

PRODUCT PERFORMANCE SHEET
NEW HEAVY WEIGHT DRILL PIPE, WELDED
3-1/2" OD by 2-1/4" ID by 31.0' OAL (55 ksi SMYS)
TOOL JOINT: 4-7/8" OD by 2-3/8" ID by TSDS38 (135 ksi SMYS)

TUBE DATA (NEW)	
OD, Tube (in)	3.500
ID, Tube (in)	2.250
Nominal Wall Thickness, Tube (in)	0.625
Center Upset OD (in)	4.000
Elevator Upset OD (in)	3.625
Cross Sectional Area, Tube (in ²)	5.645
Polar Section Modulus, Tube, J/c (in ³)	6.981
Section Modulus, Tube, I/c (in ³)	3.490

Above data based on New Heavy Weight drill pipe nominal dimensions.

TUBE PERFORMANCE PROPERTIES (NEW)	
Tensile Yield (lb)	310,470
Torsional Yield (ft-lb)	18,460
Collapse Pressure (psi)	16,130
Internal Yield Pressure (psi)	17,180
Material Yield Strength (psi)	55,000

Above data based on New Heavy Weight pipe body nominal dimensions (100% RBW) and no safety factor. Internal yield pressure based on 87.5% of New Heavy Weight pipe body nominal wall thickness.

TOOL JOINT DATA (NEW)		
Connection Size	TSDS38	
OD (in)	4.875	
ID (in)	2.375	
Box Tool Joint OAL, Ref. (in)	27.0	
Pin Tool Joint OAL, Ref. (in)	30.0	
Material Yield Strength (psi)	135,000	
Thread Compound Friction Factor	1.0 (a)	1.15 (b)
Recommended Make-Up Torque (ft-lb)	20,900	24,000 (c)
Max Make-Up Torque (ft-lb)	24,300	28,000 (d)
Torsional Yield (ft-lb)	34,800	
Approximate Tension to Yield Pin at Recommended Make-Up Torque (lb)	588,000	
Approximate Tension to Yield Pin at Max Make-Up Torque (lb)	445,000	
Tool Joint Tensile Yield (lb)	812,300	
Balanced OD (in)	4.877	

(a) Make-Up Torque values shown under column 1.0 are based on using a 1.0 friction factor thread compound (0.08 coefficient of friction).

(b) Make-Up Torque values shown under column 1.15 have been adjusted based on using a 1.15 friction factor thread compound. The make-up torque values are only applicable when using a thread compound rated by the manufacturer to have a 1.15 friction factor.

(c) Recommended Make-Up Torque is based on 60% of the connection torsional yield.

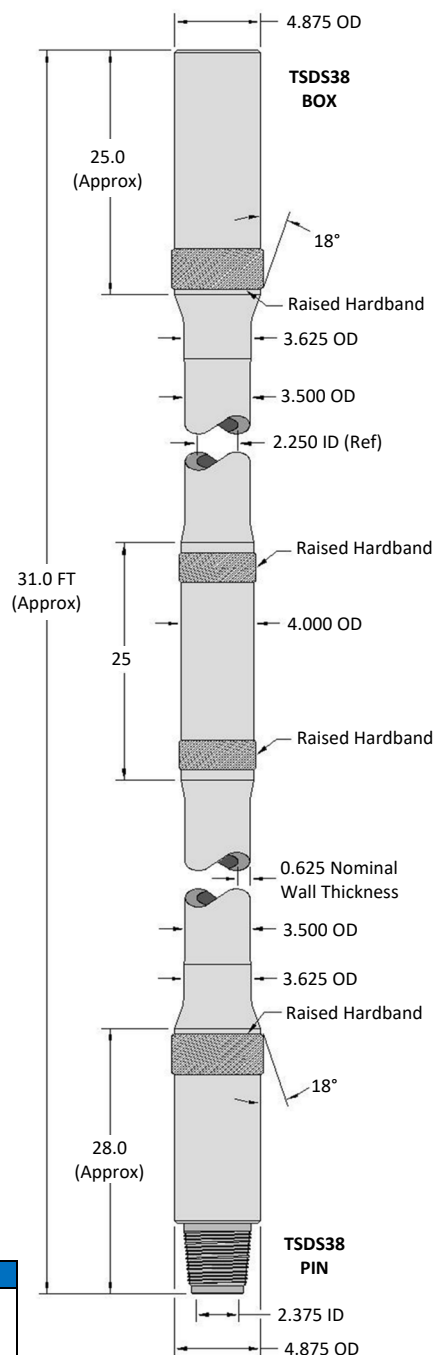
(d) Max Make-Up Torque is based on 70% of the connection torsional yield. It is the maximum make-up torque that can be applied to the connection to prevent downhole make-up, reference IADC Drilling Manual. Never exceed Max Make-Up Torque.

