

**PRODUCT PERFORMANCE SHEET**  
**NEW HEAVY WEIGHT DRILL PIPE, WELDED**  
**5" OD by 3" ID by 31.0' OAL (55 ksi SMYS)**  
**TOOL JOINT: 6-5/8" OD by 3- 1/16" ID by TSDS50 with 3.250" ID Bevel (135 ksi SMYS)**

TUBE DATA (NEW)	
OD, Tube (in)	5.000
ID, Tube (in)	3.000
Nominal Wall Thickness, Tube (in)	1.000
Center Upset OD (in)	5.500
Elevator Upset OD (in)	5.125
Cross Sectional Area, Tube (in <sup>2</sup> )	12.566
Polar Section Modulus, Tube, J/c (in <sup>3</sup> )	21.363
Section Modulus, Tube, I/c (in <sup>3</sup> )	10.681

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

TUBE PERFORMANCE PROPERTIES (NEW)	
Tensile Yield (lb)	691,150
Torsional Yield (ft-lb)	56,490
Collapse Pressure (psi)	17,600
Internal Yield Pressure (psi)	19,240
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	TSDS50 (See Note 3)	
OD (in)	6.625	
ID (in)	3.063	
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)	52,000	59,700 (c)
Max Make-Up Torque (ft-lb)	60,600	69,700 (d)
Torsional Yield (ft-lb)	86,600	
Approximate Tension to Yield Pin at Recommended Make-Up Torque (lb)	1,157,000	
Approximate Tension to Yield Pin at Max Make-Up Torque (lb)	869,000	
Tool Joint Tensile Yield (lb)	1,531,400	
Balanced OD (in)	6.482	

(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.

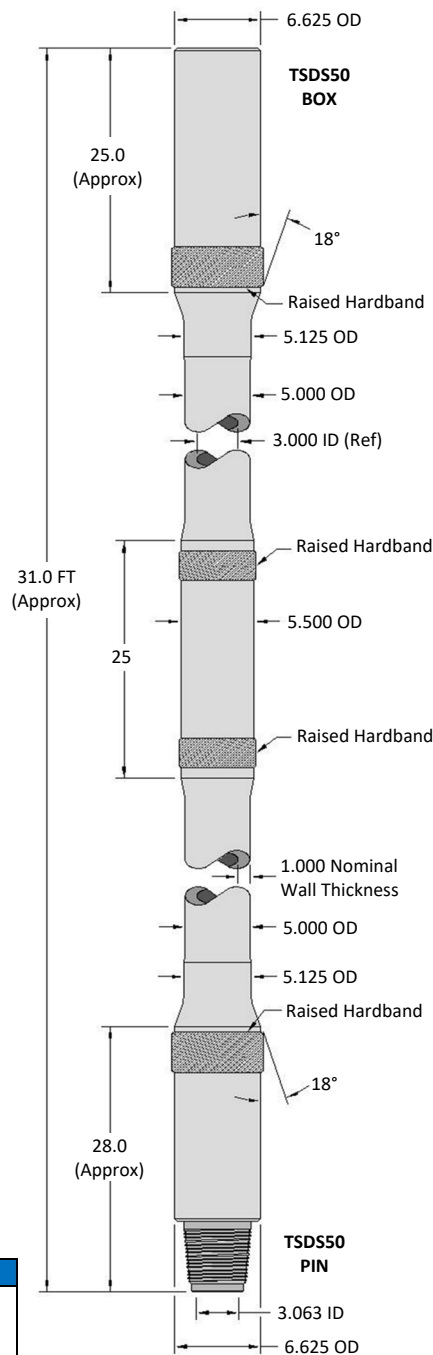
(d) Max Make-Up Torque is based on 70% of the connection torsional yield. It is the maximum make-up torque that can be applied to the connection to prevent downhole make-up, reference IADC Drilling Manual. Never exceed Max Make-Up Torque.

ASSEMBLY DATA (NEW)						
Weight (Approx.)		Capacity (Approx.)		Displacement Open Ends (Approx.)		Overall Length (Approx.)
(lb/Joint)	(lb/ft)	(US Gal/ft)	(BBL/ft)	(US Gal/ft)	(BBL/ft)	(ft)
1,553	50.57	0.3693	0.0088	0.7727	0.0184	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.
- Box and pin connection machined with a 3.250" ID bevel on the secondary shoulder (box internal shoulder and pin nose face).



