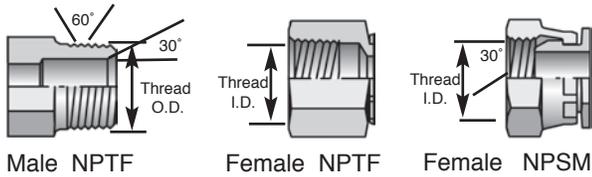


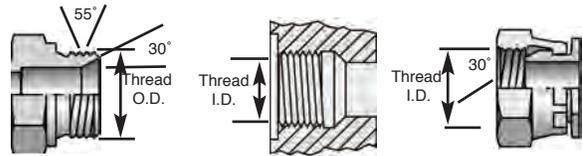
**National Pipe Thread (01,02,07)**


Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Piping O.D. In.	Tapping Drills FPT
1	1/16	27	0.264	0.312	0.313	C
2	1/8	27	0.359	0.406	0.406	Q
4	1/4	18	0.469	0.547	0.547	7/16"
6	3/8	18	0.594	0.672	0.672	37/64"
8	1/2	14	0.750	0.844	0.844	45/64"
12	3/4	14	0.953	1.062	1.062	29/32"
16	1	11 1/2	1.203	1.312	1.312	1 9/32"
20	1 1/4	11 1/2	1.266	1.672	1.672	1 31/64"
24	1 1/2	11 1/2	1.781	1.906	1.906	1 23/32"
32	2	11 1/2	2.250	2.375	2.375	2 3/16"
40	2 1/2	8	2.703	2.875	2.875	2 5/8"
48	3	8	3.325	3.500	3.500	3 1/4"
56	3 1/2	8	3.822	4.000	4.000	3 3/4"
64	4	8	4.318	4.500	4.500	4 1/4"
80	5	8	5.375	5.563	5.563	5 9/32"
96	6	8	6.430	6.625	6.625	6 11/32"

- FIP = Female Iron Pipe
- FPT = Female (internal) National Pipe
- IPS = Iron Pipe Size
- MIP = Male Iron Pipe
- NPS = American Standard Straight Pipe Thread
- NPSF = American National Standard Straight Pipe Thread
- MPT = Male Pipe Thread
- NPSM = National Pipe Mechanical
- NPT = National Pipe Taper
- NPTF = National Pipe Tapered for Fuels

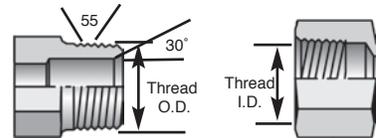
**Standard Pipe Dimensions**

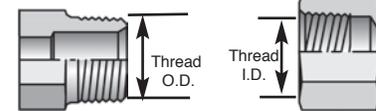

Dash Size	Nominal Size In.	Piping O.D. In. "A"	Schedule 10 I.D. In. "B"	Schedule 40 I.D. In. "B"	Schedule 80 I.D. In. "B"	Schedule 160 I.D. In. "B"
1	1/16	0.313		0.209		
2	1/8	0.406	0.307	0.269	0.215	
4	1/4	0.547	0.410	0.364	0.302	
6	3/8	0.672	0.545	0.493	0.423	
8	1/2	0.844	0.674	0.622	0.546	0.466
12	3/4	1.062	0.884	0.824	0.742	0.614
16	1	1.312	1.097	1.049	0.957	0.815
20	1 1/4	1.672	1.442	1.380	1.278	1.160
24	1 1/2	1.906	1.682	1.610	1.500	1.338
32	2	2.375	2.157	2.067	1.939	1.689
40	2 1/2	2.875	2.635	2.469	2.323	2.125
48	3	3.500	3.260	3.068	2.900	2.626
56	3 1/2	4.000				
64	4	4.500	4.260	4.026	3.826	3.438
80	5	5.563	5.295	5.047	4.813	4.313
96	6	6.625	6.357	6.065	5.761	5.189

**British Standard Pipe Thread (01,02,07)**


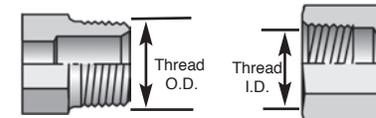
Male BSPP      Female BSPP Port      Female BSPP Swivel

Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Piping O.D. In.	Tapping Drills FPT
1	1/16	28		0.304		
2	1/8	28	0.344	0.375		
4	1/4	19	0.469	0.531		
6	3/8	19	0.594	0.656		
8	1/2	14	0.750	0.812		
10	5/8	14	0.812	0.906		
12	3/4	14	0.969	1.031		
16	1	11	1.219	1.344		
20	1 1/4	11	1.531	1.656		
24	1 1/2	11	1.781	1.875		
32	2	11	2.219	2.344		

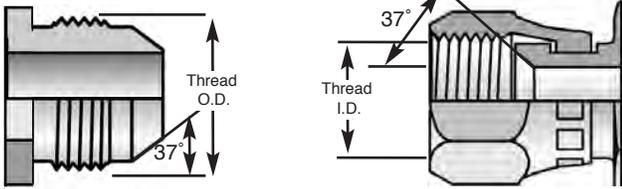
**British Standard Pipe Tapered**

 Male BSPT\*      Female BSPT\*  
 \* For BSPT Dimensions see above Chart.

**Grease Threads**


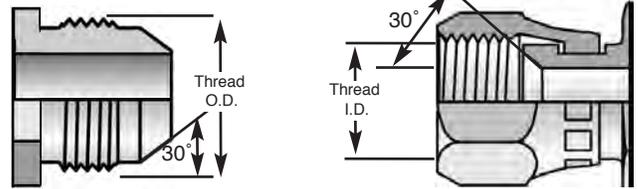
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.
2	1/8	27	---	0.406
8	1/2	27	0.515	---

**Japanese Tapered Pipe Thread**


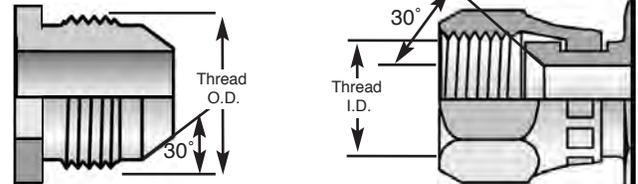
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.
2	1/8	28	0.3438	0.3750
4	1/4	19	0.4688	0.5313
6	3/8	19	0.5938	0.6563
8	1/2	14	0.7500	0.8125
12	3/4	14	0.9375	1.0313
16	1	11	1.1875	1.3125
20	1 1/4	11	1.5313	1.6563
24	1 1/2	11	1.7813	1.8750
32	2	11	2.2188	2.3438

**JIC 37° Flare (Joint Industry Conference)**

**Male JIC 37°**
**Female JIC 37°**

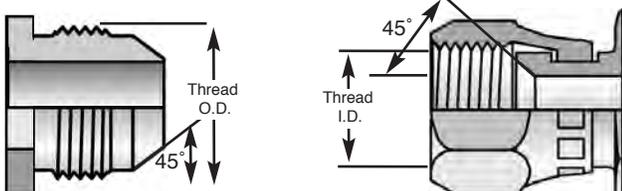
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Assembly Torque Ft. Lbs
2	1/8	5/16 - 24	0.266	0.313	7.1
3	3/16	3/8 - 24	0.328	0.375	13
4	1/4	7/16 - 20	0.391	0.438	22
5	5/16	1/2 - 20	0.453	0.500	23
6	3/8	9/16 - 18	0.500	0.563	29
7	7/16	11/16 - 16	0.625	0.687	29
8	1/2	3/4 - 16	0.687	0.750	52
10	5/8	7/8 - 14	0.812	0.875	85
12	3/4	1 1/16 - 12	0.969	1.062	135
14	7/8	1 3/16 - 12	1.109	1.187	175
16	1	1 5/16 - 12	1.234	1.312	200
20	1 1/4	1 5/8 - 12	1.547	1.625	250
24	1 1/2	1 7/8 - 12	1.797	1.875	305
32	2	2 1/2 - 12	2.422	2.500	375
40	2 1/2	3 - 12	2.910	2.998	---
48	3	3 1/2 - 12	3.416	3.491	---

**Japanese Industrial Standard 30° Flare**

**Male JIS 30°**
**Female JIS 30°**

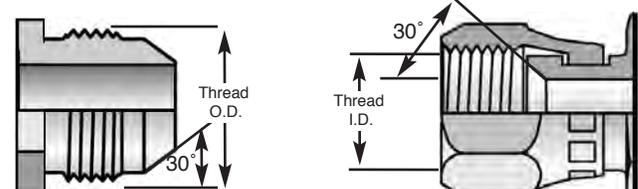
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Assembly Torque Ft. Lbs
2	1/8	28	0.344	0.375	
4	1/4	19	0.437	0.531	
6	3/8	19	0.593	0.656	
8	1/2	14	0.750	0.812	
10	5/8	14	0.812	0.906	
12	3/4	14	0.937	1.031	
16	1	11	1.187	1.312	
20	1 1/2	11	1.531	1.656	
24	1 1/2	11	1.781	1.875	
32	2	11	2.219	2.344	

**Komatsu 30° Flare**

**Male Komatsu 30°**
**Female Komatsu 30°**

Dash Size	Nominal Size In.	Metric Thread Size	Female Thread I.D. mm	Male Thread O.D. mm	Female Thread I.D. In.	Male Thread O.D. In.
4	1/4	M14x1.5	12.5	14.0	0.49	0.55
6	3/8	M18x1.5	16.4	18.0	0.65	0.71
8	1/2	M22x1.5	20.4	22.0	0.81	0.87
10	5/8	M24x1.5	22.4	24.0	0.89	0.94
12	3/4	M30x1.5	28.4	30.0	1.11	1.18
16	1	M33x1.5	31.4	33.0	1.23	1.29
20	1-1/4	M36x1.5	34.4	36.0	1.34	1.41
24	1-1/2	M42x1.5	40.4	42.0	1.57	1.65

**SAE 45° Flare (Society of Automotive Engineers)**

**Male SAE 45°**
**Female SAE 45°**

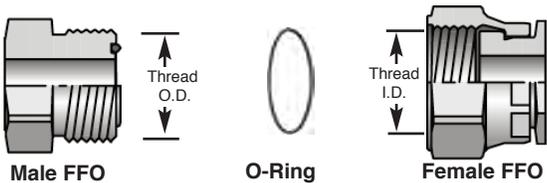
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Assembly Torque Ft. Lbs
2	1/8	5/16 - 24	0.266	0.313	--
3	3/16	3/8 - 24	0.328	0.375	--
4	1/4	7/16 - 20	0.391	0.438	10
5	5/16	1/2 - 20	0.453	0.500	13
6	3/8	5/8 - 18	0.500	0.563	17
7	7/16	11/16 - 16	0.625	0.687	--
8	1/2	3/4 - 16	0.687	0.750	34
10	5/8	7/8 - 14	0.812	0.875	50
12	3/4	1 1/16 - 12	0.969	1.062	70
14	7/8	1 1/4 - 12			--
16	1	1 5/16 - 12	1.234	1.312	--

**PTT 30° Flare (Parker Triple Thread)**

**Male PTT 30°**
**Female PTT 30°**

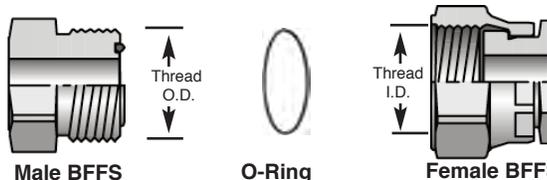
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.
16	1 5/16	14	1.250	1.312
20	1 5/8	14	1.563	1.625
24	1 7/8	14	1.813	1.875
32	2 1/2	12	2.250	2.500

**ORB ( O-Ring Boss Thread ) (05)**


Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Assembly Torque Ft. Lbs	O-Ring 90 Duro Nitrile
2	1/8	5/16 - 24	0.266	0.313	7.8	902
3	3/16	3/8 - 24	0.328	0.375	10	903
4	1/4	7/16 - 20	0.391	0.438	16	904
5	5/16	1/2 - 20	0.453	0.500	20	905
6	3/8	9/16 - 18	0.500	0.563	26	906
7	7/16	11/16 - 16	0.625	0.687	--	---
8	1/2	3/4 - 16	0.687	0.750	60	908
10	5/8	7/8 - 14	0.812	0.875	80	910
12	3/4	1 1/16 - 12	0.969	1.062	135	912
14	7/8	1 3/16 - 12	1.109	1.187	180	914
16	1	1 5/16 - 12	1.234	1.312	220	916
20	1 1/4	1 5/8 - 12	1.547	1.625	280	920
24	1 1/2	1 7/8 - 12	1.797	1.875	360	924
32	2	2 1/2 - 12	2.422	2.500	375	932

**FFO (Flat Face O-Ring)**


Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Assembly Torque Ft. Lbs	O-Ring 90 Duro Nitrile
4	1/4	9/16 - 18	0.500	0.563	26	-011
5	5/16	5/8 - 18			30	
6	3/8	11/16 - 16	0.625	0.688	30	-012
8	1/2	13/16 - 16	0.750	0.813	35	-014
10	5/8	1 - 14	0.938	1.000	100	-016
12	3/4	1 3/16 - 12	1.125	1.188	135	-018
14	7/8	1 5/16 - 12			175	
16	1	1 7/16 - 12	1.344	1.438	200	-021
20	1 1/4	1 11/16 - 12	1.594	1.688	250	-025
24	1 1/2	2 - 12	1.906	2.000	305	-029
32	2	2 1/2 - 12			375	

**BFFS (British Flat Face Seal) - Hiab (B5) - ISO 228-1**


Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Assembly Torque Ft. Lbs	O-Ring 90 Duro Nitrile
6	3/8	3/8-19	0.594	0.656	20	
8	1/2	1/2-14	0.750	0.813	40	
12	3/4	3/4-14	0.969	1.031	80	

**Code 61 Flange Connections**


Dash Size	Nominal Size In.	Flange Thickness Inch (A)	Flange O.D. Inch	Groove O.D. - I.D. (Approx.)	O-Ring 90 Duro Nitrile
-8	1/2	0.265	1.188	0.655 - 1.005	2-210
-10	5/8	0.265	1.338	0.800 - 1.125	2-212
-12	3/4	0.265	1.500	0.905 - 1.255	2-214
-16	1	0.315	1.750	1.215 - 1.565	2-219
-20	1 1/4	0.315	2.000	1.405 - 1.755	2-222
-24	1 1/2	0.315	2.375	1.775 - 2.125	2-225
-32	2	0.375	2.812	2.150 - 2.500	2-228
-40	2 1/2	0.375	3.312	2.655 - 3.005	2-232
-48	3	0.375	4.000	3.275 - 3.625	2-237
-56	3 1/2	0.442	4.500	3.865 - 4.115	2-241
-64	4	0.442	5.000	4.265 - 4.615	2-245
-80	5	0.442	6.000	5.265 - 5.615	2-253

**Code 62 Flange Connections**

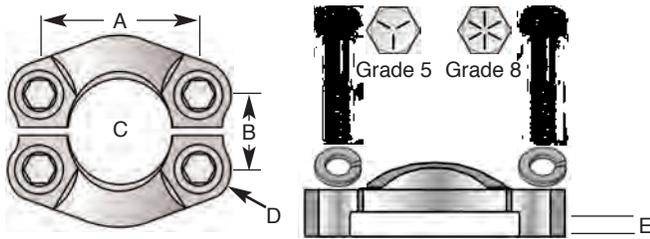
Dash Size	Nominal Size In.	Flange Thickness Inch (A)	Flange O.D. Inch	Groove O.D. - I.D. (Approx.)	O-Ring 90 Duro Nitrile
-8	1/2	0.305	1.250	0.655 - 1.005	2-210
-12	3/4	0.345	1.625	0.905 - 1.255	2-214
-16	1	0.375	1.875	1.215 - 1.565	2-219
-20	1 1/4	0.405	2.125	1.405 - 1.755	2-222
-24	1 1/2	0.495	2.500	1.775 - 2.125	2-225
-32	2	0.495	3.125	2.150 - 2.500	2-228

**Caterpillar XT5/6 Flange Connections**

Dash Size	Nominal Size In.	Flange Thickness Inch (A)	Flange O.D. Inch	Groove O.D. - I.D. (Approx.)	O-Ring 90 Duro Nitrile
-12	3/4	0.560	1.625	0.655 - 1.005	2-214
-16	1	0.560	1.875	0.905 - 1.255	2-219
-20	1 1/4	0.560	2.125	1.215 - 1.565	2-222
-24	1 1/2	0.560	2.500	1.405 - 1.755	2-225
-32	2	0.560	3.125	2.150 - 2.500	2-228

**Flange Connection Bolts**

Dash Size	Nominal Size In.	Code 61 Flange Grade 5	Code 62 Flange Grade 8	Caterpillar Flange Grade 8
-8	1/2	5/16-18 x 1.25	5/16 - 18 X 1.25	----
-10	5/8	5/16-18 x 1.25	----	----
-12	3/4	3/8-16 x 1.25	3/8 - 16 X 1.50	3/8-16 x 1.75
-16	1	3/8-16 x 1.25	7/16 - 14 X 1.75	7/16-14 x 1.75
-20	1 1/4	7/16-14 x 1.50	1/2 - 13 X 1.75	1/20-13 x 2.00
-24	1 1/2	1/2-13 x 1.50	5/8 - 11 X 2.25	5/8-11 x 2.50
-32	2	1/2-13 x 1.50	3/4 - 10 X 2.75	3/4-10 x 2.75
-40	2 1/2	1/2-13 x 1.75	----	----
-48	3	5/8-11 x 1.75	----	----
-56	3 1/2	5/8-11 x 2.00	----	----
-64	4	5/8-11 x 2.00	----	----
-80	5	5/8-11 x 2.25	----	----

**Code 61 Split Flanges**


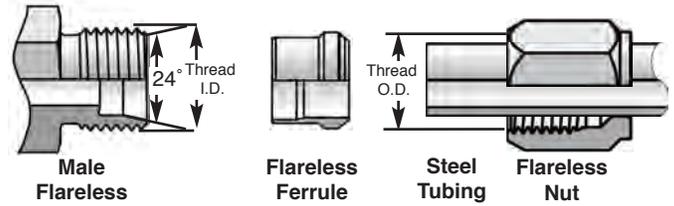
Dash Size	Nominal Size In.	Hole Spacing (A)	Hole Spacing (B)	Hole Size (C)	Hole Size (D)	Hole Depth (E)
-8	1/2	1.500	0.668	0.955	0.344	0.245
-10	5/8	1.668	0.781	1.125	0.310	0.245
-12	3/4	1.875	0.875	1.265	0.340	0.245
-16	1	2.062	1.031	1.515	0.340	0.295
-20	1 1/4	2.312	1.188	1.720	0.410	0.295
-24	1 1/2	2.750	1.406	2.000	0.470	0.295
-32	2	3.062	1.688	2.470	0.470	0.355
-40	2 1/2	3.500	2.000	2.950	0.500	0.355
-48	3	4.188	2.438	3.580	0.560	0.355
-56	3 1/2	4.750	2.750	4.030	0.620	0.422
-64	4	5.125	3.062	4.530	0.620	0.422
-80	5	6.000	3.625	5.530	0.620	0.422

**Code 62 Split Flanges**

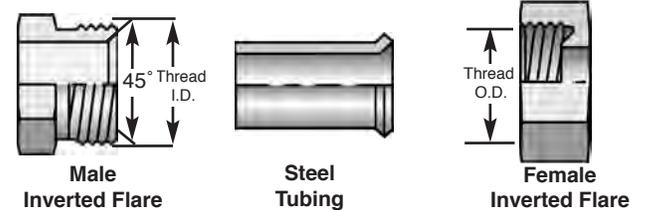
Dash Size	Nominal Size In.	Hole Spacing (A)	Hole Spacing (B)	Hole Size (C)	Hole Size (D)	Hole Depth (E)
-8	1/2	1.574	0.718	0.970	0.344	0.280
-12	3/4	2.000	0.937	1.280	0.406	0.325
-16	1	2.250	1.093	1.530	0.469	0.355
-20	1 1/4	2.625	1.250	1.750	0.531	0.385
-24	1 1/2	3.125	1.437	2.030	0.656	0.475
-32	2	3.812	1.750	2.660	0.781	0.475

