CREATING METAL ARTISTS

COMPANY PROFILE & PRODUCT LINE

OTC DAIHEN Asia Co.,Ltd.

DAIHEN
Member of DAIHEN Group

OTC DAIHEN Asia Co.,Ltd.

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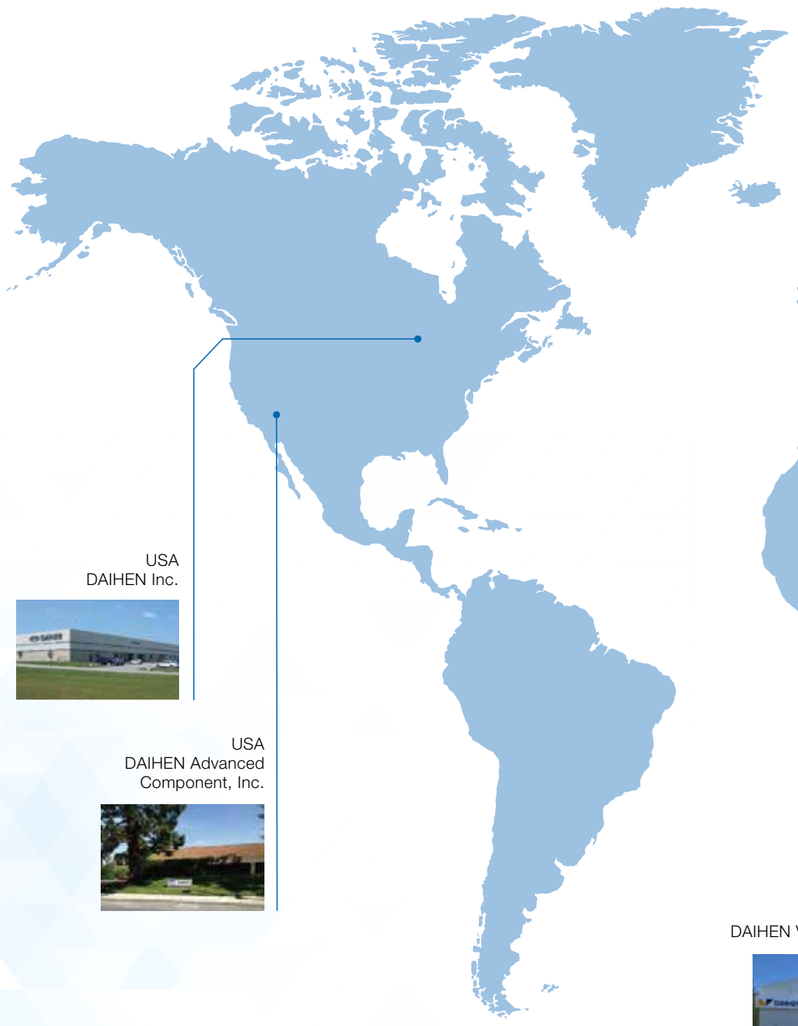
A LEADING GLOBAL COMPANY IN THE FIELD OF WELDING TECHNOLOGY AND ROBOTICS

In 1919, OTC DAIHEN developed, for the first time, new technologies for the mass production of transformers for energy distribution. The know-how gained from there soon led to the expansion of the business segments: OTC DAIHEN began developing and manufacturing high - performance welding machines and industrial robots for a wide range of applications in industrial automation, and has since been producing advanced equipment for the semiconductor industry in the rapidly developing electronics industry. OTC DAIHEN products are now used successfully in various industrial sectors worldwide and are currently an important factor for growth and development in future-oriented markets.



USA
DAIHEN Inc.

USA
DAIHEN Advanced
Component, Inc.

OTC DAIHEN
EUROPE GmbH

China
DAIHEN Advanced
Machinery
(Changshu) Co., Ltd.

China
Mudanjiang OTC
Welding Machines Co., Ltd.

China
DAIHEN OTC
(Beijing) Co., Ltd

China
OTC Industrial
(Qingdao) Co., Ltd.

Korea
DAIHEN Korea
Co., Ltd.

Japan
Rokko Plant (KOBE)

China
OTC Industrial
(Shanghai) Co., Ltd.

Slovenia
DAIHEN VARSTROJ d.d.

India
OTC DAIHEN
INDIA PVT.LTD.

Thailand
DAIHEN ELECTRIC
Co., Ltd.

Thailand
OTC DAIHEN Asia
Co., Ltd.

Indonesia
PT.OTC DAIHEN
INDONESIA

Taiwan
OTC (Taiwan)
Co., Ltd.

HISTORY OF PRODUCT DEVELOPMENT

Year

Power Products Business

2010

Pole-mounted automatic vacuum switch (with sensor)

Power center

Remote monitoring and control equipment

Switch terminal unit (with sensor)

Pole-mounted transformer with auto tap changer

Remote monitored and controlled step voltage regulator

Substation package for solar power generation

Top-runner transformer

Power conditioner for solar power generation (PV inverter)

2000

Power receiving and distribution equipment

Pad-mounted multi circuit vacuum switches

Substation device

Switch terminal unit

Saltproof pole-mounted transformer (Applicable to Zn/Al thermal spraying)

Power monitoring, control and communication equipment

Automated distribution systems

Dispersed power equipment

1990

RF generator for plasma applications

RF generators / Matching units

1980

Switches

Pole-mounted automatic vacuum section switch

Cast resin transformer

Pad-mounted transformer

Power receiving and distribution systems

1970

1960

Pole-mounted transformer

High capacity extra-high voltage, transformer

1940

1920

Pole-mounted transformer

AC arc welding machine

Transformers

1919

Semiconductor & FPD related Business

RF generator

Microwave supply system for plasma application

RF automatic matching unit

Microwave generators / Tuners

Large glass panel transfer robot for vacuum environment

Large robots fos vacuum environment

Wafer transfer robot for atmospheric environment

Wafer transfer robot for vacuum environment

LCD panel transfer robot

Wafer transfer robot for vacuum environment

Robots for vacuum environment

Clean transfer robots

Clean transfer system

Wafer transfer robot for atmospheric environment

Welding & Mechatronics Business

6-axis vertical multi-articulated arc welding robot

Welbee inverter welding machine

Inverter-controled DC spot welding machine

Inverter-controled compact air plasma cutting machine

Multipurpose handling robot (200 kg carrying capacity)

