

African attraction

Italian drill-rig manufacturer Massenza's sales manager Gabriele Pavan talks about successful orders and the pull of the African continent

Q What is your latest exploration drilling equipment?

In July 2012, Massenza delivered one of its biggest machines – the model M.I.45 drilling rig – to Australia. This machine will be utilised for coring applications to depths up to 2,600m (with HQ rods).

The machine is designed to meet Australia's high safety standards. An automatic arm charger carries out the loading of the rods and only two people are needed to manage all the movements of the rig. While one operator controls the charger, the other can place the rotary head in the working position, decreasing the time needed for the rod-loading operations. The rig is mounted on a Mercedes truck designed and built to fulfil the Australian Normative.

This project took almost one year. The company had to redesign its M.I.45 for mineral research applications while maintaining its standard of reliability and



strengths in the water-well drilling field.

The main order in 2012 came from Ethiopia where Massenza won international tenders for the supply of 14 rigs for water wells, with pull-back ranging from 28t to 50t, and six service rigs.

Q Who are your customers?

Massenza rigs are sold all over the world: in Australia, Africa [Algeria, Cameroon, Ethiopia, Ghana, Mauritania, Nigeria and South Africa], the Middle East, the US, Russia, and of course Europe and many other places. Massenza customers are all different: it could be a little company, a



Rigs destined for the Ethiopian market (M.I.50, M.I.28 and service rigs)



Massenza export destinations in 1990 and 2010

family-run business or a multinational company. Without any doubt, Africa provides the highest demand today.

Q What challenges is the market facing?

The company struggles every day trying to spread its market in every region of the world. This is the main challenge. Massenza's competitors, both Italian and international, are strong. But the company sees the competition as a way to improve its technology and quality. Therefore, for Massenza 'competition' is a synonym for 'improvement'. ▶

"Without any doubt, Africa provides the highest demand today"

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M.I.45 drilling rig for high-depth coring applications



Q Have you expanded the team?

In order to improve our commercial department, Massenza has hired one employee to take care of the development of new markets. The company has also hired two people in the production department to take care of orders.

Q What exploration equipment are you developing?

Massenza has been producing rigs since 1921 and has improved its machines every year since that date. This year the technical department will work to make its rigs stronger and more efficient. One of the key points of its success is flexibility to meet the needs of each customer.

The next improvement or the next project will probably come from a special request from one of its customers. It is a continuous effort, as every customer wants his special rig and every day Massenza designs new solutions to fulfil these requests.

Q What are your expectations for 2013?

Massenza has important contracts at stake and the company is sure that over the course of 2013 it will receive most of these orders. [Sales forecasts are] at least 75% more than 2012 due to investments and the big contracts Massenza won in 2012. The company is assessing the chance of opening a new commercial site and office point in foreign countries. ▼

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For more information: Massenza will be present at Bauma 2013 – the 30th international trade fair for construction machinery, building material machines, mining machines, construction vehicles and construction equipment, from April 15 to 21 in Munich, Germany. www.bauma.de/en; www.massenzarigs.it

Pushing the bit

With a growing need to explore new mineral deposits and to drill deeper for samples, choosing the right bit for the job is vital. Boart Longyear discusses

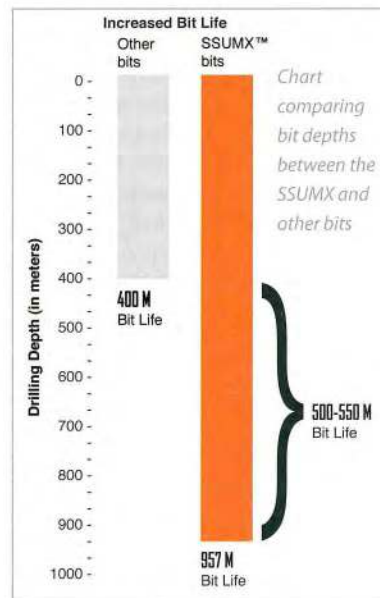
Exploration drillers need to manage costs and selecting the wrong bit can lead to wasted labour time and increased consumable usage – adding unnecessary costs.

The first step is for the driller to know what his capabilities are, from an equipment and experience standpoint. Controlling the penetration rate and pullback are important. Pushing too hard with a rig can prematurely wear the bits. Experienced drillers can typically get more out of their bits because they have a good feel for the technology and the ground formations.

Ground formation is a big consideration when choosing the right bit. It is important for drillers to conduct research to best determine what lies beneath the surface. Since it is not always possible to see the rock types below, using knowledge of past drill sites and geographical tendencies of the region can lead to an educated guess of the targeted drill site. Ground formations are generally gauged on a hardness scale – starting with unconsolidated then jumping into the Mohs scale of hardness, ranging from 1 to 10. The hardness of the ground leads to the selection of the appropriate impregnated bit formula.

The last step is to select the bit based on size and depth, while taking into account the driller's experience, the equipment and the ground conditions. Taller bits can significantly improve productivity through reduced rod tripping, as the bit stays in the hole longer. Tall crowns compatible with broken ground and soft formations, like the Boart Longyear Stage waterway designs, generate even higher efficiency by advancing the hole further in challenging conditions at depth.

For soft formations, surface-set bits are traditionally recommended. Unfortunately, when surface-set bits encounter hard ground, the driller needs to trip the drill string to change to an impregnated bit. The Boart Longyear SSUMX diamond impregnated bit allows drillers to get the penetration rate of a surface-set bit, while still being able to drill into hard rock without having to trip the drill string. The SSUMX can handle some of the softest formations, such as coal (1 on the Mohs scale), while also handling formations as tough as granite



(up to 6 on the Mohs scale).

When drilling deeper, the bit can encounter multiple rock formations. Having a bit that can handle the varied hardness of the ground is a benefit to the efficiency of the driller. Diamond impregnated bits are typically chosen because of their ability to penetrate hard-rock conditions. The Boart Longyear family of Ultramatrix (UMX) diamond core bits is designed to drill efficiently in both soft and hard ground through its patented technology.

The 07UMX bit is chosen to handle anything from limestone to taconite (3-8 on the Mohs scale) and the 09UMX tackles slate to iron ore (4-9 on the Mohs scale). The UMX bits are designed to self-sharpen through the innovative crown matrix, which cuts away during drilling to expose new, large synthetic diamonds. This allows the drillers to go deeper without having to switch out the bit.

The 10UMX is designed to penetrate the hardest rock formations encountered (8-9 on the Mohs scale) and offers the freest-cutting matrix available. By completing the range of the UMX bits, drillers now have a high-performance, efficient bit for any type of ground condition.

The UMX bits also feature the Boart Longyear patented Stage waterway design, crown heights up to 25mm and Twin-Taper window design. With Razorcut technology, UMX bits can begin cutting right out of the box, even in overburden.