**Caterpillar XT5 Split Flanges**

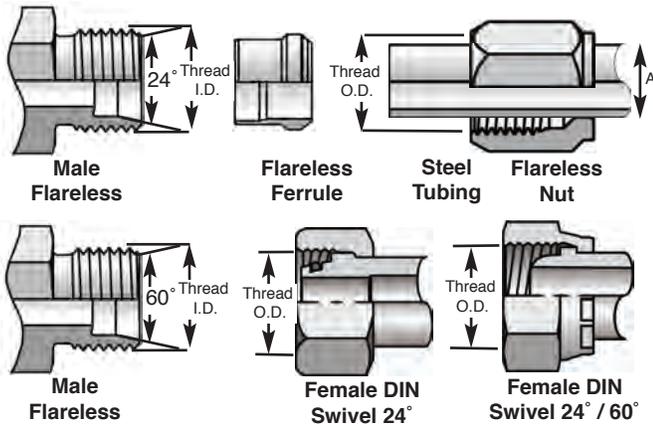
Dash Size	Nominal Size In.	Hole Spacing (A)	Hole Spacing (B)	Hole Size (C)	Hole Size (D)	Hole Depth (E)
-12	3/4	2.000	0.937	1.27	0.406	0.530
-16	1	2.250	1.093	1.55	0.469	0.530
-20	1 1/4	2.625	1.250	1.70	0.531	0.530
-24	1 1/2	3.125	1.437	2.08	0.656	0.530
-32	2	3.812	1.750	2.64	0.827	0.530

**Flareless Tube Fittings (J514)**


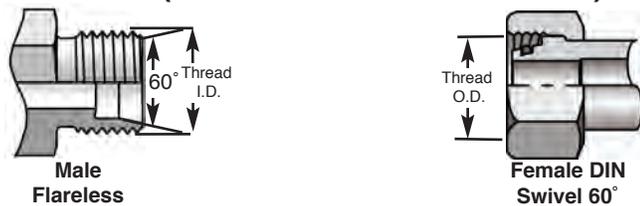
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.	Turns Until Sealed
2	1/8	5/16 - 24	0.265	0.312	1.75
3	3/16	3/8 - 24	0.328	0.375	1.75
4	1/4	7/16 - 20	0.390	0.438	1.75
5	5/16	1/2 - 20	0.453	0.500	1.75
6	3/8	9/16 - 18	0.500	0.563	1.75
8	1/2	3/4 - 16	0.687	0.750	1.75
10	5/8	7/8 - 14	0.812	0.875	1.75
12	3/4	1 1/16 - 12	0.968	1.062	1.75
14	7/8	1 3/16 - 12	1.109	1.187	1.75
16	1	1 5/16 - 12	1.234	1.312	1.75
20	1 1/4	1 5/8 - 12	1.546	1.625	1.75
24	1 1/2	1 7/8 - 12	1.796	1.875	1.75
32	2	2 1/2 - 12	2.421	2.500	1.75

**Inverted Flare**


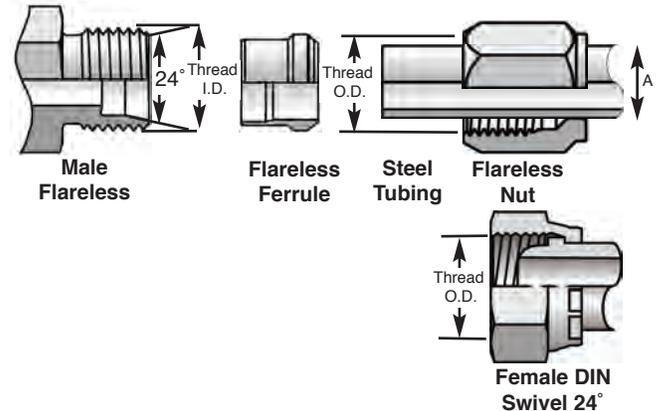
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.
2	1/8	5/16 - 28	0.280	0.320
3	3/16	3/8 - 24	0.340	0.380
4	1/4	7/16 - 24	0.400	0.440
5	5/16	1/2 - 20	0.450	0.500
6	3/8	5/8 - 18	0.570	0.630
7	7/16	11/16 - 18	0.630	0.690
8	1/2	3/4 - 16	0.700	0.750
10	5/8	7/8 - 18	0.820	0.880
12	3/4	1 1/16 - 16	1.000	1.060

**DIN 24° ( Deutsche Industrial Norme )**


Dash Size	Male O.D. ( B ) mm	Female I.D. ( C ) mm	Series 24°/60°	LL Tube O.D. ( A ) mm	L Tube O.D. ( A ) mm	H Tube O.D. ( A ) mm
M8 x 1.0	8.0		LL	4		
M10 x 1.0	10.0		LL	5		
M10 x 1.0	10.0		LL	6		
M12 x 1.0	12.0	10.5	LL	8		
M14 x 1.0	14.0	12.5	LL	10		
M16 x 1.0	16.0	14.5	LL	12		
M12 x 1.5	12.0	10.5	L/H		6	--
M14 x 1.5	14.0	12.5	L/H		8	6
M16 x 1.5	16.0	14.5	L/H		10	8
M18 x 1.5	18.0	16.5	L/H		12	10
M20 x 1.5	20.0	18.5	H		--	12
M22 x 1.5	22.0	20.5	L/H		15	14
M24 x 1.5	24.0	22.5	L/H		--	16
M26 x 1.5	26.0	24.5	L		18	--
M30 x 2.0	30.0	28.0	L/H		22	20
M36 x 2.0	36.0	34.0	L/H		28	25
M42 x 2.0	42.0	40.0	H		--	30
M45 x 2.0	45.0	43.0	L/H		35	--
M52 x 2.0	52.0	50.0	L/H		42	38

**DIN 60° ( Deutsche Industrial Norme )**


Dash Size	Male O.D. ( B ) mm	Female I.D. ( C ) mm	Series 60°	Tube O.D. ( A ) mm	Torque Ft. Lbs. Min.	Torque Ft. Lbs. MAX.
M14 x 1.5	14.0	12.5		8	15	26
M16 x 1.5	16.0	14.5		10	18	30
M18 x 1.5	18.0	16.5		12	22	33
M22 x 1.5	22.0	20.5		15	30	52
M26 x 1.5	26.0	24.5		18	44	74
M30 x 1.5	30.0	28.5		22	59	59
M38 x 1.5	38.0	36.5		28	74	111
M45 x 1.5	45.0	43.5		35	133	184
M52 x 1.5	52.0	50.5		42	148	221
M65 x 2.0	65.0	63.0				

**GAZ Thread 24° ( French )**


Dash Size	Male O.D. ( B ) mm	Female I.D. ( C ) mm	Tube O.D. ( A ) mm
M20X1.5	20.0	18.5	13.25
M24X1.5	24.0	22.5	16.75
M30X1.5	30.0	28.5	21.25
M36X1.5	36.0	34.5	26.75
M45X1.5	45.0	43.5	33.50
M52X1.5	52.0	50.5	42.25

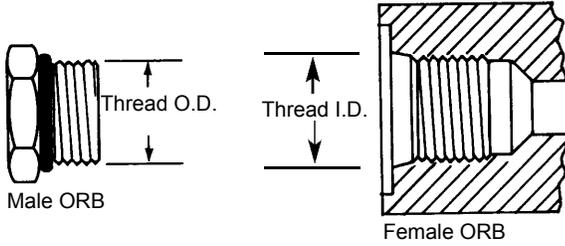
**French Metric**

Dash Size	Male O.D. ( B ) mm	Female I.D. ( C ) mm	Series 24°	Tube O.D. ( A ) mm
M12 x 1.0	12.0	11.0		6
M14 x 1.5	14.0	12.5		8
M16 x 1.5	16.0	14.5		10
M18 x 1.5	18.0	16.5		12
M20 x 1.5	20.0	18.5		14
M22 x 1.5	22.0	20.5		15
M24 x 1.5	24.0	22.5		16
M27 x 1.5	27.0	25.5		18
M30 x 1.5	30.0	28.5		22
M33 x 1.5	33.0	31.5		25
M36 x 1.5	36.0	34.5		28
M39 x 1.5	39.0	37.5		30
M42 x 1.5	42.0	40.5		32
M45 x 1.5	45.0	43.5		35
M48 x 1.5	48.0	46.5		38
M52 x 1.5	52.0	50.5		40
M54 x 2.0	54.0	51.9		45

**Metric Nut Markings**

12-LL	12-L	12-S
Extra Light Sehr Leicht	Light Leicht	Heavy Schwer
4-12mm = 100 bar	6-8mm = 315 bar 22-42mm = 160 bar	6-4mm = 630 bar 16-30mm = 400 bar 38mm = 315 bar

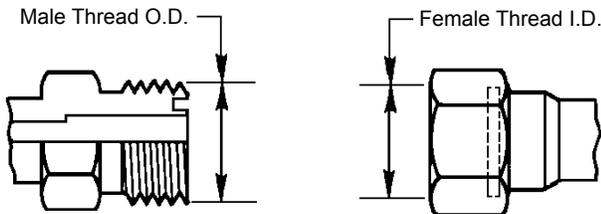
O-Ring Boss Thread



Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.
2	1/8	5/16 - 24	0.256	0.312
3	3/16	3/8 - 24	0.328	0.375
4	1/4	7/16 - 20	0.391	0.438
5	5/16	1/2 - 20	0.453	0.500
6	3/8	9/16 - 18	0.500	0.563
7	7/16	11/16 - 16	0.625	0.687
8	1/2	3/4 - 16	0.687	0.750
10	5/8	7/8 - 14	0.812	0.875
12	3/4	1 1/16 - 12	0.969	1.062
14	7/8	1 3/16 - 12	1.109	1.187
16	1	1 5/16 - 12	1.234	1.312
20	1 1/4	1 5/8 - 12	1.547	1.625
24	1 1/2	1 7/8 - 12	1.797	1.875
32	2	2 1/2 - 12	2.422	2.500
40	2 1/2	3 - 12	2.910	2.998
48	3	3 1/2 - 12	3.416	3.491

( See Page# 246 for Profile Chart )  
For O-Rings See Page #

Flat Face O-Ring

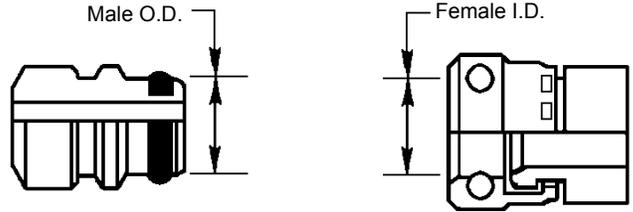


( See Page # 202 For Profile Charts )

Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.
4	1/4	9/16 - 18	0.500	0.563
6	3/8	11/16 - 16	0.625	0.687
8	1/2	11316 - 16	0.750	0.812
10	5/8	1 - 14	0.937	1.000
12	3/4	1 3/16 - 12	1.125	1.187
16	1	1 7/16 - 12	1.344	1.438
20	1 1/4	1 11/16 - 12	1.594	1.687
24	1 1/2	2 - 12	1.547	2.000

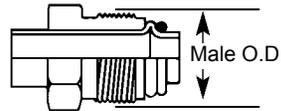
For O-Rings See Page #

Staple Lock



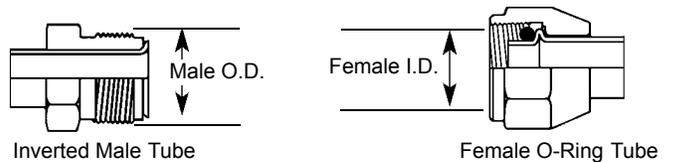
Dash Size	Nominal Size In.	Male Sealing O.D.	Female Sealing I.D.
4	1/4	0.390	0.395
6	3/8	0.547	0.552
8	1/2	0.705	0.710
12	3/4	0.941	0.946
16	1	1.216	1.221
20	1 1/4	1.492	1.497
24	1 1/2	1.846	1.851
32	2	2.200	2.205

O-Ring Seal Refrigerant Style



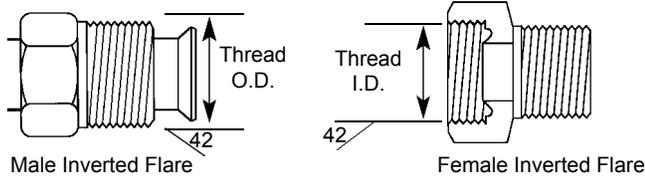
Dash Size	Nominal Size In.	Thread Per. In.	O-Ring Tube O.D. In.	Male Thread O.D. In.
6	3/8	5/8-18	0.332	0.611
8	1/2	3/4-18	0.446	0.736
10	5/8	7/8-18	0.565	0.864
12	3/4	1 1/16-16	0.698	1.054

O-Ring Seal Refrigerant Style



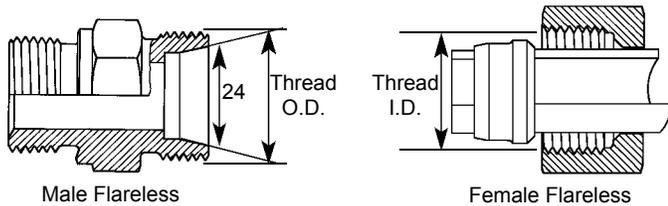
Dash Size	Nominal Size In.	Thread Per. In.	Female Thread I.D. In.	Male Thread O.D. In.
6	3/8	5/8-18	0.569	0.614
8	1/2	3/4-16	0.691	0.744
10	5/8	7/8-18	0.813	0.863
12	3/4	1 1/16-14	1.013	1.051

Inverted Flare 42 Seat



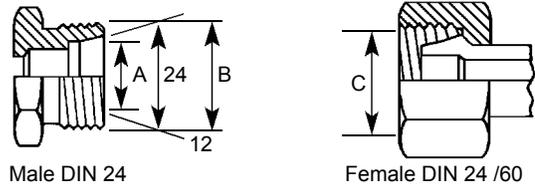
Dash Size	Nominal Size Inch	Threads Per. Inch	Female Threads I.D. In.	Male Threads O.D. In.
-2	1/8	5/16 - 28	0.280	0.320
-3	3/16	3/8 - 24	0.340	0.380
-4	1/4	7/16 - 24	0.400	0.440
-5	5/16	1/2 - 20	0.450	0.500
-6	3/8	5/8 - 18	0.570	0.630
-7	7/16	11/16 - 18	0.630	0.690
-8	1/2	3/4 - 16	0.700	0.750
-10	5/8	7/8 - 18	0.820	0.880
-12	3/4	1 1/16 - 16	1.000	1.060

Flareless Tube Fittings



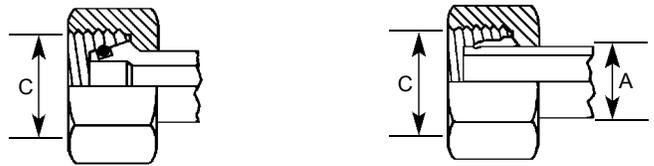
Dash Size	Nominal Size Inch	Threads Per. Inch	Female Threads I.D. In.	Male Threads O.D. In.
-2	1/8	5/16 - 24	0.265	0.312
-3	3/16	3/8 - 24	0.328	0.375
-4	1/4	7/16 - 20	0.390	0.438
-5	5/16	1/2 - 20	0.453	0.500
-6	3/8	9/16 - 18	0.500	0.563
-8	1/2	3/4 - 16	0.687	0.750
-10	5/8	7/8 - 14	0.812	0.875
-12	3/4	1 1/16 - 12	0.968	1.062
-14	7/8	1 3/16 - 12	1.109	1.187
-16	1	1 5/16 - 12	1.234	1.312
-20	1 1/4	1 5/8 - 12	1.546	1.625
-24	1 1/2	1 7/8 - 12	1.796	1.875
-32	2	2 1/2 - 12	2.421	2.500

DIN ( Deutsche Industrial Norme )



Male DIN 24

Female DIN 24 /60

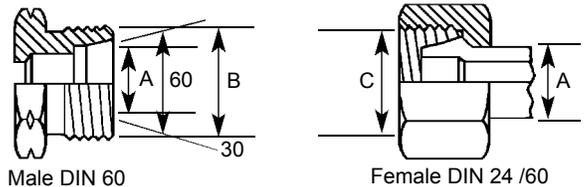


Female O-Ring 24

Female DIN Tube

Metric Thread Size	Male O.D. ( B ) mm	Female I.D. ( C ) mm	Light Tube O.D. ( A ) mm	Heavy Tube O.D. ( A ) mm
M12X1.5	12.0	10.5	6	-
M14X1.5	14.0	12.5	8	-
M16X1.5	16.0	14.5	10	8
M18X1.5	18.0	16.5	12	10
M20X1.5	20.0	18.5	14	12
M22X1.5	22.0	20.5	15	14
M24X1.5	24.0	22.5	-	16
M26X1.5	26.0	24.5	18	-
M30X2.0	30.0	28.0	22	20
M36X2.0	36.0	34.0	28	25
M42X2.0	42.0	40.0	-	30
M45X2.0	45.0	43.0	35	-
M52X2.0	52.0	50.0	42	38

DIN 60 ( Deutsche Industrial Norme )



Male DIN 60

Female DIN 24 /60

Metric Thread Size	Male O.D. ( B ) mm	Female I.D. ( C ) mm	Tube O.D. ( A ) mm
M14X1.5	14.0	12.5	8
M16X1.5	16.0	14.5	10
M18X1.5	18.0	16.5	12
M22X1.5	22.0	20.5	15
M26X1.5	26.0	24.5	18
M30X1.5	30.0	28.5	22
M38X1.5	38.0	36.5	28
M45X1.5	45.0	43.5	35
M52X2.0	52.0	50.5	42



# Flange Temperature / Pressure Ratings

TDRIH # 001-0  
11-08-18

## Pressure-temperature ratings

Ratings in the table below apply to forged carbon steel flanges covered by American National Standard ANSI B 16.5. Ratings shown are assigned by that Standard.

Use of these ratings requires gaskets conforming to dimensions set forth in ANSI, B16.5. The user is responsible for selecting gaskets of dimensions and materials to the required bolt loading without injurious crushing and suitable for the service conditions in a other respects.

Ratings at -28.9 to +37.8°C. (-20 to +100°F. ) shall also apply at lower temperatures. Some materials listed in the rating tables at ANSI undergo a decrease in impact resistance at temperatures lower than -28.8°C. ( -20°F. ) to such an extent as to be unable to safely resist shock loadings, sudden changes of stress or high stress concentrations. Therefore, flanges that are to operate at temperatures below -28.8°C. ( -20°F. ) shall conform to the rules of the applicable codes under which they are to be used.

Ratings shown here apply to:

- (a) Ring joint facing;
- (b) Small tongue and groove facing with any type gasket;
- (c) Large tongue and groove facing with any type gasket except flat solid metal;
- (d) Other facings with gaskets which results in no increase in bolt load or flange moment over those resulting from facing-gasket combinations above.

