



Casing while Drilling

# Advanced Casing Deployment – Drillable Casing Technology

## OWS ADVANCED CASING DEPLOYMENT

# Why should operators use our “Advanced Casing Deployment” 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





## REACH – High torque reamer

The **REACH – High torque reamer** utilizes medium-speed coupled with torque. It's designed to get casing and liner strings to bottom with the utmost efficiency.

The **REACH – High torque reamer** provides the ability of rotation and torque at the end of your casing or liner string. The **REACH** rotating head and body can be dressed with various blade configurations, allowing the ability to ream or drill through problematic sections, including hole spiraling, ledges and plasticised formation, all the way to total depth. The **REACH** Tool gives you the ability to reach the casing target depth in situations that would have required pulling the casing out of the hole and re-drilling the section. Additional power may be added to increase the torque to suit the application.

The **REACH – High torque reamer** is the right tool to have at the front of your casing string in the most challenging wells.



# REACH – High torque reamer

## FEATURES AND BENEFITS:

- Provides maximum rotating power on the end of your casing/liner
- Can be configured to run with a reamer or casing drilling bit
- Power is scalable to the level it can be used for casing drilling
- Outer housing rotates acting like an “agitator” on the end of your string as well as reaming simultaneously
- PDC drillable, allowing a standard BHA to drill the next section
- Provides a significant secondary shear to the cement slurry as its pumped through the tool
- Maximizes the full potential of top drive casing running
- Can be manufactured in almost any size form 4 1/2”- 20”



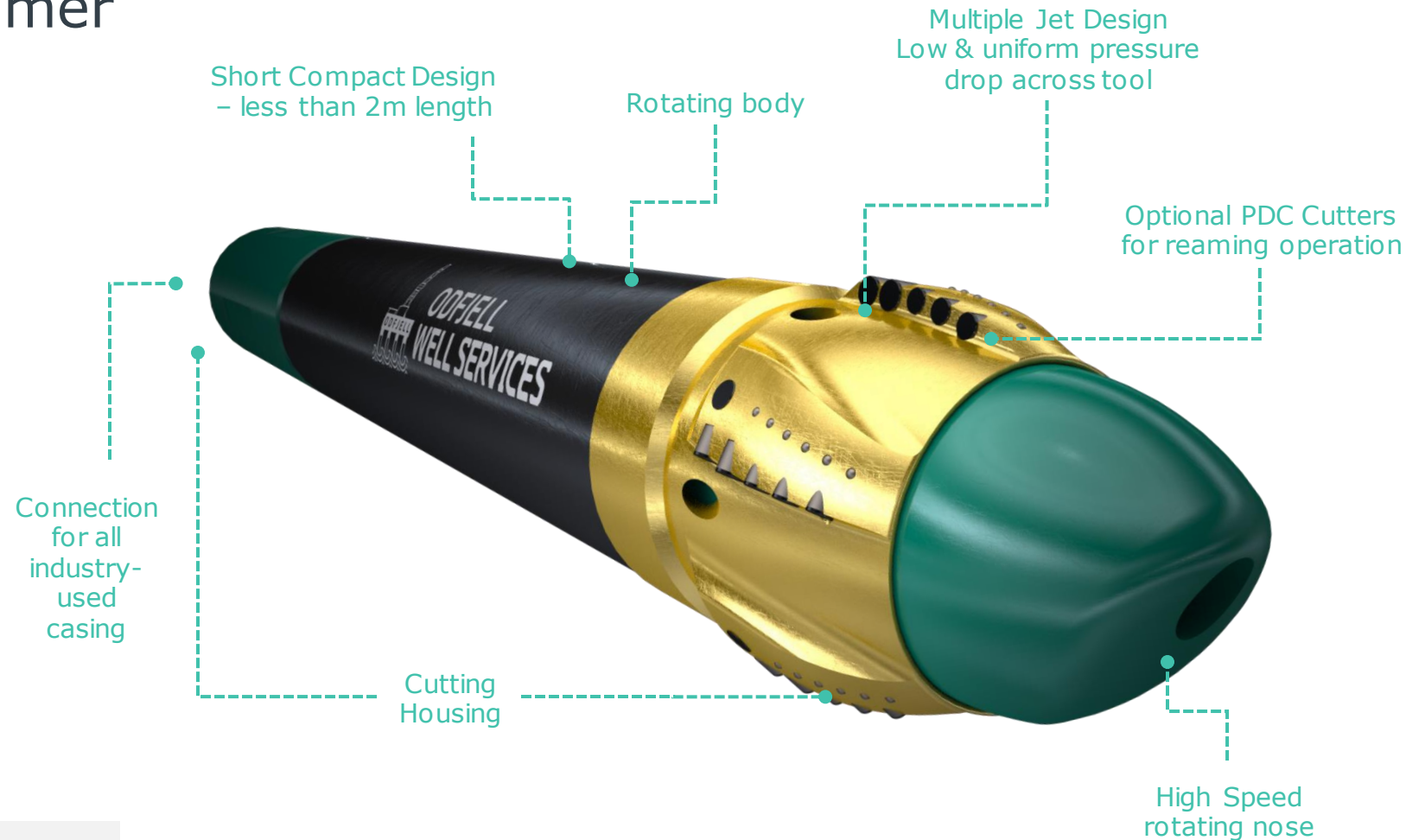
## RECOMMENDED REACH TOOL SET-UP:

