POWWEL COMPANY

Welding Machine

Welding Automation

Welding Construction

New Renewable Energy

Introduction

◆ SUMMARY

POWWEL, founded in 1989, designs and develops welding machines, rectifiers and industrial power supply equipment, with a goal to be one of the top worldwide welding machine manufacturers.

With specialties of 30 years of welding machine manufacturing technology, POWWEL has been offering a wide range of innovative products and services in welding industry, such as inverter/LNG/Plasma/Laser welding machines, custom welding automation design, and construction-specialized welding solutions. Recently, it is greatly expanding its focus into the areas of Internet of Things (IOT) and renewable energy.

As always, POWWEL will focus on customer satisfactions with outstanding products developed by ISO9001-certified quality control management and efficient system operations processes.

Thank you.

Founder and CEO
Eun, Jong Mok (Tony)

◆ Synopsis of company

- Found: Dec.2,1989 (Transferred to Corp. on July 1, 1996)
- CEO : Eun, Jong Mok (Tony Eun)
- Asset : 150,000.00 USD
- Revenue: 4 Million Dollars (2014), +6 million Dollars in 2018
- Employees : 20 (Technology Development : 4, Management : 4, Production : 6, Welder : 6)
- Products: Welding M/C(Inverter Welding M/C-TIG, MIG/Co2, Plasma, Arc, SAW..)
  Special Welding M/C(laser Welding M/C, Plasma Welding M/C, Inverter SPOT, Orbital)
  Electricity and Electronics (Rectifier, Power equipment, Solar Inverterr...)
  Welding Automation system(TIG, MIG/Co2, Plasma, Arc, SPOT...)
  Welding construction, Consulting(LNG Tank inner welding, pipeline....)
- Address : #204, Daeryung Techno Town6, 648 Sebusaet-gil, Geumcheon-Gu, Seoul, Korea
  (Apartment type factory-1,058m*)
  TEL : 82)2-1661-8211(1)
  Factory 2 : 214 Seoburo jinyeong-eup Kimhae-City, Kyeongnam,
  (Independent Plant , Height10M-1,157m*)
  TEL : 82)2-1661-8211(2)
  Factory 3 : POWWEL Building 362-15 Daeya-dong, Siheung-si, Kyeonggi-do.
  (Building area 1,323m*)
  www.powwel.com powwel@powwel.com

◆ Company History

1989. 12. Established Hando Autonicx(Technology Engineering).
1991. 06. Developed Inverter Air Plasma Cutting M/C
1996. 08. Converted to a corporate,POWWEL CO.,LTD.
1996. 08. Factory relocated in Kyeonggi-do
1997. 07. Selected as a promising company
1997. 09. Registered as military service exemption company for employee
1999. 08. Acquired Mark of "GD, good design"
1999. 05. Nominated as a venture company
2000. 06. Nominated as "Promising Export Company"
2000. 08. Obtained ISO 9001
2001. 04. Acquired "CE"approval(TIG 150EP)
2001. 08. Su-Development Institute Established.
2001. 08. Innovation Business Certificate(SMBA)
2002. 07. Joined to "Product Liability Law"
2002. 10. Venture Company Certificate(SMBA)
2002. 11. Started PLASMA Welding M/C Sales
2003. 02. Developed INVERTER WELDINNG M/C for LNG(DAEWOO SHIPYARD)
2003. 02. Won official commendation from SBMA
2003. 06. Relocated HEAD QUARTER IN Seoul and set up the factory
2003. 07. Re-nomination as Venture company
2004. 05. Won official commendation from the ministry of Industry
2005. 03. Contracted OEM with TDC in U.S.A.
2006. 05. Developed the automatic plasma welding machine for KOREA GAS CORPOTATION
2006. 06. LNG Mokeup build up
2006. 10. Sold the 10 units of the welding automation system(including LG)

2007. 12. Completed Welding of inner wall of Incheon LNG19,20
2008. 06. Sold the POSCO-Seam Welding M/C 30,000A
2008. 07. Sold the DAEWOO-LNG Auto Plasma Welding
2008. 12. Sold the STX-GTAW Auto Welding M/C
2009. 09. Developed Inverter SPOT with computer control
2010. 05. Sold LG-Auto Multi SPOT System etc
2010. 09. Developed Welding M/C for TIG & CO2 Orbital
2011. 03. Purchased Factory in Kimhae
2011. 12. Developed resistance spot welding system for Intelligent Inverter
2012. 06. Developed a high speed battery charger for electric car of 50KW class
2013. 01. Developed 5KW energy storage device(ESS)
2013. 01. Developed Welding M/C of SCR CO2 600A for Pulse MIG
2013. 03. Development of delivery Pipe inner overlay welding system
2014. 05. Sold the Factory in Kimhae City(3,967m*), Moved to Seoul Welding machine production
2015, 03. Repurchased Kimhae-City(1,157m*), Welding operation, welding construction
2016. 11. Completed Development of Daewoo Shipyard hybrid welding
2016. 12. Delivered Multi Automatic welding equipment
2017. 03. Development of delivery Korea Gas LNG Automation System Thertiary
2017. 03. Operation of KOREAN type LNG (KC1) welding construction team

◆Characteristics of POWWEL

Venture Business Confirmation


벤 처 기 업 확 인 서

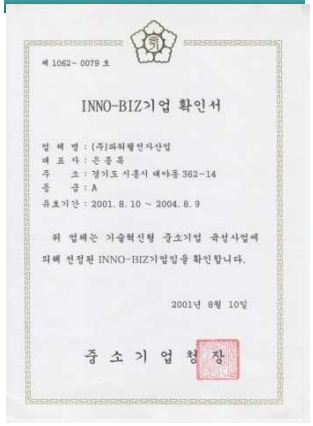
업 체 명 : (주)파워웰전자산업
대 표 자 : 은 종 욱 (股 鍾 旭)
소 재 지 : 경기도 시흥시 대야동 362-14
확인기준 : 연구개발투자기업
유효기간 : 1999. 4. 19 ~ 2000. 12. 31

위 업체는 벤처기업육성에관한특별조치법 제25조의 규정에 의하여 벤처기업임을 확인합니다.

1999 년 4 월 19 일

경기지방중소기업청장

Certification of INNO-BIZ


INNO-BIZ기업 확인서

업 체 명 : (주)파워웰전자산업
대 표 자 : 은 종 욱
주 소 : 경기도 시흥시 대야동 362-14
등 급 : A
유효기간 : 2001. 8. 10 ~ 2004. 8. 9

위 업체는 기술혁신형 중소기업 육성사업에 의해 선정된 INNO-BIZ기업임을 확인합니다.

2001년 8월 10일

중 소 기 업 청 장

Commerce, industry & energy minister citation


표 창 장

(주)파워웰전자산업
대표이사 은 종 욱

귀하는 평소 건전한 기업관과 모범적인 기업경영으로 중소기업 발전에 기여한 공로가 크므로 제16회 중소기업주간을 맞이하여 이에 표창합니다.

2004년 5월 17일

산업자원부장관 이 희 범

A SENIOR AWARD


표 창 장

파워웰전자산업(주)
대표이사 은 종 욱

귀하는 평소 창의적인 노력과 투철한 사명감으로 맡은 바 직무에 충실하여 중소기업 발전은 물론, 산업경제 발전에 기여한 모범근로자로 인정되어 이에 표창함

2003년 2월 20일

중소기업진흥공단
이사장 김 유 채

Development of subsidiary research institute

- Electronic Circuit
- Digital Hardware
- Digital Programming
- PCB , Instrument Design
- PILOT PRODUCT
- Welding Technology & Automation Design
- Welding sample production and construction


기업부설연구소인정서

1.연 구 소 명 : (주)파워웰전자산업 부설연구소
2.소 재 지 :
3.신고연월일 :

한국산업기술진흥협회장

Product development to meet customer satisfaction

POWWEL, always focus on customer satisfaction as a top priority and manufacture the best quality products through various experimentations and tests.

Complete quality control system

POWWEL products are designed, developed and produced under the ISO9001-certified Quality Control system. With multiple testing processes from each parts to integrate, it guarantees the best quality to customers.

◆ Seoul Factory

Factory in Seoul

Office

R&D lab

Production Line

PCB assembly line

QC. Inspection

◆ Kimhae Factory

Factory in Kimhae

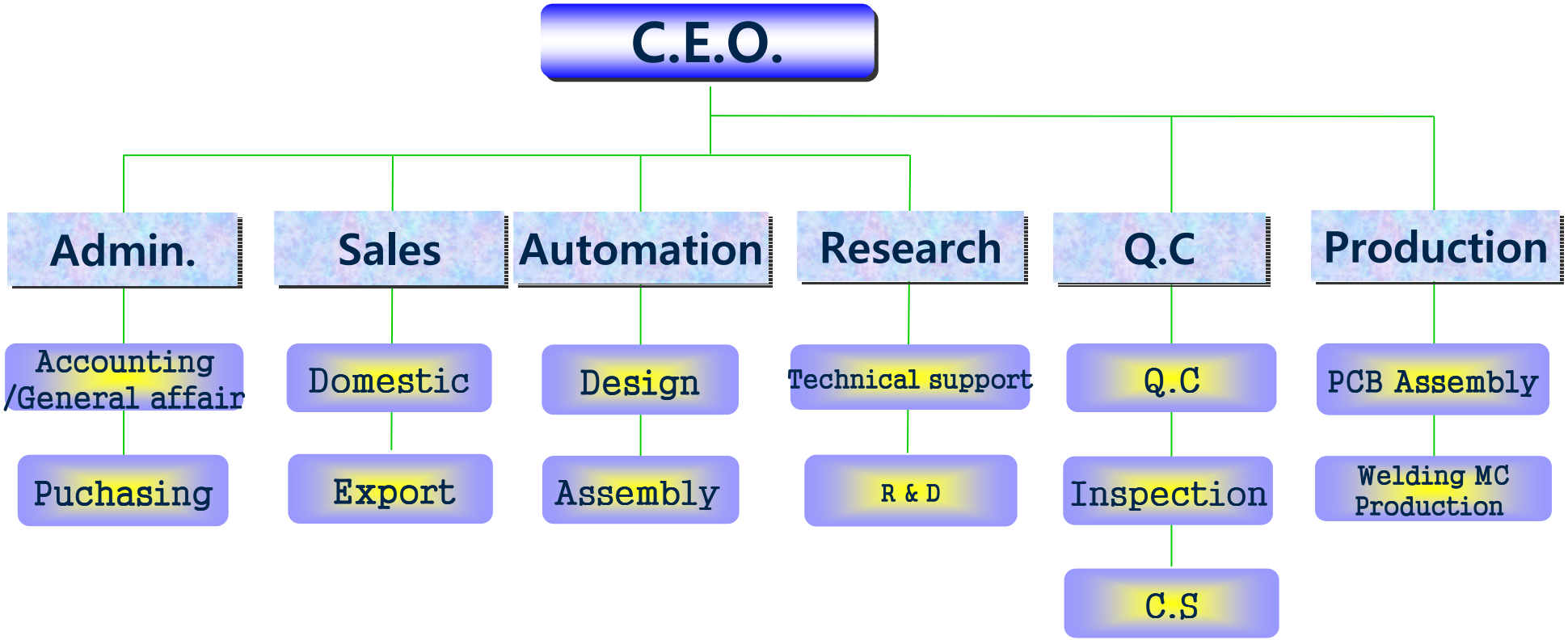
Factory

QC, Inspection room

Production assembly line

Storage

◆ POWWEL Organization



◆ Main Customers

- 20 Powwel welding M/C Agent/dealer in Domestic market
- Shipyard, Car spare parts, Electronic parts, Vacuum device related compaines
- Semiconductor, PCB, Plating related co.

