TABLE 2.2
CASING SHORT-THREAD DIMENSIONS
All dimensions in inches, except as indicated. See Fig. 2.1.
See Appendix B for metric tables.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Size: Outside Diameter D	Major Diameter	Nominal Weight: Threads and Coupling, lb. per ft.	No. of Threads Per Inch	Length: End of Pipe to Hand-Tight Plane L_1	Length: Effective Threads L_2	Total Length: End of Pipe to Vanish Point L_4	Pitch Diameter at Hand-Tight Plane E_1	End of Pipe to Center of Coupling, Power-Tight Make-Up J	Length: Face of Coupling to Hand-Tight Plane M	Diameter of Coupling Recess Q	Depth of Coupling Recess q	Hand-Tight Standoff, Thread Turns A	Minimum Length, Full Crest Threads, From End of Pipe Lc^*
4½	4.500	9.50	8	0.921	1.715	2.000	4.40337	1.125	0.704	$4^{19}/_{32}$	½	3	0.875
4½	4.500	Others	8	1.546	2.340	2.625	4.40337	0.500	0.704	$4^{19}/_{32}$	½	3	1.500
5	5.000	11.50	8	1.421	2.215	2.500	4.90337	0.750	0.704	$5^{3}/_{32}$	½	3	1.375
5	5.000	Others	8	1.671	2.465	2.750	4.90337	0.500	0.704	$5^{3}/_{32}$	½	3	1.625
5½	5.500	All	8	1.796	2.590	2.875	5.40337	0.500	0.704	$5^{19}/_{32}$	½	3	1.750
6⅝	6.625	All	8	2.046	2.840	3.125	6.52837	0.500	0.704	$6^{23}/_{32}$	½	3	2.000
7	7.000	17.00	8	1.296	2.090	2.375	6.90337	1.250	0.704	$7^{3}/_{32}$	½	3	1.250
7	7.000	Others	8	2.046	2.840	3.125	6.90337	0.500	0.704	$7^{3}/_{32}$	½	3	2.000
7⅝	7.625	All	8	2.104	2.965	3.250	7.52418	0.500	0.709	$7^{23}/_{32}$	½	3½	2.125
8⅝	8.625	24.00	8	1.854	2.715	3.000	8.52418	0.875	0.709	$8^{23}/_{32}$	½	3½	1.875
8⅝	8.625	Others	8	2.229	3.090	3.375	8.52418	0.500	0.709	$8^{23}/_{32}$	½	3½	2.250
9⅝	9.625	All	8	2.229	3.090	3.375	9.52418	0.500	0.709	$9^{23}/_{32}$	½	3½	2.250(1)
9⅝	9.625	All	8	2.162	3.090	3.375	9.51999	0.500	0.713	$9^{23}/_{32}$	½	4	2.250(2)
10¾	10.750	32.75	8	1.604	2.465	2.750	10.64918	1.250	0.709	$10^{27}/_{32}$	½	3½	1.625(1)
10¾	10.750	Others	8	2.354	3.215	3.500	10.64918	0.500	0.709	$10^{27}/_{32}$	½	3½	2.375(1)
10¾	10.750	Other	8	2.287	3.215	3.500	10.64499	0.500	0.713	$10^{27}/_{32}$	½	4	2.375(2)
11¾	11.750	All	8	2.354	3.215	3.500	11.64918	0.500	0.709	$11^{27}/_{32}$	½	3½	2.375(1)
11¾	11.750	All	8	2.287	3.215	3.500	11.64499	0.500	0.713	$11^{27}/_{32}$	½	4	2.375(2)
13⅜	13.375	All	8	2.354	3.215	3.500	13.27418	0.500	0.709	$13^{15}/_{32}$	½	3½	2.375(1)
13⅜	13.375	All	8	2.287	3.215	3.500	13.26999	0.500	0.713	$13^{15}/_{32}$	½	4	2.375(2)
16	16.000	All	8	2.854	3.715	4.000	15.89918	0.500	0.709	$16^{3}/_{32}$	½	3½	2.875
18⅝	18.625	87.50	8	2.854	3.715	4.000	18.52418	0.500	0.709	$18^{23}/_{32}$	½	3½	2.875
20	20.000	All	8	2.854	3.715	4.000	19.89918	0.500	0.709	$20^{3}/_{32}$	½	3½	2.875(3)
20	20.000	All	8	2.787	3.715	4.000	19.89499	0.500	0.713	$20^{3}/_{32}$	½	4	2.875(4)

Included taper on diameter, all sizes, 0.0625 in. per in.

