SATAREM

DRILL PIPE AND DRILL COLLAR

SATAREM

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BRIEF

Welcome! Satarem Group is an international conglomerate company. Our cooperative partners is one of the world leaders in drilling products manufacturing and services. Equipped with three welding lines and other state of the art technology, we have grown into a major manufacturing base of drill pipes, HW drill pipes and drill collars for China as well as the world. Its products have been widely accepted by customers from major Chinese oilfields and also those from North America, Russia, Middle East, Southeast Asia, etc. With more than 1860 specialized and dedicated technical and manufacturing staff, the plant is trying its every effort to satisfy demands by various customers from both offshore and on shore. Satarem and their cooperative partners have three welders which are all manufactured by Manufacturing Technology Inc. of the US thus makes the total production capacity of us to 75,000 Metric Tons or 200, 000 joints per year. In the middle of 2008, the fourth welder joins the prodction fleet and then the plant will possess 100,000 Metric Tons or 300,000 joints annual production capacity. The plant can produce full API range of drill pipes with size range from 2-3/8in to 6-5/8in and heavy weight drill pipes from 3-1/2in to 5-1/2in.

By the end of March, 2008, the drill collar line is ready to produce drill collars with size range from 4-1/2in to 10in and capacity of 5000 joints per yesr. Besides, the plant has its own tool joints manufacturing lines, one heat treatment shop and 4 upsetting lines. In order to meet the huge welding capacity, the plant is setting up its second heat treatment shop of 1,000 joints per day. By mid 2008, the plant will be able to upset and heat treat 1,500 joints of drill pipes per day.

The Master of Drill Pipe

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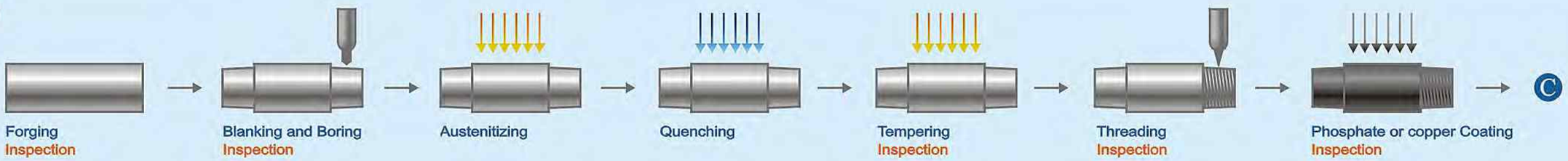
DRILL PIPE PRODUCTION CHART

Process

A



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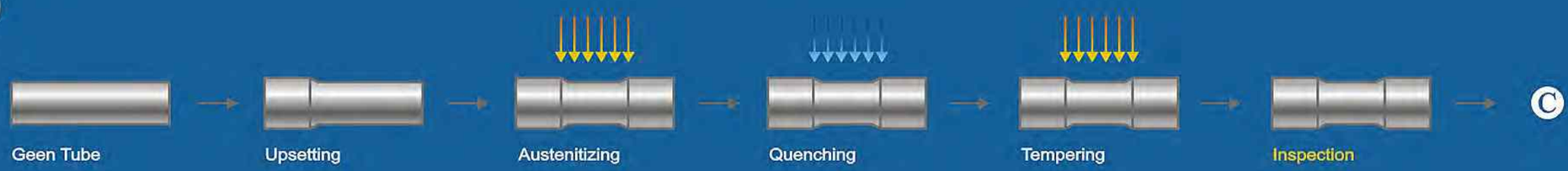

