

# THE AUSTRALIAN MINING REVIEW

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**P24** MORE COAL AT MT PLEASANT



**P66** GOING WITH THE FLOW

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**AVWELD**

New Laser Cladding Technology Arrives **P62**

## Wearing it Well

**P90** | Wear parts are on the front line at mine sites to extract, excavate and move material. **Tutt Bryant Equipment** has chosen to distribute Combi Wear Parts above other products on the market for optimum wear protection.

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# Ground-breaking Solutions

**W**ear parts are on the front line at mine sites to extract, excavate and move material and they also need to protect the primary asset being used for material handling.

If the quality of the steel that goes into the parts is inferior, and if the casting process is not completed to a high standard, they will wear out sooner.

This not only leads to higher maintenance costs through the need to replace wear parts more regularly.

It also blows a giant hole in the budget by failing to protect the main asset such as the parent bucket, which will also need to be replaced sooner.

Lower quality wear parts also lead to more resistance, and therefore lost productivity, when extracting and moving materials.

The need to complete more loads to extract the required amount of material to meet KPIs leads to greater pressure on the excavators and loaders, requiring more maintenance and higher running costs such as those relating to fuel and tyres.

Lower quality wear parts may be cheaper initially, but the carousel of costs from a substandard product quickly adds up in the long term.

The Australian Mining Review spoke to Ian Jinks, who is the National BDM for Mining Products at Tutt Bryant Equipment, about why the company has chosen to distribute Combi Wear Parts above other products on the market for optimum wear protection.

## The Swedish difference

Combi Wear Parts (CWP) develops ground-engaging tools (GET) for the construction, mining and dredging industries from a custom-built foundry in Ljungby, Sweden.

The global company is an industry leader in the development of patented wear parts systems for excavator and loader buckets, as well as cutter heads.

Outstanding craftsmanship in steel manufacturing is an important part of Swedish history and culture, as it is at CWP, which has produced high quality wear parts since the 1930s.

The specialised foundry in Ljungby has been operating since 2004 and has been continuously updated to meet the latest market demands.

A new casting line for wear parts was installed in 2019 to boost capacity by 50%.

The foundry incorporates the most advanced steel melting techniques for casted steels in its manufacturing processes.

Ian said CWP has total control over the production process by producing the parts at the purpose-built foundry, from using the highest quality steels to the casting method, which has been continually improved over almost two decades.

"The quality of their alloy is a lot better than other parts of the world—it is less diluted," Ian said.

"Every batch is tested and if it is determined that the quality of material going into the casting is of inferior quality, it doesn't get cast and gets re-done."

"Aside from the quality of the material, another thing the Swedes do differently is in the way they actually cast.

"In other countries, they will use patterns made from wood with loads of sand or wax around it, which results in wear and is a much less accurate way of casting.

"In Sweden they use patterns made from very hard special steel with a minimal amount of sand (shell moulding technique), which allows their tolerances to be tight and precise.

"The important thing with GET is the tight tolerances between the adaptor nose and the tooth and the amount of contact it has on those faces.

"When you have got a low tolerance and a good contact area, there is no slop, which is what causes wear on the adaptor nose.

"The advantage with Combi is less wear means more teeth per adaptor, which means the adaptor life is longer, which lowers maintenance costs."

## C-REX

The C-REX wear part system represents the latest in teeth and adaptor technology and has been designed for excavators up to 120t and wheel loaders up to 150t.

The system has been proven to lower operating costs while making mounting and dismantling easier than ever before.

The circlip locking system requires a casting process that achieves a tight tolerance. The lock consists of only one loose part—a locking pin that can be reused throughout the lifetime of the system.

This has enabled the same lock to be used on ten different teeth in an application in Europe.

When one considers each lock can cost \$300 in the mining industry, the system achieves huge savings.

The precise fit and large contact surfaces also help to extend the life of the system with more teeth per adaptor, which leads to lower maintenance costs.

The other benefit with the system is the longer tooth to give it more wear surface area, utilising 70% of the tooth, as opposed to 50-60% for other systems.

