HAND-HELD WELDING HEAD

# GS-2

# OPERATION MANUAL

AMADA®

Z11M0895E-06

Thank you for purchasing our Hand-Held Welding Head **GS-2**.
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.

# Contents

# 1. Special Precautions

## (1) Safety Precautions

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

●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.

**DANGER**

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

**WARNING**

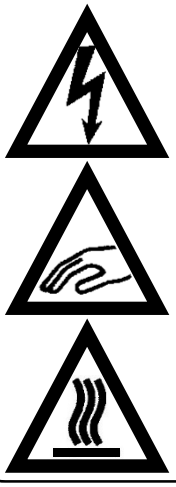
Denotes operations and practices that may result in serious injury or loss of life if not correctly followed.

**CAUTION**

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.

# DANGER

**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.

# WARNING

**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

# CAUTION

**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.

## (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.

- Stroke of electrode (*), which means clearance measured by the formula of the spacing of electrode minus thickness of the object to be welded, should be within 8 mm. When used with larger stroke, there may be the case of causing sparks.

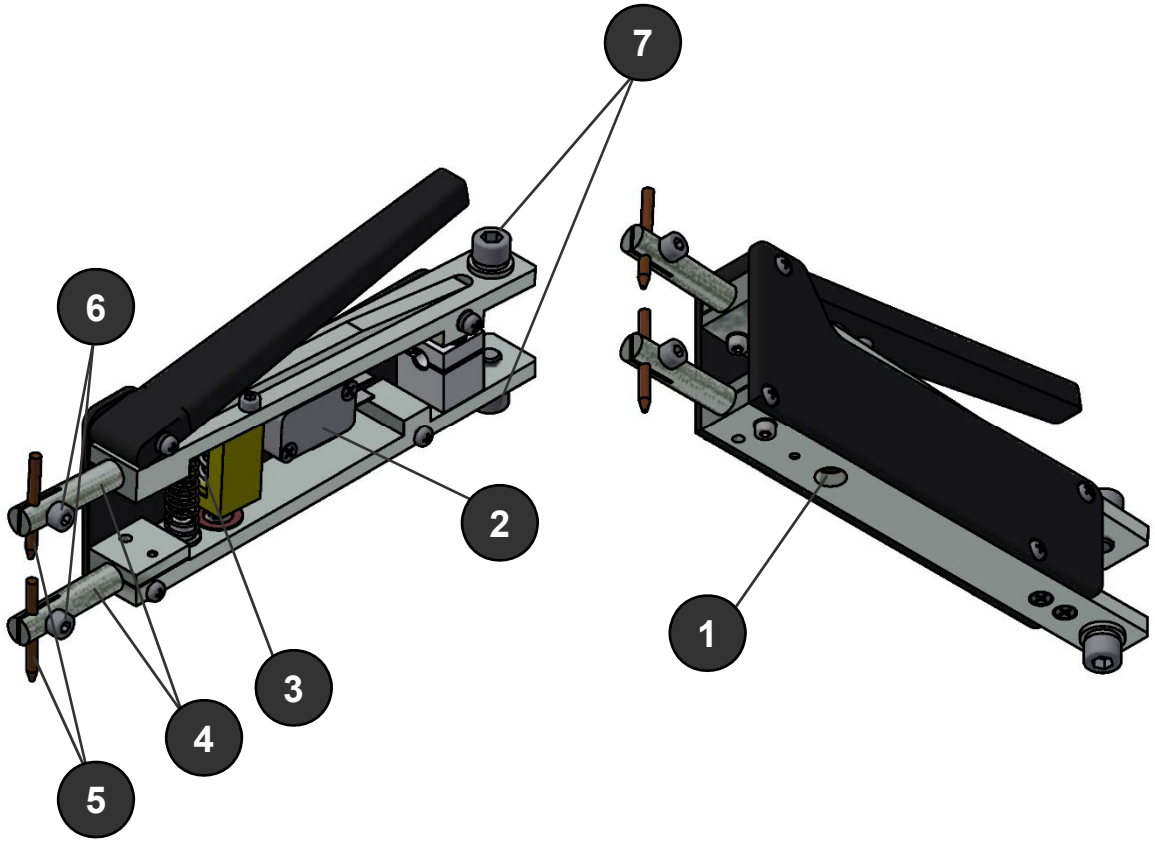
  * Stroke of electrode = electrode spacing-thickness of the object to be welded