AC/DC MIG welding machine

FA systems

Handling robots

Arc welding robots

Spot welding machines

Air plasma cutting machines

Multipurpose handling robot (40 kg carrying capacity)

Fuzzy control inverter MIG welding machine

Inverter-controled super plasma cutting machine

Vertical multi-articulated arc welding robot

Cartesian coordinate arc welding robot

Submerged arc welding machine (Auto melting)

Welding machines

Corporate Motto
Based on "QCD"

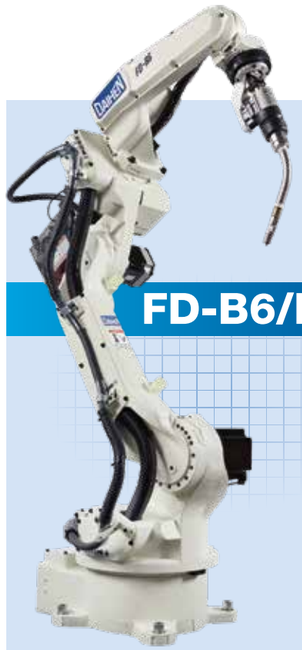
OTC DAIHEN Asia Co., Ltd. was established at Navanakorn Industrial Estate, Pathumthani in April 1989, and started to produce electric welding and cutting machines and their components since July 1990.
Our company has production lines by thorough process from raw materials to finished goods which are based on **"Q C D"** for working operations.
Our Products have been used around the world and contributed to the development of metal working industries.

& Head Office Factory

Name	**OTC DAIHEN Asia Co., Ltd.**
Establishment	April 5, 1989 (Start operation from 1990)
Head Office & Factory	60/86 Mu 19, Navanakorn Industrial Estate, Phase 3, Klong Nueng, Klong Luang, Pathumthani 12120, Thailand
Home Page	http://www.otcdaihenasia.com
Paid-in Capital	80 Million Baht
Share holder	DAIHEN Corporation (Japan) (100%)
Products	Electrical Arc Welding Torch, TIG Torch, Plasma Cutting Torch, and their components. CO2/MAG Semi-Automatic Welding Machine, and Wire Feeder.

WELDING & MULTIPURPOSE ROBOT

Almega Friendly Series II



FD-B6/B6LII

Main features

- Fastest cycle times in the industry, resulting in to shorter tact time.
- Built-in wrist motor eliminates interference with jigs and workpieces.
- Slim arm enables high-density installations.
- Synchro-feed welding cables are built into the arm.
- Eliminates the interference normally caused by weld cables behind the arm.
- A signal line and air hose are also built-in, supporting a variety of advanced tools.
- Payload is 6 kg, providing surplus payload for torch and sensor models.
- Accommodates advanced welding technologies such as Synchro-feed and Cold Tandem.

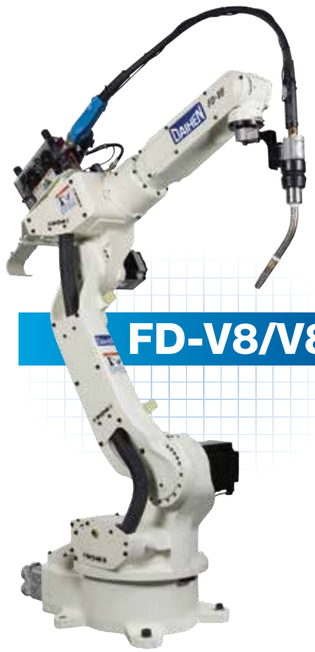
Specification

Item	Specifications
Model Name	NB6
Structure	Vertical articulated type
Number of Axes	6
Wrist Payload	6 kg
Weight	145 kg
Load of upper arm	10 kg

☐ These specifications are subject to change without prior notice.

Item	Specifications
Model Name	NB6L
Structure	Vertical articulated type
Number of Axes	6
Wrist Payload	6 kg
Weight	237 kg
Load of upper arm	20 kg

☐ These specifications are subject to change without prior notice.



FD-V8/V8LII

Main features

- Many cables and air hoses are built - in, and assorted advanced tools are accommodated.
- Corresponds to IP54 and is dust-proof and rainproof.
- Payload upped 1.3 times to 8 kg. Diverse sensors can be installed and it accommodates AI.
- Speed of all axes upped (maximum 15%). Highest speed specs in the industry realized with shorter tact time.
- 5% slimmer lower arm realized. Accommodates high density installations.
- Weight reduction 3% to 140 kg realized.
- With suspension or wall mount systems, equipment installation cost is reduced.
- All the cables except the conduit and one wire power cable are built into the arm. It's ideal for high end welding such as Synchro-feed.
- The cable behind the arm is gone decreasing interference. The back interference area is reduced about 30%. The spacing between robots is reduced about 20% enabling high density installations.
- Contributes to reducing line length.

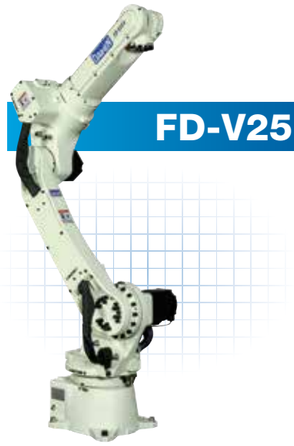
Specification

Item	Specifications
Model Name	NV8
Structure	Vertical articulated type
Number of Axes	6
Wrist Payload	8 kg
Weight	140 kg
Load of upper arm	10 kg

☐ (Note) Specifications for wall mounting appear in parentheses.

Item	Specifications
Model Name	NV8L
Structure	Vertical articulated type
Number of Axes	6
Wrist Payload	8 kg
Weight	237 kg
Load of upper arm	20 kg

☐ (Note) Specifications for wall mounting appear in parentheses.



FD-V25

Main features

- Due to the industry's fastest speeds, cycle times are reduced.
- The maximum payload has been increased by 25%, up to 25 kg. Expands support for various handling applications.
- Integrated signal cables and air hoses to accommodate a variety of end effectors.
- Splash-proof and dust-proof design equivalent to IP64 enclosure rating.

