

CLAXTON ELECTRIC DRILL, PIN AND CUT SYSTEM FOR CONDUCTOR RECOVERY

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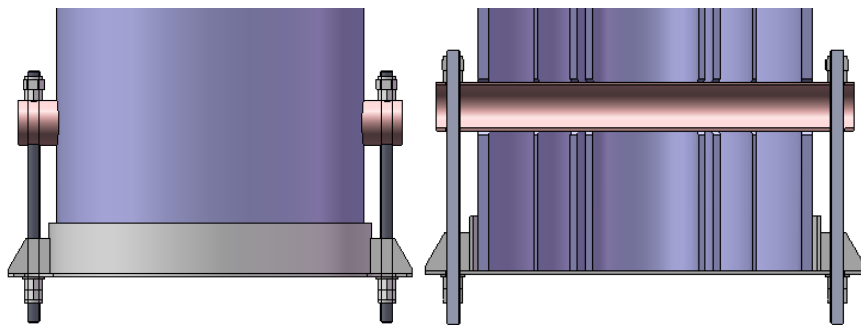
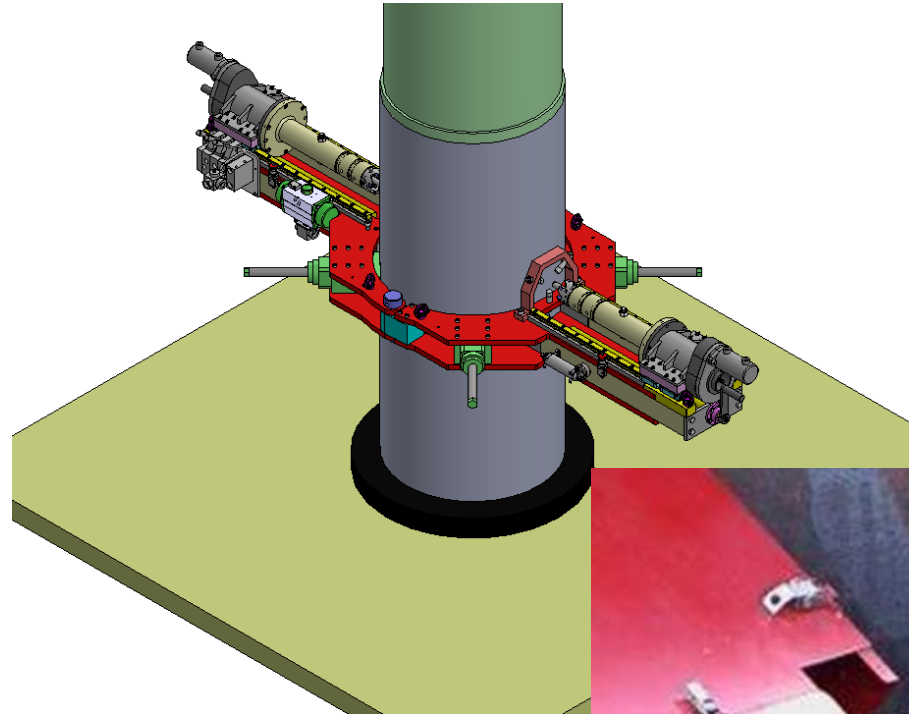
DRILLING AND DECOMMISSIONING

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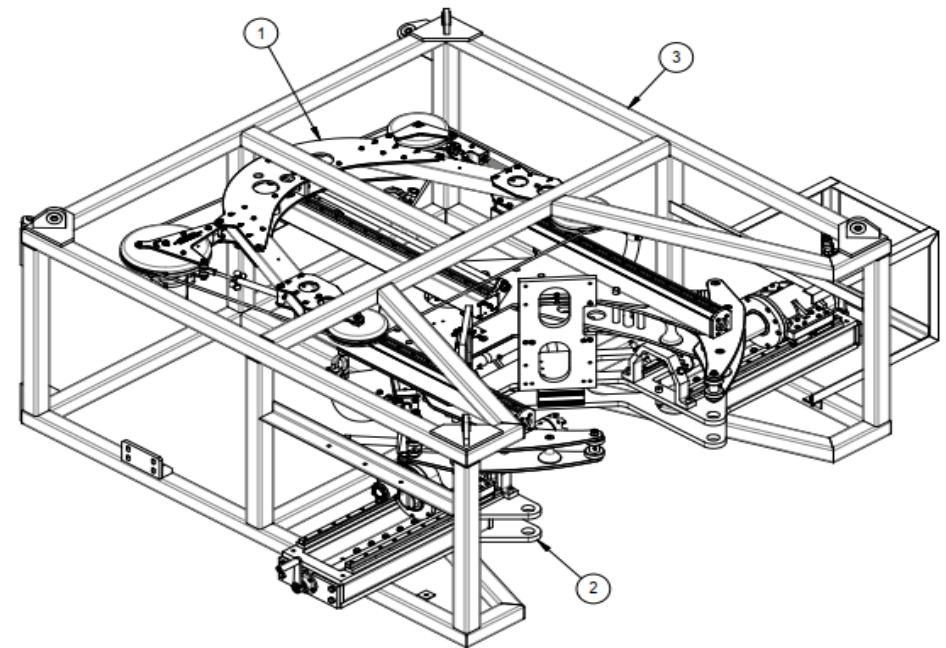
CONVENTIONAL – HYDRAULIC DRILL, PIN AND CUT

