

INVERTER-TYPE WELDING TRANSFORMER

SIT-A191

OPERATION MANUAL



Thank you for purchasing our Inverter-Type Welding Transformer **SIT-A191**.

- This operation manual explains its method of operation and precautions for use.
- Before using this Transformer, read this operation manual carefully until you have familiarized yourself with it.

After reading save the manual in place where operators can refer to it at any time.

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1. Special Precautions

(1) Safety Precautions

Before using, read "Safety Precautions" carefully to understand the correct method of 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 with a triangle denotes that the content gives notice of DANGER, WARNING or CAUTION to the operator.

DANGER



Do not touch the "Terminal block" on the rear panel of the Welding Transformer

Since very high voltage is applied to the "Terminal block", it is very dangerous to touch it unnecessarily. When connecting or disconnecting a cable, be sure to turn off the power. After connecting the cable, install the terminal cover so that operator can not touch the terminal block during work.



Never disassemble, repair or modify the Welding Transformer

These actions can cause electric shock and fire. Consult us or your distributor for inspection and repair.



Never burn, destroy, cut, crush or chemically decompose the Welding Transformer

This product incorporates parts containing gallium arsenide (GaAs).

WARNING



Do not put your hands between the electrodes

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



Do not touch +/- terminal, secondary cable, any welded part or electrodes during welding and just after welding finished

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



Ground the Welding Transformer

If the Transformer is not grounded, you may get an electric shock when there is trouble, or when electricity leaks.



Connect the specified cables securely

Cables of insufficient current capacities and loose connections can cause fire and electric shock.



Do not damage the power cable and connecting cables

Do not tread on, twist or tense any cable. The power cable and connecting cables may be broken, and that can cause electric shock and fire. If any part needs to be repaired or replaced, consult us or your distributor.



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

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. The welding machine generates a magnetic field and has effects on the operation of the pacemaker while it is turned on.



Protective gear must be worn

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



Wear protective glasses

If you look at the flash directly during welding, your eyes may be damaged. If any spatter gets in your eye, you may lose your eyesight.

CAUTION



Do not splash water on the Welding Transformer

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



Use proper tools (wire strippers, pressure wire connectors, etc) for termination of the connecting cables

Do not cut the conductor of wire. A flaw on it can cause fire and electric shock.



Install the Welding Transformer on firm and level surface

If the Transformer falls or drops, injury may result.



Do not place a water container on the Welding Transformer

If water spills, insulation will deteriorate, and this may cause electric leak and fire.



Keep combustible matter away from the welding machine

Spatter can ignite combustible matter. If it is impossible to remove all combustible matter, cover them with non-combustible material.



Do not cover the Welding Transformer with a blanket, cloth, etc.

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



Do not use this Welding Transformer for purposes other than welding

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



Use ear protectors

Loud noises can damage hearing.



Keep a fire extinguisher nearby

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



Maintain and inspect the Welding Transformer periodically

Maintain and inspect the Transformer periodically, and repair any damage nearby before starting operation.

(2) Precautions for Handling

- Install this Welding Transformer on a firm and level surface. If it is inclined, malfunction may result.
- Do not install this Welding Transformer in the following:
 - Damp places where humidity is 90% or higher,
 - Hot or cold places where temperatures are above 40°C or below 5°C,
 - Places near a high noise source,
 - Places where chemicals are handled,
 - Places where water will be condensed, and
 - Dusty places.
- Do not block up the vent slits and provide the clearance of 10 cm minimum for better radiation.
- Do not put a screw, a coin, etc., in the Welding Transformer, since they can cause a malfunction.
- Clean the outside of the Welding Transformer 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 Welding Transformer.
- Operate the Welding Transformer according to the method described in this Operation Manual.

(3) On Disposal

This product incorporates parts containing gallium arsenide (GaAs). At the time of disposal, separate it from general industrial waste or domestic waste and carry out the disposal in accordance with applicable laws and regulations.