Specification

Item	Specifications
Model Name	NV25
Structure	Vertical articulated type
Number of Axes	6
Wrist Payload	25 kg
Weight	241 kg
Load of upper arm	10 kg (Wrist capacity : 25kg)

☐ (Note) The end effect is when the maximum payload capacity is loaded. These specifications are subject to change without prior notice.

FD-A20

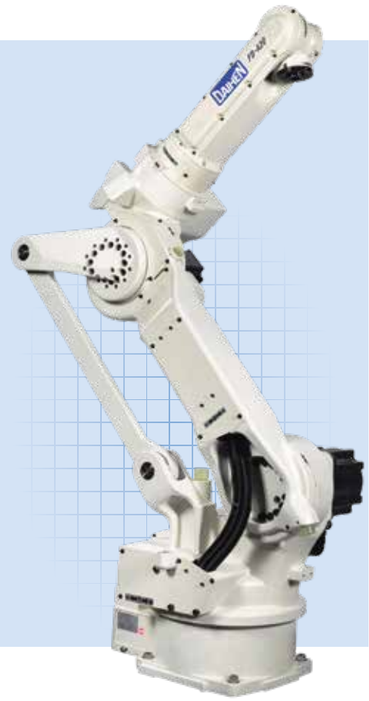
Main features

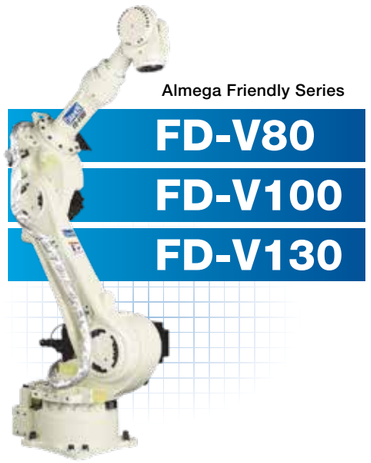
- High tracking accuracy throughout the entire robot work envelope.
- High accuracy delivered in both straight-line and small-arc applications.
- Standard interface with easy teaching and integration to production-ready laser oscillators.
- Standard interface with easy teaching and integration to production-ready laser oscillators.
- Your laser cutting programs are automatically generated from your CAD data via our offline teaching application software: FD-ST.
- 20kg payload accommodate a laser welding torch.
- Even though it uses a parallel link structure, optional reverse rotation of the 3rd-axis is enabled, supporting expanded work envelope to the rear of the robot.

Specification

Item	Specifications
Model Name	NA20
Structure	Vertical articulated type
Number of Axes	6
Wrist Payload	20 kg
Weight	355 kg
Load of upper arm	20 kg

☐ (Note) The end effect is when the maximum payload capacity is loaded. These specifications are subject to change without prior notice.





Almega Friendly Series

FD-V80
FD-V100
FD-V130

Main features

- Avoiding the interference with jigs or workpieces by slim design.
- Compatible wide operating range and narrow interference radius.
- Due to the industry's fastest speeds.
- Compatible with application cable of various communication standards
- Built-in cable from robot base to shoulder.

Specification

Item	Specifications		
Model Name	NV80	NV100	NV130
Structure	Vertical articulated type		
Number of Axes	6		
Wrist Payload	80 kg	100 kg	130 kg
Weight	780 kg	770 kg	765 kg
Load of upper arm	50 kg		

* These specifications are subject to change without prior notice.

FD-VC4

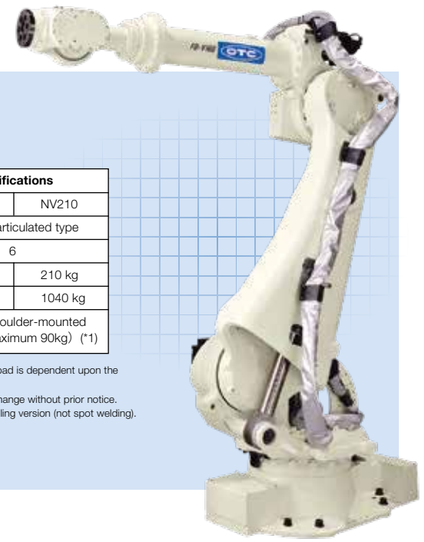
Main features

- Achieves high accuracy that enables high-quality welding.
- Can be installed without isolation from people by a safety fence.
- Best robot stops when human contact is detected.
- Move to the site where you need into operation immediately.
- Various welding methods can be selected.

Specification

Item	Specifications
Model Name	NVC4
Structure	Vertical articulated type
Number of Axes	6
Wrist Payload	4 kg
Weight	37 kg

☐ (Note) Position repeatability corresponds to values at the center of standard tools.



FD-V166/V210

Main features

- While shortening the cycle time, it still allows for high productivity.
- The shorter lines of high density installations can reduce equipment costs.
- Frequency and magnitude of maintenance tasks have been reduced through smart manipulator design.
- Reduction in power consumption supports your Green' manufacturing goals.

Specification

Item	Specifications	
Model Name	NV166	NV210
Structure	Vertical articulated type	
Number of Axes	6	
Wrist Payload	166 kg	210 kg
Weight	1010 kg	1040 kg
Load of upper arm	45 kg (Shoulder-mounted payload: Maximum 90kg) (*1)	

☐ (*1) Shoulder-mounted maximum payload is dependent upon the mounting location.
* These specifications are subject to change without prior notice.
☐ FD-V166 is the standard material handling version (not spot welding).

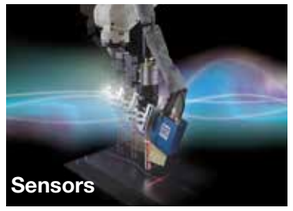
Accessories/Options

Robot Cell

Clean Kit

Gas Saver

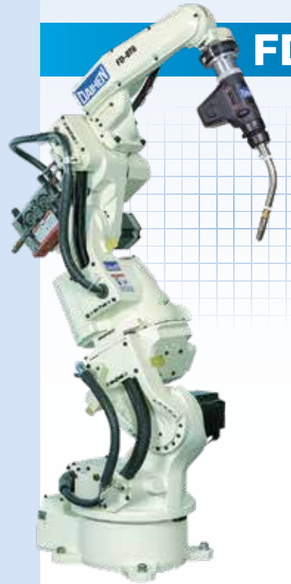
PC Software



Sensors

External Axis

7 AXIS ROBOT



FD-BT6/FD-BT6L

Main features

- The welding torch position and angle can be maintained while changing the robots posture.
- While teaching for a 7-axis robot tends to be a complex operation, Daihen's Synchro-motion technology maintains torch attitude and angle while teaching weld path positions.
- The welding power cable being built into the 7th axis robot is the first of its kind. Teaching can be done without concern of interference with jigs or workpieces.

