



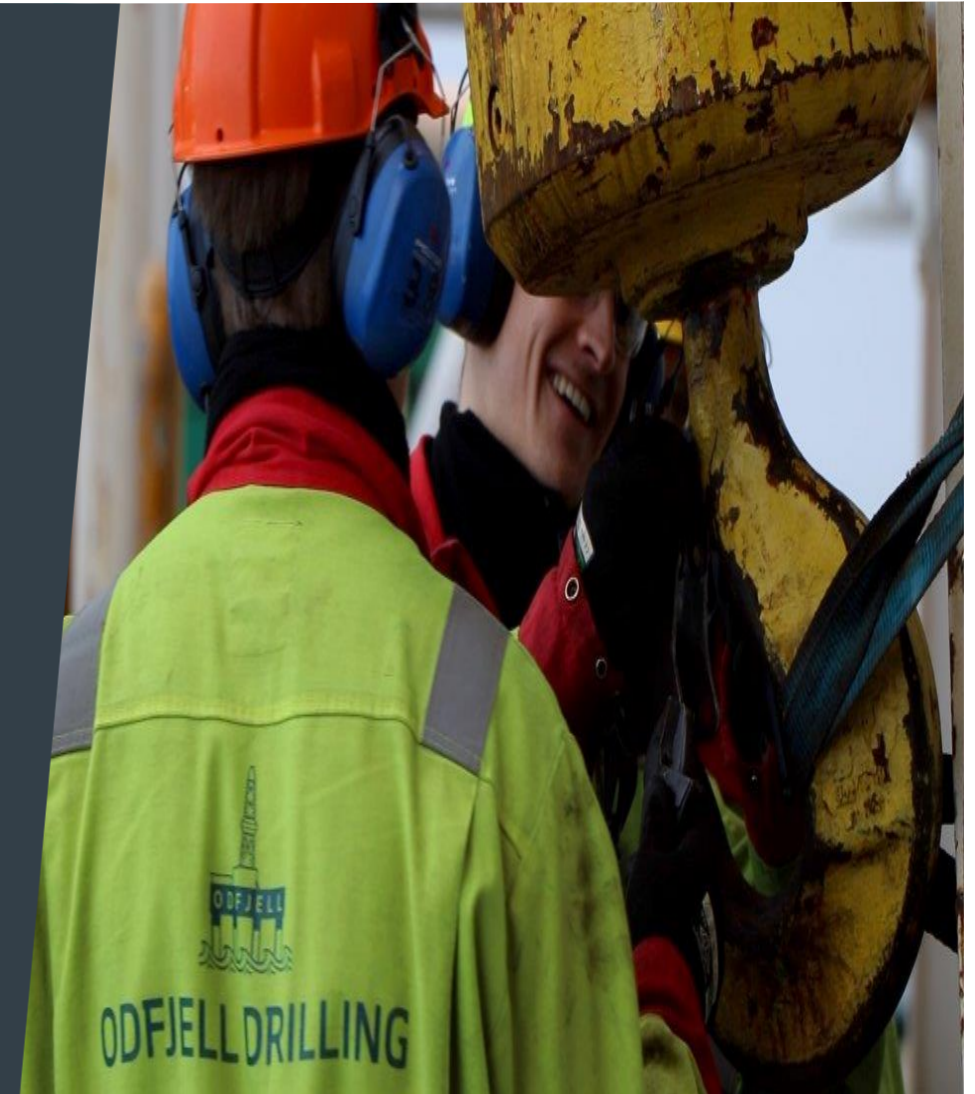
OWS ADVANCED CASING DEPLOYMENT

# Defuse™ High Speed Casing Reamer

**Derek Thomson**  
Global PLM Casing While Drilling

## Why should operators use our Defuse™ High Speed Casing Reamer tools?

- Well designs that are at the technical limit based on torque and drag calculations
- Reverse section well designs
- Build/hold/build/Horizontal/long sweeping turn in the horizontal
- Wells drilled with an un-stabilized bent housing motor/large bend angle
- Numerous instantaneous doglegs, excessive high-frequency hole spiraling
- Formation instability or plastic formations
- Wellbore has been open much longer than planned
- The need to cross faults in the wellbore path
- Low True Vertical Depth to required Measured-Depth ratio
- Increase casing/tubing running speed to reduce costs

