

REACH YOUR PEAK



WORLD CLASS RECLAMATION
AND MANUFACTURING SERVICES
**TO IMPROVE YOUR UPTIME AND
BOTTOM LINE.**





COMPANY PROFILE



HMG HARDCHROME PROVIDES
WORLD CLASS RECLAMATION AND
MANUFACTURING SERVICES TO IMPROVE
YOUR UPTIME AND BOTTOM LINE.

REACH YOUR PEAK

HMG HARDCHROME STARTED LIFE AS A SMALL SURFACE FINISHING SHOP IN 1959. TODAY, WE ARE A GLOBAL LEADER IN THE RECLAMATION AND MANUFACTURE OF COMPONENTS AND ASSEMBLIES USED IN HEAVY INDUSTRIAL ENVIRONMENTS SUCH AS RESOURCES, ENERGY, SHIPPING, LIFT AND SHIFT, TRANSPORT AND MANUFACTURING.

HMG Hardchrome works with companies in Australia and around the world to improve the uptime of their equipment and machinery. Our business partners turn to us to increase their productivity, performance and profits by reducing their downtime and maintenance costs.

As a division of the Heavy Maintenance Group, we rely on many years of experience and cutting edge technologies to deliver the best solution for your requirements safely, efficiently and economically. We offer a wide variety of repair and refurbishment options as well as an ability to design and manufacture components to original equipment manufacturer (OEM) standards.

HMG Hardchrome's comprehensive service includes hardchrome plating, high velocity oxygen fuel (HVOF), arc spraying, machining, honing, and welding. Our workshops total over 10,500m² of factory floor space and span locations in Brisbane and Mackay.



We offer a wide variety of repair and refurbishment options as well as an ability to design and manufacture components to original equipment manufacturer (OEM) standards.

- ↪ HYDRAULIC CYLINDER RECLAMATION
- ↪ HYDRAULIC CYLINDER MANUFACTURING
- ↪ HARD CHROMIUM PLATING
- ↪ HIGH VELOCITY OXYGEN FUEL (HVOF)
- ↪ ARC SPRAYING
- ↪ TURNING – COMPUTER NUMERICAL CONTROL (CNC)
- ↪ GRINDING
- ↪ HONING
- ↪ MILLING
- ↪ BORING
- ↪ TESTING
- ↪ REBUILDING
- ↪ FINISHING
- ↪ FABRICATION
- ↪ MANUFACTURING
- ↪ BLASTING
- ↪ PUMP AND MOTOR REBUILD
- ↪ HIGH TORQUE CAPABILITIES

WIDE REACHING CAPABILITIES

HMG HARDCHROME HAS OPERATIONS IN BRISBANE AND MACKAY AND A HIGHLY EXPERIENCED WORKFORCE OF MORE THAN 230. WE HAVE ONE OF THE LARGEST, MOST TECHNOLOGICALLY ADVANCED WORKSHOP FACILITIES FOR RECLAMATION AND MANUFACTURING IN THE WORLD.

The facilities at HMG Hardchrome allow us to handle any size job from refurbishing the largest excavator ram in the world down to manufacturing the smallest bearing journal to OEM standards. We can reclaim and manufacture components to within the tightest tolerances found in the industry.

For every job, we follow a detailed disassembly, inspection and specification procedure before aligning the most appropriate engineering solution to your cost and time parameters. We have an extensive database for accurate cost estimation, strong project management skills and a proven track record in the delivery of jobs on time and within budget.

Quality is the cornerstone of our process. We adhere to the highest standards and regimes in our industry and observe a culture of continuous improvement and are constantly improving our technologies.

REACHING HIGHER STANDARDS

ISO 9001: OUR QUALITY IS ASSURED

OUR QUALITY IS ASSURED

The International Organisation for Standardisation which is headquartered in Geneva, Switzerland, has developed more than 18,000 international standards which are applied by business, government and communities worldwide.

With more businesses than ever before operating in a global marketplace, the need for international standards is growing; they give customers real peace-of-mind and an assurance of quality.

The ISO 9000 family of standards relates to quality management.

