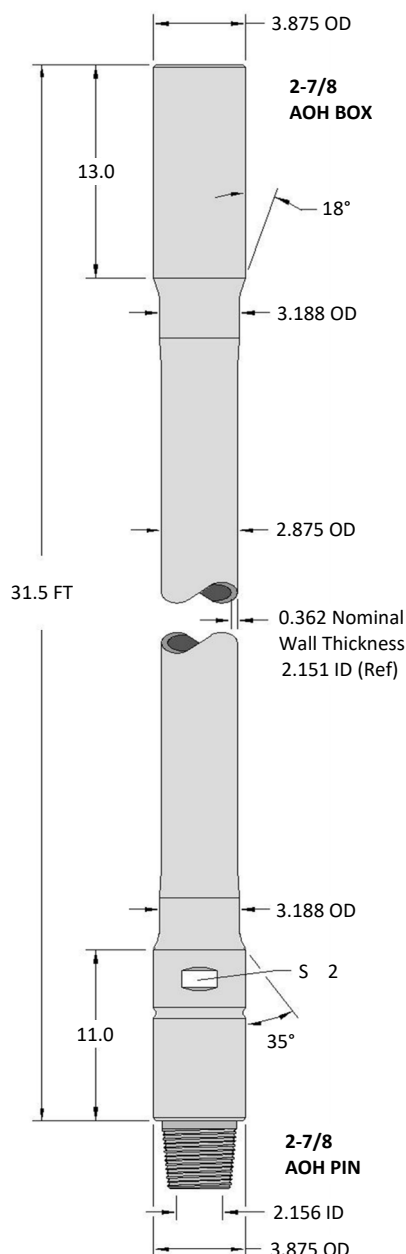


OIL DOG

PIPE RENTALS LP



DRILL PIPE DATA SHEET

DRILL PIPE: 2 7/8" EU by 10.40 lb/ft by Grade S by Range 2 (31.5 ft)
TOOL JOINT: 3 7/8" OD by 2 5/32" ID by 2-7/8 AOH (120 ksi SMYS)

DRILL PIPE BODY DIMENSIONAL DATA

	NEW	PREMIUM (80% RBW)
OD (in)	2.875	2.730
ID, Ref (in)	2.151	2.151
Wall Thickness (in)	0.362	0.290
Cross Sectional Area (in ²)	2.858	2.220
Polar Section Modulus, J/c (in ³)	3.204	2.456
Section Modulus, I/c (in ³)	1.602	1.228

Premium class values are based on a minimum wall thickness equal to 80% of New drill pipe body nominal wall thickness, reference API RP 7G-2.

DRILL PIPE BODY PERFORMANCE PROPERTIES

	NEW	PREMIUM (80% RBW)
Tensile Yield (lb)	385,820	299,764
Torsional Yield (ft-lb)	20,798	15,945
Collapse Pressure (psi)	29,716	25,602
Internal Yield Pressure (psi)	29,747	27,197
Material Yield Strength (psi)	135,000	

Drill pipe body performance properties are based on API RP 7G. Class New drill pipe body data is for reference only and is not intended for drill string design purposes.

TOOL JOINT DATA (New)

Connection Size	2-7/8 AOH		
OD (in)	3.875		
ID (in)	2.156		
Box Tool Joint OD Length (in)	13.0		
Pin Tool Joint OD Length (in)	11.0		
Connection Bevel Diameter (in)	3.609		
Material Yield Strength (psi)	120,000		
Thread Compound Friction Factor	1.0	(a)	1.15 (b)
Recommended Make-Up Torque (ft-lb)	5,194		5973 (c)
Torsional Yield (ft-lb)	8,656		
Torsional Strength Ratio, TJ/DPB	0.42 (d)		
"Approximate Tension to Yield Pin at Recommended Make-Up Torque (lb)"	329,000 (e)		
Tool Joint Tensile Yield (lb)	337,000 (e)		
Balanced OD (in)	3.666		

- Make-Up torque value shown under column 1.0 is based on using a 1.0 friction factor thread compound (0.08 coefficient of friction).
- Make-Up torque value shown under column 1.15 has been adjusted based on using a 1.15 friction factor thread compound. The make-up torque value is only applicable when using a thread compound rated by the manufacturer to have a 1.15 friction factor.
- Recommended Make-Up Torque is based on 60% of the connection torsional yield, ref API RP 7G.
- Torsional strength ratio is less than 0.80.
- Caution: Pin connection tensile yield capacity at recommended make-up torque and tool joint tensile yield are less than new drill pipe body tensile yield capacity.

