



Kempppi's Reduced Gap Technology (RGT) challenges conventional joint design principles

Kempppi Product Management and Technology Services
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Why choose RGT?

- The high energy density of WiseFusion minimizes heat input, which improves impact toughness with high-strength steels and reduces deformation, so there is less need for straightening.
- WiseFusion keeps the arc length stable. The user doesn't need to adjust it, for less hassle and a better arc time ratio.
- The A5 MIG Rail System 2500 rail carriage is optimized for use with FastMig power sources. Power to the rail carriage is supplied through Kemppi's special torch without additional cables, so getting the system ready for operation is fast, and arc time ratios are better than before.



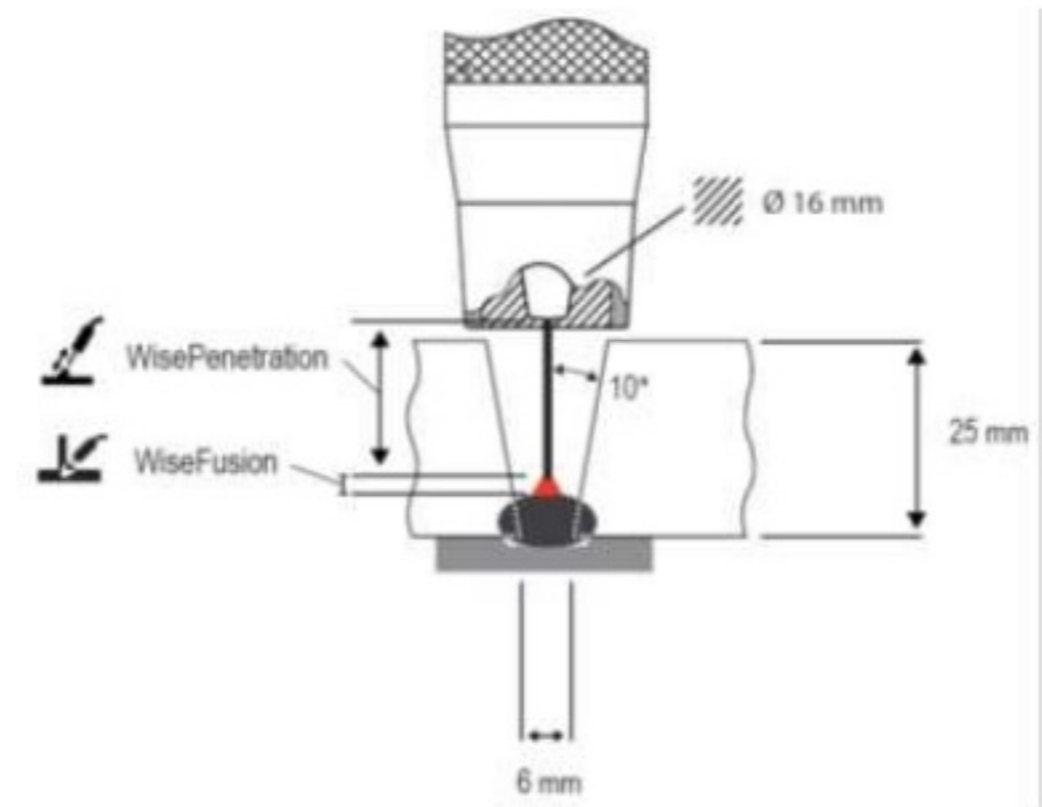
Why choose RGT?

- Narrow gap welding provides numerous benefits, and on top of those, Kemppi's RGT solution offers many further advantages, for still greater cost savings and added value:
 - Investment costs are low, since no special equipment is needed in welding with material thicknesses under 30 mm.
 - WiseFusion keeps the arc stable, improves the control of the weld pool and reduces the magnetic arc blow. This decreases the risk of welding defects, and it results in lower repair costs.
 - WisePenetration keeps the arc power consistent, regardless of variations in the contact-tip-to-work distance. This enables a higher welding speed and deposition rate, and it results in lower labor costs.



What does RGT mean?

- Reduced Gap Technology (RGT) is an intelligent welding solution designed by Kemppi. It enables reliable narrow gap welding of materials with thicknesses up to 30 mm, without the need for special equipment or accessories.
 - **WisePenetration** keeps the arc power consistent, regardless of variations in the contact-tip-to-work distance.
 - **WiseFusion** provides adaptive regulation that keeps the arc focused and optimally short.



