

FOR REFERENCE ONLY



Drill Pipe Performance Characteristics			Pipe Size and Weight: 4" 14.00 IU Pipe Grade: S-135 Range: 2 Tool Joint: 4.875 X 2.688 XT39			
Pipe						
		New	Premium		New	Premium
	OD (in)	4.000	3.868	Torsional strength (ft-lbs)	41,900	32,800
	Wall thickness (in)	0.330	0.264	Tensile strength (lbs)	513,600	403,500
	ID (in)	3.340	3.340			
	Calculated plain end weight (lbs/ft)	12.921	10.151	80% Torsional strength (ft-lbs)	33,500	26,200
Note: Premium properties are calculated based on uniform OD and wall thickness.						
	Cross sectional area pipe body (in ²)	3.805	2.989	Pressure capacity (psi)	19,491	18,428
	Cross sectional area OD (in ²)	12.566	11.751	Collapse capacity (psi)	20,141	13,836
	Cross sectional area ID (in ²)	8.762	8.762			
	Section modulus (in ³)	3.229	2.523			
	Polar section modulus (in ³)	6.458	5.046			
Tool Joint (120000 material Yield Strength)			Drill pipe assembly with			
	XT39	OD (in)	4.875	XT39 Connection		
		ID (in)	2.688			
	Pin tong length (in)	10.0		Adjusted weight (lbs/ft)	15.44	
	Box tong length (in)	15.0		Approximate length (ft)	31.64	
XT 39 CONNECTION INFORMATION FROM GRANT PRIDECO PUBLICATION						
	Torsional Strength (ft-lbs)	35,300		Fluid displacement (gal/ft)	0.236	
	Max Recommended Make-up Torque (ft-lbs)	21,200		Fluid capacity (gal/ft)	0.444	
	Min Recommended Make-up Torque (ft-lbs)	12,400				
	Balance OD (in)	4.926		Drift size (in)	2.563	
	Tensile strength (lbs)	667,800				
	Tool joint/Drill pipe torsional ratio (New pipe)	0.84				
	Tool joint/Drill pipe torsional ratio (Prem pipe)	1.08				
	Min OD for premium class (in)	4.594				
Minimum make-up is based on shoulder separation caused by bending.						

Drill Pipe Performance Sheet (1.0 FF)

1/8/2021

Combined Loading for Drill Pipe			
Connection: XT™ 39 4.875" x 2.813" (120 KSI SMYS) Friction Factor: 1.0			
Pipe: 4.0" OD 0.330" Wall Thickness S135 80% Inspection Class			
At Max MUT (19700 ft-lbs)		At Min MUT (16400 ft-lbs)	
Operational Torque(ft-lbs)	Assembly Max Tension(lbs)	Operational Torque(ft-lbs)	Assembly Max Tension(lbs)
0	403500	0	403500
900	403400	700	403400
1800	402900	1400	403200
2600	402300	2100	402700
3500	401200	2800	402000
4400	399900	3500	401200
5300	398200	4200	400200
6100	396500	4900	399000
7000	394200	5600	397600
7900	391600	6300	396000
8800	388700	7000	394200
9700	385400	7600	392500
10500	382200	8300	390400
11400	378300	9000	388000
12300	374000	9700	385400
13200	369300	10400	382600
14100	364200	11100	379600
14900	359400	11800	376400
15800	353500	12500	373000
16700	347100	13200	369300

The Technical information contained herein, including the product performance sheet and other attached documents, is for reference only and should not be considered as a recommendation. The user is fully responsible for the accuracy and suitability of use of the technical information. NOV Grant Prideco cannot assume responsibility for the results obtained through the use of this material. No expressed or implied warranty is intended. Drill pipe assembly properties are calculated based on uniform OD and wall thickness. No safety factor is applied. The information provided for various inspection classes and for various wear conditions (remaining body wall) is for information only and does not represent or imply acceptable operating limits. It is the responsibility of the customer and the end user to determine the appropriate performance ratings, acceptable use of the product, maintain safe operating practices, and to apply a prudent safety factor suitable for the application. For API connections that have different pin and box IDs, tool joint ID refers to the pin ID. Per Chapter DS, Section DS-16 of the drilling manual, it is recommended that drilling torque should not exceed 80% of MUT.

Connection Wear Table		
Connection: XT™ 39 4.875" x 2.813" (120 KSI SMYS) Friction Factor: 1.0		
Tool Joint OD (in)	Max MUT(ft-lbs)	Min MUT(ft-lbs)
4.875	19700	16400
4.855	19700	16400
4.835	19300	16100
4.814	19000	15800
4.794	18600	15500
4.774	18200	15200
4.754	17800	14900
4.734	17500	14600
4.714	17100	14200
4.693	16700	13900
4.673	16400	13600
4.653	16000	13300

Elevator Capacity		
Elevator Bore Diameter: 4.19375" Elevator SMYS: 110,100 psi Box Taper Angle: 18 deg		
Connection: XT™ 39 4.0" 0.330" wall IU S135		
Tool Joint OD (in.)	Elevator Hoist Capacity (lbs)	
	No Wear	1/32" Wear Factor
4.875	534200	511500
4.855	517400	494700
4.835	500600	477900
4.814	483100	460400
4.794	466500	443800
4.774	450000	427200
4.754	433500	410700
4.734	417100	394300
4.714	400700	378000
4.693	383700	360900
4.673	367500	344700
4.653	351300	328600

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Drill Pipe Performance Sheet (1.15 FF)

1/8/2021

Combined Loading for Drill Pipe			
Connection: XT™ 39 4.875" x 2.813" (120 KSI SMYS) Friction Factor: 1.15			
Pipe: 4.0" OD 0.330" Wall Thickness S135 80% Inspection Class			
At Max MUT (22700 ft-lbs)		At Min MUT (18900 ft-lbs)	
Operational Torque(ft-lbs)	Assembly Max Tension(lbs)	Operational Torque(ft-lbs)	Assembly Max Tension(lbs)
0	403500	0	403500
1000	403300	800	403400
2000	402800	1600	403000
3100	401700	2400	402400
4100	400400	3200	401600
5100	398600	4000	400500
6100	396500	4800	399200
7200	393700	5600	397600
8200	390700	6400	395700
9200	387300	7300	393400
10200	383500	8100	391000
11200	379200	8900	388300
12300	374000	9700	385400
13300	368800	10500	382200
14300	363000	11300	378700
15300	356800	12100	375000
16400	349300	12900	370900
17400	341900	13700	366500
18400	333800	14500	361800
19400	325100	15300	356800

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