



RISER & DRILLING SYSTEMS

Platform & Subsea Well Cutting

Introduction

Oil States has developed a range of cutting tools to facilitate the removal of platform and subsea well multiple casing assemblies. The tools, which utilise abrasive water jet cutting technology, can be configured to run inside standard 9⁵/₈" , 13³/₈" and 20" casing sizes or stand alone 30" conductors.

Features

- Real-time nozzle tracking system
- Remotely adjustable nozzle travel speed
- Multi-string cutting both cemented and voided annuli
- Tool sized to run in standard casing sizes
- Available in various tool sizes

Operations

For subsea well removals, the tool is deployed overboard from a direct deployment frame, which in turn is suspended from the vessel crane or the top drive in rig configurations. The tool is lowered down the inner casing until the assembly lands on the wellhead, positioning the tool at the required cutting elevation, typically 3 metres below the mudline.

The tool is centralised within the inner casing using an integral casing packer, after which the pressurised abrasive slurry mixture is pumped down to the tool cutting nozzle, penetrating through the well casings regardless of whether the annuli between them are cemented or voided.

Following penetration of the abrasive water jet through the well assembly into the surrounding seabed, the tool cutting head rotation begins, with all parameters monitored and adjusted as necessary in "real-time" as the cut progresses around the outer conductor circumference. The parameters used for each cut depend upon the well casing configuration, whether the annuli between the casings are cemented or voided and if the casings are arranged concentrically or eccentrically within each other.



Wellhead Abandonment Lift Tool (WALT)



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The Wellhead Abandonment Lift Tool (WALT) is run with the Abrasive Water Jet Cutting Tool to perform a single trip operation of severing the casings and removing the wellhead and guide base. The Wellhead Abandonment Lift Tool is designed to be run on drill pipe or crane, in open water from the rig/vessel and has the necessary interfaces for the AWJC tool and associated umbilical bundle. The WALT locks on to the wellhead's H4 profile and can pull with a SWL of 150Te to retrieve the wellhead, casing stubs, guide base and cement patio. The WALT and AWJC can be configured to ensure the severance cut is made at a specified depth, to suit the wellhead arrangement.

Features

- Integrates with Oil States Abrasive Water Jet Cutting Tool
- Run on drill pipe in open water
- Safe working load of 150Te
- AWJC can be pre-set to ensure severance is made at correct location

Bespoke Solutions

In addition to the array of standard internal and external remotely controlled subsea cutting tools, Oil States also designs builds and operates bespoke cutting tools to provide solutions for nonstandard applications.

Each bespoke tooling solution is subject to a design review process, which includes a 'Failure Mode and Effect Analysis', an evaluation of the tool's operating procedure and the production of PUPER and Task Risk Assessments associated with completing the scope of work.

Prior to putting the equipment into service, a submerged cutting trial will be performed at Oil States' test facility, using the proposed operating procedure to confirm that the tool functions as intended.

Bespoke Subsea Cutting Tools Features

- Intake holes in firewater or seawater caissons
- Caisson crash barriers
- Shackle pin holes in jacket legs and piles
- Pipeline test/inspection coupons
- Jacket trunnion keeper plates
- Wire rope slings
- Anchor chains
- Docking piles
- Jacket leg inspection holes
- Access windows
- Grout densitometer cutting and recovery
- Anodes
- Pipeline weight coating
- Jacket launch runner legs



Single, triple & quadruple subsea well casings cut configurations

OIL STATES INDUSTRIES RISER & DRILLING SYSTEMS

Sales, Engineering & Manufacturing

EUROPE & EURASIA
2 Heartlands Terrace
Heartlands Business Park
Whitburn, West Lothian
EH47 0SF
Scotland, UK
Tel +44 1506 896 000

ASIA
42-H Penjuru Road
Singapore 609158
Tel +65 6773 7555

Regional Sales

EUROPE & EURASIA
Moss Road
Gateway Business Park
Nigg, Aberdeen
AB12 3GQ
Scotland, UK
Tel +44 1224 290 000

5 Allée des Mésanges
13012 Marseille, France
Tel +33 491 95 60 51

Vagif Mustafazade Street 6/10
1st Floor, Sahibtac Business Centre
Old City, Baku AZ1010
Azerbaijan
Tel +994 12 598 1125

SOUTH AMERICA
02 Corporate & Offices
Ed. Evolution III
Bloco 2, Sala 105
Av. Paisagista José Silva de Azevedo
Neto, 200
Barra da Tijuca, RJ Brazil
CEP 22775-056
Tel +55 21 3503 2400

MIDDLE EAST
HDS Tower, Unit 2209, Cluster F
Jumeirah Lakes Towers
Dubai, United Arab Emirates
Tel +971 4 452 8482

decommissioning@oilstates.com

oilstates.com

