

Pipe Body Specification		
Pipe Body OD	in	5.0
Pipe Body Wall Thickness - Nominal Weight		0.362 in - 19.5 lb/ft
Pipe Body Grade		S135
Drill Pipe Length		Range 2
- MAX	ft	32.0
- MIN	ft	30.0
Type of Upset		IEU
Max Upset OD	in	5.125
Tong Length includes hardbanding if applicable		

Pipe Body Performance			
		Nominal	API Premium 80% Inspection Class
Burst Pressure *	psi	17,100	15,600
Collapse Pressure *	psi	15,670	10,030
Slip Crushing Capacity *	lbs	572,100	453,500
- Assumed Slip Length	in		16.5
- Assumed Transverse Load Factor(K)			2.6
Adjusted Weight **	lbs/ft		24.12
Fluid Displacement **	US gal/ft		0.37
	Bbls/ft		0.0088
Fluid Capacity **	US gal/ft		0.69
	Bbls/ft		0.0165
* With no bending or axial load in the string as applicable ** Best estimate with coating			
Note: Oil field barrel equivalent to 42 US gal		Note: Nominal burst calculated at 87.5% RBW per API	

The Technical information contained herein, including the product performance sheet and other attached documents, is for reference only and should not be considered as a recommendation. The user is fully responsible for the accuracy and suitability of use of the technical information. NOV Grant Prideco 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 operating 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 operating 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 DS, Section DS-16 of the drilling manual, it is recommended that drilling torque should not exceed 80% of MUT.

Tool Joint Specification		
Connection Type and Size		GPDS™ 50 - 130
Benchmark		GPmark™
SmoothEdge™ Height per side	in	N/A
Tool Joint SMYS	psi	130,000
Connection OD	in	6.625
Connection ID	in	3.25
Pin Tong Length	in	9.0
Box Tong Length	in	12.0
Thread Compound Friction Factor (FF)		1.15

Tool Joint Performance		
Max Make-Up Torque with applied FF (Recommended)	ft-lbs	53,600
Min Make-Up Torque with applied FF	ft-lbs	44,700
Min TJ OD (API Premium)	in	5.93
Min TJ OD for Counterbore	in	5.93
Drift Size	in	3.125
The maximum make-up torque should be applied when possible. To maximize connection operational tensile, a MUT (T4) =46,700.		

Advisories and Warnings for Drill Pipe	
Advisories:	- Please note this is a non-standard Tool Joint Grade and may not be commercially available. - The provided Make-Up Torques already include FF - No further adjustment is permitted.
Warnings:	

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Combined Loading for Drill Pipe			
Connection: GPDS™ 50-130 6.625 " x 3.25 " (130 KSI SMYS) Friction Factor: 1.15			
Pipe: 5.0 " OD 0.362 " Wall Thickness S135 80% Inspection Class			
At Max MUT (53600 ft-lbs)		At Min MUT (44700 ft-lbs)	
Operational Torque (ft-lbs)	Assembly Max Tension (lbs)	Operational Torque (ft-lbs)	Assembly Max Tension (lbs)
0	560800	0	560800
2700	560200	2100	560400
5400	558300	4300	559200
8100	555300	6400	557400
10700	551200	8600	554600
13400	545700	10700	551200
16100	538800	12900	546800
18800	530600	15000	541800
21500	521000	17200	535600
24200	509800	19300	528900
26800	497600	21500	521000
29500	483100	23600	512400
32200	466800	25800	502500
34900	448400	27900	491900
37600	427600	30100	479700
40300	404000	32200	466800
42900	378300	34300	452700
45600	347600	36500	436400
48300	311800	38600	419200
51000	268800	40800	399300

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Connection Wear Table		
Connection: GPDS™ 50-130 6.625 " x 3.25 " (130 KSI SMYS) Friction Factor: 1.15		
Tool Joint OD (in)	Max MUT (ft-lbs)	Min MUT (ft-lbs)
6.625	53600	44700
6.562	53600	44700
6.499	53600	44700
6.435	53600	44700
6.372	53200	44300
6.309	50800	42300
6.246	48400	40400
6.183	46100	38400
6.12	43800	36500
6.056	41500	34600
5.993	39300	32700
5.93	37100	30900

