



UPGRADES AND ENGINEERED SOLUTIONS OFFERING CATALOGUE

Q1 - 2023



SANDVIK UPGRADES AND ENGINEERED SOLUTIONS

Ever thought of raising your equipment to higher standards? To increase their productivity or safety? Or to reduce cost of ownership or environmental impact?

For 150 years, Sandvik has been synonymous with high quality and has been the driving force behind many innovations, constantly developing new, more productive, more intelligent products and service.

But we also offer the opportunity of Sandvik product owners to take advantages of these new developments by allowing our customers to upgrade their existing machines.

All our Upgrades Solutions retrofit kits include only genuine Sandvik parts of the highest quality materials, so you can expect superior reliability and longer life than non-OEM alternatives.

Enjoy the peace of mind that comes with putting top-of-the-line parts engineered with the latest technologies to work in your equipment.

Special Upgrade requirement? Thanks to our highly experienced engineering team, we can design specific custom Upgrade solutions and modify your machine to adapt it to your specific needs to allow you to accomplish your new tasks at a lower investment.

Sandvik Upgrades and Engineered Solutions delivers extra and better lifetime to your equipment.

**"We make it stronger, smarter, faster, safer and cleaner.
Yes, we make it possible."**





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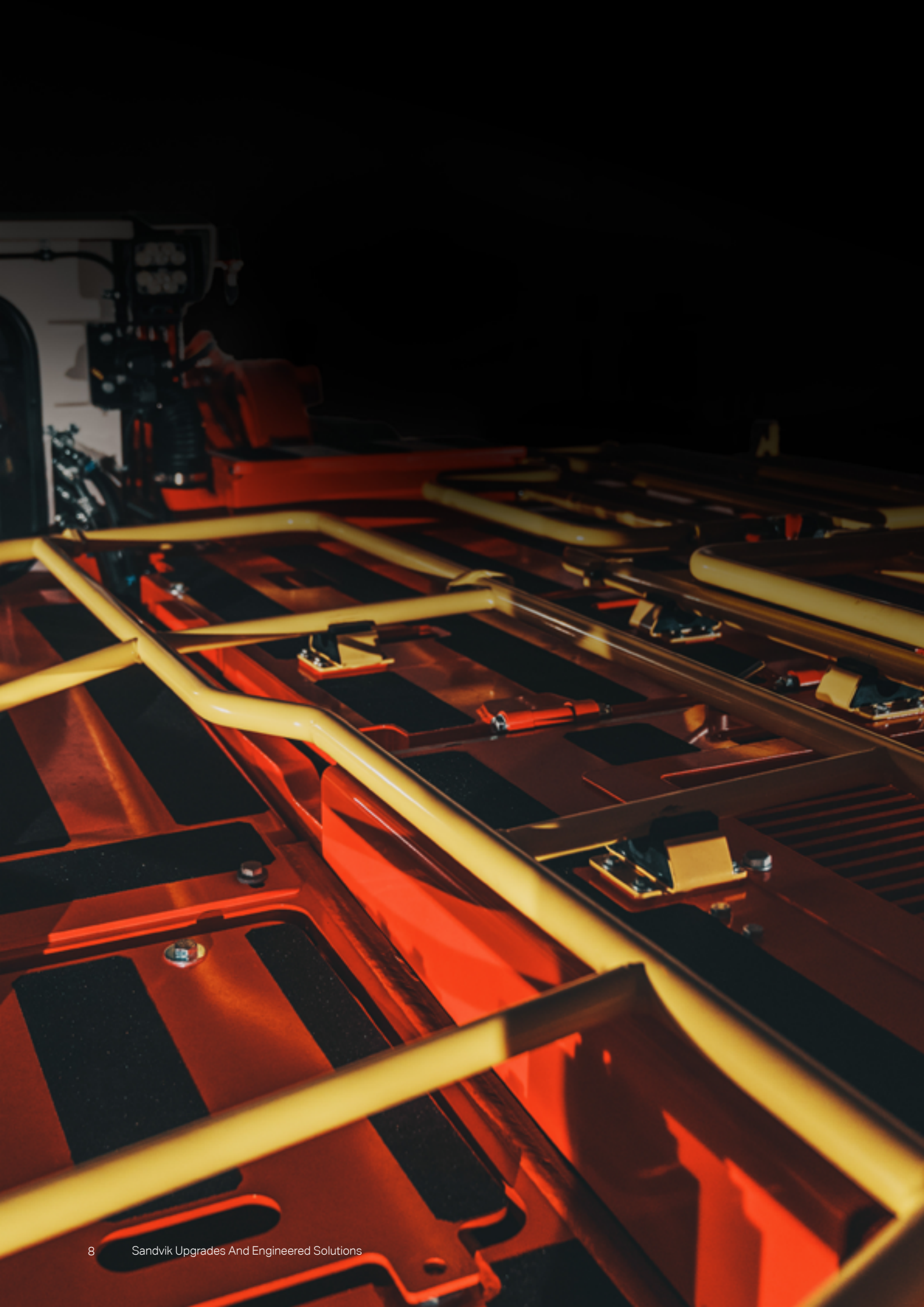
UPGRADES SOLUTIONS APPLICATIONS AREAS

ACCESS NEW TECHNOLOGY IMPROVE YOUR PRODUCTIVITY

At Sandvik Mining and Rock Technology we continuously invest in R&D to take advantage of the latest, smartest technology in order to boost productivity.

We want to extend these technologies to our existing customers by offering upgrades to their existing equipment, enabling them to enhance gross profits and maintain their competitive edge.

Sandvik Upgrades & Engineered Solutions provides access to technology to significantly improve the productivity of your current machine. Our enhancements include retrofitting integrated weighing systems on trucks and loaders, adding instrumentation systems to drill rig booms and upgrading rock drills to more powerful models.



UPGRADES SOLUTIONS APPLICATIONS AREAS

IMPROVE SAFETY, HEALTH AND SUSTAINABILITY

Safety is our top priority at Sandvik Mining and Rock Technology. This is reflected in our commitment to develop new technology for improving equipment safety and reducing the environmental impact of operation. We aim to go beyond continuous improvement, by applying special upgrades to our existing customers equipment in order to efficiently achieve the highest safety and environmental standards.

Sandvik Upgrades & Engineered Solutions gives you the technology to improve the safety and sustainability of your operations. Retrofitting to a modern, more sustainable engine to limit gas emissions and installing safety rails on truck platforms are just two of the possible upgrades available.



UPGRADES SOLUTIONS APPLICATIONS AREAS

INVEST IN THE LATEST IMPROVEMENT REDUCE THE LIFECYCLE COST

As your productivity partner, Sandvik Mining and Rock Technology will use our expertise and solutions to help you reduce the running costs of your equipment, thereby enhancing your operational efficiency and increasing your competitive edge.

Sandvik Upgrades & Engineered Solutions gives you access to improved technology, allowing savings on ownership costs as well as improved maintenance performance and consistent productivity. Offered upgrades include engine retrofitting to a modern, more sustainable model, and rock drill model conversion with a stabilizer system to prolong tool lifespan.



UPGRADES SOLUTIONS APPLICATIONS AREAS

NEW REQUIREMENTS? SIMPLY ADAPT YOUR MACHINE

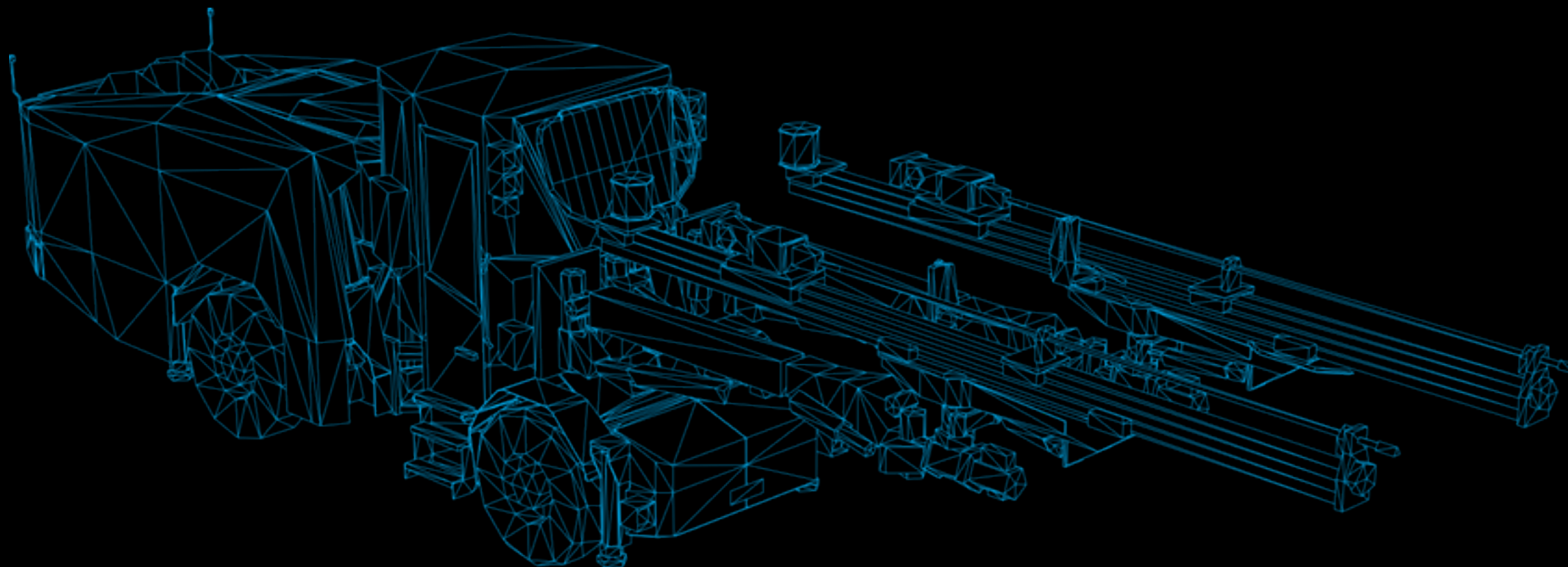
Keeping up with operational evolutions might require new tasks that your current equipment cannot handle. Sandvik Upgrades & Engineered Solutions will adapt your current fleet to your new needs for a minimal capital investment.

These adaptations range from introducing new features such as a mesh handler for bolters or an air-mist flushing system, to making sweeping changes to core machine functionality, adapting a rock breaker system to your loaders or even transforming your bolter to a face drill jumbo, for example.

UPGRADES SOLUTIONS FOR UNDERGROUND DRILLS

Sandvik Upgrades and Engineered Solutions offer a vast range of retrofit kits that allow to modify the original specifications of your Underground Mining Drills to improve the performance, the drilling accuracy, the safety or to reduce the environmental impact and the operating cost. Our offering includes also solutions to adapt your machine to different application.

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PRODUCTIVITY IMPROVEMENT

TMS+ BOOM INSTRUMENTATION FOR DEVELOPMENT DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Inaccurate drilling set-up and hole length can cause misalignment of the whole tunnel, blasting difficulties, and can lead to over-break and under-break. Fixing tunnel alignment later is extremely expensive and it also increases the need for rock support and the risk of rock fall.

Sandvik TMS+ Boom Instrumentation systems allows the operator to control with great accuracy the drilling direction. It can also display information about hole depth, penetration rates and cumulative drilled length ("DDS" option).

Get optimal control over the drilling angle and positioning in order to avoid tunnel misalignment, as well as over-break and under-break.

Optimize ore recovery, advance per blast and the fragmentation process.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Measures and displays the direction of the angle of drilling with high accuracy. 	<ul style="list-style-type: none"> Reduces the risk of generating over-break and under-break that leads to extra costs, slower production, and an increased risk of falling rocks (safety issue)
<ul style="list-style-type: none"> Version available with hole-depth measurement, penetration-rate indication and cumulative drilled hole-length counters 	<ul style="list-style-type: none"> Allows accurate control of the drilling process Allow rock tools life follow-up
<ul style="list-style-type: none"> Simple and basic system that's easy to install and use 	<ul style="list-style-type: none"> Minimal installation time and training required
<ul style="list-style-type: none"> Integrated troubleshooting function 	<ul style="list-style-type: none"> Easily test the correct function of the system's sensors to ensure minimal downtime in case of failure

OFFERING

The TMS+ Boom Instrumentation Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD320	
Sandvik DD321	
Sandvik DD410	
Sandvik DD420	Contact local Sandvik representative
Sandvik DD411	
Sandvik DD421	
Sandvik DD530	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TCAD+ BOOM INSTRUMENTATION FOR UG DEVELOPMENT DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Inaccurate drilling set-up and hole length can cause misalignment of the whole tunnel, blasting difficulties, and can lead to over-break and under-break. Fixing tunnel alignment later is extremely expensive and it also increases the need for rock support and the risk of rock fall.

Sandvik TCAD+ is an aiming tool for executing on a pre-designed drilling plan, featuring face drilling, long-hole drilling and bolting-hole plans on the screen.

Sandvik TCAD+ supports different navigation methods. In addition to traditional laser and drill-bit navigation, it introduces total station navigation to standard rigs, greatly improving their accuracy. The navigation user interface is easy to use, with on-screen creation and editing of the lasers.

With its built-in data collection, TCAD+ provides information on hole position and angle logging, as well as the drilling process. By improving the accuracy of drilling, the TCAD+ enables optimization of the whole tunneling project.

The Sandvik TCAD+ includes a troubleshooting function to help test the correct functioning of the system's sensors and the CAN system.

TCAD+ is delivered together with Sandvik iSURE®, the most sophisticated and advanced tunnel-process management software on the market. Results in accurate drilling and optimized excavation due to drilling and blasting design at the most critical position (i.e. at the end of the round). Optimizes the drilling process, as well as the complete drill and blast process. iSURE® is user-friendly and easy-to-use software.

Professional training available for operators and service with comprehensive training tools (Windows simulator).

Global Sandvik technical support team. Access to new product upgrades via lifetime services. Upcoming features can be installed on rig.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Measures and displays the direction angle of drilling with high accuracy.
- Displays positioning of each hole according the pre-designed drilling plan.
- Automatic hole length control according to a drill plan.
- Easy-to-use navigational interface.
- Professional training available for operators.
- Comprehensive training tools (Windows simulator).
- Global technical support team.
- The data collection system collects locations and directions of the drilled holes and MWD (Measurement While Drilling) data.

- TCAD+ comes with iSURE®, the most advanced tunnel-process management software on the market.

- Upcoming features can be installed on rig.

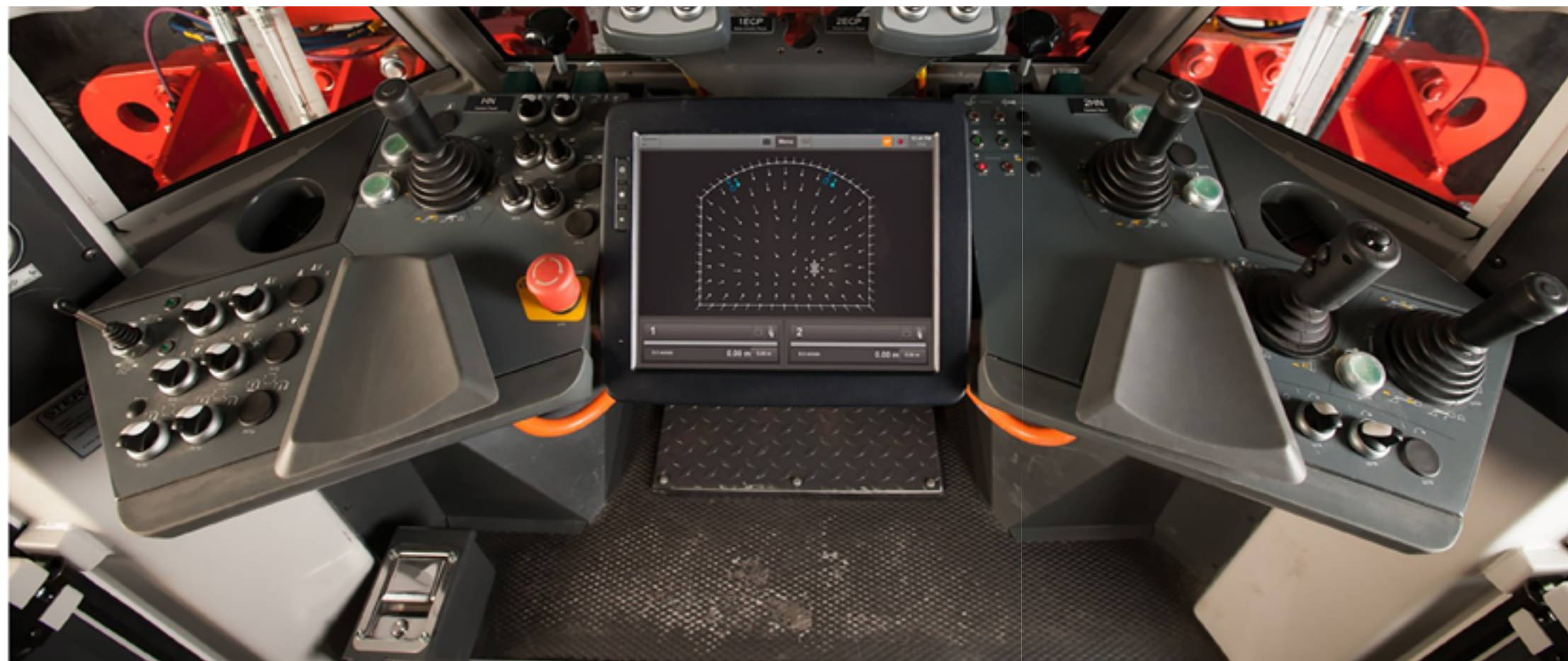
CUSTOMER VALUES

- Optimized drill and blast cycle.
- Less over- and under-breaks.
- Improves productivity and safety as no need to stand close to the face to paint the holes locations.
- Full Sandvik support on the implementation process and during life of the machine.

- Allow to monitor accurately:
- Productivity,
- Total Cost of Ownership, cost per drilled meters, etc
- Rock tools life
- Identify operator training needs

- High drilling accuracy and optimized excavation.
- Optimized drilling process.
- User-friendly and easy-to-use software.

- Access to new product upgrades via lifetime services.



OFFERING

The TCAD+ Boom Instrumentation Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD310	
Sandvik DD311	
Sandvik DD320	
Sandvik DD321	
Sandvik DD410	Contact local Sandvik representative
Sandvik DD420	
Sandvik DD411	
Sandvik DD421	
Sandvik DD530	
Sandvik DD531	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ROCK DRILL(S) CONVERSION FOR DEVELOPMENT DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Productive underground drilling is a crucial component in achieving your production targets and meeting your required advance rates. Even the most efficient drill rig can only deliver so many meters in a shift if it's not coupled with the latest rock drill technology.

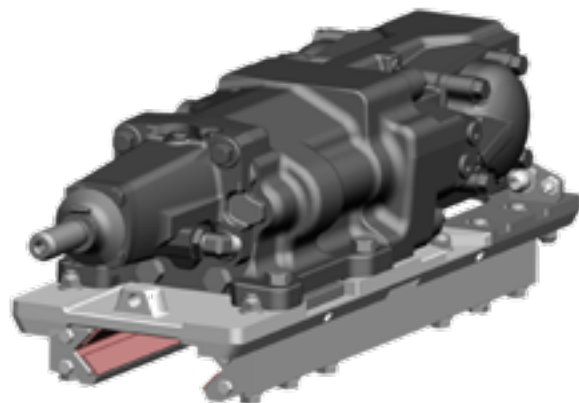
Our Rock Drill(s) Upgrade Solutions for Underground Development Drills enable seamless progression to the latest Sandvik technology. Each Upgrade kit consists of new RD-series rock drill(s) (RD520 or RD525) and all other parts needed to convert your existing equipment to the most technically advanced drilling technology available.

Highest productivity is achieved by the increased percussion frequency rate and stabilizer system that insure optimal control of the contact between the rock and the bit.

Reduced operating costs are achieved by:

- Increased reliability due to new design concept (only few pressurized seams between functional modules) that allows increased service interval of 750 percussion hrs.
- Excellent serviceability through modular construction and visual wear indicators.
- Stabilizer system that dampens recoil impulses from rock and lengthens the lifetime of rock tools.

The quicker drilling and faster production will start a ripple effect. Your productivity and reliability will increase and you'll cut costs. Optimize your operation by upgrading your existing units to new-generation Sandvik RD-series rock drills that you can count on to deliver value 365 days a year.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Highest percussion frequency. • Stabilizer system insures optimal Rock/bit contact. 	<ul style="list-style-type: none"> • Highest penetration rate that Improves productivity (+17% compare to HLX5, +28% compare to HLX5T)*.
<ul style="list-style-type: none"> • High striking frequency with low energy per impact. • Stabilizer system: efficient dampening of shock waves from the rock. • New design and construction concept with only few pressurized seams and less parts (20%). • Rock drill attached to carrier with only 6 bolts. Harmonized nut size. Visual wear indicator on key components. 	<ul style="list-style-type: none"> • Longer rock tools life (+17% bit life, +40% shank life)*. • Higher reliability and maintenance interval (750 hrs). • Improved serviceability; Easy condition evaluation in service.

OFFERING

The Rock Drill(s) Conversion is available for the following Underground Drills models:

MACHINE MODELS	RD MODEL	PART NUMBER
Sandvik DD210L	RD520	
Sandvik DD211L	RD520	
Sandvik DD220L	RD520	
Sandvik DD310	RD520	
Sandvik DD311	RD520	
Sandvik DD320	RD520	Contact local Sandvik representative
Sandvik DD321	RD520	Contact local Sandvik representative
Sandvik DD411	RD520	
Sandvik DD420	RD525	
Sandvik DD421	RD525	
Sandvik DD530	RD525	
Sandvik DD531	RD525	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



POWER EXTRACTOR FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Fractured and heterogeneous ground, poor flushing quality, cross drilling, or worn out rock tools can lead to drilling rod jamming, And It is quite hard work to recover from the jamming and it robs your job and production of expensive and valuable time.

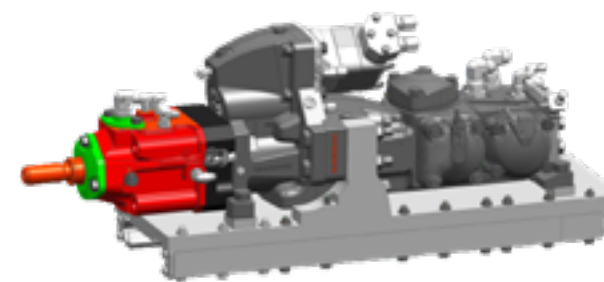
In production drilling, one of the major loss of production cause could be the difficulty to uncouple efficiently the rods.

In order to solve these issues and preserve the productivity, Sandvik has developed the Power Extractor system.

Power Extractor is a module for a hydraulic rock drill, operated by a switch on the operator's control panel. A hydraulic actuator mounted on the front end of the rock drill gear housing, by multiple (small) pistons, is able to pull the shank adapter towards the striking point, so that the piston can hit the shank during pull-back. Percussive stress waves can therefore be transmitted to the drill rods.

Power Extractor is very efficient when the drill string are jammed so tight that it can not be removed by only using feed, rotation and percussion.

Use of Power Extractor for uncoupling rods makes easier and faster the opening of joints. It reduces the non-drilling time, increases drilling capacity and rock tool service life and reduces rock drill maintenance cost.



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Power Extractor allows the rock drill piston to hit the shank during pull back (percussive stress waves transmitted to the drill rods). 	<ul style="list-style-type: none"> • Improve productivity by help to remove rod(s) from the hole in case of jamming. • In Production drilling, ease rods uncoupling.

OFFERING

The Power Extractor Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210L	
Sandvik DD211L	
Sandvik DD220L	
Sandvik DD310	
Sandvik DD311	
Sandvik DD320	
Sandvik DD321	
Sandvik DD410	
Sandvik DD411	
Sandvik DD420	
Sandvik DD421	
Sandvik DD422i	
Sandvik DD422iE	
Sandvik DL210	
Sandvik DL230	Contact local Sandvik representative
Sandvik DL310	
Sandvik DL311	
Sandvik DL320	
Sandvik DL321	
Sandvik DL330	
Sandvik DL331	
Sandvik DL410	
Sandvik DL411	
Sandvik DL420	
Sandvik DL421	
Sandvik DL430	
Sandvik DL431	
Sandvik DL432i	
Sandvik DS421	
Sandvik DS422i	

TMS DDS INSTRUMENTATION FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

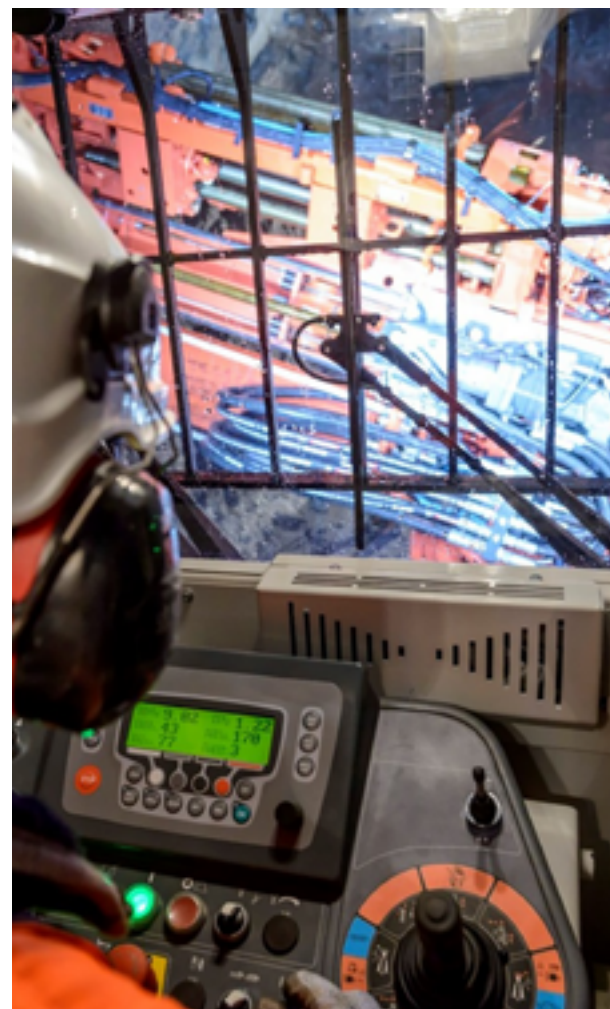
During production drilling operations, inaccurate feed positioning and an incorrect drilling angle can have serious consequences on the operational costs of an underground mine. It can cause:

- Oversized blocks
- Ore loss
- Dilution

The TMS DDS instrumentation allows the operator to control the drilling hole direction on Production Drills. It is used to accurately position the drilling feed at the correct angle (tilt and rotation), and displays hole depth, penetration speed and drilling pressures (percussion, feed, rotation and flushing).

Data collection is included.

A large, user-friendly, display clearly shows parameters to the operator. Instrumentation checks itself at every start to find possible faults in the system.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Measures and displays the direction of the angle of drilling with high accuracy. 	<ul style="list-style-type: none"> • Reduces the risk of generating over- and under-break that leads to extra costs, slower production, and an increased risk of falling rocks (safety issue).
<ul style="list-style-type: none"> • Displays the hole depth and penetration rate 	<ul style="list-style-type: none"> • Allows accurate control of the drilling process
<ul style="list-style-type: none"> • Simple and basic system that's easy to install and use 	<ul style="list-style-type: none"> • Minimal installation time and training required

OFFERING

The TMS DDS Instrumentation Upgrade Solution is available for the following Production Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL311	
Sandvik DL321	
Sandvik DL411	Contact local Sandvik representative
Sandvik DL421	
Sandvik DL431	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TIS INSTRUMENTATION FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

During production drilling operations, inaccurate feed positioning and an incorrect drilling angle can have serious consequences on the operational costs of an underground mine. It can cause:

- Oversized blocks
- Ore loss
- Dilution

TIS is basic CAN-bus based instrumentation for medium and NV long-hole top-hammer drills.

It is used to accurately position the drill feed at the correct angle (tilt and rotation). On the DL331, it displays hole depth, penetration speed and drilling pressures (percussion, feed, rotation and flushing). Data collection is included. Instrumentation is equipped with side lasers mounted to the carrier. The lasers are used to position the carrier at the drill-fan location.

A large, user-friendly display clearly shows the operator the parameters. Instrumentation checks itself for every start to find possible faults in the system.

Collected data is stored in the display unit. Data is in ASCII format comma separated and data recovery is done via USB.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Measures and displays the direction of the angle of drilling with high accuracy. 	<ul style="list-style-type: none"> • Reduces the risk of generating over- and under-break that leads to extra costs, slower production, and an increased risk of falling rocks (safety issue).
<ul style="list-style-type: none"> • Displays hole-depth measurement and penetration rate (optional only on DL331) 	<ul style="list-style-type: none"> • Allows accurate control of the drilling process
<ul style="list-style-type: none"> • Simple and basic system that's easy to install and use. 	<ul style="list-style-type: none"> • Minimal installation time and training required, and minimal downtime in case of failure.
<ul style="list-style-type: none"> • Data collection via USB and viewer software 	<ul style="list-style-type: none"> • Allows for accurate follow-up of the machine's production.

OFFERING

The TIS Instrumentation Upgrade Solution is available for the following Production Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL210	
Sandvik DL331	Contact local Sandvik representative

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ONE HOLE AUTOMATION FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

One-hole automation is designed for drilling a single long hole automatically in any direction to predefined depth, including coupling and uncoupling of rods.

It eases the work of the operator and increases productivity, by making the drilling process more controllable. It also allows the drilling operation to continue through shift change and breaks, therefore increasing the operational efficiency in long hole drilling.

The operator can use the following operating modes in one-hole automation:

- Drill – rods are automatically added, hole is drilled to given depth and rods are left in the hole
- Drill and uncouple – in addition to the “Drill” mode features, uncouples the rods
- Uncouple – the feature only uncouples the rods

The following features are designed for improving hole quality: extra flushing sequences during the drilling cycle, break through tolerance and rushing detection.

Information on the progress of drilling is shown in the operator display. User friendly and comprehensive diagnostics system helps in fault finding and the status of CAN modules and sensors can be easily checked.

One Hole Automation Upgrade Solution includes TMS DDS instrumentation and Rod Handler Sequence Control, if these options are not yet installed on the machine.

The use of rock drill power extractor is recommended in combination with One-hole automation, for the ease of uncoupling rods and for improved productivity (Upgrade Solution available).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Drilling of single automatically, in any direction, to predefined depth, including coupling and uncoupling of rods. • Information about the progress of drilling is shown in the operator display. 	<ul style="list-style-type: none"> • Eases the work of operator. • Increase productivity. • Reduce operator training duration. • Allows to continue drilling of a single hole during breaks or shift changes.
<ul style="list-style-type: none"> • Full automation of coupling and uncoupling of the rods. 	<ul style="list-style-type: none"> • Increase rock tools life.
<ul style="list-style-type: none"> • Predefined hole depth (accuracy 0,1 m). • Extra flushing sequences during drilling. • Breakthrough tolerance and rushing detection. 	<ul style="list-style-type: none"> • Increase hole quality. • Reduce hole deviation. • Reduce risk of generating over- and under-break that leads to extra costs, slower production, and an increased risk of falling rocks (safety issue). • Reduce risk to loose ore.
<ul style="list-style-type: none"> • Integrated diagnostic system. Status of CAN modules and sensors can be easily checked. 	<ul style="list-style-type: none"> • Helps in fault finding. Reduce mobilization time in case of failure.

OFFERING

The One Hole Automation Upgrade Solution is available for the following Production Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL311	
Sandvik DL321	
Sandvik DL411	Contact local Sandvik representative
Sandvik DL421	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



FAN AUTOMATION FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Fan Automation system for Production Drills is designed for drilling a complete fan automatically in any direction, depth and from the number of pivot points defined in the pre-programmed drilling plan uploaded in the system, depending on the configuration of the boom and drilling module. During fan automation the boom is automatically moved hole-to-hole and the feed is automatically aligned according to the plan. The drilling module is stabilized utilizing stingers and automatic stinger pressurization.

Fan automation increases long hole drilling productivity by making the drilling process highly controllable. The drilling cycle can be repeated with speed and precision, improving hole accuracy. Product safety is improved as operator presence is required only for a short period of time during the work cycle. Fan automation allows the units to be operated with less tear and wear, reducing operating cost.

The following features are designed to improve the hole quality: extra flushing sequences during the drilling cycle, break through tolerance and rushing detection. Information on the progress of drilling is shown in the operator display. User-friendly and comprehensive diagnostics system helps the operator in fault finding and the status of CAN modules and sensors can be easily checked.

Fan Automation Upgrade Solution includes TMS DDS instrumentation and Rod Handler Sequence Control, if these options are not yet installed on the machine.

The use of rock drill power extractor is recommended in combination with Fan automation, for the ease of uncoupling rods and for improved productivity (Upgrade Solution available).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Drilling a complete fan automatically, in any direction, depth and from the number of pivot points defined in the pre-programmed drilling plan uploaded in the system. 	<ul style="list-style-type: none"> • Eases the work of operator. One operator can supervise multiple units. • Increase productivity. • Reduce operator training duration. • Allows to continuous drilling of a full fan during breaks or shift changes.
<ul style="list-style-type: none"> • Data transfer can be utilized for uploading drill plans in the control system of the unit, and downloading the drilled data after the fan has been completed. 	<ul style="list-style-type: none"> • Accurate drilling according predesigned plan. • Data collection and reporting system for drilling operation planning and follow-up. • Allow full drilling process control
<ul style="list-style-type: none"> • Full automation of coupling and uncoupling of the rods. 	<ul style="list-style-type: none"> • Increase rock tools life.
<ul style="list-style-type: none"> • Boom automatically moved hole-to-hole and feed automatically aligned according the drilling plan. • Predefined hole depth (accuracy 0,1 m). • Extra flushing sequences during drilling. • Breakthrough tolerance and rushing detection. 	<ul style="list-style-type: none"> • Increase hole quality. • Reduce hole deviation. • Reduce highly the risk of generating over- and under-break that leads to extra costs, slower production, and an increased risk of falling rocks (safety issue). • Reduce risk to loose ore.
<ul style="list-style-type: none"> • Operator presence required only for a short period of time (only during moves between fans and setting up the boom.) 	<ul style="list-style-type: none"> • Increase safety.
<ul style="list-style-type: none"> • Integrated diagnostic system. Status of CAN modules and sensors can be easily checked. 	<ul style="list-style-type: none"> • Helps in fault finding. Reduce immobilization time in case of failure.

OFFERING

The Fan Automation Upgrade Solution is available for the following Production Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL311	
Sandvik DL321	
Sandvik DL411	Contact local Sandvik representative
Sandvik DL421	
Sandvik DL432i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TELE-REMOTE DRILLING AND DATA TRANSFER FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Tele-Remote Drilling system allows to control the unit from a safe remote location (i.e; operation surface room), with a static user interface, identical at the remote location and on the drill.

Operating a production drill remotely offers number of benefits in underground mining, related to product safety and productivity. Exposure to potentially hazardous working conditions and time on-board the drill unit are minimized. Distance between the drill unit and remote location is not limited; the remote-control interface can be in a dedicated facility or in a vehicle. Layout and ergonomics of the remote location infrastructure can be designed to meet the mine requirements and the user interface between the locations is identical; the system is fitted with remote cameras for good visibility and audio stream for realistic and informative scene on drilling.

Tele-remote drilling allows multiple units to be controlled by one operator (through individual user interfaces). Combined with drilling automation, working can continue through shift changes and breaks, or during the shift.

The drill and the remote-control location can be connected through WLAN network or LAN cable. Tele-remote operation can be integrated in the existing mine network if it meets the requirements on connectivity. The WLAN connection is also delivered with the cable connection feature. The maximum ethernet cable length between the drill and mine network access point is 90 meters.

Mobile Tele-Remote option consists of a battery powered remote control station, easy to set-up and transport, instead of the static station.

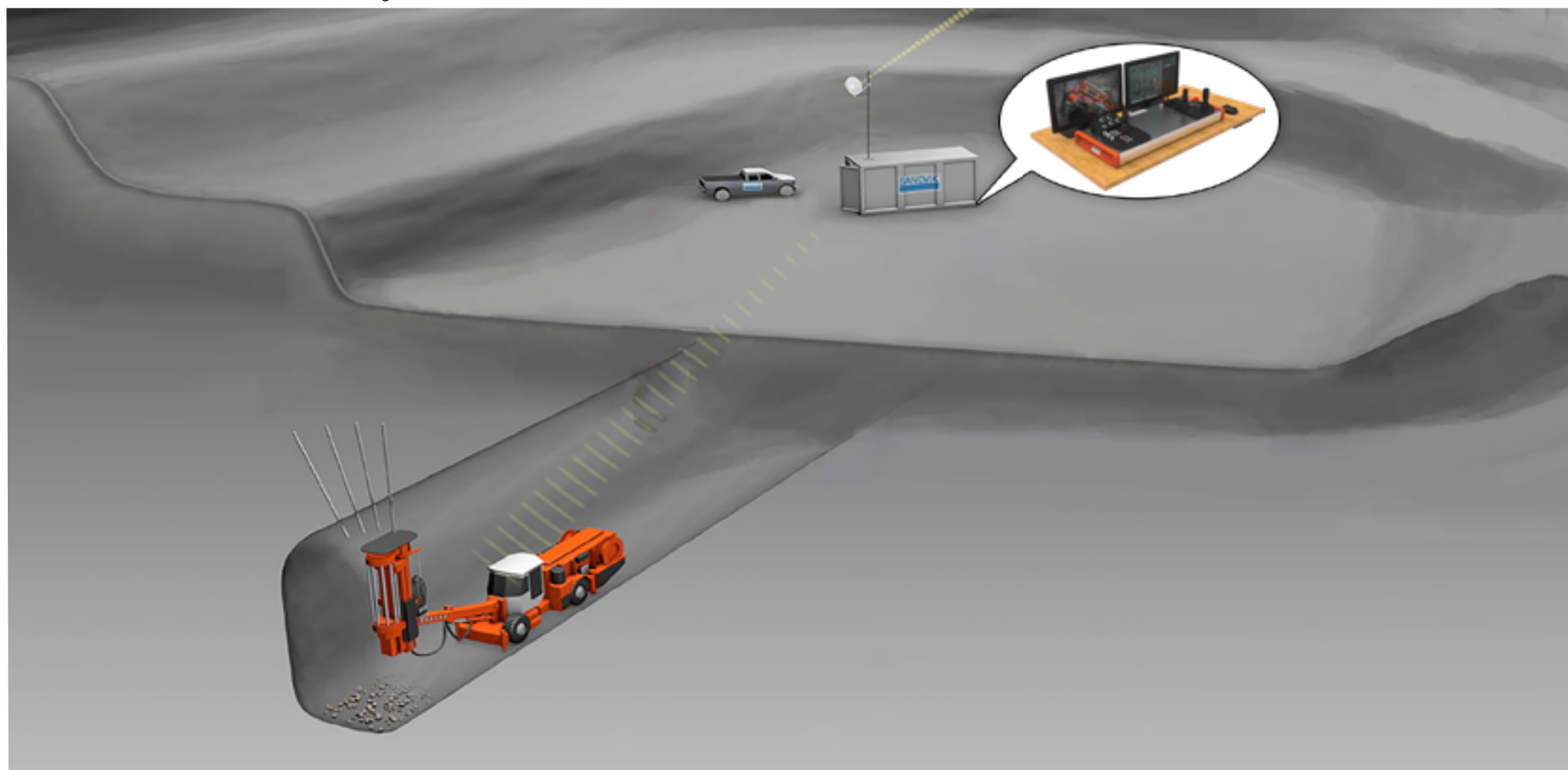
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Much less time spend in shift changes.
- One operator can supervise multiple units.
- Allows to operate through shift changes, breaks, blast smoke hours.
- Safe operation in hazardous areas.
- Remote cameras and audio stream live.
- Control of operation from safe and remote location.
- Time on-board the drill minimized
- Operation on dust, noise and vibration free environment
- Identical user interface at the remote location and on-board the drill.
- With Automation, drilling cycles are repeated with speed and accuracy.

CUSTOMER VALUES

- Increase productivity. Achieve higher output at lower cost.
- Better utilization of the workforce and competence.
- Improved operator performance.
- Ore reserves can be utilized economically in areas with compromised safety.
- Realistic and informative drilling scene.
- Improve operator safety
- Addresses the problem of maintaining a suitably qualified work force at remote sites.
- Reduction in equipment tear and wear, improved mechanical availability



OFFERING

The Tele-remote Operation Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL311	
Sandvik DL321	
Sandvik DL411	
Sandvik DL421	
Sandvik DL431	Contact local Sandvik representative
Sandvik DL422iE	
Sandvik DL432i	
Sandvik DU412i	
Sandvik DU422i-W	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ROD HANDLER SEQUENCE CONTROL FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Rod handler sequence control features three separate manual movements, each covering a series of controlled movements (sequences) carried out by the drill automatically. These sequences are designed to ease the work of the operator and make rod handling more controllable and reliable; the sequences can be activated from the control panel and engaged with the joystick.

The sensors of the rod handler are connected to the individual CAN-bus modules of the control system, and the status of each sensor can be monitored in the control panel for fault finding.

The software that runs this control has been designed to include internal security checks in order to prevent activation in the event of risk of damage posed to the drill or rock tools.

The sequence control includes three separate functionalities:

- Extension: Moves a new rod from the rod cassette port to the rod handler arms.
- Threading: Moves the selected tool to drill center and couples it to the drill string in the hole.
- Uncoupling: Moves a rod from the drill center to the rod handler port and into the cassette.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Ease the work of the operator and make rods handling more controllable and reliable.

CUSTOMER VALUES

- Improve productivity
- Improve quality and consistency for operators of all experience levels, and reduces training duration for new operators.

OFFERING

The Rod Handler Sequence Control Upgrade Solution is available for the following Production Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL311	
Sandvik DL321	Contact local Sandvik representative
Sandvik DL411	
Sandvik DL421	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



BIT CHANGER FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Manual replacement of the drill bit brings limitations on the full automation of production drills as the process cannot be fully autonomous. It also generate safety risk if not done according safe procedures.

Sandvik bit changer is designed for automatic changing of bits in long hole drilling. Once activated the bit changer carousel moves the selected bit to the port in the carousel. A selector arm is then moved into the bit. The arm is fitted with a rubber tank, which can be inflated and with which the bit can be held firmly. The bit is then moved from the carousel to the drill center in the retaining centralizer, where it can be coupled to a rod and the drilling can continue.

Worn bits are stored in the carousel; the automation stops the drilling when all bits are used. The use of bits can be optimized on the unit with the drilling automation; if bits are not fully used the amount of meters that still is available is known to the control system. The (automatic) bit change interval can be pre-set.

Bit Changer Upgrade Solution is available for Sandvik DL432i and for DL411 and DL421 delivered in the year 2014 or later.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Increased number of holes that can be drilled in fan automation mode.
- Drill bit change interval is programmed.

CUSTOMER VALUES

- Improves productivity by allowing work through shift changes, breaks, blast smoke hours.
- Drill condition controlled, ensures optimal energy transfer and higher penetration rate.

- Minimise the need for human intervention near the feed.

- Improves safety

- Drill bit change interval is programmed.

- Rock tools cost can be easily followed.
- Bit regrinding interval optimized allows rock tools cost optimization.
- Control of the drill bit condition reduce stress and wear on the drilling module.

OFFERING

The Bit Changer Upgrade Solution is available for the following Production Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL411*	
Sandvik DL421*	Contact local Sandvik representative
Sandvik DL432i	

*Only machine delivered in 2014 or later

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



REAR STINGER EXTENSION FOR SANDVIK DL331

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Correct anchoring of the feed is an essential factor to in obtaining acceptable hole quality and limited deviation. In order to ensure correct anchoring in up-hole drilling in larger cross sections, Sandvik has developed the Rear Stinger Extension for DL331.

It increase the effective length of the feed with stingers by 1000mm. The extension is bolted on the rear stinger.

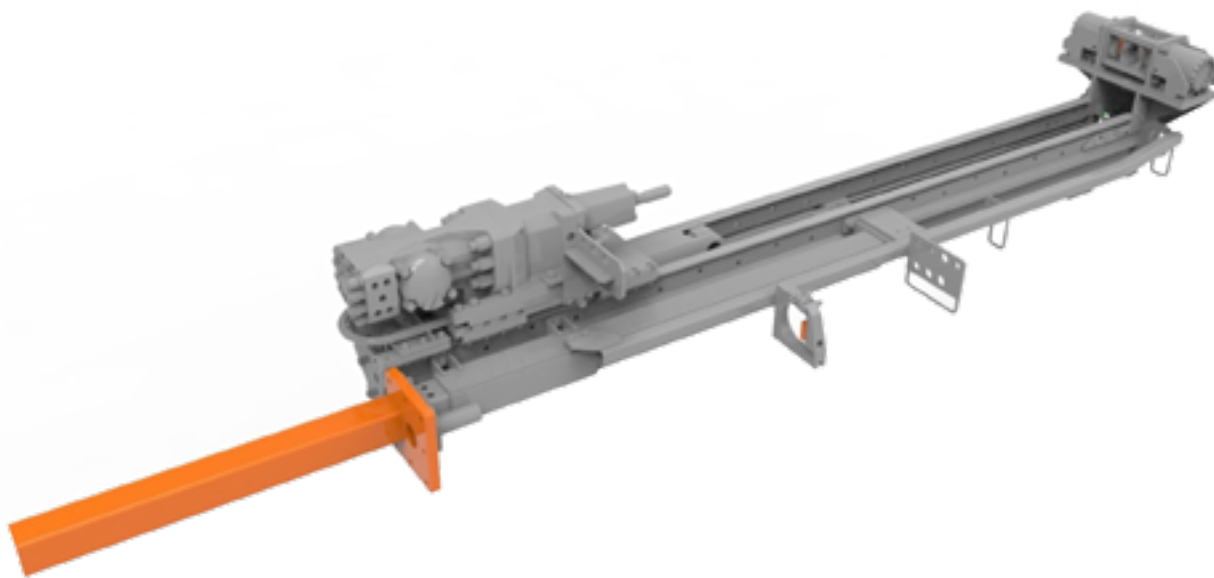
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Extend the rear stinger length by 1000mm. Allows correct anchoring in large cross sections. 	<ul style="list-style-type: none"> Insure correct anchoring in large sections that allow to obtain acceptable hole quality an limited deviation.

OFFERING

The Rear Stinger Extension Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL331	77022320



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

STINGERS PRESSURIZATION UPGRADE FOR SANDVIK DL432i

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Stability of the drilling module during long hole drilling operation is a critical factor to insure hole accuracy and optimal drilling performances. This means the stingers efficiency is a very important topic. Improper anchoring of the drilling module can also generate important vibrations and unexpected movements that could damage or reduce the life of the module.

Sandvik has developed a new modification kit for stinger pressurization to improve the drilling module stability of the DL432i.

Continuous pressure holds the stinger better on the rock during drilling.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improve the drilling module stability. Avoid unexpected vibrations and movements 	<ul style="list-style-type: none"> Improve drilling accuracy and performance Reduce vibrations and risk of unexpected movements that could damage the drilling module.

OFFERING

The Stingers Pressurization Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL432i	BG01548840



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

ROCK DRILL CONVERSION FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

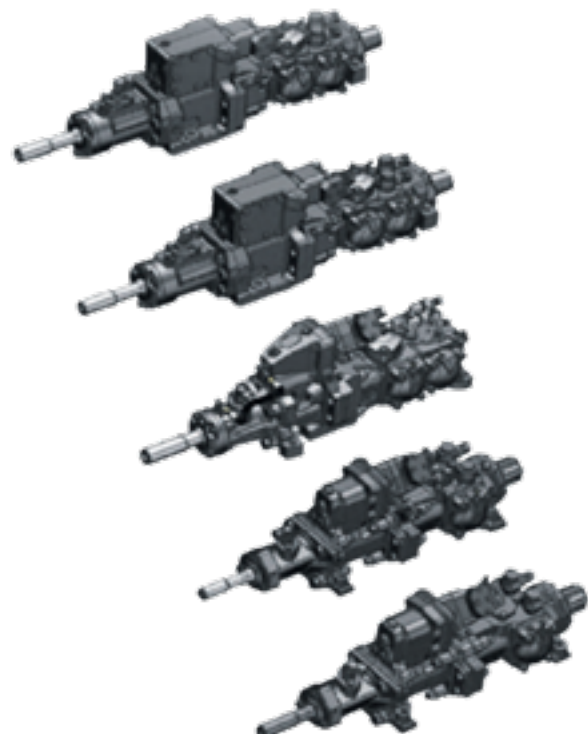
DESCRIPTION

Productive underground drilling is a crucial component in achieving the production targets. Even the most efficient drill rig can only deliver so many meters in a shift if it's not coupled with the latest rock drill technology.

Our Rock Drill Upgrade Solutions for Underground Production Drills enable seamless progression to the latest Sandvik technology. Each Upgrade kit consists of new Rock drills (model selected according machine model and application) and all other parts needed to convert your existing equipment to the most technically advanced drilling technology available.

The latest Sandvik rock drills bring a substantial improvement on drilling performances, reliability in operation and low operating cost through patented and simple product design.

HL820ST, RD921, RD927 and HL1560ST includes stabilizer system absorbs recoil energy travelling back through the rods after each impact, that can be harmful for the drill steels. With a consisted bit-rock contact and by optimizing the percussion energy, the stabilizer increases rock tools life and protects the rock drill of tear and wear.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Increase the overall drilling performances Stabilizer system (except HL710S) absorb recoil energy. Consistent bit-rock contact and optimizing percussion energy. Allows to adapt the rock drill to new rock condition or different drilling application. 	<ul style="list-style-type: none"> Improve productivity Increase rock tools life. Extends rock drill life. Allow machine adaptation to new application.

OFFERING

The Rock Drill Upgrade Solution is available for the following Underground Production Drills models:

	HL710S	HL820ST	RD921	RD927	HL1560ST
Hole Size	64-115	64-127	64-89	89-140	89-127
DL311	✓	✓			
DL321	✓	✓			
DL411	✓	✓	✓	✓	✓
DL421	✓	✓	✓	✓	✓
DL422iE			✓	✓	✓
DL431	✓				
DL432i			✓	✓	

Contact local Sandvik representative for advices on the optimal rock drill configuration according machine model and application.

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



SBH BOLTING HEAD FOR UNDERGROUND BOLTERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Customers are looking for better performances and lower operating costs on their rock support operations with mid-size bolters.

Our new Sandvik SBH Bolting Head, thanks to the high frequency and powerful RD314 rock drill allow significant improvement on the bolt installation speed (+35% faster).

The operating costs are drastically reduced thanks to new design and new material used for several new key parts (i.e. Aluminium beam, stainless steel rails, plastic skids and bolt guides, etc..).

