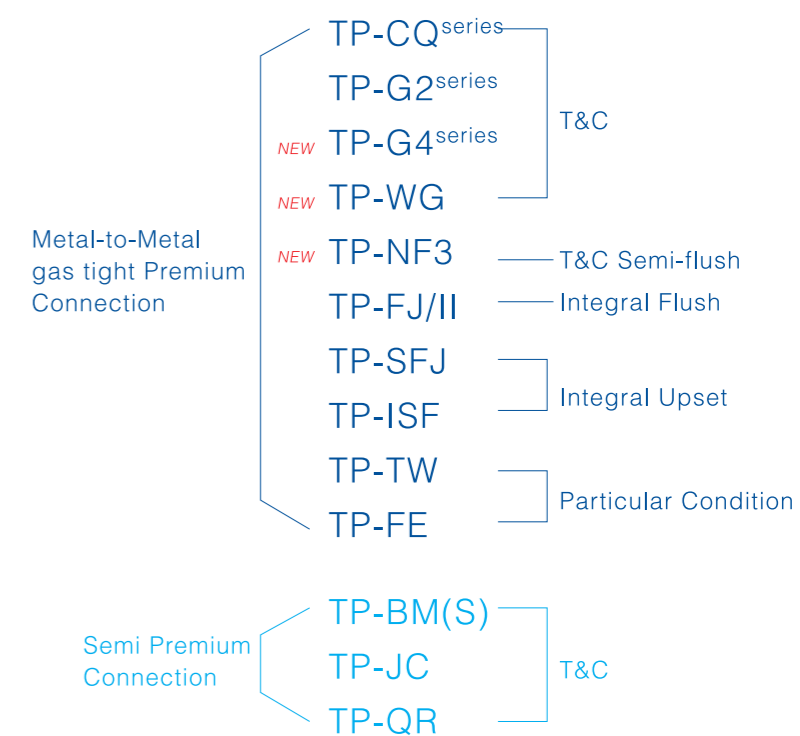




Premium Connection  
**TP-CQ**<sup>Series</sup>

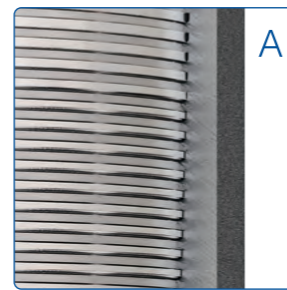
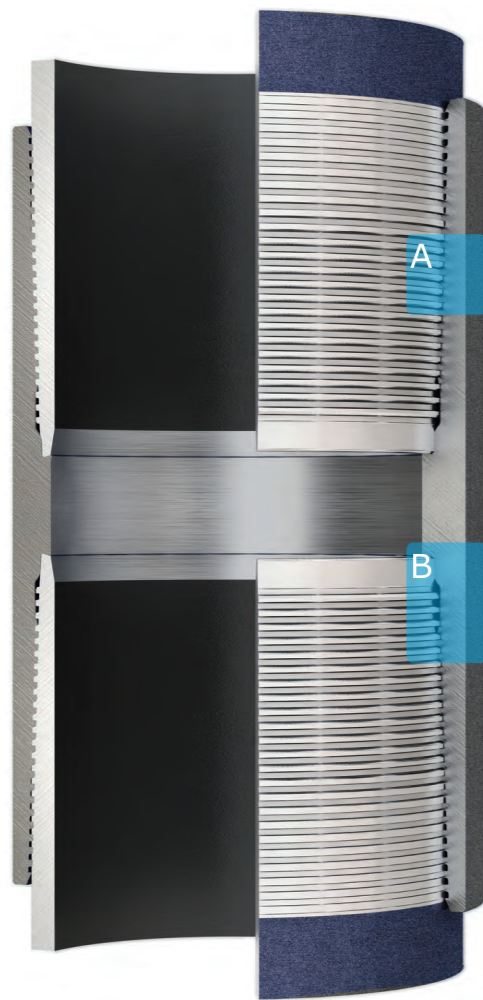


Tianjin Pipe Corporation  
 Tianjin Pipe International Economic & Trading Corporation  
 Add.: No.396, Jintang Road, Dongli District, Tianjin, P.R. China  
 Tel.: +86 22 6628 0988  
 Fax: +86 22 6628 0681  
 P.C.: 300301  
[www.tpcointernational.com](http://www.tpcointernational.com)

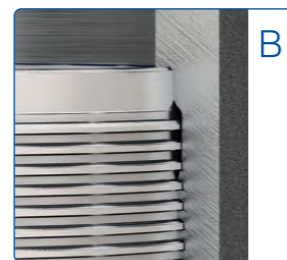
TP-CQ<sup>Series</sup> 2-3/8in ~ 14-3/8in

High performance gas-tight premium connection for casing and tubing.

