

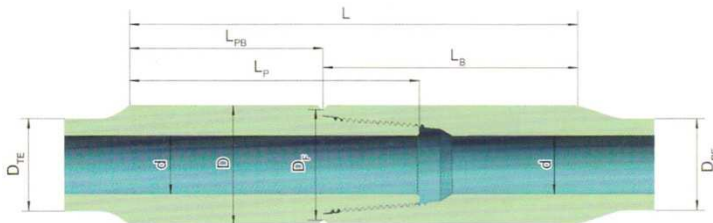


ENERSERVA LTD

II. DRILL PIPE

Drill pipe is the top component of any drill string that makes up the majority of a drill string's length. Its functions are to transmit torque and power from the top drive or rotary table to the bit. A drill pipe is described by its size, weight, grade, connection, upset, range and class.

We manufacture and supply a full range of friction welded drill pipes in nominal sizes from 2-3/8" to 6-5/8" and a wide range of wall thickness. On our drill pipes, we adopts a strict quality control policy to ensure total quality control from initial material qualification, in-process inspection to final out-going quality inspection. We are confident that our each joint of drill pipes meets your needs for reliability, durability and performance during your drilling operations.



2.1 Standard Drill Pipe

Tool Joint Parameters

TJ Designation	Conn.	Nominal Weight	Grade	Pin / Box OD	Pin ID	Bevel Dia., Pin / Box Shoulder	Total Length, Tool Joint Pin	Pin Tong Space	Box Tong Space	Combined Length, Pin/Box	Box Dia. At Elevator Upset	Pin Dia. At Elevator Upset
		D		d	DF	LP	LPB	LB	L	DPE	DTE	
		lb/ft		in	in	in	in	in	in	in	in	in
NC26 2-3/8IF	2-3/8EU	6.65	E	3-3/8	1-3/4	3-17/64	10	7	8	15	2-9/16	2-9/16
			X	3-3/8	1-3/4	3-17/64	10	7	8	15	2-9/16	2-9/16
			G	3-3/8	1-3/4	3-17/64	10	7	8	15	2-9/16	2-9/16
NC31 2-7/8IF	2-7/8EU	10.4	E	4-1/8	2-1/8	3-61/64	10-1/2	7	9	16	3-3/16	3-3/16
			X	4-1/8	2	3-61/64	10-1/2	7	9	16	3-3/16	3-3/1
			G	4-1/8	2	3-61/64	10-1/2	7	9	16	3-3/16	3-3/16
			S	4-3/8	1-5/8	3-61/64	10-1/2	7	9	16	3-3/16	3-3/16
NC38 3-1/2IF	3-1/2EU	9.5	E	4-3/4	2-11/16	4-37/64	11-1/2	8	10-1/2	18-1/2	3-7/8	3-7/8
			E	4-3/4	2-11/16	4-37/64	12	8	10-1/2	18-1/2	3-7/8	3-7/8
		13.3	X	5	2-9/16	4-37/64	12	8	10-1/2	18-1/2	3-7/8	3-7/8
			G	5	2-7/16	4-37/64	12	8	10-1/2	18-1/2	3-7/8	3-7/8
			S	5	2-1/8	4-37/64	12	8	10-1/2	18-1/2	3-7/8	3-7/8
		15.5	E	5	2-9/16	4-37/64	12	8	10-1/2	18-1/2	3-7/8	3-7/8
			X	5	2-7/16	4-37/64	12	8	10-1/2	18-1/2	3-7/8	3-7/8
			G	5	2-1/8	4-37/64	12	8	10-1/2	18-1/2	3-7/8	3-7/8