SAMSUNG HEAVY INDUSTRIES

HYUNDAI HEAVY INDUSTRIES,
HYUNDAI SAMHO HEAVY INDUSTRIES

DSME DAEWOO SHIPYARD

KOGAS

JAPAN
THAILAND
China
SINGAOPORE
VIETNAM
BELGIUM

MALAYSIA
INDONESIA
INDIA
RUSSIA
SOUTH AFRICA
SPAIN

Major Export country ; USA
TDC ; 3,000 units in 2006

◆ Intellectual Property Rights

CONTRIVED NAME	REGISTERED NO.	REGISTERED DATE	INVERTER (Designer)	PATENT or PRACTICAL NEW DEVICE
① INVENTION PATENT REGISTER				
■ Multi Channel TIG Welding MC	0221465	99.06.28.	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.
■ TIG Welding MC	9936811	99.09.01.	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.
■ Artificial Intelligence Automation Welding	9929544	99.07.21.	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.
■ Center Control….Pulse Rectifier	0130721	01.06.01.	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.
② PRACTICAL NEW DEVICE REGISTER				
■ Parts Plan of TIG Welding MC	0172028	99.12.08.	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.
■ CO2 / MIG Remote Control Box	0174643	99.12.30.	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.
■ Manual digital TIG Welding MC	0376531	05.02.14	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.
③ DESIGN RIGHTER REGISTER				
■ GAS WELDING MC	0267102	00. 9.30.	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.
■ GAS WELDING MC	0267103	00. 9.30.	EUN JONG MOK	POWWEL ELECTRONIC INC.CO.LTD.

Standard	Permitted Item	Permitted No.	Permitted Institute	Permitted Date
■ Q MARK	INVERTER WELDING MC	TI4Q96-001	KOREA ELECTRIC ELECTRONIC TEST LABORATORY	97.01.18.
■ ISO9001	INVERTER POWER DEVICE	E 152,161-201	CERTI CENTER OF SMB	00.08.12.
■ C E	INVERTERR TIG WELINDG MC	KZ-01-E00080	RWTUV(GERMANY)	01.03.25.

◆ POWWEL PRODUCTS

DC TIG WELDING MC	*TIGER 201, TIGER 301, 301P, 350EP, 500EP, 1000EP*
SPECIAL TIG WELDING MC	*MICRO TIG 30MP, DIGITAL GTAW 300GP, MULTI 200GP*
AC/DC TIG WELDING MC	*AC/DC TIG 250AP, 300AP, 500AP*
PLASMA CUTTING MC	*CUT- 35P, CUT- 35PC, CUT- 70P, CUT- 71P, CUT- 130P*
PLASMA WELDING MC	*MICRO- 50XP, 150XP, 200XP, 300XP, 500XP*
MIG/CO2 WELDING MC	*MIG 270CPL, MIG- 350CPL, MIG- 500CPX, CO2- 600CP*
DC ARC WELDING MC	*APOLLO 180, 200DP, 250DPN, 300DP*
ORBITAL WELDING MC	*PIPE AUTO 150 MINI, PIPE AUTO 200*
PULSE RECTIFIER	*DC PULSE RECTIFIER 1500RA, 1500RAM(Enclosed), 4607M*
LASER WELDING MACHINE	*PWL- 100, PWL- 350, PWL- 450*
WELDING AUTOMATION & CONSTRUCTION	*ORDER- MADE*

Welding Machines

◆ DC TIG Welding Machine

TIGER201	DC TIG 301P	TIGER301	DC TIG 350EP	DC TIG 500EP	DC TIG 1000EP
					
220 VOLT 1P 50/60 Hz	220 VOLT 1P/3P 50/60 Hz	220 VOLT 1P/3P 50/60 Hz	220/380 VOLT 1P/3P 50/60 Hz	220/380 VOLT 1P/3P 50/60 Hz	220/380 VOLT 3P 50/60 Hz

- Digital Control
- Plastic Case
- Stable Arc
- Various Pulse function
- Special memory Function
- High duty Cycle

- Welding quality control through the exact output control by selected digital control.
- Small and light product as the small transformer by changed IGBT Power conversion.
- Various pulse control function and stable ARC.
- Various welding operation by selecting 2T, 4T, Serial, TIG, spot, manual welding.
- High duty cycle to minimize inner heat and this by efficient design of inner system.
- Usable for 220V&380V through changed outer cable.

◆ DC TIG Welding Machine Specification

Model			TIGER 201	TIGER301/301P	TIG-350EP	TIG-500EP	TIG-1000EP	REMARK
Max Output current		A	200	300	350	500	1000	
Input Power	TIG	KVA	4.0(3.0kw)	9.5(7.0kw)	10.5(8.7kw)	15.8(11.7kw)	28.5(23kw)	
Output Power	MMA	KVA	4.5(3.7kw)	11.0(8.kw)	11.0(8kw)	18.3(13.3kw)		
Load Output	TIG	V/A	15/10~20/200	15/10~20/300	20/10~25/350	20/10~30/500	20/10~30/1000	
Load Output	MMA	V/A	25/10~30/150	25/10~30/240	25/10~30/250	25/10~40/400		
Non-load Volt.		V	68	68	68	80	110	
Duty Cycle		%	50	40	70	60	100	25℃
Dimension		mm	146×451×253	240×450×434	331×691×564	331×691×564	474×774×1013	W×D×H
Weight		Kg	17	22	43	47	100	

■ TIG TORCH & PARTS





◆ AC/ DC TIG Welding Machine

AC/DC TIG 250AP

220 VOLT | 1P | 50/60 Hz

AC/DC TIG 300AP

220/380 VOLT | 1P/3P | 50/60 Hz

AC/DC TIG 500AP

220/380 VOLT | 1P/3P | 50/60 Hz

- Exact input/output control by digital control
- 3 sorts of output(AC,DC,MIX
- Various PULSE function
- Compatible for 220V/380V input(changed cable)
- Stable arc start in a low current(AC15A,DC 10A)
- Method of MIX output for a vertical welding of thin plate
- 5 sorts of welding mode selection function

◆ AC/ DC TIG Welding Machine Specification

Model			AC TIG-250AP	AC TIG-300AP	AC TIG-500AP	REMARK
Mac output current		A	250	300	500	
Input Power	TIG	KVA	6.2(4.4kw)	9.5(7.0kw)	15.8(11.7kw)	
Output Power	MMA	KVA	7.0(4.9kw)	11.0(8.0kw)	18.3(13.3kw)	
Load Output	TIG	V/A	15/10~20/200	15/10~20/300	20/10~30/500	
Load Output	MMA	V/A	25/10~30/150	25/10~30/240	25/10~40/400	
Non-load Volt.		V	70	72	90	
Duty Cycle		%	25	40	40	25℃
Dimension		mm	230×463×370	331×691×564	331×691×564	W×D×H
Weight		Kg	23	45	48	

■ TIG TORCH & PARTS





◆ MIG/CO2 Welding Machine

MIG 270CPL

220 VOLT | 1P | 50/60 Hz

- Equipped a Feeder
- Control the Wire feeder
- Easy Operation
- Welding for various base material
- Excellent welding property

CO2 350CPL

220/380 VOLT | 1P/3P | 50/60 Hz

- Multi Function (CO2,MIG,Gouging,Arc)
- Arc Length control function
- High Duty Cycle
- Usable for Input Cable 50M
- Strong design for Heavy Industry /Plants
- High Duty Cycle

CO2 500CPL

220/380 VOLT | 1P/3P | 50/60 Hz

MIG 500CPX

220/380 VOLT | 1P/3P | 50/60 Hz

- Compatible for Pulse MIG/MAG/CO2
- Control Mode Selection(unification / dualization)
- Compatible for 220V, 1/3P and 380V, 3P
- Welding wire selection function
- Stable Arc in all electric current
- Low Spatter
- High Duty Cycle

CO2 600CPS

220/380 VOLT | 3P | 50/60 Hz

◆ MIG/CO2 Welding Machine Specification

Model		MIG-270CPL	CO2-350CPL	CO2-500CPL	MIG-500CPX	SCRCO2-600CPS	REMARK
Max Output current	A	270	350	500	500	600	
Input Power	KVA	8.0(5.5kw)	13.0(11.0kw)	21.0(18.0kw)	21.0(18.0kw)	41.0(30.0kw)	
Output Power	V/A	15/50~35/270	15/50~45/350	15/50~45/500	15/50~50/600	15/80~50/600	
Non-load Volt.	V	70	70	80	80	80	
Duty Cycle	%	60	60	40	60	100	25℃
Dimension	mm	331×691×564	331×691×564	331×691×564	474×774×1013	474×774×1013	W×D×H
Weight	kg	54	43	48	86	200	

■ CO2 TORCH & PARTS

◆Air Plasma Cutting Machine Specification

CUT-71P

220 VOLT | 1P | 50/60 Hz

- Equipped compressor
- Available for external air line
- Cutting Capacity : 2mm/ Max 5mm (Standard on inner compressor)
- Use of S45 Torch

CUT-35P

220 VOLT | 1P | 50/60 Hz

- Powerful cutting ability
- Clean & narrow cutting surface
- Display function for Air problem
- No problem of noise

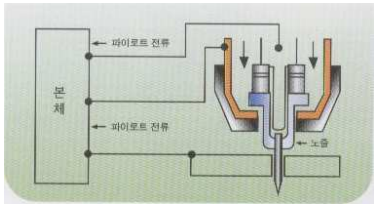
CUT-70P

220 VOLT | 1P/3P | 50/60 Hz

CUT-130P

220/380 VOLT | 1P/3P | 50/60 Hz

- Method of Pilot Arc
- Torch Switch hold function
- Torch Cooling with Air checking

