

Sandvik DTi series On the fast track



Brilliant solutions grow with extensive experience

RESPONDING TO YOUR TUNNELING CHALLENGES

A tunneling project is a race against time and costs. You have to get the project right and get it right from the start. It requires deep knowledge and years of experience in underground construction, and it requires a proper range of equipment that work, whenever and wherever needed. Therefore, at this very moment you will find Sandvik equipment and Sandvik specialists working hard everywhere in the world, exploring the possibilities for process and technology development and supporting you in your daily work.

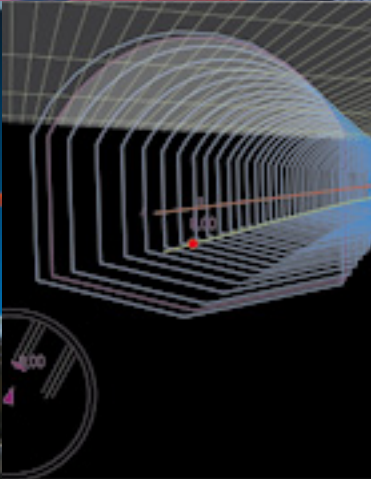
A NEW LEVEL OF TUNNELING PERFORMANCE

As the offspring of the well-known Tamrock Datamatic and Axera T Data tunneling jumbo families, the Sandvik DTi series is the spearhead of 50 years of experience, research and development in drilling at Sandvik. Designed to be **fast, accurate and user-friendly**, the DTi series jumbos produce **excavation result of the highest quality, with the lowest costs**.

The Sandvik DTi series tunneling jumbos include four different models for excavation of 16 – 203 m² cross sections, including face drilling, bolt hole drilling, and mechanized long-hole drilling. In order to produce the highest repeatability and the best excavation predictability, the DTi series are **designed for automatic use**. But, for added flexibility, there are also a range of practical features allowing the **operator to finetune the process on line** if the rock conditions so require. This means that a single operator can easily manage the jumbo and all its drilling booms.

The DTi jumbos utilize a new tunnel planning software, Sandvik iSure, which offers a totally new and efficient way of simultaneously working with blasting and drilling pattern. The iSure ensures **optimized blasting as per plan** and supplies better pull-out, decreased need for scaling, increased rock loadability and smoother collaring in the following round. This simply means high excavation quality and a tunneling project finished ahead of time.

The intelligence features in the DTi jumbos also include **collection of production and process information** such as round data, cumulative production data and drilling parameters logging that, in turn, help production logistics planning, scheduled maintenance and productivity improvement.



DEDICATION GIVES THAT EXTRA MILE

The DTi series sends you to the forefront of high quality excavation. There is no detail in the DTi tunneling jumbos that would not be well-thought-out – Sandvik engineers have spent hours and hours on a myriad of tunneling sites to learn about the requirements that underground construction sets on a machine.



CLEVER FEATURES FOR A PERFECT RESULT

The Sandvik DTi series jumbos high tech features guarantee the best excavation result.

- Lock-to-target** Helps finding the hole position quickly and accurately
- QuickStep** Finetunes drilling progress steps during automatic mode
- Dynamic correct** Redirects drilling during boom movement and helps keeping the hole bottom in place even if the hole cannot be started at the planned position

Uncompromising design with state-of-the art details

FAST CYCLES WITH A NEW LEVEL OF PRECISION

The Sandvik DTi series tunneling jumbos' advanced control system, powerful high frequency HFX5T rock drills, robust booms and advanced drill string guides make them fast and accurate drillers. This translates into significantly lower tunneling costs.

