SW-V02

Operation Manual

SKU: 8300500

CE

8914376/0925

CONTENTS

1． Precautions

Prior to using this machine, read this operation manual carefully to ensure correct operation.

The instructions contained in this operating manual are to ensure the safe use of this machine and to prevent harm from occurring to you and other persons or damage to property.

This machine has been designed and manufactured with due consideration for safety; however, please strictly observe the precautions contained in this operation manual when using the machine. Failure to observe the precautions may lead to a serious accident resulting in injury or death.

The degree of harm or damage that can occur when the machine is misused has been classified into two ranks as shown below, and these ranks are indicated with symbols and written warnings. These symbols and warnings may also be applied to labels fixed to the machine.

SYMBOLS	WARNINGS	Remarks
	WARNING	Misuse may cause a dangerous situation resulting in death or serious injuries.
	CAUTION	Misuse may cause a dangerous situation resulting in moderate/minor injuries or property damage

The symbols indicate general cases.

Serious injuries include loss of sight, wounds, burns (at high or low temperature), electric shock, bone fracture, gas poisoning, etc., which may cause aftereffects, require hospitalization or hospital visits for an extended period. Medium/minor injuries include burns, electric shock, etc., which do not require hospitalization or hospital visits for an extended period. Property damage includes significant financial loss through destruction of property and/or damage to the apparatus.

2. Instructions for your safety

	WARNING	Strictly comply with the following instructions to avoid serious physical injuries

1. This machine has been designed and manufactured with due consideration for safety. However, please strictly observe the precautions in this operation manual when using the machine. Failure to observe the precautions may lead to a serious accident resulting in injury or death.
2. Comply with applicable statutory regulations and in-house standards when working on a mains power source, selecting an installation location, handling and storing high-pressure gas and piping the gas, storing welded products, treating wastes, etc.
3. Keep unauthorized persons away from the welder and the welding site.
4. A person with a cardiac pacemaker should stay clear of the welder while it is in operation or from the welding site unless given approval by a physician. The welder generates a magnetic field while in operation, and this may adversely affect pacemaker function.
5. For safety reasons, installation, maintenance, safety checks, and repair of this welder should be conducted by a qualified person or a person having sufficient knowledge of welders.
6. For safety reasons, this machine should be operated by a person who fully understands the contents of this operation manual and who has acquired sufficient knowledge and techniques to handle this welder safely.
7. Do not use this welder for any purposes other than welding.

	WARNING	Strictly comply with the following instructions to prevent electrical shocks

Contact with electrically charged parts may cause fatal electric shocks or burns.

1. Do not touch electrically active parts such as the work cable connector, plates, or a work piece connected to the work cable clamp, with any part of the body while in contact with other electrically active parts such as the TIG torch connector/electrodes.
2. Do not touch electrically active parts such as the work cable connector, plates, or a work piece connected to the work cable clamp, with any part of the body while in contact with other electrically active parts such as the resistance welding cable connector/electrodes.
3. The casing of the welding power source, the work piece, jigs electrically connected to the work piece, etc., should be earthed by a qualified electrician in compliance with applicable regulations (e.g. the Electric Equipment Technical Standards).

4. Installation, maintenance and checks of the machine should not begin until at least 5 minutes have elapsed after isolating the input power by use of a switchbox breaker. Even if the input power is turned off, capacitors within the welder may still be charged. Please do not start any maintenance until it has been confirmed that all stored energy has been discharged.
5. Do not use cables of inadequate capacity, or damaged or bare cables.
6. Fasten and insulate cable connections securely.
7. Do not use the welder with the casing and covers of the welding power source removed.
8. Do not use torn or wet gloves. Use dry gloves at all times.
9. Use a safety harness when using the machine in a high place.
10. Conduct maintenance and safety checks periodically and do not recommence using the machine until any damaged parts have been repaired.
11. Turn the power off completely when the machine is not in use.

⚠	CAUTION		Use safety equipment to protect yourself and other persons against arc light, spatter, slag, and noise caused by welding.

Arc light may cause burns to the retina, eye inflammation, or burns to the skin.

Spatter and slag may cause eye injury or burns.

Noise may cause hearing loss.

1. Use light-shielding glasses having sufficient light-shielding effects or a welding mask when working on or monitoring a welding operation.
2. Use protective glasses to protect you against spatter and slag.
3. Use protectors such as leather welding gloves, long-sleeve shirts, leg covers, and leather aprons.
4. Place a protective curtain around the welding site to prevent the arc light from entering the eyes of other persons.
5. Use ear protectors when noise levels are high.

⚠	CAUTON		Use safety equipment to protect you and other persons against fumes and gases caused by welding.

Inhalation of fumes or gases generated by welding may damage your health.

Welding in a confined place may create a shortage of oxygen and the consequent danger of suffocation.

1. To avoid gas poisoning and suffocation, use a local ventilation system in compliance with applicable regulations (e.g. the Industrial Safety and Health Law and dust control regulations) or a respirator.
2. Ventilate well or use a respirator when welding in a confined space. Also, ensure that a properly trained supervisor is present when the machine is being operated.
3. Do not conduct welding work near degreasing, cleaning, and spraying operations. The performance of welding work near these operations may cause generation of poisonous gas.
4. Ventilate well or use a respirator when welding coated steel. Poisonous fumes or gases may be generated when welding coated steel.

	CAUTION		Strictly comply with the following instructions to avoid fires, explosions, and pipe or tank rupture.

Spatter and work pieces left hot after welding may cause fires.

Defective cable connectors or poor electrical contact in the current path to a work piece such as a steel beam may cause fires due to the heat resulting from the high-resistance connection.

Arc spark on a container of an inflammable material such as gasoline may cause an explosion. Welding a sealed tank or pipe may cause it to burst.

1. Remove inflammable materials to avoid contact with spatter. If these materials cannot be removed, cover them with a fire-resistant blanket.
2. Do not conduct welding near inflammable gas.
3. Do not place a hot work piece after welding in close proximity to an inflammable material.
4. Remove inflammable materials from the back of ceilings, floors, walls, etc. when welding onto or near such surfaces.
5. Fasten and insulate cable connections securely.
6. Connect the work piece cable as closely as possible to the welding site.
7. Do not weld a gas pipe containing gas, nor sealed tanks or sealed pipes.
8. As an extra precaution, place a fire extinguisher nearby during welding operations.

⚠	CAUTION		Strictly comply with the following instructions to avoid fires resulting from deterioration of insulation in the welding power source

The spatter generated during welding, or steel powder generated during grinding, may enter the power source and lead to fires resulting from insulation deterioration of components inside.

1. Conduct welding or grinding at a suitable distance from the welding power source to avoid entry of spatter or steel powder.
2. Conduct maintenance and safety checks periodically to prevent insulation deterioration from dust accumulating inside the welder.

In the event that spatter or steel powder enters the welder, turn off the power switch of the apparatus and the switchbox breaker and then remove contaminants by compressed air spray, etc.

⚠	CAUTION		Strictly comply with the following instructions to avoid cylinders falling over or rupture of gas flow adjusters.

Cylinders may cause physical injuries if they topple over.

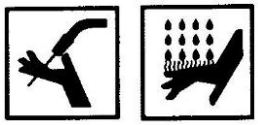
A gas cylinder contains high-pressure gas and misuse may cause a gas blowout and physical injuries.

1. Comply with applicable regulations and in-house standards when handling gas cylinders.
2. Use the gas flow adjuster attached to this product or one recommended by the manufacturer.
3. Read the instruction manual for the gas flow adjuster carefully before use and comply with the written instructions.
4. Fix the gas cylinder to its proprietary holder.
5. Do not subject the gas cylinder to high temperature.
6. Do not put your face close to an outlet when opening a gas cylinder valve.
7. Put a protective cap on the gas cylinder when not in use.
8. Do not drape the welding torches over the gas cylinder, and ensure that the electrodes do not touch the gas cylinder.

⚠	CAUTION		Strictly comply with the following instructions concerning rotating parts to avoid injuries.

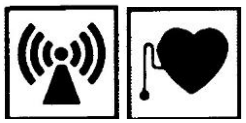
Hands, fingers, hair, and clothes may be caught in rotating parts such as a cooling fan and cause injuries.

1. Do not use the welder while the casing and covers of the welding power source are removed.
2. During maintenance and safety checks or repairs, ensure that the casing is removed under the control of a qualified person or a person having sufficient knowledge of welders. Place a barrier around the welder to keep unauthorized persons out.
3. Do not bring hands, fingers, hair, clothes, etc. close to the cooling fan while it is rotating.

⚠	CAUTION		Strictly comply with the following instructions to avoid burns being caused by the arc.

Direct contact between a body part such as a hand or finger and the arc will cause burns.

1. Keep your hands or fingers away from the tip and the electrode at the end of the torch when welding.
2. Do not grasp the work piece near the welded portion when welding.
3. Turn the power off when replacing the tip or the electrode.

⚠	CAUTION		This welder uses radio waves to start the arc. Strictly comply with the following instructions to prevent electromagnetic interference.

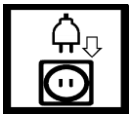
A person with a cardiac pacemaker should stay clear of the welder while it is in operation unless given approval by a physician, (The welder may adversely affect pacemaker function).

The radio waves from the welder may interfere with the following devices located in the vicinity and may cause malfunctions:

input cables, signal cables, telephone cables, radios and TV sets, computers and other controllers, detectors and safety devices for industrial use, pacemakers and hearing aids, etc.

1. Wind up the TIG torch cable and the resistance welding output cable to make them as short as possible.
2. Lay the TIG torch cable and the resistance welding output cable on the floor or the ground as closely as possible.

3. Lay the work piece cable and the electrode cables (i.e., the TIG torch cable and the resistance welding output cable) in parallel.
4. The earth connection for the work piece and the welder should be separated from other devices.
5. Fasten and fix all covers of the welder securely.
6. Do not press the foot switch except when adjusting the gas flow or welding.

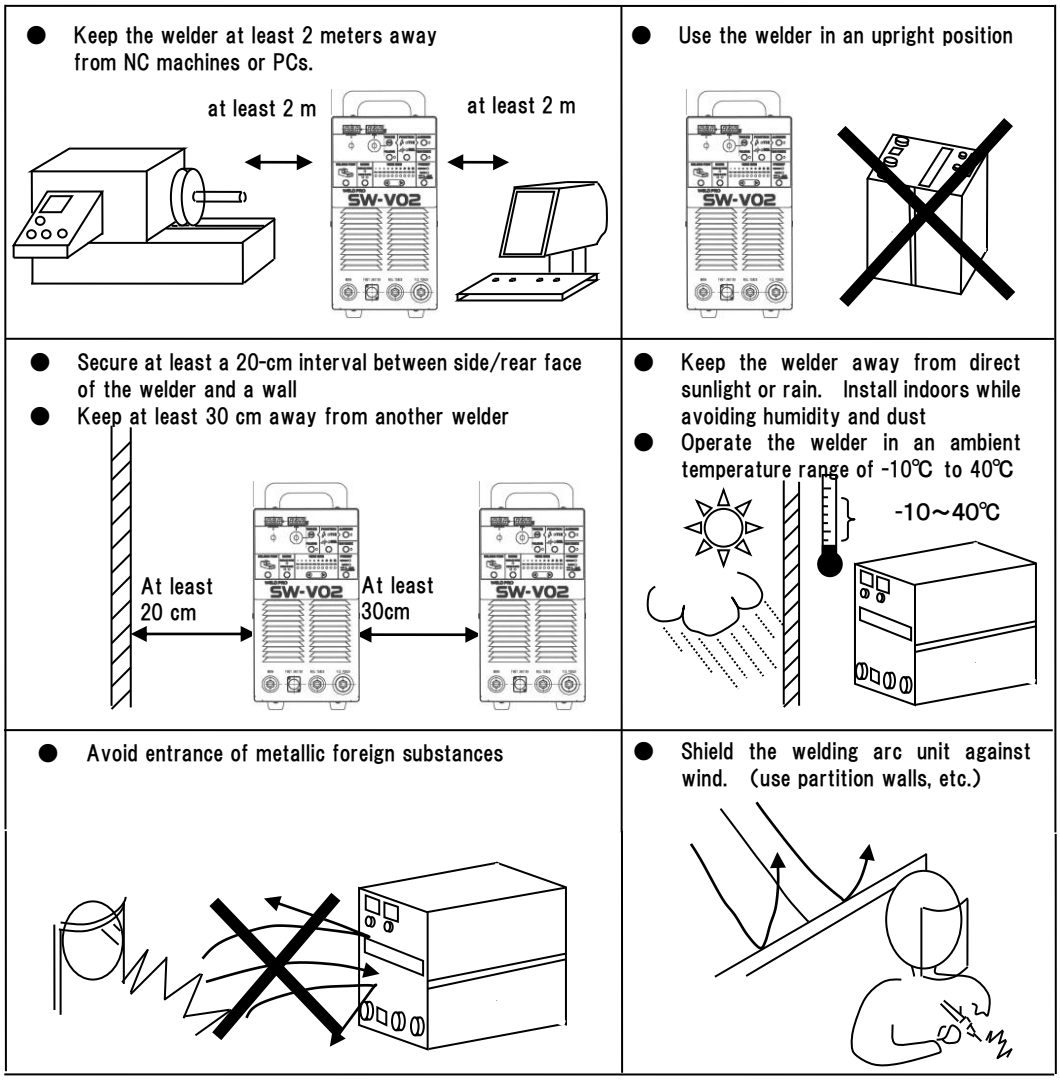
	CAUTION		In order not to affect the power quality of the system, please observe the following things.
1. This welding machine should be connected to a local low voltage system which is interfaced with the commercial power supply only at the medium voltage or high voltage level. 2. Make sure that the supply current capacity at the receiving point is sufficient for that equipment. Please consult with the electricity supply agency if necessary.			