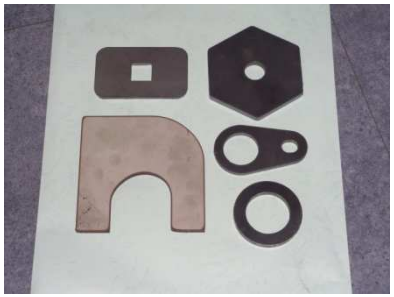


NOZZLE | ELECTRODE | SHIELD CAP(CERAMIC) | GUIDE RING | SHIELD CAP

◆ Air Plasma Cutting Machine Specification

Model		CUT-35P	CUT-35PC	CUT-70P	CUT-130P	REMARK
Max Output current	A	35	35	70	130	
Input Power	KVA	7.3(4.5kw)	7.8(4.8kw)	10.0(8.0kw)	20.0(16.0kw)	
Output Power	V/A	120/10~35	120/10~35	120/25~70	140/30~130	
Non-load Volt.	V	308	320	250	310	
Duty Cycle	%	30	30	60	30	25℃
Dimension	mm	146×451×253	260×474×340	240×450×434	331×691×564	W×D×H
Weight	Kg	17	23	22	47	

■ Air Plasma Cutting Torch & PARTS



◆ DC ARC Welding Machine

180DPL

220 VOLT | 1P | 50/60 Hz

200DPN

220 VOLT | 1P | 50/60 Hz

250DP

220/380 VOLT | 1P | 50/60 Hz

300DP

220/380 VOLT | 1P/3P | 50/60 Hz

- Compatible for MMA & Scratch TIG(ORDER MADED)
- VDR for the user's safety
- Product Safety with Enough Volume of IGBT module Guarantee
- Safety enforcement by CIRCUIT BREAKER
- Comfortable for using power of 220V single phase
- Smooth and stable Arc
- High Duty Cycle

◆ DC Arc Machine Specification

Model		180DPL	200DPN	250DP	300DP	REMARK
Max Output Current	A	150	200	250	300	
Input Power	KVA	5.0(4.5kw)	6.4(4.5kw)	11.2(7.6kw)	12.6(8.9kw)	
Output Power	V/A	40/10~130	30/10~180	30/10~230	30/10~300	
Non-load Volt.	V	76	72	80	72	
Duty Cycle	%	60	40	30	40	25℃
Dimension	Mm	155×367×271	146×451×253	159×279×428	235×478×424	W×D×H
Weight	kg	7.5	19	20	22	

■ PARTS

Special Welding Machine
Special Power supply

◆ Special LNG TIG Welding Machine

MICRO TIG 30MP

220 VOLT

1P/3P

50/60 Hz

- Digital control
- Output current 0.5A~30A
- Precision Adjustment
- More than 0.05mm plate welding
- Bellows Welding
- High Duty Cycle

MULTY CH. 200GP

220 VOLT

1P

50/60 Hz

- Digital Control
- Save the 3 types of welding Condition
- Using the front of the Flow Meter & Gas Checking
- Selection Function of Welding Condition Channel
- Proper for LNG menbrane welding
- High Duty Cycle

GTAW-300GP

440 VOLT

1P/3P

50/60 Hz

- Save the 30 types of Welding Condition
- Welding Condition Checking by LED
- Error Indicator(Over current, SHORT, ARC START)
- Easy to connect to automation
- Included AVC Detection circuit
- High Duty Cycle

GTAW-ST300AH

◆ Special TIG Welding Machine Specification

Model		MICRO TIG-30MP	MICRO TIG-50MP	MULTI CHANNEL TIG-200GP	GTAW-300GP	Remark
Max Output Current	A	30	50	200	300	
Input POWER	KVA	2.0(1.4kw)	3.0(2.2kw)	4.0(3.0kw)	9.5(7.0kw)	
Output POWER	V/A	25/30	25/50	25/200	25/300	
Non-load Volt.	V	120	120	68	82	
Duty Cycle	%	100	100	90	60	25℃
Dimension	mm	240×450×434	240×450×434	220×462×402	331×655×564	W×D×H
Weight	Kg	22	22	17	48	

■ TIG TORCH & PARTS

◆ Plasma Welding Specification

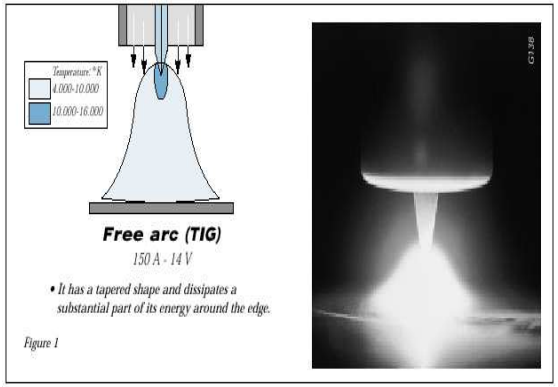
PLASMA WELDING is similar to TIG, but tungsten welding rod is embedded in the nozzle of copper electrode to generate ARC (Pilot ARC). By doing so, ARC with base material is connected and becomes main welding state, it is less contaminated or abrasion of the electrode rode,precise and high-density welding is possible.
It is welding for mild steel, stainless steel, nickel alloy, copper, copper alloy, titanium alloy and low alloy steel and it shows excellent advantage of precision welding, slag, spatter and welding range sealing.

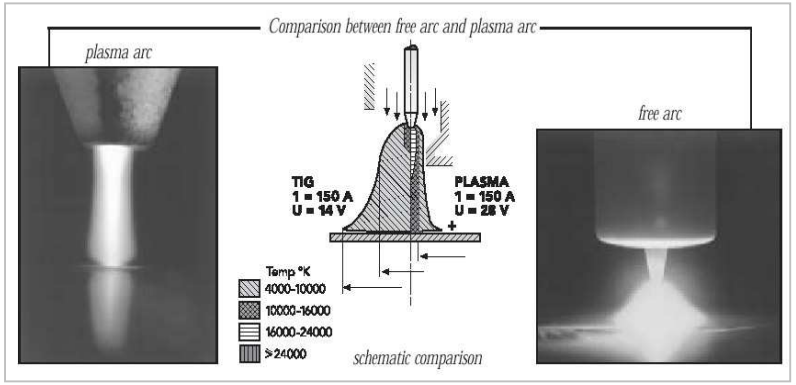
● Advantages of PLASAMA WELDING

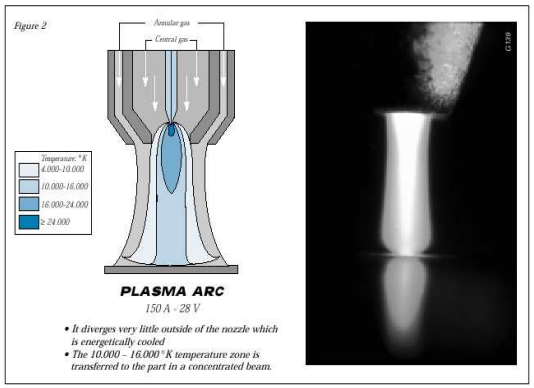
- Deep welding range and low heat variation
- Narrow bead width
- Narrow arc angle within 8˚
- Proper for continuous precision automation works
- Few consumption of electrode nozzle
- Prime cost and productivity improvement
- 100% arc start by pilot arc

● Advantages of POWWEL PLASMA

- Domestic development and competitive price
- Quick before/after service
- High precision welding
- Various pulse function
- Automation interface
- Excellent arc stability through gas precision control device(Option)







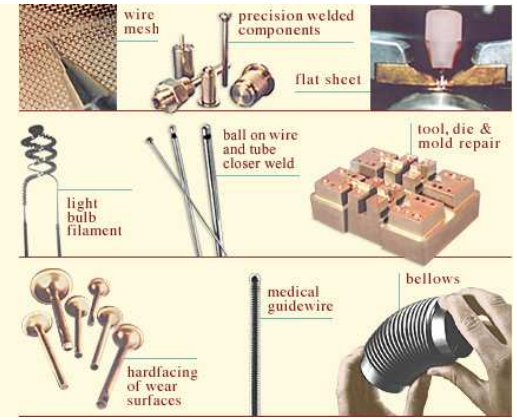
◆Plasma Welding Specification

● Comparison with TIG welding

N O	Item	TIG Welding Machine	PLASMA Welding Machine
1	Overall Assessment	General equipment	Between TIG and Laser
2	Component Consumption	much(Tungsten rods processing)5~8times/day	Low(Tungsten rods processing) 2times/day
3	Gas Consumption	Argon 10 lit./min.	Argon 0.3 lit./min. Argon+Hydrogen 5 lit./min.
4	Easy to use equipment	Easy to use	Standard setting process is hard. Keep clean
5	Welding Speed	Slow	Fast (More than 2 times from TIG)
6	Weld entry	Max : 6mm	Max : 9mm
7	Welding ARC angle	30°	6 ~ 15°
8	Failure rate	Under 5%	Under 1%
9	Welding condition setting	Simple	Complexity
10	Equipment components	Main body/Torch/Argon Gas	Main body/Torch/Water cooling/Gas/Accessories
11	Equipment amount	Cheap	Expensive

● PLASMA WELDING Application Field

1). Medical Equipment ; CUTTER/GUIDE WIRE/TUBE /RADITION INSERTION/WIRE
2). Aircraft & Aerospace ; SPACESHIP HYDROGEN COOLING TUBE/ENGINE REPAIR
3). Automotive ; AIRBAG UNIT/ CLUTCH AND BREAK PARTS/RELAY/SENSOR/EJECTION
4). Instrumentation ; HEAT BATTERY/GAUGE/LITHIUM BATTERY/METAL BELLOWS
5). Lighting ; FLORESCENT LIGHT / TUNGSTEN FILAMENT
6). Other Industries ; NUCLEAR FUEL ROD/MOLD AND DIE REPAIR/PIPE CONSTRUCTION/ WIRE BELT/ FILTER



◆Plasma Welding Machine

MICRO PLASMA 50XP

220 VOLT | 1P/3P | 50/60 Hz

PLASMA 150XP-200XP

220 VOLT | 1P/3P | 50/60 Hz

PLASMA 300XP

220 VOLT | 1P/3P | 50/60 Hz

PLASMA 500XP

220 VOLT | 1P/3P | 50/60 Hz

- Competitive price and quality as POWWEL exclusively developed
- Weld penetration and narrow BEAD width
- Excellent ARC stability with embedded MFC
- Digital Control Method

MICRO PLASMA 30XP/50XP ☞ SEMICONDUCTOR
PLASMA 150XP/200XP ☞ CAR SPARE PARTS
PLASMA 300XP/500XP ☞ PIPE CONSTRUCTION

◆ Plasma Welding Machine(Order Made)

