

5C Protect your investment.

Best practices to extend the life of your drill string

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. Depending on the specific connection, these procedures can vary. However, these procedures can be easily remembered in five simple steps.

For more information, contact your Grant Prideco representative or go to: nov.com/grantprideco

◀ For recommended connection make-up and torque specifications, please see the reverse side.



1. CLEAN

All connections 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.



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.

Gripping Location Specifications



Clamp as far as possible from the box face on the thicker section of the tool joint. Please reference Grant Prideco Running and Handling Procedures for further information.

Connection	Minimum Gripping Distance
API	As per API
GPDS™, uGPDS™	As per API
EIS™	As per API
Delta™	½ inch from make-up shoulder
HT™	2 inches from make-up shoulder
VX™	2 inches from make-up shoulder
XT™, XTF™, uXT™, XT-M™, XT-MF™	2 inches from make-up shoulder
TT™, TT-M™, TF-M™	2 inches from make-up shoulder
Nano™	2 inches from make-up shoulder
CT-M™	2 inches from make-up shoulder
GT-M™	2 inches from make-up shoulder
DPR HP™	2 inches from make-up shoulder

Make-Up Torque Specifications

Pipe OD (in)	Connection	Pin OD (in)	Pin ID (in)	Recommended Make-Up Torque (ft-lb)	Minimum Make-Up Torque (ft-lb)
2 7/8	GPDS 31	4.125	2.000	10,300	8,600
	2 7/8 PAC EIS*	3.125	1.500	6,000	4,600
	HT 2 7/8 SLH90	3.125	1.975	4,600	3,800
	HT 2 7/8 PAC	3.125	1.500	5,100	4,300
	Nano 25**	3.125	1.813	7,300	6,100
	Delta 321*	4.125	2.000	14,000	11,700
	uGPDS 31*	4.125	2.000	12,800	9,100
3 1/2	GPDS 38	4.750	2.563	14,900	12,400
	NC 38 EIS*	4.750	2.563	17,600	13,400
	HT 38	4.750	2.438	17,000	14,200
	HT 38	4.750	2.688	15,200	12,600
	XT 31	4.125	2.000	12,600	10,500
	Delta 377*	4.750	2.563	19,500	16,300
	VX 38*	4.750	2.563	20,500	17,600
	XT 38 / XTF 38	4.750	2.438	20,500	17,100
	uGPDS 31*	4.125	1.875	14,500	10,400
	uGPDS 38*	5.000	2.438	21,700	15,500
4	XT-M 38	4.750	2.438	18,400	15,300
	XT-M 39	5.000	2.438	23,300	19,400
	GPDS 38	4.875	2.438	17,400	14,500
	GPDS 38	5.000	2.438	17,400	14,500
	GPDS 40	5.250	2.563	21,800	18,200
	GPDS 40	5.250	2.688	19,600	16,300
	NC 40 EIS*	5.250	2.563	25,600	19,500
	HT 38	4.938	2.563	17,600	14,700
	HT 40	5.250	2.688	21,500	17,900
	Delta 391*	4.875	2.688	21,400	17,800
	VX 38*	4.750	2.563	20,500	17,600
	VX 39*	4.875	2.563	23,400	20,100
	VX 39*	4.875	2.688	22,300	19,100
	XT 38 / XTF 38	4.875	2.563	18,800	15,600
	XT 39 / XTF 39	4.875	2.563	22,200	18,500
	XT 39 / XTF 39	4.875	2.688	21,200	17,700
	XT 39 / XTF 39	4.875	2.813	19,700	16,400
XT 39 / XTF 39	5.000	2.563	24,500	20,400	
XT 40 / XTF 40	5.250	2.563	28,900	24,900	
XT 40 / XTF 40	5.250	2.688	28,800	24,000	
TT 390*	4.875	2.688	29,700	21,200	
TT 390*	5.000	2.563	32,900	23,500	
uXT 39*	4.938	2.563	29,600	21,100	
XT-M 39	4.875	2.688	18,900	15,700	
4 1/2	GPDS 40	5.250	2.688	19,600	16,300
	GPDS 42	5.250	2.813	22,500	18,800
	GPDS 42	5.375	2.813	23,000	19,200
	Delta 425*	5.250	3.000	30,300***	21,600
	VX 46*	6.250	3.500	42,000	36,000
	XT 43 / XTF 43	5.250	3.250	22,300	18,600
	XT 46 / XTF 46	6.250	3.250	42,000	35,000
	uXT 40*	5.250	2.813	33,300	23,800
	uXT 43*	5.250	3.250	28,200	20,100
	XT-M 40	5.250	2.688	26,200	21,800
	CT-M 43**	5.250	3.250	21,900	18,200

For five important tips to protect your investment, please see the reverse side.