# 2. Features

◇ **Compact, light-weight handy type**

◇ **Pressurization power detection mechanism built-in for stable welding**

# 3. Name and Functions of Each Section



### (1) Pressure adjusting screw

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

### (2) 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.

### (3) 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)

### (4) Electrode holder

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

### (5) 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.

### (6) Welding electrode fixing screw

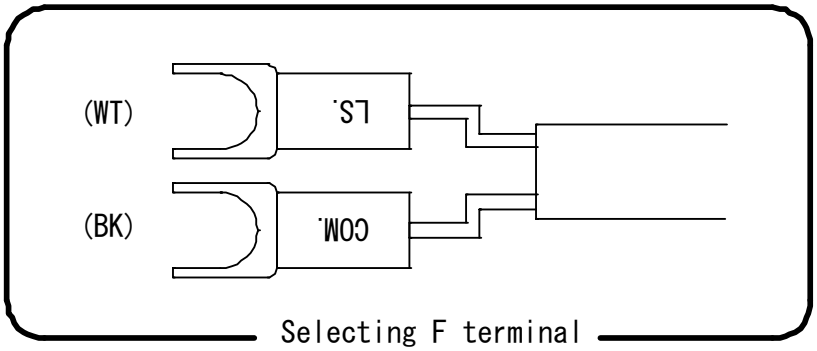
This screw is used to remove or mount the welding electrode.

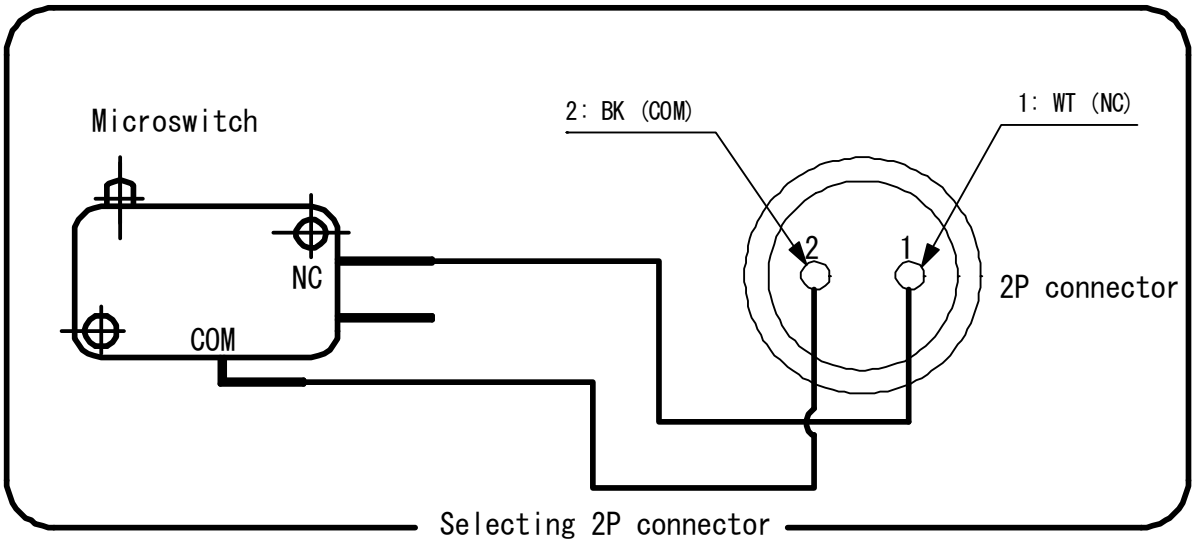
### (7) Screw to supply power (from the transformer or power supply side)

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

# 4. Connecting the Pressure Signal Cable

[Pressure signal cable terminal]



# 5. Operating Method

When holding the operation lever to make adjustments (1) and (2) as referred to below, be sure to set the welding power supply off.

(1) Adjustment of the electrode holder

Make alignment of the spacing of electrode provisionally by approximation at first and then make final adjustment of direction and length of electrode protruding from the base of the holder. When you hold the operations lever, the upper electrode will descend as if in the way of circular arc. This is why adjustment of the protruding length of electrode is necessary according to the setting of the spacing of electrode. The set screws to fix the electrode holder are provided the lower side (See the external view drawing).

(2) Adjustment of the protruding length of electrode

Adjustment the length so that clearance of the electrode spacing should be less than 8mm plus thickness of the object to be welded. The less the electrode spacing, the better for the progress of welding work because it makes do with smaller stroke of the operation lever.

