

JOY PIPE USA

The logo for JOY PIPE USA features the word "JOY" in a large, stylized, red-outlined font. The letter "O" is replaced by a globe with a grid pattern. To the right of "JOY", the words "PIPE USA" are written in a bold, red, sans-serif font.

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OCTG CASING BROCHURE

OIL COUNTRY TUBULAR GOODS
TECHNICAL DATA AND REFERENCE TABLES
CHEMICAL, PHYSICAL AND DIMENSIONAL REQUIREMENTS

TENSILE REQUIREMENTS

GRADE	LONGITUDE YIELD STRENGTH		CIRCUMFERENTIAL COMPRESSION YIELD STRENGTH		TENSILE STRENGTH		ELONGATION IN 2 INCHES	HARDNESS ROCKWELL C
	PSI		PSI		PSI			
	Min.	Max.	Min.	Max.	Min.	Max.		
H-40	40,000	--	--	--	60,000	60,000	API	Not Specified
J-55	55,000	80,000	--	--	75,000	75,000	API	Not Specified
K-55	55,000	80,000	--	--	95,000	95,000	API	Not Specified
S-80	55,000	--	75,000	--	95,000	95,000	API/K-55	Not Specified
C-75	75,000	90,000	--	--	95,000	95,000	API	Not Specified
L-80	80,000	95,000	--	--	95,000	95,000	API	23
N-80	80,000	110,000	--	--	100,000	100,000	API	Not Specified
Special S-95	80,000	95,000	95,000	--	100,000	100,000	API/N-80	22
S-95	95,000	--	95,000	--	110,000	110,000	API-C-95	31
CYS-95	95,000	110,000	95,000	--	110,000	110,000	API/C-95	28
C-95	95,000	110,000	--	--	105,000	105,000	API	Not Specified
P-110	110,000	140,000	--	--	125,000	125,000	API	Not Specified

CHEMICAL REQUIREMENTS

API 5A Grade H, J, N (percent) API 5AC Grade C-95, L-80 (percent)

P	S	Grade	C		Mn	Ni	Cu	P	S	Si
			Max.	Max.						
Max.	Max.	L-80	.40	1.90	.25	.35	.040	.060	.35	
.040	.060	C-95	.45	1.90	--	--	.040	.060	.35	

CASING — THREADING DATA

CASING SHORT - THREAD DIMENSIONS

Size	Outside Diameter	Major Diameter	Normal Weight: Threads and Coupling, lb. per foot	No. of Threads Per Inch	Length: End of Pipe To Hand-Tight Plane	Length: Effective Threads	Total Length: End of Pipe to Vanish Point	Pitch Diameter at Hand-Tight Plane	End of pipe to Center of Coupling Power-Tight Make-Up	Length: Face of Coupling to Hand-Tight Plane	Diameter of Coupling Recess	Depth of Coupling Recess	Hand-Tight Standoff Thread Turns	Minimum Length Full Crest Threads from End of Pipe
D					L ₁	L ₂	L ₄	E ₁	J	M	Q	g	A	Lc**
4-1/2	4.500	9.50	8	.921	1.715	2.000	4.40337	1.125	.704	4-19/32	1/2	3	.875	
4-1/2	4.500	Others	8	1.546	2.340	2.625	4.40337	.500	.704	4-19/32	1/2	3	1.5	
5	5.000	11.50	8	1.421	2.215	2.500	4.90337	.750	.704	5-3/32	1/2	3	1.375	
5	5.000	Others	8	1.671	2.465	2.750	4.90337	.500	.704	5-3/32	1/2	3	1.625	
5-1/2	5.500	All	8	1.796	2.590	2.875	5.40337	.500	.704	5-19/32	1/2	3	1.750	
6-5/8	6.625	All	8	2.046	2.840	3.125	6.52837	.500	.704	6-23/32	1/2	3	2.000	
7	7.000	17.00	8	1.296	2.090	2.375	6.90337	1.250	.704	7-3/32	1/2	3	1.250	
7	7.000	Others	8	2.046	2.840	3.125	6.90337	.500	.704	7-3/32	1/2	3	2.000	
7-5/8	7.625	All	8	2.104	2.965	3.250	7.52418	.500	.709	7-23/32	1/2	3-1/2	2.125	
8-5/8	8.625	24.00	8	1.854	2.715	3.000	8.52418	.875	.709	8-23/32	1/2	3-1/2	1.875	
8-5/8	8.625	Others	8	2.229	3.090	3.375	8.52418	.500	.709	8-23/32	1/2	3-1/2	2.250	
9-5/8	9.625	All	8	2.229	3.090	3.375	9.52418	.500	.709	9-23/32	1/2	3-1/2	2.250	
10-3/4	10.750	32.75	8	1.604	2.465	2.750	10.64918	1.250	.709	10-27-32	1/2	3-1/2	1.625	
10-3/4	10.750	Others	8	2.354	3.215	3.500	10.64918	.500	.709	10-27-32	1/2	3-1/2	2.375	
11-3/4	11.750	All	8	2.354	3.215	3.500	11.64918	.500	.709	11-27-32	1/2	3-1/2	2.375	
13-3/8	13.375	All	8	2.354	3.215	3.500	13.27418	.500	.709	13-15-32	1/2	3-1/2	2.375	
16	16.000	All	8	2.854	3.715	4.000	15.89918	.500	.709	16-3-32	1/2	3-1/2	2.875	
18-5/8	18.625	87.50	8	2.854	3.715	4.000	18.52418	.500	.709	18-23-32	1/2	3-1/2	2.875	
20	20.000	94.00	8	2.854	3.715	4.000	19.89918	.500	.709	20-3-32	1/2	3-1/2	2.875	

Note: included taper on diameter, all sizes, 0.0625 in. per in.

*All dimensions in inches, except as indicated.

** LC L₄ — 1.125 in. for 8 Round Thread Casings

CASING AND TUBING ROUND THREAD HEIGHT DIMENSIONS

All Dimensions in inches.

	1	2	3
		10 Threads Per Inch	Threads Per Inch
Thread Element		p 0.1000	p 0.1250
H	0.866p	0.08660	0.010825
hs hn	0.626p-0.007	0.05560	0.07125
Srs Srn	0.120p + 0.002	0.01400	0.001700
Scs Scn	0.120p + 0.005	0.01700	0.02000

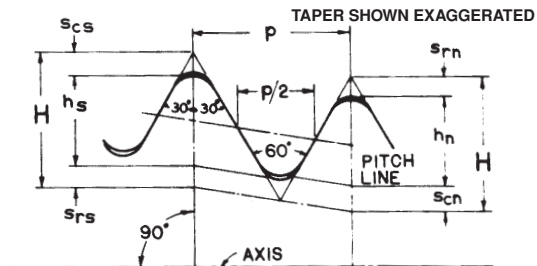
CASING LONG - THREAD DIMENSIONS

Size Outside Diameter	Major Diameter	No. of Threads Per Inch	Length: End of Pipe To Hand-Tight Plane	Length: Effective Threads	Total Length: End of Pipe to Vanish Point	Pitch Diameter at Hand-Tight Plane	End of pipe to Center of Coupling Power-Tight Make-Up	Length: Face of Coupling to Hand-Tight Plane	Diameter of Coupling Recess	Depth of Coupling Recess	Hand-Tight Standoff Thread Turns	Minimum Length Full Crest Threads from End of Pipe
D	D ₄		L ₁	L ₂	L ₄	E ₁	J	M	Q	q	A	L _c **
4-1/2	4.500	8	1.921	2.715	3.000	4.40337	.500	.704	4-19/32	1/2	3	1.875
5	5.000	8	2.296	3.090	3.375	4.90337	.500	.704	5-3/32	1/2	3	2.250
5-1/2	5.500	8	2.421	3.215	3.500	5.40337	.500	.704	5-19/32	1/2	3	2.375
6-5/8	6.625	8	2.796	3.590	3.875	6.52837	.500	.704	6-23/32	1/2	3	2.750
7	7.000	8	2.921	3.715	4.000	6.90337	.500	.704	7-3/32	1/2	3	2.875
7-5/8	7.625	8	2.979	3.840	4.125	7.52418	.500	.709	7-23/32	1/2	3-1/2	3.000
8-5/8	8.625	8	3.354	4.215	4.500	8.52418	.500	.709	8-23/32	1/2	3-1/2	3.375
9-5/8	9.625	8	3.604	4.465	4.750	9.52418	.500	.709	9-23/32	1/2	3-1/2	3.625
20	20.000	8	4.104	4.965	5.250	19.89918	.500	.709	20-23/32	1/2	3-1/2	4.125

Note: included taper on diameter, all sizes, 0.0625 in. per in.

*All dimensions in inches, except as indicated.