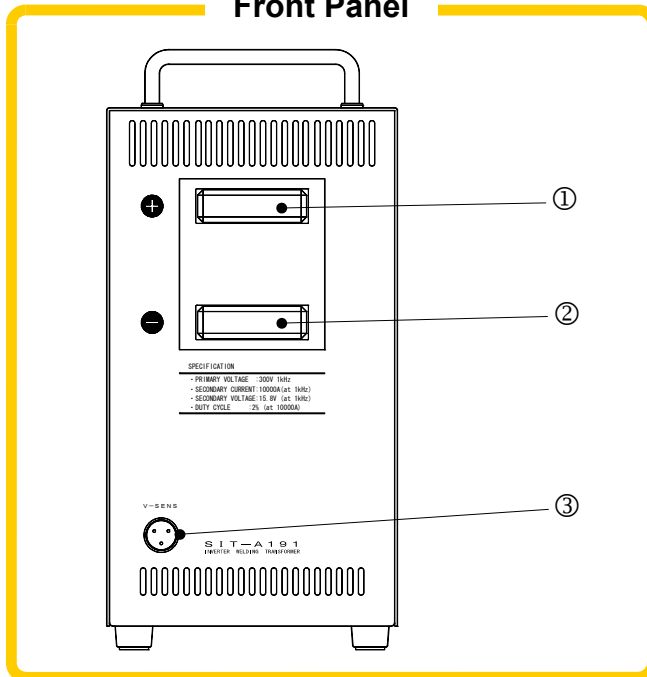
(4) Shipping Kit

Verify that contents of the container agree with the kit list.
If you see any damage, please contact us.

Packaged Kit	Quantity
SIT-A191	1
Operation Manual	1

2. Name and Function of Each Section

Front Panel



① [+] terminal

Connect the positive (+) cable of the welding head to this terminal.

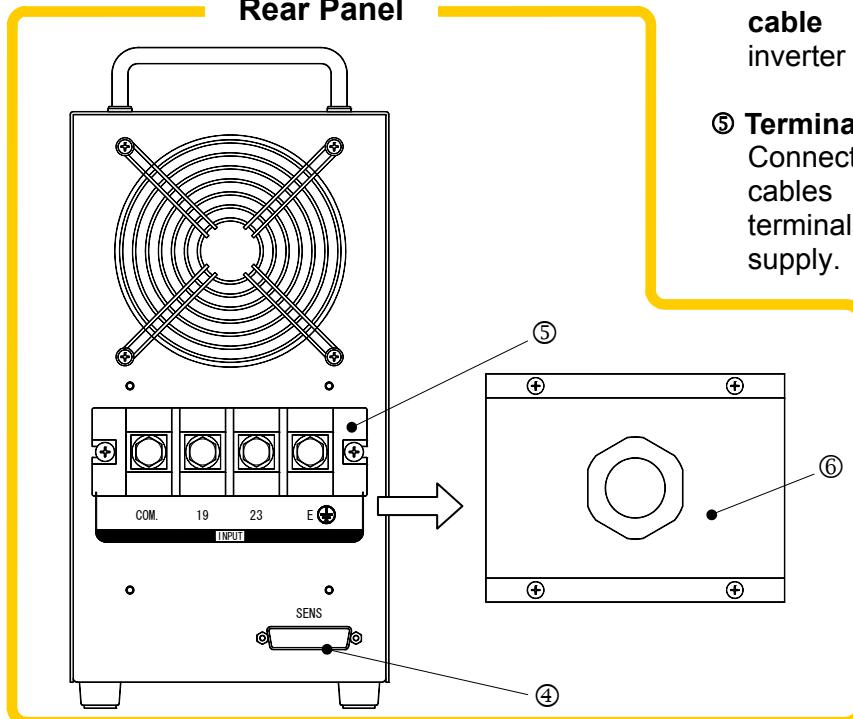
② [-] terminal

Connect the negative (-) cable of the welding head to this terminal.

③ [V-SENS] connector

Connect the plug of the voltage-sensing cable (separately sold). Connect the other side of this cable to the screws near the electrode of the welding head.

Rear Panel



④ [I/O] connector

Connect the dedicated [SENS] cable (separately sold) to our inverter power supply.

⑤ Terminal block

Connect the dedicated output cables (separately sold) to these terminals and to our inverter power supply.

