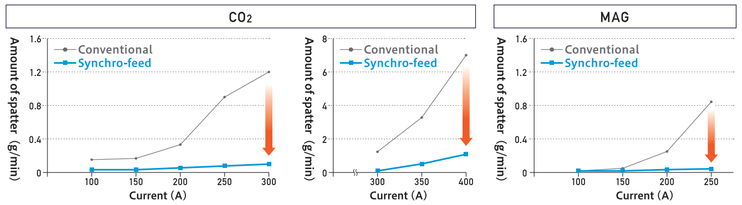
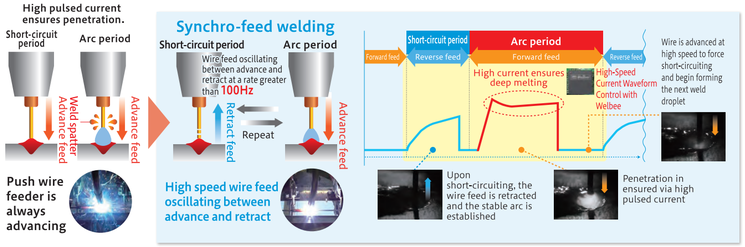
New evolutionary welding mode delivering ultra-low spatter, high quality weld results
Simple setup with reduced maintenance requirements

Synchro-feed virtually eliminates welding spatter!

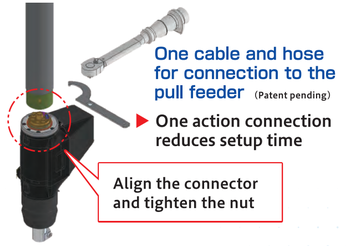
Ultra-low welding spatter (99% reduction), even at weld current in excess of 400A



Synchro-feed welding process



Simple connection and configuration



One cable and hose for connection to the pull feeder (Patent pending)

▶ One action connection reduces setup time

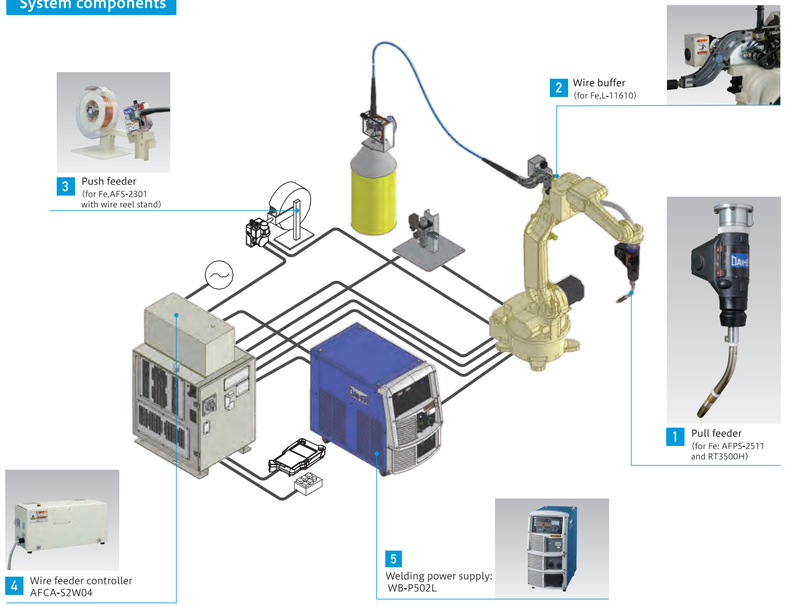
Align the connector and tighten the nut

Reduced maintenance

Includes auto-cleaning function to discharge wire shavings from the pull feeder mechanism

▶ Reduced cleaning time and improved productivity

System components



Applicable Range of Synchro-feed Evolution Welding System

Material	Mild steel	Stainless steel (ferrite/austenite)	Aluminum
Shield gas	CO_2／MAG	MIG(98%Ar,2%O2)	MIG(100%Ar)
Applicable wire	0.8-1.2	1.0,1.2	1.2
Welding current(※1)	CO_2:50-400A	50-330A	40-300A
	MAG:50-350A		
Rated duty cycle(※2※3※4)	100%	100%	100%