ASSEMBLY DATA (NEW)							
Weight (Approx.)		Capacity (Approx.)		Displacement Open Ends (Approx.)		Drift Diameter	Overall Length (Approx.)
(lb/Joint)	(lb/ft)	(US Gal/ft)	(BBL/ft)	(US Gal/ft)	(BBL/ft)	(in)	(ft)
739	24.02	0.2098	0.0050	0.3671	0.0087	2.000	31.0

Assembly data based on New Heavy Weight drill pipe nominal dimensions and no internal plastic coating.
 Conversion Factor: 1 BBL = 42 US Gallons

Notes:

- All data is based on New Heavy Weight drill pipe nominal dimensions and no safety factor.
- Drawing is for reference only, not to scale, and based on New Heavy Weight drill pipe nominal dimensions, units of inches unless otherwise indicated.



Tool Joint Make-Up Torque TSDS38 by 2.375" ID (135 ksi SMYS) 1.0 Friction Factor Thread Compound (1)			
Tool Joint OD (in)	Recommended Make-Up Torque (1) (2) (ft-lb)	Max Make-Up Torque (1) (3) (ft-lb)	Torsional Yield Ref. (ft-lb)
4.875	20,900	24,300	34,800
4.813	19,600	22,900	32,700
4.750	18,400	21,400	30,600
4.688	17,200	20,000	28,600
4.625	16,000	18,600	26,600

Tool Joint Make-Up Torque TSDS38 by 2.375" ID (135 ksi SMYS) 1.15 Friction Factor Thread Compound (4)		
Tool Joint OD (in)	Recommended Make-Up Torque (4) (2) (ft-lb)	Max Make-Up Torque (4) (3) (ft-lb)
4.875	24,000	28,000
4.813	22,600	26,300
4.750	21,100	24,600
4.688	19,700	23,000
4.625	18,300	21,400

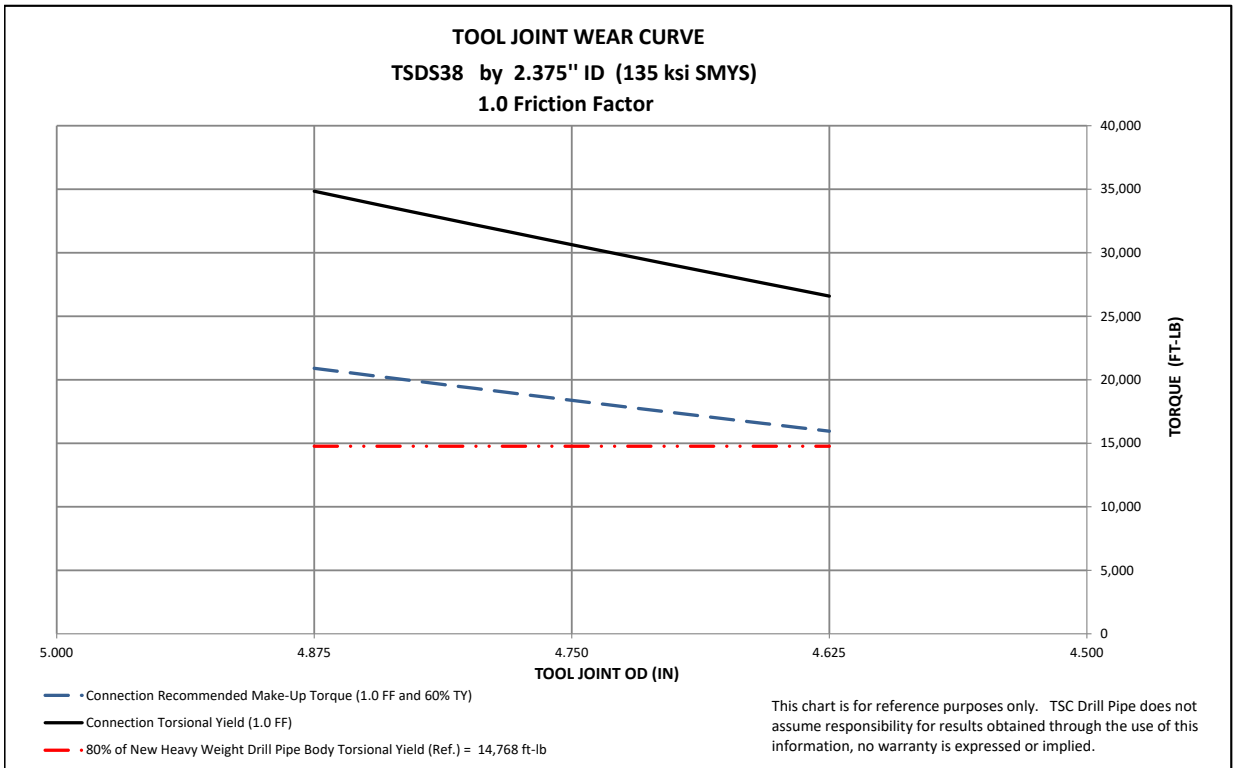
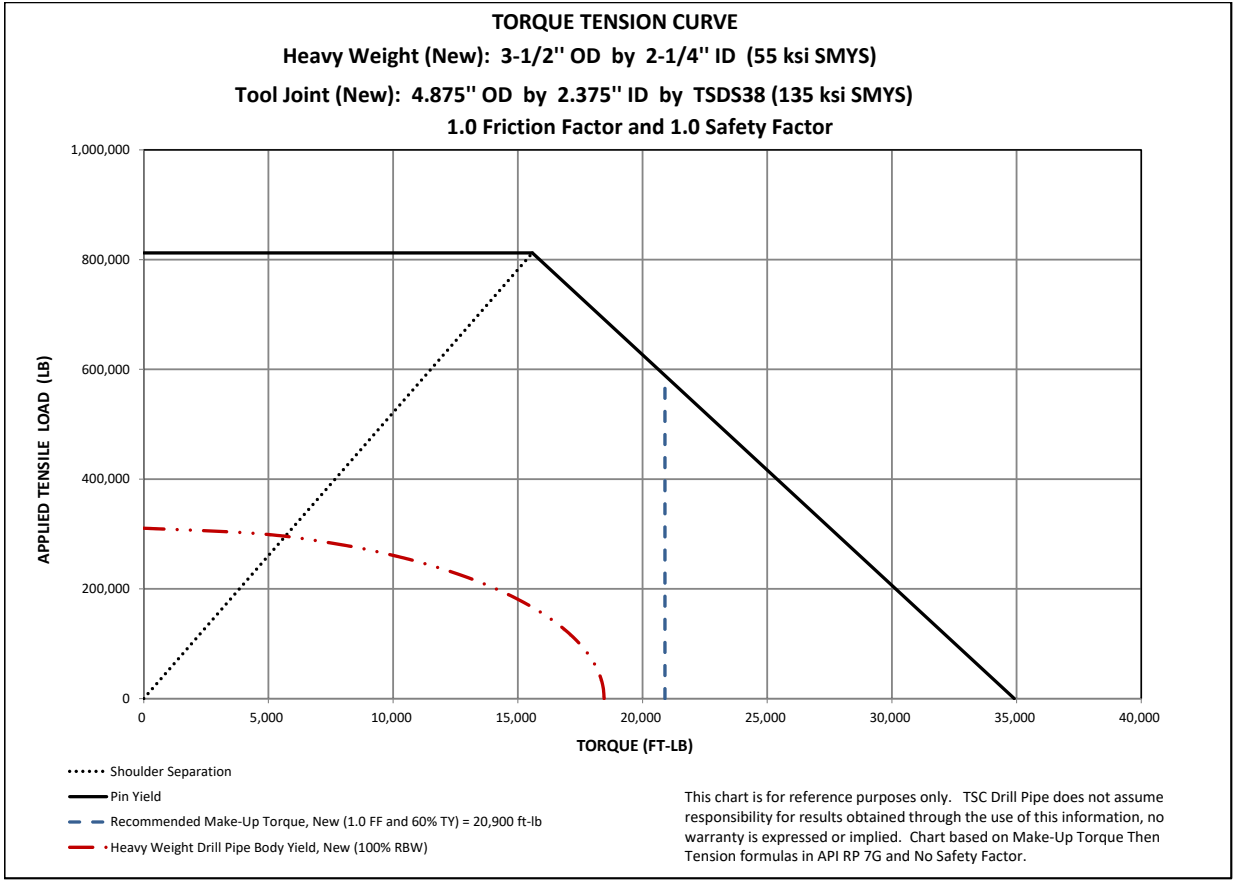
Estimated Elevator Hoist Capacity (lb) (6)	
Tool Joint OD (in)	3.969" Dia. Assumed Elev. Bore
4.875	692,400
4.625	487,200

