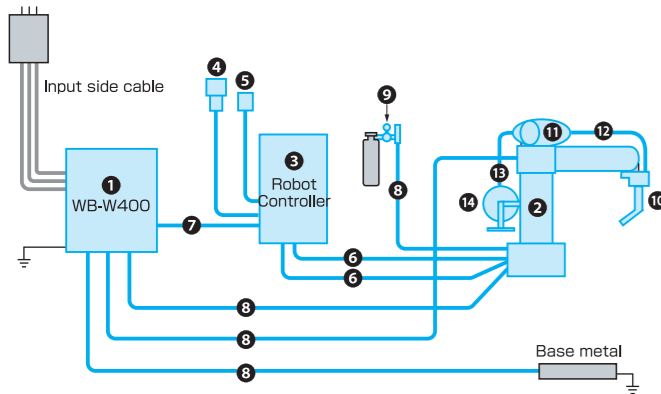


## Connection Diagram, Typical Combination, and Periphery Equipment Required

### Daihen FD-Series Robotic Welding Configuration

(Aluminum Welding)



■ denotes standard components.

\* The diagram above shows main components of a system configured with a robot and standard MIG.

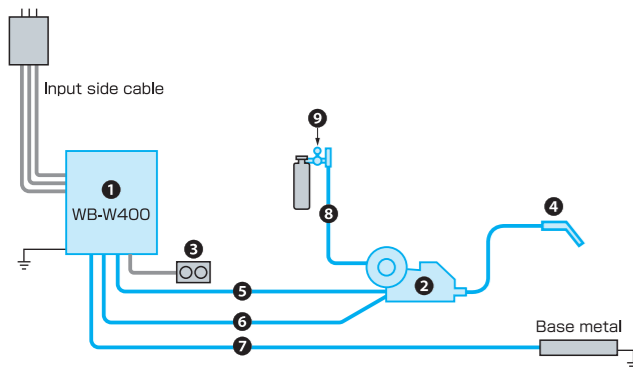
\* For more information, contact your local distributor or DAIHEN sale personnel.

Product Name	Model
1 Welding power source	WB-W400
2 Manipulator	NV6 (Model : NV62-NJFN)
3 Controller	FD11 (Model : FD11-JV0000)
4 Teach pendant	FDPDSJN-1L08
5 Operation box	FDOP-0005
6 Control cable 1.3	FDRB-1005
7 Control cable 5	FDRB-5505
8 Cable hoses	A2RB-4105 *1
9 Gas Regulator	*2
10 Welding torch	MTXCA-2531
11 Wire feeder unit	AFA-4012
12 Coaxial power cable	L-6611 (1.1m)
13 Conduit	L10598B (1.5m)
14 Body mounted type wire reel stand	L10676A

\*1: Cable hoses include gas hoses and torch welding cables.  
\*2: Depending on the area in which a Gas regulator is used, the specification is different.

### Manual welding Configuration

(10 m Extension)



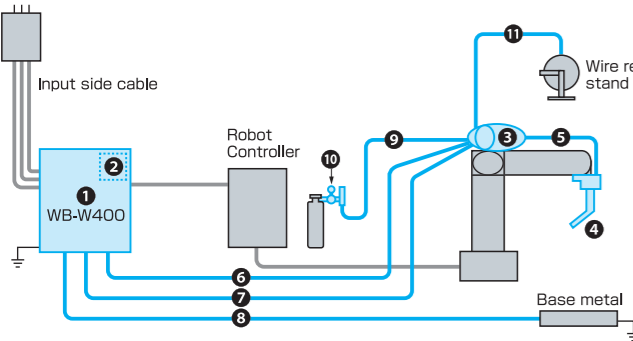
■ denotes standard components.

