

EQUIPMENT SHEET

ROCK REMOVAL TOOL

DEVELOPED FOR THE PRECISE REMOVAL AND DEPOSITION OF ROCK IN A SUBSEA ENVIRONMENT

INTRODUCTION

The Rock Removal Tool (RRT) is a Boskalis innovation that has been developed for the precise removal and deposition of rock in a subsea environment. Along with the Jet Flow Tool (JFT), it is part of a number of modular extensions to fall pipe vessel Rockpiper's Remotely Operated Vehicle (ROV). Both are designed to accommodate for the ever changing market conditions inherent to the offshore industry.

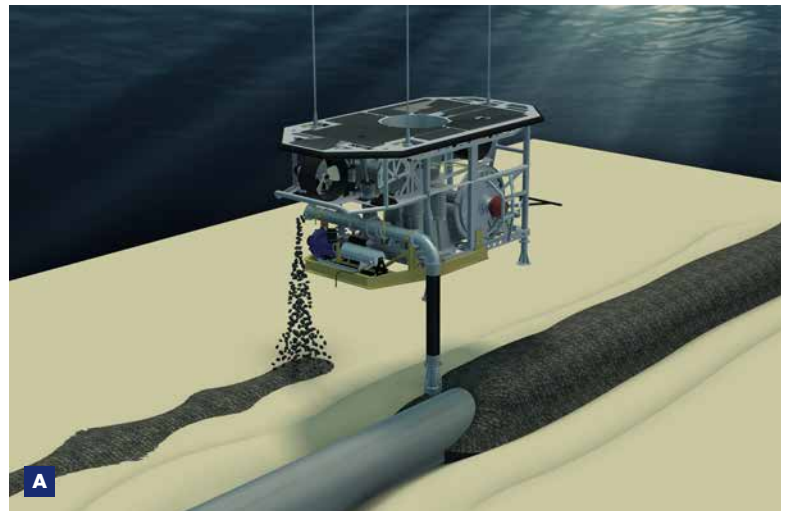
The RRT can be used for the installation and removal of non-cohesive materials at subsea structures. For example the removal of rock materials at subsea templates where either inspections, repairs or new tie-ins are required. Furthermore the unit can be used to deposit rock materials close to subsea structures without the risk of damaging the structures.

The principle of operation is as robust as it is simple. The suction process is created by means of the Bernoulli-principle: a high-velocity jet flow in the pump leads to a vacuum near the suction mouth. At the suction mouth the rock is removed, taken into suspension and transported to the RRT's discharge end, at the selected location.

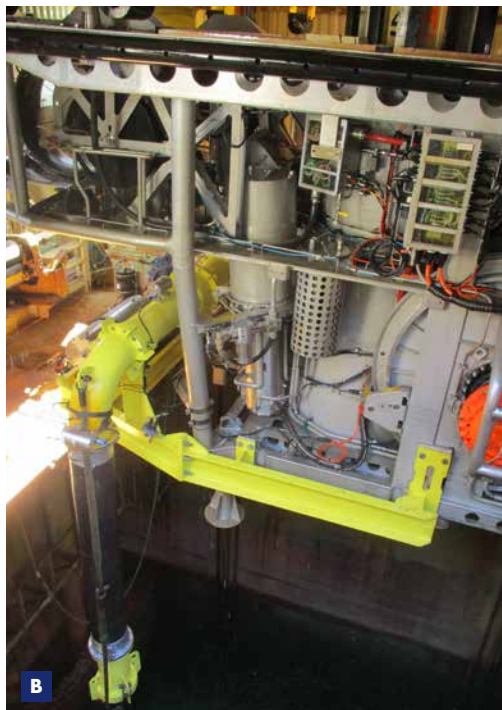
The advantages of this approach are its high precision and high reliability due to the lack of

SPECIFICATIONS

Diameter suction hose	300 mm
Transportation distance	6 to 25 m
Bulk production	30 m ³ /hr (with 1-5" rock grading)
Operating pressure	5 bar (controlled)
Installed power	130 kW
Operating depth	10-1000 m



A Artist impression of the RRT
B The RRT mounted on the FPROV of the Rockpiper



moving parts. Above all, as the rock discharge takes place some distance away from the vessel's center line, the vessel can work while maintaining a safe distance from the platform.

In that way the safety of operation is further safeguarded.

As part of the versatile Rockpiper ROV, the RRT is able to work at great depths and has sophisticated positioning systems at its disposal. Moreover it offers the possibilities of pre-survey, real-time survey and post-survey.