

Pipe						CDN		
						NEW	API PREMIUM	
Pipe size	<i>in</i>	4.500	<i>mm</i>	114.3	OD	<i>mm</i>	114.3	109.9
Pipe weight	<i>lb/ft</i>	20.00	<i>kg/m</i>	29.76	Thickness	<i>mm</i>	10.9	8.7
Upset Type		IEU			X-Sec Area	<i>cm²</i>	35.5	27.8
Tube grade		S135			Section Modulus	<i>cm³</i>	83.8	65.2
Range		3			Polar Section Modulus	<i>cm³</i>	167.7	130.3
Tube Yield	<i>MPa</i>	931			Tensile Yield	<i>kdaN</i>	330	258
ID	<i>mm</i>	92.5			Torsional Yield	<i>ft-lbs</i>	66,400	51,600
					80% Torsional Yield	<i>ft-lbs</i>	53,100	41,280
					Internal Pressure Yield	<i>MPa</i>	155.8	142.0
					Collapse Yield	<i>MPa</i>	160.6	129.6
					D/t		10.47	12.58
					Connection/Tube Torsional Ratio		0.732	

Tool Joint						CDN		
						NEW		
Connection Type		400 DUO			OD	<i>mm</i>	133.4	
Material Yield Strength	<i>MPa</i>	896			Tensile Yield Strength	<i>kdaN</i>	409	
	OD	<i>mm</i>	133.4		Torsional Yield Strength	<i>ft-lbs</i>	48,600	
	ID	<i>mm</i>	68.3		Recommended Makeup Torque	<i>ft-lbs</i>	29,200	
Pin Shoulder Angle	<i>deg</i>	18			Maximum Makeup Torque	<i>ft-lbs</i>	31,600	
Pin Tool Joint Length	<i>mm</i>	356						
Box Tool Joint Length	<i>mm</i>	356						

Drill Pipe Assembly						CDN		
				Shoulder-Shoulder Length	<i>m</i>		13.26	
				Adjusted Weight	<i>kg/m</i>		31.49	
				Closed End Displacement	<i>L/m</i>	10.48	<i>m³/m</i>	0.01048
				Open End Displacement	<i>L/m</i>	4.02	<i>m³/m</i>	0.00402
				Fluid Capacity	<i>L/m</i>	6.47	<i>m³/m</i>	0.00647
				Drift Size	<i>mm</i>	65.1		