Elevator Capacity Table						
Elevator Bore Diameter : 5.25 " Elevator SMYS: 110,100 psi Box Taper Angle: 18 deg						
Connection: GPDS™ 50-130 5.0 " 0.362 " wall IEU S135						
TJOD (in.)	Elevator Hoist Capacity (lbs) - Bore Wear					
	No Wear	Custom 0.03125 in.	1/16 in.	1/8 in.	3/16 in.	1/4 in.
6.625	1411900	1383500	1354800	1297100	1238600	1179500
6.562	1340100	1311600	1283000	1225200	1166800	1107700
6.499	1268900	1240500	1211900	1154100	1095700	1036500
6.435	1197400	1168900	1140300	1082500	1024100	965000
6.372	1127600	1099100	1070500	1012700	954300	895200
6.309	1058500	1030000	1001400	943700	885200	826100
6.246	990100	961700	933000	875300	816800	757700
6.183	922400	893900	865300	807600	749100	690000
6.12	855400	826900	798300	740500	682100	623000
6.056	788000	759500	730900	673100	614700	555600
5.993	722400	693900	665300	607500	549100	490000
5.93	657400	628900	600300	542600	484100	425000

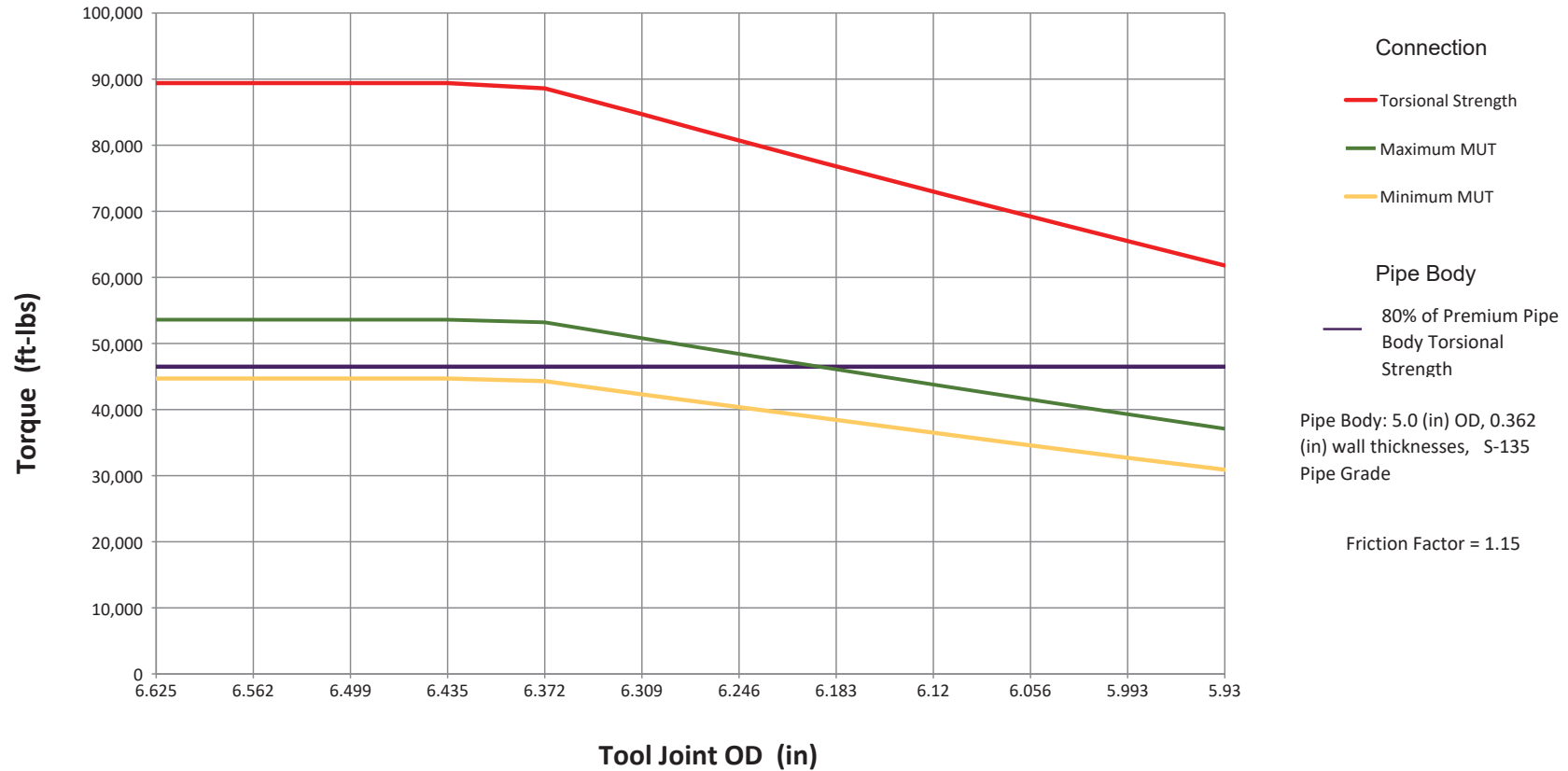
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Slip Crush Capacity Table at 80% Inspection Class					
		Slip Length			
		13.75 in.	16 in.	16.5 in.	22 in.
K Factor	2.1	456600.0 lbs	470600.0 lbs	473200.0 lbs	494600.0 lbs
	2.6	434000.0 lbs	450400.0 lbs	453500.0 lbs	479200.0 lbs
	4.0	377600.0 lbs	399000.0 lbs	403100.0 lbs	438400.0 lbs
	4.2	370500.0 lbs	392300.0 lbs	396500.0 lbs	432900.0 lbs

