SANDVIK

iSERIES FAMILY OF BLASTHOLE DRILLS

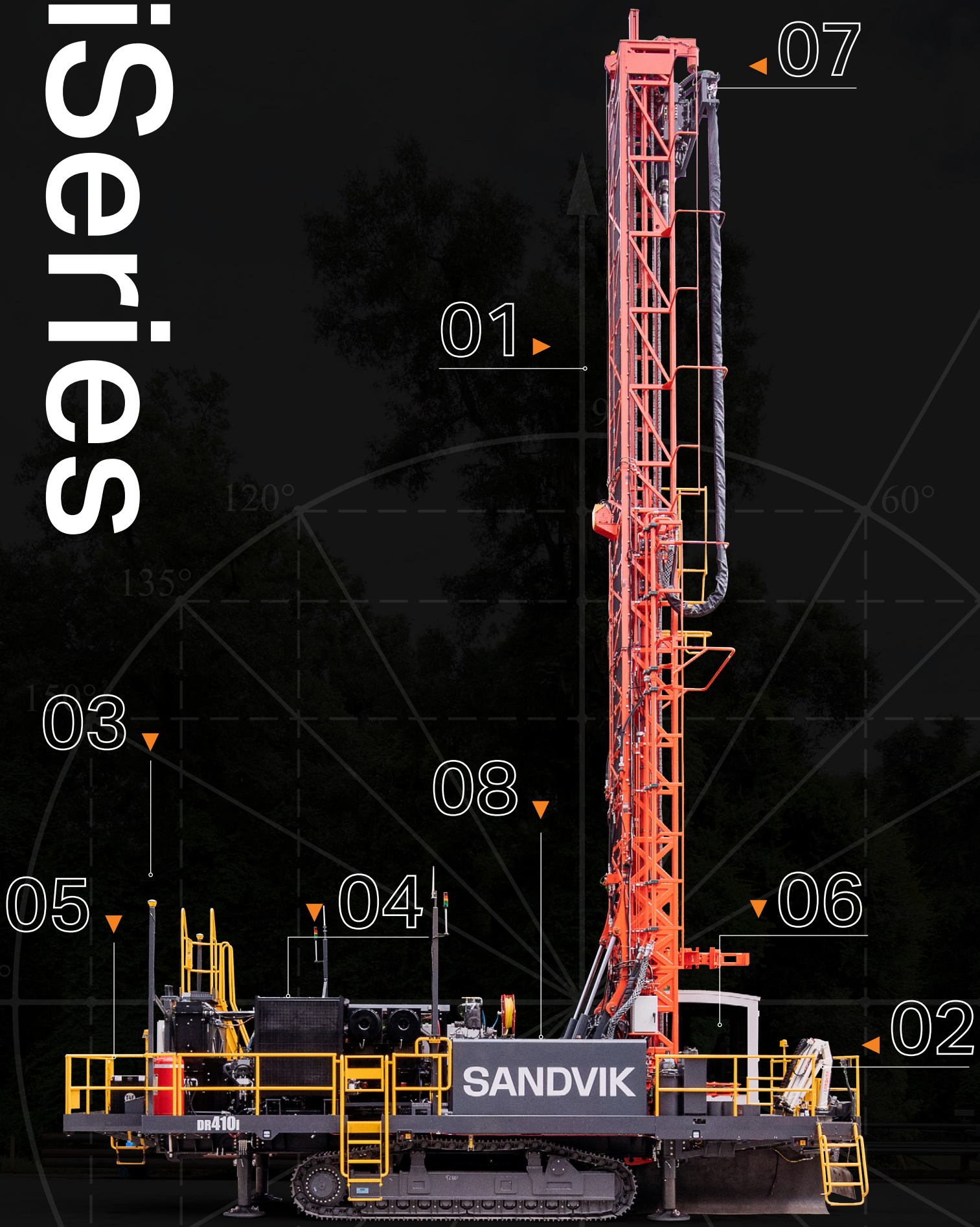
CHOOSING THE RIGHT RIG FOR THE JOB

INTELLIGENT RIGS. IMPRESSIVE RESULTS.