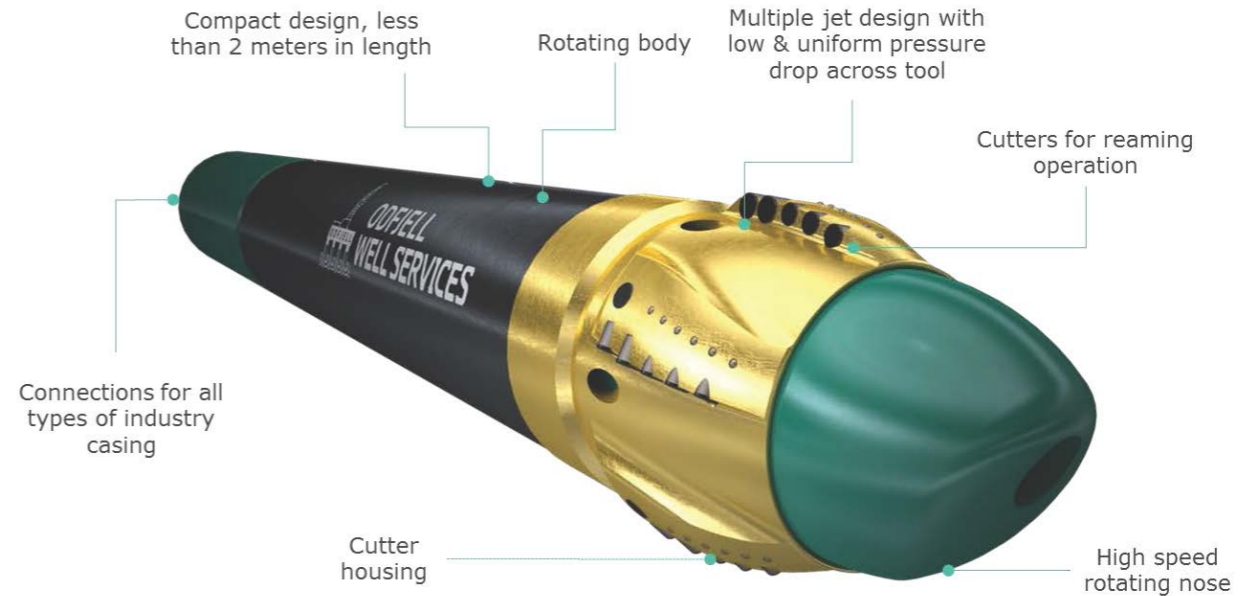


## Defuse™ High Speed Casing Reamer

The **Defuse™ High Speed Casing Reamer** is a PDC drillable casing shoe with a reverse impeller drive system to enable hydraulically controlled rotation of the shoe when necessary in order to prevent premature landing of the casing caused by ledges, high dog legs, high frequency wellbore spiralling and other wellbore obstructions. Once resistance is encountered, the pump can be applied to engage the drive mechanism inside the tool, turning it into a high-speed reaming shoe. It is designed to allow cement to be pumped through it, and the cement will receive a shear effect prior to entering the annulus.