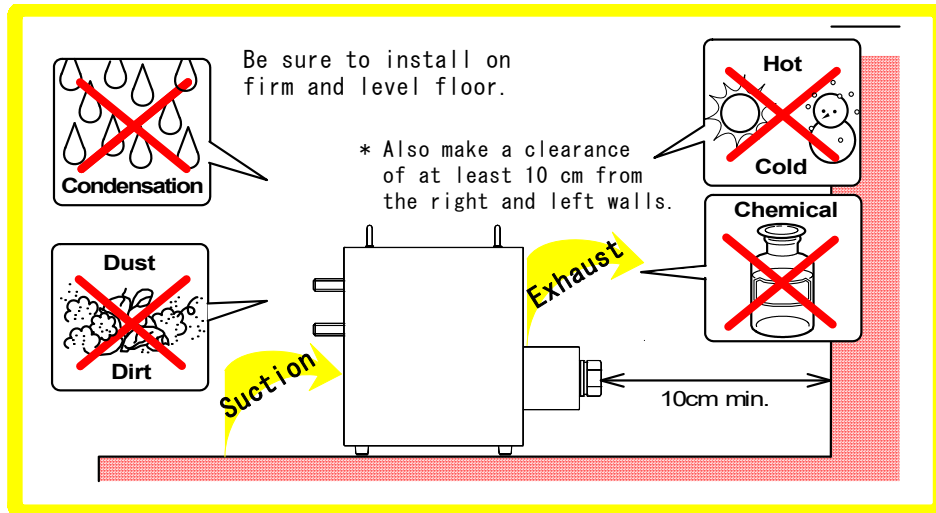
⑥ Terminal cover

This cover is installed so that a worker will not touch the terminal block directly. Keep this cover installed normally.

3. Installation and Connection

(1) Installation

Slits are provided on side of **SIT-A191** for higher heat radiation efficiency. Install this transformer in a well-ventilated place and make a clearance of at least 10 cm from the surrounding walls to extract the full performance.



(2) Connection

After selecting a proper place for installation of **SIT-A191**, connect it to the other devices according to the explanatory drawings on pages 3-2 to 3.

