HAND-HELD WELDING HEAD

PU-G

OPERATION MANUAL



Z08M0896E-06

Thank you for purchasing our Hand-Held Welding Head **PU-G**.

This operation manual describes its method of operation and precautions for use. Read this operation manual carefully prior to use. Store appropriately for ready reference.

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1. Special Precautions

(1) Safety Precautions

Before using, be sure to read this operation manual to operate this machine correctly. <u>This operation</u> <u>manual may include some items that do</u> <u>not correspond to your use</u>. <u>However,</u> <u>you are kindly requested to read only</u> <u>the items related to your use</u>.

 These precautions are shown for safe use of our products and for prevention of damage or injury to operators or others.
 Be sure to read each of them, since all of them are important for safety.

●The meaning of the words and symbols is as follows.



Denotes operations and practices that may imminently result in serious injury or loss of life if not correctly followed.



Denotes operations and practices that may result in serious injury or loss of life if not correctly followed.



Denotes operations and practices that may result in personal injury or damage to the equipment if not correctly followed.



These symbols denote "prohibition". They are warnings about actions out of the scope of the warranty of the product.



These symbols denote actions which operators must take.



Each symbol represents the contents that give notice of DANGER, WARNING, or CAUTION to the operator.





Do not disassemble, repair, or modify this machine in any case.

Otherwise, an electric shock or injury will occur. When internal inspection or repair is required, make contact with us.





Do not put your hands between the electrodes.

When welding, keep your fingers and hands away from the electrodes.



Do not touch any welded part or electrodes during

welding and just after welding finished. The welded part of a workpiece, electrodes and electrode

holder are very hot. Do not touch them; otherwise you may be burnt.



Apply the specified power supply.

Application of a voltage out of the specified range can cause fire and electric shock.



Stop the operation if any trouble occurs.

Continuous operation after occurrence of a trouble such as burning smell, abnormal sound, abnormal heat, smoke, etc, can cause electric shock and fire. If such a trouble occurs, immediately consult us or your distributor.

Persons with pacemakers must stay clear of the welding machine.

The welding machine generates a magnetic field and has effects on the operation of the pacemaker while it is turned on. A person who uses a pacemaker must not approach the welding machine or walk around the welding shop while the welding machine is in operation, without being permitted by his/her doctor.



Wear protective glasses.

If you look at the surface flash and expulsion directly during welding, your eyes may be damaged.

1. Special Precautions



Do not splash water on the product.

Water splashed over the electric parts can cause electric shock and short circuits.

Do not give excessive force to connecting cables.

Do not bend, pull, or pinch any cable forcibly. If the cable is damaged, it will cause an electric shock, short circuit, or firing.

Connect the specified cables securely.

Cables of insufficient current-carrying capacities and loose connections can cause fire and electric shock. If the welding cable is not connected completely, a spark will occur.

Install the product on firm, level surface.

If the product falls or drops, injury may result.

Keep combustible matter away from the welding machine.

Do not put any combustible material around the welder. Surface flash and expulsion can ignite combustible matter.

Do not cover the product with a blanket, cloth, etc.

If such a cover is used, it may be overheated and burn.

Keep a fire extinguisher nearby.

Keep a fire extinguisher in the welding shop in case of fire.

Maintain and inspect the product periodically.

Maintain and inspect the product periodically, and repair any damage near by before starting operation. Tighten the welding cable connecting section periodically.

Protective gear must be worn.

Put on protective gear such as protective gloves, long-sleeve jacket, leather apron, etc. Surface flash and expulsion can burn the skin if they touch the skin.

Do not use this product for purposes other than welding.

Use of this product in a manner other than specified can cause electric shock and fire.

When outage occurs, be sure to turn off the power supply.

After a recovery from the outage, the machine may be started or powered suddenly, resulting in an injury.