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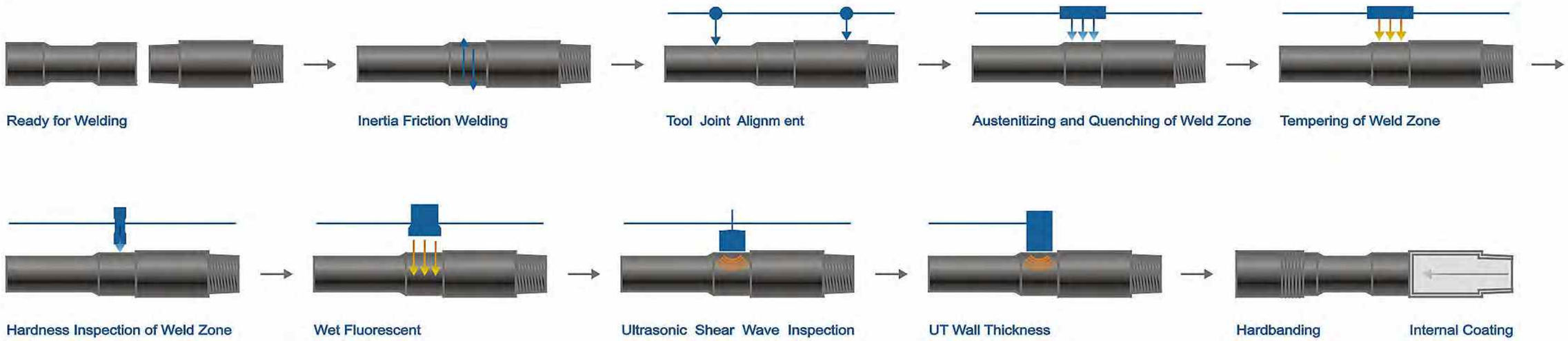

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OUR QUALITY

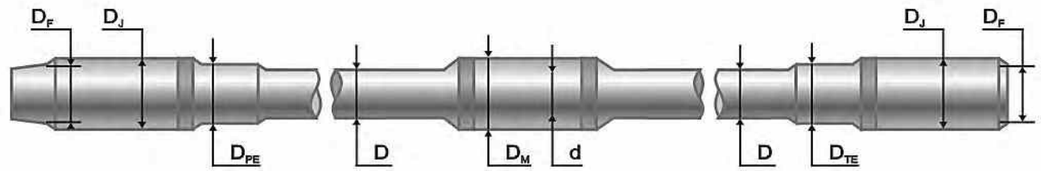
• QA/QC

- Complete QA/QC system was set up to make sure that the full production process is in strict accordance with the quality requirement.
- Satarem and their cooperative partners were ISO 9001 certified and also API certified to use API 5D and API SPEC 7 monogram.
- The plant has been equipped with inspection methods such as MT & UT on line inspection.
- Also set up the regular testing laboratory with hardness, tensile, impact testing equipments, etc.
- We have a team of qualified inspection personnel to carry out full scale in line and off line inspection.

HEAVY WEIGHT DRILL PIPE

Parameters

• Product Sketch



• Heavy Weight Drill Pipe

Nominal size	Pipe body				Tool joint				Weight kg/Piece
	D(mm)	d(mm)	Upset dimension		RSC type	D_J(mm)	ID(mm)	HSC bevel dia. D_F(mm)	
			Center dia. D_m(mm)	End dia. D_{TE}(mm)					
3 1/2	88.9	57.4	101.6	98.4	Nc38	127.0	52.4	116.3	312
3 1/2	88.9	57.2	101.6	98.4	NC38	127.0	57.2	116.3	282
4	101.6	65.1	114.3	106.4	NC40	133.4	65.1	127.4	370
4 1/2	114.3	69.9	127.0	119.1	NC46	158.8	69.9	145.3	558
5	127.0	76.2	139.7	130.2	NC50	168.3	76.2	154.0	672
5 1/2	139.7	92.1	152.4	144.5	5 1/2FH	184.2	92.1	170.7	776
6 5/8	168.3	114.3	184.2	176.2	6 5/8FH	203.2	144.3	195.7	964

