

USER MANUAL

I.G.B.T. INVERTER

DC TIG ARC WELDER

NICE – 350DT

NICE – 500DT

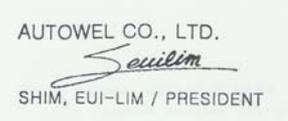
용접기제조 전문기업
AUTOWEL
오토웰

Autowel Co. Ltd.

◀ Guarantee Certificate ▶

- * The warranty of products shall confirm to the specification set forth in the article 2 "configuration and specifications" for 14 months from the date on Bill of Lading.
- * The extent of seller's liability under this warranty shall be limited to the repair or replacement as herein provided of any defective parts thereof.
- * The warranty does not extend to following occasion:
 - subjected to mis-use, neglect, accident or abuse
 - improperly repaired, installed, transported, altered or modified
 - used in violation of instructions furnished by user's manual

Model	NICE -		1. Warranty period is 14 months from the date on Bill of Lading. 2. Except for the express limited warranties set forth in this guarantee certificate, Autowel has no other liability. Certified by Autowel CO., Ltd.
Serial no.			
manufacture date	200	년 월	
ship date	200	년 월 일	
seller's name	Autowel Co., Ltd.		
client name	company		
	person		



AUTOWEL CO., LTD.
SHIM, EUI-LIM / PRESIDENT

Warranty Card.

- * Note:
