CAN YOU DO IT?

THE MOST ADVANCED STEERING TOOL IN THE WORLD
Horizontal directional drilling is a specialized profession nowadays. The days when directional drilling was ruled by assumptions, are far behind us. Clients are more demanding, drillings get more and more complex and the underground infrastructure is more dense and complex. All these factors require a professional approach to complete a successful drilling project. Also the capital-intensive investment, related to the drilling project, requires a smooth completion, resulting in a positive revenue per project.

Magnetic steering tools were the standard guidance systems of drilling companies. But the drawbacks were numerous: disturbance, inaccessible areas above a drillpath and a huge tolerance of the actual drilling trajectory towards the desired trajectory.

The DrillGuide Gyro Steering Tool (GST) was developed to eliminate these problems and achieve greater accuracy. It was decided to combine new technologies, in which gyroscopes play an important role. This technique does not depend on the magnetic North and is insensitive to magnetic disturbances. The advantages of this approach translates into a reliable system, that is able to perform under virtually all conditions. The system is resilient to vibrations and practice shows that a pilot drilling, performed with a GST, is completed much sooner than with previous systems.

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are no longer disruptive elements. Also moving traffic, whether it be on road, rail or river are no obstacle. Furthermore, there is no requirement to create a known magnetic field grid above the drill-path. This saves time, money and offers new drilling opportunities. Drilling under lakes, rivers, roads, or environmentally sensitive areas can be accurately and efficiently performed.

Due to the DrillGuide GST being insensitive to magnetic disturbance (therefore not requiring to be housed in a non-magnetic environment), the need for expensive non-magnetic collars, is no longer present.

Due to the advanced technology of the DrillGuide GST, it is continually known where the drill-head is located. Not only is the "seen" exit point exactly where it is expected, but also you have the assurance that the entire pilot hole route is being drilled as planned. This offers new opportunities in areas where the infrastructure under the ground calls for a specific route, for example to avoid other pipes, sewers, or foundations. In addition, this technique can also be applied to specific projects, i.e. parallel-drills, with multiple parallel routes, where a fixed distance from each other, needs to be maintained.

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Exit point communication with the drillhead supplies continuous data, which provides accurate x, y, and z coordinates of the drillhead. The DrillGuide GST has no restriction on drill-depth and works on the principle of CMWD (Continuous measurement while drilling). Measuring the location of the drillhead can also be achieved when the drillhead is rotating, as the DrillGuide GST does not require a stationary drillhead to take readings. During drilling all information is provided in real-time, so the driller promptly knows exactly what is required. There are no problems in obtaining correct measurement readings when drilling with a mudmotor.

Measuring the mud pressure in the borehole is increasingly important, therefore, the DrillGuide GST is equipped with a mud pressure sensor. The mud is measured at two points, in the drillhead and in the borehole.

The startup time of a pilot hole, in which the DrillGuide GST is deployed, is significantly reduced due to the known magnetic field grid being redundant. For a drilling project the surveying engineer arrives with the DrillGuide GST assembly. He shoots in the tool, connects it to the drill pipe and is ready to go within approximately one hour from arrival. Drilling can then immediately begin, following the already digitized crossing profile.

Belgium
Lommel
Parallel crossings
Length: 2 x 600m, 4 x 400m, 2 x 1200m
All holes were drilled parallel for the installation of steel pipes. After the initial drill and pullback of the steel product pipeline, each subsequent drill was made without encountering any interference from the previously installed steel product pipe.

United Kingdom
Swanscombe
Downhole motor project
Length: 670m
The drill was conducted beneath a busy built-up road. The pilot hole consisted of two large horizontal curves and a change in elevation of 30m. The exit point was in the tight vicinity of other utilities.

The Netherlands
Marshalling Yard Kijfhoek
No distortion
Length: 780m
Depth: 150m
At the location of the marshalling Yard in Zwijndrecht, the Netherlands, a total of 58 railway tracks were crossed. The DrillGuide GST was not affected by any external disturbance and the whole job was successfully concluded.
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