The maintenance is easier and faster due to improved design that give better access to perform maintenance tasks in a most efficient way.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> New powerful rock drill. Improve drilling performance by up to 35% New shorter aluminium feed. Same design and working principle as previous bolting head generation (TUC). New changeable stainless-steel feed rails, clipped on the beam. New plastic skids. New plastic bolt guides. Feed cylinder with dampening system. High frequency rock drill. Longer rock tools life. 	<ul style="list-style-type: none"> Improve productivity. Fastest bolt installation. Easier to operate in small section. No need extra operator training. Longer life of feed wear parts. Easier and faster to replace. Lower maintenance cost and downtime. Better serviceability and reduced maintenance cost. New lighter aluminium feed beam. Longer life for boom parts.

OFFERING

The SBH Bolting head Upgrade Solution is available for the following Bolters models:

MACHINE MODELS	PART NUMBER
Tamrock Robot 05	
Tamrock Robot 5	
Sandvik DS310	Contact local Sandvik representative
Sandvik DS311	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



AUTOMATIC RESIN INJECTION (ARI) FOR UNDERGROUND BOLTERS

UPGRADES AND ENGINEERED SOLUTIONS

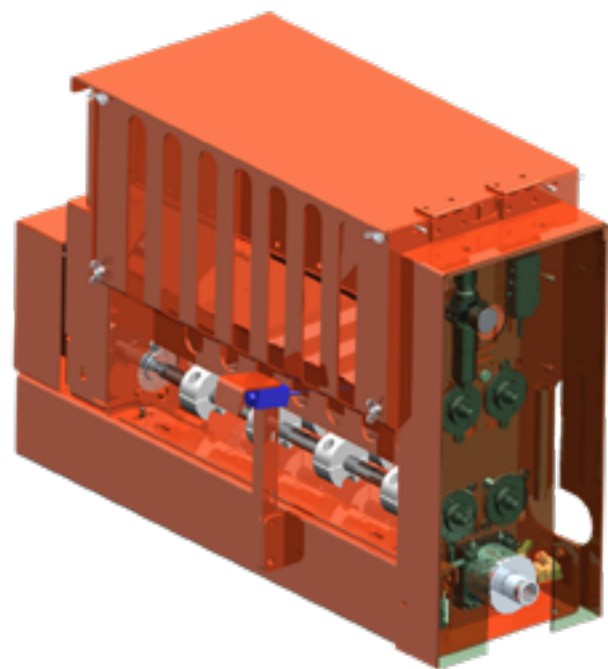
DESCRIPTION

Bolting cycle, when installing resin grouted bolts is a quite long process and every improvement on the installation time brings a lot of value. Also, the number of resin cartridges injected for each hole has to be very accurate as an error would cause lower resistance of the bolt, causing safety issue. Finally, the chemical vapours emitted by the resin cartridges are very odorous and can inconvenience the operator, especially on machine equipped with cabins.

Sandvik Automatic Resin Injection (ARI) is a system which count and inject automatically resin cartridges.

Equipped with 2 separated storages for fast set and low set cartridges, ARI realises what ever cartridge sequence is needed by the operator. If only one type of cartridge is needed, the system's autonomy is therefore doubled. The number and sequence of cartridges can be either programmed for all or part of the shift, or realised manually for each bolt, insuring the correct quantity of resin is injected for each hole.

The system improve productivity as the operator can achieve other task while the cartridges are injected. This operation is then done by pressing 2 simple push buttons. ARI is installed outside the machine's cabin, so there no more issue due to resin smell for the operator.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • ARI count and inject automatically resin cartridges. 	<ul style="list-style-type: none"> • Improve productivity by shortening the resin grouted bolt installation process. • Improve safety by insuring the correct amount of resin is injected for each bolt.
<ul style="list-style-type: none"> • The system is located outside the cabin. 	<ul style="list-style-type: none"> • Improve operator comfort by avoiding odorous resin vapours inside the cabin.

OFFERING

The Automatic Resin Injection Upgrade Solution is available for the following Bolters models:

MACHINE MODELS	PART NUMBER
Sandvik DS410	
Sandvik DS411	
Sandvik DS510	Contact local Sandvik representative
Sandvik DS511	
Sandvik DS512i	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



SAFETY AND ENVIRONMENTAL IMPROVEMENT

CAMERAS SYSTEM FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

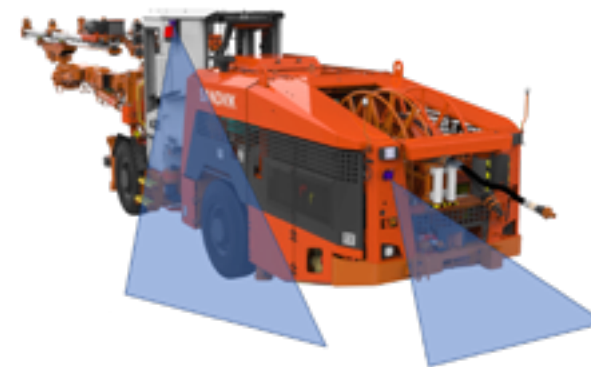
DESCRIPTION

In Underground mining, confined space and limited visibility due to dust or poor lighting increase the risk of collision with pedestrians, other machines or walls. Collision is one of the major risk on underground mining with several fatalities registered every year.

In order to increase the visibility of the operator and to limit risk of collision, Sandvik has developed cameras system for Underground drills.

Cameras system improves the safety by increasing the operator field of vision, allowing view on the blind areas. It also limits the risk of collision with walls that would cause damages on the equipment.

The systems includes on development drills and bolters two reverse cameras located on the top side of the canopy / cabin and at the back of the machine). A monitor is located on the cabin. On Production drills, there is an additional camera on the front. An optional recording device is also available.



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Increase the field of vision of the operator, allow view on the blind side areas. Limit the risk of collision with a pedestrian. Limit the risk of collision with an other machine. 	<ul style="list-style-type: none"> Increase safety
<ul style="list-style-type: none"> Reduces risk of damage on the machine due to collision with walls or other machine. 	<ul style="list-style-type: none"> Reduce operating cost

OFFERING

The Cameras System Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD311	
Sandvik DD321	
Sandvik DD410	
Sandvik DD420	
Sandvik DD411	
Sandvik DD421	
Sandvik DD422I	
Sandvik DD422IE	
Sandvik DD530	
Sandvik DD531	
Sandvik DL311	
Sandvik DL321	
Sandvik DL331	
Sandvik DL410	
Sandvik DL420	Contact local Sandvik representative
Sandvik DL430	
Sandvik DL411	
Sandvik DL421	
Sandvik DL431	
Sandvik DS311	
Sandvik DS312	
Sandvik DS410	
Sandvik DS420	
Sandvik DS411	
Sandvik DS421	
Sandvik DS422i	
Sandvik DS510	
Sandvik DS520	
Sandvik DS511	

CABIN UPGRADE FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Mining conditions varies and affects the operator's environment. Mining conditions can be dusty, dark, wet, noisy, icy and hot.

Sandvik has designed cabins for it's underground drills to improve operator's safety and comfort. The cabins are designed to be extremely durable. They meet and exceed the international standard:

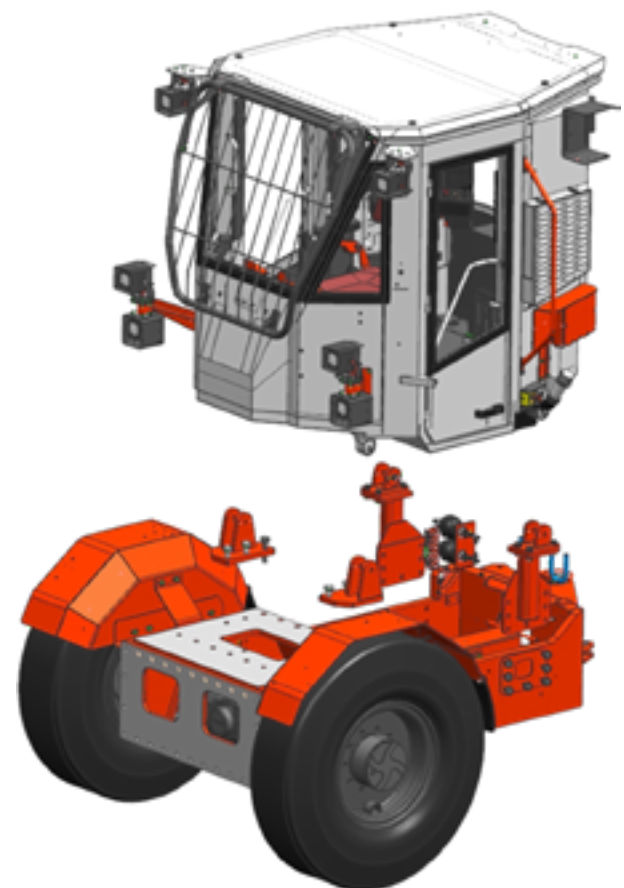
- ISO 3449 - Falling Object Protective Structure (FOPS).
- ISO 3471 - Roll-Over Protective Structure (ROPS).

Sandvik Cabin offers low noise (LpA 80 dB according EN 791) and vibration levels (0.5 m/s² according EN 791) and allows emergency exit.

Cabin upgrade solution includes Air Conditioning system.

Heating system and Window Protective Grill are available as option. Acid Proof cabin (stainless steel) version is available on selected machine models (only FOPS).

Cabin have to be selected according the height of the mine site galleries. Low cabin version available on selected machine models.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Cabin meet and exceed international safety requirements FOPS & ROPS • Protect operator from excessive noise vibration and dust exposure. • Protect operator from hot or cold environment. 	<ul style="list-style-type: none"> • Improve operator's safety and comfort

OFFERING

The Cabin Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD311	
Tamrock Axera 6	
Tamrock Axera 7	
Sandvik DD320	
Sandvik DD321	
Sandvik DD410	
Sandvik DD411	
Sandvik DD420	
Sandvik DD421	
Sandvik DL311	
Tamrock Solo 7	
Sandvik DL321	
Sandvik DL331	Contact local Sandvik representative
Sandvik DL410	
Sandvik DL411	
Sandvik DL420	
Sandvik DL421	
Sandvik DL430	
Sandvik DL431	
Sandvik DS311	
Tamrock Robolt 7	
Sandvik DS410	
Sandvik DS411	
Sandvik DS420	
Sandvik DS421	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

DOORS AND SEAT BELT INTERLOCK FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Cabin doors and seat belt are essential safety system to limit the risk of injury during machine tramming phases.

In order to insure these safety elements are operational, means cabin doors are closed and safety belt is locked, the Sandvik Doors and Safety Belt Interlock System can be added on your underground drills.

With the Sandvik Doors and Safety Belt Interlock System, the park brake release is prevented if both cabin doors are not closed and safety belt is not locked.

Furthermore, if during machine's tramming phase, the doors are opened or seat belt unlocked, a strong alarm will sound, forcing the operator to stop the machine and solving the issue.

The brakes are NOT automatically applying if, during machine's tramming phase, the doors are opened or seat belt unlocked, as sudden automatic braking causes an additional risk to a person who does not wear a seat belt.

The Doors and Safety Belt Interlock System retrofit kit is delivered with all needed parts including, switches, brackets, electric wiring, operator manual update, etc.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Insure cabin doors are closed and seat belt always fasten when the machine is tramming. 	<ul style="list-style-type: none"> • Improve safety

OFFERING

The Doors and Seat belt Interlock Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Tamrock Axera D05	
Tamrock Axera 5	
Sandvik DD310	
Sandvik DD311	
Tamrock Axera 7	
Sandvik DD320	
Sandvik DD321	
Sandvik DD410	
Sandvik DD420	
Sandvik DD421	
Sandvik DD422i	
Sandvik DD422iE	
Tamrock Solo 5-5V	
Sandvik DL310	Contact local Sandvik representative
Sandvik DL320	
Sandvik DL330	
Sandvik DL311	
Sandvik DL321	
Sandvik DL331	
Sandvik DL411	
Sandvik DL421	
Sandvik DL431	
Tamrock Robolt 05	
Tamrock Robolt 5	
Sandvik DS310	
Sandvik DS311	
Tamrock Robolt 7	
Sandvik DS421	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

CABIN SAFETY GRILL FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When drilling in poor ground condition, rock may fall from the roof and hit the cabin windshield, generating risk of injuries for the operator and damages on the unit.

In order to improve safety of the operations, Sandvik has designed the Cabin Safety Grill that provides additional protection against frontal falls of rock.

The safety grill is mounted on the cabin to cover the front windshield and folds up manually, allowing cleaning or replacement of the windshield, or servicing the window wiper(s).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Provide protection if rock hit the cabin windshield. Limit the risk of damage on the cabin front windshield 	<ul style="list-style-type: none"> Improve Safety Reduce operating cost

OFFERING

The Cabin Safety Grill Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD310	
Sandvik DD311	
Sandvik DD320	
Sandvik DD321	
Sandvik DD410	
Sandvik DD411	
Sandvik DD420	
Sandvik DD421	
Sandvik DD531	
Sandvik DL320	
Sandvik DL320	
Sandvik DL330	
Sandvik DL311	
Sandvik DL321	
Sandvik DL331	Contact local Sandvik representative
Sandvik DL420	
Sandvik DL430	
Sandvik DL411	
Sandvik DL421	
Sandvik DL431	
Sandvik DS310	
Sandvik DS311	
Sandvik DS410	
Sandvik DS411	
Sandvik DS420	
Sandvik DS421	
Sandvik DB311	
Sandvik DB331	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

CANOPY SAFETY GRILL FOR SANDVIK LOW PROFILE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

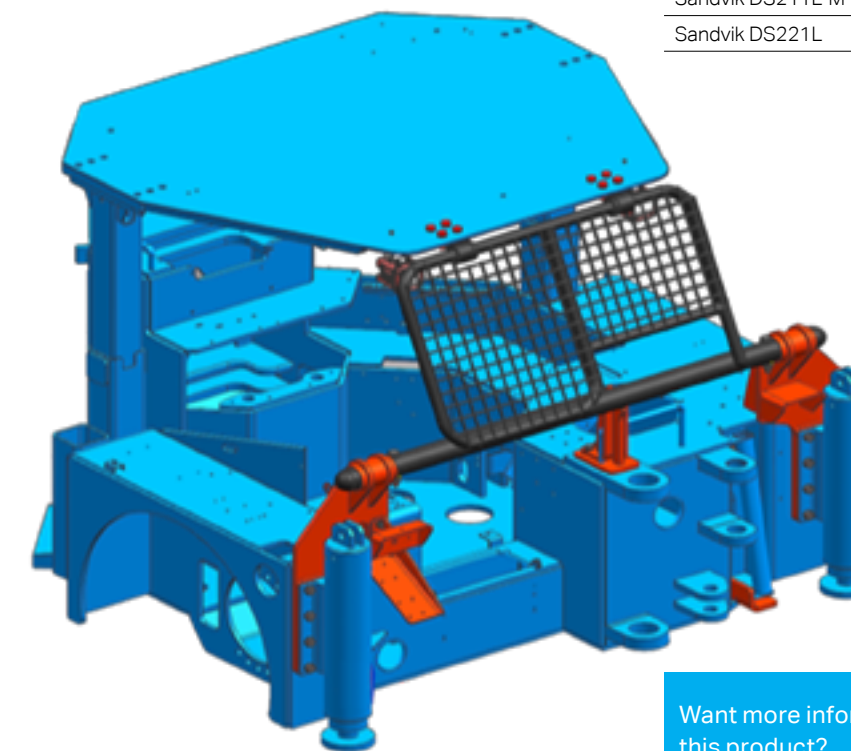
DESCRIPTION

When drilling in poor ground condition, rock may fall, roll on the boom structure down to the operator's compartment. Consequences could be fatal injuries for the operator and severe damages for the unit.

In order to strongly mitigate this risk, Sandvik has designed a specific Canopy Safety Grill for the Low Profile drills.

Canopy Safety Grill provides extra protection in poor ground environments. Designed to protect low profile drill operator compartments against frontal falls of ground, this self-movable grill improves operator safety. The grill design allows to keep the canopy variable height function.

The energy deflected is exactly in line with the normalized value used for FOPS dimensioning of the operator canopy (11.6 kJ). The protection was calculated to absorb the impact of a rock weighing 500 kilograms falling from a height of four meters. In a typical low profile environment with a room height of 2.3 meters, that means the screen protection is designed to absorb the impact of a rock weighing two tons.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Protect the operator in case of frontal falls of ground. Reduce the risk of damages on the unit 	<ul style="list-style-type: none"> Improve safety Reduce operating cost

OFFERING

The Canopy Safety Grill Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210L	BT00001916
Sandvik DD210L-V	BT00001916
Sandvik DD211L	BT00004610
Sandvik DD211L-V	BT00004610
Sandvik DL230	BT00001916
Sandvik DS210L	BT00001916
Sandvik DS210L-V	BT00001916
Sandvik DS210L-M	BT00001916
Sandvik DS211L-V	BT00004610
Sandvik DS211L-M	BT00004610
Sandvik DS221L	BT00004610

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

CANOPY SAFETY GRILL FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When drilling in poor ground condition, rock may fall, roll on the boom structure down to the operator's compartment. Consequences could be fatal injuries for the operator and severe damages for the unit.

In order to strongly mitigate this risk, Sandvik has designed a specific Canopy Safety Grill for Underground Drills.

The safety grill is mounted on the canopy to protect the front of the operator compartment from rock falls and projections. The grill design allows to keep the canopy variable height function.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Protect the operator in case of frontal falls of ground. Reduce the risk of damages on the unit. 	<ul style="list-style-type: none"> Improve safety Reduce operating cost

OFFERING

The Canopy Safety Grill Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210	
Sandvik DD2710	
Sandvik DD2711	
Sandvik DD311	
Sandvik DD321	
Sandvik DD411	
Sandvik DD421	
Sandvik DL210	
Sandvik DL2710	
Sandvik DL2711	
Sandvik DL2720	
Sandvik DL2721	
Sandvik DL311	Contact local Sandvik representative
Sandvik DL321	
Sandvik DL331	
Sandvik DL411	
Sandvik DL421	
Sandvik DL431	
Sandvik DS311	
Sandvik DS411	
Sandvik DS421	
Sandvik DS422i	
Sandvik DS511	
Sandvik DB311	
Sandvik DB331	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



ELECTRICALLY ACTIVATED SAFETY GRILL FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Poor visibility is a major factor on the risk of collision when operating underground drills. That's why keeping the cabin windows as clean as possible is very important.

Sandvik has improved the cabin's windscreen Safety Grill system in order to make it easier to clean.

Now the grill can be lifted with the help of an electrical actuator so that the window can be cleaned more easily from the ground level.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Electric system that helps to lift the windscreen's Safety Grill. 	<ul style="list-style-type: none"> Allows to clean more easily the windscreen. Improve Safety.

OFFERING

The Electrically Activated Safety Grill Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD422i	
Sandvik DD422iE	
Sandvik DL422iE	
Sandvik DL432i	Contact local Sandvik representative
Sandvik DU412i	
Sandvik DS412iE	
Sandvik DS422i	
Sandvik DS512i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)





CABIN HEATING SYSTEM FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

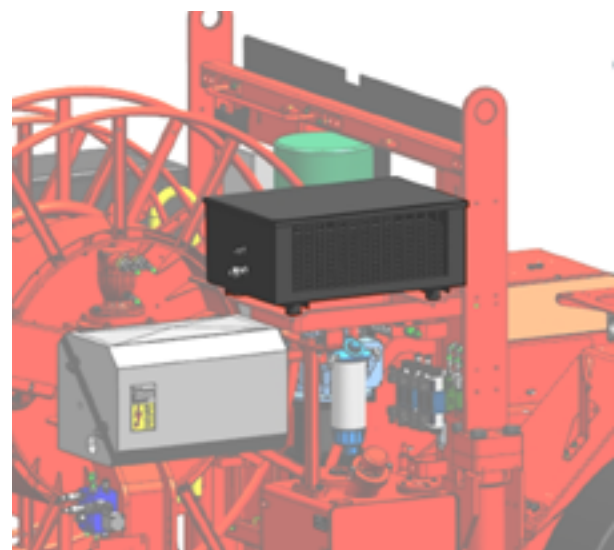
Cold temperatures have hazardous effects on humans and their ability to work well. When the body is exposed to cold temperatures, the negative effects can include dehydration, numbness, shivering, frostbite and hypothermia. This can lead to extended reactivity time, fatigue, uncontrolled movements or loss of lucidity that increase the risk of loss of control and accident.

In order to mitigate this risk, Sandvik has developed Heating Systems for their Underground Drills equipped with cabin. The Heating Systems are able to generate sufficient heat in the cabin, even on the coldest ambient temperatures.

On D301 series, the heating system consists of a "mini boiler" fuelled by diesel (from unit diesel tank). The system is operational on both drilling and tramming modes.

On larger units, the heating system uses cooling fluid from the engine cooling system to generate heat while the engine is running (tramming phases). During drilling phases, the heat is generated by electric resistance located on the AC system.

The temperature in the cabin is fully adjustable with a simple knob.



Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> System that provides heat on the cabin during drilling and tramming phases. 	<ul style="list-style-type: none"> Reduce risk of accident due to negative effect of cold ambient temperature. Improve operator's comfort.

OFFERING

The Cabin Heating System Upgrade Solution is available for the following Underground Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD311	
Sandvik DD321	
Sandvik DD410	
Sandvik DD411	
Sandvik DD420	
Sandvik DD421	
Sandvik DD530	
Sandvik DD531	
Sandvik DL320	
Sandvik DL330	
Sandvik DL311	
Sandvik DL321	
Sandvik DL331	
Sandvik DL420	
Sandvik DL430	
Sandvik DL411	Contact local Sandvik representative
Sandvik DL421	
Sandvik DL431	
Sandvik DL422iE	
Sandvik DS310	
Sandvik DS311	
Sandvik DS312	
Sandvik DS410	
Sandvik DS411	
Sandvik DS420	
Sandvik DS421	
Sandvik DS510	
Sandvik DS511	
Sandvik DS512i	
Sandvik DB311	
Sandvik DB331	



ACCESS DETECTOR FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

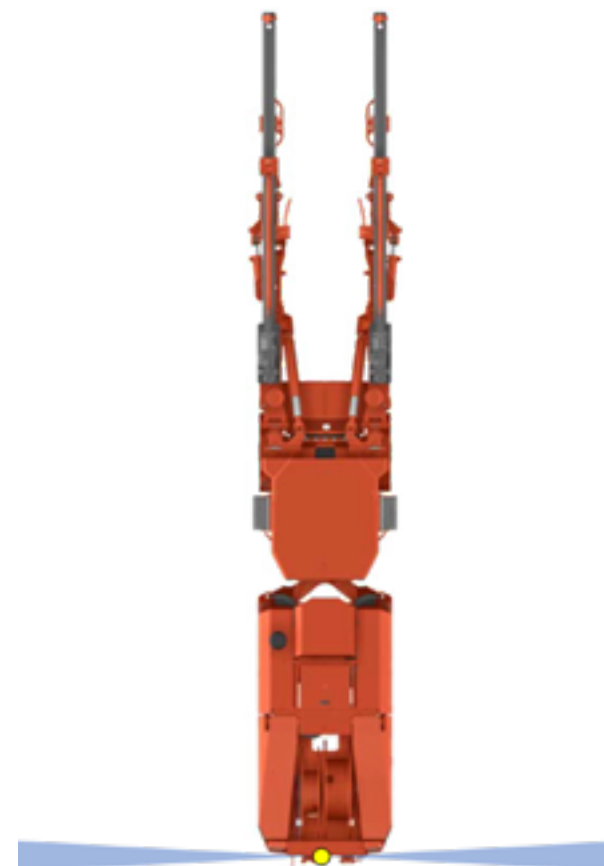
DESCRIPTION

The working area of the boom(s) of an underground drill is a dangerous area. The risk of injury due to rock fall, collision with moving boom(s), or rotating drilling rod is major, and statistics show several fatalities registered every year due

In order to reduce this risk, Sandvik has developed the Access Detector system for UG drills.

Access Detector is a systems enhancing safer drilling operations by decreasing risks caused by human actions and errors. The system detects access from both sides of the drill rig thanks to a laser scanner located at the back of the machine.

When Sandvik Access Detector is actuated by a person entering the hazard zone, it warns the operator with a visual warning. The operator may continue the drilling operation normally but he/she must ensure that no-one is in the hazard zone.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Warn the operator when somebody enters the hazard zone of the machine. 	<ul style="list-style-type: none"> Improve Safety

OFFERING

The Access Detector Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210	
Sandvik DD212	
Sandvik DD311	
Sandvik DD321	
Sandvik DD411	
Sandvik DD421	
Sandvik DD422i	
Sandvik DD422iE	
Sandvik DD531	
Sandvik DL210	
Sandvik DL230	
Sandvik DL311	
Sandvik DL321	
Sandvik DL331	Contact local Sandvik representative
Sandvik DL411	
Sandvik DL421	
Sandvik DL431	
Sandvik DL422iE	
Sandvik DL432i	
Sandvik DS311	
Sandvik DS411	
Sandvik DS421	
Sandvik DS422i	
Sandvik DS511	
Sandvik DS512i	
Sandvik DB311	
Sandvik DB331	

Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK



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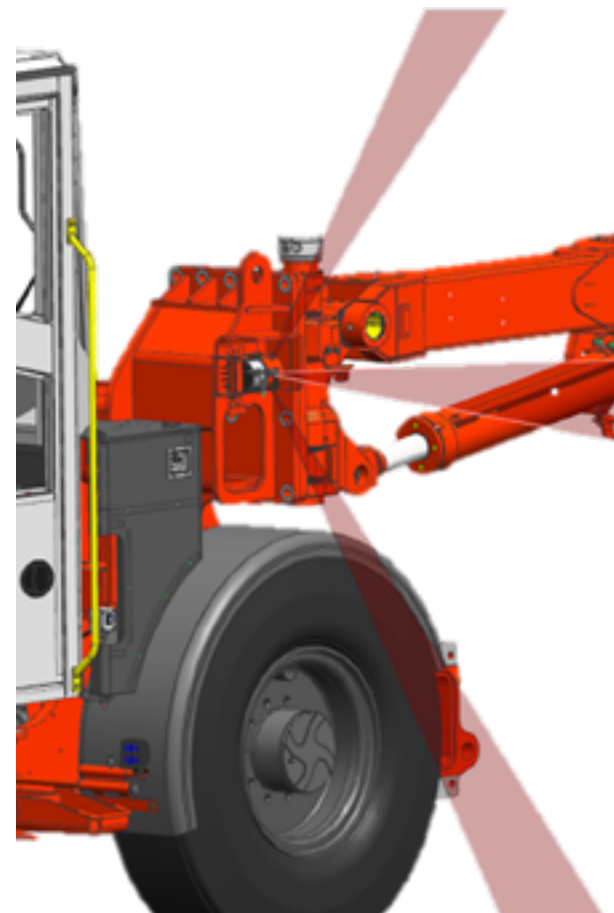
DESCRIPTION

The working area of the boom(s) of an underground drill is a dangerous areas. The risk of injury due to rock fall, collision with moving boom(s), or rotating drilling rod is major, and statistics show several fatalities registered every year due

In order to mitigate this risk, Sandvik has developed the Access Protector system for UG drills.

If the Sandvik Access Protector system recognizes a person in the detection field, thanks to laser scanner fences located on both sides of the machine, boom and drilling movements will automatically be stopped.

In other words, the Sandvik Access Protector prevents anyone from entering the working area of the booms while they are in operation. If boom operation is automatically stopped, the system must be reset by pressing the acknowledgement button, after ensuring that no-one is in the hazard zone.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Stop automatically all boom and drilling movements as soon as somebody enter the dangerous working area of the boom(s). 	<ul style="list-style-type: none"> Improve safety

OFFERING

The Access Protector Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD311	
Sandvik DD411	
Sandvik DD421	
Sandvik DD422i	
Sandvik DD422iE	
Sandvik DL311	
Sandvik DL321	
Sandvik DL331	Contact local Sandvik representative
Sandvik DL411	
Sandvik DL421	
Sandvik DL431	
Sandvik DL422iE	
Sandvik DL432i	
Sandvik DS312	
Sandvik DS422i	
Sandvik DS512i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PDS INTERFACE FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

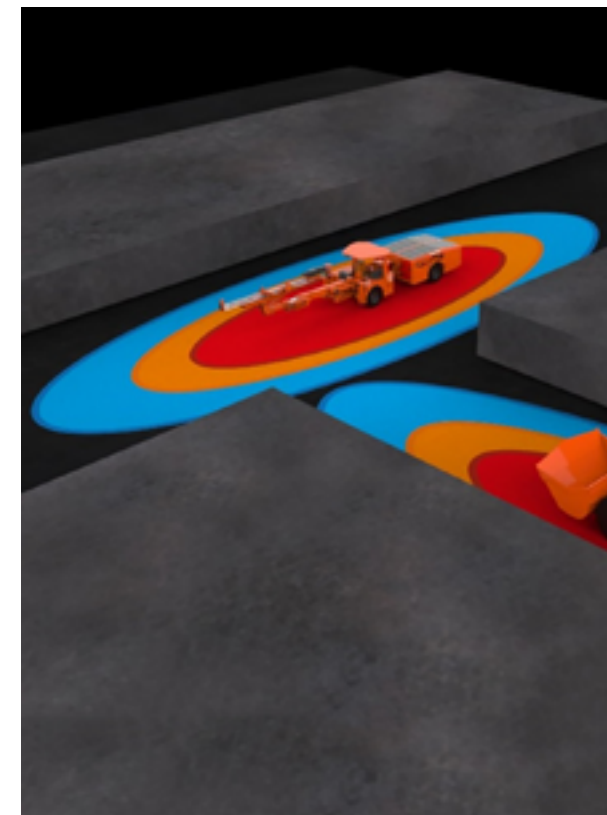
DESCRIPTION

Collision between vehicles or between machines and pedestrians is one of the major risk on underground mining. Collision with another vehicle or person could cause death or severe injury.

Proximity Detection System (PDS) is technologies or devices that actively detect close encounters between two or more objects and transmit this information to an interface system that takes automatic action to render the equipment to a safe state when potentially dangerous interaction occurs.

PDS are generally designed to inform the machine to slow down and/or eventually stop the equipment in case of collision risk with a person or an object carrying a tag.

The Sandvik Proximity Detection System Interface allows to link third-party Proximity Detection System and the Sandvik equipment.



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to link a third party PDS with the Sandvik equipment tramming and braking systems. On large drills, the system supports the use of three PDS "detection zones" 	<ul style="list-style-type: none"> OEM solution that ensure the perfect interaction of the third party PDS with the Sandvik machine systems Allow to warn the operator of potential danger in gradual way and act accordingly before the machine stops automatically.

OFFERING

The PDS Interface Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210L	BG01091286 ⁽¹⁾
Sandvik DD210L-V	BG01091286 ⁽¹⁾
Sandvik DD211L	BG01805306 ⁽²⁾
Sandvik DD211L-V	BG01805306 ⁽²⁾
Sandvik DD311	Contact local Sandvik representative
Sandvik DD321	BG01811423 ⁽³⁾
Sandvik DD321-C	BG01811427 ⁽³⁾
Sandvik DD411	BG01811423 ⁽³⁾
Sandvik DD411-C	BG01811427 ⁽³⁾
Sandvik DD421	BG01811423 ⁽³⁾
Sandvik DD421-C	BG01811427 ⁽³⁾
Sandvik DL311	Contact local Sandvik representative
Sandvik DL321	Contact local Sandvik representative
Sandvik DL331	Contact local Sandvik representative
Sandvik DL411	BG01811423 ⁽³⁾
Sandvik DL411-C	BG01811427 ⁽³⁾
Sandvik DL421	BG01811423 ⁽³⁾
Sandvik DL421-C	BG01811427 ⁽³⁾
Sandvik DL431	BG01811423 ⁽³⁾
Sandvik DL431-C	BG01811427 ⁽³⁾
Sandvik DS210L-V	BG01091286 ⁽¹⁾
Sandvik DS210L-M	BG01091286 ⁽¹⁾
Sandvik DS211L-V	BG01805306 ⁽²⁾
Sandvik DS211L-M	BG01805306 ⁽²⁾
Sandvik DS311	Contact local Sandvik representative
Sandvik DS411	BG01811423 ⁽³⁾
Sandvik DS411-C	BG01811427 ⁽³⁾
Sandvik DS421	BG01811423 ⁽³⁾
Sandvik DS421-C	BG01811427 ⁽³⁾

(1) Basic level. Non ISO 21815-2 compliant.
(2) Level 9. Non ISO 21815-2 compliant.
(3) Only for machines equipped with MB engines

ROD CHANGER FOR DL210

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

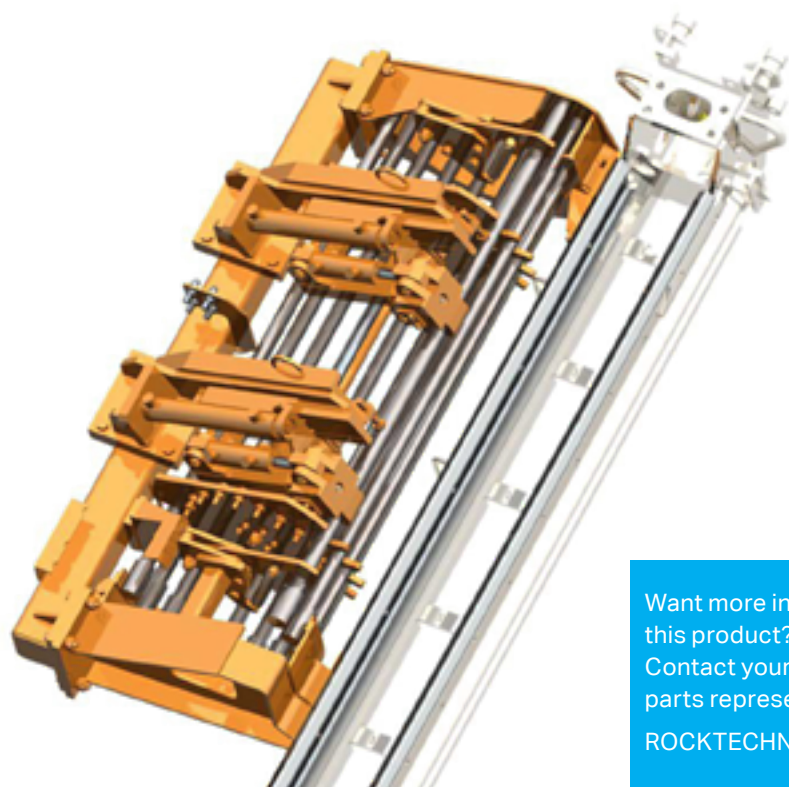
Adding manually rods on the feed is an hazardous task as the personnel in charge is exposed to risks of fatal injuries due to rock falls, rotative parts, unexpected boom movements, etc...

In order to improve the safety of the operation of the DL210 and mitigate the risk of accident during addition and removal of rods on the feed, Sandvik has developed a compact rod changer for this machine model.

The rod changer has arms geometry optimised for fast and accurate rod handling. It is manufactured of heavy duty steel and fitted with large diameter bushings for increased service life. The rod handler consists of a hydraulic motor powered carousel type magazine and rotation mechanism, index plates, front and rear end plates, and sliding arms with gripping jaws.

The rod changer is designed for R32, T38 or T45 MF rods. When changing between rod diameters the index plates and gripping jaw wear pieces must be changed (upgrade modification kit available).

The use of rock drill power extractor is recommended in combination with Rod handler, for the ease of uncoupling rods and for improved productivity (Upgrade Solution available).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Avoid manual operation near the drilling module during drilling operations. 	<ul style="list-style-type: none"> Improve safety

DRILLING CAPACITY

Rods Length		3"	4"	5"
	R32	12+1	12+1	12+1
Storing Capacity (number of rods)	T38	11+1	11+1	11+1
	T45	10+1	10+1	10+1
Maximal hole length (m)	R32	12,1	15,4	19,5
	T38	11,2	14,3	18,0
	T45	10,3	13,1	16,4

OFFERING

The Rod Changer Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL210	Contact local Sandvik representative

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

SCREEN HANDLER FOR MEDIUM BOLTERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Installation of mesh during support installation can be very hazardous if people have to go under the non supported area during the installation process.

To mitigate this risk, Sandvik has developed the SH Screen handler for DS2710 and DS300 series.

The SH Screen Handler is a hydraulic telescopic boom specially designed for the mechanization of screen installation, along the roof and/or side walls, handled by only one operator from the control station.

Not only safety and productivity are increased, but difficult places to reach are now accessible.

The system is mounted directly on the TUC or SBH bolting head goose neck. The use of the screen manipulator is simple, reliable and easy.

It can install rigid expanded metal mesh or welded wire mesh screen sheets.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allows the mechanized installation of support mesh without having anybody on the unsupported area. Simple, reliable and easy to use system. 	<ul style="list-style-type: none"> Improves safety by avoiding injuries due to rock fall during mesh installation. Require minimal maintenance and training.

OFFERING

The Screen Handler Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DS2710	Contact local Sandvik representative
Sandvik DS2711	
Sandvik DS310	
Sandvik DS311	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

SCREEN HANDLER ON SEPARATE BOOM FOR LARGE BOLTERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Installation of mesh during support installation can be very hazardous if people have to go under the non supported area during the installation process.

To mitigate this risk, Sandvik has developed the SH Screen handler on separate boom for large bolters.

The Screen Handler is a hydraulic telescopic boom specially designed for the mechanization of screen / wire mesh installation, along the hanging wall / back and / or side walls.

It is controlled by the operator from the drilling control panel.

This shortens the rock reinforcement cycle and optimizes the meshing support efficiency, because the mesh is directly pinned up with rock supporting bolts. In addition, the meshing job will be safely done from a comfortable safety cabin or canopy.

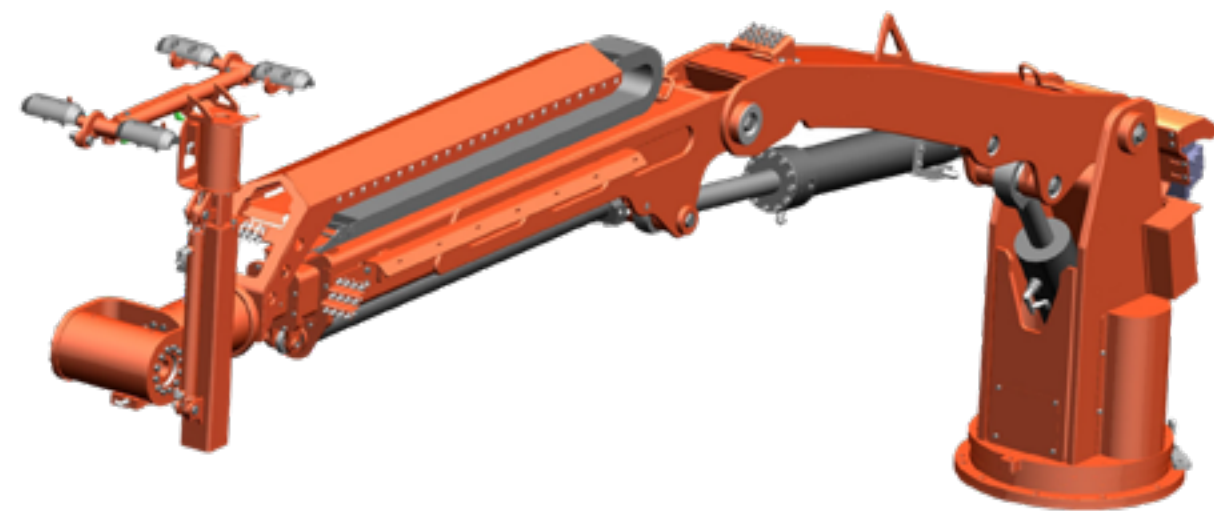
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allows the mechanized installation of support mesh without having anybody on the unsupported area. Optimize meshing support efficiency 	<ul style="list-style-type: none"> Improves safety by avoiding injuries due to rock fall during mesh installation.
<ul style="list-style-type: none"> Shortens bolting cycle 	<ul style="list-style-type: none"> Improve productivity.

OFFERING

The Screen Handler On Separate Boom Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DS410	
Sandvik DS411	
Sandvik DS510	Contact local Sandvik representative
Sandvik DS511	
Sandvik DS512i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ROLL MESH HANDLER FOR BOLTERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Installation of mesh in roll during rock support operations can be very hazardous if people have to go under the non supported area during the installation process.

Also, this task is often difficult and long to perform.

In Order to mitigate risk during mesh installation and also to ease and speed up the rock support process, Sandvik has developed the Roll Mesh Handler for it large bolters.

The Roll Mesh Handler is a mechanized unrolling device mounted on a dedicated boom (screen handler boom if the unit is already equipped with this option). It is a simple and robust system.

The mesh roll is automatically grasped and unwound along the tunnel profile in both directions (vertically and horizontally). During the process, the installation crew is never exposed to working under unsupported ground, and so, protected from rock fall hazard.

The Roll Mesh Handler ease and speed up the installation of mesh as manual work is kept to a minimum and greater quantities of mesh can be processed simultaneously.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allows to install mesh in roll without exposing people under the unsupported ground. Ease and speed up the mesh installation process. Simple and robust system. 	<ul style="list-style-type: none"> Improve safety by protecting people from rock fall during mesh installation process.. Improve productivity. Low operating cost.

OFFERING

The Roll Mesh Handler Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DS411	Contact local Sandvik representative
Sandvik DS512i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TUBE MANIPULATOR FOR SANDVIK DL421-C

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Drilling rods and tubes could be quite difficult and dangerous to manipulate as they are weighing several tenth of kilos. Also, the shape of rods make it difficult to handle with a standard crane, without specific tools .

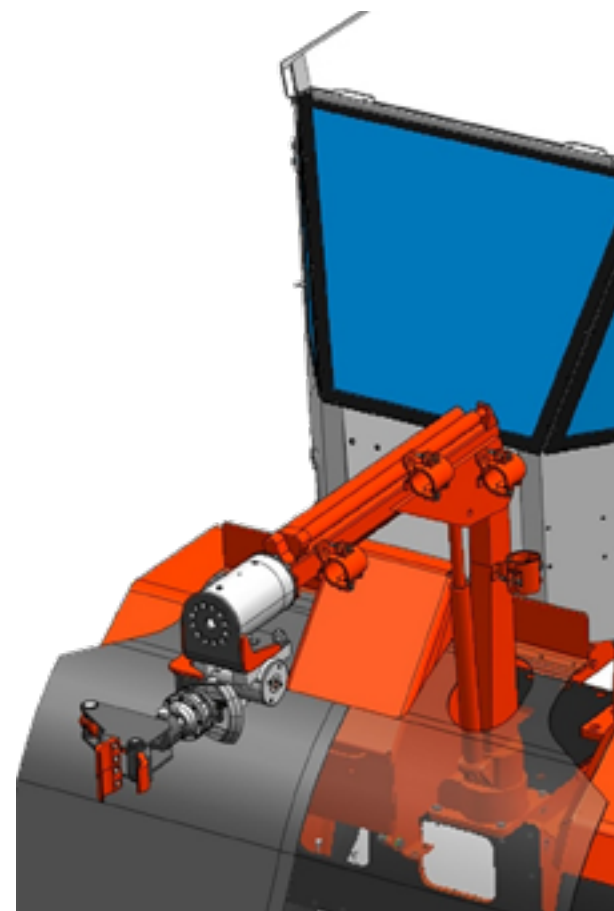
In order to make tube carousel loading operation safer and easier, Sandvik offer the possibility to equip the DL421 with a Tube Manipulator.

The Tube Manipulator is an additional hydraulic telescopic boom that can be used to grab drilling rods/ tubes on the floor and place it on the carousel of the drilling module.

It can lift up to 125 kg when retracted and 55 kg in fully extended position and can reach up to 3,8 m from it base.

Associate with the specific tool P/N: BG00405451 and a lifting chain, the Tube manipulator can also be used to handle the rock drill flushing head (i.e. for shank adaptor change or service).

The Tube Handler system is only available on DL421 equipped with cabin.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allows to manipulate the drilling rods / Tubes safely. Allows to handle safely the rock drill flushing head. 	<ul style="list-style-type: none"> Improve safety.

OFFERING

The Tube Manipulator Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL421	Contact local Sandvik representative

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

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LIFECYCLE COST IMPROVEMENT

BOOM SUSPENSION SYSTEM FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

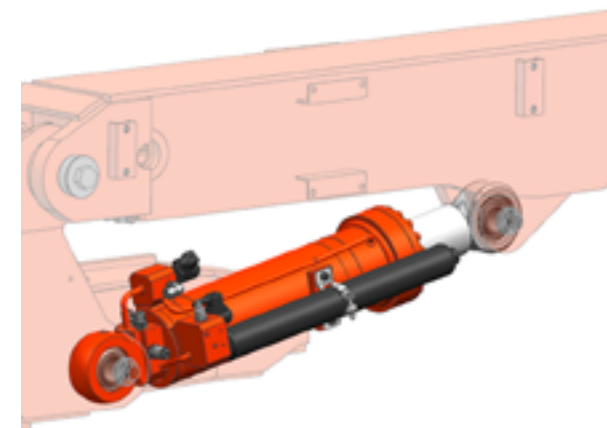
DESCRIPTION

Based on its long experience on mining equipment design and testing, Sandvik introduces a new Boom Suspension System, dedicated to UG drills.

The main purpose of this System is to extend the lifetime of boom and carrier parts by reducing the vibrations and peak forces carried to the boom when the machine is tramming on tunnels. It also improves significantly the operator comfort.

When the park brake is released and motion switch activated, the Boom Suspension System is in function. A special piston pressure accumulator, connected directly to the boom lift cylinder, absorbs most of the peaks of pressures generated and preserve the rest of the structure from high stress and vibrations.

The Boom Suspension System can be disabled easily, if needed, with a simple electric switch, from the operator compartment. Due to the small size of the accumulator, the system fulfills all the local regulations (EU, CRN).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Life of the boom parts (extension tube, skids, pins, etc.) is extended by +60% due to reduced stress and vibrations carried by the boom. Reduce the stress on front carrier structure and on front axle. Avoid engine rpm fluctuations. Reduce stress on transmission. Decrease the amount of failures and repairs 	<ul style="list-style-type: none"> Reduce the operating cost
<ul style="list-style-type: none"> Operator is less exposed to vibrations and machine's movements during tramming. Decrease the risk of boom structure failures that could generate accident while the machine is tramming. 	<ul style="list-style-type: none"> Improve safety and ergonomics
<ul style="list-style-type: none"> Reduce the risk of downtime due to boom parts failures, front carrier cracks or axles failures. 	<ul style="list-style-type: none"> Improve productivity

OFFERING

The Boom Suspension Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DS311	BG01206978
Sandvik DS210L-M	BG01253627
Sandvik DD210L	
Sandvik DD211L	
Sandvik DS211L-M	
Sandvik DL230L	Contact local Sandvik representative
Sandvik DD212	
Sandvik DS310	
Sandvik DL330 (Only with B26LC boom)	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



HEALTH MONITORING SYSTEM FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Scheduled maintenance done at regular interval is NOT the most optimized maintenance strategy as there are risk to under or over-maintaining the machine.

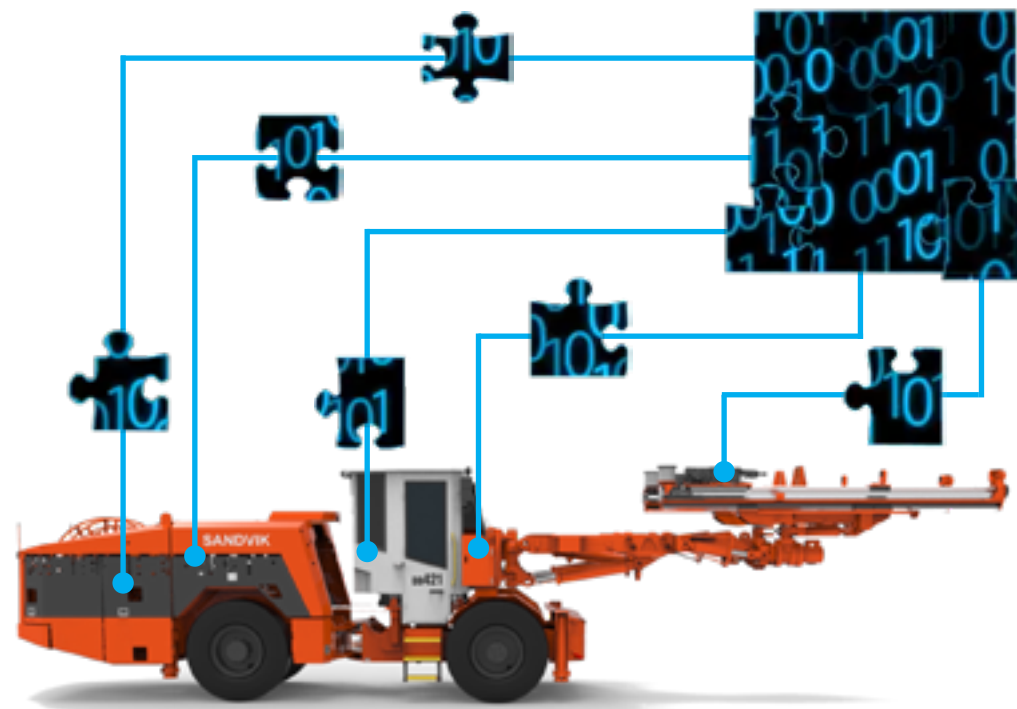
The Sandvik Health Monitoring System allows to switch easily to an optimized conditional maintenance strategy by monitoring the real condition of your machine.

Thanks to a network of sensors the Sandvik Health Monitoring System measures and transfer information about the operating state and wear level of the main machine's systems.

The Sandvik Health Monitoring System makes your machine "intelligent" by collecting easily reliable data that will help you to follow closely the condition of the main systems of your drill rig and so, to make maintenance decision based on real facts!

The data measured by the Health Monitoring System are transferred to the My Sandvik Digital Services Knowledge Box™. These data are used to build My Sandvik Productivity reports that gives a direct overview of fleet condition, utilization and performance. It also gives access to alarm and signal reports to detect early safety violations or lower performance issues.