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DRILLPIPE

Parameters

• Drillpipe

Nominal size	Nominal weight	Pipe body				Tool joint							Torsional Ration, Pin to Drill pipe body
		Grade	Upset type	OD D_{dp} (mm)	wall thickness t (mm)	RSC type	OD of Pin and box D (mm)	ID of Pin d(mm)	Bevel Dia. Of Pin and Box Shoulder D_F(mm)	Pin tong L_{PB}(mm)	Box tong L_{PB}(mm)	OD of Upset neck D_{TE}/D_{PE} (mm)	
2 3/8	6.65	E	EU	60.32	7.11	NC26	85.7	45.45	82.95	177.8	203.2	65.09	1.1
		X					85.7	45.45	82.95	177.8	203.2	65.09	0.87
		G					85.7	45.45	82.95	177.8	203.2	65.09	0.79
2 7/8	10.4	E	EU	73.02	9.19	NC31	104.8	53.98	100.41	177.8	228.6	80.96	1.03
		X					104.8	50.8	100.41	177.8	228.6	80.96	0.9
		G					104.8	50.8	100.41	177.8	228.6	80.96	0.82
		S					111.1	41.28	100.41	177.8	228.6	80.96	0.82
3 1/2	13.3	E	EU	88.9	9.35	NC38	120.7	68.26	116.28	203.2	266.7	98.43	0.98
		X					127	65.09	116.28	203.2	266.7	98.43	0.87
		G					127	61.91	116.28	203.2	266.7	98.43	0.86
		S					127	53.98	116.28	203.2	266.7	98.43	0.8
	15.5	E			11.4		127	65.09	116.28	203.2	266.7	98.43	0.97
		X					127	61.91	116.28	203.2	266.7	98.43	0.83
		G					127	53.98	116.28	203.2	266.7	98.43	0.9
		S				NC40	139.7	57.15	127.4	177.8	254	98.43	0.87
4	14	E	IU	101.6	8.38		133.4	71.44	127.4	177.8	254	106.36	1.01
		X					133.4	68.26	127.4	177.8	254	106.36	0.86
		G					139.7	61.91	127.4	177.8	254	106.36	0.93
		S					139.7	50.8	127.4	177.8	254	106.36	0.87
		E	EU			NC46	152.4	82.55	145.26	177.8	254	114.3	1.43
		X					152.4	82.55	145.26	177.8	254	114.3	1.13
		G					152.4	82.55	145.26	177.8	254	114.3	1.02
		S					152.4	76.2	145.26	177.8	254	114.3	0.94
4 1/2	16.6	E	IEU	114.3	8.56		158.8	82.55	145.26	177.8	254	119.06	1.09
		X					158.8	76.2	145.26	177.8	254	119.06	1.01
		G					158.8	76.2	145.26	177.8	254	119.06	0.91
		S					158.8	69.85	145.26	177.8	254	119.06	0.81

Nominal size	Nominal weight	Pipe body				Tool joint							Torsional Ration, Pin to Drill pipe body
		Grade	Upset type	OD D_{dp} (mm)	wall thickness t(mm)	RSC type	OD of Pin and box D(mm)	ID of Pin d(mm)	Bevel Dia. Of Pin and Box Shoulder D_F(mm)	Pin tong L_{PB}(mm)	Box tong L_{PB}(mm)	OD of Upset neck D_{TE}/D_{PE} (mm)	
4 1/2	20	E	IEU	114.3	10.92	Nc46	158.75	76.2	145.3	177.8	254	119.07	1.07
		X					158.75	69.85	145.3	177.8	254	119.07	0.96
		G					158.75	63.5	145.3	177.8	254	119.07	0.96
		S					158.75	57.15	145.3	177.8	254	119.07	0.81
	16.6	E	EU		8.56	NC50	168.28	95.25	154.0	177.8	254	127.0	1.23
		X					168.28	95.25	154.0	177.8	254	127.0	0.97
		G					168.28	95.25	154.0	177.8	254	127.0	0.88
		S					168.28	88.9	154.0	177.8	254	127.0	0.81
	20	E			10.92		168.28	92.08	154.0	177.8	254	127.0	1.02
		X					168.28	88.9	154.0	177.8	254	127.0	0.96
		G					168.28	88.9	154.0	177.8	254	127.0	0.86
		S					168.28	76.2	154.0	177.8	254	127.0	0.87
5	19.5	E	IEU	127	9.19		168.28	95.25	154.0	177.8	254	130.18	0.92
		X					168.28	88.9	154.0	177.8	254	130.18	0.86
		G					168.28	82.55	154.0	177.8	254	130.18	0.89
		S					168.28	69.85	154.0	177.8	254	130.18	0.86
	25.6	E			12.7		168.28	88.9	154.0	177.8	254	130.18	0.86
		X					168.28	76.2	154.0	177.8	254	130.18	0.86
		G					168.28	69.85	154.0	177.8	254	130.18	0.87
	19.5	E			9.19	5 1/2FH	177.8	95.25	170.7	203.2	254	130.18	1.53
		X					177.8	95.25	170.7	203.2	254	130.18	1.21
		G					177.8	95.25	170.7	203.2	254	130.18	1.09
		S					184.15	88.9	170.7	203.2	254	130.18	0.98
	25.6	E			12.7		177.8	88.9	170.7	203.2	254	130.18	1.21
		X					177.8	88.9	170.7	203.2	254	130.18	0.85
		G					184.15	88.9	170.7	203.2	254	130.18	0.99
		S					184.15	82.55	170.7	203.2	254	130.18	0.83
5 1/2	21.9	E		139.7	9.17		177.8	101.6	170.7	203.2	254	144.46	1.11
		X					177.8	95.25	170.7	203.2	254	144.46	0.98
		G					184.15	88.9	170.7	203.2	254	144.46	1.02
		S					190.5	76.2	180.2	203.2	254	144.46	0.96
	24.7	E			10.54		177.8	101.6	170.7	203.2	254	144.46	0.99
		X					184.15	88.9	170.7	203.2	254	144.46	1.01
		G					184.15	88.9	170.7	203.2	254	144.46	0.92
		S					190.5	76.2	180.2	203.2	254	144.46	0.86
6 5/8	25.2	E		168.28	8.38	6 5/8FH	203.2	127.00	195.7	203.2	279.4	176.21	1.04
		X					203.2	127.00	195.7	203.2	279.4	176.21	0.82
		G					209.55	120.65	195.7	203.2	279.4	176.21	0.87
		S					215.90	107.95	195.7	203.2	279.4	176.21	0.86
	27.7	E			9.19		203.20	127.00	195.7	203.2	279.4	176.21	0.96
		X					209.55	120.65	195.7	203.2	279.4	176.21	0.89
		G					209.55	120.65	195.7	203.2	279.4	176.21	0.81
		S					215.90	107.95	195.7	203.2	279.4	176.21	0.80