3. Features

Thank you very much for purchasing the High-precision Resistance / TIG Welder SW-V02. The High-precision Resistance / TIG Welder is suitable for use in padding various molds for repairs. This welder has both resistance welding and TIG welding functions for tack welding and deals with various types of welding from fine welding to large-scale welding. Since this welder incorporates standard welding condition settings suitable for various welding regions and welding materials, as well as welding rods thickness, even beginners can soon learn how to operate this welder after a short training period. With the aluminum mode, which was newly added, this welder can repair aluminum and copper alloy metals. In addition, it also includes functions for continuous pulse welding to deal with large welding areas.

4． Installation location and power & gas facilities

4-1． Installation location

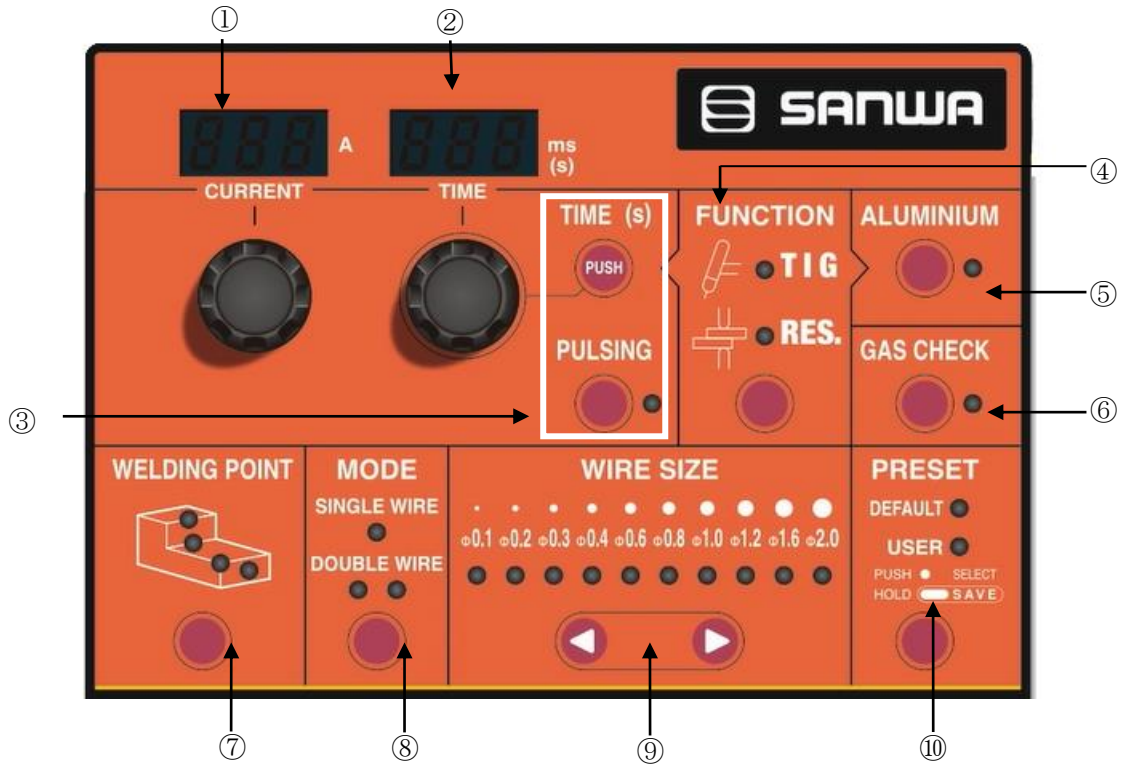


4-2． Power & gas facilities

Rated Input Voltage	200 / 230 V	Required switchboard fuse		20 A (Type B)
Phase/Frequency	Single,50/60Hz	Cable size (diameters)	Input power cable	3.5 mm^2 or above
Power capacity	20 kVA or above		Ground cable	3.5 mm^2 or above
Regulation allowance	180 ～ 253 V	Welding gas	Argon gas	JIS K 1105

5． Part names and functions

5－1． Switches (buttons) and functions



①	**Welding current setting and display** ● The welding current value (A) is set by turning the dial (right: increase, left: decrease). The set value is indicated on the display. ⇒See P.12 (1) “Operating the dial” for more details. ● Applicable error codes are indicated depending on the error types. (e.g. E01) ⇒See P.36 8-2, “Response to error displays” for more details.
②	**Welding time setting and display** ● The welding time (ms) is set by turning the dial (right: increase, left: decrease). The set value is indicated on the display. ⇒See P.12 (1) “Operating the dial” for more details. ● This unit is also used for setting and displaying the interval time (s) when the continuous TIG mode is selected. ⇒See ③ ms : mm seconds (1ms = 1/1000 second) s : second

③	**Turning continuous TIG mode ON/OFF and setting the time** ● You can turn the continuous TIG mode on or off by pressing the lower button. When turning the continuous TIG mode on, you can conduct TIG spot welding continuously at desired intervals. The time interval can be set by turning the "TIME" dial while pressing the upper button. You can set the time interval in the range of 0.1～2 (s) in increments of 0.1 (s). ☞ The time interval range may be [automatically] reduced by the usage rate restriction depending on the welding current value and time settings. ⇒See P.15 "Interval time setting in the continuous TIG mode" for more details
④	**RES./TIG mode selection button** ● You can select RES. (Resistance welding) or TIG mode by pressing this button.
⑤	**Aluminum mode** ● Turn this mode on when performing TIG welding to weld an aluminum (a copper alloy) mold.Turning this mode on displays the welding current value and welding time for aluminum mold automatically. =>For selectable conditions, refer to page 12 (2) "Selectable conditions for the welding point and the size of the welding material".
⑥	**Gas check button** ● Use this button when adjusting the gas flow rate. The gas flows out of one end of the TIG welding torch while the "GAS CHECK" switch is turned on (LED on). The gas flow stops when the "GAS CHECK" switch is turned off (LED off). ☞ Turn off the "GAS CHECK" switch during normal operation.
⑦	**Welding point selection button** ● Use this button to select the welding point. You can shift the welding point through the sequence of 2-plane edge → Inner corner → 3-plane corner → Flat plane by repeatedly pressing the button. ☞ You cannot select "3-plate corner" in continuous TIG mode. ☞ You cannot select "Inner corner" in the aluminum mode. =>For selectable conditions, see page 12 (2) "Selectable conditions for the welding point and the size of the welding material".
⑧	**Welding mode selection button** ● Use this button to select the single wire mode or the double wire mode. Single wire mode: Use this mode when performing welding with one welding rod. Double wire mode: Use this mode when performing welding with two welding rods. ☞ The double wire mode cannot be used when welding an inner corner and in the aluminum mode. =>For selectable conditions, see page 12 (2) "Selectable conditions for the welding point and the size of the welding material".
⑨	**Welding wire size selection button** ● Use this button for selecting the size of the welding material. You can shift between the available sizes by pressing the appropriate arrow button.

	☞ Some material size selections may not be available, depending on the selected welding point or other functions. ⇒See P.12 "Selectable conditions for the welding point and the size of the welding material" for more details.
⑩	**User selection/Setting memory button** ● Use this button to retrieve the memorized user settings. The DEFAULT mode automatically retrieves the recommended preset values (the current value and the welding time) in response to the selected welding point ([7]), welding mode ([8]), and the size of the welding material ([9]). You can also modify the default values with the dials but cannot overwrite them. The USER mode is preset to the same value as the DEFAULT mode at the point of shipment. You can modify and overwrite the values in this USER mode. For how to memorize settings, see page 28, Section 7-4 "Memorizing user settings."

（1） Operating the dial (Operation panel ①, ②)

Values changed by turning the dials (an amount of change by every notch) vary depending on the welding mode (RES./TIG) and the value zones.

Amounts changed by every notch of the dial (in various modes)

Welding Mode	Current (A)	Amounts （A）	Time （ms）	Amounts （ms）
RES.	30～750	5	1～30	1
TIG	2～100	1	1～50	1
	101～250	5	51～150	2
	–	–	151～300	5
	–	–	301～600	10

(2) Selectable conditions for the welding point and the size of the welding material (Operation panel ④、⑤、⑦、⑧、⑨)

Some combinations of the welding point and the size of the welding material are not selectable depending on the selected mode and other functions in use. The selectable combinations are illustrated in this table.

RES. Weld （single wire mode）

Material / Point	Welding wire									
	φ0.1	φ0.2	φ0.3	φ0.4	φ0.6	φ0.8	φ1.0	φ1.2	φ1.6	φ2.0
2–plane edge	○	○	○	○	○	○	×	×	×	×
Inner corner	○	○	○	○	○	○	×	×	×	×
3–plane corner	○	○	○	○	○	○	×	×	×	×
Flat plane	○	○	○	○	○	○	×	×	×	×

○ : Selectable
× : Not selectable

RES. Weld （double wire mode）

Material / Point	Welding wire									
	φ0.1	φ0.2	φ0.3	φ0.4	φ0.6	φ0.8	φ1.0	φ1.2	φ1.6	φ2.0
2−plane edge	○	○	○	○	○	○	×	×	×	×
Inner corner	×	×	×	×	×	×	×	×	×	×
3−plane corner	○	○	○	○	○	○	×	×	×	×
Flat plane	○	○	○	○	○	○	×	×	×	×

○：Selectable

×：Not selectable

TIG weld (normal TIG, single wire mode)

Material / Point	Welding wire									
	φ0.1	φ0.2	φ0.3	φ0.4	φ0.6	φ0.8	φ1.0	φ1.2	φ1.6	φ2.0
2−plane edge	○	○	○	○	○	○	○	○	○	○
Inner corner	○	○	○	○	○	○	○	○	○	○
3−plane corner	○	○	○	○	○	○	○	○	○	○
Flat plane	○	○	○	○	○	○	○	○	○	○

○：Selectable

×：Not selectable

TIG weld (normal TIG, double wire mode)

Material / Point	Welding wire									
	φ0.1	φ0.2	φ0.3	φ0.4	φ0.6	φ0.8	φ1.0	φ1.2	φ1.6	φ2.0
2−plane edge	○	○	○	○	○	○	×	×	×	×
Inner corner	×	×	×	×	×	×	×	×	×	×
3−plane corner	○	○	○	○	○	○	×	×	×	×
Flat plane	○	○	○	○	○	○	×	×	×	×

○：Selectable

×：Not selectable

TIG weld (continuous TIG, single wire mode)

Material / Point	Welding wire									
	φ0.1	φ0.2	φ0.3	φ0.4	φ0.6	φ0.8	φ1.0	φ1.2	φ1.6	φ2.0
2−plane edge	○	○	○	○	○	○	○	○	○	○
Inner corner	○	○	○	○	○	○	○	○	○	○
3−plane corner	×	×	×	×	×	×	×	×	×	×
Flat plane	○	○	○	○	○	○	○	○	○	○

○：Selectable

×：Not selectable

TIG weld (continuous TIG, double wire mode)

Material / Point	Welding wire									
	ϕ0.1	ϕ0.2	ϕ0.3	ϕ0.4	ϕ0.6	ϕ0.8	ϕ1.0	ϕ1.2	ϕ1.6	ϕ2.0
2-plane edge	○	○	○	○	○	○	×	×	×	×
Inner corner	×	×	×	×	×	×	×	×	×	×
3-plane corner	×	×	×	×	×	×	×	×	×	×
Flat plane	○	○	○	○	○	○	×	×	×	×

○ : Selectable

× : Not selectable

Aluminum mode (only TIG weld, only single wire mode)

Material / Point	Welding wire									
	ϕ0.1	ϕ0.2	ϕ0.3	ϕ0.4	ϕ0.6	ϕ0.8	ϕ1.0	ϕ1.2	ϕ1.6	ϕ2.0
2-plane edge	×	×	×	○	○	○	×	×	×	×
Inner corner	×	×	×	×	×	×	×	×	×	×
3-plane corner	×	×	×	○	○	○	×	×	×	×
Flat plane	×	×	×	○	○	○	×	×	×	×