Digitalization is true as we speak and market is moving fast. With your machines being ready to send reliable and applicable data you can make your decisions based on facts that weren't visible before.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

SYSTEMS MONITORED	FEATURES	ADVANTAGES
<ul style="list-style-type: none"> Rock drill(s) (Only Machines equipped with rock drills with stabilizer system) 	<ul style="list-style-type: none"> Measurement of the pressure on the return line of the rock drill(s) stabilizer system 	<ul style="list-style-type: none"> Provides indications about wear state of the rock drill(s). Monitor the condition of the rock drill(s) and perform maintenance accordingly to prevent catastrophic failures.
<ul style="list-style-type: none"> Shank lubrication 	<ul style="list-style-type: none"> Measurement of Temperature and water content of shank lubrication oil. 	<ul style="list-style-type: none"> Monitor shank lub oil water content and T°. Control the shank lubrication oil quality. Prevent issues due to oil water contamination on shank lubrication oil like piston striking face cracks and failures, corrosion and premature wears of bushings and bearings.
<ul style="list-style-type: none"> Hydraulic system 	<ul style="list-style-type: none"> Measurement of load on powerpack motor(s) with current transducer(s). Measurement of the temperature and water content on the hydraulic oil. 	<ul style="list-style-type: none"> Estimate hydraulic system condition and detect loss of performance of the main components to anticipate failures. Monitor hydraulic oil temperature and water content to identify issues and failures before important consequences.
<ul style="list-style-type: none"> Drilling parameters 	<ul style="list-style-type: none"> Measurement of Percussion, rotation and feed pressures. 	<ul style="list-style-type: none"> Overall look at fleet's utilization and performance to improve efficiency for different shifts, as well as compare them on the My Sandvik Productivity reports.
<ul style="list-style-type: none"> Water flushing 	<ul style="list-style-type: none"> Measurement of Water flushing pressure. 	<ul style="list-style-type: none"> Identify issues with mine water supply or water pump condition.
<ul style="list-style-type: none"> Mine water supply 	<ul style="list-style-type: none"> Measurement of Mine water supply pressure and temperature. 	<ul style="list-style-type: none"> Identify issues on the mine water supply and help you to take the appropriate measures to solve the issues before important loss of productivity or machines failures.
<ul style="list-style-type: none"> Mine electric supply 	<ul style="list-style-type: none"> Measurement of Mine electric voltage. 	<ul style="list-style-type: none"> Alerts in case of wrong voltage input. Helps to take the appropriate measures to solve the issues before important loss of productivity or machines failures.
<ul style="list-style-type: none"> Operating environment 	<ul style="list-style-type: none"> Measurement of machine environment T° and humidity. 	<ul style="list-style-type: none"> The Health Monitoring System Upgrade Solution is available for the following UG Drills

OFFERING

The Health Monitoring System Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD311*	Contact local Sandvik representative
Sandvik DD321*	
Sandvik DD421*	

*Only machines with specific configuration are compatible with the Health Monitoring System at the moment. Configuration must be checked to ensure retrofit possibilities. Configuration of other machine type/models (including Bolters and production drills) than listed above, must be studied before feasibility validation.

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ADDITIONAL BY-PASS FILTER FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Underground Mining operations have to run smoothly and economically with limited or no downtime to be successful. Unplanned equipment breakdown can often be the most timely and expensive setbacks for mining companies. And a majority of the failures concerns the hydraulic systems of the machines. The components that are parts of the hydraulic systems (Rock drills, pumps, cylinders, valves...) are generally very expensive and difficult to troubleshoot and replace.

Studies provided by suppliers of hydraulic components, show that up to 80% of the hydraulic systems failures are caused by excessive hydraulic oil contamination.

The most efficient solution to reduce dramatically the risk of failures of hydraulic components is to control and limit the contamination level of the hydraulic oil. This means that hydraulic fluids maintenance should be a top priority during maintenance operations.

Sandvik always promotes the best maintenance practices and would like to help his customers to manage the hydraulic oil contamination level. So we have developed a "by-pass" filtration system that clean continuously the oil.

This additional filter is mounted in parallel with the hydraulic circuit, which allow a very fine and efficient filtration (2µm absolute). The filter element has a high retention capacity (240g) that makes replacement interval wide and economical. Electric clogging indicator inform when replacement of the element is needed.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Very efficient filtration that reduce the risk of failure of the hydraulic components Limit the risk of downtime due to failure of hydraulic component 	<ul style="list-style-type: none"> Reduce operating cost Preserve productivity

OFFERING

The Additional By-Pass Filter Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD422i	BG00752286
Sandvik DD422iE	
Sandvik DL422iE	
Sandvik DL432i	
Sandvik DS412i	Contact local Sandvik representative
Sandvik DS412iE	
Sandvik DS511	
Sandvik DS512i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



KVL10-1 TO SLU-1 CONVERSION KIT FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Proper Rock drill lubrication is of critical importance to avoid frequent reliability problems and maintain operating cost at an acceptable level. Low lubrication lead to premature wear of bushings, failure of ball bearings and excessive wear of all rotative and sliding parts. Excess of lubrication, or water contamination of the oil leads to frequent failure of the piston striking face and corrosion that weaken the parts.

So we understand that the setting of the lubrication flow is very important as the control of the water content on the oil.

Some of the Sandvik drills are still operating on the field with KVL10-1 shank lubrication system. The function of this system is very basic (which can be considered an advantage) but it has two important critical flaws:

- It's impossible to control accurately the oil flow.
- The water coming from the moisture on the air flow contaminate the oil in the tank (air flow and oil tank not separated).

In order to limit rock drill failure generated by improper oil flow or water contamination of the lubrication oil, Sandvik offers to replace the KVL10-1 shank lubrication system by SLU-1.

SLU-1 shank lubrication system offers the possibility to adjust with great accuracy the oil flow. Also, the oil tank is separated from the air flow, which avoid water contamination of the oil in the tank.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> SLU-1 allows accurate adjustment of the shank lubrication oil flow SLU-1 works with separation of the oil stored in the tank and air flow. 	<ul style="list-style-type: none"> Avoid issues generated by lack or excess of shank lubrication oil. Improve reliability.

OFFERING

The KVL10-1 to SLU-1 is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210	
Sandvik DD210L	
Sandvik DD210L-V	
Sandvik DD211L	Contact local Sandvik representative
Sandvik DD211L-V	
Sandvik DS211L-M	
Sandvik DS211L-V	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



WATER/AIR SEPARATOR AUTO BLEEDING FOR UNDERGROUND DRILLS

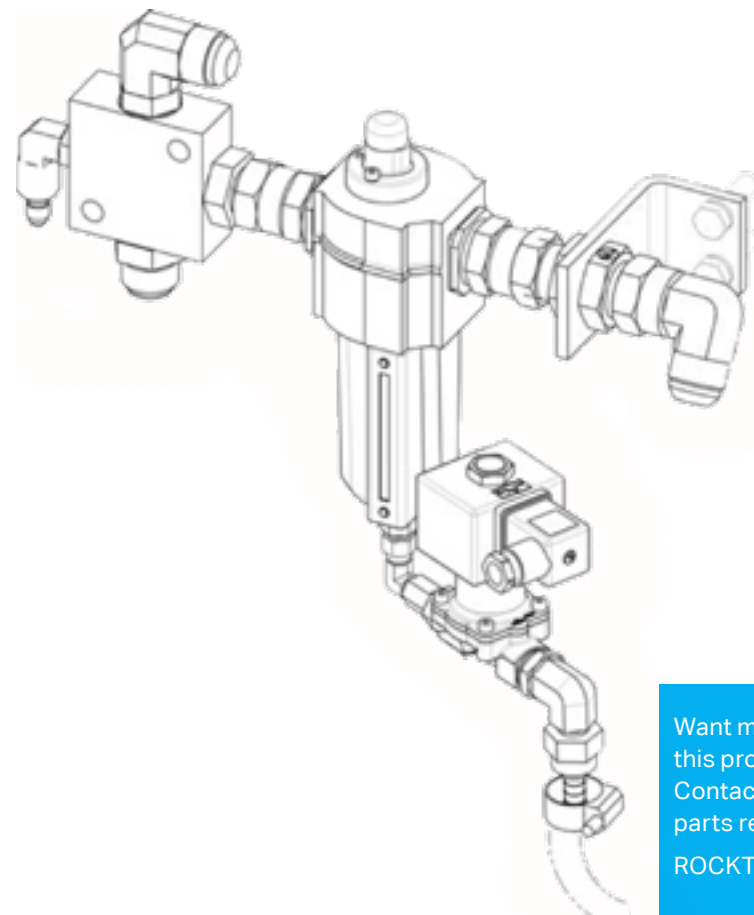
UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Significant water contamination of the shank lubrication is a serious concern as it generate corrosion that weaken the rock drill parts and can lead to failure of the piston striking face.

In order to limit water contamination, our machines are equipped with Water/Air Separation System on the compressed air line. But this system has to be bled manually regularly in order to ensure the system efficiency. In very humid environment, like underground mine tunnels, the bleeding tap has to be sometimes turned on several times per shift, which can be quite restrictive.

In order to avoid this repetitive task and to ensure the Water/Air Separator is always protect the rock drill from excessive water contamination in the lubrication oil, Sandvik has developed an Auto Bleeding System upgrade. It automatically drain the water from Separator system. The interval and duration of the drains can be fully set-up to adapt to the machine working environment (air humidity level).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
Ensure proper operation of the air/water separator by automatic bleeding of the water collected.	Limit the risk of rock drill failure due to excessive water contamination of the shank lubrication oil
Reduce daily maintenance tasks	Improve productivity

OFFERING

The Water/Air Separator Auto Bleeding Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210L	
Sandvik DD210L-V	
Sandvik DL230L-5	BG00653634
Sandvik DS210L-V	
Sandvik DS210L-M	
Sandvik DD311	
Sandvik DS311	BG00613215
Sandvik DL331	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



AUTOMATIC GREASING SYSTEM FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Regular lubrication of implemented greasing points is essential for reliable and trouble-free operations of the drilling mechanical components. Important saving on the life of different pins and skids can be achieved with optimum lubrication. Proper condition of the boom articulation insures also drilling precision.

With automatic greasing system the correct amount of grease is delivered automatically to the majority of lubrication points, excluding feed(s).

The lubrication interval can be adjusted from the central greasing unit. System diagnostics monitor that greasing cycle is done successfully.



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improve life of booms and central articulation pins and skids by insuring constant and optimal greasing Reduce maintenance time. 	<ul style="list-style-type: none"> Reduce operating cost
<ul style="list-style-type: none"> Ensure good condition of boom pins and skids 	<ul style="list-style-type: none"> Improve drilling precision/ productivity

OFFERING

The Automatic Greasing System Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD311	
Sandvik DD320	
Sandvik DD321	
Sandvik DD410 / DD420	
Sandvik DD411 / DD421	
Sandvik DD422i	
Sandvik DD422iE	
Sandvik DD530	
Sandvik DD531	
Sandvik DL310 / DL320	
Sandvik DL311 / DL321	
Sandvik DL331	
Sandvik DL410 / DL420	
Sandvik DL430	
Sandvik DL411 / DL421	
Sandvik DL422iE	Contact local Sandvik representative
Sandvik DL431	
Sandvik DL432i	
Sandvik DS310	
Sandvik DS311*	
Sandvik DS312*	
Sandvik DS410	
Sandvik DS411	
Sandvik DS420	
Sandvik DS421	
Sandvik DS422i	
Sandvik DS510	
Sandvik DS511	
Sandvik DS512i	
Sandvik DS520	
Sandvik DB311 / DB331	

CARRIER CENTRALIZED GREASING SYSTEM FOR UG DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Regular lubrication of implemented greasing points is essential for reliable and trouble-free operations of the mechanical components. Important saving on the life of articulation and cylinders pins of the carrier can be achieved with optimum lubrication.

With Carrier Centralized Greasing System the lubrication points are grouped together for easy access. Central articulation, front stabilizers, rear axle bolster, etc, greasing points are grouped by areas. The number of lubrication points varies between drilling unit types.

Greasing is done manually with hand greasing pump or by using the options described on the next two pages. (Grease reel with pump and nozzle or grease gun and cartridge).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improve life carrier's pins by making greasing maintenance operation more faster, easier and efficient. 	<ul style="list-style-type: none"> Reduce operating cost
<ul style="list-style-type: none"> Reduce daily maintenance time. 	<ul style="list-style-type: none"> Increase machine availability (productivity).

OFFERING

The Carrier Centralized Greasing System Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD211L	
Sandvik DD211L-V	
Sandvik DD220L	
Sandvik DL230L	
Sandvik DS211L-V	
Sandvik DS211L-M	
Sandvik DS221L	
Sandvik DD310	
Sandvik DD311	
Sandvik DD320S	
Sandvik DL311	Contact local Sandvik representative
Sandvik DL321	
Sandvik DL331	
Sandvik DS311	
Sandvik DS312	
Sandvik DL410	
Sandvik DL420	
Sandvik DL430	
Sandvik DB311	
Sandvik DB331	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



GREASE REEL WITH PUMP AND NOZZLE FOR UG DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

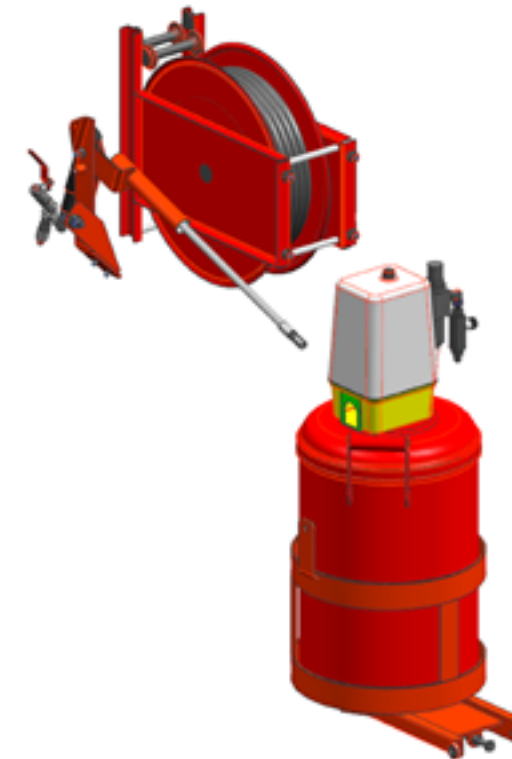
Regular lubrication of implemented greasing points is essential for reliable and trouble-free operations of the drilling mechanical components. Important saving on the life of different pins and skids can be achieved with optimum lubrication. Proper condition of the boom articulation insures also drilling precision.

Greasing reel with pump and nozzle enables the operator to manually lubricate the needed locations.

The system is fully integrated on the machine and autonomous. The lubrication hose is long enough to reach all grease point on the drilling unit (15 m).

Operator manually controls the amount of grease to be injected with the trigger of the nozzle. The pump works with compressed air provided by the machine's compressor.

The grease tank capacity is 14 or 22 litres according machine model.



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improve life of booms, cylinders, articulation pins and skids by making greasing maintenance operation easy and convenient on every machine's location. 	<ul style="list-style-type: none"> Reduce operating cost

OFFERING

The Grease Reel with Pump and Nozzle Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD212	
Sandvik DD2710 / DD2711	
Sandvik DD310	
Sandvik DD320	
Sandvik DD320S	
Sandvik DD321	
Sandvik DD410	
Sandvik DD411	
Sandvik DD420	
Sandvik DD421	
Sandvik DD530	
Sandvik DD531	
Sandvik DL2710 / DL2711	
Sandvik DL2720 / DL2721	
Sandvik DL310 / DL320	
Sandvik DL330	
Sandvik DL311 / DL321	Contact local Sandvik representative
Sandvik DL410 / DL420	
Sandvik DL430	
Sandvik DL411 / DL421	
Sandvik DL431	
Sandvik DL422iE	
Sandvik DL432i	
Sandvik DS2710 / DS2711	
Sandvik DS310	
Sandvik DS410	
Sandvik DS411	
Sandvik DS420	
Sandvik DS421	
Sandvik DS422i	
Sandvik DS510	
Sandvik DS511	
Sandvik DS512i	
Sandvik DS520	

CARTRIDGE GREASE GUN AND REEL FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

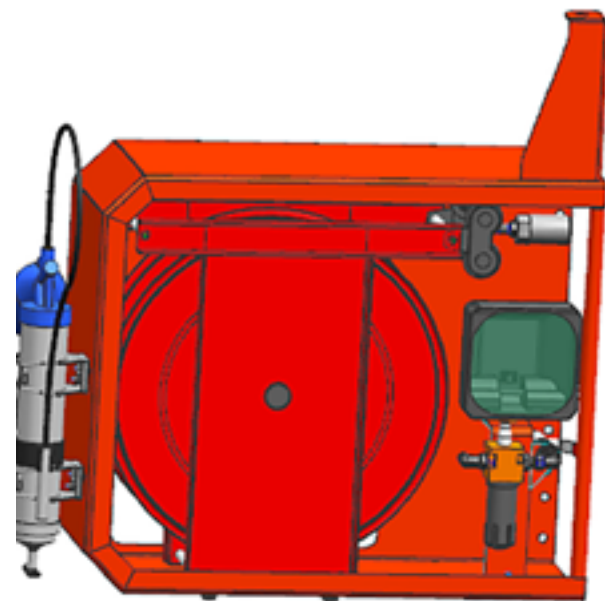
DESCRIPTION

Regular lubrication of implemented greasing points is essential for reliable and trouble-free operations of the drilling mechanical components. Important saving on the life of different pins and skids can be achieved with optimum lubrication. Proper condition of the boom articulation insures also drilling precision.

The Cartridge Grease Gun and Reel system includes a variable speed trigger that allows excellent grease flow control.

The gun is automatic, with an accessible check valve assembly for a superior flow performance.

The Cartridge Grease gun is powered by compressed air from the on-board air compressor.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Improve life of booms, cylinders, articulation pins and skids by making greasing maintenance operation easy and convenient on every machine's location.

CUSTOMER VALUES

- Reduce operating cost

OFFERING

The Cartridge Grease Gun and Reel Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210L	
Sandvik DD210L-V	
Sandvik DD211L	
Sandvik DD211L-V	
Sandvik DD220L	
Sandvik DS210L-V	
Sandvik DS210L-M	
Sandvik DS211L-V	
Sandvik DS211L-M	
Sandvik DS221L	Contact local Sandvik representative
Sandvik DL230L	
Sandvik DD210	
Sandvik DL210	
Sandvik DL230	
Sandvik DD311	
Sandvik DL331	
Sandvik DS311	
Sandvik DS312	
Sandvik DB311	
Sandvik DB331	

Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK



HIGH PRESSURE CLEANER FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Mining equipment are operating in a very dusty, muddy and wet environment. That's why it's important to keep the equipment as clean as possible with regular washing with high pressure water to remove, mud, dirty grease, and rock cuttings, that could on the long run damage the unit, generate premature wearing or inhibit some functions and movements.

In order to ease the maintenance operations, and especially the unit washing operations, Sandvik offers to equip underground drills with on-board water High Pressure Cleaner.

This heavy duty High Pressure Cleaner, can generate pressure up to 180 bars. Water is pressurized with a separate hydraulically driven high pressure water pump, powered by the diesel engine of the rig and the system can be used anywhere, as long as the machine is connected to the mine water network.

The High Pressure Cleaner upgrade solution includes a practical spring loaded hose reel.



Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- On-board water HP cleaner. Allows to clean the machine efficiently everywhere it is possible to connect the machine to the mine water network.

CUSTOMER VALUES

- Reduce operating cost by allowing to clean easily and efficiently the machine.

OFFERING

The High Pressure Cleaner Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210L / DD210L-V	
Sandvik DD211L / DD211L-V	
Sandvik DD220L	
Sandvik DD210	
Sandvik DD212	
Sandvik DD2711	
Sandvik DD310 / DD311	
Sandvik DD320 / DD320S / DD321	
Sandvik DD410 / DD420	
Sandvik DD411 / DD421	
Sandvik DD422i / DD422iE	
Sandvik DD530 / DD531	
Sandvik DL230L	
Sandvik DL210 / DL230	
Sandvik DL2711 / DL2721	
Sandvik DL310 / DL320 / DL330	Contact local Sandvik representative
Sandvik DL311 / DL321 / DL331	
Sandvik DL410 / DL420 / DL430	
Sandvik DL411 / DL421 / DL431	
Sandvik DL422iE / DL432i	
Sandvik DS210L-V / DS210L-M	
Sandvik DS211L-V / DS211L-M	
Sandvik DS221L	
Sandvik DS2711	
Sandvik DS310	
Sandvik DS311	
Sandvik DS312	
Sandvik DS410 / DS420	
Sandvik DS411 / DS421	
Sandvik DS422i	
Sandvik DS510 / DS520	
Sandvik DS511	
Sandvik DS512i	

WATER HOSE REEL FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Frequent repair or replacement of the water supply hose could be very costly and frequent damages of the hose can really impact the production as drilling is impossible without correct water supply. Also, unreeling and reeling hose "by hand" is a long and heavy task for the operator if the mine water connection is located several tenths of meters from the work place.

In order to ease the management of the water supply hose and to protect it during tramming phases, Sandvik has developed a Water Hose Reel.

The reel can be controlled from the operator station or from the back of the machine. There is an automatic function that unreel the hose in the same time the machine tram to the face (same as the electric supply cable).

The Water Hose Reel upgrade solution can be delivered with water hose (size and length differ according machine models.)



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Water Hose Reel ease the management of the water supply hose and protect it during tramming phases.

CUSTOMER VALUES

- Reduce risk of damages on the water hose that are costly and disturbs production.
- Makes operator tasks easier and more comfortable.

OFFERING

The Water Hose Reel Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD311	
Sandvik DD320S	
Sandvik DD321	
Sandvik DD410 / DD420	
Sandvik DD411 / DD421	
Sandvik DD422i / DD422iE	
Sandvik DD530	
Sandvik DD531	
Sandvik DL311 / DL321 / DL331	
Sandvik DL410 / DL420 / DL430	Contact local Sandvik representative
Sandvik DL411 / DL421 / DL431	
Sandvik DL422iE / DL432i	
Sandvik DS311	
Sandvik DS312	
Sandvik DS410 / DS420	
Sandvik DS411 / DS421	
Sandvik DS412i / DS412iE	
Sandvik DS422i	
Sandvik DS511	
Sandvik DS512i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



BOLTING HEAD OILER FOR BOLTERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Bolting head have to be in relative good and clean condition to operate correctly. Dirt and more precisely cement or resin residues can prevent the correct operation of the turret and generate expensive repair.

In order to avoid cement and resin residues to stick on the bolting head elements and makes cleaning operations long and tedious tasks, Sandvik has developed the Bolting Head Oiler.

Bolting Head Oiler allows to creates a film of oil that protect the bolting head from cement and resin overflow and splashing. It also prevents itself from rusting.

Before bolting, the operator, with a high pressure pistol, sprays a film of oil on the whole bolting head. Immediately after finishing the bolting operations, it is highly recommended to wash the bolting head to remove the cement lying on the oil film.

This pneumatic system is working either on the mine air network supply or on the on-board air compressor supply.

It is a highly recommended option when operating bulk cement bolting unit or cement or resin injection.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- The use of the bolting Head Oiler creates an oil film that protect the bolting head from cement or resin overflow and splashing.

CUSTOMER VALUES

- Avoid premature wear and mis-function of the bolting head due to cement or resin residues.
- Ease cleaning operations.

OFFERING

The Bolting Head Oiler Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DS311	
Sandvik DS312	
Sandvik DS410	
Sandvik DS411	
Sandvik DS420	Contact local Sandvik representative
Sandvik DS421	
Sandvik DS422i	
Sandvik DS510	
Sandvik DS511	
Sandvik DS512i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



APPLICATION MODIFICATION

TELESCOPIC FEED CONVERSION FOR DEVELOPMENT DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When it is needed to perform new tasks with your development drill rig, like for instance drilling cross-cuttings on narrow drifts or drilling bolt holes, using a solid long feed can be problematic. That's why Sandvik has developed the TFX500 feeds.

Sandvik TFX500 telescopic feeds are designed for Sandvik face drilling jumbos with RDX5 and RD500 series rock drills. A versatile feed for face drilling, bolt hole drilling and cross-cuttings in a limited space where both long and short rods have to be used. Optimized with SB40 NV boom (Upgrades Solutions retrofit kit also available).

When Sandvik TFX500 feed is at the minimum length, short holes (i.e. bolt holes) can be drilled and while at maximum length, longer holes (i.e. face holes) can be drilled. The extension of feed can be adjusted step-by-step between the minimum and maximum length.

The beams are made of special aluminium profile with sliding surfaces faced with stainless steel strips. The drill rod centralizers are equipped with hardened steel wear pieces and designed for optimum visibility and durability.

TRR1 (hydraulic rod retainer) for extension drilling is available as an option.

The TFX500 conversion kit is delivered with all needed parts including, telescopic function controls (hydraulic or electro-hydraulic according machine model) and hoses harness.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to do several tasks with the same machine in an efficient way. No waste of time and human resources on bringing several machines on the same location to perform different tasks. 	<ul style="list-style-type: none"> Improve productivity
<ul style="list-style-type: none"> Transform development drill rig into versatile machine that can drill face and also bolt holes at a low investment cost. 	<ul style="list-style-type: none"> Reduce operating cost

OFFERING

The Telescopic Feed Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	TFX 6/12	TFX 8/14	TFX 10/16
Sandvik DD210L	✓	✓	
Sandvik DD211L	✓	✓	
Sandvik DD2711	✓	✓	
Sandvik DD310	✓	✓	
Sandvik DD311	✓	✓	
Sandvik DD320	✓	✓	
Sandvik DD320S	✓	✓	
Sandvik DD321	✓	✓	
Sandvik DD410	✓	✓	✓*
Sandvik DD420	✓	✓	✓*
Sandvik DD411	✓	✓	✓*
Sandvik DD421	✓	✓	✓*
Sandvik DD422i	✓	✓	✓
Sandvik DD422iE	✓	✓	✓
Sandvik DD530	✓	✓	✓
Sandvik DD531	✓	✓	✓

* With boom SB60 and SB90 only



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

TRR1 ROD RETAINER FOR DEVELOPMENT DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Occasionally, it might be necessary to drill holes longer than the standard rod length used, i.e. probe drilling, holes for grouting or, etc.

For this purpose, Sandvik has developed the TRR1 rods retainer system that allows to add one or several rods on the feed, to drill longer holes.

Sandvik Rod Retainer TRR1 can be fitted on Sandvik development drills feeds (TF, TFi and TFX) with HLX5, RDX5 and RD500 series rock drills.

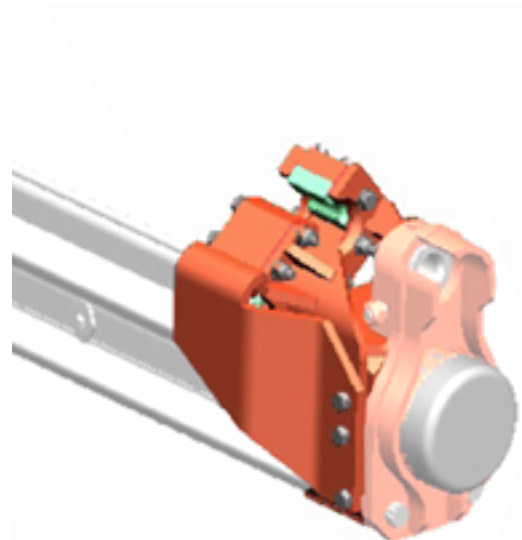
Additional rods have to be loaded manually in the gripper. A safety wire is installed near the TRR1 to allow immediate emergency stop in case of issue.

During coupling and uncoupling phase TRR1 is holding extension rods. TRR1 can be used either 32 mm (1 ¼ in) or 38 mm (1 ½ in) rods.

The design of TRR1 rod retainer aims at simplicity of structure and ease of maintenance. TRR1 is a robust welded steel structure with only one movable jaw piece. The jaw pieces are made of hardened steel and designed for optimum visibility and durability.

When TRR1 is installed on TF feed, hole depth is shortened by 35 mm. By cutting 35 mm off from the buffer hole depth can be restored. On telescopic TFX feed there is no effect on hole length.

The TRR1 conversion kit is delivered with all needed parts including, new controls (hydraulic or electro-hydraulic according machine model) and hoses harness.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to drill occasional longer hole by adding additional rod(s) on the feed. Safety wire allow emergency stop while adding rod on the feed. 	<ul style="list-style-type: none"> Improve machine versatility Improve safety

OFFERING

The TRR1 Rod Clamp Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210L	
Sandvik DD211L	
Sandvik DD210	
Sandvik DD2710	
Sandvik DD2711	
Sandvik DD310	
Sandvik DD311	
Sandvik DD320	
Sandvik DD320S	Contact local Sandvik representative
Sandvik DD321	
Sandvik DD410	
Sandvik DD420	
Sandvik DD411	
Sandvik DD421	
Sandvik DD422i	
Sandvik DD422iE	
Sandvik DD530	
Sandvik DD531	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

TRS TWO RODS SYSTEM FOR DEVELOPMENT DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Occasionally, it might be necessary to drill holes longer than the standard rod length used, i.e. drilling investigation holes, holes for grouting etc.

For this purpose, Sandvik has developed the TRS two rods system that allow to had safely a second rod on the feed.

The TRS can be retrofitted to TF feeds on development drills.

The TRS consists of two grippers with cylinders to hold one rod at a time in jaws, a rod retainer to hold the rod during coupling / uncoupling, an opening travelling centralizer to allow adding / removing rods from the center line, and a limit plate to help positioning the rods in the grippers.

The drilling starts with one rod in the feed, and another in the grippers. When the first rod is drilled, the second rod is placed in the feed by the grippers.

Additional rods can be loaded manually in the gripper. A safety wire is installed near the TRS to allow immediate emergency stop in case of issue.

The TRS Upgrade Solution Retrofit kit is delivered fully adapted to customer's rods specifications, with all needed parts including controls and hoses harness.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to drill occasional longer hole by adding a second rod on the feed with having to bring people on the front danger area of the machine. 	<ul style="list-style-type: none"> Improve Safety

OFFERING

The TRS Two Rods System Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD321	
Sandvik DD410	
Sandvik DD420	
Sandvik DD411	
Sandvik DD421	Contact local Sandvik representative
Sandvik DD422i	
Sandvik DD422iE	
Sandvik DD530	
Sandvik DD531	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

DUAL DRILLING CONTROLS FOR SANDVIK DD421i AND DD421iE

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik DD422i And DD422iE face drills have introduced major improvements compare to the previous generation of drills. Particularly concerning the operator safety and usability with the new cabin design that brings drastically reduced noise levels, improved drilling visibility and the possibility to drill seated. Drilling performance and costs of drilling consumables are also greatly improved thanks to the torque optimized drilling control (approximately 10% improvement in productivity and nearly 20% improvement on drill consumable costs measured during field test, compare to previous generation hydraulic controlled jumbo).

In order to make these benefits available for ground support application, Sandvik has recently released a new Dual Controls package. This package is retrofitable on active DD422i and DD422iE.

Dual Drilling Controls improve fleet optimisation, versatility and performance for the Sandvik DD422i and Sandvik DD422iE face drills. The Dual Controls package was designed to address a wide range of needs identified by mining contractors currently using development drills for a variety of tasks including boring, bolting and meshing. DD422i and DD422iE Dual Controls (DC) allows customer to use a single platform for all drilling applications.

Depending original machine configuration, the retrofit kit could require complete new cabin with Dual Drilling Controls, TFX feeds, hydraulic parallelism booms with hosing, electric system modification and software update.

Retrofit of Dual Drilling controls imply the removal of boom instrumentation and drilling automation.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allowing to use the DD422i platform for a variety of manual tasks like boring, bolting and meshing. 	<ul style="list-style-type: none"> Increase versatility of the unit. This provides modular options for the boom and drilling assemblies, whilst the carrier and cabin remain standardized.
<ul style="list-style-type: none"> Allows to use only one drilling platform (DD422i) for all drilling application. 	<ul style="list-style-type: none"> Commonality in spare parts, service points and service principles with 400i series Compatibility with Sandvik digital systems, e.g. My Sandvik and OptiMine
<ul style="list-style-type: none"> Improved cabin, compare to previous hydraulic controlled jumbos. 	<ul style="list-style-type: none"> Improve safety and usability by reduced noise level and improved comfort, ergonomic and visibility.
<ul style="list-style-type: none"> Torque optimized drilling controls system. 	<ul style="list-style-type: none"> Increase productivity by providing best possible drilling performance. Improve rock tools life.

OFFERING

The Dual Drilling Controls Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD422i	Contact local Sandvik representative
Sandvik DD422iE	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

LONG BOOM SUPPORT FOR SANDVIK DL421

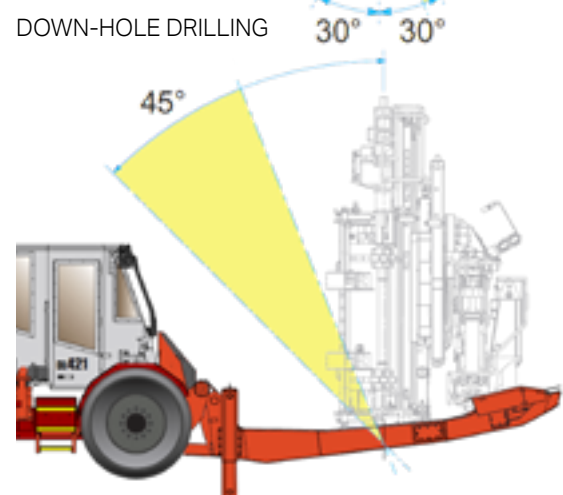
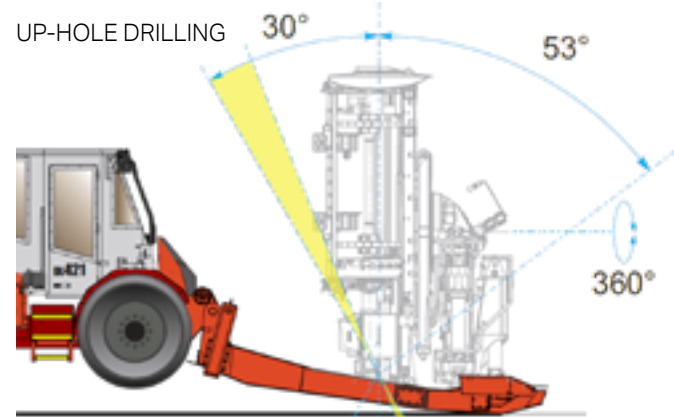
UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik DL421 long-hole drills can be equipped with a longer (horseshoe) boom support for up to $\pm 45^\circ$ drilling module tilt in drilling fans or single long-holes. The maximum tilt angle backwards can be achieved by keeping the support in horizontal position; it is equipped with hydraulic jacks so it can sufficiently be stabilized for acceptable drilling stability. When the boom support is kept on the ground the boom tilt angle in the extreme back position is 30° from vertical.

In addition to feed extension, units with longer boom support are equipped with a telescopic feed cradle that allows the greater boom tilt angles.

The wider boom tilt range increases the versatility of the DL421 in down-hole drilling or if holes need to be drilled parallel to the contact of the orebody. This feature is also suited for drop raise and drainage hole drilling. Units equipped with this feature have the same boom coverage and drilling module rotation, compared to standard units.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
Long Boom Support Upgrade Solution allows the drilling module to tilt up to $\pm 45^\circ$ in fan drilling or single long holes. When the boom support is kept on the ground, the boom tilt angle in the extreme back position is 30° from vertical.	Increase versatility of the DL421 in: <ul style="list-style-type: none"> Down-hole drilling Parallel holes drilling in contact with the orebody Drop raise and drainage hole drilling.

OFFERING

The Long Boom Support Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DL421	Contact local Sandvik representative

Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK

RODS LENGTH CONVERSION KIT FOR PRODUCTION DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Change on the mine drifts shape, or need for different hole length can lead to necessity to change the rods length on production Drills.

Sandvik offers to customers to adapt the drilling module of their Production Drills to different rods length with specific Conversion kits.

The Rods Length Conversion kits are optimized to include all (and only) needed parts to change the rods length in the minimal possible machine immobilization time and at the lowest cost possible.

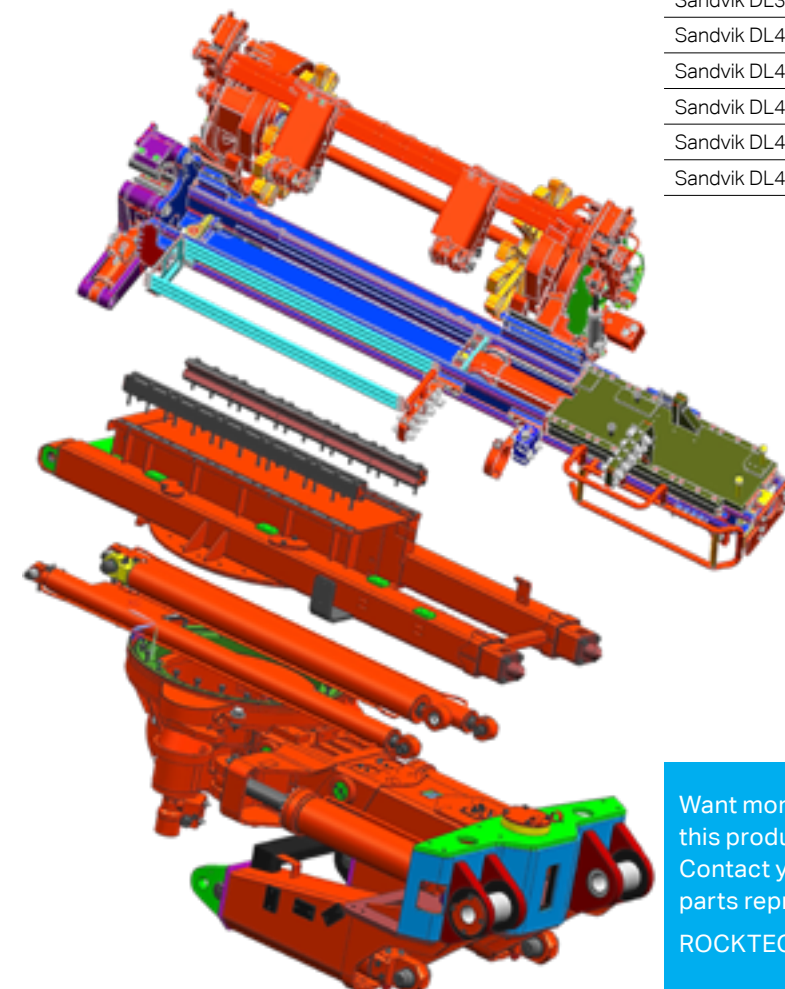
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
Rods Conversion Kit includes all needed part to adapt the drilling module to different rods length.	Allows to adapt easily and cost effectively the drilling module to different rods size.

OFFERING

The Rods Length Conversion Solution is available for the following UG Production Drills models:

Rods length	3'	4'	5'	6'
Sandvik DL210	✓	✓	✓	
Sandvik DL2710		✓	✓	✓
Sandvik DL2720		✓	✓	✓
Sandvik DL2711		✓	✓	✓
Sandvik DL2721		✓	✓	✓
Sandvik DL311		✓	✓	✓
Sandvik DL321		✓	✓	✓
Sandvik DL331	✓	✓	✓	✓
Sandvik DL411		✓	✓	✓
Sandvik DL421		✓	✓	✓
Sandvik DL422IE		✓	✓	✓
Sandvik DL431		✓	✓	✓
Sandvik DL432i		✓	✓	✓



Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK

BOLTS TYPE/LENGTH CONVERSION KIT FOR BOLTERS

UPGRADES AND ENGINEERED SOLUTIONS

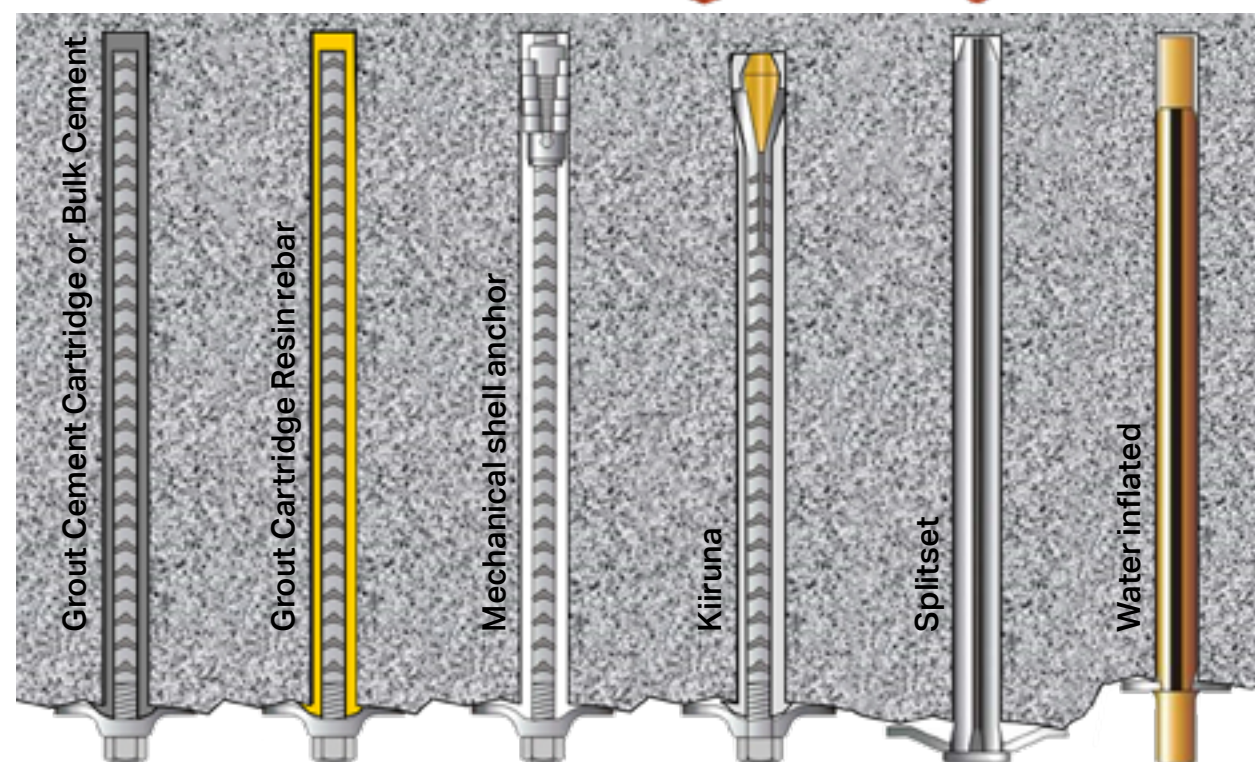
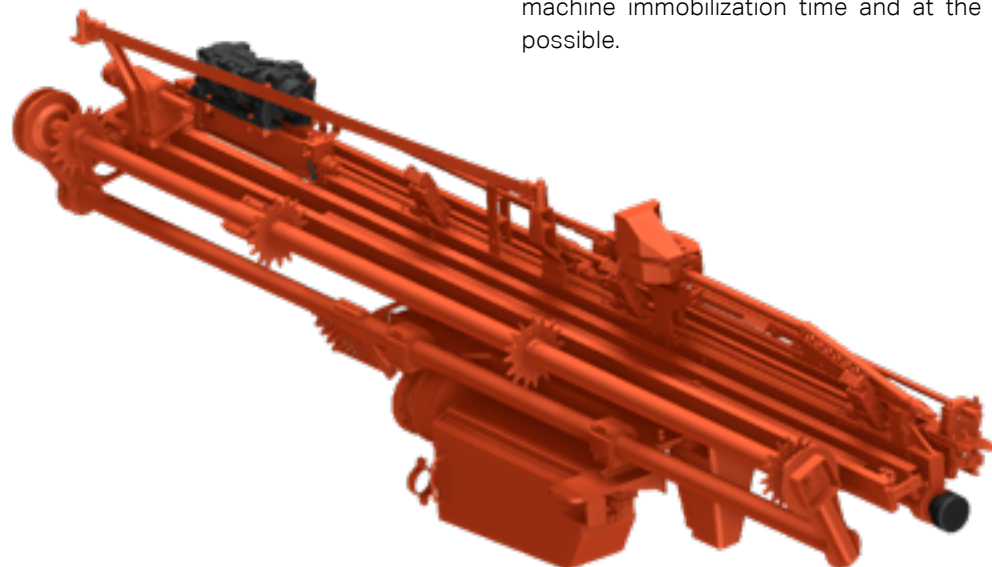
DESCRIPTION

Change on the mining methods, on rock geology, on machine application or on safety regulation, may involve to install a different type or length of bolt.

Sandvik offers to customers the solution to modify the bolting head and other required systems (cartridges injection, cement mixer, etc...) on their bolters to allow the mechanized installation of most of the bolt type and length of the market.

Sandvik offers to customers the solution to modify the bolting head and other required systems (cartridges injection, cement mixer, etc...) on their bolters to allow the mechanized installation of most of the bolt type and length of the market.

The Bolts type/length conversion kits are optimized to include all (and only) needed parts to adapt the bolter to the new bolt specification, in the minimal possible machine immobilization time and at the lowest cost possible.



BOLTS TYPES: STRONG AND WEAK POINTS

BOLT TYPE	PRO	CONS
Grout Cement Cartridge and rebar (GCC)	<ul style="list-style-type: none"> Low cost. Permanent bolt. 	<ul style="list-style-type: none"> No Immediate support. Long hardening period. Bolt tensioning operation delayed when cement is dry. Limited support ability. Impossible to manage cement/water ratio. Cartridge injection might be challenging.
Bulk Cement and rebar (BC)	<ul style="list-style-type: none"> Low cost. Permanent bolt. Simple and quick installation. Cement /cement ratio. 	<ul style="list-style-type: none"> No Immediate support. Long hardening period. Bolt tensioning operation delayed when cement is dry. Limited support ability. Bolt have to be bend with the turret (stress on turret structure).
Grout Cartridge Resin rebar (GCR)	<ul style="list-style-type: none"> Relative low cost. Immediate support. Permanent bolt. 	<ul style="list-style-type: none"> Resin grout most expensive than cement. Greater care needed during installation. High quality resin availability.
Mechanical shell anchor (M)	<ul style="list-style-type: none"> Immediate support. Simple and quick installation. Can be cement grouted (for permanent support). 	<ul style="list-style-type: none"> More expensive than GCC, BK, or GCR bolts. Temporary support if not grouted.
Kiiruna expansion shell bolt grouted (K)	<ul style="list-style-type: none"> Immediate support. Permanent bolt. 	<ul style="list-style-type: none"> Not suitable for soft rock. Require impactor.
Splitset bolt (S)	<ul style="list-style-type: none"> Immediate support. Full column anchor. High support ability Easy and quick installation 	<ul style="list-style-type: none"> Temporary support. High price. Require an impactor
Water Inflated bolt (WI)	<ul style="list-style-type: none"> Immediate support Full column anchor. High support ability Easy and quick installation 	<ul style="list-style-type: none"> Temporary support. High price. Require high pressure water system (300 bars)

OFFERING

The Bolts Type/Length Conversion Solution is available for the following UG Drills models:

MACHINE MODELS	BOLTS TYPES								BOLTS LENGTH												
	GCC	BC	GCR	M	K	S	WI	1100	1200	1300	1400	1500	1800	2200	2400	2700	3000	4000	5000	6000	
Sandvik DS210L-M	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓								
Sandvik DS211L-M	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓								
Sandvik DS310	✓		✓	✓			✓					✓	✓	✓	✓			✓			
Sandvik DS311	✓		✓	✓			✓					✓	✓	✓	✓			✓			
Sandvik DS312	✓		✓	✓			✓					✓	✓	✓	✓			✓			
Sandvik DS410		✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓		✓			
Sandvik DS411		✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓		✓			
Sandvik DS510		✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sandvik DS511		✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sandvik DS512i		✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



AIR MIST FLUSHING FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Flushing is needed on a drill rig for removing the cutting generated by the drill bits. A proper removal of cuttings is one key parameter for maximized drilling performance, rock drill reliability and optimized rock tool life.

The standard media used for flushing holes on Underground drills is water. But sometime, rock condition do not allow the use of water flushing (hole collapse after being drilled, avoiding to charge it with explosive). Also, In some locations, water can also be a rare and expensive resource that cannot be wasted.

To solve this issue, Sandvik has developed Air Mist Flushing system for Underground Drills.

The Air Mist Flushing use mainly compressed air for flushing but with the injection of a small quantity of water to avoid generation of dust that could be harmful for the mine personal and generate high cost of ventilation.

The pressurized water is conveyed through a special jet that sprays it into the air from inside a special Y connection. This connection is located as close as possible from the rock drill / rotary drill flushing head in order for the sprayed water not to settled down in the line.

Depending on unit model supply of air can be done internally (with replacing the original compressor by a bigger one or addition of a second compressor, or addition of air receiver(s)).

Also in few models, a water tank and OA cooler can be installed to have on-board (internal) water supply.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Drilling with mainly compressed air and only a small quantity of water. 	<ul style="list-style-type: none"> Allows to drill almost all rocks specifications (the hole do not collapse after drilling). Improve safety by avoiding dust generation (compare to dry air drilling).
<ul style="list-style-type: none"> Drilling with minimum quantity of water. 	<ul style="list-style-type: none"> Allows to drill where water is a rare and/or expensive resource.



OFFERING

The Air Mist Flushing Upgrade Solution is available for the following UG Drills models*:

MACHINE MODELS	AIR / WATER FLUSHING SUPPLY			
	EXT. A. / EXT. W.	INT. A. / EXT. W.	EXT. A. / INT. W.	INT. A. / INT. W.
Sandvik DD210L / DD210L-V	✓	✓	X	X
Sandvik DD211L / DD211L-V	✓	✓	X	X
Sandvik DD220L	✓	X	X	X
Sandvik DD210 / DD212	✓	X	✓	X
Sandvik DD2711	✓	✓	✓	✓
Sandvik DD310 / DD311	✓	✓	✓	✓
Sandvik DD320	✓	X	X	X
Sandvik DD320S	✓	X	X	X
Sandvik DD321	✓	✓	X	X
Sandvik DD410 / DD420	✓	X	X	X
Sandvik DD411 / DD421	✓	X	X	X
Sandvik DD422i / DD422iE	✓	X	X	X
Sandvik DD530 / DD531	✓	X	X	X
Sandvik DL210	✓	X	✓	X
Sandvik DL2711 / DL2721	✓	✓	✓	✓
Sandvik DL310 / DL320 / DL330	✓	X	X	X
Sandvik DL311 / DL321 / DL331	✓	✓	✓	✓
Sandvik DL410 / DL420 / DL430	✓	X	X	X
Sandvik DL411 / DL421 / DL431	✓	✓	X	X
Sandvik DL422iE / DL432i	✓	✓	X	X
Sandvik DS210L-V / DS210L-M	✓	X	X	X
Sandvik DS211L-V / DS211L-M	✓	✓	X	X
Sandvik DS2711	✓	✓	✓	✓
Sandvik DS310	✓	✓	✓	✓
Sandvik DS311 / DS312	✓	✓	✓	✓
Sandvik DS410 / DS420	✓	X	X	X
Sandvik DS411 / DS421	✓	✓	X	X
Sandvik DS510 / DS520	✓	X	X	X
Sandvik DS511/DS512i	✓	X	X	X

*Possibilities of implementing different configurations of the Air Mist Flushing can vary according machine specifications and options. Please contact your local Sandvik Representative for more information.

