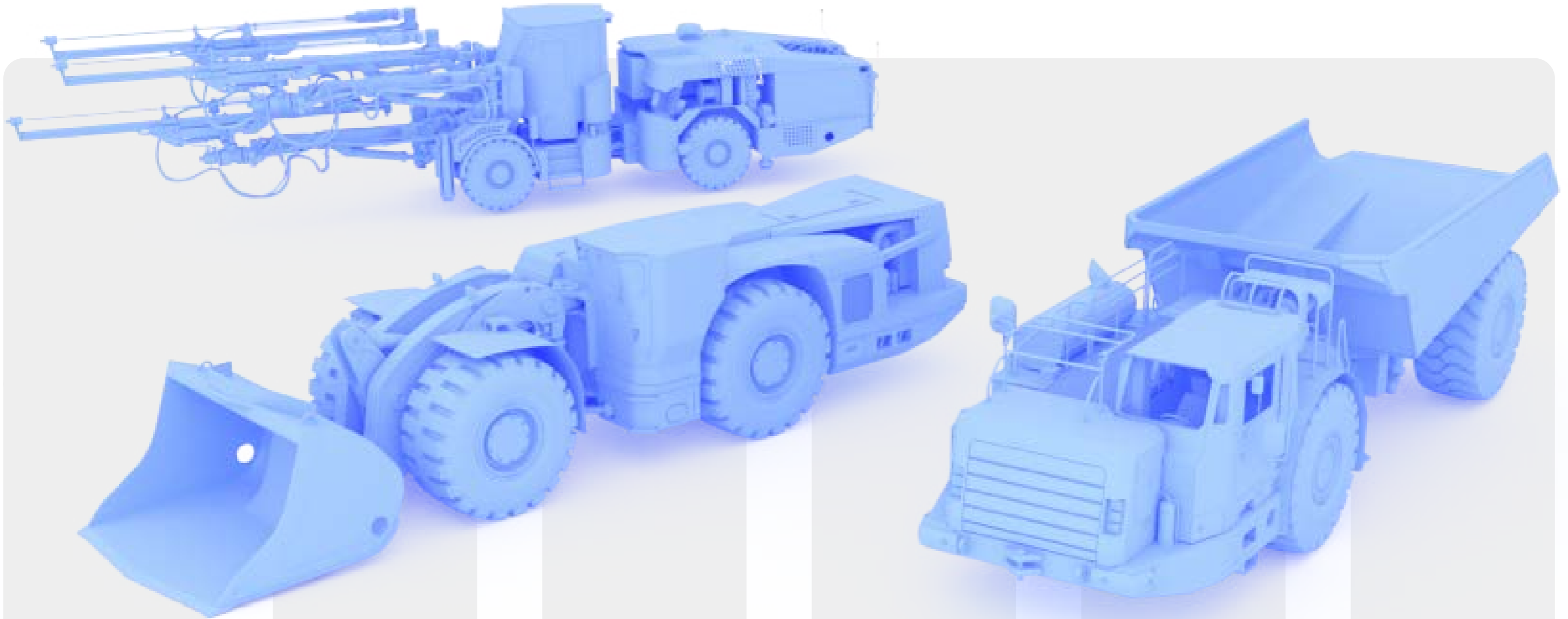


PROTECTION SOLUTIONS

Delivering productivity through
increased machine performance

Underground Machines



Engine idle down controllers

Designed to moderate extreme operating temperatures before final shutdown occurs on mobile equipment. A cost-effective means of protecting diesel engines and turbo components from excessive wear due to immediate shutdown without an idle period.



Park brake door alarms

Preventative action kits designed to stop machines from being left unmanned, in an unsafe condition ensuring a machine's park brake is engaged before an operator exits the machine



Engine protection systems

Extremely reliable, easy to install and simple to use. this system can be customised to monitor known problems and functions commonly associated with equipment failure.



Vehicle overspeed & engine over RPM systems

Warn and prevent operators from overspeeding and over-revving their machines to prevent machine damage from operator abuse.



Fuel cap isolation

Designed to prevent the machine operator from starting the machine and driving away with the fuel filler still attached, preventing damage to machines, refuelling stations and hoses.