PLASMA 500XP(Order Made)

220 VOLT | 1P/3P | 50/60 Hz

PLASMA 300XP (Touch Panel type)

220 VOLT | 1P/3P | 50/60 Hz

1.PLASMA WELDING MACHINE–500XP
2.EXTERIOR REMOTE Controller
3.Wire Feeder
4.Wire Feeding Exterior Remote Control

Function of Plasma Welding Machine

1.Pulse Function – Pulse width, frequency, control the base current
2.Welding Gas Flow Stability - M.F.C using, error +/- 0.5%
3.Exterior REMOTER DIGITAL selection(Option) – Welding current, pulse width, frequency, Control the base current
4.Duty Cycle 100% - Inside cooling mode : WATER COOLING
5. Save the 20 types of Welding condition – Digital Control Memory
6.Stability of Output Current- INVERTER Control method, Output current Error : +/-1%
7.Available for Connection to any SYSTEM – 100% Exchange available

◆ Plasma Welding Machine Specification

Model		30XP	50XP	100XP	200XP	300XP	500XP	REMARK
Max Output Current	A	30	50	100	200	300	500	
Input Power	KVA	2.0(1.4kw)	3.0(2.2kw)	4.0(2.8kw)	8.0(5.6kw)	11.0(8.0kw)	21.0(18.kw)	
Output Power	V/A	40/30	40/50	40/100	40/200	40/300	40/500	
Non-load Volt.	V	100	100	100	100	100	120	
Duty Cycle	%	100	100	100	80	50	90	25℃
Dimension	Mm	331×691×564	331×691×564	331×691×564	331×691×564	474×774×1013	474×774×1013	W×D×H
Weight	kg	45	45	45	45	86	86	

■ Plasma Welding TORCH &PARTS






■ Grinder

■ Wire Feeder

■ Remote control,Cooler


◆ Orbital Pipe Welding Machine

Simple, fast and high quality with circumferential welding!!
Available for thin semiconductor tubes & large caliber carbon steel pipes.

PIPE AUTO 150 MINI

- ◆ Save function of various Welding condition
- ◆ Welding flow identification function by LED
- ◆ Various pulse function
- ◆ Save function of Welding condition and Search function by encoder
- ◆ Easy to carry with compact and light weight
- ◆ Excellent weldability, function and safety with simple operation as computer interface function embedded.

◆ Can be obtained in a clean weld area with less oxidation as welding in the middle of the sealed container
◆ allow OD 1/8 ~ 8 inch by 6 kinds of welding heads
◆The width of head is thin, welding of elbow etc. is easy (min.12.7mm)
◆ Excellent workability by one-touch pipe detachment

◆ High-efficiency head with one-touch clamp, one-touch start
◆ Easy to set condition by checking the welding parts
◆ 4 types of heads allow welding of 1/2 to 8 inches

PIPE AUTO 300QP

◆ Laser Welding Machine

PWL-60S

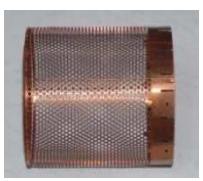
Jewelry, eyeglass frames, mold repair,
Semiconductor parts,
denture correction

- •Stable design
- •DIGITAL mark
- •Welding induction POINT
- •Quick service

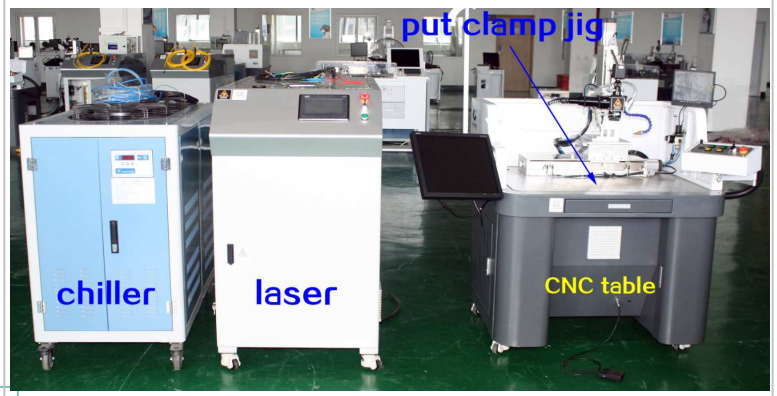
PWL-350S

Mold repair (large), sensor welding
Semiconductors, Pneumatic Pressures

- •Automatic transfer of X, Y table
- •PLC, inside of DIGITAL designate
- •Welding induction POINT
- •CCD camera can be installed



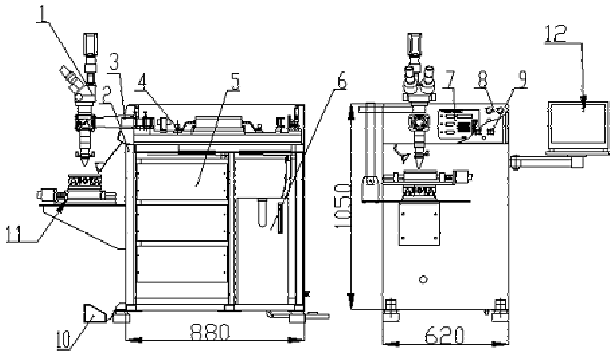
PWL 350WL



Sensor welding, Semiconductor, Pneumatic pressure

- •Design for welding automation
- •Robot interface
- •Curved welding

◆ Laser Welding Machine Specification



The PWL 300 is a YAG laser welding system with a complete structure consisting of a cabinet, an internal cooling system, a laser power supply, a control system, a pilot lot laser and a work table. The main features are an integral appearance, small volume and easy operation.

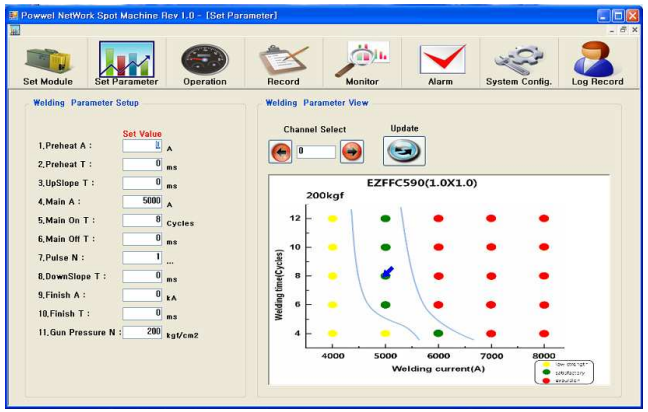
1. Microscope 2. Cabinet 3. Focus system 4. Laser device 5. Power supply
6. Internal cooling system 7. Control system 8. Power supply panel
9. Operation panel 10. Foot switch 11. Work table 12. Monitor

Specification	PWL-60S	PWL-200S	PWL-300C	REMARK
Laser medium	Nd: YAG	Nd: YAG	Nd: YAG	
Wavelength	1064mm	1064mm	1064mm	
Max single pulse energy	40J	70J / 80J	70J / 80J	
Average output power	50W / 60W	200W / 300W	200W / 300W	Adjustable
Focused spot diameter	0.1~2.0mm	0.3~0.6mm	0.3~0.6mm	Adjustable
Pulse width	0.1~15ms	0.1~10ms	0.1~10ms	Adjustable
Pulse frequency	1~20Hz	1~100Hz	1~100Hz	Adjustable
Power Supply	220V 60Hz 5Kw	220V/380V 60Hz	220V/380V 60Hz	
Protective Gas	Ar	Ar	Ar	

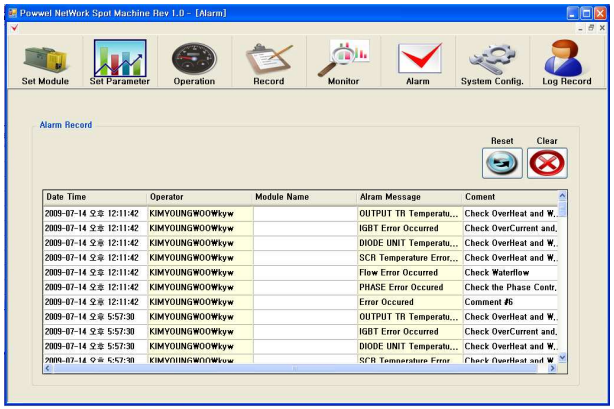
◆ INVERTER MFDC SPOT WELDING MACHINE

Computer Control Inverter MFDC SPOT Welding System

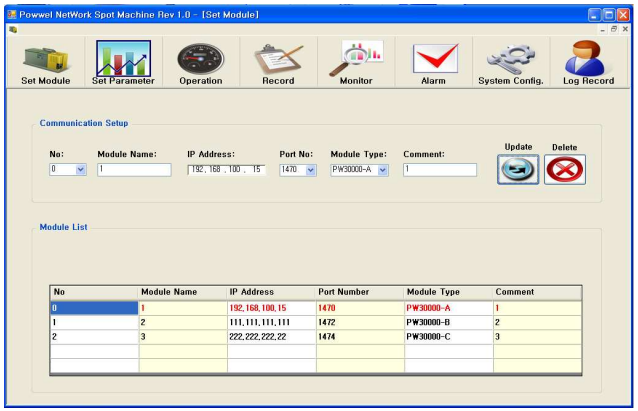
◆ INVERTER SPOT WELDING MACHINE CONTROL



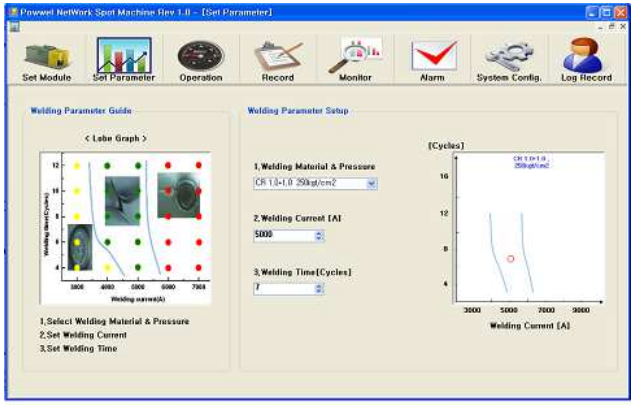
Each module setting screen



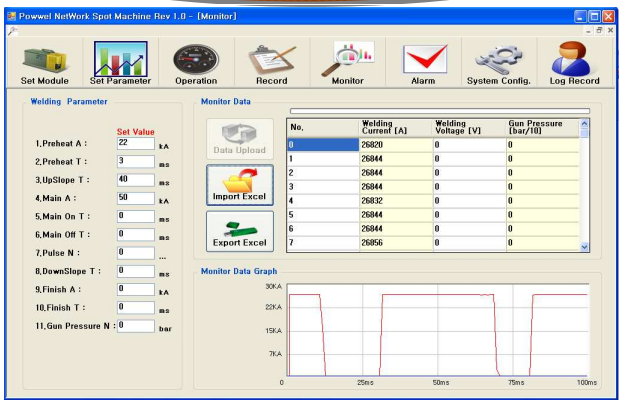
Operation screen,
display error screen 1