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Connection Wear for GPDS™ 50-130 (6.625 (in) OD x 3.25 (in) ID)

Material SMYS (Specified Minimum Yield Strength) = 130000 (psi)

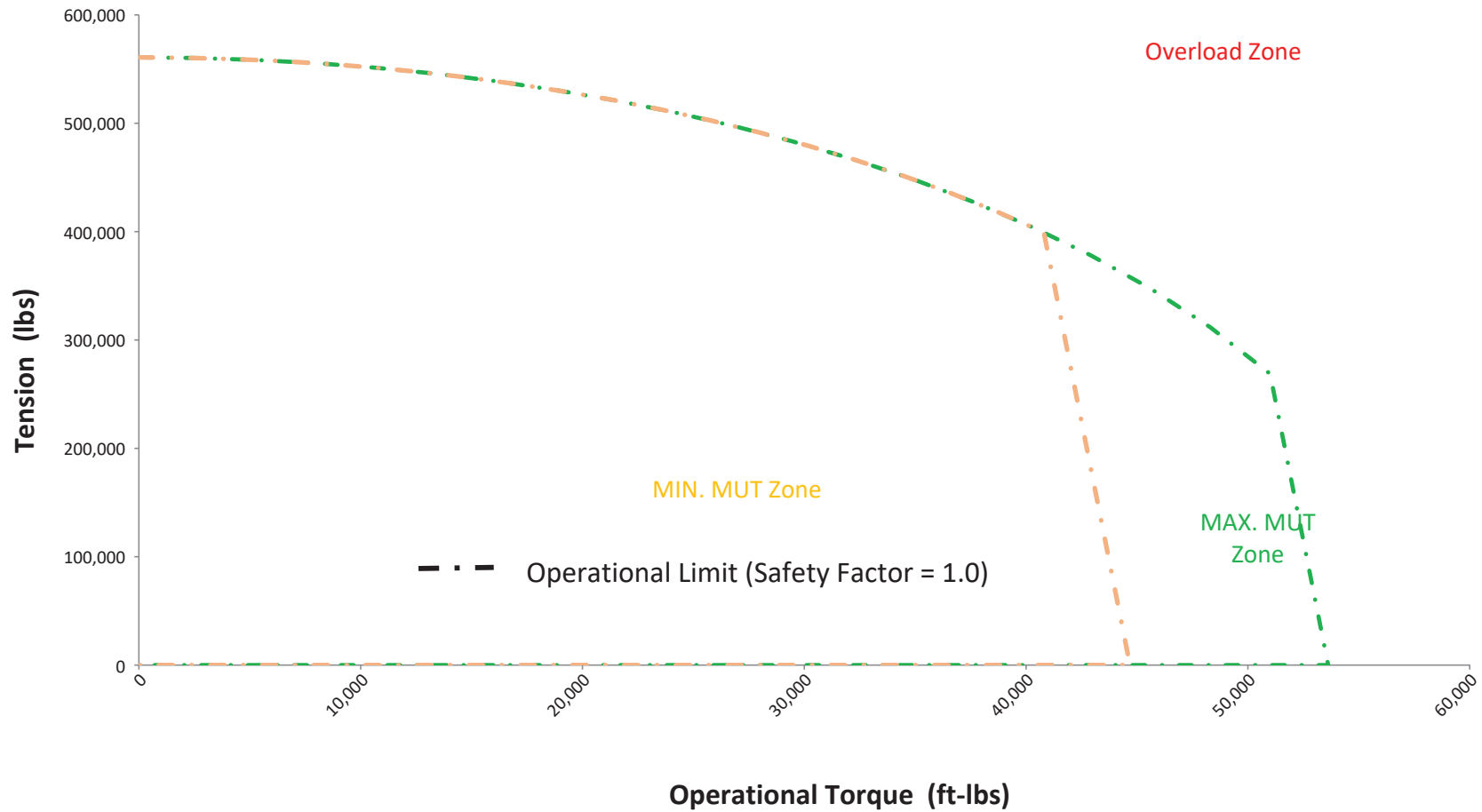


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Drill Pipe Operational Limits (Connection at Recommended MUT = 53620 (ft-lbs)) (Connection at Minimum MUT = 44684 (ft-lbs))

