OTC
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Welbee

Welbee Inverter

A350P

AC/DC Pulsed TIG Welding Power Source

NEW

- Enables high quality welding in the plate thickness range from ultrathin to thick.
- Achieves high-efficient TIG welding with 500Hz AC frequency and improved duty cycle.
- Sets automatically the welding condition by the *Welding Setting Guide* function.
- Improves convenience with fieldbus interface for connecting an automatic welding machine.

Applicable widely to various usages from ultrathin plates to thick plates.
AC/DC pulsed TIG welding power source with high-efficiency high-quality performance.

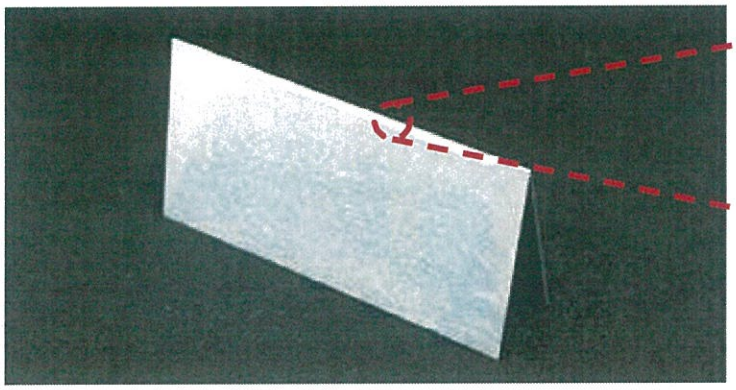
DAIHEN Corporation

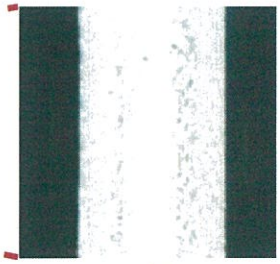
A350P

Achieves high-quality welding in various materials and plate thicknesses including aluminum with the AC welding mode installed. The enhanced output enables high-efficiency welding.

Enables high-quality welding in ultrathin plates.

The upgraded stability in the low current zone (minimum current for AC output: 5 A) and the improved arc concentration (AC frequency: 500 Hz) enable high-quality welding in ultrathin plates.



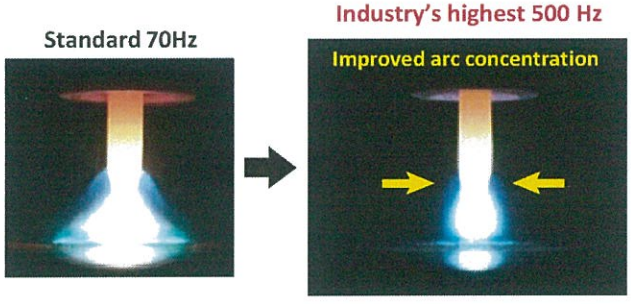


Ultrathin plates can consistently be welded with an AC frequency of 500 Hz.

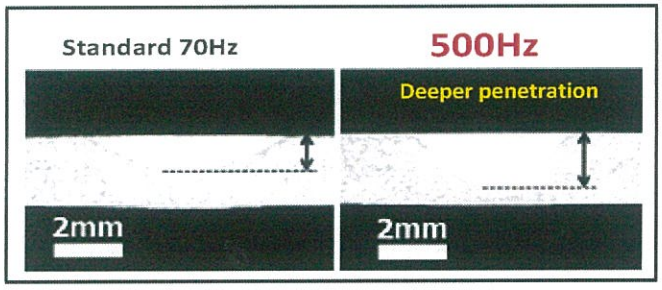
Base metal: soft aluminum; **Plate thickness: 0.2mm;** Ar 100%; AC 5A; Welding speed: 7cm/min; AC frequency: 500Hz

Realizes the industry's highest arc concentration.

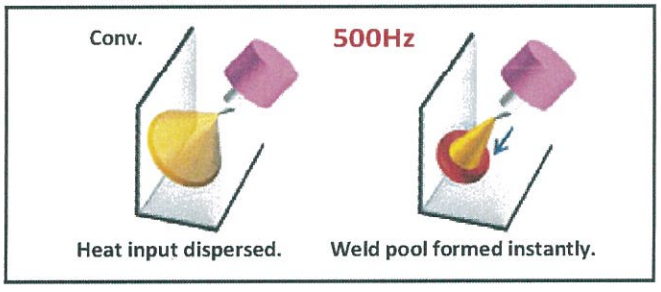
The concentrated arc with an AC frequency of 500 Hz provides deep penetration and thus upgrades joint strength. Furthermore, tack welding and arc starting can be as quicker as three times the conventional speed by fusing the base metal instantaneously.