** LC L₄ — 1.125 in. for 8 Round Thread Casings



CASING AND TUBING ROUND THREAD FORM

CASING DIMENSIONS & PROPERTIES - 8 ROUND THREADS

OUT-SIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS			COUPLING DIMENSIONS			SETTING DEPTHS BASED ON MINIMUM PROPERTIES				INTERNAL PRESSURES						
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	REG. CLEARANCE	SPL CLEARANCE	SHORT	LONG	COLLAPSE		TENSION		STD MILL TEST	80% MIN YLD TEST	MIN YLD	ULTI MATE MIN.		
										INS	INS	FT	PSI					1000 LBS	FT
INS	LBS	LBS	INS	INS	INS	INS	INS	INS	INS	INS	FT	PSI	FT	1000 LBS	FT	PSI	PSI	PSI	
4 1/2	9.50	9.41	.205	4.090	3.965	5.000	4.875	6-1/4	.....	H	4540	2550	4500	77	.....	2900	3190	5470
	9.50	9.41	.205	4.090	3.965	5.000	4.875	6-1/4	.....	K	5900	3320	6550	112	.....	3000	4380	8660
	10.50	10.24	.224	4.052	3.927	5.000	4.875	6-1/4	.....	K	6810	3830	7720	146	.....	3000	4400	9460
	11.60	11.36	.250	4.000	3.875	5.000	4.875	6-1/4	7	K	8060	4540	8140	170	8620	3000	4900	10560	
	11.60	11.36	.250	4.000	3.875	5.000	4.875	.....	7	C	10040	5650	.....	.....	10150	6700	7290	10560
	13.50	13.05	.290	3.920	3.795	5.000	4.875	.....	7	C	12710	7150	.....	.....	10580	7700	8460	12240
	11.60	11.36	.250	4.000	3.875	5.000	4.875	.....	7	N	10580	5950	.....	.....	10680	7100	7780	11110
	13.50	13.05	.290	3.920	3.795	5.000	4.875	.....	7	N	13480	7580	.....	.....	11110	8200	9020	12890
	11.60	11.36	.250	4.000	3.875	5.000	4.875	.....	7	P	14140	7950	.....	.....	13360	9800	10690	13890
	13.50	13.05	.290	3.920	3.795	5.000	4.875	.....	7	P	18560	10440	.....	.....	13910	10000	11300	16110
	15.10	15.00	.337	3.826	3.701	5.000	4.875	7	P	23100	12990	14940	10000	13200	14420	
	15.10	15.00	.337	3.826	3.701	5.000	4.875	7	V	30490	17150	19090	12000	18000	19660	

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11.50	11.24	.220	4.560	4.435	5.563	5.375	6-1/2	K	5560	3130	7100	147	3000	3900	4240	8360	
13.00	12.84	.253	4.494	4.369	5.563	5.375	6-1/2	7-3/4	K	6990	3930	7950	186	8590	201	3000	4500	4870	9620
15.00	14.88	.296	4.408	4.283	5.563	5.375	6-1/2	7-3/4	K	8860	4980	8440	228	9110	246	3000	5200	5700	11250
15.00	14.88	.296	4.408	4.283	5.563	5.375	.....	7-3/4	C	11140	6260	.....	.....	10930	295	7100	7770	11250
18.00	17.95	.362	4.276	4.151	5.563	5.375	.....	7-3/4	C	15110	8500	.....	.....	11600	376	8700	9500	13760
15.00	14.88	.296	4.408	4.283	5.563	5.375	.....	7-3/4	N	11770	6620	.....	.....	11520	311	7600	8290	11840
18.00	17.95	.362	4.276	4.151	5.563	5.375	.....	7-3/4	N	16080	9050	.....	.....	12220	396	9300	10140	14480
15.00	14.88	.296	4.408	4.283	5.563	5.375	.....	7-3/4	P	15960	8970	.....	.....	14370	388	10000	11400	14800
18.00	17.95	.362	4.276	4.151	5.563	5.375	.....	7-3/4	P	22390	12590	.....	.....	15280	495	10000	12700	18100
15.00	14.88	.296	4.408	4.283	5.563	5.375	.....	7-3/4	V	19570	11010	.....	.....	18410	497	12000	14200	18950
18.00	17.95	.362	4.276	4.151	5.563	5.375	.....	7-3/4	V	29550	16620	.....	.....	19570	634	12000	17400	23170
20.80	20.65	.422	4.156	4.031	5.563	5.375	.....	7-3/4	V	33995	19120	.....	.....	20170	755	12000	20300	27000
24.10	24.05	.500	4.000	3.875	5.563	5.375	.....	7-3/4	V	39610	22280	.....	.....	20780	905	12000	24000	32000
14.00	13.71	.244	5.012	4.887	6.050	5.875	6-3/4	.....	H	4340	2440	5160	130	.....	2800	2800	3110	5320
14.00	13.71	.244	5.012	4.887	6.050	5.875	6-3/4	.....	K	5640	3170	7500	189	.....	3000	3900	4270	8430
15.50	15.36	.275	4.950	4.825	6.050	5.875	6-3/4	8	K	6860	3860	7960	222	8570	239	3000	4400	9500	
17.00	16.89	.304	4.892	4.767	6.050	5.875	6-3/4	8	K	8000	4500	8240	252	8890	272	3000	4900	5320	10500
17.00	16.89	.304	4.892	4.767	6.050	5.875	.....	8	C	9950	5600	.....	.....	10690	327	6600	7250	10500
20.00	19.83	.361	4.778	4.653	6.050	5.875	8	C	13070	7350	11190	403	7900	8610	12470	
23.00	22.56	.415	4.670	4.545	6.050	5.875	8	C	15820	8900	11430	473	9100	9900	14340	

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CASING DIMENSIONS & PROPERTIES - 8 ROUND THREADS

OUT-SIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS				COUPLING DIMENSIONS				SETTING DEPTHS BASED ON MINIMUM PROPERTIES				INTERNAL PRESSURES			
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	REG. CLEARANCE	SPL CLEARANCE	LENGTH 8R THREAD		COLLAPSE		TENSION		STD MILL TEST	80% MIN YLD TEST	MIN YLD	ULTI MATE MIN.	
								INS	INS	FT	PSI	S.F. 1.8	ULTI MATE JT STRG					SHORT CPLG	LONG CPLG	FT	PSI	1000 LBS	1000 LBS
INS	LBS	LBS	INS	INS	INS	INS	INS	INS	INS	FT	PSI	S.F. 1.8	ULTI MATE JT STRG	PSI	PSI	PSI	PSI	
5 1/2	17.00	16.89	.304	4.892	4.767	6.050	5.875	.....	8	N 10490	5900	.....	.....	11370	348	7100	7740	11060
	20.00	19.83	.361	4.778	4.653	6.050	5.875	.....	8	N 13870	7800	.....	.....	11890	428	8400	9190	13120
	23.00	22.56	.415	4.670	4.545	6.050	5.875	.....	8	N 16740	9420	.....	.....	12130	502	9700	10560	15090
	17.00	16.89	.304	4.892	4.767	6.050	5.875	.....	8	P 14000	7880	.....	.....	14540	445	9700	10640	13820
	20.00	19.83	.361	4.778	4.653	6.050	5.875	.....	8	P 10140	10770	.....	.....	15220	548	10000	11600	12630
	23.00	22.56	.415	4.670	4.545	6.050	5.875	.....	8	P 23260	13080	.....	.....	15530	643	10000	13500	14530
	20.00	19.83	.361	4.778	4.653	6.050	5.875	.....	8	V 25260	14210	.....	.....	19470	701	12000	15800	17230
	23.00	22.56	.415	4.670	4.545	6.050	5.875	.....	8	V 30700	17270	.....	.....	19880	823	12000	18100	19810
	20.00	19.51	.288	6.049	5.924	7.390	7.000	7-1/4	.....	H 4190	2360	5110	184	.....	.....	2800	3040	5220
	20.00	19.51	.288	6.049	5.924	7.390	7.000	7-1/4	8-3/4	K 5440	3060	7420	267	8060	290	3000	3800	4180
24.00	23.60	.352	5.921	5.796	7.390	7.000	7-1/4	8-3/4	K 7540	4240	7920	342	8610	372	3000	4700	5110	
24.00	23.60	.352	5.921	5.796	7.390	7.000	8-3/4	C 9310	5240	10490	453	6400	6970	10100	