Connection: GPDS™ 50-130 (6.625 (in) OD 3.25 (in) ID) SMYS = 130000 (psi) Friction Factor = 1.15

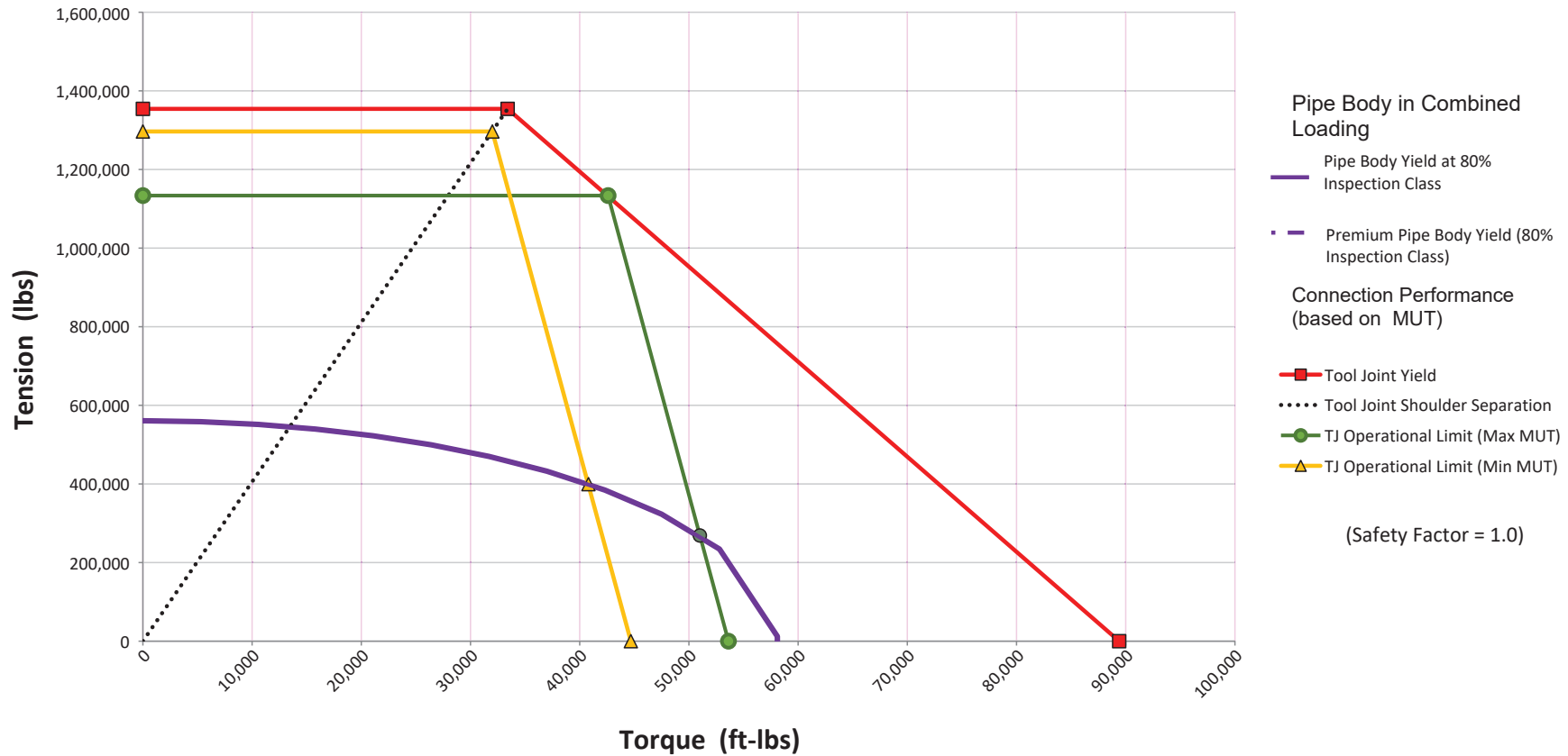
Pipe Body: 80% Inspection Class, 5.0 (in) OD, 0.362 (in) Wall Thickness, S-135 Pipe Grade