HMG Hardchrome adheres to the requirements set down in ISO 9001 – that is, we consistently provide products and services that enhance customer satisfaction and meet all applicable statutory and regulatory requirements.

Enjoy the confidence that comes from doing business with HMG Hardchrome; a company that consistently delivers the right products on time, to the right specifications.



**“THE ISO 9000 FAMILY OF
STANDARDS RELATES TO
QUALITY MANAGEMENT.”**

REACHING NEW HORIZONS

HMG Hardchrome worked with the University of Queensland on the new Scram Jet Project. Scram Jets are air-breathing supersonic combustion ramjet engines that could enable two hour flights from Sydney to London.

We built a specialised wind tunnel to test the effects of re-entry on materials and designs for the University's advanced Scram Jet prototypes. The wind tunnel is more than 30m long and weighs over 25 tonnes. The tunnel does not use air but high pressurised, super heated helium to generate wind speeds of more than Mach15, or 15,000km/hour.

This project was a first for HMG Hardchrome. Not only was it outside our standard scope of works involving hydraulic cylinders, but it also broke several records for machining size and weight. At over 500mm internal diameter, it was the largest job ever machined, bored, and honed. The attaching thread is also the largest thread ever cut at the company.

HMG HARDCHROME IS WIDELY RESPECTED AS A TECHNOLOGY LEADER IN THE RECLAMATION AND MANUFACTURING INDUSTRY. WE ACTIVELY EXPLORE AND IMPLEMENT NEW TECHNIQUES AND IDEAS TO PROMOTE CONTINUOUS IMPROVEMENT IN EVERYTHING WE DO.

Technology is a key value creator for our clients, helping to reduce costs, increase efficiencies and deliver the best possible outcomes.

HMG Hardchrome's ability to apply the most advanced, innovative and well considered technical advice available allows the company to successfully answer many unique and complex engineering challenges. We have delivered several industry firsts by breaking through boundaries and pushing out the edges of what can be achieved.

The company also has a proven track record for assisting OEM partners to enhance their product quality through the application of innovative research and development solutions.

REACHING GREATER HEIGHTS

NEW STANDARDS IN SAFETY.

At **HMG Hardchrome**, we are committed to providing a safe and healthy work environment for all. Founded on the belief that all incidents and injuries can be prevented, our health and safety program was developed in accordance with AS NZS 4801:2001 and is subject to regular third party audits to ensure standards are maintained on all jobs.

The rigid implementation of our health and safety program integrates safety into all business practices and drives improvements in equipment, processes, work methods, and individual and group performances.

NEW STANDARDS IN ENVIRONMENTAL CARE.

HMG Hardchrome is supported by a first class environmental system which ensures we comply with all relevant laws and regulations and assists us to go further than the law requires. At all times, we operate in a manner that protects the natural environment and social surroundings, preserves biodiversity, prevents pollution and minimises waste.

Our facilities recycle waste and are energy and water efficient, reusing water from our own capture systems and utilising power saving programs sponsored by the Queensland Government. Our Brisbane facility is also surrounded by a pit to protect the surrounding environment against pollution or contamination.

We support these initiatives with a robust incident reporting system and an emissions reduction program to ensure the company maintains the highest levels in environmental performance in the industry.

HMG HARDCHROME'S HIGH PERFORMANCE CULTURE HAS HELPED THE COMPANY TO LEAD OUR INDUSTRY AND SET NEW STANDARDS IN NOT ONLY RECLAMATION AND MANUFACTURING BUT ALSO IN THE CRITICAL AREAS OF SAFETY AND ENVIRONMENTAL CARE.

The HMG Group Safety, Health and Environment Strategy forms an integral part of our enduring desire to create an environmentally friendly, sustainable, injury free and healthy work environment for all people who enter our workplaces.



REACHING FURTHER

HMG HARDCHROME HAS WORKED IN HEAVY INDUSTRIAL ENVIRONMENTS FOR MORE THAN 50 YEARS AND TURNED ITS EXPERT HAND TO THOUSANDS OF JOBS OVER THIS TIME. WE UNDERSTAND BETTER THAN ANY COMPANY THAT DOWNTIME CAN TRANSLATE TO MILLIONS OF DOLLARS IN LOST EARNINGS. WE HAVE RESPONDED TO THIS CHALLENGE HEAD ON BY LAUNCHING NEW PROGRAMS TO DELIVER GREATER UPTIMES AND COST SAVINGS.