### Operational Features

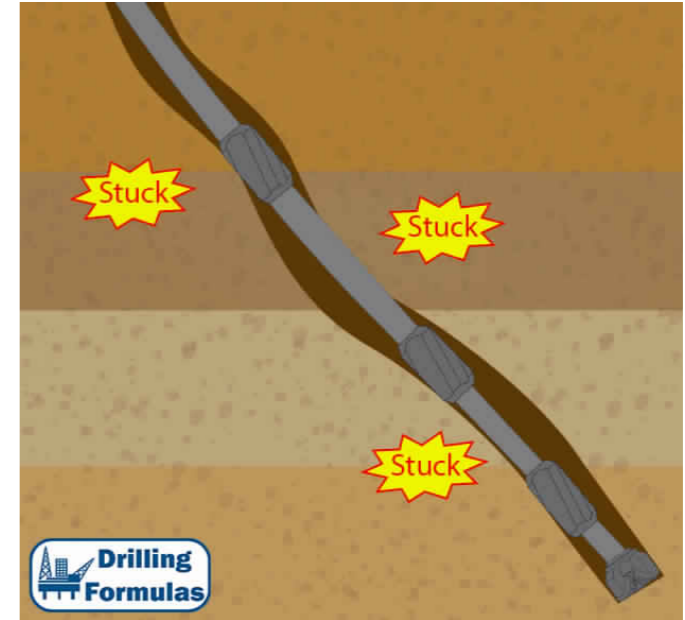
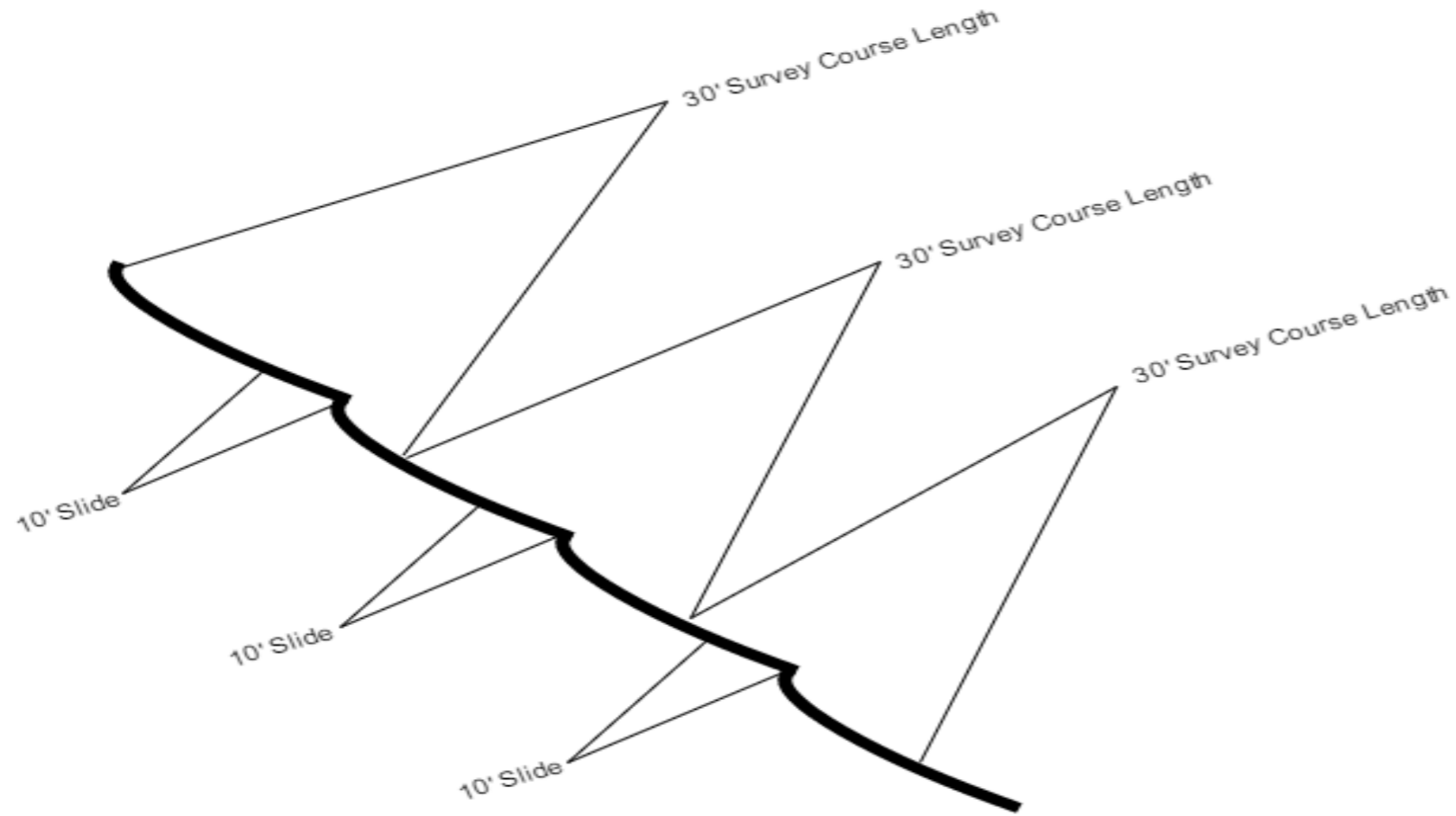
- Rapid activation when hole problems are encountered
- Hydraulically removes debris ahead of the casing
- Improved wellbore preparation before performing cement job
- Designed for efficient drill-out with PDC bit
- Provides a significant secondary shear to the cement slurry as it is pumped through the tool
- High speed bearings capable of speeds of +8000 RPM
- For high dog-leg applications with risk of casing string fatigue failures, reaming operation can be performed without a need to rotate the casing string