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
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DRY DRILLING FOR UNDERGROUND DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Flushing is needed on a drill rig for removing the cutting generated by the drill bits. A proper removal of cuttings is one key parameter for maximized drilling performance, rock drill reliability and optimized rock tool life.

The standard media used for flushing holes on Underground drills is water. But sometime, rock condition do not allow the use of any water for flushing (hole collapse if being drilled with water, avoiding to charge it with explosive). Also, In some locations, water cannot be available (desert places) or used (environmental regulations).

To solve this issue, and allows to drill with only compressed air, Sandvik has developed Dry Drilling system for Underground Drills.

The Dry Drilling system includes a dust collector, installed on the back of the unit, that suck and collect the cuttings, avoid generation of dust on the gallery, that could be harmful for the mine personnel. The dust collector includes filters with cleaning by reversed air automatic system.

Depending unit model and specification, compressed air system could need to be improved to insure sufficient air flushing flow.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Drilling with only dry air flushing without generating dust that could be harmful for mine personnel.. 	<ul style="list-style-type: none"> • Allows to drill rock that do not accept any water in the flushing without generating dust..
<ul style="list-style-type: none"> • Drilling without water. 	<ul style="list-style-type: none"> • Allows to drill where there is no water supply..

OFFERING

The Dry Drilling Upgrade Solution is available for the following UG Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DD210L	
Sandvik DS210L-V	
Sandvik DL230L	
Sandvik DD310	Contact local Sandvik representative
Sandvik DD311	
Sandvik DD321	
Sandvik DD421	
Sandvik DS311	

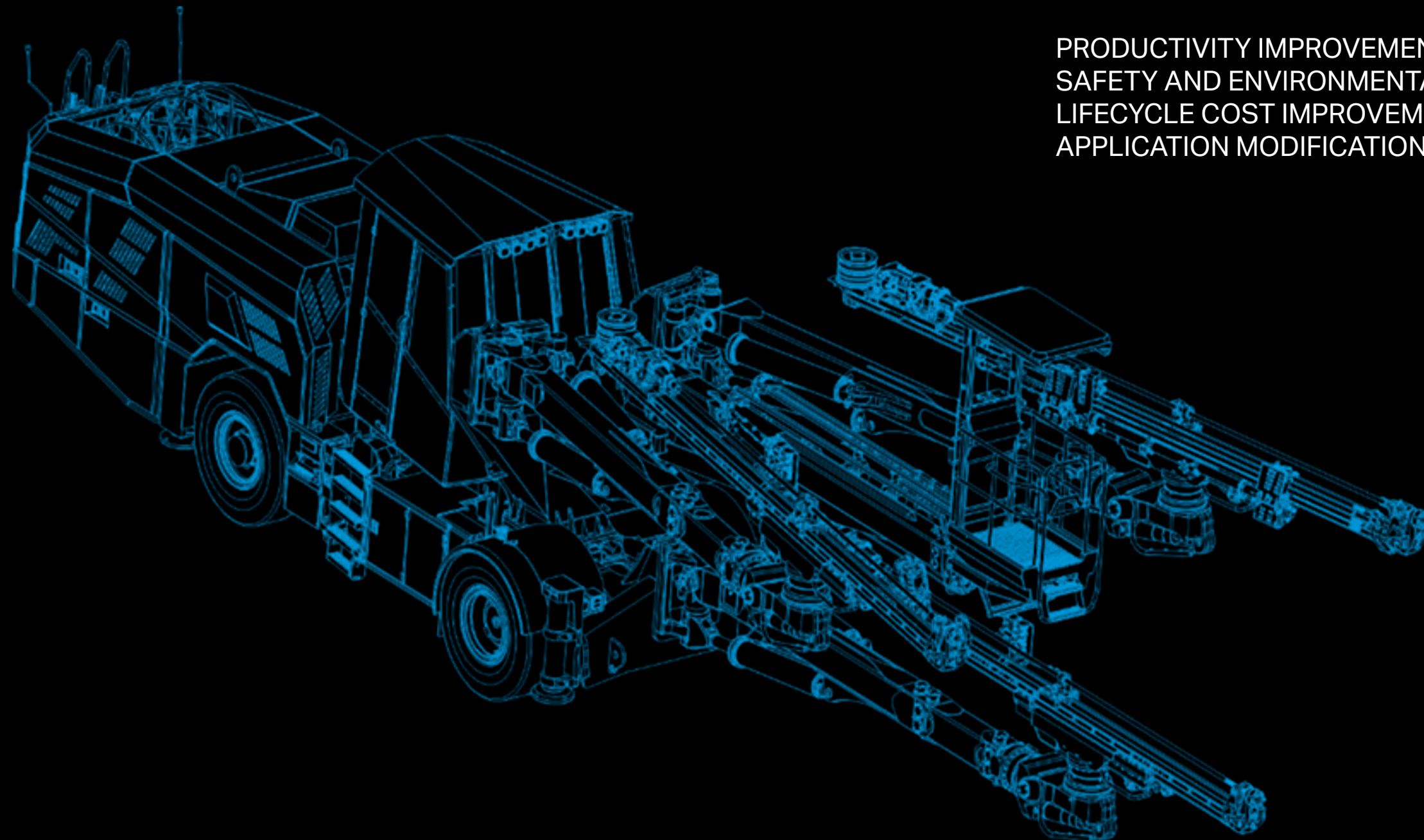


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- UNDERGROUND DRILLS

UPGRADES SOLUTIONS FOR TUNNELING DRILLS

Sandvik Upgrades and Engineered Solutions offers a vast range of retrofit kits that allows to modify the original specifications of your Tunneling Drills to improve the performance, the drilling accuracy, the safety or to reduce the environmental impact and the operating cost. Our offering includes also solutions to adapt your machine to different application.



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PRODUCTIVITY IMPROVEMENT

TMS+ BOOM INSTRUMENTATION FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Inaccurate drilling set-up and hole length can cause misalignment of the whole tunnel, blasting difficulties, and can lead to over-break and under-break. Fixing tunnel alignment later is extremely expensive and it also increases the need for rock support and the risk of rock fall.

Sandvik TMS+ Boom Instrumentation systems allows the operator to control with great accuracy the drilling direction. It can also display information about hole depth, penetration rates and cumulative drilled length ("DDS" option).

Get optimal control over the drilling angle and positioning in order to avoid tunnel misalignment, as well as over-break and under-break.

Optimize ore recovery, advance per blast and the fragmentation process.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Measures and displays the direction of the angle of drilling with high accuracy. 	<ul style="list-style-type: none"> Reduces the risk of generating over-break and under-break that leads to extra costs, slower production, and an increased risk of falling rocks (safety issue)
<ul style="list-style-type: none"> Version available with hole-depth measurement, penetration-rate indication and cumulative drilled hole length counters. 	<ul style="list-style-type: none"> Allows accurate control of the drilling process. Allow rock tools life follow-up.
<ul style="list-style-type: none"> Simple and basic system that's easy to install and use. 	<ul style="list-style-type: none"> Minimal installation time and training required.
<ul style="list-style-type: none"> Integrated troubleshooting function 	<ul style="list-style-type: none"> Easily test the correct function of the system's sensors to ensure minimal downtime in case of failure

OFFERING

The TMS+ Boom Instrumentation Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS*	PART NUMBER
Sandvik DT611	
Sandvik DT621	
Sandvik DT721	Contact local Sandvik representative
Sandvik DT820	
Sandvik DT821	

*TMS+ not available for machines equipped with NV boom(s).



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

TCAD+ BOOM INSTRUMENTATION FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Inaccurate drilling set-up and hole length can cause misalignment of the whole tunnel, blasting difficulties, and can lead to over-break and under-break. Fixing tunnel alignment later is extremely expensive and it also increases the need for rock support and the risk of rock fall.

Sandvik TCAD+ is an aiming tool for executing on a pre-designed drilling plan, featuring face drilling, long-hole drilling and bolting-hole plans on the screen.

Sandvik TCAD+ supports different navigation methods. In addition to traditional laser and drill-bit navigation, it introduces total station navigation to standard rigs, greatly improving their accuracy. The navigation user interface is easy to use, with on-screen creation and editing of the lasers.

With its built-in data collection, TCAD+ provides information on hole position and angle logging, as well as the drilling process. By improving the accuracy of drilling, the TCAD+ enables optimization of the whole tunneling project.

The Sandvik TCAD+ includes a troubleshooting function to help test the correct functioning of the system's sensors and the CAN system.

TCAD+ is delivered together with Sandvik iSURE®, the most sophisticated and advanced tunnel-process management software on the market. Results in accurate drilling and optimized excavation due to drilling and blasting design at the most critical position (i.e. at the end of the round). Optimizes the drilling process, as well as the complete drill and blast process. iSURE® is user-friendly and easy-to-use software.

Professional training available for operators and service with comprehensive training tools (Windows simulator).

Global Sandvik technical support team. Access to new product upgrades via lifetime services. Upcoming features can be installed on rig.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Measures and displays the direction angle of drilling with high accuracy.
- Displays positioning of each hole according the pre-designed drilling plan.
- Automatic hole length control according to a drill plan.
- Easy-to-use navigational interface.
- Professional training available for operators.
- Comprehensive training tools (Windows simulator).
- Global technical support team.
- The data collection system collects locations and directions of the drilled holes and MWD (Measurement While Drilling) data.

- TCAD+ comes with iSURE®, the most advanced tunnel-process management software on the market.

- Upcoming features can be installed on rig.

CUSTOMER VALUES

- Optimized drill and blast cycle.
- Less over- and under-breaks.
- Improves productivity and safety as no need to stand close to the face to paint the holes locations.
- Full Sandvik support on the implementation process and during life of the machine.

- Allow to monitor accurately:
- Productivity,
- Total Cost of Ownership, cost per drilled meters, etc
- Rock tools life
- Identify operator training needs

- High drilling accuracy and optimized excavation.
- Optimized drilling process.
- User-friendly and easy-to-use software.

- Access to new product upgrades via lifetime services.



OFFERING

The TCAD+ Boom Instrumentation Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT611	Contact local Sandvik representative
Sandvik DT621	
Sandvik DT721	
Sandvik DT821	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ROCK DRILLS CONVERSION FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Productive tunneling drilling is a crucial component in achieving the production targets and meeting the required advance rates. Even the most efficient drill rig can only deliver so many meters in a shift if it's not coupled with the latest rock drill technology.

Our Rock Drill(s) Upgrade Solutions for Tunneling Drills enable seamless progression to the latest Sandvik technology. Each Upgrade kit consists of new RD-series rock drill(s) (RD520 or RD525) and all other parts needed to convert your existing equipment to the most technically advanced drilling technology available.

Highest productivity is achieved by the increased percussion frequency rate and stabilizer system that insure optimal control of the contact between the rock and the bit.

Reduced operating costs are achieved by:

- Increased reliability due to new design concept (only few pressurized seams between functional modules) that allows increased service interval of 750 percussion hrs.
- Excellent serviceability through modular construction and visual wear indicators.
- Stabilizer system that dampens recoil impulses from rock and lengthens the lifetime of rock tools.

The quicker drilling and faster production will start a ripple effect. Your productivity and reliability will increase and you'll cut costs. Optimize your operation by upgrading your existing units to new-generation Sandvik RD-series rock drills that you can count on to deliver value 365 days a year.



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



POWER EXTRACTOR FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

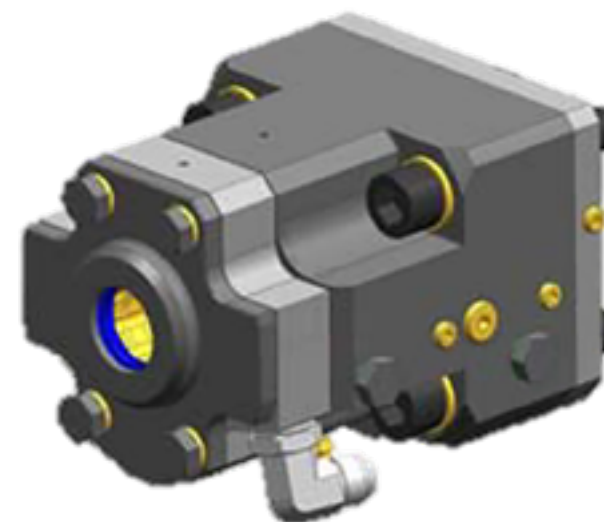
Fractured and heterogeneous ground, poor flushing quality, cross drilling, or worn out rock tools can lead to drilling rod jamming, And It is quite hard work to recover from the jamming and it robs your job and production of expensive and valuable time.

In order to solve this issues and preserve the productivity, Sandvik has developed the Power Extractor system.

Power Extractor is a module for a hydraulic rock drill, operated by a switch on the operator's control panel. A hydraulic actuator mounted on the front end of the rock drill gear housing, by multiple (small) pistons, is able to pull the shank adapter towards the striking point, so that the piston can hit the shank during pull-back. Percussive stress waves can therefore be transmitted to the drill rods.

Power Extractor is very efficient when the drill string are jammed so tight that it can not be removed by only using feed, rotation and percussion.

Use of Power Extractor for uncoupling rods makes easier and faster the opening of joints. It reduces the non-drilling time, increases drilling capacity and rock tool service life and reduces rock drill maintenance cost.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Power Extractor allows the rock drill piston to hit the shank during pull back (percussive stress waves transmitted to the drill rods). 	<ul style="list-style-type: none"> • Improve productivity by help to remove rod(s) from the hole in case of jamming.

OFFERING

The Power Extractor Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT610	
Sandvik DT611	
Sandvik DT821	
Sandvik DT831	
Sandvik DT920i	
Sandvik DT921i	
Sandvik DT922i	
Sandvik DT1120i	
Sandvik DT1121i	Contact local Sandvik representative
Sandvik DT1130i	
Sandvik DT1131i	
Sandvik DT1132i	
Sandvik DT1230i	
Sandvik DT1231	
Sandvik DT1231i	
Sandvik DT1330i	
Sandvik DT1331i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



SAFETY AND ENVIRONMENTAL IMPROVEMENT

CAMERAS SYSTEM FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

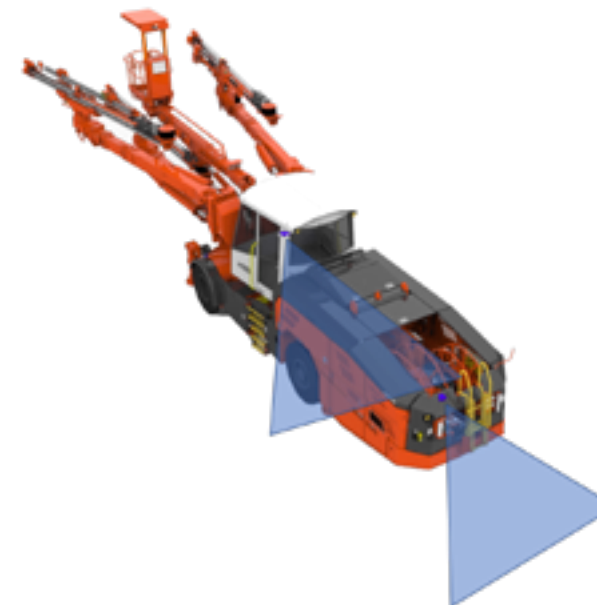
DESCRIPTION

In Underground mining, confined space and limited visibility due to dust or poor lighting increase the risk of collision with pedestrians, other machines or walls. Collision is one of the major risk on underground mining with several fatalities registered every year.

In order to increase the visibility of the operator and to limit risk of collision, Sandvik has developed cameras system for Tunneling drills.

Cameras system improves the safety by increasing the operator field of vision, allowing view on the blind areas. It also limits the risk of collision with walls that would cause damages on the equipment.

The systems includes a top side camera, a back camera and a display located on the operator compartment. An optional recording device is also available.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Increase the field of vision of the operator, allow view on the blind side areas. Limit the risk of collision with a pedestrian. Limit the risk of collision with an other machine. Optional recording device allows accident cause analysis 	<ul style="list-style-type: none"> Increase safety
<ul style="list-style-type: none"> Reduces risk of damage on the machine due to collision with walls or other machine. 	<ul style="list-style-type: none"> Reduce operating cost

OFFERING

The Cameras System Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT610	
Sandvik DT820	
Sandvik DT821	
Sandvik DT920i	
Sandvik DT921i	
Sandvik DT912D	Contact local Sandvik representative
Sandvik DT1120i	
Sandvik DT1130i	
Sandvik DT1131i	
Sandvik DT1230i	
Sandvik DT1231i	
Sandvik DT1232i	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



CABIN UPGRADE FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Working conditions on construction sites varies and affect the operator's environment. The conditions can be dusty, dark, wet, noisy, icy and hot.

Sandvik has designed cabins for it's tunneling drills to improve operator's safety and comfort. The cabins are designed to be extremely durable. They meet and exceed the international standard:

- ISO 3449 - Falling object Protective Structure (FOPS).
- ISO 3471 - Roll-Over Protective Structure (ROPS).

Sandvik Cabin offers low noise (LpA 80 dB according EN 791) and vibration level (0.5 m/s² according EN 791) and allows emergency exit.

Cabin upgrade solution includes Air Conditioning system.

Heating system and Window Protective Grill are available as option. Acid Proof cabin (stainless steel) version is available on selected machine models (only FOPS).



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PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Cabin meet and exceed international safety requirements FOPS & ROPS • Protect operator from excessive noise vibration and dust exposure. • Protect operator from hot or cold environment. 	<ul style="list-style-type: none"> • Improve operator's safety and comfort

OFFERING

The Cabin Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT610	
Sandvik DT620	
Sandvik DT621	
Sandvik DT720	Contact local Sandvik representative
Sandvik DT821*	
Sandvik DT1131	
Sandvik DT1231	

*Low version cabin available.

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



CABIN SAFETY GRILL FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When drilling in poor ground condition, rock may fall from the roof and hit the cabin windshield, generating risk of injuries for the operator and damages on the unit.

In order to improve safety of the operations, Sandvik has designed the Cabin Safety Grill that provides additional protection against frontal falls of rock.

The safety grill is mounted on the cabin to cover the front windshield and folds up manually, allowing cleaning or replacement of the windshield, or servicing the window wiper(s).

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Provide protection if rock hit the cabin windshield. • Limit the risk of damage on the cabin front windshield 	<ul style="list-style-type: none"> • Improve Safety • Reduce operating cost

OFFERING

The Cabin Safety Grill Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT621	
Sandvik DT721	Contact local Sandvik representative
Sandvik DT912D	
Sandvik DT922i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK





CANOPY SAFETY GRILL FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When drilling in poor ground condition, rock may fall, roll on the boom structure down to the operator's compartment. Consequences could be fatal injuries for the operator and severe damages for the unit.

In order to strongly mitigate this risk, Sandvik has designed a specific Canopy Safety Grill for Tunneling Drills.

The safety grill is mounted on the canopy to protect the front of the operator compartment from rock falls and projections. The grill design allows to keep the canopy variable height function.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Protect the operator in case of frontal falls of ground. Reduce the risk of damages on the unit. 	<ul style="list-style-type: none"> Improve safety Reduce operating cost

OFFERING

The Canopy Safety Grill Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT621	Contact local Sandvik representative
Sandvik DT721	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ELECTRICALLY ACTIVATED SAFETY GRILL FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Poor visibility is a major factor on the risk of collision when operating Tunneling drills. That's why keeping the cabin windows as clean as possible is very important.

Sandvik has improved the cabin's windscreen Safety Grill system in order to make it easier to clean.

Now the grill can be lifted with the help of an electrical actuator so that the window can be cleaned more easily from the ground level.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Electric system that helps to lift the windscreen's Safety Grill. 	<ul style="list-style-type: none"> Allows to clean more easily the windscreen. Improve Safety.

OFFERING

The Electrically Activated Safety Grill Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT912D	Contact local Sandvik representative
Sandvik DT922i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



CABIN HEATING SYSTEM FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Cold temperatures have hazardous effects on humans and their ability to work well. When the body is exposed to cold temperatures, the negative effects can include dehydration, numbness, shivering, frostbite and hypothermia. This can lead to extended reactivity time, fatigue, uncontrolled movements or loss of lucidity that increase the risk of loss of control and accident.

In order to mitigate this risk, Sandvik has developed Heating Systems for their Underground Drills equipped with cabin. The Heating Systems are able to generate sufficient heat in the cabin, even on the coldest ambient temperatures.

The heating system uses cooling fluid from the engine cooling system to generate heat while the engine is running (tramping phases). During drilling phases, the heat is generated by electric resistance located on the AC system.

The temperature on the cabin is fully adjustable with a simple knob.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> System that provides heat on the cabin during drilling and tramping phases. 	<ul style="list-style-type: none"> Reduce risk of accident due to negative effect of cold ambient temperature. Improve operator's comfort.

OFFERING

The Cabin Heating System Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT610	Contact local Sandvik representative
Sandvik DT720	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ACCESS DETECTOR FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

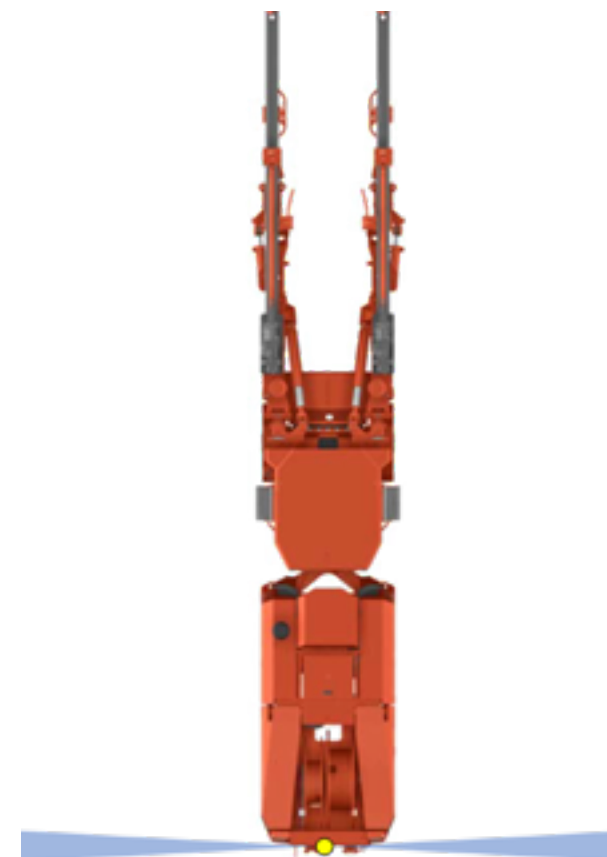
DESCRIPTION

The working area of the boom(s) of an underground drill is a dangerous area. The risk of injury due to rock fall, collision with moving boom(s), or rotating drilling rod is major, and statistics show several fatalities registered every year due

In order to reduce this risk, Sandvik has developed the Access Detector system for Tunneling drills.

Access Detector is a systems enhancing safer drilling operations by decreasing risks caused by human actions and errors. The system detects access from both sides of the drill rig thanks to a laser scanner located at the back of the machine.

When Sandvik Access Detector is actuated by a person entering the hazard zone, it warns the operator with a visual warning. The operator may continue the drilling operation normally but he/she must ensure that no-one is in the hazard zone.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Warn the operator when somebody enters the hazard zone of the machine. 	<ul style="list-style-type: none"> Improve safety

OFFERING

The Access Detector Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT611	Contact local Sandvik representative
Sandvik DT621	
Sandvik DT721	
Sandvik DT821	
Sandvik DT831	
Sandvik DT912D	
Sandvik DT921i	
Sandvik DT922i	
Sandvik DT923i	
Sandvik DT1121i	
Sandvik DT1131	
Sandvik DT1131i	
Sandvik DT1132i	
Sandvik DT1231	
Sandvik DT1231i	
Sandvik DT1331i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ACCESS PROTECTOR FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

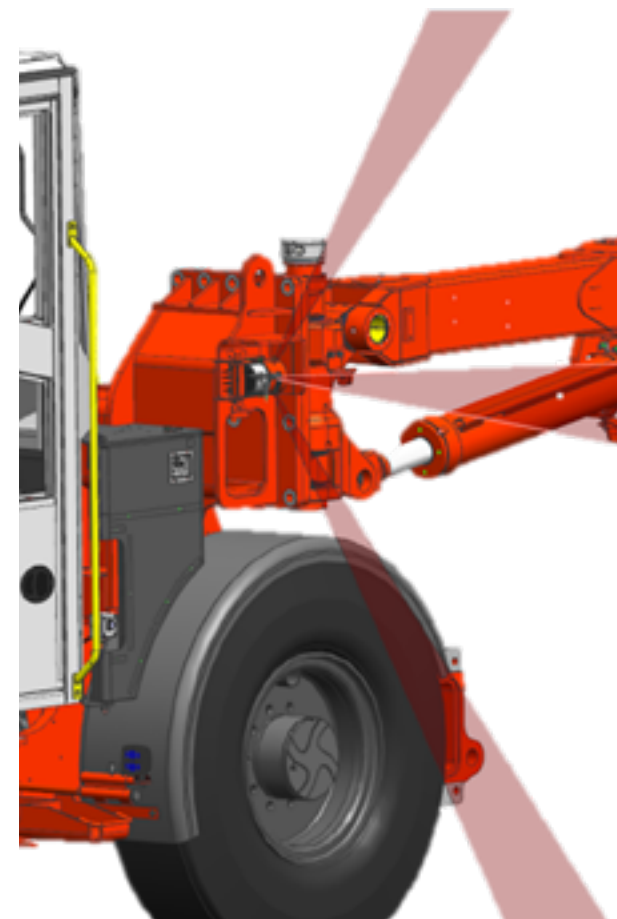
DESCRIPTION

The working area of the boom(s) of a Tunneling drill is a dangerous areas. The risk of injury due to rock fall, collision with moving boom(s), or rotating drilling rod is major, and statistics show several fatalities registered every year due

In order to mitigate this risk, Sandvik has developed the Access Protector system for Tunneling drills.

If the Sandvik Access Protector system recognizes a person in the detection field, thanks to laser scanner fences located on both sides of the machine, boom and drilling movements will automatically be stopped.

In other words, the Sandvik Access Protector prevents anyone from entering the working area of the booms while they are in operation. If boom operation is automatically stopped, the system must be reset by pressing the acknowledgement button, after ensuring that no-one is in the hazard zone.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Stop automatically all boom and drilling movements as soon as somebody enter the dangerous working area of the boom(s). 	<ul style="list-style-type: none"> Improve safety

OFFERING

The Access Protector Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT912D	
Sandvik DT921i	
Sandvik DT922i	
Sandvik DT923i	
Sandvik DT1131i	Contact local Sandvik representative
Sandvik DT1132i	
Sandvik DT1231i	
Sandvik DT1331i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



LIFECYCLE COST IMPROVEMENT

ADDITIONAL BY-PASS FILTER FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Tunneling operations have to run smoothly and economically with limited or no downtime to be successful. Unplanned equipment breakdown can often be the most timely and expensive setbacks for tunneling companies. And a majority of the failures concerns the hydraulic systems of the machines. The components that are parts of the hydraulic systems (Rock drills, pumps, cylinders, valves...) are generally very expensive and difficult to troubleshoot and replace.

Studies provided by suppliers of hydraulic components, show that up to 80% of the hydraulic systems failures are caused by excessive hydraulic oil contamination.

The most efficient solution to reduce dramatically the risk of failures of hydraulic components is to control and limit the contamination level of the hydraulic oil. This means that hydraulic fluids maintenance should be a top priority during maintenance operations.

Sandvik always promotes the best maintenance practices and would like to help his customers to manage the hydraulic oil contamination level. So we have developed a "by-pass" filtration system that clean continuously the oil.

This additional filter is mounted in parallel with the hydraulic circuit, which allow a very fine and efficient filtration (2µm absolute). The filter element has a high retention capacity (240g) that makes replacement interval wide and economical. Electric clogging indicator inform when replacement of the element is needed.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Very efficient filtration that reduce the risk of failure of the hydraulic components. 	<ul style="list-style-type: none"> Reduce Operating Cost
<ul style="list-style-type: none"> Limit the risk of downtime due to failure of hydraulic component. 	<ul style="list-style-type: none"> Preserve productivity

OFFERING

The Additional By-Pass Filter Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT912D	Contact local Sandvik representative
Sandvik DT921i	
Sandvik DT922i	
Sandvik DT923i	
Sandvik DT1131i	
Sandvik DT1132i	
Sandvik DT1231i	
Sandvik DT1331i	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



AUTOMATIC GREASING SYSTEM FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Regular lubrication of implemented greasing points is essential for reliable and trouble-free operations of the drilling mechanical components. Important saving on the life of different pins and skids can be achieved with optimum lubrication. Proper condition of the boom articulation insures also drilling precision.

With automatic greasing system the correct amount of grease is delivered automatically to the majority of lubrication points, excluding feed(s).

The lubrication interval can be adjusted from the central greasing unit. System diagnostics monitor that greasing cycle is done successfully.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improve life of booms and central articulation pins and skids by insuring constant and optimal greasing Reduce maintenance time. 	<ul style="list-style-type: none"> Reduce operating cost
<ul style="list-style-type: none"> Ensure good condition of boom pins and skids 	<ul style="list-style-type: none"> Improve drilling precision/ productivity

OFFERING

The Automatic Greasing System Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT610	
Sandvik DT611	
Sandvik DT621	
Sandvik DT720	
Sandvik DT721	
Sandvik DT820	
Sandvik DT821	
Sandvik DT831	
Sandvik DT912D	
Sandvik DT920i	
Sandvik DT921i	Contact local Sandvik representative
Sandvik DT922i	
Sandvik DT1120i	
Sandvik DT1121i	
Sandvik DT1130i	
Sandvik DT1131	
Sandvik DT1131i	
Sandvik DT1132i	
Sandvik DT1230i	
Sandvik DT1231	
Sandvik DT1231i	
Sandvik DT1331i	

Want more information about this product? Contact your local Sandvik Spare parts representative or check: [ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



GREASE REEL WITH PUMP AND NOZZLE FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Regular lubrication of implemented greasing points is essential for reliable and trouble-free operations of the drilling mechanical components. Important saving on the life of different pins and skids can be achieved with optimum lubrication. Proper condition of the boom articulation insures also drilling precision.

Greasing reel with pump and nozzle enables the operator to manually lubricate the needed locations.

The system is fully integrated on the machine and autonomous. The lubrication hose is long enough to reach all grease point on the drilling unit (15 m).

Operator manually controls the amount of grease to be injected with the trigger of the nozzle. The pump works with compressed air provided by the machine's compressor.

The grease tank capacity is 14 or 22 litres according machine model.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improve life of booms, cylinders, articulation pins and skids by making greasing maintenance operation easy and convenient on every machine's location. 	<ul style="list-style-type: none"> Reduce operating cost

OFFERING

The Grease Reel with Pump and Nozzle Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT610	
Sandvik DT611	
Sandvik DT621	
Sandvik DT720	
Sandvik DT721	
Sandvik DT820	
Sandvik DT821	Contact local Sandvik representative
Sandvik DT831	
Sandvik DT912D	
Sandvik DT922i	
Sandvik DT1131	
Sandvik DT1132i	
Sandvik DT1231	



Want more information about this product? Contact your local Sandvik Spare parts representative or check: [ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

HIGH PRESSURE CLEANER FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Mining equipment are operating in a very dusty, muddy and wet environment. That's why it's important to keep the equipment as clean as possible with regular washing with high pressure water to remove mud, dirty grease, and rock cuttings, that could on the long run damage the unit, generate premature wearing or inhibit some functions and movements.

In order to ease the maintenance operations, and especially the unit washing operations, Sandvik offers to equip underground drills with on-board water High Pressure Cleaner.

This heavy duty High Pressure Cleaner, can generate pressure up to 180 bars. Water is pressurized with a separate hydraulically driven high pressure water pump, powered by the diesel engine of the rig and the system can be used anywhere, as long as the machine is connected to the mine water network.

The High Pressure Cleaner upgrade solution includes a practical spring loaded hose reel.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> On-board water HP cleaner. Allows to clean the machine efficiently everywhere it is possible to connect the machine to the mine water network. 	<ul style="list-style-type: none"> Reduce operating cost by allowing to clean easily and efficiently the machine.

OFFERING

The High Pressure Cleaner Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT610	
Sandvik DT611	
Sandvik DT621	
Sandvik DT720	
Sandvik DT721	
Sandvik DT820	
Sandvik DT821	
Sandvik DT831	
Sandvik DT912D	
Sandvik DT920i	
Sandvik DT921i	
Sandvik DT922i	Contact local Sandvik representative
Sandvik DT1120i	
Sandvik DT1121i	
Sandvik DT1130i	
Sandvik DT1131	
Sandvik DT1131i	
Sandvik DT1132i	
Sandvik DT1230i	
Sandvik DT1231	
Sandvik DT1231i	
Sandvik DT1330i	
Sandvik DT1331i	

Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK

WATER HOSE REEL FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Frequent repair or replacement of the water supply hose could be very costly and frequent damages of the hose can really impact the production as drilling is impossible without correct water supply. Also, unreeling and reeling hose "by hand" is a long and heavy task for the operator if the mine water connection is located several tenth of meters from the work place.

In order to ease the management of the water supply hose and to protect it during tramming phases, Sandvik has developed a Water Hose Reel.

The reel can be controlled from the operator station or from the back of the machine. There is an automatic function that unreel the hose in the same time the machine tram to the face (same as the electric supply cable).

The Water Hose Reel upgrade solution can be delivered with water hose (size and length differ according machine models.)



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Water Hose Reel ease the management of the water supply hose and protect it during tramming phases. 	<ul style="list-style-type: none"> Reduce risk of damages on the water hose that are costly and disturbs production. Makes operator tasks easier and more comfortable.

OFFERING

The Water Hose Reel Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT610	
Sandvik DT611	
Sandvik DT621	
Sandvik DT720	
Sandvik DT721	
Sandvik DT820	
Sandvik DT821	
Sandvik DT831	
Sandvik DT912D	
Sandvik DT920i	
Sandvik DT921i	
Sandvik DT922i	Contact local Sandvik representative
Sandvik DT1120i	
Sandvik DT1121i	
Sandvik DT1130i	
Sandvik DT1131	
Sandvik DT1131i	
Sandvik DT1132i	
Sandvik DT1230i	
Sandvik DT1231	
Sandvik DT1231i	
Sandvik DT1330i	
Sandvik DT1331i	

Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK

APPLICATION MODIFICATION

TELESCOPIC FEED CONVERSION FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When it is needed to perform new tasks with your development drill rig, like for instance drilling cross-cuttings on narrow drifts or drilling bolt holes, using a solid long feed can be problematic. That's why Sandvik has developed the TFX500 feeds.

Sandvik TFX500 telescopic feeds are designed for Sandvik face drilling jumbos with RDX5 and RD500 series rock drills. A versatile feed for face drilling, bolt hole drilling and cross-cuttings in a limited space where both long and short rods have to be used. Optimized with SB40 NV boom (Upgrades Solutions retrofit kit also available).

When Sandvik TFX500 feed is at the minimum length, short holes (i.e. bolt holes) can be drilled and while at maximum length, longer holes (i.e. face holes) can be drilled. The extension of feed can be adjusted step-by-step between the minimum and maximum length.

The beams are made of special aluminium profile with sliding surfaces faced with stainless steel strips. The drill rod centralizers are equipped with hardened steel wear pieces and designed for optimum visibility and durability.

TRR1 (hydraulic rod retainer) for extension drilling is available as an option.

The TFX500 conversion kit is delivered with all needed parts including, telescopic function controls (hydraulic or electro-hydraulic according machine model) and hoses harness.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to do several tasks with the same machine in an efficient way. 	<ul style="list-style-type: none"> Improve versatility
<ul style="list-style-type: none"> No waste of time and human resources on bringing several machines on the same location to perform different tasks. 	<ul style="list-style-type: none"> Improve productivity
<ul style="list-style-type: none"> Transform development drill rig into versatile machine that can drill face and also bolt holes at a low investment cost. 	<ul style="list-style-type: none"> Reduce operations costs.

OFFERING

The Telescopic Feed Conversion Solution is available for the following Tunneling Drills models:

MACHINE MODELS	TFX6/12	TFX8/14	TFX10/16	TFX12/18
Sandvik DT611	✓	✓		
Sandvik DT621	✓	✓		
Sandvik DT721	✓	✓		
Sandvik DT820	✓	✓	✓	
Sandvik DT821	✓	✓	✓	
Sandvik DT912D	✓	✓	✓	✓
Sandvik DT922i	✓	✓	✓	✓
Sandvik DT923i	✓	✓	✓	✓
Sandvik DT1131	✓	✓	✓	
Sandvik DT1132i			✓	
Sandvik DT1231	✓	✓	✓	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

TRR1 ROD RETAINER FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Occasionally, it might be necessary to drill holes longer than the standard rod length used, i.e. drilling investigation holes, holes for grouting etc.

For this purpose, Sandvik has developed the TRR1 rods retainer system that allows to add several rods on the feed, to drill longer holes.

Sandvik Rod Retainer TRR1 can be fitted on Sandvik Tunneling drills feeds (TF, TFi and TFX) with HLX5, RDX5 and RD500 series rock drills.

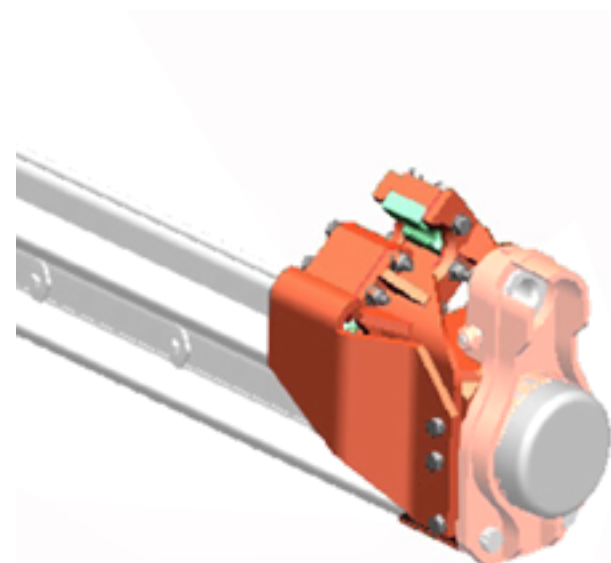
Additional rods have to be loaded manually in the gripper. A safety wire is installed near the TRR1 to allow immediate emergency stop in case of issue.

During coupling and uncoupling phase TRR1 is holding extension rods. TRR1 can be used either 32 mm (1 ¼ in) or 38 mm (1 ½ in) rods.

The design of TRR1 rod retainer aims at simplicity of structure and ease of maintenance. TRR1 is a robust welded steel structure with only one movable jaw piece. The jaw pieces are made of hardened steel and designed for optimum visibility and durability.

When TRR1 is installed on TF feed, hole depth is shortened by 35 mm. By cutting 35 mm off from the buffer hole depth can be restored. On telescopic TFX feed there is no effect on hole length.

The TRR1 conversion kit is delivered with all needed parts including, new controls (hydraulic or electro-hydraulic according machine model) and hoses harness.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to drill occasional longer hole by adding a second rod on the feed Safety wire allow emergency stop while adding rod on the feed. 	<ul style="list-style-type: none"> Improve machine's versatility Improve Safety

OFFERING

The TRR1 Rod Retainer Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT620	
Sandvik DT621	
Sandvik DT720	
Sandvik DT721	
Sandvik DT820	Contact local Sandvik representative
Sandvik DT821	
Sandvik DT912D	
Sandvik DT922i	
Sandvik DT1131	
Sandvik DT1231	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

SCR ROD RETAINER FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Occasionally, it might be necessary to drill holes longer than the standard rod length used, i.e. drilling investigation holes, holes for grouting etc.

For this purpose, Sandvik has developed the SCR rods retainer system that allows to add several rods on the feed, to drill longer holes.

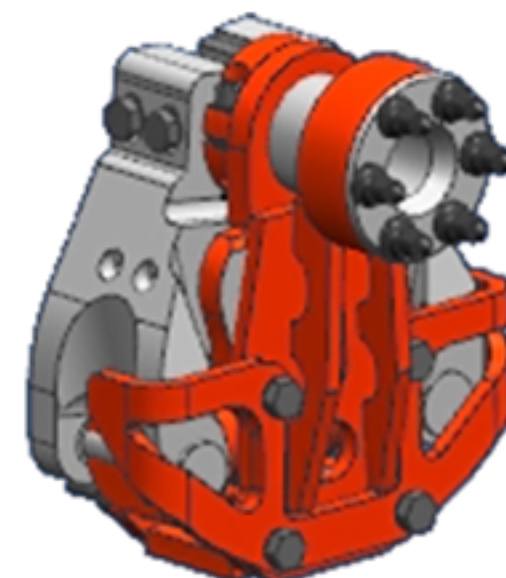
Sandvik Rod Retainer SCR can be fitted on Sandvik Tunneling drills feeds (TF, TFi) with HLX5, RDX5 and RD500 series rock drills. SCR is not available with TFX feed.

Additional rods have to be loaded manually in the gripper. A safety wire is installed near the SCR to allow immediate emergency stop in case of issue.

The design of the SCR rod retainer aims at simplicity of structure and ease of maintenance. SCR is a robust welded steel structure with two movable jaw pieces. The jaw pieces are made of hardened steel and designed for optimum visibility and durability.

The key benefit of SCR in addition to effective holding of the rods is the ability to keep the rod centralized in the middle of the feed front centralizer while clamping. The grip is tighter and better suited for the rod coupling than a non-centralizing retainer (i.e. TRR1).

The SCR conversion kit is delivered with all needed parts including new controls (hydraulic or electro-hydraulic according machine model) and hoses harness.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to drill occasional longer hole by adding a second rod on the feed. Safety wire allow emergency stop while adding rod on the feed. 	<ul style="list-style-type: none"> Improve machine's versatility Improve Safety

OFFERING

The SCR Rod Retainer Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT821	
Sandvik DT912D	
Sandvik DT921i	
Sandvik DT922i	
Sandvik DT1120i	
Sandvik DT1130i	
Sandvik DT1131	Contact local Sandvik representative
Sandvik DT1131i	
Sandvik DT1132i	
Sandvik DT1230i	
Sandvik DT1231	
Sandvik DT1231i	
Sandvik DT1331i	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

TRS TWO RODS SYSTEM FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Occasionally, it might be necessary to drill holes longer than the standard rod length used, i.e. drilling investigation holes, holes for grouting etc.

For this purpose, Sandvik has developed the TRS two rods system that allow to had safely a second rod on the feed.

The TRS can be retrofitted to TF feeds on tunneling drills.

The TRS consists of two grippers with cylinders to hold one rod at a time in jaws, a rod retainer to hold the rod during coupling / uncoupling (TRR1 or SCR), an opening travelling centralizer to allow adding / removing rods from the center line, and a limit plate to help positioning the rods in the grippers.

The drilling starts with one rod in the feed, and another in the grippers. When the first rod is drilled, the second rod is placed in the feed by the grippers.

Additional rods can be loaded manually in the gripper. A safety wire is installed near the TRS to allow immediate emergency stop in case of issue.

The TRS Upgrade Solution Retrofit kit is delivered fully adapted to customer's rods specifications, with all needed parts including controls and hoses harness.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to drill occasional longer hole by adding a second rod on the feed without having to bring people on the front danger area of the machine. 	<ul style="list-style-type: none"> Improve versatility and safety

OFFERING

The TRS Two Rods System Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT621*	
Sandvik DT720*	
Sandvik DT721*	
Sandvik DT912D	
Sandvik DT921i	
Sandvik DT922i	Contact local Sandvik representative
Sandvik DT1131	
Sandvik DT1131i	
Sandvik DT1231	
Sandvik DT1231i	
Sandvik DT1331i	

*TRR1 Rod retainer instead of SCR.



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TRH ROD HANDLING SYSTEM FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik TRH rod handling system is used for longhole drilling applications in tunneling with Sandvik T35 MF extension rods. Hole size is typically is 54...64 mm.

Typical works are drilling of injection and probe hole fans heading from tunnel face forward. TRH is remotely controlled from operator's place. TRH provides a safe, ergonomic and mechanized way of extension rod handling.

Sandvik TRH system can be mounted on 2- booms or 3-booms jumbo. TRH is not intended for rock bolt hole fans.

Designing criteria of revolutionary Sandvik TRH solution has been low weight, compact design, ease of use and durable and protected structure for demanding tunnel conditions.

Depending on application Sandvik TRH can use 12 ft, 14 ft or 16 ft extension rods, which means less couplings and more production capacity due to minimized auxiliary times. For effective uncoupling of rods TRH must be used in combination with Power Extractor which is mounted on a rock drill. The magazine is designed for four extension rods in addition to the starter rod on the feed. Controls of TRH and Power Extractor are integrated to the control systems of DTi drill rigs.

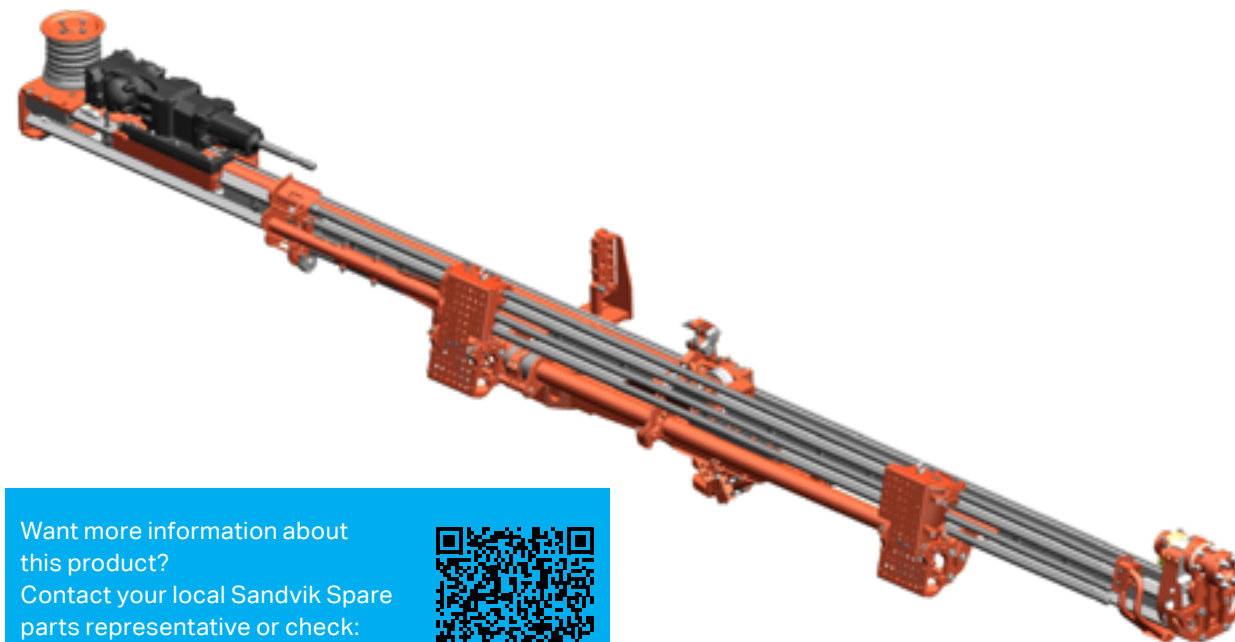
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow to drill long hole by adding up to 4 rods rod on the feed. Fully mechanized system that allows extension drilling without having to bring people on the front danger area of the machine. 	<ul style="list-style-type: none"> Improve machine versatility Improve safety

OFFERING

The TRH Rod Handling System Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT920i	
Sandvik DT921i	
Sandvik DT922i	
Sandvik DT1120i	
Sandvik DT1130i	
Sandvik DT1131i	Contact local Sandvik representative
Sandvik DT1132i	
Sandvik DT1230i	
Sandvik DT1231i	
Sandvik DT1330i	
Sandvik DT1331i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



UTILITY BOOM UPGRADE FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Marking the face, scaling the roof or installing bolts are hazardous tasks if not done with the proper equipment. Sandvik Utility booms are designed to lift people in order to achieve needed tasks in the most safe way.

The Utility booms have a telescopic extension, parallel automatics of the basket and dual controls (from the basket and from the unit's operator station) for the boom swing, lift and extension features.

Type A basket is without and type B basket with a swing feature. The basket swing speed is adjustable.

Sandvik SUB5i booms are manufactured and tested according to European Standard EN280.

Safety canopy, hydraulically lifted (FOPS, ISO 3449, 11600J) is available as optional feature as is a rod rack (2 pieces, for max. 4 pieces of 10 or 12 ft rods per rack) and working lights assembly.

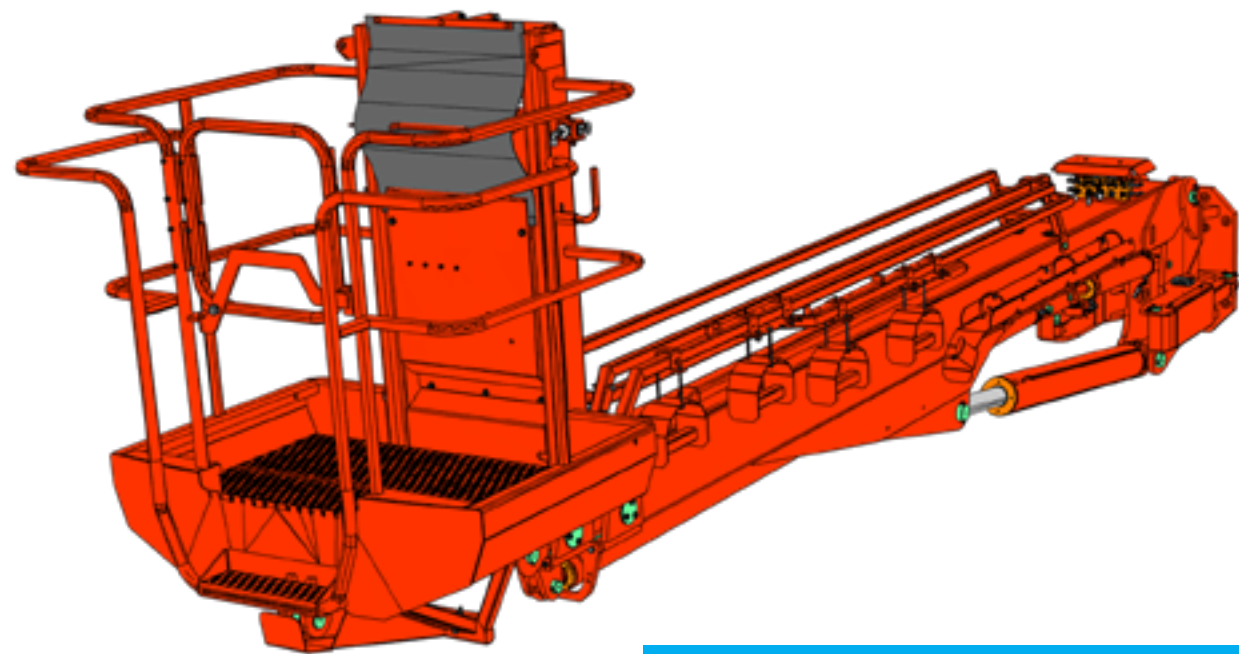
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Utility boom that is able to lift people in safety to perform task in height. 	<ul style="list-style-type: none"> Improve safety during hazardous tasks.

