TDI-BROOKS MANTA-200 CPT SYSTEM

The TDI-Brooks' Manta-200 Cone Penetration Testing (CPT) system is suitable for almost any project in shallow water up to 150 meters. The CPT system is powered by a unique Continuous Drive System (CDS) that was designed with a clear focus on durability and high production. It also guarantees uninterrupted penetration of the cone.

OVERVIEW

The Manta-200 CPT system is a modular design capable of delivering results on even the most challenging of projects with a chain-drive based system that can reach penetration depths of up to eighty meters. Both casings and tubes can be operated simultaneously.

During CPT operation the Manta is controlled from the surface with a real time link over a combined power and communication umbilical. Data can be viewed in real time allowing operators to manage the push and react to local sediment conditions to provide the highest quality data to the greatest depths possible.

PRODUCT HIGHLIGHTS

The Manta system is composed of the base equipment which is then completed with supporting options like ballasts and winches all depending on your project's requirement. The heart of each system is its capability of retrieving and processing high quality data.

During CPT operation the Manta is controlled from the surface with the control box. The controls are intuitive and easy to use. Data is viewed in real time as with a conventional CPT. Data, communication and power are all handled by the umbilical.

Main characteristics of the Manta-200:

- Power and communication via umbilical
- Modular system weight 5 -28 tons
- Thrust capacity 0 -200 kN
- Variable penetration rate 0 -80 mm/s
- Variable retraction speed 0 -80 mm/s
- Real-time CPT data at surface
- Capable of driving 55 mm casing tubes

A standard Manta-200 package consists of the following items:

- Base frame with CDS drive
- Fully integrated submersible power pack with PTO function
- Standard skirt
- Hoisting frame (32 mm hoisting wire)
- Control and data acquisition unit

The Manta-200 measures 2,200 x 2,200 x 2,300 mm(L x W x H) when being transported. The basic setup is transportable in 20 ft sea containers.