 1. The "Guarantee Certificate" shall practically be effected with seller's signature after fill in blank of Warranty Card.
 2. Users has to pay attention to the subjects set forth Article 3 "installation" when installing the main power units and accessories.
 3. Autowel has no liability of accessories, which are consumable and not to manufactured by Autowel

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To increase product's life and welding efficiency, please make sure to read this user manual before using.

1. Product description

NICE-350(500)DT of Autowel which is DC TIG welding machine can be used as MMA as well. We maximized the efficiency through adopting INVERTER method by PWM power control using I.G.B.T element. You can select various welding functions so that this machine can be used for specialists.

2. Composition and specification

1) Composition and standard parts

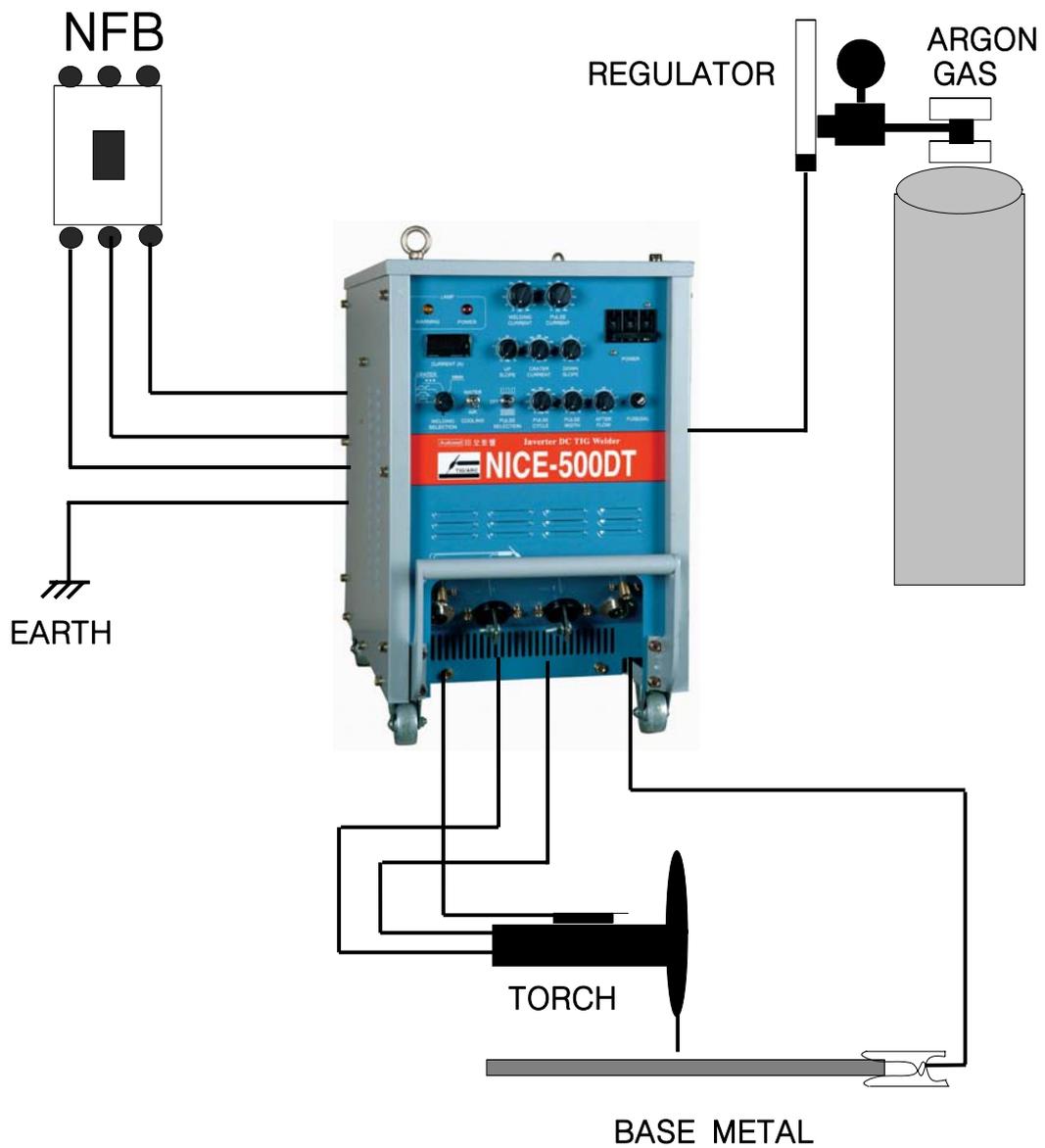
Name \ Type	NICE-350DT	NICE-500DT	Q'ty
WELDING POWER	DC 350A	DC 500A	1
TORCH (SET)	Air cooling 350A 4M	Air cooling 500A 4M	1
Base metal CABLE	22SQ or more	38SQ or more	1
Chuck, body	Ø2.4	Ø3.2	1
Tungsten	Ø2.4	Ø3.2	1
Ceramic	6	8	1
Gas gauge	ARGON	ARGON	1
Hose	3M	3M	1