The iSeries family of rotary blasthole drill rigs represents the next generation of surface drilling technology. Designed for what lies ahead, these automation capable drills are equipped to meet your needs today and in the future.

iSeries drill rigs simplify operations using automated functions while an intuitive user interface delivers a consistent operator experience across the iSeries range. The comprehensive Sandvik Intelligent Control System Architecture (SICA), a key component of our iSeries family, provides the operator with real-time feedback regarding the machine's performance and health, along with tools for drill planning, reporting and analysis ensuring quality and consistency hole-to-hole.

i Series



MAST

The iSeries mast design offers increased strength, durability and productivity. The chain feed system delivers cleaner holes which improve blast quality at a lower cost.

It's no wonder that our state-of-the-art mast design is one of the top reasons our iSeries rigs are unmatched by competitors.

KEY FEATURES

FEATURE	BENEFIT
Chain Feed System	Improves hole quality which reduces operating costs and improves blast quality, lowering maintenance costs
Timing Sprocket	Synchronizes left and right chains ensuring consistent feed
Auto Chain Tensioning	Supports extended chain life while increasing productivity via reduced scheduled downtime
Mast Access*	Dedicated mast access with enhanced safety enables thorough mast inspections helping reduce downtime

**Optional*

PIPE AND TOOL HANDLING

02

All iSeries drill rigs are equipped with labor saving pipe and tool handling features which extend tool life, improve productivity and reduce total cost of ownership.

KEY FEATURES

FEATURE	BENEFIT
Breakout System	The Sandvik-designed system** reduces injury potential and offers safer bit changes
Deck Crane*	Allows for one man operation for bit change without manual lifting
Auto Thread In/Out	Increases tool joint life leading to reduced operating costs
Pipe Centralizer/ Traveling Centralizer	Increases life of rig components and improves accuracy and quality of drilling vertical and angle holes

**Optional*

***Sandvik is the only OEM to offer a self-designed system*

AUTOMATION AND TECHNOLOGY

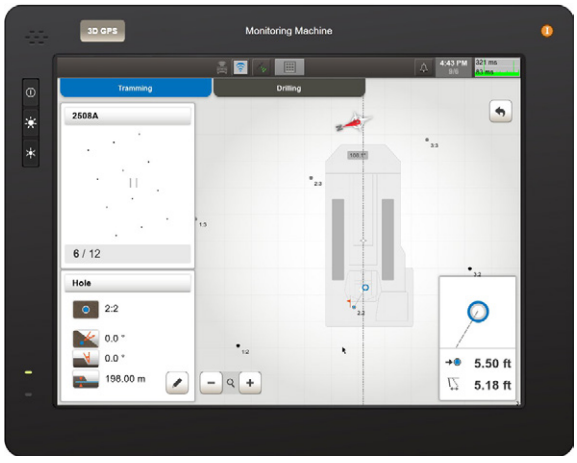
The scalable iDrill automation platform provides automation options and digital services designed to speed up your production process and support your mine operations. You can use as much or as little technology as you need, knowing more is available when you need it.

Performance iDrill and Navigation iDrill work together to produce accurately placed, consistently clean, precision-drilled holes delivering improved fragmentation, downstream throughput, productivity and asset utilization.

KEY FEATURES

FEATURE	BENEFIT
High-precision Navigation	Improves blast quality/ fragmentation, reduced drilling time and increased productivity and throughput
Auto Mast	Angle drilling accuracy can improve fragmentation while reducing stress on the mast structure
Auto Level	Precision leveling improves productivity and reduces structural stress
Auto Drill	Allows faster, more precise drilling delivering improved fragmentation, improving truck/shovel cycle times and reducing operational costs
Auto Pipe Handling	Increases tool life and provides pipe change consistency, saving on operating costs for maintenance and component replacements
Connectivity to Third Party Data	OEM agnostic, streamlining flow between applications and automating data transfer
AutoMine Capable	Allows faster implementation of automated solutions with scalable options, so you can add functionality as needed

**Check with factory for available features on each model*



DR410i control screen

INTELLIGENT FEATURES

04

iSeries rigs are loaded with intelligent features, helping operators take the guesswork out of daily activities. Features like Independent Cooler Control, On-board Diagnostics, System Health, Wireless Remote Control, SICA Control System and Electronic Depth Counter help maintain operator awareness. This provides operators the ability to identify and rectify potential issues as (or before) they arise, ensuring production while limiting down-time and cost.

