

WELD. CUT. HEAT.

How ArcReach Technology
is sparking the future
of heavy industry



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Introduction

Welding can be a risky occupation that requires welders to manoeuvre around high heat applications in often precarious conditions, while handling flames and arcs of up to 6000 degrees. To further complicate things, welders frequently need to adjust the weld settings for their projects which quickly becomes time consuming if the power source is located at a distance from their workstation.

Recognising the unique challenges that welders face, global leading manufacturer Miller developed ArcReach technology to give welders more control over their work by centralising their heating and power sources into a 'one stop shop' for welding, cutting, and heating.

This whitepaper will explain how the recent expansion of the ArcReach technology product range has further demonstrated Miller's commitment to improving the welding process in-situ. Furthermore, it will explore some of the key features and benefits of new ArcReach products, including Miller's revolutionary portable induction heater.



Overview of ArcReach technology

Designed to withstand the harsh conditions of mine sites and MRO workshops, the ArcReach range of products are add-ons for Miller's range of state-of-the-art welding machines, which includes industry preferred solutions such as the XMT 350 FieldPro; the Big Blue 400X and 500X Pro; the Big Blue 700X Duo and 800X Duo Air Pak; and the newest addition to the ArcReach welding machine family- the Dimension 650.

Since Miller first introduced ArcReach welding technology to the Australian market three years ago, the ArcReach products have already made their mark on the mining and MRO sectors by addressing the critical needs of welders working in heavy industry.

"Heavy engineering companies immediately recognise the benefits of the ArcReach all-in-one package solution – mainly, improved safety and increased productivity for their welders." says Fuhai Liu, Product Manager for Welding Industries Australia (WIA), representing Miller products through their Australian national distribution network.

"The ArcReach products have been successful in these sectors because they were designed to focus on heavy fabrication," he says. "Heavy engineering applications out in the field are typically located on very large sites. This means the power source could be located 20-30 metres away. But a complete

ArcReach package has the capability to serve as a remote setup for welding, cutting, power, and compressed air – effectively, it works as a complete solution and a 'one-stop-shop' for welders."

"To fully utilise the ArcReach technology, we recommend using ArcReach equipped power sources with the corresponding ArcReach accessories," explains Fuhai. "For MROs we recommend the BB800X Dual operator Air Pak Engine Driven Welder paired with an ArcReach 12 suitcase feeder and gouging remote. This way, the welder can change between the two processes at the weld and have full control of the welding parameters."



Introducing the ArcReach Heater

Thanks to Miller's innovative ArcReach heater technology, the traditional methods of using resistance heating or propane torches to heat workpieces is now a thing of the past. The ArcReach heater is a portable induction heating unit that is an accessory for select ArcReach welding power sources. Capable of heating

to a maximum of 315 °C, the ArcReach Heating System uses air-cooled cables or air-cooled quick wraps that connect from the power source to the heater to generate electromagnetic currents that heats from within for exceptionally faster and safer temperature control.

FEATURES:

- Designed for preheating and bakeout up to 315 °C (600 °F) in field applications
- Programmable heating profiles
- Can preheat any metal containing iron or steel to make it magnetic
- Improved joint temperature and uniformity for consistent heat
- Powered by Miller ArcReach compatible welding power sources

BENEFITS:

- Fewer quality issues associated with torch/resistance heating
- Lower operational costs
- Eliminates preheating and bakeout costs incurred by contractors
- Welders not exposed to flame, gases, or elements
- Improves work conditions and reduces operator fatigue
- Reaches target temperatures faster
- Requires no fuel/gas to run and no fire personnel/heating contractors

COMPATIBLE WITH:

- XMT 350 Field Pro
- Pipeworx 350 Field pro
- Trailblazer 325 ArcReach
- Big Blue 400X Pro ArcReach
- Big Blue 500X Pro ArcReach
- Big Blue 700X Duo ArcReach
- Big Blue 800X Duo Air Pak ArcReach

When the ArcReach Heater is paired with a compatible ArcReach power source and corresponding ArcReach accessories, it provides an all-in-one weld, cut and heat solution that is unmatched by anything else on the market.