1. Special Precautions

(2) Precautions for Handling

- Do not install this product in the following:
 - Damp places where humidity is 90% or higher,
 - Dusty places,
 - Places where chemicals are handled,
 - Places where corrosive gas is generated,
 - Places near a high noise source,
 - Hot or cold places where temperatures are above 40°C or below 5°C, and
 - Areas where water will be condensed.
- Clean the outside of the product with a soft, dry cloth or one wet with a little water. If it is very dirty, use diluted neutral detergent or alcohol. Do not use paint thinner, benzine, etc., since they can discolor or deform the product.
- Between electrodes, do not put such a material other than the weldment as tool and screw. Otherwise, the welding electrode will be damaged or a spark will occur. When performing maintenance for this machine as a result of replacement of electrodes, turn off the power supplies of the welder and control device in advance.
- Do not put a screw, a coin, etc., in the product, since they can cause a malfunction.
- Be sure to install the screws, which were removed for maintenance of this machine, in their original positions. If they are installed in different positions, this machine will be damaged or go wrong.
- Operate the product according to the method described in this operation manual.
- Caution must, therefore, be made against damage that could happen if subjected to heavy shock such as when dropped down.
- Welding with large electric current may cause the body of this unit and welding cable to get heated. In such case, consult our sales person for help.
 Be careful so that no horizontal load should be applied to this hand-set. Take note that the following cases may possibly occur by chance.
 - Normal pressure force is not obtained.
 - Damage or bend of electrode and/or main shaft.

1. Special Precautions

2. Features

- \diamond Grip-held push type hand-set
- $\diamond~$ Free point welding irrespective of welded object
- $\diamond~$ Pressurization for stable welding

3. Name and Functions of Each Section



3. Name and Functions of Each Section

(1) Pressure adjusting knob

This knob is used to adjust the pressure at welding. Turn the pressure knob to set the required pressure.

(2) Pressure scale

This scale is used to read the pressure at welding. For the relation of pressure between "Pressure scale" and "Pressure spring specification", refer to the pressure diagram (page 13).

CAUTION The pressure diagram represents theoretical values. To measure actual pressure, use a pressure gauge or spring balance.

(3) Pressure sensor

The pressure sensor is used to make sure that pressure is applied to the weldment at welding. This sensor outputs a signal when the electrode makes contact with the weldment and the specified pressure is reached.

(4) Pressure spring

This pressure spring gives the pressure required for welding to the weldment. Pressure spring specification (S series): Maximum pressure 25/50/80/120 (N)

(5) Electrode holder

This part is used to give a welding current to the welding electrodes and fix the electrodes.

(6) Welding electrode

This is an electrode rod for welding. Select a material and an end shape suitable for your use. We prepare welding electrodes for various uses.

(7) Welding electrode fixing screw

This screw is used to remove or mount the welding electrode.

(8) Screw to supply power (from the transformer or power supply side)

Connect the welding cable from the welding transformer or welding power supply.

4. Connecting the Pressure Signal Cable



5. Operating Method

(1) How to set electrode

Set electrode, with 10mm sticking out upward (see figure below), to the electrode terminal.

Insert the electrode into the electrode holder in such way that the D-cut of the electrode on the electrode terminal should come right to face the set screw position of the electrode holder. Fix the set screw seeing that the electrode holder and the electrode terminal are flat in touch leaving no clearance between them.



(2) Setting of pressure force

Set the pressure force by rotating the pressure force regulation knob. Clock-wise rotation (turning to the right) will increase the pressure force. Pressure force graduation is engraved on the body for your reference guide.

Use an independent pressure force gauge to get the actual exact pressure force. (A pressure gauge measuring up to 10 kgs is ready for supply.)

(3) How to weld

Hold the grip and press the hand-set straight in axial direction to strike on the object to be welded.

The pressure force signal is set to on and welding current starts running when the shaft which fixed the electrode holder gets into the body by about 1.5 mm deep.

5. Operating Method

6. Product Specifications

1	Electrode diameter	φ 5
2	Signal output	Microswitch
3	Pressure force	1 to 9 kg
4	Welding cable (2 pcs.) (option)	H-050-1000-06-08-N (Item No.: 1006016) 50 sq φ6 - φ8 L = 1 m Nylon mesh sleeve
5	Weight	700 g
6	Terminal copper bus bar	30 x 180 x 5t Material: Cu

6. Product Specifications

7. Outline Drawings



Material: Alumina dispersion copper

