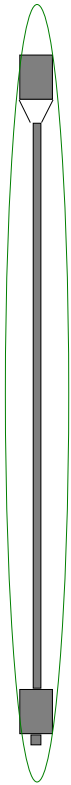


<b>DRILL PIPE</b>					SIZE:	5.000" 19.50 ppf 0.362" wall IEU			
					GRADE:	S-135			
					RANGE:	II			
					CONNECTIONS:	NC50			
<u>PIPE BODY:</u>					<u>TUBULAR ASSEMBLY</u>				
	Nominal 100% RBW	Nominal 95% RBW	Ultra Class 90% RBW	Premium 80% RBW					
OD (in)	5.000	4.964	4.928	4.855	Adjusted Weigh (in):	24,11	Fluid Displacement (gal/ft):	0,37	
Wall Thickness (in)	0,362	0,344	0,326	0,290	Approximate Length (ft):	31,5	Fluid Displacement (bbls/ft):	0,0088	
Nominal ID:	4.276	4.276	4.276	4.276	Box TJ Length (in):	12	Fluid Capacity w/IPC (gal/ft):	0,7	
Tensile Strenght (lbs)	712.070	673.826	635.861	560.763	Pin TJ Length (in):	9	Fluid Capacity w/IPC (bbls):	0,0167	
Torsional Strenght (in)	74.100	70.043	66.026	58.113	Upset Type : IEU		Fluid Capacity w/IPC (gal/ft):	0,71	
Burst Capacity (psi)	17.105	18.571	17.593	15.638	Max Upset OD (in):	5.125	Fluid Capacity w/IPC (bbls/ft):	0,0169	
Collapse Capacity (psi)	15.672	14.292	12.892	10.029	Drift Size (in):	3.125			
Notes: Body properties are calculated based on uniform OD and wall thickness. Burst capacity for Nominal (100% RBW) based on 87.5% RBW per API.					Note: These are OEM values that may vary with actual values due to mill tolerances, IPC tolerances, OEM rounding, and other factors. Pipe is purchased at a guaranteed 95% RBW. IPC is applied to a nominal thickness of 0.009". Pipe will have an ID of 2.705", which is smaller than pipe purchased at 87.5%.				
<u>CONNECTIONS: API NC50</u>					<u>ELEVATOR SHOULDER</u>				
TOOL JOINT OD (in):	6,625						Smooth Edge Height (in):	0,09375	
TOOL JOINT ID (in):	3,250						Smooth Edge OD (in):	6.812	
MYS (ksi):	120						SE Elevator Shoulder Capacity (lbs):	1.629.800	
			Maximum MUT (ft/lbs):	30.700			Nominal TJ OD (in):	6.625	
			Tension at Shoulder Separation @Max MUT (lbs)	Tensile Limited			Nominal TJ OD Elevator Shoulder Capacity (lbs):	1.411.900	
			Tension at Connection Yield @Max MUT (lbs)	1.117.600			Assume Elevator Bore (in)	5,25	
			Minimum MUT (ft/lbs):	25.600					
			Tension at Shoulder Separation @MinMUT (lbs)	1.132.000					
			Tension at Connection Yield @Min MUT (lbs)	1.250.000					
			Tool Joint Torsional Strenght (ft/lbs):	51.200					
			Tool Joint Tensile Strenght (ft/lbs):	1.250.000					
Note: MUT values are based on a friction factor of 1.0. There is no published pressure rating for this connection					Note: Elevator capacity based on assumed elevator bore, no wear factor, and contact stress of 110, 100 psi. An increased elevator shoulder OD increases elevator capacity without affecting make-up torque.				
The technical information contained herein, including the product performance sheet and other attached documents, has been extracted from information available from the manufacturer and is for reference only and not a recommendation. The user is fully responsible for the accuracy and suitability of use of the technical information. Workstrings International 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 operation 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 operational 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 B, Section 4 VII of the IADC drilling manual, it is recommended that drilling torque should not exceed 80% of MUT.									

# Operational Limits of Drill Pipe

<b>Connection</b>	NC50	<b>Tool Joint OD</b> (in)	6.625	<b>Tool Joint ID</b> (in)	3.250	<b>Tool Joint Specified Minimum Yield Strength</b> (psi)	120,000
<b>Pipe Body</b>	80 % Inspection Class	<b>Pipe Body OD</b> (in)	5	<b>Wall Thickness</b> (in)	0.362	<b>Pipe Body Grade</b>	S-135



**Combined Loading for Drill Pipe at  
Maximum Make-up Torque = 30,700 (ft-lbs)**

Operational Torque (ft-lbs)	Assembly Max Tension (lbs)	Pipe Body Max Tension (lbs)	Connection Max Tension (lbs)
0	560,800	560,800	1,117,600
1,600	560,600	560,600	1,117,600
3,200	559,900	559,900	1,117,600
4,800	558,800	558,800	1,117,600
6,300	557,500	557,500	1,117,600
7,900	555,600	555,600	1,117,600
9,500	553,200	553,200	1,117,600
11,100	550,400	550,400	1,117,600
12,700	547,200	547,200	1,117,600
14,300	543,500	543,500	1,117,600
15,900	539,400	539,400	1,117,600
17,500	534,700	534,700	1,117,600
19,000	529,900	529,900	1,117,600
20,600	524,400	524,400	1,117,600
22,200	518,200	518,200	1,117,600
23,800	511,600	511,600	1,117,600
25,400	504,400	504,400	1,117,600
27,000	496,600	496,600	1,117,600
28,600	488,200	488,200	1,117,600
30,200	479,400	479,400	1,117,600

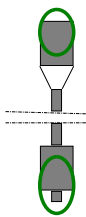
Operational drilling torque is limited by the Make-up Torque.

**Combined Loading for Drill Pipe at  
Minimum Make-up Torque = 25,600 (ft-lbs)**

Operational Torque (ft-lbs)	Assembly Max Tension (lbs)	Pipe Body Max Tension (lbs)	Connection Max Tension (lbs)
0	560,800	560,800	1,132,000
1,300	560,600	560,600	1,132,000
2,600	560,200	560,200	1,132,000
4,000	559,400	559,400	1,132,000
5,300	558,400	558,400	1,132,000
6,600	557,100	557,100	1,132,000
7,900	555,600	555,600	1,132,000
9,200	553,700	553,700	1,132,000
10,500	551,500	551,500	1,132,000
11,900	548,900	548,900	1,132,000
13,200	546,100	546,100	1,132,000
14,500	543,000	543,000	1,132,000
15,800	539,600	539,600	1,132,000
17,100	535,900	535,900	1,132,000
18,400	531,900	531,900	1,132,000
19,800	527,200	527,200	1,132,000
21,100	522,500	522,500	1,132,000
22,400	517,400	517,400	1,132,000
23,700	512,000	512,000	1,132,000
25,000	506,100	506,100	1,132,000

Operational drilling torque is limited by the Make-up Torque.

## Connection Make-up Torque Range



	Make-up Torque (ft-lbs)	Connection Max Tension (lbs)	
Min MUT	25,600	1,132,000	
	26,200	1,158,500	
	26,700	1,180,600	
	27,300	1,207,200	
	27,900	1,233,700	
	28,400	1,242,800	
	29,000	1,210,200	
	29,600	1,177,500	
	30,100	1,150,300	
	Max MUT	30,700	1,117,600

Note: Recommended MUT should always be used when possible. If not possible, MUT should be as close to Recommended MUT as possible.

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06-18-2015