

## TECHNICAL SPECIFICATIONS

Equipment No's: Ref. Enclosed page

Spec. No.: DP-4-05

### 4" OD Drill Pipe, S-135, TT-390 Conn's

**New**

**Premium**

80% remaining Body Wall

#### DESCRIPTION

Type  
Range  
Conventional=welded T-J. / Integral=Monoblock

IU, 14.0 #  
2  
Conventional

#### TUBE DATA

Material grade		S-135			
Internal plastic coating		TK-34P			
Tube body OD x ID	inch	4,000	3,340	3,868	3,340
Wall thickness, nominal	inch	0,330		0,264	
Cross Sectional Area	inch <sup>2</sup>	3,805		2,989	
Polar Sectional Modulus	inch <sup>3</sup>	6,458		5,046	
Tensile yield pipe	lbf	513 600		403 500	
	kN	2 285		1 795	
Torsional yield pipe	lbf-ft	41 900		32 800	
	kNm	56,8		44,5	
80% Torsional Yield	lbf-ft	33 520		26 240	
	kNm	45,4		35,6	

#### CONNECTION DATA

Connection type		Turbo Torque 390			
Material grade		130 ksi			
Hardbanding		TCS-Titanium			
OD x ID	inch	5,000	2,563	4,577	2,563
B.S.R.	x : 1	2,00		NA	
Tensile yield tooljoint	lbf	753 700		561 400	
	kN	3 353		2 497	
Torsional yield tooljoint	lbf-ft	47 000		35 200	
	kNm	63,7		47,7	
Make up torque (Max.)	lbf-ft	32 900		24 600	
	kNm	44,6		33,4	

#### OPERATIONAL DATA

Tool joint/Drill pipe torsional ratio	=> 0.80 *	1,12		1,43	
Drift diameter	inch			2,438	
Type of elevator shoulder:				18°	
Burst pressure	psi	19 490		17 820	
	Mpa	134		123	
Collapse pressure	psi	20 140		13 840	
	MPa	139		95	
Adjusted weight	lbs/ft			16,96	
	kg/mtr			25,2	
Approx weight each joint	lbs			544	
	kg			247	
Capacity	gal/ft			0,43	
	ltr/mtr			5,34	
Open end displacement	gal/ft			0,26	
	ltr/mtr			3,23	
Closed end displacement	gal/ft			0,69	
	ltr/mtr			8,57	
Built In Length (shoulder to shoulder)	ft			32,1	
	mtr.			9,8	

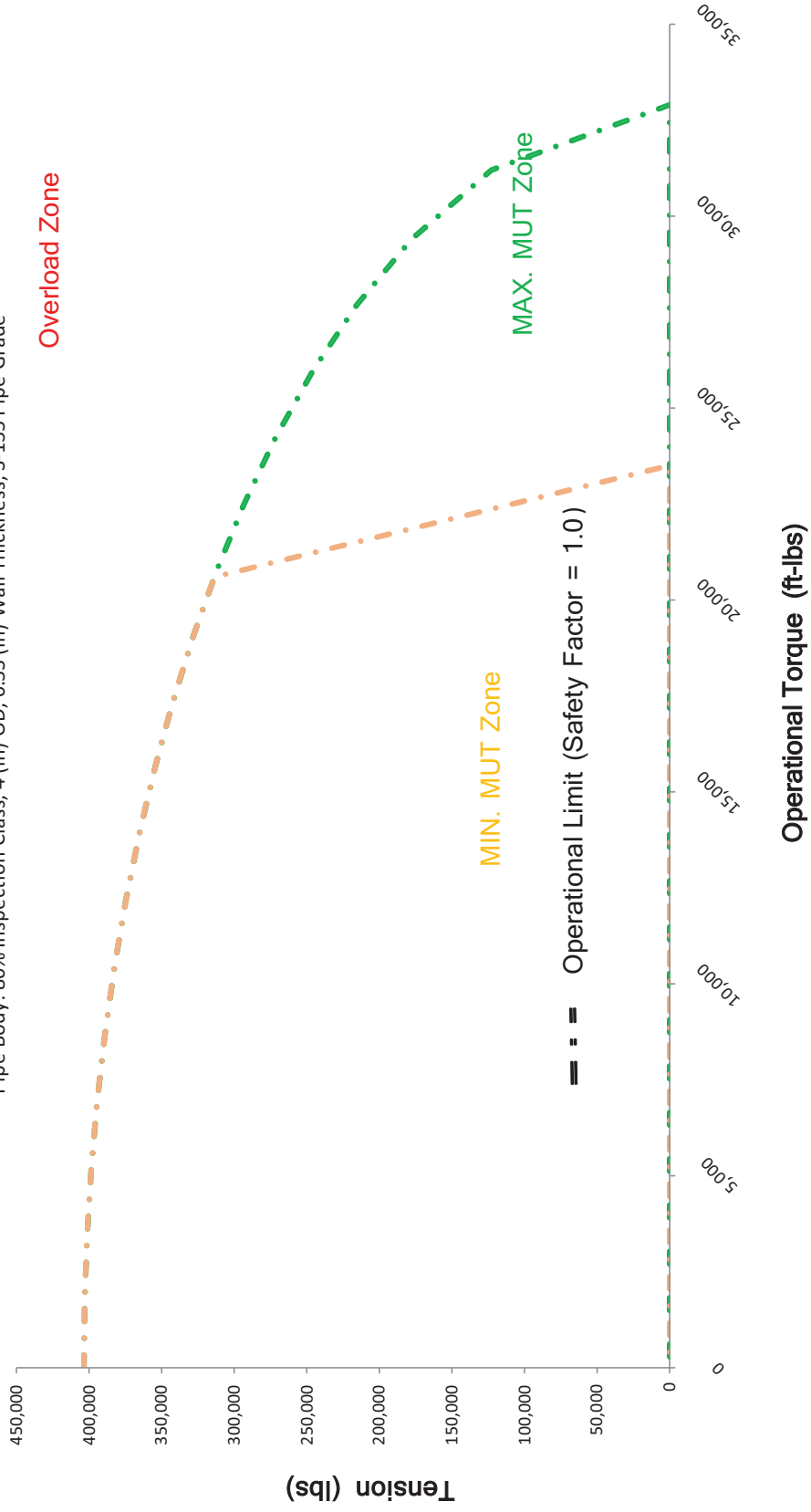
Calculated using nominal OD & ID. Safety & Dope friction factor used: 1.0