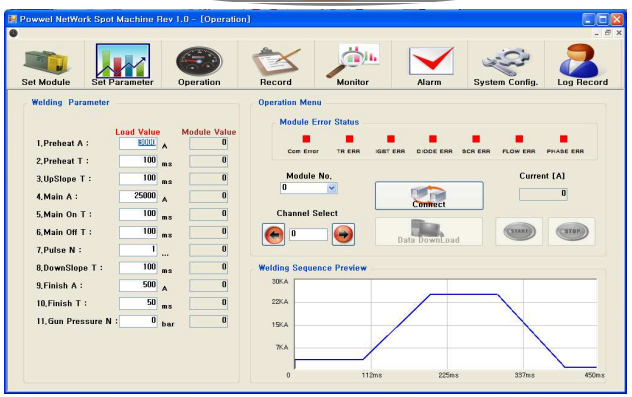
Welding result
Data Save screen



Each Welding Parameter Setting



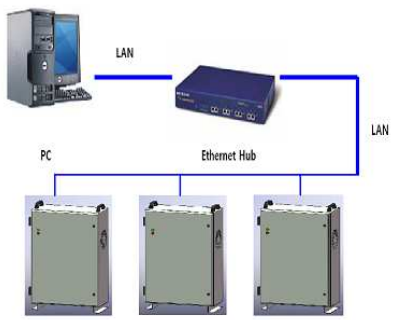
Screen of Welding monitering

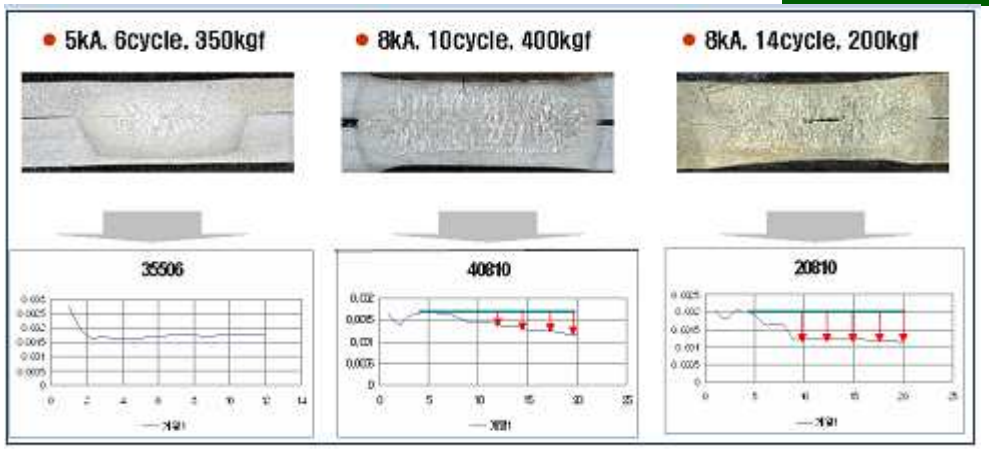


Operation screen

◆ INVERTER SPOT Welding machine Specification

	Details	Unit	Spec.	Remark
INPUT	Voltage	VAC	380 ±10%	-
	Max.Electric Power	KVA	150 Approxi.	Max. Value moment
	Frequency	Hz	50~60	-
OUTPUT	Max.Current	ADC	30,000	Max. 6 cycle
	No load voltage	ADC	14	-
	Switching frequency	KHz	1.5	-
Control Method	Constant Voltage/Current Control	-	constant current	PWM method
	PID control	-	PID	within 10msec
Opetating Method	PC control	-	Dedicated program	Current, time, pressure etc.
	Remote	-		Input run/stop
Cooling method	Water cooling, Air cooling	-	Water cooling, Air cooling	Power device spot
Exterior	Size	mm		W*H*D
	Weight	kg	40	

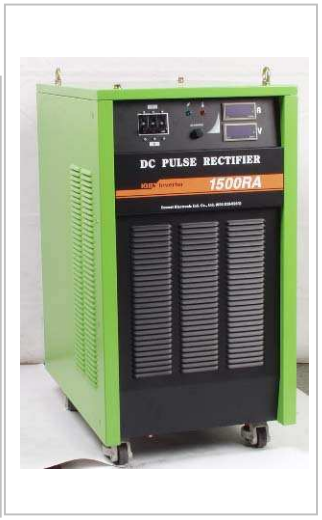




200kgf, 8cycle							
전류 (kA)	단면 매크로	너깃 지름	너깃 높이	열영향부지름	압흔자국	압흔깊이	압흔지름
4		3.7	1.5	4.9		0.04	4.3
5		4.4	1.8	5.2		0.07	5.0
6		4.8	1.8	6.0		0.09	5.4
7		5.4	1.6	6.4		0.13	6.0
8		5.2	1.7	6.4		0.17	6.8

◆A RECTIFIER for PLATING

H4607 Vacuum attachment	Wire cutting POWER	RA1500M(Seal type) PCB plating	RA1500(Normal type) PCB plating	Shifter type Rectifier	Rack Rectifier special device



♣ *Feature*

1) Fast and uniformed output
2) Large output range
3) PULSE function
4) Central control date management system
5) Small and light weight of IGBT inverter Welding method
6) High efficiency and low power consumption
7) Soft START/STOP, UP/DOWN slope function
8) Full sealed type and long life

◆ RECTIFIER FOR PLATING

RA1500M(closed type)

RA1500(general)

Homogeneity plating

Reduced power consumption

Small & Light weight

Easy to following up control

PCB Plating System

♣ Main Specifications and Features (RA1500. RA1500M)

Specification	INPUT ELECTRIC	220V, 380V, 440V +/−10%, 3P, 50/60Hz, 16KVA	INTERFACE	Output Voltage/ Current Monitor	DIGITAL
	Output voltage / current	2~6VDC(load variation),80A~1500A(continuous var		Output current control	DIGITAL
	Current fluctuating	Load current within +/−%		START/STOP Control	LOGIC SIGNAL
	PULSE	Frequency:1~200Hz,With:20~80%,BASE:80A~Ma	Protect function	Input Overvoltage Protection Circuit	INTERNAL
	Up/Down Slope time	0.1 ~ 5%		Output overcurrent protection circuit	INTERNAL
	Rate of use	100% @1200A		Internal overheat protection circuit	INTERNAL

◆ Central Control Rectifier

RECTIFIER CENTRAL CONTROL SYSTEM

☆ Feature

■ Control up to 20 rectifiers by host computer

■ Output monitoring and data up to 1 year(Graphic Support)

■ Control System is interlocked with automation system

■ Easy operation and management with Windows environment program

RACK TYPE RECTIFIER (Special Device)

H4607 (Vacuum attachment)

Use : ▷ PCB Plating ▷Semiconductor LID Frame

▷ Vacuum attachment rectifier

▷ Waste disposal

▷ Discharge of electricity processing

♠ Central Control Rectifier system of POWWEL

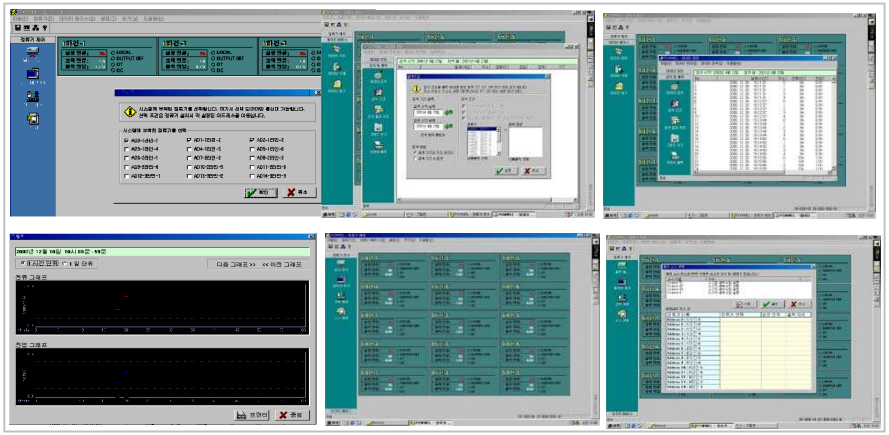
■Control up to 20 rectifiers of PCB plating line

■ Instruction for operation - Current, Voltage, Pulse, slope, etc.

■ Monitoring of Rectifier condition - Output current, Voltage, warning, etc.

■ It sets the monitored date periodically(1 min., 1hour, 1day, etc.) and memorizes the parameter value of the operation condition for 20 rectifiers. Then, it compares and analyzes workload, work degree, quality of setting value and amount of plating chemicals.

Central control Program



◆ Battery Charger

PWB - 1000

•Max output;1400W/24VDC(Non load 32V)
•40A / 48V, 24V Selection
•High Speed charging;
-Within 8 hours 268AH buffer /
-Complete charging condition;270AH

PW- 3000BC

•Max output : 3500W / 48VDC(Non load 64V)
• 45A / 48V, 24V Selection
•High Speed charging; within 8hours 320AH buffer/
•Complete charging condition;350AH

PW- 4200BC

▣ MOSFET, IGBT INVERTER(SMBC)

-Small, light-weight, power saving, High efficiency

▣ MICRO computer control

-Constant current&voltage, Recharge process PROGRAM

▣ Protection function

-Over-charge, over-current, over-voltage, overheat protection function

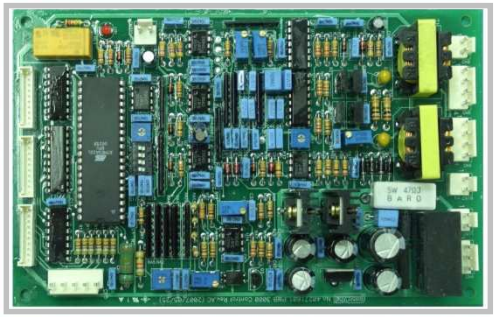
▣ Function of E-Q mode, mark function of voltage/current, automation charging end

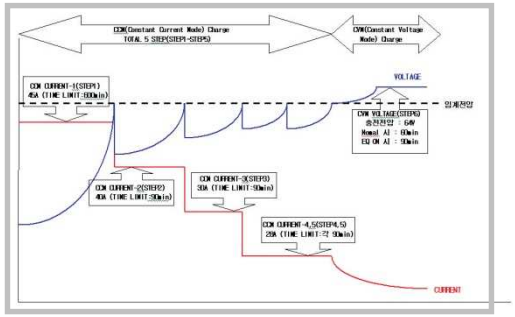
▣ Purge control

-Outside temperature sensing, Automatic control function of charging time

▣ No operation

-Battery current voltage mark





Application

Electric motion forklift(AGV)	Electric motion forklift Charge
Golf-Car	Golf field transportation equipment Charge
Emergency generator	Emergency generator battery Charge
Transportation machine	Small transportation machine Charge
Motor soooter	No leak liquid storage battery Charge

Welding Automation

◆ Welding automation

Know-how and design technique of automation device for unique Special Welding machine(Micro TIG, Plasma Welding, Micro Plasma Welding) is combined.
POWWEL can support customer's demand throughout the design, production, test of running, installation, setting of welding conditions, trading, etc.

