

# smwgroup

engineering continuous improvement



## Manufacturing CAPABILITY STATEMENT

*Innovating to solve common industry challenges*

# INNOVATION: WE THINK DIFFERENTLY

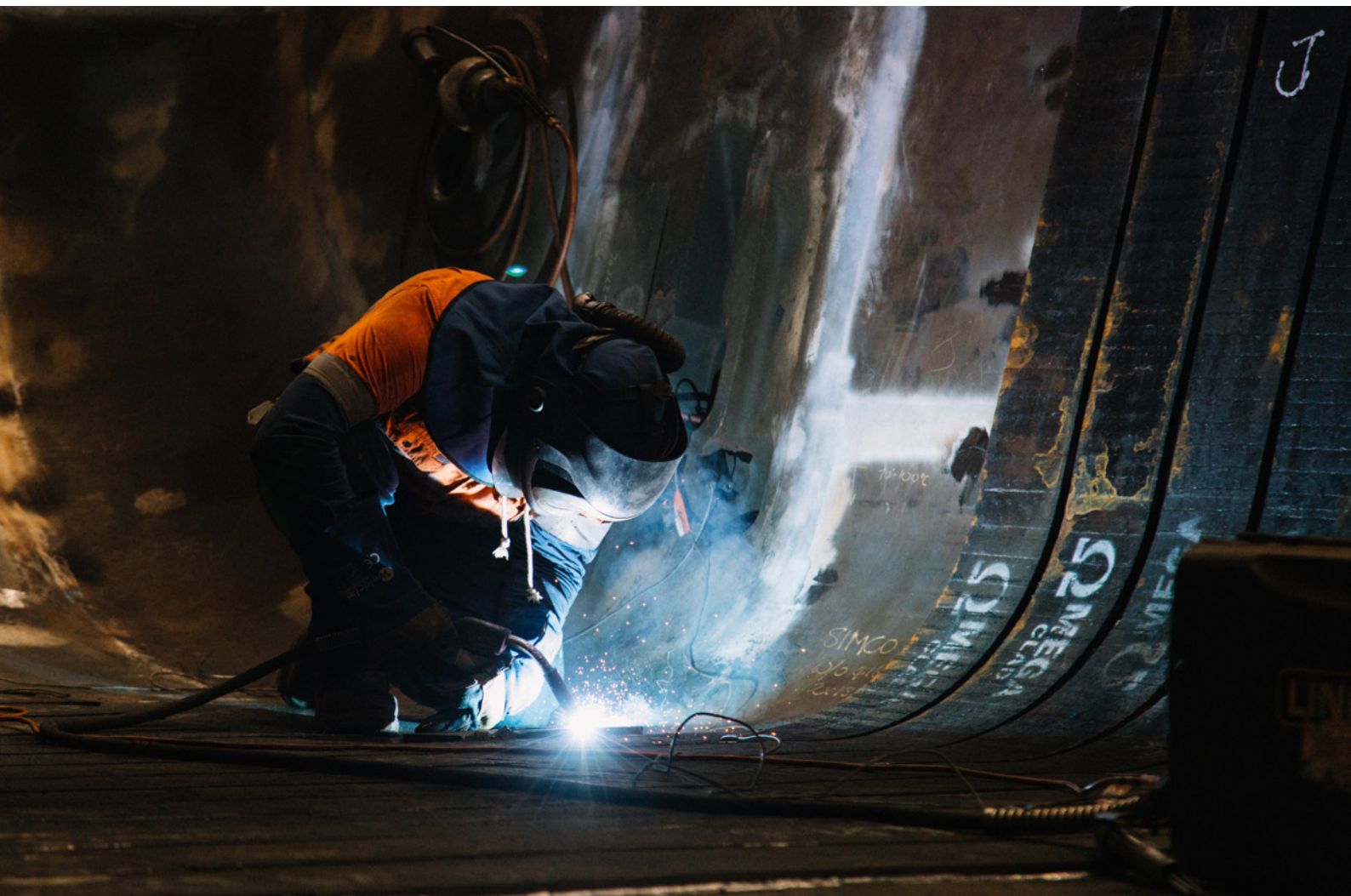
*When you choose SMW Group for your project, expect cost-saving, creative engineering and design, fabricated with the latest technology and resourceful people who are proud to be part of our best-in-class business.*

## THE SMW GROUP CONTINUOUS IMPROVEMENT ADVANTAGE

SMW Group continually invests in state-of-the-art, industry-leading equipment to support our aim of being 'faster, smarter and more efficient'.