○ : Selectable

× : Not selectable

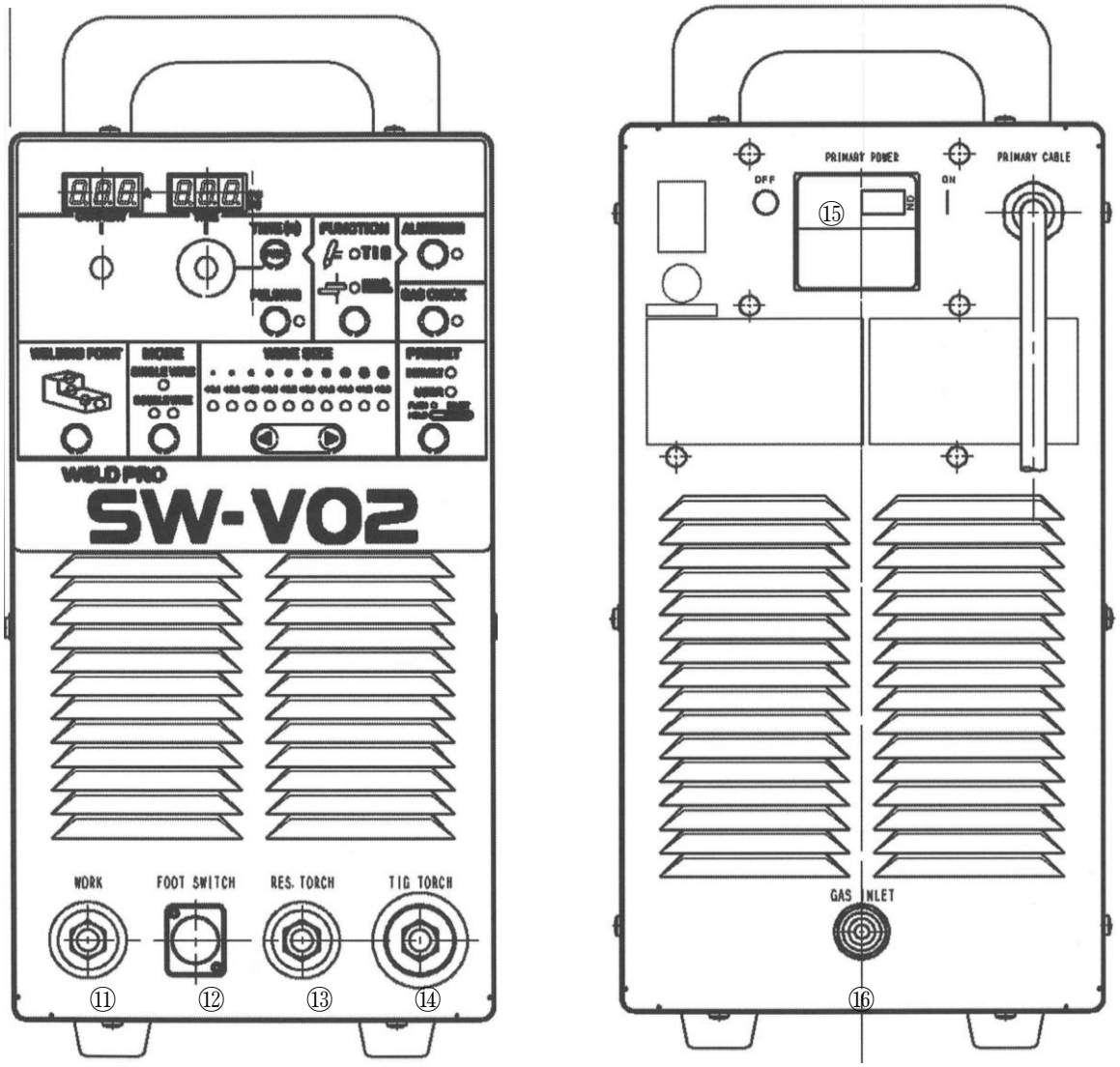
（3） Interval time setting in the continuous TIG mode (Operation panel ③)

The selectable ranges of the TIG interval time in response to various combinations of the welding current values and the welding time are shown in this table. The zones marked with ■ are not selectable.

Selectable ranges of TIG interval time

Welding current (A)	Welding time (ms)	Selectable ranges of TIG interval time(s)																			
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
1～100	1～600																				
101～200	1～50																				
	51～100	■																			
	101～150	■	■																		
	151～200	■	■	■																	
	201～250	■	■	■	■																
	251～300	■	■	■	■	■															
	301～350	■	■	■	■	■	■														
	351～400	■	■	■	■	■	■	■													
	401～450	■	■	■	■	■	■	■	■												
	451～500	■	■	■	■	■	■	■	■	■											
	501～550	■	■	■	■	■	■	■	■	■	■										
	551～600	■	■	■	■	■	■	■	■	■	■	■									
201～250	1～30																				
	31～60	■																			
	61～90	■	■																		
	91～120	■	■	■																	
	121～150	■	■	■	■																
	151～180	■	■	■	■	■															
	181～210	■	■	■	■	■	■														
	211～240	■	■	■	■	■	■	■													
	241～270	■	■	■	■	■	■	■	■												
	271～300	■	■	■	■	■	■	■	■	■											
	301～330	■	■	■	■	■	■	■	■	■	■										
	331～360	■	■	■	■	■	■	■	■	■	■	■									
	361～390	■	■	■	■	■	■	■	■	■	■	■	■								
	391～420	■	■	■	■	■	■	■	■	■	■	■	■	■							
	421～450	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
	451～480	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■					
	481～510	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
	511～540	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
	541～570	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	571～600	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

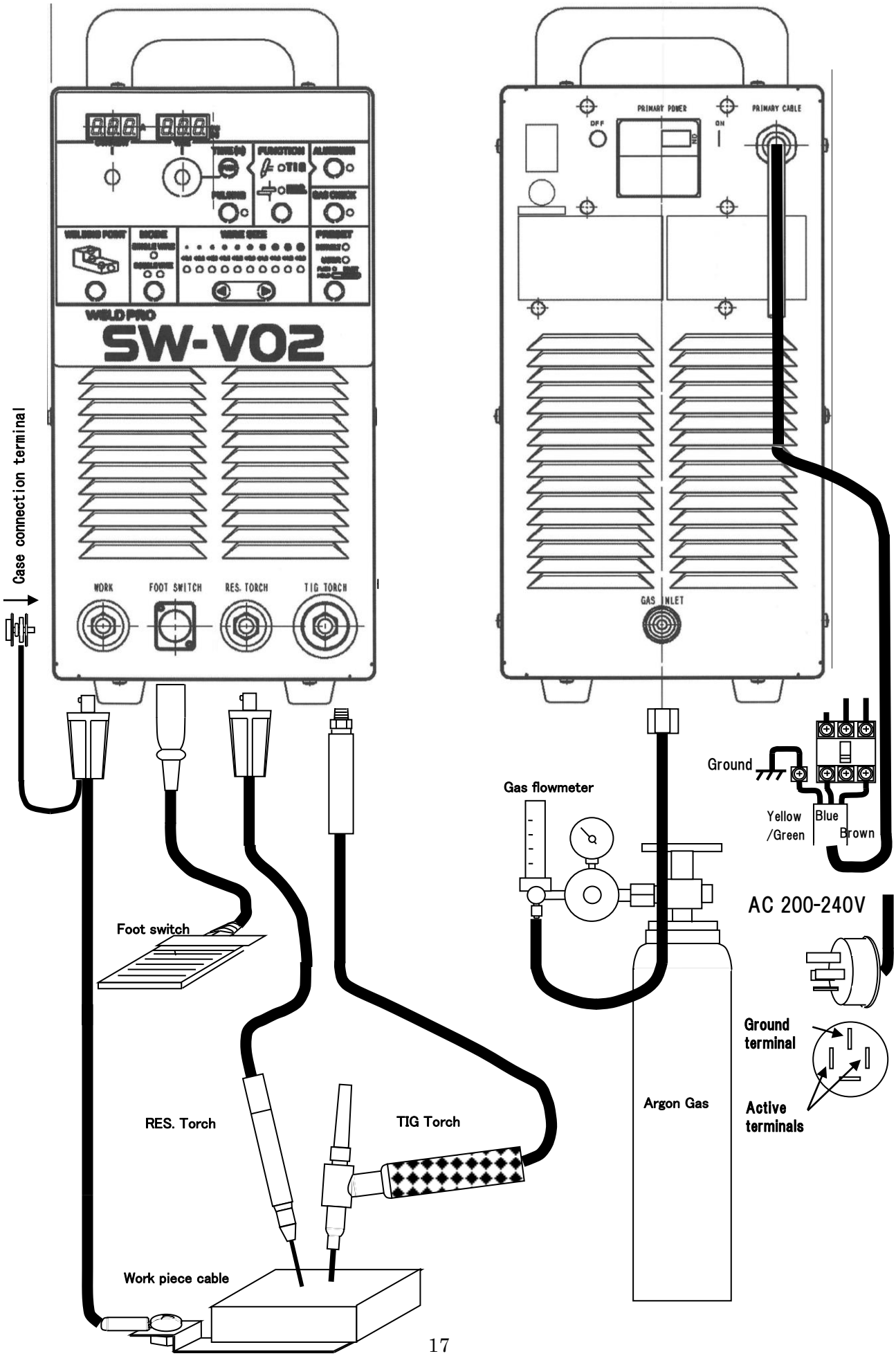
5－2．Connectors for cables



※See P.16, section 6 “Connection” for more information on how to connect the cables

⑪	**Work piece cable outlet** ● Connect the work piece cable here.
⑫	**Foot switch outlet** ● Connect the foot switch here.
⑬	**Resistance welding output cable outlet** ● Connect the resistance welding torch here.
⑭	**TIG welding torch outlet** ● Connect the TIG torch here.
⑮	**Power switch** ● Move the lever to the right to turn the power on.
⑯	**Gas inlet connection** ● Connect the gas hose here.

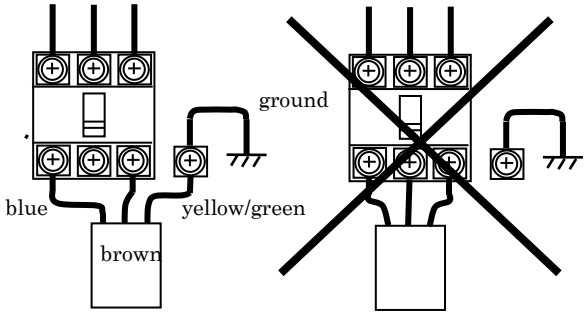
6. Connection

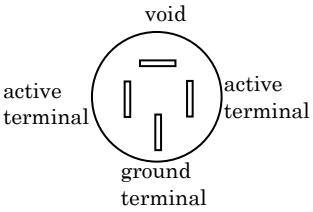


① Connecting the input cable

Connect the cable to a switchboard (with sufficient load capacity) as illustrated below. The yellow/green striped wire in the input cable of this welder is the ground wire and MUST NOT be connected to a three-phase power source terminal. When using the cap, the wires in the cable are arranged as illustrated below. If the wiring arrangement of an outlet on the facility side is different, the wires inside the cap must be rearranged accordingly.

APPLICABLE IN CASE OF DIRECT CONNECTION TO THE SWITCHBOARD





② Connecting the gas hose

First, insert the gas hose securely into the gas flowmeter. Fasten the gas hose securely using a fastener to avoid gas leakage, and fit the assembly to a gas cylinder with a wrench. Second, screw the other end of the gas hose extending from the flowmeter into the gas inlet on the rear face of the welder. Fasten the hose with a wrench tightly enough to prevent gas leakage. Sealing paste is not usually required for fitting the hose. Be careful not to apply too much force when tightening the gas hose, to avoid fracturing the gas inlet fitting.

③ Connecting the TIG torch

Screw the connector of the TIG torch into the TIG torch outlet on the front face of the welder using a wrench. Sealing paste is not usually required.

④ Connecting the resistance welding torch

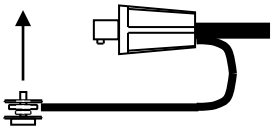
Push the DIN connector into the resistance welding torch outlet on the front face of the welder, and turn the connector to the right to lock it into place.

⑤ Connecting the foot switch

Push the cannon connector of the foot switch cable into the foot switch outlet on the front face of the welder until you hear a click.

⑥ Connecting the work piece cable

Push the DIN connector of the work piece cable into the work piece cable outlet on the front face of the welder, and turn the connector to the right to lock it into place. Securely attach the case ground terminal of the work piece cable to the case connection terminal on the lower left side (looking from the front) for grounding (see below). This step is very important for the safety of the operator.



7. Operation

7-1. Preparation and checks

Before starting

(1) Connect and check cables

Check whether the resistance welding output cable, the TIG welding torch, the workpiece cable, footswitch, and the gas hose are connected properly. Then, turn on the power switch located on the rear face of the welder.

☞ See page 17, Section 6 “Connection” for more information on how to connect the cables.

(2) Check gas

Turn the GAS CHECK switch on and check for the flow of argon gas from the end of the TIG welding torch. Adjust the flow rate to 5 L/M using the flowmeter connected to the gas cylinder.

Operation panel ⑥

Be sure to turn the GAS CHECK switch off when you have finished making adjustments and checks.

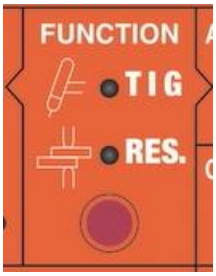
☞The argon gas will keep flowing out as long as the GAS CHECK switch is turned on and until the gas cylinder is empty. Turn the GAS CHECK switch off when you have finished making adjustments and checks.

☞Keep this switch turned off at all times during the welding operation.

7-2. Resistance welding (RES.)

(1) Select mode

Select the RES. mode.



Operation panel④

(2) Select user setting

Select the DEFAULT mode. You can shift the modes through the sequence of DEFAULT -> USER -> DEFAULT -> alternately by repeatedly pressing the button.

Operation panel⑩

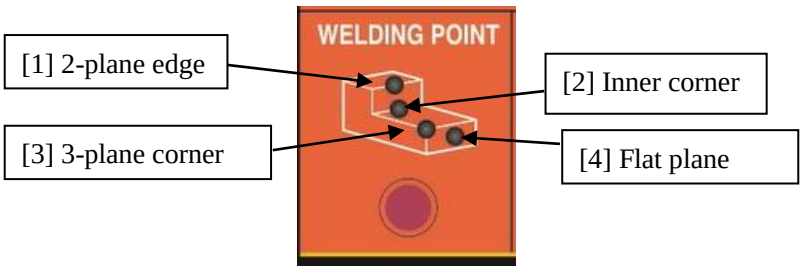
☞Operations in the DEFAULT mode are explained in this chapter. For operations using the USER mode, see page 28, Section 7-4 “Memorizing user settings.”

What’s DEFAULT

DEFAULT means the recommended preset values of current and welding time are automatically retrieved in line with selection of the aluminum mode ([5]), welding point ([7]), welding mode ([8]), size of the welding material ([9]).