■ Weld penetration becomes deeper at the same current.

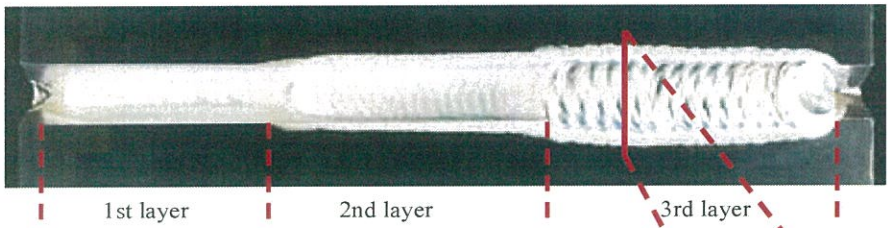


■ Instantaneous weld pool formation speeds up the tack welding and arc starting by 3 times the conventional.



Applicable to high-efficiency welding of thick plates by increased duty cycle.

With high duty cycle (max. output: 350 A, continuous welding current: 270 A), high-efficiency multilayer welding can be performed in thick plates.

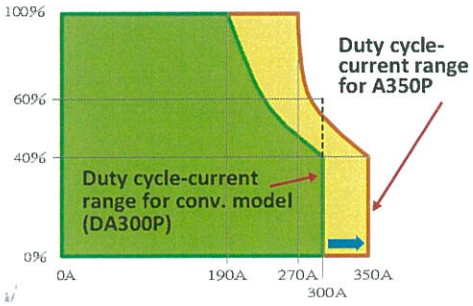


Base metal: hard aluminum, 10-mm thick plate, Ar 100%

-1st layer:
Straight run, AC240A (filler wire feed rate: 2.7m/min, welding speed: 30cm/min, AC frequency: 500Hz)
-2nd layer:
Weaving run, AC220A (filler wire feed rate: 3.0m/min, welding speed: 12cm/min, AC frequency: 150Hz)
-3rd layer:
Weaving run, AC200A (filler wire feed rate: 3.5m/min, welding speed: 10cm/min, AC frequency: 70Hz)

Original size photo

Higher rated current and the wider usable current range at 100% duty cycle outstrip the conv. model.



Allows setting the best weld. cond. for ultrathin plates in steps of 0.1A in the 10A or lower cur. range.

Weld joint contours vs. current changes SUS304, 0.3-mm thick plate butt joint, DC mode

A350P/500P

Amp: 8.5A

Meandered weld bead due to heat input shortage. | Stable weld bead obtained by fine amp control. | Burn-through caused by excessive heat input

Conventional adjustable range: Amp: 8A → Amp: 9A (+1A adjusted)

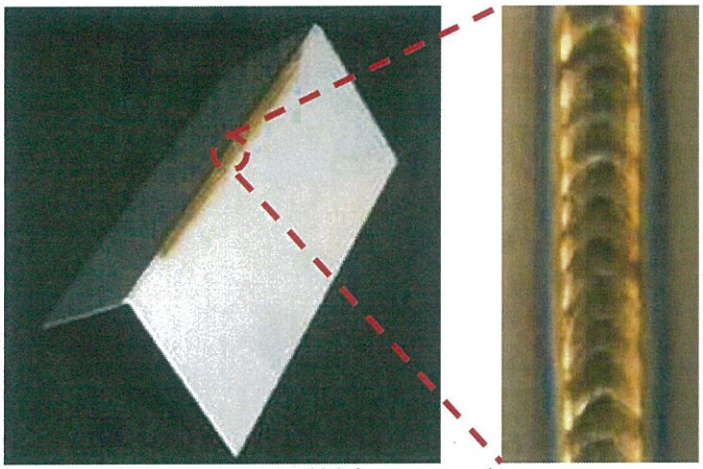
Installed with AC manual welding mode for covered electrodes.