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6 5/8

28.00	27.67	.417	5.791	5.666	7.390	7.000	8-3/4	C	12260	6890	10950	552	7600	7600	8260	11960
32.00	31.23	.475	5.675	5.550	7.390	7.000	.....	8-3/4	C	14890	8380	.....	11080	638	8600	8600	9410	13620
24.00	23.60	.352	5.921	5.796	7.390	7.000	.....	8-3/4	N	9790	5510	.....	11130	481	6800	6800	7440	10630
28.00	27.67	.417	5.791	5.666	7.390	7.000	.....	8-3/4	N	12990	7310	.....	11630	586	8100	8100	8810	12590
32.00	31.23	.475	5.675	5.550	7.390	7.000	.....	8-3/4	N	15850	8910	.....	11750	677	9200	9200	10040	14340
24.00	23.60	.352	5.921	5.796	7.390	7.000	.....	8-3/4	P	12940	7280	.....	14840	641	9400	9400	10230	13280
28.00	27.67	.417	5.791	5.666	7.390	7.000	.....	8-3/4	P	17810	10020	.....	15500	781	10000	11100	12120	15730
32.00	31.23	.475	5.675	5.550	7.390	7.000	.....	8-3/4	P	22160	12470	.....	15690	904	10000	12600	13800	17920
17.00	16.72	.231	6.538	6.413	7.656	7.375	7-1/4	.....	H	2450	1380	3990	122	.....	2100	2100	2310	3960
20.00	19.56	.272	6.456	6.331	7.656	7.375	7-1/4	.....	H	3420	1920	4890	176	.....	2500	2500	2720	4660
20.00	19.56	.272	6.456	6.331	7.656	7.375	7-1/4	9	K	4440	2500	7060	254	7810	281	3000	3400	7380
23.00	22.65	.317	6.366	6.241	7.656	7.375	7-1/4	9	K	5840	3280	7460	309	8240	341	3000	4000	8610
26.00	25.69	.362	6.276	6.151	7.656	7.375	7-1/4	9	K	7230	4070	7780	364	8570	401	3000	4600	9820
23.00	22.65	.317	6.366	6.241	7.656	7.375	.....	9	C	6950	3910	.....	10050	415	5400	5400	5940	8610
26.00	25.69	.362	6.276	6.151	7.656	7.375	.....	9	C	8880	4990	.....	10450	489	6200	6200	6790	9820
29.00	28.75	.408	6.184	6.059	7.656	7.375	.....	9	C	10850	6110	.....	10770	562	7000	7000	7650	11070
32.00	31.70	.453	6.094	5.969	7.656	7.375	.....	9	C	12800	7200	.....	10990	633	7800	7800	8490	12300
35.00	34.61	.498	6.004	5.879	7.656	7.375	.....	9	C	14720	8280	.....	11160	703	8500	8500	9340	13510
38.00	37.29	.540	5.920	5.795	7.656	7.375	9	C	16140	9080	11210	767	9300	9300	10130	14660

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CASING DIMENSIONS & PROPERTIES - 8 ROUND THREADS

OUTSIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS			COUPLING DIMENSIONS			SETTING DEPTHS BASED ON MINIMUM PROPERTIES						INTERNAL PRESSURES				
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	REG. CLEARANCE	SPL CLEARANCE	SHORT LONG	LENGTH 8R THREAD	COLLAPSE		TENSION				STD MILL TEST	80% MIN YLD TEST	MIN YLD	ULTI MATE MIN.
										S.F. 1.125	PRES-SURE	S.F. 1.8	ULTI MATE JT STRG	S.F. 1.8	ULTI MATE JT STRG					SHORT CPLG	LONG CPLG	1000 LBS	FT	1000 LBS	FT
INS	LBS	LBS	INS	INS	INS	INS	INS	INS	INS	FT	PSI	FT	FT	PSI	PSI	PSI	PSI	PSI	
7	23.00	22.65	.317	6.366	6.241	7.656	7.375	.....	9	N	7230	4070	.....	10680	442	5800	6340	9060
	26.00	25.69	.362	6.276	6.151	7.656	7.375	.....	9	N	9320	5240	.....	11090	519	6600	7240	10340
	29.00	28.75	.408	6.184	6.059	7.656	7.375	.....	9	N	11470	6450	.....	11440	597	7500	8160	11660
	32.00	31.70	.453	6.094	5.969	7.656	7.375	.....	9	N	13570	7640	.....	11670	672	8300	9060	12940
	35.00	34.61	.498	6.004	5.879	7.656	7.375	.....	9	N	15660	8810	.....	11840	746	9100	9960	14220
	38.00	37.29	.540	5.920	5.795	7.656	7.375	.....	9	N	17090	9610	.....	11900	814	9900	10800	15430
	26.00	25.69	.362	6.276	6.151	7.656	7.375	.....	9	P	12220	6880	.....	14810	693	9100	9950	12930
	29.00	28.75	.408	6.184	6.059	7.656	7.375	.....	9	P	15490	8710	.....	15270	797	10000	11220	14570
	32.00	31.70	.453	6.094	5.969	7.656	7.375	.....	9	P	18700	10520	.....	15570	897	10000	12460	16180
	35.00	34.61	.498	6.004	5.879	7.656	7.375	.....	9	P	21880	12310	.....	15810	996	10000	13700	17780
	38.00	37.29	.540	5.920	5.795	7.656	7.375	.....	9	P	23740	13350	.....	15890	1087	10000	14850	19290
	29.00	28.75	.408	6.184	6.059	7.656	7.375	9	V	18630	10480	20100	1049	12000	14000	18650	

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32.00	31.70	.453	6.094	5.969	7.656	7.375	9	V	24610	13840	20490	1180	12000	15500	16990	20710	
35.00	34.61	.498	6.004	5.879	7.656	7.375	.....	9	V	29070	16350	.....	20810	1311	12000	17100	18680	22760
38.00	37.29	.540	5.920	5.795	7.656	7.375	.....	9	V	31330	17620	.....	20910	1430	12000	18500	20250	24690
20.00	19.64	.250	7.125	7.000	8.500	8.125	7-1/2	.....	H	2420	1360	4610	166	.....	2100	2100	2000	3930
24.00	23.47	.300	7.025	6.900	8.500	8.125	7-1/2	.....	H	3500	1970	4910	212	.....	2500	2500	2750	4720
26.40	25.59	.328	6.969	6.844	8.500	8.125	7-1/2	9-1/4	K	5350	3010	7200	342	7930	377	3000	3800	4140	8170
26.40	25.59	.328	6.969	6.844	8.500	8.125	9-1/4	C	6260	3520	9700	461	5200	5200	5650	8170
29.70	29.06	.375	6.875	6.750	8.500	8.125	.....	9-1/4	C	8120	4570	.....	10140	542	5900	5900	6450	9350
33.70	33.07	.430	6.765	6.640	8.500	8.125	.....	9-1/4	C	10290	5790	.....	10470	635	6800	6800	7400	10720
39.00	38.08	.500	6.625	6.500	8.500	8.125	.....	9-1/4	C	13050	7340	.....	10700	751	7900	7900	8610	12460
26.40	25.59	.328	6.969	6.844	8.500	8.125	.....	9-1/4	N	6480	3650	.....	10310	490	5500	5500	6020	8600
29.70	29.06	.375	6.875	6.750	8.500	8.125	.....	9-1/4	N	8500	4780	.....	10760	575	6300	6300	6890	9840
33.70	33.07	.430	6.765	6.640	8.500	8.125	.....	9-1/4	N	10860	6110	.....	11110	674	7200	7200	7900	11280
39.00	38.08	.500	6.625	6.500	8.500	8.125	.....	9-1/4	N	13850	7790	.....	11370	798	8400	8400	9180	13110
26.40	25.59	.328	6.969	6.844	8.500	8.125	7-1/2	9-1/4	P	6970	3920	.....	13760	654	7600	7600	8280	10750
29.70	29.06	.375	6.875	6.750	8.500	8.125	.....	9-1/4	P	10970	6170	.....	14380	769	8700	8700	9470	12300
33.70	33.07	.430	6.765	6.640	8.500	8.125	.....	9-1/4	P	14560	8190	.....	14850	901	9900	9900	10860	14100
39.00	38.08	.500	6.625	6.500	8.500	8.125	.....	9-1/4	P	19120	10760	.....	15190	1066	10000	11500	12620	16390
33.70	33.07	.430	6.765	6.640	8.500	8.125	9-1/4	V	16820	9460	19900	1207	12000	13500	14800	18050	