Specification

Item	Specifications	
Model Name	NBT6	NBT6L
Structure	Vertical articulated type	
Number of Axes	7	
Wrist Payload	6 kg	
Weight	185 kg	338 kg
Load of upper arm	10 kg	

☐ (Note) The end effect is when the maximum payload capacity is loaded. These specifications are subject to change without prior notice.

FD-VT20

Main features

- Teaching with competing 7-axis robots is cumbersome. Our simplified teaching maintains torch attitude using our exclusive Synchro-motion technology.
- Payload 20kg. Well-suited for medium load material handling and welding.

Specification

Item	Specifications
Model Name	NVT20
Structure	Vertical articulated type
Number of Axes	7
Wrist Payload	20 kg
Weight	336 kg
Load of upper arm	5 kg

☐ (Note) The end effect is when the maximum payload capacity is loaded. These specifications are subject to change without prior notice.

Application

Spot welding

Spot welding guns are mounted on robots and used to spot weld steel. They are used to assemble auto bodies, parts, and frames. Welding guns are controlled by the robots so weld spatter does not occur for high quality welds and high productivity in a clean and quiet environment.

Welding Best Electronic Engine Welbee II

Low Spatter & High Speed Advanced Model

M350LII

Characteristic
Digital inverter controlled low sputter CO2 / MAG automatic welding machine

- Significant reduction of spatter generation from low current area to high current area
- Suppresses spatter generation even at high speed welding and realizes high quality welding

Specification

Welding power supply	WB-M350LII
Rated input	3Phase 380 / 400 V
Rated output	350 A / 36 V
Output adjustment range	30～350 A / 12～36 V
Rated usage rate	60 %
Mass (dimension)	62 kg（395 × 710 × 640 mm）
Wire feeder	CMV-7403
Welding Torch	BT3500V-30
Gas Flow Regulator	AU-888

High Quality Standard Model

M350II/M500II

M350II

Characteristic
Digital inverter controlled type CO2 / MAG automatic welding machine

- Stability of the arc is greatly improved from the low current area to the high current area
- Voltage fluctuation is small even at high speed welding, realizing a beautiful bead appearance with bead edges
- Welbee high dustproof and easy maintenance (M 500) with side flow structure

Specification

Welding power supply	WB-M350II	WB-M500II
Rated input	3 Phase 380 / 400 V	3Phase 380 / 400 V
Rated output	350 A / 36 V	500 A / 45 V
Output adjustment range	30～350 A / 12～36 V	30～500 A / 12～45 V
Rated usage rate	60%	100%
Mass (dimension)	61 kg（395×710×640 mm）	77 kg（395×710×810 mm）
Wire feeder	CM-7403	CM-7403
Welding Torch	BT3500-30	BT5000-30
Gas Flow Regulator	AU-888	FCR-226

M500II

P400II

Characteristic
Digital Inverter Controlled Pulse MAG / MIG · CO 2 / MAG / MIG Automatic Welding Machine

- High-quality pulse welding realized by waveform control optimized for various materials
- Excellent stability of the arc even at high speed welding

Specification

Welding power supply	WB-P400II
Rated input	3Phase 380/400V
Rated output	350 A / 36 V
Output adjustment range	30～350 A / 12～36 V
Rated usage rate	60 %
Mass (dimension)	60 kg（395×710×640mm）
Wire feeder	CM-7403, CMA-7403, CMAW-7403
Welding Torch	BT3510-30, BTA300-30, BTAW400-30
Gas Flow Regulator	D-BHN-2, FCR-226

P400LII/500LII

P500L

Characteristic
Digital Inverter Controlled Pulse MAG / MIG · CO 2 / MAG / MIG Automatic Welding Machine

- Significant reduction in spatter generation from low current to high current
- High-quality pulse welding realized by waveform control optimized for various materials

Specification

Welding power supply	WB-P400LII	WB-P500LII
Rated input	3Phase 380/400V	3Phase 380/400V
Rated output	400	500（Direct current）/400（pulse）
Output adjustment range	30～400A	30～500（Direct current）/30～400（pulse）
Rated usage rate	60 %	60 %（Direct current）/ 80 %（pulse）
Mass (dimension)	62 kg（395×710×640mm）	79 kg（395×710×810mm）
Wire feeder	CM-7403, CMV-7403, CMA-7403	CM-7403, CMV-7403, CMW-743, CMA-7403, CMAW-743
Welding Torch	BT3510-30, BT3510V-30, BTA300-30	BT5000-30, BT3510V-30, WTCW-5001, BTA300-30, WTCAW-5002
Gas Flow Regulator	D-BHN-2, FCR-226	D-BHN-2, FCR-226

W400

Characteristic
AC / DC pulse MAG / MIG automatic welding machine

- Daiheng's proprietary AC pulse welding method realizes high efficiency and high quality welding of ultrathin plates
- Evolutionary wave pulse enables welding quality with less vessel
- Aluminum · mild steel · stainless steel, and high quality welding possible for various plate thickness
- Output current 17% UP! High efficiency welding is achieved up to middle thickness

Specification

Welding power supply	WB-W400
Rated input	3 Phase 380 / 400 V
Rated output	400 A / 36 V
Output adjustment range	30～400 A
Rated usage rate	60 %
Mass (dimension)	86 kg（395×710×835mm）
Wire feeder	CM-7403, CMA-7403, CMAW-7403
Welding Torch	BT3510-30, WTS300-SD, BTA300-30, BTAW400-30
Gas Flow Regulator	D-BHN-2