### Key Benefits

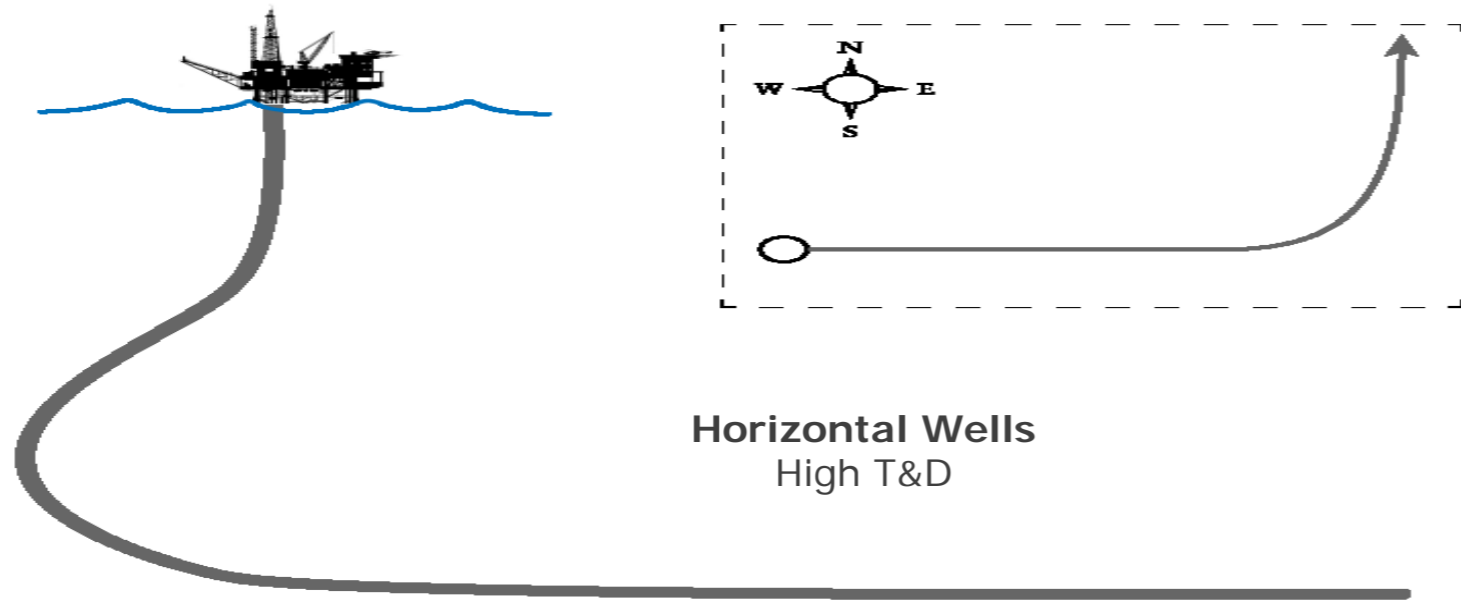
- ✓ Eliminates the risk of stuck casing caused by wellbore imperfections
- ✓ Eliminates time and cost associated with wiper trips & re-runs (\*typically 2-3 days per offshore well section)
- ✓ Provides total depth assurance