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Torque-Tension Graph

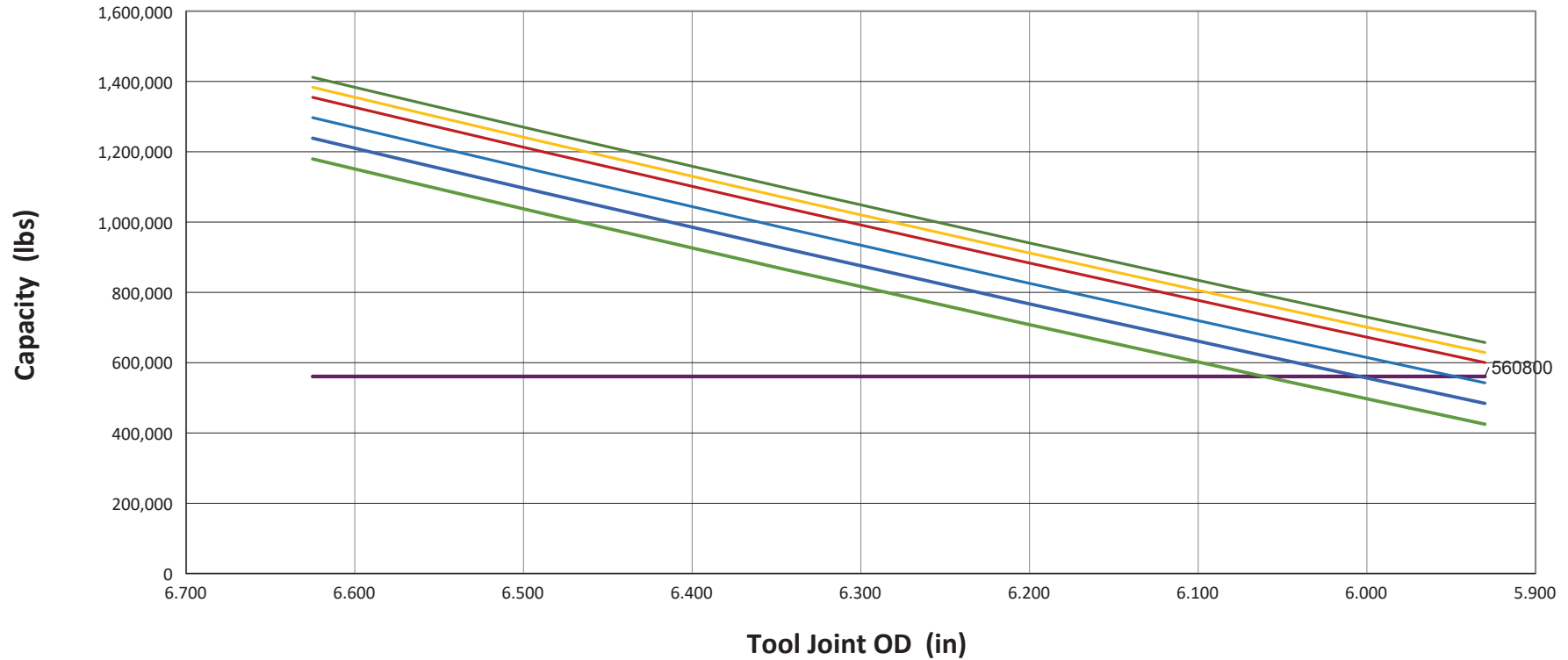
Connection: GPDS™ 50-130 (6.625 (in) OD 3.25 (in) ID) SMYS = 130000 (psi) Friction Factor = 1.15
Pipe Body: 80% Inspection Class, 5.0 (in) OD, 0.362 (in) Wall Thickness, S-135 Pipe Grade



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Elevator Capacity Curve

(Based on new Elevator Bore Diameter of 5.25 (in) (0.362 (in) wall) and the elevator yield strength of 110100 (psi)
5.0 (in) (0.362 (in)wall) IEU S-135 GPDS™ 50-130 (6.625 (in) x 3.25 (in)”) Max DTE = 5.125 (in)



— Tube Tensile Capacity at Inspection Class (560800 (lbs))

(Safety Factor = 1.0)

- Elevator Capacity (No Wear - 5.25 (in) Bore Dia)
- Elevator Capacity (0.031 Wear - 5.281in Bore Dia)
- Elevator Capacity (1/16 Wear - 5.313 (in) Bore Dia)
- Elevator Capacity (1/8 Wear - 5.375 (in) Bore Dia)
- Elevator Capacity (3/16 Wear - 5.438 (in) Bore Dia)
- Elevator Capacity (1/4 Wear - 5.5 (in) Bore Dia)

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