F300P

Characteristic

- Keyhole welding realizes high-speed welding and high quality welding
- Pulse frequency and pulse machine can be freely changed, a solid pulse function to prevent distortion and melting down
- Torch recognition function to prevent torch and consumable parts from burning
- Torch has a double nozzle type that suppresses consumption of electrodes and stabilizes output for a long time and a single nozzle type that can be miniaturized while adapting to a large current

Specification

Welding power supply	WB-F300P					
Rated input voltage	3 Phase 380 / 400 V（common 50/60Hz）					
Rated output	300 A					
Output adjustment range	0.5～300 A					
Rated usage rate	100 %					
Mass (dimension)	95 kg（395×710×820mm）					
Wire feeder	CM-7403, CMA-7403, CMAW-7403					
Welding Torch	PTW-0151	PTPW-0701 PTW-0701	PTPW-1001 PTW-1001	PTPW-1501 PTW-1501	PTPW-2001 PTW-2001	PTPW-3001E
Base material side power cable	BKPTF-0305	BKPTF-2205		BKPTF-6005		BKPTF-8005
Gas hose	BKHGGF-0705					
Water hose	BKWCF-0805					
Air Hose	BKACF-0805					
Ar gas flow rate regulator	V-F22AR					
Ar + H2 gas flow rate regulator	*FR-2LL					
Air unit	K-5972					

A350P

Characteristic

- High quality welding of ultrathin plates
- High efficiency utilization of thick plates is supported
- Automatic setting of welding conditions with "welding setting guide" function
- Compatible with Fieldbus Interface

Improve convenience when connecting an automatic machine

Specification

Welding power supply	WB-A350P
Rated input	3 Phase 380 / 400 V
Rated output	350 A
Output adjustment range	AC5～350A / DC2～350A
Rated usage rate	40 %
Mass (dimension)	68 kg (395×710×640mm)
Welding Torch	AWD-17, AWD-26, AWD-18
Base metal side power cable	BKPDT-3803
Gas hose	BKGFF-0603
Water hose (for tap water)	BBDW-3001
Water hose (for water tank)	BBPU-3002
Gas flow rate regulator	V-F22AR

T500P

Characteristic
High efficiency welding with large capacity 500 A output

- Constant current stability is improved, and a wide current range from thin plate to thick plate can be handled by one unit
- Startability · Stability of the arc greatly improved
- Automatic setting of welding conditions with "welding setting guide" function
- Early detection of welding abnormality by welding manage ment function

Specification

Welding power supply	WB-T500P
Rated input voltage	3 Phase (single phase) 380 / 400 V
Rated output	500 A
Output adjustment range	2～500 A
Rated usage rate	60 %
Mass (dimension)	61 kg (395×710×640mm)
Welding Torch	AW-12
Welding torch adapter	BBAWD-1201
Base metal side power cable	BKPDT-6003
Gas hose	BKGFF-0603
Water hose (for tap water)	BBDW-3001
Water hose (for water tank)	BBPU-3002
Gas flow rate regulator	V-F22AR[manufactured by Nikkatsu TANAKA CORPORATION]

CO2/MAG/MIG Inverter

DL350II

200/220V 400V CO2/MAG

Cutting Edge Low Spatter and Low Heat Input Welding Machine Inverter Controlled CO2/MAG Welding Machine Dramatically improved the quality of thin sheet welding with gaps.

DM350

200/220V 400V CO2/MAG

Inverter Controlled CO2/MAG Welding Machine for Higher Quality and Efficiency Welding Substantially Small Size and Light Weight

CPVE 400II/500II

380V 400V 415V CO2/MAG

Full Digital Inverter CO2/MAG Welding Machine. High Power Factor,Saving Energy. Welding conditions can be read and operated from remote control box.

Thyristor

XD250C

200/220V 400V CO2/MAG

Digital Synergic Controlled CO2/MAG Welding Machine with Wire Feeder Built-in Big Wheel and Handle for Easy Carrying

XD350SII / 500SII

220V 380V 415V CO2/MAG

Digital Synergic Control with Quality One knob Synergic Control & Penetration Control

DC Arc Welding Machine

VR400II

380V 415V DC STICK

Inverter Controlled High Performance DC Are Welding Machine. IGBT Inverter Control Results Superior Arc Stability. Arc Drive Control ensures High Quality Welding Can weld with Cellulose-coated electrode at any positions

MR400

220V 380V 415V DC STICK

IC. Thyristor Controlled DC Arc Welding Machine. Heavy Duty Cycle Machine suitable for medium and thick plate welding.(Rated duty cycle 60%) constant current characteristics features stable and constant welding

TIG Welding Machine

DT300PII

400V Pulsed TIG DC TIG DC STICK

This is The Most Intelligent TIG Welding Machine with TIG Synergic Function

(ACCUTIG)

AEP300/500

220V 380V 415V Pulsed TIG AC/DC TIG AC/DC STICK

AC+DC Hybrid Pulse TIG Welding Machine delivers “Hight Quality Welding” and “User Friendly Operations”

MR315T

380V 415V Pulsed TIG DC TIG DC STICK

Multi Mode for High Performance High Quality with DC TIG welding High Efficiency with DC Stick Welding

Multi Purpose Welding Machine

MRA630

220V 380V 415V GOUGING DC STICK

Digital Controlled High Performance DC Arc Welding and Gouging Machine with Micro Processor Suitable for Low carbon steel, High-strength steel, High-resistant steel, stainless steel and copper alloy-Safety design, multiple protection, easy maintenance

XD600G

220V 380V 415V CO2/MAG GOUGING DC STICK

Thyristor Controlled CO2/MAG Welding & Gouging Machine 3 in 1 Micro-processor digital controlled multi-function welding machine

• CO2/MAG function • DC Gouging function • DC Stick function

Very suitable for work like back side gouging, or welding defect removing

Plasma Cutting Machine

D-12000

380V 415V AIR

• High Power and 100 % for Precision High Speed Cutting Max Cutting Capacity 60 mm

• High Power and 100 % Duty Cycle for Precision High Seed Cutting

• Max Cutting Capacity 60 mm (2.4in)

• Built-in “Torch Guard” function monitors tip and electrode consumption

C-70

380V 415V AIR

Max Cutting Capacity 35 mm , 60% Duty Cycle at maximax current Double the Cutting Speed at Half the Cost compare to Oxy/Fuel Cutting