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DRILLPIPE

• Special Feature Ⅰ

HW Drill Pipe by welding—— OD 3-1/2" to 5-1/2"

- tool joints made separately
- sufficient heat treatment, physical property optimized
- easy for threading and surface treatment, more accurate on dimensional control
- MTI 400BX welder stable and reliable plus mature and advanced heat treatment to realize high strength seamless connection
- length guaranteed and tailored as per customer request

• Special Feature Ⅱ

Internal Upset Transit area

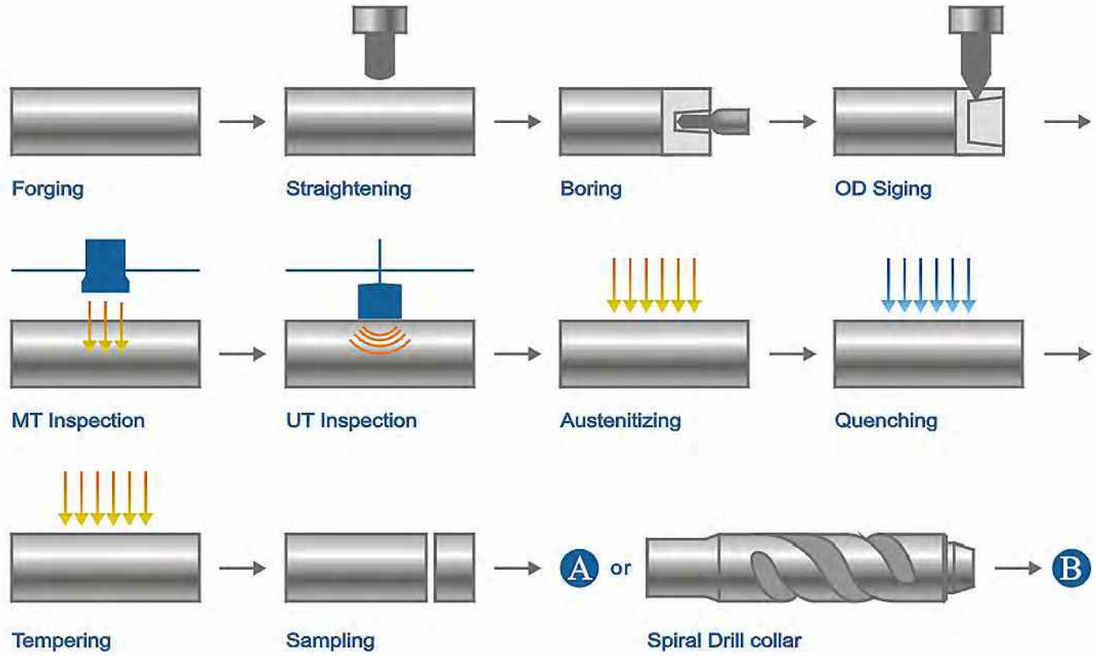
- 120 ~ 160mm long
- Transition area long & Smooth, the best in the world

