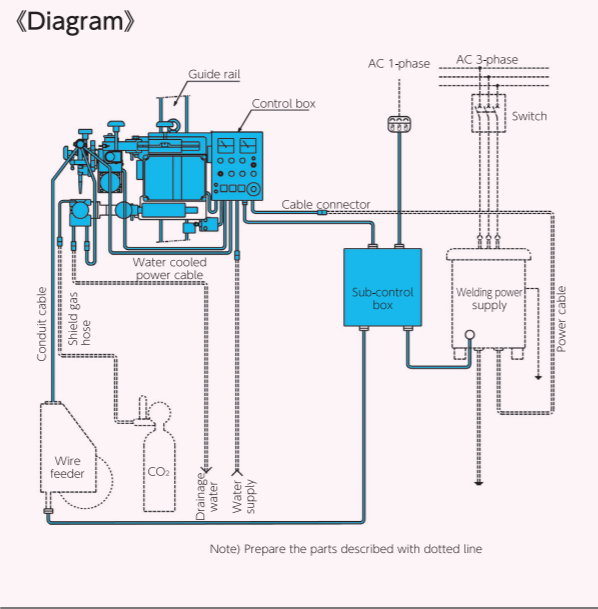
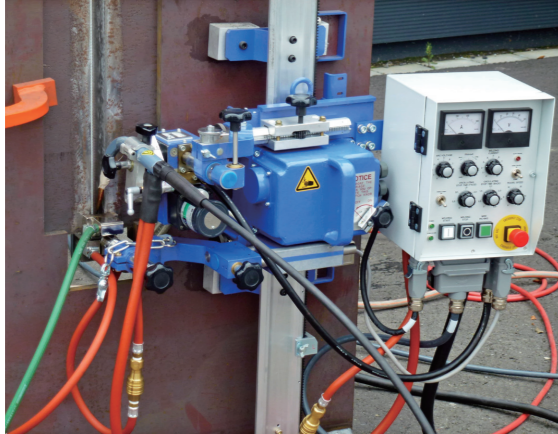


Components



KOBELCO

Efficient ElectroGas Arc Welding Process : SEGARC™

SG-2Z-CE

Specification

Configuration	Specification	
Drive system	Guide rail (rack-and-pinion)	
	Travelling speed	0 - 25cm/min, continuously variable, for the welding operation 55cm/min, for the rapid travelling
Torch adjustment	Right and left adjustment	±20mm
	Forward and backward adjustment	20mm
	Up and down	15mm
	Right and left angle adjustment	±3 degrees
Travelling carriage	Forward and backward angle adjustment	20 degrees against plate surface
	Cu shoe adjustment	±20mm to right and left
Oscillator	Oscillation pattern	Linear Oscillation in plate thickness direction
	Oscillation amplitude	5 - 30 mm
	Oscillation frequency	50 times/min (without stopping at both ends)
	Dwelling time	0 - 3sec. Variable at both end of the oscillating
Dimensions and mass	430W × 300D × 300Hmm, about 21kg	
Guide rail	Type	Side rack type aluminum protrusion rail
	Dimensions and mass	1.5m × 2 pieces, 14kg
Copper shoe	Pressure to sliding direction	max.186N
	Dimensions	54W × 20D × 66Lmm
Torch	Type	Dedicated water-cooled type curved torch Rate current 450A
Control box	Dimensions and mass	200W × 20D × 265Hmm, about 8.5kg
Sub-control box	Dimensions and mass	260W × 260D × 200Hmm, about 9kg
Conduit cable	Dimensions	Inside diameter Φ3.56mm × 3m

Options(Separately sold)

Options	Specification	
Copper shoe	24,32,36,50mm (width)	(Standard specification 28mm)
Guide rail	0.5, 1.0, 2.0m	(Standard specification 1.5m)
Control cable	(Sub-control box - Wire feeder)	30,40,50m (Standard specification 20m)
	(Sub-control box - Control box)	30,40,50m (Standard specification 20m)

Conditions on Usage

Items	Specification
Service environment	Temperature : 0-40°C
	Humidity : 20 - 90% without dew condensation
Power source	400V, 1phase
Mechanism and cooling system	Simple dust control, indirect cooling



WARNING

Welding generates fume and gas. Inhaling them can be harmful to health. Precautions such as sufficient ventilation and using respiratory protective equipment should be taken. Arc light is harmful to eyes and skin. Light-shielding protective equipment (glasses) should be used. Touching an electrified part may cause fatal electrical impact. So don't touch that part.