*Lc = L_4 - 1.125 in. for 8 Round Thread Casing.

NOTE: *Hand tight Standoff "A" is the basic allowance for basic power makeup of the joint as shown in Fig. 2.1. It determines the coupling thread diameter size and does not apply to the pipe thread.*

(1) Applicable to coupling grades lower than P-110.
(2) Applicable to coupling grades P-110 and higher.
(3) Applicable to coupling grades lower than J-55 and K-55.
(4) Applicable to coupling grades J-55 and K-55 and higher.

TABLE 2.3
CASING LONG-THREAD DIMENSIONS
All dimensions in inches, except as indicated. See Fig. 2.1.
See Appendix B for metric tables.

1	2	3	4	5	6	7	8	9	10	11	12	13
Size: Outside Diameter D	Major Diameter D_4	No. of Threads Per Inch	Length: End of Pipe to Hand-Tight Plane L_1	Length: Effective Threads L_2	Total Length: End of Pipe to Vanish Point L_4	Pitch Diameter at Hand-Tight Plane E_1	End of Pipe to Center of Coupling, Power-Tight Make-Up J	Length: Face of Coupling to Hand-Tight Plane M	Diameter of Coupling Recess Q	Depth of Coupling Recess q	Hand-Tight Standoff, Thread Turns A	Minimum Length, Full Crest Threads, From End of Pipe Lc^*
4½	4.500	8	1.921	2.715	3.000	4.40337	0.500	0.704	$4^{19}/_{32}$	½	3	1.875
5	5.000	8	2.296	3.090	3.375	4.90337	0.500	0.704	$5^{3}/_{32}$	½	3	2.250
5½	5.500	8	2.421	3.215	3.500	5.40337	0.500	0.704	$5^{19}/_{32}$	½	3	2.375
6⅝	6.625	8	2.796	3.590	3.875	6.52837	0.500	0.704	$6^{23}/_{32}$	½	3	2.750
7	7.000	8	2.921	3.715	4.000	6.90337	0.500	0.704	$7^{3}/_{32}$	½	3	2.875
7⅝	7.625	8	2.979	3.840	4.125	7.52418	0.500	0.709	$7^{23}/_{32}$	½	3½	3.000
8⅝	8.625	8	3.354	4.215	4.500	8.52418	0.500	0.709	$8^{23}/_{32}$	½	3½	3.375
9⅝	9.625	8	3.604	4.465	4.750	9.52418	0.500	0.709	$9^{23}/_{32}$	½	3½	3.625(1)
9⅝	9.625	8	3.537	4.465	4.750	9.51999	0.500	0.713	$9^{23}/_{32}$	½	4	3.625(2)
20	20.00	8	4.104	4.965	5.250	19.89918	0.500	0.709	$20^{3}/_{32}$	½	3½	4.125(3)
20	20.00	8	4.037	4.965	5.250	19.89499	0.500	0.713	$20^{3}/_{32}$	½	4	4.125(4)

Included taper on diameter, all sizes, 0.0625 in. per in.

*Lc = L - 1.125 in for 8 Round Thread Casing.

NOTE: *Hand tight Standoff "A" is the basic allowance for basic power makeup of the joint as shown in Fig. 2.1. It determines the coupling thread diameter size and does not apply to the pipe thread.*

(1) Applicable to coupling grades lower than P-110.
(2) Applicable to coupling grades P-110 and higher.
(3) Applicable to coupling grades lower than J-55 and K-55
(4) Applicable to coupling grades J-55 and K-55 and higher.