AUTOMATION WELDING SERIES

FUNCTION(1) – CIRCLE WELDING UNIT OF HORIZONTAL MATERIAL TYPE
FUNCTION(2) – RECTILINEAL WELDING UNIT OF HORIZONTAL MATERIAL TYPE
FUNCTION(3) – CIRCLE WELDING UNIT OF VERTICAL MATERIAL TYPE
FUNCTION(4) – ELLIPSE WELDING UNIT OF VERTICAL MATERIAL TYPE
FUNCTION(5) – TRACKING WELDING UNIT OF 3D CURVE TYPE
FUNCTION(6) – TAPER TYPE TRACKING WELDING UNIT
FUNCTION(7) – AMPERE CONTROL UNIT PER TRIANGLE,SQUARE

WELDING FACILITY FLOW

MATERIAL SOURCE ->START BUTTON->WELDING START AND COMPLETION

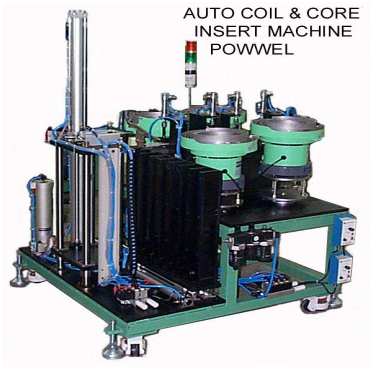
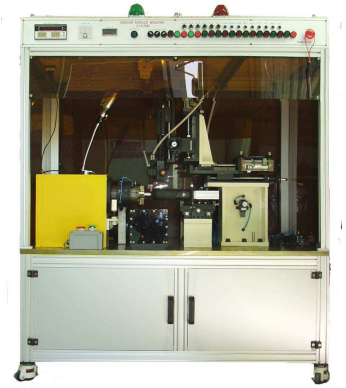
APPLIED MATERIAL

STAINLESS(SUS), IRON(STEEL), TITANIUM, ALUMINUM, ETC.

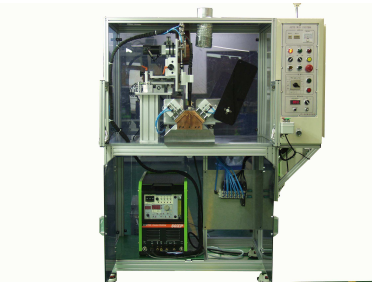
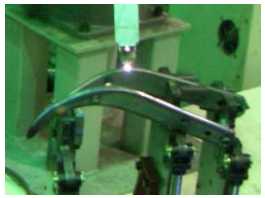
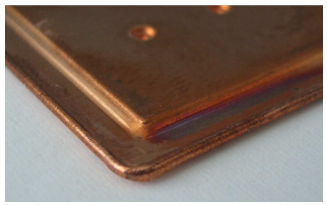
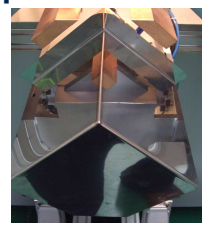
FACILITY FEATURE

1. REDUCE EXTERIOR DEFECT PRODUCT RATE BY MANUAL WORKS
2. NO NEED OF EXPERTISED WELDER
3. WOMEN CAN OPERATE IT.
4. THE WELDING CONDITION SIMPLYLY CONTROL
5. SELF DETECTION OF MACHINE PROBLEM AND INDICATING THE FAULT LOCATION
6. PROTECTING THE WORKER FROM REFLECTED GLORY
7. AVAILABLE FOR 3D CIRCULAR WELDING
8. CONTROL WELDING OF CURRENT/AMPERE/SPEED
9. AVAILABLE FOR ALL SHAPE WELDING BY WELDING TRACKING DEVICE
10. PRECISION WELDING BY SUB-MOTOR
11. UNIFORM WELDING OPERATION BY HIGH PRECISION JIG
12. NO DEFECTIVE PRODUCT BY HEAT TRANSFORMATION

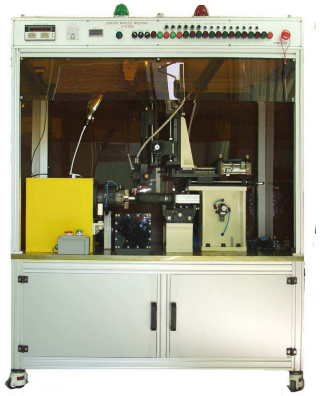
◆ Welding automation performance 1-5

				
Test sample;	Test sample;	Test sample; 	Test sample;	Test sample; 
Welding method;MICRO TIG	Welding method; TIG	Welding method; TIG Welding	Welding method;CO2	Welding method; PLASMA
Welding method;Rotation, different metals	Welding method;SPOT,CU	Welding method;Rotation	Welding method;Rotation,Fe	Welding method;Rotation,W/F
Use;Car temperature sensor	Use; Motor starter coil	Use; Fishing Tackle, Ellipse	Use; Cylinder enclosure	Use;car part shaft

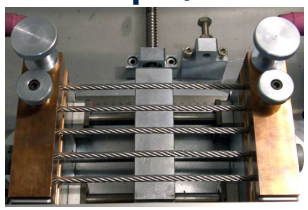
◆ Welding automation performance 5-10

				
Test sample; 	Test sample; 	Test sample; 	Test sample;	Test sample; 
Welding method;PLASMA	Welding method; PLASMA	Welding method; TIG	Welding method;PLASMA	Welding method; PLASMA
Welding method; Curves, robots	Welding method;SPOT, Orthogonal robot	Welding method; Straight line Cu	Welding method;Right angle, Orthogonal robot	Welding method; Right Angle Corner Straight
Use; Auto parts lever	Use; Diesel engine carburetor	Use; Small chiller	Use;SUS, Door corner	Use;Sink corner

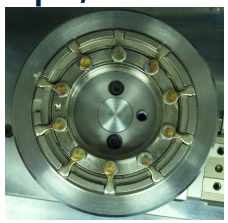
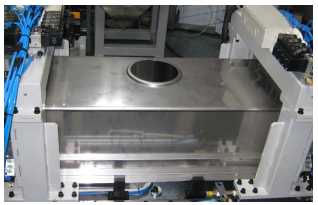
◆ Welding automation performance 11-15

				
Test sample; 	Test sample;	Test sample; 	Test sample;	Test sample; 
Welding method;TIG	Welding method; TIG	Welding method; TIG	Welding method;TIG	Welding method; PLASMA
Welding method;Rotation,different kind	Welding method;Rotation	Welding method;SPOT, CU	Welding method;Rotation, Cooling	Welding method;Rotation, Dissimilar metal
Use; Sol valve exterior	Use; Heater case	Use; Filter coil, connector	Use; Pressure sensor,SUS	Use; Circular case

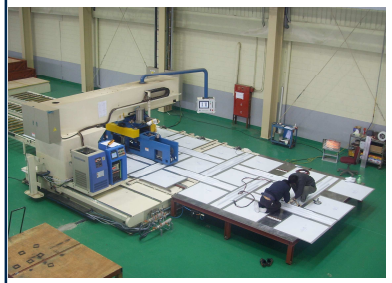
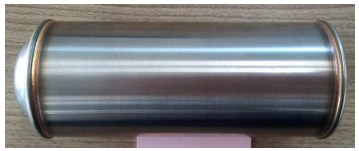
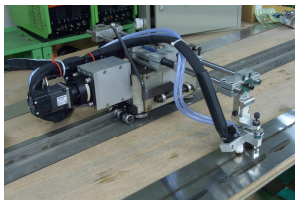
◆ Welding automation performance 16-20

				
Test sample; 	Test sample; 	Test sample; 	Test sample; 	Test sample; 
Welding method;PLASMA	Welding method; TIG	Welding method; TIG	Welding method;PLASMA	Welding method;PLASMA
Welding method;Rotation	Welding method;Wire SPOT	Welding method;Rotation,Curve, 30 types	Welding method;SPOT, Rotation	Welding method;straight, inconel
Use;Machine parts	Use; Seat belt wire	Use;T,L type of pipe	Use; Car engine part	Use;Plant part

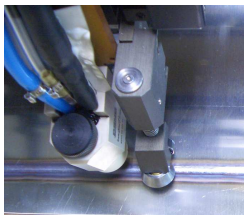
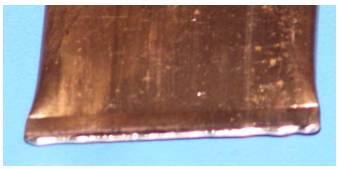
◆ Welding automation performance 21-25

				
Test sample;	Test sample;	Test sample; 	Test sample; 	Test sample;
Welding method;PLASMA	Welding method; PLASMA	Welding method; PLASMA	Welding method;FIBER LASER	Welding method; PLASMA
Welding method;straight,SEAM	Welding method;straight	Welding method;Rotation,orthogonal robot	Welding method; stair of Straight	Welding method;straight,SEAM
Use;Drum of laundry	Use;Drum	Use; Car part	Use;corner of sink	Use; Drum of vacuum

◆ Welding automation performance 26-30

				
Test sample; 	Test sample;	Test sample; 	Test sample; 	Test sample; 
Welding method;MICRO TIG	Welding method; TIG	Welding method; PLASMA	Welding method;TIG	Welding method; PLASMA
Welding method;Rotation, separate plate	Welding method;straight,SEAM	Welding method;straight, carriage	Welding method;straight, Rotation, 8 types	Welding method;straight,
Use;small LPG container	Use; Large straight welding	Use;LNG tank part	Use;LNG tank	Use;LNG tank