OFFERING

The Utility Boom Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	UTILITY BOOM	PART NUMBER
Sandvik DT820	SUB3A	
Sandvik DT821	SUB3A	
Sandvik DT922i	SUB4i A/B	
Sandvik DT1131	SUB5i A/B	
Sandvik DT1131i	SUB5i A/B	Contact local Sandvik representative
Sandvik DT1132i	SUB5i A/B	
Sandvik DT1231	SUB5i A	
Sandvik DT1231i	SUB5i A/B	
Sandvik DT1331i	SUB5i A/B	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

RX EXPANSION BOLT KIT FOR TUNNELING DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

RX Expansion Bolt Kit is an option on Sandvik Utility Booms.

The Kit allows to inflate manually, from the basket of the Utility Boom, expansion bolts with H.P. water. A pressure gauge, located on the inflation gun, allows the operator to insure the bolt is inflated to the correct pressure.

The kit includes also an high pressure water pump (max. 320 bars) and all mechanical, electric and hydraulic assemblies needed.

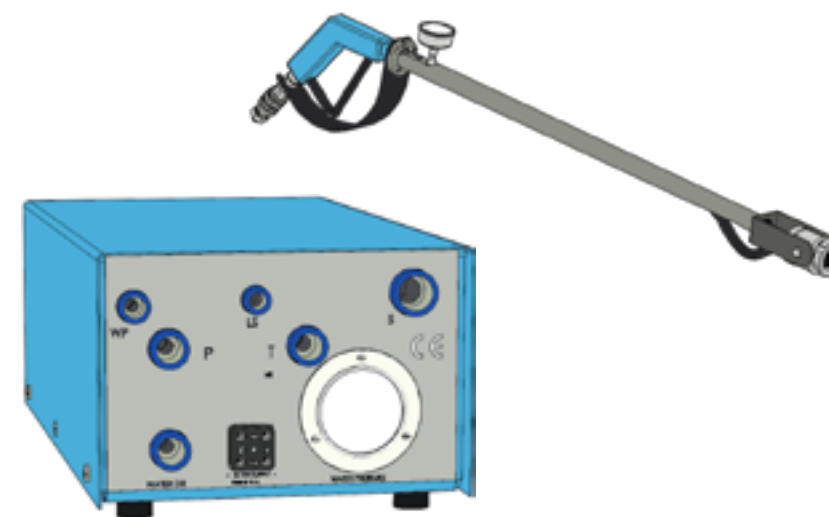
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allows to inflate manually, from the basket of the Utility Boom, expansion bolts. 	<ul style="list-style-type: none"> Install expansion bolts on a safe way.

OFFERING

The RX Expansion Bolt kit Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik DT820	
Sandvik DT821	
Sandvik DT922i	
Sandvik DT1131	
Sandvik DT1131i	Contact local Sandvik representative
Sandvik DT1132i	
Sandvik DT1231	
Sandvik DT1231i	
Sandvik DT1331i	

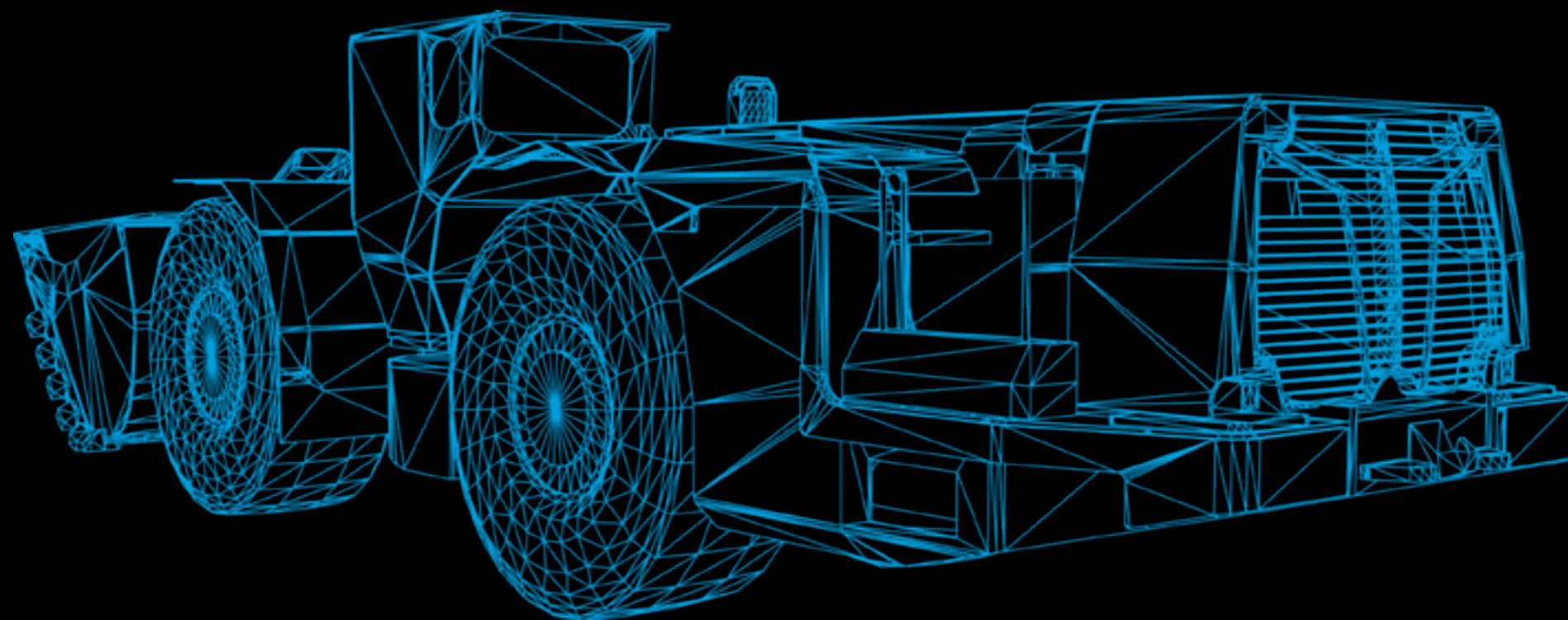


Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

UPGRADES SOLUTIONS FOR LOADERS

Sandvik Upgrades and Engineered Solutions offers a vast range of retrofit kits that allow to modify the original specifications of your Underground Mining Loaders to improve the performance, the productivity, the safety or to reduce the environmental impact and the operating cost. Our offering includes also solutions to adapt your machine to different application.

PRODUCTIVITY IMPROVEMENT	116
SAFETY AND ENVIRONMENTAL IMPROVEMENT	120
LIFECYCLE COST IMPROVEMENT	138
APPLICATION MODIFICATION	150



PRODUCTIVITY IMPROVEMENT

INTEGRATED WEIGHING SYSTEM FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

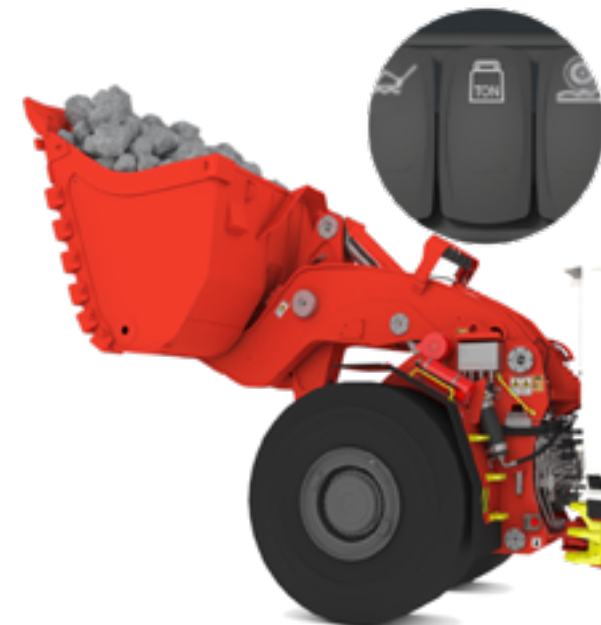
DESCRIPTION

Improper loading of the loader's bucket leads to loss of productivity, and could generate safety consequences and expensive technical issues.

Sandvik Integrated Weighing System (IWS) for Loader allows to monitor the load on the bucket of your loader with great accuracy (up to 97%) thus ensuring the maximal productivity.

In addition, it will help to avoid safety and technical issues that could be generated by frequent over-loading of the bucket.

The data measured by the IWS are transferred to the My Sandvik Digital Services Knowledge Box™. These data are used to build My Sandvik Productivity reports that give a direct overview of fleet utilization and performance. It also gives access to alarm and signal reports to detect early safety violations or lower performance issues.



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Provide reliable estimation of the bucket payload (within 3% maximal error*) when lifting the boom (weighing "on the go").
- IWS is fully integrated into the machine control system using the original display to provide bucket load information to the operator.
- Assist the operator with a sound signal when the weighing result is ready.
- IWS information are collected and can be transferred wirelessly or via USB to the My Sandvik Digital Services Knowledge box™.

CUSTOMER VALUES

- Ensures optimum bucket filling thus maximal productivity.
- No interruption of the loading process due to weighing.
- Avoids safety or technical issues caused by bucket overloading.
- User friendly interface. IWS is simple and easy to use
- No additional screen needed.
- Improves quality and consistency for operators of all experience levels, and reduces training duration for new operators.
- Identifies needs for operator training.
- IWS data are used to build the My Sandvik Productivity reports.
- Reliable data easily collected and compiled. Optimal production follow-up.
- Possibility to compare real productivity results with targets for each individual loader and to get a direct overview of fleet's utilization.
- Access to alarm and signal reports. Early detection of lower performance, safety violations, etc...

OFFERING

The Integrated Weighing System Upgrade Solution is available for the following Tunneling Drills models:

MACHINE MODELS	PART NUMBER
Sandvik LH410	BG01681322
Sandvik LH410	BG01683216
Sandvik LH514	BG01683251
Sandvik LH517	BG01683254
Sandvik LH517L	BG01683254
Sandvik LH517i	BG01683427
Sandvik LH621	BG01683261
Sandvik LH621i	BG01687532

The retrofit kit content varies according machine specifications and options. Contact your local Sandvik representative for more information.

BOOM SUSPENSION & FLOATING SYSTEMS FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

While the loader is tramming with bucket loaded, the suspended weight generates important fore-and-aft pitching motions that lead to bucket spillage, if the loader trams too fast, which has important consequences in terms of productivity and operating cost (increase needs for road maintenance, risk of tyres damages...).

These movements also generates high stress on the loaders components and reduce their lifetime.

In order to reduce the fore-and-aft pitching motions while the loader is tramming, Sandvik has developed the Boom Suspension System for Loaders (also called "Ride Control").

The boom suspension improves the loader's driving and operator's comfort by suspending the boom on pressure accumulators during tramming. It also reduces the stress on the machine frame components, extending their lifetime.

Daily tasks get more effective by stable driving and more comfort increasing safety, reliability and productivity.

Boom suspension system comes together with the Bucket Floating System that allows the bucket to follow the ground smoothly. It enable to clear easily fallen rock on the roads.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

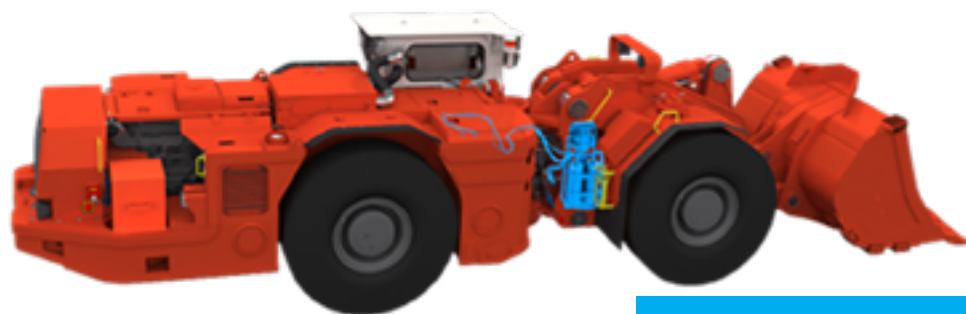
ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Reduces bucket spillage with boom suspension. Higher tramming speed. 	<ul style="list-style-type: none"> Increase Productivity.
<ul style="list-style-type: none"> Reduced stress on the loader extends components life. Reduced road maintenance due to less spillage. Reduced tires wear and risk of tire damage. 	<ul style="list-style-type: none"> Reduce operating cost.
<ul style="list-style-type: none"> Improved road condition and operator comfort. Stable and smooth operation, even with higher speed. Reduced fore-and-aft pitching motion and collision with rocks. 	<ul style="list-style-type: none"> Improve safety and operator's comfort.

OFFERING

The Boom Suspension and Floating Systems Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER	PART NUMBER*
Sandvik LH307	56203746	BG01128201
Sandvik LH410	56043918	BG01128435
Sandvik LH514	BG00353725	BG01127002
Sandvik LH517		
Sandvik LH517i	Contact local Sandvik representative	
Sandvik LH621		
Sandvik LH621i		

*CRN Certified (only units operating in Canada)



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

SAFETY AND ENVIRONMENTAL IMPROVEMENT

SAFETY RAILS FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

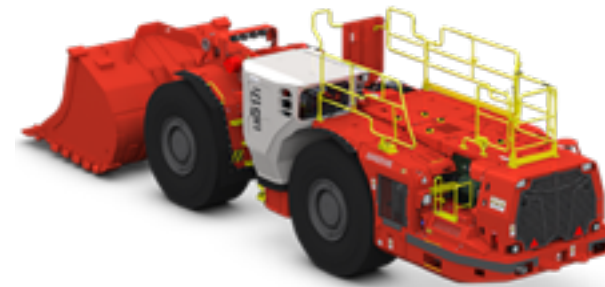
DESCRIPTION

Working at height is one of the highest risk that mine workers are facing. And statistics show that slip and fall are a major cause of accident in the mining industry with several fatalities registered every year.

On loaders, some maintenance and repair operations have to be done from the top deck.

To help our customers to control fall hazards during maintenance and repair operations, Sandvik has developed the Safety Rails system that offers an efficient protection against the risk of fall.

The Safety Rails system is specifically designed for underground mining harsh environment. The Safety Rails system is operated by an electro-hydraulic system, providing immediate protection to the worker while climbing on the machine.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Safety Rails mitigate the risk that service people fall from the top of the machine. 	<ul style="list-style-type: none"> Improve the safety of the maintenance and repair operations
<ul style="list-style-type: none"> Foldable system that stays permanently on the machine, it is always available, even if the machine is not located on the workshop. 	<ul style="list-style-type: none"> Able to protect the people in any circumstances.
<ul style="list-style-type: none"> Simple and reliable system. 	<ul style="list-style-type: none"> Easy to use, require minimal training to be used. Minimal maintenance and withstands tough mining conditions.
<ul style="list-style-type: none"> Easy and quick to set-up. 	<ul style="list-style-type: none"> Immediate safety to the person climbing on top of the machine.

OFFERING

The Safety Rails Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH307	BG01264247
Sandvik LH410	BG00374042
Sandvik LH410	BG00361081
Sandvik LH514	56203845
Sandvik LH514	56203853
Sandvik LH514	56210891
Sandvik LH514	BG00524798
Sandvik LH514	BG00610353
Sandvik LH514	BG00757703
Sandvik LH517	56212199
Sandvik LH517	56212225
Sandvik LH517	BG00242012*
Sandvik LH517i	BG00929241
Sandvik LH517i	BG00971876
Sandvik LH621	BG00311581
Sandvik LH621	BG00736986
Sandvik LH621i	BG00976329

* Conversion Manual to Electro-hydraulic kit. The retrofit kit content varies according machine specifications and options. Contact your local Sandvik representative for more information.

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



CAMERAS SYSTEM FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

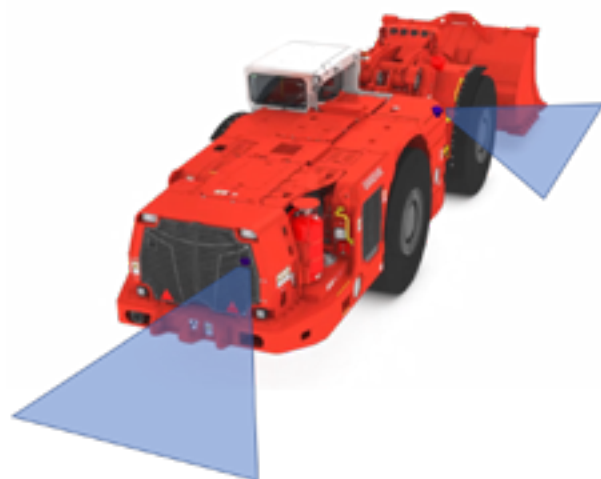
DESCRIPTION

In Underground mining, confined space and limited visibility due to dust or poor lighting increase the risk of collision with pedestrians, other machines or walls. Collision is one of the major risk on underground mining with several fatalities registered every year.

In order to increase the visibility of the operator and to limit risk of collision, Sandvik has developed cameras system for Loader.

Cameras system improves the safety by increasing the operator field of vision, allowing view on the blind areas. It also limits the risk of collision with walls that would cause damages on the equipment.

The system includes two cameras located on front and rear on the machine, on the opposite side of the cabin. (Two monitors (one for each camera) are located on the cabin (only 1 monitor on LH208L) . An optional recording device is also available on some models.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Increase the field of vision of the operator, allow view on the blind side areas. Limit the risk of collision with a pedestrian. Limit the risk of collision with an other machine. Optional recording device allows accident cause analysis 	<ul style="list-style-type: none"> Increase safety
<ul style="list-style-type: none"> Reduces risk of damage on the machine due to collision with walls or other machine. 	<ul style="list-style-type: none"> Reduce operating cost

OFFERING

The Cameras System Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH208L	BG00817394
Sandvik LH209L	BG00844928
Sandvik LH307 (OC)	BG00955379
Sandvik LH307 (CC)	BG00775155
Sandvik LH410 (OC)	BG01708065
Sandvik LH410 (CC)	BG01707925
Sandvik LH410 (CC)*	BG01707917
Sandvik LH514 (OC)	BG00842909
Sandvik LH514 (CC)	BG00841015
Sandvik LH514 (CC)*	BG01174450
Sandvik LH514L	BG00300053
Sandvik LH514 (OC)**	56210214
Sandvik LH514 (CC)**	56212181
Sandvik LH517	56037484
Sandvik LH517L	BG00300053
Sandvik LH517i	BG00868381
Sandvik LH621	56037838
Sandvik LH621i	BG00915720

*These retrofit kits include recording device
 **For loaders equipped with secondary braking system (Rammer).
 "OC" = Open Cabin
 "CC" = Closed cabin.

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

DIESEL PARTICULATE FILTER (DPF) FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Diesel exhaust particles are dangerous for health. Prolonged exposure to high concentrations of diesel particulate matter increases a worker's risk of cardiovascular, cardiopulmonary and respiratory disease, and lung cancer. This is especially true on the confined underground environment.

In order to prevent the small, health-endangering diesel exhaust particles and carcinogenic toxins from spreading into the environment, Sandvik has equip the LH208L with Diesel Particulate Filter (DPF).

The DPF uses sintered metal filter with external regeneration technology.

It is protected by an on-board diagnostic system. The system will give an early alarm to the operator if something is wrong before any serious failure can occur.

The Diesel Particulate Filter has to be cleaned regularly simply with a water HP cleaner.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Reduce by up to 90% the Diesel exhaust particles emissions. On-board diagnostic system that monitor the condition of the DPF and alarm the operator in case of issue before serious and expensive failure occur. 	<ul style="list-style-type: none"> Improve safety and reduce environmental impact. Reduce operating cost

OFFERING

The Diesel Particulate Filter Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH208L	BG01559948

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

CABIN UPGRADE FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Mining conditions varies and affects the operator's environment. Mining conditions can be dusty, dark, wet noisy, icy or hot.

Sandvik has designed cabins for it's loaders to improve the operator's safety and comfort. The cabins are designed to be extremely durable. They meet and exceed the international standard:

- ISO 3449 - Falling Object Protective Structure (FOPS).
- ISO 3471 - Roll-Over Protective Structure (ROPS).

Sandvik Cabin offers low noise and vibration levels and allows emergency exit. Over-pressure in the cabin reduces exposure to air borne particles

Cabin upgrade solution includes Air Conditioning system and additional cabin heater element on AC is available on option.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Cabin meet and exceed international safety requirements FOPS & ROPS. • Protect operator from excessive noise, vibration and dust exposure. • Protect operator from hot or cold environment 	<ul style="list-style-type: none"> • Improve operator's safety and comfort.

OFFERING

The Cabin Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH209L	
Sandvik LH307	
Sandvik LH410	Contact local Sandvik representative
Sandvik LH514	
Sandvik LH514E	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



CABIN LIFT UPGRADE FOR LOADERS

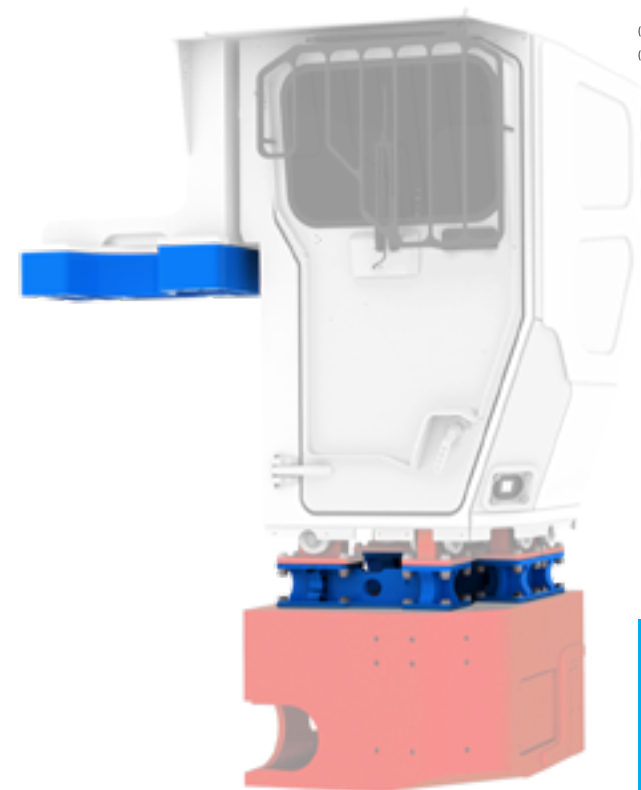
UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

In Underground mining, confined space and dust or poor lighting increase the risk of collision with pedestrians, other machines or walls. Collision is one of the major risk on underground mining with several fatalities registered every year.

In order to increase the visibility of the operator and to limit risk of collision, Sandvik has developed Cabin Lift Upgrade Solution for Loader.

The Cabin Lift Upgrade Solution consist on spacers under the cabin and the ROPS bar and lifts the cabin up by 150 mm. Consequently it in increase the height of the equipment by 150 mm (hight of the drifts must be sufficient).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Increase the field of vision of the operator. • Limit the risk of collision with a pedestrian. • Limit the risk of collision with an other machine. • Reduces risk of damage on the machine due to collision with walls or other machine. 	<ul style="list-style-type: none"> • Increase safety • Reduce operating cost

OFFERING

The Cabin Lift Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH514	56032513
Sandvik LH514E	56032513
Sandvik LH517	56039786
Sandvik LH517i	Contact local Sandvik representative
Sandvik LH621 ⁽¹⁾	56044162
Sandvik LH621 ⁽²⁾	56212903
Sandvik LH621i	Contact local Sandvik representative

⁽¹⁾CC517 Cabin
⁽²⁾CC621 Cabin

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ADDITIONAL CABIN HEATER FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Cold temperatures have hazardous effects on humans and their ability to work well. When the body is exposed to cold temperatures, the negative effects can include dehydration, numbness, shivering, frostbite and hypothermia. This can lead to extended reactivity time, fatigue, uncontrolled movements or loss of lucidity that increase the risk of loss of control and accident.

In order to mitigate this risk, Sandvik has developed Additional Cabin Heater for Loaders equipped with cabin. The Heating Systems are able to generate sufficient heat in the cabin, even on the coldest ambient temperatures.

The heating system uses cooling fluid from the engine cooling system to generate heat while the engine is running (tramping phases). In the Sandvik LH514E, there is a separate heater, not integrated in the air conditioning system, mounted in the cabin.

The temperature on the cabin is fully adjustable with a simple knob.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> System that provides heat on the cabin. 	<ul style="list-style-type: none"> Reduce risk of accident due to negative effects of cold ambient temperatures. Improve operator's comfort

OFFERING

The Additional Cabin Heater Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH307	Contact local Sandvik representative
Sandvik LH410	BG01666067
Sandvik LH514	
Sandvik LH514E	Contact local Sandvik representative
Sandvik LH517i	
Sandvik LH621i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

CABIN SAFETY GRILL FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When operating in poor ground conditions, rock may fall from the roof and hit the cabin windshield, generating a risk of injury for the operator and damage to the unit.

In order to improve the safety of the operations, Sandvik has designed the Cabin Safety Grill that provides additional protection against frontal falls of rock.

The Safety Grill is mounted on the cabin to cover the front window and can be rotated manually, allowing for cleaning or replacement of the window, or servicing of the window wiper.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Provides protection if rock hits the windshield. Limit the risk of damage to the cabin windshield. 	<ul style="list-style-type: none"> Improve safety. Reduce operating cost.

OFFERING

The Cabin Safety Grill Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH307	BG00418484
Sandvik LH410	BG00418484
Sandvik LH514 ⁽¹⁾	56046962
Sandvik LH517i	BG00892250
Sandvik LH517i ⁽²⁾	BG01131035

⁽¹⁾Only low profile cabin.
⁽²⁾Raised Cabin only.



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

HIGH BACKREST SEAT FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Operators spend a lot of time every day sitting in their loader. This stationary work places a lot of physical and mental stress on the operator. Sitting in an uncomfortable seat can cause additional fatigue and lead to loss of concentration. The risk of accidents increases in consequence. And staying in a stationary position for a long time leads to long-term damage, especially to the lower back, which can lead to chronic pain and permanent disability.

In order to improve the comfort and safety of the operator, Sandvik offers an High Backrest Seat Upgrade Solution.

High Backrest Seat improves the operator ergonomics by providing a better head support when operating the equipment. It includes four-points seat belt that ties the operator tightly to the seat improving safety during operation.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> High Backrest Seat improves operator ergonomics by providing better head support. 	<ul style="list-style-type: none"> Improve operator's comfort and safety.

OFFERING

The High Backrest Seat Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH517i	Contact local Sandvik representative
Sandvik LH621i	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

SEAT BELT & DOOR LATCH MONITORING FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Cabin door and seat belt are essential safety system to limit the risk of injury during machine tramming phases.

In order to insure these safety elements are operational, means cabin door is closed and safety belt is locked, the Sandvik Doors and Safety Belt Monitoring System can be added on your loaders.

The seat belt and door latch indication system is designed to warn the machine operator if machine is used without seat belt or when the cabin door is not properly closed. Warnings are given by a buzzer and with warning lights in the instrument panel.

The brakes are NOT automatically applying if, during machine's tramming phase, the door are opened or seat belt unlocked, as sudden automatic braking causes an additional risk to a person who does not wear a seat belt.

The Doors and Safety Belt Interlock System retrofit kit is delivered with all needed parts including, switches, brackets, electric wiring, operator manual update, etc.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Insure cabin doors are closed and seat belt always fasten when the machine is tramming. 	<ul style="list-style-type: none"> Improve safety

OFFERING

The Seat Belt & Door Latch Monitoring System Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH514	Contact local Sandvik representative
Sandvik LH517	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

IMPROVED DOOR LOCK FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik has upgraded the door lock in LH517i and LH621i loaders.

When closing the door, the door lock opening handles inside and outside the cabin don't follow the locking mechanism movement anymore. This will help to close the door firmly and ensure the safety of the operator.

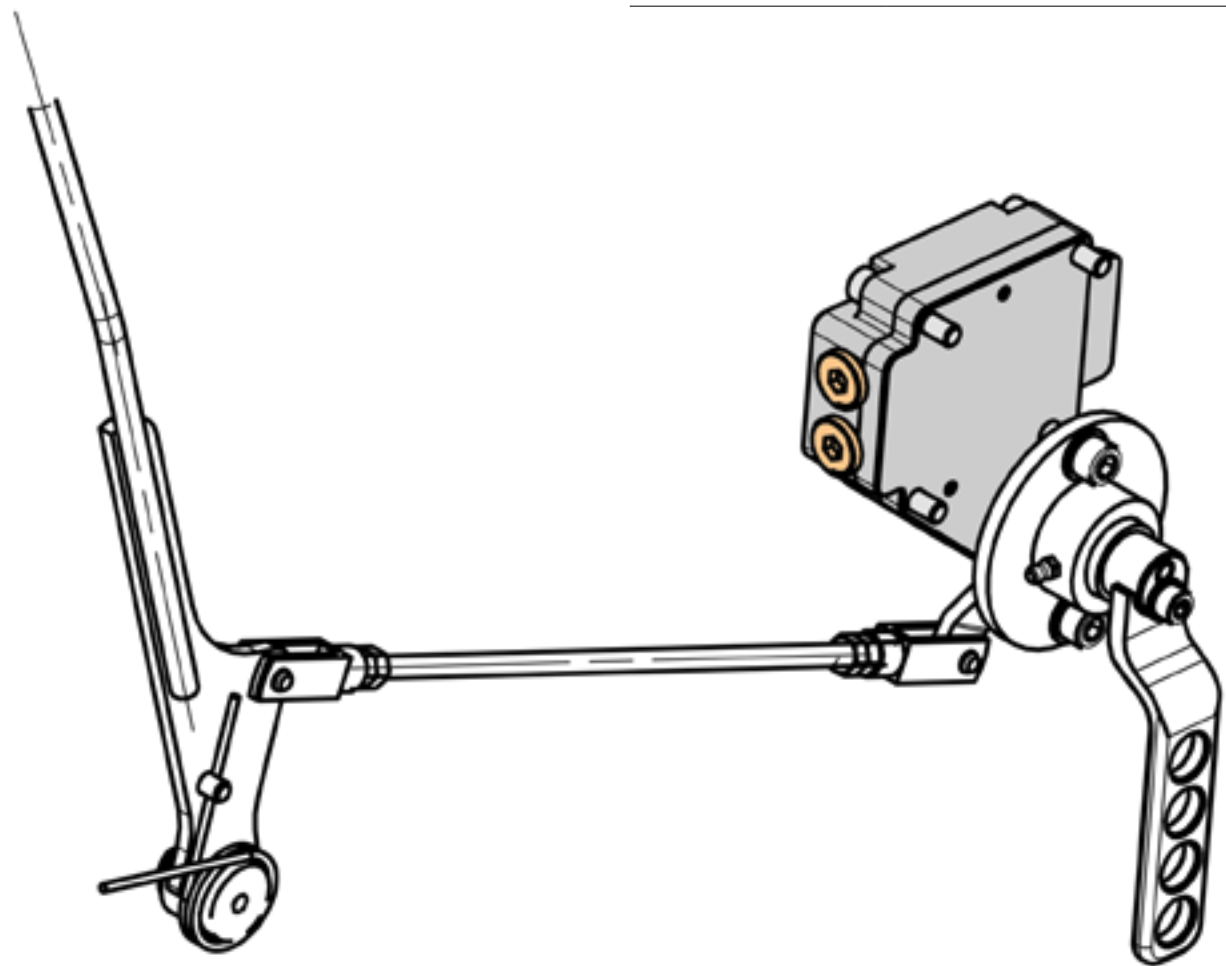
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
Door lock opening handles do not follow anymore the locking mechanism movement.	Helps to close firmly the door and ensure the safety of the operator.

OFFERING

The Improved Door lock Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH517i	BG01465700
Sandvik LH621i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

RETURN FILTER UPGRADE FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

On its latest i-series loaders, Sandvik has introduced a new type of hydraulic return filter..

This new filter brings several advantages:

- The filter is shorter and much lighter (~40% when wet) and it is offering firmer grip for lifting the element with a hook or with the fingers as there is more space on the top of the filter. Also, the bottom of the filter is flat making it stand alone when removed. This makes safer and easier the filter replacement. When less effort is needed, more concentration are possible for safe filter change-out. This is particularly true for this filter that has to be replaced from the top of the unit (risk of slip and fall from height).
- During the filter element installation, the magnet is guided with the help of a central rod. Magnet stays away from internal metal wire mesh and avoiding any touches with the filter media. So there is no more risks to damage the inside of the filter media or metal wire mesh during the installation process. Media surfaces stay clean and not defected. The possibility of having an element installed that won't perform according to expectations leading to higher contamination of oil and premature wear of whole system components is then strongly mitigated.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> The new filter is shorter and lighter (~40% when wet). There is more space on the top to insert a lifting hook or the fingers. Smooth and "cut free" surface of the filter element increasing handling safety. No welding beam. New filter element is a stand alone unit thanks to its plain bottom design (no falling down risk). 	<ul style="list-style-type: none"> Replacement of the filter element is safer as the weight to lift is reduced (filter located in the tank, so the lifting position at the beginning is really low) and no need to lift as high because the filter is shorter. Less effort needed, more concentration for safe filter change-out. No risk of cut with the filter element. Reduce risk of messy oily operation. Less risks of injuries due to lifting on slippery surface.
<ul style="list-style-type: none"> Filter element can be installed carefully to the bottom plate without any magnet distractions. After the element installation, the magnet is guided by a central rod. Magnet stays away from internal metal wire mesh and avoiding any touches with the media. No special tools required to replace the filter element. No jigs or inserts. Same filter installed on latest Sandvik LH517i and LH621i. 	<ul style="list-style-type: none"> Avoid risks to operate with damaged filter element, leading to higher contamination of oil and premature wear of whole hydraulic system components. Safety and performance of the equipment guaranteed. Standardization of the fleet spare parts. Limit references on stock.

OFFERING

The Return Filter Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH517	BG01492400
Sandvik LH517L	
Sandvik LH621	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



RADIO REMOTE CONTROL SYSTEM FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

In the case of specific mining methods are used, such as sub-level stopping or block caving, ore needs, in some situation, to be loaded from unsupported areas. It can create hazardous situation as there is a risk the roof collapse on the loader, and smash or trap the operator.

To mitigate those hazards, and to make the loader available for loading in an unsupported area, Sandvik has developed Radio Remote Control (RRC) system to operate the unit from line-of-sight distance.

Line of sight system: the operator must see the loader under his/her control at all times. During RRC operation, the gears are limited to the first gear. Optional camera system can be added to improve the visibility of the operations.

The RRC system requires a safe operating place for the operator that controls the unit (mine responsibility). The transmitter is compact and light to carry (about 2.0kg with battery) but still durable. It is equipped with a tilt switch for operator safety.

Frequencies: 2.4 GHz as standard, other frequencies available on request, depending on local country specific regulations.

The Radio Remote Control System is frequently associated with Recovery System to be able to remove safely the loader in case of roof collapse.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Remote control system that allows the operator to control the loader with a remote controller instead of operating the unit from the cabin/canopy. Enable an access to the ore from hard-to-reach ore. 	<ul style="list-style-type: none"> Improve safety, especially when part of the loader cycle takes place under unsupported roof. Improve productivity

OFFERING

The Radio Remote Control Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH202	
Sandvik LH203	
Sandvik LH307	
Sandvik LH400T	
Sandvik LH409E	
Sandvik LH410	Contact local Sandvik representative
Sandvik LH514	
Sandvik LH514E	
Sandvik LH517	
Sandvik LH517i	
Sandvik LH621	
Sandvik LH621i	



Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK



RRC VIDEO SYSTEM FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When operating loader with line of sight radio remote control system, visibility can be poor due to dust, smoke or poor lightening.

To improve the visibility of the operations during the Radio Remote Controlled operations, Sandvik has developed a specific Video System. This system improve the safety of the operation and also the productivity (operator can ensure the bucket is correctly fill).

The RRC Video System includes two cameras mounted on the machine to have front and rear views. A display is mounted on the remote control. The system is wireless (radio transmission).

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improve the visibility when operating the loader with the line of sight radio remote control system. 	<ul style="list-style-type: none"> Improve safety and productivity

OFFERING

The RRC Video System Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH307	
Sandvik LH410	
Sandvik LH514	
Sandvik LH517	Contact local Sandvik representative
Sandvik LH517i	
Sandvik LH621	
Sandvik LH621i	



Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK



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RECOVERY SYSTEM (RADIO SIGNAL) FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

In some breakdown cases like engine failure or transmission breakdown, or even roof collapse (if machine operated under unsupported roof with RRC), the loader can be stuck and block the production site, generating important productivity loss.

Removing the unit from the location without all functional components, or without easy and safe access to the operator compartment, can be hazardous.

In order to mitigate this risk and makes easier to remove the loader from the location, Sandvik has developed a Recovery System that allows, remotely, to shut down the engine and release the brakes of the loader with a radio Signal.

The system includes a radio remote control to operate the system (and a receiver installed on the unit), an electric operated hydraulic pump to pressurise the brake circuit and release the brakes, and a tow hook that is installed at the back of the unit and allows to pull out the loader with an other loader.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Allows to remotely release the brakes in case of need to retrieve a buried unit or to remove it quickly from the section in case of breakdown.

CUSTOMER VALUES

- Improve the safety by making the unit recovery process safer.

OFFERING

The Recovery System with brake release by radio signal Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH202	
Sandvik LH203	
Sandvik LH307	Contact local Sandvik representative
Sandvik LH400T	
Sandvik LH410	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



RECOVERY SYSTEM (PULLED HOOK) FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

In some breakdown cases like engine failure or transmission breakdown, or even roof collapse (if machine operated under unsupported roof with RRC), the loader can be stuck and block the production site, generating important productivity loss.

Removing the unit from the location without all functional components, or without easy and safe access to the operator compartment, can be hazardous.

In order to mitigate this risk and makes easier to remove the loader from the location, Sandvik has developed a Recovery System that allows to release the brakes when pulling on the towing hook.

On the LH514 and LH517, the system is electro-hydraulic. When the recovery hook is pulled, a pressure accumulator provides pressure to release the brakes. More pressure, if needed, is produced by an electric pump.

On LH517i and LH621i, the system is fully hydraulic. The retrieval hook is connected to a cylinder which extends when the hook is pulled. Oil from the cylinder flows to the brake pistons releasing the brakes.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Allows to remotely release the brakes in case of need to retrieve a buried unit or to remove it quickly from the section in case of breakdown.

CUSTOMER VALUES

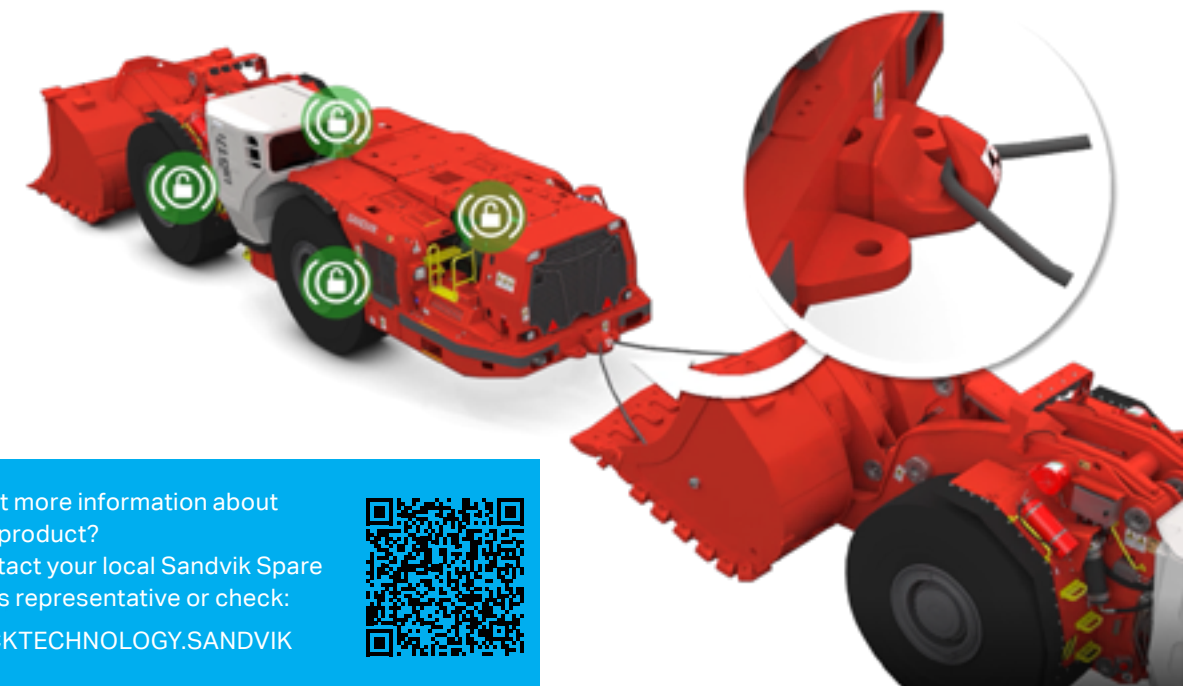
- Improve the safety by making the unit recovery process safer.

OFFERING

The Recovery System with pulled hood Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH514	
Sandvik LH517	
Sandvik LH517i	Contact local Sandvik representative
Sandvik LH621i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PDS INTERFACE FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

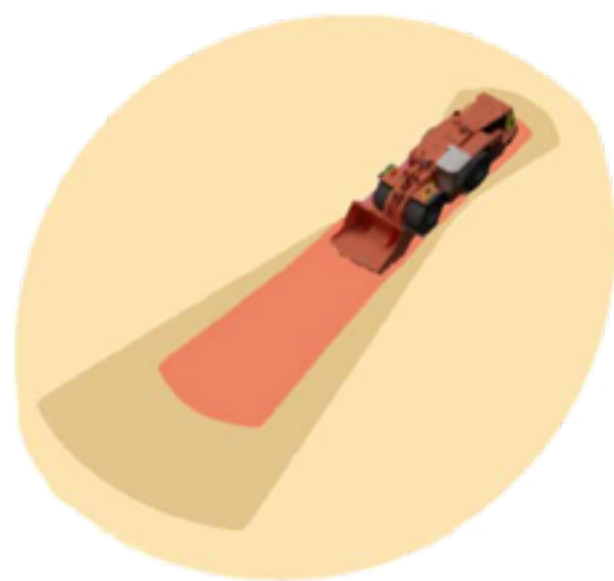
Collision between vehicles or between machines and pedestrians is one of the major risk on underground mining. Collision with another vehicle or person could cause death or severe injury.

Proximity Detection System (PDS) is technologies or devices that actively detect close encounters between two or more objects and transmit this information to an interface system that takes automatic action to render the equipment to a safe state when potentially dangerous interaction occurs.

PDS are generally designed to inform the machine to slow down and/or eventually stop the equipment in case of collision risk with a person or an object carrying a tag.

The Sandvik Proximity Detection System Interface allows to link third-party Proximity Detection System and the Sandvik equipment.

All PDS Interface for Loaders listed here are Level 9 and ISO 21815-2 compliant.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- PDS interface system allow to link a third party PDS with the Sandvik equipment tramming and braking systems. OEM solution that ensure the perfect interaction of the third party PDS with the Sandvik machine systems.
- The interface system supports the use of three PDS "detection zones". Allow to warn the operator of potential danger in gradual way and act accordingly before the machine stops automatically.

CUSTOMER VALUES

- Improve safety

OFFERING

The PDS Interface Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH208L (K)	BG01814529
Sandvik LH307 (OC, K.)	BG01804966
Sandvik LH307 (OC, D.)	BG01804886
Sandvik LH307 (CC, K.)	BG01804945
Sandvik LH410 (VCM2)	BG01804968
Sandvik LH514 (VCM2, OC)	BG01674842
Sandvik LH514 (VCM2, CC)	BG01674844
Sandvik LH514 (VCM3, OC, IWS)	BG01804786
Sandvik LH514 (VCM3, OC)	BG01804783
Sandvik LH514 (VCM3, CC, IWS)	BG01804982
Sandvik LH514 (VCM3, CC)	BG01804772
Sandvik LH517	BG01805005
Sandvik LH517i	BG01812057
Sandvik LH621 (CC517, K)	BG01805047
Sandvik LH621 (CC517, D)	BG01805032
Sandvik LH621i	BG01812080

"OC" = Open Cabin
 "CC" = Closed cabin.
 "K" = Kessler axles
 "D" = Dana axles
 "VCM2", "VCM3": Control system version
 "IWS": Machines equipped with Integrated Weighing System

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



JUMP START CONNECTOR FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Discharged battery might lead to the need to use jump cables to start the engine of the loader with the use of an external battery pack or other unit.

This process can be dangerous in case of polarity mistake on the jump cables connection as the battery short circuit can lead to explosion of the battery, fire start and serious damages on the electric system of the machine.

In order to mitigate this risk, Sandvik offers the installation of the Jump Start Connector Upgrade Solution.

The Jump Start Connector avoid the risk to invert polarity of the jump cable. It avoid also generation of sparks, that could happen if cables were connected temporarily on the battery terminals with clamps (risk of fire).

Only female connector is supplied on the kit. Cable with male connector can be ordered separately from Sandvik:

- P/N 504744: Jump cable length 3m (10ft):
- P/N: 56034295: Jump cable length 4,5m (15ft)



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Jump Start Connector avoid risk of inversion of polarities during jump start operations

CUSTOMER VALUES

- Avoid risk of fire or battery explosion during jump start operations.
- Avoid risk of damage on electric and electronic equipment of the unit during jump start operations.

OFFERING

The Jump Start Connector Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH209L	56030116
Sandvik LH307	BG00687584
Sandvik LH410 (Tier 4F and Stage V engine)	BG00974034
Sandvik LH410 (other engines)	56050359
Sandvik LH514	56033894
Sandvik LH517 (Tier4F engine)	56020980
Sandvik LH517 (other engines)	56033894
Sandvik LH517i	BG00870020
Sandvik LH621	56020980
Sandvik LH621i	BG00887863

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



LIFECYCLE COST IMPROVEMENT

ENGINE CONVERSION SOLUTION FOR SANDVIK LH410

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

The Volvo Penta TAD941VE engine (9L), that used to be the standard engine on Sandvik LH410 Loader, has been phased-out by the manufacturer and it is not anymore available as spare part.

Therefore, Sandvik has developed and extensively tested a new Volvo Penta TAD1140VE engine (11L) that is now the standard engine on Sandvik LH410 loader.

The Volvo Penta TAD1140VE is a 6 cylinder off-road turbo diesel engine with 235kW and 2100 rpm. Due to increased power, the complete power pack systems had to be reviewed for engine manufacture certification (warranty coverage), optimal performances, safety, lifetime and reliability.

Sandvik offers to our customers to upgrade their LH410 active fleet with this powerful, reliable and economical engine.

SPECIFICATIONS

ENGINE	
Engine model	Volvo TAD1140VE
Emissions	Tier 2, Euro Stage II
Operating altitude	-1500m to +3000m
Operating temperature	-20°C to +50°C
Upgrade Engine OEM certification	Engine manufacturer certified modification with warranty coverage
COOLER	
Type	Heavy duty
Radiator	Corrosion resistant anodized aluminum
AIR INTAKE	
Air filtration	Two stages filtration, dry type
Maintenance	Free tools maintenance
EXHAUST	
Exhaust system	Catalytic purifier and muffler
Heat shield	Long life composite material

Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

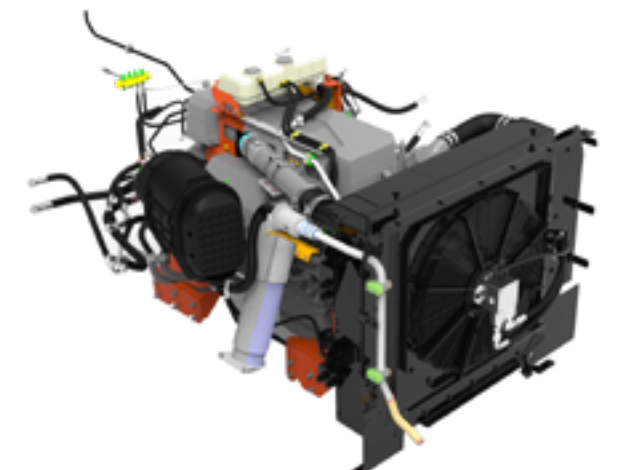
ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> New Volvo Penta TAD1140VE engine. 	<ul style="list-style-type: none"> Increased power. Reduced operating cost. Certified modification, Warranty coverage.
<ul style="list-style-type: none"> New heavy duty aluminium cooler. 	<ul style="list-style-type: none"> Improved cooling performance. Increased resistance to corrosion. Easier to clean. Lower cost to replace in case of damages.
<ul style="list-style-type: none"> New air intake system. 	<ul style="list-style-type: none"> Improved engine protection. Improved handling and maintenance.
<ul style="list-style-type: none"> Modification of exhaust system. 	<ul style="list-style-type: none"> New heat shield material. Extended life. Improve safety.
<ul style="list-style-type: none"> OEM upgrade solution. 	<ul style="list-style-type: none"> All needed parts included (hoses, accessories and all needed parts). Insure smooth installation. Complete fitting instructions. Insure smooth installation. Spare parts documentation provided.

OFFERING

The Engine Conversion Solution Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH410*	BG00958660

* With original Volvo Penta TAD941VE engine (9L)



AXLE CONVERSION KIT FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik offers to customers to retrofit Kessler Axles on their active loaders, originally equipped with Dana axles. Kessler axles equip the latest Sandvik loaders and are characterized by a superior reliability based on product knowledge proven through many years of field experience as well as by an elaborated lightweight design.

The axles conversion kit includes all items needed to do the conversion in the most efficient way.

