

Pipe

					NEW	API PREMIUM
Pipe size	in	4.500	OD	in	4.500	4.365
Pipe weight	lb/ft	16.60	Thickness	in	0.337	0.270
Upset Type		IEU	X-Sec Area	in ²	4.407	3.469
Tube grade		S135	Section Modulus	in ³	4.271	3.3468
Range		2	Polar Section Modulus	in ³	8.543	6.6937
Tube Yield	ksi	135	Tensile Yield	lbs	595,000	468,000
ID	in	3.826	Torsional Yield	ft-lbs	55,500	43,500
			80% Torsional Yield	ft-lbs	44,400	34,800
			Internal Pressure Yield	psi	17,700	16,200
			Collapse Yield	psi	16,800	11,000
			D/t		13.35	16.19
			Connection/Tube Torsional Ratio		0.781	

Tool Joint

					NEW	REC MIN OD
Connection Type		430 DUO	OD	in	5.250	4.938
Material Yield Strength	ksi	130	Tensile Yield Strength	lbs	826,800	826,800
OD	in	5.250	Torsional Yield Strength	ft-lbs	43,400	31,600
ID	in	3.000	Recommended Makeup Torque	ft-lbs	26,000	19,000
Pin Shoulder Angle	deg	18	Maximum Makeup Torque	ft-lbs	28,200	20,600
Pin Tool Joint Length	in	14.0				
Box Tool Joint Length	in	14.0				

Drill Pipe Assembly

Shoulder-Shoulder Length	ft	31.5		
Adjusted Weight	lbs/ft	18.28		
Closed End Displacement	gal/ft	0.851	bbl/ft	0.0203
Open End Displacement	gal/ft	0.279	bbl/ft	0.0066
Fluid Capacity	gal/ft	0.571	bbl/ft	0.0136
Drift Size	in	2.875		

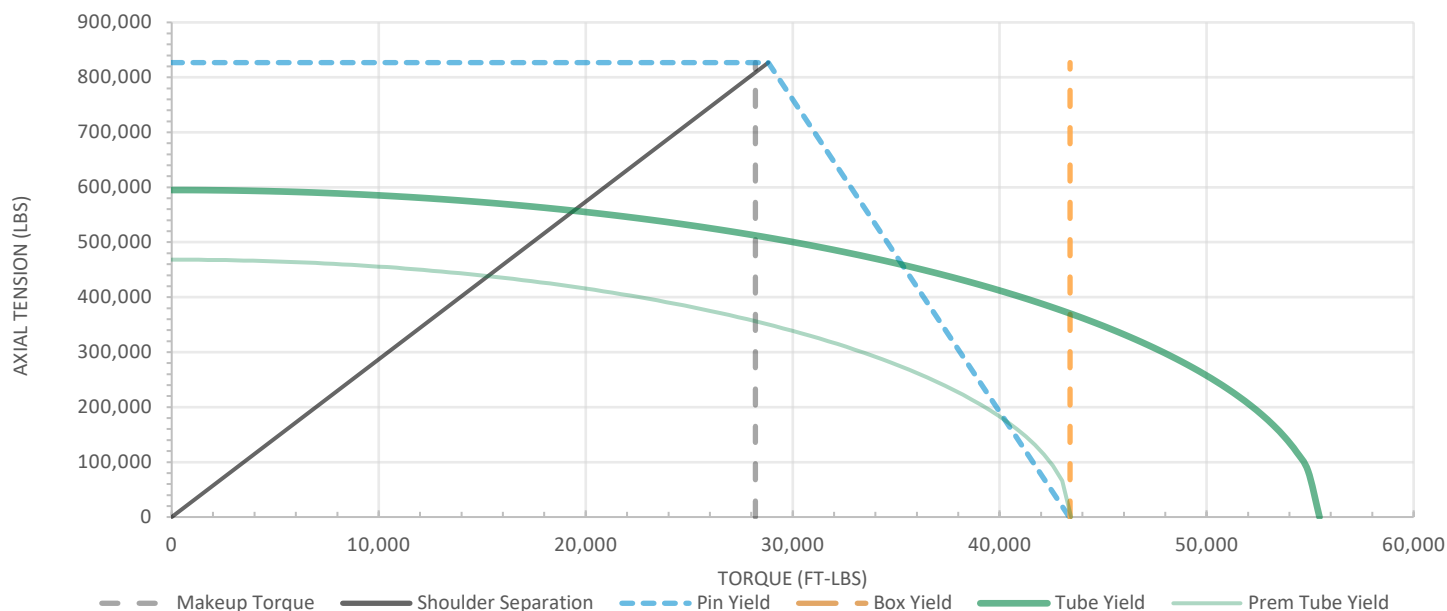
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Calculations are based on uniform wall thickness and outside diameter – no safety factor has been applied. The information provided for inspection classes is based on uniform wear and is not intended to recommend or confirm operational limits of any 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 Group 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.

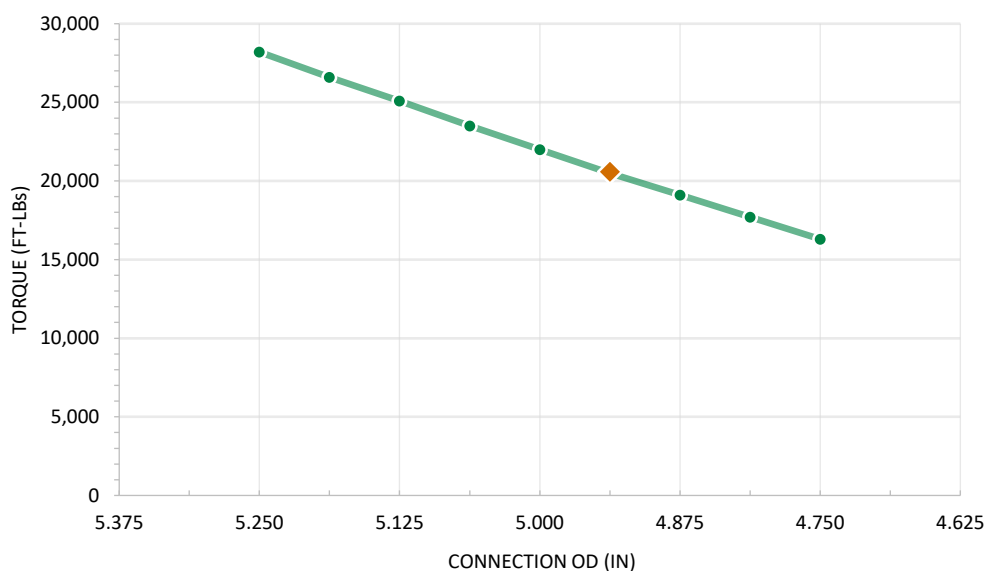
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Pipe Size: 4.500 in Grade: S135 Range: 2
 Pipe Weight: 16.60 lb/ft Upset: IEU Connection: 430 DUO

Makeup Torque Then Tension Chart



Connection Wear Chart



CONNECTION OD (in)	MAXIMUM MAKEUP TORQUE (ft-lbs)
5.250	28,200
5.188	26,600
5.125	25,100
5.063	23,500
5.000	22,000
4.938	20,500
4.875	19,100
4.813	17,700
4.750	16,300
MIN REC OD (in)	
4.938	20,600

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