

# SPE - Presentation

**Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment**

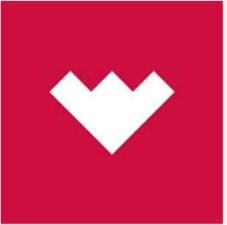
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**Jamie Stewart**

Weatherford UK – ISDT Product Line

# AGENDA

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**1**

**Background**

**2**

**Challenges**

**3**

**Consequences**

**4**

**Advancements in Technology**

**5**

**Advancements in Technology**

**6**

**Key Takeaways**

**7**

**Questions**

# Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment

## Biography.

- Current – Weatherford UK – ISDT Technical Manager – Fishing, Milling & P&A
- Schlumberger – 10 years – Asia and UK Roles – Project Management (Well P&A)
- Norse Cutting & Abandonment – Well P&A Operations Manager – UK
- Smith Services / SLB – Well Abandonment Business Manager
- Well-Safe Solutions – Well Abandonment Engineer
- Weatherford – 30 Years – Fishing & Milling + P&A – On and Offshore Roles.



# Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment

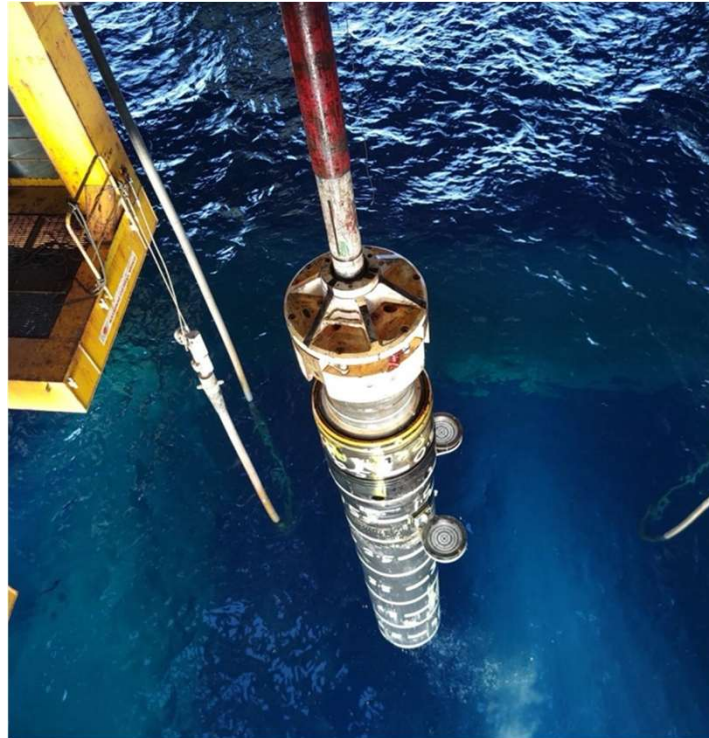
## The Subsea Wellhead: The Past.

- Around the late 60's to 70's to 80's to 90's. – High Exploration Activity
- Commonly recovered with rig – on location – End of Drilling Phase
- Weight set wellhead systems. 18 ¾” and 21 ¼” Two Stack etc
- PGB installed – TGB commonly not used.
- Explosive Option – Often Primary and Mechanical Option secondary
- Earlier designs had centralizing ribs on 18 ¾” Wellhead Extension



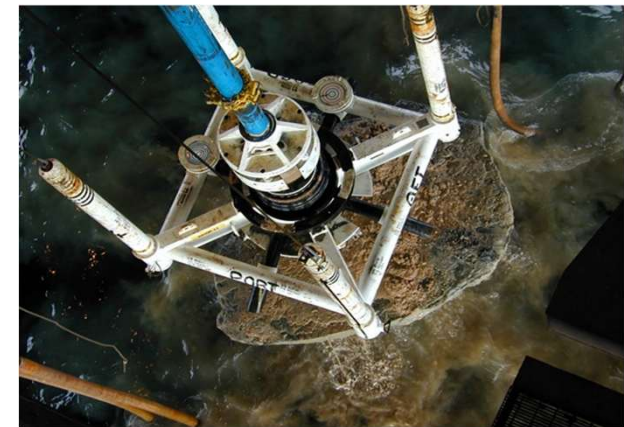
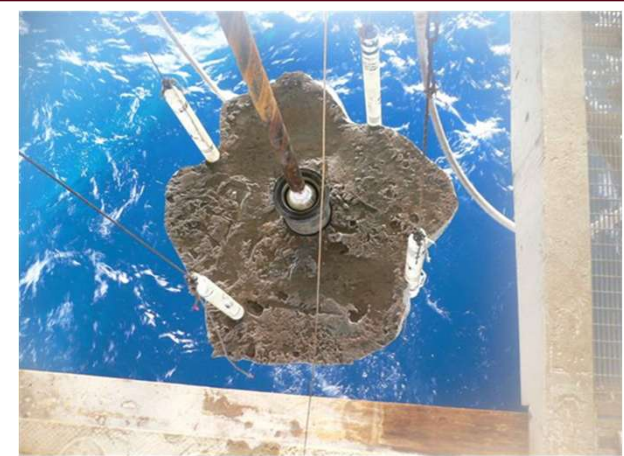
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- Cement Excess on Conductor & Seabed
- Internal Restriction in Wellhead Bores
- Wellhead Ribs
- Multi String Cutting
- Short HP Housing Wellhead Extension
- Reduced Wellhead ID's
- TITUS Pipe