New warranty replacement program

HMG Hardchrome's unparalleled commitment to quality ensures that every component or assembly we deliver is designed, engineered, manufactured and tested with one goal in mind – your complete satisfaction. That's why our range of services is backed with a warranty you can trust. Our 5000 hour warranty program is a written assurance that our products will perform to the highest standards and be free from defects in materials and workmanship. We give you the confidence of knowing that our service will provide you with the ultimate performance.

New components exchange program

We also maintain a small inventory of many popular components and assemblies, namely hydraulic cylinders, which allows us to change out your worn components quickly and conveniently. All exchange components are engineered to OEM standards and are available at discounted prices. Our off the shelf availability can help increase your uptime significantly while saving you money.

New priority service program

HMG Hardchrome's wealth of experience and superior plant capabilities enables us to turn jobs around quickly and to the highest standards. However, if you have no time to lose, we now offer a new Priority Service Program which allows you to place your job at the front of the queue for an agreed premium. Your job will receive priority, first class attention and be fast-tracked through every stage of our process from inspection through reclamation to final delivery.

A full-page background image showing two men in safety gear (hard hats, safety vests, and sunglasses) standing on a construction site. The man on the left wears a red hard hat and a high-visibility orange and yellow vest. The man on the right wears a white hard hat and a high-visibility yellow and green vest. They are both looking at a clipboard held by the man on the right. In the background, a large yellow construction vehicle, possibly a bulldozer, is visible on a dirt field under a clear blue sky.