Conquering lost productivity

ArcReach technology increases productivity as welders no longer have to walk back to the power source to make process or weld parameter changes. This also reduces the amount of weld defects in a project as the operator has full control of the power source right at the weld joint.

According to research conducted by Miller, the average welder makes about four trips a day walking to adjust the weld process and parameters of their welding project at the power source. "If a welder has to stop and walk over the machine just to make a small change and walk back it could take 15 to 20 minutes every time. A quick glance at the math behind these figures, reveals that four trips a day at around 15 minutes per trip quickly adds up to approximately 250 hours of walking annually," says Mathew Hefferan, Business Development Specialist for WIA.

The time and cost saving data is very relevant in Australia because labour costs more in this country compared to in the United States, notes Matt. "What, at first, may seem like a minor inconvenience on the job, is actually incurring significant costs for companies to the tune of approximately \$14,000 per welder each year – not to mention lost hours of productivity."

The Miller point of difference

With ArcReach technology, welders can stay at their workstation all day. Additionally, by preheating with ArcReach Heaters, welders won't have to wait for a heating contractor for work to be complete. Instead, they can quickly and easily heat their own joints, completing welds faster and helping meet project deadlines.

"It takes less than 20 minutes to set up an ArcReach Heater on a weld joint and in many cases another 20 minutes to bring that joint to temperature, depending on the type of material being heated, its overall mass, the type of insulation being used, and ambient temperature," explains Matt. "Compare that to the three hours it can take to set up resistance preheating equipment, then another three hours to bring the joint to temperature with resistance or flame methods."



Cost Savings

PROBLEM:



1 X WELDER



= 250 HOURS OF WALKING ANNUALLY

SOLUTION:

By converting their fleet to ArcReach technology, companies save on average \$14,000 per year per welder.*

A safer working environment

ArcReach technology prioritises the safety of welders which means no more welding with less-than-ideal settings in unsafe working conditions.

Particularly on heavy industrial sites for mining and extraction, it's important to reduce the chances of an operator slipping, tripping, or falling while trying to make weld process and parameter changes. ArcReach's power source with auto process select allows the operator to switch between processes and change weld parameters

right at the weld joint removing the need to walk over cables or climb ladders over long distances on site. In addition to this, the ArcReach induction heater makes welding a lot safer in a mining space by allowing the welder to work close to the heating blanket, and eliminating the risk of exposed flames, radiant heat, gas leaks, or explosions.

Ultimately, ArcReach technology offers a safer and more comfortable working environment for welders in the workshop or in field.

CASE STUDY

– Mining Excavator Boom Repair

WIA worked directly with a team of construction engineers in Mount Thorley, New South Wales to develop a qualified weld procedure for single-sided boom welding repairs – utilising Miller ArcReach technology to revolutionise the process.

Their client was experiencing 4-5 breakdowns on their excavator boom every year at an operating cost of \$30,000/hr.

Traditionally, to repair excavator booms, a person-sized hole would need to be cut into the hollow of the structure to allow a welder to climb inside and weld. Subsequently, this would require the welder to work for hours in the confined space which posed several health, safety, and quality issues.

Working with their central welding group, WIA proposed the use of the RMD (Regulated Metal Deposition) process to the client with the ArcReach Smart Feeder which would allow the repair work to be fully completed from the outside. Effectively, this reduced the amount of welding work required; eliminated the need for a welder to work in a hot, confined space; and reduced the risk of inhaling harmful fumes or experiencing burns.

The concept was approved by the mining client as a qualified weld process, ultimately saving them up to 15 hours in downtime and delivering \$1.8M in cost savings per year.



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Sparking the future

With the latest addition of the ArcReach induction heater, the ArcReach product range has truly become a complete weld, cut, and heat package solution. This expanded range of ArcReach compatible weld machines and accessories only stands to grow businesses who convert their fleets to ArcReach systems.

Whereas, welding once was considered a high-risk occupation, Miller's continuous work toward improving welding technology means that the trade is becoming more inviting and accessible to future workers every day.



To learn more about the Miller ArcReach technology and accompanying products that are available in Australia, ask one of our experts at Welding Industries Australia:

www.welding.com.au/arcreach-technology

For more information, visit:
www.welding.com.au



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1300 300 884