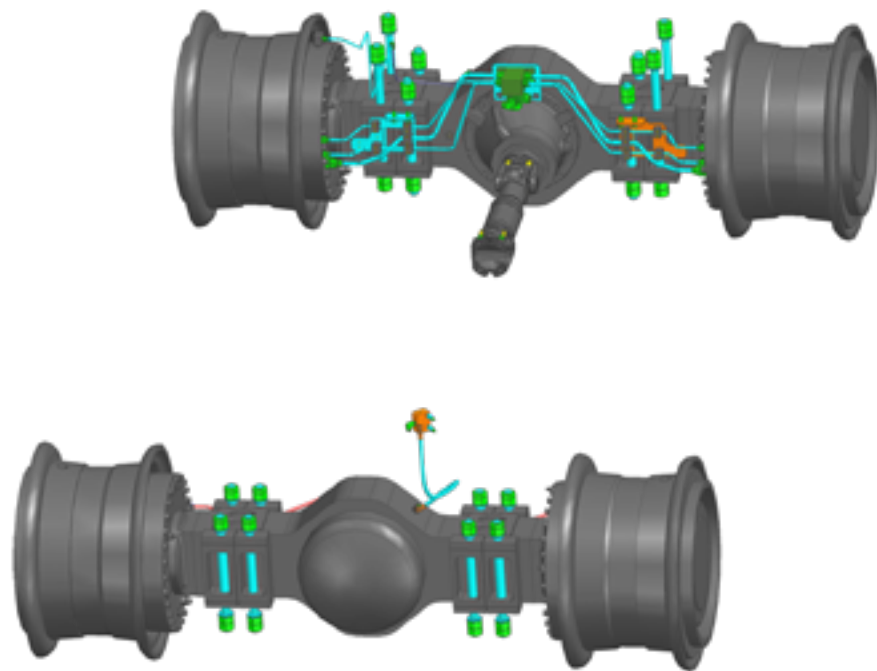
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Axle conversion kit allows to retrofit Kessler axles instead of original Dana axles. 	<ul style="list-style-type: none"> Improved reliability. Spare parts commonality between older and latest units.

OFFERING

The Axles Conversion Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH307	BG00213127
Sandvik LH410	BG00212456
Sandvik LH514	BG00212158
SandvikLH517	BG00906838
Sandvik LH621	BG00214095



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TURBOCHARGER HEAT SHIELD FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik has released a new turbocharger heat shield for loaders equipped with Volvo engines. The new turbocharger heat shield is made of composite material, designed to extend the service life. Deteriorated heat shield increase risk of fire.

Our Turbocharger Heat Shield Upgrades Solution include the new shield and all other needed to make the modification.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

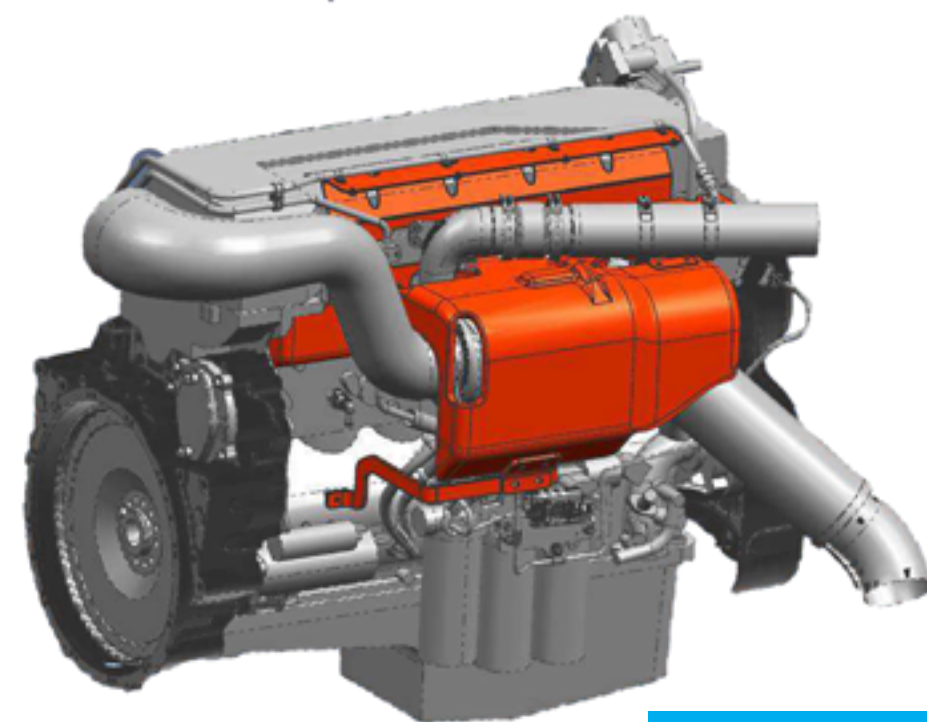
ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Composite material of the new Turbocharger Heat Shield provides longer lifespan. 	<ul style="list-style-type: none"> Reduce maintenance cost. Reduce risk of fire (safety improvement).

OFFERING

The Turbocharger Heat Shield Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	ENGINE MODEL	PART NUMBER
Sandvik LH307	Volvo TAD572VE	BG01258370
	Volvo TAD941VE	BG00818876
Sandvik LH410	Volvo TAD1140VE	BG00941154
	Volvo TAD1171VE	BG00818885

Contact your local Sandvik Spare Parts Representative to check if your loader is originally equipped with the new heat shield or not.



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TYRES PRESSURE MONITORING SYSTEM FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik has developed the Tyres Pressure Monitoring System (T.P.M.S.) for loaders. The system is fully integrated in the Intelligent Control System of the machine.

Thanks to the four self-powered radio pressure sensors mounted on tyre's valves stem, the pressure information of every individual tyre is collected, send by radio signal to the receiver, through the antenna located in the central articulation of the machine, and displayed on the original control system screen (no additional display).

The operator is informed in real time with warning and alarm in case of air leakage or incorrect tyre pressure.

Control of the correct inflation pressure avoid premature damages on tyres and prevents unexpected failure of the tyre which increases safety. Productivity and operating cost are improved by reduction of service time and tyre costs.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> System components are easy to maintain and replace. Correct tyre pressure reduces risk of premature tyre wear and damages. Reduce service time. 	<ul style="list-style-type: none"> Reduce service and tyre cost.
<ul style="list-style-type: none"> Warning or alarms pop-up on the display in case of pressure error detected. Operator can execute proactive actions instead of reactive. Increase machine availability. 	<ul style="list-style-type: none"> Increase productivity and reliability.
<ul style="list-style-type: none"> Operator gets real-time information about tyre pressure. Correct tyre pressure increases operating comfort and reduces operator fatigue. Incorrect pressure could generate tyre burst and causes loss of machine control. 	<ul style="list-style-type: none"> Increase Safety.

OFFERING

The Tyres Pressure Monitoring System Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH410	56044564
Sandvik LH514	56044564
Sandvik LH517	56044564
Sandvik LH517i	BG00868920
Sandvik LH621	56044564
Sandvik LH621i	BG00887963



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TRACTION CONTROL SYSTEM FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik Traction Control System is intended to reduce wheel slipping when penetrating to the muck pile and filling the bucket. It is specifically useful when loading with radio remote control, when the operator's feel to the equipment is not ideal.

By reducing slipping, the Traction Control System improve the tyres lifetime and reduces the need for tyre change.

The system measures each wheel speed separately. When the speed of any wheel differentiates enough from the others, engine RPM is limited until the speed difference decreases back to the allowed range.

Functional only during bucket filling, with first gear forward selected, and bucket not in transport position

The system can be switched on/off directly from the control system display.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Increase the lifetime of the tyres by reducing wheel slipping while the bucket penetrate the muck pile. Limit the risk of loss of productivity due to tyre failure or premature wear. Reduce the risk of tyre failure that could cause accident due to loss of control. 	<ul style="list-style-type: none"> Reduce service and tyre cost. Increase productivity and reliability. Increase Safety.

OFFERING

The Traction Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH517	BG01423956
Sandvik LH621	BG01225255



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TILT CYLINDER UPGRADE FOR SANDVIK LH621i

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik has released an improved tilt cylinder for LH621i loaders. The improved tilt cylinder included a new sensor and sensor wiring. This change increases maintainability in wiring issues and helps to achieve a longer service life for the tilt cylinder.

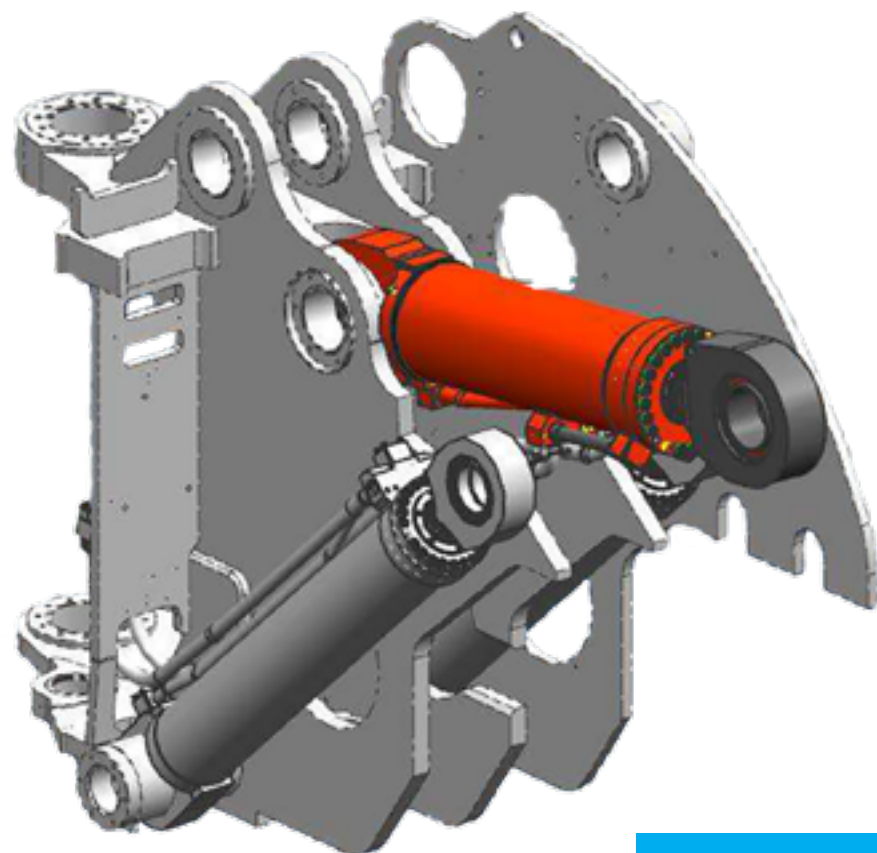
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improved tilt cylinder design. New sensor and sensor wiring. 	<ul style="list-style-type: none"> Improve the life of the lift cylinder. Increase maintainability of the sensor wiring.

OFFERING

The Tilt Cylinder Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH621i	BG01518795



Want more information about this product? Contact your local Sandvik Spare parts representative or check: [ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



FUEL FAST FILLING SYSTEM FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

The Fuel Fast Filling system is designed for fast and safe refuelling and lubrication service on Sandvik loaders. Fuel Fast Filling System allows rapid fuelling with no spillage and with automatic shut-off when the tank is full. As the receiver is mounted near the bottom of the tank, there is no foaming that could result into partial fuel loads.

The system is based on using a sealed tank on the vehicle. A receiver is mounted on the tank, near the bottom (to eliminate foaming) and a vent on the top of the tank. Filling is done using a Wiggins ZZ9A1 nozzle – as fuel enters the tank, it forces the air inside to exit through the vent. When fuel level nears the top of the tank, the “hollow floating balls” force the valve in the vent seal the tank, and pressure inside the tank starts building up until at 8 to 10 psi the fuelling nozzle automatically shuts off.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

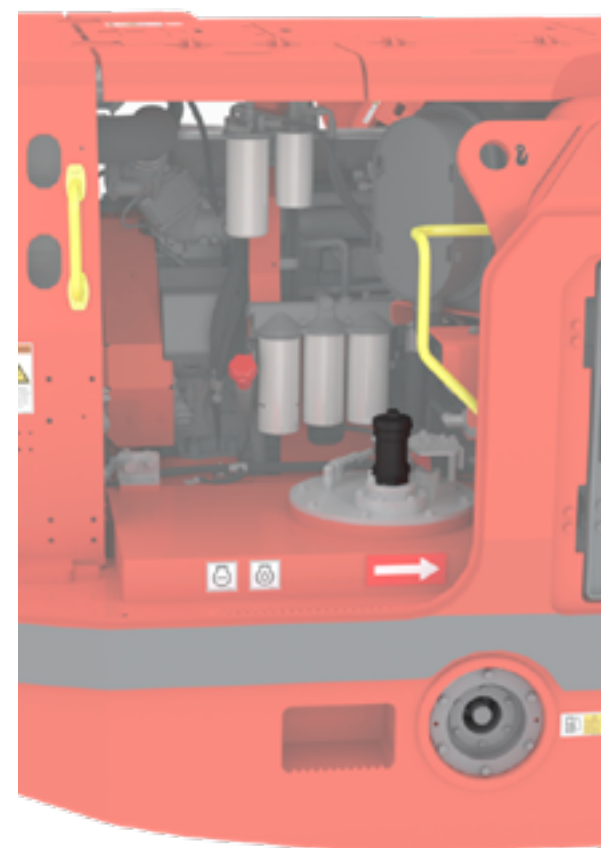
ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Fuel Fast Filling system allows to speed up refilling oils and fuel. System cuts off fuel supply when the tank is full by sensing pressure or monitoring fuel level. 	<ul style="list-style-type: none"> Faster than manual filling. Ground level filling increases safety. Reduces spillage due to automatic shut-off when the tank is full. Reduces entry of dirt into the fuel and oil tanks.

OFFERING

The Fuel Fast Filling Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH202	Contact local Sandvik representative
Sandvik LH203	BG01125518
Sandvik LH209L	Contact local Sandvik representative
Sandvik LH307	29612763
Sandvik LH400T	Contact local Sandvik representative
Sandvik LH410	56026162
Sandvik LH514	BG01128905 ⁽¹⁾
Sandvik LH517	56025327 ⁽²⁾ BG00528181 ⁽³⁾
Sandvik LH517i	BG01275317 ⁽¹⁾
Sandvik LH621	29607166
Sandvik LH621i	BG01275324 ⁽¹⁾

(1) Includes lockable cap for standard filling
 (2) "Small tank" version
 (3) "Large tank" version



Want more information about this product? Contact your local Sandvik Spare parts representative or check: [ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



QUICK OILS FILLING SYSTEM FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Oil contamination is one of the major risk of failure of expensive component and mistake in the oil type can lead to catastrophic failures.

In order to reduce the risk of contamination of new oil during the filling process and also to avoid risk of mixing oil types, Sandvik has developed Quick Oil Filling system for Loaders.

The systems consist on quick coupling for hydraulic oil, transmission oil, engine oils, coolant (i.e. in practice all except AdBlue/DEF), allowing to fill directly the receivers without having to use any other container that could be dirty. Each coupling have different size in order to avoid any fluid type error.

The mine oil filling system must be equipped with the corresponding quick coupling from Wiggins.



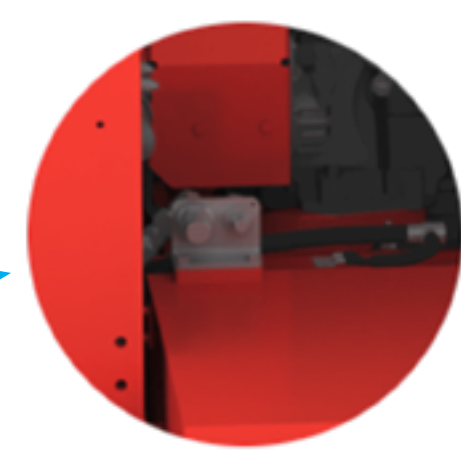
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Limit the risk of contamination when filling the equipment with oil or coolant fluid. Avoid the risk of mixing the different oils types. 	<ul style="list-style-type: none"> Improve reliability. Avoid risk of failure due to use of improper oil.

OFFERING

The Quick Oils Filling Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH209L	
Sandvik LH307	
Sandvik LH400T	
Sandvik LH410	
Sandvik LH514	
Sandvik LH514E	Contact local Sandvik representative
Sandvik LH517	
Sandvik LH517i	
Sandvik LH621	
Sandvik LH621i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

ELECTRIC FILLING PUMP FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Oil contamination is one of the major risk of failure of expensive component of the hydraulic system, generate frequent downtimes and

In order to reduce the risk of contamination of new oil during the filling process, Sandvik has developed the Electric Filling Pump for hydraulic tank(s).

This on-board oil pump enables hydraulic oil to be filled, from ground level, straight from barrels, without having to use any other container that could be dirty and bring contamination in the oil. The oil is pumped through a filter ensuring the oil is clean and reduces possibility of contamination of oil during filling.

On units equipped with two separate hydraulic tanks, there is a selector



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Oil can be pumped directly from the barrel, through a filter. Oil tanks can be filled from ground level 	<ul style="list-style-type: none"> Reduce risk of contamination of the new oil. Reduce service time Improve safety

OFFERING

The Electric Filling Pump Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH202	BR00078154
Sandvik LH307	56049654
Sandvik LH410	56048638

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

IMPROVED LIVE OIL SAMPLING FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Contaminants such as dirt, sand, water and metallic particles cause premature component wear and failures, leading to unscheduled downtime and loss of production.

Monitoring the condition of equipment fluids helps to understand component health and enables making informed maintenance decisions to extend the equipment lifetime and reduce total lifecycle cost.

Results can provide an early warning of emerging issues and enable corrective and preventative actions

- Minimize risks of unexpected failure and downtime
- Control maintenance and operating costs
- Optimize maintenance scheduling to minimize impact on production
- Increase reliability and safety

The live oil sampling kit offers the customer a safer, quicker and controlled way of taking oil samples from the machine.

This improved version allows faster samples collections due to improved piping. It can be installed in a machine to replace the old version or in a machine where the Live Oil Sampling is not factory installed.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Helps to collect easily, properly and with constancy oil sampling for contamination measurement purpose 	<ul style="list-style-type: none"> • Control of the oil contamination level has a huge impact on hydraulic systems reliability and maintenance cost. • Reduce risk of accident due to unexpected failure.
<ul style="list-style-type: none"> • Improved version allows faster samples collections 	<ul style="list-style-type: none"> • Reduce maintenance time

OFFERING

The Improved Live Oil Sampling Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH517i	BG01603529
Sandvik LH621i	BG01601986



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

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- REBUILD SOLUTIONS
- CUSTOM UPGRADES
- BOOM SURFACE DRILLS
- TRUCKS
- LOADERS
- TUNNELING DRILLS
- UNDERGROUND DRILLS

APPLICATION MODIFICATION

EJECTOR BUCKET ADAPTATION KIT FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

In some low profile drifts, it might be difficult or even impossible to lift properly the bucket of the loader for dumping due to too low roof height.

Moreover, there might be a risk of contacting overhead obstacles like power lines or ventilation pipes while dumping the bucket.

In case of dumping on slope, uneven or unstable ground, there is also a risk of tipping over when dumping.

To solve these issue, Sandvik has developed an Ejector Bucket to equip the loaders.

The Sandvik Ejector bucket is made of high-quality steel & hard materials – made to last. It is equipped with a push plate that dump the load while the bucket stays horizontal.

The push blade movement insures there are no material remaining in the bucket after dumping.

The ejector bucket allows to spread easily the material out over a distance, making easier back filling works.

The Ejector Bucket adaptation kit includes all needed parts to do the adaptation of an Ejector bucket on a loader originally equipped with conventional bucket, including hydraulic and electric components, hose and electric wiring harness, etc.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow dumping on low profile drift Allow to spread easily the material out over a distance. 	<ul style="list-style-type: none"> Improve machine versatility
<ul style="list-style-type: none"> Mitigate the risk of tipping over when dumping on slope and uneven or unstable ground. Mitigate the risk to collide with overhead obstacles like power lines, or ventilation pipes. 	<ul style="list-style-type: none"> Improve safety
<ul style="list-style-type: none"> Push blade movement insures the complete emptying of the bucket. 	<ul style="list-style-type: none"> Improve productivity

OFFERING

The Ejector Bucket Adaptation Kit Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	BUCKET SIZE	PART NUMBER
Sandvik LH208L	2,6 m ³	Contact local Sandvik representative
Sandvik LH209L	4,0 m ³	
Sandvik LH202	1,0 m ³	
Sandvik LH203	1,5 m ³	
Sandvik LH307	3,0 m ³	
Sandvik LH307	3,7 m ³	
Sandvik LH410	4,6 m ³	
Sandvik LH514	5,4 m ³	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



HYDRAULIC HAMMER INTERFACE FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Most underground mines face the challenge of moving oversized rock blocks. Whether that oversize is created from inaccurate drilling, blasting, or just not enough homogeneous grinding in the case of a block cave, large rocks can be very costly and extremely dangerous to deal with.

Oversized rock boulders affect mining operations and increase the cost of operations in many ways like:

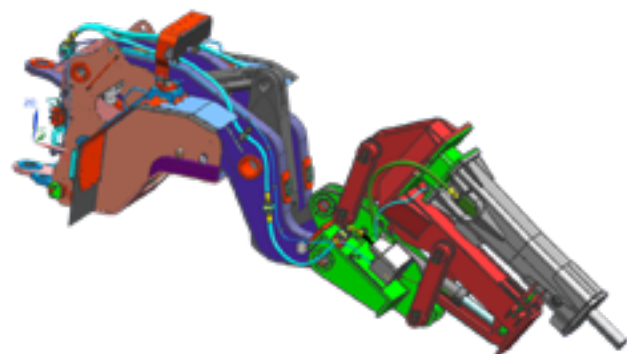
- Inefficient loading operations
- Higher cycle time for hauling equipment due to higher waiting time and loading time
- Risk of damages and/or extra wear of loading and hauling equipment.
- Jamming and wear and tear of the crusher.
- Blocking of galleries or draw point.

Even in some mines, the oversize is dispatched to the waste dump, resulting on direct loss of ore.

In order to mitigate this problem, Sandvik has designed an interface system that allows to install an hydraulic hammer (Rammer®) on selected Loaders.

Hydraulic hammer installed on loader allows to efficiently fragment oversized rock blocks.

The Sandvik Hydraulic Hammer interface retrofit kit includes all needed parts to do the adaptation of a Rammer® hydraulic hammer on a loader originally equipped with conventional bucket, including new controls, hydraulic and electric components, hose and electric wiring harness, etc.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Allows to transform standard loader into secondary breaking unit a low investment cost. 	<ul style="list-style-type: none"> • Increase machine versatility
<ul style="list-style-type: none"> • Allows to fragment oversized boulders efficiently, on site, prior to handling. 	<ul style="list-style-type: none"> • Increase productivity
<ul style="list-style-type: none"> • Reduce blocking of galleries or draw point due to oversized rock blocks. 	<ul style="list-style-type: none"> • Reduce operating cost
<ul style="list-style-type: none"> • Mitigate risk of damages on loaders and truck due to handling of oversized rock blocks. 	
<ul style="list-style-type: none"> • Mitigate risk of jamming and wear and tear of the crusher 	

OFFERING

The Hydraulic Hammer Interface Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	RAMMER® HYDRAULIC HAMMER*	RAMMER® CARRIAGE*	PART NUMBER
Sandvik LH307	BR1533E	EC60	
Sandvik LH410	BR2577E	EC80	Contact local Sandvik representative
Sandvik LH514	BR4099E	EC80	
Sandvik LH517	BR4099E	EC80	

*Rammer® hydraulic hammer and carriage are not included on the Sandvik Hydraulic Hammer Interface retrofit kit. These components have to be sourced from local Rammer® dealer.

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



QUICK DETACH SYSTEM INTERFACE FOR LOADERS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

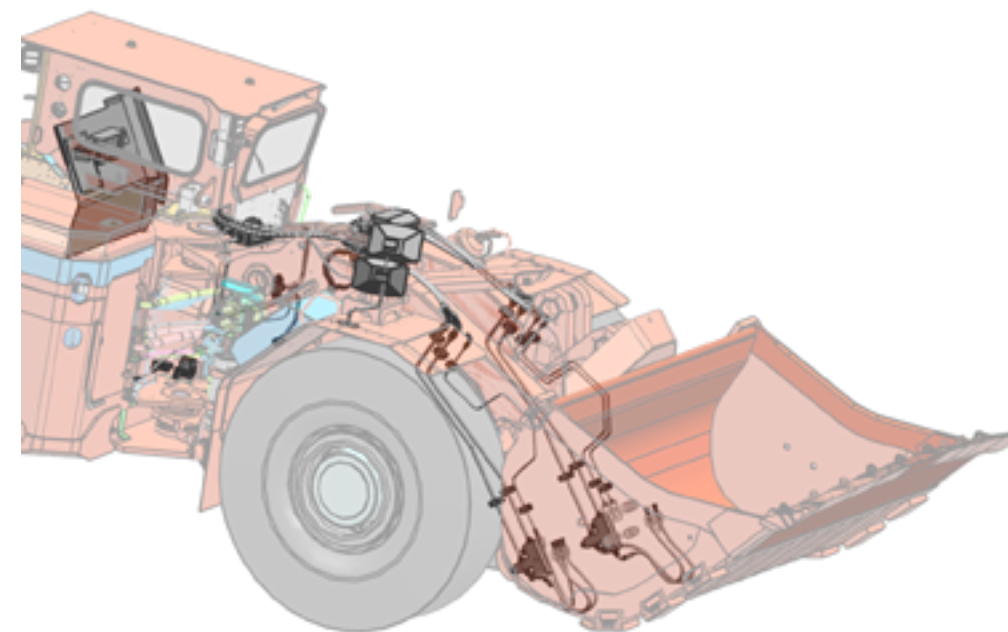
Underground mining requires to perform a lot of different tasks and it is very difficult and expensive to own a specific machine dedicated to each of them.

That's why versatility is one of the major feature for a loader.

In order to increase loader versatility and allow to adapt easily the machine to the task to be done, Sandvik has developed an interface kit for Quick Detach System (QDS) for Loader.

QDS allow quickly to switch to different size or type of bucket or even to install a different tool like forks, jib boom or tire handler for instance.

The QDS Interface kit includes all needed parts to do the adaptation of WBM® wheel loaders attachments tools on a loader originally equipped with conventional bucket, including hydraulic and electric components, hose and electric wiring harness, etc.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Allow to change quickly and safely the bucket or to replace it with an other tool to perform different task. 	<ul style="list-style-type: none"> • Improve machine versatility

OFFERING

The QDS adaptation kit Upgrade Solution is available for the following Loaders models:

MACHINE MODELS	PART NUMBER
Sandvik LH203	
Sandvik LH307	Contact local Sandvik representative
Sandvik LH410	

QDS Interface retrofit kit do not include WBM® attachment tools.

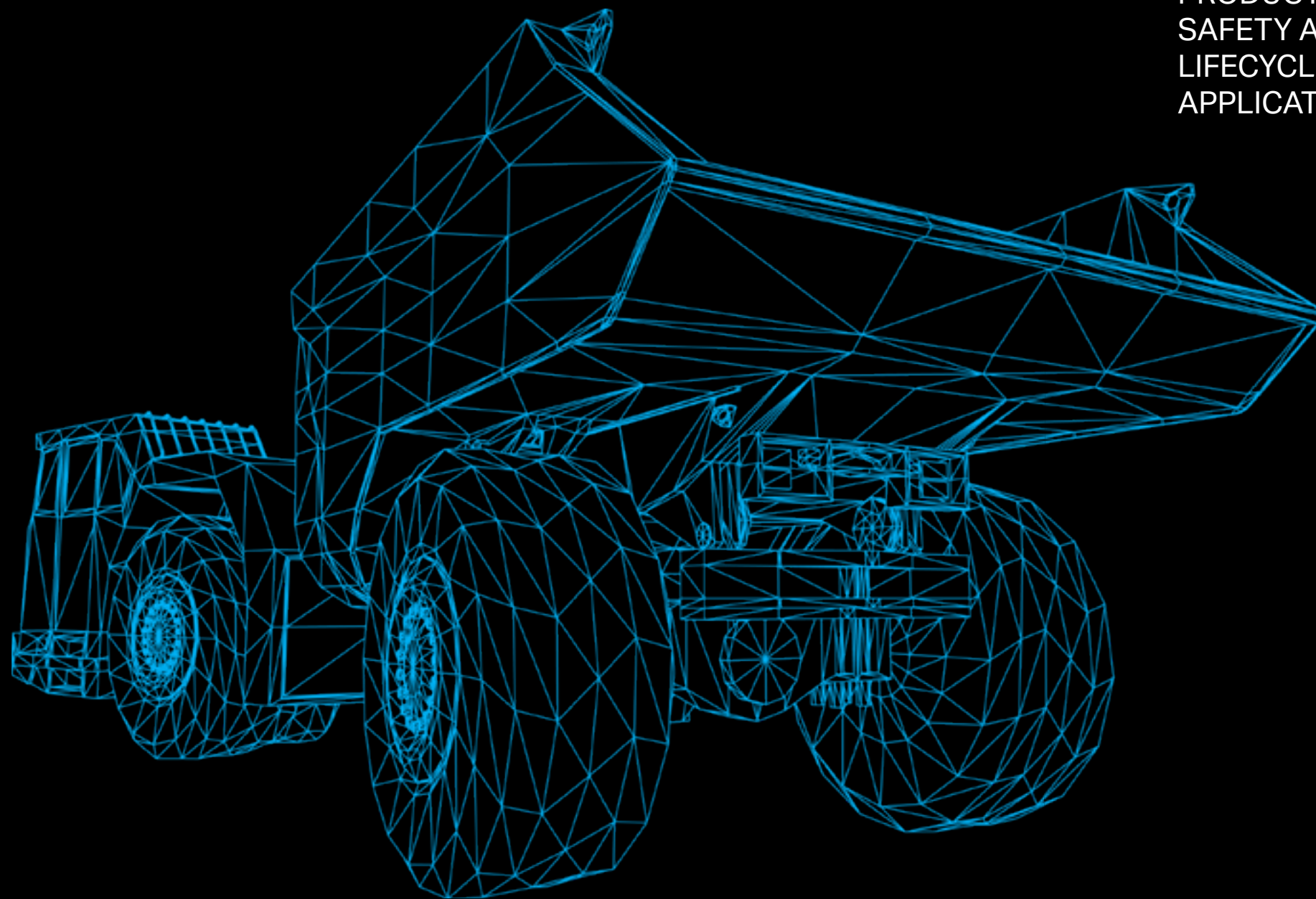
Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



UPGRADES SOLUTIONS FOR TRUCKS

Sandvik Upgrades and Engineered Solutions offers a vast range of retrofit kits that allow to modify the original specifications of your Underground Mining Trucks to improve the performance, the productivity, the safety or to reduce the environmental impact and the operating cost. Our offering includes also solutions to adapt your machine to different application.

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PRODUCTIVITY IMPROVEMENT

INTEGRATED WEIGHING SYSTEM FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Improper loading of the truck box leads to loss of productivity, and could generate safety consequences and expensive technical issues.

Sandvik Integrated Weighing System (IWS) for trucks allows to monitor the payload of your truck with great accuracy (up to 97%) and so ensuring the maximal productivity. In addition, it helps to avoid technical issues that could be generated by frequent over-loading of the box. It also protects against the safety risks that over-loading could generate.

The system also informs the loader operator in real time about the truck payload with the help of "traffic lights" located on each size of the truck.

The data measured by the IWS can be transferred wirelessly or via USB to the My Sandvik Digital Services Knowledge Box™ for further analysis. Together with the alarm and signal reports from IWS, you will have access to productivity reports that you can compare with your productivity targets.



Want more information about this product? Contact your local Sandvik Spare parts representative or check: ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Insures optimal filling of the box (no short loading or overloading of the box). • Insures the box is empty and thus minimize carry-back. • Improves quality and consistency for operators at all experience levels (reduce training duration of new operators). • Insures homogeneous load resulting on homogeneous speed of the trucks on the ramp. • Allows accurate production follow-up of each individual truck (Individual productivity target, early detection of lower performance...). 	<ul style="list-style-type: none"> • Increase productivity
<ul style="list-style-type: none"> • Reduce the risk of loss of control due to overloading of the box (Reduced stability, difficulties to steer, longer braking distances). • Reduce risk of brake failure or premature wear due to overloading of the box. • Reduce the risk of tires overheating, blow-out or premature wear due to overloading of the box. • Limit the gas emissions that could increase significantly if the truck is overloaded. • Reduce the chances rocks would fall from the box on roads and could damage the others equipment and roads. 	<ul style="list-style-type: none"> • Increase safety
<ul style="list-style-type: none"> • Avoid excessive fuel consumption. Avoid excess of ventilation due to extra exhaust gas emissions.. • Saving cost on brake system. Limit axle and carrier fatigue. • Saving on tires cost. • Avoid damages on roads due to rock falling from the box (overloading). • Reduce new operators training duration. 	<ul style="list-style-type: none"> • Reduce operating cost

OFFERING

The Integrated Weighing System Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	BG00805790
Sandvik TH540	BG00791985
Sandvik TH540	BG00997212
Sandvik TH550	BG00791985
Sandvik TH545i	BG00997212
Sandvik TH551	BG01457159
Sandvik TH663	BG01457159

EXTERNAL IWS DISPLAYS FOR SANDVIK TH551i AND TH663i

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik has developed External Displays as an optional feature for Integrated Weighing System. The displays enable the loader's operator to see directly the weight on the truck dump box.

The instant load information for the loader operator ensure more efficient passes and maximal productivity. The fill factor is optimized and the risk of overloading is minimized.

Compare to the standard "traffic lights" load indication system, the digital readout of the optional External Displays gives the loader operator better indication of how much load is in the box (The "traffic lights" system has greater ranges of payload values).

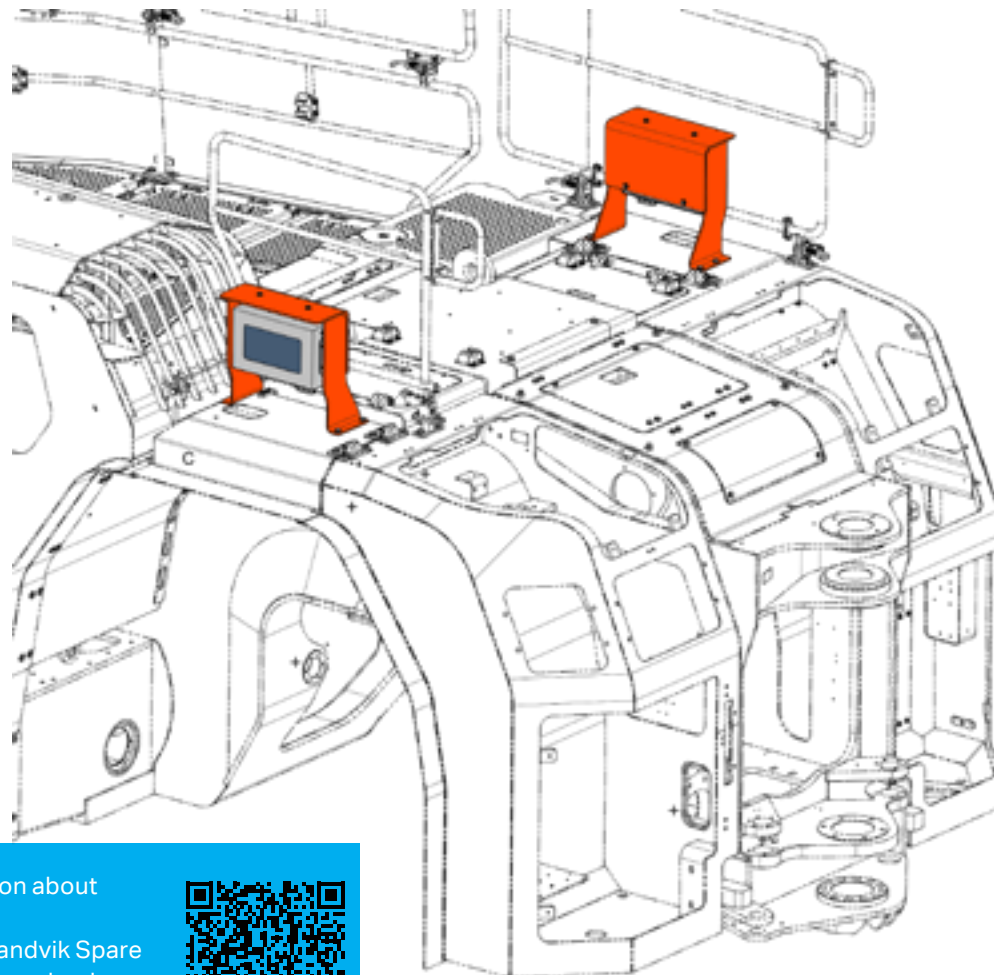
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Instant digital readout of the load on the truck box Reduce the risk of overloading 	<ul style="list-style-type: none"> Increase productivity by ensuring optimized fill factor. Improve safety and reduce risk of failure due to overloading.

OFFERING

The External IWS Display Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH551i	Contact local Sandvik representative
Sandvik TH663i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



DUCKTAIL BOX EXTENSION FOR SANDVIK TH551i AND TH663i

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Loading the truck box at full capacity, at every round, is the most easier way to achieve productivity targets. But when the handling material is light, the volume of the box might be insufficient to reach the maximal payload of the truck.

In order to improve the volume of the TH551i and TH663i trucks boxes (30, 38 or 40m³), Sandvik has designed the Ducktail Box Extension retrofit kit.

By adding this box extension, the volume of the box is increased and it allow to carry more material at every round. Also, it reduces the chances rocks would fall from the box on roads and could damages the others equipment and roads.

30m³ box: +2m³
38 and 40m³ boxes: +2,5m³

Warning: The Ducktail Box Extension do not increase the maximal payload capacity of the truck.

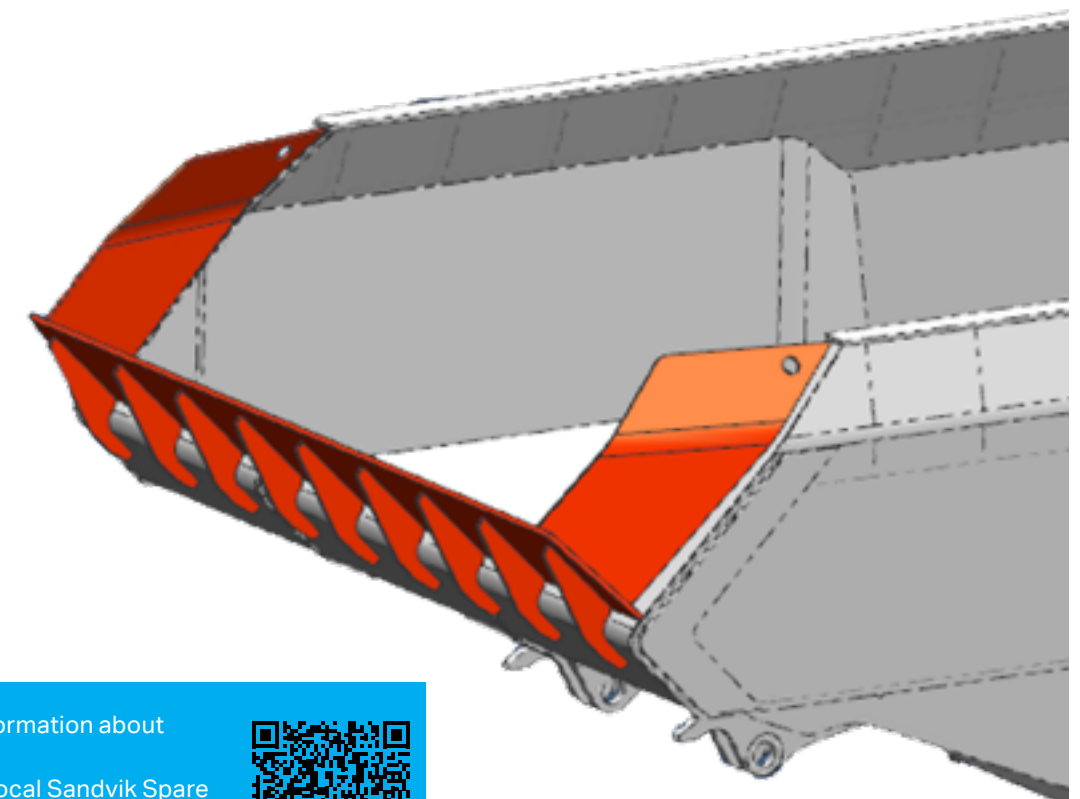
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allows to increase the volume of the box. Reduce risk to drop rocks on the hauling roads. 	<ul style="list-style-type: none"> Improve productivity by increasing the volume of material carried by the truck. Reduce operating cost by reducing the risk of damages on other on other equipments and on the roads. Reduce the need for road cleaning.

OFFERING

The Ducktail Box Extension Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	BOX SIZE	PART NUMBER
Sandvik TH551i	30m ³	BG01510650
Sandvik TH663i	38m ³	BG01525767
Sandvik TH663i	40m ³	BG01449999



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



SAFETY AND ENVIRONMENTAL IMPROVEMENT

SAFETY RAILS FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Working at height is one of the highest risk that mine workers are facing. And statistics show that slip and fall are a major cause of accident in the mining industry with several fatalities registered every year.

On trucks, some maintenance and repair operations have to be done from the top deck.

To help our customers to control fall hazards during maintenance and repair operations, Sandvik has developed the Safety Rails system that offers an efficient protection against the risk of fall.

The Safety Rails system is specifically designed for underground mining harsh environment. The rails are hinged to the frame at the top of the unit and have to be raised up before starting service and maintenance work, then put down and locked before the machine is returned to operation.



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Safety Rails mitigate the risk that service people fall from the top of the machine. 	<ul style="list-style-type: none"> Improve the safety of the maintenance and repair operations by suppressing one of the main risk faced by the service peoples.
<ul style="list-style-type: none"> Foldable system that stay permanently on the machine. 	<ul style="list-style-type: none"> Unlike a removable system, it therefore is always available, even if the machine is not located on the workshop. Able to protect the people in any circumstances.
<ul style="list-style-type: none"> Simple and reliable system. 	<ul style="list-style-type: none"> Easy to use, require minimal training to be used. Requires minimal maintenance and withstands tough mining conditions.
<ul style="list-style-type: none"> Easy and quick to set-up. 	<ul style="list-style-type: none"> Providing a steady hand grip and sure footing for balance or support during climbing up and going down the machine immediate safety to the person climbing on top of the machine.

OFFERING

The Safety Rails Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	BG00262820
Sandvik TH540	BG00390756
Sandvik TH540	BG00891903
Sandvik TH540	BG00408911
Sandvik TH550	BG00390756
Sandvik TH550	BG00408911
Sandvik TH545i	BG00970982
Sandvik TH545i	BG01008920
Sandvik TH545i	BG01007860
Sandvik TH551	56208774
Sandvik TH551	BG00838621*
Sandvik TH551i	56208774
Sandvik TH551i	BG00838621*
Sandvik TH663	BG00768651
Sandvik TH663	BG00838621*
Sandvik TH663i	BG00768651
Sandvik TH663i	BG00838621*

* Extra removable rail on box side (protect when box is lifted or removed).
The retrofit kit content varies according machine specifications and options. Contact your local Sandvik representative for more information.

CAMERAS SYSTEM FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

In Underground mining, confined space and limited visibility due to dust or poor lighting increase the risk of collision with pedestrians, other machines or walls. Collision is one of the major risk on underground mining with several fatalities registered every year.

In order to increase the visibility of the operator and to limit risk of collision, Sandvik has developed cameras system for Trucks.

Cameras system improves the safety by increasing the operator field of vision, allowing view on the blind areas. It also limits the risk of collision with walls that would cause damages on the equipment.

The systems includes one reverse camera , one reverse and one side camera or four cameras located on front and rear on the machine, on the opposite side of the cabin (kit content depend machine model). A monitors is located on the cabin. An optional recording device is also available on some models.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Increase the field of vision of the operator, allow view on the blind side areas. Limit the risk of collision with a pedestrian. Limit the risk of collision with an other machine. Optional recording device allows accident cause analysis. Reduces risk of damage on the machine due to collision with walls or other machine. 	<ul style="list-style-type: none"> Improve Safety Reduce operating cost

OFFERING

The Cameras System Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH315 (One reverse camera)	BG00324388
Sandvik TH320 (One reverse camera)	BG00958659
Sandvik TH320 (Additional module including front camera and recorder).	BG00878375
Sandvik TH430 (Four cameras + recorder)	BG01270981
Sandvik TH540 (Four cameras + recorder)	BG01224943
Sandvik TH550 (Four cameras + recorder)	BG01224943
Sandvik TH545i (Four cameras + recorder)	BG01224943
Sandvik TH551 (One side + one rear camera)	BG00758274
Sandvik TH663 (One side + one rear camera)	BG00758274

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



INTEGRATED JACKING SYSTEM FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Replacing tires on large an heavy UG truck can be challenging and dangerous as it require specific tools that are often difficult to use on underground mining environment.

To make tires replacements safer, quicker and easier, Sandvik has developed the Integrated Jacking System.

The system consist on four hydraulic cylinders mounted to the front and rear frames. These hydraulic cylinders are intended to jack-up the truck for replacement of the tire. Each cylinder is controlled separately with a remote control which is connected to the outside of the cabin with a cable.

The Sandvik Integrated Jacking System is able to jack-up the truck in any place (with level and firm ground) and circumstance, even in confined spaces or if the truck is fully loaded.

Service stands are a separate option that is strongly recommended to use in combination with Integrated jacking System.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Four hydraulic jacking cylinders mounted to the front and rear frames. Remote controlled system Simple operator interface Strong system, allows to jack-up fully loaded truck 	<ul style="list-style-type: none"> Improves the safety of the maintenance and repair operations, especially when it comes to tire replacement. Allows to operate the Integrated Jacking System from a safe distance. Easy to use, require minimal training to be used. Requires minimal maintenance and withstands tough mining conditions. Makes tires replacement easier and faster in a confined mining environment. Increase productivity by reducing downtime.

OFFERING

The Integrated Jacking System Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH551	Contact local Sandvik representative
Sandvik TH663	
Sandvik TH551i	
Sandvik TH663i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



PDS INTERFACE FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Collision between vehicles or between machines and pedestrians is one of the major risk on underground mining. Collision with another vehicle or person could cause death or severe injury.

Proximity Detection System (PDS) is technologies or devices that actively detect close encounters between two or more objects and transmit this information to an interface system that takes automatic action to render the equipment to a safe state when potentially dangerous interaction occurs.

PDS are generally designed to inform the machine to slow down and/or eventually stop the equipment in case of collision risk with a person or an object carrying a tag.

The Sandvik Proximity Detection System Interface allows to link third-party Proximity Detection System and the Sandvik equipment.

All PDS Interface for Loaders listed here are Level 9 and ISO 21815-2 compliant except when mentioned.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> PDS interface system allow to link a third party PDS with the Sandvik equipment trammig and braking systems. OEM solution that ensure the perfect interaction of the third party PDS with the Sandvik machine systems. The interface system supports the use of three PDS "detection zones" . Allow to warn the operator of potential danger in gradual way and act accordingly before the machine stops automatically. 	<ul style="list-style-type: none"> Improve Safety

OFFERING

The PDS Interface Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH320*	BG00793232
Sandvik TH430	BG01804813
Sandvik TH540	BG01804822
Sandvik TH550	BG01804822
Sandvik TH545i	BG01804822
Sandvik TH551	BG01812084
Sandvik TH663	BG01812084
Sandvik TH551i	BG01812082
Sandvik TH663i	BG01812082

*Not ISO 21815-2 compliant



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

ELECTRICAL BRAKE RETARDER FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Service brakes overheating is a major risk as it can lead to complete loss of the brake function and dramatic accidents. In order to mitigate this risk, Sandvik has developed an Electrical Brake Retarder for selected trucks models.

The Electric Brake Retarder supports the truck service brakes system by acting as a supplementary brake system. It dissipate the braking energy by generating eddy currents. The eddy currents produce a gradual rise in rotor temperature and the heat is then released into the atmosphere through ventilation systems. With this "induction braking systems", it is thus possible to effectively slow down the transmission rotating shaft without friction and therefore without wear.

This technology guarantees unequalled instantaneous availability and full braking power provided by the retarder, regardless of the vehicle's speed and it remains effective even after the engine stops, or when the gearbox is in neutral. Risks associated with service braking system overheating are therefore avoided and the system remains fully operational in case of emergency.

Trucks equipped with an Electrical Brake Retarder can multiply the lifespan of their service braking system up to ten times: maintenance costs are therefore greatly reduced and operational availability is increased.

The ease of use, flexibility and progressive character of Electrical Brake Retarder guarantees exceptional comfort for the Truck operator. Activated and easy to control with a switch located on the dashboard: once the function is turned on, it works automatically.

Electric Brake Retarder can be used with an empty or fully loaded box. Recommended for ramp haulage applications (i.e. backfilling).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Provide supplementary braking power without generating heat on the service brake system, regardless truck speed. Effective after the engine stops or when gear box is in neutral. Can be used with empty or fully loaded box. 	<ul style="list-style-type: none"> Mitigate risk of service brake overheating and total loss of braking power. Brake system fully operational in all conditions and in case of emergency.
<ul style="list-style-type: none"> A switch mounted on the operator's dashboard allows to activate the system and to select four different levels of retarder activation. Lack of friction on the working principle make Electric Brake Retarder totally silent in all condition of use of use and guarantees the absence of particle emissions or any other pollutant release into the environment. Progressive and instant response to operator solicitations 	<ul style="list-style-type: none"> Improve operator's comfort and safety. Do not affect the ambient air quality.
<ul style="list-style-type: none"> Reduce drastically solicitation and wear on the service brake system. Do not require specific maintenance. 	<ul style="list-style-type: none"> Improve operating cost by extending the lifespan of the service brake system's parts. Increase operational availability.

OFFERING

The Electrical Brake Retarder Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	Contact local Sandvik representative

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

CABIN UPGRADE FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Mining conditions varies and affects the operator's environment. Mining conditions can be dusty, dark, wet noisy, icy or hot.

Sandvik has designed cabins for it's trucks to improve the operator's safety and comfort. The cabins are designed to be extremely durable. They meet and exceed the international standard:

- ISO 3449 - Falling Object Protective Structure (FOPS).
- ISO 3471 - Roll-Over Protective Structure (ROPS).

Sandvik Cabin offers low noise and vibration levels and allows emergency exit. Over-pressure in the cabin reduces exposure to air borne particles

Cabin upgrade solution includes Air Conditioning system and additional cabin heater element on AC is available on option.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Cabin meet and exceed international safety requirements FOPS & ROPS. • Protect operator from excessive noise, vibration and dust exposure. • Protect operator from hot or cold environment 	<ul style="list-style-type: none"> • Improve operator's safety and comfort.

OFFERING

The Cabin Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH320	Contact local Sandvik representative
Sandvik TH330	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



COLD CLIMATE PACKAGE FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Cold temperatures have hazardous effects on humans and their ability to work well. When the body is exposed to cold temperatures, the negative effects can includes dehydration, numbness, shivering, frostbite and hypothermia. This can lead to extended reactivity time, fatigue, uncontrolled movements or loss of lucidity that increase the risk of loss of control and accident.

Also, frost and condensation on cabin window and mirrors can affect the correct visibility that could lead to accident.

In order to mitigate this risk, Sandvik has developed Cold Climate Package for Trucks. The Package includes Additional Cabin Heater, mirror heater, cabin window and mirror defroster.

The Cold Climate Package improve the operator comfort in cold conditions. It keeps the cabin warm and windows and mirrors clear of ice and condensation water.