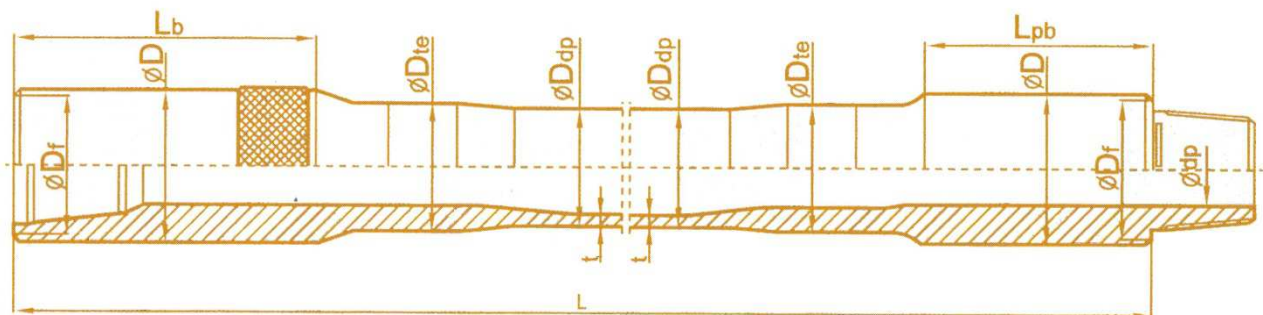
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TJ Designation	Conn.	Nominal Weight	Grade	Pin / Box OD	Pin ID	Bevel Dia., Pin / Box Shoulder	Total Length, Tool Joint Pin	Pin Tong Space	Box Tong Space	Combined Length, Pin/Box	Box Dia. At Elevator Upset	Pin Dia. At Elevator Upset
				D	d	DF	LP	LPB	LB	L	DPE	DTE
		lb/ft		in	in	in	in	in	in	in	in	in
NC40 4FH	3-1/2EU	15.5	S	5-1/2	2-1/4	5-1/64	11-1/2	7	10	17	3-7/8	3-7/8
	4IU	14	E	5-1/4	2-13/16	5-1/64	11-1/2	7	10	17	4-3/16	4-3/16
			X	5-1/4	2-11/16	5-1/64	11-1/2	7	10	17	4-3/16	4-3/16
			G	5-1/2	2-7/16	5-1/64	11-1/2	7	10	17	4-3/16	4-3/16
			S	5-1/2	2	5-1/64	11-1/2	7	10	17	4-3/16	4-3/16
NC46 4IF	4EU	14	E	6	3-1/4	5-23/32	11-1/2	7	10	17	4-1/2	4-3/16
			X	6	3-1/4	5-23/32	11-1/2	7	10	17	4-1/2	4-3/16
			G	6	3-1/4	5-23/32	11-1/2	7	10	17	4-1/2	4-3/16
			S	6	3	5-23/32	11-1/2	7	10	17	4-1/2	4-3/16
	4-1/2IU	13.75	E	6	3-3/8	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
	4-1/2EU	16.6	E	6-1/4	3-1/4	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
			X	6-1/4	3	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
			G	6-1/4	3	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
			S	6-1/4	2-3/4	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
	4-1/2IE U	20	E	6-1/4	3	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
			X	6-1/4	2-3/4	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
			G	6-1/4	2-1/2	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
			S	6-1/4	2-1/4	5-23/32	11-1/2	7	10	17	4-11/16	4-11/16
NC50 4-1/2IF	4-1/2EU	13.75 16.60	E	6-5/8	3-3/4	6-1/16	11-1/2	7	10	17	5	5
			E	6-5/8	3-3/4	6-1/16	11-1/2	7	10	17	5	5
			X	6-5/8	3-3/4	6-1/16	11-1/2	7	10	17	5	5
			G	6-5/8	3-3/4	6-1/16	11-1/2	7	10	17	5	5
		20	S	6-5/8	3-1/2	6-1/16	11-1/2	7	10	17	5	5
			E	6-5/8	3-5/8	6-1/16	11-1/2	7	10	17	5	5
			X	6-5/8	3-1/2	6-1/16	11-1/2	7	10	17	5	5
			G	6-5/8	3-1/2	6-1/16	11-1/2	7	10	17	5	5
NC50 5-1/2IF	5IEU	19.5	S	6-5/8	3-1/2	6-1/16	11-1/2	7	10	17	5-1/8	5-1/8
			E	6-5/8	3-3/4	6-1/16	11-1/2	7	10	17	5-1/8	5-1/8
			X	6-5/8	3-1/2	6-1/16	11-1/2	7	10	17	5-1/8	5-1/8
			G	6-5/8	3-1/4	6-1/16	11-1/2	7	10	17	5-1/8	5-1/8
		25.6	S	6-5/8	2-3/4	6-1/16	11-1/2	7	10	17	5-1/8	5-1/8
			E	6-5/8	3-1/2	6-1/16	11-1/2	7	10	17	5-1/8	5-1/8
			X	6-5/8	3	6-1/16	11-1/2	7	10	17	5-1/8	5-1/8
			G	6-5/8	2-3/4	6-1/16	11-1/2	7	10	17	5-1/8	5-1/8