Streamlined processes and automations set new benchmarks for safety improvements, time and cost savings.

In-house designed equipment and products solve everyday problems that are common to every mine site and industrial operation.





# WORKING WITH SMW GROUP

*SMW Group is committed to building client relationships for the long term. We deliver exceptional value through innovative approaches to every job.*

With workshops in Rockhampton and Mackay, our team of over 500 staff is experienced and disciplined in quality, safety and efficiency. We can perform a full fleet refurbishment with lower costs, without compromising on safety.

Our clients return to us time and time again, thanks to the integrity of our safety and quality work focus, the ease of undertaking projects and our continued efforts in customer service and relationship development.

**We are ready and able to support and collaborate with major companies thanks to a number of key factors:**

- We are certified to ISO 9001 and ISO45001.
- Our workshop facilities have the capacity to fit up to 15 dragline buckets, excavator buckets or rear dump trays in different stages of repair or manufacturing, comfortably together undercover at any one time.
- Our skilled onsite and project management staff represent hundreds of years of combined experience in heavy industrial, earthmoving, and mining fabrication, repairs, new builds and installations.
- We are available across the Bowen and Galilee Basins for urgent work and backlog repairs at short notice.
- SMW has an extensive database of employees ready to join our team in around the clock shift work operations to get your equipment refurbished and recommissioned in exceptional time.
- Both of our facilities are licensed to operate 24/7/365.
- Our extensive workshop facilities, road and rail hub proximity and local collaborative advantages are ideal for smooth and swift project completion.





# INNOVATION IN ACTION

## AUTOMATED PLASMA CUTTER AND WELDER (PCAW ROBOT)

*SMW Group is known for pushing the boundaries of manufacturing, employing innovative solutions to save our clients time and money. Welding is an everyday occurrence in heavy engineering, and quality control is key to success – so we decided to automate it.*

### WHY USE A ROBOT?

The SMW Group automated plasma cutter and welder (PCAW Robot) is a complete robotic solution for heavy industry fabrication and manufacturing needs.

Capable of numerous repair, rebuild and new manufacturing tasks, the PCAW Robot eliminates labour costs, reduces project timeframes and improves quality and safety outcomes.

Tested in heavy industry supply environments and backed up by the reputable Kawasaki brand, SMW Group's PCAW Robot revolutionises the way the resource sector looks at fabrication and maintenance.

The system also has real time quality control reporting systems like no other. Video monitoring, root gap analysis and multipass assessment are all real time and data logged.

### WHAT CAN IT BE USED FOR?

The advanced technology built into the PCAW robot allows for precision capabilities. The PCAW Robot has undertaken most heavy fabrication and manufacturing projects with any detailed specification required.

- Dragline and excavator bucket: repair and rebuild
- Dragline, shovel and excavator bucket: new fabrication
- Rear dump truck: tray repair, rebuild and new fabrication
- Dragline tub: new manufacture
- Track frame: rebuild and new manufacture

### CUSTOMER BENEFITS

*Safety outcomes are improved, errors are minimised, quality control is maximised.*

- **61.6% CHEAPER**  
Cost reductions of an average 60% on all relevant fabrication and manufacturing tasks
- **46.2% FASTER**  
Reducing fabrication time by an average of 47% across all suitable welding tasks
- **100% AUTOMATED**

## 3D SCANNING, MODELLING AND DESIGN

***Enabling repairs with accurate and detailed damage and wear records, and custom-manufactured solutions for existing plant and equipment.***

Building on our commitment to continuous improvement in engineering, we routinely use the FARO Focus 3D X330 scanner for repairs, fabrication and manufacturing in many projects.

With a range from 0.6m to 330m, the scanner produces a detailed point cloud database of any component and environment, from a bucket liner to Wash Plant chutes, conveyors and structural steel.