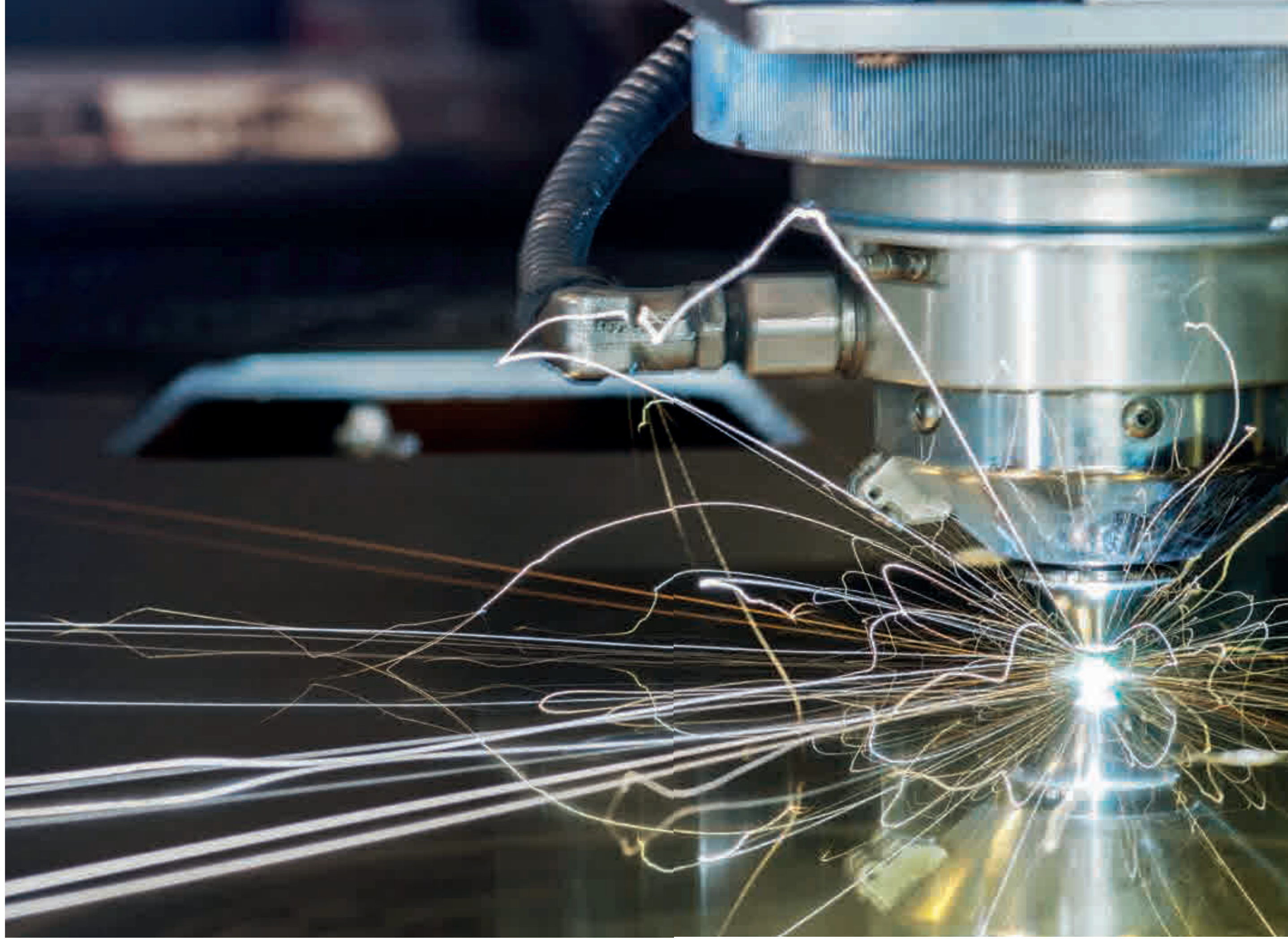
PEOPLE REACHING HIGHER

AT THE HEART OF OUR SUCCESS ARE OUR PEOPLE. THE HMG HARDCHROME TEAM SHARES A RELENTLESS DESIRE TO LEAD OUR INDUSTRY AND DO THINGS BETTER AND SMARTER. WE EMPLOY AND RETAIN THE BEST PEOPLE TO PROVIDE YOU WITH THE HIGHEST QUALITY SERVICE.

Our team encompasses a wide range of backgrounds, professions and experiences. It is this diversity that allows us to approach every project from different angles to identify the best solution for each project.

We support our position as industry leaders with incentives such as a reward and retention program, an apprenticeship program and policies that foster open communication and assure employee health and safety.

We encourage and challenge our people to learn. Our staff are provided with a full range of technical, operational and compliance training and our scholarship program helps three individuals achieve university degrees each year.