BLUE Torch III

"Easy" welding work,
From an operator's point of view
I was born with thorough pursuit
The latest CO 2 / MAG / MIG
welding torch

Characteristic
CO2 / MAG / MIG welding torch

- "Fatigue resistant" welding torch
  - Easy handgrip torch handle
  - Flexible cable with excellent workability is adopted
- "hard to get hot" torch handle
- "Easy to use" welding torch
  - Easy to customize according to work environment and use
  - Maintenance is greatly improved
- Rich line-up from 180 A to 500 A

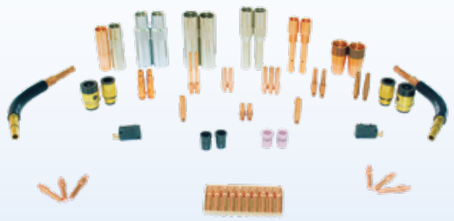
Heat Resistant !
The new structure of the handle is so heat-resistant that, it allows for even hours of welding.

User friendly !
Easy to dismantle and can be adapted to numerous shapes

Low fatigue !
Ergonomic and “Easy-grip” handle

Customizable for every application

- “Easy-Grip” torch handle
- Flexible cable, for smooth handling
- “Heater-resistant” torch handle
- “User-friendly” welding torch
- Can easily be adapted to the working environment and the application area
- Considerably improves maintenance
- Available in an extensive product range



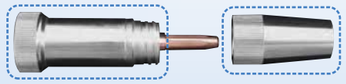
OTC Genuine Consumable Parts

***NEW** water-cooled MIG welding torch (BTAW500) can achieve high-quality aluminum welding.*

● High shielding performance
The path for shieldibg gas at the torch tip is optimized. Air entrapment has been reduced by 80% max by regulating the shielding gas flow (*in comparison with conventional torch).

● Reduction of blowholes
Dew point performance has been improved by 30% by using a hose that does not easily transmit moisture into the gas path of the torch.

● Improved cleaning workability by adapting the split nozzle structure

Water-cooled nozzle  *Tip nozzle*

No cooling water leaks during cleaning work and thus no moisture enters the shielding gas, there by reducing the occurrence of blowhole.

Extensive lineup

for various applications : selectable from 21 types such as 180A to 500A air/water-cooled, and standard/flexible torch body.

For CO2/MAG	*Small handle type*			*Large handle type*		
Rated current	180A (CO_2) 130A (MAG)	200A (CO_2) 160A (MAG)	350A (CO_2) 200A (MAG)	350A (CO_2) 300A (MAG)	350A (CO_2) 350A (MAG)	350A (CO_2) 450A (MAG)
Model	BT1800-30	BT2000-30(40)	BT3500-30(45•60)	BT3510-30(45•60)	BT3520-30(45•60)	BT5000-30(45•60)
						
Duty cycle	40% (CO_2) 30% (MAG)	50% (CO_2) 30% (MAG)	30% (CO_2) 30% (MAG)	60% (CO_2) 30% (MAG)	80% (CO_2) 30% (MAG)	60% (CO_2) 30% (MAG)
Wire diameter	(0.6) 0.8 mm	(0.8) 0.9 (1.0) (1.2) mm	(0.9) (1.0) (1.2) mm	(0.9) (1.0) 1.2 (1.4) mm	1.2 (1.4) (1.6) mm	(1.2) 1.4 (1.6) mm
Cable length	3 m	3, 4 m	3, 4.5, 6 m	3, 4.5, 6 m	3, 4.5, 6 m	3, 4.5, 6 m
Cooling system	Air cooling	Air cooling	Air cooling	Air cooling	Air cooling	Air cooling

For CO2/MAG	*For Water cooling*		*For Low spatter welding*		
Rated current	450A (CO_2) 450A (MAG) 350A (MAG)	500A (CO_2) 450A (MAG) 400A (MAG)	200A (CO_2) 160A (MAG)	350A (CO_2) 200A (MAG)	350A (CO_2) 300A (MAG)
Model	BTW450-30(50)	BTW500-30(50)	BT2000V-30(40)	BT3520V-30(45•60)	BT3510V-30(45•60)
					
Duty cycle	100%	100%	50% (CO_2) 30% (MAG)	30% (CO_2) 30% (MAG)	60% (CO_2) 30% (MAG)
Wire diameter	1.2 (1.4) (1.6) mm	(1.2) (1.4) 1.6 mm	(0.8) 0.9 (1.0) (1.2) mm	(0.9) (1.0) (1.2) mm	(0.9) (1.0) 1.2 (1.4) mm
Cable length	3, 5 m	3, 5 m	3, 4 m	3, 4.5, 6 m	3, 4.5, 6 m
Cooling system	Water cooling	Water cooling	Air cooling	Air cooling	Air cooling

For CO2/MAG	*Flexible type*			
Rated current	200A (CO_2) 160A (MAG)	350A (CO_2) 200A (MAG)	350A (CO_2) 300A (MAG)	350A (CO_2) 350A (MAG)
Model	BT2000-30(40)	BTW3500F-30(40)	BT3510F-30(45•60)	BT3510V-30(45•60)
				
Duty cycle	50% (CO_2) 30% (MAG)	30% (CO_2) 30% (MAG)	60% (CO_2) 30% (MAG)	80% (CO_2) 30% (MAG)
Wire diameter	(0.8) 0.9 (1.0) (1.2) mm	(0.9) (1.0) (1.2) mm	(0.9) (1.0) 1.2 (1.4) mm	1.2 (1.4) (1.6) mm
Cable length	3, 4 m	3, 4.5, 6 m	3, 4.5, 6 m	3, 4.5, 6 m
Cooling system	Air cooling	Air cooling	Air cooling	Air cooling

For MIG	*Small handle type*			*Large handle type*		
Rated current	180A	200A	300A	300A	400A	500A
Model	BTA180-20	BTA200-30	BTA300-30	BTS300-30	BTAW400-30	BTAW500-30
						
Duty cycle	20% (MIG)	60% (MIG) 30% (Pulse MIG)	50% (MIG) 30% (Pulse MIG)	50% (MIG) 30% (Pulse MIG)	100%	80%
Wire diameter	0.8 mm	(1.0) 1.2 mm	(1.0) 1.2 (1.6) mm	(0.9) (1.0) 1.2 mm	(1.2) 1.6 mm	1.2 (1.6) mm
Cable length	2 m	3 m	3 m	3 m	3 m	3 m
Cooling system	Air cooling	Air cooling	Air cooling	Air cooling	Water cooling	Water cooling

* If you use a wire diameter given in parentheses, an optional product is required.
* With the torches for a rated curremt of 350A or more, 0.9-mm dia. wire cannot be used for a cable length of 4.5m, and 0.9- and 1.0-mm dia. wires for a cable length of 6m.
* The low spatter welding torches are for the power sources of welbee M350L, P500L (low-spatter mode), and DL350.
* The wire feeder to be combined with BTAW400 and 500 is CMAW-7403 (central connection)
* The wire feeder to be combined with BTW450 and 500 is CMW-7403.