TABLE 2.4
BUTTRESS CASING THREAD DIMENSIONS

All dimensions in inches, except as indicated. See Fig. 2.2. See Appendix B for metric tables.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Size: Outside Diameter D	Major Diameter D_4	No. of Threads Per Inch	Length: Imperfect Threads g	Length: Perfect Threads L_7	Total Length: End of Pipe to Vanish Point [1] L_4	Pitch Diameter[1] E_7	End of Pipe to Center of Coupling, Power-Tight Make-Up J	End of Pipe to Center of Coupling, Hand-Tight Make-Up J_h	Length: Face of Coupling to Plane E_7	Length: End of Pipe to Triangle Stamp A_1	Hand-Tight Standoff, Thread Turns A	Diameter of Counterbore in Coupling Q	Minimum Length, Full Crest Threads From End of Pipe Lc*
4½	4.516	5	1.984	1.6535	3.6375	4.454	0.500	0.900	1.884	3 1/16	½	4.640	1.2535
5	5.016	5	1.984	1.7785	3.7625	4.954	0.500	1.000	1.784	4 1/16	1	5.140	1.3785
5½	5.516	5	1.984	1.8410	3.8250	5.454	0.500	1.000	1.784	4⅛	1	5.640	1.4410
6⅝	6.641	5	1.984	2.0285	4.0125	6.579	0.500	1.000	1.784	4 5/16	1	6.765	1.6285
7	7.016	5	1.984	2.2160	4.2000	6.954	0.500	1.000	1.784	4½	1	7.140	1.8160
7⅝	7.641	5	1.984	2.4035	4.3875	7.579	0.500	1.000	1.784	4 11/16	1	7.765	2.0035
8⅝	8.641	5	1.984	2.5285	4.5125	8.579	0.500	1.000	1.784	4 13/16	1	8.765	2.1285
9⅝	9.641	5	1.984	2.5285	4.5125	9.579	0.500	1.000	1.784	4 13/16	1	9.765	2.1285
10¾	10.766	5	1.984	2.5285	4.5125	10.704	0.500	1.000	1.784	4 13/16	1	10.890	2.1285
11¾	11.766	5	1.984	2.5285	4.5125	11.704	0.500	1.000	1.784	4 13/16	1	11.890	2.1285
13⅜	13.391	5	1.984	2.5285	4.5125	13.329	0.500	1.000	1.784	4 13/16	1	13.515	2.1285
16	16.000	5	1.488	3.1245	4.6125	15.938	0.500	0.875	1.313	4 13/16	⅞	16.154	2.7245
18⅝	18.625	5	1.488	3.1245	4.6125	18.563	0.500	0.875	1.313	4 13/16	⅞	18.779	2.7245
20	20.000	5	1.488	3.1245	4.6125	19.938	0.500	0.875	1.313	4 13/16	⅞	20.154	2.7245

Included taper on diameter: Sizes 13⅜ in. and smaller — 0.0625 in. per in.
Sizes 16 in. and larger — 0.0833 in. per in.

NOTES: 1. *At plane of perfect thread length L_7, the basic major diameter of the pipe thread and plug gage thread is 0.016 in. greater than nominal pipe diameter D for sizes 13⅜ in. and smaller, and is equal to the nominal pipe diameter for sizes 16 in. and larger.*

2. *Hand tight Standoff "A" is the basic allowance for basic power makeup of the joint as shown in Fig. 2.2. It determines the coupling thread diameter size and does not apply to the pipe thread. The triangle stamp located on the pipe at the length A_1 from the end of the pipe facilitates obtaining the power makeup provided for by Hand tight Standoff "A".*

[1]Pitch diameter on buttress casing thread is defined as being midway between the major and minor diameters.
*$L_Q = L_7 - 0.400$ in. for buttress thread casing. Within the L_Q length, as many as 2 threads showing the original outside surface of the pipe on their crests for a circumferential distance not exceeding 25% of the pipe circumference is permissible. The remaining threads in the L_Q thread length shall be full crested threads.