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CASING DIMENSIONS & PROPERTIES - 8 ROUND THREADS

OUT-SIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS			COUPLING DIMENSIONS			SETTING DEPTHS BASED ON MINIMUM PROPERTIES				INTERNAL PRESSURES						
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	REG. CLEARANCE	SPL CLEARANCE	LENGTH 8R THREAD	COLLAPSE		TENSION		STD MILL TEST	80% MIN YLD TEST	MIN YLD	ULTI MATE MIN.			
									INS	INS	INS	INS					FT	PSI	FT	PSI	1000 LBS	FT	1000 LBS
INS	LBS	LBS	INS	INS	INS	INS	INS	INS	INS	INS	FT	PSI	FT	PSI	PSI	PSI	PSI		
7 5/8	39.00	38.08	.500	6.625	6.500	8.500	8.125	.....	9-1/4	V	25230	14190	.....	20340	1428	12000	15700	17210	20980
	45.30	44.71	.595	6.435	6.310	8.500	8.125	.....	9-1/4	V	31640	17800	.....	21110	1721	12000	18700	20480	24960
8 5/8	28.00	27.04	.304	8.017	7.892	9.625	9.125	7-3/4	.....	H	2820	1580	4620	233	.....	2300	2300	2470	4230
	32.00	31.13	.352	7.921	7.796	9.625	9.125	7-3/4	.....	H	3750	2110	4840	279	.....	2600	2600	2860	4900
	24.00	23.60	.264	8.097	7.972	9.625	9.125	7-3/4	.....	K	2550	1430	6090	263	.....	2700	2700	2950	5820
	32.00	31.13	.352	7.921	7.796	9.625	9.125	7-3/4	10	K	4870	2740	6980	402	7850	3000	3600	3930	7760
	36.00	35.17	.400	7.825	7.700	9.625	9.125	7-3/4	10	K	6070	3420	7220	468	8210	3000	4100	4460	8810
	36.00	35.17	.400	7.825	7.700	9.625	9.125	.....	10	C	7270	4090	.....	.....	10000	5600	5600	6090	8810
	40.00	39.33	.450	7.725	7.600	9.625	9.125	.....	10	C	9020	5070	.....	.....	10310	6300	6300	6850	9910
	44.00	43.43	.500	7.625	7.500	9.625	9.125	.....	10	C	10760	6050	.....	.....	10530	7000	7000	7610	11010
	49.00	48.04	.557	7.511	7.386	9.625	9.125	.....	10	C	12760	7180	.....	.....	10650	7700	7700	8480	12270
	36.00	35.17	.400	7.825	7.700	9.625	9.125	.....	10	N	7580	4270	.....	.....	10620	5900	5900	6490	9280

8 5/8	40.00	39.33	.450	7.725	7.600	9.625	9.125	.....	10	N	9470	5330	.....	10940	788	6700	6700	7300	10430
	44.00	43.43	.500	7.625	7.500	9.625	9.125	.....	10	N	11370	6390	.....	11200	887	7400	7400	8120	11590
	49.00	48.04	.557	7.511	7.386	9.625	9.125	.....	10	N	13530	7610	.....	11300	997	8300	8300	9040	12920
	40.00	39.33	.450	7.725	7.600	9.625	9.125	.....	10	P	12450	7000	.....	14650	1055	9200	9200	10040	13040
	44.00	43.43	.500	7.625	7.500	9.625	9.125	.....	10	P	15340	8630	.....	14970	1186	10000	10200	11160	14490
	49.00	48.04	.557	7.511	7.386	9.625	9.125	.....	10	P	18640	10480	.....	15140	1335	10000	11400	12430	16150
	44.00	43.43	.500	7.625	7.500	9.625	9.125	.....	10	V	18320	10310	.....	20090	1591	12000	13900	15220	18550
	49.00	48.04	.557	7.511	7.386	9.625	9.125	.....	10	V	24520	13790	.....	20280	1789	12000	15500	16950	20670
	29.30	28.07	.281	9.063	8.907	10.625	10.125	7-3/4	.....	H	1940	1090	4210	222	.....	1900	1900	2040	3500
	32.30	31.06	.312	9.001	8.845	10.625	10.125	7-3/4	.....	H	2370	1330	4370	254	.....	2100	2100	2270	3890
	36.00	34.89	.352	8.921	8.765	10.625	10.125	7-3/4	.....	H	3040	1710	4540	294	.....	2300	2300	2560	4390
	29.30	28.07	.281	9.063	8.907	10.625	10.125	7-3/4	.....	K	2350	1320	6050	319	.....	2600	2600	2810	5550
	36.00	34.89	.352	8.921	8.765	10.625	10.125	7-3/4	10-1/2	K	3950	2220	6530	423	7550	489	3000	3200	6950
	40.00	38.97	.395	8.835	8.679	10.625	10.125	7-3/4	10-1/2	K	4910	2760	6750	486	7790	561	3000	3600	7800
	40.00	38.97	.395	8.835	8.679	10.625	10.125	.....	10-1/2	C	5670	3190	.....	.....	9640	694	4900	4900	7800
	43.50	42.73	.435	8.755	8.599	10.625	10.125	.....	10-1/2	C	6920	3890	.....	9910	776	5400	5400	5930	8590
	47.00	46.18	.472	8.681	8.525	10.625	10.125	.....	10-1/2	C	8080	4540	.....	10070	852	5900	5900	6440	9320
	53.50	52.90	.545	8.535	8.379	10.625	10.125	.....	10-1/2	C	10360	5830	.....	10370	999	6800	6800	7430	10760
	40.00	38.97	.395	8.835	8.679	10.625	10.125	10-1/2	N	5840	3280	10240	737	5300	5300	5750	8210

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CASING DIMENSIONS & PROPERTIES - 8 ROUND THREADS

OUT-SIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS			COUPLING DIMENSIONS			SETTING DEPTHS BASED ON MINIMUM PROPERTIES				INTERNAL PRESSURES				
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	REG. CLEARANCE	SPL CLEARANCE	LENGTH 8R THREAD	COLLAPSE		TENSION		80% MIN YLD TEST	STD MILL TEST	MIN YLD	ULTI MATE MIN.	
									S.F. 1.125	PRES-SURE	S.F. 1.8	ULTI MATE JT STRG					SHORT CPLG	LONG CPLG	1000 LBS	FT	1000 LBS	FT
INS	LBS	LBS	INS	INS	INS	INS	INS	INS	INS	FT	PSI	FT	FT	PSI	PSI	PSI	PSI
9 5/8	43.50	42.73	.435	8.755	8.599	10.625	10.125	10-1/2	N	7200	4050	10540	825	5800	6330	9040	9040
	47.00	46.18	.472	8.681	8.525	10.625	10.125	10-1/2	N	8450	4760	10700	905	6300	6870	9810	9810
	53.50	52.90	.545	8.535	8.379	10.625	10.125	10-1/2	N	10930	6150	11030	1062	7200	7930	11330	11330
	43.50	42.73	.435	8.755	8.599	10.625	10.125	10-1/2	P	8450	4750	14130	1106	8000	8700	11300	11300
	47.00	46.18	.472	8.681	8.525	10.625	10.125	10-1/2	P	10890	6120	14340	1213	8600	9440	12260	12260
	53.50	52.90	.545	8.535	8.379	10.625	10.125	10-1/2	P	14670	8250	14770	1422	10000	10900	14160	14160
	53.50	52.90	.545	8.535	8.379	10.625	10.125	10-1/2	V	17030	9580	19820	1909	12000	13600	14860	18120
	58.40	57.44	.595	8.435	8.279	10.625	10.125	10-1/2	V	22390	12590	19960	2098	12000	14800	16230	19790
	61.10	60.13	.625	8.375	8.219	10.625	10.125	10-1/2	V	24760	13930	20100	2211	12000	15600	17050	20780
	71.80	71.16	.750	8.125	7.969	10.625	10.125	10-1/2	V	31630	17790	20670	2672	12000	18700	20450	24940
	32.75	31.23	.279	10.192	10.036	11.750	11.250	8	H	1500	850	3480	205	1200	1700	1820	3110
	40.50	38.91	.350	10.050	9.894	11.750	11.250	8	H	2390	1340	4310	314	1600	2100	2280	3910