KEY FEATURES

FEATURE	BENEFIT
Independent Cooler Control	Precision control over cooler temperature helps improve component life and reduces fuel burn, system load and noise
On-board Diagnostics	Reduces troubleshooting time to increase productivity
Remote Factory Diagnostics	Allows factory experts to assist with increasing availability via remote troubleshooting assistance
Wireless Remote Tramming	Enhances safety by removing operators from dangerous environments
SICA Control System	Provides consistent operating experience across iSeries machines with proven reliability and enhanced control of critical rig functions
Electronic Depth Counter	Precision hole depth improves blast quality/fragmentation

MAINTENANCE

The iSeries family of drill rigs was designed to be maintenance friendly, reducing the time needed for scheduled and unscheduled tasks. By minimizing the need for maintenance personnel contact with the drill, you greatly improve your return on investment.

KEY FEATURES

FEATURE	BENEFIT
Accessibility	Allows easy access to frequently maintained components
Centralized Service Center	Reduces time for fluid fills, improving utilization and reducing the chance for fluid spills and negative environmental impact
Off-board Diagnostic Connection	Reduces time to remedy system errors with a direct connection to factory experts
Does Not Require DEF	Reduces service requirements with less fluids to manage, lowering operating costs
Sandvik Support	Tailor options to fit your requirements with specialized OEM trained technicians
Centralized Lubrication System	Extends component life reducing maintenance costs and increasing uptime
Sandvik Designed Tracks	Robust design improves track life

ERGONOMICS AND SAFETY

Safety remains our #1 concern. Sandvik iSeries drills utilize key safety features to help reduce risks to mine personnel operating in dangerous environments. We've also implemented special ergonomic features to enhance the operators interface with the machine, leading to improved operator ease, comfort and production.

KEY FEATURES

FEATURE	BENEFIT
Quiet Cabin	Provides more comfortable environment for operators
In-seat Controls, GUI	Ergonomic for operators' comfort with instant access to drill information and diagnostics
Protective Features Throughout	Helps reduce chances of operator error, improving safety and reducing downtime
Dual Point Compressor Hose Harness	Improves safety and compliance
Bit Change Above Deck & Bit/Hammer Storage	Improves safety and accessibility
Safari Roof*	Provides better climate control, creating a more comfortable environment for operators
Oversized Drillers Window	Improved visibility reduces error potential and machine damage

