

Afrox Hardgoods, ready to support you all the way

African Fusion talks to Afrox's Dewald Bodenstein, Head of Hardgoods, and Johann Pieterse, MI Technical Manager, about Afrox's Hardgoods product offering and the comprehensive welding solutions Afrox can provide to fabricators.

“Afrox is here to support you all the way,” begins Dewald Bodenstein, the newly appointed Head of Hardgoods for Afrox. “Through our extensive network, we are well-suited to offer a wide range of products to service our customers’ needs. If you require technical advice on gas and gas welding equipment, arc equipment and welding procedures, then Afrox is your go-to place,” he assures.

Afrox can support its customers with a wide range of value-added services, from the renowned and highly sought after safety solutions, which bring peace of mind to any manager or business owner knowing that their workforce has the knowledge and skill to use gas and gas equipment safely and productively, to our total 360° welding solutions, whereby our accredited International Welding Engineer and International Welders can provide dedicated welding process, procedure and training support,” he adds.

“Being the exclusive and preferred supplier of numerous brands, not only into South Africa but into sub-Saharan Africa,

Afrox is well positioned to bring you quality products, such as class-leading Afrox Saffire Gas Equipment, Afrox Vitamax, Miller Welding Equipment, Hobart filler materials and our extensive range of Böhler filler materials,” continues Bodenstein.

The Miller slogan: ‘We build the quality welding products you need to help build our world’ rings true. Afrox supports this vision by backing the Miller brand. The extensive network can provide the correct welding equipment required for any application. Backed by machine repair partners nationwide, customers can have peace of mind knowing that, regardless of what happens, they will be supported.

For welding stainless steel pipe, Johann Pieterse continues, Afrox has a Miller-based solution. “We know that stainless pipe fabricators work hard. They now have the opportunity to work smarter by using the modified short-circuit GMAW process from Miller, Regulated Metal Deposition (RMD), as a substitute for GMAW and GTAW processes in the root pass.

“Pipe fabricators are particularly sceptical about short-circuit GMAW, and with good reason. With traditional GMAW, short circuits occur at erratic intervals and with varying intensity. As a result, the weld puddle undergoes considerable agitation. To prevent lack-of-fusion defects, the operator must work to control and manipulate the weld puddle. High-speed video demonstrates how the short circuit ‘explosion’ causes the weld puddle to splash up and freeze on the sidewall of the pipe, which is how cold lap occurs. It also leads to spatter and extensive clean-up time,” he explains.

Because it requires a great deal of skill to produce code-quality root welds with traditional short-circuit GMAW, many fabricators avoid the process, and many end-users do not include it in their list of approved procedures. Fortunately, technological advances are changing the game,” he notes.

With RMD™ technology, the welding system anticipates and



Dewald Bodenstein.



Johann Pieterse.

controls the short circuit, then reduces available welding current to create a consistent metal transfer. Precisely controlled metal transfer ensures uniform droplet deposition, allowing the welder to control the puddle more easily. High-speed video shows that, with RMD, stable short circuits create only minor ripples in the weld puddle, which in turn allow consistent tie-in to the sidewalls. With a stable and more controllable weld puddle, apprentice operators can quickly and easily learn to create uniform, high-quality welds, assures Pieterse.

For stainless steel pipe, Miller welding machines with RMD enhance welding quality and productivity. The process is easy to learn, enabling more work to be done faster and at a higher quality rate.

Another premium solution from Miller is ArcReach technology. The key feature of this technology is that Miller has eliminated the need for a control cable between the power source and the ancillary equipment. Communication between the power source and the equipment is achieved through the welding cables. “This means we can immediately increase the distance from the power source by up to a hundred metres, thereby getting rid of the clutter and only taking the ancillary equipment into hard-to-reach places. It also eliminates the high level of maintenance required by qualified personnel to maintain control cables and torch extensions on site,” explains Pieterse.

Key to making ArcReach possible is Cable Length Compensation (CLC™), which automatically ensures that the voltage at the arc matches the required set value. CLC™ compensates for the voltage drop in long cable lengths between the power source and remote components, providing the welder with the exact set values of voltage and current.

ArcReach technology can be used with multiple arc welding processes. A welder can use GTAW to weld an open root and then change directly to SMAW for the fill and cap by simply unplugging the GTAW torch from the Miller ArcReach Stick/TIG remote and plugging in the SMAW electrode holder. The system automatically senses



Afrox's Miller PipeWorxFieldPro range is purpose-designed for pipe welding projects.

the process change and switches from GTAW mode to SMAW mode.