103/4	40.50	38.91	.350	10.050	9.894	11.750	11.250	8	K	3080	1730	6170	450	2100	2900	3130	6190
	45.50	44.26	.400	9.950	9.794	11.750	11.250	8	K	4080	2300	6450	528	2500	3300	3580	7070
	51.00	49.55	.450	9.850	9.694	11.750	11.250	8	K	5100	2870	6600	606	2800	3700	4030	7950
	51.00	49.55	.450	9.850	9.694	11.750	11.250	8	C	5910	3330	8240	756	5000	5000	5490	7950
	55.50	54.26	.495	9.760	9.604	11.750	11.250	8	C	7170	4030	8440	843	5500	5500	6040	8750
	51.00	49.55	.450	9.850	9.694	11.750	11.250	8	N	6110	3440	8760	804	5400	5400	5860	8370
	55.50	54.26	.495	9.760	9.704	11.750	11.250	8	N	7470	4200	8960	895	5900	5900	6450	9210
	51.00	49.55	.450	9.850	9.694	11.750	11.250	8	P	6670	3750	11760	1088	7400	7400	8060	10460
	55.50	54.26	.495	9.760	9.604	11.750	11.250	8	P	8950	5030	12040	1203	8100	8100	8860	11510
	60.70	59.45	.545	9.660	9.504	11.750	11.250	8	P	11730	6600	12250	1338	8900	8900	9760	12680
	65.70	64.59	.595	9.560	9.404	11.750	11.250	8	P	14030	7890	12450	1472	9700	9700	10650	13840
	71.10	70.18	.650	9.450	9.294	11.750	11.250	8	P	16580	9330	12640	1618	10000	10600	11640	15110
	65.70	64.59	.595	9.560	9.404	11.750	11.250	8	V	15850	8920	16720	1978	12000	13300	14530	17710
71.10	70.18	.650	9.450	9.294	11.750	11.250	8	V	20900	11750	16990	2174	12000	14500	15870	19350	
42.00	40.64	.333	11.084	10.928	12.750	.....	8	H	1820	1020	4060	307	1400	1800	1980	3400	
47.00	45.60	.375	11.000	10.844	12.750	.....	8	K	2900	1630	6020	509	2100	2800	3070	6060	
54.00	52.62	.435	10.880	10.724	12.750	.....	8	K	4040	2280	6230	606	2400	3300	3560	7030	
60.00	58.87	.489	10.772	10.616	12.750	.....	8	K	5040	2840	6420	693	2700	3700	4010	7910	
60.00	58.87	.489	10.772	10.616	12.750	8	C	5840	3280	8050	869	5000	5000	5460	7910	
60.00	58.87	.489	10.772	10.616	12.750	8	N	6030	3390	8560	924	5300	5300	5830	8320	
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CASING DIMENSIONS & PROPERTIES - 8 ROUND THREADS

OUTSIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS			COUPLING DIMENSIONS			SETTING DEPTHS BASED ON MINIMUM PROPERTIES						INTERNAL PRESSURES				
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	REG. CLEARANCE	SPL CLEARANCE	SHORT LONG	LENGTH 8R THREAD	COLLAPSE			TENSION			STD MILL TEST	80% MIN YLD TEST	MIN YLD	ULTI MATE MIN.
										S.F. 1.125	PRES-SURE	S.F. 1.8	ULTI MATE JT STRG	S.F. 1.8	ULTI MATE JT STRG				
INS	LBS	LBS	INS	INS	INS	INS	INS	INS	INS	INS	INS	FT	PSI	FT	FT	PSI	PSI	PSI	PSI
7	23.00	22.65	.317	6.366	6.241	7.656	7.375	.....	9	N	7230	4070	.....	10680	442	5800	6340	9060
	26.00	25.69	.362	6.276	6.151	7.656	7.375	.....	9	N	9320	5240	.....	11090	519	6600	7240	10340
	29.00	28.75	.408	6.184	6.059	7.656	7.375	.....	9	N	11470	6450	.....	11440	597	7500	8160	11660
	32.00	31.70	.453	6.094	5.969	7.656	7.375	.....	9	N	13570	7640	.....	11670	672	8300	9060	12940
	35.00	34.61	.498	6.004	5.879	7.656	7.375	.....	9	N	15660	8810	.....	11840	746	9100	9960	14220
	38.00	37.29	.540	5.920	5.795	7.656	7.375	.....	9	N	17090	9610	.....	11900	814	9900	10800	15430
	26.00	25.69	.362	6.276	6.151	7.656	7.375	.....	9	P	12220	6880	.....	14810	693	9100	9950	12930
	29.00	28.75	.408	6.184	6.059	7.656	7.375	.....	9	P	15490	8710	.....	15270	797	10000	11220	14570
	32.00	31.70	.453	6.094	5.969	7.656	7.375	.....	9	P	18700	10520	.....	15570	897	10000	12460	16180
	35.00	34.61	.498	6.004	5.879	7.656	7.375	.....	9	P	21880	12310	.....	15810	996	10000	13700	17780
	38.00	37.29	.540	5.920	5.795	7.656	7.375	.....	9	P	23740	13350	.....	15890	1087	10000	14850	19290
	29.00	28.75	.408	6.184	6.059	7.656	7.375	.....	9	V	18630	10480	.....	20100	1049	12000	14000	18650

133/8	72.00	70.67	.514	12.347	12.191	14.375	8	P	5120	2880	10820	1402	6800	6800	7400	9610
	72.00	70.67	.514	12.347	12.191	14.375	8	V	5120	2880	14500	1887	9200	9200	10090	12300
16	65.00	62.64	.375	15.250	15.062	17.000	9	H	1130	630	3750	439	1100	1500	1640	2810
	75.00	72.86	.438	15.124	14.936	17.000	9	K	1810	1020	5570	752	1800	2400	2630	5200
	84.00	82.05	.495	15.010	14.822	17.000	9	K	2630	1480	5720	865	2000	2700	2980	5880
	109.00	107.60	.656	14.688	14.500	17.000	9	K	4910	2760	6020	1181	2700	3600	3950	7790
	109.00	107.60	.656	14.688	14.500	17.000	9	N	5830	3280	8120	1594	5200	5200	5740	8200
20	94.00	91.59	.438	19.124	18.936	21.000	9	H	920	520	3430	581	3980	1100	1530	2630
	94.00	91.59	.438	19.124	18.936	21.000	9	K	920	520	4870	824	5640	1400	1930	4160
	106.50	104.23	.500	19.000	18.812	21.000	9	K	1370	770	5010	960	5810	1600	2200	4750
	133.00	131.45	.635	18.730	18.542	21.000	9	K	2850	1600	5230	1253	6070	1453	2800	6030

RANGE LENGTHS

	<u>RANGE 1</u>	<u>RANGE 2</u>	<u>RANGE 3</u>
CASING AND LINERS			
Total range length, inclusive	16.0 TO 25.0	25.0 TO 34.0	34.0 TO 48.0
THREADED & COUPLED TUBING & CASING USED AS TUBING			
Total range length, inclusive	20.0 TO 28.0	28.0 TO 34.0	38.0 TO 45.0

STANDARD DRIFT SIZE

Dimensions in inches

Product and Label 1	Standard Drift Mandrel Size Min.	
	Length	Diameter
Casing and liners		
$< 9\text{-}5/8$	6	$d - 1/8$
$\geq 9\text{-}5/8$ to $\leq 13\text{-}3/8$	12	$d - 5/32$
$> 13\text{-}3/8$	12	$d - 3/16$
Tubing		
$\leq 2\text{-}7/8$	42	$d - 3/32$
$> 2\text{-}7/8$	42	$d - 1/8$

CASING DIMENSIONS & PROPERTIES - BUTTRESS THREAD

OUTSIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS		COUPLING DIMENSIONS		INTERNAL PRESSURES					SETTING DEPTHS BASED ON MINIMUM PROPERTIES					JT YLD STRG		
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	O.D.	THREAD LENGTH	G R A D E	STD MILL	80% MIN YIELD TEST	MIN YIELD	ULTI-MATE MIN	COLLAPSE		TENSION				
													S.F. 1.125	PRES-SURE	SAME GRADE	HIGHER GRADE		S.F. 1.8	ULTI-MATE	1000 LBS	FT	1000 LBS
INS	LBS	LBS	INS	INS	INS	INS	INS	PSI	PSI	PSI	PSI	FT	PSI	FT	1000 LBS	FT	1000 LBS	1000 LBS	
4 1/2	10.50	10.24	.224	4.052	3.927	5.000	8-7/8	K	3000	4400	4790	9460	3830	6810	3830	286	15130	286	165
	11.60	11.36	.250	4.000	3.875	5.000	8-7/8	K	3000	4900	5350	10560	4540	8060	4540	317	15180	317	184
	11.60	11.36	.250	4.000	3.875	5.000	8-7/8	C	6700	6700	7290	10560	5650	10040	5650	317	15180	317	250
	13.50	13.05	.290	3.920	3.795	5.000	8-7/8	C	7700	7700	8460	12240	7150	12710	7150	364	14980	364	288
	11.60	11.36	.250	4.000	3.875	5.000	8-7/8	N	7100	7100	7780	11110	5950	10580	5950	334	16000	334	267
	13.50	13.05	.290	3.920	3.795	5.000	8-7/8	N	8200	8200	9020	12890	7580	13480	7580	384	15800	384	307
	11.60	11.36	.250	4.000	3.875	5.000	8-7/8	P	9800	9800	10690	13890	7950	14140	7950	417	19970	417	367
	13.50	13.05	.290	3.920	3.795	5.000	8-7/8	P	10000	11300	12410	16110	10440	18560	10440	480	19750	480	422
	15.10	15.00	.337	3.826	3.701	5.000	8-7/8	P	10000	13200	14420	18730	12990	23100	12990	543	20270	543	485
	15.10	15.00	.337	3.826	3.701	5.000	8-7/8	V	12000	18000	19660	23960	17150	30490	17150	683	25130	683	661
	13.00	12.84	.253	4.494	4.369	5.563	9-1/8	K	3000	4500	4870	9620	3930	6990	3930	358	15300	358	208
	15.00	14.88	.296	4.408	4.283	5.563	9-1/8	K	3000	5200	5700	11250	4980	8860	4980	416	15410	416	241