Tool Joint Make-Up Torque TSDS50 ( 3.250" ID Bevel) by 3.063" ID (135 ksi SMYS) 1.0 Friction Factor Thread Compound			
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)
6.625	52,000	60,600	86,600
6.500	52,000	60,600	86,600
6.375	48,200	56,200	80,400
6.250	43,900	51,200	73,200
6.125	39,800	46,400	66,300

(1)

Combined Torque and Tension to Yield Tube Body (100% RBW) New Heavy Weight Drill Pipe 5.000" OD by 3.000" ID by 55 ksi SMYS	
Operational Torque (ft-lb)	Tube Body Max Tension (lb)
0	691,150
2,000	690,700
4,000	689,400
6,000	687,200
8,000	684,100
10,000	680,200
12,000	675,300
14,000	669,500
16,000	662,800
18,000	655,100
20,000	646,300
22,000	636,500
24,000	625,600
26,000	613,600
28,000	600,200
30,000	585,600
32,000	569,500
34,000	551,900
36,000	532,600
38,000	511,400
40,000	488,000
42,000	462,200
44,000	433,500

(5)

Tool Joint Make-Up Torque TSDS50 ( 3.250" ID Bevel) by 3.063" ID (135 ksi SMYS) 1.15 Friction Factor Thread Compound		
Tool Joint OD (in)	Recommended Make-Up Torque (4) (2) (ft-lb)	Max Make-Up Torque (4) (3) (ft-lb)
6.625	59,700	69,700
6.500	59,700	69,700
6.375	55,400	64,600
6.250	50,500	58,900
6.125	45,800	53,400

(4)

