Size and Weight: 3.500" 15.50 ppf 0.449" wall EU
Grade: S-135
Range: 2
Tool Joint: 4.875" x 2.563" NC38

Pipe Body:

	Nominal 100% RBW	95% RBW	Ultra Class 90% RBW	Premium 80% RBW
OD (in):	3.500	3.455	3.410	3.320
Wall Thickness (in):	0.449	0.427	0.404	0.359
Nominal ID (in):	2.602	2.602	2.602	2.602
Tensile Strength (lbs):	580,994	547,883	515,200	451,115
Torsional Strength (ft-lbs):	37,954	35,661	33,415	29,063
Burst Capacity (psi):	30,308	32,905	31,173	27,710
Collapse Capacity (psi):	30,194	29,218	28,203	26,049

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.

Tubular Assembly:

Adjusted Weight (lbs/ft):	17.50	Fluid Displacement (gal/ft):	0.27
Approximate Length (ft):	31.6	Fluid Displacement (bbls/ft):	0.0064
Box TJ Length (in):	12.5	Fluid Capacity w/IPC (gal/ft):	0.26
Pin TJ Length (in):	10	Fluid Capacity w/IPC (bbls/ft):	0.0062
Upset Type:	EU	Fluid Capacity w/o IPC (gal/ft):	0.27
Max Upset OD (in):	3.875	Fluid Capacity w/o IPC (bbls/ft):	0.0063
Drift Size (in):	2.438		

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 2.534", which is smaller than pipe purchased at 87.5%.

Connection: NC38

TJ OD (in): **4.875**
TJ ID (in): **2.563**
MYS (ksi): 120

Maximum MUT is recommended based on thread compound friction factor (unless stated). Lower than maximum MUT should only be used when MUT is limited by rig equipment or connection tensile. Lower than minimum MUT should never be used.

	1.0 FF	1.1 FF	1.15 FF
Maximum MUT (ft-lbs):	**12,100**	**13,310**	**13,915**
Tension at Shoulder Separation @ Max MUT (lbs):	Tensile Limited	Tensile Limited	Tensile Limited
Tension at Connection Yield @ Max MUT (lbs):	539,000	539,000	539,000
Minimum MUT (ft-lbs):	**10,000**	**11,000**	**11,500**
Tension at Shoulder Separation @ Min MUT (lbs):	594,300	594,300	594,300
Tension at Connection Yield @ Min MUT (lbs):	634,700	634,700	634,700
Tool Joint Torsional Strength (ft-lbs):	20,100	22,110	23,115
Tool Joint Tensile Strength (lbs):	634,700	634,700	634,700

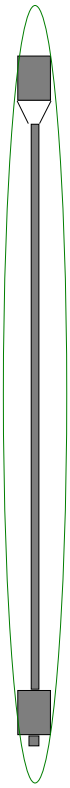
Elevator Shoulder:

Smooth Edge Height (in):	N/A
Smooth Edge OD (in):	N/A
SE Elevator Shoulder Capacity (lbs):	N/A
Nominal TJ OD (in):	4.875
Nominal TJ OD Elevator Shoulder Capacity (lbs):	692,800
Assumed Elevator Bore (in):	3.969

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.

Operational Limits of Drill Pipe

Connection	NC38	Tool Joint OD (in)	4.875	Tool Joint ID (in)	2.563	Tool Joint Specified Minimum Yield Strength (psi)	120,000
Pipe Body	80 % Inspection Class	Pipe Body OD (in)	3.5	Wall Thickness (in)	0.449	Pipe Body Grade	S-135



Combined Loading for Drill Pipe at

Maximum Make-up Torque = 12,100 (ft-lbs)

Operational Torque (ft-lbs)	Assembly Max Tension (lbs)	Pipe Body Max Tension (lbs)	Connection Max Tension (lbs)
0	451,100	451,100	539,000
600	451,000	451,000	539,000
1,300	450,700	450,700	539,000
1,900	450,200	450,200	539,000
2,500	449,400	449,400	539,000
3,200	448,400	448,400	539,000
3,800	447,200	447,200	539,000
4,500	445,700	445,700	539,000
5,100	444,100	444,100	539,000
5,700	442,400	442,400	539,000
6,400	440,000	440,000	539,000
7,000	437,800	437,800	539,000
7,600	435,400	435,400	539,000
8,300	432,300	432,300	539,000
8,900	429,400	429,400	539,000
9,600	425,800	425,800	539,000
10,200	422,400	422,400	539,000
10,800	418,800	418,800	539,000
11,500	414,300	414,300	539,000
12,100	410,200	410,200	539,000

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

Combined Loading for Drill Pipe at

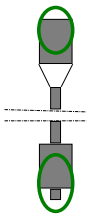
Minimum Make-up Torque = 10,000 (ft-lbs)

Operational Torque (ft-lbs)	Assembly Max Tension (lbs)	Pipe Body Max Tension (lbs)	Connection Max Tension (lbs)
0	451,100	451,100	594,300
500	451,000	451,000	594,300
1,100	450,800	450,800	594,300
1,600	450,400	450,400	594,300
2,100	449,900	449,900	594,300
2,600	449,300	449,300	594,300
3,200	448,400	448,400	594,300
3,700	447,400	447,400	594,300
4,200	446,400	446,400	594,300
4,700	445,200	445,200	594,300
5,300	443,600	443,600	594,300
5,800	442,000	442,000	594,300
6,300	440,400	440,400	594,300
6,800	438,600	438,600	594,300
7,400	436,200	436,200	594,300
7,900	434,100	434,100	594,300
8,400	431,900	431,900	594,300
8,900	429,400	429,400	594,300
9,500	426,300	426,300	594,300
10,000	423,600	423,600	594,300

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	10,000	594,300
	10,200	606,200
	10,500	624,100
	10,700	633,400
	10,900	619,900
	11,200	599,700
	11,400	586,200
	11,600	572,700
	11,900	552,500
Max MUT	12,100	539,000

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