- A float collar should be run one joint above the REACH to allow for flexibility behind the tool
- The REACH tool comes with a high velocity jetting nose as standard, designed to follow a tortuous well path
- For maximum effect, we recommend REACH to be used in conjunction with a top drive casing running tool

## DEFUSE – High speed reamer

The **DEFUSE – High speed reamer** provides the versatility of a casing shoe that can rotate freely passing over ledges in the wellbore, without the aid of pumping. Once resistance is encountered, pump pressure can be applied to engage the drive mechanism inside the tool, turning it into a high-speed reaming shoe. This tool will enable the operator to circulate through debris and ledges ahead of the casing, enabling casing to be landed on depth and on time.

The **DEFUSE - High speed reamer** is a valuable addition to have in the tool box for any well.



### BENEFITS

- 4-1/2" and larger DEFUSE Tools are PDC drillable, allowing a standard bit/BHA to be used to drill the next section
- Both DEFUSE and REACH tools supply a significant second shear to cement slurry as it's pumped through the tool

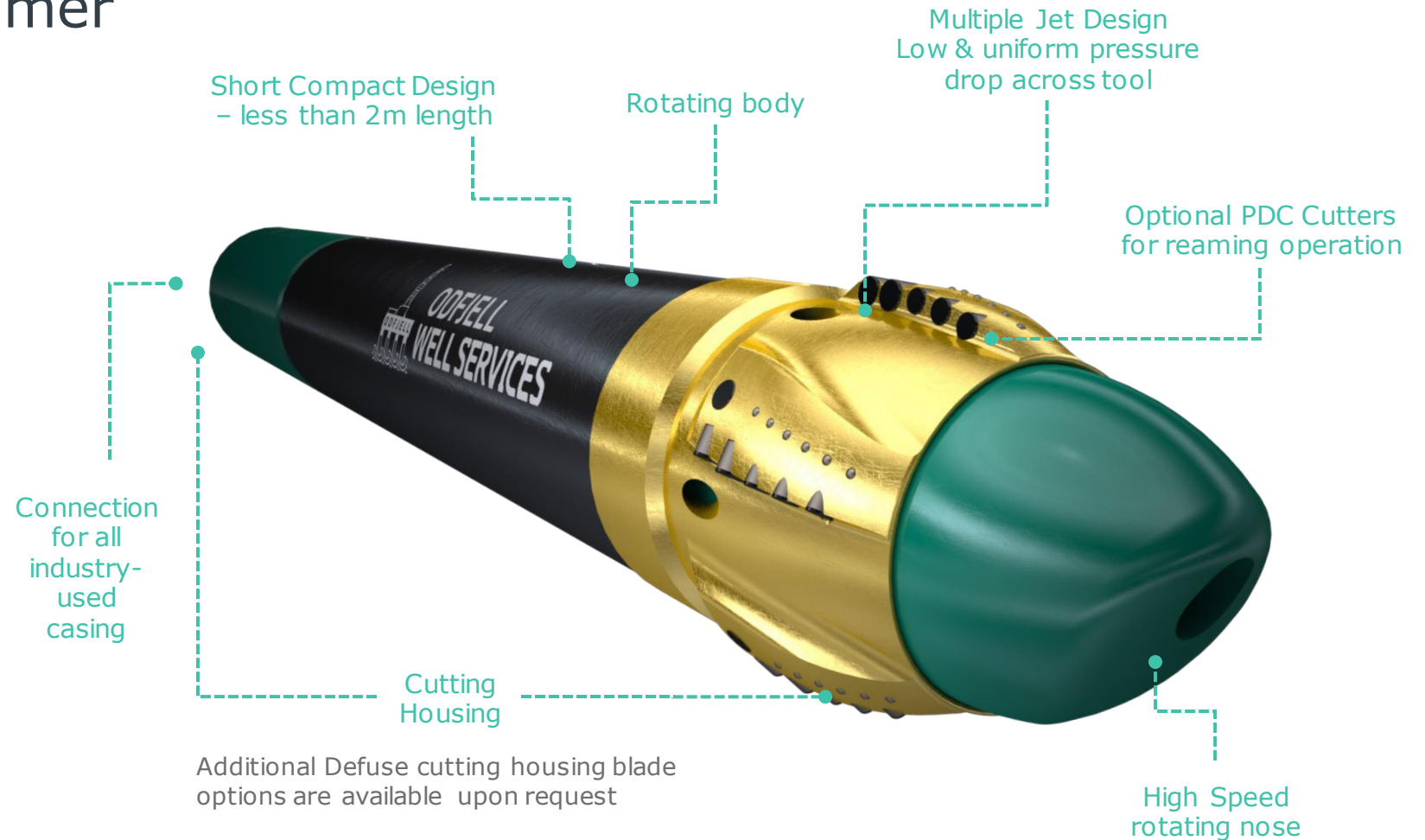
# DEFUSE – High speed reamer

## FEATURES AND BENEFITS:

- Rapid response when hole problems are encountered
- Fluid activated with drillable internals
- Tool speed can be varied via flow rate
- Ability to rotate at extremely high RPM
- Multiple fluid jets
- Hydraulically removes debris ahead of the casing
- Improved wellbore preparation prior to performing cement Job
- Provides a significant secondary shear to the cement slurry as its pumped through the tool
- Maximizes the full potential of top drive casing running
- Can be manufactured in all sizes from 4 1/2"-20"

## RECOMMENDED DEFUSE TOOL SET-UP:

- A float collar should be run one joint above the DEFUSE to allow for flexibility behind the tool
- The DEFUSE tool comes with a high velocity jetting nose as standard, designed to follow a tortuous well path
- For maximum effect, we recommend DEFUSE to be used in conjunction with a top drive casing running tool



# REACH – High torque reamer

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)	
<b>450</b>	102 (2,591)	5.25+ (133+)	60 - 400 (227 - 1,514)	30+	< 3,300	1,850 (12,750)	22,500 (10)	22,500 (10)	5.875+ (149+)	4.50+ (114+)	<b>As per requirement</b>
<b>500</b>	102 (2,591)	5.25+ (133+)	60 - 400 (227 - 1,514)	30+	< 3,300	1,850 (12,750)	22,500 (10)	22,500 (10)	5.875+ (149+)	4.50+ (114+)	