# High Instantaneous Dog Legs

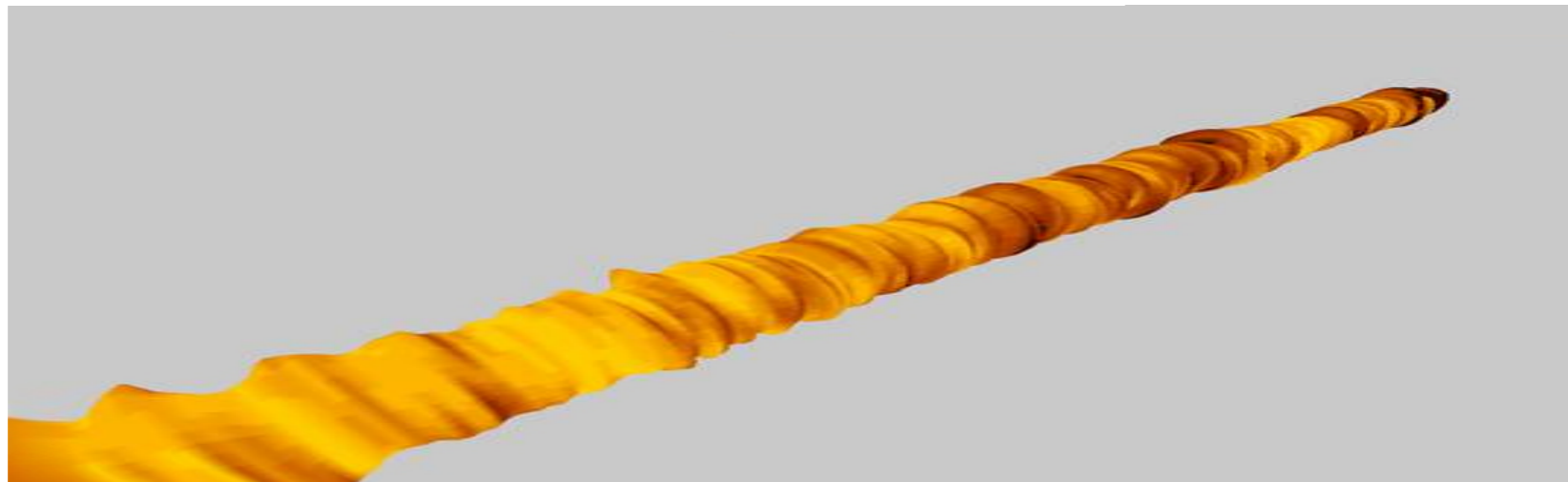
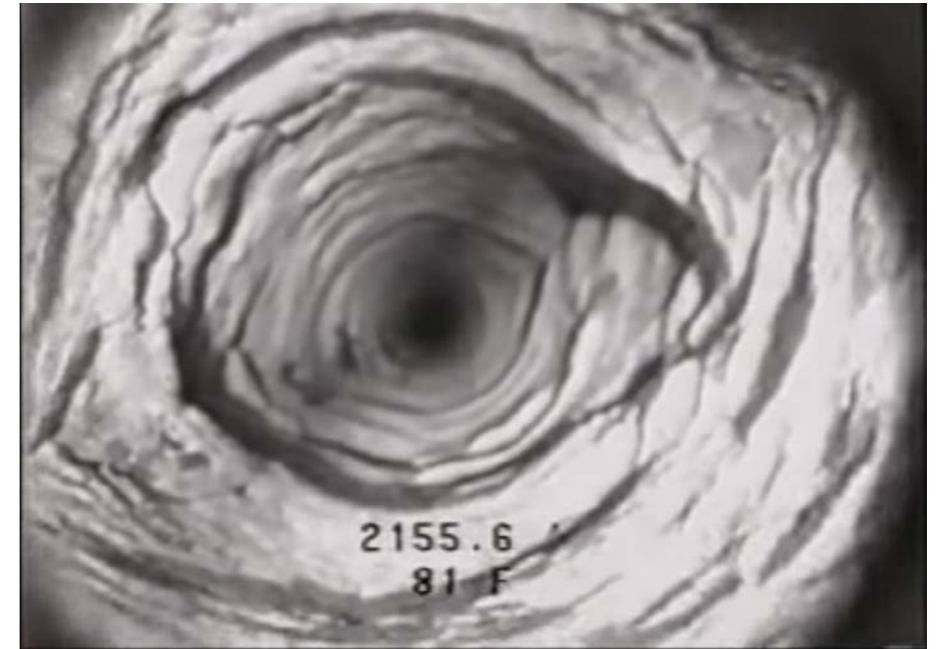