"The shape of the tooth also means it stays sharper for longer, which means better penetration, which leads to less fuel consumption, less tyre wear and more loads per shift," Ian said.

Ultimately it also means less stress on the primary assets worth millions of dollars.

Another reason for the higher quality is

the foundry's methodical heat treatment process, which is done properly over several hours to achieve a hardness around the 530/500 Brinell mark for the C-REX teeth and yet keep their strength against impact loads.

The cheaper GET products are around 400-450 on the Brinell scale, which means they wear out faster.

The Combi products are moved straight into the heat treatment process to achieve better quality control.

The whole heat-treatment process takes time to achieve a high-quality level. At CWP's foundry, the steel is heated minimum four times to get the required result.

"Often the heat treatment process for lower quality products is a much faster process, to save money," Ian said.

"The complex casting and methodologies that go into the Combi products is phenomenal."

The C-REX system can be used in a range of applications from direct on-front, basted rock/ore, loading after crushing, digging in water, trenching or ripping and is suitable for use in a range of materials from gold to copper, iron and granite.

The advantages to operators are endless with over 15% more lifetime, a reduction in wear part cost and downtime, higher efficiency and higher productivity gained.

A C-REX system was tested on an excavator in a quarry environment to compare its performance with that of competitors.

Incredibly, the C-REX system lasted 25 days when put to the test, where a competitor's system only lasted 6 days.

A bucket would typically need to be rebuilt after 1000 hours of operation—when the C-REX system was put to the test in a quarry, the bucket's lifetime was well over 2000 hours.



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EX850 running the Proclaw W20 System.

**ProClaws**

The ProClaws are the predecessor to the C-REX and have had enormous success in extremely abrasive environments like South Africa, Norway and Russia.

While they have been used in quarries in Australia, the Proclaws have not yet been introduced into the Australian mining market – until now.

Designed for excavators and face shovels up to 250 tonnes and the largest wheel loaders, Proclaws offer a wide variety of benefits including better penetration and less stress on the machine while maintaining maximum sharpness throughout their lifetime.

They also come with a reusable and user-friendly mechanical lock, which is easy to mount and dismount, and is well protected while in use.

A stronger and more reliable adaptor leads to lower maintenance costs.

The Proclaws and new C-Rex adaptors both come with a wear indicator.

“The tooth will have a little wear mark or groove and once you can see that, it is time to change it,” Ian said.

“You will always know when it is time to replace the tooth so you can get the optimum wear life out of it.”

The adaptors also have wear indicators to prevent breakage.

Both the C-REX and Proclaws systems are also hammerless, which means the operator does not need a hammer to drive the pin out—music to the ears of occupational health and safety officers.

Cheaper systems involve the use of a chisel and hammer to bash the pin out, which carries the risk of metal chipping off and injuring a worker, especially if it lands in their eye.

Combi provides more support for machines through the provision of associated products including safety hooks, wear buttons, bucket shoes, side wear plates, lip protectors, inner liners, mechanical side and lip shrouds and wear cap adaptors.

**Environmentally Friendly**

Combi Wear Parts products are manufactured using electricity from renewable sources such as wind and water.

Independent studies show Sweden has lower CO2 emissions compared to other countries when it comes to producing steel castings.

Combi Wear Parts also combats climate change by using recycled steel scrap from steel manufacturing in Sweden.

Customers are also allowed to return and recycle consumed wear parts—allowing recycling at both ends.

Combi believes in offering clients sustainably sourced products and considers the carbon footprint of the upstream supply chain to strive for a greener future.

**Global Network**

Combi Wear Parts are distributed to more than 100 countries through a network of exclusive partners, strategically placed around the world.

C-Rex and ProClaws continue to find new markets with their annual turnover in 2020 growing by 36% and 33% respectively.

Tutt Bryant Equipment offers a national distribution network with a presence in all major cities and has just opened a branch in Karratha.

The site will double as a heavy lift and shift, crane and equipment site, with the personnel and stock to offer support in the key WA mining region.

“An important question in the mining industry is always what the support network is,” Ian said.

“We only distribute the highest quality products but we don’t stop there.

“We are willing to be creative on how we go about working with clients, depending on their individual needs.”