(3) Select welding point

Select the welding point using the WELDING POINT SELECT button. You can shift the welding point through the sequence [1] 2-plane edge -> [2] Inner corner -> [3] 3-plane corner -> [4] Flat plane -> [1] 2-plane edge -> by repeatedly pressing the button.



Operation panel⑦

(4) **Select welding mode** Select the single wire mode or double wire mode using the MODE button.

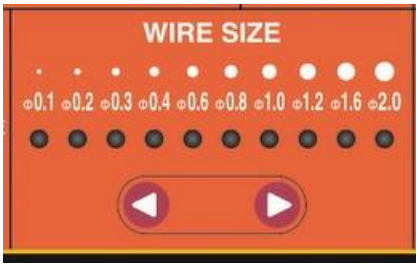
Single wire mode: Use this mode when performing welding operation with one welding rod

Double wire mode: Use this mode when performing the welding operation with two welding rods

* The double wire mode cannot be used for welding an inner corner and when the aluminum mode is used

Operation panel⑧

(5) **Select welding material size** Select the size of the welding material using the MATERIAL SELECT button.



Operation panel⑨

(6) **Check welding current value and welding time** The appropriate welding current value (A) and the welding time (ms) are retrieved and displayed. The values can be modified by turning the dials.

Operation panel①②

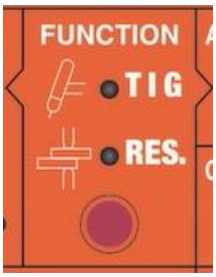
☞The preset initial values for the welding current (A) and the welding time (ms) are shown in the table on page 30 (1) "Initial values for welding current/time."

(7) **Start welding** Step on the footswitch to start TIG welding. Hold down the footswitch

7-3. TIG welding

7-3-1. Normal TIG welding

(1) Select welding Select the TIG mode.



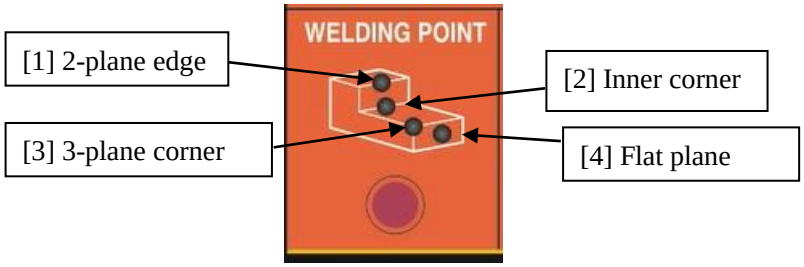
Operation panel④

(2) Select user setting Select the DEFAULT mode.

Operation panel⑩

☞Operations in the DEFAULT mode are explained in this chapter. For operations using the USER mode, see page 28, Section 7-4 “Memorizing user settings.”

(3) Select welding point Select the welding point using the WELDING POINT SELECT button. You can shift the welding point through the sequence [1] 2-plane edge -> [2] Inner corner -> [3] 3-plane corner -> [4] Flat plane -> [1] 2-plane edge -> by repeatedly pressing the button.



Operation panel⑦

(4) Select welding mode

Select the single wire mode or double wire mode using the MODE button.

Single wire mode: Use this mode when performing welding operation with one welding rod

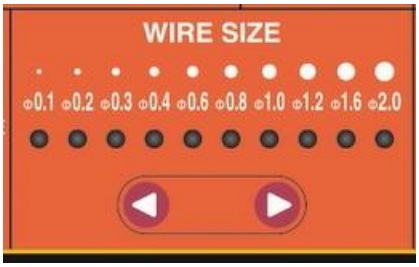
Double wire mode: Use this mode when performing the welding operation with two welding rods

* The double wire mode cannot be used for welding an inner corner and when the aluminum mode is used.

Operation panel⑧

(5) Select welding material size

Select the size of the welding material using the MATERIAL SELECT button.



Operation panel⑨

(6) Select aluminum mode

The aluminum mode is selected when TIG-welding an aluminum (copper alloy) mold.

Usually OFF

Operation panel⑤

(7) Select continuous TIG mode welding

Continuous TIG mode welding is selected to perform TIG welding continuously at constant preset intervals (the interval time is adjustable) over a wide area or a long distance.

Usually OFF

Operation in the DEFAULT mode (not using continuous TIG mode

welding) is explained in this chapter. To use continuous TIG mode welding, see page 25, Section 7-3-2 “Continuous TIG mode welding.”

Check and ensure the PULSING switch is turned off (LED is off)

Operation panel③

⑻ Check welding current value and welding time

The appropriate welding current value (A) and the welding time (ms) are retrieved and displayed. The values can be modified by turning the dials.

Operation panel①②

☞The preset initial values for the welding current (A) and the welding time (ms) are shown in the table on page 30 (1) “Initial values for welding current/time.”

(9) Start welding

Step on the footswitch to start TIG welding. Hold down the footswitch for at least 0.5 seconds.

☞In TIG welding, after stepping on the footswitch, the argon gas initially flows for 0.3 seconds (pre-flow) before the arc is generated.

7-3-2. Continuous TIG mode welding

Continuous TIG mode welding is selected to perform TIG welding continuously at constant preset intervals over a wide area or a long distance.

(1) Select welding
(2) Select user setting
(3) Select welding point
(4) Select welding mode
(5) Select welding material size
(6) Select continuous TIG welding function

These procedures are similar to the ones described in Section 7-3-1 “Normal TIG welding” on page 22.

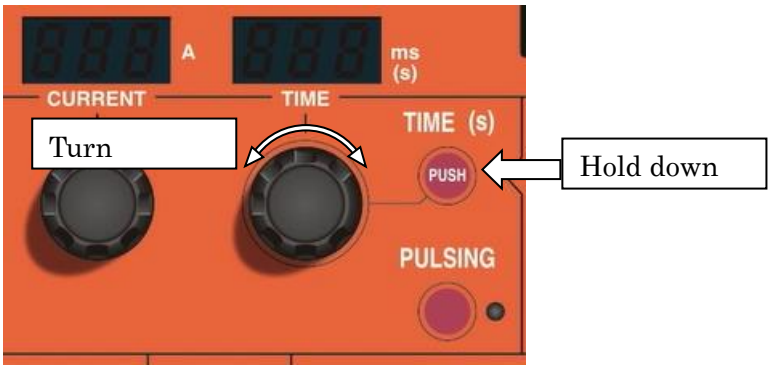
In continuous TIG mode, turn the PULSING switch on (LED on)

Operation panel③

The interval time is automatically set in the DEFAULT mode depending on the size of the welding material.

To change interval time

To change the interval time (S), push the TIME (S) button while at the same time turning the TIME dial.



☞The interval time can be adjusted in the range of 0.1 to 2 seconds in increments of 0.1 seconds. However, because of the usage rate restriction, this range may be automatically reduced depending on the welding current and time settings. => See page 15 (3) “Interval time setting in the continuous TIG mode” for more details.

☞The 3-plane corner cannot be selected as the welding point when the

continuous TIG mode is turned on. => See page 12 (2) “Selectable conditions for the welding point and the size of the welding material” for more detail.

(7) Check welding current value and welding time

Same as the procedure (7) in Section 7-3-1 “Normal TIG welding” on page 22.

☞When the continuous TIG mode is selected in DEFAULT mode, the interval time is automatically set to 0.1 s, and the relevant welding current value and the welding time are retrieved. => See page 32 (3) “Initial values for welding current/time in the continuous TIG mode” for more details. These values can be changed by turning the dials.

(8) Start welding

Step on the footswitch to start TIG welding. The arc is generated continuously at the preset interval time while the footswitch is held down. Hold down the footswitch for at least 0.5 seconds.

☞In TIG welding, after stepping on the footswitch, the argon gas initially flows for 0.3 seconds (pre-flow) before the arc is generated.

7-3-3. TIG welding in the aluminum mode

Aluminum mode is a TIG welding mode, which is to be selected when repairing an aluminum (copper alloy) mold. (Resistance welding cannot be performed.)

⑴Select aluminum mode Press the ALUMINUM button to turn it on (LED on).

Operation panel⑤

(2)Select welding
(3) Select user setting
(4) Select welding point
(5) Select welding mode
(6) Select welding material

These procedures are similar to the ones described in Section 7-3-1 “Normal TIG welding” on page 22.

(7) Check welding current value and welding time

Same as the procedure (7) in Section 7-3-1 “Normal TIG welding” on page 22.

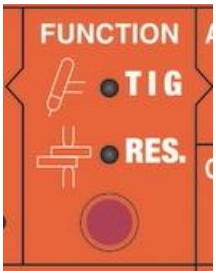
(8) Start welding Step on the footswitch after getting the TIG torch ready.

☞In TIG welding, after stepping on the footswitch, the argon gas initially flows for 0.3 seconds (pre-flow) before the arc is generated.

7-4. Memorizing user settings

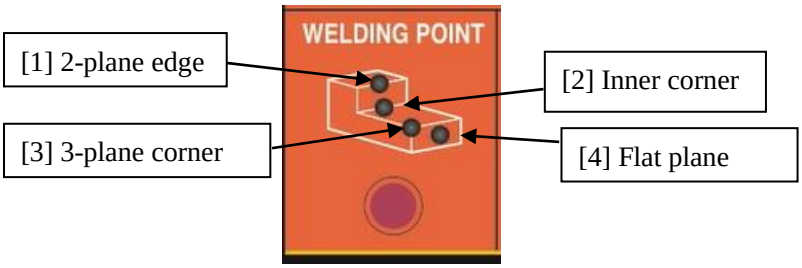
This welder offers a function to memorize the welding conditions set uniquely by the user. How to use this function is as follows:

(1) Select welding mode Select Resistance (RES.) or TIG mode.



Operation panel④

(2) Select welding point Select the welding point using the WELDING POINT SELECT button. You can shift the welding point through the sequence [1] 2-plane edge -> [2] Inner corner -> [3] 3-plane corner -> [4] Flat plane -> [1] 2-plane edge -> by repeatedly pressing the button.



Operation panel⑦

⑶ Select welding mode Select the single wire mode or double wire mode using the MODE button.

Single wire mode: Use this mode when performing welding operation with one welding rod

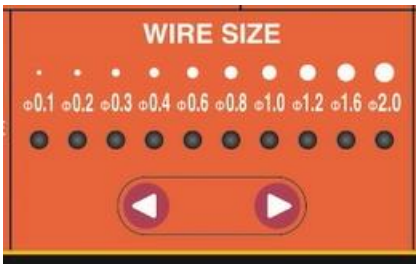
Double wire mode: Use this mode when performing the welding operation with two welding rods

* The double wire mode cannot be used for welding an inner corner and when the aluminum mode is used.

Operation panel⑧

(4) Select welding material size

Select the size of the welding material using the MATERIAL SELECT button.



Operation panel⑨

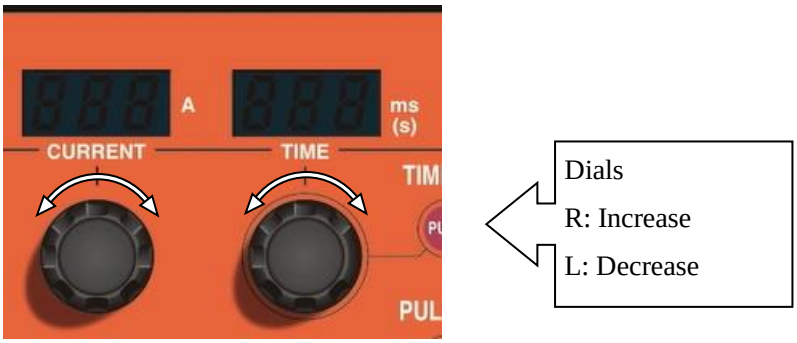
(5) Select Aluminum mode

The aluminum mode is selected when TIG-welding an aluminum (copper alloy) mold.

Operation panel⑤

(6) Set up welding current/ time

Adjust the current value (A) and the welding time (ms) with the dials.



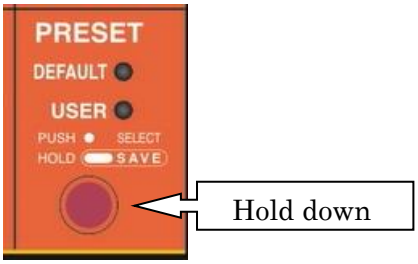
*IF turn dial, blink “PRESET” LED

(7) Confirm setting

Confirm the items set in procedures (1) to (6). Go back to the applicable procedure and adjust the settings if you need to change any of the items.

(8) Save the setting

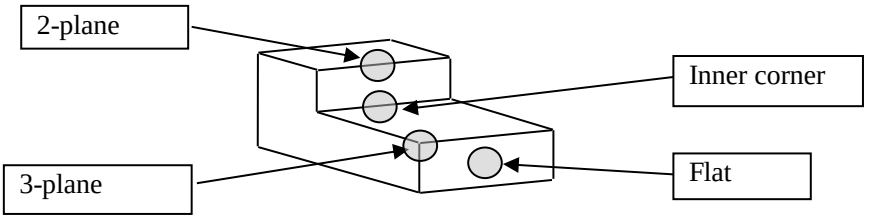
Hold down the PRESET button to save the settings after confirming them.



Later on, you can retrieve the memorized settings by pressing the PRESET button to select the applicable USER mode. You can also overwrite the settings as many times as desired.