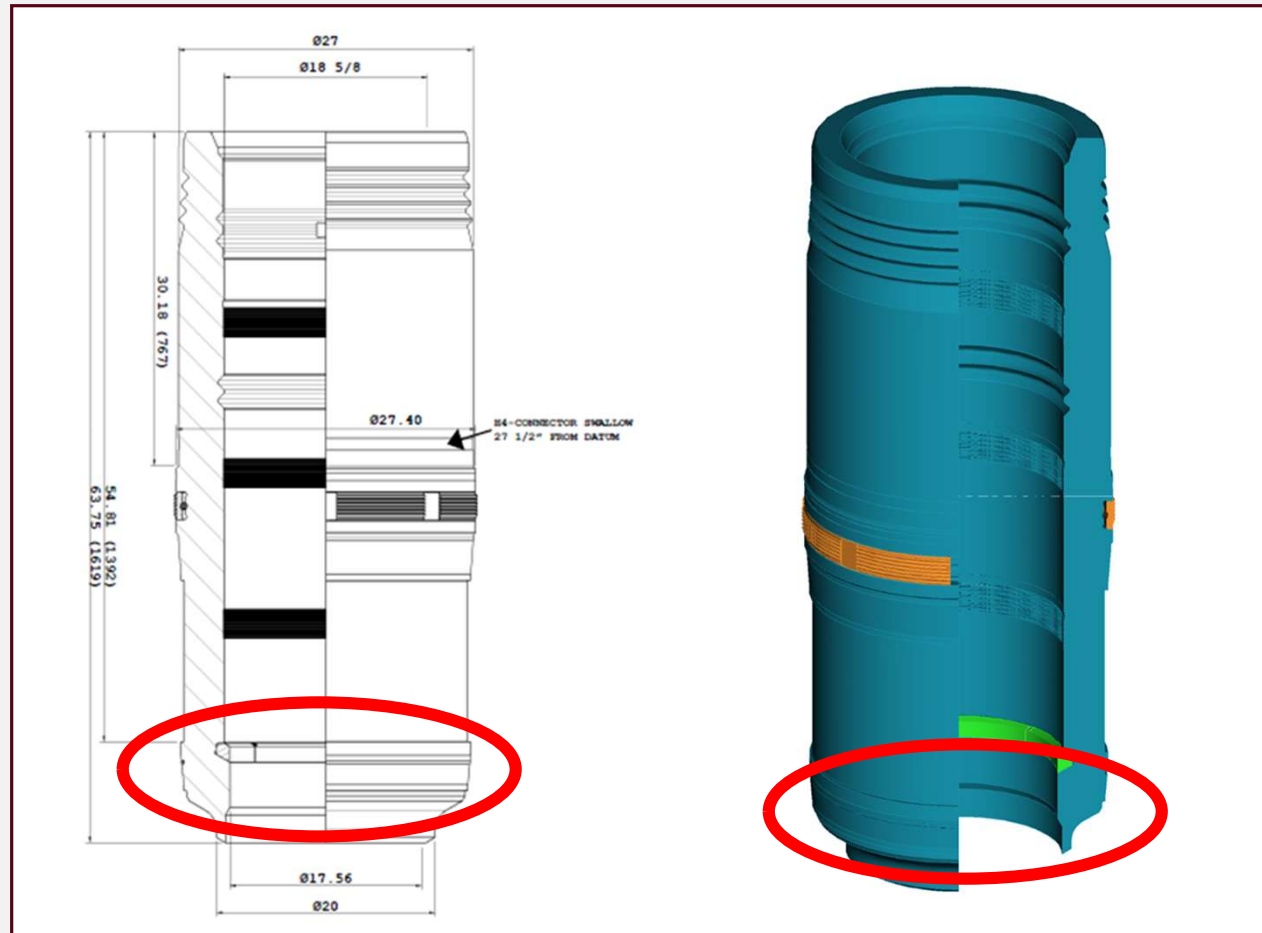
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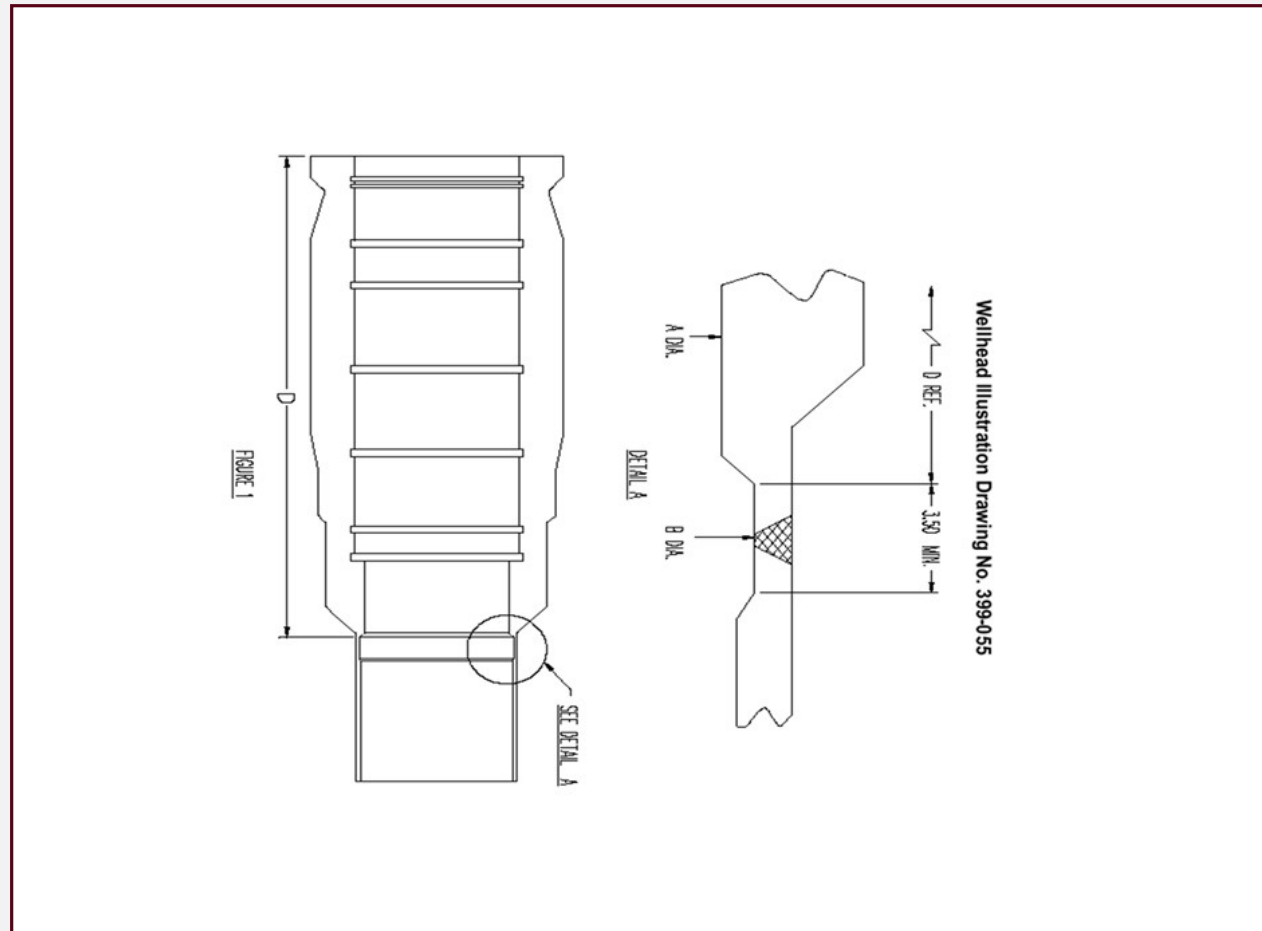
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