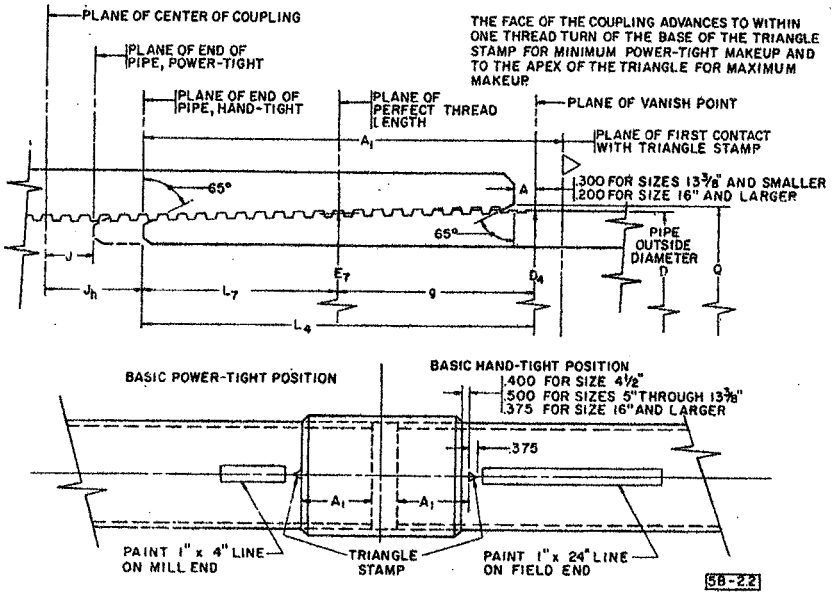

FIG. 2.2
BASIC DIMENSIONS OF BUTTRESS CASING THREADS
HAND-TIGHT MAKE-UP

See Appendix B for metric dimensions.
See Fig. 2.5 for detail of thread form and dimensions.
See Fig. 2.1 for line-pipe threads and casing and tubing round threads.
See Sect. 7 for extreme-line casing threads.

TABLE 2.5

NON-UPSET TUBING THREAD DIMENSIONS

All dimensions in inches, except as indicated. See Fig. 2.1.
See Appendix B for metric tables.

1	2	3	4	5	6	7	8	9	10	11	12	13
Size: Outside Diameter D	Major Diameter D_4	No. of Threads Per Inch	Length: End of Pipe to Hand-Tight Plane L_1	Length: Effective Threads L_2	Total Length: End of Pipe to Vanish Point L_4	Pitch Diameter at Hand-Tight Plane E_1	End of Pipe to Center of Coupling, Power-Tight Make-Up J	Length: Face of Coupling to Hand-Tight Plane M	Diameter of Coupling Recess Q	Depth of Coupling Recess q	Hand-Tight Standoff, Thread Turns A	Minimum Length, Full Crest Threads, From End of Pipe Lc*
1.050	1.050	10	0.448	0.925	1.094	0.98826	0.500	0.446	1.113	5/16	2	0.300
1.315	1.315	10	0.479	0.956	1.125	1.25328	0.500	0.446	1.378	5/16	2	0.300
1.660	1.660	10	0.604	1.081	1.250	1.59826	0.500	0.446	1.723	5/16	2	0.350
1.900	1.900	10	0.729	1.206	1.375	1.83826	0.500	0.446	1.963	5/16	2	0.475
2 3/8	2.375	10	0.979	1.456	1.625	2.31326	0.500	0.446	2.438	5/16	2	0.725
2 7/8	2.875	10	1.417	1.894	2.063	2.81326	0.500	0.446	2.938	5/16	2	1.163
3 1/2	3.500	10	1.667	2.144	2.313	3.43826	0.500	0.446	3.563	5/16	2	1.413
4	4.000	8	1.591	2.140	2.375	3.91395	0.500	0.534	4.063	3/8	2	1.375
4 1/2	4.500	8	1.779	2.328	2.563	4.41395	0.500	0.534	4.563	3/8	2	1.563

Included taper on diameter, all sizes, 0.0625 in. per in.

*Lc = L_4 - 0.900 in. for 10 thread tubing, but not less than 0.300 in.
Lc = L_4 - 1.000 in. for 8 thread tubing.