## Flange Standards : ANSI B16.5 and MSS SP-44

	Size range, incl.	
	ANSI	MSS
<b>150 Lbs. Pressure Standard</b>		
Welding Neck, Slip-On, Blind, Lap Joint, Threaded	1/2" - 24"	---
Socket Welding	1/2" - 3"	---
<b>300 Lbs. Pressure Standard</b>		
Welding Neck, Slip-On	1/2" - 24"	26" - 30"
Blind, Lap Joint, Threaded	1/2" - 24"	---
Socket Welding	1/2" - 3"	---
<b>400 Lbs. Pressure Standard</b>		
Welding Neck, Slip-On	1/2" - 24"	26" - 30"
Blind, Lap Joint, Threaded	1/2" - 24"	---
<b>600 Lbs. Pressure Standard</b>		
Welding Neck, Slip-On	1/2" - 24"	24" - 36"
Blind, Lap Joint, Threaded	1/2" - 24"	---
Socket Welding	1/2" - 3"	---
<b>900 Lbs. Pressure Standard</b>		
Welding Neck, Slip-On	1/2" - 24"	26" - 30"
Blind, Lap Joint, Threaded	1/2" - 24"	---
<b>1500 Lbs. Pressure Standard</b>		
Welding Neck, Blind, Lap Joint	1/2" - 24"	---
Threaded	1/2" - 12"	---
Slip-On, Socket Welding	1/2 - 2 1/2"	---
<b>2500 Lbs. Pressure Standard</b>		
Welding Neck, Blind, Lap Joint, Threaded	1/2" - 12"	---

## Pressure Rating for Forged Carbon Steel Flanges ( Non Shock Pressures PSIG )

° C Service Temperatures		° F	150 Lbs.	300 Lbs.	400 Lbs.	600 Lbs.	900 Lbs.	1500 Lbs.	2500 Lbs.
-28.9 to 37.8	-20 to 100		275	720	960	1,440	2,160	3,600	6,000
65.6	150		255	710	945	1,420	2,130	3,550	5,915
93.3	200		240	700	930	1,400	2,100	3,500	5,830
121.1	250		225	690	920	1,380	2,070	3,450	5,750
148.9	300		210	680	910	1,365	2,050	3,415	5,690
176.7	350		195	675	900	1,350	2,025	3,375	5,625
204.4	400		180	665	890	1,330	2,000	3,330	5,550
232.2	450		165	650	870	1,305	1,955	3,255	5,430
<b>260.0</b>	<b>500</b>		<b>150</b>	<b>625</b>	<b>835</b>	<b>1,250</b>	<b>1,875</b>	<b>3,125</b>	<b>5,210</b>
287.8	550		140	590	790	1,180	1,775	2,955	4,925
315.6	600		130	555	740	1,110	1,660	2,770	4,620
343.3	650		120	515	690	1,030	1,550	2,580	4,300
371.1	700		110	470	635	940	1,410	2,350	3,920
398.9	750		100	425	575	850	1,275	2,125	3,550
426.7	800		92	365	490	730	1,100	1,830	3,050
<b>454.4</b>	<b>850</b>		<b>82</b>	<b>300</b>	<b>400</b>	<b>600</b>	<b>900</b>	<b>1,500</b>	<b>2,500</b>
468.3	875		75	260	350	525	785	1,305	2,180
482.2	900		70	225	295	445	670	1,115	1,855
496.1	925		60	190	250	375	565	945	1,570
510.0	950		55	155	205	310	465	770	1,285
523.9	975		50	120	160	240	360	600	1,000
537.8	1,000		40	85	115	170	255	430	715

**Temperature & Pressure Equivalents Of Saturated Steam Gauge Pressure At Sea Level**

 PSI x .006895 = Megapascals (Mpa) = Meganewton/meter<sup>2</sup> • Degrees Celsius = 5/9 ( -32°F )

Temperature				Temperature				Temperature			
F°	C°	Sq. in.	MPa	F°	C°	Sq. in.	MPa	F°	C°	Sq. in.	MPa
212	100.0	0.0	0.000	286	141.1	39.4	0.272	336	168.9	97.1	0.670
214	101.1	0.6	0.004	<b>287</b>	<b>141.7</b>	<b>40.3</b>	<b>0.278</b>	337	169.4	98.7	0.681
216	102.2	1.2	0.008	288	142.2	41.1	0.283	<b>338</b>	<b>170.0</b>	<b>100.2</b>	<b>0.691</b>
218	103.3	1.8	0.012	289	142.8	42.0	0.289	339	170.6	101.8	0.702
220	104.4	2.5	0.017	290	143.3	42.9	0.296	340	171.1	103.3	0.712
222	105.6	3.2	0.022	291	143.9	43.8	0.302	341	171.7	105.0	0.724
224	106.7	3.9	0.027	292	144.4	44.7	0.308	342	172.2	106.5	0.734
226	107.8	4.6	0.032	<b>293</b>	<b>145.0</b>	<b>45.6</b>	<b>0.314</b>	343	172.8	108.2	0.746
<b>228</b>	<b>108.9</b>	<b>5.3</b>	<b>0.037</b>	294	145.6	46.5	0.321	344	173.3	109.8	0.757
230	110.0	6.1	0.042	295	146.1	47.5	0.328	345	173.9	111.5	0.769
232	111.1	6.9	0.048	296	146.7	48.4	0.334	346	174.4	113.1	0.780
234	112.2	7.7	0.053	297	147.2	49.4	0.341	347	175.0	114.8	0.792
236	113.3	8.5	0.059	<b>298</b>	<b>147.8</b>	<b>50.3</b>	<b>0.347</b>	348	175.6	116.5	0.803
238	114.4	9.4	0.065	299	148.3	51.3	0.354	349	176.1	118.2	0.815
<b>240</b>	<b>115.6</b>	<b>10.3</b>	<b>0.071</b>	300	148.9	52.3	0.361	350	176.7	119.9	0.827
242	116.7	11.2	0.077	301	149.4	53.4	0.368	352	177.8	123.5	.852
244	117.8	12.1	0.083	302	150.0	54.4	0.376	354	178.9	127.1	.876
246	118.9	13.1	0.090	<b>303</b>	<b>150.6</b>	<b>55.4</b>	<b>0.382</b>	356	180.0	130.8	.902
248	120.0	14.1	0.097	304	151.1	56.4	0.389	358	181.1	134.5	.927
<b>250</b>	<b>121.1</b>	<b>15.1</b>	<b>0.104</b>	305	151.7	57.5	0.396	360	182.2	138.3	.954
252	122.2	16.2	0.112	306	152.2	58.6	0.404	362	183.3	142.3	.981
254	123.3	17.3	0.119	307	152.8	59.7	0.412	364	184.4	146.2	1.008
256	124.4	18.4	0.127	<b>308</b>	<b>153.3</b>	<b>60.7</b>	<b>0.419</b>	<b>366</b>	<b>185.6</b>	<b>150.3</b>	<b>1.036</b>
258	125.6	19.6	0.135	309	153.9	61.9	0.427	368	186.7	154.4	1.065
<b>260</b>	<b>126.7</b>	<b>20.7</b>	<b>0.143</b>	310	154.4	63.0	0.434	370	187.8	158.7	1.094
261	127.2	21.4	0.147	311	155.0	64.2	0.443	372	188.9	163.0	1.124
262	127.8	22.0	0.152	312	155.6	65.3	0.450	374	190.0	167.4	1.154
263	128.3	22.6	0.156	313	156.1	66.5	0.459	376	191.1	171.9	1.185
264	128.9	23.2	0.160	314	156.7	67.6	0.466	378	192.2	176.4	1.216
265	129.4	23.9	0.165	315	157.2	68.8	0.474	380	193.3	181.1	1.249
266	130.0	24.5	0.169	<b>316</b>	<b>157.8</b>	<b>70.0</b>	<b>0.483</b>	382	194.4	185.8	1.281
<b>267</b>	<b>130.6</b>	<b>25.2</b>	<b>0.174</b>	317	158.3	71.3	0.492	384	195.6	190.6	1.314
268	121.1	25.8	0.178	318	158.9	72.5	0.500	386	196.7	195.6	1.349
269	131.7	26.5	0.183	319	159.4	73.7	0.508	<b>388</b>	<b>197.8</b>	<b>200.6</b>	<b>1.383</b>
270	132.2	27.2	0.187	<b>320</b>	<b>160.0</b>	<b>75.0</b>	<b>0.517</b>	390	198.9	205.7	1.418
271	132.8	27.9	0.192	321	160.6	76.3	0.526	392	200.0	210.9	1.454
272	133.3	28.6	0.197	322	161.1	77.5	0.534	394	201.1	216.2	1.491
273	133.9	29.3	0.202	323	161.7	78.8	0.543	396	202.2	221.5	1.527
<b>274</b>	<b>134.4</b>	<b>30.0</b>	<b>0.207</b>	<b>324</b>	<b>162.2</b>	<b>80.1</b>	<b>0.552</b>	398	203.3	227.0	1.565
275	135.0	30.8	0.212	325	162.8	81.5	0.562	400	204.4	232.6	1.604
276	135.6	31.5	0.217	326	163.3	82.8	0.571	402	205.5	238.0	1.641
277	136.1	32.3	0.223	327	163.9	84.2	0.581	404	206.7	244.0	1.682
278	136.7	33.0	0.227	<b>328</b>	<b>164.4</b>	<b>85.6</b>	<b>0.590</b>	<b>406</b>	<b>207.8</b>	<b>250.0</b>	<b>1.724</b>
279	137.2	33.8	0.233	329	165.0	87.0	0.600	408	208.9	256.0	1.765
280	137.8	34.5	0.238	330	165.6	88.4	0.610	410	210.0	262.0	1.806
<b>281</b>	<b>138.3</b>	<b>35.3</b>	<b>0.243</b>	331	166.1	89.8	0.619	412	211.1	268.0	1.848
282	138.9	36.1	0.249	332	166.7	91.2	0.629	414	212.2	275.0	1.896
283	139.4	36.9	0.254	333	167.2	92.7	0.639	416	213.3	281.0	1.937
284	140.0	37.7	0.260	334	167.8	94.1	0.649	418	214.4	288.0	1.986
285	140.6	38.6	0.266	<b>335</b>	<b>168.3</b>	<b>95.6</b>	<b>0.659</b>	420	215.6	294.0	2.027



## End Force Chart 50 PSI to 15,000 1/4" to 24"

TD # 002-0  
11-08-18

### End Force Chart ( in Pounds ) 50 PSI to 600 PSI

PSI		50	100	150	200	225	300	400	500	600
I/D	Sq. Inches									
1/4	0.0491	2.45	4.91	7.36	9.82	11.04	14.73	19.63	24.54	29.45
3/8	0.1104	5.52	11.04	16.57	22.09	24.85	33.13	44.18	55.22	66.27
1/2	0.1964	9.82	19.64	29.45	39.27	44.18	58.91	78.54	98.18	117.81
3/4	0.4418	22.09	44.18	66.27	88.36	99.40	132.54	176.71	220.89	265.07
1	0.7854	39.27	78.54	117.81	157.08	176.71	235.62	314.16	392.70	471.24
1 1/4	1.2272	61.36	122.72	184.08	245.44	276.12	368.16	490.87	613.59	736.31
1 1/2	1.7671	88.36	176.71	265.07	353.43	397.61	530.14	706.86	883.57	1,060.29
2	3.1416	157.08	314.16	471.24	628.32	706.86	942.48	1,256.64	1,570.80	1,884.96
2 1/2	4.9087	245.44	490.87	736.31	981.75	1,104.47	1,472.62	1,963.50	2,454.37	2,945.24
3	7.0686	353.43	706.86	1,060.29	1,413.72	1,590.43	2,120.57	2,827.43	3,534.29	4,241.15
4	12.5664	628.32	1,256.64	1,884.96	2,513.27	2,827.43	3,769.91	5,026.55	6,283.19	7,539.82
5	19.6350	981.75	1,963.50	2,945.24	3,926.99	4,417.86	5,890.49	7,853.98	9,817.48	11,780.97
6	28.2743	1,413.72	2,827.43	4,241.15	5,654.87	6,361.73	8,482.30	11,309.73	14,137.17	16,964.60
8	50.2655	2,513.27	5,026.55	7,539.82	10,053.10	11,309.73	15,079.64	20,106.19	25,132.74	30,159.29
10	78.5398	3,926.99	7,853.98	11,780.97	15,707.96	17,671.46	23,561.94	31,415.93	39,269.91	47,123.89
12	113.0973	5,654.87	11,309.73	16,964.60	22,619.47	25,446.90	33,929.20	45,238.93	56,548.67	67,858.40
14	153.9380	7,696.90	15,393.80	23,090.71	30,787.61	34,636.06	46,181.41	61,575.22	76,969.02	92,362.82
16	201.0619	10,053.10	20,106.19	30,159.29	40,212.39	45,238.93	60,318.58	80,424.77	100,530.97	120,637.16
18	254.4690	12,723.45	25,446.90	38,170.35	50,893.80	57,255.53	76,340.70	101,787.60	127,234.50	152,681.40
20	314.1593	15,707.96	31,415.93	47,123.89	62,831.85	70,685.83	94,247.78	125,663.71	157,079.63	188,495.56
22	380.1327	19,006.64	38,013.27	57,019.91	76,026.54	85,529.86	114,039.81	152,053.08	190,066.36	228,079.63
24	452.3893	22,619.47	45,238.93	67,858.40	90,477.87	101,787.60	135,716.80	180,955.74	226,194.67	271,433.61

### End Force Chart ( in Pounds ) 1,000 PSI to 15,000 PSI

PSI		1,000	2,000	3,000	4,000	5,000	6,000	7,000	10,000	15,000
I/D	Sq. Inches									
1/4	0.0491	49.09	98.17	147.26	196.35	245.44	294.52	343.61	490.87	736.31
3/8	0.1104	110.45	220.89	331.34	441.79	552.24	662.68	773.13	1,104.47	1,656.71
1/2	0.1964	196.35	392.70	589.05	785.40	981.75	1,178.10	1,374.45	1,963.50	2,945.25
3/4	0.4418	441.79	883.57	1,325.36	1,767.14	2,208.93	2,650.72	3,092.50	4,417.86	6,626.79
1	0.7854	785.40	1,570.80	2,356.19	3,141.59	3,926.99	4,712.39	5,497.79	7,853.98	11,780.97
1 1/4	1.2272	1,227.19	2,454.37	3,681.56	4,908.74	6,135.93	7,363.11	8,590.30	12,271.85	18,407.78
1 1/2	1.7671	1,767.15	3,534.29	5,301.44	7,068.58	8,835.73	10,602.88	12,370.02	17,671.46	26,507.19
2	3.1416	3,141.59	6,283.19	9,424.78	12,566.37	15,707.97	18,849.56	21,991.15	31,415.93	47,123.90
2 1/2	4.9087	4,908.74	9,817.48	14,726.22	19,634.96	24,543.70	29,452.43	34,361.17	49,087.39	73,631.09
3	7.0686	7,068.58	14,137.17	21,205.75	28,274.33	35,342.92	42,411.50	49,480.08	70,685.83	106,028.75
4	12.5664	12,566.37	25,132.74	37,699.11	50,265.48	62,831.86	75,398.23	87,964.60	125,663.71	188,495.57
5	19.6350	19,634.95	39,269.91	58,904.86	78,539.82	98,174.77	117,809.72	137,444.68	196,349.54	294,524.31
6	28.2743	28,274.33	56,548.67	84,823.00	113,097.34	141,371.67	169,646.00	197,920.34	282,743.34	424,115.01
8	50.2655	50,265.48	100,530.96	150,796.45	201,061.93	251,327.41	301,592.89	351,858.37	502,654.82	753,982.23
10	78.5398	78,539.82	157,079.63	235,619.45	314,159.26	392,699.08	471,238.90	549,778.71	785,398.16	1,178,097.24
12	113.0973	113,097.34	226,194.67	339,292.01	452,389.34	565,486.68	678,584.01	791,681.35	1,130,973.35	1,696,460.03
14	153.9380	153,938.04	307,876.08	461,814.12	615,752.16	769,690.20	923,628.24	1,077,566.28	1,539,380.40	2,309,070.60
16	201.0619	201,061.93	402,123.86	603,185.79	804,247.72	1,005,309.65	1,206,371.58	1,407,433.51	2,010,619.30	3,015,928.95
18	254.4690	254,469.01	508,938.01	763,407.02	1,017,876.02	1,272,345.03	1,526,814.03	1,781,283.04	2,544,690.05	3,817,035.08
20	314.1593	314,159.27	628,318.53	942,477.80	1,256,637.06	1,570,796.33	1,884,955.59	2,199,114.86	3,141,592.65	4,712,388.98
22	380.1327	380,132.71	760,265.42	1,140,398.13	1,520,530.84	1,900,663.56	2,280,796.27	2,660,928.98	3,801,327.11	5,701,990.67
24	452.3893	452,389.34	904,778.68	1,357,168.03	1,809,557.37	2,261,946.71	2,714,336.05	3,166,725.39	4,523,893.42	6,785,840.13



# Pressure Conversion Table

TDH # 003A-0  
11-08-18

PSI	Kpa	Mpa	Bars	kg/cm <sup>2</sup>	kg/m <sup>2</sup>	Atmospheres	lb/ft <sup>2</sup>
1	6.89	0.0068948	0.068948	0.070307	703.070	0.068046	144
2	13.79	0.0137896	0.137896	0.140614	1,406.140	0.136092	288
3	20.68	0.0206844	0.206844	0.210921	2,109.210	0.204138	432
4	27.58	0.0275792	0.275792	0.281228	2,812.280	0.272184	576
5	34.47	0.0344740	0.344740	0.351535	3,515.350	0.340230	720
6	41.37	0.0413688	0.413688	0.421842	4,218.420	0.408276	864
7	48.26	0.0482636	0.482636	0.492149	4,921.490	0.476322	1008
8	55.16	0.0551584	0.551584	0.562456	5,624.560	0.544368	1152
9	62.05	0.0620532	0.620532	0.632763	6,327.630	0.612414	1296
10	68.95	0.0689480	0.689480	0.703070	7,030.700	0.680460	1440
20	137.90	0.1378960	1.378960	1.406140	14,061.400	1.360920	2880
30	206.84	0.2068440	2.068440	2.109210	21,092.100	2.041380	4320
40	275.79	0.2757920	2.757920	2.812280	28,122.800	2.721840	5760
50	344.74	0.3447400	3.447400	3.515350	35,153.500	3.402300	7200
60	413.69	0.4136880	4.136880	4.218420	42,184.200	4.082760	8640
70	482.64	0.4826360	4.826360	4.921490	49,214.900	4.763220	10080
80	551.58	0.5515840	5.515840	5.624560	56,245.600	5.443680	11520
90	620.53	0.6205320	6.205320	6.327630	63,276.300	6.124140	12960
100	689.48	0.6894800	6.894800	7.030700	70,307.000	6.804600	14400
200	1,378.96	1.3789600	13.789600	14.061400	140,614.000	13.609200	28800
300	2,068.44	2.0684400	20.684400	21.092100	210,921.000	20.413800	43200
400	2,757.92	2.7579200	27.579200	28.122800	281,228.000	27.218400	57600
500	3,447.40	3.4474000	34.474000	35.153500	351,535.000	34.023000	72000
600	4,136.88	4.1368800	41.368800	42.184200	421,842.000	40.827600	86400
700	4,826.36	4.8263600	48.263600	49.214900	492,149.000	47.632200	100800
800	5,515.84	5.5158400	55.158400	56.245600	562,456.000	54.436800	115200
900	6,205.32	6.2053200	62.053200	63.276300	632,763.000	61.241400	129600
1000	6,894.80	6.8948000	68.948000	70.307000	703,070.000	68.046000	144000
2000	13,789.60	13.7896000	137.896000	140.614000	1,406,140.000	136.092000	288000
3000	20,684.40	20.6844000	206.844000	210.921000	2,109,210.000	204.138000	432000
4000	27,579.20	27.5792000	275.792000	281.228000	2,812,280.000	272.184000	576000
5000	34,474.00	34.4740000	344.740000	351.535000	3,515,350.000	340.230000	720000
6000	41,368.80	41.3688000	413.688000	421.842000	4,218,420.000	408.276000	864000
7000	48,263.60	48.2636000	482.636000	492.149000	4,921,490.000	476.322000	1008000
8000	55,158.40	55.1584000	551.584000	562.456000	5,624,560.000	544.368000	1152000
9000	62,053.20	62.0532000	620.532000	632.763000	6,327,630.000	612.414000	1296000
10000	68,948.00	68.9480000	689.480000	703.070000	7,030,700.000	680.460000	1440000
20000	137,896.00	137.8960000	1,378.960000	1,406.140000	14,061,400.000	1,360.920000	2880000
30000	206,844.00	206.8440000	2,068.440000	2,109.210000	21,092,100.000	2,041.380000	4320000
40000	275,792.00	275.7920000	2,757.920000	2,812.280000	28,122,800.000	2,721.840000	5760000
50000	344,740.00	344.7400000	3,447.400000	3,515.350000	35,153,500.000	3,402.300000	7200000
60000	413,688.00	413.6880000	4,136.880000	4,218.420000	42,184,200.000	4,082.760000	8640000
70000	482,636.00	482.6360000	4,826.360000	4,921.490000	49,214,900.000	4,763.220000	10080000
80000	551,584.00	551.5840000	5,515.840000	5,624.560000	56,245,600.000	5,443.680000	11520000
90000	620,532.00	620.5320000	6,205.320000	6,327.630000	63,276,300.000	6,124.140000	12960000
100000	689,480.00	689.4800000	6,894.800000	7,030.700000	70,307,000.000	6,804.600000	14400000

PSI	=	Pound Per Square Inch	=	1	PSI
kg/m <sup>2</sup>	=	Kilogram Per Square Meter	=	0.001422	PSI
Kpa	=	Kilopascals	=	0.145038	PSI
kg/cm <sup>2</sup>	=	Kilogram Per Square CentiMeter	=	14.2233	PSI
Bar	=	Meteorological Atmosphere	=	14.5038	PSI
Mpa	=	Megapascals	=	145.038	PSI



