





30 DEG PRESSURE ANGLE
TABLE 30-30 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 8/16 SPLINE PITCH

Table with columns for No. of Teeth (N), Internal and External diameters (D, Db, Dri, DFi, Di), Internal (sv, s) and External (tv, t) space widths and tooth thicknesses, and fillet radii (Do, DFe, Dre). Includes tolerance ranges and specific values for 6 to 60 teeth.

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness.
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
c. See Table 105.
d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
e. Figures in bold type are modified values, see Section 25.

- f. Where a minimum value for the fillet radius must be specified, see paragraph 7.3 and Table 108.
g. External splines designed to this major diameter tabulation may not be interchanged with splines designed to previous spline standards. It is permissible to specify the full range of tolerances listed for External Major Diameter if the mating internal spline is per this standard or ANSI B5.15-1950 full dedendum splines.





30 DEG PRESSURE ANGLE

TABLE 32-30 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 12/24 SPLINE PITCH

Table with 17 columns: N, D, Db, Dri, DF, Di, Sv, tv, Do, DFe, Dre. It includes sub-headers for internal and external data and tolerance classes (7, 6, 5, 4). Rows are numbered 6 to 60.

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness.
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
c. See Table 105.
d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
e. Figures in bold type are modified values, see Section 25.

- f. Where a minimum value for the fillet radius must be specified, see paragraph 7.3 and Table 108.
g. External splines designed to this major diameter tabulation may not be interchanged with splines designed to previous spline standards. It is permissible to specify the full range of tolerances listed for External Major Diameter if the mating internal spline is per this standard or ANSI B5.15-1950 full dedendum splines. If the mating spline is per other spline standards, the Max Major Diameter and Tolerances on major diameters must be reduced by 0.2/P + 0.004 in.















37.5 DEG PRESSURE ANGLE

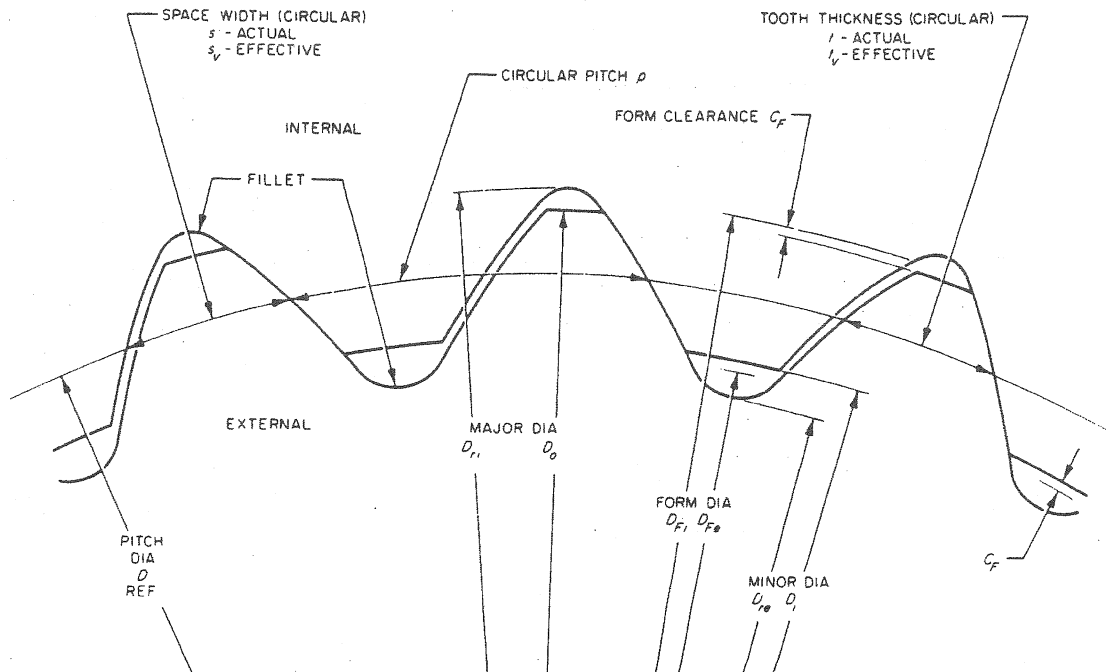


FIG. 8—SPLINE TERMS, SYMBOLS AND DRAWING DATA, 37.5 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT

The pressure angle and proportions of this spline are a direct compromise of the 30 and 45 deg pressure angle splines. It is often used on couplings where the external spline is to be cold formed; especially where a 45 deg pressure angle spline will not satisfy functional requirements and the shaft material is above hardness limitation of 30 deg pressure angle cold forming tools.