***3D Scanning and design removes trial and error, saves repair costs. We have designed, repaired, fabricated and installed infrastructure and machinery including:***

### Chutes and Platforms

- Safe access platforms that integrate seamlessly with infrastructure
- Small access stairs
- Large platforms, catwalks and multi-storey structures
- Grizzlies and chutes of all shapes and sizes

### Guard Railing and Conveyors

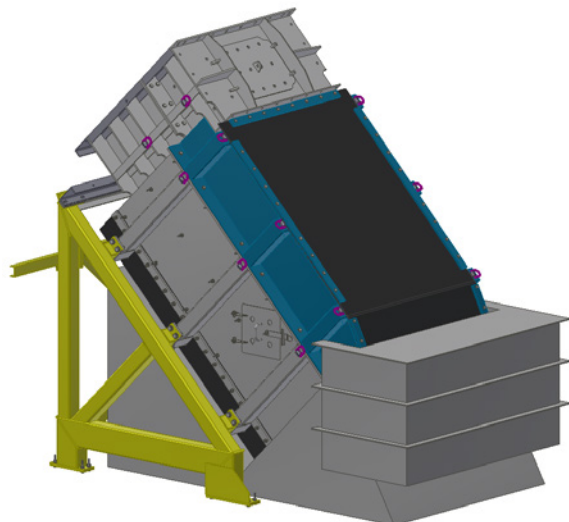
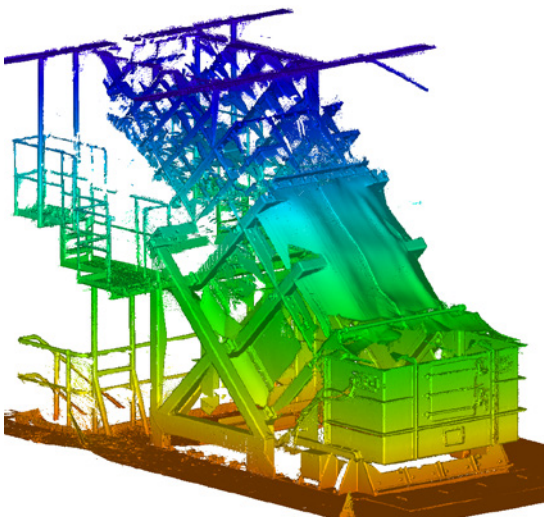
- New guard railing and screens for an existing conveyor system
- Upgrade existing screens
- Upgrade to underpans at train load out
- Upgrades to conveyor structures

### General Wash Plant and CHPP projects

- Extend wash plant structure, completed end to end
- Upgrades for safety and increased capacity
- Ongoing shutdown maintenance

### Bucket and Tray Repairs

- Repair and liner packages, customised to each part number
- Liners supplied at tailored size, thickness and profile for specific component
- 996 Boom stress testing analysis and investigate cracking points





# QUALITY FOCUS AT EVERY STAGE

## FINITE ELEMENT ANALYSIS

*Finite Element Analysis is an integral part of our accredited Quality Management System.*

- All in-house manufactured components undergo FEA before production sign-off.
- Potential weaknesses are identified early in design.
- We repeat the process until the strongest possible outcome is achieved.

## CASE STUDY: ULTRAHAUL TRAYS

The Ultrahaul is our maintenance-free heavy haulage tray, custom-designed for maximum productivity.

Design features address common issues such as wear, fatigue cracking and poor productivity. After we apply Finite Element Analysis to each tailored design, we produce trays that have:

- Light, strong skeletal design
- Radiused corners to reduce hang-up
- Increased angle on tray floor to reduce wear
- Current fleet of truck trays are 5 years maintenance free.

## REAL-TIME QUALITY ASSURANCE WITH VIDEO FEEDS

*Real-time video access, data logging and automated quality control.*

SMW Group uses 24/7 live video feed of fabrication processes. We provide an online app for clients to observe build progress at any time, saving the cost of site visits to check on projects.

We also use this feed for real-time Quality Assurance, ensuring the whole team has input to the highest quality outcomes for every job.

Where our manufacturing process is assisted by state-of-the-art robotic welding technology, the system also creates a live Quality Assurance data log for end user cost savings and manufacturing efficiencies, coupled with the security of weld quality on large, lengthy structural plate joins.

Another feature of the system provides automatic temperature control to hold structural plate and welding wire to strict tolerances. The system will automatically disengage the process if temperatures exceed or reduces outside these parameters.