Micro-doglegs

# Complex Well Profiles



**HFWBS**  
Borehole camera view



**HFWBS**  
Borehole imaging log view

# Defuse™ Specifications

Tool Size	Length	Bladed Diameter	Flow Rate	Speed	Torque	Max. Pressure Drop	Max. Weight	Max. Overpull	Hole Size	Casing/Liner Size	Top Connection
	in. (mm)	in. (mm)	gpm (lpm)	RPM	ft-lbs	psi (kPa)	lbf (kdaN)	lbf (kdaN)	in. (mm)	in. (mm)	
450	55.25 (1,403)	5.75+ (146+)	60 - 400 (227 - 1,514)	300+	< 1,600	1,300 (8,964)	23,000 (10.2)	23,000 (10.2)	5.875+ (149+)	4.50+ (114+)	As per requirement
500	55.25 (1,403)	5.75+ (146+)	60 - 400 (227 - 1,514)	300+	< 1,600	1,300 (8,964)	23,000 (10.2)	23,000 (10.2)	6.0+ (152+)	5.0+ (127+)	
550	57.5 (1,461)	6.00+ (152+)	100 - 600 (379 - 2,271)	300+	< 2,100	1,200 (8,274)	28,100 (12)	28,100 (12)	6.50+ (165+)	5.50+ (140+)	
700	63.5 (1,613)	8.25+ (210+)	130 - 650 (492 - 2,461)	300+	< 2,900	1,100 (7,585)	30,500 (14)	30,500 (14)	8.375+ (213+)	7.00+ (178+)	
9625	65.5 (1,664)	12.00+ (305+)	150 - 1,200 (568 - 4,543)	250+	< 3,700	990 (6,826)	47,300 (21)	47,300 (21)	12.25+ (305+)	9.625+ (286+)	
9625	65.5 (1,664)	12.00+ (305+)	100 - 1,200 (379 - 4,543)	250+	< 3,700	4,125 (28,442)	47,300 (21)	47,300 (21)	12.25+ (305+)	9.625+ (286+)	
10750	68 (1,727)	13.125+ (333+)	150 - 1,200 (568 - 4,543)	200+	< 3,000	870 (6,000)	55,000 (24.5)	55,000 (24.5)	13.5 + (343 +)	10.750+ (273 +)	
13375	70 (1,778)	15.875+ (403+)	200 - 1,200 (757 - 4,543)	250+	< 4,800	800 (5,516)	65,000 (29)	65,000 (29)	16+ (406+)	13.375+ (340+)	

## Defuse™ Track History

Over 115 successful runs to date.



## Tool Efficiency