Product Name	Model
1 Welding power source	WB-W400
2 Wire feeder unit	CM-7402/CMA-7402
3 Analog remote control box	K5416S00(classified as a part)
4 Welding torch	BT3500-30 / WTS300-SD BTA300-30
5 Feeder control cable (10-core)	BKCPJ-1010 *1
6 Feeder power cable	BKPD-6012 *1
7 Base material side power cable	BKPD-6012 *1
8 Gas hose	BKGG-0610 *1
9 Gas Regulator	*2

\*1: Select a cable length for your welder. Available in the length of 5 m, 10 m, 15 m, and 20 m.  
\*2: Depending on the area in which a Gas regulator is used, the specification is different.

### Robotic made by other companies Configuration

(Aluminum Welding: 10 m Extension)



■ denotes standard components.

\* The diagram above shows main components of an MIG configuration.

\* Detailed specification needs to be determined if establishing connections with Robot made by other companies and auto machine.

Product Name	Model
1 Welding power source	WB-W400
2 Interface	IFR-101WB
3 Wire feeder unit	CMRE-742
4 Aluminum kit	K5879B00(classified as a part)
5 Welding torch	MTXCA-2531
6 Coaxial power cable	L-6611 (1.1m)
7 Feeder control cable (10-core)	BKCPJ-1010 *1
8 Feeder power cable	BKPD-6012 *1
9 Base material side power cable	BKPD-6012 *1
10 Gas hose	BKGG-0610 *1
11 Gas Regulator	*2
12 Conduit	L450K00(For aluminum welding)

\*1: Select a cable length for your welder. Available in the length of 5 m, 10 m, 15 m, and 20 m.  
\*2: Depending on the area in which a Gas regulator is used, the specification is different.

### Input Power Capacity and Cables Specifications

Items	Model	WB-W400
Input voltage	V	400 ± 15%
Phase	—	Three phase
Input power capacity	kVA	22 or more
Fuse/Breaker Capacity	Switch with fuse	A Switch capacity : 35 or more Fuse : 35
	Breaker *1	A 50
Input side cable *2	mm <sup>2</sup>	10 or more to 38 or less
Base Metal/Feeder power cable	mm <sup>2</sup>	60
Earth Ground cable *2	mm <sup>2</sup>	10 or more

\*1: When using a no-fuse breaker use a motor breaker.  
\*2: Numerical value in a parenthesis indicates the size of the welding machine side pressure terminal.  
CE-Marking welding power supplies are equipped with a input cable and a ground cable.  
\* Depending on the area in which a power source is used, the specification is different.

### Specifications

General name		Welbee Inverter W400			
Welding power source	Model	WB-W400			
Rated input voltage	V	400±15%(Common to both 50 and 60Hz)			
Number of phase		Three phases			
Rated input	kVA	21.4 (17.0kW)			
Rated duty cycle	%	DC, DC Pulse:40/100, AC Pulse:60/100			
Rated output current	A	DC:400/350, DC Pulse:400/283, AC Pulse:350/300			
Rated load voltage	V	DC:34/31.5, DC Pulse:34/28.2, AC Pulse:31.5/29			
Rated output current range	A	30~400			
Rated output voltage range	V	12~34			
Maximum no-load voltage	V	92			
External dimensions(WxDxH)	mm	395x710x640(w/o eyebolt)			
Mass	kg	86			
Wire feeder unit	Model	CM-7403	CMA-7403	CMAW-7403	
Wire diameter *1	mm	(0.8), 0.9, 1.0, 1.2, (1.4, 1.6)	1.0, 1.2, (1.6)	(1.0), 1.2, 1.6	
Wire used		A solid wire and flux wire Hard/soft aluminum			
Wire feeding speed	m/min	22 MAX			
External dimensions(WxDxH)	mm	252x611x393	285x723x393	285x723x393	
Mass	kg	14	15	16	
Welding Torch	Model	BT3510-30	WTS300-SD	BTA300-30	BTAW400-30
Rated current	A	MAG:300	MIG/MAG:300	MIG:300	MIG:400
Wire diameter *1	mm	(0.9, 1.0), 1.2	(1.0), 1.2, (1.6)	1.2, (1.6)	1.2, (1.6)
Rated duty cycle	%	MAG:30	DC MIG:50 Pulse MIG:30	DC MIG:50 Pulse MIG:30	100
Cooling system		Air cooling			
Cable length	mm	3, (4, 5, 6)	3		
Feeder unit side power cable	Model	BKPD-6002			
Cable size	mm <sup>2</sup>	60			
Base material side power cable	Model	BKPD-6002			
Cable size	mm <sup>2</sup>	60			