- AC manual welding mode is installed besides DC manual welding mode, and thus covered electrodes for AC can be used.
- The ON/OFF function of the torch switch is installed to improve operability.

Note: When you use the AC manual welding mode, see Article 332 of the Ordinance on Industrial Safety and Health and install the voltage reducing device if necessary. Voltage reducing device that can be mounted: K-300 (The mounting bracket K970J77 is needed).

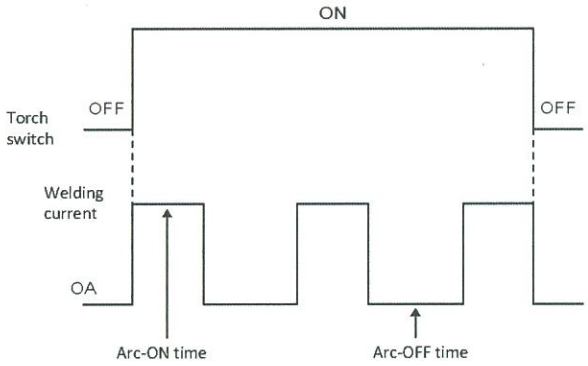
TIG interval function controls heat input to prevent thermal strain and burn-through in the ultrathin plate welding.

It was conventionally needed to adjust heat input by turning ON/OFF of the torch switch, but the interval function eliminates the need of handling the torch switch during welding, thereby enabling more stable welds.



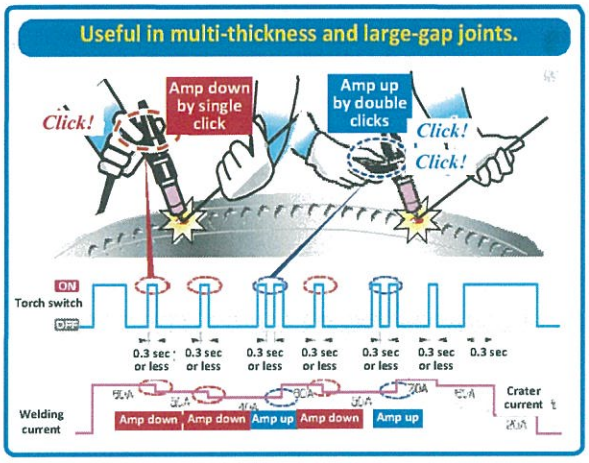
Note: When this function is enabled, high frequency wave is generated at the timing of arc ON. The touch start cannot work.

The arc-ON and arc-OFF periods of time for the TIG interval are configurable.



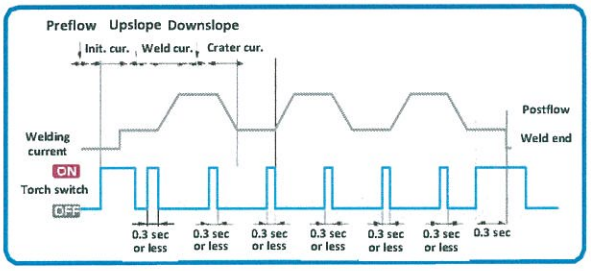
The *Welding Current Adjusting Function* of the torch switch

The *Welding Current Adjusting Function* is installed for allowing the torch switch operation to increase or decrease the output current by the amount of arbitrarily-set current change. This function makes it possible to create an arbitrary current value by operating the torch switch only, and thus improves the weldability of aluminum that requires a fine current adjustment.



Crater (repetition) function

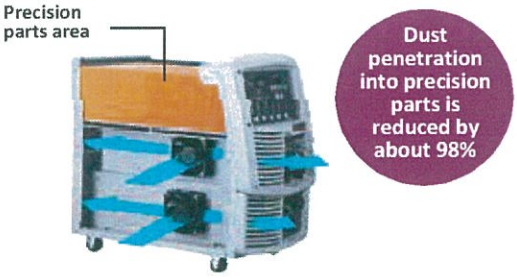
The torch switch allows to command the desired operation when extinguish the arc at the crater (repetition). This function enables to prevent the weld crater and tungsten electrode from oxidation.