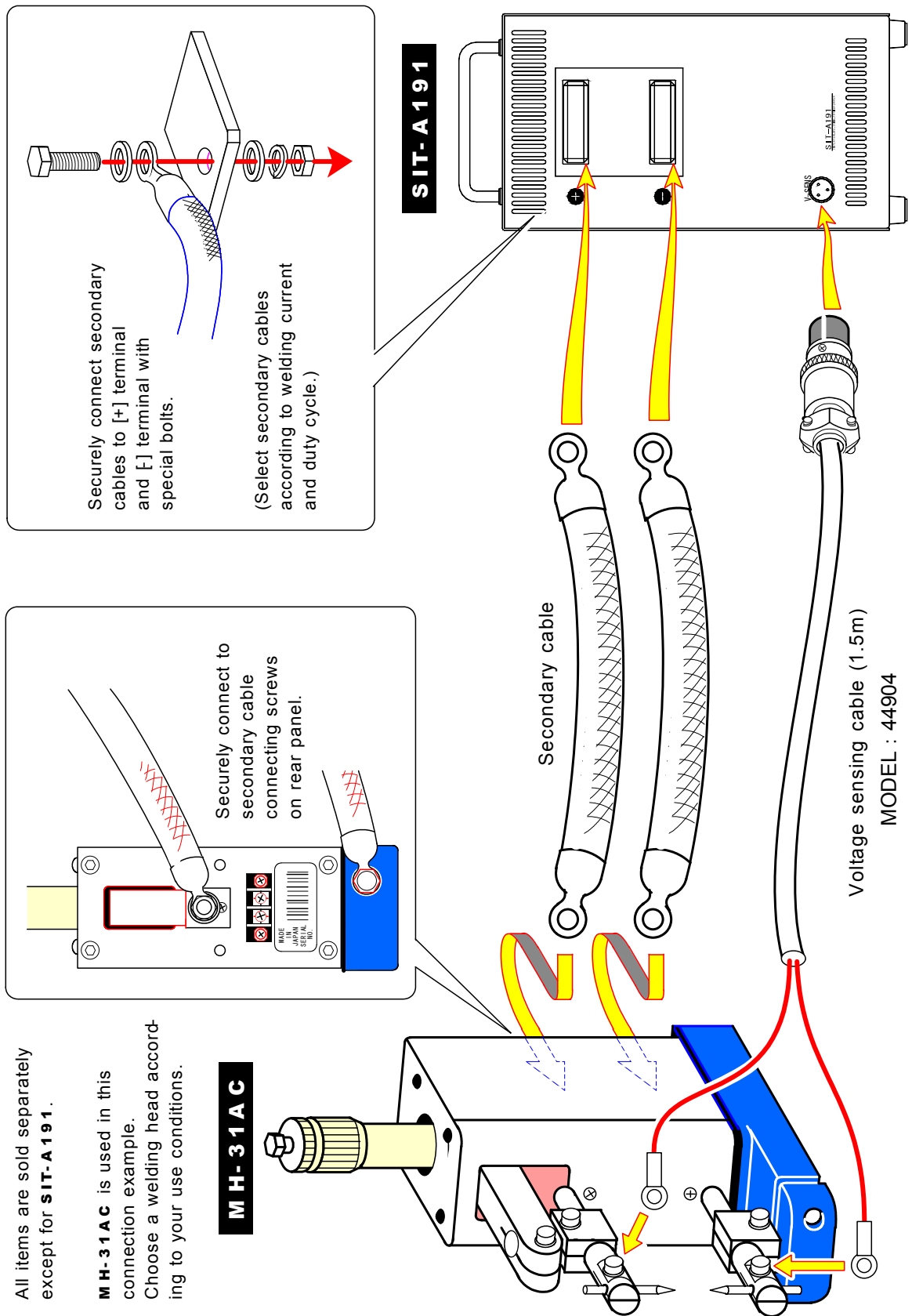
ATTENTION

Our welding head **MH-31AC** and welding power supply **IS-600A** is used in the explanatory drawings.
The connection varies with the type and using method of the devices to be used. When connecting them, refer to their instruction manuals.
Make sure to disconnect the power supply before connecting work.

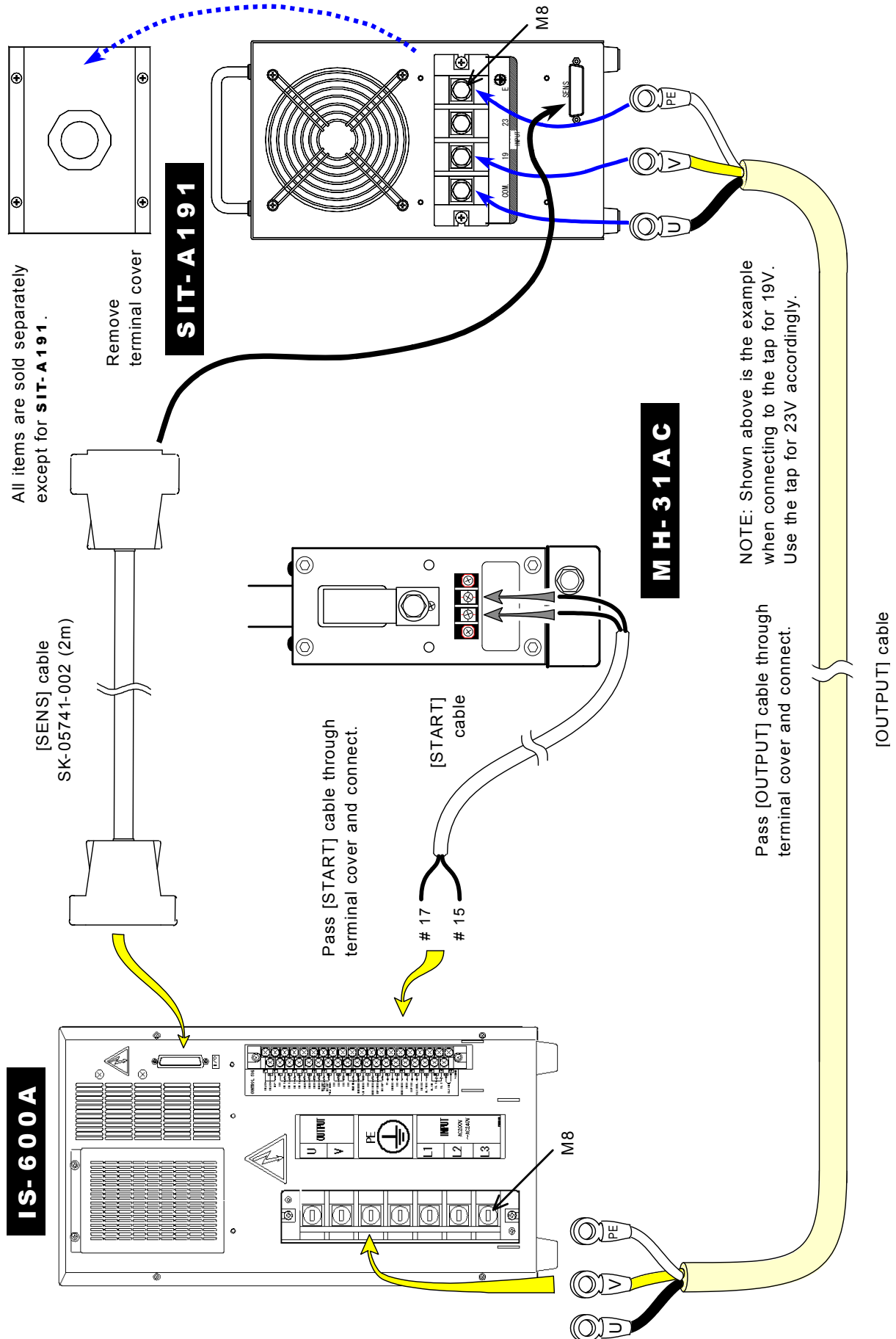
All items are sold separately except for **SIT-A191**.