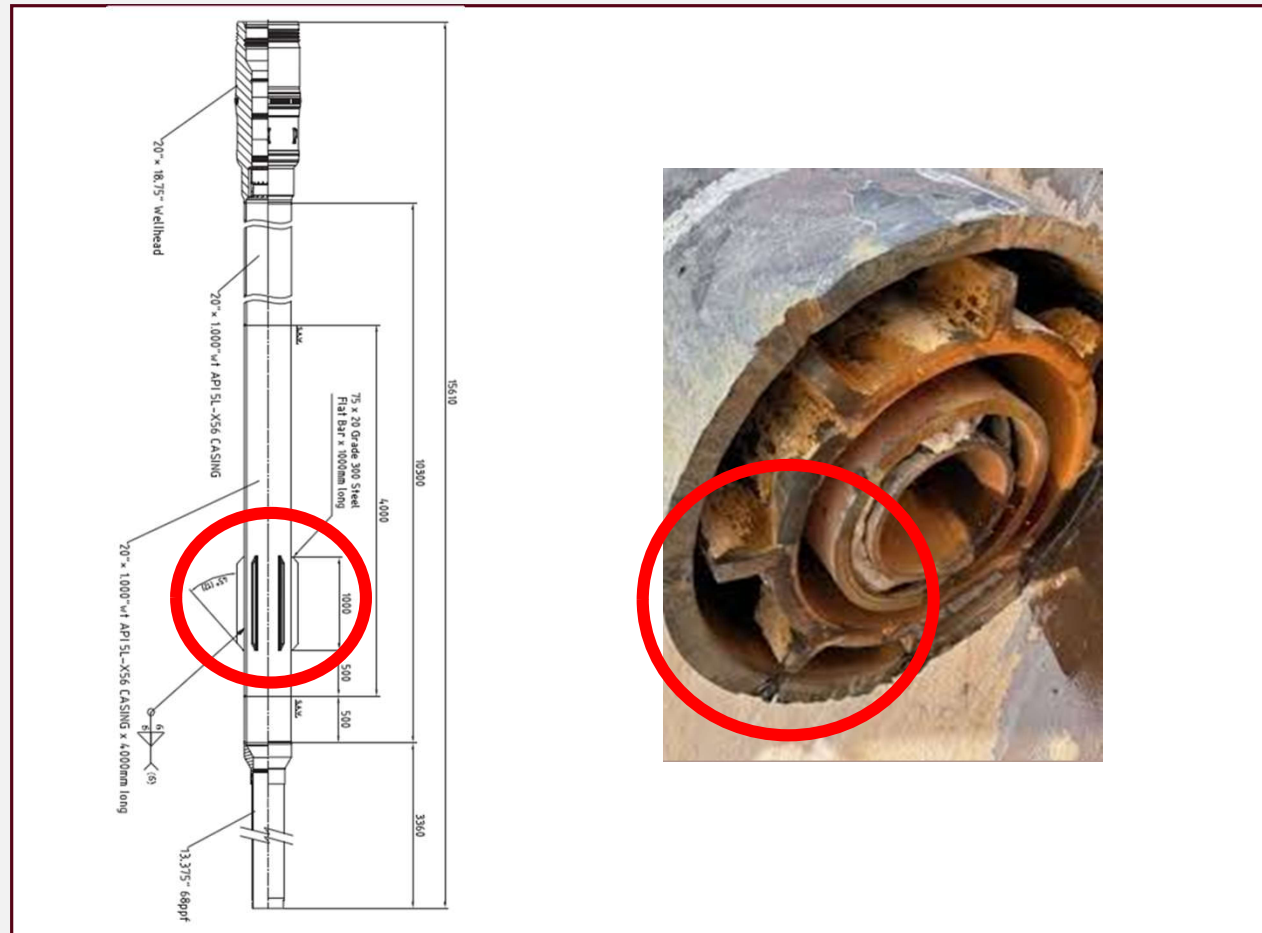
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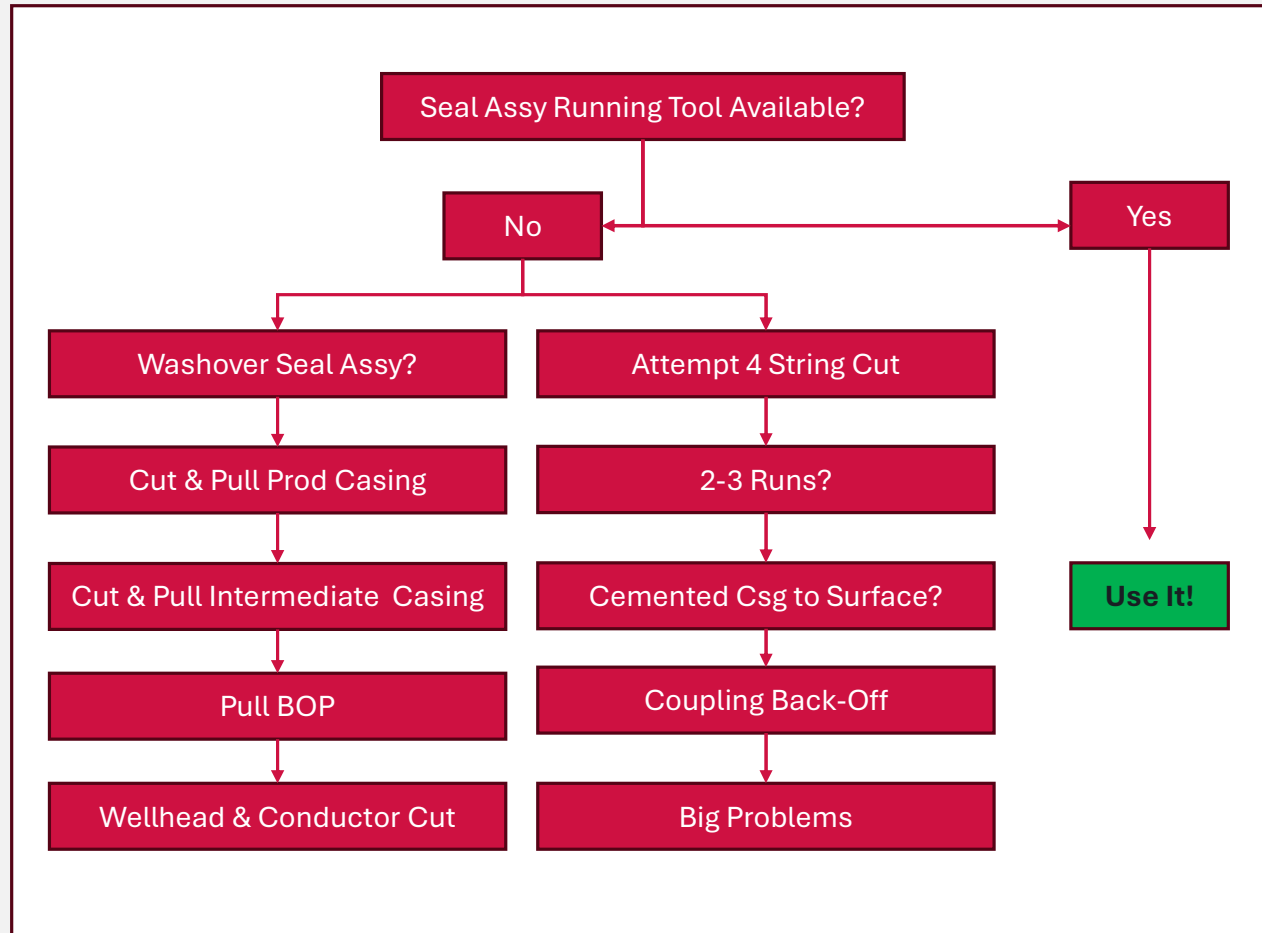
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