Cost savings example*

Arc time

Arc time, 45° groove: 810 s

Arc time, 20° groove: 505 s

Difference = 305 s

→ **Arc time savings 38%**

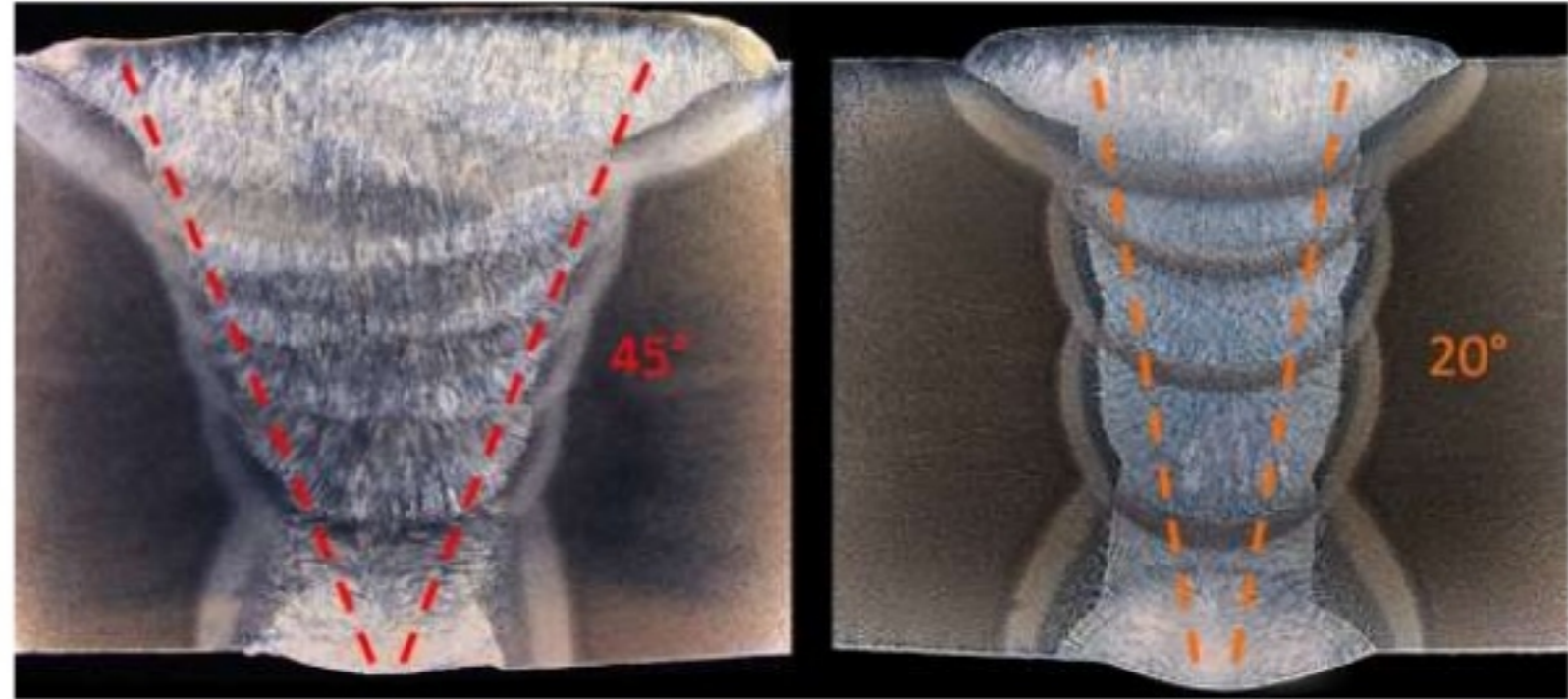
Filler material consumption

Groove volume, 45° groove: 372 mm²

Groove volume, 20° groove: 281 mm²

Difference = 91 mm²

→ **Filler material savings 25 %**



Traditional
7 weld passes

RGT
5 weld passes

* A preliminary WPS and detailed calculations can be found in the white paper "Kemppi's Reduced Gap Technology (RGT) challenges conventional joint design principles".



Arctech Helsinki Shipyard uses Kemppi's technology

*"Adoption of the new technology has brought us cost savings and improved the welding quality," says Arctech's Hull Production Manager **Niko Rautiainen**.*

"Welding work has gained speed, because the groove volume and the number of beads to be welded have decreased. Also less filler material is needed. Mechanization has also improved the arc time ratio and made the welds more consistent in quality," he adds.



Photos:
Arctech Helsinki Shipyard.