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TJ Designation	Conn.	Nominal Weight	Grade	Pin / Box OD	Pin ID	Bevel Dia., Pin / Box Shoulder	Total Length, Tool Joint Pin	Pin Tong Space	Box Tong Space	Combined Length, Pin/Box	Box Dia. At Elevator Upset	Pin Dia. At Elevator Upset
				D	d	DF	LP	LPB	LB	L	DPE	DTE
		lb/ft		in	in	in	in	in	in	in	in	in
5-1/2FH	5IEU	19.5	E	7	3-3/4	6-23/32	13	8	10	18	5-1/8	5-1/8
			X	7	3-3/4	6-23/32	13	8	10	18	5-1/8	5-1/8
			G	7	3-3/4	6-23/32	13	8	10	18	5-1/8	5-1/8
			S	7-1/4	3-1/2	6-23/32	13	8	10	18	5-1/8	5-1/8
		25.6	E	7	3-1/2	6-23/32	13	8	10	18	5-1/8	5-1/8
			X	7	3-1/2	6-23/32	13	8	10	18	5-1/8	5-1/8
			G	7-1/4	3-1/2	6-23/32	13	8	10	18	5-1/8	5-1/8
5-1/2FH	5IEU	25.6	S	7-1/4	3-1/4	6-23/32	13	8	10	18	5-1/8	5-1/8
		21.9	E	7	4	6-23/32	13	8	10	18	5-11/16	5-11/16
			X	7	3-3/4	6-23/32	13	8	10	18	5-11/16	5-11/16
			G	7-1/4	3-1/2	6-23/32	13	8	10	18	5-11/16	5-11/16
			S	7-1/4	3	6-23/32	13	8	10	18	5-11/16	5-11/16
		24.7	E	7	4	6-23/32	13	8	10	18	5-11/16	5-11/16
			X	7	3-1/2	6-23/32	13	8	10	18	5-11/16	5-11/16
			G	7-1/4	3-1/2	6-23/32	13	8	10	18	5-11/16	5-11/16
			S	7-1/2	3	6-23/32	13	8	10	18	5-11/16	5-11/16
6-5/8FH	6-5/8IEU	25.2	E	8	5	7-45/64	13	8	10	18	5-11/16	5-11/16
			X	8	5	7-45/64	13	8	11	19	6-15/16	6-15/16
			G	8-1/4	4-3/4	7-45/64	13	8	11	19	6-15/16	6-15/16
			S	8-1/4	4-1/4	7-45/64	13	8	11	19	6-15/16	6-15/16
		25.2	E	8	5	7-45/64	13	8	11	19	6-15/16	6-15/16
			X	8-1/4	4-3/4	7-45/64	13	8	11	19	6-15/16	6-15/16
			G	8-1/4	4-3/4	7-45/64	13	8	11	19	6-15/16	6-15/16
			S	8-1/2	4-1/4	7-45/64	13	8	11	19	6-15/16	6-15/16





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Drill Pipe Main Technical Parameters