# Pressure Conversion Table

TDH # 003B-0  
11-08-18

Bars	Atmospheres	Mpa	kg/cm <sup>2</sup>	Kpa	lb/ft <sup>2</sup>	kg/m <sup>2</sup>	PSI
1.0	0.99	0.1	1.020	100.0	2,088.54	10,197.2	14.50
2.0	1.97	0.2	2.039	200.0	4,177.08	20,394.4	29.01
3.0	2.96	0.3	3.059	300.0	6,265.62	30,591.6	43.51
4.0	3.95	0.4	4.079	400.0	8,354.16	40,788.8	58.02
5.0	4.93	0.5	5.099	500.0	10,442.70	50,986.0	72.52
6.0	5.92	0.6	6.118	600.0	12,531.24	61,183.2	87.02
7.0	6.91	0.7	7.138	700.0	14,619.78	71,380.4	101.53
8.0	7.90	0.8	8.158	800.0	16,708.32	81,577.6	116.03
9.0	8.88	0.9	9.177	900.0	18,796.86	91,774.8	130.53
10.0	9.87	1.0	10.197	1,000.0	20,885.40	101,972.0	145.04
20.0	19.74	2.0	20.394	2,000.0	41,770.80	203,944.0	290.08
30.0	29.61	3.0	30.592	3,000.0	62,656.20	305,916.0	435.11
40.0	39.48	4.0	40.789	4,000.0	83,541.60	407,888.0	580.15
50.0	49.35	5.0	50.986	5,000.0	104,427.00	509,860.0	725.19
60.0	59.22	6.0	61.183	6,000.0	125,312.40	611,832.0	870.23
70.0	69.08	7.0	71.380	7,000.0	146,197.80	713,804.0	1,015.27
80.0	78.95	8.0	81.578	8,000.0	167,083.20	815,776.0	1,160.30
90.0	88.82	9.0	91.775	9,000.0	187,968.60	917,748.0	1,305.34
100.0	98.69	10.0	101.972	10,000.0	208,854.00	1,019,720.0	1,450.38
200.0	197.38	20.0	203.944	20,000.0	417,708.00	2,039,440.0	2,900.76
300.0	296.08	30.0	305.916	30,000.0	626,562.00	3,059,160.0	4,351.14
400.0	394.77	40.0	407.888	40,000.0	835,416.00	4,078,880.0	5,801.52
500.0	493.46	50.0	509.860	50,000.0	1,044,270.00	5,098,600.0	7,251.90
600.0	592.15	60.0	611.832	60,000.0	1,253,124.00	6,118,320.0	8,702.28
700.0	690.84	70.0	713.804	70,000.0	1,461,978.00	7,138,040.0	10,152.66
800.0	789.54	80.0	815.776	80,000.0	1,670,832.00	8,157,760.0	11,603.04
900.0	888.23	90.0	917.748	90,000.0	1,879,686.00	9,177,480.0	13,053.42
1,000.0	986.92	100.0	1,019.720	100,000.0	2,088,540.00	10,197,200.0	14,503.80
2,000.0	1,973.84	200.0	2,039.440	200,000.0	4,177,080.00	20,394,400.0	29,007.60
3,000.0	2,960.76	300.0	3,059.160	300,000.0	6,265,620.00	30,591,600.0	43,511.40
4,000.0	3,947.68	400.0	4,078.880	400,000.0	8,354,160.00	40,788,800.0	58,015.20
5,000.0	4,934.60	500.0	5,098.600	500,000.0	10,442,700.00	50,986,000.0	72,519.00
6,000.0	5,921.52	600.0	6,118.320	600,000.0	12,531,240.00	61,183,200.0	87,022.80
7,000.0	6,908.44	700.0	7,138.040	700,000.0	14,619,780.00	71,380,400.0	101,526.60
8,000.0	7,895.36	800.0	8,157.760	800,000.0	16,708,320.00	81,577,600.0	116,030.40
9,000.0	8,882.28	900.0	9,177.480	900,000.0	18,796,860.00	91,774,800.0	130,534.20
10,000.0	9,869.20	1,000.0	10,197.200	1,000,000.0	20,885,400.00	101,972,000.0	145,038.00
20,000.0	19,738.40	2,000.0	20,394.400	2,000,000.0	41,770,800.00	203,944,000.0	290,076.00
30,000.0	29,607.60	3,000.0	30,591.600	3,000,000.0	62,656,200.00	305,916,000.0	435,114.00
40,000.0	39,476.80	4,000.0	40,788.800	4,000,000.0	83,541,600.00	407,888,000.0	580,152.00
50,000.0	49,346.00	5,000.0	50,986.000	5,000,000.0	104,427,000.00	509,860,000.0	725,190.00
60,000.0	59,215.20	6,000.0	61,183.200	6,000,000.0	125,312,400.00	611,832,000.0	870,228.00
70,000.0	69,084.40	7,000.0	71,380.400	7,000,000.0	146,197,800.00	713,804,000.0	1,015,266.00
80,000.0	78,953.60	8,000.0	81,577.600	8,000,000.0	167,083,200.00	815,776,000.0	1,160,304.00
90,000.0	88,822.80	9,000.0	91,774.800	9,000,000.0	187,968,600.00	917,748,000.0	1,305,342.00
100,000.0	98,692.00	10,000.0	101,972.000	10,000,000.0	208,854,000.00	1,019,720,000.0	1,450,380.00



## Areas & Circumferences of Circles for Diameters in Units & Fractions

TDB # 001A-0  
11-08-18

Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.
0	0.000000	0.00000	<b>2"</b>	<b>3.141593</b>	<b>6.28318</b>	<b>4"</b>	<b>12.566371</b>	<b>12.56636</b>	<b>6"</b>	<b>28.274334</b>	<b>18.84954</b>	<b>8"</b>	<b>50.265482</b>	<b>25.13272</b>
1/32"	0.000767	0.09817	1/32"	3.240534	6.38135	1/32"	12.763487	12.66453	1/32"	28.569625	18.94771	1/32"	50.658949	25.23089
1/16"	0.003068	0.19635	1/16"	3.341010	6.47953	1/16"	12.962138	12.76271	1/16"	28.866450	19.04589	1/16"	51.053949	25.32907
3/32"	0.006903	0.29452	3/32"	3.443020	6.57770	3/32"	13.162322	12.86088	3/32"	29.164810	19.14406	3/32"	51.450483	25.42724
1/8"	0.012272	0.39270	1/8"	3.546564	6.67588	1/8"	13.364041	12.95906	1/8"	29.464703	19.24224	1/8"	51.848551	25.52542
5/32"	0.019175	0.49087	5/32"	3.651641	6.77405	5/32"	13.567293	13.05723	5/32"	29.766130	19.34041	5/32"	52.248153	25.62359
3/16"	0.027612	0.58905	3/16"	3.758253	6.87223	3/16"	13.772080	13.15541	3/16"	30.069091	19.43859	3/16"	52.649289	25.72177
7/32"	0.037583	0.68722	7/32"	3.866399	6.97040	7/32"	13.978400	13.25358	7/32"	30.373587	19.53676	7/32"	53.051959	25.81994
1/4"	0.049087	0.78540	1/4"	3.976078	7.06858	1/4"	14.186254	13.35176	1/4"	30.679616	19.63494	1/4"	53.456162	25.91812
9/32"	0.062126	0.88357	9/32"	4.087292	7.16675	9/32"	14.395643	13.44993	9/32"	30.987179	19.73311	9/32"	53.861900	26.01629
5/16"	0.076699	0.98175	5/16"	4.200039	7.26493	5/16"	14.606565	13.54811	5/16"	31.296276	19.83129	5/16"	54.269172	26.11447
11/32"	0.092806	1.07992	11/32"	4.314321	7.36310	11/32"	14.819021	13.64628	11/32"	31.606907	19.92946	11/32"	54.677978	26.21264
3/8"	0.110447	1.17810	3/8"	4.430137	7.46128	3/8"	15.033012	13.74446	3/8"	31.919072	20.02764	3/8"	55.088318	26.31082
13/32"	0.129621	1.27627	13/32"	4.547486	7.55945	13/32"	15.248536	13.84263	13/32"	32.232771	20.12581	13/32"	55.500192	26.40899
7/16"	0.150330	1.37445	7/16"	4.666370	7.65763	7/16"	15.465594	13.94081	7/16"	32.548004	20.22399	7/16"	55.913600	26.50717
15/32"	0.172573	1.47262	15/32"	4.786787	7.75580	15/32"	15.684187	14.03898	15/32"	32.864771	20.32216	15/32"	56.328541	26.60534
1/2"	0.196350	1.57080	1/2"	4.908739	7.85398	1/2"	15.904313	14.13716	1/2"	33.183072	20.42034	1/2"	56.745017	26.70352
17/32"	0.221660	1.66897	17/32"	5.032224	7.95215	17/32"	16.125973	14.23533	17/32"	33.502907	20.51851	17/32"	57.163027	26.80169
9/16"	0.248505	1.76714	9/16"	5.157243	8.05032	9/16"	16.349167	14.33350	9/16"	33.824276	20.61668	9/16"	57.582571	26.89986
19/32"	0.276884	1.86532	19/32"	5.283797	8.14850	19/32"	16.573895	14.43168	19/32"	34.147179	20.71486	19/32"	58.003649	26.99804
5/8"	0.306796	1.96349	5/8"	5.411884	8.24667	5/8"	16.800158	14.52985	5/8"	34.471616	20.81303	5/8"	58.426260	27.09621
21/32"	0.338243	2.06167	21/32"	5.541506	8.34485	21/32"	17.027954	14.62803	21/32"	34.797587	20.91121	21/32"	58.850406	27.19439
11/16"	0.371223	2.15984	11/16"	5.672661	8.44302	11/16"	17.257284	14.72620	11/16"	35.125092	21.00938	11/16"	59.276086	27.29256
23/32"	0.405738	2.25802	23/32"	5.805350	8.54120	23/32"	17.488148	14.82438	23/32"	35.454131	21.10756	23/32"	59.703299	27.39074
3/4"	0.441786	2.35619	3/4"	5.939574	8.63937	3/4"	17.720546	14.92255	3/4"	35.784704	21.20573	3/4"	60.132047	27.48891
25/32"	0.479369	2.45437	25/32"	6.075331	8.73755	25/32"	17.954478	15.02073	25/32"	36.116811	21.30391	25/32"	60.562328	27.58709
13/16"	0.518486	2.55254	13/16"	6.212622	8.83572	13/16"	18.189944	15.11890	13/16"	36.450451	21.40208	13/16"	60.994144	27.68526
27/32"	0.559136	2.65072	27/32"	6.351447	8.93390	27/32"	18.426944	15.21708	27/32"	36.785626	21.50026	27/32"	61.427494	27.78344
7/8"	0.601320	2.74889	7/8"	6.491807	9.03207	7/8"	18.665478	15.31525	7/8"	37.122335	21.59843	7/8"	61.862377	27.88161
29/32"	0.645039	2.84707	29/32"	6.633700	9.13025	29/32"	18.905546	15.41343	29/32"	37.460578	21.69661	29/32"	62.298795	27.97979
15/16"	0.690291	2.94524	15/16"	6.777127	9.22842	15/16"	19.147148	15.51160	15/16"	37.800355	21.79478	15/16"	62.736746	28.07796
31/32"	0.737078	3.04342	31/32"	6.922088	9.32660	31/32"	19.390284	15.60978	31/32"	38.141665	21.89296	31/32"	63.176232	28.17614
<b>1"</b>	<b>0.785398</b>	<b>3.14159</b>	<b>3"</b>	<b>7.068583</b>	<b>9.42477</b>	<b>5"</b>	<b>19.634954</b>	<b>15.70795</b>	<b>7"</b>	<b>38.484510</b>	<b>21.99113</b>	<b>9"</b>	<b>63.617251</b>	<b>28.27431</b>
1/32"	0.835253	3.23976	1/32"	7.216613	9.52294	1/32"	19.881158	15.80612	1/32"	38.828889	22.08930	1/32"	64.059805	28.37248
1/16"	0.886641	3.33794	1/16"	7.366176	9.62112	1/16"	20.128896	15.90430	1/16"	39.174801	22.18748	1/16"	64.503892	28.47066
3/32"	0.939563	3.43611	3/32"	7.517273	9.71929	3/32"	20.378168	16.00247	3/32"	39.522248	22.28565	3/32"	64.949514	28.56883
1/8"	0.994020	3.53429	1/8"	7.669904	9.81747	1/8"	20.628974	16.10065	1/8"	39.871229	22.38383	1/8"	65.396669	28.66701
5/32"	1.050010	3.63246	5/32"	7.824069	9.91564	5/32"	20.881313	16.19882	5/32"	40.221743	22.48200	5/32"	65.845358	28.76518
3/16"	1.107534	3.73064	3/16"	7.979768	10.01382	3/16"	21.135187	16.29700	3/16"	40.573792	22.58018	3/16"	66.295582	28.86336
7/32"	1.166592	3.82881	7/32"	8.137001	10.11199	7/32"	21.390595	16.39517	7/32"	40.927374	22.67835	7/32"	66.749339	28.96153
1/4"	1.227185	3.92699	1/4"	8.295768	10.21017	1/4"	21.647537	16.49335	1/4"	41.282491	22.77653	1/4"	67.200630	29.05971
9/32"	1.289311	4.02516	9/32"	8.456069	10.30834	9/32"	21.906013	16.59152	9/32"	41.639141	22.87470	9/32"	67.655456	29.15788
5/16"	1.352971	4.12334	5/16"	8.617904	10.40652	5/16"	22.166022	16.68970	5/16"	41.997326	22.97288	5/16"	68.111815	29.25606
11/32"	1.418165	4.22151	11/32"	8.781273	10.50469	11/32"	22.427566	16.78787	11/32"	42.357044	23.07105	11/32"	68.569708	29.35423
3/8"	1.484893	4.31969	3/8"	8.946176	10.60287	3/8"	22.690644	16.88605	3/8"	42.718297	23.16923	3/8"	69.029135	29.45241
13/32"	1.553156	4.41786	13/32"	9.112613	10.70104	13/32"	22.955255	16.98422	13/32"	43.081083	23.26740	13/32"	69.490097	29.55058
7/16"	1.622952	4.51604	7/16"	9.280584	10.79922	7/16"	23.221401	17.08240	7/16"	43.445404	23.36558	7/16"	69.952592	29.64876
15/32"	1.694282	4.61421	15/32"	9.450089	10.89739	15/32"	23.489081	17.18057	15/32"	43.811258	23.46375	15/32"	70.416621	29.74693
1/2"	1.767146	4.71239	1/2"	9.621127	10.99557	1/2"	23.758294	17.27875	1/2"	44.178647	23.56193	1/2"	70.882184	29.84511
17/32"	1.841544	4.81056	17/32"	9.793700	11.09374	17/32"	24.029042	17.37692	17/32"	44.547569	23.66010	17/32"	71.349281	29.94328
9/16"	1.917476	4.90873	9/16"	9.967807	11.19191	9/16"	24.301324	17.47509	9/16"	44.918025	23.75827	9/16"	71.817912	30.04145
19/32"	1.994942	5.00691	19/32"	10.143448	11.29009	19/32"	24.575139	17.57327	19/32"	45.290016	23.85645	19/32"	72.288078	30.13963
5/8"	2.073942	5.10508	5/8"	10.320623	11.38826	5/8"	24.850489	17.67144	5/8"	45.663540	23.95462	5/8"	72.759777	30.23780
21/32"	2.154476	5.20326	21/32"	10.499331	11.48644	21/32"	25.127372	17.76962	21/32"	46.038598	24.05280	21/32"	73.233010	30.33598
11/16"	2.236544	5.30143	11/16"	10.679574	11.58461	11/16"	25.405790	17.86779	11/16"	46.415191	24.15097	11/16"	73.707777	30.43415
23/32"	2.320146	5.39961	23/32"	10.861351	11.68279	23/32"	25.685741	17.96597	23/32"	46.793317	24.24915	23/32"	74.184078	30.53233
3/4"	2.405282	5.49778	3/4"	11.044662	11.78096	3/4"	25.967227	18.06414	3/4"	47.172977	24.34732	3/4"	74.661913	30.63050
25/32"	2.491952	5.59596	25/32"	11.229506	11.87914	25/32"	26.250246	18.16232	25/32"	47.554171	24.44550	25/32"	75.141282	30.72868
13/16"	2.580156	5.69413	13/16"	11.415885	11.97731	13/16"	26.534800	18.26049	13/16"	47.936900	24.54367	13/16"	75.622185	30.82685
27/32"	2.669894	5.79231	27/32"	11.603798	12.07549	27/32"	26.820887	18.35867	27/32"	48.321162	24.64185	27/32"	76.104622	30.92503
7/8"	2.761165	5.89048	7/8"	11.793244	12.17366	7/8"	27.108508	18.45684	7/8"	48.706958	24.74002	7/8"	76.588593	31.02320
29/32"	2.853971	5.98866	29/32"	11.984225	12.27184	29/32"	27.397664	18.55502	29/32"	49.094288	24.83820	29/32"	77.074098	31.12138
15/16"	2.948311	6.08683	15/16"	12.176739	12.37001	15/16"	27.688353	18.65319	15/16"	49.483152	24.93637	15/16"	77.561137	