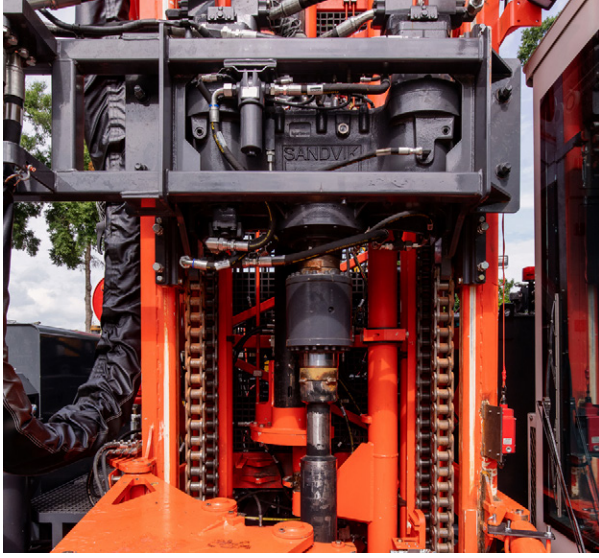
**DR412i and DR416i models*

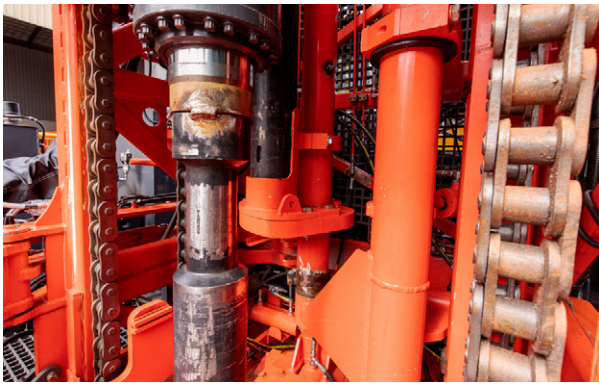
ROTARY HEAD

We've redesigned the rotary head for the iSeries, allowing for extended fluid and component life. Faster, safer replacements reduce maintenance intervals and limit chance of potential injury.

KEY FEATURES

FEATURE	BENEFIT
Rotary Head Fluid Filter	Increases rotary head and fluid life
Quick Change Rotary Head	Provides faster and safer replacements



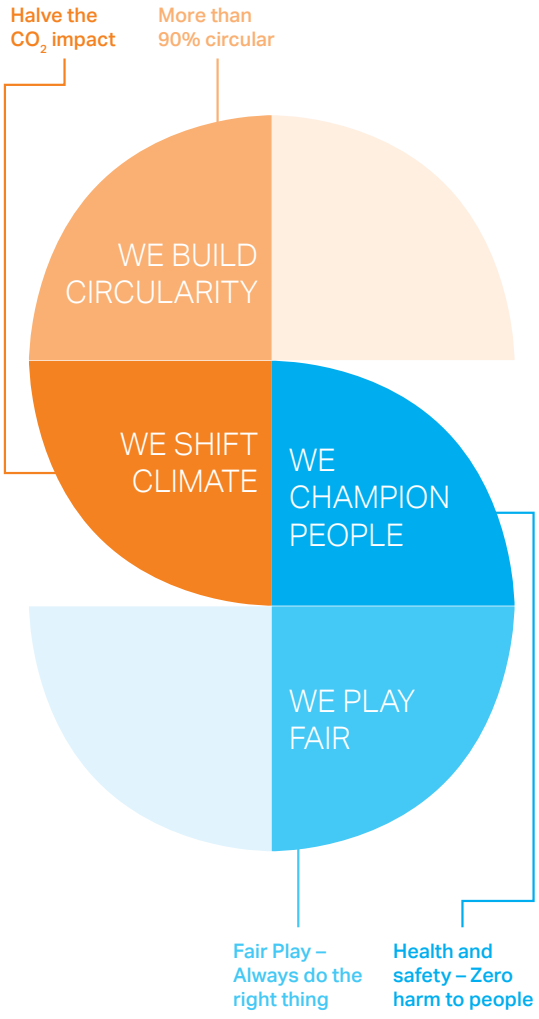


SUSTAINABILITY

Sandvik makes sustainability a priority, and our iSeries family is no exception. With intelligent system load management, our iSeries drills help reduce carbon emissions while extending component life. Not only can you feel good about reducing your environmental footprint, reduced fueling events and system load can all lead to lower operating costs—making it a win-win.