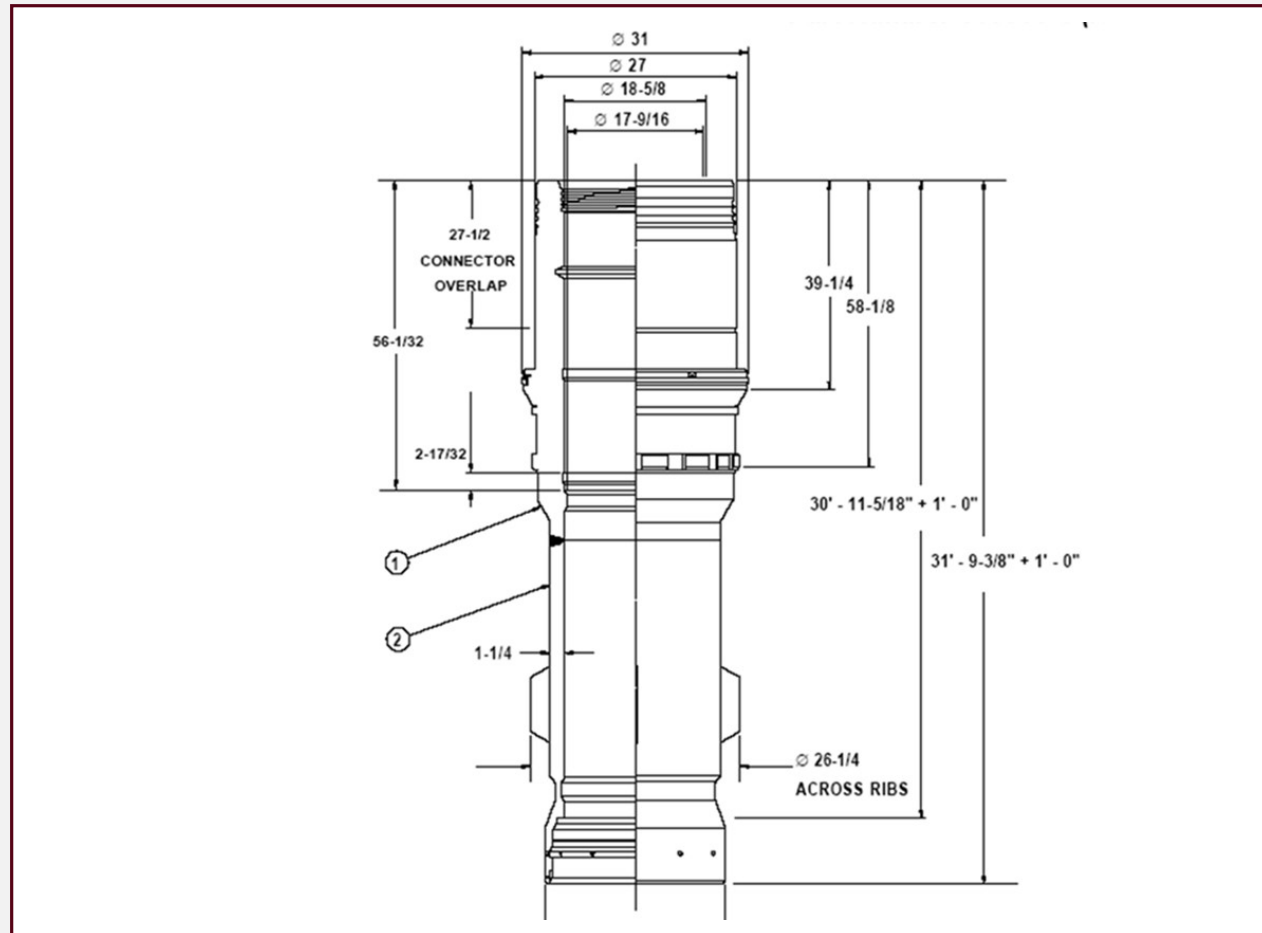
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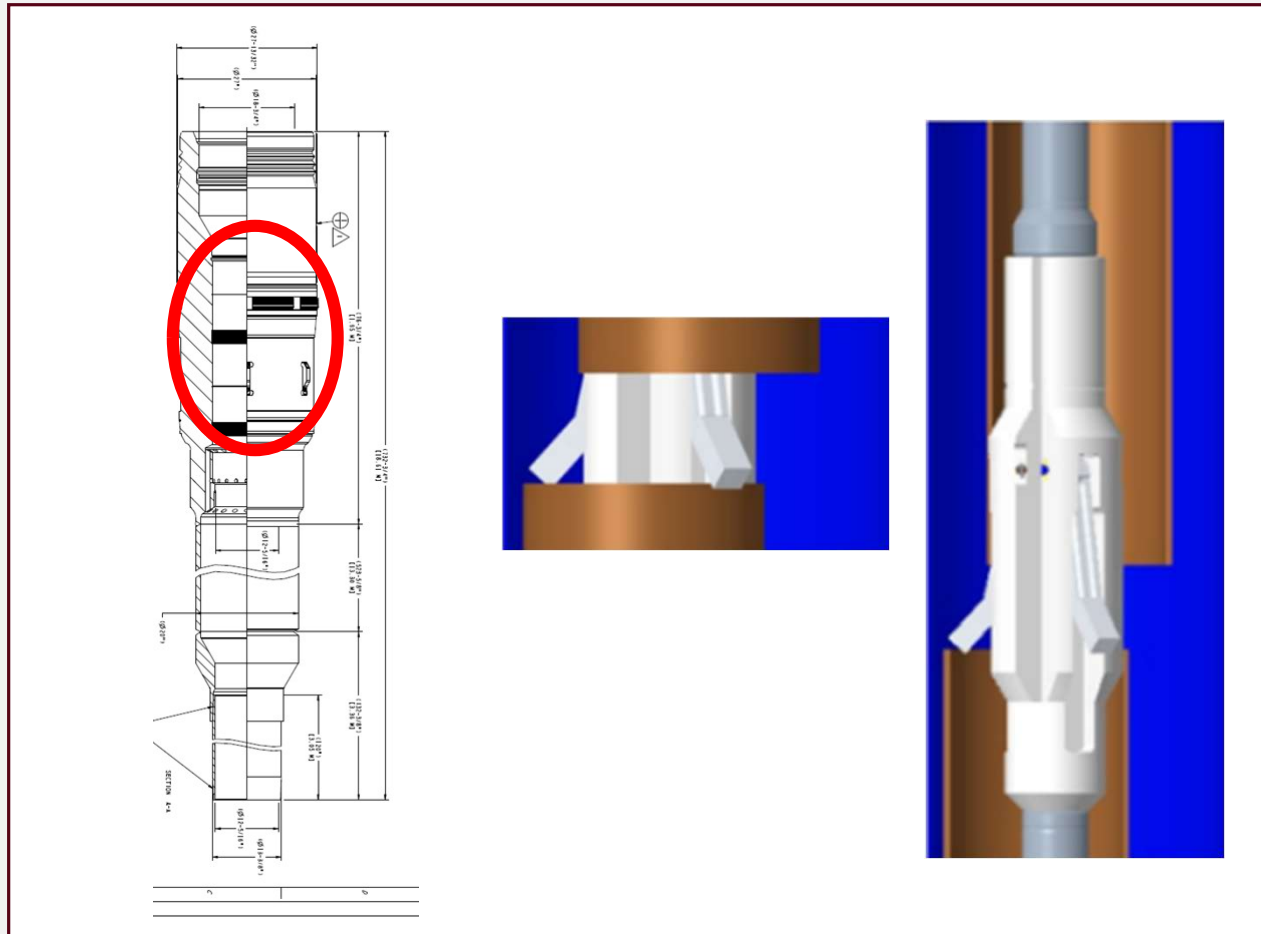