<b>550</b>	105 (2,667)	6.00+ (152+)	100 - 600 (379 - 2,271)	30+	< 4,700	1,400 (9,653)	38,000 (16.9)	38,000 (16.9)	6.50+ (165+)	5.50+ (140+)	
<b>700</b>	125 (3,175)	8.25+ (210+)	130 - 700 (492 - 2,650)	30+	< 6,800	1,600 (11,000)	42,000 (18.7)	42,000 (18.7)	8.375+ (213+)	7.00+ (178+)	
<b>9625</b>	130 (3,302)	12.00+ (305+)	150 - 900 (568 - 3,407)	30+	< 9,000	1,500 (10,343)	60,000 (26.7)	60,000 (26.7)	12.25+ (305+)	9.625+ (286+)	
<b>13375</b>	170 (4,318)	14.5+ (368+)	200 - 1,200 (757 - 4,542)	30+	< 11,500	1,100 (7,585)	65,000 (28.9)	65,000 (28.9)	14.75+ (375+)	13.375+ (340+)	

Tests are conducted with fresh water of 8.33 PPG

\* Sizes vary to Hole Gauge

# DEFUSE – High speed reamer

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)	
<b>450</b>	55.25 (1,403)	5.25+ (133+)	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
<b>500</b>	55.25 (1,403)	5.25+ (133+)	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+)	
<b>550</b>	57.5 (1,461)	6.00+ (152+)	100 - 600 (379 - 2,271)	300+	< 2,100	1,200 (8,274)	32,000 (14.2)	32,000 (14.2)	6.50+ (165+)	5.50+ (140+)	
<b>700</b>	63.5 (1,613)	8.25+ (210+)	130 - 700 (492 - 2,650)	300+	< 2,900	1,100 (7,585)	40,500 (18)	40,500 (18)	8.375+ (213+)	7.00+ (178+)	
<b>9625</b>	65.5 (1,664)	12.00+ (305+)	150 - 1,200 (568 - 4,543)	250+	< 3,700	990 (6,826)	55,000 (24.5)	55,000 (24.5)	12.25+ (305+)	9.625+ (286+)	
<b>13375</b>	70 (1,778)	14.5+ (368+)	200 - 1,200 (757 - 4,543)	250+	< 4,800	800 (5,516)	63,000 (28)	63,000 (28)	14.75+ (375+)	13.375+ (340+)	

OVER 70 SUCCESSFUL  
DEFUSE REAMING  
OPERATIONS  
PERFORMED TO DATE

Tests are conducted with fresh water of 8.33 PPG  
\* Sizes vary to Hole Gauge

- Fluid activated with drillable internals



# Static Defuse Reamer

The **Static Defuse Reaming Tool** is specifically designed for soft formations, and to maximize cutting without compromising the casing thread integrity. This aggressive casing drilling shoe allows the operator the ability to pump while the tool rotates with the casing string and jets any debris in the wellbore from its path. The tool is engineered to withstand high impact and erosion. Chevron-style upper blades provide stabilization and balance, keeping torque to a minimum. After the cement job, the tool may be drilled out with ease.

Ultra low friction contact blades

Connection can be threaded or welded

Chevron-style blades with carbide domes