Press fits are not tabulated because their design depends on the degree of tightness desired and must allow for such factors as the shape of the blank, wall thickness, material, hardness, thermal expansion, etc. Close tolerances or selective size grouping may be required to limit fit variations.

See Tables 39-52.

DRAWING DATA

INTERNAL INVOLUTE SPLINE DATA		EXTERNAL INVOLUTE SPLINE DATA	
FILLET ROOT SIDE FIT		FILLET ROOT SIDE FIT	
NUMBER OF TEETH	xx	NUMBER OF TEETH	xx
SPLINE PITCH	xx/xx	SPLINE PITCH	xx/xx
PRESSURE ANGLE	37.5°	PRESSURE ANGLE	37.5°
BASE DIAMETER	x.xxxxxx REF	BASE DIAMETER	x.xxxxxx REF
PITCH DIAMETER	x.xxxxxx REF	PITCH DIAMETER	x.xxxxxx REF
MAJOR DIAMETER	x.xxx MAX	MAJOR DIAMETER	x.xxx/x.xxx
FORM DIAMETER	x.xxx	FORM DIAMETER	x.xxx
MINOR DIAMETER	x.xxx/x.xxx	MINOR DIAMETER	x.xxx MIN
CIRCULAR SPACE WIDTH		CIRCULAR TOOTH THICKNESS	
MAX ACTUAL	x.xxxx	MAX EFFECTIVE	x.xxxx
MIN EFFECTIVE	x.xxxx	MIN ACTUAL	x.xxxx
The following information may be added as required:		The following information may be added as required:	
MAX MEASUREMENT BETWEEN PINS	x.xxxx REF	MIN MEASUREMENT OVER PINS	x.xxxx REF
PIN DIAMETER	x.xxxx	PIN DIAMETER	x.xxxx

The above drawing data is required for the spline specifications. The standard system is shown; for alternate systems, see Table 4 and paragraphs 11.4.1, 11.4.2 and 13.

**37.5 DEG PRESSURE ANGLE**  
**TABLE 39—37.5 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 2.5/5 SPLINE PITCH**

Internal and External		Internal (see Drawing Data)								External (see Drawing Data)							
N	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	s <sub>v</sub> Min. Eff. Circ. Space Width = 0.6683 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.6683 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.	
						s				t							
						Max. Actual Circ. Space Width for Tolerance Class				Min. Actual Circ. Tooth Thickness for Tolerance Class							
						7	6	5	4	4	5	6	7				
					s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>					
1	2	3.2	4.4	5.1	6.2	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.2	18.3	
					Note e	Notes a & b								Note e			
Tolerance in Ten Thousandths					+200										+0		
					-0										-200		
6	2.400000	1.904048	3.090	2.805	2.088	0.6757	0.6735	0.6720	0.6709	0.6657	0.6646	0.6631	0.6609	2.800	2.082	1.830	
7	2.800000	2.221389	3.490	3.206	2.480	0.6758	0.6736	0.6721	0.6710	0.6656	0.6645	0.6630	0.6608	3.200	2.474	2.230	
8	3.200000	2.538731	3.890	3.607	2.880	0.6759	0.6737	0.6721	0.6710	0.6656	0.6645	0.6629	0.6607	3.600	2.873	2.630	
9	3.600000	2.856072	4.290	4.008	3.280	0.6761	0.6737	0.6722	0.6711	0.6655	0.6644	0.6629	0.6605	4.000	3.272	3.030	
10	4.000000	3.173413	4.690	4.408	3.680	0.6762	0.6738	0.6722	0.6711	0.6655	0.6644	0.6628	0.6604	4.400	3.672	3.430	
11	4.400000	3.490755	5.090	4.809	4.080	0.6763	0.6739	0.6723	0.6711	0.6655	0.6643	0.6627	0.6603	4.800	4.071	3.830	
12	4.800000	3.808096	5.491	5.210	4.480	0.6764	0.6740	0.6723	0.6712	0.6654	0.6643	0.6626	0.6602	5.200	4.470	4.229	
13	5.200000	4.125437	5.891	5.611	4.880	0.6765	0.6740	0.6724	0.6712	0.6654	0.6642	0.6626	0.6601	5.600	4.869	4.629	
14	5.600000	4.442778	6.291	6.012	5.280	0.6766	0.6741	0.6724	0.6712	0.6654	0.6642	0.6625	0.6600	6.000	5.268	5.029	
15	6.000000	4.760120	6.691	6.412	5.680	0.6767	0.6742	0.6725	0.6713	0.6653	0.6641	0.6624	0.6599	6.400	5.668	5.429	

