

SPECIALISED TOOLING



BALL STUD REMOVAL TOOL

To suit Caterpillar 777, 785, 789 & 793 Haul Trucks

2025 - Revision 7

Make ball stud change-outs safer with the Ball Stud Removal Tool

Improve maintenance practices with the Geographe BSRT

Routine maintenance is critical yet challenging in the demanding and rugged terrains where mining trucks operate. Geographe, in collaboration with Fortescue Metals Group, identified a significant bottleneck in the maintenance of Caterpillar haul truck fleets: the removal of seized ball studs in steering arms, which requires hot works to lance the pins out.

What are the hazards associated with hot works?

The hazards associated with thermal lancing include intense heat, potential environmental damage, noise pollution, respiratory risks, and fire hazards that pose significant threats to workers and the surrounding working environment.

The Safer Alternative

To overcome this, Geographe engineered a solution: the patented Ball Stud Removal Tool (BSRT). Designed for efficiency and safety, this hydraulic tool simplifies the ball stud removal process, safeguarding both personnel and machinery. Building on the global success of the existing Ball Stud Removal Tool to suit 785, 789 & 793 trucks, Geographe has re-engineered the BSRT with the introduction of split retainers, now featured in the BSRT 2nd Generation and the BSRT to suit Caterpillar 777 haul trucks.

Same high quality, now with enhanced features

- Crafted from durable high-tensile alloy.
- Lightweight and portable design, suitable for workshop and in-field use.
- Heat-treated for increased reliability in demanding conditions.
- Optimised through Finite Element Analysis (FEA).
- The flexible two-part split retainers securely hold the Ball Stud Removal Tool in place during operation.
- Convenient user-friendly locking knobs on the retainers enable easy one-person locking and unlocking.



Reduces labour costs from prolonged fleet downtime due to traditional removal practices .



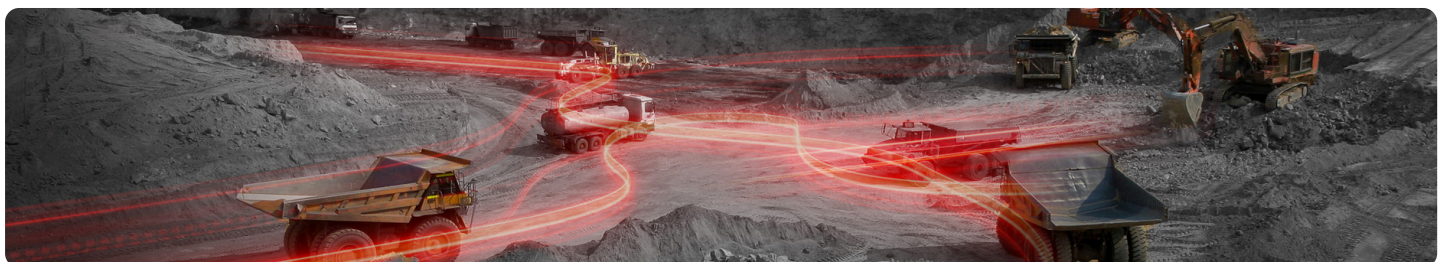
Minimises downtime associated with maintenance and repairs, further contributing to cost efficiency.



Increased overall safety practices by minimising the need for thermal lancing, hammering and grinding to remove seized ball studs .



Reduces occurrences of slippage with the BSRT's two-part split retainers, **securely locking the tool into place.**



Available to suit Caterpillar 7 Series Trucks



The Ball Stud Removal Tool Comes in 3 Kit Variations

- BSRT available to suit Caterpillar **777** haul trucks
- BSRT 2nd Generation available to suit Caterpillar **785, 789**, and **793** haul trucks
- BSRT 2nd Generation available to suit Caterpillar **793** haul trucks with Extended Life Brake Packs (ELBP)

	BSRT Kit (11542115)	BSRT 2nd Generation Kit (11544610)	BSRT 2nd Generation (with ELBP) Kit (11545125)
To Suit	Caterpillar 777	Caterpillar 785, 789 & 793	Caterpillar 793
Designed to Release	• Six studs on the standard steering arm.	• Six studs on standard steering arm. • Two centre steering arm studs on 793 haul trucks fitted with ELBP.	• Four studs on ELBP outer steering arm. IMPORTANT: This Kit CANNOT be used on CAT 793 Haul Trucks with standard steering arms
Kit Contents	• Retainer Assembly • Removal tool body design and rating certificate. • Hi-Force® Hydraulic cylinder rated to 20T. • Hydraulic cylinder certificate of test and conformity. • Cylinder Spacer Assembly 23mm thickness • Cylinder Spacer Assembly 45mm thickness • Laminated user manual. • BSRT usage log. • Customised waterproof wheeled Pelican™ case	• Retainers and blade. • Removal tool body design and rating certificate. • Hi-Force® Hydraulic cylinder rated to 50T / 10,000 PSI. • Hydraulic cylinder certificate of test and conformity. • Hydraulic cylinder adaptor to suit CAT 785 trucks. • Laminated user manual. • BSRT usage log. • Customised waterproof wheeled Pelican™ case.	• Retainer and blade. • ELBP Removal tool body design and rating certificate. • Hi-Force® Hydraulic cylinder rated to 50T / 10,000 PSI. • Hydraulic cylinder certificate of test and conformity. • Laminated user manual. • BSRT usage log. • Customised waterproof wheeled Pelican™ case.



**CHALLENGING YOU
TO EXPECT MORE
FROM YOURSELF
& YOUR ASSETS**



What customers think about the Ball Stud Removal Tool



"I have seen this tooling at another company and know the value that it gives."

**- Reliability Analyst,
Mineral Resources**



"Using the Geographe Ball Stud Removal Tool, the workgroup was able to separate 6 ball studs in under 15 minutes, this all done without heat or excessive stress on steering components."

**-Mobile Maintenance
Supervisor, South 32**



"The Caterpillar Haul Truck Ball Stud Removal Tool has reduced the time to remove ball studs from 12 hours per truck to just 1 hour. The risk of damaging jacks throughout the process has also been removed. This initiative represents a significant cost and time reduction while also improving safety for our maintainers."

**-Truck Maintenance Superintendent,
FMG Fortescue Metals Group**



 **geographe™**

**DESIGNED
TO DELIVER.**



ENHANCED PERFORMANCE

With over 1,000 Enhanced Performance (EP™) components now catalogued to suit OEM brands such as Caterpillar, Komatsu, Hitachi, and Liebherr, Geographe creates and manufactures products to outperform any wear parts in the market.



Extend the
Operational Life
of parts



Correct known
deficiencies in
OEM parts



Adapt existing
designs for specific
conditions



Cut maintenance
costs and increase
uptime

How we add value to your operation

At Geographe, our products are designed to deliver beyond expectations. We provide engineered solutions to achieve higher equipment utilisation and performance rates.

We collaborate with our customers to solve mine site challenges, helping to significantly reduce maintenance time, improve safety, and decrease up-front and whole-of-life operating costs.

Through innovative thinking and a pioneering approach, our dedicated team of skilled engineers, metallurgists, analysts, and developers design and engineer high-performance parts to support optimal performance and minimal interruptions to operating equipment in mine sites around the world.

Let us know how
we can help.

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It is not implied that any part listed is the product of the OEM.

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