Tutt Bryant also offer free adaptors to clients changing from another system.

Tutt Bryant Group Limited is an industrial services organisation providing sales, hire, parts, service and engineering solutions to the construction, mining, engineering and trade sectors throughout Australia. **AMR**

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CREX R130 to suit 140mm Lip due early 2022.



994 running the Proclaw W40 system achieving up to 1800 hours per set of teeth.



CREX adaptor nose to tooth tight tolerance fit.



# Reduce your spend on GET?

## Just ask us how!

### Available in 25mm - 90mm lip sizes

#### PRECISE FIT WITH LARGE CONTACT SURFACES

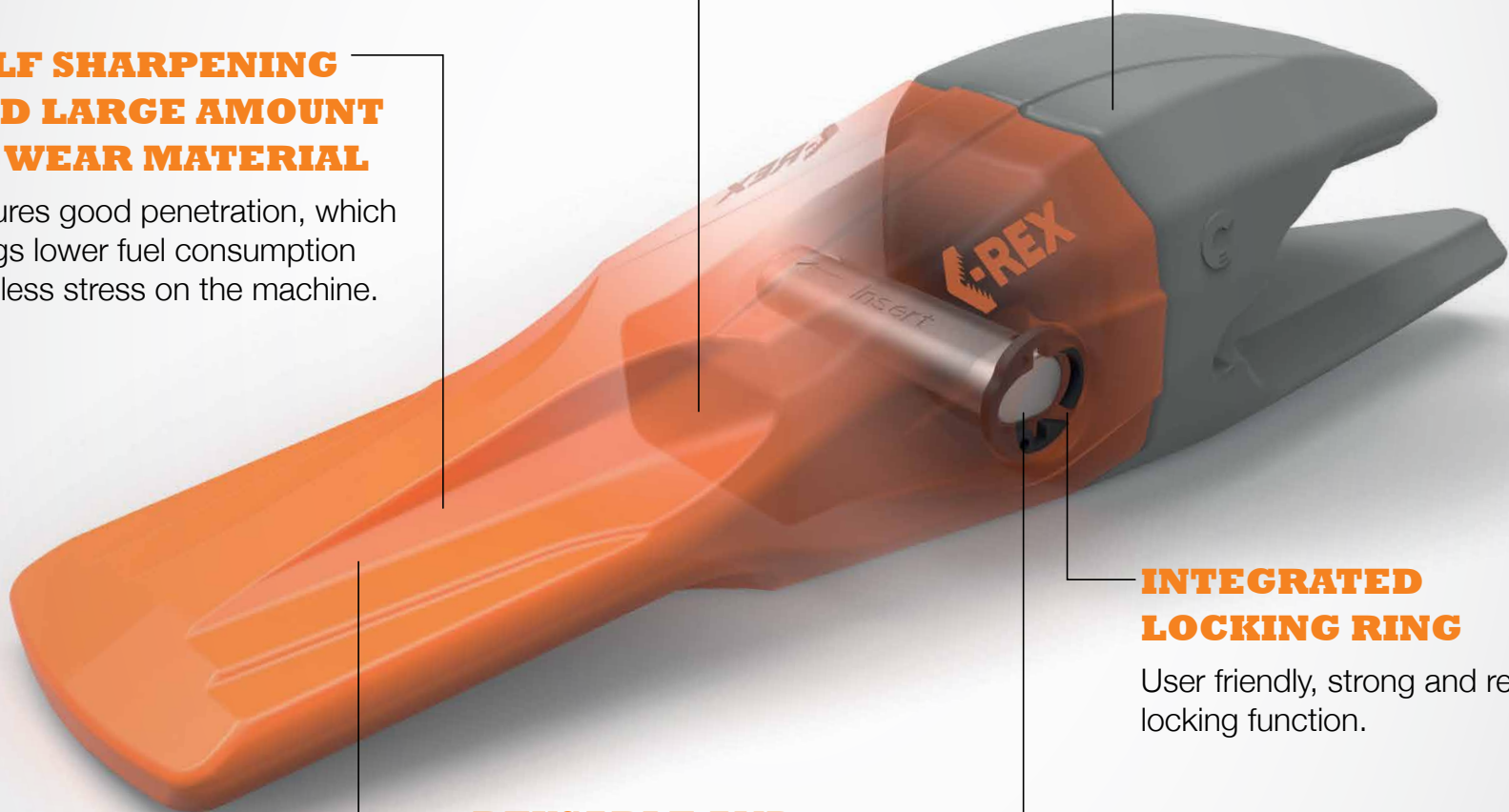
Extended life time and more teeth per adapter, which leads to lower maintenance costs.