Improvement in durability and maintenance

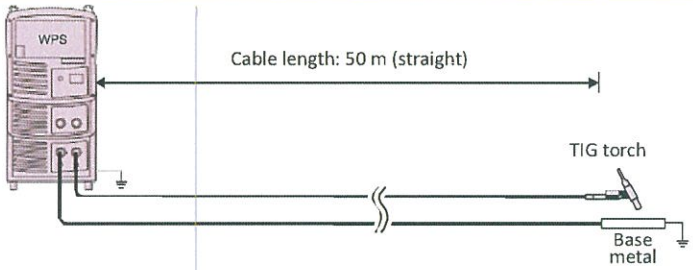
Welbee's side-air-flow structure

- **High dust resistance**
  Reliability is improved with the separating structure that eliminates dust from entering the specific area for mounting precision components such as electronic parts.
- **Easy maintenance**
  By controlling the rotation of the cooling fan according to the duty cycle and the ambient temperature, the entry of foreign matters such as dust is minimized. Because air blowing can also be done without opening the case, it is easy to clean particles and dust.



Cable-extension mode is installed (AC TIG mode and AC･DC TIG mode)

The cabtire cable can be extended up to 50 m on one side, by turning on the cable extension mode.

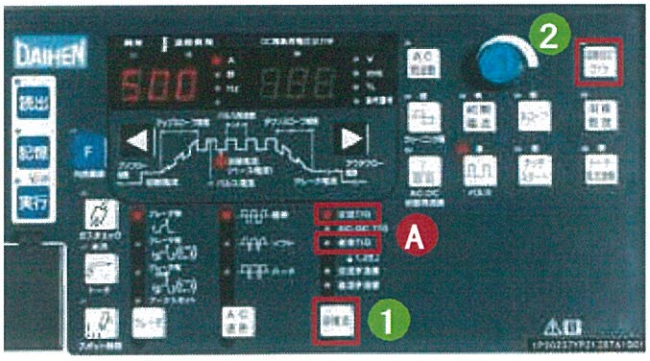


Note: The upper limit of AC frequency is 100 Hz.

The *Welding Setting Guide* function enables automatic setting of welding conditions.

Various basic settings can be called up by the *Welding Setting Guide* button before welding.

The welding power source automatically adjusts the welding conditions such as welding current, initial current, and crater current, by setting only the four parameters (electrode diameter, base metal type, weld joint type, and base metal thickness). This function makes it easier to adjust the welding conditions and thus improves the efficiency of welding work. This function also enables automatic setting of pulse condition.



1. Electrode dia. (Choice: 1.6, 2.4, 3.2, 4.0, 4.8, or 6.4 mmϕ)
2. Base metal type (Al, Mild steel, Stainless steel)
3. Weld joint type (T fillet, Butt, Lap fillet, Corner)
4. Base metal thickness (0.5 mm or thicker)

Set the above *four* conditions on the front panel, and the suitable welding conditions will be called up.

Operation flow of *Welding Setting Guide*

1. Push the *Welding Method* button to select a welding method.
   - A. Select AC TIG or DC TIG.
2. Push the *Welding Setting Guide* button to select the desired parameters (electrode dia., base metal type, weld joint type, and base metal thickness).

Proper welding condition is decided.

The *Welding Management* function enables to detect a welding abnormality at an earlier stage.

This function monitors various management items during welding and contributes to welding quality management by sending an alarm immediately when a welding abnormality occurs.

This function checks 16 management items to reduce the burden on welding workers.

List of main welding management items

Various management data is displayed.

Intended use	Mgmt item	Welding management data
Warning of welding abnormality and early detection of welding failure	Weld quality	Av value monit. range setting (Amp./volt)
		Plus-side current tolerance setting (%)
		Minus-side current tolerance setting (%)
		Welding voltage upper limit (V)
		Welding voltage lower limit (V)
		Abnormality determination time (sec)
		Op. setting when weld. cond. abn detected
Management of working hours	Total welding time	Resultant total welding time (min)
		Target time (min)
		Operation when the target time is fulfilled
Prevention of leaving behind an unwelded joint	Number of welds	Resultant number of welds (No. of times)
		Target number of welds (No. of times)
		Operation when the target No. is fulfilled

Installed fieldbus interface improves convenience when connecting an automatic welding machine.

Installing the fieldbus connection tool enables digital communication with an auto welding mach. and an ordinary robot.

Standard lineup

IFR-800EI – Com. Std: EtherNet/IP

IFR-800PB – Com. Std: PROFIBUS

Other various communication standards can also be applied.