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15.00	14.88	.296	4.408	4.283	5.563	9-1/8	C	7100	7100	7700	11250	11140	6260	15410	416	328
18.00	17.95	.362	4.276	4.151	5.563	9-1/8	C	8700	8700	9500	13760	15110	8500	15460	501	.....	306
15.00	14.88	.296	4.408	4.283	5.563	9-1/8	N	7600	7600	8290	11840	11770	6620	16190	437	16190	350
18.00	17.95	.362	4.276	4.151	5.563	9-1/8	N	9300	9300	10140	14480	16080	9050	16300	528	16300	422
15.00	14.88	.296	4.408	4.283	5.563	9-1/8	P	10000	10400	11400	14800	15960	8970	20260	547	20260	481
18.00	17.95	.362	4.276	4.151	5.563	9-1/8	P	10000	12700	13940	18100	22390	12590	20340	659	20340	580
15.00	14.88	.296	4.408	4.283	5.563	9-1/8	V	12000	14200	15540	18950	19570	11010	25370	685	.....	656
18.00	17.95	.362	4.276	4.151	5.563	9-1/8	V	12000	17400	19000	23170	29550	16620	25490	826	.....	791
20.80	20.65	.422	4.156	4.031	5.563	9-1/8	V	12000	20300	22160	27000	33990	19120	22620	847	.....	910
24.10	24.05	.500	4.000	3.875	5.563	9-1/8	V	23000	24000	26250	32000	39610	22280	19440	847	.....	1060
14.00	13.71	.244	5.012	4.887	6.050	9-1/4	K	3000	3900	4270	8430	5640	3170	15200	383	15200	222
15.50	15.36	.275	4.950	4.825	6.050	9-1/4	K	3000	4400	4810	9500	6860	3860	15380	429	15380	248
17.00	16.89	.304	4.892	4.767	6.050	9-1/4	K	3000	4900	5320	10500	8000	4500	15390	471	15390	273
17.00	16.89	.304	4.892	4.767	6.050	9-1/4	C	6600	6600	7250	10500	9950	5600	15390	471	.....	372
20.00	19.83	.361	4.778	4.653	6.050	9-1/4	C	7900	7900	8610	12470	13070	7350	15390	554	.....	437
23.00	22.56	.415	4.670	4.545	6.050	9-1/4	C	9100	9100	9900	14340	15820	8900	13410	555	.....	497
17.00	16.89	.304	4.892	4.767	6.050	9-1/4	N	7100	7100	7740	11060	10490	5900	16210	496	16210	397
20.00	19.83	.361	4.778	4.653	6.050	9-1/4	N	8400	8400	9190	13120	13870	7800	16190	593	16190	466
23.00	22.56	.415	4.670	4.545	6.050	9-1/4	N	9700	9700	10560	15090	16740	9420	14110	584	16010	530

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CASING DIMENSIONS & PROPERTIES - BUTTRESS THREAD

OUT-SIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS		COUPLING DIMENSIONS		INTERNAL PRESSURES					SETTING DEPTHS BASED ON MINIMUM PROPERTIES					JT YLD STRG		
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	O.D	THREAD LENGTH	G R A D E	STD MILL	80% MIN YIELD TEST	MIN YIELD	ULTI-MATE MIN	COLLAPSE		TENSION				
													S.F. 1.125	PRES-SURE	SAME GRADE	HIGHER GRADE		S.F. 1.8	ULTI-MATE	1000 LBS	FT	1000 LBS
INS	LBS	LBS	INS	INS	INS	INS	INS		PSI	PSI	PSI	PSI	FT	PSI	FT	1000 LBS	FT	1000 LBS	1000 LBS
5 1/2	17.00	16.89	.304	4.892	4.767	6.050	9-1/4	P	9700	9700	10640	13820	14000	7880	20260	20260	20260	620	546
	20.00	19.83	.361	4.778	4.653	6.050	9-1/4	P	10000	11600	12630	16400	19140	10770	20220	20220	20220	728	641
	23.00	22.56	.415	4.670	4.545	6.050	9-1/4	P	10000	13300	14530	18870	23260	13080	17630	17630	20020	829	729
	20.00	19.83	.361	4.778	4.653	6.050	9-1/4	V	12000	15800	17230	21000	25260	14210	25220	25220	.....	.....	874
	23.00	22.56	.415	4.670	4.545	6.050	9-1/4	V	12000	18100	19810	24150	30700	17270	21980	21980	.....	.....	994
6 5/8	20.00	19.51	.288	6.049	5.924	7.390	9-5/8	K	3000	3800	4180	8260	5440	3060	15140	545	15140	545	315
	24.00	23.60	.352	5.921	5.796	7.390	9-5/8	K	3000	4700	5110	10100	7540	4240	15250	659	15250	659	382
	24.00	23.60	.352	5.921	5.796	7.390	9-5/8	C	6400	6400	6970	10100	9310	5240	15250	659	15250	659	520
	28.00	27.67	.417	5.791	5.666	7.390	9-5/8	C	7600	7600	8260	11960	12260	6890	15340	773	15340	773	610
	32.00	31.23	.475	5.675	5.550	7.390	9-5/8	C	8600	8600	9410	13620	14890	8380	15140	872	15140	872	688
24.00	23.60	.352	5.921	5.796	7.390	9-5/8	N	6800	6800	7440	10630	9790	5510	16060	694	16060	694	555	
28.00	27.67	.417	5.791	5.666	7.390	9-5/8	N	8100	8100	8810	12590	12990	7310	16130	813	16130	813	651	

65/8	32.00	31.23	.475	5.675	5.550	7.390	9-5/8	N	9200	9200	10040	14340	15850	8910	15940	918	15940	918	734
	24.00	23.60	.352	5.921	5.796	7.390	9-5/8	P	9400	9400	10230	13280	12940	7280	20070	867	20070	867	763
	28.00	27.67	.417	5.791	5.666	7.390	9-5/8	P	10000	11100	12120	15730	17810	10020	20180	1017	20180	1017	895
	32.00	31.23	.475	5.675	5.550	7.390	9-5/8	P	10000	12600	13800	17920	22160	12470	19910	1147	19910	1147	1009
	17.00	16.72	.231	6.456	6.331	7.656	10	K	3000	3400	3740	7380	4440	2500	15170	546	15170	546	316
	23.00	22.65	.317	6.366	6.241	7.656	10	K	3000	4000	4360	8610	5840	3280	15270	632	15270	632	366
	26.00	25.69	.362	6.276	6.151	7.656	10	K	3000	4600	4980	9820	7230	4070	15320	717	15320	717	415
	23.00	22.65	.317	6.366	6.241	7.656	10	C	5400	5400	5940	8610	6950	3910	15270	632	-----	-----	499
	26.00	25.69	.362	6.276	6.151	7.656	10	C	6200	6200	6790	9820	8880	4990	15320	717	-----	-----	566
	29.00	28.75	.408	6.184	6.059	7.656	10	C	7000	7000	7650	11070	10850	6110	15380	803	-----	-----	634
	32.00	31.70	.453	6.094	5.969	7.656	10	C	7800	7800	8490	12300	12800	7200	14650	844	-----	-----	699
	35.00	34.61	.498	6.004	5.879	7.656	10	C	8500	8500	9340	13510	14720	8280	13400	844	-----	-----	763
	38.00	37.29	.540	5.920	5.795	7.656	10	C	9300	9300	10130	14660	16140	9080	12340	844	-----	-----	822
	23.00	22.65	.317	6.366	6.241	7.656	10	N	5800	5800	6340	9060	7230	4070	16090	666	16090	666	532
	26.00	25.69	.362	6.276	6.151	7.656	10	N	6600	6600	7240	10340	9320	5240	16130	755	16130	755	604
	29.00	28.75	.408	6.184	6.059	7.656	10	N	7500	7500	8160	11660	11470	6450	16190	845	16190	845	676
	32.00	31.70	.453	6.094	5.969	7.656	10	N	8300	8300	9060	12940	13570	7640	15430	889	16180	932	745
	35.00	34.61	.498	6.004	5.879	7.656	10	N	9100	9100	9960	14220	15660	8810	14110	889	16140	1017	814
	38.00	37.29	.540	5.920	5.795	7.656	10	N	9900	9900	10800	15430	17090	9610	13000	889	16020	1096	877

