

*“If the operations of your company demands quality equipment then demand **Quality Rental Tools**”*

Best Practices to Extend the Life of the Drillstring

Proper running and handling procedures are imperative to maximize performance, extend life, and reduce the Total Cost of Ownership of drill pipe and BHA components. These procedures help prevent downhole make-up, shoulder-separation, washout and high break-out torque. While the procedures can vary according to the specific connection, they are commonly referred to as the 5 Cs.



1. Clean

All connections (drill pipe, subs, lift plugs, saver subs, etc.) and thread protectors should be clean. Thread compound should be free of contamination.



2. Coverage

100% of connection thread, seal, and shoulder surfaces should be uniformly covered with a light coat of thread compound. Excessive dope can have a negative effect.



3. Control

Drilling tubulars should be handled, stabbed, made-up properly, and aligned under complete control.



4. Clamp Pressure

Pressure should be minimized and tongs should be positioned away from the box shoulder face.



5. Calibration

Torque and handling equipment should be properly adjusted and calibrated.

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This is a summary of proper running and handling procedures. It is not intended to replace the manufacturer's care and handling procedures. Information and images from NOV Grant Prideco and other companies.

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Drill Pipe Connection	Minimum Distance to Clamp from Make-Up Shoulder
API	As per API
GPDS™ and uGPDS™	½ inch from Make-Up Shoulder
HT™	2 inches from Make-Up Shoulder
XT™ and uXT™ size 43 and smaller size 46 and larger	1 ½ inches from Make-Up Shoulder 2 inches from Make-Up Shoulder
Clamp as far as possible from the box face on the thicker section of the tool joint	



Drill Pipe Specifications

(Pipe Dope Friction Factor 1.15)

Pipe OD (in)	Connection	TJ OD (in)	TJ ID (in)	Grade	Range	Wall (in)	Tube ID (in)	Nominal Weight (lbs/ft)	Recommended Make-up Torque (ft-lbs)	Minimum Make-up Torque (ft-lbs)
3 1/2	3 1/2" IF, NC38	4.875	2.563	S-135	2	0.337	2.602	15.50	13,866	13,225
4	Delta 391	4.875	2.688	S-135	2	0.330	3.340	14.00	24,600	20,500
4	XT™39	4.875	2.688	S-135	2	0.330	3.340	14.00	24,380	20,355
4 1/2	GPDS™42	5.375	2.813	S-135	2	0.337	3.826	16.60	28,635	23,920
4 1/2	Delta 425	5.375	3.000	S-135	2	0.337	3.826	16.60	34,845	24,840
5 1/2	Delta 544	6.625	4.000	S-135	2	0.361	4.788	21.90	67,505	48,185

Heavy Weight Drill Pipe Specifications

(Pipe Dope Friction Factor 1.15)

Pipe OD (in)	Connection	TJ OD (in)	TJ ID (in)	Tube ID (in)	Adjusted Weight (lbs/ft)	TJ Torsional Yield (ft-lbs)	Recommended Make-up Torque (ft-lbs)	Minimum Make-up Torque (ft-lbs)	Type	Design
3 1/2	3 1/2" IF, NC38	4.875	2.375	2.250	23.90	26,557	16,365	13,720	Welded	Conventional
3 1/2	3 1/2" IF, NC38	4.875	2.375	2.250	23.90	26,557	16,365	13,720	Welded	Spiral
4	XT™39	4.875	2.562	2.562	28.92	40,605	25,530	21,275	Welded	Conventional
4	XT™39	4.875	2.562	2.562	28.92	40,605	25,530	21,275	Welded	Tri-Spiral
4	Delta 391	4.875	2.563	2.563	28.30	42,297	25,400	21,100	Welded	Conventional
4	NC40	5.250	2.688	2.5625	34.10	31,815	18,170	15,295	Welded	Spiral
4 1/2	GPDS™42	5.375	2.750	2.750	37.50	45,481	27,300	22,700	Welded	Conventional
4 1/2	Delta 425	5.375	2.750	2.750	37.17	55,984	39,200	28,000	Welded	Conventional
4 1/2	NC46	6.25	2.875	2.750	41.10	50,979	29,710	24,996	Welded	Conventional
4 1/2	NC46	6.25	2.875	2.750	46.30	50,979	29,710	24,996	Welded	Spiral
5	NC50	6.625	3.062	3.0625	50.10	66,142	39,980	33,540	Welded	Conventional
5	NC50	6.625	3.062	3.0625	50.10	66,142	39,980	33,540	Welded	Spiral
5 1/2	FH	7.500	3.500	3.375	60.30	91,654	55,000	45,800	Welded	Conventional
5 1/2	Delta 544	6.625	3.250	3.250	57.45	99,574	59,700	49,800	Welded	Conventional
5 7/8	XT57™	7.000	4.000	4.000	57.42	113,463	73,255	61,065	Welded	Tri-Spiral
6 5/8	FH	8.000	4.500	4.499	70.40	101,601	60,950	50,830	Welded	Conventional
6 5/8	FH	8.500	4.500	4.500	77.78	111,741	67,045	55,890	Welded	Conventional
6 5/8	FH	8.250	4.500	4.500	81.90	111,741	65,205	54,740	Welded	Spiral
6 5/8	FH	8.250	4.500	4.500	75.41	111,741	67,045	55,890	Welded	Tri-Spiral

Drill Collar Specifications

(Pipe Dope Friction Factor 1.15)

Pipe OD (in)	Connection	Connection OD (in)	Connection ID (in)	Adjusted Weight (lbs/ft)	Connection Torsional Yield (ft-lbs)	Recommended Make-up Torque (ft-lbs)	Minimum Make-up Torque (ft-lbs)	Design
3 1/8	2 7/8 Pac	3.125	1.250	21.90	6,103	6,158	5,583	Slick
4 3/4	NC38	4.750	2.250	44.40	17,576	12,633	11,483	Spiral

4 7/8	XT39™	4.875	2.563	45.92	35,300	24,380	20,355	Spiral
4 7/8	NC38	4.875	2.250	47.50	20,999	15,180	13,720	Spiral
6 3/4	NC50	6.750	2.813	100.53	57,000	40,825	37,145	Spiral
7 1/4	5 ½ Reg	7.250	2.813	119.22	58,000	45,885	41,630	Spiral
8	6 5/8 Reg	8.000	2.813	150.00	100,000	67,558	61,348	Spiral
9 1/2	7 5/8 Reg	9.500	3.250	208.00	141,729	112,125	101,890	Spiral

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The various characteristics are for reference only. Information was accumulated from public domain sources as well as the OEM. Always contact your provider for the applicable specification sheets.