(3) Setting of pressure force

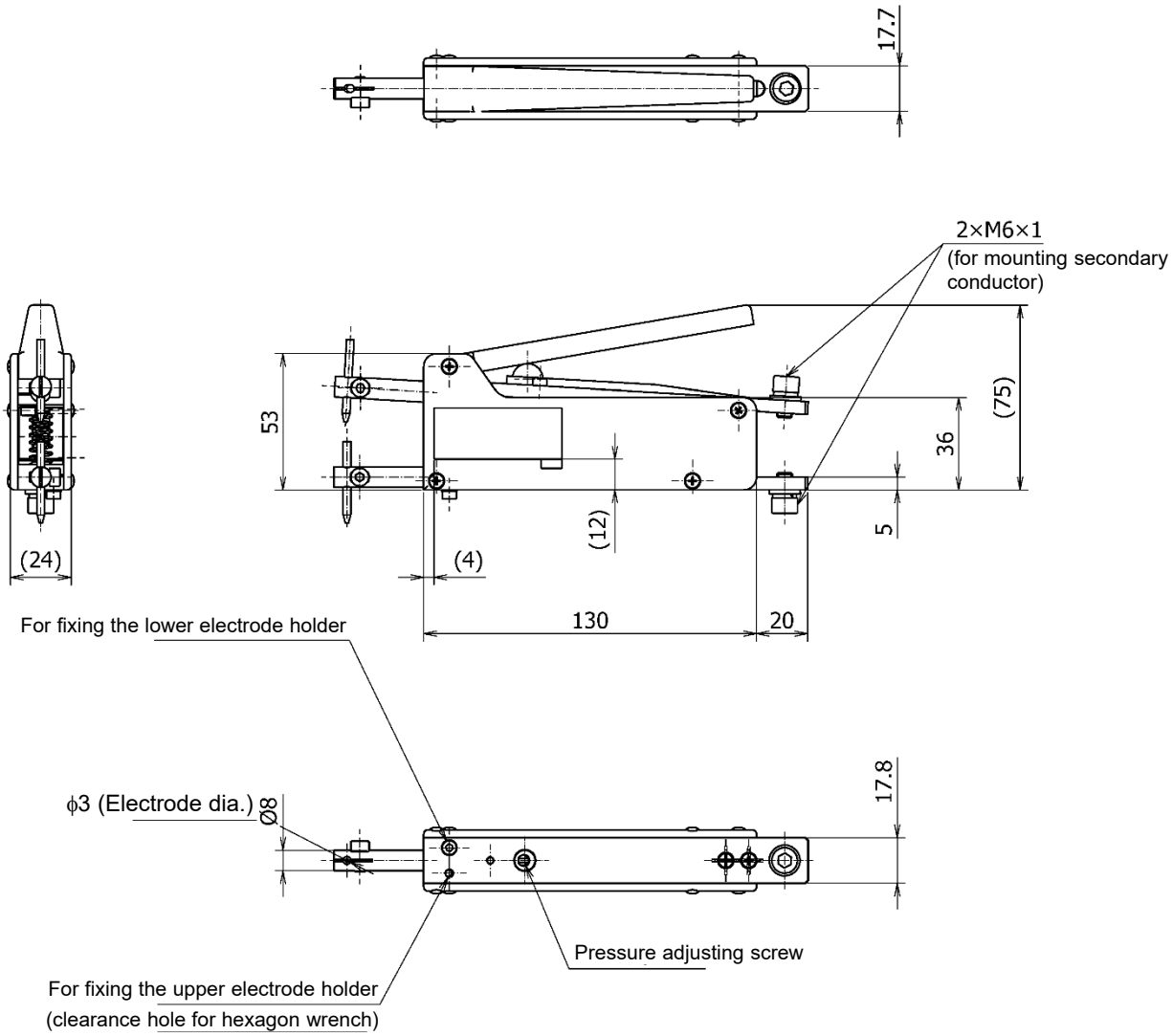
Adjustment is made by rotation with a screw driver the slotted head screw for pressure force adjustment located on the lower part of the unit body. clock-wise rotation (turning to the right) will increase the pressure force (Refer to the external view drawing).

To verify the actual pressure force is readily available on request.

# 6. Product Specifications

| | | |
|---|---|---|
| 1 | Electrode diameter | ϕ 3 |
| 2 | Electrode holder | 90° or 45° selectable |
| 3 | Signal output | Micro switch |
| 4 | Pressure force | 1.5 to 5 kg |
| 5 | Secondary conductor (option) | H-050-1000-06-08-N (Item No.: 1006016) |
| 6 | Weight | 500 g |

# 7. Outline Drawings



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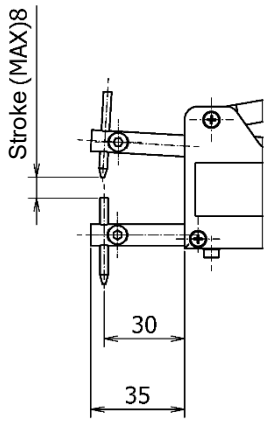
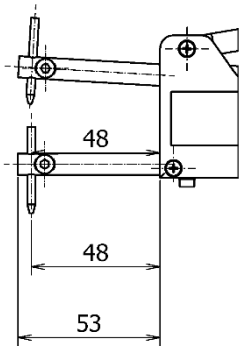
## Electrode holder

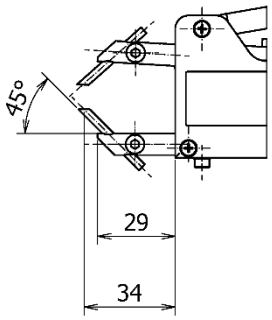
### Vertical: standard




### Vertical: long

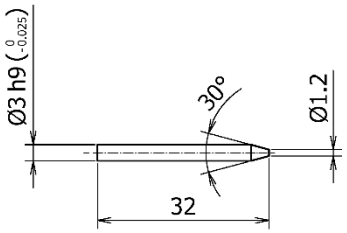



### Inclined




## Welding electrode

### Vertical




### Inclined