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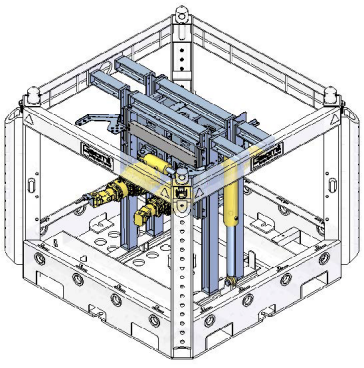
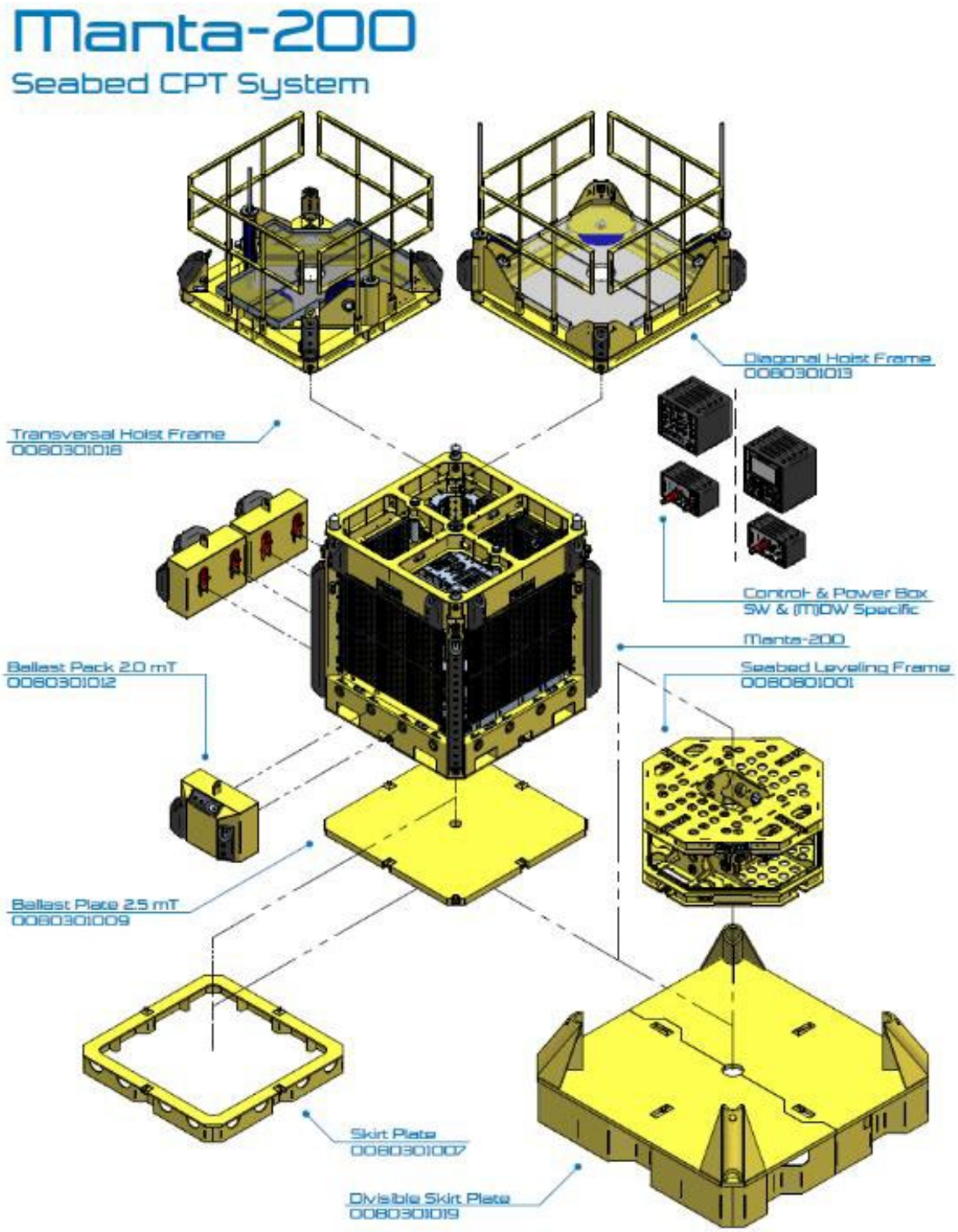
Main characteristics of the Manta-200:	
Depth rating	SW: 150 m
Machine mass	6 - 28 mT depending on type and configuration
Dimensions	Manta-200: DW: 2.00 x 2.00 x 2.40 (L x W x H)
Transport	20 ft sea container (not standard included)
Continuous drive system	
Maximum trust force	Manta-200: variable 0-200 kN
CPT speed	Variable between 0- 24 mm/s continuously Speed is regulated, monitored and recorded
Downward speed	Maximum 80 mm/s (50 Hz) or 90 mm/s (60 Hz)
Upward speed	Maximum 80 mm/s (50 Hz) or 90 mm/s (60 Hz)
Drive motors	Four units, pressure compensated
Drive chain	Gripper pads, diameter 36 - 55 mm
Powerpack and interfacing	
Hydraulic powerpack	Mounted on basic frame, submersible, pressure compensated, electric-hydraulic driven
Power supply	Three phase 380 - 440 Vac / 50 - 60 Hz / 32 A
Power take-off (PTO)	One PTO section is included, pressure controlled 0 - 250 bar, flow controlled 0 - 40 l/min
Atmospheric submersible container	Data acquisition and machine control
Hoisting frame	
Transversal frame	Transversal rigging for cables diameter 28 - 32 mm Pin mounted to the base frame
Skirt	
Skirt plate	For stability and suction on the seabed: Manta-200: 2.00 x 2.00 m (L x W)
Enlarged plate	Enlarged divisible plate: Manta-200: 3.00 x 3.00 m (L x W)