KEY FEATURES

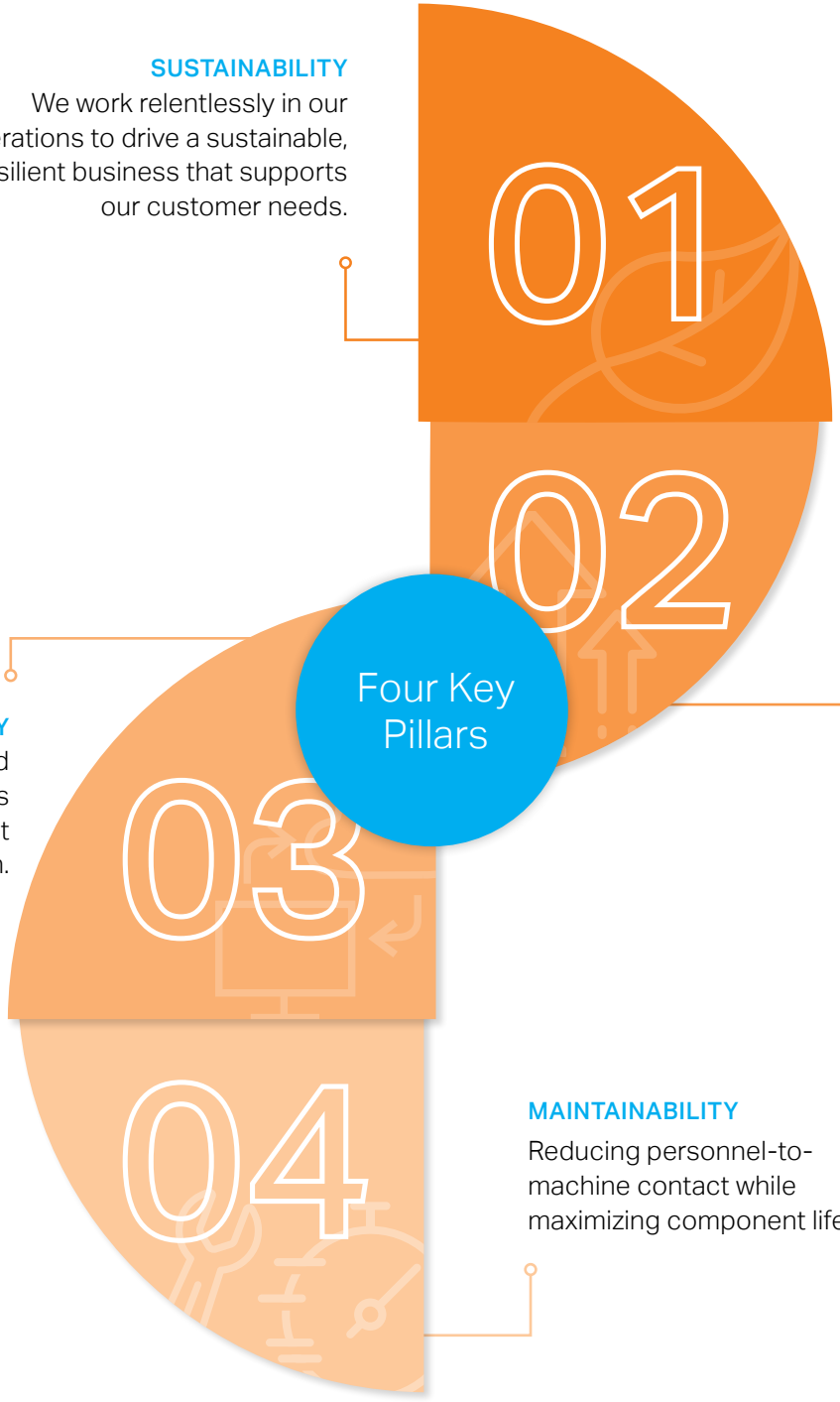
FEATURE	BENEFIT
Compressor Control System	Reduces noise, fuel burn, system load and environmental footprint while extending engine and compressor life
Operational Readiness Document	Formalized plan for drill implementation creates a faster ROI
Structural Testing	Increases confidence in machine durability, reliability and quality



iSERIES FOUNDING PRINCIPLES

The iSeries family of rotary blasthole drill rigs represents the next generation of surface drilling technology. Designed for the challenges of tomorrow, these automation capable drills are equipped to meet your needs today and in the future.

The four key principles that led to the innovative design e orts that brought the iSeries to life are:



SUSTAINABILITY
We work relentlessly in our operations to drive a sustainable, resilient business that supports our customer needs.

PRODUCTIVITY
Advanced design and technology to help meet your production targets.