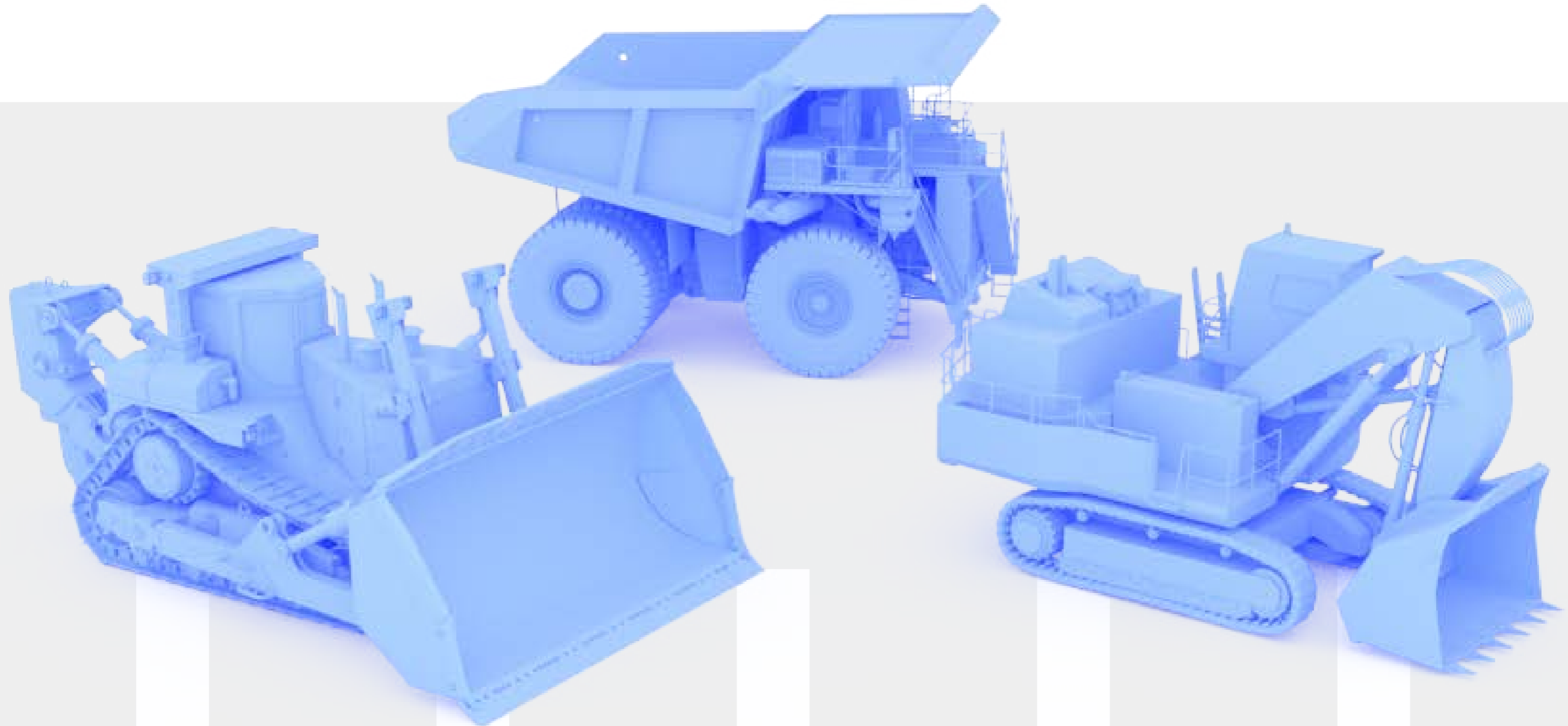


Raised tray warning systems

Minimise these risks by alerting the operator and personnel within the area that the vehicle's tray is in a raised position with a programmable ultra sonic sensor for the operator.



Surface Machines



Speed Limiters

This device can be further enhanced with the use of a Zone Controller which will enable different speed settings for different zones on site to ensure a machine is travelling at the optimum speed at all times to further improve productivity.



Park brake door alarms

Preventative action kits designed to stop machines from being left unmanned, in an unsafe condition ensuring a machine's park brake is engaged before an operator exits the machine.