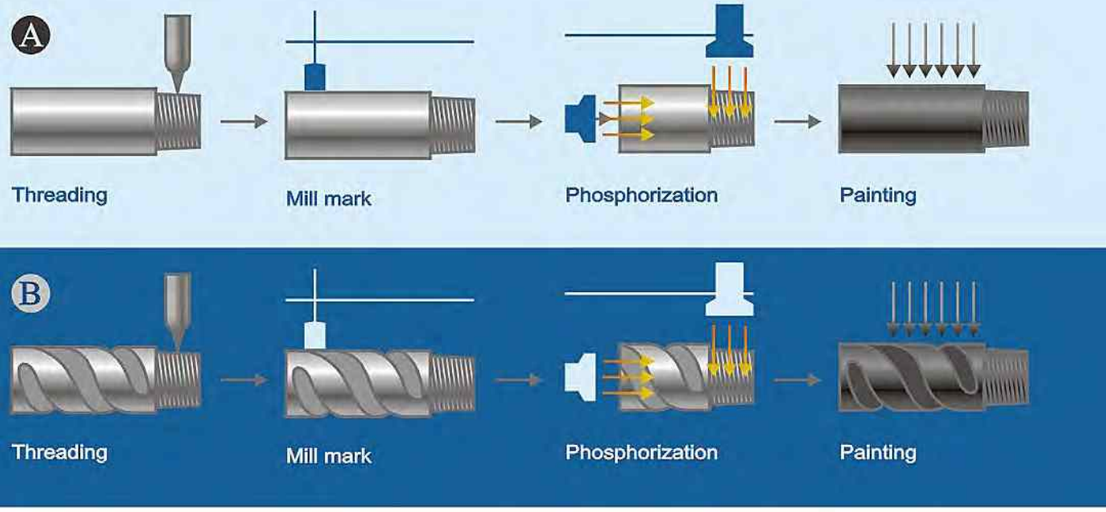
• Special Feature Ⅲ

- Equipped with Make & Break Machine, we can perform make & break testing as per customer requirement.
- Also, cold rolling of the threads can be carried out as per customer demand.
- In line with NS-1 requirement.

DRILL COLLAR

Process





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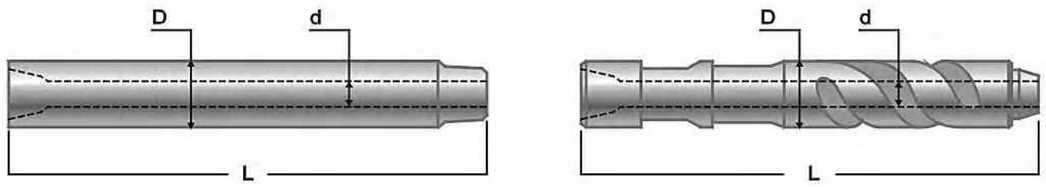
DRILL COLLAR