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 85-92.  
 b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.  
 c. See Table 105.  
 d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.  
 e. Figures in bold type are modified values, see Section 25.







37.5 DEG PRESSURE ANGLE  
TABLE 42-37.5 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 5/10 SPLINE PITCH

Table with 17 columns: No. of Teeth, D Pitch Dia., Db Base Dia., Dri Major Dia. Max., DFi Form Dia., Di Minor Dia., Sv Min. Eff. Circ. Space Width = 0.3342, S Max. Actual Circ. Space Width for Tolerance Class (7, 6, 5, 4), tv Max. Eff. Circ. Tooth Thickness = 0.3342, t Min. Actual Circ. Tooth Thickness (4, 5, 6, 7), Do Major Dia., DFe Form Dia., Dre Minor Dia. Min.

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 85-92.  
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.  
c. See Table 105.

d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.  
e. Figures in bold type are modified values, see Section 25.



37.5 DEG PRESSURE ANGLE

TABLE 44—37.5 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 8/16 SPLINE PITCH

Internal and External		Internal (see Drawing Data)								External (see Drawing Data)						
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	S <sub>v</sub> Min. Eff. Circ. Space Width = 0.2088 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.2088 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.
						s				t						
						Max. Actual Circ. Space Width for Tolerance Class				Min. Actual Circ. Tooth Thickness for Tolerance Class						
						7	6	5	4	4	5	6	7			
					s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>				
1	2	3.2	4.4	5.1	6.2	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.2	18.3
					Note e	Notes a & b										Note e
Tolerance in Ten Thousandths					+50									+0		
					-0									-50		
6	0.750000	0.5950150	0.970	0.879	<b>0.655</b>	0.2144	0.2127	0.2116	0.2108	0.2068	0.2060	0.2049	0.2032	0.875	<b>0.650</b>	0.568
7	0.8750000	0.6941841	1.095	1.004	0.775	0.2145	0.2128	0.2116	0.2108	0.2068	0.2060	0.2048	0.2031	1.000	0.771	0.693
8	1.0000000	0.7933532	1.220	1.129	0.900	0.2146	0.2128	0.2117	0.2108	0.2068	0.2059	0.2048	0.2030	1.125	0.896	0.817
9	1.1250000	0.8925225	1.345	1.254	1.025	0.2146	0.2129	0.2117	0.2109	0.2067	0.2059	0.2047	0.2030	1.250	1.021	0.942
10	1.2500000	0.9916916	1.470	1.379	1.150	0.2147	0.2129	0.2117	0.2109	0.2067	0.2058	0.2047	0.2029	1.375	1.146	1.067

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 85-92.
- b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
- c. See Table 105.
- d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
- e. Figures in bold type are modified values, see Section 25.







37.5 DEG PRESSURE ANGLE

TABLE 47-37.5 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 16/32 SPLINE PITCH

Table with columns for No. of Teeth (Z), Pitch Dia. (D), Base Dia. (Db), Major Dia. (DFi), Form Dia. (DFi), Minor Dia. (Di), Min. Eff. Circ. Space Width (Sv), Max. Eff. Circ. Space Width (S), Min. Actual Circ. Space Width (S7-S4), Min. Actual Circ. Tooth Thickness (tv), Max. Actual Circ. Tooth Thickness (t), Major Dia. (Do), Form Dia. (DFe), Minor Dia. (Dre). It includes a tolerance section at the bottom with values in ten thousandths and note e.

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 85-92.
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
c. See Table 105.

d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
e. Figures in bold type are modified values, see Section 25.

37.5 DEG PRESSURE ANGLE
TABLE 48-37.5 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 20/40 SPLINE PITCH

Table with 17 columns (N, D, D\_B, D\_r1, D\_Fi, D\_i, S\_7 to S\_4, t\_4 to t\_7, D\_o, D\_Fe, D\_re) and 60 rows of data. The table is divided into sections for tolerance ranges and includes various technical specifications and notes.