Fatigue monitoring

Operator fatigue has been identified as a major contributor of machine damage and reduced productivity.



Power mode bypass

When the Haul Truck is carrying a load, "power mode" is engaged. And, when it is empty, it automatically transitions to "economy mode" to reduce overall fuel and maintenance costs.



Raised tray warning systems

Minimise these risks by alerting the operator and personnel within the area that the vehicle's tray is in a raised position with a programmable ultra sonic sensor for the operator.



Incline alarm systems

Warn machine operators that the machine they are operating is on a dangerous incline (at angles over 35° or 60°) with an audible and visual warning for a pre-set time after which the engine will be shut down.



Idle Timer

The Idle Timer was developed to ensure machines were able to cool down before they were shut down to prevent engine and turbo damage.

Having the Idle Timer in place allows shutdown to be managed through a configurable setting; eliminating damage and significantly reducing costly unplanned downtime which results in increased production. Immediate gains in machine availability and production hours were experienced across fleets.

Idle Timers are easy to install and maintain and require no ongoing maintenance. The benefits of the Idle Timer far outweigh the small cost involved in introducing the product.

One client reported the elimination of turbo damage to its fleet of trucks following the installation of Idle Timers; saving them thousands of dollars in repairs.

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Parts

11452	Idle Timer kit
12362	Excess Idle Timer controller
12532	Idle Timer with Park Brake Interlock controller
12535	Idle Timer with Start Inhibit controller
12534	Idle Timer to suit Energise-to-Stop Engines controller

Speed Limiters

The Muirhead® Speed Limiter controls the speed of machines to prevent accidents. However, the benefits extend to: greater fuel economy, reduced unplanned downtime, and extended life of all major machine components.

This small device is delivering big results in terms of productivity. In one case the Muirhead® Speed Limiter extended machine life by a further 2000 hours and reduced fuel usage by 40 per cent.

This device can be further enhanced with the use of a Zone Controller which will enable different speed settings for different zones on site to ensure a machine is travelling at the optimum speed at all times to further improve productivity.

The Muirhead® Speed Limiter is not restricted to just travelling speed, but can also limit engine speed. The Muirhead® Engine Overspeed System is designed to prevent major component damage and reduce engine life. The solution will monitor and prevent overspeed by limiting or restricting engine RPM to below or at OEM specified levels.

The Overspeed Systems are universal in design to allow for installation across all machine types and brands.

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Parts

7290	Electronic Throttle Speed Limiter
12607	Mechanical Throttle Speed Limiter

Park Brake Interlock

Entering and exiting large mining machines can be precarious due to numerous reasons beyond control, so RCT has come up with a solution to mitigate a risk it can control with the Park Brake Interlock.

This warning system reduces the risk of an accident resulting from a machine rolling when the park brake not been applied correctly. Improving machine use helps to drive productivity gains and extends machine life.

Introducing the Park Brake Interlock has proven to improve site's operating habits which, in turn has reduced machine damage.

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Parts

11377	Door Open Park Brake Warning
12848	Park Brake Interlock Seat Belt and Door Open Warning

Fatigue Monitoring

Operator fatigue has been identified as a major contributor of machine damage and reduced productivity. RCT has developed a range of easy-to-use Fatigue Monitoring systems to help combat the problem without disrupting production or increasing the risk of accidents.

The systems come in two options; Reflex and Active to cater to different requirements. The Reflex Warning System monitors the time it takes for the operator to reset the warning once it goes off. If the system detects a slower reaction time, the warning will ensue more frequently.

The Active Fatigue Warning requires the operator to react when prompted, however this warning can be programmed to operate at times fatigue is most prevalent. For example, one site found that operators working between the hours of 10pm-3am were most prone to fatigue. Upon implementation of the system, the user noticed a considerable decrease in operator fatigue and accidents.

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Parts

17112	Fatigue Warning Controller
17226	Fatigue Warning Kit

Fuel Lockouts

Safeguard operators during refuelling to prevent incidents such as driving off with the fuel nozzle still attached by ensuring the machine remains locked out, in a safe state for the duration of the daily task.