# SOLVING ON-SITE PROBLEMS

## REMOTE-OPERATED HIGH-PRESSURE CLEANING

### *A safety-first approach to industrial cleaning.*

SMW Group's Clean Team Remote-Operated Cleaning Truck represents a new approach to industrial cleaning, with operator safety, productivity and uptime at the forefront of our design.

#### **The Remote-Operated Cleaning Truck is ideal for high-pressure cleaning of equipment including:**

- Heavy line excavator boom, stick & super structure
- Overburden drills, masts and heads
- Rope shovel handle, dipper arrangements
- Rear dump and coal body tray build-up removal
- All Working at Heights high-risk activities.

#### **Our Hiab-mounted high-pressure hot wash cleaning truck:**

- Eliminates working at heights
- Ensures the operator is on the ground, a safe distance away. Remote operation through console control.
- Eliminates the risk of machine failure with an employee in a basket
- Eliminates potential eye and skin injuries from back-spray of material or water

## EXCAVATOR BUCKET PIN PULLER

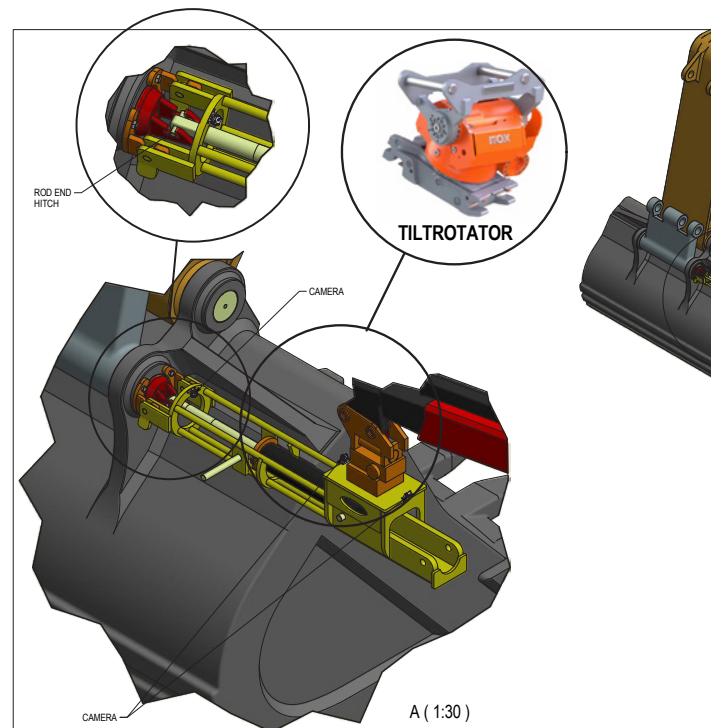
### *Reducing injury risk during removal and replacement of attachment pins.*

SMW Group has designed and engineered a Pin Removal and Replacement Tool to reduce close manual handling, multiple operators, and uncontrolled and unsupported bucket components that can weigh up to 1 tonne.

#### **SMW Group's solution:**

A hydraulic, remotely operated pin removal tool with the versatility and flexibility to be used on various earthmoving machines and environments. Features include:

- Utilising remote operated VLC, with four remote mounted cameras feeding operator's console and viewing screen.
- VLC-mounted pin pulling or pushing attachment that locks into the pin on a pre-fitted hook arrangement.
- Cradle arrangement to support the removed pin, to eliminate the potential for pin movement, uncontrolled falls and machinery damage.
- Dedicated medium-rigid vehicle that supports the pin removal tool and can hold and relocate the removed pin, and hold the replacement pin for re-assembly.
- SOP for machine operation that ensures protocols are in place to lock out VLC and excavator swing during the removal and replacement process.



# IN-HOUSE PRODUCT INNOVATION

## ULTRAHAUL

*Proven results of 40% efficiency gains over standard OEM trays.*

With decades of experience in tray repairs, SMW Group have innovated to solve common design and maintenance issues. Designed for specific site geologies, Ultrahaul trays are proven to increase payload haulage and cut maintenance budgets, year on year.