CAPABILITIES



CAPABILITIES

CAPABILITIES: WORK TYPE

WORK TYPE WE UNDERTAKE

MINING RECLAMATION OR MANUFACTURE

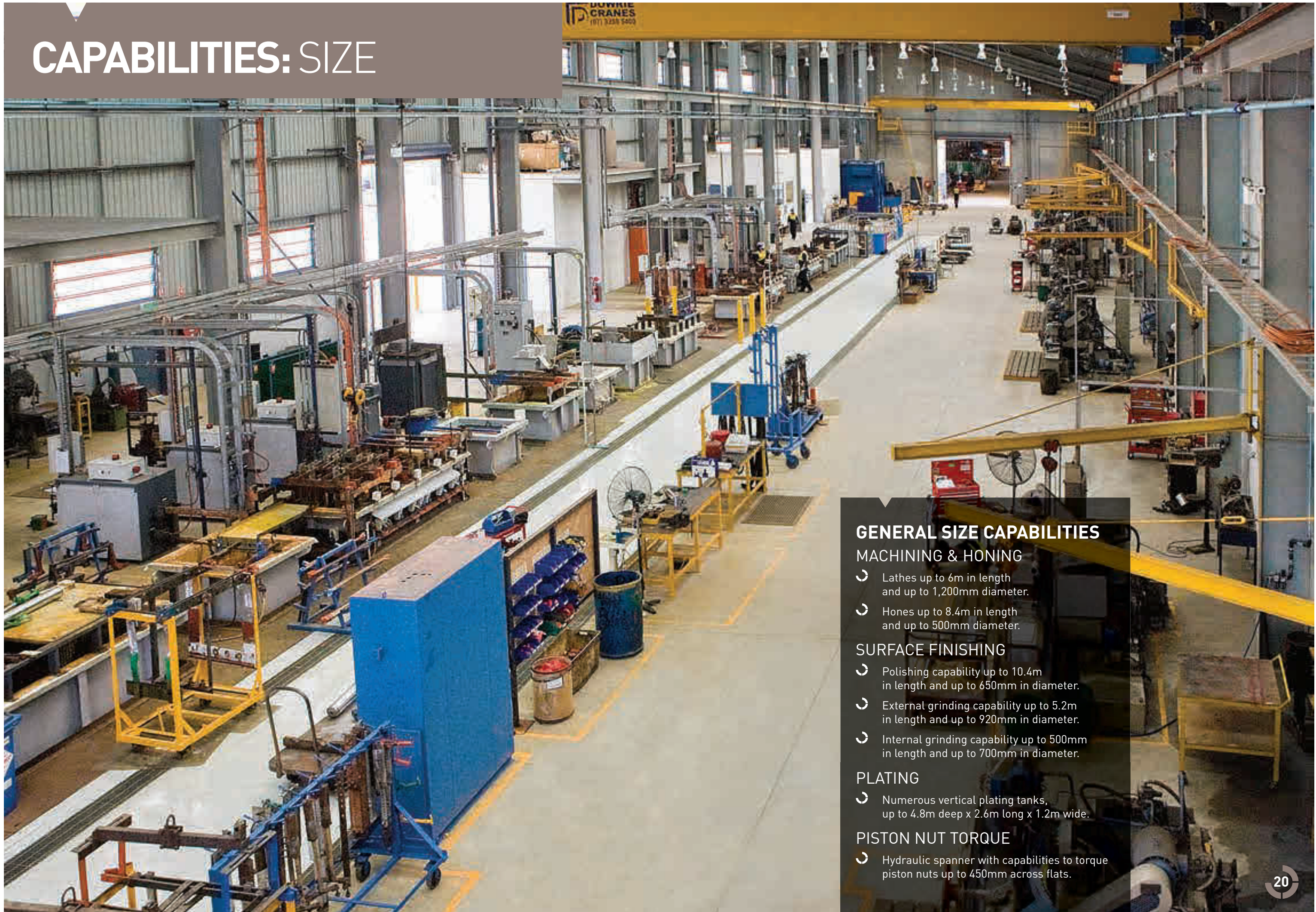
- ⌋ Suspension rods & cylinders
- ⌋ Wheel hubs
- ⌋ Wheel spindles
- ⌋ Pivot shafts
- ⌋ Stub axles
- ⌋ Screen decks
- ⌋ Brake drums
- ⌋ Hydraulic ram assemblies
- ⌋ Wheel assemblies
- ⌋ Hitch pins
- ⌋ Truck hoists
- ⌋ Stub shafts
- ⌋ Pump rotors
- ⌋ Pump shafts
- ⌋ Actuator shafts
- ⌋ Directional control valves
- ⌋ Hydraulic motors
- ⌋ Hydraulic pumps
- ⌋ Hydraulic couplings
- ⌋ General engineering applications

INDUSTRIAL & ENGINEERING RECLAMATION OR MANUFACTURE

- ⌋ Printing rollers
- ⌋ Carpet rollers
- ⌋ Extrusion dies
- ⌋ Bedplates
- ⌋ Worn bearing or seal diameter reclaims
- ⌋ Internal chrome applications for sleeves
- ⌋ Armatures
- ⌋ Pump housings
- ⌋ Bearing housings
- ⌋ Gearbox housings
- ⌋ Turbine shafts
- ⌋ Oil and gas – BOPs
- ⌋ Heavy duty engineering fabrications

COMPONENTS WHICH IN THE PAST HAVE BEEN CONSIDERED THROW AWAY ITEMS CAN NOW BE ECONOMICALLY RECLAIMED MANY TIMES OVER.

CAPABILITIES: SIZE



GENERAL SIZE CAPABILITIES

MACHINING & HONING

- ↪ Lathes up to 6m in length and up to 1,200mm diameter.
- ↪ Hones up to 8.4m in length and up to 500mm diameter.

