

## Inovatum Lifting AS

During the development of installation methodologies for part of the Kaombo project it was apparent that there were going to be some areas which could be quite challenging. One such area was the disconnection of the installation rigging for the Flexible Jumpers at the STTR.

Standard ROV operable shackles were potentially going to be difficult to access for a disconnection and if re-connection were necessary would be a nightmare.

The INOshackle hydraulic shackle was selected as it allows both of these operations to be carried out in a fraction of the time compared to standard ROV shackles. The potential project/vessel time saved far outweighing the initial cost of the shackles.

The simplicity of the ROV intervention on the INOshackle avoids over stressing the ROV manipulator and allows the ROV to remain at a safe distance from the rigging when it is disconnected.

So amongst the many advantages are.

- A safe and simple deck operation using air when preparing the rigging.
- A robust design which can be used for disconnection and also reconnection subsea.
- Easy to interface to subsea.
- A rapid disconnection which allows the ROV to remain at a safe distance from the heavy rigging when it disconnects and swings away.
- Simple quasi standard ROV HP water jet interface.
- Can be configured for remote simultaneous disconnection of multiple shackles.
- Self aligns when re-installing.

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