※1 The maximum welding current varies depending on the wire diameter and material.
※2 The rating duty is for an ambient temperature of 45° C (113° F).
※3 For use at a rated duty ratio of 100%, air for cooling (50L/min, 13.2gpm) or more must be supplied.
※4 When WB-P502L welding power source is used

Components by Specification

Item		Synchro-feed	Synchro-feed Lite
Components		Wire buffer Pull feeder Push feeder	Pull feeder
Wire stock system	Pack wire	✓	✓
	Reel wire	✓	–
Applicable materials	Mild steel and stainless steel	✓	✓
	Aluminum-Brazing	✓	–
Welding power source		WB-P402L WB-P502L WB-W400	WB-P402L WB-P502L

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Note | This product and the technologies (including software) used in the product are subject to Catch-All Controls. When exporting any of them, verify the users, applications, etc. according to the applicable laws and regulations and take appropriate procedures such as applications for export permission to the Minister of Economy, Trade and Industry if required.

●The information contained in this catalog is current as of April 2021 and is subject to revision without notice.

CAT No.R21694

DAIHEN

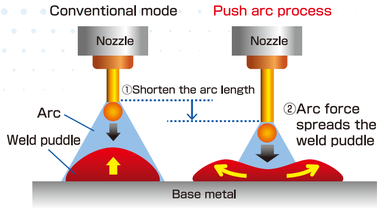
Almega Friendly series II
Ultra-Low-Spatter Technology

Synchro-feed robotic welding system
Synchro-feed Evolution

Compatible with various materials such as mild steel, stainless steel, aluminum, etc.

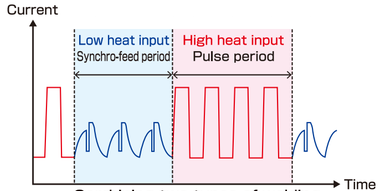
New mode for even higher quality welding

Push arc process



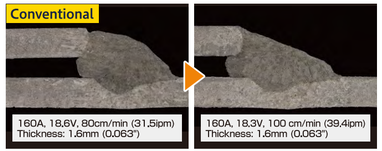
Wide bead accomodates variation in joint fit up!

Synchro-feed pulse



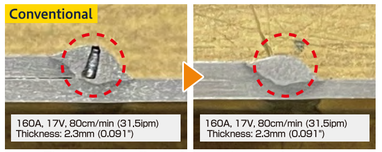
Combining two types of welding waveforms to control head input!
Desirable weld bead appearance!

Mild steel



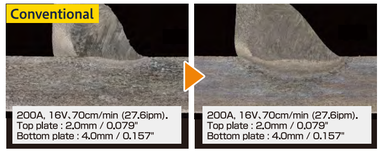
Wide bead to accommodate joint gap variance

Galvanized



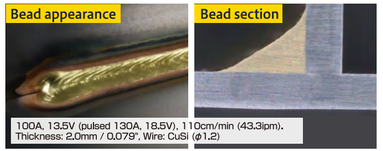
The push-out effect of the molten pool promotes easy release of zinc vapor to suppress blowholes.

Stainless steel



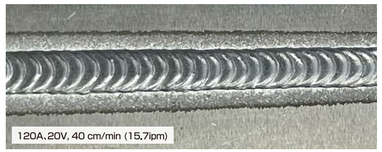
Bead with wide leg length and reduced throat thickness

Brazing



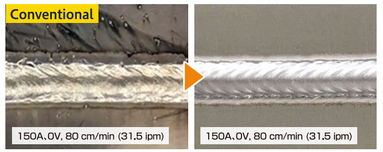
Wide range of weld beads and suppression of base metal penetration