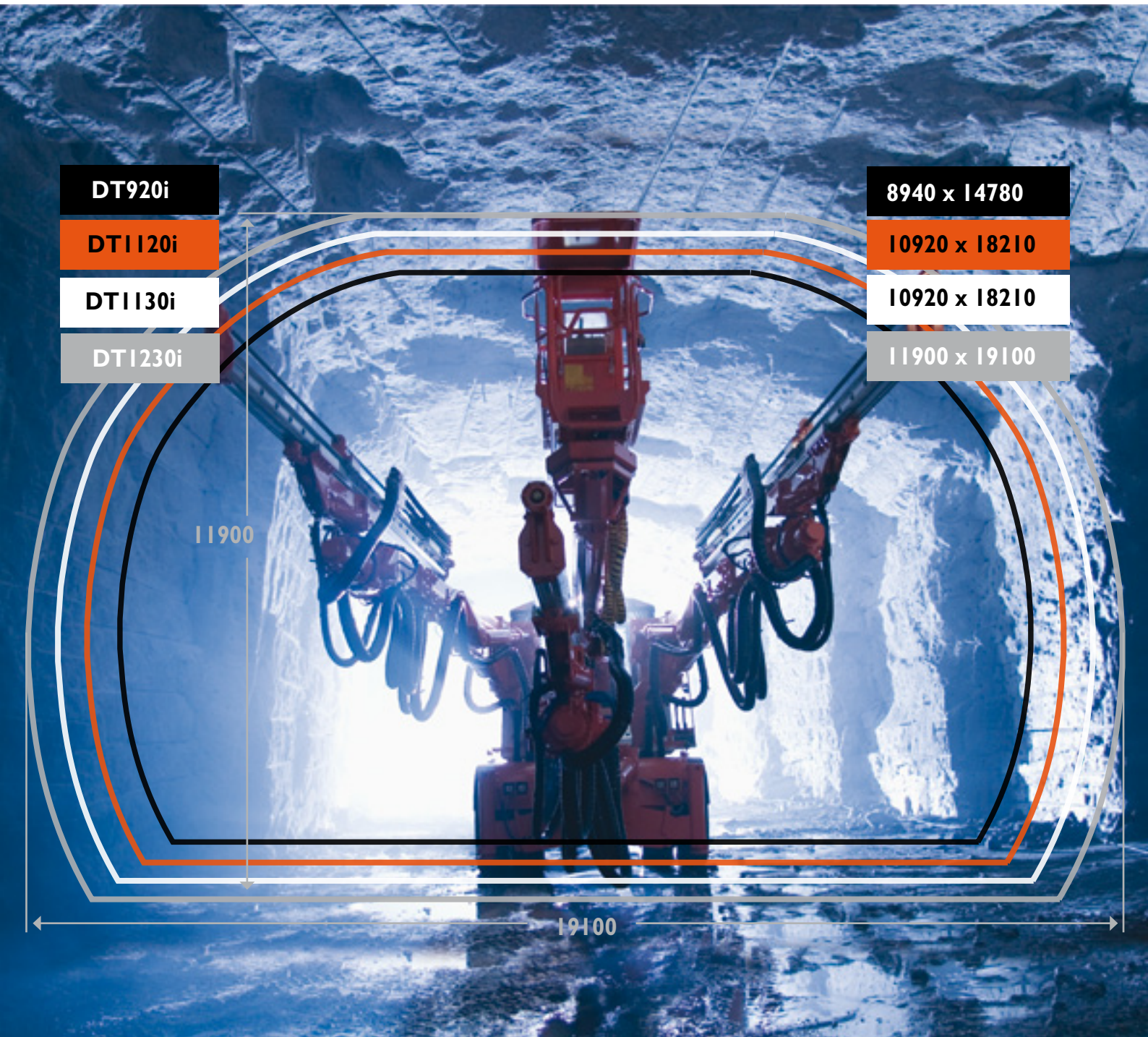
The new, user-friendly control system includes easy-to-use screen views for a wide range of functions and sensitive drilling controls offer a smooth working process for the operator. With the DTi series automatic mode, the jumbo works as per the designed drill plan and drilling sequence which greatly adds to the predictability of the tunneling process.

In specific rock conditions, though, there is often a need to **finetune the drilling process** in order to ensure the accuracy of the excavation process. The Sandvik DTi series offers several advanced, practical features that allow the operator to take control of the process during the automatic mode: Lock-to-Target helps the operator to rapidly find the correct hole position, QuickStep allows the operator affect the operation steps, and Dynamic Correct continuously redirects drilling when the booms are moving, keeping the hole bottom as planned. The operator can also adjust drilling power level, feed and rotation speed on line when appropriate.

Adding to the excellent accuracy of the DTi series is the **boom control**. It is based on a proven and widely tested deflection compensation but improved further with new ingenious features: Roll-over joint and boom location compensation model. Boom location compensation accommodates the degree in which the booms are open.

The DTi series' advanced accuracy features also include a new type of **front centralizers** that offer the **best possible drill steel guidance** in the collaring phase. In addition, the drill bit remains inside the front guide in the collaring; this allows the bit to get as close to the rock as possible.

It is not enough, though, that the machine is accurate when it leaves the factory – it needs to stay that way even after heavy use. Therefore, another great feature in the DTi series is the possibility for **advanced factory calibration in job site conditions**.



DT920i

DT1120i

DT1130i

DT1230i

8940 x 14780

10920 x 18210

10920 x 18210

11900 x 19100

11900

19100

HIGH POWER DRILLING

Powerful, high frequency HFX5T rock drills with 75 kW power packs guarantee fast penetration. Together with tough and hard Sandvik rock tools, they offer a drilling performance second to none.