Drill Pipe							SPECIFICATIONS						
Designations ^a					Pipe body OD	Pipe wall thickness	Drill Pipe Weld Neck	Tool Joint				RSC bevel dia.	Approx mass ^c
								OD	Pin ID	Pin OD Length	Box OD Length		
Label1	Label2	Grade	Upset	RSC	D _{dp}	t	D _{le^b}	D	d _p	L _{pb}	L _b	D _f	Wdp
			Type	type ^d	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
						-12.5%	max.	±0.8	+0.4 -0.8	±6.4	±6.4	±0.4	Calculated
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Internal-External Upset (IEU)													
4-1/2	16.6	E	IEU	NC46	114.3	8.56	119.1	158.8	82.6	177.8	254	145.26	27.36
4-1/2	16.6	X G	IEU	NC46	114.3	8.56	119.1	158.8	76.2	177.8	254	145.26	27.73
4-1/2	16.6	S	IEU	NC46	114.3	8.56	119.1	158.8	69.9	177.8	254	145.26	28.04
4-1/2	20	E	IEU	NC46	114.3	10.92	119.1	158.8	76.2	177.8	254	145.26	32.94
4-1/2	20	X	IEU	NC46	114.3	10.92	119.1	158.8	69.9	177.8	254	145.26	33.69
4-1/2	20	G	IEU	NC46	114.3	10.92	119.1	158.8	63.5	177.8	254	145.2	33.97
4-1/2	20	S	IEU	NC46	114.3	10.92	119.1	158.8	57.2	177.8	254	145.26	34.23
5	19.5	E	IEU	NC50	127	9.19	130.2	168.3	95.3	177.8	254	153.99	31.79
5	19.5	X	IEU	NC50	127	9.19	130.2	168.3	88.9	177.8	254	153.99	32.58
5	19.5	G	IEU	NC50	127	9.19	130.2	168.3	82.6	177.8	254	153.99	32.95
5	19.5	S	IEU	NC50	127	9.19	130.2	168.3	69.9	177.8	254	153.99	33.6
5	19.5	E	IEU	5-1/2FH	127	9.19	130.2	177.8	95.3	203.2	254	170.66	33.22
5	19.5	X G	IEU	5-1/2FH	127	9.19	130.2	177.8	95.3	203.2	254	170.66	33.61
5	19.5	S	IEU	5-1/2FH	127	9.19	130.2	184.2	88.9	203.2	254	170.66	34.89
5	25.6	E	IEU	NC50	127	12.7	130.2	168.3	88.9	177.8	254	153.99	40.73
5	25.6	X	IEU	NC50	127	12.7	130.2	168.3	76.2	177.8	254	153.99	41.8
5	25.6	G	IEU	NC50	127	12.7	130.2	168.3	69.9	177.8	254	153.99	42.11
5	25.6	E	IEU	5-1/2FH	127	12.7	130.2	177.8	88.9	203.2	254	170.66	42.14
5	25.6	X	IEU	5-1/2FH	127	12.7	130.2	177.8	88.9	203.2	254	170.66	42.51
5	25.6	G	IEU	5-1/2FH	127	12.7	130.2	184.2	88.9	203.2	254	170.66	43.35
5	25.6	S	IEU	5-1/2FH	127	12.7	130.2	184.2	82.6	203.2	254	170.66	43.75
5-1/2	21.9	E	IEU	5-1/2FH	139.7	9.17	144.5	177.8	101.6	203.2	254	170.66	35.43
5-1/2	21.9	X	IEU	5-1/2FH	139.7	9.17	144.5	177.8	95.3	203.2	254	170.66	36.36
5-1/2	21.9	G	IEU	5-1/2FH	139.7	9.17	144.5	184.2	88.9	203.2	254	170.66	37.61
5-1/2	21.9	S	IEU	5-1/2FH	139.7	9.17	144.5	190.5	76.2	203.2	254	180.18	39.27
5-1/2	24.7	E	IEU	5-1/2FH	139.7	10.54	144.5	177.8	101.6	203.2	254	170.66	39.19
5-1/2	24.7	X G	IEU	5-1/2FH	139.7	10.54	144.5	184.2	88.9	203.2	254	170.66	41.32
5-1/2	24.7	S	IEU	5-1/2FH	139.7	10.54	144.5	190.5	76.2	203.2	254	180.18	42.97



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(CONTINUED)

Drill Pipe							SPECIFICATIONS						
Designations ^a					Pipe body OD	Pipe wall thickness	Drill Pipe Weld Neck	Tool Joint				RSC bevel dia.	Approx mass ^c
								OD	Pin ID	Pin OD	Box OD		
										Length	Length		
Label1	Label2	Grade	Upset	RSC	D _{dp}	t	D _{te^b}	D	d _p	L _{pb}	L _b	D _f	Wdp
			Type	type ^d	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
						-12.5%	max.	±0.8	+0.4 -0.8	±6.4	±6.4	±0.4	Calculated
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Internal-External Upset (IEU)													
6-5/8	25.2	E	IEU	6-5/8FH	168.28	8.38	176.2	203.2	127	203.2	279.4	195.66	41.03
6-5/8	25.2	X	IEU	6-5/8FH	168.28	8.38	176.2	203.2	127	203.2	279.4	195.66	41.03
6-5/8	25.2	G	IEU	6-5/8FH	168.28	8.38	176.2	209.6	120.7	203.2	279.4	195.66	42.6
6-5/8	25.2	S	IEU	6-5/8FH	168.28	8.38	176.2	215.9	108	203.2	279.4	195.66	44.73
6-5/8	27.7	E	IEU	6-5/8FH	168.28	9.19	176.2	203.2	127	203.2	279.4	195.66	43.79
6-5/8	27.7	X G	IEU	6-5/8FH	168.28	9.19	176.2	209.6	120.7	203.2	279.4	195.66	45.35
6-5/8	27.7	S	IEU	6-5/8FH	168.28	9.19	176.2	215.9	108	203.2	279.4	195.66	47.48