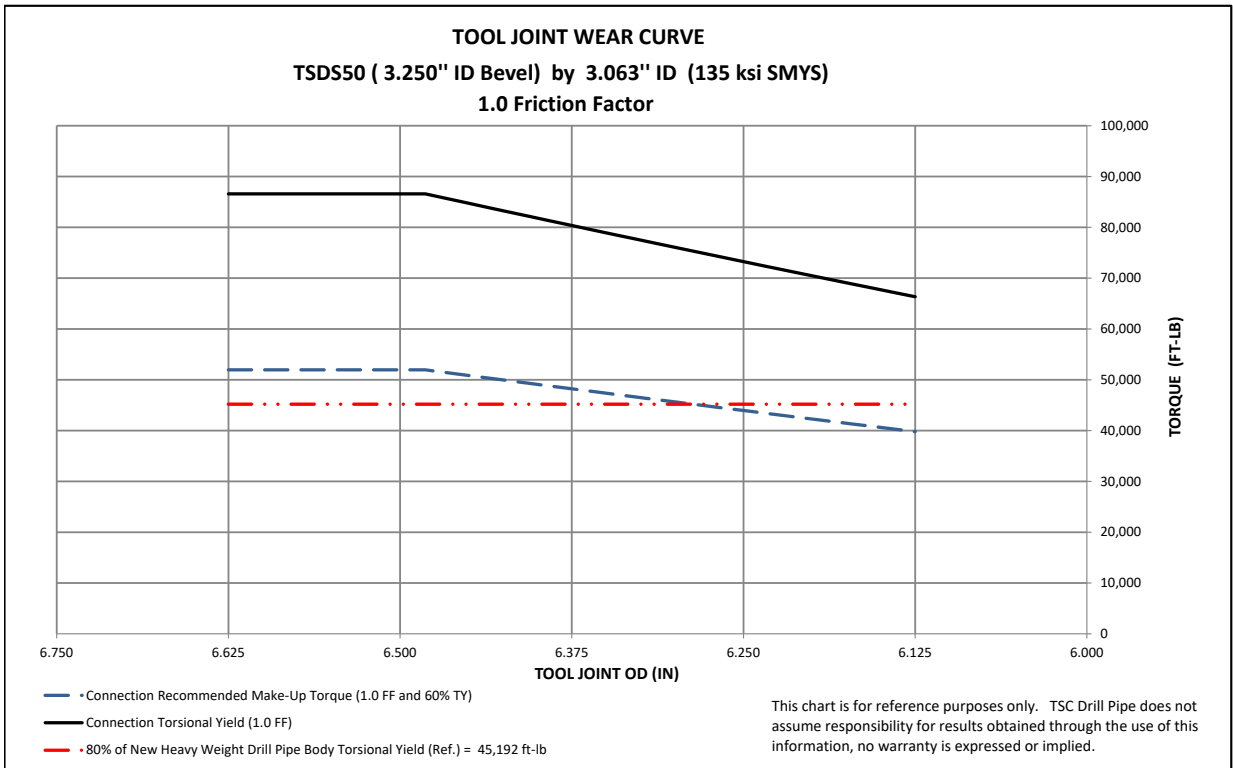
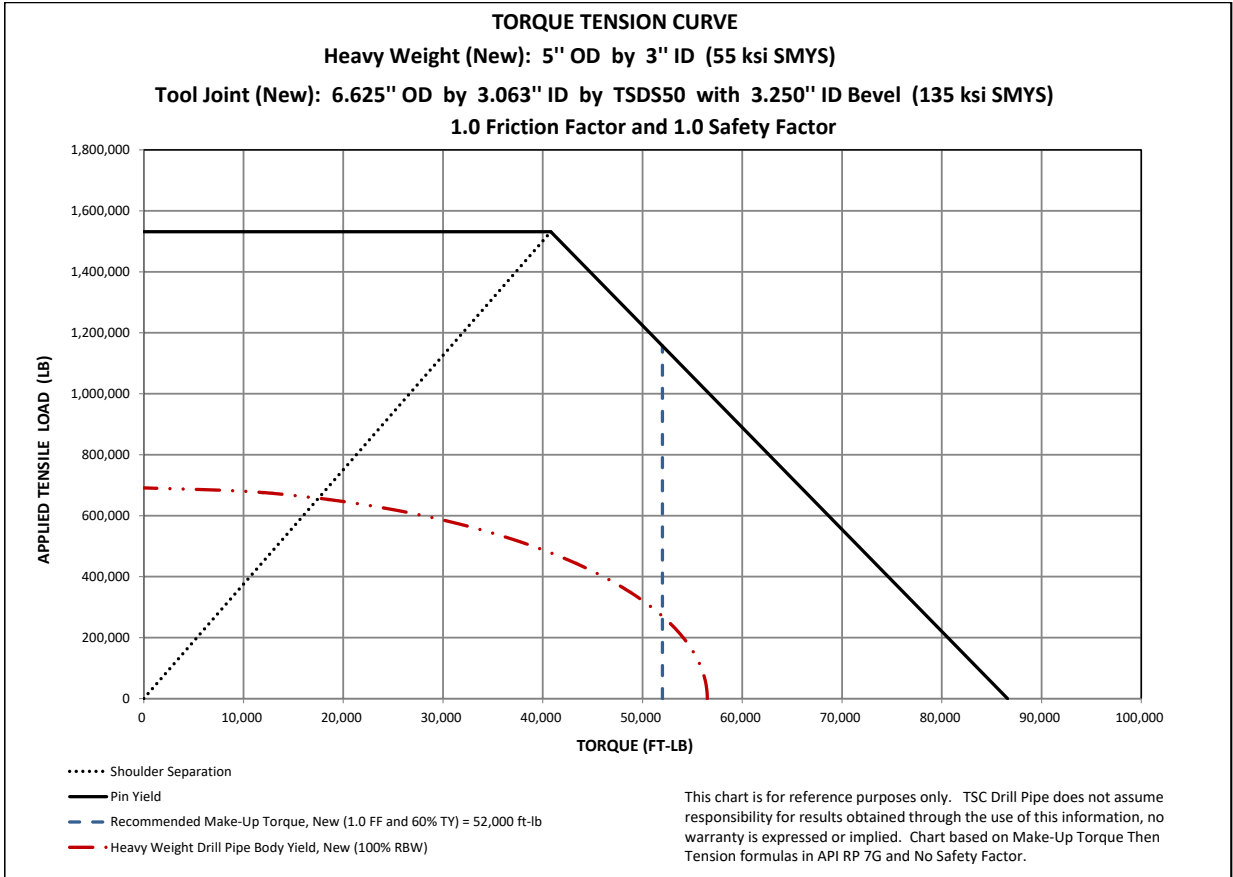
Estimated Elevator Hoist Capacity (lb)	
Tool Joint OD (in)	5.250" Dia. Assumed Elev. Bore
6.625	1,410,600
6.125	859,800

(6)

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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