- Excellent gas seal-ability under combined load
- Easy stabbing, no cross threading
- Superior anti-galling performance
- Repairing easily
- Suitable for low alloy & carbon steel pipe
- ISO13679:2002 CAL IV qualified
- API 5C5:2017 CAL IV qualified



Modified buttress thread  
Taper=1:16  
TBG: 2-3/8in~2-7/8in: 8T.P.I.  
3-1/2in~4-1/2in: 6T.P.I.  
CSG: 5in~14-3-/8in 5T.P.I.



Metal-to-metal  
Tapered pin and box seal  
Reverse angel torque shoulder  
Internal flush

Application:

- Horizon and deep wells
- Surface and intermediate casing
- Tubing
- Production casing, tie back and liners

1 . Description

1.1 Threaded connection

Improved buttress thread form with a taper of 1:16. The clearance at the top of the thread crests minimizes thread galling and avoids the trapping of compound inside the threads.

1.2 Metal-to-metal seal

Metal-to-metal seal surface provides enough contact length and contact pressure. The metal-to-metal seal system offers excellent gas-tight sealing, even under the most severe combined loads. The seal integrity remains constant after repeated make-ups and break-outs. Optimized thread geometry minimizes the risk of galling, even when thread lubricants are poorly applied.

1.3 Reverse angle torque shoulder

The reverse angle torque shoulder provides a positive torque stop, which allows accurate power tight make-up and minimizes hoop stresses of the connection. The “wedge” effect caused by the reverse angle gives the connection a superior structural strength. The shoulder design is optimized in order to resist adverse conditions such as combined compression and external pressure or combined bending, compression, and torque.

1.4 Streamlined internal profile

A pin ID chamfer, tight tolerances on the coupling center and a long shoulder combine to minimize turbulence and energy loss inside the connection for high-velocity gas flows.

1.5 Coupling design

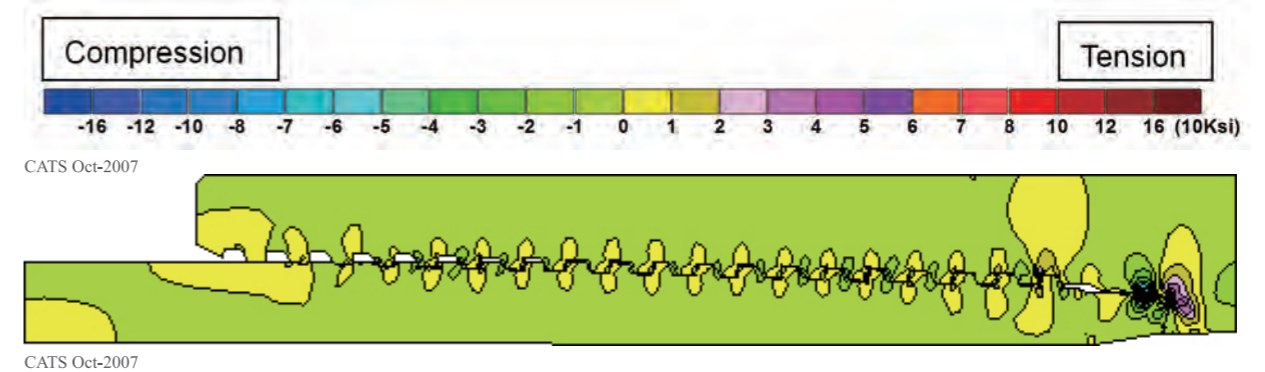
Joint efficiency is more than 100% and coupling critical section is greater than pipe body section. Because the coupling covers the vanishing threads, the connection tensile efficiency is maximized.

1.6 Connection low stress design

Connection low stress design can ensure that it can be safe under corrupt environment.