RCT's Fuel Lockouts are suitable across all machine types and brands and has proven to improve machine availability and operating practices.

Clients already utilising the Fuel Lockouts have eliminated damage to refuelling bays. This has saved companies in both repairs and downtime costs associated with operators driving off with the nozzle attached.

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Parts

5338	Mechanical Live Fuel Lockouts
8972	Electronic Live Fuel Lockouts
7811	Fuel Cap Lockouts

Incline Controllers

Machine roll overs on site are all too prevalent and results in costly and significant disruptions that interfere with productivity on site. RCT's Incline Controllers assist operators in combating the issue; empowering them with the information on their operating conditions and machine position, allowing them to make better decisions.

Although Incline Controllers can be equipped to any mobile machine they are particularly sought after for use on bulldozers, which often work on steep incline and operate at critical angles.

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Parts

1800	35 Degree Incline controller
4090	60 Degree Incline controller
6119	Fully Programmable 10 to 45 Degree Incline Controller

Engine Protection

Engine damage is costly and disrupts mine production for extended periods of time. To combat this and ensure long-term machine availability to maintain productivity, RCT designed the Muirhead® Engine Protection System (EPS) for heavy duty machines.

The Muirhead® EPS prevents engine damage if a fault was to arise. It has proven to be an industry leading product and as a result it is one of the most popular engine protection solutions available in the mining industry today.

This solution is programmable to three levels of protection in addition to being able to lockout operation in order to prevent catastrophic engine failure.

The kits can be configured to suit all machine types and brands; regardless of the size of machines. Muirhead® EPS should be included on all mining machines to prolong engine life increase productivity levels.

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Parts

3565	Six and Four Function Water Cooled Kits
3747	Six and Four Function Air Cooled Kits

Tray Lockouts

A haul truck is the critical link in the surface mining process in determining if production tons are met. Being able to prevent avoidable accidents and damage to these machines can ensure productivity targets are continually met.

Damage to a haul truck's tray is the most common occurrence, particularly with oversized or modified trays. To prevent this damage, RCT has designed Tray Lockout solutions to alert the operator or inhibit the tray from rising in a situation that could result in damage. These devices are now widely used to accommodate the increase in custom trays being installed on haul trucks to assist in increasing production rates.

Tray Lockouts are simple to install and maintain and configurable; delivering peace of mind to mining managers.

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Parts

12537	Raised Tray Warning Control
12595	Raise Tray Inhibit
6274	Tray Angle Kickout

Throttle Limiter

Safeguarding machines operating in extreme weather conditions is critical as an engine's RPM is raised too fast when a machine is started in cold conditions. This causes excessive stress on the machine as the oils and lubricants don't have enough time to spread throughout the engine.

To prevent this from occurring, RCT has developed the Throttle Limiter to restrict the RPM for a pre-set amount of time, or when the engine temperature reaches an acceptable level. The system prevents the engine from experiencing unnecessary stress on cold starts to extend machine life and increase productivity.

Kits are programmable to suit all operating conditions, are simple to install and easy to maintain.

[view online](#)



Parts

10975	Electronic Throttle Limiting
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Power Mode Bypass

Managing Haul Truck fuel consumption efficiently is an easy and effective way to help streamline operations on site.

The Muirhead® Power Mode Bypass ensures the "power mode" function on a Haul Truck is used correctly, every time. It's the easiest way to guarantee the longevity of the trucks and facilitate high productivity – which is what all mine managers strive for.

Mining operations across the globe are facing rising costs due to fuel price hikes and maintenance overheads and the Muirhead® Power Mode Bypass is helping overcome this by reducing these costs and assisting in the viability of an operation.

The innovative system can be installed on Komatsu 785-5 and 785-7 Haul Trucks with custom kits available for other haul truck models and brands where a "power mode" selection is available.

The controller is designed to automatically select either "power mode" or "economy mode" via an interface to the machine's switches. When the Haul Truck is carrying a load, "power mode" is engaged. And, when it is empty, it automatically transitions to "economy mode" to reduce overall fuel and maintenance costs.

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Parts

11337	Komatsu 785-5 and 785-7 Power Mode Bypass
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Note: Other Haul Truck models and brands are available upon request.



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