ASSEMBLY DATA (New)

Weight (Approx.)		Capacity (Approx.)		Displacement Open Ends (Approx.)		Drift Diameter	Assembly Length Shld'r to Shld'r (Approx.)
(lb/Joint)	(lb/ft)	(US gal/ft)	(BBL/ft)	(US gal/ft)	(BBL/ft)	(in)	(ft)
348	11.04	0.1890	0.0045	0.1687	0.0040	1.963	31.5

Assembly data based on New API drill pipe nominal dimensions and no internal plastic coating. Conversion Factor: 1 BBL = 42 US Gallons Drift diameter is based on API RP 7G (drift diameter is smaller than standard API 5DP).

Notes:

- 1) All data is calculated based on standard methods. No safety factor applied.
- 2) Premium Class drill pipe data is based on a minimum wall thickness equal to 80% of New drill pipe nominal wall thickness, reference API RP 7G-2.
- 3) Drawing is for reference purposes only, not to scale, and based on New drill pipe nominal dimensions, units of inches unless otherwise indicated.
- 4) Specified tool joint OD is smaller than the standard API 5DP tool joint for 2 7/8 EU drill pipe. User is advised to contact their elevator manufacturer for elevator hoist capacity rating versus tool joint OD.

COMBINED TORQUE AND TENSION TO YIELD DRILL PIPE BODY

Premium Class (80% RBW)
2-7/8" EU x 10.40 lb/ft x Grade S (5)

TOOL JOINT MAKE-UP TORQUE

2-7/8 AOH x 2.156" ID (120 ksi SMYS)
1.0 and 1.15 Friction Factor Thread Compound

Tool Joint OD (in)	Recommended Make-Up Torque 1.0 FF (1) (2) (ft-lb)	Recommended Make-Up Torque 1.15 FF (1) (3) (ft-lb)	Torsional Yield Ref. (ft-lb)
3.875	5,194	5,973	8,656
(4) 3.688	5,194	5,973	8,656

ESTIMATED ELEVATOR HOIST CAPACITY (LB)		
Tool Joint OD (in)	3.281" Dia Assumed Elev. Bore	3.313" Dia Assumed Elev. Bore
3.875	367,000	349,200
3.750	284,700	266,900 *
3.688	244,500	226,700 *

* Estimated elevator hoist capacity is less than premium class (80% RBW) drill pipe body tensile yield capacity.

Operational Torque (ft-lb)	Drill Pipe Body Max Tension (lb)
0	299,764
250	299,700
500	299,600
750	299,400
1,000	299,100
1,250	298,800
1,500	298,400
1,750	297,900
2,000	297,300
2,250	296,700
2,500	296,000
2,750	295,200
3,000	294,400
3,250	293,400
3,500	292,400
3,750	291,300
4,000	290,100
4,250	288,900
4,500	287,500
4,750	286,100

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

Notes:

- 1) Recommended make-up torque values are based on 60% of the connection torsional yield, ref API RP 7G.
- 2) Make-up torque values shown under column 1.0 FF are based on using a 1.0 friction factor thread compound (0.08 coefficient of friction).
- 3) Make-up torque values shown under column 1.15 FF 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.
- 4) Drill pipe assembly does not meet 0.80 torsional strength ratio. 3.688" OD tool joint is for reference only and is the minimum used tool joint OD to maintain new tool joint connection torsional strength and new connection RSC bevel diameter based on condition of uniform OD wear. Caution: Approximate tension to yield pin connection at recommended make-up torque for 3.688" OD used tool joint is 275,000 lbs, and is less than Premium Class (80% RBW) drill pipe body tensile yield capacity.
- 5) Premium drill pipe body is based on 80% remaining pipe body wall (2.730" Min. OD and 0.290" Min. Wall) and other requirements specified in API RP 7G-2. Drill pipe body combined torque and tension based on API RP 7G, no safety factor applied.
- 6) Estimated elevator hoist capacity is for reference only and based on tool joint projected taper area, 110 ksi SMYS and no safety factor. User is advised to contact their elevator manufacturer for elevator hoist capacity versus tool joint OD.