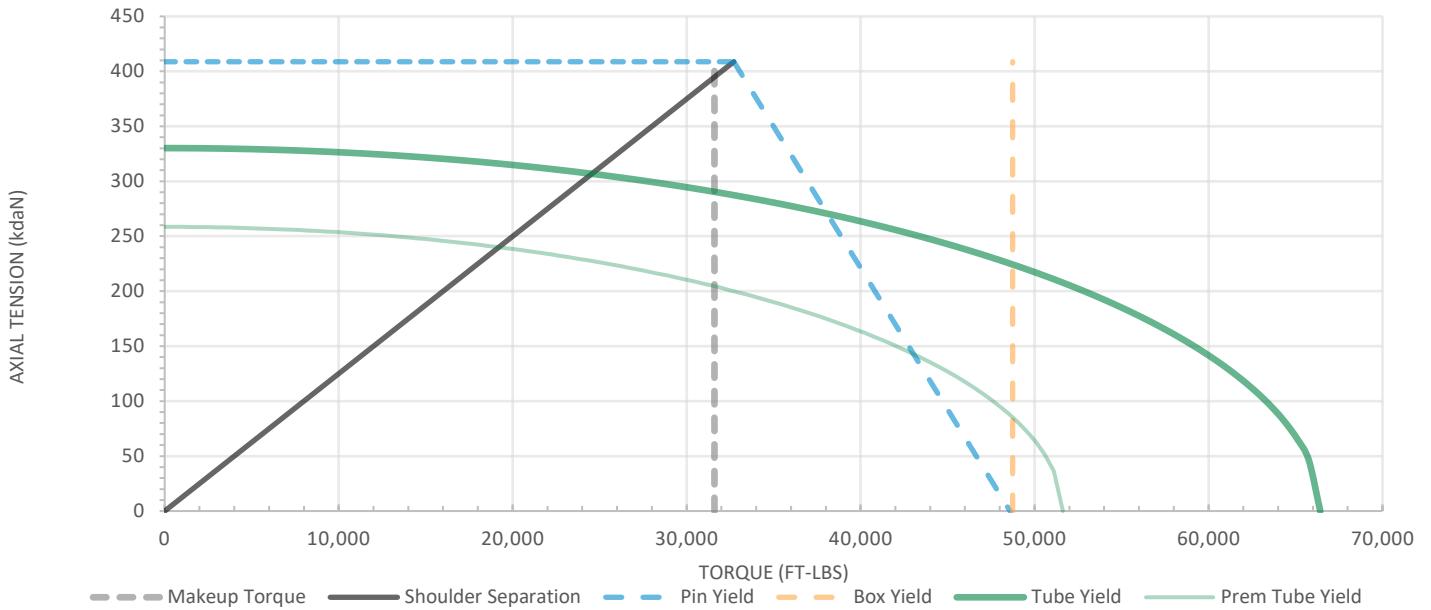
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Calculations are based on uniform wall thickness and outside diameter – no safety factor has been applied. The information provided for inspection classes is based on uniform wear and is not intended to recommend or confirm operational limits of any used product. It is recommended that drilling torque not exceed 80% of the makeup torque, however it is the responsibility of the end user to determine the acceptable use of the end product including appropriate performance ratings and safety factors where applicable. All connection torque calculations have been performed using a thread compound friction factor of 1.0. Complete Tubular Products does not endorse any specific thread compound and waives all responsibility in determining appropriate makeup torque values for any specific drilling circumstance. Modifying makeup torque values for any reason shall be done at the end users discretion and risk.

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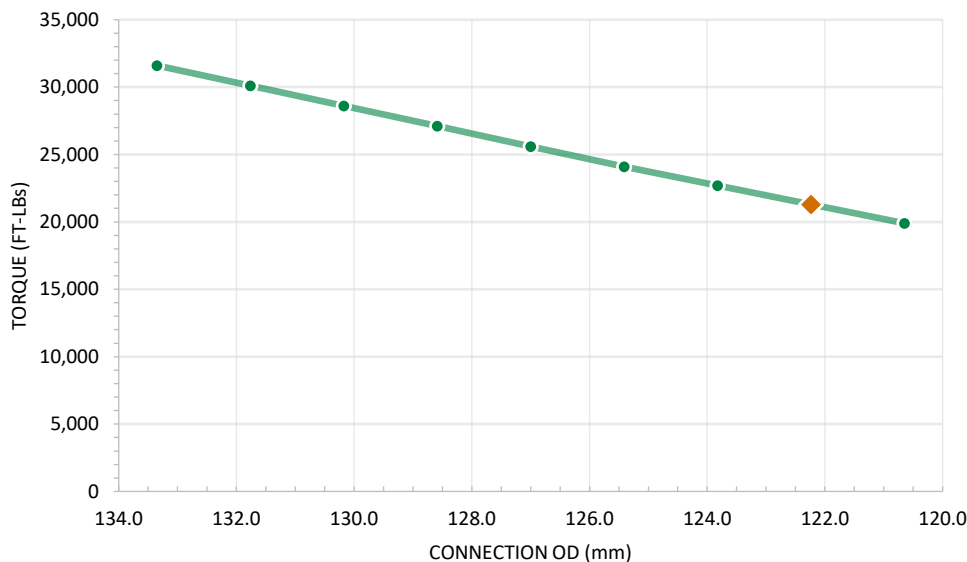
Makeup Torque Then Tension Chart

CDN



Connection Wear Chart

CDN



CONNECTION OD (mm)	MAXIMUM MAKEUP TORQUE (ft-lbs)
133.4	31,600
131.8	30,100
130.2	28,600
128.6	27,100
127.0	25,600
125.4	24,100
123.8	22,700
122.2	21,300
120.7	19,900
MIN REC OD (mm)	
122.2	21,300

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