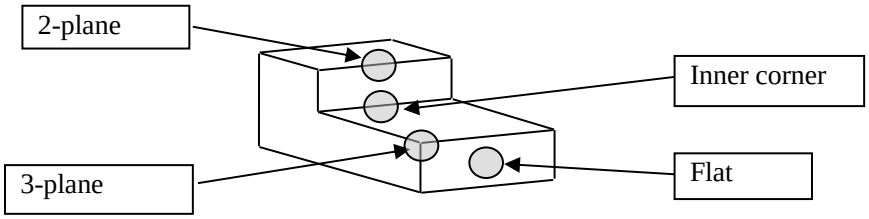
7-5. Initial values for welding current/time

(1) Initial values for RES welding current and time



Welding point	SIZE(mm)	SINGLE WIRE		DOUBLE WIRE	
		Current(A)	Time(ms)	Current(A)	Time(ms)
2-plane	φ0.1	70	2	70	2
	φ0.2	170	5	170	5
	φ0.3	250	5	250	5
	φ0.4	400	5	400	5
	φ0.6	500	10	500	10
	φ0.8	650	10	650	10
	φ1.0				
	φ1.2				
	φ1.6				
	φ2.0				
Inner corner	φ0.1	120	5		
	φ0.2	200	5		
	φ0.3	300	5		
	φ0.4	450	10		
	φ0.6	550	10		
	φ0.8	650	15		
	φ1.0				
	φ1.2				
	φ1.6				
	φ2.0				
3-plane	φ0.1	70	2	70	2
	φ0.2	170	5	170	5
	φ0.3	240	5	240	5
	φ0.4	400	5	400	5
	φ0.6	450	10	450	10
	φ0.8	650	10	650	10
	φ1.0				
	φ1.2				
	φ1.6				
	φ2.0				
Flat	φ0.1	100	3	100	3
	φ0.2	170	5	170	5
	φ0.3	250	5	250	5
	φ0.4	450	5	450	5
	φ0.6	500	10	500	10
	φ0.8	650	10	650	10
	φ1.0				
	φ1.2				
	φ1.6				
	φ2.0				

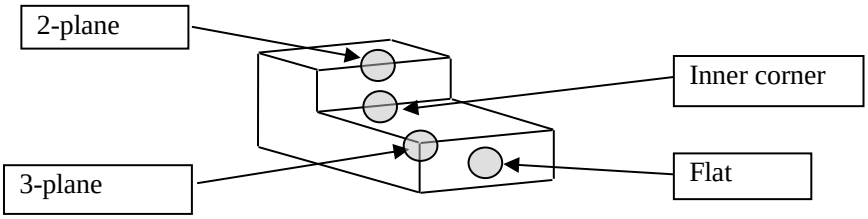
(2) Initial values for TIG welding current and time



Welding point	SIZE(mm)	SINGLE WIRE		DOUBLE WIRE	
		Current(A)	Time(ms)	Current(A)	Time(ms)
2-plane	φ0.1	2	1	5	5
	φ0.2	6	6	18	18
	φ0.3	16	16	25	25
	φ0.4	25	25	40	40
	φ0.6	45	45	70	70
	φ0.8	60	60	90	90
	φ1.0	80	80		
	φ1.2	100	100		
	φ1.6	130	130		
	φ2.0	170	170		
Inner corner	φ0.1	6	6		
	φ0.2	15	15		
	φ0.3	30	30		
	φ0.4	40	40		
	φ0.6	60	60		
	φ0.8	80	80		
	φ1.0	105	105		
	φ1.2	125	124		
	φ1.6	170	170		
	φ2.0	220	220		
3-plane	φ0.1	2	2	2	2
	φ0.2	3	3	10	10
	φ0.3	14	14	18	18
	φ0.4	20	20	30	30
	φ0.6	35	35	58	58
	φ0.8	50	50	80	80
	φ1.0	75	76		
	φ1.2	90	90		
	φ1.6	120	120		
	φ2.0	160	160		
Flat	φ0.1	4	4	10	10
	φ0.2	10	10	25	25
	φ0.3	25	25	35	35
	φ0.4	38	38	45	45
	φ0.6	58	58	70	70
	φ0.8	76	76	110	110
	φ1.0	100	100		
	φ1.2	120	120		
	φ1.6	160	160		
	φ2.0	210	210		

(3) Initial values for welding current/time

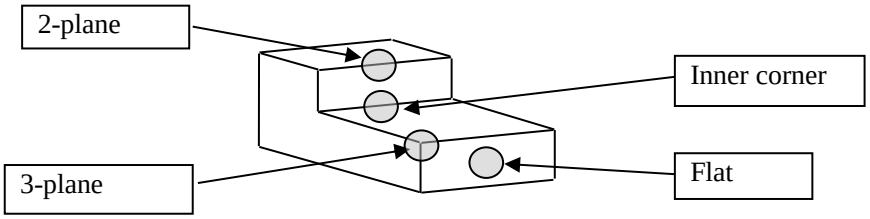
(in continuous TIG mode)



Welding point	SIZE(mm)	SINGLE WIRE			DOUBLE WIRE		
		Current(A)	Time(ms)	Interval(s)	Current(A)	Time(ms)	Interval(s)
2-plane	φ0.1	2	1	0.5	5	5	0.5
	φ0.2	6	6	0.5	18	18	0.5
	φ0.3	16	16	0.5	25	25	0.5
	φ0.4	25	25	0.5	40	40	0.5
	φ0.6	45	45	0.5	70	70	0.5
	φ0.8	60	60	0.5	90	90	0.5
	φ1.0	80	80	0.5			
	φ1.2	100	100	0.5			
	φ1.6	130	130	0.5			
	φ2.0	170	170	0.5			
Inner corner	φ0.1	6	6	0.5			
	φ0.2	15	15	0.5			
	φ0.3	30	30	0.5			
	φ0.4	40	40	0.5			
	φ0.6	60	60	0.5			
	φ0.8	80	80	0.5			
	φ1.0	105	105	0.5			
	φ1.2	125	124	0.5			
	φ1.6	170	170	0.5			
	φ2.0	220	220	0.8			
3-plane	φ0.1						
	φ0.2						
	φ0.3						
	φ0.4						
	φ0.6						
	φ0.8						
	φ1.0						
	φ1.2						
	φ1.6						
	φ2.0						
Flat	φ0.1	4	4	0.5	10	10	0.5
	φ0.2	10	10	0.5	25	25	0.5
	φ0.3	25	25	0.5	35	35	0.5
	φ0.4	38	38	0.5	45	45	0.5
	φ0.6	58	58	0.5	70	70	0.5
	φ0.8	76	76	0.5	110	110	0.5
	φ1.0	100	100	0.5			
	φ1.2	120	120	0.5			
	φ1.6	160	160	0.5			
	φ2.0	210	210	0.7			

(4) Initial values for welding current/time

(in ALUMINIUM mode)



Welding point	SIZE(mm)	SINGLE WIRE			DOUBLE WIRE		
		Current(A)	Time(ms)	Interval(s)	Current(A)	Time(ms)	Interval(s)
2-plane	φ0.1						
	φ0.2						
	φ0.3						
	φ0.4	50	50	0.15			
	φ0.6	70	70	0.20			
	φ0.8	90	90	0.20			
	φ1.0						
	φ1.2						
	φ1.6						
	φ2.0						
Inner corner	φ0.1						
	φ0.2						
	φ0.3						
	φ0.4						
	φ0.6						
	φ0.8						
	φ1.0						
	φ1.2						
	φ1.6						
	φ2.0						
3-plane	φ0.1						
	φ0.2						
	φ0.3						
	φ0.4	50	50	0.15			
	φ0.6	70	70	0.20			
	φ0.8	85	85	0.20			
	φ1.0						
	φ1.2						
	φ1.6						
	φ2.0						
Flat	φ0.1						
	φ0.2						
	φ0.3						
	φ0.4	85	84	0.15			
	φ0.6	100	100	0.20			
	φ0.8	130	130	0.30			
	φ1.0						
	φ1.2						
	φ1.6						
	φ2.0						

8. Maintenance and safety checks

8-1. Maintenance and safety checks

Please conduct maintenance and safety checks periodically to keep the welder in fine conditions for safe and efficient operations.

Welder main unit

Location	Check points	Notes
Front face	● Breakage, loose fixation, or failure of the operation units and displays on the operation panel ● Breakage or loose fixation of the DIN/cannon connector outlets or the gas outlet joint	In case of troubles, conduct: internal check retightening parts replacement
Rear face	● Breakage or loose fixation of the gas inlet connection ● Smooth operating sound and ventilation of the cooling fan	
Top face Bottom face Side faces	● Breakage and loose fixation of the handles ● Breakage and loose fixation of rubber bases ● Loose fixation of the top and bottom plates	In case of troubles, conduct: retightening parts replacement
General	● Tarnish and other appearances indicating overheat ● When welding in an on-state, □Unusual vibrations and buzzes □Unusual smell	Conduct internal check

Cables and hoses

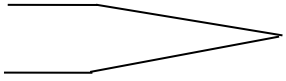
Location	Check points	Notes
Ground wire	● Disconnection or loose fixation of the ground wire of the work piece cable	Check it at all times to avoid electric shock injuries.
Input cable	● Loose fixation of the connectors, proper wire arrangement of the active and ground terminals ● Worn or torn cable coating ● Excessive weight on the cable	Check appropriately to meet requirements in the workplace for securing the safety and stable arc ejection.
Output cable	● Loose fixation to the DIN outlets ● Loose fixation of the connectors ● Worn or torn cable coating ● Exposure of electrically active parts (except the work connector) ● Excessive weight on the cable	
Foot switch	● Loose fixation between the cannon connector and outlet ● Excessive weight on the cable	
Hoses	● Loose fixation to the joints, loose fasteners ● Worn or torn hoses	In case of troubles, conduct: retightening hose replacement
TIG torch cable	● Bent cable ● Worn, torn, or cracked cable	In case of troubles, replace the cable

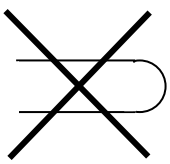
◎ Checking the TIG tungsten electrode

Use tungsten electrodes qualified by the manufacturer.

Rounded or stained (oxidized) tungsten electrode tips may defect radio-wave discharge and thereby cause arc deficiencies such as ejection failures or defocusing.

Sharpen the tip frequently with a grinder, etc., and remove the stains off (see the illustration below) for achieving fine welding works.