Values herein is meant as guidelines only. Odfjell will not be held liable for any damage or injuries !

<b><i>String number:</i></b>	<b><i>Joints:</i></b>	<b><i>Individual serial numbers:</i></b>
OWS-DP-407	388	OWS-500 to OWS-887
OWS-DP-408	489	OWS-900 to OWS-1388
OWS-DP-410	636	OWS-1700 to OWS-2337
OWS-DP-4-05	647	OWS-2400 to OWS-3046

**Drill Pipe Operational Limits (Connection at Recommended MUT = 32,905 (ft-lbs)) (Connection at Minimum MUT = 23,503 (ft-lbs))**

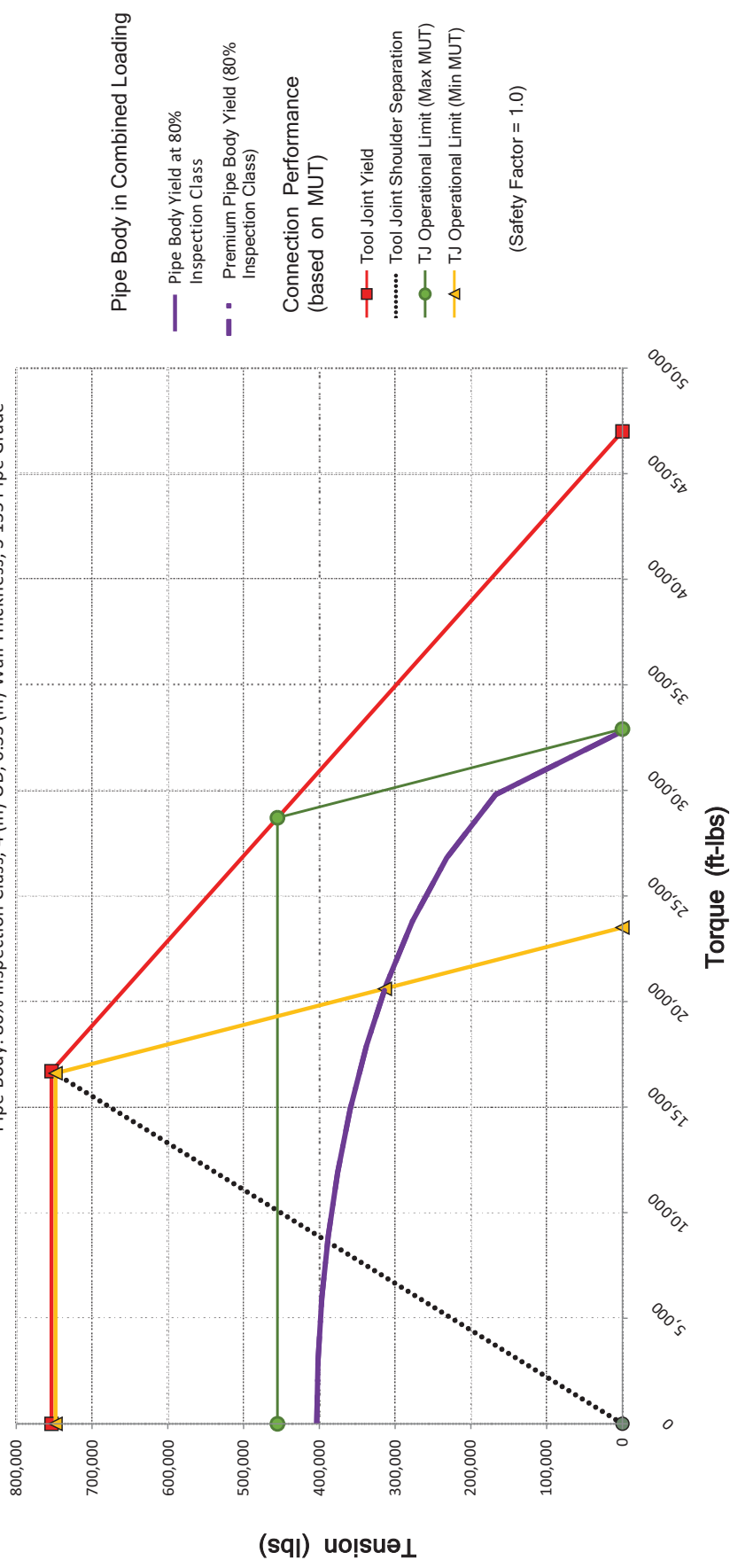
Connection: TurboTorque™ 390-130 (5 (in) OD 2.563 (in) ID) SMYS = 130,000 (psi) Friction Factor = 1.0  
 Pipe Body: 80% Inspection Class, 4 (in) OD, 0.33 (in) Wall Thickness, S-135 Pipe Grade



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### Torque-Tension Graph

Connection: TurboTorque™ 390-130 (5 (in) OD 2.563 (in) ID) SMYS = 130,000 (psi) Friction Factor = 1.0  
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**Combined Loading for Drill Pipe**

Connection: TurboTorque™ 390 5.0" x 2.563" (130 KSI SMYS) Friction Factor: 1.0  
 Pipe: 4.0" OD 0.330" Wall Thickness S135 80% Inspection Class

At Max MUT (32900 ft-lbs)		At Min MUT (23500 ft-lbs)	
