



Shallow-Angle QuickCut™ Casing Exit System RMN*-Type Anchor or RHN*-Type Anchor

Weatherford's shallow-angle QuickCut casing exit system with RMN- or RHN-type anchor is a single-trip, retrievable, 2°-whipstock system with either a mechanically or hydraulically actuated, non-sealing anchor. This innovative, high-expansion anchor delivers increased radial anchoring performance, and includes a wide catch range of casing sizes. This versatile, robust anchor delivers the performance required when milling in highly compressive-strength formations or in brownfield applications where casing wall loss is common. The casing catch range of the anchor with the high-performance, shallow-angle QuickCut milling system provides improved milling, gauge retention, and formation drilling in a single trip.

Applications

- Extended-reach wells to minimize doglegs
- Abandonment plug without the need for multiple plugs
- Wells requiring exits to accommodate long rotary-steerable drilling systems
- Wells running complex completion strings and expandables
- Exits through multiple strings of casing or casing strings with multiple weights

Features, Advantages and Benefits

- Functionality is not dependent on, or limited by, exact casing ID. One size anchor can catch multiple sizes of casing. This versatility reduces the risk associated with wellbore obstructions or restrictions.
- The system uses a minimal rathole for tough-to-drill formations, reducing overall installed costs.
- The milling bottomhole assembly (BHA) and whipstock are designed for safe, quick rig-floor makeup.
- The aggressive lead mill geometry improves rates of penetration and gauge retention.

* ANCHOR		
Retrievable or Permanent	Hydraulic or Mechanical	Sealing or Non-Sealing
Retrievable	Hydraulic or Mechanical	Non-Sealing





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Features, Advantages and Benefits (continued)

- The shear value for the mill attachment bolt can be adjusted for varying well profiles.
- The unique lug technology protects the whipstock during cut-out and accurately directs the mill into the casing wall.
- The window can be oriented, anchored, and milled in one efficient trip.
- All three mills are full gauge to ensure window consistency.
- The 2°, single-angle concave creates a smooth transition from the parent bore into the lateral section.
- The system includes a QuickChange™ shear disconnection, providing debris management, as well as the capability to change from one anchor type to another.
- The system can be retrieved in multiple ways, providing added flexibility in the field.

Specifications

Milling Assemblies

Casing		Concave OD (in./mm)	Lead Mill			Secondary Mill		Flex Mandrel Connection Box x Pin	Steering Mill	
OD (in./mm)	Weight (lbm/ft, kg/m)		OD (in./mm)	Pilot OD (in./mm)	Box Connection (in.)	OD (in./mm)	Connection Box x Pin		OD (in./mm)	Connection Box x Pin
7 177.8	20 29.8	5-1/2 139.7	6-1/4 158.8	5 127.0	3-1/2 Reg	3-1/2 Reg	Flex mandrel is incorporated in secondary mill	6-1/4 158.8	3-1/2 IF Box x 3-1/2 Reg Pin	
	23 SD 34.2 SD		6-1/8 155.6					6-1/8 155.6		
	23 34.2							6 ^a 152.4		
	26 38.7		4 1/2 114.3	5-7/8 ^a 149.2				5-7/8 ^a 149.2		
	29 SD 43.2			6 ^a 152.4				6 ^a 152.4		
	29 ^a 43.2			5-7/8 ^a 149.2				5-7/8 ^a 149.2		
	32 ^a 47.6			6 ^a 152.4				6 ^a 152.4		
	32 Sd ^a 47.6 SD		5-7/8 ^a 149.2	5-7/8 ^a 149.2						
	35 ^a 52.1									

*Heavyweight assemblies



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Specifications (continued)