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness.
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
c. See Table 105.
d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
e. Figures in bold type are modified values, see Section 25.











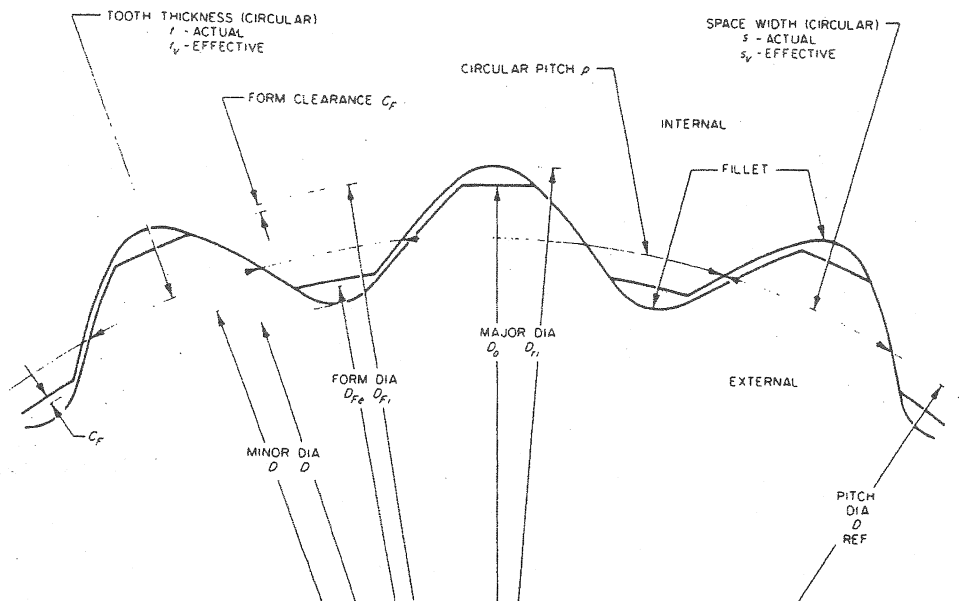


FIG. 9—SPLINE TERMS, SYMBOLS AND DRAWING DATA, 45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT

Involute splines with 45 deg pressure angle are used where the toothed member delivers torque only (does not slide under load) and where wall thicknesses are great enough to resist bursting tendencies. The 45 deg pressure angle spline is highly suitable for cold forming.

Press fits are not tabulated because their design depends on the degree of tightness desired and must allow for such factors as the shape of the blank, wall thickness, material, hardness, thermal expansion, etc. Close tolerances or selective size grouping may be required to limit fit variation.

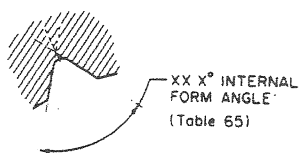
See Tables 53-63.

DRAWING DATA

INTERNAL INVOLUTE SPLINE DATA		EXTERNAL INVOLUTE SPLINE DATA	
FILLET ROOT SIDE FIT		FILLET ROOT SIDE FIT	
NUMBER OF TEETH	xx	NUMBER OF TEETH	xx
SPLINE PITCH	xx/xx	SPLINE PITCH	xx/xx
PRESSURE ANGLE	45°	PRESSURE ANGLE	45°
BASE DIAMETER	x.xxxxxx REF	BASE DIAMETER	x.xxxxxx REF
PITCH DIAMETER	x.xxxxxx REF	PITCH DIAMETER	x.xxxxxx REF
MAJOR DIAMETER	x.xxx MAX	MAJOR DIAMETER	x.xxx/x.xxxx
FORM DIAMETER	x.xxx	FORM DIAMETER	x.xxx
MINOR DIAMETER	x.xxx/x.xxx	MINOR DIAMETER	x.xxx MIN
CIRCULAR SPACE WIDTH		CIRCULAR TOOTH THICKNESS	
MAX ACTUAL	x.xxxx	MAX EFFECTIVE	x.xxxx
MIN EFFECTIVE	x.xxxx	MIN ACTUAL	x.xxxx
The following information may be added as required:		The following information may be added as required:	
MAX MEASUREMENT BETWEEN PINS	x.xxxx REF	MIN MEASUREMENT OVER PINS	x.xxxx REF
PIN DIAMETER	x.xxxx	PIN DIAMETER	x.xxxx

The above drawing data is required for the spline specifications. The standard system is shown; for alternate systems see Table 4 and paragraphs 11.4.1, 11.4.2 and 13.