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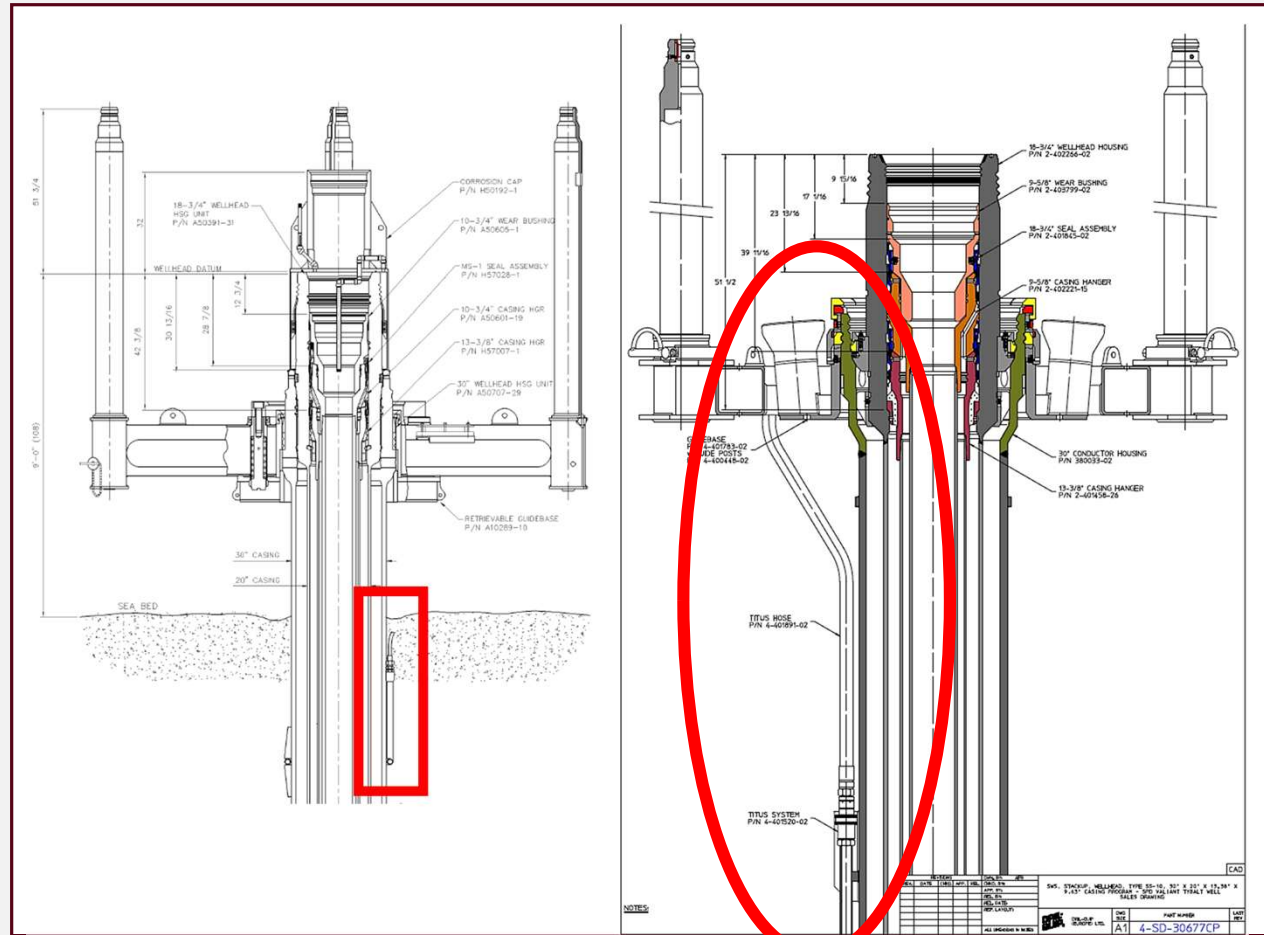
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## Sub-Sea Wellhead Recovery - Consequences