2) Rated specification

Item \ Type		NICE-350DT	NICE-500DT
Input voltage		AC 220V 1P, 3P (380V multiple use OPTION)	AC 220V/380V multiple use 1P, 3P
Input power		3 phase 10.5 KVA	3 phase 18 KVA
		Single phase 6.3 KVA	Single phase 9.2 KVA
Frequency		50/60 Hz	
Output current	TIG	3 phase 5 ~ 350A Single phase 5 ~ 250A	3 phase 5 ~ 500A Single phase 5 ~ 380A
	ARC	3 phase 5 ~ 220A Single phase 5 ~ 200A	3 phase 5 ~ 350A Single phase 5 ~ 300A
Unloading voltage		Approximately 70V	Approximately 75V
Loading voltage		22V	24V
Efficient		60 %	
Size (WDXH)		270X440X400	330X570X560
Weight		25KG	35KG

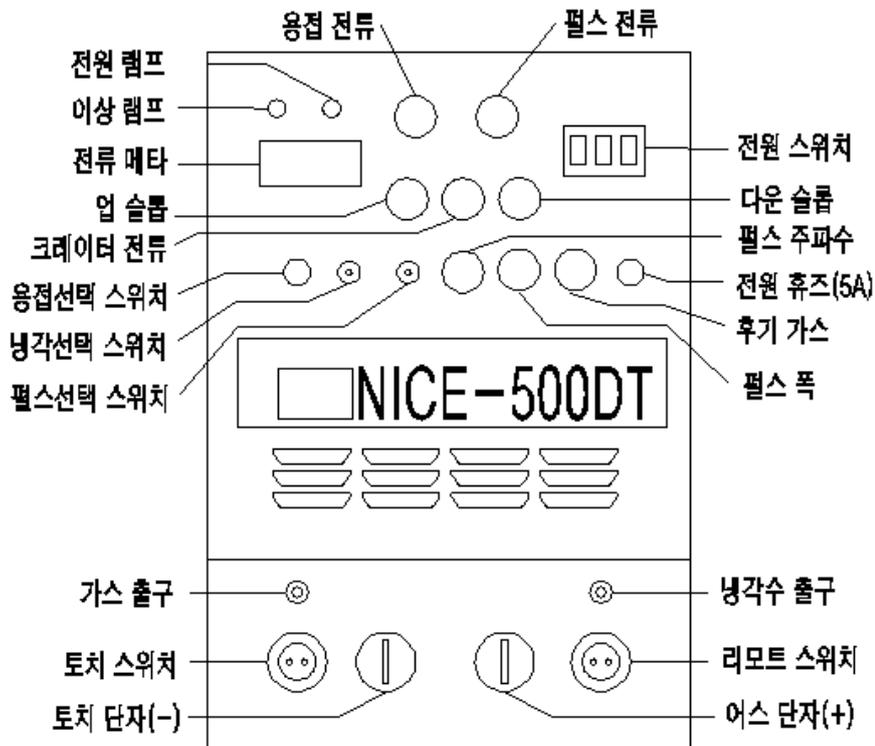
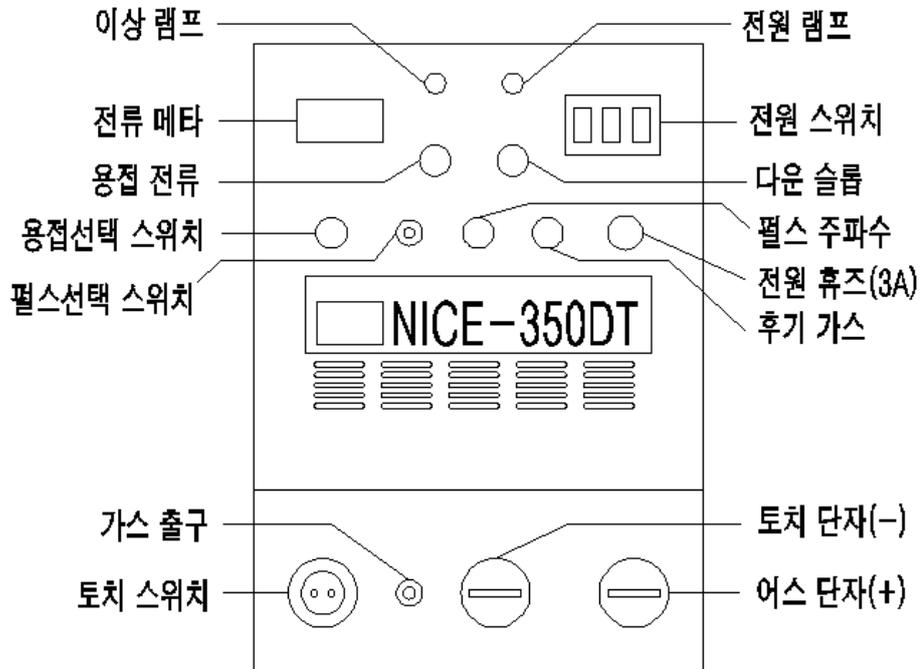
3. Installation