Parameters

- Product Sketch



- Drillcollar

Nominal size	D		d		L(mm)	D_F(mm)	Bending Strength ratio
	mm	in	mm	in			
NC31-41(2-7/8F)	104.8	4-1/8	50.8	2	9150	100.4	2.43:1
NC35-47	120.7	4-3/4	50.8	2	9150	114.7	2.58:1
NC38-50(3-1/2IF)	127.0	5	57.2	2-1/4	9150	121.0	2.38:1
NC44-60	152.4	6	57.2	2-1/4	9150	144.5	2.49:1
NC44-60	152.4	6	71.4	2-13/16	9150/9450	144.5	2.84:1
NC44-62	158.8	6-1/4	57.2	2-1/4	9150/9450	149.2	2.91:1
NC46-62(4IF)	158.8	6-1/4	71.4	2-13/16	9150/9450	150.0	2.63:1
NC46-65(4IF)	165.1	6-1/2	57.2	2-1/4	9150/9450	154.8	2.76:1
NC46-65(4IF)	165.1	6-1/2	71.4	2-13/16	9150/9450	154.8	3.05:1
NC46-67(4IF)	171.4	6-3/4	57.2	2-1/4	9150/9450	159.5	3.18:1
NC50-67(4-1/2IF)	171.4	6-3/4	71.4	2-13/16	9150/9450	159.5	2.37:1
NC50-70(4-1/2IF)	177.8	7	57.2	2-1/4	9150/9450	164.7	2.54:1
NC50-70(4-1/2IF)	177.8	7	71.4	2-13/16	9150/9450	164.7	2.73:1
NC50-72(4-1/2IF)	184.2	7-1/4	71.4	2-13/16	9150/9450	169.5	3.12:1
NC56-77	196.8	7-3/4	71.4	2-13/16	9150/9450	185.3	2.70:1
NC56-80	203.2	8	71.4	2-13/16	9150/9450	190.1	3.02:1
6-5/8REG	209.6	8-1/4	71.4	2-13/16	9150/9450	195.7	2.93:1
NC61-90	228.6	9	71.4	2-13/16	9150/9450	212.7	3.17:1
7-5/8REG	241.3	9-1/2	76.2	3	9150/9450	223.8	2.81:1
NC70-97	247.6	9-3/4	76.2	3	9150/9450	232.6	2.57:1
NC70-100	254.0	10	76.2	3	9150/9450	237.3	2.81:1

- Special features
  - high quality, unique selection
  - special intermediate frequency heat treatment technique
  - satisfies API SPEC7-1 requests
  - UT & Mt Inspecion
  - strict quality control system
  - Can produce normal Drillcollar, Spiral Drillcollar and Non-Magnetic Drillcollar

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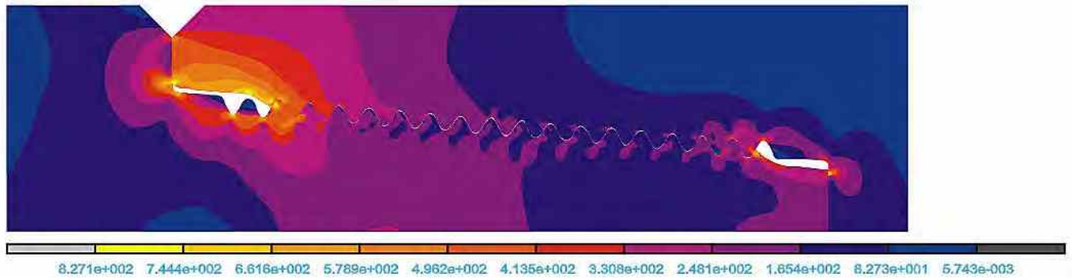
PROPRIETARY PRODUCT

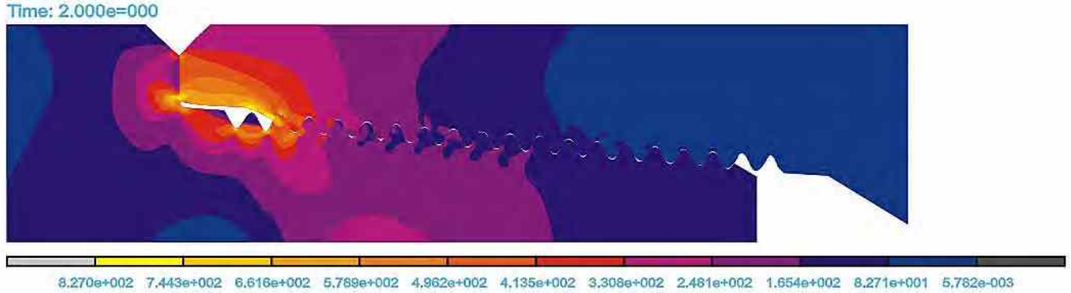
Parameters

- DPDS——Double Shoulder Tool Joint Developed by DP-Master
  - apart from the primary seal, secondary torque shoulder is designed
  - secondary torque shoulder increases the total size of torque shoulder
  - secondary torque shoulder can greatly improve seal and torque capacity
  - torque capacity increase 30% to 50% than normal API standard tool joint
  - suitable for drilling activities of high pumping pressure, high flow and high torque
  - specially designed for deep and super deep well drilling, directional and horizontal wells

