



a.p. van den berg  
*The CPT factory*

# ROSON-ST

for safe & fast seabed CPT's



## features

- operational safety: support CPT string eliminated
- fast deployment and high productivity
- less requirements for vessels
- Ø 40 mm CPT rod for straight and continuous push
- for 50 m CPT length
- up to 4,000 m water depth
- 10 & 20 tons pushing capacity

creating tools that move your business

# ROSON-ST for safe & fast seabed CPT's



## introduction

It can be challenging to get the seabed Cone Penetration Test at the seabed and push a straight CPT into the soil, particularly with ever increasing depths. The CPT string is therefore often supported externally. This external string support makes a system heavier, less safe, more difficult to handle and time

consuming to set up. Compact solutions available today introduce shortcomings of their own, concerning achievable penetration depth, data reliability, cone sizes to choose from and increased wear and tear. By incorporating the patented (un) folding SingleTwist™ rods in the ROSON seabed CPT system, a compact and automated CPT system is created.

## ST-Rods: the foldable CPT string

The ST-Rods are mounted on the ROSON seabed system. They can be in one of just two states, twisted or untwisted, and it takes very little to transform them from one state to another. Untwisted, the ST-Rods behave a bit like a pearl necklace and can be easily folded onto a reel. Once twisted, the rods form a solid CPT string with a push/pull/buckle performance equal to a string of standard CPT rods. Because the rods have a self-seeking bayonet thread, they close effortlessly and require just a final, short, single twist to become firmly interlocked, hence the name SingleTwist-Rods. All it takes to put together an automated CPT system, i.e. one that performs a full CPT and a subsequent complete reel-in of the string on a single operator command, is a folder, a twister and a sprocket wheel to connect the two.

## fast deployment & high productivity

Through the compact design, the ROSON-ST is easy and safe to handle from most vessels. It can be deployed for projects from shallow to ultra-deep water. It does not require any external CPT string support, assuring optimal safety, fast deployment and high productivity. The application of patented 40 mm rods create a very solid CPT string and ensure straight pushes. It is suitable for 50 m penetration at water depths up to 4,000 m. The standard configuration with a 10 tons pushing force will be more than enough for the majority of your projects, but a 20 tons version is also available. The system is conveniently controlled via a single HMI touch screen.

## robust technology for harsh offshore conditions

In the ROSON-ST robust technology is integrated to operate in the harsh offshore conditions. The optical fibre umbilical guarantees realtime broadband data transmission and power supply over great distances. The selftensioning electric winch is provided with a level winder for proper layering of the umbilical. Optional features are a spin control system for steady system deployment and a ballast and skirt system for stabilization on the seafloor and minimal disturbance of the soil.

## digital Icone data acquisition system

The ROSON works in conjunction with A.P. van den Berg's digital Icone data acquisition system. It enables measurement of cone resistance ( $q_c$ ), local friction ( $f_c$ ), pore water pressure ( $u$ ) and inclination ( $lx/y$ ). The Icone is easily extendable with click-on modules to measure other than the four standard parameters. The Icone Vane can be used at water depths up to 4,000 m. The modules Conductivity, Magneto and Seismic at water depths up to 1,000 m. For high accuracy over the full range of water depths from 500 to 4,000 m a pressure compensated Icone (Deep Water Icone) is available.

### Specifications

Driving speed drive unit	20 mm/sec
Electrical motors	3 x 1,5 kW + 3 x 0,25 kW
Wheel diameter	Ø 1,000 mm
Footprint	2,300 x 2,300 mm
Height seabed frame	2,700 mm
Lifting point height	3,400 mm (incl. ballast)
Weight seabed frame	8,200 kg in air (excl. ballast)
Icone sizes/type	5, 10 & 15 cm <sup>2</sup> / CPT or CPTU
(DW) Icone size	10 cm <sup>2</sup>



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We reserve the right to change specifications without prior notice. ROSON and Icone are trademarks of A.P. van den Berg, Heerenveen. Patents apply for the ST-Rod with bayonet thread and the full ST-system which can be mounted on virtually any A.P. van den Berg pusher.