\*1: Option parts are required if selecting any of bracketed wire diameters.

### Standard Accessories

Items	CM-7403	CMA-7403	CMAW-7403	
Wire feeder	1	1	1	
Gas hose (3m)	1	1	1	
Welding touch	BT3510-30	WTS300-SD	BTA300-30	BTAW400-30
Hex key (M5)	1	1	1	1

### Options

Extension cable		5m	10m	15m	20m
Power cable * (common for base material and feeder sides)	(60mm <sup>2</sup> )	BKPD-6007	BKPD-6012	—	—
	(80mm <sup>2</sup> )	—	—	BKPD-8017	BKPD-8022
Gas hose		BKGG-0605	BKGG-0610	BKGG-0615	BKGG-0620
Feeder control cable (10-core)		BKCPJ-1005	BKCPJ-1010	BKCPJ-1015	BKCPJ-1020
Analog remote control cable		BKCPJ-0605	BKCPJ-0610	BKCPJ-0615	BKCPJ-0620
Digital remote control cable		BKCAN-0405	BKCAN-0410	BKCAN-0415	BKCAN-0420
Water hose		BKWR-0605	BKWR-0610	BKWR-0615	BKWR-0620

\*Welding machine powered by an extension cable does not require the use of a 2 m standard power cable.  
\*Contact us to specify needed length of your power cable over 20 m.  
\*It is recommended to select an 80 mm<sup>2</sup> cable for welders run at near rated current, water-cooled, or with over 15 m power cable.

### Analog remote control box(3m)

Product Name	Parts Number
Analog remote control box(3m)	K5416S00

### Digital remote control box

(requires a complete set composed of three below)

Product Name	Model
Digital remote control box	E-2442
Control cable	BKCAN-0410(10m)
Conversion adaptor (classified as a part)	K5810B00



Digital remote control box

### Interface for Robot made by other companies

Product Name	Model
Interface	IFR-101WB

\*Contact us for details to establish connections with an external robot.

### Wire Feeder for Robot made by other companies

Model	CMRE-742
Wire diameter	1.2, 1.6mm
Wire type	Solid; Flux-cored Wire
Mass	7kg
External dimensions(WxDxH)	195x275x235mm

\*The weight and dimensions above exclude cables.

### Parts Kit CMRE-742 for Aluminum Welding

Parts Number : K5879B00



Wire feeder unit for Robot made by other companies

In accordance with DAIHEN's policy of make continuing improvements, design and/or specifications are subject to change without notice and without any obligation on the part of manufacturer.

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# W400

## AC/DC Pulse MAG/MIG Welder

# Higher Productivity and Welding Quality!

## AC Pulse Welder is full of advantage!

Daihen's AC-MIG pulse welder delivers high-quality welds on your thinnest material.

Daihen's exclusive AC WavePulse produces the best welds with the least welding defects.

The W400 Welbee delivers the best welds for aluminum, mild steel and stainless steel.

Increased output of 33% over our prior model enables welding of medium-to-thick material!