## Areas & Circumferences of Circles for Diameters in Units & Fractions

TDB # 001B-0  
11-08-18

Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.
<b>10"</b>	<b>78.539816</b>	<b>31.41590</b>	<b>12"</b>	<b>113.097335</b>	<b>37.69908</b>	<b>14"</b>	<b>153.938040</b>	<b>43.98226</b>	<b>16"</b>	<b>201.061930</b>	<b>50.26544</b>	<b>18"</b>	<b>254.469005</b>	<b>56.54862</b>
1/32"	79.031457	31.51407	1/32"	113.687151	37.79725	1/32"	154.626030	44.08043	1/32"	201.848095	50.36361	1/32"	255.353345	56.64679
1/16"	79.524632	31.61225	1/16"	114.278501	37.89543	1/16"	155.315555	44.17861	1/16"	202.635794	50.46179	1/16"	256.239219	56.74497
3/32"	80.019341	31.71042	3/32"	114.871384	37.99360	3/32"	156.006613	44.27678	3/32"	203.425027	50.55996	3/32"	257.126627	56.84314
1/8"	80.515584	31.80860	1/8"	115.465802	38.09178	1/8"	156.699205	44.37496	1/8"	204.215794	50.65814	1/8"	258.015568	56.94132
5/32"	81.013360	31.90677	5/32"	116.061753	38.18995	5/32"	157.393332	44.47313	5/32"	205.008095	50.75631	5/32"	258.906044	57.03949
3/16"	81.512671	32.00495	3/16"	116.659239	38.28813	3/16"	158.088992	44.57131	3/16"	205.801930	50.85449	3/16"	259.798054	57.13767
7/32"	82.013516	32.10312	7/32"	117.258258	38.38630	7/32"	158.786186	44.66948	7/32"	206.597299	50.95266	7/32"	260.691598	57.23584
1/4"	82.515895	32.20130	1/4"	117.858812	38.48448	1/4"	159.484914	44.76766	1/4"	207.394202	51.05084	1/4"	261.586676	57.33402
9/32"	83.019807	32.29947	9/32"	118.460899	38.58265	9/32"	160.185177	44.86583	9/32"	208.192639	51.14901	9/32"	262.483287	57.43219
5/16"	83.525254	32.39765	5/16"	119.064521	38.68083	5/16"	160.886973	44.96401	5/16"	208.992610	51.24719	5/16"	263.381433	57.53037
11/32"	84.032235	32.49582	11/32"	119.669676	38.77900	11/32"	161.590303	45.06218	11/32"	209.794115	51.34536	11/32"	264.281113	57.62854
3/8"	84.540749	32.59400	3/8"	120.276366	38.87718	3/8"	162.295167	45.16036	3/8"	210.597154	51.44354	3/8"	265.182327	57.72672
13/32"	85.050798	32.69217	13/32"	120.884589	38.97535	13/32"	163.001565	45.25853	13/32"	211.401727	51.54171	13/32"	266.085074	57.82489
7/16"	85.562380	32.79035	7/16"	121.494346	39.07353	7/16"	163.709498	45.35671	7/16"	212.207834	51.63989	7/16"	266.989356	57.92307
15/32"	86.075497	32.88852	15/32"	122.105638	39.17170	15/32"	164.418964	45.45488	15/32"	213.015475	51.73806	15/32"	267.895172	58.02124
1/2"	86.590147	32.98670	1/2"	122.718463	39.26988	1/2"	165.129964	45.55306	1/2"	213.824650	51.83624	1/2"	268.802521	58.11942
17/32"	87.106332	33.08487	17/32"	123.332822	39.36805	17/32"	165.842498	45.65123	17/32"	214.635359	51.93441	17/32"	269.711405	58.21759
9/16"	87.624051	33.18304	9/16"	123.948716	39.46622	9/16"	166.556566	45.74940	9/16"	215.447602	52.03258	9/16"	270.621823	58.31576
19/32"	88.143303	33.28122	19/32"	124.566143	39.56440	19/32"	167.272168	45.84758	19/32"	216.261378	52.13076	19/32"	271.533774	58.41394
5/8"	88.664089	33.37939	5/8"	125.185104	39.66257	5/8"	167.989304	45.94575	5/8"	217.076689	52.22893	5/8"	272.447260	58.51211
21/32"	89.186410	33.47757	21/32"	125.805599	39.76075	21/32"	168.707974	46.04393	21/32"	217.893534	52.32711	21/32"	273.362279	58.61029
11/16"	89.710264	33.57574	11/16"	126.427629	39.85892	11/16"	169.428178	46.14210	11/16"	218.711913	52.42528	11/16"	274.278833	58.70846
23/32"	90.235653	33.67392	23/32"	127.051192	39.95710	23/32"	170.149916	46.24028	23/32"	219.531825	52.52346	23/32"	275.196920	58.80664
3/4"	90.762575	33.77209	3/4"	127.676289	40.05527	3/4"	170.873188	46.33845	3/4"	220.353272	52.62163	3/4"	276.116542	58.90481
25/32"	91.291032	33.87027	25/32"	128.302920	40.15345	25/32"	171.597994	46.43663	25/32"	221.176253	52.71981	25/32"	277.037697	59.00299
13/16"	91.821022	33.96844	13/16"	128.931085	40.25162	13/16"	172.324334	46.53480	13/16"	222.000767	52.81798	13/16"	277.960387	59.10116
27/32"	92.352546	34.06662	27/32"	129.560784	40.34980	27/32"	173.052208	46.63298	27/32"	222.826816	52.91616	27/32"	278.884610	59.19934
7/8"	92.885605	34.16479	7/8"	130.192017	40.44797	7/8"	173.781615	46.73115	7/8"	223.654399	53.01433	7/8"	279.810367	59.29751
29/32"	93.420197	34.26297	29/32"	130.824784	40.54615	29/32"	174.512557	46.82933	29/32"	224.483515	53.11251	29/32"	280.737659	59.39569
15/16"	93.956323	34.36114	15/16"	131.459085	40.64432	15/16"	175.245033	46.92750	15/16"	225.314166	53.21068	15/16"	281.666484	59.49386
31/32"	94.493983	34.45932	31/32"	132.094921	40.74250	31/32"	175.979043	47.02568	31/32"	226.146351	53.30886	31/32"	282.596844	59.59204
<b>11"</b>	<b>95.033178</b>	<b>34.55749</b>	<b>13"</b>	<b>132.732290</b>	<b>40.84067</b>	<b>15"</b>	<b>176.714587</b>	<b>47.12385</b>	<b>17"</b>	<b>226.980069</b>	<b>53.40703</b>	<b>19"</b>	<b>283.528737</b>	<b>59.69021</b>
1/32"	95.573906	34.65566	1/32"	133.371193	40.93884	1/32"	177.451664	47.22202	1/32"	227.815322	53.50520	1/32"	284.462164	59.78838
1/16"	96.116168	34.75384	1/16"	134.011630	41.03702	1/16"	178.190276	47.32020	1/16"	228.652108	53.60338	1/16"	285.397125	59.88656
3/32"	96.659964	34.85201	3/32"	134.653600	41.13519	3/32"	178.930422	47.41837	3/32"	229.490429	53.70155	3/32"	286.333621	59.98473
1/8"	97.205295	34.95019	1/8"	135.297105	41.23337	1/8"	179.672102	47.51655	1/8"	230.330283	53.79973	1/8"	287.271650	60.08291
5/32"	97.752159	35.04836	5/32"	135.942144	41.33154	5/32"	180.415315	47.61472	5/32"	231.171672	53.89790	5/32"	288.211213	60.18108
3/16"	98.300557	35.14654	3/16"	136.588717	41.42972	3/16"	181.160063	47.71290	3/16"	232.014594	53.99608	3/16"	289.152310	60.27926
7/32"	98.850489	35.24471	7/32"	137.236824	41.52789	7/32"	181.906345	47.81107	7/32"	232.859050	54.09425	7/32"	290.094942	60.37743
1/4"	99.401955	35.34289	1/4"	137.886465	41.62607	1/4"	182.654160	47.90925	1/4"	233.705041	54.19243	1/4"	291.039107	60.47561
9/32"	99.954955	35.44106	9/32"	138.537640	41.72424	9/32"	183.403510	48.00742	9/32"	234.552565	54.29060	9/32"	291.984806	60.57378
5/16"	100.509489	35.53924	5/16"	139.190349	41.82242	5/16"	184.154393	48.10560	5/16"	235.401624	54.38878	5/16"	292.932039	60.67196
11/32"	101.065557	35.63741	11/32"	139.844591	41.92059	11/32"	184.906811	48.20377	11/32"	236.252216	54.48695	11/32"	293.880806	60.77013
3/8"	101.623159	35.73559	3/8"	140.500368	42.01877	3/8"	185.660763	48.30195	3/8"	237.104342	54.58513	3/8"	294.831107	60.86831
13/32"	102.182295	35.83376	13/32"	141.157679	42.11694	13/32"	186.416248	48.40012	13/32"	237.958003	54.68330	13/32"	295.782942	60.96648
7/16"	102.742965	35.93194	7/16"	141.816524	42.21512	7/16"	187.173268	48.49830	7/16"	238.813197	54.78148	7/16"	296.736311	61.06466
15/32"	103.305169	36.03011	15/32"	142.476902	42.31329	15/32"	187.931821	48.59647	15/32"	239.669925	54.87965	15/32"	297.691214	61.16283
1/2"	103.868907	36.12829	1/2"	143.138815	42.41147	1/2"	188.691909	48.69465	1/2"	240.528187	54.97783	1/2"	298.647651	61.26101
17/32"	104.434179	36.22646	17/32"	143.802262	42.50964	17/32"	189.453530	48.79282	17/32"	241.387984	55.07600	17/32"	299.605622	61.35918
9/16"	105.000985	36.32463	9/16"	144.467243	42.60781	9/16"	190.216686	48.89099	9/16"	242.249314	55.17417	9/16"	300.565127	61.45735
19/32"	105.569325	36.42281	19/32"	145.133757	42.70599	19/32"	190.981375	48.98917	19/32"	243.112178	55.27235	19/32"	301.526166	61.55553
5/8"	106.139199	36.52098	5/8"	145.801806	42.80416	5/8"	191.747598	49.08734	5/8"	243.976576	55.37052	5/8"	302.488739	61.65370
21/32"	106.710606	36.61916	21/32"	146.471388	42.90234	21/32"	192.515356	49.18552	21/32"	244.842508	55.46870	21/32"	303.452846	61.75188
11/16"	107.283548	36.71733	11/16"	147.142505	43.00051	11/16"	193.284647	49.28369	11/16"	245.709975	55.56687	11/16"	304.418487	61.85005
23/32"	107.858024	36.81551	23/32"	147.815156	43.09869	23/32"	194.055472	49.38187	23/32"	246.578975	55.66505	23/32"	305.385662	61.94823
3/4"	108.434034	36.91368	3/4"	148.489340	43.19686	3/4"	194.827832	49.48004	3/4"	247.449509	55.76322	3/4"	306.354371	62.04640
25/32"	109.011578	37.01186	25/32"	149.165059	43.29504	25/32"	195.601725	49.57822	25/32"	248.321577	55.86140	25/32"	307.324614	62.14458
13/16"	109.590655	37.11003	13/16"	149.842311	43.39321	13/16"	196.377152	49.67639	13/16"	249.195179	55.95957	13/16"	308.296391	62.24275
27/32"	110.171267	37.20821	27/32"	150.521098	43.49139	27/32"	197.154114	49.77457	27/32"	250.070315	56.05775	27/32"	309.269701	62.34093
7/8"	110.753413	37.30638	7/8"	151.201418	43.									



## Areas & Circumferences of Circles for Diameters in Units & Fractions

TDB # 001C-0  
11-08-18

Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.	Dia. In.	Area Sq. In.	Circumf. In.
<b>20"</b>	<b>314.159265</b>	<b>62.83180</b>	<b>22"</b>	<b>380.132711</b>	<b>69.11498</b>	<b>24"</b>	<b>452.389342</b>	<b>75.39816</b>
1/32"	315.141780	62.92997	1/32"	381.213400	69.21315	1/32"	453.568206	75.49633
1/16"	316.125829	63.02815	1/16"	382.295624	69.31133	1/16"	454.748604	75.59451
3/32"	317.111411	63.12632	3/32"	383.379381	69.40950	3/32"	455.930537	75.69268
1/8"	318.098528	63.22450	1/8"	384.464673	69.50768	1/8"	457.114003	75.79086
5/32"	319.087178	63.32267	5/32"	385.551498	69.60585	5/32"	458.299003	75.88903
3/16"	320.077363	63.42085	3/16"	386.639857	69.70403	3/16"	459.485537	75.98721
7/32"	321.069082	63.51902	7/32"	387.729751	69.80220	7/32"	460.673605	76.08538
1/4"	322.062334	63.61720	1/4"	388.821178	69.90038	1/4"	461.863207	76.18356
9/32"	323.057121	63.71537	9/32"	389.914139	69.99855	9/32"	463.054343	76.28173
5/16"	324.053441	63.81355	5/16"	391.008635	70.09673	5/16"	464.247013	76.37991
11/32"	325.051296	63.91172	11/32"	392.104664	70.19490	11/32"	465.441217	76.47808
3/8"	326.050684	64.00990	3/8"	393.202227	70.29308	3/8"	466.636955	76.57626
13/32"	327.051607	64.10807	13/32"	394.301324	70.39125	13/32"	467.834227	76.67443
7/16"	328.054063	64.20625	7/16"	395.401956	70.48943	7/16"	469.033033	76.77261
15/32"	329.058054	64.30442	15/32"	396.504121	70.58760	15/32"	470.233373	76.87078
1/2"	330.063578	64.40260	1/2"	397.607820	70.68578	1/2"	471.435247	76.96896
17/32"	331.070636	64.50077	17/32"	398.713053	70.78395	17/32"	472.638655	77.06713
9/16"	332.079229	64.59894	9/16"	399.819820	70.88212	9/16"	473.843597	77.16530
19/32"	333.089355	64.69712	19/32"	400.928121	70.98030	19/32"	475.050073	77.26348
5/8"	334.101015	64.79529	5/8"	402.037957	71.07847	5/8"	476.258083	77.36165
21/32"	335.114210	64.89347	21/32"	403.149326	71.17665	21/32"	477.467627	77.45983
11/16"	336.128938	64.99164	11/16"	404.262229	71.27482	11/16"	478.678705	77.55800
23/32"	337.145200	65.08982	23/32"	405.376666	71.37300	23/32"	479.891316	77.65618
3/4"	338.162997	65.18799	3/4"	406.492637	71.47117	3/4"	481.105462	77.75435
25/32"	339.182327	65.28617	25/32"	407.610142	71.56935	25/32"	482.321142	77.85253
13/16"	340.203191	65.38434	13/16"	408.729181	71.66752	13/16"	483.538356	77.95070
27/32"	341.225589	65.48252	27/32"	409.849754	71.76570	27/32"	484.757103	78.04888
7/8"	342.249521	65.58069	7/8"	410.971861	71.86387	7/8"	485.977385	78.14705
29/32"	343.274988	65.67887	29/32"	412.095502	71.96205	29/32"	487.199201	78.24523
15/16"	344.301988	65.77704	15/16"	413.220676	72.06022	15/16"	488.422551	78.34340
31/32"	345.330522	65.87522	31/32"	414.347385	72.15840	31/32"	489.647434	78.44158
<b>21"</b>	<b>346.360590</b>	<b>65.97339</b>	<b>23"</b>	<b>415.475628</b>	<b>72.25657</b>	<b>25"</b>	<b>490.873852</b>	<b>78.53975</b>
1/32"	347.392192	66.07156	1/32"	416.605405	72.35474	1/32"	492.101803	78.63792
1/16"	348.425328	66.16974	1/16"	417.736716	72.45292	1/16"	493.331289	78.73610
3/32"	349.459998	66.26791	3/32"	418.869561	72.55109	3/32"	494.562309	78.83427
1/8"	350.496202	66.36609	1/8"	420.003940	72.64927	1/8"	495.794862	78.93245
5/32"	351.533940	66.46426	5/32"	421.139852	72.74744	5/32"	497.028950	79.03062
3/16"	352.573212	66.56244	3/16"	422.277299	72.84562	3/16"	498.264571	79.12880
7/32"	353.614018	66.66061	7/32"	423.416280	72.94379	7/32"	499.501727	79.22697
1/4"	354.656358	66.75879	1/4"	424.556794	73.04197	1/4"	500.740416	79.32515
9/32"	355.700232	66.85696	9/32"	425.698843	73.14014	9/32"	501.980640	79.42332
5/16"	356.745640	66.95514	5/16"	426.842426	73.23832	5/16"	503.222397	79.52150
11/32"	357.792582	67.05331	11/32"	427.987543	73.33649	11/32"	504.465689	79.61967
3/8"	358.841058	67.15149	3/8"	429.134193	73.43467	3/8"	505.710514	79.71785
13/32"	359.891067	67.24966	13/32"	430.282378	73.53284	13/32"	506.956873	79.81602
7/16"	360.942611	67.34784	7/16"	431.432096	73.63102	7/16"	508.204767	79.91420
15/32"	361.995689	67.44601	15/32"	432.583349	73.72919	15/32"	509.454194	80.01237
1/2"	363.050301	67.54419	1/2"	433.736136	73.82737	1/2"	510.705155	80.11055
17/32"	364.106447	67.64236	17/32"	434.890456	73.92554	17/32"	511.957651	80.20872
9/16"	365.164126	67.74053	9/16"	436.046311	74.02371	9/16"	513.211680	80.30689
19/32"	366.223340	67.83871	19/32"	437.203699	74.12189	19/32"	514.467243	80.40507
5/8"	367.284088	67.93688	5/8"	438.362622	74.22006	5/8"	515.724341	80.50324
21/32"	368.346370	68.03506	21/32"	439.523078	74.31824	21/32"	516.982972	80.60142
11/16"	369.410185	68.13323	11/16"	440.685068	74.41641	11/16"	518.243137	80.69959
23/32"	370.475535	68.23141	23/32"	441.848593	74.51459	23/32"	519.504836	80.79777
3/4"	371.542418	68.32958	3/4"	443.013651	74.61276	3/4"	520.768069	80.89594
25/32"	372.610836	68.42776	25/32"	444.180244	74.71094	25/32"	522.032837	80.99412
13/16"	373.680788	68.52593	13/16"	445.348370	74.80911	13/16"	523.299138	81.09229
27/32"	374.752273	68.62411	27/32"	446.518030	74.90729	27/32"	524.566973	81.19047
7/8"	375.825293	68.72228	7/8"	447.689225	75.00546	7/8"	525.836342	81.28864
29/32"	376.899846	68.82046	29/32"	448.861953	75.10364	29/32"	527.107245	81.38682
15/16"	377.975934	68.91863	15/16"	450.036215	75.20181	15/16"	528.379682	81.48499
31/32"	379.053555	69.01681	31/32"	451.212012	75.29999	31/32"	529.653653	81.58317

$$\text{DIAMETER} = \text{CIRCUMFERENCE} \div 3.141592654$$

$$\text{CIRCUMFERENCE} = 3.141592654 \times \text{DIAMETER}$$

$$\text{AREA} = 0.785398163 \times \text{DIAMETER}^2$$

$$1 \text{ sq.in.} = 6.4516 \text{ sq. cm.}$$

$$1 \text{ sq.ft.} = 929.03 \text{ sq. cm.}$$

$$1 \text{ sq.cm.} = 0.155 \text{ sq. in.}$$

$$1 \text{ sq.cm.} = 0.0010764 \text{ sq. ft.}$$



# Centigrade / Fahrenheit Conversion Table

TDB # 008-A

C	C/F	F	C	C/F	F	C	C/F	F	C	C/F	F
<b>-73.3</b>	<b>-100</b>	<b>-148.0</b>	<b>-40.0</b>	<b>-40</b>	<b>-40.0</b>	<b>-6.7</b>	<b>20</b>	<b>68.0</b>	<b>26.7</b>	<b>80</b>	<b>176.0</b>
-72.8	-99	-146.2	-39.4	-39	-38.2	-6.1	21	69.8	27.2	81	177.8
-72.2	-98	-144.4	-38.9	-38	-36.4	-5.6	22	71.6	27.8	82	179.6
-71.7	-97	-142.6	-38.3	-37	-34.6	-5.0	23	73.4	28.3	83	181.4
-71.1	-96	-140.8	-37.8	-36	-32.8	-4.4	24	75.2	28.9	84	183.2
-70.6	-95	-139.0	-37.2	-35	-31.0	-3.9	25	77.0	29.4	85	185.0
-70.0	-94	-137.2	-36.7	-34	-29.2	-3.3	26	78.8	30.0	86	186.8
-69.4	-93	-135.4	-36.1	-33	-27.4	-2.8	27	80.6	30.6	87	188.6
-68.9	-92	-133.6	-35.6	-32	-25.6	-2.2	28	82.4	31.1	88	190.4
-68.3	-91	-131.8	-35.0	-31	-23.8	-1.7	29	84.2	31.7	89	192.2
<b>-67.8</b>	<b>-90</b>	<b>-130.0</b>	<b>-34.4</b>	<b>-30</b>	<b>-22.0</b>	<b>-1.1</b>	<b>30</b>	<b>86.0</b>	<b>32.2</b>	<b>90</b>	<b>194.0</b>
-67.2	-89	-128.2	-33.9	-29	-20.2	-0.6	31	87.8	32.8	91	195.8
-66.7	-88	-126.4	-33.3	-28	-18.4	0.0	32	89.6	33.3	92	197.6
-66.1	-87	-124.6	-32.8	-27	-16.6	0.6	33	91.4	33.9	93	199.4
-65.6	-86	-122.8	-32.2	-26	-14.8	1.1	34	93.2	34.4	94	201.2
-65.0	-85	-121.0	-31.7	-25	-13.0	1.7	35	95.0	35.0	95	203.0
-64.4	-84	-119.2	-31.1	-24	-11.2	2.2	36	96.8	35.6	96	204.8
-63.9	-83	-117.4	-30.6	-23	-9.4	2.8	37	98.6	36.1	97	206.6
-63.3	-82	-115.6	-30.0	-22	-7.6	3.3	38	100.4	36.7	98	208.4
-62.8	-81	-113.8	-29.4	-21	-5.8	3.9	39	102.2	37.2	99	210.2
<b>-62.2</b>	<b>-80</b>	<b>-112.0</b>	<b>-28.9</b>	<b>-20</b>	<b>-4.0</b>	<b>4.4</b>	<b>40</b>	<b>104.0</b>	<b>37.8</b>	<b>100</b>	<b>212.0</b>
-61.7	-79	-110.2	-28.3	-19	-2.2	5.0	41	105.8	38.3	101	213.8
-61.1	-78	-108.4	-27.8	-18	-0.4	5.6	42	107.6	38.9	102	215.6
-60.6	-77	-106.6	-27.2	-17	1.4	6.1	43	109.4	39.4	103	217.4
-60.0	-76	-104.8	-26.7	-16	3.2	6.7	44	111.2	40.0	104	219.2
-59.4	-75	-103.0	-26.1	-15	5.0	7.2	45	113.0	40.6	105	221.0
-58.9	-74	-101.2	-25.6	-14	6.8	7.8	46	114.8	41.1	106	222.8
-58.3	-73	-99.4	-25.0	-13	8.6	8.3	47	116.6	41.7	107	224.6
-57.8	-72	-97.6	-24.4	-12	10.4	8.9	48	118.4	42.2	108	226.4
-57.2	-71	-95.8	-23.9	-11	12.2	9.4	49	120.2	42.8	109	228.2
<b>-56.7</b>	<b>-70</b>	<b>-94.0</b>	<b>-23.3</b>	<b>-10</b>	<b>14.0</b>	<b>10.0</b>	<b>50</b>	<b>122.0</b>	<b>43.3</b>	<b>110</b>	<b>230.0</b>
-56.1	-69	-92.2	-22.8	-9	15.8	10.6	51	123.8	43.9	111	231.8
-55.6	-68	-90.4	-22.2	-8	17.6	11.1	52	125.6	44.4	112	233.6
-55.0	-67	-88.6	-21.7	-7	19.4	11.7	53	127.4	45.0	113	235.4
-54.4	-66	-86.8	-21.1	-6	21.2	12.2	54	129.2	45.6	114	237.2
-53.9	-65	-85.0	-20.6	-5	23.0	12.8	55	131.0	46.1	115	239.0
-53.3	-64	-83.2	-20.0	-4	24.8	13.3	56	132.8	46.7	116	240.8
-52.8	-63	-81.4	-19.4	-3	26.6	13.9	57	134.6	47.2	117	242.6
-52.2	-62	-79.6	-18.9	-2	28.4	14.4	58	136.4	47.8	118	244.4
-51.7	-61	-77.8	-18.3	-1	30.2	15.0	59	138.2	48.3	119	246.2
<b>-51.1</b>	<b>-60</b>	<b>-76.0</b>	<b>-17.8</b>	<b>0</b>	<b>32.0</b>	<b>15.6</b>	<b>60</b>	<b>140.0</b>	<b>48.9</b>	<b>120</b>	<b>248.0</b>
-50.6	-59	-74.2	-17.2	1	33.8	16.1	61	141.8	49.4	121	249.8
-50.0	-58	-72.4	-16.7	2	35.6	16.7	62	143.6	50.0	122	251.6
-49.4	-57	-70.6	-16.1	3	37.4	17.2	63	145.4	50.6	123	253.4
-48.9	-56	-68.8	-15.6	4	39.2	17.8	64	147.2	51.1	124	255.2
-48.3	-55	-67.0	-15.0	5	41.0	18.3	65	149.0	51.7	125	257.0
-47.8	-54	-65.2	-14.4	6	42.8	18.9	66	150.8	52.2	126	258.8
-47.2	-53	-63.4	-13.9	7	44.6	19.4	67	152.6	52.8	127	260.6
-46.7	-52	-61.6	-13.3	8	46.4	20.0	68	154.4	53.3	128	262.4
-46.1	-51	-59.8	-12.8	9	48.2	20.6	69	156.2	53.9	129	264.2
<b>-45.6</b>	<b>-50</b>	<b>-58.0</b>	<b>-12.2</b>	<b>10</b>	<b>50.0</b>	<b>21.1</b>	<b>70</b>	<b>158.0</b>	<b>54.4</b>	<b>130</b>	<b>266.0</b>
-45.0	-49	-56.2	-11.7	11	51.8	21.7	71	159.8	55.0	131	267.8
-44.4	-48	-54.4	-11.1	12	53.6	22.2	72	161.6	55.6	132	269.6
-43.9	-47	-52.6	-10.6	13	55.4	22.8	73	163.4	56.1	133	271.4
-43.3	-46	-50.8	-10.0	14	57.2	23.3	74	165.2	56.7	134	273.2
-42.8	-45	-49.0	-9.4	15	59.0	23.9	75	167.0	57.2	135	275.0
-42.2	-44	-47.2	-8.9	16	60.8	24.4	76	168.8	57.8	136	276.8
-41.7	-43	-45.4	-8.3	17	62.6	25.0	77	170.6	58.3	137	278.6
-41.1	-42	-43.6	-7.8	18	64.4	25.6	78	172.4	58.9	138	280.4
-40.6	-41	-41.8	-7.2	19	66.2	26.1	79	174.2	59.4	139	282.2