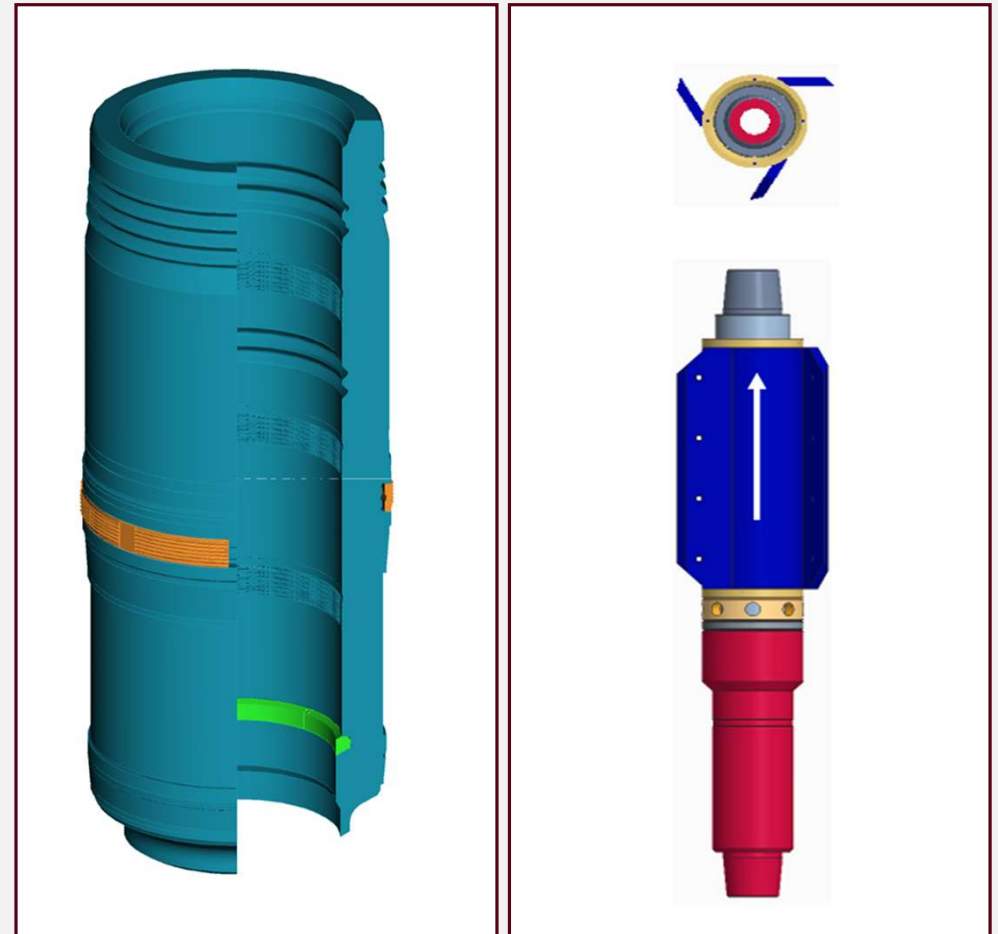
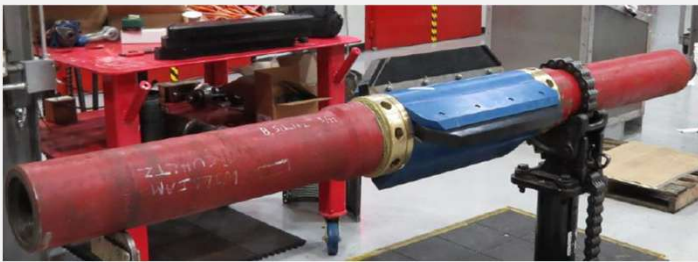
- Unable to pull wellheads:
- Cement bonding
- Aborted Cuts
- Excessive Time for the Cutting Scope
- 18 ¾" Wellhead Strip Out
- Broken BHA Components
- Infringement – 10' BSB Guidelines



# Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment

## Stabilisation

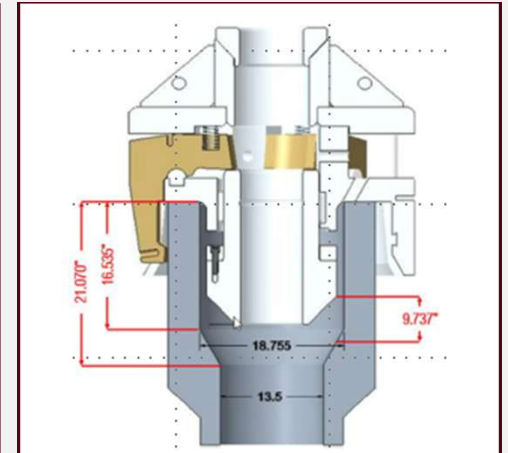
- Essential to the success of a casing cut.
- Flexible Blades allow the Stabilizer to collapse & pass wellhead Muti Load Shoulder with ID of 19.625”
- Blades re-expand to its original diameter
- Reduce vibrations and provide stabilization to the BHA



# Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment

## External Latch

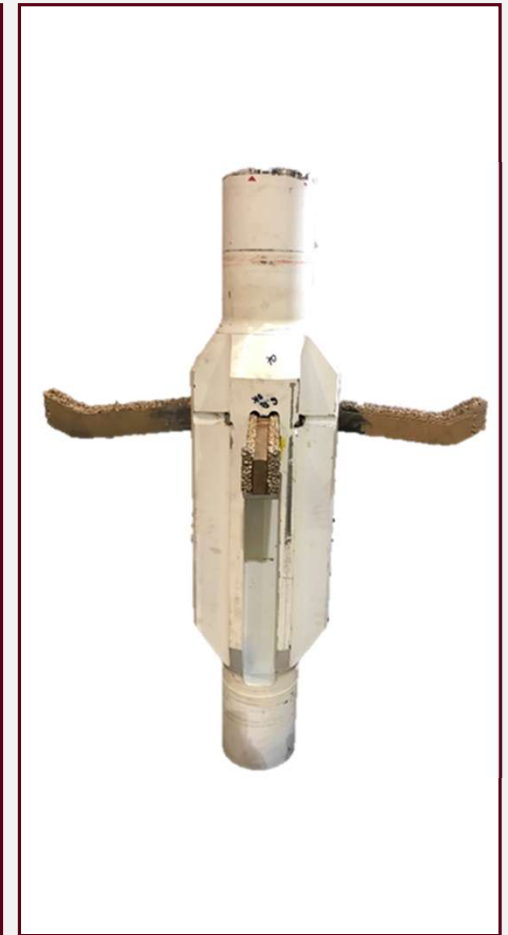
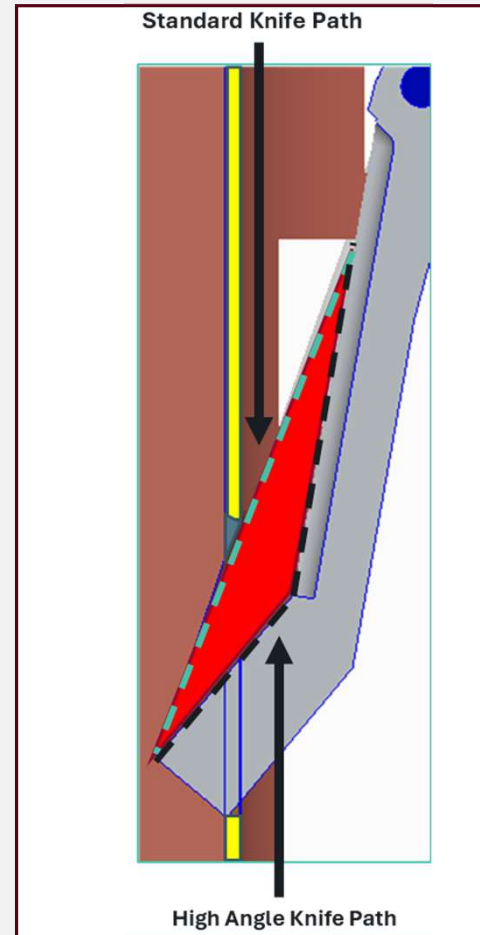
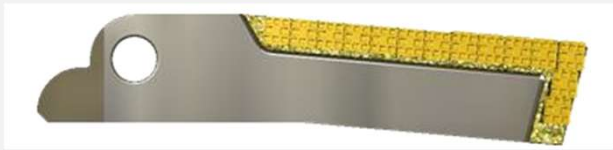
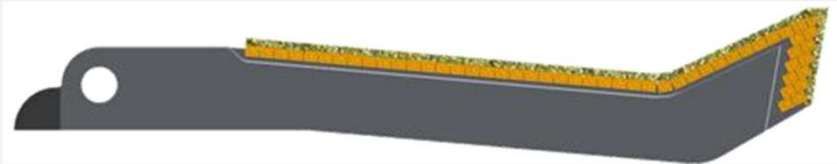
- Can accommodate tension or compression cuts – by simple BHA reconfiguration.
- De-risk wellhead strip out from 30” x 36” LPWHH
- Increased centralization in wellhead bore.
- Enhanced swarf dispersal



# Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment

## Mechanical Casing Cutter Advancements

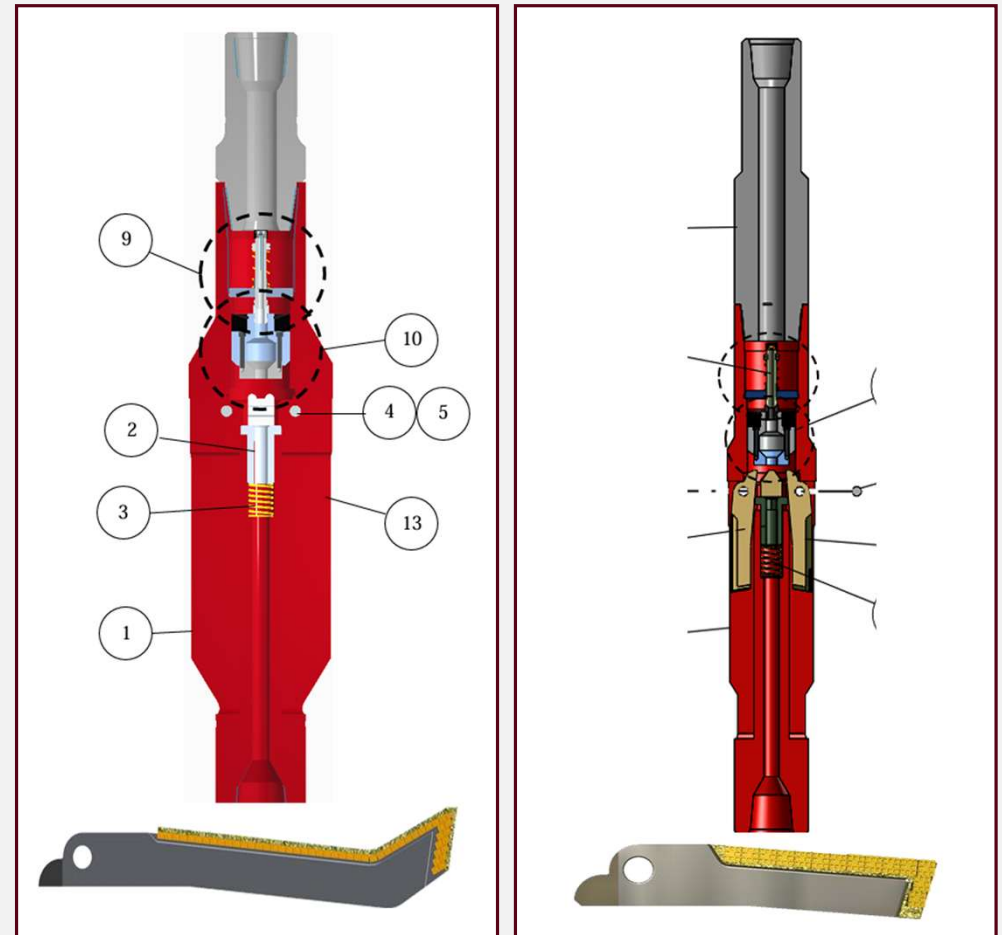
- From Traditional 12" to 17" OD Cutter Bodies
- Upgraded larger knife designs
- More carbide cutting structures per knife
- 4 Bladed Casing Cutters



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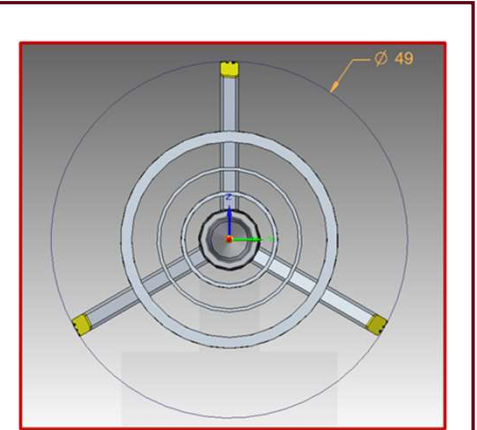
- 12" Casing Cutter – Standard Knife Design
- 17" OD Casing Cutter – High Angle Knife Design
  - Reduces contact area with 20" when cutting through to 30/36" LPWH
  - Dual Row of TCI (Inserts) for improved cut performance / reliability
  - Improved Stabilisation



# Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment

## Mechanical Multi String Cutting

- **Conventional:**
  - Currently a 2-3 run scenario
  - Creation of a Window using a series of spacer subs and knife lengths
- **Next Technical Barrier** – Technology Focus – 1 run
  - The Drawbacks
    - Uncemented Casing in Annulus
    - Casing Coupling Back Off



# Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment

## Mechanical Multi String Cutting

- Casing Coupling Back Off
  - Uncemented Casing in Annulus
  - Tension Release from 13 3/8" Casing – Attempting Multi String Cut – Coupling Back Off at Casing Hanger.
  - **Mechanical Cutting Attempt Aborted.**
  - No Wellhead Seal Assy Running Tool to Release Lock Ring and Recover 13 3/8" Casing
  - Explosive Option Only. AWJC Not Possible



**13 3/8" Collar Back Off – Jan 2026**

# Sub-Sea Wellhead Recovery - Back to the Future - Doing More with Legacy Equipment

## Key Takeaways

**1**

**Mechanical Cutting  
Enhancements**

Bigger is better

Increased performance and  
results from upscaling casing  
cutter bodies

**2**

**Stabilization Technology**

New Design – Increased Success

Expandable Stabiliser to enter  
reduced ID's and expand back to  
Surface Casing ID.

**3**

**Cost Reduction**

Option – Alongside Rig Chase

Advantages to Recover  
Wellheads – Rig Based  
Operations

# Questions?

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