



ROTOCUTTER

Active nuclear solidified sediment waste retrieval

The RotoCutter is a remotely operable, hydraulically powered device for macerating, recovering and transferring hazardous compacted sedimentary wastes.

Waste maceration – RotoCutter consists of a hydraulically powered, remotely operated tracked platform. The ROV platform has a mechanical chain macerator that can be deployed accurately to remove compacted and hardened sediment wastes. The chain macerator can be deployed to horizontal surfaces and, to a limited extent, also to vertical surfaces.

Vacuum recovery – Macerated dry waste is removed from the operating environment by a bespoke vacuum system, the waste is further size reduced and suspended in water by a patented mechanism before being pumped to further processing.

Anti-caking – RotoCutter has various mechanisms to deal with dust generation, caking of debris and the homogenisation of the waste for fluid handling.

Rapid deployment – RotoCutter is dimensionally compact to allow for deployment into confined spaces. It is powered, controlled and debris is removed for processing using an umbilical. All systems are dedicated, everything is modular.

Umbilical management – RotoCutter can be deployed with a remotely controlled, hydraulically actuated, umbilical management system to mitigate the risk of entanglement by operational environment furniture and features.

Remote control – The RotoCutter system is controlled using multiple radiation hardened cameras, local illumination and a dedicated control system.

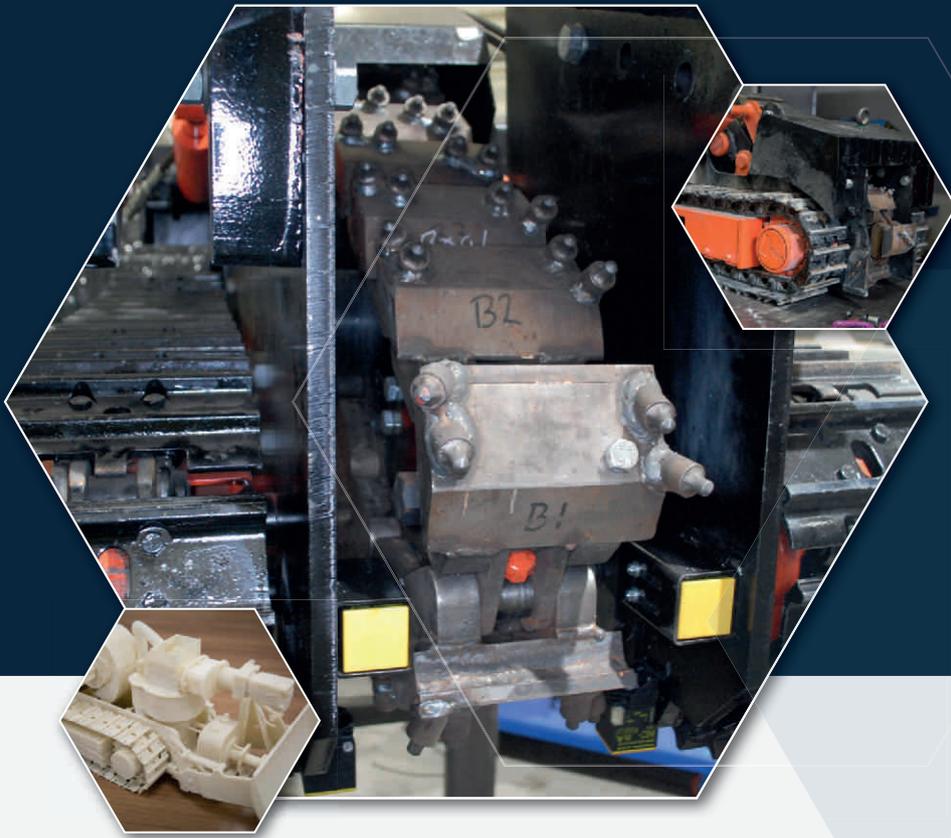
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Key points

- Macerates and collects dried nuclear sediments
- Fine cutter-dept0h control
- Waste fluidised and pumped for transfer
- Remote operation using umbilical system
- Modular system
- Compact for confined spaces
- Deployment through minimum 1,067mm (42") penetration



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Sediment removal

Rotocutter is moved using hydraulically driven tracks that are remotely controlled by the operator. A depth sensitive, hydraulically driven toothed chain cuts the sediment. The macerated sediment is removed from the resulting trench by vacuum draft. The vacuum is generated remotely and is delivered to the Rotocutter using a combined services umbilical. The debris is further size reduced in the ROV before being suspended in water using a patented mechanism.

The water borne debris is then removed using an on-board hydraulically driven pump. Rotocutter is fitted with lifting points to allow it to be deployed either as a stand-alone unit or through the integrated Umbilical Management System which also facilitates lowering and lifting and robotic umbilical management system to avoid umbilical entanglement within the operating environment.

Rotocutter is dimensionally compact (1,968mm x 711mm x 805mm). Along with its umbilical management system Rotocutter can be deployed into confined spaces through a penetration with a minimum size of 1,067mm (42"). Rotocutter can also be deployed from the surface of a large body of water by the Barrnon Hydrospyder .

The complete Rotocutter system is remotely controlled using a Human User Interface comprising of electro-hydraulic joystick controls and live-feed video screens and a Graphical User Interface displaying critical parameters.



For more information on Rotocutter

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Barrnon Specialities

- Nuclear decommissioning solutions
- Sludge waste handling specialists
- Nuclear fabrication
- Concept to close-out in house
- Patented technologies
- Environment characterisation
- Rapid prototyping
- Plastic and metal 3D printing
- VR control of robotics
- CAD design

Rotocutter Capabilities

Rotocutter can break down and retrieve radioactive wastes that have been stored in dry environments.

It's designed to work with hard heel and bitumen encased waste so that the waste can be recovered for processing or long-term storage.

Rotocutter models are currently undergoing extensive testing and success has led to requests for several design variations to meet specific client needs.



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