- DPDS——Developed by us

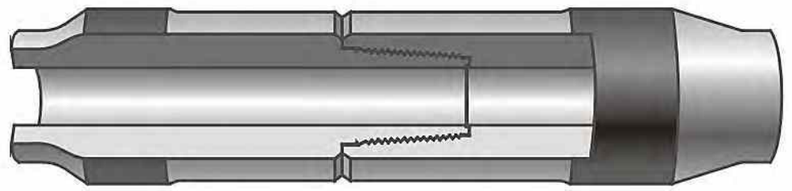


- API Standard Tool Joint





- Product Sketch



- Double Shoulder Tool Joint

Item	OD(mm)	ID(mm)	LPC(mm)	C(mm)	Secondary Shoulder Torque (ft • ib)	Primary Shoulder Torque (ft • ib)	Enhanced Percentage (%)
NC26	3 3/8	1 3/4	3	2.668	2066	6875	30%
NC31	4 1/8	2	3 1/2	3.813	5020	13389	37%
	4 3/8	1 5/8	3 1/2	3.183	7150	17170	42%
NC38	5	2 9/16	4	3.808	6428	20326	32%
	5	2 7/16	4	3.808	7908	22213	36%
	5	2 1/8	4	3.808	11174	26515	42%
NC40	5 3/8	2 7/16	4 1/2	4.072	11150	29930	37%
	5 1/4	2 9/16	4 1/2	4.072	9623	27760	35%
	5 1/2	2 1/4	4 1/2	4.072	13245	32943	40%
	6 1/2	2 7/16	4 1/2	4.072	11150	30114	37%
NC46	6	3 1/4	4 1/2	4.626	10451	33625	31%
	6	3	4 1/2	4.626	14898	39229	38%
	6 1/4	3	4 1/2	4.626	14898	39659	38%
	6 1/4	2 3/4	4 1/2	4.626	18860	44871	42%
	6 1/4	2 1/2	4 1/2	4.626	22352	49630	45%
	6 1/4	2 1/4	4 1/2	4.626	25389	53936	47%
NC50	6 5/8	3 3/4	4 1/2	5.042	10956	37676	29%
	6 5/8	3 1/2	4 1/2	5.042	16678	44673	37%
	6 5/8	3 1/4	4 1/2	5.042	21859	51447	42%
	6 5/8	3	4 1/2	5.042	26513	57800	46%
	6 5/8	2 3/4	4 1/2	5.042	30656	63406	48%
5 1/2FH	7	3 3/4	5	5.591	25185	60338	42%
	7	3 1/2	5	5.591	31214	60338	52%
	7 1/4	3 1/2	5	5.591	29000	72480	41%
	7 1/4	3 1/4	5	5.591	36672	76156	48%
	7 1/2	3	5	5.591	41571	87341	48%

The torque value of the primary shoulder is API standard torque value

The torque value of the secondary shoulder is the enhanced torque by the secondary shoulder

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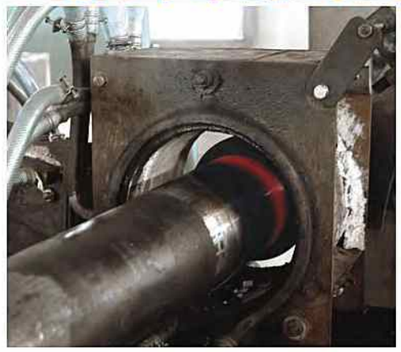
OUR EQUIPMENT

1 | 2
3

1. Polish
2. Heat treatment equipment
3. Heat treatment equipment

DRILLPIPE
OUR EQUIPMENT



4 | 4
5

4. MTI friction welding machine
5. Weld Area Heat Treatment

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OUR EQUIPMENT

5 | 6 | 7
8

5. In Line Inspection
6. In Line Inspection
7. In Line Inspection
8. Inspection Center

DRILL COLLAR
OUR EQUIPMENT

9
10 | 11

9. Drill collar workshop
10. Machining center
11. Boring Machine