Operational Torque(ft-lbs)	Assembly Max Tension(lbs)	Operational Torque(ft-lbs)	Assembly Max Tension(lbs)
0	403500	0	403500
1700	403000	1100	403300
3500	401200	2200	402600
5200	398400	3300	401500
6900	394500	4300	400000
8700	389000	5400	398000
10400	382600	6500	395500
12100	375000	7600	392500
13900	365400	8700	389000
15600	354800	9800	385000
17300	342600	10800	381000
19100	327800	11900	375900
20800	311700	13000	370400
22500	293200	14100	364200
24200	271900	15200	357400
26000	245400	16300	350000
27700	215300	17400	341900
29400	177800	18400	333800
31200	122800	19500	324200
32900	0	20600	313700

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 D5, Section D5-16 of the drilling manual, it is recommended that drilling torque should not exceed 80% of MUT.

**Connection Wear Table**

Connection: TurboTorque™ 390 5.0" x 2.563" (130 KSI SMYS) Friction Factor: 1.0

Tool Joint OD (in)	Max MUT(ft-lbs)	Min MUT(ft-lbs)
5.0	32900	23500
4.962	32900	23500
4.923	32900	23500
4.885	32500	23200
4.846	31500	22500
4.808	30500	21800
4.769	29500	21000
4.731	28500	20300
4.692	27500	19600
4.654	26500	19000
4.615	25600	18300
4.577	24600	17600