If the truck is regularly stored outside in below -10°C or if the temperature may occasionally drop below -20°C, an arctic package is required (see Lifecycle Cost Improvement section of this catalogue).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • System that provides heat on the cabin. • System that avoid frost and condensation on cabin windows and mirror. 	<ul style="list-style-type: none"> • Reduce risk of accident due to negative effects cold ambient temperatures. • Improve operator's comfort

OFFERING

The Cold Climate Package Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	Contact local Sandvik representative
Sandvik TH545i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



LIFECYCLE COST IMPROVEMENT

TYRES PRESSURE MONITORING SYSTEM FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik has developed the Tyres Pressure Monitoring System (T.P.M.S.) for trucks. The system is fully integrated in the Intelligent Control System of the machine.

Thanks to the four self-powered radio pressure sensors mounted on tyre's valves stem, the pressure information of every individual tyre is collected, send by radio signal to the receiver, through the antenna located in the central articulation of the machine, and displayed on the original control system screen (no additional display).

The operator is informed in real time with warning and alarm in case of air leakage or incorrect tyre pressure.

Control of the correct inflation pressure avoid premature damages on tyres and prevents unexpected failure of the tyre which increases safety. Productivity and operating cost are improved by reduction of service time and tyre costs.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> System components are easy to maintain and replace. Correct tyre pressure reduces risk of premature tyre wear and damages. Reduce service time. 	<ul style="list-style-type: none"> Reduce Service and Tyres cost
<ul style="list-style-type: none"> Operator gets real-time information about tyre pressure. Correct tyre pressure increases operating comfort and reduces operator fatigue. Incorrect pressure could generate tyre burst and causes loss of machine control. 	<ul style="list-style-type: none"> Improve Safety
<ul style="list-style-type: none"> Warning or alarms pop-up on the display in case of pressure error detected. Operator can execute proactive actions instead of reactive. Increase machine availability. 	<ul style="list-style-type: none"> Increase productivity and reliability

OFFERING

The Tyres Pressure Monitoring System Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	56046416
Sandvik TH540	56046416
Sandvik TH550	56046416
Sandvik TH545i	56046416
Sandvik TH551	BG00752622
Sandvik TH663	BG00752622
Sandvik TH551i	BG00752622
Sandvik TH663i	BG00752622



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



TRANSMISSION UPGRADE FOR SANDVIK TH551i AND SANDVIK TH663i

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

To increase productivity, improve reliability and reduce truck operating costs, Sandvik has introduced a new transmission for its flag ship trucks Sandvik TH551i and Sandvik TH663i. The new size-class transmission is a result of extensive product development work done by Sandvik and the transmission supplier to meet the customer needs for 51 and 63 tonnes trucks.

In the new transmission, improved reliability and reduced costs are achieved with robust and simple design, made specifically for heavy off-road application. Compared to the previous model, the transmission lifetime is expected to be longer, and less gearbox change-outs are required during the truck lifetime, reducing total costs.

From the intelligence point of view, self-diagnostics in the transmission control system has been improved and fully integrated into the Sandvik Intelligent Control System, enabling easy and fast trouble shooting without external diagnostics tools or laptops.

The driveline design has been also improved as the original two-piece rear driveline shaft is replaced with a one-piece driveline shaft. This more robust driveline shaft extends the driveline lifetime, eases maintenance and eliminates the need for the rear driveline support bearing.

The Upgrade solution can include also a new durable and maintenance friendly aluminium cooler with outstanding corrosion resistance and long component lifetimes (option)

Front and rear axles replacement is mandatory in downhill loaded applications..

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Robust and more simple design with less components (integrated PTO for hydraulic pumps and drop box).
- Lower operating costs with longer transmission lifetime due to robust design specifically made for heavy off-road application.
- Increased lock-up clutch lifetime with reduced lock-up activations.
- Heavy duty aluminium coolers. Improved cooling performance. Increased resistance to corrosion. Easier to clean. Lower cost to replace in case of damages.
- Improved self diagnostics integrated on truck's control system. Easy and fast trouble shooting.
- Engine brake and fully proportional, more powerful hydraulic retarder which operate simultaneously. Makes easier downhill control and higher speeds enabling shorter cycle times.
- Maximum speed and efficiency in varying ramps and with different loads. Achieved with eight gears and optimized axle ratio, compared to original transmission with six gears).
- Lock-up to lock-up gear shifting. Quick and smooth gear shifting that allows to keep speed better in uphill gear shifting.
- Easy operation and extremely smooth gear shifting improve operator comfort.

CUSTOMER VALUES

- Increase reliability and reduce operating cost.
- Increase productivity
- Increase operator comfort.

KIT CONTENT

ITEM DESCRIPTION

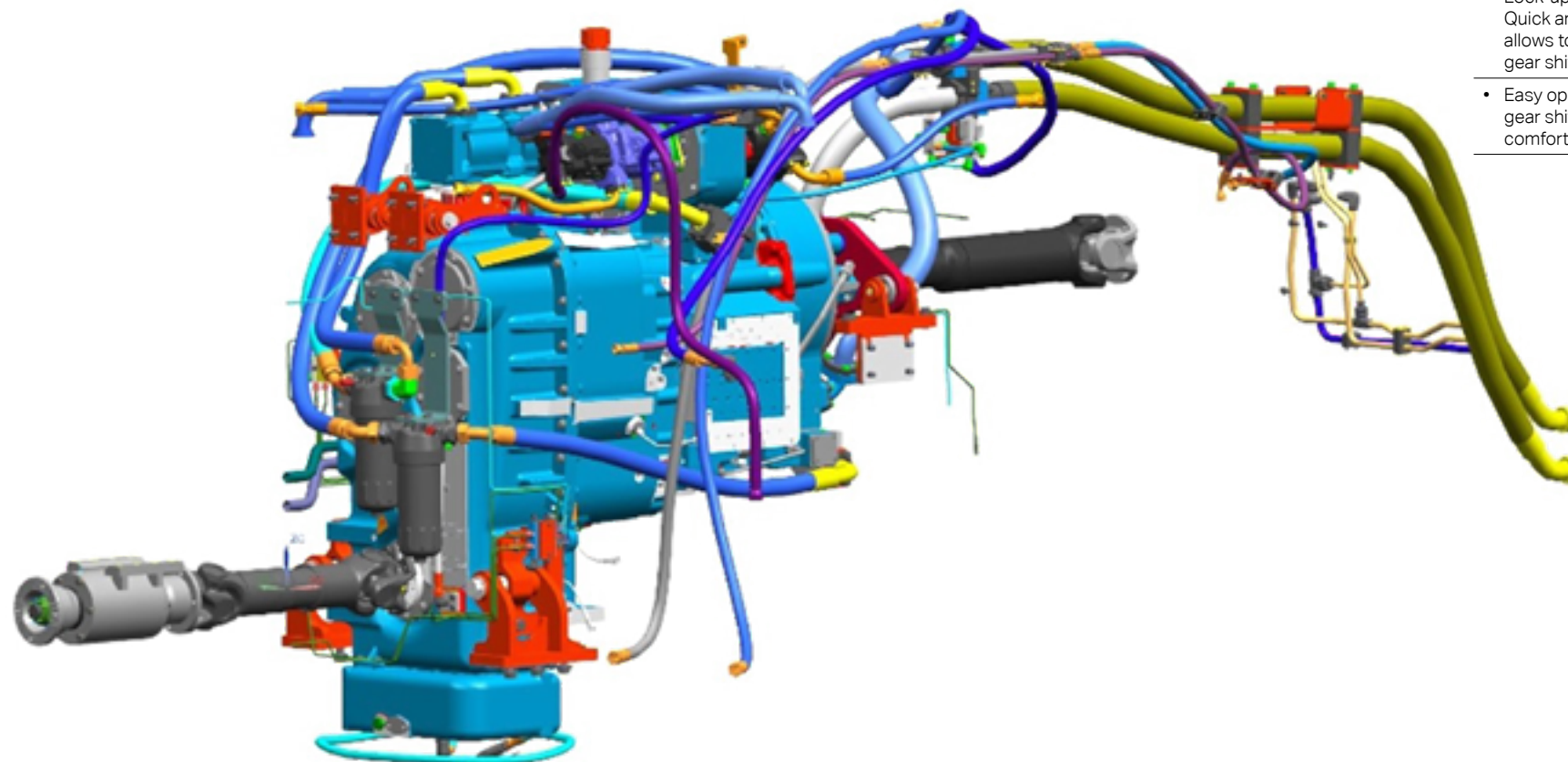
Transmission complete assembly incl. pumps, hosing, brackets, etc.
Rear drive shaft
Complete air intake assembly
Hydraulic assembly
Electric assembly
Brackets and screws set
Option: Complete new cooling system, incl. coolers, hoses, mask, etc..
Option (in case of downhill application): Front and rear axles assemblies

OFFERING

The Transmission Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH551*	
Sandvik TH663*	
Sandvik TH551i	Contact local Sandvik representative
Sandvik TH663i	

* Only trucks equipped with Volvo engine (Upgrades Solutions conversion kit available).



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



FUEL FAST FILLING SYSTEM FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

The Fuel Fast Filling system is designed for fast and safe refuelling and lubrication service on Sandvik trucks.

Fuel Fast Filling System allows rapid fuelling with no spillage and with automatic shut-off when the tank is full. As the receiver is mounted near the bottom of the tank, there is no foaming that could result into partial fuel loads.

The system is based on using a sealed tank on the vehicle. A receiver is mounted on the tank, near the bottom (to eliminate foaming) and a vent on the top of the tank. Filling is done using a Wiggins ZZ9A1 nozzle – as fuel enters the tank, it forces the air inside to exit through the vent. When fuel level nears the top of the tank, the “hollow floating balls” force the valve in the vent seal the tank, and pressure inside the tank starts building up until at 8 to 10 psi the fuelling nozzle automatically shuts off.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Fuel Fast Filling system allows to speed up refilling oils and fuel. System cuts off fuel supply when the tank is full by sensing pressure or monitoring fuel level. 	<ul style="list-style-type: none"> Faster than manual filling. Ground level filling increases safety. Reduces spillage due to automatic shut-off when the tank is full. Reduces entry of dirt into the fuel and oil tanks.

OFFERING

The Fuel Fast Filling System Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH320	56204337
Sandvik TH430	Contact local Sandvik representative
Sandvik TH540	BG00607824
Sandvik TH545i	BG00607824
Sandvik TH550	BG00607824
Sandvik TH551	BG00699704
Sandvik TH663	BG00699704
Sandvik TH551i	BG00699704
Sandvik TH663i	BG00699704

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



QUICK OILS FILLING SYSTEM FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

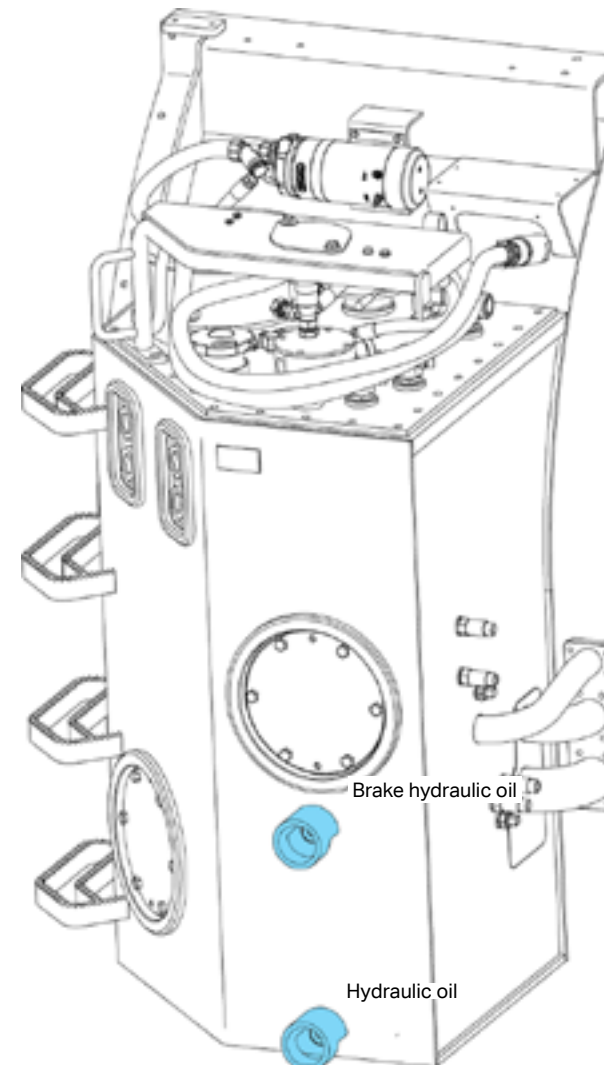
DESCRIPTION

Oil contamination is one of the major risk of failure of expensive component and mistake in the oil type can lead to catastrophic failures.

In order to reduce the risk of contamination of new oil during the filling process and also to avoid risk of mixing oil types, Sandvik has developed Quick Oil Filling system for Trucks.

The systems consist on quick coupling for hydraulic oil, transmission oil, engine oils, coolant (i.e. in practice all fluids except AdBlue/DEF), allowing to fill directly the receivers without having to use any other container that could be dirty. Each coupling have different size in order to avoid any fluid type error.

The mine oil filling system must be equipped with the corresponding quick coupling from Wiggins.



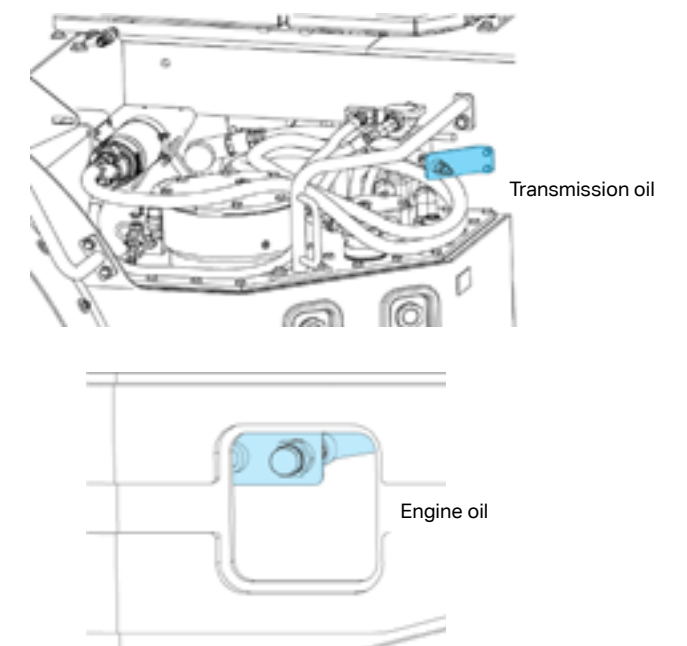
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Limit the risk of contamination when filling the equipment with oil or coolant fluid. Avoid the risk of mixing the different oils types. 	<ul style="list-style-type: none"> Improve reliability. Avoid risk of failure due to use of improper oil.

OFFERING

The Quick Oil Filling System Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	
Sandvik TH545i	
Sandvik TH540	
Sandvik TH551	Contact local Sandvik representative
Sandvik TH663	
Sandvik TH551i	
Sandvik TH663i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



INTEGRATED JACKING VALVE UPGRADE FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

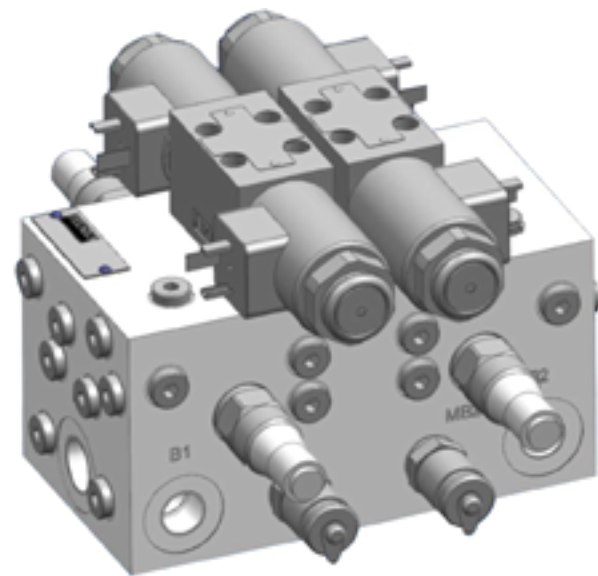
Sandvik has released a new jacking system control valve for the dump trucks Sandvik TH551, TH551i, TH663, and TH663i that are equipped with the jacking system option.

The new Integrated Jacking System control valve provides better operational reliability.

Sandvik offers to its customers operating Sandvik TH551, TH551i, TH663, and TH663i trucks, equipped with the jacking system option, a possibility to replace the current jacking system valve with a new valve. The current and improved valves are directly interchangeable.

In the truck there are two jacking system valves: one in the front frame and one in the rear frame.

The new jacking system valve replaces the current jacking system valve BG00223149.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> The new Integrated Jacking System control valve are more reliable. 	<ul style="list-style-type: none"> Increase machine reliability and availability.

OFFERING

The Integrated jacking Valve Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH551	BG01478586
Sandvik TH663	BG01478586
Sandvik TH551i	BG01478586
SandvikTH663i	BG01478586

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



WATER COOLED ALTERNATOR FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Dusty or salty environments have a negative impact on the life time of the air cooled alternator, as the cooling fins gets quickly clogged and loose their efficiency, leading to alternator over-heating.

In order to improve the reliability of the alternator in dusty and salty environment, Sandvik offers to his customers the possibility to replace the standard air cooled alternator by a Water Cooler Alternator.

Water cooled alternator increases the alternator lifetime compared to the standard (air cooled) alternator. It reduces costs and increases equipment uptime as the alternator change interval is longer compared to the standard alternator.

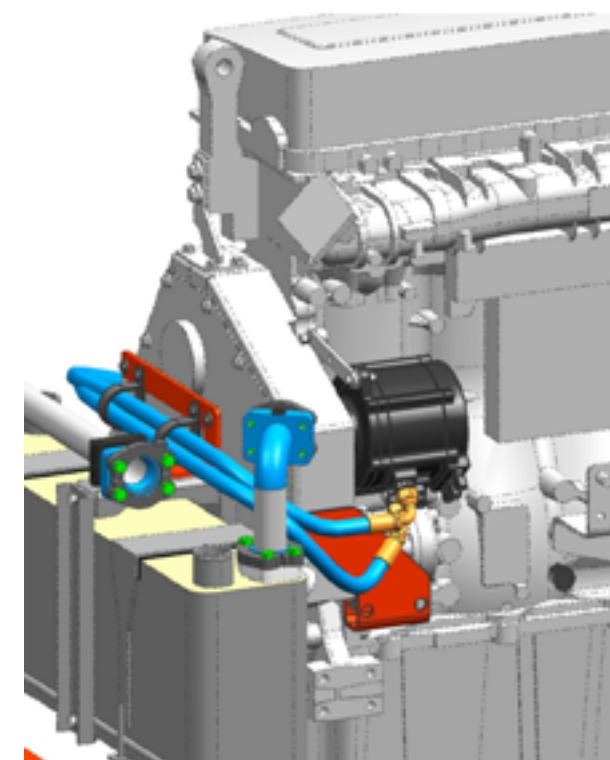
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Water cooled alternator increases the alternator lifetime compared to the standard (air cooled) alternator; Especially in dusty and salty environment. 	<ul style="list-style-type: none"> Reduces costs and increases equipment uptime as the alternator change interval is longer compared to the standard alternator.

OFFERING

The Water Cooled Alternator Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	
Sandvik TH540	
Sandvik TH545i	Contact local Sandvik representative
Sandvik TH550	
Sandvik TH551i	
Sandvik TH663i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK





HARSH CONDITION PACKAGE FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Mining operation in acidic or salty water environment affect the equipment lifetime and reliability, and cause corrosion.

In order to reduce the issues due to this aggressive environment, Sandvik offers the possibility to the customers to equip their trucks with Harsh Condition Package.

The Harsh Condition package for Trucks includes a Water Cooled Alternator (instead of the standard air cooled one), and box lift, steering and suspension cylinders with nickel-chromium plated rods.

Water cooled alternator increases the alternator lifetime compared to the standard (air cooled) alternator, especially in acidic environment.

The chromium layer of the cylinders rods is characterised by a controlled micro-crack distribution with high crack density, which in combination with specially adapted finishing procedures, provides for superior corrosion resistance.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Water cooled alternator increases the alternator lifetime compared to the standard (air cooled) alternator; Especially in harsh condition Chromium plated cylinders rods with superior corrosion resistance. 	<ul style="list-style-type: none"> Reduces costs and increases equipment uptime.

OFFERING

The Harsh Condition Package Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	
Sandvik TH540	
Sandvik TH545i	
Sandvik TH550	Contact local Sandvik representative
Sandvik TH551	
Sandvik TH551i	
Sandvik TH663	
Sandvik TH663i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK




ARCTIC PACKAGE FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

In low temperatures, the oil gets cold and thicker, and makes it very difficult to start the engine which reduce productivity. Start cold also increase the component wearing, reduce the lifetime of components and generate frequent downtime.

Arctic package offers an efficient preheating system for the engine, transmission, gear box, battery, as well as hydraulic and brake oils.

Sandvik TH430 and TH545i arctic package includes all the components of the Cold Climate Package (See details on the Safety and Environmental Improvement section of this catalogue) plus the following additional components: engine block heater, gearbox heating pads, hydraulic oil heater and charge air pre-heater. On TH551i and TH663, cabin heater, window defroster and side mirrors defroster are standard features, so the arctic package option includes only engine block heater, gearbox heating pads, hydraulic oil heater, charge air pre-heater brake oil heater, drop box heating pads and up box heating pads. The heater is available as 120 V and as 230 V.

Preheating components allows faster start and more efficient operations, and decreases downtime. Less component wear and tear, less breakdowns.

Recommended when the equipment is regularly stored outside in below -10°C or when the temperature may occasionally drop below -20°C .



PRODUCT ADVANTAGES AND CUSTOMER VALUES


ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Efficient preheating system for the engine, transmission, gear box, battery, as well as hydraulic and brake oils. Ease engine start when cold. 	<ul style="list-style-type: none"> Less component wear and tear, less breakdowns Allows faster start and more efficient operations, and decreases downtime

OFFERING

The Cold Climate Package Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH430	
Sandvik TH545i	Contact local Sandvik representative
Sandvik TH551i	
Sandvik TH663i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



IMPROVED UP-BOX FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik has released a new Up-box for Sandvik TH551, TH551i, TH663 and TH663i dump trucks.

In the new improved up-box the weight of gears has been optimized in order to reduce inertia values. Gear teeth width has changed from 60mm to 43mm.

This improvement, associated with the Improved Flexible Coupling (see next page), will help to reduce the torsional vibration in the rest of the power train, which improves the lifetime of the power train components.

This modification is only possible on Volvo powered trucks.

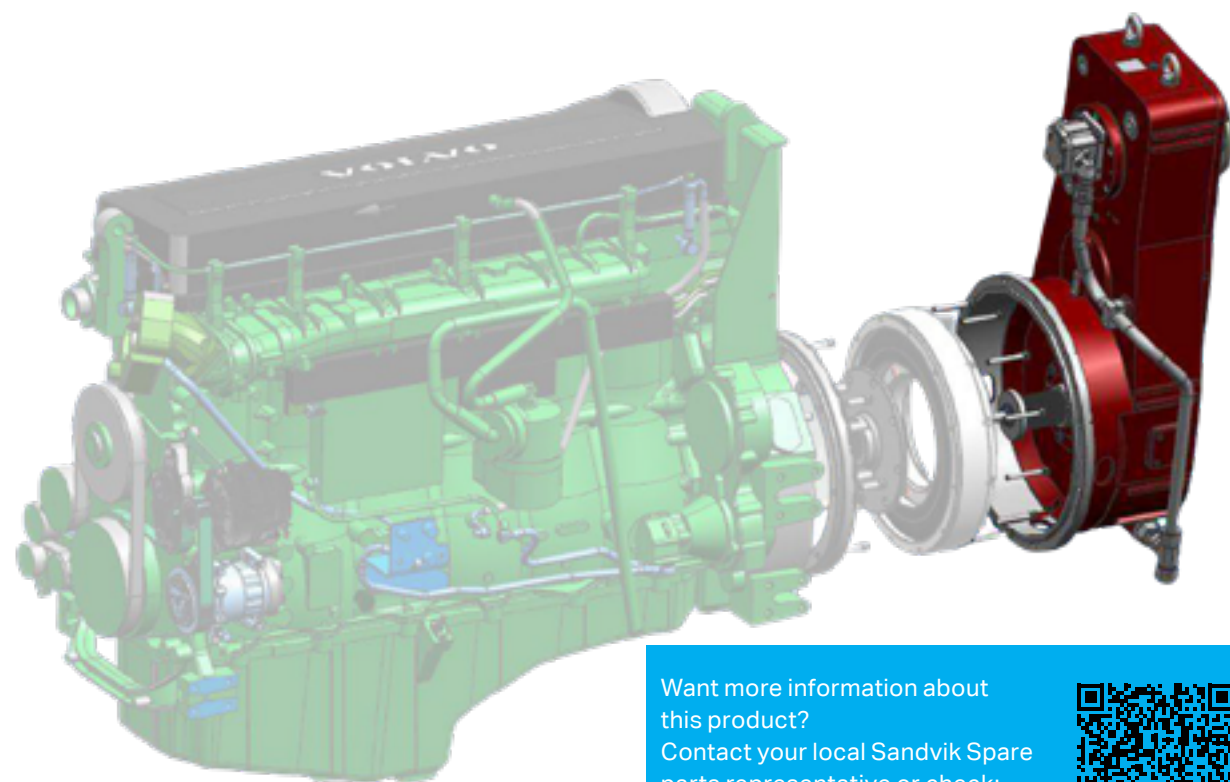
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> New design of gears with optimized weight and increased teeth width. 	<ul style="list-style-type: none"> Improves lifetime of the power train components.

OFFERING

The Improved Up-Box Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH551	Contact local Sandvik representative
Sandvik TH551i	
Sandvik TH663	
Sandvik TH663i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



IMPROVED FLEXIBLE COUPLING FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Sandvik has released a new Flexible Coupling for Sandvik TH551, TH551i, TH663 and TH663i dump trucks.

New improved flexible coupling has smaller inertia value and better damping ration compared to old flexible coupling.

This improvement, associated with the Improved Up-Box (see previous page), will help to reduce the torsional vibration in the rest of the power train, which improves the lifetime of the power train components.

This modification is only possible on Volvo powered trucks.

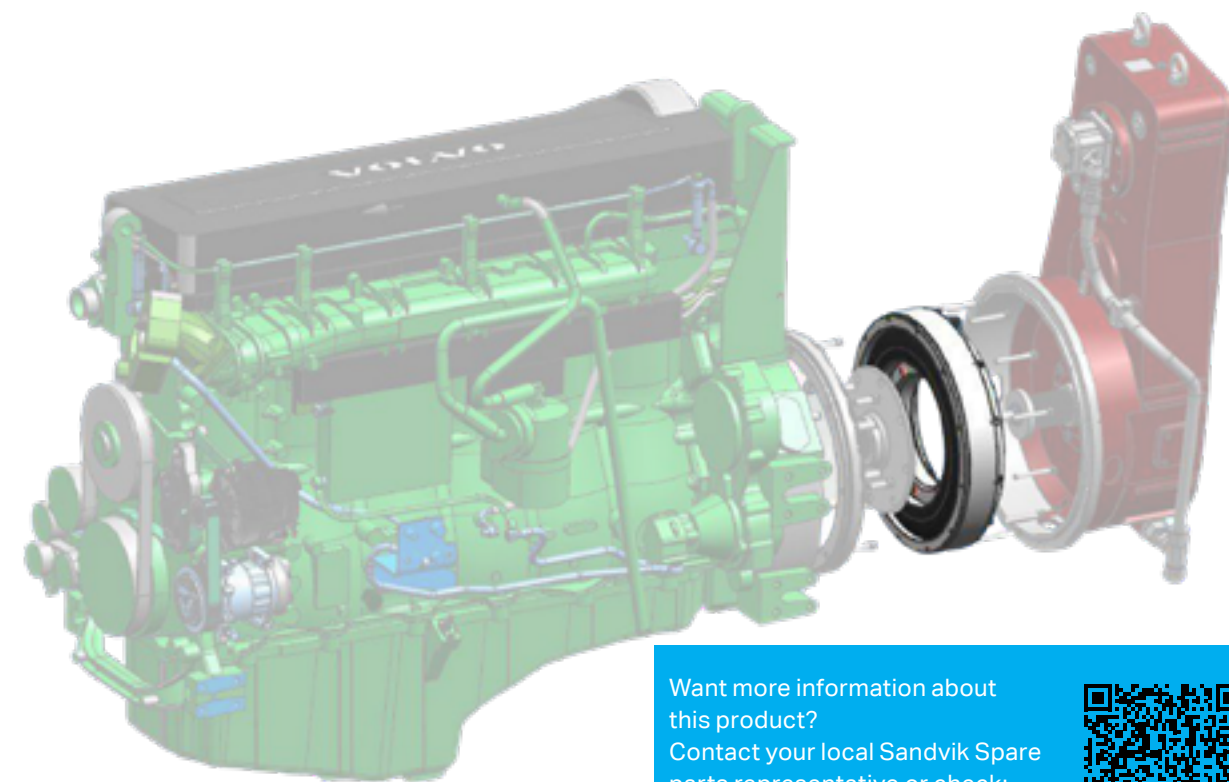
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> The Improved Flexible Coupling has smaller inertia and better damping ratio 	<ul style="list-style-type: none"> Improves lifetime of the power train components.

OFFERING

The Improved Flexible Coupling Upgrade Solution is available for the following Trucks models:

MACHINE MODELS	PART NUMBER
Sandvik TH551	BG01553995
Sandvik TH551i	
Sandvik TH663	
Sandvik TH663i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



APPLICATION MODIFICATION

EJECTOR BOX ADAPTATION KIT FOR TRUCKS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

In some low profile drifts, it might be difficult or even impossible to lift properly the box of the truck for dumping due to too low roof height.

Moreover, there might be a risk of contacting overhead obstacles like power lines or ventilation pipes while dumping the box.

In case of dumping on slope, uneven or unstable ground, there is also a risk of tipping over when dumping.

To solve these issue, Sandvik has developed an Ejector Box System to equip the trucks.

The Sandvik Ejector box consist of a durable high-strength steel frame equipped with a tail gate and a push blade that dump the load while the box stays horizontal. The tail gate and the push blade are operated by cylinders.

The push blade movement insures there are no material remaining in the box after dumping (no carry-back).

The ejector box allows also to spread easily the material out over a distance without slowing down.

The Ejector Box adaptation kit includes all needed parts to do the adaptation of an Ejector box on a truck originally equipped with conventional box, including hydraulic and electric components, hose and electric wiring harness, etc.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allow dumping on low profile drifts. Allow to spread easily the material out over a distance.. 	<ul style="list-style-type: none"> Improve machine versatility.
<ul style="list-style-type: none"> Mitigate the risk of tipping over when dumping on slope and uneven or unstable ground. Mitigate the risk to collide with overhead obstacles like power lines, or ventilation pipes. 	<ul style="list-style-type: none"> Improve safety.
<ul style="list-style-type: none"> Push blade movement insures the complete emptying of the box, preventing any carry-back. Allow spreading material out over distance without slowing down. 	<ul style="list-style-type: none"> Improve productivity.

OFFERING

The Ejector Box Adaptation kit is available for the following Trucks models:

MACHINE MODELS	BOX SIZE	IWS COMPATIBILITY	AUTOMATION COMPATIBILITY
Sandvik TH320	9,6 m3	No	No
Sandvik TH430	14 m3	No	No
Sandvik TH540	20 m3	No	No
Sandvik TH545i	20 m3	No	Yes
Sandvik TH551	25 m3	Yes	Yes
Sandvik TH551i	25 m3	Yes	Yes
Sandvik TH663	28 m3	Yes	Yes
Sandvik TH663i	28 m3	Yes	Yes

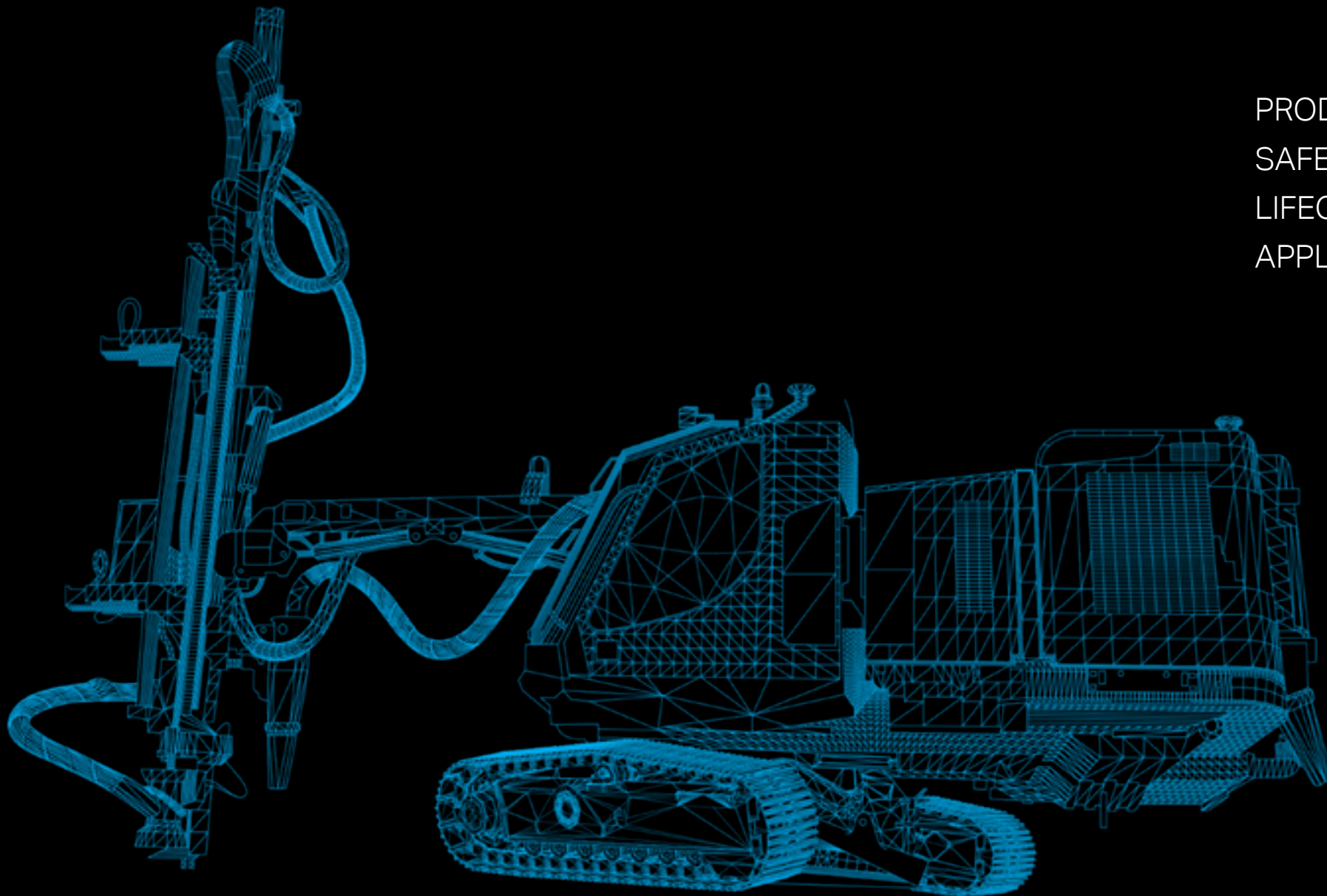
The adaptation kit content varies according machine specifications and options. Contact your local Sandvik representative for more information.

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



UPGRADES SOLUTIONS FOR BOOM SURFACE DRILLS

Sandvik Upgrades and Engineered Solutions offers a vast range of retrofit kits that allow to modify the original specifications of your Boom Surface Drill to improve the performance, the productivity, the safety or to reduce the environmental impact and the operating cost. Our offering includes also solutions to adapt your machine to different application.



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PRODUCTIVITY IMPROVEMENT

TIM3D DRILL NAVIGATION SYSTEM FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

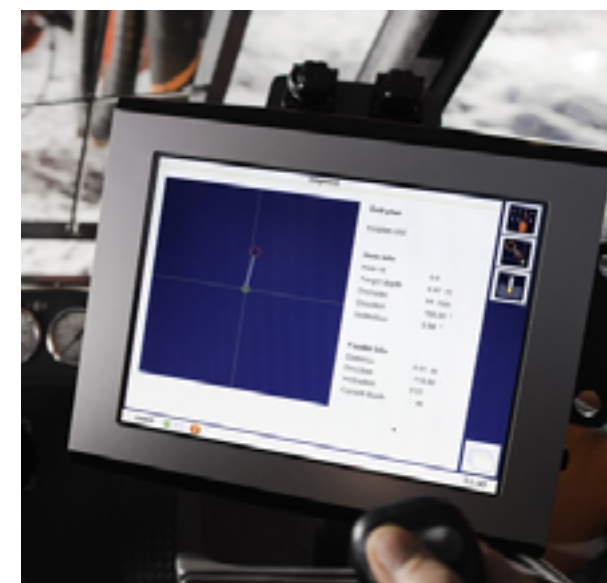
Sandvik TIM3D drill navigation system ensures the hole quality and hole position accuracy in all drilling tasks. It bases on the most accurate multi-satellite system, RTK GNSS (Real time kinematics global navigation system). The system accuracy is better than 10 cm.

TIM3D reads a drilling plan made in IREDES format (International Rock Excavation Data Exchange Standard). The drilling plan file is transferred to TIM3D with USB stick or it can be created through the display. When the actual drilled geometry is saved to TIM3D, it can be transferred back to the office in IREDES format for further actions.

In i-Series drill rigs the system is integrated to standard screen. In "classic or hybrid" series drill rig the additional screen is mounted to the cabin.

The system consists of three essential operations (rig navigation, feed alignment and drilling) to assist the driller to improve the whole drilling process and cut of the production costs in every job site.

TIM3D is available with the optional Automatic feed alignment system. When the drill has been trammed to the proximity of the hole to be drilled, the function can be activated with single click of the hole to run button. This activates automatics and take the feed is correct position and alignment.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Full system support from a single source. • System calibration and self diagnostics are done through user-interface • Less-add on devices 	<ul style="list-style-type: none"> • Simplicity, availability.
<ul style="list-style-type: none"> • SanRemo integration, inc. fleet and process data • Platform for future updates and advanced features 	<ul style="list-style-type: none"> • Connectivity • Scalability

OFFERING

The TIM3D drill navigation system Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Leopard DI650i	
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	Contact local Sandvik representative
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TIMI FOR INCLINED HOLES AND TIM3D READINESS FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

TiMi for inclined holes and TIM3D readiness is used for drilling vertical and inclined holes with a hole depth measuring. The system makes possible to retrofit full TIM3D system easy by adding just antennas and GPS receiver. The system has upgraded user interface with touch-screen function. Through the display its possible also to troubleshoot the system and initialize sensors.

The hole depth can be given as a bench height or directly as a hole depth. The system displays the drilled hole depth and the penetration rate and it alarms the operator/stops the drilling when the set depth is achieved. Inbuilt drilling memory contains counters as well. The counters hold three type of data:

- Cumulative data since the last reset of counters by user.
- Cumulative data since the last reset of counters by service personnel.
- Cumulative data through machine life time.

Following counters are included: amount of drilled holes, drilled meters, drilling time, percussion hours and average penetration rate.

The system also includes aiming unit and hydraulic cylinders with sensors. Inclination direction can be given by using directly blast direction or reference direction with the aiming unit



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Fast aligning for vertical and inclined holes. • Auto stop for drilling when the set depth is achieved. 	<ul style="list-style-type: none"> • Improve productivity, • Improve quality and consistency for operators of all experience levels, and reduces training duration for new operators.
<ul style="list-style-type: none"> • Drilling counters. • Possibility to collect production information through My Sandvik Productivity 	<ul style="list-style-type: none"> • Allows to review the performance of each individual unit and compare with similar units to detect easily inefficiency. • Help to react quickly and make decision based on real facts. • Allows to set-up and measure easily and accurately productivity KPI's. • Follow up cost/drilled meters (parts, rock tools life, etc...).
<ul style="list-style-type: none"> • Touchscreen user-interface. • System troubleshooting and sensors initialization through the display. 	<ul style="list-style-type: none"> • Easy and simple to use and maintain.
<ul style="list-style-type: none"> • Easy upgradeable to full TIM3D drill navigation 	<ul style="list-style-type: none"> • Evolutive system.

OFFERING

The TiMi for inclined holes and TIM3D readiness Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Leopard DI650i	
Sandvik Ranger DX600	Contact local Sandvik representative
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



TIMI FOR INCLINED HOLES AND HOLE DEPTH MEASUREMENT FOR BOOM SURFACE DRILLS

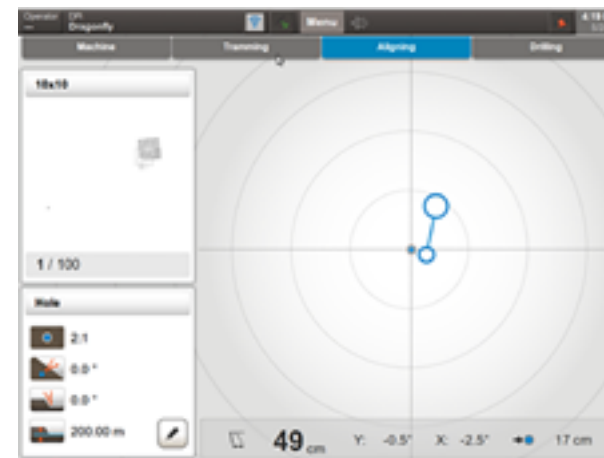
UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

TiMi indicates blasting direction with the aiming unit. Aiming can be done to free selected reference point.

Hole depth measurement displays the drilled hole depth and penetration rate. Drilling stops when set depth is achieved. System has drilling memory which contains three sets of counters: one total counters and two reset counters. Total counter holds the cumulative data over the lifetime of the instrument. The reset counters hold the cumulative data since last reset

Optionally TiMi for inclined holes can be equipped also with GPS which is reducing drilling errors and especially directional errors of inclined holes even more. System equipped with GPS saves time and guarantees parallel direction of the holes having direct affect to fragmentation result. The drilling direction will be given once in either compass direction only or by traditional aiming device. The direction is stored and used in every hole until new direction is given. GPS aiming reduces the need to find any reference target. It works in rain, fog or other poor visibility conditions. Random and human errors are eliminated and the accuracy is approximately 0.5°.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Drilling stops when depth is achieved. • Optional GPS Aiming. • Works in rain, fog or other poor visibility conditions. 	<ul style="list-style-type: none"> • Insure even floor level. • Eliminate random and human errors. Reduce drilling error. • Improve productivity and drilling accuracy/quality. • Improve rock fragmentation.

OFFERING

The TiMi for inclined holes and hole depth measurement Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Leopard DI650i	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	Contact local Sandvik representative
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ROCKPULSE™ SENSOR SYSTEM FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

RockPulse™ utilizes ground breaking sensor technology and gives you visibility inside the rock while you drill.

The system analyses the efficiency and quality of your drilling, suggesting adjustments to your feed pressure, giving immediate feedback on your drilling settings. RockPulse is the real time heartbeat of your drilling. The system enables you to quickly adapt to changing rock conditions, increasing your productivity and efficiency.

RockPulse system upgrade is currently available for Ranger DX800i and DX900i, with RD920-series rock drills. RockPulse system consists of the RockPulse sensor, RockPulse shank and the user interface.

The system guides every operator to perform their best productivity with three new indicators in the main drilling views:

- **Drill Bit Response** measures the bit-rock contact and helps you to achieve higher penetration rate in changing rock conditions.
- **Tools Load** measures harmful energy reflected back from the rock. By adjusting drilling settings, the tool life can be significantly increased.
- **Feed Level** measures the optimal feed level in changing rock conditions. Optimal performance can be achieved by adjusting the feed level, while improving hole quality and tool life.

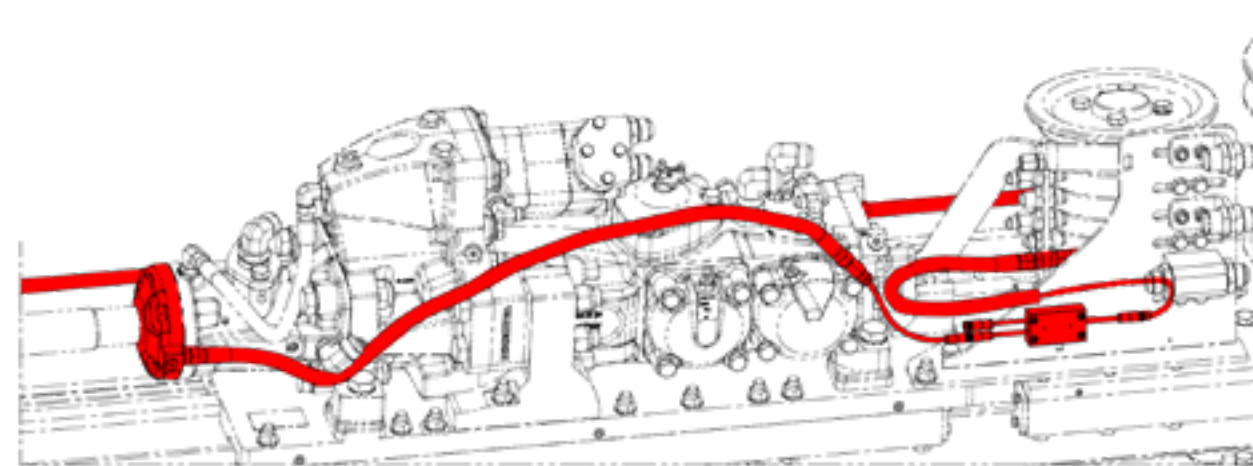
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • System that analyzes drilling efficiency and quality. • Suggest feed pressure adjustment 	<ul style="list-style-type: none"> • Help the operator to increase drilling efficiency. • Improve productivity • Improve rock tools life. Reduce operating cost.

OFFERING

The RockPulse™ Sensor System Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Ranger DX800i	Contact local Sandvik representative
Sandvik Ranger DX900i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

POWER EXTRACTOR FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Fractured and heterogeneous ground, poor flushing quality, cross drilling, or worn out rock tools can lead to drilling rod jamming. And It is quite hard work to recover from the jamming and it robs your job and production of expensive and valuable time.

In production drilling, one of the major loss of production cause could be the difficulty to uncouple efficiently the rods.

In order to solve these issues and preserve the productivity, Sandvik has developed the Power Extractor system.

Power Extractor is a module for a hydraulic rock drill, operated by a switch on the operator's control panel.

An hydraulic actuator mounted on the front end of the rock drill gear housing, by multiple (small) pistons, is able to pull the shank adapter towards the striking point, so that the piston can hit the shank during pull-back.

Percussive stress waves can therefore be transmitted to the drill rods.

Power Extractor is very efficient when the drill string are jammed so tight that it can not be removed by only using feed, rotation and percussion.

Use of Power Extractor for uncoupling rods makes easier and faster the opening of joints. It reduces the non-drilling time, increases drilling capacity and rock tool service life and reduces rock drill maintenance cost.

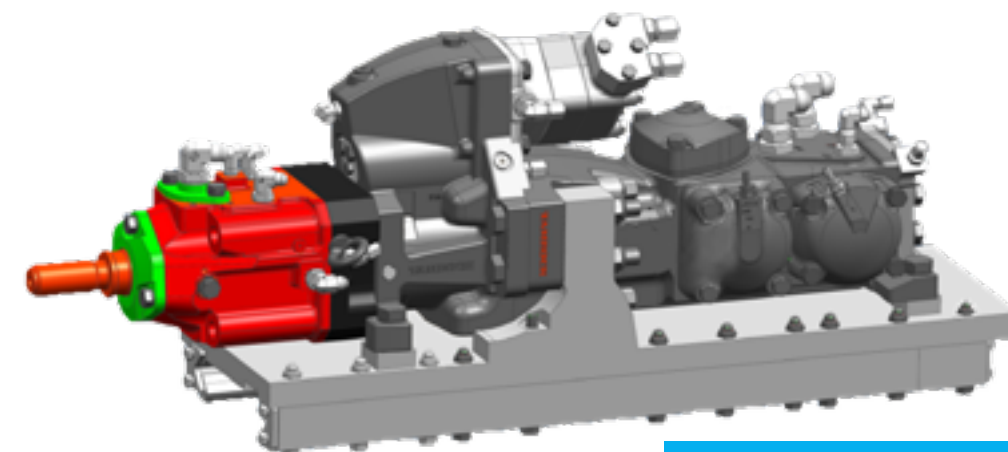
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> • Power Extractor allows the rock drill piston to hit the shank during pull back (percussive stress waves transmitted to the drill rods. 	<ul style="list-style-type: none"> • Improve productivity by help to remove rod(s) from the hole in case of jamming. • In Production drilling, ease rods uncoupling.

OFFERING

The Power Extractor Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Ranger DX600	Contact local Sandvik representative
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

WATER INJECTION SYSTEM FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

When collaring a hole and drilling broken rock, the hole walls tend to collapse causing drill steels to jam or a need to re-drill the hole. This can be avoided by using a water injection system, which effectively stabilizes the hole walls. The water injection system consists of a water tank, control valves, water pump and control system.

Controlled amount of water or a water / foaming agent mixture is pumped into the rock drill's flushing air. The mixture pumped into the flushing air suppresses the dust and vaults the hole with a cement-like layer which prevents the hole from collapsing.

The actual amount of mixture used depends on the type of the rock and the size of drilled hole. Water tanks are big enough for one day operation. Capacities are as follows:

Ranger DX & Tiger DG: 250 litres

Ranger DXi: 250 litres (125l each)

Pantera DPi 250 litres

Leopard DI: 350 litres



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Prevents hole from collapsing during collaring Reduced amount of flying dust 	<ul style="list-style-type: none"> Increase productivity Improve safety

OFFERING

The Water injection system Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Tiger DG710	
Sandvik Tiger DG810	
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Leopard DI650i	
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	

Contact local Sandvik representative

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



HYDRAULIC REAR GROUND SUPPORT FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Hydraulic rear ground support provides better stability for the feed when drilling on uneven ground. It also helps to utilize rigs weight against higher drilling forces when drilling with high percussion pressures.