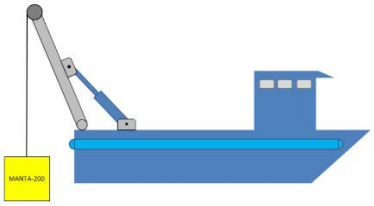


MANTA-200 CPT WEIGHT



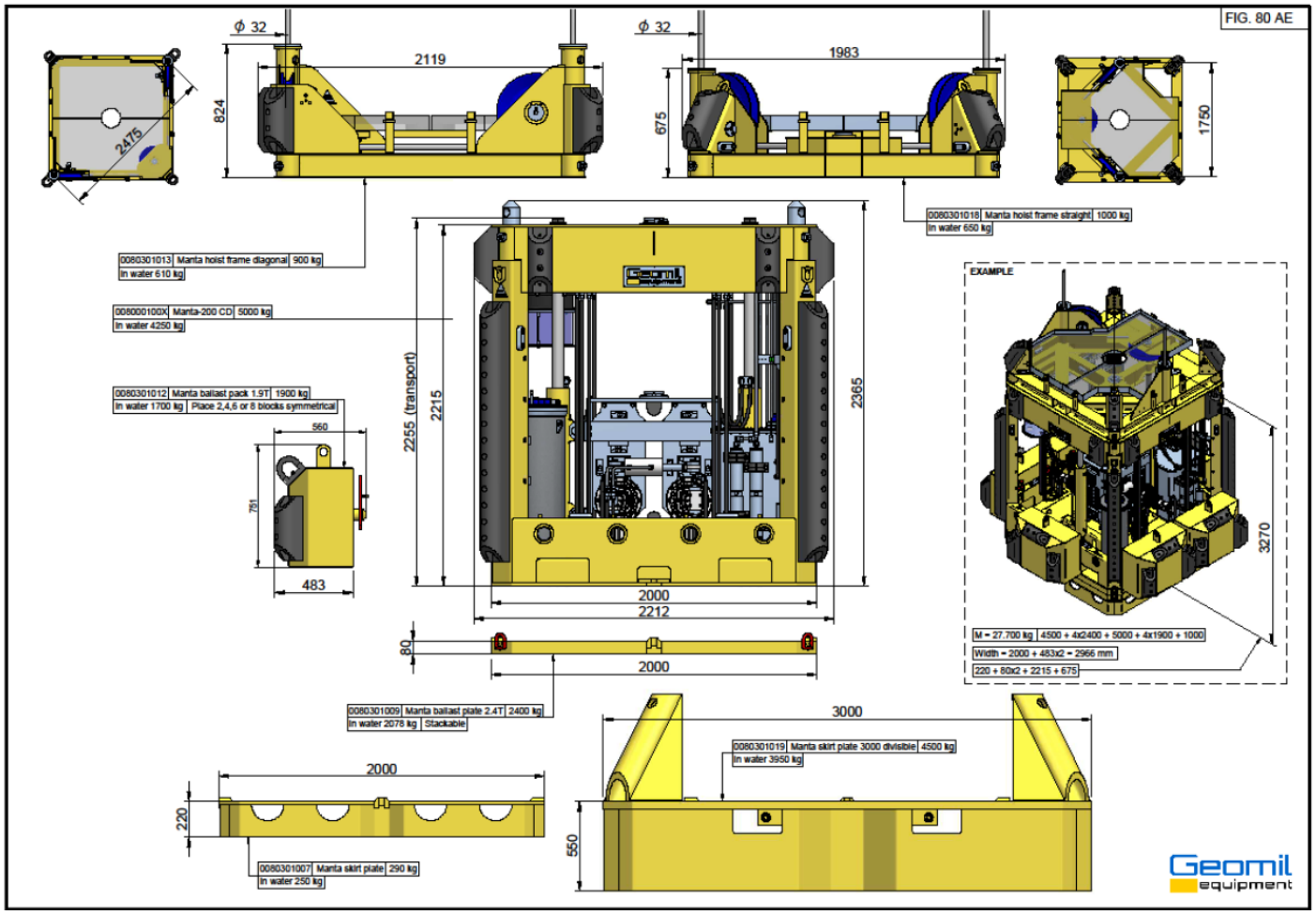
MANTA-200 DEPLOYMENT

The A-frame offers an efficient deployment as a method for rapid operating



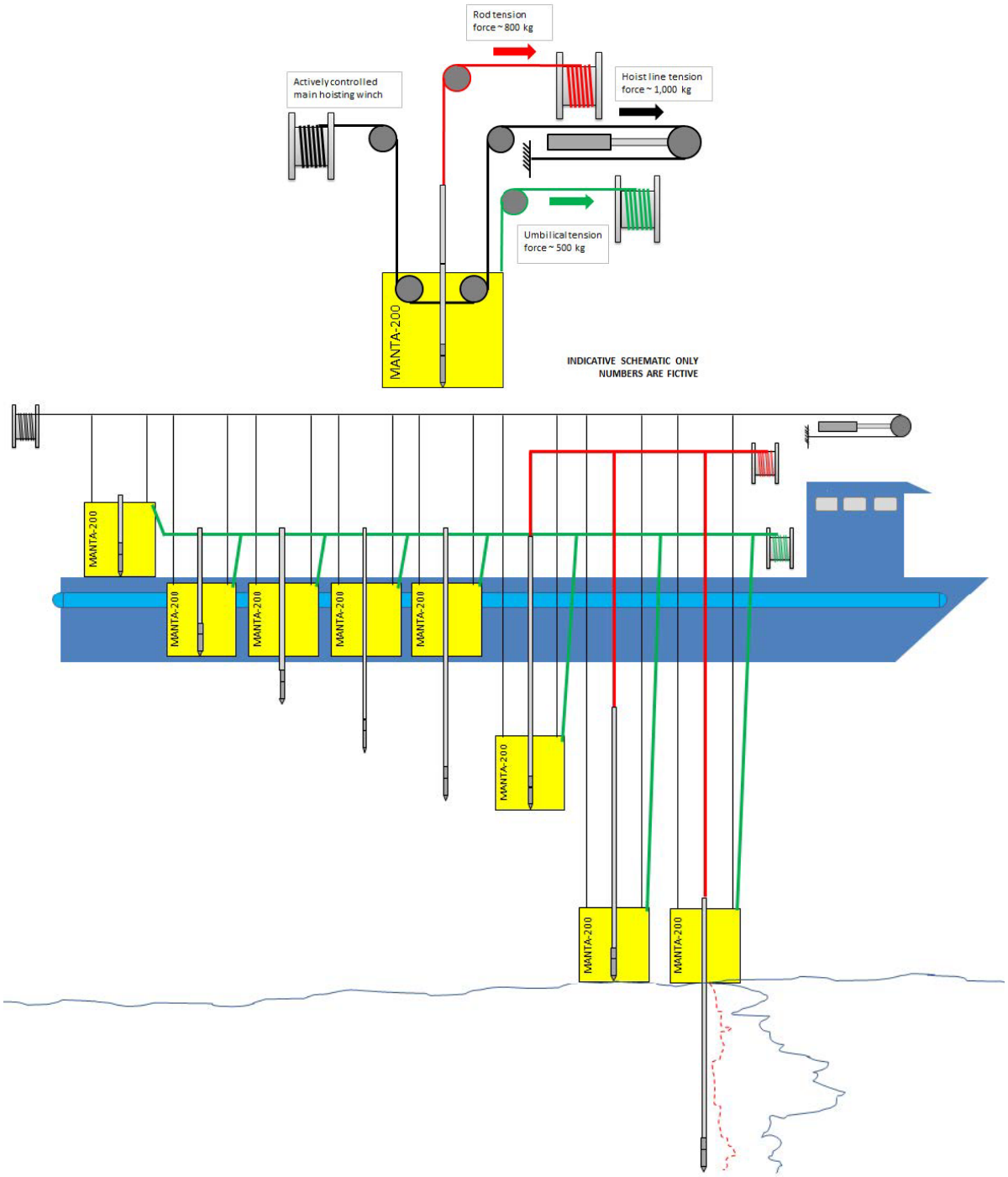
MANTA-200 CPT WEIGHT

The weight of the components is presented in the diagrams below. The weight should be corrected for the situation in a submerged setting, on average by a factor x 0.8.



MANTA-200 CPT HANDLING