2 . Finite Element Analysis on TP-CQ

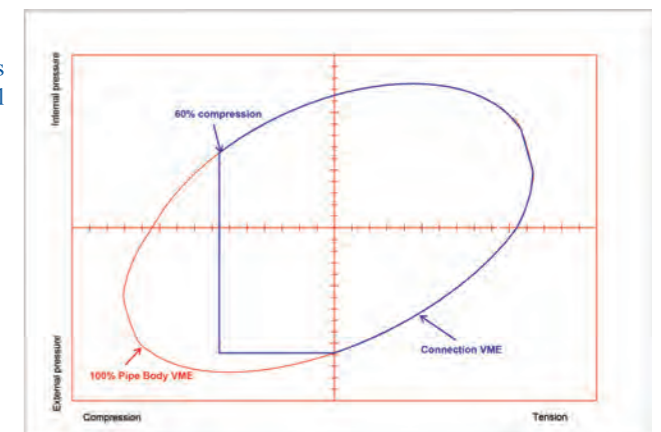
TP- CQ L80 9-5/8" × 53.5#



Finite Element Analysis (FEA) graphically illustrates the low-stress design which makes TP-CQ of the excellent choices for critical well applications.

Options:

- TP-CQ D: Optimized Design
- TP-CQ HC: High Compression
- TP-CQ HT: High Torque
- TP-CQ(SB): Special Bevel
- TP-CQ(SC): Special Clearance
- TP-CQ(MS): Match Strength
- Dope Free Solution



TP-CQSeries | T&C | 2-3/8"~14-3/8"