# Centigrade / Fahrenheit Conversion Table

TDB # 008-B

C	C/F	F	C	C/F	F	C	C/F	F	C	C/F	F
<b>60.0</b>	<b>140</b>	<b>284.0</b>	<b>93.3</b>	<b>200</b>	<b>392.0</b>	<b>126.7</b>	<b>260</b>	<b>500.0</b>	<b>160.0</b>	<b>320</b>	<b>608.0</b>
60.6	141	285.8	93.9	201	393.8	127.2	261	501.8	160.6	321	609.8
61.1	142	287.6	94.4	202	395.6	127.8	262	503.6	161.1	322	611.6
61.7	143	289.4	95.0	203	397.4	128.3	263	505.4	161.7	323	613.4
62.2	144	291.2	95.6	204	399.2	128.9	264	507.2	162.2	324	615.2
62.8	145	293.0	96.1	205	401.0	129.4	265	509.0	162.8	325	617.0
63.3	146	294.8	96.7	206	402.8	130.0	266	510.8	163.3	326	618.8
63.9	147	296.6	97.2	207	404.6	130.6	267	512.6	163.9	327	620.6
64.4	148	298.4	97.8	208	406.4	131.1	268	514.4	164.4	328	622.4
65.0	149	300.2	98.3	209	408.2	131.7	269	516.2	165.0	329	624.2
<b>65.6</b>	<b>150</b>	<b>302.0</b>	<b>98.9</b>	<b>210</b>	<b>410.0</b>	<b>132.2</b>	<b>270</b>	<b>518.0</b>	<b>165.6</b>	<b>330</b>	<b>626.0</b>
66.1	151	303.8	99.4	211	411.8	132.8	271	519.8	166.1	331	627.8
66.7	152	305.6	100.0	212	413.6	133.3	272	521.6	166.7	332	629.6
67.2	153	307.4	100.6	213	415.4	133.9	273	523.4	167.2	333	631.4
67.8	154	309.2	101.1	214	417.2	134.4	274	525.2	167.8	334	633.2
68.3	155	311.0	101.7	215	419.0	135.0	275	527.0	168.3	335	635.0
68.9	156	312.8	102.2	216	420.8	135.6	276	528.8	168.9	336	636.8
69.4	157	314.6	102.8	217	422.6	136.1	277	530.6	169.4	337	638.6
70.0	158	316.4	103.3	218	424.4	136.7	278	532.4	170.0	338	640.4
70.6	159	318.2	103.9	219	426.2	137.2	279	534.2	170.6	339	642.2
<b>71.1</b>	<b>160</b>	<b>320.0</b>	<b>104.4</b>	<b>220</b>	<b>428.0</b>	<b>137.8</b>	<b>280</b>	<b>536.0</b>	<b>171.1</b>	<b>340</b>	<b>644.0</b>
71.7	161	321.8	105.0	221	429.8	138.3	281	537.8	171.7	341	645.8
72.2	162	323.6	105.6	222	431.6	138.9	282	539.6	172.2	342	647.6
72.8	163	325.4	106.1	223	433.4	139.4	283	541.4	172.8	343	649.4
73.3	164	327.2	106.7	224	435.2	140.0	284	543.2	173.3	344	651.2
73.9	165	329.0	107.2	225	437.0	140.6	285	545.0	173.9	345	653.0
74.4	166	330.8	107.8	226	438.8	141.1	286	546.8	174.4	346	654.8
75.0	167	332.6	108.3	227	440.6	141.7	287	548.6	175.0	347	656.6
75.6	168	334.4	108.9	228	442.4	142.2	288	550.4	175.6	348	658.4
76.1	169	336.2	109.4	229	444.2	142.8	289	552.2	176.1	349	660.2
<b>76.7</b>	<b>170</b>	<b>338.0</b>	<b>110.0</b>	<b>230</b>	<b>446.0</b>	<b>143.3</b>	<b>290</b>	<b>554.0</b>	<b>176.7</b>	<b>350</b>	<b>662.0</b>
77.2	171	339.8	110.6	231	447.8	143.9	291	555.8	177.2	351	663.8
77.8	172	341.6	111.1	232	449.6	144.4	292	557.6	177.8	352	665.6
78.3	173	343.4	111.7	233	451.4	145.0	293	559.4	178.3	353	667.4
78.9	174	345.2	112.2	234	453.2	145.6	294	561.2	178.9	354	669.2
79.4	175	347.0	112.8	235	455.0	146.1	295	563.0	179.4	355	671.0
80.0	176	348.8	113.3	236	456.8	146.7	296	564.8	180.0	356	672.8
80.6	177	350.6	113.9	237	458.6	147.2	297	566.6	180.6	357	674.6
81.1	178	352.4	114.4	238	460.4	147.8	298	568.4	181.1	358	676.4
81.7	179	354.2	115.0	239	462.2	148.3	299	570.2	181.7	359	678.2
<b>82.2</b>	<b>180</b>	<b>356.0</b>	<b>115.6</b>	<b>240</b>	<b>464.0</b>	<b>148.9</b>	<b>300</b>	<b>572.0</b>	<b>182.2</b>	<b>360</b>	<b>680.0</b>
82.8	181	357.8	116.1	241	465.8	149.4	301	573.8	182.8	361	681.8
83.3	182	359.6	116.7	242	467.6	150.0	302	575.6	183.3	362	683.6
83.9	183	361.4	117.2	243	469.4	150.6	303	577.4	183.9	363	685.4
84.4	184	363.2	117.8	244	471.2	151.1	304	579.2	184.4	364	687.2
85.0	185	365.0	118.3	245	473.0	151.7	305	581.0	185.0	365	689.0
85.6	186	366.8	118.9	246	474.8	152.2	306	582.8	185.6	366	690.8
86.1	187	368.6	119.4	247	476.6	152.8	307	584.6	186.1	367	692.6
86.7	188	370.4	120.0	248	478.4	153.3	308	586.4	186.7	368	694.4
87.2	189	372.2	120.6	249	480.2	153.9	309	588.2	187.2	369	696.2
<b>87.8</b>	<b>190</b>	<b>374.0</b>	<b>121.1</b>	<b>250</b>	<b>482.0</b>	<b>154.4</b>	<b>310</b>	<b>590.0</b>	<b>187.8</b>	<b>370</b>	<b>698.0</b>
88.3	191	375.8	121.7	251	483.8	155.0	311	591.8	188.3	371	699.8
88.9	192	377.6	122.2	252	485.6	155.6	312	593.6	188.9	372	701.6
89.4	193	379.4	122.8	253	487.4	156.1	313	595.4	189.4	373	703.4
90.0	194	381.2	123.3	254	489.2	156.7	314	597.2	190.0	374	705.2
90.6	195	383.0	123.9	255	491.0	157.2	315	599.0	190.6	375	707.0
91.1	196	384.8	124.4	256	492.8	157.8	316	600.8	191.1	376	708.8
91.7	197	386.6	125.0	257	494.6	158.3	317	602.6	191.7	377	710.6
92.2	198	388.4	125.6	258	496.4	158.9	318	604.4	192.2	378	712.4
92.8	199	390.2	126.1	259	498.2	159.4	319	606.2	192.8	379	714.2



# Centigrade / Fahrenheit Conversion Table

TDB-008-C

C	C/F	F	C	C/F	F	C	C/F	F	C	C/F	F
<b>193.3</b>	<b>380</b>	<b>716.0</b>	<b>226.7</b>	<b>440</b>	<b>824.0</b>	<b>260.0</b>	<b>500</b>	<b>932.0</b>	<b>293.3</b>	<b>560</b>	<b>1040.0</b>
193.9	381	717.8	227.2	441	825.8	260.6	501	933.8	293.9	561	1041.8
194.4	382	719.6	227.8	442	827.6	261.1	502	935.6	294.4	562	1043.6
195.0	383	721.4	228.3	443	829.4	261.7	503	937.4	295.0	563	1045.4
195.6	384	723.2	228.9	444	831.2	262.2	504	939.2	295.6	564	1047.2
196.1	385	725.0	229.4	445	833.0	262.8	505	941.0	296.1	565	1049.0
196.7	386	726.8	230.0	446	834.8	263.3	506	942.8	296.7	566	1050.8
197.2	387	728.6	230.6	447	836.6	263.9	507	944.6	297.2	567	1052.6
197.8	388	730.4	231.1	448	838.4	264.4	508	946.4	297.8	568	1054.4
198.3	389	732.2	231.7	449	840.2	265.0	509	948.2	298.3	569	1056.2
<b>198.9</b>	<b>390</b>	<b>734.0</b>	<b>232.2</b>	<b>450</b>	<b>842.0</b>	<b>265.6</b>	<b>510</b>	<b>950.0</b>	<b>298.9</b>	<b>570</b>	<b>1058.0</b>
199.4	391	735.8	232.8	451	843.8	266.1	511	951.8	299.4	571	1059.8
200.0	392	737.6	233.3	452	845.6	266.7	512	953.6	300.0	572	1061.6
200.6	393	739.4	233.9	453	847.4	267.2	513	955.4	300.6	573	1063.4
201.1	394	741.2	234.4	454	849.2	267.8	514	957.2	301.1	574	1065.2
201.7	395	743.0	235.0	455	851.0	268.3	515	959.0	301.7	575	1067.0
202.2	396	744.8	235.6	456	852.8	268.9	516	960.8	302.2	576	1068.8
202.8	397	746.6	236.1	457	854.6	269.4	517	962.6	302.8	577	1070.6
203.3	398	748.4	236.7	458	856.4	270.0	518	964.4	303.3	578	1072.4
203.9	399	750.2	237.2	459	858.2	270.6	519	966.2	303.9	579	1074.2
<b>204.4</b>	<b>400</b>	<b>752.0</b>	<b>237.8</b>	<b>460</b>	<b>860.0</b>	<b>271.1</b>	<b>520</b>	<b>968.0</b>	<b>304.4</b>	<b>580</b>	<b>1076.0</b>
205.0	401	753.8	238.3	461	861.8	271.7	521	969.8	305.0	581	1077.8
205.6	402	755.6	238.9	462	863.6	272.2	522	971.6	305.6	582	1079.6
206.1	403	757.4	239.4	463	865.4	272.8	523	973.4	306.1	583	1081.4
206.7	404	759.2	240.0	464	867.2	273.3	524	975.2	306.7	584	1083.2
207.2	405	761.0	240.6	465	869.0	273.9	525	977.0	307.2	585	1085.0
207.8	406	762.8	241.1	466	870.8	274.4	526	978.8	307.8	586	1086.8
208.3	407	764.6	241.7	467	872.6	275.0	527	980.6	308.3	587	1088.6
208.9	408	766.4	242.2	468	874.4	275.6	528	982.4	308.9	588	1090.4
209.4	409	768.2	242.8	469	876.2	276.1	529	984.2	309.4	589	1092.2
<b>210.0</b>	<b>410</b>	<b>770.0</b>	<b>243.3</b>	<b>470</b>	<b>878.0</b>	<b>276.7</b>	<b>530</b>	<b>986.0</b>	<b>310.0</b>	<b>590</b>	<b>1094.0</b>
210.6	411	771.8	243.9	471	879.8	277.2	531	987.8	310.6	591	1095.8
211.1	412	773.6	244.4	472	881.6	277.8	532	989.6	311.1	592	1097.6
211.7	413	775.4	245.0	473	883.4	278.3	533	991.4	311.7	593	1099.4
212.2	414	777.2	245.6	474	885.2	278.9	534	993.2	312.2	594	1101.2
212.8	415	779.0	246.1	475	887.0	279.4	535	995.0	312.8	595	1103.0
213.3	416	780.8	246.7	476	888.8	280.0	536	996.8	313.3	596	1104.8
213.9	417	782.6	247.2	477	890.6	280.6	537	998.6	313.9	597	1106.6
214.4	418	784.4	247.8	478	892.4	281.1	538	1000.4	314.4	598	1108.4
215.0	419	786.2	248.3	479	894.2	281.7	539	1002.2	315.0	599	1110.2
<b>215.6</b>	<b>420</b>	<b>788.0</b>	<b>248.9</b>	<b>480</b>	<b>896.0</b>	<b>282.2</b>	<b>540</b>	<b>1004.0</b>	<b>315.6</b>	<b>600</b>	<b>1112.0</b>
216.1	421	789.8	249.4	481	897.8	282.8	541	1005.8	316.1	601	1113.8
216.7	422	791.6	250.0	482	899.6	283.3	542	1007.6	316.7	602	1115.6
217.2	423	793.4	250.6	483	901.4	283.9	543	1009.4	317.2	603	1117.4
217.8	424	795.2	251.1	484	903.2	284.4	544	1011.2	317.8	604	1119.2
218.3	425	797.0	251.7	485	905.0	285.0	545	1013.0	318.3	605	1121.0
218.9	426	798.8	252.2	486	906.8	285.6	546	1014.8	318.9	606	1122.8
219.4	427	800.6	252.8	487	908.6	286.1	547	1016.6	319.4	607	1124.6
220.0	428	802.4	253.3	488	910.4	286.7	548	1018.4	320.0	608	1126.4
220.6	429	804.2	253.9	489	912.2	287.2	549	1020.2	320.6	609	1128.2
<b>221.1</b>	<b>430</b>	<b>806.0</b>	<b>254.4</b>	<b>490</b>	<b>914.0</b>	<b>287.8</b>	<b>550</b>	<b>1022.0</b>	<b>321.1</b>	<b>610</b>	<b>1130.0</b>
221.7	431	807.8	255.0	491	915.8	288.3	551	1023.8	321.7	611	1131.8
222.2	432	809.6	255.6	492	917.6	288.9	552	1025.6	322.2	612	1133.6
222.8	433	811.4	256.1	493	919.4	289.4	553	1027.4	322.8	613	1135.4
223.3	434	813.2	256.7	494	921.2	290.0	554	1029.2	323.3	614	1137.2
223.9	435	815.0	257.2	495	923.0	290.6	555	1031.0	323.9	615	1139.0
224.4	436	816.8	257.8	496	924.8	291.1	556	1032.8	324.4	616	1140.8
225.0	437	818.6	258.3	497	926.6	291.7	557	1034.6	325.0	617	1142.6
225.6	438	820.4	258.9	498	928.4	292.2	558	1036.4	325.6	618	1144.4
226.1	439	822.2	259.4	499	930.2	292.8	559	1038.2	326.1	619	1146.2