Aluminum Soft



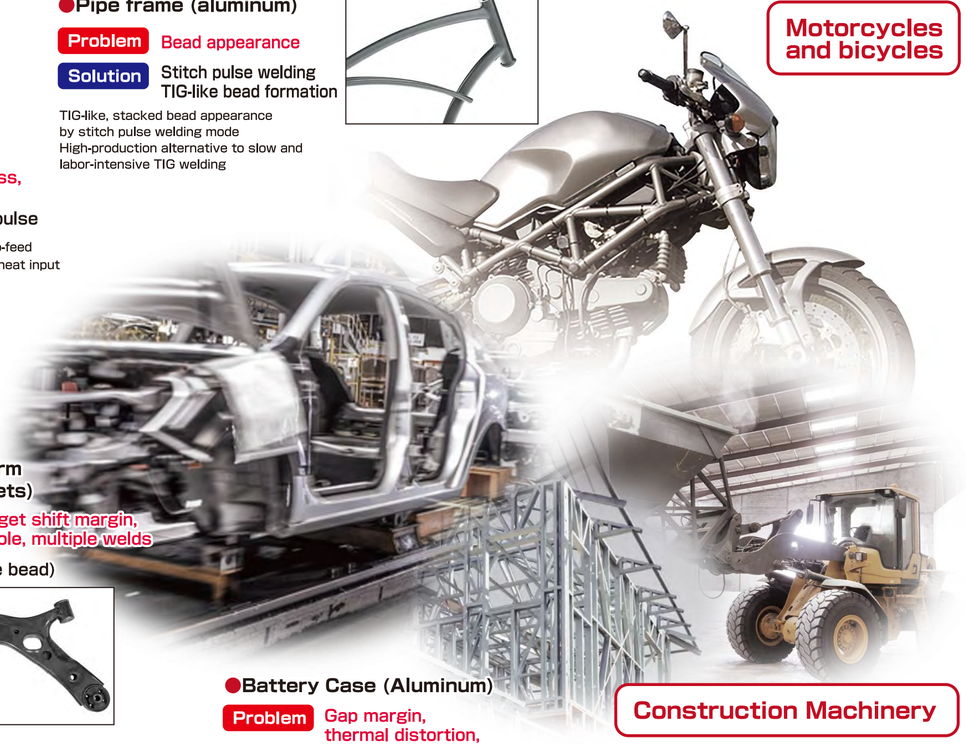
Bead apperance

Aluminum Hard



Very low heat input and less weld smut for high-quality weld results.

Applications



Automobiles

●Bumper crash box (Aluminum)

Problem Wrong thickness, melt-off

Solution Synchro-feed pulse

Adjusting the ratio between Synchro-feed and pulse welding for fine control of heat input

●Suspension Lower Arm (galvanized steel sheets)

Problem Joint gap / target shift margin, Spatter, blowhole, multiple welds

Solution Push arc (wide bead)

Push arc enables wide bead, low spatter, and zinc vapor discharge. Predictive control maintains low spatter performance even in simultaneous welding by multiple units.

●Seat frame (high-tensile steel)

Problem Ultra-thin plate welding (0.6mm / 0.024") joint gap variance and targeting misalignment

Solution Push arc (Wide bead)

Synchro-feed eliminates burn-through on ultra-thin material. Reducing spatter adhesion and weld contamination through ultra-low spatter performance of Synchro-feed.

●Pipe frame (aluminum)

Problem Bead appearance

Solution Stitch pulse welding TIG-like bead formation

TIG-like, stacked bead appearance by stitch pulse welding mode High-production alternative to slow and labor-intensive TIG welding

Motorcycles and bicycles

●Tank (Iron)

Problem Misalignment tolerance

Solution Push arc (wide bead)

Ultra-low spatter achieved by Synchro-feed welding. Push arc's wide bead better accomodates joint fit up variation

●Muffler exhaust manifold (stainless steel)

Problem

Gap tolerance, wrong plate thickness

Solution

Push arc (wide bead)

Push arc's wide bead better accomodates joint fit up variation.
Also improves high-speed welding performance.

●Battery Case (Aluminum)

Problem Gap margin, thermal distortion, Melt down

Solution Push arc (wide bead)

Wide bead with Push arc to tolerate joint gap variance.Low heat input welding is possible to suppress thermal distortion and melt drop.

Construction Machinery

●Cabin (Iron)

Problem

Prevention of spatter adhesion and insufficient penetration in medium-thick plate welding

Solution Weld with 450A

High current, ultra-low spatter welding delivering deep penetraction with reduced weld spatter.

Other

●Grating, building scaffolding, ladder, etc.

Contributes to improved welding quality by reducing spatter in many applications.