* Installation description

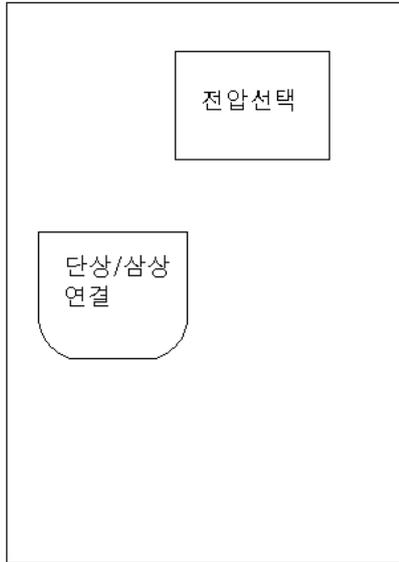


4. Handling and operation

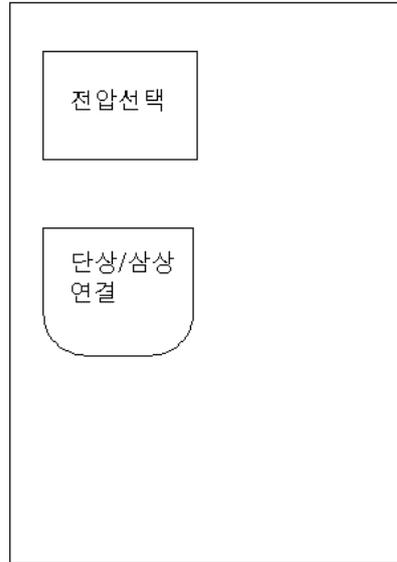
4-1. Front panel structure and name



350DT 뒷면

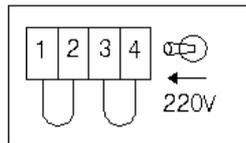


500DT 뒷면

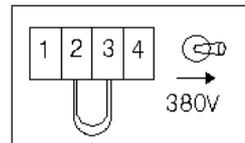


Power selection

220V 연결시

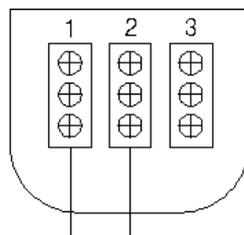


380V 연결시

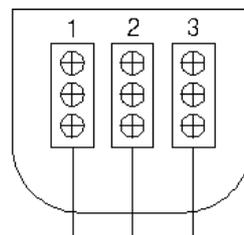


Single phase/
3 phase connection

단상(1P) 연결시



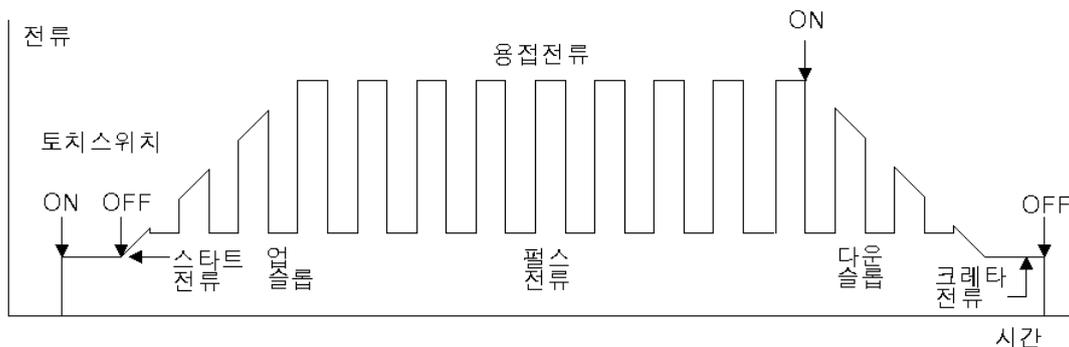
삼상(3P) 연결시



Rear wiring diagram

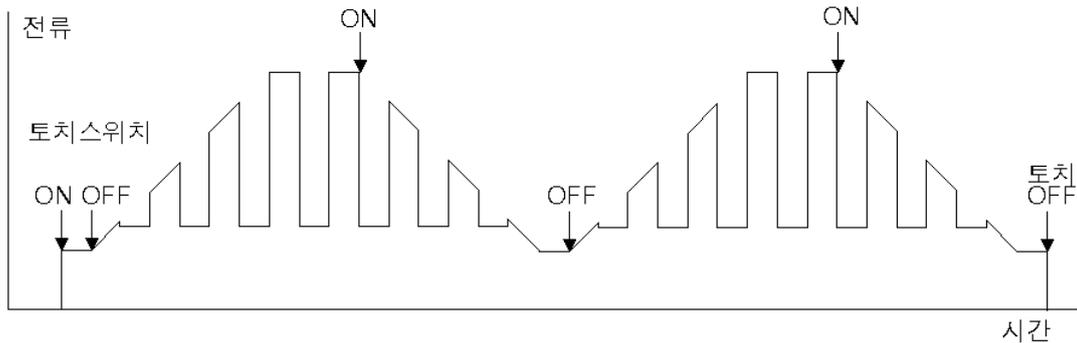
4-2. Functions and operations

- 1) CURRENT Meter: It is output current in welding.
- 2) WARNING lamp:
 - ① Power error- It will be turned on (off) when input voltage goes down by more than 20% from standard voltage.
 - ② Overload- It will be turned on (off) when welding current goes up rapidly.
 - ③ Temperature error- It will be turned on (off) when inner temperature of the machine is higher than 85°C and it is able to use the machine when this lamp is turned off after certain period of time.
- 3) FUSE: It is for protecting PCB and FAN. (350DT : 3A, 500DT : 5A)
- 4) Power lamp: It indicates power is supplied to welding machine.
- 5) Power switch: It turns ON/OFF the welding machine and it will shut off the power in overloading.
- 6) WELDING SELECTION switch
 - ① No crater (OFF) – It operates only when torch switch is ON.
 - ② With crater (SINGLE) – Crater current is generated when pressing torch switch and welding will be done with this crater current. If pressing this switch again, crater current will be generated and



welding will be stopped when releasing this switch.