Ground support is located on the lower frame and it is frog leg type. The control is located in the cabin and in the optional remote-control panel.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

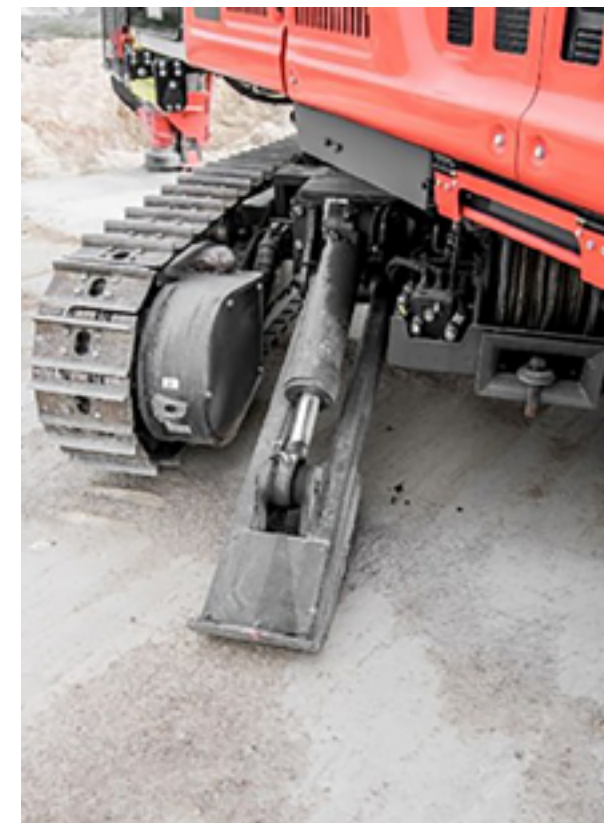
ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Provides better stability on uneven ground Helps to utilize rigs weight with high percussion pressures 	<ul style="list-style-type: none"> Improve drilling accuracy. Improve drilling performance.

OFFERING

The Hydraulic Rear Ground Support Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Tiger DG710	
Sandvik Tiger DG810	
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	

Contact local Sandvik representative



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



SAFETY AND ENVIRONMENTAL IMPROVEMENT

NOISE GUARD - DX FOR RANGER DX SERIES

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Many contractors and quarries face increasingly restrictive noise limits, particularly in urban areas. Effective solutions are necessary to cut out harmful noise to improve work safety and to maintain neighbourly relations with local communities. The new solutions introduced by Sandvik are not only beneficial to the surrounding areas, they also reduce operators' and work site personnel's exposure to harmful noise levels, thereby offering a more comfortable working environment.

Noise Guard - DX reduces noise emissions from Ranger™ DX series drill rigs. The Noise Guard - DX is a fully enclosed structure that reduces Lwa sound power level outside of the drill approx 10dB, down to 117,3 dB. The LpA, sound pressure level at operator seat drops down to 71,6dB (normally around 80dB).

Requirements to limit noise from drilling machinery stem from several international and national sources, such as EU directives, various safety standards, occupational health and safety legislation and environmental regulations. The measurements above represent the A-weighted sound pressure (LpAd) levels according to the EN 16228-1 safety standard, which applies the methods standardized in SFS EN ISO 3744:2010 for determining the sound power level of a noise source.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Reduce noise emissions while drilling. 	<ul style="list-style-type: none"> Help to respect local noise regulations. Improve work safety.

OFFERING

The Noise Guard - DX Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Ranger DX700	Contact local Sandvik representative
Sandvik Ranger DX800	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



NOISEGUARD - DXI FOR RANGER DXI SERIES

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Many contractors and quarries face increasingly restrictive noise limits, particularly in urban areas. Effective solutions are necessary to cut out harmful noise to improve work safety and to maintain neighbourly relations with local communities. The new solutions introduced by Sandvik are not only beneficial to the surrounding areas, they also reduce operators' and work-site personnel's exposure to harmful noise levels, thereby offering a more comfortable working environment.

NoiseGuard-DXi is a fully enclosed structure that provides up to -12.9 dB noise reduction in A-weighted sound pressure within a 16-meter radius of the rig. In this measuring distance, the noise reduction compared to unmitigated sound pressure is up to 95 percent. The NoiseGuard-DXi option comes with a camera system that provides visually aided drilling when the structure doors are closed. Additionally, it has an innovative single-bolt dismantling design for fast and easy maintenance on the feed system.

Requirements to limit noise from drilling machinery stem from several international and national sources, such as EU directives, various safety standards, occupational health and safety legislation and environmental regulations. The measurements above represent the A-weighted sound pressure (LpAd) levels according to the EN 16228-1 safety standard, which applies the methods standardized in SFS EN ISO 3744:2010 for determining the sound power level of a noise source.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Reduce noise emissions while drilling. 	<ul style="list-style-type: none"> Help to respect local noise regulations. Improve work safety.

OFFERING

The NoiseGuard-DXi Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Ranger DX800i	Contact local Sandvik representative
Sandvik Ranger DX900i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



SAFETY CAGE FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Unsafe working habits may cause the drill rig operator to stand near the feed while the machine is drilling. This expose him to serious risk of accident that can be dramatic.

The safety cage is a safety device attached to the feed beam consisting of a steel wire mesh. Its purpose is to prevent the operator from getting caught by the rotating drill steels.

On DX and DXi series, the Safety Cage is available on Long version (replace standard component).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Cage installed on the feed that prevent the operator to be hurt by the drilling rod. 	<ul style="list-style-type: none"> Increase the safety.

OFFERING

The Long Safety Cage Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC130Ri	Contact local Sandvik representative
Sandvik Commando DC300Ri	
Sandvik Dino DC400R	
Sandvik Dino DC410R	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



DUSTMIZER FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

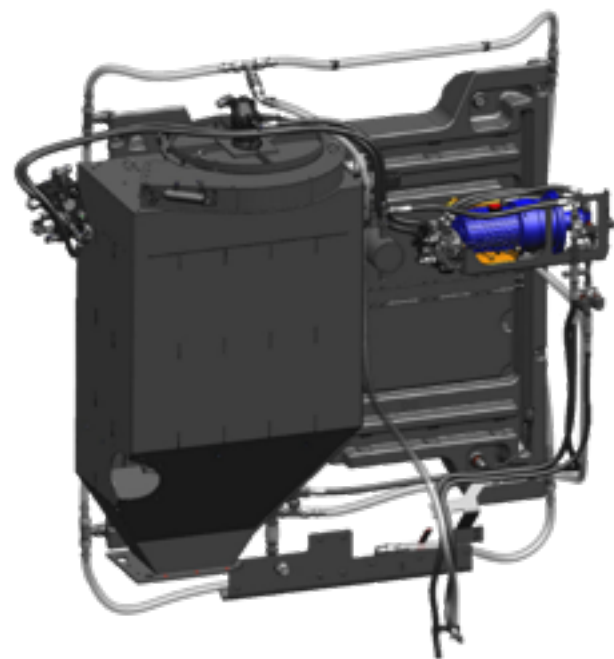
Dustmizer is an effective addition to standard dust collection system taking care of also the smallest particles which can't be seen but are most harmful. Dustmizer's dust binding liquid is added to the rock drill flushing air during drilling. The fluid led into the flushing air suppresses the drilling dust and forms a sand like and grainy, dust free substance. Water receiver is big enough for one shift operation. There are two nozzles in the Dust Collector spraying dust binding liquid to the outlet when there is a need to bind the dust dropped to the ground.

Engine heater option is required, if machine equipped with Dustmizer operates below freezing point.

On Commando DC300Ri, Dino and Ranger DXi series, the Dustmizer upgrade includes always the flap feeder system.

On Ranger DX, Leopard DI650i and Pantera DPi, flap feeder system is not part of Dustmizer upgrade but can be added as an option (see page 197).

On Leopard DI650i, Dustmizer upgrade require Water Injection System (see page 190).



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Reduce the amount of dust particles in the air. 	<ul style="list-style-type: none"> Improve safety by reducing the risk for the operator and other staff to breathe dust particles.
<ul style="list-style-type: none"> Reduce the need to clean the coolers to avoid clogging. Reduce the need to clean cabin. 	<ul style="list-style-type: none"> Improve reliability and operating cost.

OFFERING

The Dustmizer Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC300Ri	
Sandvik Dino DC400R	
Sandvik Dino DC410R	
Sandvik Dino DC420Ri	
Sandvik Tiger DG710	
Sandvik Tiger DG810	
Sandvik Leopard DI650i	
Sandvik Ranger DX600	
Sandvik Ranger DX600R	Contact local Sandvik representative
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



FLAP FEEDER FOR DUST COLLECTOR FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

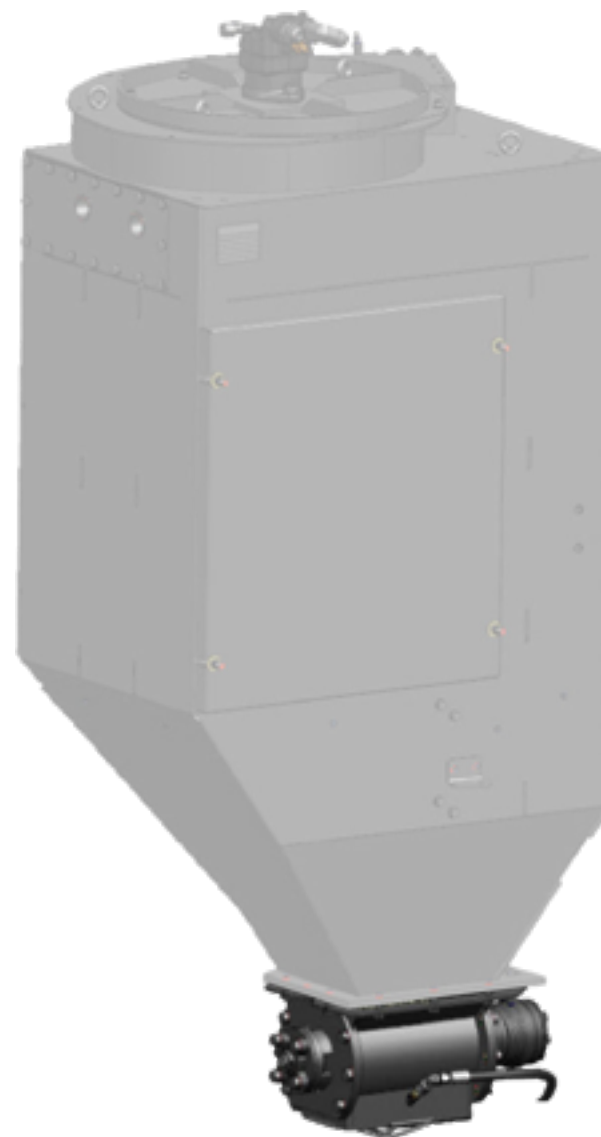
DESCRIPTION

The flap feeder system replaces the shutter valve at the rear of the drill rig.

Hydraulic motor turns the feeder which lets the dust out of the collector and prevents filter cleaning air pulse to blow to the dust pile below the collector.

Reducing the amount of dust flying around the environment helps to preserve staff health and to keep clean the coolers.

On Commando DC300Ri, Dino and Ranger DXi series the Dustmizer upgrade (see page 197) includes always the flap feeder system.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Prevent filter cleaning air pulse to blow to the dust pile below the collector. 	<ul style="list-style-type: none"> Improve safety by reducing the amount of dust particles in the environment.
<ul style="list-style-type: none"> Reduce the need to clean the coolers to avoid clogging. Reduce the need to clean cabin. 	<ul style="list-style-type: none"> Improve reliability and operating cost.

OFFERING

The Flap feeder for dust collector Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC300Ri	
Sandvik Dino DC400R	
Sandvik Dino DC410R	
Sandvik Dino DC420Ri	Contact local Sandvik representative
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK





PIPE WINCH FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

The drill pipes are heavy as they can weigh up to several hundred kilos. Handling the pipes without specific equipment can be hazardous. Even more, if this task has to be performed outside workshops.

The pipe winch is intended for loading and unloading drill pipes to and from the cassette in the easiest and safer way.

The pipe winch is operated with a radio remote control, which is an additional option

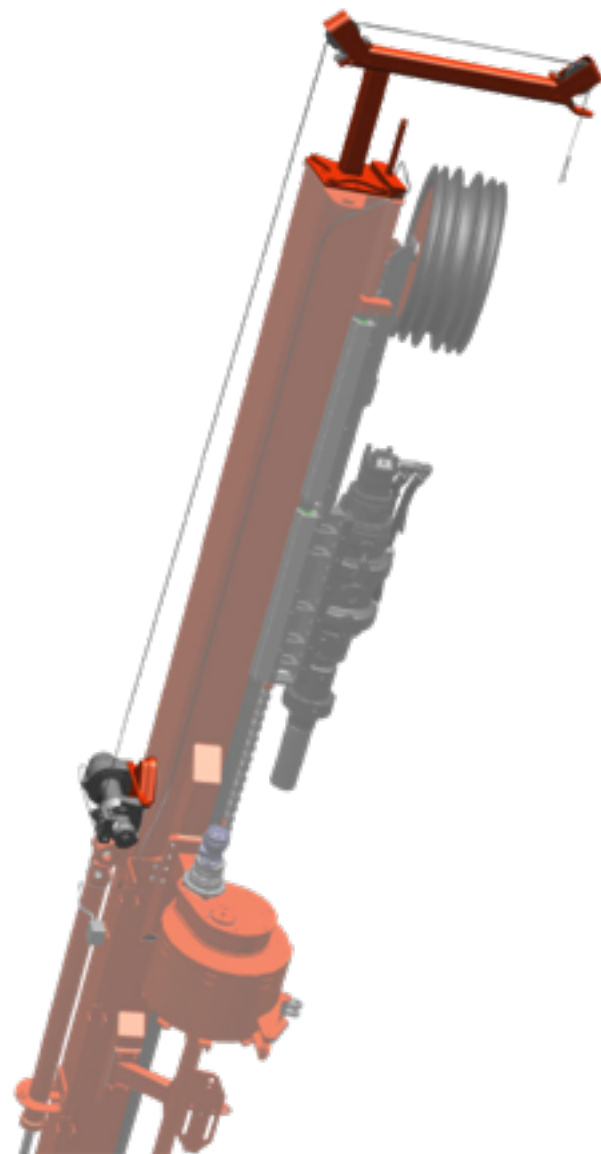
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Allows to handle safely and easily the drill pipes. Easy and fast tube change. 	<ul style="list-style-type: none"> Improve safety. Reduce machine downtime.


OFFERING

The Pipe winch Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Leopard DI450	
Sandvik Leopard DI550	Contact local Sandvik representative
Sandvik Leopard DI560	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK




HYDRAULIC WINCH FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Hydraulic winch is needed to secure drill rig when operating rig in steep slopes. This upgrade is required according to Drill Rig Safety rules when inclination of the rig exceeds more than 20°. When the winch is in use, the maximum allowed inclination angle is 30°.

Winch is operated from radio remote on all models, except on DC120 and DC121R units where operation happens via levers.

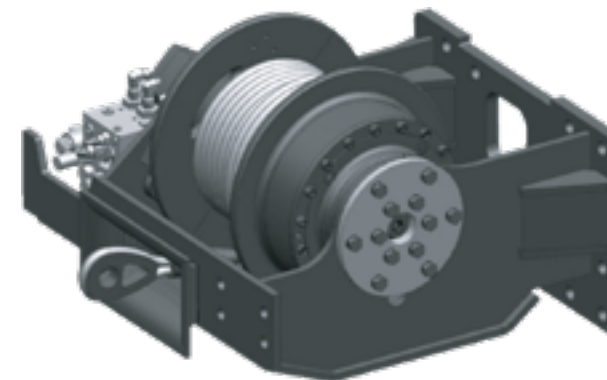
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Secure the drill while drilling on steep slopes. Allows to operate in places which are normally unreachable. 	<ul style="list-style-type: none"> Improve safety Increase the operational scope of the machine.

OFFERING

The Hydraulic winch Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC120	
Sandvik Commando DC121R	
Sandvik Commando DC122R	
Sandvik Commando DC130Ri	
Sandvik Commando DC300Ri	
Sandvik Dino DC400R	
Sandvik Dino DC410R	
Sandvik Dino DC420Ri	
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	Contact local Sandvik representative
Sandvik Leopard DI650i	
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
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- INDEX
- REBUILD SOLUTIONS
- CUSTOM UPGRADES
- BOOM SURFACE DRILLS
- TRUCKS
- LOADERS
- TUNNELING DRILLS
- UNDERGROUND DRILLS

EXPLOSION PROOF WINDOW FOR BOOM SURFACE DRILLS

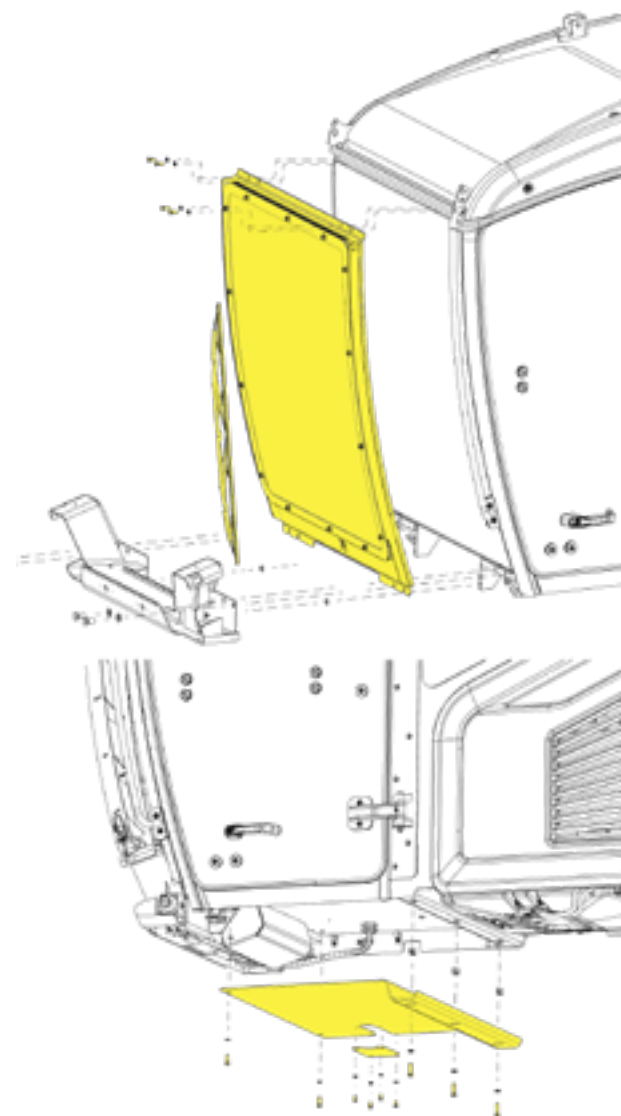
UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Explosive proof cabin window is an additional window on top of standard front window. This window is designed to resist to flying rocks and shock waves generated by blastings.

This provides better protection to the operator and also avoids damaging the machine and having to move it over long distances to get far away from the production area during each blast.

First layer is changeable wearing layer. Under that is 12mm Polycarbonate armour glass.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Provides better protection to the operator. Avoids damages on the window.. Allows to leave the machine closer to the production area during blasting.. 	<ul style="list-style-type: none"> Increase safety. Reduce maintenance cost. Reduces tramming time and increases productivity.

OFFERING

The Explosion Proof Window Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Leopard DI650i	
Sandvik Ranger DX800i	Contact local Sandvik representative
Sandvik Ranger DX900i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ROCK SHIELD FOR LIGHTS AND LOWER PART OF THE WINDOW FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

The shield for lower front lights and lower part of front window protect front window for flying rocks and extends the life time of window.

This extra protection is fitted on the original window protective grid and lifts with it to allow the cleaning of the window and replacement of the wiper blades.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Provides better protection to the operator Avoids damages on the window.. 	<ul style="list-style-type: none"> Increase safety. Reduce maintenance cost.

OFFERING

The Rock shield for lights and lower part of the window Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Leopard DI450	
Sandvik Leopard DI550	Contact local Sandvik representative
Sandvik Leopard DI560	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



REVERSING CAMERA SYSTEM FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Reversing Camera System improves tramming safety of a rill rig.

On DPi, the system consist on a back camera and a right side camera, connected on the machine's original user interface touch screen.

On TG, DI and DX, The system consist of 6.9" TFT LCD colour flat screen monitor and 3 cameras for monitoring the overall rear view and the ground behind the tracks. It is possible to show the view of all three cameras on screen at the same time or select the view of camera one by one.

On DXi, the system consist on 4 cameras that are on the machine's original user interface touch screen. There are a back camera, two lower side cameras and a front camera. Operator can look 2 Camera views at the same time.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Improve visibility to back and side of machine Reduce risk of damages on the machine. 	<ul style="list-style-type: none"> Improve safety Reduce operating cost

OFFERING

The Reversing Camera System Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Tiger DG710	
Sandvik Tiger DG810	
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Leopard DI650i	
Sandvik Ranger DX600	Contact local Sandvik representative
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

JUMP START CONNECTOR FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Discharged battery might lead to the need to use jump cables to start the engine of the loader with the use of an external battery pack or other unit.

This process can be dangerous is case of polarity mistake on the jump cables connection as the battery short circuit can lead to explosion of the battery, fire start and serious damages on the electric system of the machine.

In order to mitigate this risk, Sandvik offers the installation of the Jump Start Connector Upgrade Solution.

The Jump Start Connector avoid the risk to invert polarity of the jump cable. It avoid also generation of sparks, that could happen if cables where connected temporarily on the battery terminals with clamps (risk of fire).

Only female connector is supplied on the kit. Cable with male connector can be ordered separately from Sandvik:

- P/N 504744: Jump cable length 3m (10ft):
- P/N: 56034295: Jump cable length 4,5m (15ft)

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Jump Start Connector avoid risk of inversion of polarities during jump start operations 	<ul style="list-style-type: none"> Avoid risk of fire or battery explosion during jump start operations. Avoid risk of damage on electric and electronic equipment of the unit during jump start operations.

OFFERING

The Jump Start Connector Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC300Ri	
Sandvik Leopard DI450	
Sandvik Leopard DI550	Contact local Sandvik representative
Sandvik Leopard DI560	
Sandvik Leopard DI650i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

LIFECYCLE COST IMPROVEMENT

SHUT DOWN OF SUCTION FOR WATER HOLES FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Shut down of suction for water holes functionality is used to cut off the dust collector suction when drilling through wet layer.

When drilling through wet layer, dust collector sucks water into filter elements very easily. Water and dust forms cement-like layer to the filters which is difficult to clean and which prevents correct operation of filters. This can be avoided by switching off the suction immediately when water is noticed with the suction shut-down system. The suction is switched off by closing the suction flap valve of the dust collector. The flap valve is operated by a cylinder and the control lever is located at the control panel or at radio remote.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Allow to shut down suction system when drilling through wet layer.

CUSTOMER VALUES

- Avoid dust filters to be clogged by water/dust mix.
- Increase life of the dust filter and reduce maintenance time and cost.

OFFERING

The Shut Down of Suction for Water Holes Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC120	
Sandvik Commando DC121R	
Sandvik Commando DC122R	
Sandvik Commando DC130Ri	
Sandvik Commando DC300Ri	
Sandvik Dino DC400R	
Sandvik Dino DC410R	Contact local Sandvik representative
Sandvik Tiger DG710	
Sandvik Tiger DG810	
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	

Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



THREAD GREASING SYSTEM FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Greasing drill steel threads systematically helps opening the threads, increase drill rod life and Minimizes rattling time.

Thread Greasing system consists of a rod greasing unit (5 gallon bucket), injector and electric controls. The greaser is activated with a pedal switch located in the cabin. The special Sandvik grease, developed for this purpose, provides protection against corrosion and metal to metal contact. It is sprayed through nozzle to threads when adding next rod to the drill string.

Note: Thread Greasing System is part of the full cycle drilling automatics system. It automatically distributes lubricant when rod is added.



PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Allows to spray grease on the rod threads

CUSTOMER VALUES

- Grease protect rod threads from corrosion and metal to metal contact.
- Extended rods life.
- Reduced operating cost.

OFFERING

The Thread Greasing System Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC300Ri	
Sandvik Dino DC400R	
Sandvik Dino DC410R	
Sandvik Dino DC420Ri	
Sandvik Tiger DG710	
Sandvik Tiger DG810	
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Leopard DI650i	Contact local Sandvik representative
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	

Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



EXTRA BRAKE FOR TURNABLE UPPER STRUCTURE FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Extra brake for turnable upper structure upgrade takes away clearance between upper and lower structure. The system also increases service life for turning structure.

Extra brake for turnable upper structure is included on the Horizontal drilling Upgrade (See page 211).

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Increases service life for turning structure

CUSTOMER VALUES

- Reduce maintenance cost

OFFERING

The Extra brake for turnable upper structure Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	Contact local Sandvik representative
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	



Want more information about this product?
Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK



ELECTRIC FUEL FILLING PUMP FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Electric fuel filling pump is used to help operator refuel the drilling rig.

The system prevents possibility to fuel contamination as with pump, fuel can be refilled directly from bigger tank instead of pouring it from canister. It includes a 500 microns strainer that retain the big particles that could generate damages on the fuel system.

Electric fuel filling pump makes refuelling even easier and faster than with manual fuel filling pump as there is no need for manual labour.

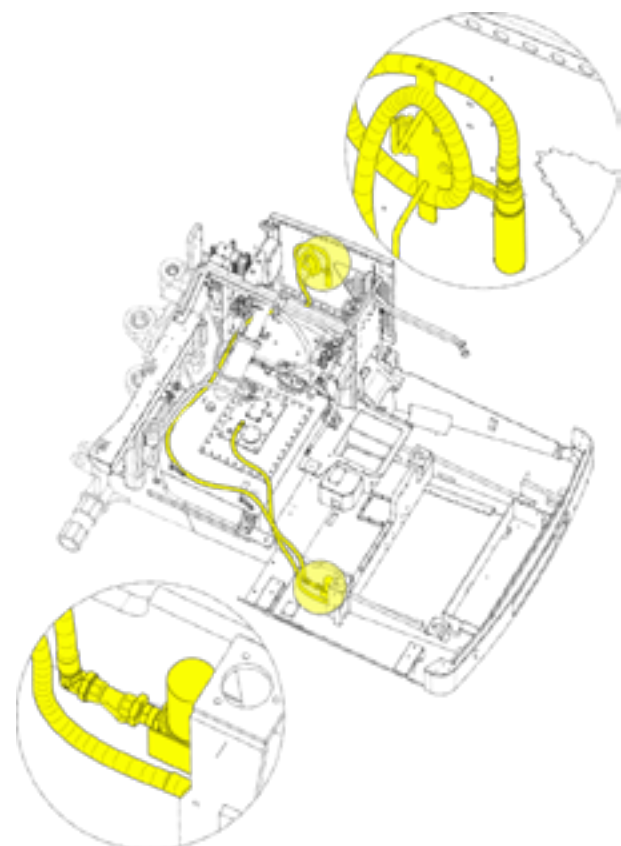
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Fuel can be pumped directly from main tank. No need to use extra canister System includes a strainer. Fast fuel filling process 	<ul style="list-style-type: none"> Reduce the risk of using contaminated fuel. Improve reliability of the fuel system. Improve machine availability

OFFERING

The Electric fuel filling pump Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC120	
Sandvik Commando DC121R	
Sandvik Commando DC122R	
Sandvik Commando DC130Ri	
Sandvik Commando DC300Ri	
Sandvik Dino DC400R	
Sandvik Dino DC410R	
Sandvik Dino DC420Ri	
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	Contact local Sandvik representative
Sandvik Leopard DI650i	Contact local Sandvik representative
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

ELECTRIC HYDRAULIC OIL FILLING PUMP FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Oil contamination is one of the major risk of failure of expensive component of the hydraulic system, generate frequent downtimes and In order to reduce the risk of contamination of new oil during the filling process, Sandvik has developed the Electric Filling Pump for hydraulic tank.

This on-board oil pump enables hydraulic oil to be filled, from ground level, straight from barrels, without having to use any other container that could be dirty and bring contamination in the oil. The oil is pumped through a filter ensuring the oil is clean and reduces possibility of contamination of oil during filling.

Electric oil filling pump makes also oil change easier and faster compared to manual oil filling pump as there is no need for manual labor.

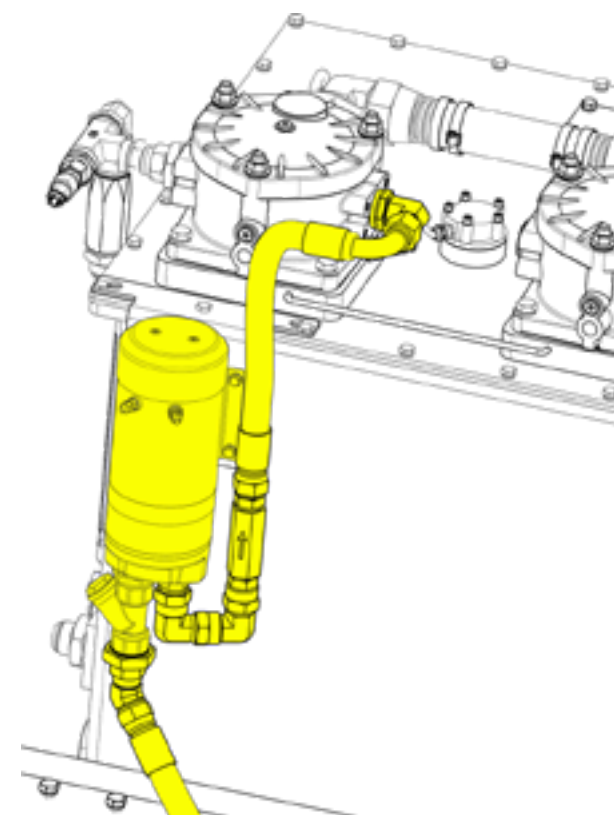
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Oil can be pumped directly from the barrel, through a filter. Oil tanks can be filled from ground level 	<ul style="list-style-type: none"> Reduce risk of contamination of the new oil. Reduce service time Improve safety

OFFERING

The Electric hydraulic oil filling pump Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Leopard DI650i	
Sandvik Ranger DX800i	Contact local Sandvik representative
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
ROCKTECHNOLOGY.SANDVIK

HORIZONTAL DRILLING UPGRADE FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

APPLICATION MODIFICATION

DESCRIPTION

Horizontal drilling Upgrade is needed to support the feed when drilling toe holes.

Horizontal drilling upgrade consists of ground support for the feed, a hose reel and a bracket to turn the primary separator to vertical position when the feed is turned horizontal. This upgrade is needed to keep the hoses off the ground.

The Horizontal Drilling upgrade for Ranger DX800i and DX900i includes also Extra Brake For Turnable Upper Structure (see Page page 207). The extra brake takes away clearance between upper and lower structure.

PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES

- Horizontal drilling upgrade allows to drill horizontal holes

CUSTOMER VALUES

- Allow to keep the hoses off the ground when drilling toe holes.
- Reduce wear and risk of failure of the feed hoses.

OFFERING

The Horizontal drilling Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Tiger DG710	
Sandvik Tiger DG810	
Sandvik Leopard DI450	
Sandvik Leopard DI550	
Sandvik Leopard DI560	
Sandvik Ranger DX600	
Sandvik Ranger DX600R	Contact local Sandvik representative
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)



KIT FOR ALTERNATIVE STEEL FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Kit for alternative steels includes necessary components to modify drill rigs feed for another drill steel size.

When drill rigs feed is modified for different size of drill steels there is a need to change some of the jaws and wear pieces for new drill steels size. This kit includes all necessary components and parts (Except shank)..

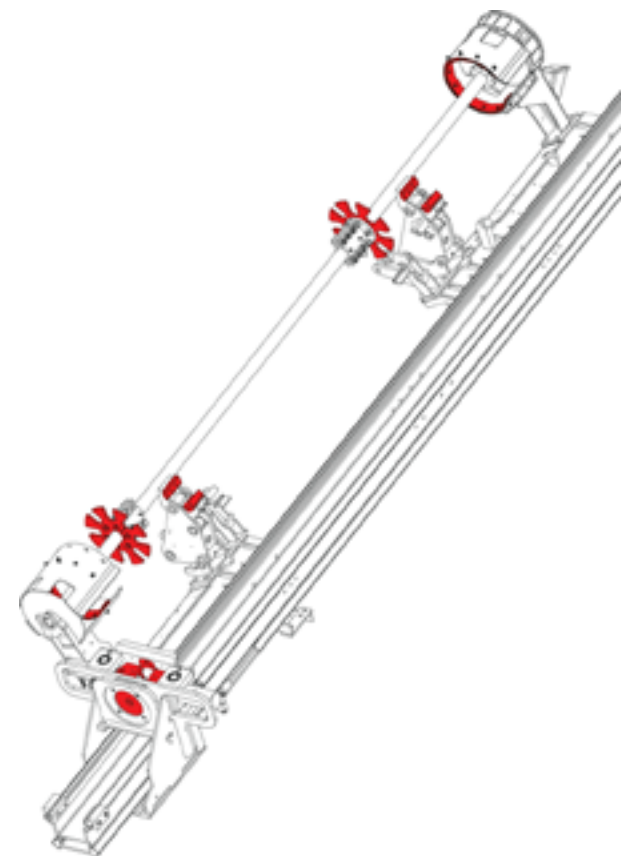
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Optimize bit size and drill steel combination. 	<ul style="list-style-type: none"> Straighter holes and improved flushing

OFFERING

The Kit for alternative steel Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Commando DC120	
Sandvik Commando DC121R	
Sandvik Commando DC122R	
Sandvik Commando DC130Ri	
Sandvik Commando DC300Ri	
Sandvik Dino DC400R	
Sandvik Dino DC410R	
Sandvik Dino DC420Ri	
Sandvik Tiger DG710	
Sandvik Tiger DG810	Contact local Sandvik representative
Sandvik Ranger DX600	
Sandvik Ranger DX600R	
Sandvik Ranger DX700	
Sandvik Ranger DX800	
Sandvik Ranger DX800R	
Sandvik Ranger DX800i	
Sandvik Ranger DX900i	
Sandvik Pantera DP1100i	
Sandvik Pantera DP1500i	
Sandvik Pantera DP1600i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

KIT FOR ALTERNATIVE PIPE FOR BOOM SURFACE DRILLS

UPGRADES AND ENGINEERED SOLUTIONS

DESCRIPTION

Kit for alternative pipes includes necessary parts to modify drill rigs feed for another drill pipe size than originally factory fitted.

When drill rig feed is modified for different size of drill pipe some jaws and wear pieces need to be replaced. This kit includes necessary components, parts and rotary head saver sub adapter.

Following alternative pipe kits are available:

- 76mm (Leopard DI450/550/560)
- 89mm (Leopard DI450/550/560)
- 102mm (Leopard DI550/560/650i)
- 114mm (Leopard DI550/560/650i)
- 127mm (Leopard DI650i)
- 140mm (Leopard DI650i) - only with MRH6 HD rotary head

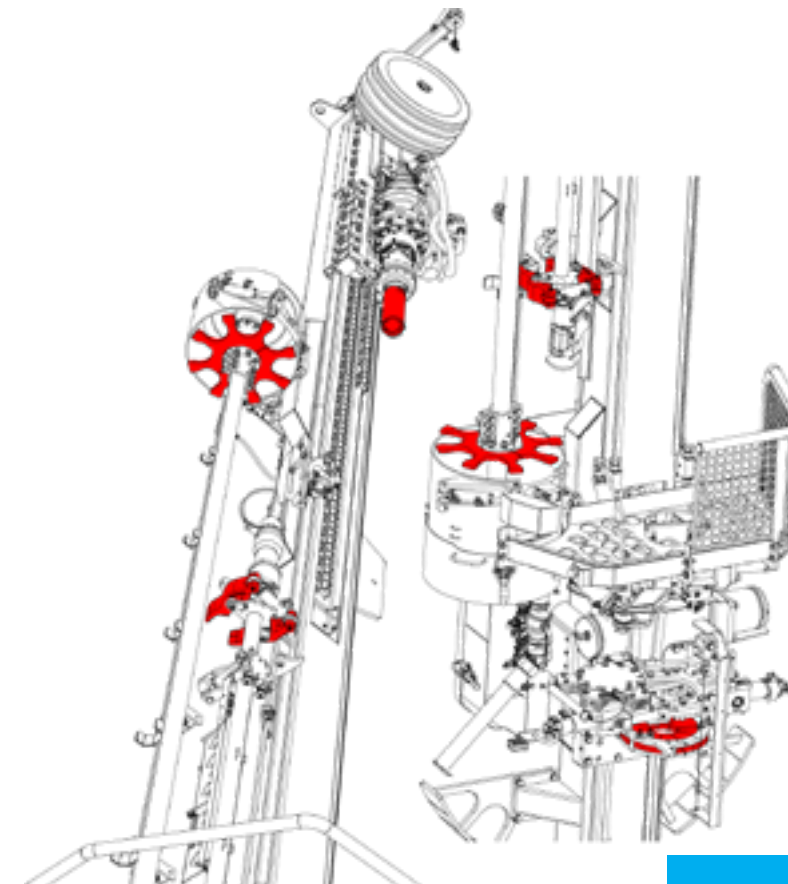
PRODUCT ADVANTAGES AND CUSTOMER VALUES

ADVANTAGES	CUSTOMER VALUES
<ul style="list-style-type: none"> Optimize bit size and drill steel combination. 	<ul style="list-style-type: none"> Straighter holes and improved flushing

OFFERING

The Kit for alternative pipes Upgrade Solution is available for the following Boom Surface Drills models:

MACHINE MODELS	PART NUMBER
Sandvik Leopard DI450	
Sandvik Leopard DI550	Contact local Sandvik representative
Sandvik Leopard DI560	
Sandvik Leopard DI650i	



Want more information about this product?
 Contact your local Sandvik Spare parts representative or check:
[ROCKTECHNOLOGY.SANDVIK](https://rocktechnology.sandvik.com)

CUSTOM UPGRADES SOLUTIONS

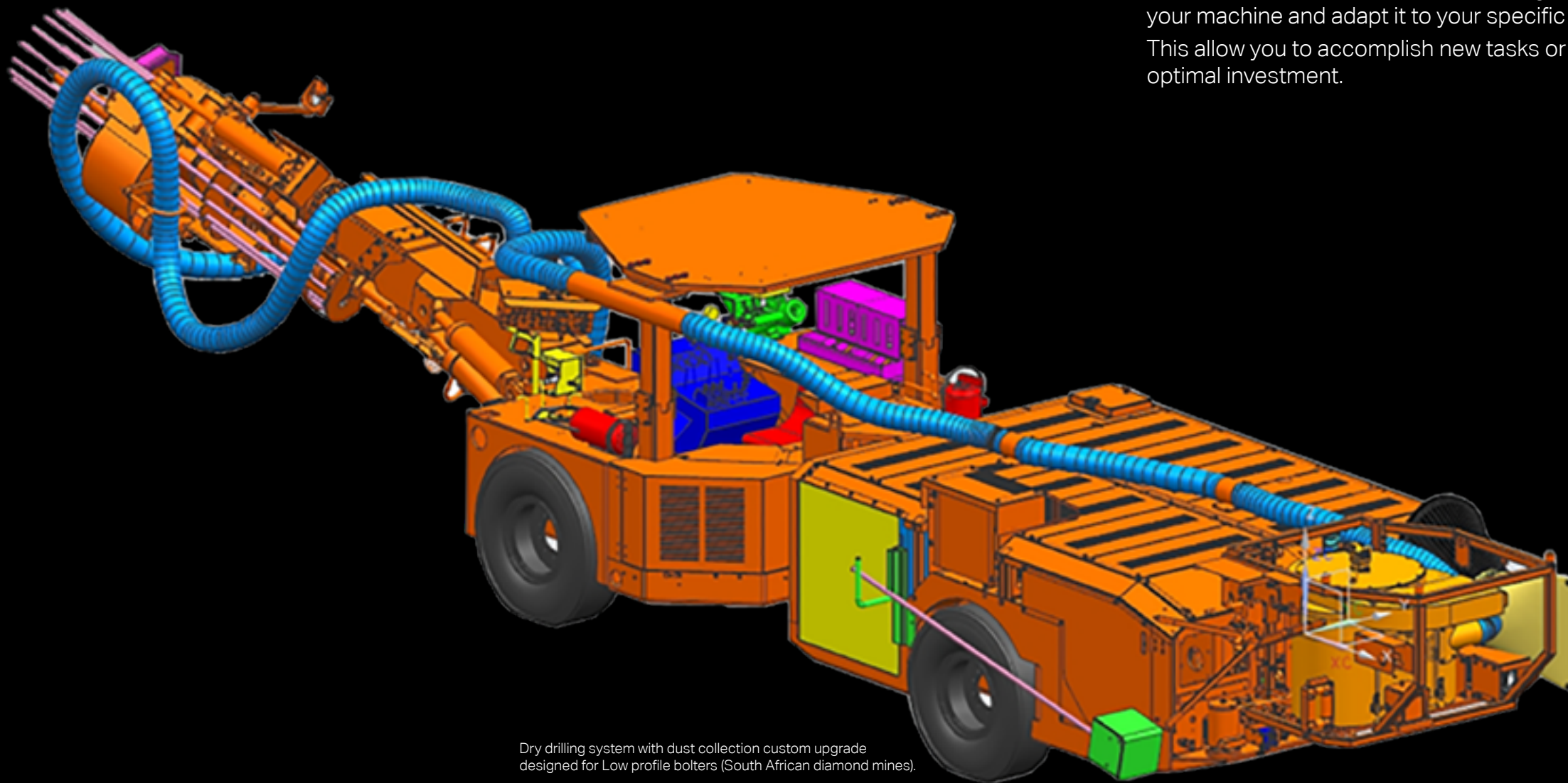
EXPERTISE AND IMAGINATION @ YOUR SERVICE!

Sandvik Mining focuses on ensuring that each of our customers is matched with the best products for the maximum productivity, safety, reliability and profitability.

Our strength is our customer relationship, and we are committed to offer our best expertise to help them to face the most complex challenges.

Special problem to overcome? New safety regulations? Specific task to accomplish? Thanks to our highly experienced and qualified R&D, Sandvik Upgrades and Engineered Solutions is able to assist you and design specific Custom Upgrade Solutions to modify your machine and adapt it to your specific needs.

This allow you to accomplish new tasks or answer to new requirements at the most optimal investment.



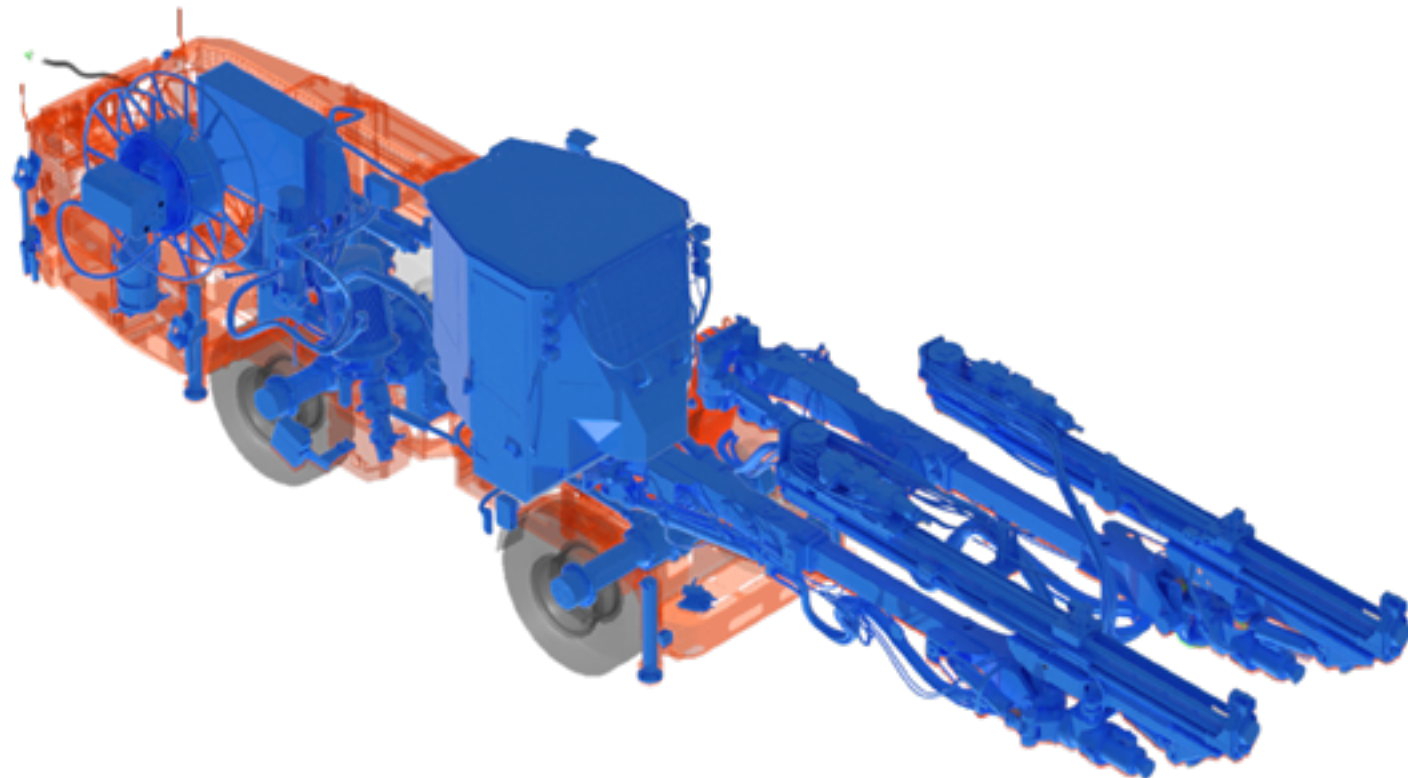
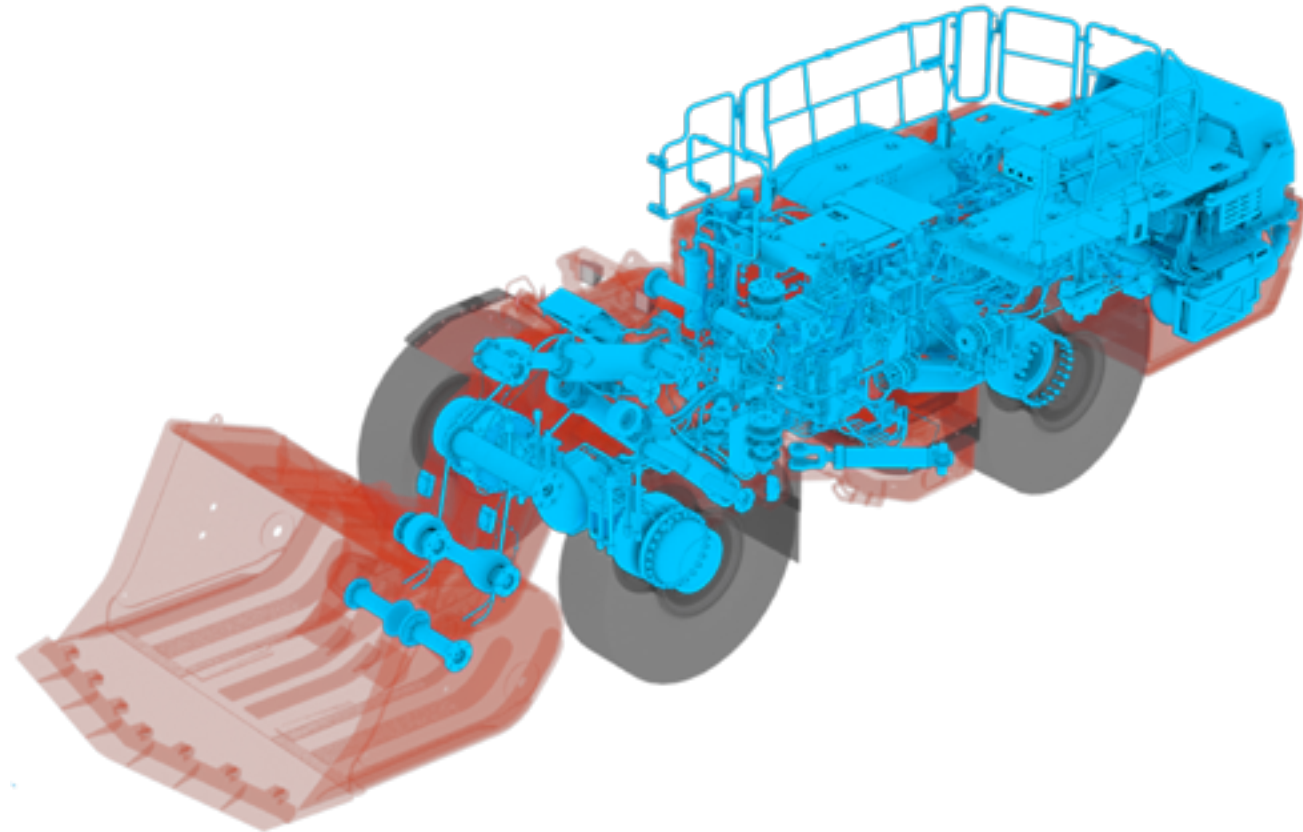
Dry drilling system with dust collection custom upgrade designed for Low profile bolters (South African diamond mines).

SANDVIK REBUILD SOLUTIONS

REBUILDING YOUR EQUIPMENT? WOULDN'T IT BE THE RIGHT TIME TO UPGRADE IT?

Sandvik offers a range of REBUILD SOLUTIONS which can include UPGRADES SOLUTIONS to enhance your equipment by applying the latest improvements. The rebuilt and upgraded equipment could be safer and bring better productivity at lower cost than when it was new!

Taking advantage of Rebuild operation to introduce UPGRADES SOLUTIONS is also the best financial strategy when it is about Upgrades Solutions that require important investment like for instance new model of diesel engine, improved transmission or new generation of rock drill(s).



LIFE EXTENSION+	REBORN+	CUSTOM REBUILD
<ul style="list-style-type: none"> • Partial scope from Reborn+. • Upgrades Solutions enhancements. • Fully renewed systems and modules. • Pre-engineered/ assembled Kits. • Fixed prices. • Rebuild standard warranty. • Comprehensive testing. • Certification. • Commissioning. • Specialized technical support. • Updated parts books and manuals. 	<ul style="list-style-type: none"> • Full Scope. • Upgrades Solutions enhancements. • Second life endurance. • Pre-engineered/ Assembled Kits. • Fixed prices. • Warranty as new. • Digital Integration - FDM. • Comprehensive testing • Certification. • Commissioning. • Specialized technical support. • Updated parts books and manuals. 	<ul style="list-style-type: none"> • Customized Scope. • Upgrades Solutions as optional choice. Focus on Enhancing performance. • Detailed condition inspection. • OEM Parts & Services • Rebuild standard warranty. • Comprehensive testing. • Certification. • Commissioning. • Specialized technical support. • Updated parts books and manuals.

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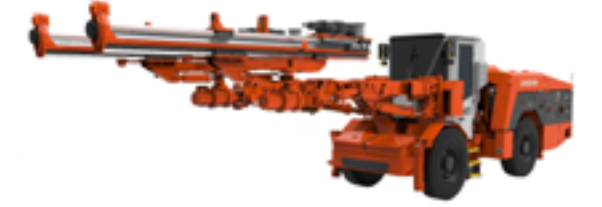


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*Only with B26LC boom

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