Imperial Units

Size (OD)		Nominal weight	Wall thickness		Standard Drift	Standard Coupling OD	Make up loss	Coupling length	Tension Efficiency	Yield strength(1000lb.)						External pressure(psi)						Minimum internal yield pressure(psi)					
inch	mm	lb./ft	inch	mm	inch	inch	inch	inch	%	55ksi	80ksi	95ksi	110ksi	125ksi	140ksi	55ksi	80psi	95psi	110psi	125psi	140 psi	55ksi	80ksi	95ksi	110ksi	125ksi	140ksi
2-3/8	60.32	4.60	0.190	4.83	1.901	2.795	2.520	6.024	100.0	72	104	124	143	163	183	8100	11780	13990	16150	17930	19620	8100	11200	13300	15400	17500	19600
2-7/8	73.02	6.40	0.217	5.51	2.347	3.307	2.835	6.654	100.0	100	145	172	199	227	254	7670	11160	12930	14540	16060	17490	7670	10570	12550	14530	16510	18490
3-1/2	88.90	9.20	0.254	6.45	2.867	3.937	3.346	7.874	100.0	142	207	246	285	324	363	7240	10530	12070	13520	14880	16150	7400	10160	12070	13970	15880	17780
		12.70	0.375	9.52	2.625	4.134	3.346	7.874	100.0	203	295	350	405	460	515	10520	15300	18170	21040	23900	26770	10520	15000	17810	20630	23440	26250
4	101.60	9.50	0.226	5.74	3.423	4.409	3.543	8.268	100.0	147	214	255	295	335	375	4530	6590	7310	7910	8380	8740	5110	7910	9390	10880	12360	13840
		10.70	0.262	6.65	3.351	4.409	3.543	8.268	100.0	169	246	292	338	385	431	6040	8790	9960	11040	12010	12870	6590	9170	10890	12610	14330	16050
4-1/2	114.30	12.60	0.271	6.88	3.833	5.000	3.937	9.055	100.0	198	288	342	396	450	504	5150	7490	8400	9200	9880	10440	5720	8430	10010	11590	13170	14750
		15.20	0.337	8.56	3.701	5.118	3.937	9.055	100.0	243	353	419	485	551	617	7620	11090	12770	14340	15830	17230	7620	10480	12450	14420	16380	18350
		18.90	0.430	10.92	3.515	5.197	3.937	9.055	100.0	303	440	522	605	687	770	9510	13830	16420	19010	21600	24190	9510	13380	15890	18390	20900	23410
5	127.00	15.00	0.296	7.52	4.283	5.563	4.764	10.512	100.0	241	350	416	481	547	612	4980	7250	8110	8850	9480	9980	5560	8290	9840	11400	12950	14500
		18.00	0.362	9.19	4.151	5.563	4.764	10.512	98.2	285	414	492	570	647	725	7220	10500	12020	13470	14820	16070	7380	10140	12040	13940	15840	17740
		20.30	0.408	10.36	4.059	5.563	4.764	10.512	88.0	285	414	492	570	647	725	8240	11990	14240	16490	18550	20320	8240	11420	13570	15710	17850	19990
		20.80	0.422	10.72	4.031	5.563	4.764	10.512	85.3	285	414	492	570	647	725	8500	12360	14680	17000	19320	21610	8500	11820	14030	16250	18460	20680
		21.40	0.437	11.10	4.001	5.563	4.764	10.512	82.7	285	414	492	570	647	725	8770	12760	15150	17550	19940	22330	8770	12240	14530	16820	19120	21410
		23.20	0.478	12.14	3.919	5.563	4.764	10.512	76.2	285	414	492	570	647	725	9510	13830	16430	19020	21620	24210	9510	13380	15890	18400	20910	23420
24.10	0.500	12.70	3.875	5.563	4.764	10.512	73.2	285	414	492	570	647	725	9900	14400	17100	19800	22500	25200	9900	14000	16630	19250	21880	24500		
5-1/2	139.70	17.00	0.304	7.72	4.767	6.181	4.843	10.709	100.0	273	397	471	546	620	695	4320	6290	6940	7480	7890	8170	4910	7740	9190	10640	12090	13540
		20.00	0.361	9.17	4.653	6.181	4.843	10.709	100.0	320	466	554	641	729	816	6070	8830	10020	11110	12090	12950	6620	9190	10910	12640	14360	16080
		23.00	0.415	10.54	4.545	6.181	4.843	10.709	100.0	364	530	630	729	829	928	7670	11160	12930	14540	16060	17480	7670	10560	12540	14530	16510	18490