# Centigrade / Fahrenheit Conversion Table

TDB # 008-D

C	C/F	F									
<b>326.7</b>	<b>620</b>	<b>1148.0</b>	<b>360.0</b>	<b>680</b>	<b>1256.0</b>	<b>393.3</b>	<b>740</b>	<b>1364.0</b>	<b>426.7</b>	<b>800</b>	<b>1472.0</b>
327.2	621	1149.8	360.6	681	1257.8	393.9	741	1365.8	427.2	801	1473.8
327.8	622	1151.6	361.1	682	1259.6	394.4	742	1367.6	427.8	802	1475.6
328.3	623	1153.4	361.7	683	1261.4	395.0	743	1369.4	428.3	803	1477.4
328.9	624	1155.2	362.2	684	1263.2	395.6	744	1371.2	428.9	804	1479.2
329.4	625	1157.0	362.8	685	1265.0	396.1	745	1373.0	429.4	805	1481.0
330.0	626	1158.8	363.3	686	1266.8	396.7	746	1374.8	430.0	806	1482.8
330.6	627	1160.6	363.9	687	1268.6	397.2	747	1376.6	430.6	807	1484.6
331.1	628	1162.4	364.4	688	1270.4	397.8	748	1378.4	431.1	808	1486.4
331.7	629	1164.2	365.0	689	1272.2	398.3	749	1380.2	431.7	809	1488.2
<b>332.2</b>	<b>630</b>	<b>1166.0</b>	<b>365.6</b>	<b>690</b>	<b>1274.0</b>	<b>398.9</b>	<b>750</b>	<b>1382.0</b>	<b>432.2</b>	<b>810</b>	<b>1490.0</b>
332.8	631	1167.8	366.1	691	1275.8	399.4	751	1383.8	432.8	811	1491.8
333.3	632	1169.6	366.7	692	1277.6	400.0	752	1385.6	433.3	812	1493.6
333.9	633	1171.4	367.2	693	1279.4	400.6	753	1387.4	433.9	813	1495.4
334.4	634	1173.2	367.8	694	1281.2	401.1	754	1389.2	434.4	814	1497.2
335.0	635	1175.0	368.3	695	1283.0	401.7	755	1391.0	435.0	815	1499.0
335.6	636	1176.8	368.9	696	1284.8	402.2	756	1392.8	435.6	816	1500.8
336.1	637	1178.6	369.4	697	1286.6	402.8	757	1394.6	436.1	817	1502.6
336.7	638	1180.4	370.0	698	1288.4	403.3	758	1396.4	436.7	818	1504.4
337.2	639	1182.2	370.6	699	1290.2	403.9	759	1398.2	437.2	819	1506.2
<b>337.8</b>	<b>640</b>	<b>1184.0</b>	<b>371.1</b>	<b>700</b>	<b>1292.0</b>	<b>404.4</b>	<b>760</b>	<b>1400.0</b>	<b>437.8</b>	<b>820</b>	<b>1508.0</b>
338.3	641	1185.8	371.7	701	1293.8	405.0	761	1401.8	438.3	821	1509.8
338.9	642	1187.6	372.2	702	1295.6	405.6	762	1403.6	438.9	822	1511.6
339.4	643	1189.4	372.8	703	1297.4	406.1	763	1405.4	439.4	823	1513.4
340.0	644	1191.2	373.3	704	1299.2	406.7	764	1407.2	440.0	824	1515.2
340.6	645	1193.0	373.9	705	1301.0	407.2	765	1409.0	440.6	825	1517.0
341.1	646	1194.8	374.4	706	1302.8	407.8	766	1410.8	441.1	826	1518.8
341.7	647	1196.6	375.0	707	1304.6	408.3	767	1412.6	441.7	827	1520.6
342.2	648	1198.4	375.6	708	1306.4	408.9	768	1414.4	442.2	828	1522.4
342.8	649	1200.2	376.1	709	1308.2	409.4	769	1416.2	442.8	829	1524.2
<b>343.3</b>	<b>650</b>	<b>1202.0</b>	<b>376.7</b>	<b>710</b>	<b>1310.0</b>	<b>410.0</b>	<b>770</b>	<b>1418.0</b>	<b>443.3</b>	<b>830</b>	<b>1526.0</b>
343.9	651	1203.8	377.2	711	1311.8	410.6	771	1419.8	443.9	831	1527.8
344.4	652	1205.6	377.8	712	1313.6	411.1	772	1421.6	444.4	832	1529.6
345.0	653	1207.4	378.3	713	1315.4	411.7	773	1423.4	445.0	833	1531.4
345.6	654	1209.2	378.9	714	1317.2	412.2	774	1425.2	445.6	834	1533.2
346.1	655	1211.0	379.4	715	1319.0	412.8	775	1427.0	446.1	835	1535.0
346.7	656	1212.8	380.0	716	1320.8	413.3	776	1428.8	446.7	836	1536.8
347.2	657	1214.6	380.6	717	1322.6	413.9	777	1430.6	447.2	837	1538.6
347.8	658	1216.4	381.1	718	1324.4	414.4	778	1432.4	447.8	838	1540.4
348.3	659	1218.2	381.7	719	1326.2	415.0	779	1434.2	448.3	839	1542.2
<b>348.9</b>	<b>660</b>	<b>1220.0</b>	<b>382.2</b>	<b>720</b>	<b>1328.0</b>	<b>415.6</b>	<b>780</b>	<b>1436.0</b>	<b>448.9</b>	<b>840</b>	<b>1544.0</b>
349.4	661	1221.8	382.8	721	1329.8	416.1	781	1437.8	449.4	841	1545.8
350.0	662	1223.6	383.3	722	1331.6	416.7	782	1439.6	450.0	842	1547.6
350.6	663	1225.4	383.9	723	1333.4	417.2	783	1441.4	450.6	843	1549.4
351.1	664	1227.2	384.4	724	1335.2	417.8	784	1443.2	451.1	844	1551.2
351.7	665	1229.0	385.0	725	1337.0	418.3	785	1445.0	451.7	845	1553.0
352.2	666	1230.8	385.6	726	1338.8	418.9	786	1446.8	452.2	846	1554.8
352.8	667	1232.6	386.1	727	1340.6	419.4	787	1448.6	452.8	847	1556.6
353.3	668	1234.4	386.7	728	1342.4	420.0	788	1450.4	453.3	848	1558.4
353.9	669	1236.2	387.2	729	1344.2	420.6	789	1452.2	453.9	849	1560.2
<b>354.4</b>	<b>670</b>	<b>1238.0</b>	<b>387.8</b>	<b>730</b>	<b>1346.0</b>	<b>421.1</b>	<b>790</b>	<b>1454.0</b>	<b>454.4</b>	<b>850</b>	<b>1562.0</b>
355.0	671	1239.8	388.3	731	1347.8	421.7	791	1455.8	455.0	851	1563.8
355.6	672	1241.6	388.9	732	1349.6	422.2	792	1457.6	455.6	852	1565.6
356.1	673	1243.4	389.4	733	1351.4	422.8	793	1459.4	456.1	853	1567.4
356.7	674	1245.2	390.0	734	1353.2	423.3	794	1461.2	456.7	854	1569.2
357.2	675	1247.0	390.6	735	1355.0	423.9	795	1463.0	457.2	855	1571.0
357.8	676	1248.8	391.1	736	1356.8	424.4	796	1464.8	457.8	856	1572.8
358.3	677	1250.6	391.7	737	1358.6	425.0	797	1466.6	458.3	857	1574.6
358.9	678	1252.4	392.2	738	1360.4	425.6	798	1468.4	458.9	858	1576.4
359.4	679	1254.2	392.8	739	1362.2	426.1	799	1470.2	459.4	859	1578.2



# Centigrade / Fahrenheit Conversion Table

TDB # 008-E

C	C/F	F	C	C/F	F	C	C/F	F	
<b>460.0</b>	<b>860</b>	<b>1580.0</b>	<b>493.3</b>	<b>920</b>	<b>1688.0</b>	<b>526.7</b>	<b>980</b>	<b>1796.0</b>	
460.6	861	1581.8	493.9	921	1689.8	527.2	981	1797.8	
461.1	862	1583.6	494.4	922	1691.6	527.8	982	1799.6	
461.7	863	1585.4	495.0	923	1693.4	528.3	983	1801.4	
462.2	864	1587.2	495.6	924	1695.2	528.9	984	1803.2	
462.8	865	1589.0	496.1	925	1697.0	529.4	985	1805.0	
463.3	866	1590.8	496.7	926	1698.8	530.0	986	1806.8	
463.9	867	1592.6	497.2	927	1700.6	530.6	987	1808.6	
464.4	868	1594.4	497.8	928	1702.4	531.1	988	1810.4	
465.0	869	1596.2	498.3	929	1704.2	531.7	989	1812.2	
<b>465.6</b>	<b>870</b>	<b>1598.0</b>	<b>498.9</b>	<b>930</b>	<b>1706.0</b>	<b>532.2</b>	<b>990</b>	<b>1814.0</b>	
466.1	871	1599.8	499.4	931	1707.8	532.8	991	1815.8	
466.7	872	1601.6	500.0	932	1709.6	533.3	992	1817.6	
467.2	873	1603.4	500.6	933	1711.4	533.9	993	1819.4	
467.8	874	1605.2	501.1	934	1713.2	534.4	994	1821.2	
468.3	875	1607.0	501.7	935	1715.0	535.0	995	1823.0	
468.9	876	1608.8	502.2	936	1716.8	535.6	996	1824.8	
469.4	877	1610.6	502.8	937	1718.6	536.1	997	1826.6	
470.0	878	1612.4	503.3	938	1720.4	536.7	998	1828.4	
470.6	879	1614.2	503.9	939	1722.2	537.2	999	1830.2	
<b>471.1</b>	<b>880</b>	<b>1616.0</b>	<b>504.4</b>	<b>940</b>	<b>1724.0</b>	<b>537.8</b>	<b>1000</b>	<b>1832.0</b>	
471.7	881	1617.8	505.0	941	1725.8				
472.2	882	1619.6	505.6	942	1727.6				
472.8	883	1621.4	506.1	943	1729.4				
473.3	884	1623.2	506.7	944	1731.2				
473.9	885	1625.0	507.2	945	1733.0				
474.4	886	1626.8	507.8	946	1734.8				
475.0	887	1628.6	508.3	947	1736.6				
475.6	888	1630.4	508.9	948	1738.4				
476.1	889	1632.2	509.4	949	1740.2				
<b>476.7</b>	<b>890</b>	<b>1634.0</b>	<b>510.0</b>	<b>950</b>	<b>1742.0</b>				
477.2	891	1635.8	510.6	951	1743.8				
477.8	892	1637.6	511.1	952	1745.6				
478.3	893	1639.4	511.7	953	1747.4				
478.9	894	1641.2	512.2	954	1749.2				
479.4	895	1643.0	512.8	955	1751.0				
480.0	896	1644.8	513.3	956	1752.8				
480.6	897	1646.6	513.9	957	1754.6				
481.1	898	1648.4	514.4	958	1756.4				
481.7	899	1650.2	515.0	959	1758.2				
<b>482.2</b>	<b>900</b>	<b>1652.0</b>	<b>515.6</b>	<b>960</b>	<b>1760.0</b>				
482.8	901	1653.8	516.1	961	1761.8				
483.3	902	1655.6	516.7	962	1763.6				
483.9	903	1657.4	517.2	963	1765.4				
484.4	904	1659.2	517.8	964	1767.2				
485.0	905	1661.0	518.3	965	1769.0				
485.6	906	1662.8	518.9	966	1770.8				
486.1	907	1664.6	519.4	967	1772.6				
486.7	908	1666.4	520.0	968	1774.4				
487.2	909	1668.2	520.6	969	1776.2				
<b>487.8</b>	<b>910</b>	<b>1670.0</b>	<b>521.1</b>	<b>970</b>	<b>1778.0</b>				
488.3	911	1671.8	521.7	971	1779.8				
488.9	912	1673.6	522.2	972	1781.6				
489.4	913	1675.4	522.8	973	1783.4				
490.0	914	1677.2	523.3	974	1785.2				
490.6	915	1679.0	523.9	975	1787.0				
491.1	916	1680.8	524.4	976	1788.8				
491.7	917	1682.6	525.0	977	1790.6				
492.2	918	1684.4	525.6	978	1792.4				
492.8	919	1686.2	526.1	979	1794.2				

**Temperature**

Celsius + 17.78 x 1.8 = Fahrenheit  
 Celsius + 273.15 = Kelvin

Fahrenheit - 32 ÷ 1.8 = Celsius  
 Fahrenheit + 459.67 + 1.8 = Kelvin

Rankine ÷ 1.8 = Kelvin  
 Kelvin - 273.15 = Celsius

**Celsius Scale :** Anders Celsius Swedish Astronomer (1701 - 1744 )  
 A temperature scale on which the boiling point of water is 100° and the melting point of ice is 0°. This is the official name of the temperature scale which known as centigrade.

**Fahrenheit Scale :** Gabriel Fahrenheit German Physicist (1686 - 1736 )  
 The temperature scale used in the U.S.A. and England. The freezing point of water is 32° and the boiling point of 212°. Indicated by F.

**Kelvin Scale :** William Thomson Lord Kelvin (1824 - 1907)  
 British Physicist  
 The absolute scale of temperature, based on the average kinetic energy per molecule of perfect gas. Zero is equal to -273° Celsius or -459.4° Fahrenheit.

**Rankine Scale :** William Rankine Scottish Engineer ( 1820 - 1872 )  
 Scale expressing absolute temperatures in Fahrenheit degrees.

						Metric to Imperial		Gage for Sheet Steel		
Metric mm.	Imperial Fractions	Imperial Dec.	Metric mm.	Imperial Fractions	Imperial Dec.	Metric mm.	Imperial Dec.	Gage* Number	Approx. Thickness	Imperial Dec.
			<b>15.8750</b>	<b>5/8</b>	<b>.6250</b>	1.0000	.0394	0000000	0.46875	15/32
.3969	1/64	.0156	16.2719	41/64	.6406	2.0000	.0787	<b>000000</b>	<b>0.4375</b>	<b>7/16</b>
.7938	1/32	.0312	16.6688	21/32	.6562	3.0000	.1181	0000	0.40625	13/32
1.1906	3/64	.0468	17.0656	43/64	.6718	4.0000	.1575	<b>000</b>	<b>0.375</b>	<b>3/8</b>
<b>1.5875</b>	<b>1/16</b>	<b>.0625</b>	<b>17.4625</b>	<b>11/16</b>	<b>.6875</b>	5.0000	.1968	00	0.34375	11/32
1.9844	5/64	.0781	17.8594	45/64	.7031	6.0000	.2362	<b>0</b>	<b>0.3125</b>	<b>5/16</b>
2.3812	3/32	.0937	18.2562	23/32	.7187	7.0000	.2756	1	0.28125	9/32
2.7781	7/64	.1093	18.6531	47/64	.7343	8.0000	.3150	2	0.265625	17/64
<b>3.1750</b>	<b>1/8</b>	<b>.1250</b>	<b>19.0500</b>	<b>3/4</b>	<b>.7500</b>	9.0000	.3543	<b>3</b>	<b>0.250</b>	<b>1/4</b>
3.5719	9/64	.1406	19.4469	49/64	.7656	10.0000	.3937	4	0.234375	15/64
3.9688	5/32	.1562	19.8438	25/32	.7812			5	0.21875	7/32
4.3656	11/64	.1718	20.2406	51/64	.7968	11.0000	.4331	6	0.203125	13/64
<b>4.7625</b>	<b>3/16</b>	<b>.1875</b>	20.2375	13/16	.8125	12.0000	.4724	<b>7</b>	<b>0.1875</b>	<b>3/16</b>
5.1594	13/64	.2031	21.0344	53/64	.8281	13.0000	.5118	8	0.171875	11/64
5.5562	7/32	.2187	21.4312	27/32	.8437	14.0000	.5512	9	0.15625	5/32
5.9531	15/64	.2343	21.8281	55/64	.8593	15.0000	.5905	10	0.140625	9/64
<b>6.3500</b>	<b>1/4</b>	<b>.2500</b>	<b>22.2250</b>	<b>7/8</b>	<b>.8750</b>	16.0000	.6299	<b>11</b>	<b>0.125</b>	<b>1/8</b>
6.7469	17/64	.2656	22.6219	57/64	.8906	17.0000	.6693	12	0.109375	7/64
7.1438	9/32	.2812	23.0188	29/32	.9062	18.0000	.7087	13	0.09375	3/32
7.5406	19/64	.2968	23.4156	59/64	.9218	19.0000	.7480	14	0.078125	5/64
<b>7.9375</b>	<b>5/16</b>	<b>.3125</b>	<b>23.8125</b>	<b>15/16</b>	<b>.9375</b>	20.0000	.7874	15	0.0703125	
8.3344	21/64	.3281	24.2094	61/64	.9531					
8.7312	11/32	.3437	24.6062	31/32	.9687	21.0000	.8268	<b>16</b>	<b>0.0625</b>	<b>1/16</b>
9.1281	23/64	.3593	25.0031	63/64	.9843	22.0000	.8661	17	0.05625	
<b>9.5250</b>	<b>3/8</b>	<b>.3750</b>	25.4000	1	1.0000	23.0000	.9055	18	0.05000	
9.9219	25/64	.3906	50.8002	2	2.0000	24.0000	.9449	19	0.04375	
10.3188	13/32	.4062	76.2003	3	3.0000	25.0000	.9842	20	0.0375	
10.7156	27/64	.4218	101.6004	4	4.0000			21	0.034375	
<b>11.1125</b>	<b>7/16</b>	<b>.4375</b>	127.0005	5	5.0000			22	0.03125	1/32
11.5094	29/64	.4531	152.4006	6	6.0000			23	0.028125	
11.9062	15/32	.4687	177.8007	7	7.0000			24	0.02500	
12.3031	31/64	.4843	203.2008	8	8.0000			25	0.021875	
<b>12.7000</b>	<b>1/2</b>	<b>.5000</b>	228.6009	9	9.0000			26	0.01875	
13.0969	33/64	.5156	254.0010	10	10.0000			27	0.0171875	
13.4938	17/32	.5312	279.4010	11	11.0000			28	0.015625	1/64
13.8906	35/64	.5468	304.8010	12	12.0000			29	0.014625	
<b>14.2875</b>	<b>9/16</b>	<b>.5625</b>						30	0.0125	
14.6844	37/64	.5781						31	0.0109375	
15.0812	19/32	.5937						32	0.01015625	
15.4781	39/64	.6093								

Metric Conversion Table

Length Equivalent

Unit	Millimeters	Centimeters	Inches	Feet	Yards	Meters
1 Millimeter	1	.1	.03937	.003281	.001094	.001
1 Centimeter	10	1	.3937	.032808	.010936	.01
1 Inch	25.4001	2.54001	1	.083333	.027778	.025400
1 Foot =	304.801	30.4801	12	1	.333333	.304801
1 Yard =	914.402	91.4402	36	3	1	.914402
1 Meter	1000	100	39.37	3.28083	1.09361	1

Unit	Feet	Yards	Meters	Rods	Furlongs	Miles (Statute)
1 Rod	16.5	5.5	5.02921	1	.025(1/40)	.003125 (1/320)
1 Furlong	660	220	201.168	40	1	.125(1/8)
1 Kilometer	3280.8	1093.6	1000	199	4.971	.62137
1 Mile (statute)	5280	1760	1609.35	320	8	1

1 Nautical Mile = 6080.2 feet = 1.15155 statute miles = 1/3 league.

1 Light Year = 5.879 trillion miles = 9.46 trillion kilometers.



# Metric Conversion Table

TDB # 007-A

## Metric Conversion Table

METRIC mm.	IMPERIAL FRAC.	IMPERIAL DEC.
.3969	1/64	.0156
.7938	1/32	.0312
1.		.0394
1.1906	3/64	.0468
<b>1.5875</b>	<b>1/16</b>	<b>.0625</b>
1.9844	5/64	.0781
2.		.0787
2.3812	3/32	.0937
2.7781	7/64	.1093
3.		.1181
<b>3.1750</b>	<b>1/8</b>	<b>.1250</b>
3.5719	9/64	.1406
3.9688	5/32	.1562
4.		.1575
4.3656	11/64	.1718
<b>4.7625</b>	<b>3/16</b>	<b>.1875</b>
5.		.1968
5.1594	13/64	.2031
5.5562	7/32	.2187
5.9531	15/64	.2343
6.		.2362
<b>6.3500</b>	<b>1/4</b>	<b>.2500</b>
6.7469	17/64	.2656
7.		.2756
7.1438	9/32	.2812
7.5406	19/64	.2968
<b>7.9375</b>	<b>5/16</b>	<b>.3125</b>
8.		.3150
8.3344	21/64	.3281
8.7312	11/32	.3437
9.		.3543
9.1281	23/64	.3593
<b>9.5250</b>	<b>3/8</b>	<b>.3750</b>
9.9219	25/64	.3906
10.		.3937
10.3188	13/32	.4062
10.7156	27/64	.4218
11.		.4331
<b>11.1125</b>	<b>7/16</b>	<b>.4375</b>
11.5094	29/64	.4531
11.9062	15/32	.4687
12.		.4724
12.3031	31/64	.4843
<b>12.7000</b>	<b>1/2</b>	<b>.5000</b>
13.		.5118
13.0969	33/64	.5156
13.4938	17/32	.5312
13.8906	35/64	.5468
14.		.5512

## Metric Conversion Table

METRIC mm.	IMPERIAL FRAC.	IMPERIAL DEC.
<b>14.2875</b>	<b>9/16</b>	<b>.5625</b>
14.6844	37/64	.5781
15.		.5905
15.0812	19/32	.5937
15.4781	39/64	.6093
<b>15.8750</b>	<b>5/8</b>	<b>.6250</b>
16.		.6299
16.2719	41/64	.6406
16.6688	21/32	.6562
17.		.6693
17.0656	43/64	.6718
<b>17.4625</b>	<b>11/16</b>	<b>.6875</b>
17.8594	45/64	.7031
18.		.7087
18.2562	23/32	.7187
18.6531	47/64	.7343
19.		.7480
<b>19.0500</b>	<b>3/4</b>	<b>.7500</b>
19.4469	49/64	.7656
19.8438	25/32	.7812
20.		.7874
20.2406	51/64	.7968
<b>20.2375</b>	<b>13/16</b>	<b>.8125</b>
21.		.8268
21.0344	53/64	.8281
21.4312	27/32	.8437
21.8281	55/64	.8593
22.		.8661
<b>22.2250</b>	<b>7/8</b>	<b>.8750</b>
22.6219	57/64	.8906
23.		.9055
23.0188	29/32	.9062
23.4156	59/64	.9218
<b>23.8125</b>	<b>15/16</b>	<b>.9375</b>
24.		.9449
24.2094	61/64	.9531
24.6062	31/32	.9687
25.		.9842
25.0031	63/64	.9843
<b>25.4001</b>	<b>1</b>	<b>1.</b>
50.8002	2	2.
76.2003	3	3.
101.6004	4	4.
127.0005	5	5.
152.4006	6	6.
177.8007	7	7.
203.2008	8	8.
228.6009	9	9.
254.0010	10	10.