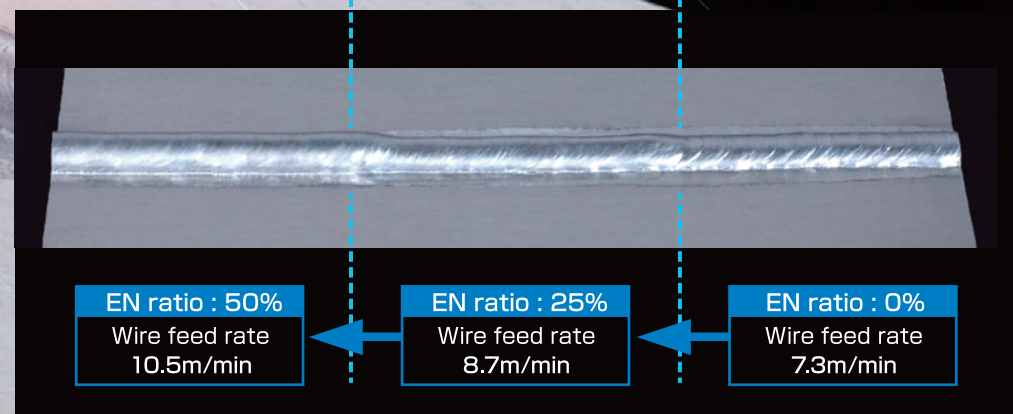
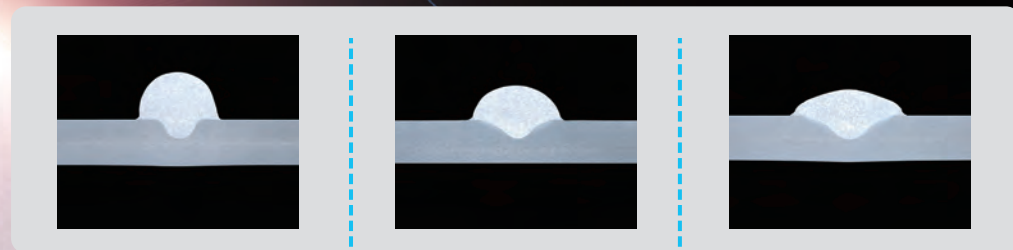
# NEW

# Advantages!

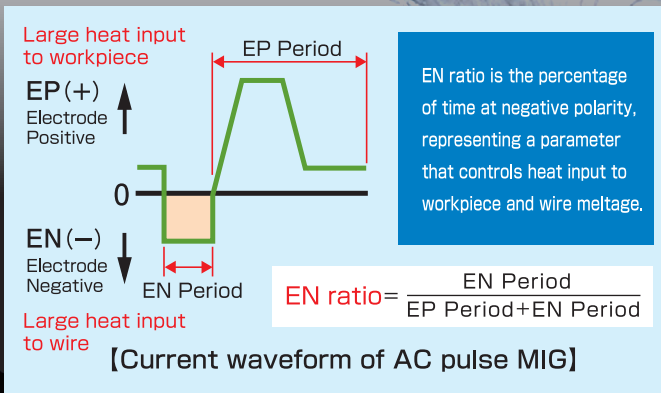
DAIHEN Corporation

# Higher **productivity!** Higher **welding quality!** Universal Dual-Current Pulse MAG/MIG Auto Welder is full of **advantages!**

Daihen's exclusive **AC pulse welding method** delivers the cleanest welds on the thinnest material.



W400 Welbee produces clean welds without burn-through...reducing the heat input to the workpiece while increasing the wire melting rate. Increasing the EN ratio from 40% of conventional welders to 50% of the Welbee W400 results in a weld with finer deposition control.



With a 33% increase in output current over the prior model, the W400 will make quick work of welding your medium to thick materials!

Our 400A rated output is capable of welding medium and thick material. AC Pulse MIG applications using 1.6mm diam. wire now support thin, medium and thick material welding.

If you struggle to weld thin plates,

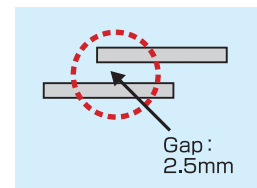
**AC pulse welding eliminates gaps, burn-through and holes** when welding thin plates.