		26.00	0.476	12.09	4.423	6.181	4.843	10.709	90.6	374	544	647	749	851	953	8700	12650	15020	17390	19760	22140	8700	12120	14390	16660	18930	21200
26.80	0.500	12.70	4.375	6.181	4.843	10.709	86.7	374	544	647	749	851	953	9090	13220	15700	18180	20660	23140	9090	12730	15110	17500	19890	22270		
6-5/8	168.28	20.00	0.288	7.32	5.924	7.402	5.039	11.260	100.0	316	459	545	631	717	803	2390	3480	3800	4030	4170	4220	2970	6090	7230	8370	9510	10650
		24.00	0.352	8.94	5.796	7.402	5.039	11.260	100.0	382	555	659	763	867	971	3960	5760	6310	6730	7020	7180	4560	7440	8830	10230	11620	13020
		28.00	0.417	10.59	5.666	7.402	5.039	11.260	100.0	448	651	773	895	1017	1139	5620	8170	9220	10160	11000	11710	6170	8810	10460	12120	13770	15420
		32.00	0.475	12.07	5.550	7.402	5.039	11.260	100.0	505	734	872	1009	1147	1285	7100	10320	11820	13230	14540	15750	7320	10040	11920	13800	15680	17570
7	177.80	23.00	0.317	8.05	6.241	7.717	5.236	11.969	100.0	366	532	632	732	832	932	2630	3830	4150	4440	4650	4760	3270	6340	7530	8720	9910	11100
		26.00	0.362	9.19	6.151	7.717	5.236	11.969	100.0	415	604	717	830	944	1057	3720	5410	5890	6230	6450	6690	4320	7240	8600	9960	11310	12670
		29.00	0.408	10.36	6.059	7.717	5.236	11.969	100.0	465	676	803	929	1056	1183	4830	7030	7840	8530	9110	9560	5400	8160	9690	11220	12750	14280
		32.00	0.453	11.51	5.969	7.717	5.236	11.969	99.4	509	741	880	1019	1158	1296	5920	8610	9740	10780	11710	12530	6470	9060	10760	12460	14160	15860
		35.00	0.498	12.65	5.879	7.717	5.236	11.969	91.0	509	741	880	1019	1158	1296	7010	10190	11650	13030	14320	15490	7270	9960	11830	13700	15560	17430
		38.00	0.540	13.72	5.795	7.717	5.236	11.969	84.5	509	741	880	1019	1158	1296	7830	11390	13430	15130	16740	18260	7830	10800	12830	14850	16880	18900
7-5/8	193.68	26.20	0.328	8.33	6.844	8.500	5.433	12.047	100.0	414	602	714	827	940	1053	2340	3400	3710	3920	4050	4080	2890	6020	7150	8280	9410	10540
		29.70	0.375	9.52	6.750	8.500	5.433	12.047	100.0	470	683	811	940	1068	1196	3290	4790	5130	5350	5670	5930	3900	6890	8180	9470	10760	12050
		33.70	0.430	10.92	6.640	8.500	5.433	12.047	100.0	535	778	923	1069	1215	1361	4510	6560	7270	7870	8340	8690	5090	7900	9380	10860	12340	13820
		35.80	0.465	11.81	6.570	8.500	5.433	12.047	100.0	575	837	994	1151	1308	1464	5290	7690	8640	9480	10200	10800	5850	8540	10140	11740	13340	14940
		39.00	0.500	12.70	6.500	8.500	5.433	12.047	100.0	615	895	1063	1231	1399	1567	6060	8820	10000	11080	12060	12920	6610	9180	10900	12620	14340	16070
		42.80	0.562	14.27	6.376	8.500	5.433	12.047	98.1	673	979	1162	1346	1530	1713	7440	10820	12410	13930	15350	16680	7510	10320	12250	14190	16120	18060
45.30	0.595	15.11	6.310	8.500	5.433	12.047	93.1	673	979	1162	1346	1530	1713	7910	11510	13670	15440	17110	18670	7910	10920	12970	15020	17070	19120		
47.10	0.625	15.88	6.250	8.500	5.433	12.047	89.0	673	979	1162	1346	1530	1713	8280	12040	14300	16550	18700	20490	8280	11480	13630	15780	17930	20080		
7-3/4	196.85	39.50	0.500	12.70	6.625	8.656	5.433	12.047	100.0	626	911	1082	1253	1424	1594	5890	8560	9680	10710	11630	12430	6430	9030	10730	12420	14110	15810
8-5/8	219.08	28.00	0.304	7.72	7.892	9.625	5.591	12.677	100.0	437	636	755	874	993	1113	1490	2160	2210	2210	2210	2210	1880	4930	5860	6780	7710	8640
		32.00	0.352	8.94	7.796	9.625	5.591	12.677	100.0	503	732	869	1006	1144													