TECHNOLOGY
Our iSeries units and off boa d technologies take the guesswork out of your daily operation.

MAINTAINABILITY
Reducing personnel-to-machine contact while maximizing component life.

iDRILL SCALABLE AUTOMATION PLATFORM

The scalable iDrill on-board automation platform provides automation options and digital services designed to speed up your production process and support your mine operations. You can use as much or as little technology as you need, knowing more is available when you need it.

AUTOMINE® (REMOTE OPERATION)

AUTONOMOUS

- Fully automated drilling cycle with hole-to-hole tramming

Fully autonomous drilling cycle and hole-to-hole tramming boosts productivity, lowers operating costs and enhances safety

CONTROL ROOM

- Operating from a central control center
- Fully automated drilling process for multiple drill rig operation via control room-based operating station

Single rig operator becomes a fleet supervisor, capable of controlling multiple highly-automated rigs from a control room ensuring high productivity with high level of safety

LINE-OF-SIGHT

- Operator in a movable drill station with line-of-sight view to drilling area
- A single operator able to control up to 3 rigs from the same station

Increased operator productivity

Keeps mine personnel out of the hazardous areas

iDRILL (ONBOARD OPERATION)

NAVIGATION

- High-precision drilling with TIM3D Navigation System
- Navigate based on drill plan with integrated drill to elevation capability
- Wireless plan transfer and basic reporting

Up to 23%* increased productivity compared to manual operation

Sandvik TIM3D drill navigation system guarantees precise drilling process from tramming and hole positioning to actual drilling

PERFORMANCE

- iSeries drill rig operated from cabin
- Automated drill functions (e.g. auto drill, auto level, etc) capable of being executed with the push of a button

Up to 15%* increased productivity compared to manual operation

Improved drilling accuracy

Increased operational safety

iDRILL PACKAGE FEATURES IN DETAIL

	FEATURE	DESCRIPTION	PERFORMANCE iDRILL	NAVIGATION iDRILL	LINE OF SIGHT AUTOMINE	CONTROL ROOM AUTOMINE	AUTONOMOUS AUTOMINE
ONBOARD AUTOMATION	Automated Mast Incline	Automate the rising/lowering of the mast in 5° increments to 20° with the extended mast and 30° with the standard mast.	✓	✓	✓	✓	✓
	Automated Levelling	Brings the drill rig to a stable, level position prior to drilling and unlevels after drilling completes.	✓	✓	✓	✓	✓
	Hole Collaring Automatics	Hole collaring algorithm reduces the chance of hole collapse during drilling.	✓	✓	✓	✓	✓
	Adaptive Auto Drill Functionality	Automatically adjusts drilling parameters during operation based on ground conditions.	✓	✓	✓	✓	✓
	Automated Pipe Add/Removal	Ability to automatically add and remove drill pipe until desired depth is reached.	✓	✓	✓	✓	✓
	Intelligent Hole Finishing Sequence	Automated functionality to clean the finished hole ba ed on the depth and/or the final hole el vation.	✓	✓	✓	✓	✓
NAVIGATION	TIM3D High Precision Navigation	GPS based hole navigation system that assists the operator in positioning the drill bit to within 10 centimeters.		✓	✓	✓	✓
	Onboard/Wireless Pattern Creation	Capability to wirelessly transfer drill patterns, load drill patterns via USB, or create a pattern onboard using the current bit position.		✓	✓	✓	✓
	Delay Status Tracking*	Ability to track operator/equipment states/reasons throughout a shift based on an operations time utilization model.		✓	✓	✓	✓
	Driller's Notes Hole Logging*	Allows the operator to collect and store drilling information at specific de ths while drilling.		✓	✓	✓	✓
	Measurement While Drilling*	Logging of drilling component measurements for future analysis while drilling.		✓	✓	✓	✓
	Onboard Diagnostics	Onboard diagnostics of alarms and system health parameters.		✓	✓	✓	✓
REMOTE AUTOMATION	AutoMine® Onboard Kit	Hardware components on the drill allow connectivity and access to the onboard controls and automation features.			✓	✓	✓
	AutoMine®: ACS Safety System	Safety system with physical safety key lock-out and remote E-stop.			✓	✓	✓
	AutoMine®: TeleControl	Control of all rig functions with same controls.			✓	✓	✓
	AutoMine®: InfoDrills	An overview of the key info from all rigs in the fleet and abili y to switch control to a di erent drill (FleetView).			✓	✓	✓
	AutoMine®: InfoView	High-quality video and audio.			✓	✓	✓
	AutoMine®: InfoMap	Drill plan view to show location of all rigs and drill patterns with touch-screen move, zoom and rotate.			✓	✓	✓
	Obstacle Detection System (HW) Kit	Hardware components on the drill providing feedback of area around the drill to the control system for obstacle detection.				✓	✓
	AutoMine®: InfoGeoPhoto	Ability to load georeferenced photos as the background image for the drill map view with on/off oggling.				✓	✓
	AutoMine®: TeleGeofence	Predefined a ea where remote-operation allowed only inside the area. System prevents moving the rig outside of the area.				✓	✓
	AutoMine®: TeleDetect*	Sandvik Obstacle detection system provides improved awareness of obstacles for remote operator.				✓	✓
	AutoMine®: Autocycle	Autonomous drilling cycle where work proceeds through drilling cycle including hole-to-hole tramming without operator involvement.					✓
	AutoMine®: AutoPlanning	Plan the rig work sequence by selecting holes or adding waypoints. System defines the actual t amming path. Planning is enabled while rig is working.					✓
	AutoMine®: AutoGeofence	Predefined a ea where autonomous tramming is allowed only inside the area. Proximity to area boundary stops a rig during auto tramming.					✓
	AutoMine®: AutoDetect*	Sandvik Obstacle detection system stops & interlocks tramming when there are obstacles in the STOP-zone.					✓