Same display of production part display light

Standard specification

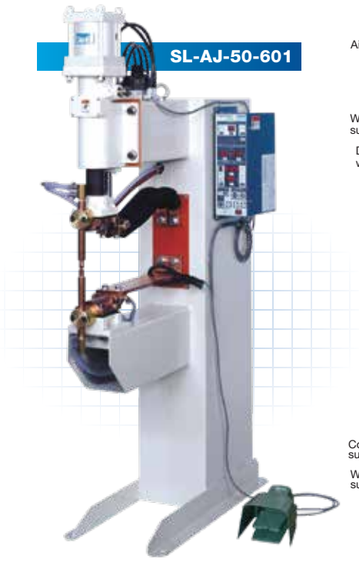
● is alternating current spot projection welding machine

Type		Rated capacity	Maximum capacity (at 50%)	Secondary short circuit current (MAX) Platen position	Secondary short circuit current (MAX) Tip position	Maximum welding current Platen position	Maximum welding current Tip position	Rated electrode force (at 0.49MPa)	Throat depth Platen position	Throat depth Tip position	Throat gap	Rated duty cycle	Freqency	Rated supply voltage (Direct current Three phase alternating current Single phase)	Platen diameter	Electrode stroke	Electrode taper	Electrode diameter	Electrode holder Diameter	Electrode holder Length	Diameter of electrode horn	Weight	Timer type	Power supply control
		kVA	kVA	A	A	A	A	kN (kgf)	mm	mm	mm	%	Hz	V	mm	mm		φmm	φmm	mm	φmm	kg		V
SLAJ30-601	Spot	30	60 [66.7]		13,400		12,000	5.6 (570)		600	212	12.0 [10]	380V 50Hz	200 or 400		20/60 convert type	1/10	16	25	180	60	256	VX-300K or R-50T	100
SLAJ35-601		35	85 [96]		16,000		14,400					8.3 [6.6]										265		
SLAJS35-601			72 [80]		16,000		14,400			400		11.8 [9.5]										247		
SLAJ50-601		50	129 [150]		20,000		18,000			600		7.5 [5.5]										281		
SLAJS50-601			104 [117]		19,500		17,550			400		11.7 [9.1]										255		
SLAJ50-610			129 [150]		20,000		18,000	9.3 (950)		600	210	7.5 [5.5]				20/80 convert type		18	32	220	70	385		
SLAJS50-610			104 [117]		19,500		17,550			400		11.7 [9.1]										349		
SLAJS75-610		75	161 [188]		25,000		22,500					10.0 [8.0]										365		
SLAJ90-610		90	196 [225]							600												420		
SLAJS90-610			235 [270]		30,000		27,000			400		7.2 [5.5]										400		
SLAJMS50-610※	Spot projection	50	138 [156]	26,000	21,000	23,400	18,900		290	400	170	6.6 [5.1]			□150							376		
SLAJMS75-610※		75	209 [244]	32,500	26,500	29,300	23,900					6.4 [4.7]										393		
SLAJMS90-610※		90	305 [351]	39,000	31,500	35,100	28,400					4.3 [3.3]										422		
SLAJM50-610※		50	156 [182]	24,000	20,500	21,600	18,500		490	600		5.2 [3.8]										413		
SLAJM90-610※		90	237 [272]	30,000	26,000	27,000	23,400					7.3 [5.5]										442		

※Remark production part
- Maximum short circuit is measured when the throat is displayed
- [ ] is 60Hz time
- Alternating current・projection welding machine weight is not included attached equipment weight
- Direct inverter spot・projection welding machine weight is not included inverter power supply weight.

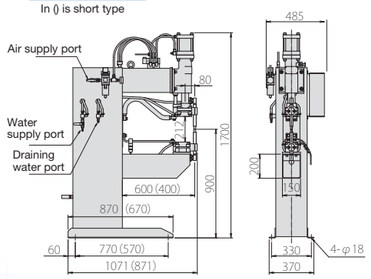
External dimension figure

※There is no power terminal control in inverter power supply machine.

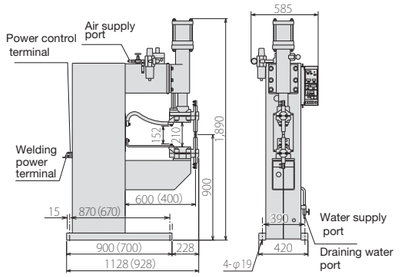


SL-AJ-601

In () is short type

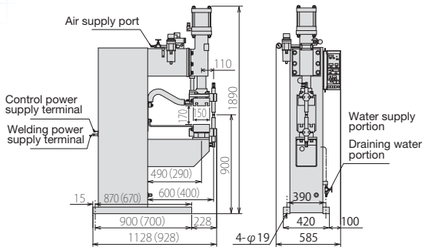


SL-AJ-610



SL-AJM(S)-610

In () is short type



Spot welding capability

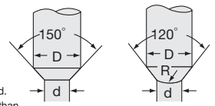
Type	Soft polished metal sheet welding B class equivalence
SL-AJ30-601	0.5～2.8 t
SL-AJ (S) 35-601	0.5～3.2 t
SL-AJ (S) 50-601	0.5～3.2 t
SL-AJ (S) 50-610	0.5～4.0 t※
SL-AJS75-610	0.6～4.0 t※
SL-AJ90-610	0.6～4.0 t※
SL-AJS90-610	0.8～4.0 t※

※signal items, the thickness is able to over 0.4t, please contact to department of sale and marketing when select machinery.

