Wire</th>
<th>Hardness after welding HRC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ø 0.5</td>
<td>Ø 0.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic mold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAK-80</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>NAK-55</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>HPM-50</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>HPM-38</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>HPM-2</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>STAVAX</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>RIGOR</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>IMPAX</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>NICKELalloy</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>S50C (5m)</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Die cast mold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKD-61</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>ORVAR</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>QRO-90</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>MAS-1</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Press mold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKD-11</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>SKH-51</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>SVERKER</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For nitriding</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>For copper alloy</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
Further evolution towards a new generation!

Marvelous high specifications
SW-V01 is here!

More precise, easy-to-use new generation welder

High specification model surpassing laser welding

Marvelous high specifications

The two functions of resistance welding and high-precision TIG welding are integrated into one; five additional functions are newly introduced. This welder can appropriately support various welding conditions. The minimum current for the TIG welding has been reduced to 2A. By applying the ultra precision mode (FINE mode), high precision, fine welding has been materialized. The easy-to-use characteristics and performance surpass the laser welder and support a wide range of customer needs.

5 New Functions

- **Ultra precision mode**
  By selecting the “FINE mode,” this welder makes it possible to weld even a fine core pin (diameter 0.2), which was too small for an ordinary welder.

- **Weld Navigation**
  Appropriate current and welding time will automatically be set and displayed by setting the welding target area, welding material, and size.

- **Data memory mode**
  With the SAVE mode, data for welding conditions fixed by an operator can be stored and read out again the next time.

- **Continuous TIG mode**
  When a large area will be welded, the Continuous TIG mode provides smoother welding more quickly than laser welding. (Interval time: 0.1 sec – 2.0 sec)

- **Lead arc**
  By emitting a minute arc (2A) to the welding target point in advance, the target portion can be welded more precisely.
Ultra-precision Mold Padding Welder
Compliant with CE and CCC Marking.
Designed with Special Attention to the Environment and Safety.

WELDPRO SW-VOI WELD PRO SW-V01

Broad Application Range
- Plastic mold
- Die casting mold
- Press mold
- Glass mold
- Blow mold
- Rubber mold
- Copper alloy mold

Assured Resistance Welding and Precise TIG welding
Precise current-carrying time is achieved through inverter control for resistance welding (1-30 m sec) and TIG welding (1-600 m sec), and then reliable tack welding and precise TIG welding can be assured. A welding current can also be adjusted up to ones for resistance welding (30-750 A) and TIG welding (2-250 A).

Diverse Purposes
- Parting line part, slide edge areas where shocks are applied
- Pin-gate areas, tunnel-gate areas
- Repair of ejector-holes, thin edge areas
- Smoothing pinholes and surface depressions after argon welding
- Padding after electric discharge machining, nitriding, and tufftride processing

Various kinds of processing after welding are available
Electric discharge machining, creping, and blasting are possible after welding, as well as heat-treating and nitriding.

Repair examples
Connector core pin area
Helicoid slide edge area
Welding of inclined pins (Nitriding)
Polished lens barrel (Helicoid)
Welding of inclined pins (Nitriding)
Polished lens barrel (Helicoid)
WELD PRO SW-V01

Configuration (Include option)

[Image of configuration diagram]

Wiring diagram

[Image of wiring diagram]

Specifications

- Resistance welding
- TIG welding

- Input Voltage: Single Phase AC200/230V 50/60Hz
- Rated Output Current: 10.4 kVA (Peak value) 6.3 kVA
- Maximum Voltage of No-Load: 76 V
- Output Current: 30~750 A 2~250 A
- Welding Time: 1~30ms 1~600ms
- Repetition Period: 400ms 0.1~2.0s

- Control Method: Inverter Method
- Cooling Method: Forced air cooling
- Dimensions(W×D×H)mm: 204 ×425 ×390
- Weight: 23.8kg

Special materials

- Dark welding helmet
- Work microscope with a shield (x10)
- Torch stand (2-axis stage Y, Z)
- Halogen light

* For details, please refer to the optional accessory page.

Welding materials

<table>
<thead>
<tr>
<th>Type</th>
<th>Materials</th>
<th>ø 0.8</th>
<th>ø 0.6</th>
<th>ø 0.4</th>
<th>ø 0.3</th>
<th>ø 0.2</th>
<th>ø 0.1</th>
<th>ø 0.075</th>
<th>ø 0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic mold</td>
<td>NAK-80</td>
<td>● ● ● ● ● ● ● ● • 40~42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>STAVAX</td>
<td>● ● ● ● ● ● ● ● • 52~55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Die cast mold</td>
<td>MAS-1</td>
<td>● ● ● ● ● ● ● ● • 28~30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GRD-90</td>
<td>● ● ● ● ● ● ● ● • 50~53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press mold</td>
<td>SKH-51</td>
<td>● ● ● ● ● ● ● ● • 60~62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SKD-11</td>
<td>● ● ● ● ● ● ● ● • 55~57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Optinal materials: Wire Ø 0.8 shall be sold at 5m.