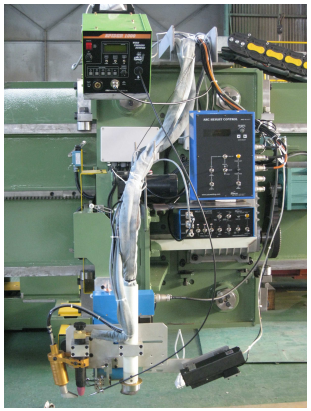
◆ Welding automation performance 31-35

				
Test sample; 	Test sample;	Test sample; 	Test sample;	Test sample;
Welding method;PLASMA	Welding method; TIG	Welding method; TIG	Welding method;TIG	Welding method;TIG
Welding method;Rotation,straight	Welding method;straight, Rotation	Welding method;corner of copper plate	Welding method;Big PIPE SEAM	Welding method;PIPE SEAM
Use; part of LNG tank	Use;electric part, general	Use;cooling part	Use; part of power plant	Use; part of power plant

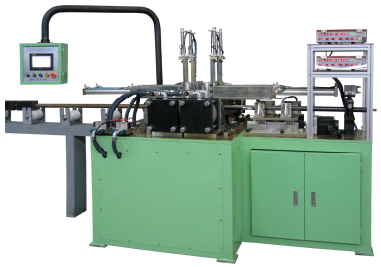
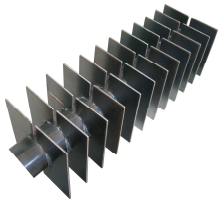
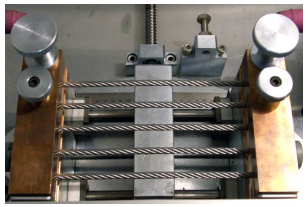
◆ Welding automation performance 36-40

				
Test sample;	Test sample;	Test sample; 	Test sample;	Test sample; 
Welding method;PLASMA	Welding method;TIG ORBITAL	Welding method;AC TIG(AL)	Welding method;SUBMERGED	Welding method;SPOT
Welding method;straight,W/F	Welding method;Rotation,PIPE	Welding method; square,orthogonal robot	Welding method; Large three-axis simultaneously	Welding method; slab ,SUS
Use; part of window and door part	Use; Pipe connect	Use; Battery enclosure	Use; part of Power plant	Use;part of dishwasher

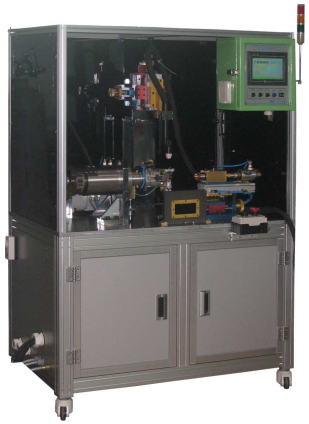
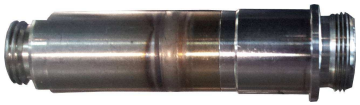
◆ Welding automation performance 41-45

				
Test sample; 	Test sample; 	Test sample;	Test sample; 	Test sample;
Welding method;MICRO SPOT	Welding method;PLASMA	Welding method;TIG,PLASMA	Welding method;TIG,PLASMA	Welding method;TIG,PLASMA
Welding method;12 spots at once	Welding method;Rotation	Welding method;rear plate straight carriage	Welding method;straight carriage at once	Welding method;straight carriage.AVC
Use;inner of dishwasher.SUS	Use;Machine parts	Use;Plant	Use;Plant	Use;Plant

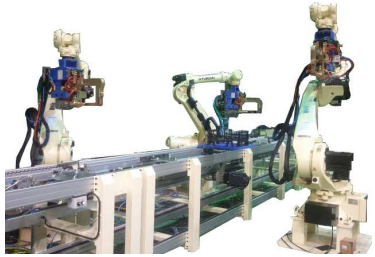
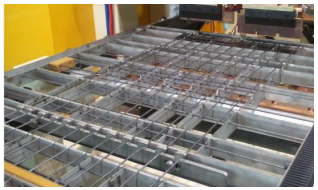
◆ Welding automation performance 45-50

				
Test sample; 	Test sample;	Test sample; 	Test sample; 	Test sample;
Welding method; SPOT	Welding method;PLASMA	Welding method;CUTTING	Welding method;TIG Promote	Welding method;TIG
Welding method;straight move,Pin 2 pcs	Welding method;straight SEAM	Welding method; Wire cutting	Welding method; inner pipe Promote	Welding method;ARC SPOT
Use; A heat exchanger	Use;Drum of laundry	Use;Seat belt	Use;Plant	Use; temperature Senser

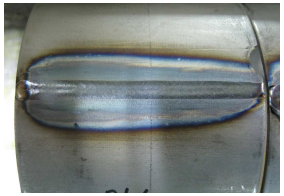
◆ Welding automation performance 51-55

				
Test sample;	Test sample; 	Test sample; 	Test sample; 	Test sample; 
Welding method; Inverter SPOT	Welding method;PLASMA	Welding method;LASER	Welding method;SUBMERGERD	Welding method;SUBMERGERD
Welding method; Aluminum 5t	Welding method;Rotation	Welding method;bellows	Welding method;MANIPLATE	Welding method; Turntable
Use;Machine parts	Use;Electric parts	Use;Valve parts	Use;large size elbow	Use; large size elbow

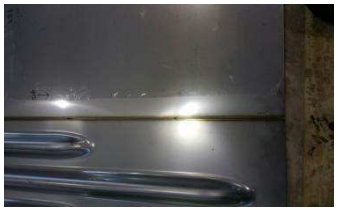
◆ Welding automation performance 56-60

				
Test sample; 	Test sample;	Test sample; 	Test sample; 	Test sample;
Welding method;MULTI SPOT	Welding method;SPOT	Welding method;TIG	Welding method;TIG SPOT	Welding method;AVC
Welding method;WIRE MESH	Welding method;ROBOT SPOT	Welding method;Rotation	Welding method;ARC SPOT	Welding method; Voltage sensing
Use; A heat exchanger of refrigerator	Use;Part of Home Appliances	Use;Gas tank	Use; Wire cutting face	Use;Height control automatically

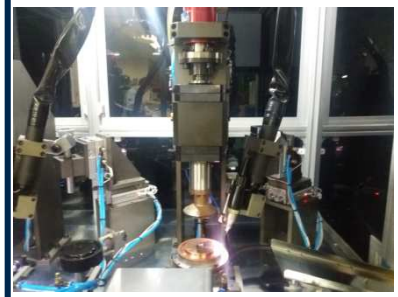
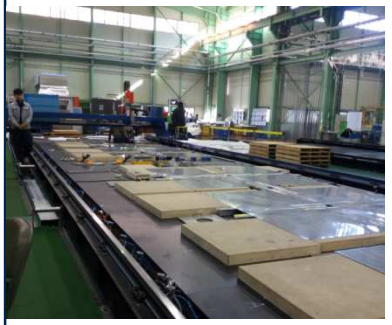
◆ Welding automation performance 61-65

				
Test sample; 	Test sample; 	Test sample;	Test sample; 	Test sample; 
Welding method;TIG ORBITAL	Welding method;PLASMA	Welding method; PLASMA	Welding method;TIG	Welding method;TIG
Welding method;straight. Inconel	Welding method;circle straight	Welding method; ARC JET	Welding method; Circumference, CU	Welding method; Titanium Straight
Use;Plant part	Use; Car part	Use; Gas occur	Use;Pipe elbow, T	Use; unclear shield

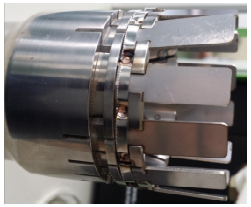
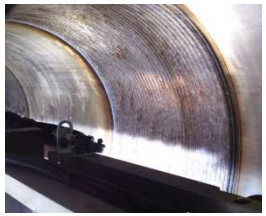
◆ Welding automation performance 66-70

				
Test sample; 	Test sample; 	Test sample; 	Test sample; 	Test sample; 
Welding method;PLASMA	Welding method;PLASMA	Welding method;TIG 2P	Welding method;MIG+PLAS.	Welding method;TIG weaving
Welding method;Cylinder SEAM Straight	Welding method; Gantry plate straight	Welding method;Gantry straight	Welding method; Hybrid	Welding method;Rotation,AVC, W/F
Use; Ventilator	Use; LNG	Use;	Use; Aluminum rear panel	Use; Rotation general

◆ Welding automation performance 71-75

				
Test sample;	Test sample; 	Test sample; 	Test sample; 	Test sample; 
Welding method;PLASMA	Welding method;TIG9P	Welding method;TIG	Welding method;PLASMA	Welding method;TIG WEAVING
Welding method;Rotation	Welding method;cylinder straight,lamination	Welding method; cylinder Rotation	Welding method; Gantry plate straight	Welding method;up/down 2P,W/F
Use;Machine parts	Use; Electric car motor core	Use; Water purifier	Use;KC1 LNG tank	Use;Drum of laundry

◆ Welding automation performance 76-80

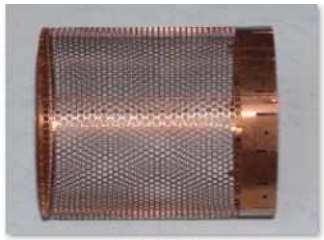
				
Test sample; 	Test sample; 	Test sample; 	Test sample; 	Test sample; 
Welding method;MICRO SPOT	Welding method;LASER	Welding method;TIG inner promote	Welding method;TIG	Welding method;PLASMA promote
Welding method;double contact	Welding method; Plate layer	Welding method;12m PIPE promote	Welding method; Circumferential side	Welding method; Gantry straight
Use;electric part	Use; A heat exchanger	Use;	Use; temperature Senser	Use;Plant

◆ Welding automation performance 81-85

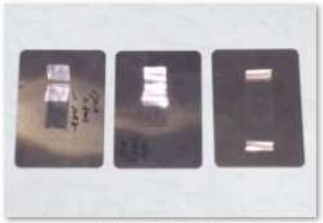
				
Test sample; 	Test sample; 	Test sample;	Test sample;	Test sample;
Welding method;PLASMA	Welding method;PLASMA*2	Welding method;	Welding method;	Welding method;
Welding method;Multi-rotation,Robot	Welding method; Engine parts	Welding method;	Welding method;	Welding method;
Use;Boiler, Steel	Use; Cooling	Use;	Use;	Use;

