KOBELCO

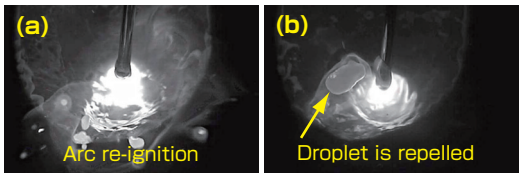
Only-One

Low Spatter, Fume and High Efficiency CO_2 Gas Shielded Arc Welding

REGARC™

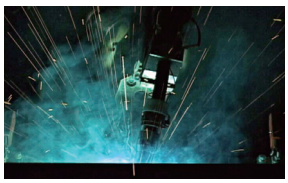
Conventional CO_2 gas shielded arc welding

(a)A metal droplet is blown off at the moment of arc re-ignition just after it short-circuits.
(b)A large metal droplet detaches being repelled upwards by the arc force, and it scatters with rotation.



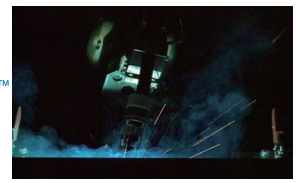
REGARC™

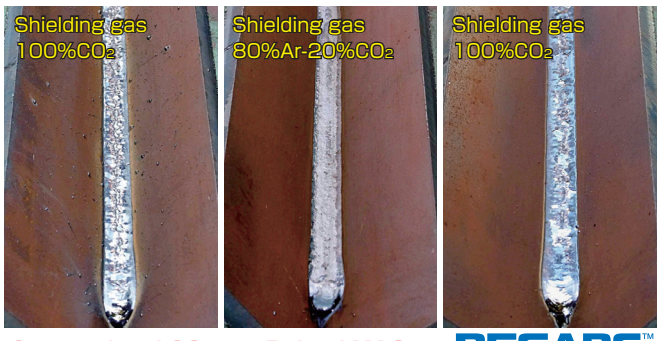
By optimizing the pulse current for each timing of droplet formation and detachment, the metal droplet can be controlled to transfer regularly with a constant size in globular mode.



Conventional CO_2

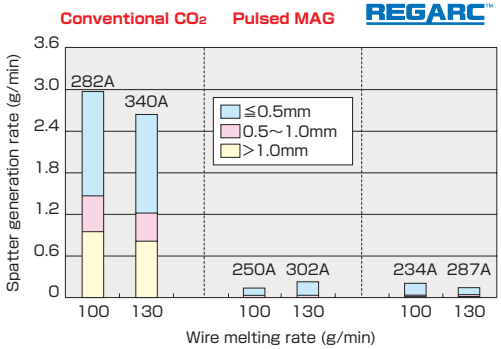
REGARC™



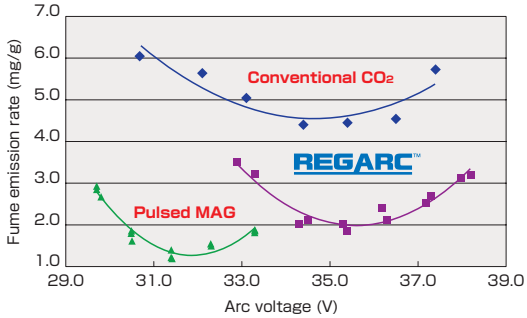


Conventional CO_2 Pulsed MAG REGARC™

Feature 1 Lower spatter and fume, Low cost



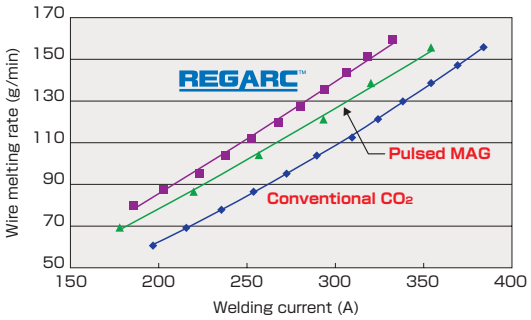
Comparison of spatter generation rates in flat fillet welding



Comparison of fume emission rates (Welding current 280-290A)