Drill Pipe							SPECIFICATIONS						
Designations ^a					Pipe-body OD	Pipe wall thickness	Drill Pipe Weld Neck	Tool Joint				RSC bevel dia.	Approx mass ^c
								OD	Pin ID	Pin OD	Box OD		
										Length	Length		
Label1	Label2	Grade	Upset	RSC	D _{dp}	t	D _{te^b}	D	d _p	L _{pb}	L _b	D _f	Wdp
			Type	type ^d	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
						-12.5%	max.	±0.8	0.4 -0.8	±6.4	±6.4	±0.4	Calculated
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Internal Upset (IU)													
4	14	E	IU	NC40	101.6	8.38	106.4	133.4	71.4	177.8	254	127.4	22.42
4	14	X	IU	NC40	101.6	8.38	106.4	133.4	68.3	177.8	254	127.4	22.76
4	14	G	IU	NC40	101.6	8.38	106.4	139.7	61.9	177.8	254	127.4	23.61
4	14	S	IU	NC40	101.6	8.38	106.4	139.7	50.8	177.8	254	127.4	24.03
4-1/2	13.75	E	IU	NC46	114.3	6.88	119.1	152.4	85.7	177.8	254	145.26	22.5



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Drill Pipe							SPECIFICATIONS						
Designations ^a					Pipe-body OD	Pipe wall thickness	Drill Pipe Weld Neck	Tool Joint				RSC bevel dia.	Approx mass ^c
								OD	Pin ID	Pin OD	Box OD		
										Length	Length		
Label1	Label2	Grade	Upset	RSC	D _{dp}	t	D _{te} ^b	D	d _p	L _{pb}	L _b	D _f	W _{dp}
			Type	type ^d	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
						-12.5%	max.	±0.8	0.4 -0.8	±6.4	±6.4	±0.4	Calculated
1	2	3	4	5	6	7	8	9	10	11	12	13	14
External Upset (EU)													
2-3/8	6.65	E	EU	NC26	60.32	7.11	65.1	85.7	44.5	177.8	203.2	82.95	10.45
2-3/8	6.65	X G	EU	NC26	60.32	7.11	65.1	85.7	44.5	177.8	203.2	82.95	10.58
2-7/8	10.4	E	EU	NC31	73.02	9.19	81	104.8	54	177.8	228.6	100.41	16.25
2-7/8	10.4	X G	EU	NC31	73.02	9.19	81	104.8	50.8	177.8	228.6	100.41	16.5
2-7/8	10.4	S	EU	NC31	73.02	9.19	81	111.1	41.3	177.8	228.6	100.41	17.19
3-1/2	9.5	E	EU	NC38	88.9	6.45	98.4	120.7	68.3	203.2	266.7	116.28	15.77
3-1/2	13.3	E	EU	NC38	88.9	9.35	98.4	120.7	68.3	203.2	266.7	116.28	20.77
3-1/2	13.3	X	EU	NC38	88.9	9.35	98.4	127	65.1	203.2	266.7	116.28	21.76
3-1/2	13.3	G	EU	NC38	88.9	9.35	98.4	127	61.9	203.2	266.7	116.28	21.9
3-1/2	13.3	S	EU	NC38	88.9	9.35	98.4	127	54	203.2	266.7	116.28	22.22
3-1/2	15.5	E	EU	NC38	88.9	11.4	98.4	127	65.1	203.2	266.7	116.28	24.67
3-1/2	15.5	X	EU	NC38	88.9	11.4	98.4	127	61.9	203.2	266.7	116.28	25.07
3-1/2	15.5	G	EU	NC38	88.9	11.4	98.4	127	54	203.2	266.7	116.28	25.38
3-1/2	15.5	S	EU	NC38	88.9	11.4	98.4	139.7	57.2	203.2	266.7	127.4	26.19
4	14	E	EU	NC46	101.6	8.38	114.3	152.4	82.6	177.8	254	145.26	23.67
4	14	X G	EU	NC46	101.6	8.38	114.3	152.4	82.6	177.8	254	145.26	24.12
4	14	S	EU	NC46	101.6	8.38	114.3	152.4	76.2	177.8	254	145.26	24.46
4-1/2	13.75	E	EU	NC50	114.3	6.88	127	168.3	95.3	177.8	254	153.99	23.65
4-1/2	16.6	E	EU	NC50	114.3	8.56	127	168.3	95.3	177.8	254	153.99	27.51
4-1/2	16.6	X G	EU	NC50	114.3	8.56	127	168.3	95.3	177.8	254	153.99	28.07
4-1/2	16.6	S	EU	NC50	114.3	8.56	127	168.3	88.9	177.8	254	153.99	28.47
4-1/2	20	E	EU	NC50	114.3	10.92	127	168.3	92.1	177.8	254	153.99	32.93
4-1/2	20	X G	EU	NC50	114.3	10.92	127	168.3	88.9	177.8	254	153.99	33.63
4-1/2	20	S	EU	NC50	114.3	10.92	127	168.3	76.2	177.8	254	153.99	34.34