If wire except a tip of a welding torch contacts with a current-carrying part such as a welding work and a wire feeder while welding, an electrical spark will occur, and that may cause fire and burn. So attention should be paid to that.

Note

- The property data given herein, such as weld material, deposit metal and weld metal, are just for explanations of typical property and performance of the production. Those data except clear notifications as provisions of standards doesn't provide assurance.
- Performances in actual welded structures are influenced by designing of structures, chemical components of a steel plate, construction techniques, welding conditions, abilities of an operator and so on.
- We are not responsible for damage from using technical information given herein in an improper way.

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KOBE STEEL, LTD.

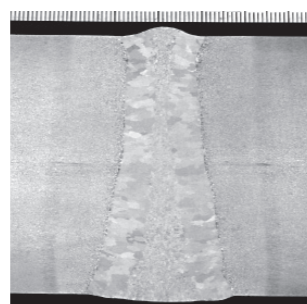
SEGARC™ -unique & ultimate automatic vertical welding process & equipments KOBELCO designed and put into practical use first in the world. Plenty of supply records to fabricators of ships, oil tankages, and bridges for over 40 years.

Features & Benefits

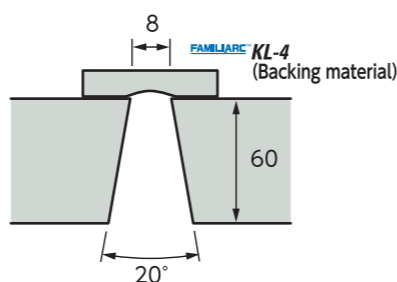
1 Vertical, single pass welding available even on thick plate, up to 65mm

[A example of standard welding condition with a 60mm-thick plates]

Current (A)	Voltage (V)	Travel Speed (mm/min)	Heat Input (kJ/mm)
400	43	26	40



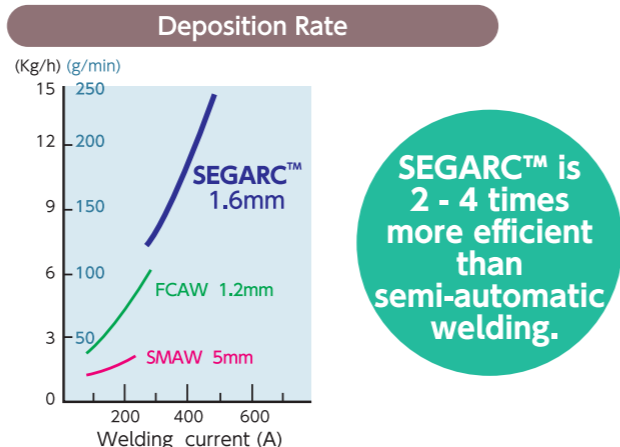
Cross-section surface



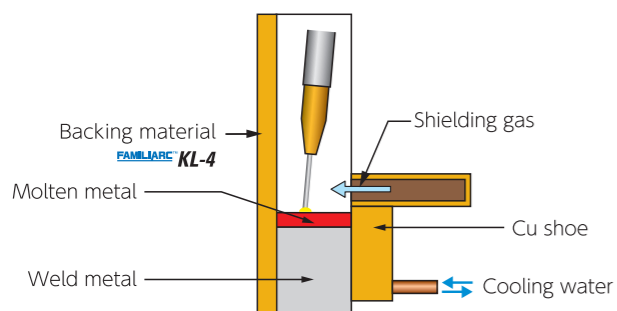
2 High efficiency

High deposition rates (e.g., 180g/min at 380A) with a small diameter flux-cored wire provide high welding efficiency.