Milling Assemblies

Casing		Concave OD (in./mm)	Lead Mill			Secondary Mill		Flex Mandrel Connection Box x Pin	Steering Mill	
OD (in./mm)	Weight (lbm/ft, kg/m)		OD (in./mm)	Pilot OD (in./mm)	Box Connection (in.)	OD (in./mm)	Connection Box x Pin		OD (in./mm)	Connection Box x Pin
9-5/8 244.5	36.0 53.6	8 203.2	8-3/4 222.3	7 177.8	4-1/2 Reg	8-3/4 222.3	4-1/2 IF 4-1/2 Reg	4-1/2 IF	8-3/4 222.3	4-1/2 IF
	40.0 59.5		8-5/8 219.1			8-5/8 219.1			8-5/8 219.1	
	43.5 ^a 64.7		8-1/2 ^a 215.9	6-3/8 ^a 161.9		8-1/2 ^a 215.9			8-1/2 ^a 215.9	
	47.0 ^a 69.9									
	53.5 ^a 79.6									
58.4 ^a 86.9	8-1/4 ^a 209.5	8-1/4 ^a 209.5	8-1/4 ^a 209.5							
10-3/4 273.1	32.75 48.7	9 228.6	9-7/8 250.8	7 177.8	4-1/2 IF	9-7/8 250.8	4-1/2 IF	4-1/2 IF	9-7/8 250.8	4-1/2 IF
	40.5 to 45.5 60.3 to 67.7		9-3/4 247.7			9-3/4 247.7			9-3/4 247.7	
	51 75.9		9-5/8 244.5			9-5/8 244.5			9-5/8 244.5	
	55 82.6		9-1/2 241.3			9-1/2 241.3			9-1/2 241.3	
	60.0 to 65.7 89.3 to 97.8		9-3/8 238.1			9-3/8 238.1			9-3/8 238.1	
11-3/4 298.5	38 56.5	10 254.0	10-7/8 276.2	8-1/8 206.3	6-5/8 Reg	10-7/8 276.2	6-5/8 Reg	6-5/8 Reg	10-7/8 276.2	6-5/8 Reg
	42 62.5		10-3/4 273.1			10-3/4 273.1			10-3/4 273.1	
	47 69.9		10-5/8 269.9			10-5/8 269.9			10-5/8 269.9	
	54 80.4		10-1/2 266.7			10-1/2 266.7			10-1/2 266.7	
	60 89.3									
13-3/8 339.7	48.0 71.4	11-1/2 292.1	12-1/4 311.2	10 254.0		12-1/4 311.2			12-1/4 311.2	
	54.5 81.1									
	72.0 107.1									

*Heavyweight assemblies



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Specifications (continued)

Anchor Assemblies

Casing		Whipstock OD (in./mm)	MultiCatch™ Anchor						
			Running OD (in./mm)	Maximum Torque (ft-lb/N·m)	Mechanical Shear (lb/daN)	Running Length		Overpull	
OD (in./mm)	Weight (lb/ft, kg/m)	Running OD (in./mm)				Maximum Torque (ft-lb/N·m)	Mechanical Shear (lb/daN)	With QuickChange™ Sub (ft/m)	Without QuickChange Sub (ft/m)
7 177.8	17.0 to 35.0 25.3 to 52.1	5-1/2 139.7	5-1/4 133.4	10,000 13,558	13,500 6,005	6.5 2.0	4.4 1.3	14,000 6,227	100,000 44,482
9 5/8 244.5	36.0 to 58.4 53.8 to 86.9	8 203.2	7 177.8	20,000 27,116	13,500 6,005	7.7 2.3	6.1	16,000 7,117	125,000 55,598
10 3/4 273.1	32.75 to 65.70 47.7 to 97.8	9 228.6	7 177.8	20,000 27,116	13,500 6,005	8.06 2.5	6.1	18,000 8,006	125,000 55,598
11 3/4 298.5	38.0 to 60.0 56.6 to 89.3	10 254.0	10 254.0	20,000 27,116	13,500 6,005	11.4 3.5	9.1 2.8	20,000 8,896	150,000 66,723
13-3/8 339.7	48.0 to 72.0 71.4 to 107.1	11-1/2 292.1				11.9 3.6			



Set (Milling)



Unset (Running In)