*Option

THE DR410i

PRODUCTIVITY UNMATCHED

The DR410i blasthole drill provides mine operators with a compact, powerful, and technologically advanced drill producing clean, consistent holes enhancing productivity with a low total cost of ownership.

MACHINE SPECIFICATIONS DR410i

	METRIC	IMPERIAL
Hole diameter	152-251 mm	6 - 9 ⅞ in
Maximum hole depth - Std. Mast	46.6 m	153 ft
Maximum hole depth - Ext. Mast	32.3 m	106 ft
First pass capability - Std. Mast	10 m	33 ft
First pass capability - Ext. Mast	14 m	46 ft
FEED		
Maximum pulldown	222.4 kN	50,000 lbf
Weight on Bit	258 kN	58,000 lbf
Feed rate up	0-33.5 m/min	0-110 ft/min
Feed rate down	0-25.6 m/min	0-84 ft/min
POWER GROUP		
Engine options:		
Cummins QSK19 (Non tier 4)	563 kW	755 hp
CAT C18 (Non tier 4)	521 kW	700 hp
CAT C18 (Tier 4)	563 kW	755 hp
Compressor options:		
Rotary drilling	45.3 m³/min @ 6.9 bar	1,600 scfm @ 100 psi
DTH drilling	41 m³/min @ 24.1 bar	1,450 scfm @ 350 psi
ROTATION		
Power	112 kW	150 hp
Speed	0-160 rpm	

THE DR412i

DEPENDABILITY DEFINED

The DR412i blasthole drill is designed to deliver dependable penetration and greater return on investment for rotary and DTH holes.

From on-board automation that increases drilling efficie y, to full autonomous operation; this scalable solution is designed to meet customer needs both now and far into the future.