#### SELF SHARPENING AND LARGE AMOUNT OF WEAR MATERIAL

Ensures good penetration, which brings lower fuel consumption and less stress on the machine.

#### STRONG AND RELIABLE ADAPTER

Extended operation time, which leads to lower maintenance costs.



#### INTEGRATED LOCKING RING

User friendly, strong and reliable locking function.

#### REUSABLE AND STRONG LOCKING PIN

Reduced costs for locks.

#### SWEDISH STEEL

A seal of quality and guarantees a responsible total solution with minimal environmental impact.

#### MECHANICAL LOCK

For user friendly, hammerless, safe and quick tooth replacement.

## Receive FREE C-REX adapters when you convert from another System



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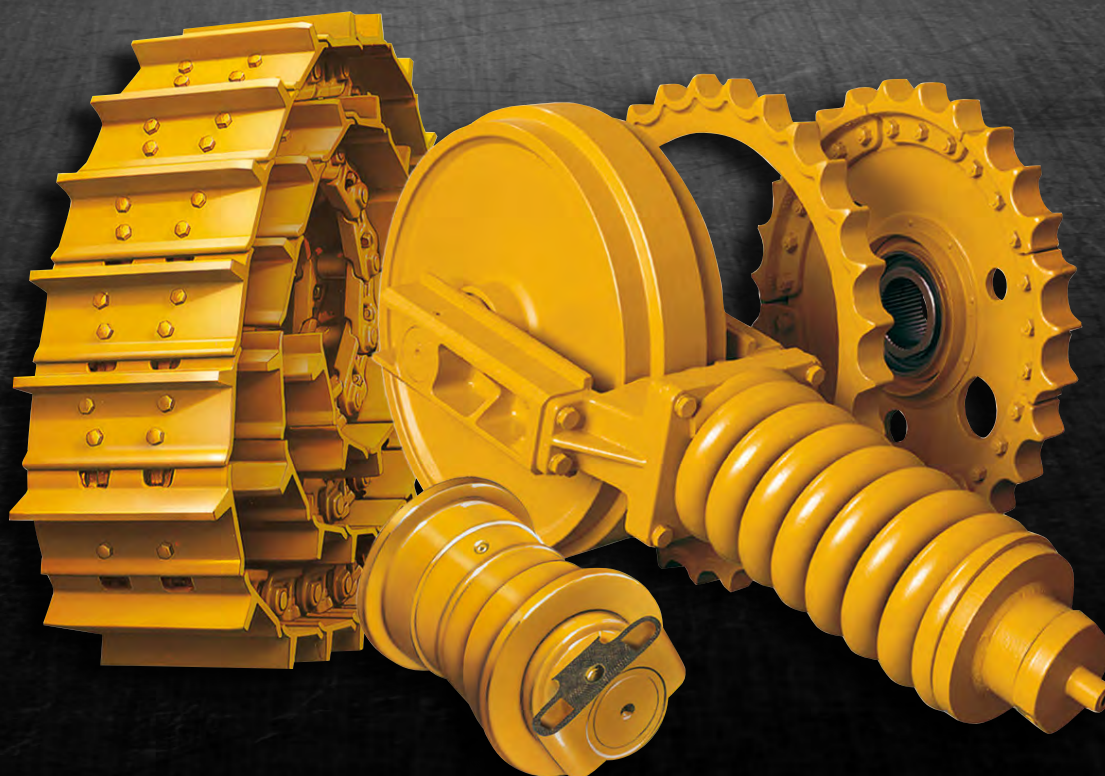


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- **D8**
- **D475**
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