Can't MIG welding deliver clean welds on thin plates?



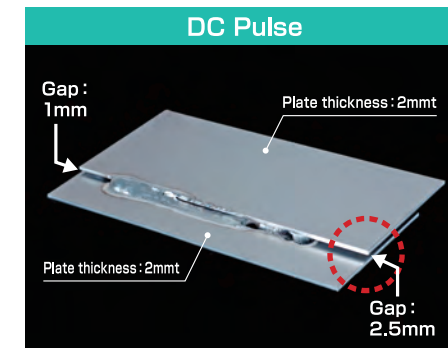
**Burn through in the welding of thin plates can be avoided.**

When welding thin aluminum plates, controlled penetration and consistent wire melting can be achieved, eliminating defects due to burn-through.

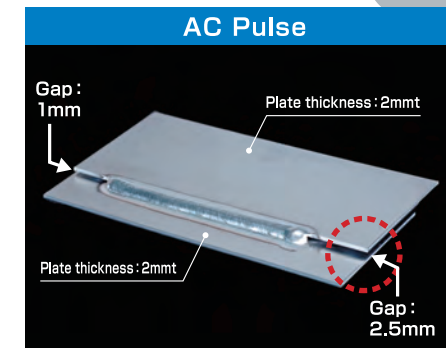


DC Pulse vs. AC Pulse Comparison—Weld Bridging

● Travel Speed : 60cm/min ● Base metal : A5052 (hard aluminum)



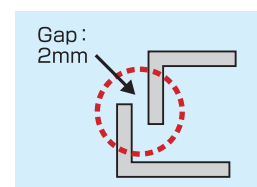
Welding current : 96A Wire feed rate : 6.2m/min  
Welding voltage : 17.7V



Welding current : 85A Wire feed rate : 6.2m/min  
Welding voltage : 17.8V EN ratio : 20%

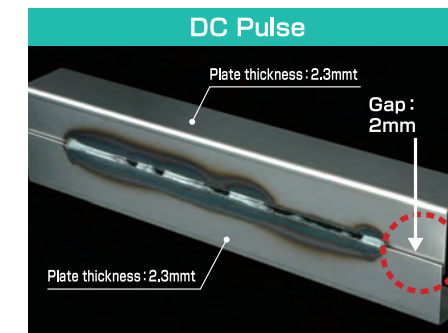
**Clean welds on difficult joints with poor fit-up and gaps.**

Poor fit-up with gaps larger than the thickness of the workpiece material can be handled through adjustment of the **EN ratio**. Steady welding across inconsistent gaps, every time.

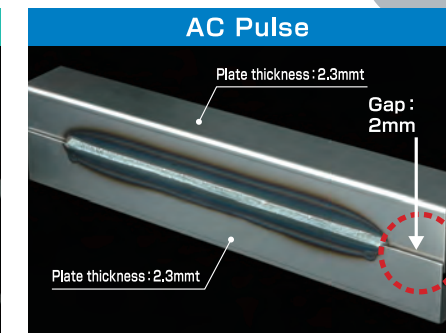


DC Pulse vs. AC Pulse Comparison—Vertical Lap Joint

● Travel Speed : 75cm/min ● Base metal : SS400 (ASTM A36, EN S275)



Welding current : 240A Wire feed rate : 8.4m/min  
Welding voltage : 26V



Welding current : 240A Wire feed rate : 9.6m/min  
Welding voltage : 26V EN ratio : 70%

If you are required to weld a variety of materials and thickness,

**Clean welds on aluminum, mild steel and stainless steel,** regardless of thickness.

Is welding of various materials possible?