MACHINE SPECIFICATIONS DR412i

	METRIC	IMPERIAL
Hole diameter	203 - 311 mm	8.0 - 12.25 in
Maximum hole depth - Standard Mast	76 m	249.5 ft
Maximum hole depth - Extended Mast	33.1 m	108.5 ft
First pass capability - Standard Mast	12 m	39.5 ft
First pass capability - Extended Mast	17.8 m	58.5 ft
FEED		
Maximum pulldown	356 kN	80,000 lbf
Weight on bit	407 kN	91,500 lbf
Feed rate up/down - Extended Mast	0 - 43.9 m/min	0 - 140 fpm
Feed rate up/down - Standard Mast	0 - 41.1 m/min	0 - 135 fpm
Feed rate down - Multi-pass	0 - 41.2 m/min	0 - 135 fpm
ENGINE OPTIONS		
Cummins QST 30 (Non Tier 4)	783 kW	1,050 hp
CAT C27 (Non Tier 4/Tier 4)	708 kW	950 hp
COMPRESSOR OPTIONS		
Rotary Drilling	56.6 m^3/min @ 6.9 bar	2,000 SCFM @ 100 psi
Rotary Drilling (option)	76.6 m^3/min @ 5.5 bar	2,600 SCFM @ 80 psi
DTH Drilling	41 m^3/min @ 24.1 bar	1,450 SCFM @ 350 psi
DTH Drilling (option)	42.4 m^3/min @ 34.4 bar	1,500 SCFM @ 500 psi
ROTATION		
Power	193 kW	260 hp
Speed	0-150 RPM	

*Consult factory for options and alternate power group arrangements

THE DR416i

BIGGER. SMARTER. STRONGER.

Intended for large diameter rotary drilling, the DR416i blasthole drill combines power and intelligence, taking the guesswork out of daily operation and delivering a reliable high-yielding production environment.

The DR416i blasthole drill delivers the longest single-pass capacity mast in its class, along with a consistent maximum depth across all recommended pipe diameters.

MACHINE SPECIFICATIONS DR416i

	METRIC	IMPERIAL
Hole diameter	270-406 mm	10 5/8 -16 in
Maximum hole depth	42.4 m	139 ft
First pass capability	21 m	69 ft
FEED		
Maximum pulldown	534 kN	120,000 lbf
Weight on bit	703 kN	158,000 lbf
Feed rate up/down	0 - 41 m/min	0 - 135 fpm
POWER GROUP		
Engine Options		
Cummins QSK50 (Non tier 4)	1,118 kW	1,500 hp
COMPRESSOR OPTIONS		
Rotary Drilling	109 m^3/min @ 5.5 bar	3,850 SCFM @ 80 psi
ROTATION		
Power	193 kW	260 hp
Speed	0-180 RPM	

*Consult factory for options and alternate power group arrangements

PARTS AND SERVICES

Sandvik Mining and Rock Solutions Parts and Services division is committed to your productivity and ready to act 24 hours a day, 365 days a year to keep your Sandvik equipment running.

Around-the-clock service, qualified engineers and genuine components and parts on demand come together to minimize your unplanned downtime. My Sandvik customer portal and customer support center delivers you 24/7 support, no matter where you are. You can access your fleet information, request quotations, place orders and much more, any time.

SANDVIK ROCK TOOLS

When using a selection of rock tools, you need to know that they are reliable. Sandvik is experienced in both using and supplying high quality rock tools, and offer an extensive range to cover all of your needs and requirements.

SANDVIK DTH DRILLING TOOLS

For efficient wn-the-hole (DTH) drilling, Sandvik o ers high performance drilling tools to increase your productivity and reduce your total operation cost.

SANDVIK ROTARY DRILLING TOOLS

Sandvik offers a wide range of rotary drilling tools needed to support our customers entire process, offering a complete drill string for rotary applications, Sandvik has the product to meet your specific demands.

ROCK TOOLS SERVICES

In addition to supplying your operation with the premium brand of rock tools, our range of added services and digital solutions support your drilling operations, everyday – all year round. And we can also take full responsibility for the supply and life cycle management of your tools with our Rock Tools Contract Services.

CARBIDE RECYCLING

The global shortage of raw materials inspired the Sandvik scrap recycling program, an initiative that addresses today's increasing environmental concerns while also benefiting customers' bottom line.

Find out more at
https://home.sandvik/en/products-services/