SURFACE FINISHING

- ↪ Polishing capability up to 10.4m in length and up to 650mm in diameter.
- ↪ External grinding capability up to 5.2m in length and up to 920mm in diameter.
- ↪ Internal grinding capability up to 500mm in length and up to 700mm in diameter.

PLATING

- ↪ Numerous vertical plating tanks, up to 4.8m deep x 2.6m long x 1.2m wide.

PISTON NUT TORQUE

- ↪ Hydraulic spanner with capabilities to torque piston nuts up to 450mm across flats.

CAPABILITIES: HARD CHROMIUM PLATING SHOP

NEW (2008) HARD CHROMIUM PLATING SHOP

WHY USE HARD CHROMIUM PLATING?

Hard chromium (hardchrome) plating is an excellent method of reclaiming worn, corroded or incorrectly machined components.

Hardchrome is a metal coating which, when applied to a base material, provides a low friction, non-stick, hard, wear resistant surface.

Hardchrome is used in a wide variety of applications and industries. A few examples are as follows:

HYDRAULIC RAMS

To reduce wear and friction losses and to provide corrosion protection to the base material.

MILL ROLLERS

To reduce wear.

MOULDS

Easier removal of the component from the mould due to its nonstick properties.

PRODUCTION EQUIPMENT

Extended service life, no contamination, reduce wear, easier cleaning.

SURFACE PREPARATION AND FINISHING

Any ferrous and most non ferrous metals are suitable for hardchrome plating. Components which require less than three thousandths of an inch deposit are usually polished before and after processing.

Preparation for heavier deposits is achieved by fine turning or machine grinding.

“HARD CHROMIUM
(HARDCHROME) PLATING
IS AN EXCELLENT
METHOD OF RECLAIMING
WORN, CORRODED OR
INCORRECTLY MACHINED
COMPONENTS.”

PHYSICAL PROPERTIES OF HARDCHROME

HARDNESS

64-70 Rockwell c,
or 800-1250 VPN

MELTING POINT

1800°C

RESISTIVITY

13 microhms per cm³

CRYSTAL FORM

Body Centre Cubic

ATOMIC NO

24

COEFFICIENT OF FRICTION

0.2μ

COEFFICIENT OF LINEAR EXPANSION

8.1×10^{-6}



CAPABILITIES: MACHINE SHOP

“HMG HARDCHROME CAN HANDLE ANY SIZE JOB FROM REFURBISHING THE LARGEST EXCAVATOR RAM IN THE WORLD DOWN TO MANUFACTURING THE SMALLEST BEARING JOURNAL TO OEM STANDARDS.”

MACHINE SHOP

Some of the capabilities and machines we have include:

- ↪ Lathes up to 6m in length & 1200mm diameter.
- ↪ Honers up to 8m in length and 500mm diameter.
- ↪ Milling and boring machines up to 1600 x 1400mm tables.
- ↪ CNC machines / machining centres specialising in small or large production runs up to 3m in length and 13" diameter.
- ↪ Deep hole boring up to 500mm diameter.

- ↪ Deep hole drilling from 100mm drill size up to 240mm drill size.
- ↪ Welding and fabrication equipment. (including reclamation of eye bores and bearing journals).
- ↪ Hydraulic assembly and disassembly equipment.
- ↪ Crack testing including DPI or MPI.
- ↪ UT (including certificates).
- ↪ We are able to arrange material purchase not only from local suppliers, but with large overseas mills and foundries.

CAPABILITIES: CYLINDER ASSEMBLIES

CYLINDER ASSEMBLIES

- ↪ Manufacture or refurbishment
- ↪ Hydraulic or pneumatic cylinders
- ↪ Mobile or fixed plant cylinders
- ↪ Rotary or displacement cylinders
- ↪ Honing cylinder barrels
- ↪ Repairing cylinder eyes
- ↪ Re-tubing cylinder barrels
- ↪ Re-chroming cylinder rods
- ↪ Disassembly, testing and reassembly of cylinders
- ↪ Resealing cylinder groups
- ↪ Crack repairs
- ↪ Cylinder modifications
- ↪ Cylinder design
- ↪ Welding cylinder components
- ↪ Bronze overlay and CI welding
- ↪ HVOF thermal spray of piston rods
- ↪ Rod straightening
- ↪ OEM and after-market sealkit options to ensure maximum service life to suit all geographical locations
- ↪ Assembly and testing of hydraulic pumps, motors and couplings.