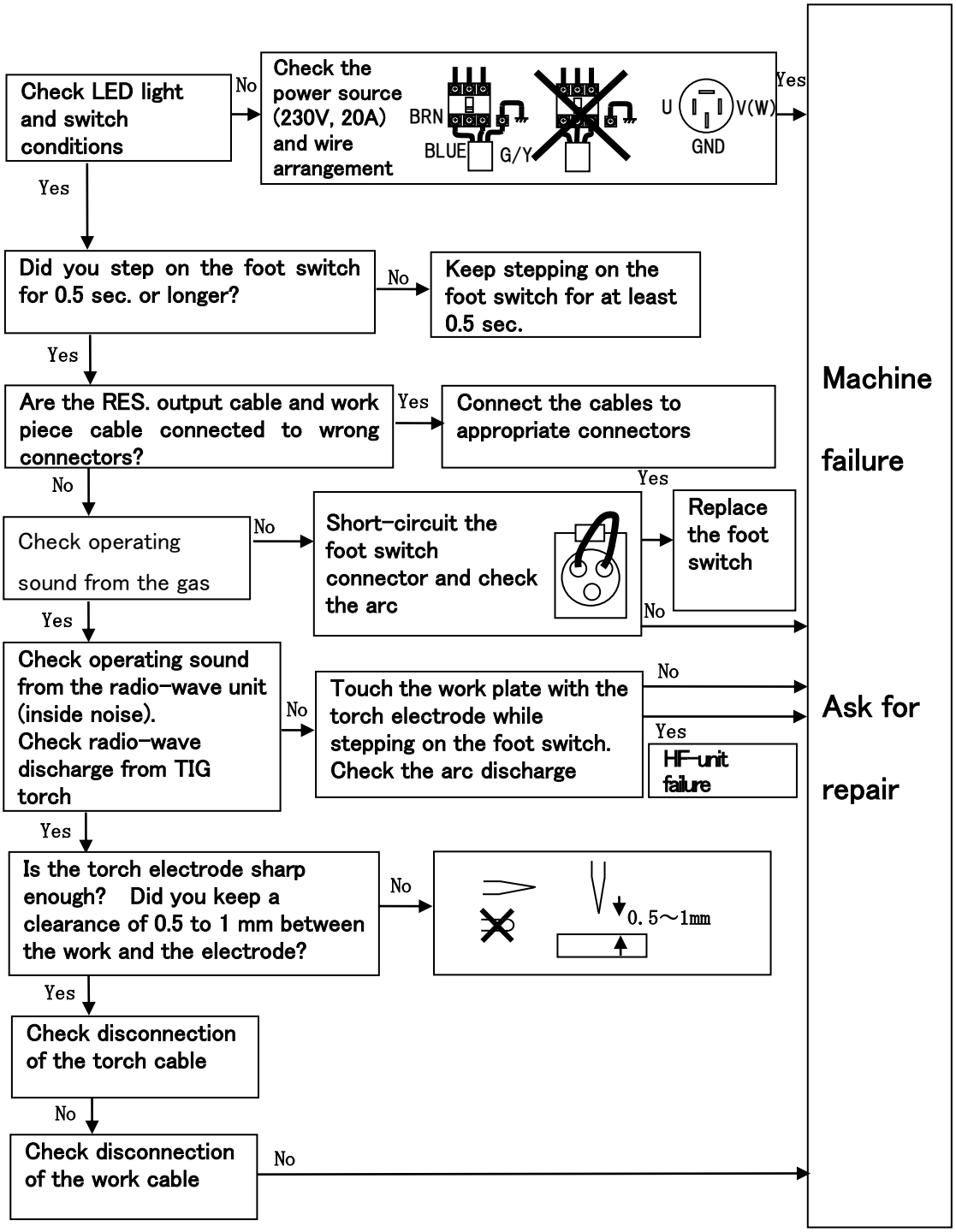


8-2. Response to error displays

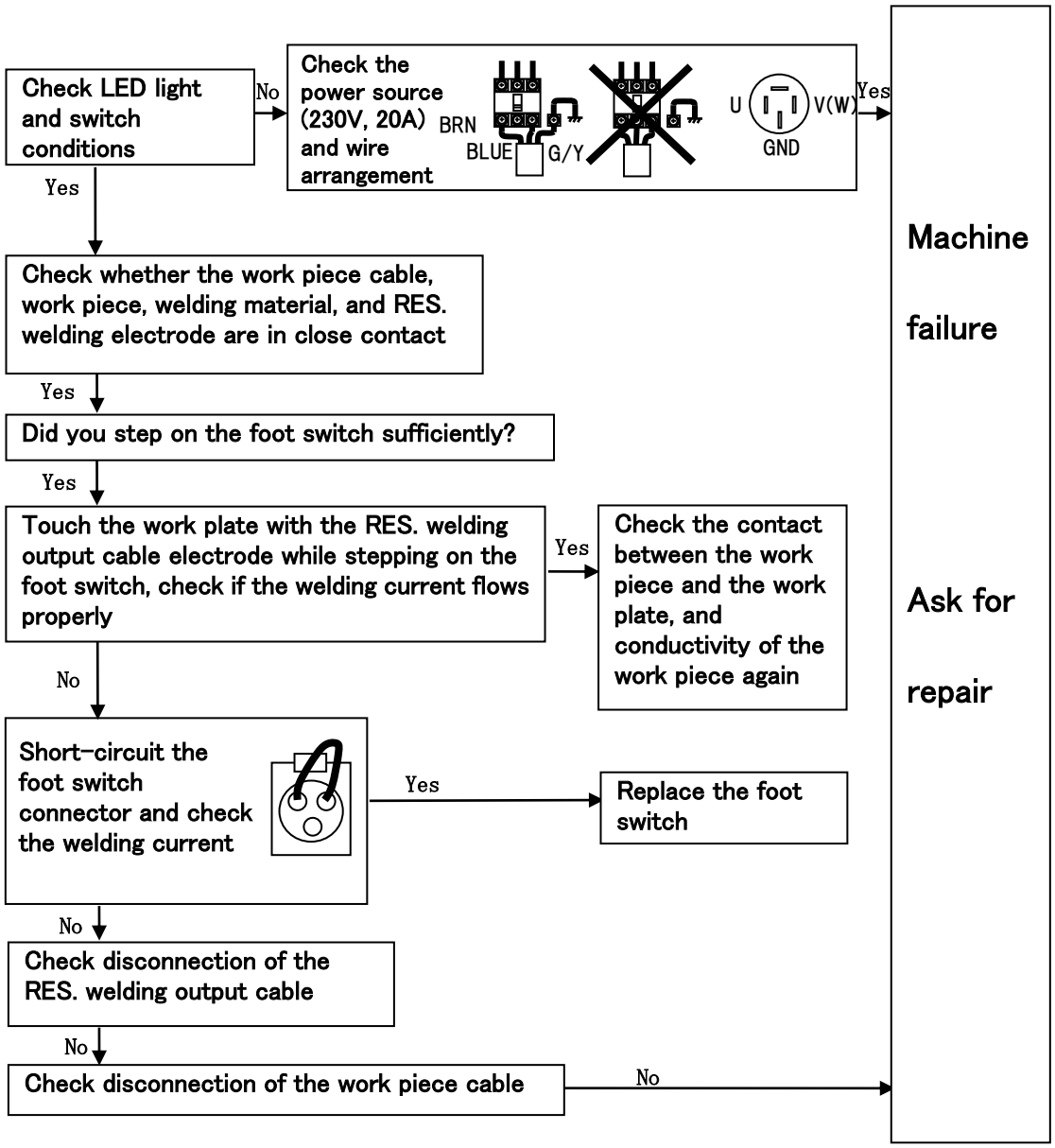
Error code LED blink	Details and response
E99	**Input power voltage is too high or too low** ● The power voltage deviates from the acceptable range from 180V ～ 253V. Correct the voltage and turn the power switch on again.
E01	**Input power voltage is too low** ● The power voltage should be set to 200V and 20A (or above). Check the wire arrangement as well.
E02	**Input power voltage is too high** ● Check the power voltage (200V).
E03	**Overcurrent on primary side** ● This error is attributable to a trouble inside the welder, and the welder should be repaired by the manufacturer.
E04	**Overheat on the primary side** ● Stop the welding operation, remain the welder turned on and wait for cooling down. If the error occurs again soon after restarting, the welder should be repaired by the manufacturer.
E05	**Overheat on the secondary side** ● Stop the welding operation, remain the welder turned on and wait for cooling down. If the error occurs again soon after restarting, the welder should be repaired by the manufacturer.
Buzzer alarm no display	**Arc current uncontrollable** ● This error is attributable to a trouble inside the welder, and the welder should be repaired by the manufacturer.

8-3. Trouble shooting guide

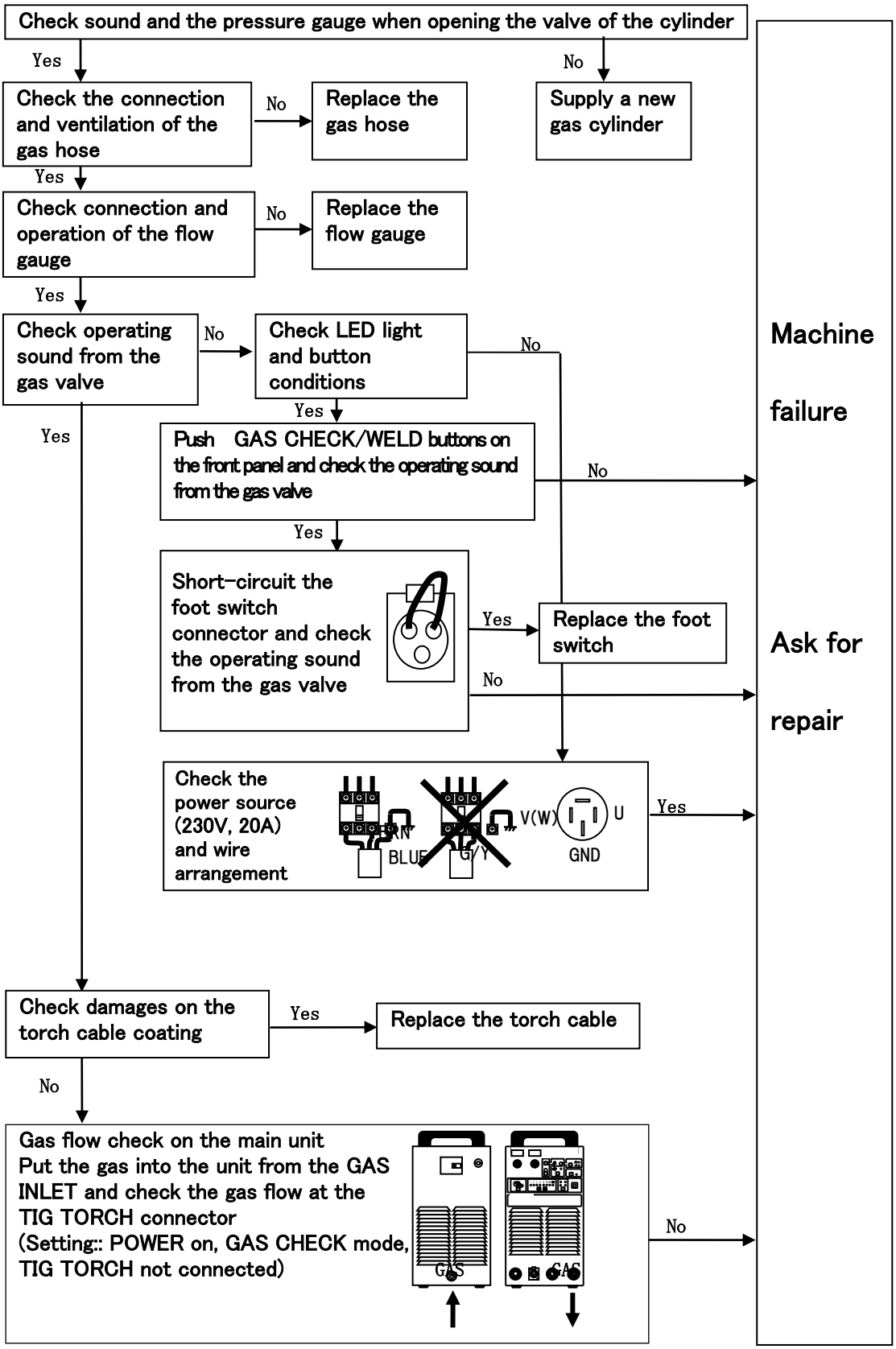
8-3-1. When the arc does not come out,



8-3-2. When resistance welding does not work,



8-3-3. When the gas does not come out of the torch



9. Specifications

9-1. Rating and specifications of power source

		SW – V01
Welding Methods		TIG spot welding, resistance welding
Rated Input Voltage	V	200 / 230
Phase		Single phase
Input Voltage Variation Allowance	V	180 ～ 253
Power Frequency	Hz	50 / 60
Rated Input Power	kVA	10.4(Peak current)
	kVA	2.8(Average current)
Max. No-load Voltage	V	approx. 76V (AC230V input, TIG)
Base Current (w/ pulses)	A	5
Rated Output Current	A	250 (TIG), 750 (RES.)
Welding Current Range	A	2.5 ～ 250 (TIG), 30 ～ 750 (RES.)
Welding Time Range	ms	1 ～ 600 (TIG), 1 ～ 30 (RES.)
Repetitive welding cycle (RES.)	ms	400
Pulse cycle (TIG)	s	0.1 ～ 2.0
Rated Load Voltage	V	20 (TIG), 5 (RES.)
Usage Rate	%	12 (TIG), 7.5 (RES.)
Control Method		Inverter method
Cooling Method		Forced air cooling
Radio Wave Generator (TIG)		Spark discharge, serial superposition type
Gal Pre-flow Time (TIG)	s	approx. 0.3 sec.
Gas After-flow time (TIG)	s	w/o intervals 1 ～ 5 sec. w/ intervals 2 ～ 6 sec. (Link system using output current setting)
Control Functions		□Rotary encoders Welding current/time settings □Push-button switches Welding point, Welding mode, Wire size (L/R), RES/TIG mode, pulsing, Pulsing time, Aluminum mode, Gas check, USER select/save
Dimensions	mm	203[W] 425[D] 389[H] (excluding handles)
Gross Weight	kg	approx. 23
Insulation Type		Type H

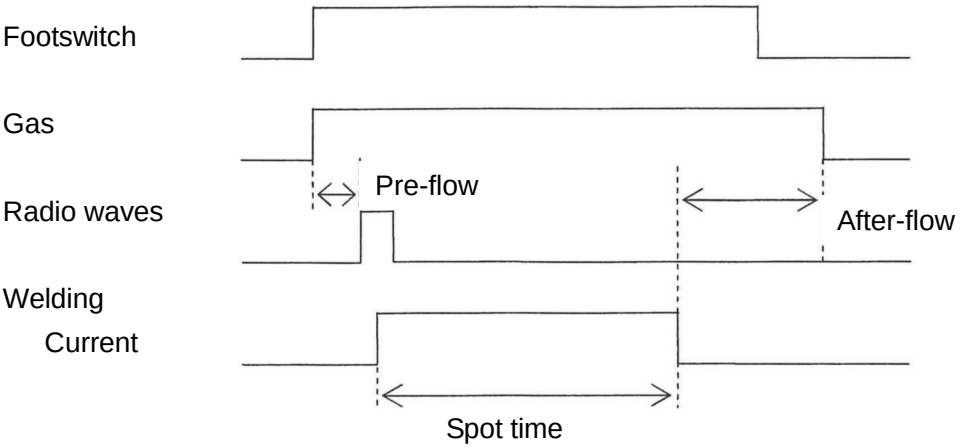
9-2. Insulation resistance and withstand voltage

Test zone	Insulation resistance	Withstand voltage
Input - Output	10MΩ or above with DC500V measure	1 minute at AC 3750V
Input - Ground	10MΩ or above with DC500V measure	1 minute at AC 1875V
Output - Ground	10MΩ or above with DC500V measure	1 minute at AC 1875V