NOTE: *Hand tight Standoff "A" is the basic allowance for basic power makeup of the joint as shown in Fig. 2.1. It determines the coupling thread diameter size and does not apply to the pipe thread.*

TABLE 2.6

EXTERNAL-UPSET TUBING THREAD DIMENSIONS

All dimensions in inches, except as indicated. See Fig. 2.1.
See Appendix B for metric tables.

1	2	3	4	5	6	7	8	9	10	11	12	13
Size: Outside Diameter D	Major Diameter D_4	No. of Threads Per Inch	Length: End of Pipe to Hand-Tight Plane L_1	Length Effective Threads L_2	Total Length: End of Pipe to Vanish Point L_4	Pitch Diameter at Hand-Tight Plane E_1	End of Pipe to Center of Coupling, Power-Tight Make-Up J	Length: Face of Coupling to Hand-Tight Plane M	Diameter of Coupling Recess Q	Depth of Coupling Recess q	Hand-Tight Standoff, Thread Turns A	Minimum Length, Full Crest Threads, From End of Pipe Lc*
1.050	1.315	10	0.479	0.956	1.125	1.25328	0.500	0.446	1.378	5/16	2	0.300
1.315	1.469	10	0.604	1.081	1.250	1.40706	0.500	0.446	1.531	5/16	2	0.350
1.660	1.812	10	0.729	1.206	1.375	1.75079	0.500	0.446	1.875	5/16	2	0.475
1.900	2.094	10	0.792	1.269	1.438	2.03206	0.500	0.446	2.156	5/16	2	0.538
2 3/8	2.594	8	1.154	1.703	1.938	2.50775	0.500	0.534	2.656	3/8	2	0.938
2 7/8	3.094	8	1.341	1.890	2.125	3.00775	0.500	0.534	3.156	3/8	2	1.125
3 1/2	3.750	8	1.591	2.140	2.375	3.66395	0.500	0.534	3.813	3/8	2	1.375
4	4.250	8	1.716	2.265	2.500	4.16395	0.500	0.534	4.313	3/8	2	1.500
4 1/2	4.750	8	1.841	2.390	2.625	4.66395	0.500	0.534	4.813	3/8	2	1.625

Included taper on diameter, all sizes, 0.0625 in. per in.

*Lc = L_4 - 0.900 in. for 10 thread tubing, but not less than 0.300 in.
*Lc = L_4 - 1.000 in. for 8 thread tubing.

NOTE: *Hand tight Standoff "A" is the basic allowance for basic power makeup of the joint as shown in Fig. 2.1. It determines the coupling thread diameter size and does not apply to the pipe thread.*

TABLE 2.6a
EXTERNAL-UPSET TUBING LONG THREAD DIMENSIONS FOR REINFORCED THERMOSETTING RESIN TUBING

All dimensions in inches, except as indicated. See Fig. 2.1.
See Appendix B for metric tables.

1	2	3	4	5	6	7	8	9	10	11	12	13
Size Outside Diameter D	Major Diameter D_4	No. of Threads Per Inch	Length: End of Pipe to Hand-Tight Plane L_1	Length: Effective Threads L_2	Total Length: End of Pipe to Vanish Point L_4	Pitch Diameter at Hand-Tight Plane E_1	End of Pipe to Center of Coupling, Power-Tight Make-up J	Length: Face of Coupling to Hand-Tight Plane M	Diameter of Coupling Recess Q	Depth of Coupling Recess q	Hand-Tight Standoff, Thread Turns A	Minimum Length, Full Crest Threads, From end of Pipe L_C*
1.050	1.315	10	0.979	1.456	1.625	1.25328	0.500	0.446	1.378	1/16	2	0.725
1.315	1.469	10	1.104	1.581	1.750	1.40706	0.500	0.446	1.531	1/16	2	0.850
1.660	1.812	10	1.229	1.706	1.875	1.75079	0.500	0.446	1.875	5/16	2	0.975
1.900	2.094	10	1.417	1.894	2.063	2.03206	0.500	0.446	2.156	1/8	2	1.163
2⅜	2.594	8	1.779	2.328	2.563	2.50775	0.500	0.534	2.656	⅜	2	1.563
2⅞	3.094	8	2.091	2.640	2.875	3.00775	0.500	0.534	3.156	⅜	2	1.875
3½	3.750	8	2.341	2.890	3.125	3.66395	0.500	0.534	3.813	⅜	2	2.125
4	4.250	8	2.591	3.140	3.375	4.16395	0.500	0.534	4.313	⅜	2	2.375
4½	4.750	8	2.716	3.265	3.500	4.66395	0.500	0.534	4.813	⅜	2	2.500