HMG HARDCHROME HAS THE STAFF, THE RIGHT EQUIPMENT AND TRACK RECORD TO HAVE YOUR REPAIRED OR RECONDITIONED COMPONENT BACK WORKING FOR YOU IN THE SHORTEST POSSIBLE TIME.

- ↪ REDUCED DOWNTIME
- ↪ NEW QUALITY OR BETTER
- ↪ CAPACITY FOR LARGE SIZES AND HIGH VOLUME

CAPABILITIES: ARC SPRAY

ARC SPRAY - TWIN WIRE ARC SPRAY

Arc spraying is a technology which protects or extends the life of a wide variety of products in the most hostile environments and in situations where coatings are vital for performance and safety.

Arc or metal spraying involves the melting of a raw material in wire or powder form, before propelling the atomised material towards the work-piece at high velocity to create a coating. The resultant finish is tough beyond belief.

HMG Hardchrome's arc spray facility in Mackay, Queensland is Australia's latest state of the art purpose built metal spray centre able to provide our valued clients with exceptional service, experience and skill.

Our well trained and experienced staff will match the system to suit your requirements and budget to get you operational as quickly as possible.

BENEFITS OF ARC SPRAY:

- Excellent, tenaciously bonded coatings
- Dense with low porosity
- Coatings with low metallic oxide
- Very high coating thickness available
- Optimised microhardness
- Predictable coating chemistries
- Smooth "as-sprayed" surface finish
- Excellent machined surface finish

SUITABLE FOR A WIDE VARIETY OF INDUSTRIES AND APPLICATIONS:

- Mining
- Plastics
- Power Generation
- Transport
- Marine
- Aeronautical
- Electronic
- Printing
- Paper
- Chemical
- Food and many more.

TYPICAL APPLICATIONS OF ARC SPRAY SYSTEMS:

- Reclamation and salvage operations
- Abrasion and erosion resistance
- Resistance to fretting, galling and adhesive wear
- Control of oxidation and sulfidation
- Atmospheric and heat corrosion control
- Resistance to cavitation effects
- Resistance to chemical attack