**Reduction and elimination of weld fumes and soot, produces cleaner welds and a healthier work environment.**

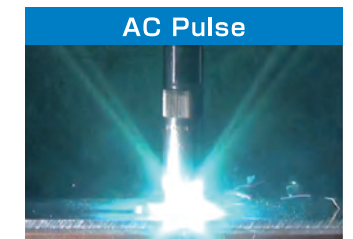
Through the reduction of droplet temperature, welding fumes and soot are suppressed, creating a healthier welding environment. The resulting welds are clean and ready for assembly and finishing.

DC Pulse vs. AC Pulse Comparison—Welding Fumes

● Travel Speed : 40cm/min



Welding current : 80A Wire feed rate : 5.2m/min  
Welding voltage : 17.8V



Welding current : 80A Wire feed rate : 5.9m/min  
Welding voltage : 17.8V EN ratio : 20%

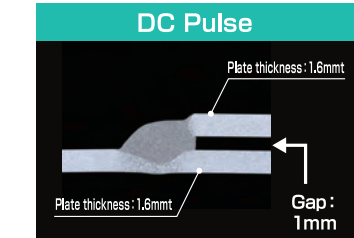
mild steel

**High-quality welding is available even in the high-speed welding.**

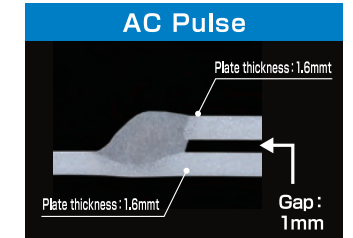
AC Pulse MIG welding utilizes **high EN ratio** to ensure sufficient weld deposits, even under high-speed, high-production applications.

DC Pulse vs. AC Pulse Comparison—Welding deposition on gap

● Travel Speed : 150cm/min ● Base metal : SS400 (ASTM A36, EN S275)



Welding current : 205A Wire feed rate : 6.6m/min  
Welding voltage : 23.5V



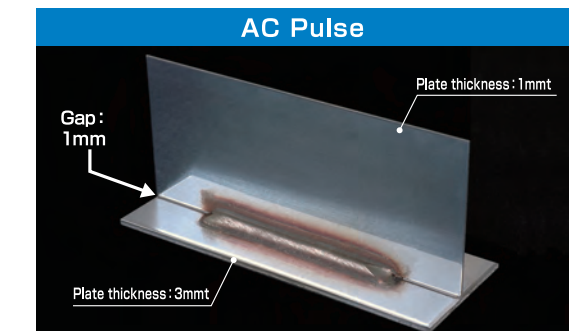
Welding current : 270A Wire feed rate : 9.9m/min  
Welding voltage : 27.5V EN ratio : 60%

stainless steel

**The SUS ferrite mode is incorporated and application range is increased further.**

The SUS ferrite mode is incorporated in addition to the conventional SUS solid mode. Wide application range including the welding of very thin plates for the mufflers of motorbikes, etc. is provided.

● Travel Speed : 70cm/min ● Base metal : SUS430 (ferrite)

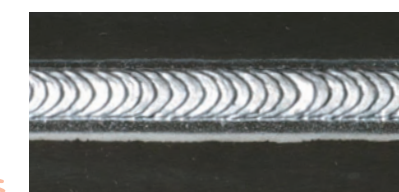


Welding current : 140A Wire feed rate : 6.2m/min  
Welding voltage : 22V EN ratio : 70%

If you demand the cleanest weld appearance without welding defects,

**Daihen exclusive WavePulse delivers the cleanest welds with the least amount of defects.**

Is it possible to get high-quality welds while using aluminum?



Welding current : 100A Base metal : A5052  
Welding voltage : 20V Plate thickness : 3mm  
Wire feed rate : 40cm/min Wire : A5356 1.2mm

**Daihen's exclusive AC Wave Pulse delivers beautiful TIG-like bead appearance.**

Our AC WavePulse II controls arc length and wire feed speed to produce well-defined, scaled, TIG-like beads.

**Minimizes Welding Defects Specific to Materials**

AC WavePulse eliminates crack sensitivity and blow holes when welding aluminum, mild steel and stainless steel.