- Plastic mold: NAK-80, STAVAX
- Die cast mold: MAS-1, GRD-90
- Press mold: SKH-51, SKD-11

Safety Remarks

* The operation, maintenance, and inspection of this product must only be conducted by a specialist thoroughly familiar with the product.

* For details, please refer to the optional accessory page.
The SW-808 is a capacitor discharging deposition equipment. The compact size incorporates a high-output circuit and is easy to carry.


Superior Workability
- Superior weldability using condenser spot welding.
- Easy milling and electrical discharge machining after repairs.
- Superior performance to repair narrow and fine areas.
- Easy padding by layering several thin welding plates on top of each other.
- Newly designed handpiece to boost workability.

User-Friendly
- Easy viewing operation panel, makes work status apparent at a glance.
- Highly portable, lightweight and compact design doesn’t limit work site, either.
- Built-in alarm light to check overheating upon overloaded operation.
- Standard foot switch boosts work convenience since both hands will be free to use.
- Featuring high-insulation performance and high voltage capacity.

The ensured safety design allows anyone to operate the equipment.

Notable Repair Examples

Capable of Diverse Repairs on Mold Padding.

Broad Application Range
- Plastic mold
- Die-cast mold
- Press mold
- Glass mold
- Blow mold
- Rubber mold

Diverse Purposes
- Repair parting lines, mounting or edges.
- Bury pinholes or repair scratching in slide areas.
- Repair excessive cutting away after machining.
- Shape sharp tips or fine dents.
Introducing a New Model that Starts a New Era in Pad Welding!

Diverse Features Only Possible with a Microcomputer Controlled Mechanism

- High efficiency condenser discharge system using high-tech switching circuit.
- Lightweight design possible with microcomputer controlled circuit.
- High speed continuous welding.
- Selectable 2 mode, single or continuous, welding operations.
- 20-step output adjustment, fine tuning possible through LED parameter.
- Constantly stable output regardless of fluctuating input.
- Two pulse current widths, allows for user-friendly one-touch switching for easy operation of the most complex works.

Easy-to-Use Hand Pieces

The hand piece is designed not to resist heating after long periods of use. (You can choose the appropriate hand-piece depending on your work.)

Configuration

- Tool box
- Output Cord (1.3 m)
- Ground wire (1.0 m)
- Foot Switch
- Electrode Holder (handpiece)
- Ground Cooper Plate (60 x 145 x 2t)
- Metal Cutter
- Fuse (2 pieces)
- Electrode (round/flat)
- Welding Material (Plate/Paste/Porous Metal/Yarn)

Welding Material for SW-808 (sold separately)

- We offer various materials which are ready for various molds.
- For further details, please see the page on welding materials.
### Welding Material for SW-808 (sold separately)

<table>
<thead>
<tr>
<th>Plate Metal</th>
<th>Powder</th>
<th>Paste Metal</th>
<th>Porous Metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAK-80</td>
<td>NAK-80</td>
<td>NAK-80</td>
<td>Nickel Alloy</td>
</tr>
<tr>
<td>HPM-1</td>
<td>HPM-38</td>
<td>HPM-38</td>
<td>SUS</td>
</tr>
<tr>
<td>HPM-2</td>
<td>HPM-50</td>
<td>HPM-50</td>
<td>Other</td>
</tr>
<tr>
<td>HPM-38</td>
<td>SKD-61</td>
<td>SKD-61</td>
<td>-</td>
</tr>
<tr>
<td>HPM-50</td>
<td>SKD-11</td>
<td>SKD-11</td>
<td>-</td>
</tr>
<tr>
<td>SKD-61</td>
<td>Nickel Alloy</td>
<td>Nickel Alloy</td>
<td>-</td>
</tr>
<tr>
<td>SKD-11</td>
<td>Yarn Metal</td>
<td>Electrode (Copper Tungsten)</td>
<td>Handpiece</td>
</tr>
<tr>
<td>IMPAX</td>
<td>Nickel Alloy</td>
<td>(round) 2Ø X 50</td>
<td>13Ø</td>
</tr>
<tr>
<td>RIGOR</td>
<td>SUS</td>
<td>(round) 3Ø X 50</td>
<td>18Ø</td>
</tr>
<tr>
<td>CALMAX</td>
<td>Other</td>
<td>(round) 4Ø X 50</td>
<td>-</td>
</tr>
<tr>
<td>STAVAX</td>
<td>-</td>
<td>(round) 5Ø X 50</td>
<td>-</td>
</tr>
<tr>
<td>QRO90</td>
<td>-</td>
<td>(flat) 1.5X5X50</td>
<td>-</td>
</tr>
<tr>
<td>YAG</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Power Specifications