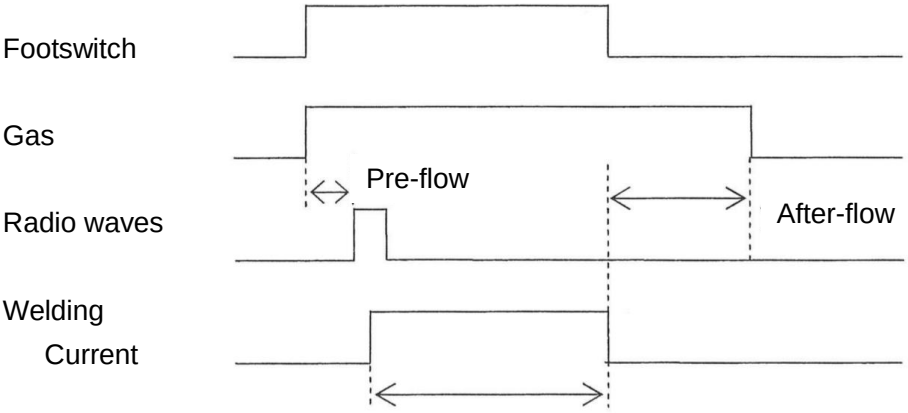
9-3. Operation flowchart

9-3-1 TIG Weld mode

(2) Normal

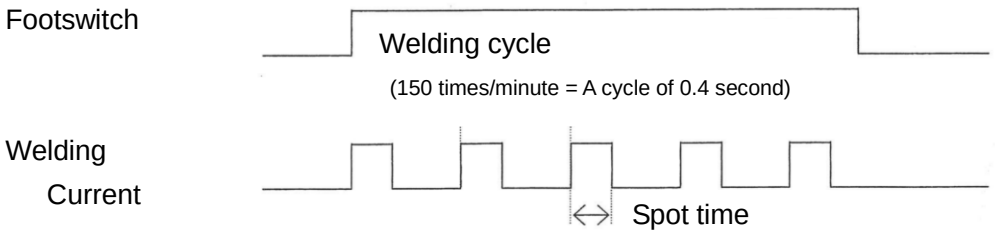


(1) Foot-switch off within welding time

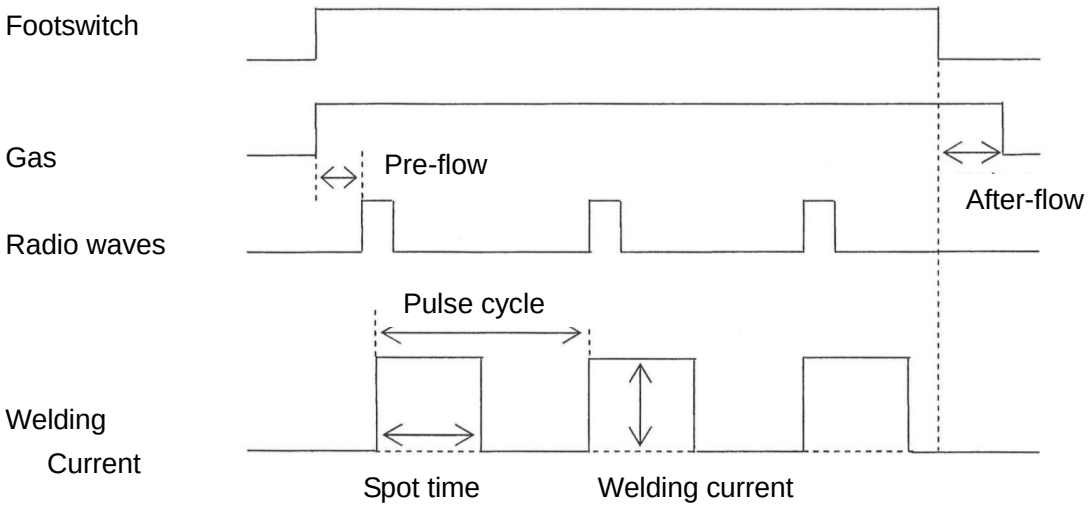


The output is stopped when the footswitch is turned off.

9-3-2 RES Continuous Spot Mode



9-3-3 TIG Continuous Spot Mode

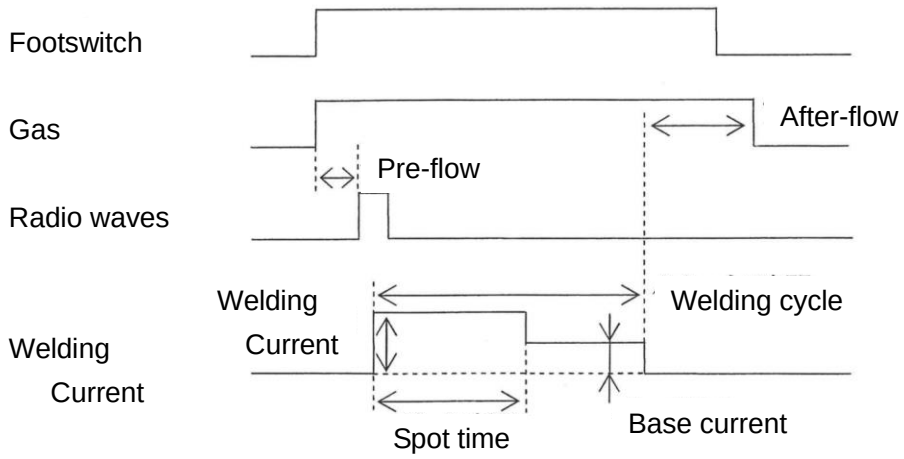


* If the footswitch is turned off within the spot time, the output stops at that time and the after-flow operation is initiated.

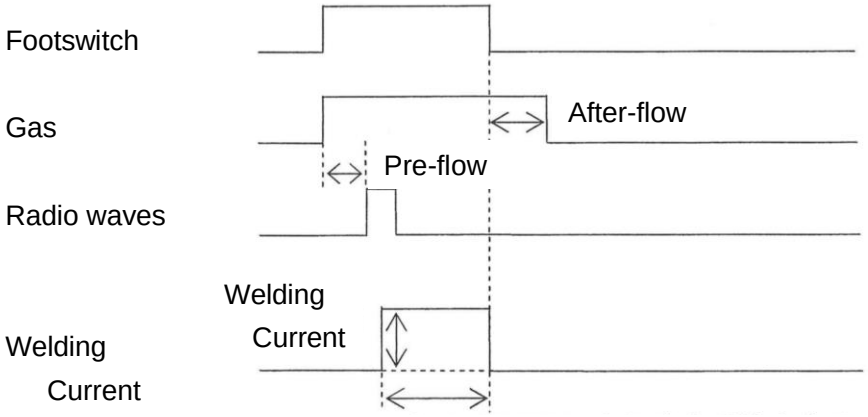
* From the point of time when the footswitch is turned off, the after-flow operation is initiated.

9-3-4 Aluminum TIG spot Mode

(1)Normal

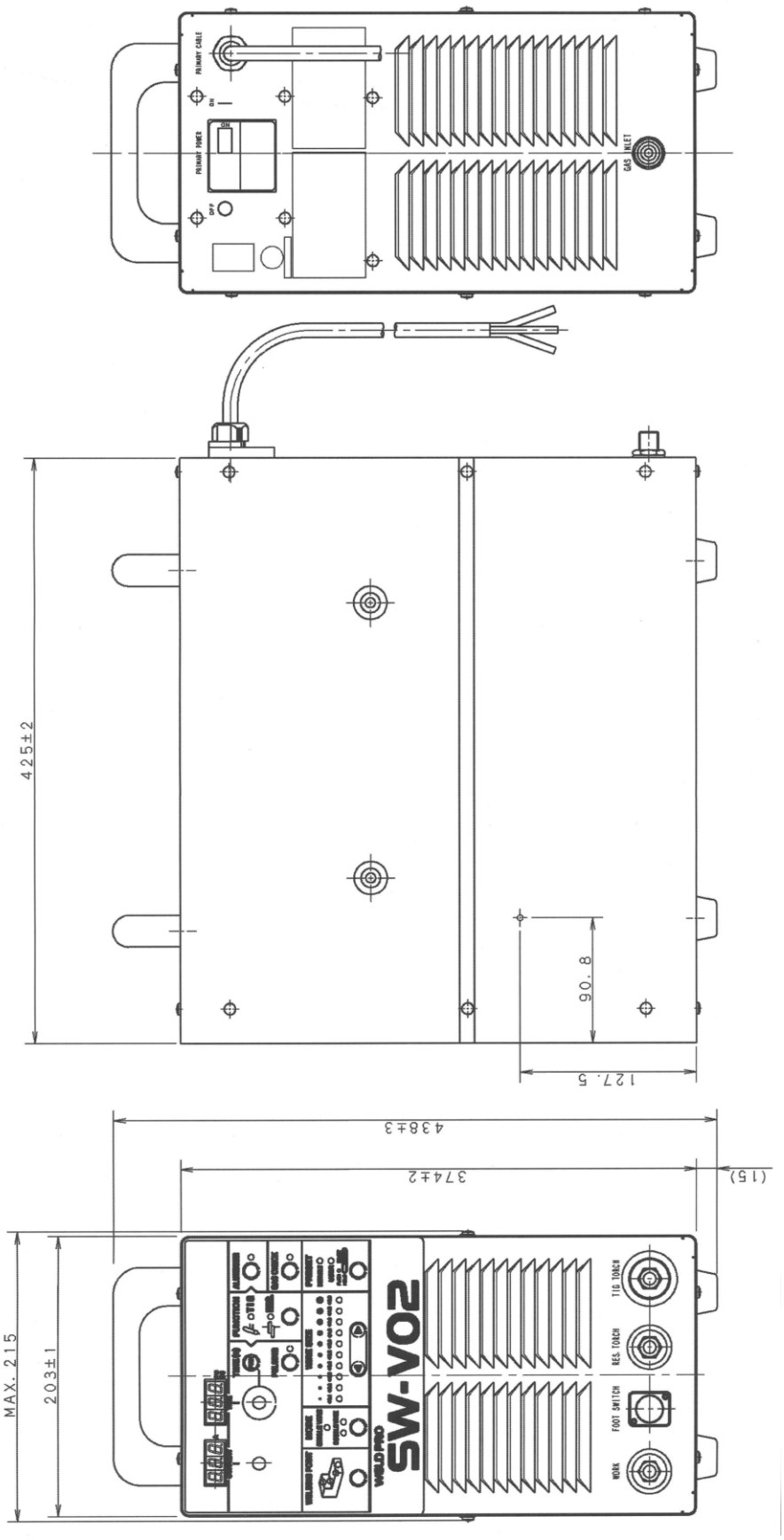


○ Footswitch off within spot time.



The output is stopped when the footswitch is turned off.

9-4. Dimensions



SW-V02

Operation quick reference

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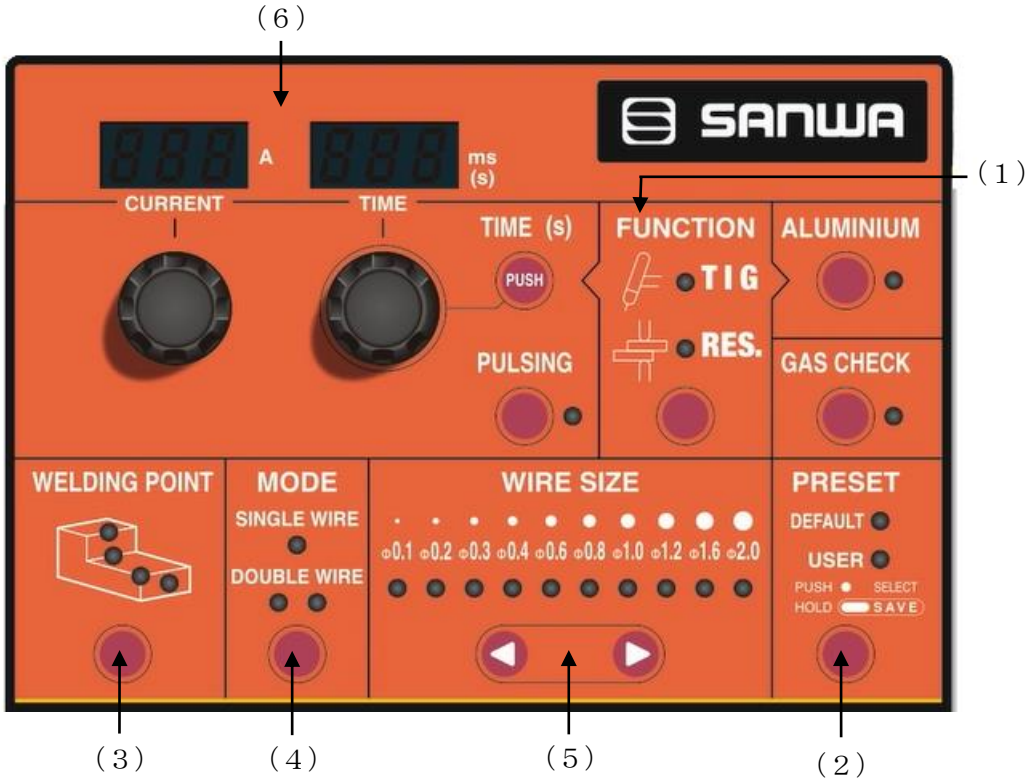
1 . Before starting

Operation panel

（1） Connect and check cables	① Resistance welding output cable ② TIG welding torch ③ Work piece cable ④ Foot switch ⑤ Gas hose Check whether cables and hose ①～⑤ are connected properly.
（2） Turn power switch on	Turn on the power switch located on the rear face of the main unit
（3） Turn gas check switch on	Press the “GAS CHECK” button and check for flow of argon gas from the end of the TIG welding torch.
（4） Adjust flow rate	Adjust the flow rate to 5L/M using the flowmeter connected to the gas cylinder.
（5） Turn gas check switch off	Turn the “GAS CHECK” switch off.

※See P.19, section 7-1 “Preparation and checks” in the Operation Manual for more details.

2 .Resistance welding (RES.)