Polarity Reversing technology automatically changes the polarity from DCEN to DCEP, and the current control is done directly on the remote.

Likewise, if the welder needs to switch to GMAW or FCAW, the welding cables can be connected to an ArcReach suitcase feeder, while the multi-process power source remains safely out of the way from the workstation. ArcReach suitcase feeders are also available in smaller 8-inch versions, which are ideally suited for use in workspaces with access restrictions.

Maximum benefit and cost savings are ultimately realised when the Miller ArcReach SmartFeeder is connected to the power source, as this allows for open root with RMD fill and cap welding to be performed with the same equipment, wire and shielding gas.

In addition, RMD eliminates the need for a hot pass, resulting in a process that often replaces the conventional GTAW process for large-bore pipe welding, delivering five times faster weld deposits compared to a traditional GTAW root and hot pass weld sequence. Once the root has been welded, the welder can immediately switch the wire feeder to GMAW-P mode and begin rapidly filling the weld, with capping done using the same mode.

The efficient process is ideally suited for welding with solid or metal-cored wire, which eliminates slag formation and slag inclusions. Using metal-cored wires adds even more productivity gains and cost-saving benefits, so it is recommended whenever a suitable consumable is available. Compared to conventional processes, RMD and GMAW technology is at least three times faster than traditional GTAW and SMAW, with productivity savings often exceeding 80% per kilogram of deposited weld metal.

“The procedures have been successfully

applied in large bore boiler pipe repairs, workshop build-up and cladding, as well as *in-situ* repair welding and replacement welds in power generation boilers and petrochemical gasifier plants,” says Pieterse.

“Welding parameters can be programmed and stored directly onto the SmartFeeder, or welders can store their own programs and settings on a memory card. These optimised settings are then immediately available to the welders as soon as their shift starts, and there is no need to spend valuable production time optimising the settings at the start of each shift,” continues Dewald Bodenstein.

The latest Miller addition to this system is a remote induction-heater system, which offers fast, safe, and precise pre-weld heating of up to 315 °C. The system is powered via the welding cables from the same multi-process welding power source used with the remote, the suitcase feeder or the SmartFeeder. A separate induction power supply is no longer required. Once pre-heating is complete, the welder can immediately start welding, with an absolute minimum of setup delay and without the need to move away from their onsite welding station.

Miller ArcReach technology, for which Afrox is the exclusive agency, combined with the GasReach MUPP shielding gas delivery system, offers an ideal Afrox 360° solution. The combination of Miller and Afrox equipment and quality delivers advanced technology, first-class consumables, and high-purity shielding gases directly to where they are used, eliminating the need to return to the power source to make parameter adjustments or to manage numerous shielding gas cylinders at the point of work. This provides optimum productivity when welding.

‘Don’t walk, weld’ is the key Miller phrase used to describe the benefits of ArcReach. This highlights the time-saving and safety advantages that result from



The class-leading Afrox Saffire Gas Equipment range and Afrox's 360° gas safety solution training bring peace of mind to any manager or business owner.

eliminating the need for welders to walk to and from the power source and their welding stations.

ArcReach systems are powered by the extraordinarily robust XMT 350 FieldPro with Polarity Reversing technology, which includes Auto-Line, which automatically adjusts to any input voltage from 208 V to 565 V. The same power source can be used for all the different ArcReach combinations described above. Initially launched in the early 1990s, the Miller XMT power source technology has undergone continual improvement and updates, and the power sources are well known for their reliability and robustness. The ArcReach technology can also be used with some of the well-known and reliable Miller engine drives, without losing any of the high-end control capability.

“The Afrox MI Team has been using its 360° Application Solutions Programme to solve real customer problems, thereby adding value to their operations over long periods of time. By surveying a customer site, we can extract valuable information to create a value proposition that addresses problems and enhances profitability. Following implementation, this is supported with ongoing customer support,” assures Johann Pieterse.

“The Miller ArcReach and Afrox GasReach combination offers new and unique opportunities to enhance welding profitability and safety across a wide range of industries, elevating modern welding technology to levels and locations previously unimaginable.

“Interested? Our Hardgoods MI Technical team would be happy to support you with your next welding project, because your success is our success,” he concludes.

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