### Engineered and manufactured with productivity in mind

- Unique skeletal design to maximise strength and minimise corrosion
- Balanced between lightweight and durable
- Standard radiused corners to reduce material hang-up
- Increased angle on the tray floor to reduce floor wear over time
- Engineered for the specific density of a site's material
- Process approach to fleet fabrication

### Customisable Design Criteria

An Ultrahaul tray is customisable to any or all of the following criteria, plus additional site requirements:

- Payload capacity and fill factor
- Tray width, tray height and maximum side height for loading
- Ground clearance
- Load positioning and tray lowered indicators
- Side lights
- Rock ejectors
- Eyebrows
- Headboard position
- Tray liner position and composition

### Case Study: Ultrahaul Trays on Site

In 2016, SMW Group delivered a fleet of nine Caterpillar 793D Ultrahaul trays to a client in the Bowen Basin, following initial testing of the tray design on site.

The trays were designed to OEM specifications and engineered to suit the site's specific material.

The trays are currently achieving maximum truck design payload (plus freeboard) and are monitored by SMW Group's Product Support team to ensure their effective life in the field is being met. These coal trays have increased productivity of the trucks by 40% by optimising tray size to suit the mined product.

To date, the underbody rib design is entirely maintenance-free.

**Ultrahaul - clearly ahead of the pack with SMW Group's design solutions including:**

- Robotic process manufacturing
- Finite Element Analysis
- Quality Assurance to ISO 9001
- whole-of-life costs through leasing and integrated wear packages







## ULTRALIFT

### *Innovating safe lifting and moving heavy equipment on site and around workshops.*

SMW Group design, engineer and produce Ultralift mobile straddle carriers to eliminate the time, cost and safety restraints of complex crane lifts. As a fully mobile solution, the Ultralift can be positioned wherever a truck can go on site.

- eliminate complex crane lifts
- remove the risk of operator injury
- eliminates the need for specialised operators
- reposition trays, buckets and other heavy equipment as you wish
- save the cost of frequent crane hire

#### **Use the Ultralift to:**

- Change out trays onto truck bodies – ideal for smaller mines
- Reposition dragline buckets during shutdowns
- Reposition components during maintenance and repair
- Drill mast removal and replacement
- Move components to abrasive blasting and painting facilities
- Load trays or buckets onto floats to send for repairs and maintenance
- Change, move or repair engines, water cart tanks and other heavy equipment
- Clean up around the site during downtime, relocate scrap without complex logistics

#### **Designed for stability and safety**

- Lowered risk with a controlled, straight 4-post vertical lift
- Eliminated risk of cranes tipping or accidents in high-wind environments
- Operator safety at the forefront with remote operation
- Risk-free, improved operator visibility and accessibility
- Lowered risk in logistics of loading heavy equipment
- Ability to easily reposition heavy equipment in the workshop/yard, keeping safety first

# FIT-FOR-PURPOSE SOLUTIONS

SMW Group has never accepted the status quo when it comes to the delivery of a project. If our team of in-house engineers can build a solution to specifically suit the need of a client, we will.

## **Examples of these fit-for-purpose solutions include:**

- Our award-winning hydraulic lifting system
- Our complete design and build of an amphiroller for an industry client
- The use of automated butt welding system to deliver quality pipe welding.
- The ability to design and build a materials processing plant solution for a client in the Pilbara, Western Australia as SMW's solution was the most cost and time effective.

***SMW Group will take the same innovative approach to any project that we are awarded.***





# SAFETY, SYSTEMS AND QUALITY

*Operating across the Bowen and Galilee basins and beyond, SMW Group has developed extensive management systems to ensure our safety, quality and service remains consistently at the highest levels.*

We are dedicated to the safety and wellbeing of our team and yours. To this end, we maintain a full suite of safety and quality certifications, including ISO 45001 and ISO 9001.

SMW Group complies with the provisions of the Workplace Health and Safety Act 2011 and its associated Regulations, Codes of Practice and Australian Standards.

We aim to achieve zero workplace incidents and accidents at all our operations and as such we place the safety of employees, contractors, and the public as our first priority.

SMW Group is committed to working with you to ensure any of your site-specific requirements are incorporated into our procedures where necessary.

**We work above Australian and International standards in everything we do, including being supported by:**

- ISO 9001 Accredited (including our PCAW robot)
- ISO45001 accredited Safety Management System to ensure continuous improvement of systems
- Safety, Health, Environment, Community and Equal Opportunity Policies and Procedures enforced across our operations
- Notable community supporter with a significant range of sponsorships and other activities supporting CQ





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