TP-CQ Series | T&C | 2-3/8"~14-3/8"

Metric Units

Size (OD)		Nominal weight	Wall thickness		Standard Drift	Standard Coupling OD	Make up loss	Coupling length	Tension Efficiency	Yield strength(KN)						External pressure(MPa)						Minimum internal yield pressure(MPa)					
inch	mm	lb/ft	inch	mm	mm	mm	mm	mm	%	55ksi	80ksi	95ksi	110ksi	125ksi	140ksi	55ksi	80psi	95psi	110psi	125psi	140 psi	55ksi	80ksi	95ksi	110ksi	125ksi	140ksi
2-3/8	60.32	4.60	0.190	4.83	48.29	71.00	64.00	153.00	100.0	318	463	552	636	725	814	55.8	81.2	96.5	111.4	123.6	135.3	55.9	77.2	91.7	106.2	120.7	135.1
2-7/8	73.02	6.40	0.217	5.51	59.61	84.00	72.00	169.00	100.0	443	645	765	885	1010	1130	52.9	76.9	89.1	100.2	110.7	120.6	52.9	72.9	86.5	100.2	113.8	127.5
3-1/2	88.90	9.20	0.254	6.45	72.82	100.00	85.00	200.00	100.0	633	921	1094	1268	1441	1615	49.9	72.6	83.2	93.2	102.6	111.4	51.0	70.1	83.2	96.3	109.5	122.6
		12.70	0.375	9.52	66.68	105.00	85.00	200.00	100.0	902	1312	1557	1802	2046	2291	72.5	105.5	125.3	145.1	164.8	184.6	72.6	103.4	122.8	142.2	161.6	181.0
4	101.60	9.50	0.226	5.74	86.94	112.00	90.00	210.00	100.0	654	952	1134	1312	1490	1668	31.2	45.4	50.4	54.5	57.8	60.3	35.2	54.5	64.7	75.0	85.2	95.4
		10.70	0.262	6.65	85.12	112.00	90.00	210.00	100.0	752	1094	1299	1503	1713	1917	41.7	60.6	68.7	76.1	82.8	88.7	45.4	63.2	75.1	86.9	98.8	110.7
4-1/2	114.30	12.60	0.271	6.88	97.36	127.00	100.00	230.00	100.0	881	1281	1521	1761	2002	2242	35.5	51.6	57.9	63.4	68.1	72.0	39.4	58.1	69.0	79.9	90.8	101.7
		15.20	0.337	8.56	94.01	130.00	100.00	230.00	100.0	1080	1570	1864	2157	2451	2745	52.6	76.5	88.0	98.9	109.1	118.8	52.6	72.3	85.8	99.4	112.9	126.5
		18.90	0.430	10.92	89.28	132.00	100.00	230.00	100.0	1346	1957	2322	2691	3056	3425	65.6	95.4	113.2	131.1	148.9	166.8	65.6	92.3	109.6	126.8	144.1	161.4
5	127.00	15.00	0.296	7.52	108.79	141.30	121.00	267.00	100.0	1070	1557	1850	2140	2433	2722	34.4	50.0	55.9	61.0	65.4	68.8	38.3	57.2	67.8	78.6	89.3	100.0
		18.00	0.362	9.19	105.44	141.30	121.00	267.00	98.2	1266	1842	2189	2535	2878	3225	49.8	72.4	82.9	92.9	102.2	110.8	50.9	69.9	83.0	96.1	109.2	122.3
		20.30	0.408	10.36	103.10	141.30	121.00	267.00	88.0	1266	1842	2189	2535	2878	3225	56.8	82.7	98.2	113.7	127.9	140.1	56.8	78.7	93.6	108.3	123.1	137.8
		20.80	0.422	10.72	102.39	141.30	121.00	267.00	85.3	1266	1842	2189	2535	2878	3225	58.6	85.2	101.2	117.2	133.2	149.0	58.6	81.5	96.7	112.0	127.3	142.6
		21.40	0.437	11.1	101.63	141.30	121.00	267.00	82.7	1266	1842	2189	2535	2878	3225	60.5	88.0	104.5	121.0	137.5	154.0	60.5	84.4	100.2	116.0	131.8	147.6
		23.20	0.478	12.14	99.54	141.30	121.00	267.00	76.2	1266	1842	2189	2535	2878	3225	65.6	95.4	113.3	131.1	149.1	166.9	65.6	92.3	109.6	126.9	144.2	161.5
5-1/2	139.70	24.10	0.500	12.7	98.43	141.30	121.00	267.00	73.2	1266	1842	2189	2535	2878	3225	68.3	99.3	117.9	136.5	155.1	173.7	68.3	96.5	114.7	132.7	150.9	168.9
		17.00	0.304	7.72	121.08	157.00	123.00	272.00	100.0	1214	1766	2095	2429	2758	3092	29.8	43.4	47.8	51.6	54.4	56.3	33.9	53.4	63.4	73.4	83.4	93.4
		20.00	0.361	9.17	118.19	157.00	123.00	272.00	100.0	1425	2073	2464	2851	3243	3630	41.9	60.9	69.1	76.6	83.4	89.3	45.7	63.4	75.2	87.1	99.0	110.9
		23.00	0.415	10.54	115.44	157.00	123.00	272.00	100.0	1621	2358	2802	3243	3688	4128	52.9	76.9	89.1	100.2	110.7	120.5	52.9	72.8	86.5	100.2	113.8	127.5