<table>
<thead>
<tr>
<th>Method</th>
<th>Condenser Electrical Discharge System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>Single Pase 230V 50/60Hz</td>
</tr>
<tr>
<td>Consumption electric power</td>
<td>630VA</td>
</tr>
<tr>
<td>Output</td>
<td>3000A MAX</td>
</tr>
<tr>
<td>Tact Time</td>
<td>0.27sec. MIN</td>
</tr>
<tr>
<td>Control</td>
<td>CPU Controlled</td>
</tr>
<tr>
<td>Others</td>
<td>Built-in, single, continuous electricity switching function</td>
</tr>
<tr>
<td>Dimensions(W×D×H)mm</td>
<td>180 x240 x390</td>
</tr>
<tr>
<td>Weight</td>
<td>approx 17kg</td>
</tr>
</tbody>
</table>

*Specifications may vary without prior notice.*
The “Type-2” model is a simple-design washer with selected functions. It features the circulating pump, heater with controls, and a digital timer with a simple design, thus enabling comfortable and simple cleaning work.

Compact Design

The outside dimensions are 750 mm in width, 760 mm in depth, and 650 mm in height, and the compact design is not location selective. In addition, the simple design is the result of narrowing down the features to only the necessary functions. This delivers a convenient, simple washing operation.
The use of a heater will generate a temperature difference at the upper and the lower part of the liquid in the washing tank. The Wave Clean washer stirs up the cleaning liquid evenly with the circulating pump. The reflux flow of the liquid prevents generation of uneven temperatures in the washing tank. As a result, the mold can be cleaned without unevenness and in every hole and corner.

### Comparative temperature rise distribution graph

**With Circulating pump**

The heater is preset at 60°C

When 35 minutes pass after the start of heating, there is almost no temperature difference between the surface and the lower part of the vessel.

- Surface: 69.9°C
- Upper part: 68.9°C
- Lower part: 38.7°C

When a circulating pump is working, it can maintain the preset temperature uniformly even it reaches 60°C.

**No Circulating pump**

The heater is preset at 60°C

When 35 minutes pass after the start of heating, a temperature difference of about 38°C occurs between the surface and the lower part of the vessel.

- Surface: 69.9°C
- Upper part: 68.9°C
- Lower part: 38.7°C

When there is no circulating pump, the temperature rises even after it reaches the preset temperature and a temperature difference of more than 20°C occurs between the surface and the lower part of the vessel.

### Heater with controls

The heater will raise the cleaning liquid temperature in the tank to enhance the cleaning effect. The temperature is adjustable in the range from 0 to 70°C by digital control.

### Liquid shortage sensor

The sensor detects the absence of cleaning liquid and shuts down the system automatically. You do not have to worry about heating without liquid during the unattended cleaning process.
Supersonic Wave Mold Washer

**WAVE CLEAN**

**Digital control timer**

The cleaning process time is controlled by the digital control timer, thus enhancing the efficiency of cleaning.

**Standard Accessories**

- Washing cage (mesh type)
- Hose for bleeding off the cleaning liquid
- Rubber gloves
- pH-test paper
- Pump for cleaning liquid
- Protective mask
- Protective glasses

**Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside dimensions</td>
<td>W750 X D760 X H650(mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 85 kg (main unit only)</td>
</tr>
<tr>
<td>Tank dimensions</td>
<td>W450 X D350 X H250</td>
</tr>
<tr>
<td>Cage dimensions</td>
<td>W440 X D340 X H200</td>
</tr>
<tr>
<td>Max. liquid amount</td>
<td>39 liters</td>
</tr>
<tr>
<td>Power consumption</td>
<td>3.65kW</td>
</tr>
<tr>
<td>Supersonic wave output</td>
<td>0 to 600 W (variable with potentiometer)</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>28kHz</td>
</tr>
<tr>
<td>Power requirement</td>
<td>3-phase 200V AC</td>
</tr>
</tbody>
</table>

The high-performance vibrator with the oscillation frequency of 28 kHz clean mold from every hole and corner. The output is adjustable in the range from 0 to 600W (300W, max. for U300) according to mold size.

Digital control timer