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CASING DIMENSIONS & PROPERTIES - BUTTRESS THREAD

OUT-SIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS		COUPLING DIMENSIONS		INTERNAL PRESSURES					SETTING DEPTHS BASED ON MINIMUM PROPERTIES								
	NOM THIRD AND END CPLG	PLAIN	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	O.D.	THREAD LENGTH	G R A D E	STD MILL	80% MIN YIELD TEST	MIN YIELD	ULTI-MATE MIN	COLLAPSE		TENSION			JT YLD STRG		
													S.F. 1.125	PRES-SURE	SAME GRADE	HIGHER GRADE	S.F. 1.8		ULTI-MATE	1000 LBS	FT	1000 LBS
INS	LBS	LBS	INS	INS	INS	INS	INS	PSI	PSI	PSI	PSI	PSI	FT	PSI	FT	1000 LBS	FT	1000 LBS	1000 LBS	
7	26.00	25.69	.362	6.276	6.151	7.656	10	P	9100	9100	9950	12930	12220	6880	20170	944	20170	994	830	
	29.00	28.75	.408	6.184	6.059	7.656	10	P	10000	10300	11220	14570	15490	8710	20230	1056	20230	1056	929	
	32.00	31.70	.453	6.094	5.969	7.656	10	P	10000	11400	12460	16180	18700	10520	20230	1111	20230	1165	1025	
	35.00	34.61	.498	6.004	5.879	7.656	10	P	10000	12500	13700	17780	21880	12310	17630	1111	20190	1272	1119	
	38.00	37.29	.540	5.920	5.795	7.656	10	P	10000	13600	14850	19290	23740	13350	16240	1111	19930	1363	1205	
	29.00	28.75	.408	6.184	6.059	7.656	10	V	12000	14000	15300	18650	18630	10480	24830	1296	-----	-----	-----	1267
	32.00	31.70	.453	6.094	5.969	7.656	10	V	12000	15500	16990	20710	24610	13840	23660	1363	-----	-----	-----	1398
	35.00	34.61	.498	6.004	5.879	7.656	10	V	12000	17100	18680	22760	29070	16350	21630	1363	-----	-----	-----	1526
	38.00	37.61	.540	5.920	5.795	7.656	10	V	12000	18500	20250	24690	31330	17620	19930	1363	-----	-----	-----	1644
	26.40	25.59	.328	6.969	6.844	8.500	10-3/8	K	3000	3800	4140	8170	5350	3010	15030	714	15030	714	414	
	26.40	25.59	.328	6.969	6.844	8.500	10-3/8	C	5200	5200	5650	8170	6260	3520	15030	714	-----	-----	-----	564
	29.70	29.06	.375	6.875	6.750	8.500	10-3/8	C	5900	5900	6450	9350	8210	4570	15170	811	-----	-----	-----	641

7 5/8

7 5/8	33.70	33.07	.430	6.765	6.640	8.500	10-3/8	C	6800	6800	7400	10720	10290	5790	15220	923	-----	729
	39.00	38.08	.500	6.625	6.500	8.500	10-3/8	C	7900	7900	8610	12460	13050	7340	15140	1063	-----	839
	26.40	25.99	.328	6.969	6.844	8.500	10-3/8	N	5500	5500	6020	8600	6480	3650	15820	752	15820	602
	29.70	29.06	.375	6.875	6.750	8.500	10-3/8	N	6300	6300	6890	9840	8500	4780	15970	854	15970	683
	33.70	33.07	.430	6.765	6.640	8.500	10-3/8	N	7200	7200	7900	11280	10860	6110	16020	972	16020	778
	39.00	38.08	.500	6.625	6.500	8.500	10-3/8	N	8400	8400	9180	13110	13850	7790	15940	1119	15940	895
	29.70	29.06	.375	6.875	6.750	8.500	10-3/8	P	8700	8700	9470	12300	10970	6170	19900	1064	19900	940
	33.70	33.07	.430	6.765	6.640	8.500	10-3/8	P	9900	9900	10860	14100	14560	8190	19960	1211	19960	1069
	39.00	38.08	.500	6.625	6.500	8.500	10-3/8	P	10000	11500	12620	16390	19120	10760	19870	1395	19870	1231
	33.70	33.07	.430	6.765	6.640	8.500	10-3/8	V	12000	13500	14800	18050	16820	9460	24430	1482	-----	1458
	39.00	38.08	.500	6.625	6.500	8.500	10-3/8	V	12000	15700	17210	20980	25230	14190	24300	1706	-----	1679
	45.30	44.71	.595	6.435	6.310	8.500	10-3/8	V	12000	18700	20480	24960	31640	17800	23690	1932	-----	1971
8 5/8	32.00	31.13	.352	7.921	7.796	9.625	10-5/8	K	3000	3600	3930	7760	8570	2740	15090	869	15090	503
	36.00	35.17	.400	7.825	7.700	9.625	10-5/8	K	3000	4100	4460	8810	6070	3420	15140	981	15140	568
	36.00	35.17	.400	7.825	7.700	9.625	10-5/8	C	5600	5600	6090	8810	7270	4090	15150	982	-----	775
	40.00	39.33	.450	7.725	7.600	9.625	10-5/8	C	6300	6300	6850	9910	9020	5070	15250	1098	-----	867
	44.00	43.43	.500	7.625	7.500	9.625	10-5/8	C	7000	7000	7610	11010	10760	6050	15300	1212	-----	957
	49.00	48.04	.557	7.511	7.386	9.625	10-5/8	C	7700	7700	8480	12270	12760	7180	15200	1341	-----	1059
	36.00	35.17	.400	7.825	7.700	9.625	10-5/8	N	5900	5900	6490	9280	7580	4270	15960	1034	15960	827

CASING DIMENSIONS & PROPERTIES - BUTTRESS THREAD

OUT-SIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS		COUPLING DIMENSIONS		INTERNAL PRESSURES					SETTING DEPTHS BASED ON MINIMUM PROPERTIES					JT YLD STRG		
	NOM THIRD AND CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	O.D.	THREAD LENGTH	G R A D E	STD MILL	80% MIN YIELD TEST	MIN YIELD	ULTI-MATE MIN	COLLAPSE		TENSION				
													S.F. 1.125	PRES-SURE	S.F. 1.8	ULTI-MATE		SAME GRADE	HIGHER GRADE	1000 LBS
INS	LBS	LBS	INS	INS	INS	INS	INS	PSI	PSI	PSI	PSI	FT	PSI	FT	1000 LBS	FT	1000 LBS	1000 LBS	
8 5/8	40.00	39.33	.450	7.725	7.600	9.625	10-5/8	N	6700	6700	7300	10430	9470	5330	16060	1156	16060	1156	925
	44.00	43.43	.500	7.625	7.500	9.625	10-5/8	N	7400	7400	8120	11590	11370	6390	16110	1276	16110	1276	1021
	49.00	48.04	.557	7.511	7.386	9.625	10-5/8	N	8300	8300	9040	12920	13530	7610	16010	1412	16010	1412	1129
	40.00	39.33	.450	7.725	7.600	9.625	10-5/8	P	9200	9200	10040	13040	12450	7000	19790	1425	19790	1425	1271
	44.00	43.43	.500	7.625	7.500	9.625	10-5/8	P	10000	10200	11160	14490	15340	8630	19870	1574	19870	1574	1404
	49.00	48.04	.557	7.511	7.386	9.625	10-5/8	P	10000	11400	12430	16150	18640	10488	19740	1741	19740	1741	1553
	44.00	43.43	.500	7.625	7.500	9.625	10-5/8	V	12000	13900	15220	18550	18320	10310	24310	1925	-----	-----	1914
	49.00	48.04	.557	7.511	7.386	9.625	10-5/8	V	12000	15500	16950	20670	24520	13790	24150	2130	-----	-----	2118
	36.00	34.89	.352	8.921	8.765	10.625	10-5/8	K	3000	3200	3520	6950	2350	1320	14860	963	14860	963	564
	40.00	38.97	.395	8.835	8.679	10.625	10-5/8	K	3000	3500	3950	7800	4910	2760	14940	1076	14940	1076	630
40.00	38.97	.395	8.835	8.679	10.625	10-5/8	C	4900	4900	5390	7800	5670	3190	15110	1088	-----	-----	859	
43.50	42.73	.435	8.755	8.599	10.625	10-5/8	C	5400	5400	5930	8590	6920	3890	15240	1193	-----	-----	942	