Pipe OD (in)	Connection	Pin OD (in)	Pin ID (in)	Recommended Make-Up Torque (ft-lb)	Minimum Make-Up Torque (ft-lb)
5	GPDS 50	6.625	3.250	43,000	35,900
	NC 50 EIS*	6.625	3.250	49,800	38,200
	HT 50	6.625	3.500	38,200	32,800
	Delta 494*	6.250	3.250	47,800	39,000
	Delta 527*	6.500	3.750	49,800	41,500
	VX 50	6.500	3.750	51,200	44,300
	VX 50	6.625	3.750	54,300	47,100
	XT 50 / XTF 50	6.500	3.750	46,100	38,400
	XT 50 / XTF 50	6.625	3.500	54,300	45,300
	XT 50 / XTF 50	6.625	3.750	46,100	38,400
5 1/2	TT 525*	6.500	3.875	57,700	41,200
	uGPDS 50*	6.625	3.250	53,900	38,500
	XT-M 50	6.625	3.500	50,200	41,800
	GPDS 50	6.625	3.500	35,900	29,900
	GPDS 55	7.000	3.500	55,800	46,500
	GPDS 55	7.000	3.750	52,200	43,500
	GPDS 55	7.000	4.000	43,700	36,400
	GPDS 55	7.250	4.000	43,700	36,400
	5 1/2 FH EIS*	7.000	3.750	59,700	46,200
	5 1/2 FH EIS*	7.000	4.000	50,700	39,000
5 3/4	HT 55	7.000	3.750	52,700	43,900
	HT 55	7.000	4.000	46,300	38,600
	Delta 544*	6.625	4.000	50,300	41,900
	VX 54*	6.625	4.000	52,800	45,700
	VX 57*	7.000	4.250	60,800	52,900
	XT 54 / XTF 54	6.625	4.000	49,900	41,600
	XT 57 / XTF 57	7.000	4.250	56,500	47,100
	TT 550*	6.625	4.250	59,200	42,300
	uGPDS 55*	7.000	4.000	54,800	39,100
	6	GPDS 55	7.000	4.000	43,700
5 1/2 FH EIS*		7.000	3.750	59,700	46,200
5 1/2 FH EIS*		7.000	4.000	50,700	39,000
Delta 576*		7.000	4.250	59,200	49,300
VX 57*		7.000	4.250	60,800	52,900
XT 57 / XTF 57		7.000	4.250	56,500	47,100
TT 575*		7.125	4.125	85,300	60,900
TT 585*		7.000	4.500	72,400	51,700
uGPDS 55*		7.000	4.000	54,800	39,100
uXT 57*		7.000	4.250	71,400	51,000
6 1/2	XT-M 57	7.000	4.250	51,500	42,900
	CT-M 57**	7.000	4.000	58,700	48,900
	CT-M 57**	7.000	4.250	51,600	43,000
	GPDS 65	8.500	4.750	82,500	68,800
	6 1/2 FH EIS*	8.250	4.750	80,100	62,400
	Delta 663*	8.000	5.000	86,600	72,200
	VX 65*	8.250	5.250	85,600	75,200
	XT 65	8.000	5.000	81,100	67,600
	XT 69	8.500	5.250	100,100	83,400
	uGPDS 65*	8.375	4.750	87,900	62,800
6 3/4	XT-M 69	8.500	5.250	92,700	77,200
	6 3/4 DPR HP	8.000	5.190	44,900	40,900
	GT-M 69	8.500	5.500	50,400	42,000

Make-up torque is based on 120 ksi tool joint material unless otherwise indicated. For sour service grades and non-standard tool joint grades, the make-up torques will differ. Please contact your Grant Prideco representative for an accurate performance data sheet for your specific configuration. * indicates 130 ksi tool joint material ** indicates 135 ksi tool joint material *** indicates extended MUT