- ③ Crater REPEAT – Above ② condition will be maintained. If keeping the torch away from base metal it will be OFF.



④ Arc SPOT – SPOT welding is possible. Welding is done during torch switch is ON and it will be OFF when it reaches arc spot time set.

⑤ Manual welding (MMA) – It is used in general arc welding and the holder is connected to (+) electrode and earth to (-) electrode.

7) PULSE CYCLE: It can adjust the frequency between 10 ~ 500Hz.

8) PULSE WIDTH: It can adjust pulse width (500DT).

9) WELDING CURRENT: It is used to adjust the welding current.

10) PULSE SELECTION: ① High – 10 ~ 500Hz adjustment

(PULSE SELECTION) ② Low – 0.5 ~ 25Hz adjustment

③ None – No pulse used.

11) TIG SPOT TIME / DOWN SLOPE: Spot time can be adjusted when welding selection switch is in Arc Spot position. If selecting With Crater or Crater Repeat, you can adjust the time the welding current changes into crater current.

12) AFTER FLOW: It adjusts gas generating time after completion of the welding.

13) TORCH S/W: This is a CONNECTOR of the torch switch.

14) GAS OUTLET: This is gas discharging outlet.

15) Torch terminal (-): This is connected with torch and it is used as ground in manual welding.

16) Ground terminal (+): Connected with base metal and used as holder in manual welding.

17) TIG welding condition set up

Metal thickness (mm)	Electrode Ø	Welding current (A)	Gas quantity ℓ/min	Electrode Ø
0.1-0.5	1.0-1.6	5-40	4	1.6
0.6-1.0		20-60		
1.0-2.0	1.6-2.4	40-100		
2.0-3.0		60-120	2.6	
3.0-5.0	2.4-3.2	100-160	5	3.2
5.0-7.0		160-240		4.0
7.0-9.0	2.4-3.2	220-300	6	5.0
9.0-12		250-500		
12이상	3.2-6.4	350-500		

5. Safety regulations

- 1) Power facility: Have one switch for each welder and use 5.5SQ of service wire for 350DT and 8.0SQ or higher for 500DT.
- 2) Welding terminal: Please keep your hands, PC or electric products away from welder during operation as there is high voltage generated at torch side of the terminal.
- 3) Gas: Please use only Argon gas as provided.
- 4) Ground: Comply with Class 3 ground.
- 5) Circumstance: Avoid the places with moisture, dust and high temperature around and install it at the place of good ventilation. Ventilation is particularly closely related with the efficiency.
- 6) Movement: Make sure to check input power and connecting condition of input/output line when using after moving the welder.
- 7) Body safety: Be careful for burning as torch is high temperature and wear safety mask and cloth as arc ray may damage eye and skin. Install a ventilating facility and take rest regularly as welding gas is harmful for body.

6. Diagnosis and countermeasures

Order	Status	Cause	Countermeasures
1	No reaction	Main NFB defect Check service line Check power supplied	Check and replace
2	FAN is running but welder doesn't operate	Torch switch defect	Replace switch
		Warning lamp flickers	High temperature (Use after certain period of time)
		Warning lamp is ON continuously	Resistance wire break due to overcurrent (Request A/S)
3	Gas is not discharged	There is no gas or it is not connected	Check
		Solenoid valve defect	Exchange
		Control PCB error	Request A/S
4	Gas is discharged continuously	Turn off the power	Remove foreign substances from the valve
		Solenoid valve defect	Exchange
		Control PCB error	Request A/S
5	Start is not smooth	Shortage of gas	Adjust gas pressure
		Overage of gas	
		High frequency is not generated	Request A/S
		Circuit break of base metal	Exchange
		Torch defect	



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