Coverage	10 - 70 m ²	DT920i
Rock drill	2 x HFX 5 T (24.5 kW)	
Control system	iDATA+	
Weight	29 000 kg 33 000 kg with basket boom	
Width	2.58 m	
Length	12.49 m -14.35 m (41 - 47 ft feeds)	
Total input power	180 kW	
Engine	MB OM904 LA, 110 kW	

Coverage	12 - 110 m ²	DT1120i
Rock drill	2 x HFX 5 T (24.5 kW)	
Control system	iDATA+	
Weight	37 700 kg 40 600 kg with basket boom	
Width	2.94 m	
Length	14.68 m -16.40 m (48-53 ft feeds)	
Total input power	180 kW	
Engine	MB OM904 LA, 110 kW / MB OM906 LA, 170 kW	

Coverage	20 - 183 m ²	DT1130i
Rock drill	3 x HFX 5 T (24.5 kW)	
Control system	iData+	
Weight	40 500 kg basic 43 400 kg with basket boom	
Width	2.99 m	
Length	16.74 m -18.74 m (55-61.5 ft feeds)	
Total input power	270 kW	
Engine	MB OM904 LA, 110 kW / MB OM906 LA, 170 kW	

Coverage	20 - 203 m ²	DT1230i
Rock drill	3 x HFX 5 T (24.5 kW)	
Control system	iDATA+	
Weight	45 500 kg 49 500 kg with basket boom	
Width	3.05 m	
Length	16.74 m -18.74 m (55-61.5 ft feeds)	
Total input power	270 kW	
Engine	MB OM906 LA, 170 kW / MB OM904 LA, 170 kW	







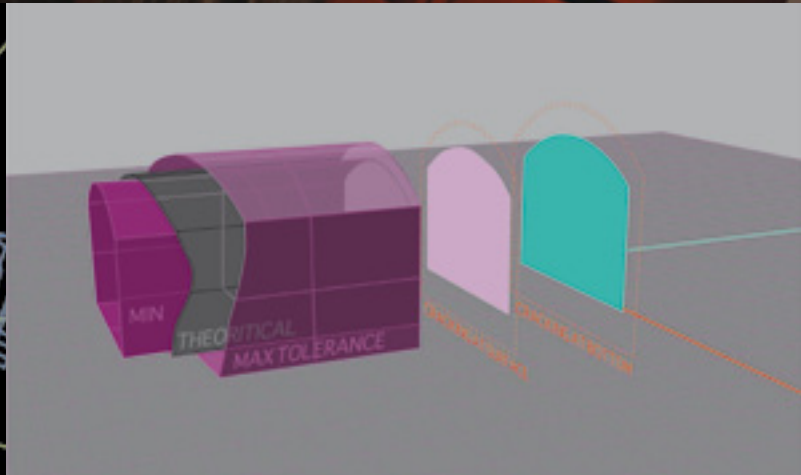
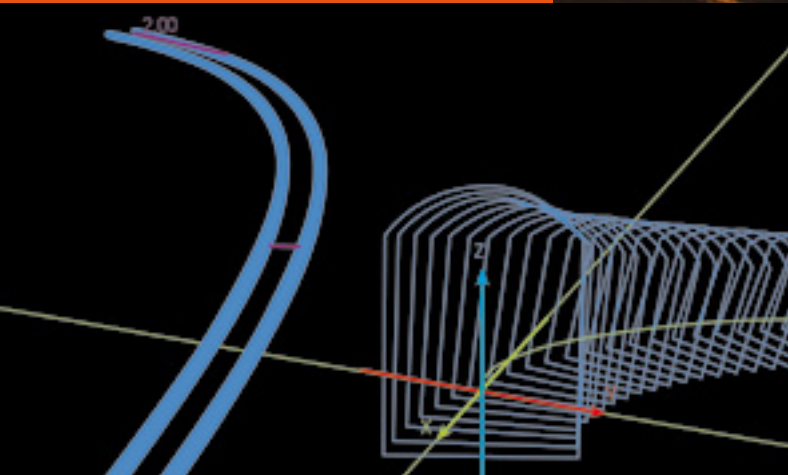
AHEAD OF THE PACK

The Sandvik DTi series jumbos are designed to be fast, accurate and user-friendly. They produce excavation result of the highest quality, with the lowest costs. Ahead of time.





Accurate excavation means low costs



A revolution in accuracy offers a competitive edge

The Sandvik DTi series utilizes a new tunnel planning software, Sandvik iSURE, which offers an **efficient way of designing blasting and drilling pattern together**. Offering a range of revolutionary features that supply optimal plan designs as well as allow quick editing of the designs when required, the iSURE guarantees high excavation quality and, therefore, low project costs.

The power and strength of the iSURE lies on planning the drilling pattern in terms of blasting and excavation work. The iSURE ensures optimized blasting as per plan and supplies better pull-out, decreased need for scaling, increased rock loadability and smoother collaring in the following round.