Combined Torque and Tension to Yield Tube Body (100% RBW) New Heavy Weight Drill Pipe 3.500" OD by 2.250" ID by 55 ksi SMYS (5)	
Operational Torque (ft-lb)	Tube Body Max Tension (lb)
0	310,470
1,000	310,000
2,000	308,600
3,000	306,300
4,000	303,100
5,000	298,800
6,000	293,600
7,000	287,200
8,000	279,800
9,000	271,000
10,000	260,900
11,000	249,300
12,000	235,900
13,000	220,400
14,000	202,300

Caution: Operational (rotating) torque should never exceed 80% of the connection make-up torque, reference IADC Drilling Manual.

Notes:

- (1) Make-Up Torque values are based on 1.0 friction factor thread compound (0.08 coefficient of friction).
- (2) Recommended Make-Up Torque is based on 60% of the connection torsional yield.
- (3) Max Make-Up Torque is based on 70% of the connection torsional yield. It is the maximum make-up torque that can be applied to the connection to prevent downhole make-up, reference IADC Drilling Manual. Never exceed Max Make-Up Torque.
- (4) Make-Up Torque values have been adjusted based on using a 1.15 friction factor thread compound. The make-up torque values are only applicable when using a thread compound rated by the manufacturer to have a 1.15 friction factor.
- (5) Tube Body combined torque and tension data is based on New Heavy Weight drill pipe nominal dimensions (100% RBW) and no safety factor.
- (6) Estimated elevator hoist capacity is for reference only and based on tool joint projected taper area, 110,000 psi SMYS and no safety factor. User is advised to contact their elevator manufacturer for elevator hoist capacity.



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