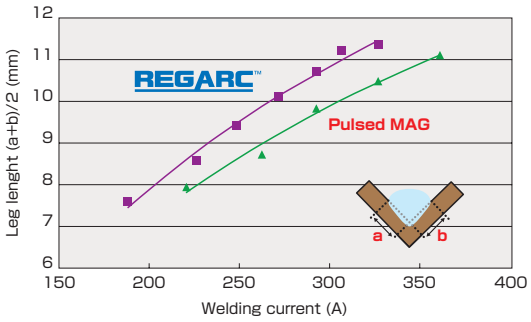
Low Spatter, Fume and High Efficiency CO_2 Gas Shielded Arc Welding

Feature 2　Higher efficiency and Saving energy



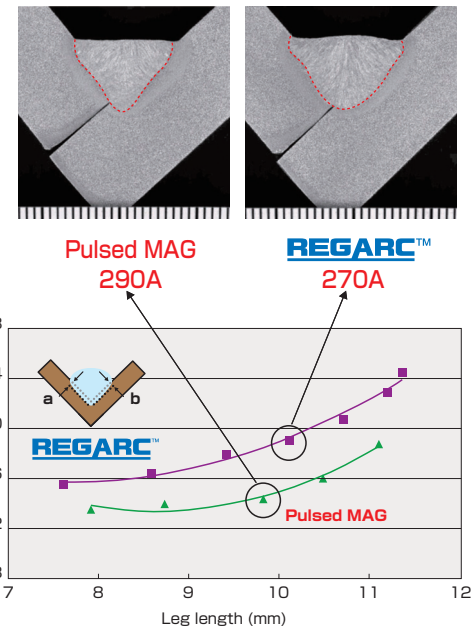
Comparison of wire melting rate(Welding speed : 30cm/min, Tip height : 25mm)

At the same mean current, wire melting rate in REGARC™ is higher by approximately 20-25%



Comparison of leg length
(Welding speed : 30cm/min, Tip height : 25mm)

Feature 3　Deep penetration



Comparison of penetration depth(Welding speed : 30cm/min, Tip height : 25mm)

In REGARC™ , the weld penetration profile exhibits a bowl-shape form with broad and deep penetration, which is more resistant to weld defects.

Efficiency of REGARC™

Conventional CO_2 process → REGARC™

- Low spatter
  - Good looking bead appearance
  - Decrease the cleaning time and the cost required to remove spatters
- Low fume
  - Improve the work environments
- Increase the deposition rate
  - Increase the leg length

Ar-rich-gas-mixture GMA → REGARC™

- Ar-rich-gas ⇒ CO_2 gas
  - Decrease the gas cost
  - Deep penetration
  - Decrease the risk of weld defects as blowholes

Specifications of REGARC™

Robot	ARCMAN™
Power source	SENSARC™ AB500
Shielding gas	100%CO_2
Wire	MG-50REG (1.1mmϕ)
Welding current	~330A
Wire feeding speed	~2000mm/min
Welding speed	~400mm/min
Tip height	25mm
Welding position	Flat・Horizontal

KOBE STEEL, LTD.

WELDING BUSINESS

Marketing Center

Marketing Planning Section　TEL +81-3-5739-6321 FAX +81-3-5739-6958

Marketing Department(Japan)

Shipbuilding & Engineering Section　TEL +81-3-5739-6322 FAX +81-3-5739-6958

East Japan Marketing Section

(Welding Consumables)　TEL +81-3-5739-6323 FAX +81-3-5739-6958

(Welding System)　TEL +81-3-5739-6325 FAX +81-3-5739-6958

Hokkaido Marketing Office　TEL +81-11-261-9334 FAX +81-11-251-2533

Tohoku Marketing Office　TEL +81-22-261-8812 FAX +81-22-261-0762

Middle Japan Marketing Section　TEL +81-52-584-6075 FAX +81-52-584-6109

West Japan Marketing Section

(Welding Consumables)　TEL +81-6-6206-6390 FAX +81-6-6206-6458

(Welding System)　TEL +81-6-6206-6423 FAX +81-6-6206-6458

Chugoku Marketing Office　TEL +81-82-258-5305 FAX +81-82-258-5309

Shikoku Marketing Office　TEL +81-87-823-7444 FAX +81-87-823-7333

Kyusyu Marketing Office　TEL +81-92-451-6012 FAX +81-92-473-8238

Global Operations & Marketing Department　TEL +81-3-5739-6331~6332 FAX +81-3-5739-6960

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