



## Potential Detachment of SPT Swivel / Head Assembly



### What happened?

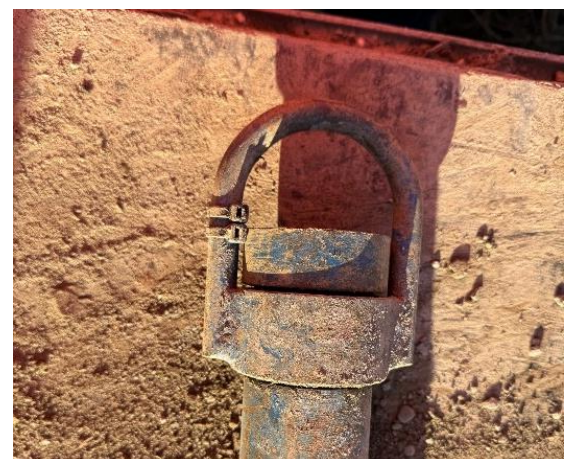
During the course of the inspection and testing of SPT equipment, it was identified that a new design of the lifting head/swivel is now available in the UK. This new head/swivel design can lead to detachment from the SPT sleeve and assembly which could lead to the catastrophic uncontrolled fall of a heavy object (the SPT weight and assembly).

This lifting head/swivel is screwed directly into the top of the sleeve which in turn is attached to a standard automatic drop hammer assembly typically used with a cable percussion drilling machine.

Whilst attaching the SPT assembly, the head/swivel assembly did not turn freely and as the assembly was being screwed to the test string and the head started to unscrew from the sleeve. This could lead to the head becoming completely detached from the sleeve and the whole hammer assembly of approximately 115kg dropping.

The head/swivel design comprises a hook welded to a ring which makes it difficult to observe that the head is unscrewing as the ring obscures the user's view.

Also, when checking the Safe Working Load (SWL), the manufacturer has not provided a unique identifier or marked a SWL.





## What went wrong?

### Mechanical Causes

- The ring of the swivel can be in contact with the threaded head which can unscrew and detach itself from the sleeve as the swivel turns.
- The thread is too short and does not need many turns to become detached.
- There is no locking mechanism for the head once screwed in.

### Procedure Causes

- PUWER requires all users to ensure equipment is safe prior to coming into use. The hazard should have been identified and rectified immediately.
- All lifting accessories require a unique identifier and SWL marked on them.



## Outcome and Lessons Learnt

- Provide a locking mechanism to ensure that the head/swivel assembly cannot unscrew from the sleeve.
- All new plant and equipment, as required by PUWER, must be inspected by the user prior to bringing into operation to ensure that it is safe to use.
- Any safety observations or defects reported by the Lead Driller must be acted on and rectified prior to continuing use.
- Any plant or equipment which has not been rectified must be quarantined and organisations should have a robust procedure in place.
- All lifting accessories, as required by LOLER, must have a unique identifier and SWL marked on them, preferably by the manufacturer, or alternatively by a qualified LOLER examiner.