Mild steel sheet spot welding condition chart (Reference value) Alternating spot

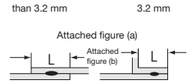
Sheet thickness	Erectrode max φd	Erectrode min φD	Erectrode R	Minimum pitch	Minimum lap	Best condition (A class) Welding time 50Hz	Best condition (A class) Welding time 60Hz	Best condition (A class) Electrode force	Best condition (A class) Welding current	Medium condition (B class) Welding time 50Hz	Medium condition (B class) Welding time 60Hz	Medium condition (B class) Electrode force	Medium condition (B class) Welding current	Normal condition (C class) Welding time 50Hz	Normal condition (C class) Welding time 60Hz	Normal condition (C class) Electrode force	Normal condition (C class) Welding current
mm	mm	mm	mm	mm	mm	Cycle	Cycle	kN	A	Cycle	Cycle	kN	A	Cycle	Cycle	kN	A
0.25	3.2	10		6	10	3	4	0.9	4,000	4	5	0.6	3,700	13	15	0.3	3,000
0.4	3.2	10		8	10	4	5	1.1	5,200	7	8	0.7	4,500	17	20	0.4	3,500
0.5	3.5	10		9	11	5	6	1.3	6,000	8	10	0.9	5,000	20	24	0.4	4,000
0.6	4.0	10		10	11	6	7	1.5	6,600	10	12	1.0	5,500	22	26	0.5	4,300
0.8	4.5	10		12	11	7	8	1.9	7,800	13	15	1.2	6,500	25	30	0.6	5,000
1.0	5.0	13		18	12	8	10	2.2	8,800	17	20	1.5	7,200	30	36	0.7	5,600
1.2	5.5	13		20	14	10	12	2.6	9,800	19	23	1.7	7,800	33	40	0.8	6,100
1.4	6.0	13		23	15	12	14	3.0	10,600	22	26	2.1	8,500	38	46	1.0	6,600
1.6	6.3	13		27	16	13	16	3.5	11,500	25	30	2.4	9,100	42	50	1.1	7,000
1.8	6.7	16		31	17	15	18	4.0	12,500	28	33	2.7	9,700	45	54	1.3	7,500
2.0	7.0	16		35	18	17	20	4.6	13,300	30	36	2.9	10,300	48	58	1.5	8,000
2.4	7.8	16		40	20	20	24	5.7	15,000	37	44	3.6	11,300	54	65	1.8	8,600
2.8	8.5	16		45	21	23	28	6.9	16,200	43	52	4.2	12,100	60	72	2.2	9,400
3.2	9.0	16	75	50	22	25	30	8.0	17,500	50	60	5.1	12,900	65	78	2.5	10,000
3.6	10.3	22	100	57	29	34	41	9.1	18,200	60	72	5.5	13,600	85	102	2.7	10,600
4.0	11.1	22	100	67	32	42	50	10.1	18,900	73	88	6.3	14,100	104	125	3.1	11,000

Remark (1) Minimum pitch comes from practical shunt effect depended on adjoining spot welding to show the neglect limit.
(2) Minimum lap displays in (b) figure.
(3) In case of different thickness 2 sheets welding, please refer to the thin sheet thickness for safety.
(However, in case of thickness comparison, it is less than 1:3 in case that the convex of electrode is in thin sheet side)
Also, less than 4 sheets welding layer becomes safety standard.
(However, in case of sum of thickness sheet, it should be less than 4 times of one sheet.



- In case of spot or projection welding which the accuracy of parallel degree of electrode is important, please separately consult.
- Projection welding which is able to operate with general-purpose machine, also can do nut projection easily

Attached figure (a)



● When do such below welding

(Refer to soft metal sheet spot welding condition chart)

	★In case of black surface	★In case of bonding sheet
Electrode pressure force	10~20% Increase	5~10% Increase
Welding current	5~10% Decrease	5~10% Increase
Welding time	Same	Same
Upslope	1~5 Cycle	1~5 Cycle

● Stainless metal sheet reference welding condition

(Please refer to soft steel sheet spot welding condition chart)
Electrode pressure force increases 50%, welding current reduces 10% and welding time reduces 30%

Important equipment

● is alternative spot・projection welding machine

Type	Function	Main circuit power supply: Power supply volta	Power supply capacity	Switch	Connecting cable	Power supply control: Power supply voltage	Connecting Lead line	Cooling water: Cooling water volume	Hose diameter	Compressed air: Compressor capacity	Hose diameter	Installation: Base bolt	Grounding: Earth cable
		V	kVA	A	mm²	V	mm²	ℓ/min	φmm	kW	φmm		mm²
SLAJ30-601	Single phrase alternating current	380V 50Hz	30	Over 150(75)	Over 38(22)	100	1.25	5	12	2.2	13	M16	14
SLAJ35-601			35										
SLAJS35-601								6					
SLAJ50-601			50	Over 300(150)	Over 60(38)								
SLAJS50-610								10		3.7	19		
SLAJS50-610													
SLAJS75-610			75	Over 400(200	Over 80(50)								
SLAJ90-610			90	Over 500(250)	Over 100(60)								
SLAJS90-610													
SLMS50-610			50	Over 500(250)	Over 60(38)								
SLAJM(S)50-610													
SLMS75-610			75	Over 400(200)	Over 80(60)								
SLAJMS75-610													
SLMS90-610			90	Over 500(250)	Over 100(60)								
SLAJM(S)90-610													

Remark
- The cooling water pressure is due to water supply portion 0.1~0.3 MPa
- Compressed air is due to air supply port 0.5~0.7 MPa range, please use dry air. ※In case of the value number of power supply main circuit is over 50kW for high pressure receiving equipment, please refer to displayed value.
- Use value in () u when 400V utilization ※For receiving equipment which is less than 50kW, the value of main circuit power supply cannot be referred (Abolish power supply voltage value). Therefore, please refer to standard electrical power of each receiving equipment. The volume of cooling water is possible to depend on consumption in electrode heat sink. We provide an option part to improve consumption heat sink