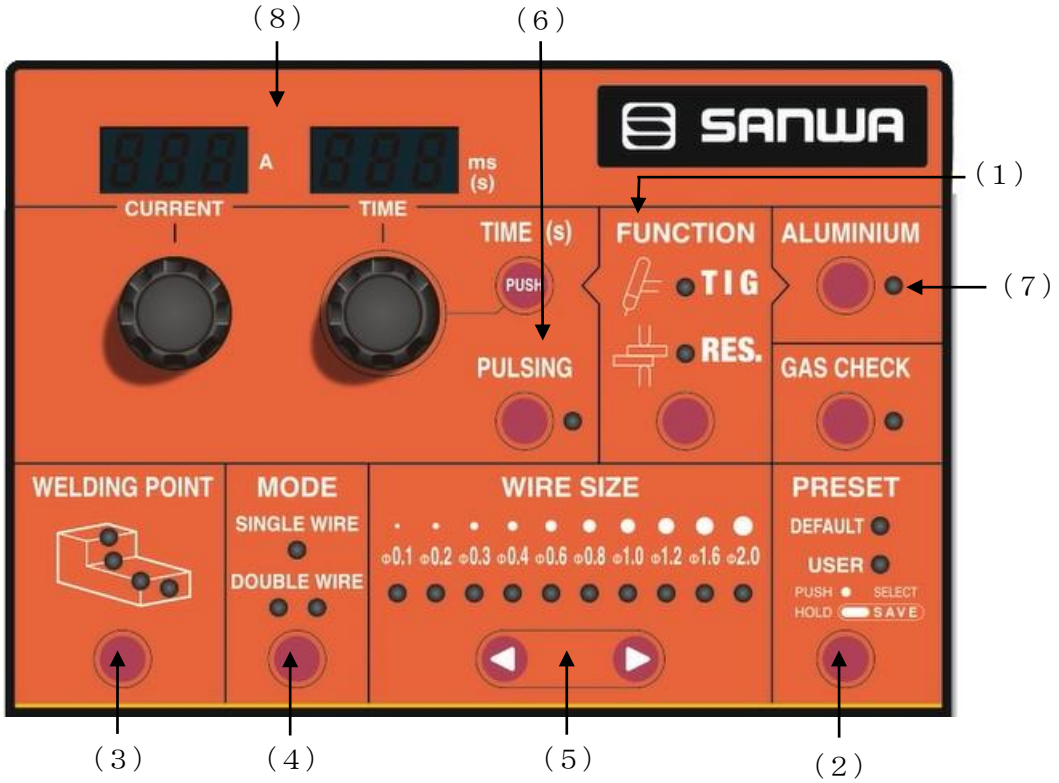


Operation panel

(1) Select the welding mode	Select the "RES." mode.
(2) Select user setting	Select the "DEFAULT" mode.
(3) Select welding point	Select the welding point.
(4) Select welding mode	Select the welding mode
(5) Select welding material size	Select the size of the welding material
(6) Check welding current value and welding time	The appropriate values are retrieved automatically as a result of procedures (3) and (4). Check the displays. ☞You can change the values when necessary.
(7) Start welding	Step on the foot switch to start welding.

※See P.20 7-2 "Resistance welding (RES.)" in the Operation Manual for more details.

3 .Normal TIG welding

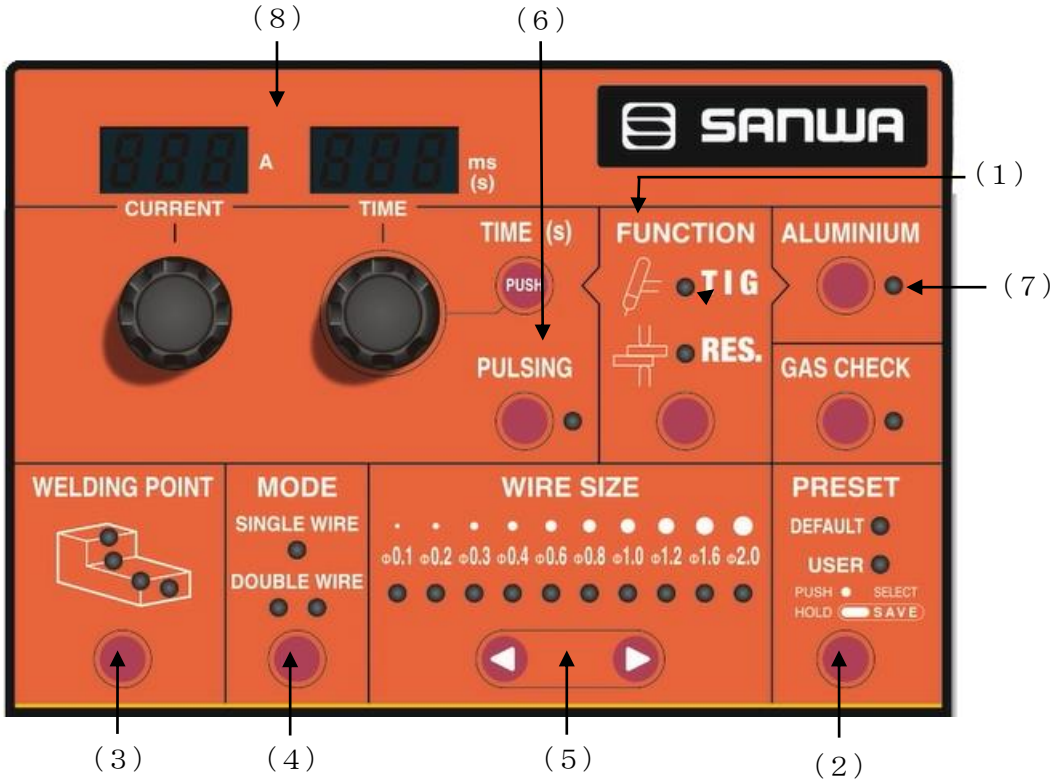


Operation panel

（1） Select the welding mode	Select the “TIG” mode.
（2） Select user setting	Select the “DEFAULT” mode.
（3） Select welding point	Select the welding point.
（4） Select welding mode	Select the welding mode
（5） Select welding material size	Select the size of the welding material.
（6） Check continuous TIG welding function	Check and ensure the “PULSING” switch is turned off.
（7） Check ALUMINIUM switch	Check and ensure the “ALUMINIUM” switch is turned off.
（8） Check welding current value and welding time	The appropriate values are retrieved automatically as a result of procedures (3),(4)and (5). Check the displays. ☞You can change the values when necessary.
（9） Start welding	Step on the foot switch to start welding.

※See P.22, section 7-3-1 “Normal TIG welding” in the Operation Manual for more details.

4 . Continuous TIG mode welding



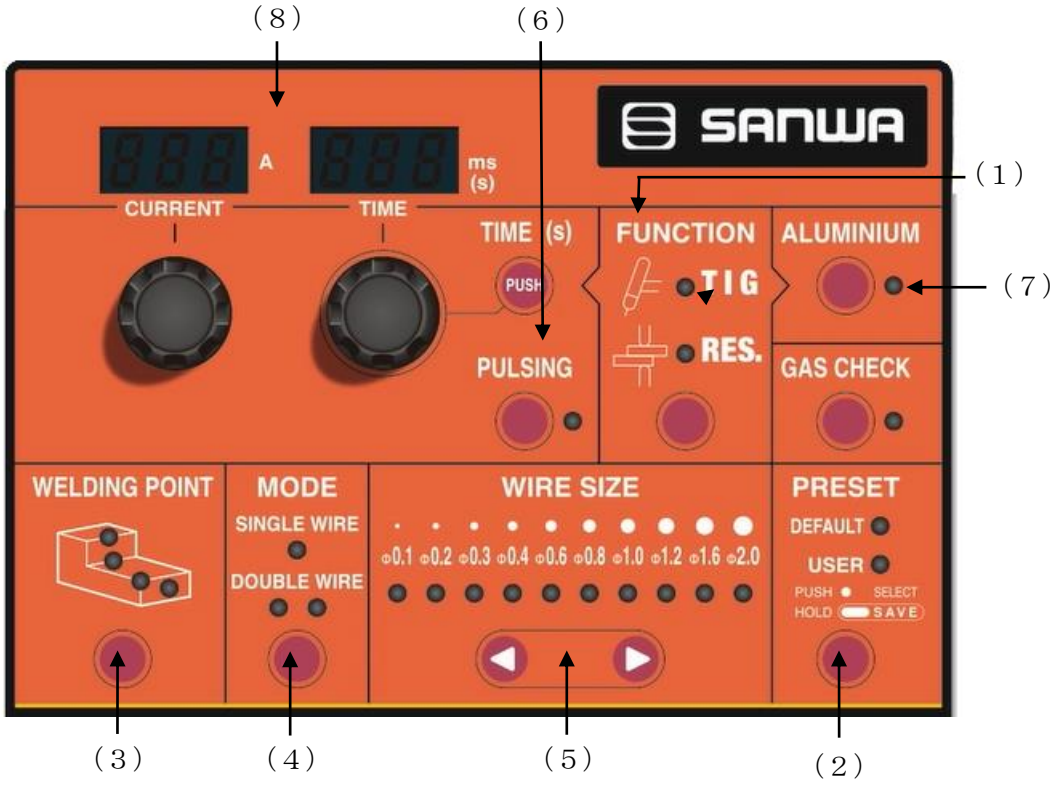
Operation panel

(1) Select the welding mode	Select the "TIG" mode.
(2) Select user setting	Select the "DEFAULT" mode.
(3) Select welding point	Select the welding point.
(4) Select welding mode	Select the welding mode
(5) Select welding material size	Select the size of the welding material.
(6) Check continuous TIG welding function	Check and ensure the "PULSING" switch is turned ON.
(7) Check ALUMINIUM switch	Check and ensure the "ALUMINIUM" switch is turned off.
(8) Check welding current value and welding time	The appropriate values are retrieved automatically as a result of procedures (3),(4)and (5). Check the displays. ☞You can change the values when necessary.
(9) Start welding	Step on the foot switch to start welding.

※See P.25, section 7-3-2 "Continuous TIG mode welding" in the Operation Manual for more details.

5. ALUMINIUM mode welding

Aluminium mode is a TIG welding mode, witch is to be selected when repairing an aluminium (or copper alloy) mold. (Resistance welding can not be performed)

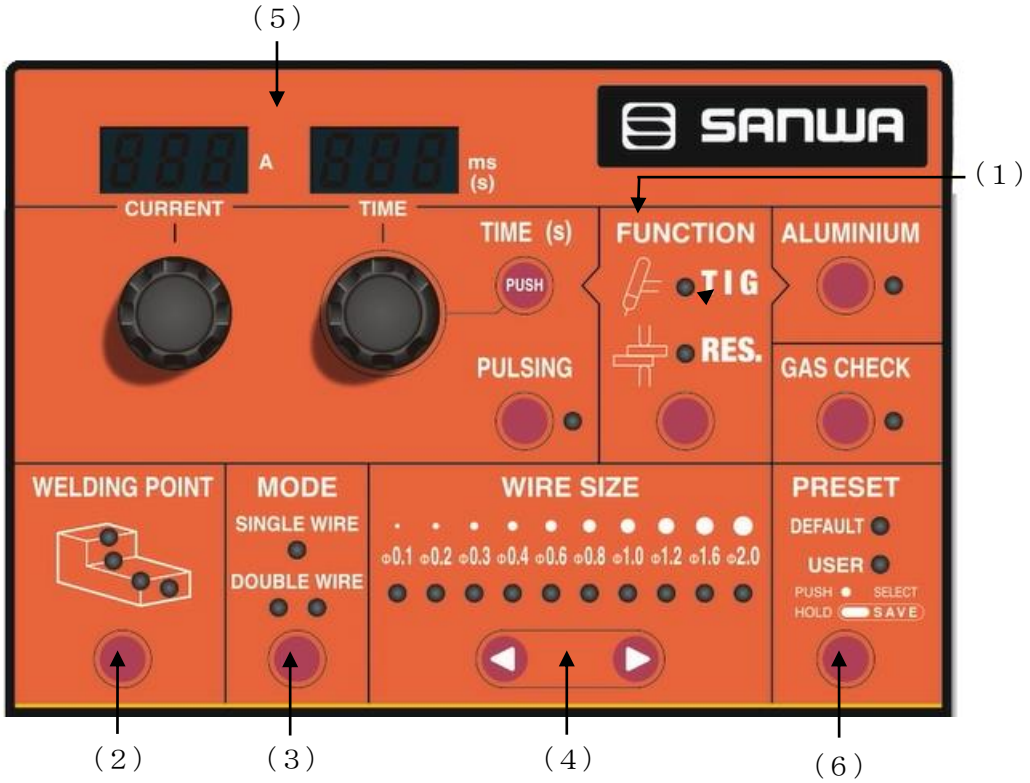


Operation panel

(1) Select the welding mode	Select the "TIG" mode.
(2) Select user setting	Select the "DEFAULT" mode.
(3) Select welding point	Select the welding point.
(4) Select welding mode	Select the welding mode
(5) Select welding material size	Select the size of the welding material.
(6) Check continuous TIG welding function	Check and ensure the "PULSING" switch is turned off.
(7) Check ALUMINIUM switch	Check and ensure the "ALUMINIUM" switch is turned ON.
(8) Check welding current value and welding time	The appropriate values are retrieved automatically as a result of procedures (3),(4)and (5). Check the displays. ☞You can change the values when necessary.
(9) Start welding	Step on the foot switch to start welding.

※See P.27, section 7-3-3 "TIG welding in the aluminium mode" in the Operation Manual for more details.

6 .Memorizing user settings



Operation panel

（1） Select the welding mode	Select the “TIG” mode.
（2） Select welding point	Select the welding point.
（3） Select welding mode	Select the welding mode
（4） Select welding material size	Select the size of the welding material.
（5） Check welding current value and welding time	Set up the welding current value and the welding time with the dials. When you turn the dials, the preset LED blink
（6） Memorize setting	Hold down the PRESET button.
（7） Call setting	Push the PRESET button and select the USER.

※See P.28, section 7-4 “Memorizing user settings” in the Operation Manual for more details.

Contact Us

We’re Here to Help

If you encounter any issues or have any questions about your new product, please gather the serial number and contact our customer support team.

Customer Support

Gesswein®
201 Hancock Avenue
Bridgeport, CT 06605 US

Email: info@gesswein.com
Phone: 203.366.5400

Support Hours

Mon - Fri | 8:30AM - 5PM EST