Included taper on diameter, all sizes, 0.0625 in. per in.

*$L_C = L_4$ — 0.900 in. for 10 thread tubing.
$L_C = L_4$ — 1.000 in. for 8 thread tubing.

NOTE: *Hand tight Standoff "A" is the basic allowance for basic power makeup of the joint as shown in Fig. 2.1. It determines the coupling thread diameter size and does not apply to the pipe thread.*

TABLE 2.7
INTEGRAL-JOINT TUBING THREAD DIMENSIONS

All dimensions in inches, except as indicated. See Fig. 2.1.
See Appendix B for metric tables.

1	2	3	4	5	6	7	8	9	10	11	12	13
Size: Outside Diameter D	Major Diameter D_4	No. of Threads Per Inch	Length: End of Pipe to Hand-Tight Plane L_1	Length: Effective Threads L_2	Total Length: End of Pipe to Vanish Point L_4	Pitch Diameter at Hand-Tight Plane E_1	End of Pipe to Thread Run-out in Box Power-Tight Make-Up J	Length: Face of Box to Hand-Tight Plane M	Diameter of Box Recess Q	Depth of Box Recess q	Hand-Tight Standoff, Thread Turns A	Minimum Length, Full Crest Threads, From End of Pipe L_C*
1.315	1.315	10	.479	.956	1.125	1.25328	0.500	0.446	1.378	5/32	2	0.225
1.660	1.660	10	.604	1.081	1.250	1.59826	0.500	0.446	1.723	1/8	2	0.350
1.900	1.900	10	.729	1.206	1.375	1.83826	0.500	0.446	1.963	1/8	2	0.475
2.063	2.094	10	.792	1.269	1.438	2.03206	0.500	0.446	2.156	1/8	2	0.538

Included taper on diameter, all sizes, 0.0625 in. per in.

*$L_C = L_4$ - 0.900 in. for 10 thread tubing.

NOTE: *Hand tight Standoff "A" is the basic allowance for basic power makeup of the joint as shown in Fig. 2.1. It determines the coupling thread diameter size and does not apply to the pipe thread.*

TABLE 2.8

LINE-PIPE THREAD HEIGHT DIMENSIONS

All dimensions in inches. See Fig. 2.3
See Appendix B for metric tables.

1	2	3	4	5	6
Thread Element	27 Threads Per Inch p=0.0370	18 Threads Per Inch p=0.0556	14 Threads Per Inch p=0.0714	11½ Threads Per Inch p=0.0870	8 Threads Per Inch p=0.1250
H= 0.866p	0.0321	0.0481	0.0619	0.0753	0.1082
h_s=h_n= 0.760p	0.0281	0.0422	0.0543	0.0661	0.0950
f_{rs}=f_{rn}= 0.033p	0.0012	0.0018	0.0024	0.0029	0.0041
f_{cs}=f_{cn}= 0.073p	0.0027	0.0041	0.0052	0.0063	0.0091

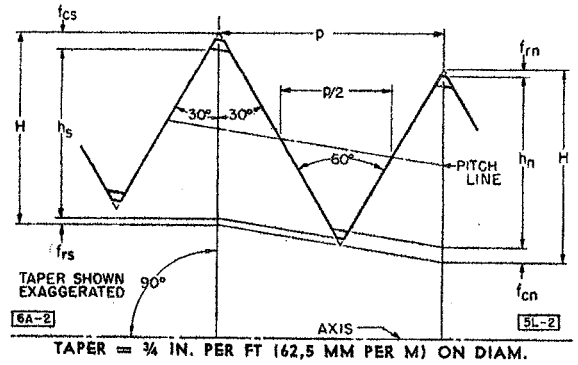

FIG. 2.3
LINE-PIPE THREAD FORM
See Table 2.8 for dimensions.

