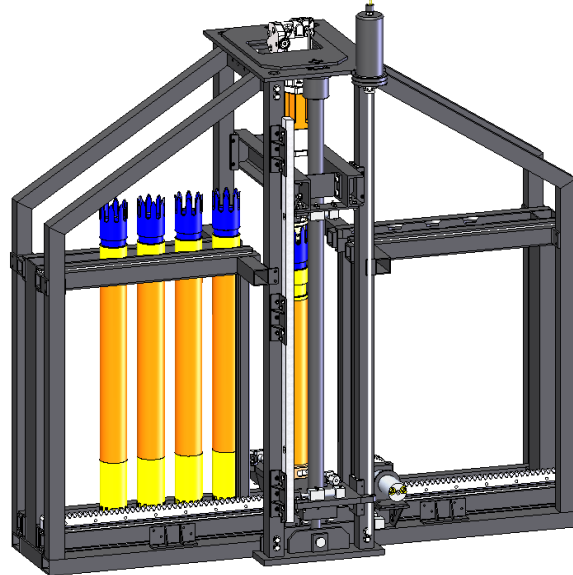


ROCS – Remotely Operated Core Sampler



Ideal for:

- Geological Investigations
- Marine Mining Exploration
- Multiple or single shot samples
- Use with ROV's



**Left – ROCS on deployment. Credit Michael Zylstra / MarMine
Above – 3D Model of in development Multiple Coring ROCS**

FEATURES

The ROCS System is designed to be deployed by an ROV to obtain shallow depth core samples at an ocean depth up to 4,000 m. The sample of at least 70 mm in diameter can have a max core length of 1,000 mm. This can be deployed by a neutrally buoyant ROV as it requires low torque (200 N-m max), and a low drilling force (100 kgf max). Operating at a high rpm the QD Tech Inc. corebarrel has the capability to require a low force to retract in case of emergency.

The ROCS consists of the frame and tool storage, cross head assembly, and rotary head assembly. The cross head assembly controls the drilling feed, corebarrel pull back, vertical positioning, and clamping operations while the rotary head assembly connects to the corebarrel and moves along the frame assembly via linear bearings.

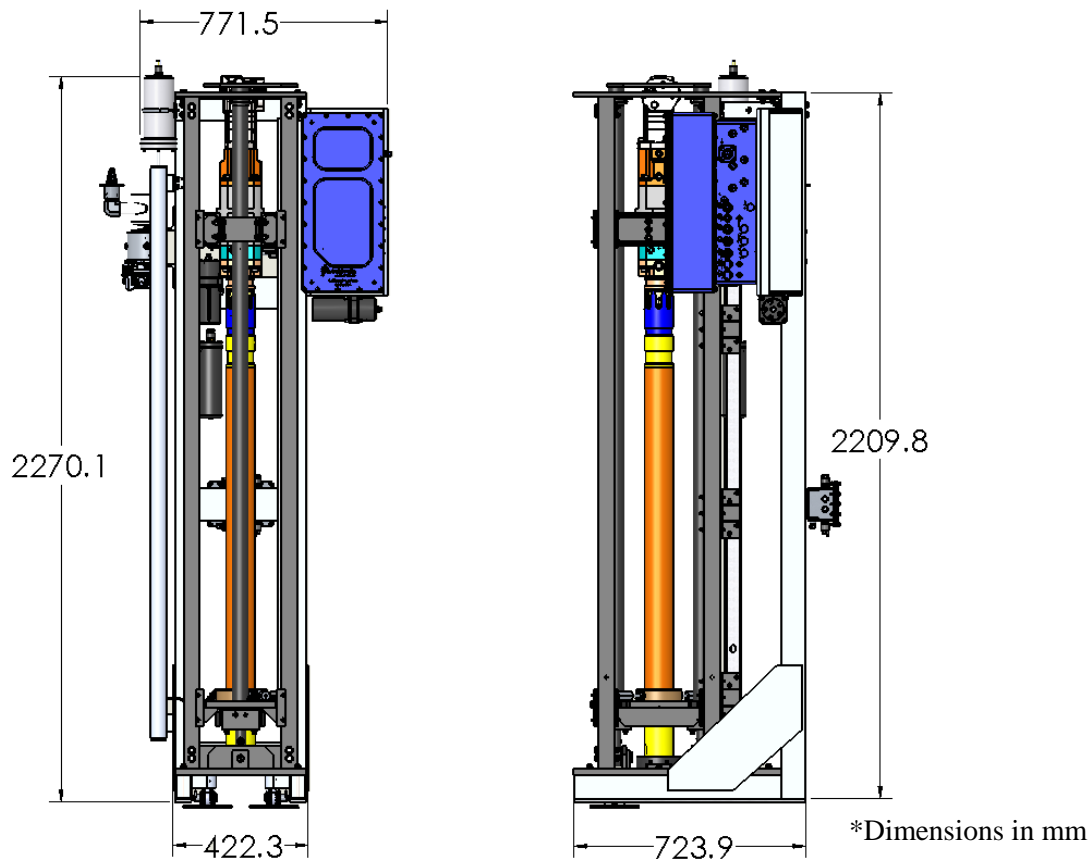
The ROCS can include the optional control system which includes a dedicated valve pack, water pump, camera and light suite and operating software.

- Designed to sit either on the seafloor or ROV Sub Frame
- For protection against corrosion and also to minimize the reflectivity of the ROV cameras and lights all aluminum parts will be hard coat anodized black and stainless steel parts will be electropolished or black oxide coated.
- Sensors suite can be customer designed or rely on camera and lights for visual verification. Speed sensor of rotary head is standard and a linear position sensor for drill position.
- Rotary head includes a water swivel that will require a flow of 3-5 gpm.
- Frame variations can include multiple tool storage for up to five drill tools.

SPECIFICATIONS

General	
Core Diameter (nominal)	75 mm
Core Length (nominal)	1,000 mm
ROCS Total Weight (estimated in air, w/o core)	143 kg
Max Bit Weight	100 kgf
Max Torque (low speed, continuous)	235 N-m
Max Torque (low speed, intermittent)	345 N-m
Max Pull Back Load	44.5 kN
Global Hydraulic Flow Requirement	18-20 gpm
Operating Pressure	3,000 psi

Rotary Head Specifications	
Rotary Head Mass	37.6 kg
Hydraulic Motor	
Motor Mass	13.8 kg
Motor Speed – High	1,000 rpm
Motor Speed – Low	500 rpm
Pressure	3000 psi
Max Torque (low speed, continuous)	235 N-m
Max Torque (low speed, intermittent)	345 N-m
Flow Requirement	12 gpm



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