MH-31AC is used in this connection example. Choose a welding head according to your use conditions.

MH-31AC



3. Installation and Connection

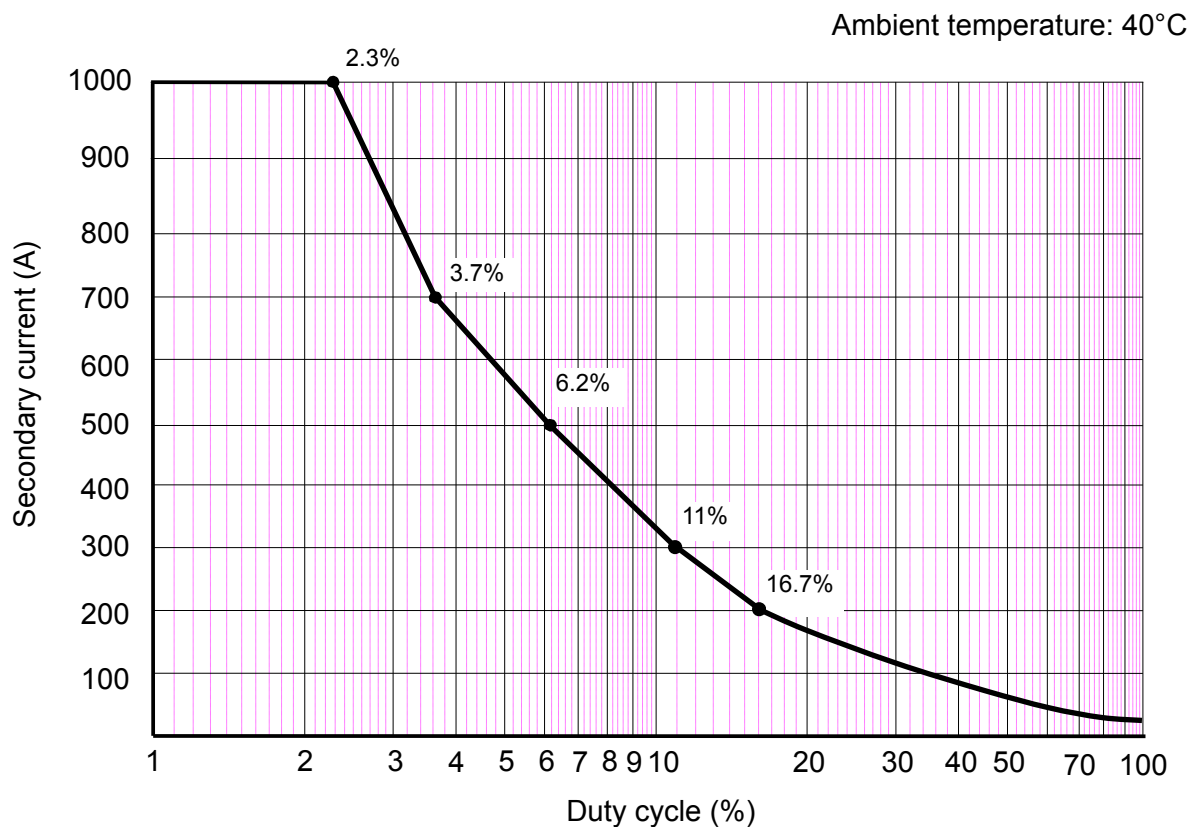


4. Specifications

(1) Specifications

Rated voltage	300 V (When input voltage to inverter power supply is 220 V AC)
Frequency	1 kHz
No-load secondary voltage	13 V (23 tap) / 15.8 V (19 tap)
Max. output current	10000 A
Max. duty cycle	2% (10000 A)
Cooling method	Forced air cooling
Protection	60°C thermostat switch (built-in)
Operating ambient temperature	5°C to 40°C
Outline dimensions	298 mm (H) x 160 mm (W) x 280 mm (D) (Not including projections)
Mass	28 kg
Accessories	Operation manual x 1

(2) Duty Cycle Graph



5. Troubleshooting

Contents	Cause	Measures
Body of SIT-A191 becomes hot abnormally.	Fan motor does not work.	Consult us or your distributor.
Current does not flow.	Secondary cables are not connected correctly.	Check that all cables are connected correctly.
	Output cable attached to power supply is not connected correctly.	
Current is reduced.	Contacts of secondary cables are oxidized.	Disconnect secondary cables and polish their contacts.
	Internal trouble of transformer	Consult us or your distributor.

6. Outline Drawing

(Dimensions in mm)