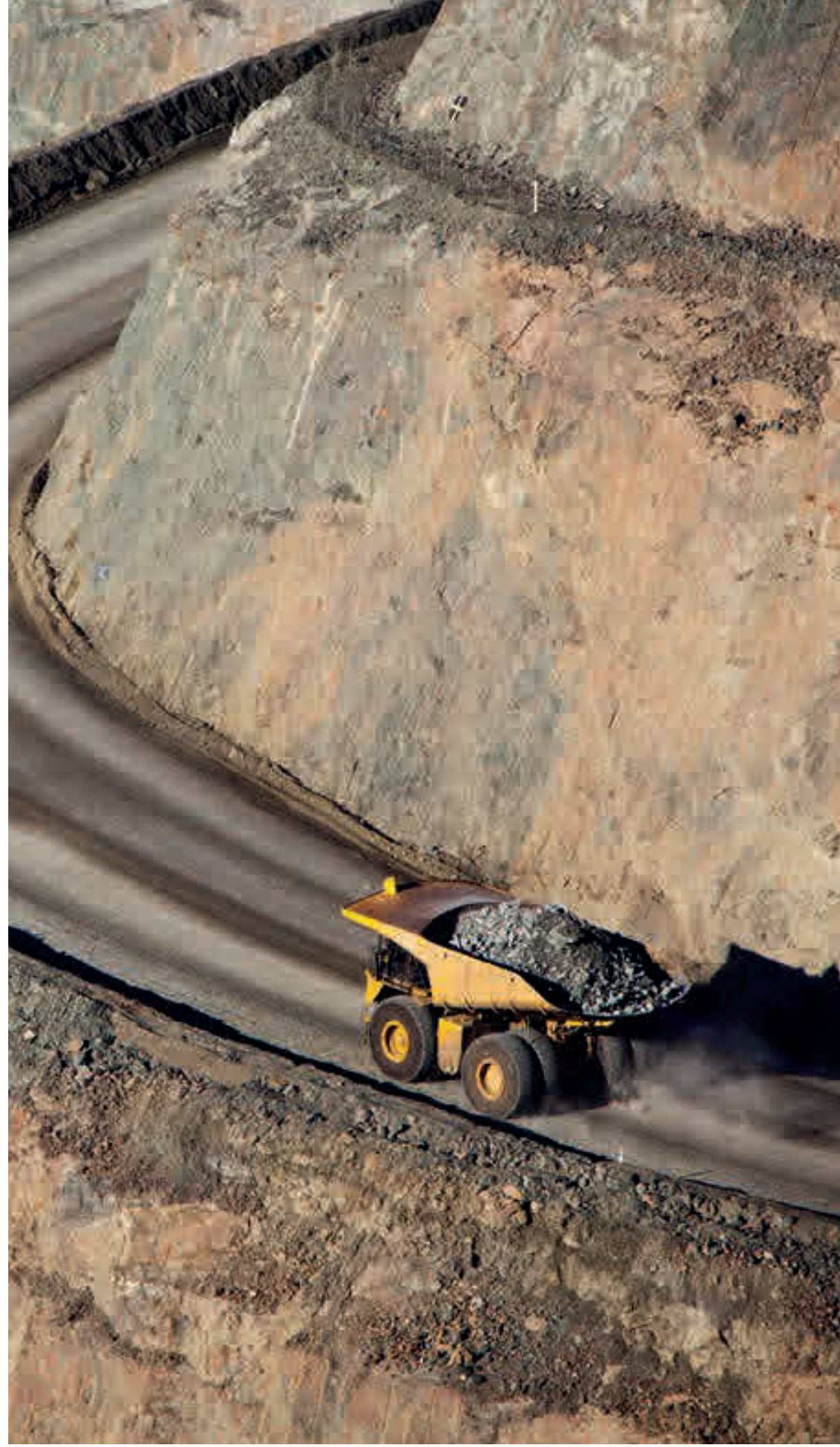
CAPABILITIES: PUMP SHOP

PUMP SHOP

Some of the capabilities for reclamations of pumps, motors and couplings we have include:

- ↻ Overhaul hydraulic piston pumps
- ↻ Overhaul hydraulic gear pumps
- ↻ Overhaul hydraulic rotary actuators
- ↻ Overhaul hydraulic motors
- ↻ Overhaul main control valve banks
- ↻ Overhaul pilot control valves
- ↻ Manufacture of large directional valve spools
- ↻ Re-chroming of spool's and body component refurbishment
- ↻ Manufacture of critical parts for pumps, motors and couplings
- ↻ Internal seal kit replacement
- ↻ Assemble and test of hydraulic pumps, motors and couplings.





GEOGRAPHIES

FAR REACHING

FROM THE REPAIR OR MANUFACTURE OF PARTS TO SITE SPECIFIC ENGINEERING APPLICATIONS, HMG HARDCHROME WORKS WITH COMPANIES IN EVERY STATE AND TERRITORY IN AUSTRALIA AS WELL AS PAPUA NEW GUINEA, INDONESIA AND NEW ZEALAND TO IMPROVE THE UPTIME OF THEIR MOBILE FLEET AND FIXED PLANT EQUIPMENT.

Our geographical footprint is now expanding as more and more companies from around the world seek to utilise our advanced capabilities to reduce their downtime and maintenance costs.

Apart from our world class facilities and technologies, HMG calls on a vast international network of business partners to offer door-to-door freight transportation capability. Our in-depth understanding of all modes of intercontinental transport including airfreight, seafreight and road and rail ensures parts are delivered to and from some of the world's most remote sites in the safest, fastest and most cost effective way possible.

Shipments are planned and controlled according to industry best practice to allow up-to-the-minute monitoring and tracking of your consignment.

HMG Hardchrome also relies on the appropriate expertise to manage the smooth clearance of shipments through various customs and quarantine barriers around the world. We are highly experienced in managing all aspects of regulatory and customs compliance including tariff advice, classification and valuation advice and Australian Quarantine Inspection Services (AQIS) accreditation.



REACH OUT

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