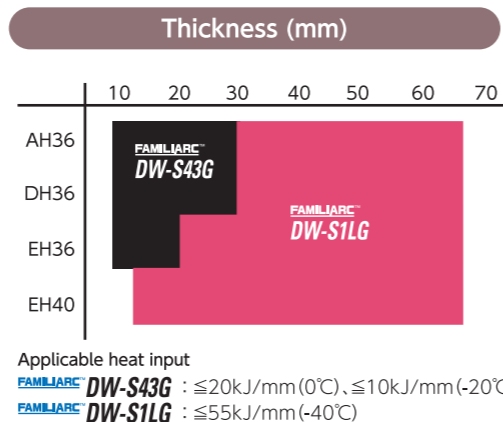
Deposition Rate (g/min)	
SEGARC™	> SMAW FCAW



SEGARC™ Mechanism



Applicable Steel Plate Thickness



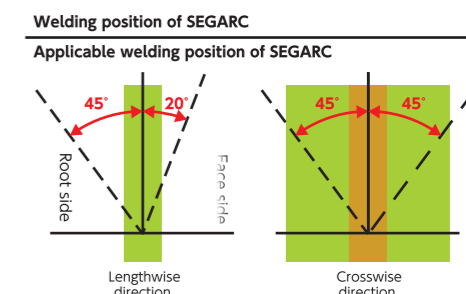
Features & Benefits

3 Easy handling and wide range of application

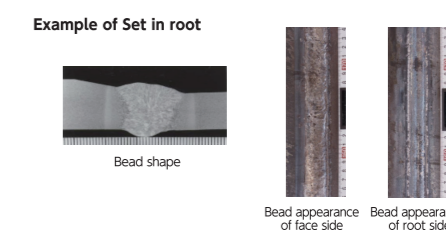
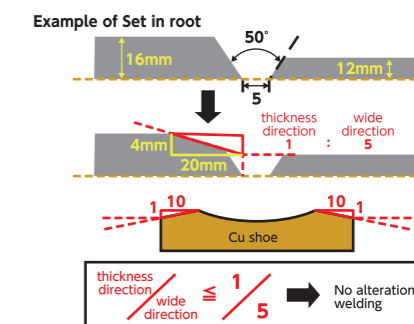
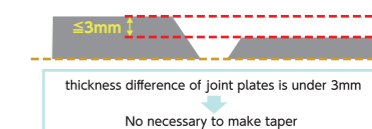
- Applicable not only to vertical but slant joints
SEGARC™ is widely applicable to variable fields (e.g., shipyard, bridge, machinery, storage tank, steel structure and so on).
- Applicable to joint plates which have thickness difference
If the thickness difference of joint plates is under 3mm, there is no necessary to make taper.
- Easy to operate
Travelling speed while welding operation is adjusted automatically to keep wire extension constant.

Application of SEGARC™ Process

Fields	Application
Shipyard	Side shells, bulkheads and hoppers of bulk carriers
Bridge	Box girder webs, I-plate girder webs
Machinery	Press frames
Storage Tank	Grain silos, oil tanks
Steel Structure	Water conduits, large diameter pipes, structural members of seawater desalination plants



Application of SEGARC on thickness difference of joint plates



Line-up of Welding Materials for SEGARC™

Trade designation	Type of steel	0.2% Offset Strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact value (J)	Approvals by ship classification societies
FAMILIARC™ DW-S43G	Mild steel, 490MPa HT steel	470	600	29	60(-20°C)	NK, ABS, LR, BV, DNV, GL, CCS, CR, KR
TRUSTARC™ DW-S60G	550-610MPa HT steel	520	650	26	65(-20°C)	NK, ABS, LR, BV, DNV, GL
FAMILIARC™ DW-S1LG	Mild steel, 490MPa HT steel for low temperature service	500	615	26	100(-60°C)	NK, ABS, LR, BV, DNV, GL

• Flux cored wires mentioned above are designed for 100%CO₂ (C1) shielding gas.
 • FAMILIARC™ KL-4 or Water cooled copper backing must be used as backing material.