### Roll Length

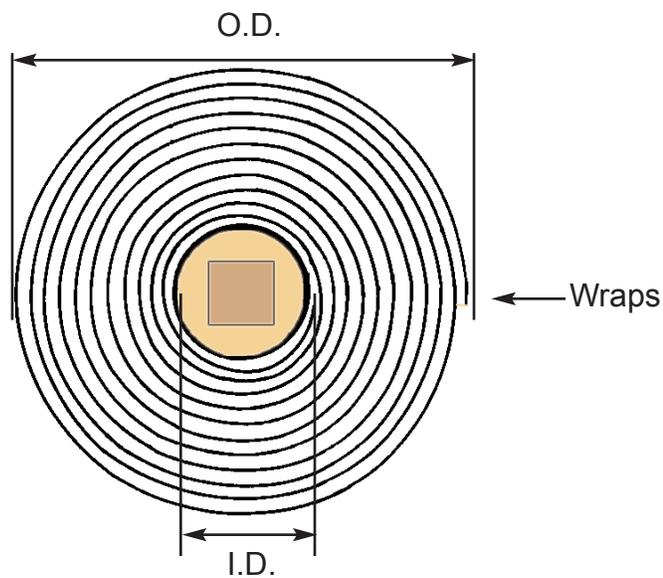
To determine the footage of a roll of belting:

1. Add together the Diameter (O.D.) of the roll plus the diameter (I.D.) of the core, both in inches.
2. Multiply by the number of Wraps.
3. Next multiply by .131

The above will give roll length in feet regardless of the thickness of the belt.

Example: Roll diameter = 54" Core diameter = 6" Number of Wraps = 63 5/8

01.  $54 + 6 = 60$  ( O.D. + I.D. )
02.  $60 \times 63\text{-}5/8 = 3817\text{ }1/2$  ( O.D. + I.D. ) x Wraps
03.  $3817\text{ }1/2 \times .131 = 500'$  ( O.D. + I.D. x Wraps ) x .131 = Total Footage





# Metric Conversion Table

TDB # 007-B

## Length Equivalents

Unit	Millimeters	Centimeters	Inches	Feet	Yards	Meters
1 Millimeter	1	.1	.03937	.003281	.001094	.001
1 Centimeter	10	1	.3937	.032808	.010936	.01
1 Inch	25.4001	2.54001	1	.083333	.027778	.025400
1 Foot =	304.801	30.4801	12	1	.333333	.304801
1 Yard =	914.402	91.4402	36	3	1	.914402
1 Meter	1000	100	39.37	3.28083	1.09361	1

Unit	Feet	Yards	Meters	Rods	Furlongs	Miles (Statute)
1 Rod	16.5	5.5	5.02921	1	.025(1/40)	.003125 (1/320)
1 Furlong	660	220	201.168	40	1	.125(1/8)
1 Kilometer	3280.8	1093.6	1000	199	4.971	.62137
1 Mile (statute)	5280	1760	1609.35	320	8	1

1 Nautical Mile = 6080.2 feet = 1.15155 statute miles = 1/3 league.  
 1 Light Year = 5.879 trillion miles = 9.46 trillion kilometers.

## Weight Equivalents

Unit	Grains	Grams	Ounces Troy	Ounces Avoir.	Pounds Troy	Pounds Avoir	Kilo-grams
1 Grain	1	.064799	.002083	.002286	.000174	.000143	.000065
1 Gram	15.4324	1	.032151	.035274	.002679	.002205	.001
1 Ounce Troy	480	31-1035	1	1.09714	.083333	.068571	.031104
1 Ounce Avoir.	437.5	28-3495	.911458	1	.075955	.0625	.028350
1 Pound Troy	5760	373.242	12	13.1657	1	.822857	.373242
1 Pound Avoir.	7000	453.592	14.5833	16	1.21528	1	.453592
1 Kilogram	15432.4	1000	32.1507	35.2740	2.67923	2.20462	1

Unit	Kilograms	Pounds Troy	Pounds Avoir.	Metric Tons	Net Short Tons	Gross Long Tons
1 Metric Ton	1000	2679.23	2204.62	1	1.10231	.984206
1 Net Short Ton	907.185	2430.56	2000	.907185	1	.892857
1 Gross Long Ton	1016.05	2722.22	2240	1.01605	1.12	1

## Volume and Capacity Equivalents

Unit	Cubic Centi meters	Cubic Inches	Liters	Quarts Liquid	Quarts Dry	Gals. Liquid	Gals. Dry	Cubic Feet
1 Cu. Centimeter	1	.06102	.001	.00106	.00091	.00026	.00023	.00004
1 Cu. Inch	16.387	1	.01639	.01732	.01488	.00433	.00372	.00058
1 Cu. Foot	28317.0	1728	28.317	29.922	25.714	7.4805	6.4285	1
1 Cu. Yard	764559.4	46656	764.56	807.90	694.28	201.97	173.57	27
1 Cu. Meter	1000000	161023.4	1000	1056.7	908.08	264.17	227.02	35.314

1 Gill	118.29	7.2188	.11829	.125	.10742	.03125	.02686	.00418
1 Pint liquid	473.18	28.875	.47318	.5	.42968	.125	.10742	.01671
1 Quart liquid	946.36	57.75	.94636	1	.85937	.25	.21484	.03342
1 Gallon liquid	3785.4	231	3.7854	4	3.4375	1	.85937	.13368

1 Pint dry	550.62	33.600	.55062	.58182	.5	.14546	.125	.01945
1 Quart dry	1101.2	67.201	1.1012	1.1637	1	.29091	.25	.03889
1 Gallon dry	4404.9	268.80	4.4049	4.6546	4	1.1636	1	.15556
1 Liter	1000	61.023	1	1.0567	.90808	.26417	.22702	.03531

1 Peck	8809.8	537.61	8.8098	9.3092	8	2.3273	2	.31111
1 Bushel	35239.3	2150.4	5.239	37.237	32	9.3092	8	1.2445
1 Barrel	119241.2	7276.5	119.24	126	108.28	31.5	27.070	4.2109



# Metric Conversion Table

TDB # 007-C

## Area Equivalents

Unit	Square Inches	Square Feet	Square Yards	Square Meters
1 Square Foot	144	1	.1111	.09290
1 Square Yard	1296	9	1	.83613
1 Square Meter	1550	10.7639	1.19599	1
1 Square Rod	39204	272.25	30.25	25.293
1 Are	155000	1076.39	119.599	100
1 Acre	6272640	43560	4840	4046-86
1 Square Mile (640 Acres)	-	27878400	3097600	2589999
1 Square Kilometer	-	10763867	1195985	1000000

## Power Equivalents

Unit	BTU/Hr.	Ft.Lb./Hr.	Ft.Lb./Min.	HP	HP (Met.)	Watt	Kilowatt
1 BTU/Hr.	1	778.1688	12.96948	.000393	.000398	.293071	.000293
1 Ft.Lb./Hr.	.001285	1	-	$5.05 \times 10^{-7}$	$5.12 \times 10^{-7}$	.0003766	$3.766 \times 10^{-7}$
1 Ft.Lb./Min.	.077104	-	1	$3.0303 \times 10^{-5}$	$3.072 \times 10^{-5}$	.022597	$2.26 \times 10^{-5}$
1 HP	2544.43	1980000	33000	1	1.01387	745.699	.7457
1 HP (Met.)	2509.622	1952914	32548.56	.986320	1	735.499	.735499
1 Watt	3.41214	2655.224	44.2537	.0013410	.0013596	1	.001

Note: Foot-Pounds Indicates Energy. Pound-Feet Indicates Torque.

## Metric System

### Length

1 meter (m)	=	10 decimeters (dm)
1 meter (m)	=	100 centimeters (cm)
1 meter (m)	=	1,000 millimeters (mm)
1 dekameter (dkm)	=	10 meters (m)
1 hectometer (hm)	=	100 meters (m)
1 kilometer (km)	=	1,000 meters (m)

### Weight

1 gram (g)	=	10 decigrams (dg)
1 gram (g)	=	100 centigrams (cg)
1 gram (g)	=	1,000 milligrams (mg)

1 dekagram (dkg)	=	10 grams (g)
1 hectogram (hg)	=	100 grams (g)
1 kilogram (kg)	=	1,000 grams (g)

1 metric ton	=	1,000 kilograms (kg)
1 metric ton	=	1,000,000 grams (g)

### Volume & Capacity

1 liter (l)	=	1 cubic decimeter (d M <sup>3</sup> )
1 liter (l)	=	10 deciliters (dl)
1 liter (l)	=	100 centiliters (cl)
1 liter (l)	=	1,000 milliliters (ml)
1 liter (l)	=	1,000 cubic centimeters (cc)

1 dekaliter (dkl)	=	10 liters (l)
1 hectoliter (hl)	=	100 liters (l)

1 kiloliter (kl)	=	1 cubic meter (M <sup>3</sup> )
1 kiloliter (kl)	=	1 stere (s)
1 kiloliter (kl)	=	1,000 liters (l)

### AREA

1 centare (ca)	=	1 square meter (M <sup>2</sup> )
1 centare (ca)	=	100 square decimeters (d M <sup>2</sup> )
1 centare (ca)	=	10,000 square centimeters (CM <sup>2</sup> )
1 centare (ca)	=	1,000,000 square millimeters (MM <sup>2</sup> )
1 are (a)	=	1 square dekameter (dk M <sup>2</sup> )
1 are (a)	=	100 square meters (M <sup>2</sup> )
1 hectare (ha)	=	100 ares (a)
1 hectare (ha)	=	10,000 square meters (M <sup>2</sup> )
1 square kilometer	=	1,000,000 square meters (M <sup>2</sup> ) (km <sup>2</sup> )

### Metric Prefixes used:

atto	a	one-quintillionth	0.000 000 000 000 000 001	10 <sup>-19</sup>
femto	f	one-quadrillionth	0.000 000 000 000 001	10 <sup>-15</sup>
Pico	P	one-trillionth	0.000 000 000 001	10 <sup>-12</sup>
nano	n	one-billionth	0.000 000 001	10 <sup>-9</sup>
micro	u	one-millionth	0.000 001	10 <sup>-6</sup>
milli	m	one-thousandth	0.001	10 <sup>-3</sup>
centi	c	one-hundredth	0.01	10 <sup>-2</sup>
deci	d	one-tenth	0.1	10 <sup>-1</sup>
uni		one	0.1	10 <sup>0</sup>
deka	da	ten	10.0	10 <sup>1</sup>
deca				
hecto	h	one hundred	100.0	10 <sup>2</sup>
kilo	k	one thousand	1 000.0	10 <sup>3</sup>
myria		ten thousand	10 000.0	10 <sup>4</sup>
mega	M	one million	1 000 000.0	10 <sup>6</sup>
giga	G	one billion	1 000 000 000.0	10 <sup>9</sup>
tera	T	one trillion	1 000 000 000 000.0	10 <sup>12</sup>



# Metric Conversion Table

TDB # 007-D

## Circle

Area	=	Square of Diameter X .7854
Area	=	square of Radius X 3.1416
Circumference	=	Diameter X 3.1416
Diameter	=	Circumference X .3183
Doubling diameter increases area four times; tripling diameter increases area nine times, etc.		

## Square

Area	=	Square of Side
Diagonal	=	Side X 1.4142
Side	=	Diagonal X .7071

## Square Inscribed in Circle

Side of Square	=	Diameter of Circle X .7071 or Circumference of Circle X .2251
Diameter of Circle	=	Side of Square X 1.4142
Circumference of Circle	=	Side of Square X 4.4429

## Square and Circle with Equal Area

Side of Square	=	Diameter of Circle X .8862
Diameter of Circle	=	Side of Square X 1.128
Circumference of Circle	=	Side of Square X 3.545

## Rectangle

Area	=	Length X Width
Diagonal	=	Square root of sum of squares of Width and Length

## Triangle

Area	=	Base X 1/2 of Perpendicular Height
------	---	------------------------------------

## Sphere

Area of Surface	=	Square of Diameter X 3.1416
Volume	=	Cube of Diameter X .5236

## Cube

Area of Surface	=	Square of Side X 6
Volume	=	Cube of Side
Diagonal	=	Side X 1.732

## Cylinder

Area of Curved Surface	=	Diameter X Length X 3.1416
Volume	=	Square of Diameter X Length X .7854

## Cone

Area of Curved Surface	=	Diameter of Base X Slant Height X 1.5708
Volume	=	Diameter of Base Squared X Perpendicular Height X .2618 or Area of Base X Perpendicular Height

1 HP	=	33,000 Ft.-pounds of work per minute
1 B.T.U.	=	Heat required to raise 1 lb. water °F.
1 Kilowatt Hour	=	3415 B.T.U.
1 Radian	=	57.296 degrees.
1 Register Ton	=	100 Cu. Ft.
1 U.S. Shipping Ton	=	40 Cu. Ft.
1 British Shipping Ton	=	42 Cu. Ft.
1 Cu. Ft./Min.	=	471.9474 Cu. Cm./Sec.
1 Cu. Ft./Min.	=	.1246753 Gal. (U.S.)/Sec.
1 Cu. Ft./Sec.	=	2.2222 Cu. Yd./Min.
1 Gal. (U.S.)/Min.	=	8.020834 Cu. Ft./Hr.
1 Gal. (U.S.)/Min.	=	3.785412 Litre/Min.
1 Liter/Min.	=	2.118880 Cu. Ft./Hr.
1 Cu. Mitre/Min.	=	264.1720 Gal. (U.S.)/Min.
1 Lb./Gal.(U.S.)	=	7.480519 Lb./Cu. Ft.
1 Mile/Hr.	=	88 Ft./Min.
1 Ft./Min.	=	.01136364 Miles/Hr.
1 Lb. per Sq. In. (PSI)	=	144 Lbs./Sq. Ft.
	=	2.3095 feet fresh water at 62°F.
	=	2.0355 inches mercury at 32°F.
	=	2.0416 inches mercury at 62°F.
	=	.068 atmosphere.
Water Pressure (PSI)	=	.433 x height of water in feet (Fresh water at 62°F.).
Weight of 1 cu. ft. Fresh Water	=	62.355 lbs. at 62°F.
	=	59.76 lbs. at 212°F.
Weight 1 Gal. (U.S.) Water	=	8.34 lbs.
Weight of 1 cu. ft. Air at 14.7 PSI	=	.07608 Lbs. at 62 °F.
	=	.08073 lbs. at 32°F.
Watts	=	Amperes x Volts.
1 Watt-Hr.	=	3.41214 BTU
	=	859.845 Calorie = 3600 Joule.
g	=	Acceleration due to Gravity at Sea Level, Latitude 451 32.1726 Ft./Sec <sup>2</sup>
1 Lb. Ft. (Torque)	=	1.355818 Newton-Metre.

**Threads**

TAPE SIZE	NF/NC UNF/UNC	Threads per inch	Basic major dia (inches)	Basic effective dia (inches)	Basic minor dia of ext. threads (inches)	Basic minor dia of int. threads (inches)	Drill size
0-80	UNF	80	.0600	.0519	.0447	.0465	3/64
1-64	UNC	64	.0730	.0629	.0538	.0561	#54
2-56	UNC	56	.0860	.0744	.0641	.0667	#50
2-64	UNF	64	.0860	.0759	.0668	.0691	#50
4-40	UNC	40	.1120	.0958	.0813	.0849	#43
4-48	UNF	48	.1120	.0985	.0864	.0894	#42
5-40	UNC	40	.1250	.1088	.0943	.0979	#38
5-44	UNF	44	.1250	.1102	.0971	.1004	#37
6-32	UNC	32	.1360	.1177	.0997	.1042	#36
6-40	UNF	40	.1360	.1218	.1073	.1109	#33
8-32	UNC	32	.1640	.1437	.1257	.1302	#29
8-36	UNF	36	.1640	.1460	.1299	.1339	#29
10-24	UNC	24	.1900	.1629	.1389	.1449	#25
10-32	UNF	32	.1900	.1697	.1517	.1562	#21
1/4-20	UNC	20	.2500	.2175	.1887	.1959	#7
1/4-28	UNF	28	.2500	.2268	.2062	.2113	#3
5/16-18	UNC	18	.3125	.2764	.2443	.2524	F
5/16-24	UNF	24	.3125	.2854	.2614	.2674	I
3/8-16	UNC	16	.3750	.3344	.2983	.3073	5/16
3/8-24	UNF	24	.3750	.3479	.3239	.3299	Q
7/16-14	UNC	14	.4375	.3911	.3499	.3602	U
7/16-20	UNF	20	.4375	.4050	.3762	.3834	25/64
1/2-13	UNC	13	.5000	.4500	.4056	.4167	27/64
1/2-20	UNF	20	.5000	.4675	.4387	.4459	29/64
9/16-12	UNC	12	.5625	.5084	.4603	.4723	31/64
9/16-18	UNF	18	.5625	.5264	.4943	.5024	33/64
5/8-11	UNC	11	.6250	.5660	.5135	.5266	17/32
5/8-18	UNF	18	.6250	.5869	.5568	.5649	37/64
3/4-10	UNC	10	.7500	.6650	.6273	.6417	21/32
3/4-16	UNF	16	.7500	.7094	.6733	.6823	11/16
7/8-9	UNC	9	.8750	.8028	.7387	.7547	49/64
7/8-14	UNF	14	.8750	.8286	.7874	.7977	13/16
1-8	UNC	8	1.000	.9188	.8466	.8647	7/8
1-14	UNF	14	1.000	.9459	.8978	.9098	15/16
1 1/8-7	UNC	7	1.1250	1.0322	.9497	.9704	63/64
1 1/8-12	UNF	12	1.1250	1.0709	1.0228	1.0348	1 3/64
1 1/4-7	UNC	7	1.2500	1.1572	1.0747	1.0954	1 7/64
1 3/8-6	UNC	6	1.3750	1.2667	1.1705	1.1946	1 13/64
1 1/2-6	UNC	6	1.5000	1.3917	1.2955	1.3196	1 11/32
1 3/4-5	UNC	5	1.7500	1.6201	1.5046	1.5335	1 35/64
2-4.5	UNC	4 1/2	2.0000	1.8557	1.7274	1.7594	1 25/32



Measurements Mils x Inch x Millimeters

mils	Inch	mm									
1	0.0010	0.0254	26	0.0260	0.6604	51	0.0510	1.2954	76	0.0760	1.9304
2	0.0020	0.0508	27	0.0270	0.6858	52	0.0520	1.3208	77	0.0770	1.9558
3	0.0030	0.0762	28	0.0280	0.7112	53	0.0530	1.3462	78	0.0780	1.9812
4	0.0040	0.1016	29	0.0290	0.7366	54	0.0540	1.3716	79	0.0790	2.0066
5	0.0050	0.1270	30	0.0300	0.7620	55	0.0550	1.3970	80	0.0800	2.0320
6	0.0060	0.1524	31	0.0310	0.7874	56	0.0560	1.4224	81	0.0810	2.0574
7	0.0070	0.1778	32	0.0320	0.8128	57	0.0570	1.4478	82	0.0820	2.0828
8	0.0080	0.2032	33	0.0330	0.8382	58	0.0580	1.4732	83	0.0830	2.1082
9	0.0090	0.2286	34	0.0340	0.8636	59	0.0590	1.4986	84	0.0840	2.1336
10	0.0100	0.2540	35	0.0350	0.8890	60	0.0600	1.5240	85	0.0850	2.1590
11	0.0110	0.2794	36	0.0360	0.9144	61	0.0610	1.5494	86	0.0860	2.1844
12	0.0120	0.3048	37	0.0370	0.9398	62	0.0620	1.5748	87	0.0870	2.2098
13	0.0130	0.3302	38	0.0380	0.9652	63	0.0630	1.6002	88	0.0880	2.2352
14	0.0140	0.3556	39	0.0390	0.9906	64	0.0640	1.6256	89	0.0890	2.2606
15	0.0150	0.3810	40	0.0400	1.0160	65	0.0650	1.6510	90	0.0900	2.2860
16	0.0160	0.4064	41	0.0410	1.0414	66	0.0660	1.6764	91	0.0910	2.3114
17	0.0170	0.4318	42	0.0420	1.0668	67	0.0670	1.7018	92	0.0920	2.3368
18	0.0180	0.4572	43	0.0430	1.0922	68	0.0680	1.7272	93	0.0930	2.3622
19	0.0190	0.4826	44	0.0440	1.1176	69	0.0690	1.7526	94	0.0940	2.3876
20	0.0200	0.5080	45	0.0450	1.1430	70	0.0700	1.7780	95	0.0950	2.4130
21	0.0210	0.5334	46	0.0460	1.1684	71	0.0710	1.8034	96	0.0960	2.4384
22	0.0220	0.5588	47	0.0470	1.1938	72	0.0720	1.8288	97	0.0970	2.4638
23	0.0230	0.5842	48	0.0480	1.2192	73	0.0730	1.8542	98	0.0980	2.4892
24	0.0240	0.6096	49	0.0490	1.2446	74	0.0740	1.8796	99	0.0990	2.5146
25	0.0250	0.6350	50	0.0500	1.2700	75	0.0750	1.9050	100	0.1000	2.5400

1 mils = 0.001 inch = 0.0254 mm