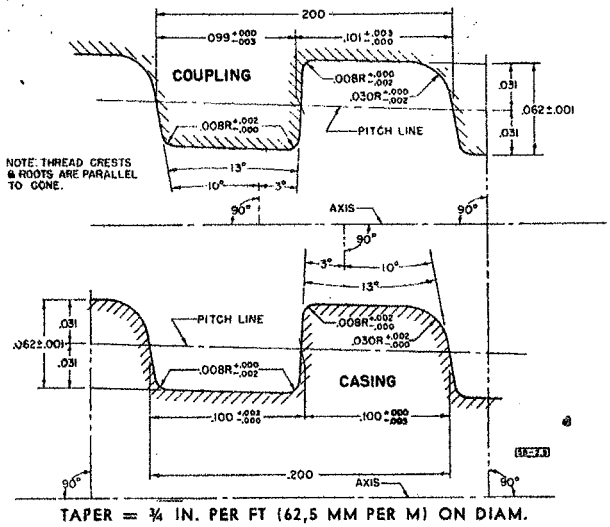

FIG. 2.5
BUTTRESS CASING THREAD FORM
AND DIMENSIONS
For casing sizes 4½ through 13⅜ in.
See Appendix B for metric dimensions.

TABLE 2.9

CASING AND TUBING ROUND THREAD HEIGHT DIMENSIONS

All dimensions in inches. See Fig. 2.4.
See Appendix B for metric tables.

1	2	3
Thread Element	10 Threads per Inch, p = 0.1000	8 Threads per Inch, p = 0.1250
H =0.866p	0.08660	0.10825
h_s =h_n =0.626p—0.007	0.05560	0.07125
s_{rs}=s_{rn}=0.120p+0.002	0.01400	0.01700
s_{cs}=s_{cn}=0.120p+0.005	0.01700	0.02000

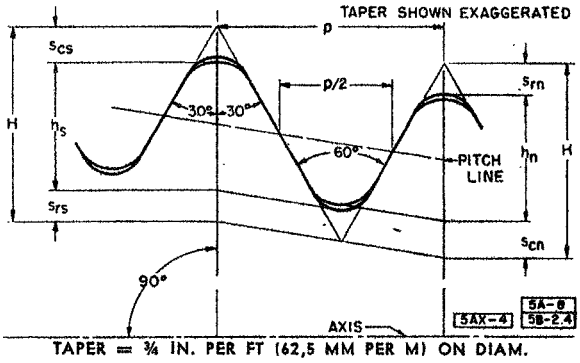

FIG. 2.4
CASING AND TUBING ROUND THREAD FORM
See Table 2.9 for dimensions.

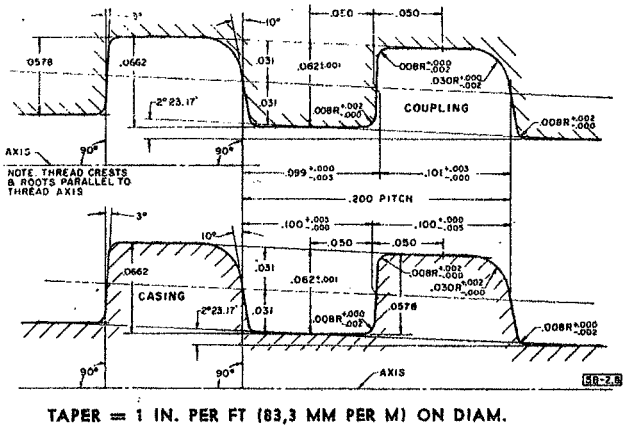

FIG. 2.6
BUTTRESS CASING THREAD FORM
AND DIMENSIONS
For sizes 16-in. and larger
See Appendix B for metric dimensions.