Sample welding and welding construction

◆ Welding Sample


LASER-동박막.jpg

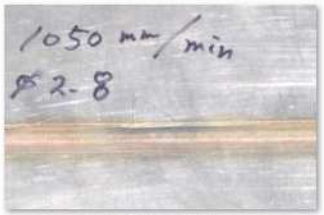

LASER-바테리케이스.jpg


LASER-스텐박막.jpg

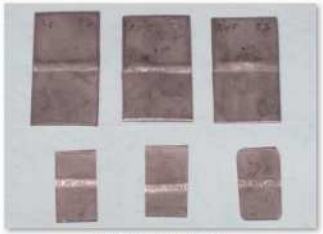

LASER-싱크대판.jpg


LASER-알미늄겹침.jpg


PLASMA=스프링.JPG



PLASMA-LNG1.jpg


PLASMA-LNG시료.jpg


PLASMA-맛대기.jpg

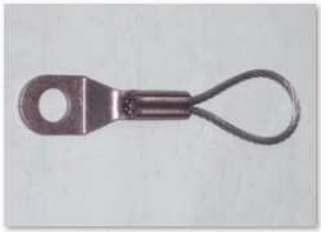

PLASMA-밸브류.JPG

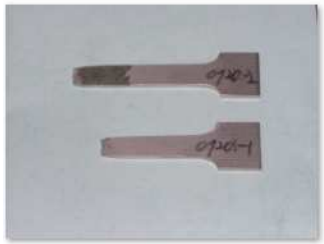

PLASMA-벨로즈.JPG


PLASMA-볼트.JPG

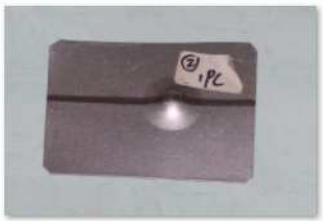

PLASMA-성형벨로즈.JPG

PLASMA-스텐2.jpg


PLASMA-와이어스풋.jpg


PLASMA-용접시료.JPG


PLASMA-유량.JPG


PLASMA-인바.jpg


PLASMA-차부품.jpg


PTA-밸브.jpg

◆ Welding Sample

◆ Welding Sample


TIG-센서.JPG


TIG-솔밸브1.jpg

TIG-스풋필터.jpg


TIG-오비탈.JPG


TIG-원주센서.jpg


TIG원주용접.jpg


TIG원주용접외.jpg

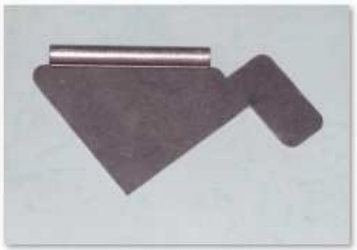

TIG-원통쉼.jpg

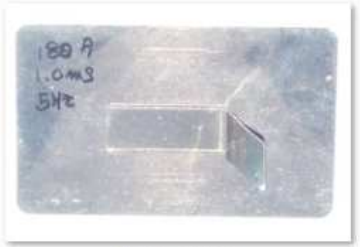

TIG-전자부품.JPG


고주파용접.jpg


그림2.jpg


동알미늄결합.JPG


레이저-부품1.jpg



레이저-스텐1.jpg


레이저-압력센서.JPG

◆ Welding Sample

레이저-핸드폰부품.JPG

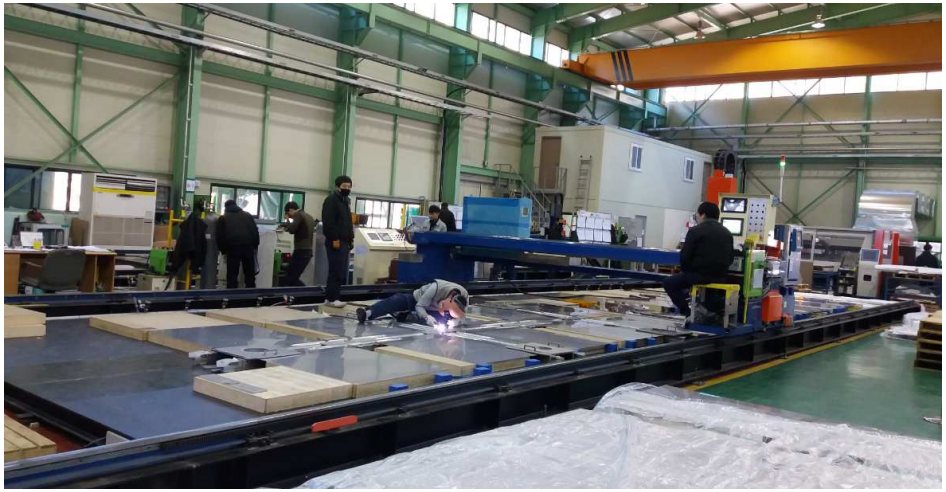
박막센서용접.jpg

브레이징1.jpg

엔진부품PLASMA SPOT용접.jpg

절단시료.JPG

◆ Korean type of LNG tank inner plate of factory welding

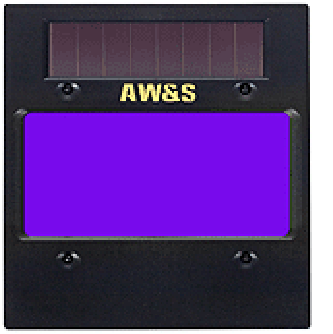


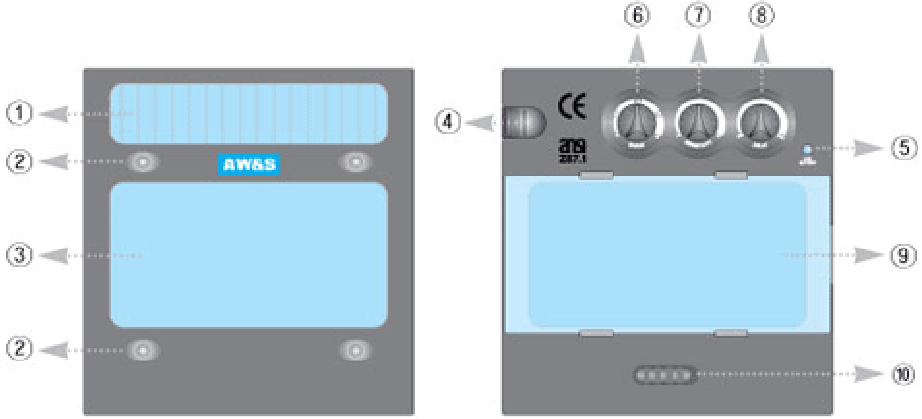
Welding Helmet,
Dust Collector

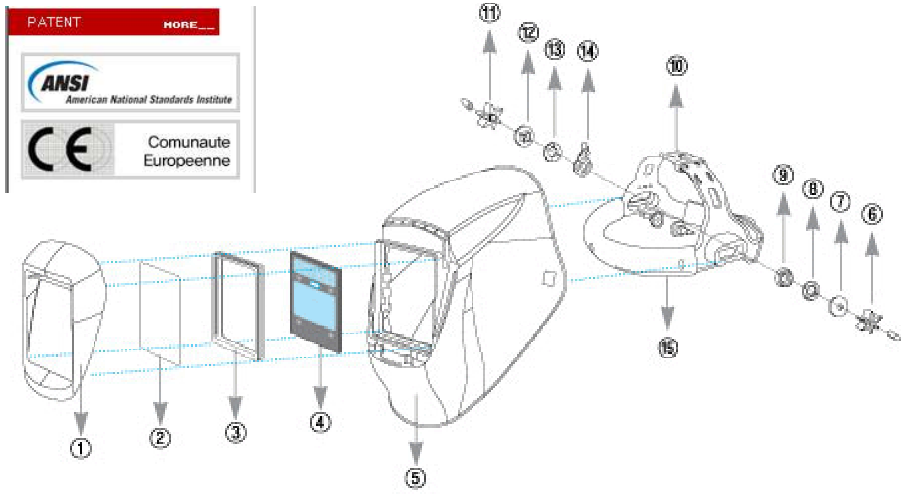
◆Welding Helmet

	Alpha Series	Beta Series	Gamma Series
decal graphic			
solid			

◆ Welding Helmet Parts







1. Solar Cell	6. Shade Control
2. Sensor	7. Sensitivity Control Knob
3. UV, IR filter	8. Delayed Time Control Knob
4. Battery Change Plate	9. LCD Protect Plate
5. Low Battery Indicator	10. Welding/Grinding Switch

SPARE PARTS

Item No	Description	Qty
1	Cover Lens Holder (Not available as a seperate item)	2
2	Front Cover Lens	1
3	Rubber Packing	1
4	Auto-Darkening Filter Lens	1
5	Helmet Shell (Not available as a seperate item)	1
6 to 14	Harness Assembly Complete (available as assembly only)	1
15	Sweat Band	1
-	Product Bag - Welding Helmet (Not Pictured)	1
-	Magnifying Lens - 1.00 (Not Pictured)	-
-	Magnifying Lens - 1.50 (Not Pictured)	-
-	Magnifying Lens - 2.00 (Not Pictured)	-

◆ Welding Helmet Specification

DESCRIPTION	Auto—Darkening Filter Lens
Filter Lens Dimension	4.7"x 4.4" x 0.4" (119mm x 112mmx 10mm)
VIEWING AREA DIMENSIONS	3.9" X 1.8"(98mm x 46mm)
REACTION TIME	1/20,000 SEC.
SENSORS	4 Optical Sensors
POWER SUPPLY	3V Battery plus Solar Cell
NORMAL SHADE	Din # 3.5
INACTIVATED SHADE LEVEL	3.5
VARIABLE SHADE LEVEL	9 ~ 13
OPERATING TEMPERATURE	23°F ~ 131°F(-5℃ ~ +55℃)
STORING TEMPERATURE	-4°F ~ +158°F(-20℃ ~ 70℃)
GRIND MODE	Grind / Welding Switch
SENSITIVITY RANGE(LIGHT TO DARK)	Low - High
DELAY(DARK TO LIGHT)	Min(0.1 SEC.) ~ Max(1 SEC.)
ON/OFF CONTROL	Automatic
LOW BATTERY INDICATOR	Flashing LED
WEIGHT	4.6oz(130g)

- Purpose for Industrial heavy duty
- Good for Low current(TIG 5A)
- Lightweight and durable with special nylon material.
- Full size for covering the entire neck and ear
- Excellent color coating for Decal Graphic and single color
- Easy and simple for fixing the lens
- Protect from welding light and spatter
- No delay of start, no fatigue of eyes
- No battery consumption in grinding mode when not in use
- Less battery With Solar battery in Strong welding light

◆ DUST COLLECTOR

P530

220 VOLT 1P 50/60 Hz

P540

220 VOLT 1P 50/60 Hz

- Super-flexible Flexi Extractor Arm
- Convenience of movement
- Superior suction power
- Drum type filter structure
- Easy to clean filter
- Semi-permanent filter
- Dust collector for welding
- Dust collector for grinding
- Other dusts generating space

MODEL	Air Volume (M2/min)	Static Pressure (mmAq)	Output Power (Kw)	Load Output	Dimension(mm)	Length of Arm	Weight(kg)
P540	17-20	200Pa	0.75	220V /Single phase	960x630x570	160*3M	78
P530	17-20	200Pa	0.75	220V /Single phase	975x570x475	160*3M	63

Thank you