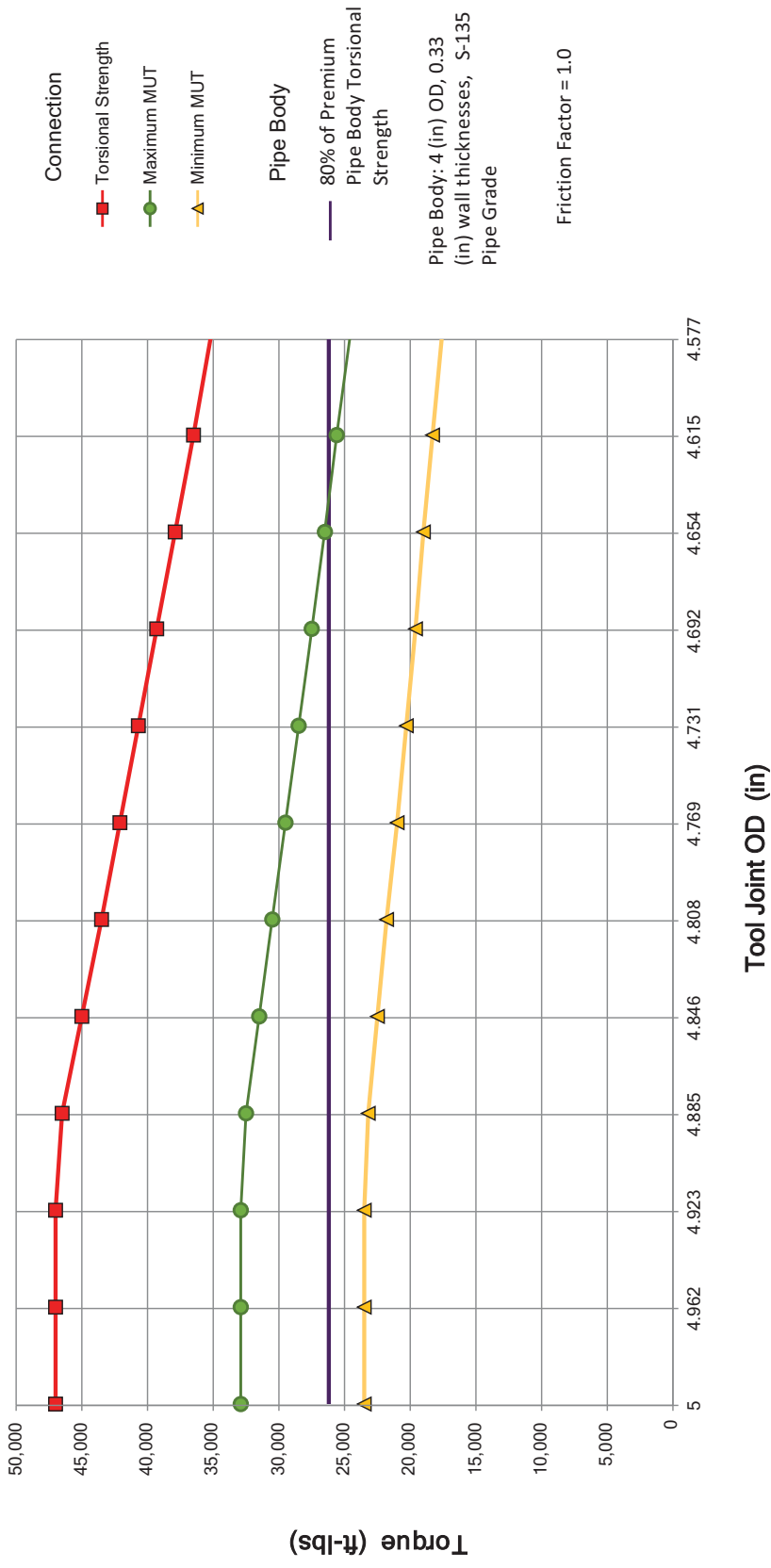
**Elevator Capacity**

Elevator Bore Diameter: 4.28175" Elevator SMYS: 110,100 psi Box Taper Angle: 18 deg  
 Connection: TurboTorque™ 390 4.0" 0.330" wall IU S135

Tool Joint OD (in.)	Elevator Hoist Capacity (lbs)	
	No Wear	1/32" Wear Factor
5.1875	741700	718400
5.132	692100	668900
5.077	643600	620300
5.021	594700	571500
4.966	547200	524000
4.91	499400	476100
4.855	452900	429700
4.799	406200	382900
4.744	360800	337600
4.688	315100	291900
4.633	270800	247500
4.577	226200	202900

Connection Wear for TurboTorque™ 390-130 (5 (in) OD x 2.563 (in) ID)

Material SMYS (Specified Minimum Yield Strength) = 130,000 (psi)



Friction Factor = 1.0

Pipe Body: 4 (in) OD, 0.33 (in) wall thicknesses, S-135 Pipe Grade

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