9 5/8	47.00	46.18	.472	8.681	8.525	10.625	10-5/8	C	5900	5900	6440	9320	8080	4540	15240	1289	-----	1018
	53.50	52.90	.545	8.535	8.379	10.625	10-5/8	C	6800	6800	7430	10760	10360	5830	15340	1477	-----	1166
	40.00	38.97	.395	8.835	8.679	10.625	10-5/8	N	5300	5300	5750	8210	5840	3280	15900	1145	15900	916
	43.50	42.73	.435	8.755	8.599	10.625	10-5/8	N	5800	5800	6330	9040	7200	4050	16040	1256	16040	1005
	47.00	46.18	.472	8.681	8.525	10.625	10-5/8	N	6300	6300	6870	9810	8450	4760	16040	1357	16040	1086
	53.50	52.90	.545	8.535	8.379	10.625	10-5/8	N	7200	7200	7930	11330	10930	6150	16150	1555	16150	1244
	43.50	42.73	.435	8.755	8.599	10.625	10-5/8	P	8000	8000	8700	11300	8450	4750	19580	1533	19580	1381
	47.00	46.18	.472	8.681	8.525	10.625	10-5/8	P	8600	8600	9440	12260	10890	6120	19570	1656	19570	1493
	53.50	52.90	.545	8.535	8.379	10.625	10-5/8	P	10000	10000	10900	14160	14670	8250	19700	1897	19700	1710
	53.50	52.90	.545	8.535	8.379	10.625	10-5/8	V	12000	13600	14860	18120	17030	9580	24100	2321	-----	2332
	58.40	57.44	.595	8.435	8.279	10.625	10-5/8	V	12000	14800	16230	19790	22390	12590	23960	2519	-----	2532
	61.10	60.13	.625	8.375	8.219	10.625	10-5/8	V	12000	15600	17050	20780	24760	13930	23990	2638	-----	2651
	71.80	71.16	.750	8.125	7.969	10.625	10-5/8	V	12000	18700	20450	24940	31630	17790	20830	2692	-----	3137
103/4	40.50	38.91	.350	10.050	9.894	11.750	10-5/8	H	1600	2100	2280	3910	2390	1349	9410	686	9410	457
	40.50	38.91	.350	10.050	9.894	11.750	10-5/8	K	2100	2900	3130	6190	3080	1730	14550	1061	14550	629
	45.50	44.26	.400	9.950	9.794	11.750	10-5/8	K	2500	3300	3580	7070	4080	2300	14740	1207	14740	715
	51.00	49.55	.450	9.850	9.694	11.750	10-5/8	K	2800	3700	4030	7950	5100	2870	14730	1352	14730	801
	51.00	49.55	.450	9.850	9.694	11.750	10-5/8	C	5000	5000	5490	7950	5910	3330	15070	1383	-----	1092
	55.50	54.26	.495	9.760	9.604	11.750	10-5/8	C	5500	5500	6040	8750	7170	4030	15170	1515	-----	1196

CASING DIMENSIONS & PROPERTIES - BUTTRESS THREAD

OUT-SIDE DIA.	WEIGHT PER FOOT		CASING DIMENSIONS		COUPLING DIMENSIONS		INTERNAL PRESSURES					SETTING DEPTHS BASED ON MINIMUM PROPERTIES									
	NOM THIRD AND END CPLG	PLAIN END	WALL THICKNESS	INSIDE DIA.	DRIFT DIA.	O.D.	THREAD LENGTH	GRADE	80% MIN YIELD TEST	MIN YIELD	ULTI-MATE MIN	COLLAPSE		TENSION			JT YLD STRG				
												S.F. 1.125	PRES-SURE	SAME GRADE	HIGHER GRADE	S.F. 1.8		ULTI-MATE	1000 LBS	FT	1000 LBS	FT
INS	LBS	LBS	INS	INS	INS	INS	INS	PSI	PSI	PSI	PSI	FT	PSI	FT	1000 LBS	FT	1000 LBS	FT	1000 LBS	FT	1000 LBS
10 3/4	51.00	49.55	.450	9.850	9.694	11.750	10-5/8	N	5400	5860	8370	6110	3440	15830	1453	15830	1453	15830	1453	1165	
	55.50	54.26	.495	9.760	9.704	11.750	10-5/8	N	5900	6450	9210	7470	4200	15930	1591	15930	1591	15930	1591	1276	
	51.00	49.55	.450	9.850	9.694	11.750	10-5/8	P	7400	8060	10460	6670	3750	19130	1756	19130	1756	19130	1756	1602	
	55.50	54.26	.495	9.760	9.604	11.750	10-5/8	P	8100	8860	11510	8950	5030	19250	1923	19250	1923	19250	1923	1754	
	60.70	59.45	.545	9.660	9.504	11.750	10-5/8	P	8900	9760	12680	11730	6600	19280	2107	19280	2107	19280	2107	1922	
	65.70	64.59	.595	9.560	9.404	11.750	10-5/8	P	9700	10650	13840	14030	7890	19360	2289	19360	2289	19360	2289	2088	
	71.10	70.18	.650	9.450	9.294	11.750	10-5/8	P	10000	11640	15110	16580	9330	18890	2418	19430	2487	19430	2487	2269	
	65.70	64.59	.595	9.560	9.404	11.750	10-5/8	V	12000	14530	17710	15850	8920	23670	2799	-----	-----	-----	-----	2847	
	71.10	70.18	.650	9.450	9.294	11.750	10-5/8	V	12000	14500	19350	20900	11750	23110	2957	-----	-----	-----	-----	3094	
11 3/4	42.00	40.64	.333	11.084	10.928	12.750	10-5/8	H	1400	1980	3400	1820	1020	9480	717	9480	717	9480	717	478	
	47.00	45.60	.375	11.000	10.844	12.750	10-5/8	K	2100	2800	3070	2900	1630	14540	1230	14540	1230	14540	1230	737	
	54.00	52.62	.435	10.880	10.724	12.750	10-5/8	K	2400	3300	3560	4040	2280	14610	1420	14610	1420	14610	1420	850	

113/4	60.00	58.87	.489	10.772	10.616	12.750	10-5/8	K	2700	3700	4010	7910	5040	2840	14700	1588	14700	1588	952
	60.00	58.87	.489	10.772	10.616	12.750	10-5/8	C	5000	5000	5460	7910	5840	3280	15120	1633	.....	.....	1298
	60.00	58.87	.489	10.772	10.616	12.750	10-5/8	N	5300	5300	5830	8320	6030	3390	15810	1707	15810	1707	1384
133/8	48.00	46.02	.330	12.715	12.559	14.375	10-5/8	H	1200	1600	1730	2960	1320	740	9390	811	9390	811	541
	54.50	52.79	.380	12.615	12.459	14.375	10-5/8	K	1900	2500	2730	5400	2030	1140	14260	1399	14260	1399	853
	61.00	59.50	.430	12.515	12.359	14.375	10-5/8	K	2100	2800	3090	6110	2960	1670	14360	1577	14360	1577	962
	68.00	66.17	.480	12.415	12.259	14.375	10-5/8	K	2400	3200	3450	6820	3800	2140	14330	1754	14330	1754	1069
	72.00	70.67	.514	12.347	12.191	14.375	10-5/8	C	4600	4600	5040	7300	4880	2750	14850	1925	.....	.....	1558
	77.00	75.40	.550	12.275	12.119	14.375	10-5/8	C	4900	4900	5400	7810	5690	3200	14820	2054	.....	.....	1662
	85.00	82.98	.608	12.159	12.003	14.375	10-5/8	C	5500	5500	5970	8640	7000	3940	14780	2261	.....	.....	1829
	98.00	97.28	.719	11.937	11.781	14.375	10-5/8	C	6500	6500	7060	10210	9500	5340	13020	2296	.....	.....	2144
	72.00	70.67	.514	12.347	12.191	14.375	10-5/8	N	4900	4900	5380	7690	4990	2810	15530	2013	15530	2013	1661
	77.00	75.40	.550	12.275	12.119	14.375	10-5/8	N	5300	5300	5760	8220	5870	3300	15500	2148	15500	2148	1773
	85.00	82.98	.608	12.159	12.003	14.375	10-5/8	N	5800	5800	6360	9090	7280	4100	15450	2364	15450	2364	1951
	98.00	97.28	.719	11.937	11.781	14.375	10-5/8	N	6900	6900	7530	10750	9990	5620	13610	2400	15710	2771	2287
	72.00	70.67	.514	12.347	12.191	14.375	10-5/8	P	6800	6800	7400	9610	5120	2880	18770	2433	18770	2433	2596
	72.00	70.67	.514	12.347	12.191	14.375	10-5/8	V	9200	9200	10090	12300	5120	2880	22960	2976	.....	.....	3323
16	65.00	62.64	.375	15.250	15.062	17.000	10-5/8	H	1100	1500	1640	2810	1130	630	.....	801	.....	801	736
	75.00	72.86	.438	15.124	14.936	17.000	10-5/8	K	1800	2400	2630	5200	1810	1020	.....	1329	.....	1320	1178
	84.00	82.05	.495	15.010	14.822	17.000	10-5/8	K	2000	2700	2980	5880	2630	1480	.....	1496	.....	1496	1326