6-5/8	168.28	26.00	0.476	12.09	112.34	157.00	123.00	272.00	90.6	1664	2420	2878	3332	3785	4239	60.0	87.2	103.6	119.9	136.2	152.6	60.0	83.6	99.2	114.9	130.5	146.2
		26.80	0.500	12.7	111.13	157.00	123.00	272.00	86.7	1664	2420	2878	3332	3785	4239	62.7	91.1	108.2	125.3	142.4	159.5	62.7	87.8	104.2	120.7	137.1	153.5
		20.00	0.288	7.32	150.47	188.00	128.00	286.00	100.0	1404	2042	2424	2807	3189	3572	16.5	24.0	26.2	27.8	28.8	29.1	20.5	42.0	49.8	57.7	65.6	73.4
		24.00	0.352	8.94	147.22	188.00	128.00	286.00	100.0	1697	2469	2931	3394	3857	4319	27.3	39.7	43.5	46.4	48.4	49.5	31.4	51.3	60.9	70.5	80.1	89.8
7	177.80	28.00	0.417	10.59	143.92	188.00	128.00	286.00	100.0	1991	2896	3438	3981	4524	5067	38.7	56.3	63.6	70.1	75.8	80.7	42.6	60.7	72.1	83.6	94.9	106.3
		32.00	0.475	12.07	140.97	188.00	128.00	286.00	100.0	2245	3265	3879	4488	5102	5716	48.9	71.2	81.5	91.2	100.2	108.6	50.5	69.2	82.2	95.1	108.1	121.1
		23.00	0.317	8.05	158.52	196.00	133.00	304.00	100.0	1627	2366	2811	3256	3701	4146	18.2	26.4	28.6	30.6	32.1	32.8	22.6	43.7	51.9	60.1	68.3	76.5
		26.00	0.362	9.19	156.24	196.00	133.00	304.00	100.0	1847	2687	3189	3692	4199	4702	25.6	37.3	40.6	43.0	44.5	46.1	29.8	49.9	59.3	68.7	78.0	87.4
		29.00	0.408	10.36	153.90	196.00	133.00	304.00	100.0	2067	3007	3572	4132	4697	5262	33.3	48.5	54.1	58.8	62.8	65.9	37.2	56.3	66.8	77.4	87.9	98.5
		32.00	0.453	11.51	151.61	196.00	133.00	304.00	99.4	2266	3296	3914	4533	5151	5765	40.8	59.4	67.2	74.3	80.7	86.4	44.6	62.5	74.2	85.9	97.6	109.4
7-5/8	193.68	35.00	0.498	12.65	149.33	196.00	133.00	304.00	91.0	2266	3296	3914	4533	5151	5765	48.3	70.3	80.3	89.8	98.7	106.8	50.1	68.7	81.6	94.5	107.3	120.2
		38.00	0.540	13.72	147.19	196.00	133.00	304.00	84.5	2266	3296	3914	4533	5151	5765	54.0	78.5	92.6	104.3	115.4	125.9	54.0	74.5	88.5	102.4	116.4	130.3
		26.20	0.328	8.33	173.84	215.90	138.00	306.00	100.0	1841	2678	3176	3679	4181	4684	16.1	23.4	25.6	27.0	27.9	28.1	19.9	41.5	49.3	57.1	64.9	72.7
		29.70	0.375	9.52	171.45	215.90	138.00	306.00	100.0	2089	3038	3608	4181	4751	5320	22.7	33.0	35.4	36.9	39.1	40.9	26.9	47.5	56.4	65.3	74.2	83.1
		33.70	0.430	10.92	168.66	215.90	138.00	306.00	100.0	2379	3461	4106	4755	5405	6054	31.1	45.2	50.1	54.3	57.5	59.9	35.1	54.5	64.7	74.9	85.1	95.3
		35.80	0.465	11.81	166.88	215.90	138.00	306.00	100.0	2560	3723	4422	5120	5818	6512	36.5	53.0	59.6	65.4	70.3	74.5	40.3	58.9	69.9	80.9	92.0	103.0
7-3/4	196.85	39.00	0.500	12.7	168.28	219.85	138.00	306.00	100.0	2786	4052	4813	5574	6334	7090	40.6	59.0	66.7	73.8	80.2	85.7	44.3	62.3	74.0	85.6	97.3	109.0
		28.00	0.304	7.72	200.46	244.48	142.00	322.00	100.0	1945	2829	3358	3888	4417	4951	10.2	14.9	15.2	15.2	15.2	15.2	13.0	34.0	40.4	46.7	53.2	59.6
		32.00	0.352	8.94	198.02	244.48	142.00	322.00	100.0	2239	3256	3866	4475	5089	5698	14.5	21.0	22.7	23.6	23.9	23.9	17.4	39.4	46.7	54.2	61.6	68.9
		36.00	0.400	10.16	195.58	244.48	142.00	322.00	100.0	2529	3679	4368	5058	5747	6437	19.4	28.3	30.1	32.3	34.0	35.1	23.8	44.7	53.2	61.6	69.9	78.3
		40.00	0.450	11.43	193.04	244.48	142.00	322.00	100.0	2829	4115	4884	5654	6428	7197	26.2	38.1	41.5	44.1	45.8	47.1	30.3	50.3	59.8	69.2	78.7	88.1
		44.00	0.500	12.7	190.50	244.48	142.00	322.00	100.0	3122	4542	5391	6245	7095	7949	32.9	47.9	53.4	58.1	61.9	64.9	37.0	56.0	66.5	76.9	87.4	97.9
8-5/8	219.08	49.00	0																								