The iSURE offers a project tree for combining all tunnel plans in one project. A tunnel plan, in turn, combines a curve table, tunnel profiles, drill plans, lasers and data collection files, all of which can also be controlled separately. It also supplies two-by-two views for project, tunnel line, drill and blast design and reporting.

The iSure uses explosive power and specific charging requirement of the different parts of the tunnel cross section, weight and power of explosive charges in holes as well as the depth of the fracture zones as the basis for the drilling and blasting pattern design. Additionally, the fracture zone can be visualised during the preparation of the pattern. Another major strength in the iSURE is that it utilizes the level of hole bottoms for calculating the hole spacing and burden. In the drill pattern, the iSURE offers a possibility to define a range of different hole types that utilize their own parameters. This makes the excavation process faster and more accurate.

The iSure software consists of four separate modules: **iSURE Tunnel**, **iSURE Report**, **iSURE Analysis** and **iSURE Bolting**. The Tunnel module includes drill and blast design, drilling pattern design, longhole pattern, tunnel line and project files. The Report module supplies a round report for drilling management and process development, and the Analysis module offers measuring-while-drilling data collection and reporting for analyzing rock structure and characteristics. This data can be exported into Microsoft Excel also. The bolting module supplies design of up to 5 bolting fans with hole placement and direction, tools for hole generation and fan management.

Daily comfort boosts your project productivity

THE CAB - A COMFORTABLE SAFETY ZONE FOR THE OPERATOR

The modern FOPS-certified safety cabin in the Sandvik DTi series, with a 20 per cent larger-than-before window surface, gives a feeling of space and provides excellent visibility in every drilling application, even when the cabin is not elevated. High power xenon lights for drilling and tramming, an operator seat placed as close to the windshield as possible and effective windshield wipers add to the visibility.

An ergonomically designed workstation with **armrest integrated, sophisticated controls**, advanced air filtration and optimized flow together with excellent noise – under 75 dB (A) - and vibration control system offer the operator **a pleasant and ergonomic working environment**. A separate tramming interface takes comfort even further, and powerful engine guarantees fast tramming.

SIMPLICITY OF SERVICE

The Sandvik DTi design focuses on the ease of service. The components are damage-protected, and all daily service points and most of the components are accessible from the ground level. The machines are easy to maintain; rock drill modules can be serviced on the feed beam, and all hoses on the booms are well-organized.

The intelligence features on the DTi series also include condition monitoring. The **built-in self diagnostics system** includes, among others, a real-time self-check of all computer modules, a boom movement comparison, and drilling pressure and function monitoring. The diagnostics system shows where the fault is and greatly helps service personnel in identifying the actions needed.



All daily service points are accessible from the ground level



Boot washer and stair lights improve comfort and safety

Smart services benefit your bottom line



GLOBAL NETWORK

Sandvik has 3 500 service technicians spread in every corner of the world. They are only a local phone call away when you need help.



Strong backup gives you a good night's sleep

SUPPORT WHERE IT COUNTS. ON THE JOB SITE

Service is, of course, a matter of being available when problems occur. But we at Sandvik prefer seeing it more as an investment; effective service is the key to profitable tunneling.

No matter how good a machine is, at some point it will need service. Avoiding lengthy and costly downtime is a prerequisite for a smoothly running operation. The trick really is to be proactive. This is where excellent machine serviceability and advanced features such as **self-diagnostics** and **USB updating systems** come in handy - they help you make well-grounded and preventive maintenance plans.

Investment in preplanned service will help you protect your business from unexpected risks. Sandvik **service contracts** let you concentrate on your main processes. They come in different levels so you can choose a program that best suits your needs. For many of our customers we have tailored maintenance programs designed to eliminate unnecessary downtime.

Sandvik drill steel, ready-made maintenance kits and genuine spare parts ensure trouble-free drilling and maximize productivity.

THERE IS ALWAYS SOMETHING MORE TO KNOW

The new Sandvik operator training concept offers you authorized trainers and a modular curriculum – you can choose which modules suit best for your purposes. You can train your skills in practice with real machines as well as learn about the theory of machine maintenance to help you in managing the maintenance process more efficiently.

Productivity in Action

Sandvik is a high-technology engineering group with world-leading positions in selected areas – tools for metal working, advanced materials technology, and mining and construction. We employ more than 47 000 people and are represented in 130 countries.

Sandvik Mining and Construction represents one third of the overall Sandvik Group and serves a broad range of customers in construction, mineral exploration, mining and bulk materials handling. Our construction expertise covers quarrying, tunneling, demolition and recycling, and other civil engineering applications. Our mining products and services support customers on the surface and under ground, in all mineral, coal and metal mining applications from exploration to ore transportation.

