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COSON-ST: FROM MANUALLY OPERATED TO CPT ROBOT

The Cone Penetration Test (CPT) cabin as working environment, built on trucks, crawlers or Track-Trucks®, will more and more develop from a workshop into an office. Before, operators were mainly dealing with manual operations to keep the production going. Nowadays and in the future, it can be increasingly expected that time "on board" will be spend on engineering or other office-related work next to performing CPTs. By integrating the patented SingleTwist™ technology in a CPT cabin with the COSON continuous pushing system, A.P. van den Berg has developed an automatic and hands-free CPT machine.

Changing requirements and regulations are spurring continuous development of CPT systems. The need for increasing operational efficiency requires systems that can start up more quickly and run without further intervention or control. The focus is on obtaining better CPT data, performed in a shorter time and with less effort. The answer is "back-to-basics". The CPT rod, the most simple

and robust part of the CPT system, has become the core of a new development. The CPT rod is the connecting link between the measuring cone and the pushing system. More than 90 percent of the time required for CPTs consists of handling the CPT rods.

Patented SingleTwist™ (ST) technology

The fact that being involved with onshore as well as offshore developments can foster cross-fertilisation is proven by the development of the patented SingleTwist (ST) technology by A.P. van den Berg. Initially, the ST-technology was developed as a ROSON-ST to create optimal safety and increased productivity in seabed CPTs. Later it turned out that this technology is also suitable for onshore CPT, which has resulted in the development of the COSON-ST. With a single push on the button, the automatic CPT cycle is completed automatically. The CPT string, with the measuring instrument (cone) fitted at the end, is pushed into

the soil in one continuous movement. This string is built up from a reel with separate, but interconnected, ST-rods. The ST-rod is designed in such a way that the risk of breakage and the associated downtime and costs are limited.

Track-Truck with COSON-ST

The COSON-ST has proven to be a robust CPT pushing system providing reliable data about the soil and ensuring the operational efficiency. The system works fast, as it can start up more quickly and runs without further intervention or control. The working environment is ergonomically optimized, because manual actions near the moving system are almost unnecessary. Furthermore, the depth range is increased because of the continuous CPT push. CPTs are realized faster and in addition to the already shorter preparation time, this continuous movement results in a faster pushing and pulling process with a higher production rate as a consequence. ●



Figure 1 – Automatic and hands-free CPT machine.



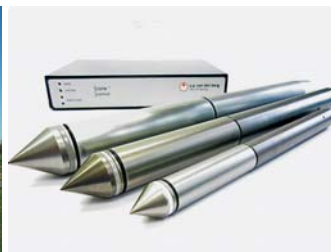
Figure 2 – ST-rod connection.



Figure 3 – Track-Truck with COSON-ST



a.p. van den berg



COSON-ST, the hands-free CPT system



- ✓ ST-technology results in fully automated CPT cycle
- ✓ Continuous CPT pusher
- ✓ Production rate increase of 20%
- ✓ Ergonomically optimized working environment

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