- ▶ Traditionally different pin sizes used depending on application (4” or 6”)
- ▶ Once drilled, a pin is inserted to secure all strings
- ▶ Ancillary lifting equipment and drills to suit the above pin sizes
- ▶ A number of these Double Drill Units in rental fleet
- ▶ Cut sections can utilise “debris cap” to remove risk of falling debris



COMBINED HYDRAULIC DRILL, PIN AND CUT

- ▶ A combination of drilling and sawing equipment
- ▶ Reduces set up times by allowing both pieces of equipment to be deployed simultaneously
- ▶ Uses existing drilling/sawing equipment
- ▶ Can be configured with diamond wire blade or standard bandsaw blades



COMBINED ELECTRIC DRILL, PIN AND CUT (DPCE)

▶ Development Aims

- ▶ Improve turnaround time on conductor recovery
- ▶ Reduction in time taken to drill, pin, and cut recovered casings
- ▶ Project objective of 50 minutes cycle time per section
- ▶ Ability to carry out operations simultaneously
- ▶ Increase power and control to operation
- ▶ Improve safety by removing operators from vicinity
- ▶ Interface with Claxton WellRaizer™



DPCE DEVELOPMENT CHALLENGE

- ▶ Development
 - ▶ September 2000 to February 2021 timeline
 - ▶ Designed and manufactured on critical path
 - ▶ 20" to 36" conductor capacity
 - ▶ PLC controlled electric drive system
 - ▶ Norsok, CE and ATEX Zone II
 - ▶ Integrated into WellRaizer™
 - ▶ Drill bit shaft is load pin
 - ▶ Drill and cut simultaneously



DPCE PROJECT OPPORTUNITY

- ▶ Project - Aker BP Valhall Platform
- ▶ Well cut and recovery programme
- ▶ 23 wells 30" x 20"
- ▶ 6 wells 24" x 18.5/8"
- ▶ 1 well 26" x 20"
- ▶ Mobilised with Claxton WellRaizer™



DPCE PROJECT RESULTS

▶ Results

- ▶ Developed on time and budget to meet mobilisation
- ▶ Each well was recovered in 12mtr +- sections, 5 sections per well, 1x drill, pin and cut per section.
- ▶ 150 sections laid out
- ▶ Total of 1890m of conductor recovered (62-63m per well)
- ▶ Time Saving – 150 joints
 - ▶ Conventional – 230 hrs
 - ▶ DPCE – 127.5 hrs
 - ▶ Total saving 102.5 hrs
 - ▶ Estimated cost saving £200K based on scope of campaign (WellRaizer and DPCE)



DPCE SYSTEM BENEFITS

▶ Associated System Benefits

- ▶ Less manual handling
- ▶ Single person operation
- ▶ Once installed no cranes needed on tooling (main crane on conductor for lay out)
- ▶ Dual operations more efficient
- ▶ Low maintenance (field operations show that the DPCE performed on 17 wells before requiring maintenance)



DPCE FUTURE IMPROVEMENTS

- ▶ Target the pinnacle of DPC technology:
 - ▶ Package refinements to allow flexibility of deployment and reduced footprint
 - ▶ Control system refinement for additional feedback and optimisation of parameters
 - ▶ Deal with challenge of “chasing” eccentric conductors
 - ▶ Hone parameters versus casing make up
 - ▶ Streamline pin loading to reduce downtime between operations
 - ▶ Dealing with access to challenging conductors



Q&A AND CLOSE

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