The schematic below outlines the general winch arrangement illustrating the steps of a typical deployment. In the example illustrated, the required length of CPT tubes is added with the Manta at the deck level. The Manta is then lowered to the bottom of the rod string. The entire system can be lowered to seabed with the rod tensioning and umbilical tensioning winches attached.

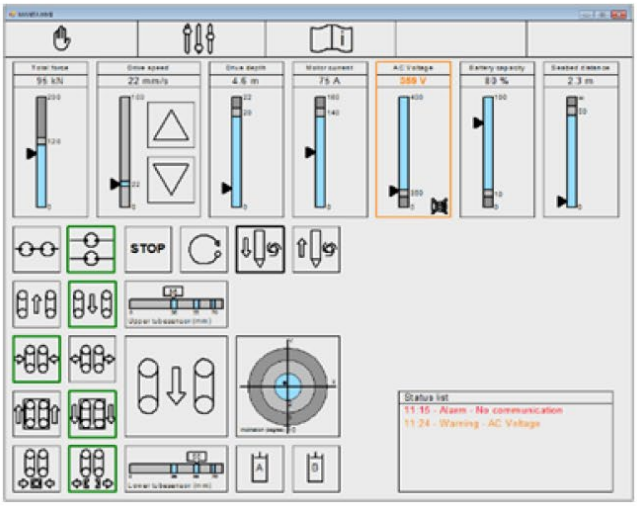


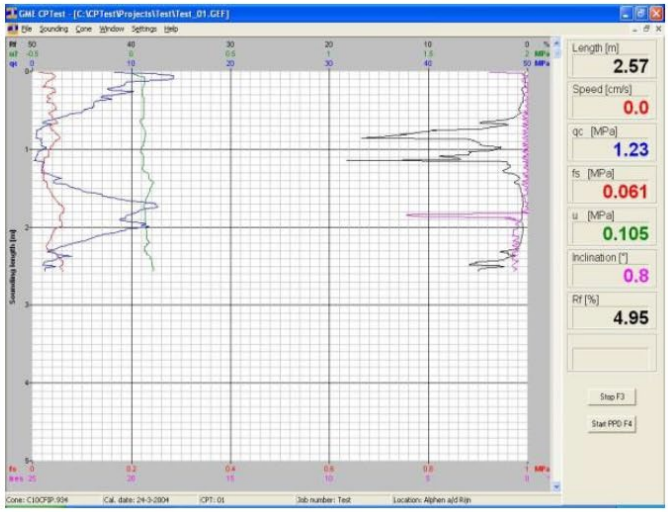
MANTA-200 CPT OPERATION

The system has the following advantages:

- No rod slip which is common in conventional wheel drive systems
- Flow controlled pressure compensated constant CPT speed from 0 to max. 28 mm/s
- Fast retraction up to 80 mm/s
- High productivity and uptime with ease of gripper pad replacement
- Only seabed CPT system which can push casing (Manta-200 only)

During CPT operation the Manta is controlled from the surface with the control box. The controls are intuitive and easy to use. Data is viewed in real time as with a conventional CPT. Data, communication and power are all handled by the umbilical.





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