INTERNAL STRAIGHT SIDED OPTION—ALTERNATE DESIGN



The following information may be added as required:

MAX MEASUREMENT BETWEEN PINS	x xxxx REF
PIN DIAMETER	x xxxx
INTERNAL FORM ANGLE VARIATION	+xx° -xx°
	(Table 66)



**.45 DEG PRESSURE ANGLE**  
**TABLE 53-45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 10/20 SPLINE PITCH**

Internal and External			Internal (see Drawing Data)							External (see Drawing Data)						
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	S <sub>v</sub> Min. Eff. Circ. Space Width = 0.1771 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.1771 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.
						s				t						
						Max. Actual Circ. Space Width for Tolerance Class				Min. Actual Circ. Tooth Thickness for Tolerance Class						
						7	6	5	4	4	5	6	7			
						s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>			
1	2	3.3	4.5	5.1	6.3	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.3	18.4
					Note e	Notes a & b									Note e	
Tolerance in Ten Thousandths					+ 50 - 0								+0 - 50			
61	6.100000	4.313351	6.258	6.213	6.040	0.1854	0.1829	0.1812	0.1800	0.1742	0.1730	0.1713	0.1688	6.200	6.027	5.982
62	6.200000	4.384062	6.358	6.313	6.140	0.1854	0.1829	0.1813	0.1801	0.1741	0.1729	0.1713	0.1688	6.300	6.127	6.082
63	6.300000	4.454773	6.458	6.413	6.240	0.1855	0.1830	0.1813	0.1801	0.1741	0.1729	0.1712	0.1687	6.400	6.227	6.182
64	6.400000	4.525484	6.558	6.513	6.340	0.1856	0.1830	0.1813	0.1801	0.1741	0.1729	0.1712	0.1686	6.500	6.327	6.282
65	6.500000	4.596194	6.659	6.613	6.440	0.1856	0.1831	0.1814	0.1801	0.1741	0.1728	0.1711	0.1686	6.600	6.427	6.381
66	6.600000	4.666905	6.759	6.714	6.540	0.1857	0.1831	0.1814	0.1801	0.1741	0.1728	0.1711	0.1685	6.700	6.526	6.481
67	6.700000	4.737616	6.859	6.814	6.640	0.1857	0.1831	0.1814	0.1802	0.1740	0.1728	0.1711	0.1685	6.800	6.626	6.581
68	6.800000	4.808326	6.959	6.914	6.740	0.1858	0.1832	0.1814	0.1802	0.1740	0.1728	0.1710	0.1684	6.900	6.726	6.681
69	6.900000	4.879037	7.059	7.014	6.840	0.1858	0.1832	0.1815	0.1802	0.1740	0.1727	0.1710	0.1684	7.000	6.826	6.781
70	7.000000	4.949748	7.159	7.114	6.940	0.1859	0.1832	0.1815	0.1802	0.1740	0.1727	0.1710	0.1683	7.100	6.926	6.881
71	7.100000	5.020458	7.259	7.215	7.040	0.1859	0.1833	0.1815	0.1802	0.1740	0.1727	0.1709	0.1683	7.200	7.025	6.981
72	7.200000	5.091169	7.359	7.315	7.140	0.1860	0.1833	0.1815	0.1803	0.1739	0.1727	0.1709	0.1682	7.300	7.125	7.081
73	7.300000	5.161880	7.459	7.415	7.240	0.1860	0.1834	0.1816	0.1803	0.1739	0.1726	0.1708	0.1682	7.400	7.225	7.181
74	7.400000	5.232590	7.559	7.515	7.340	0.1861	0.1834	0.1816	0.1803	0.1739	0.1726	0.1708	0.1681	7.500	7.325	7.281
75	7.500000	5.303301	7.659	7.615	7.440	0.1861	0.1834	0.1816	0.1803	0.1739	0.1726	0.1708	0.1680	7.600	7.425	7.381
76	7.600000	5.374012	7.759	7.716	7.540	0.1862	0.1835	0.1817	0.1803	0.1739	0.1725	0.1707	0.1680	7.700	7.524	7.481
77	7.700000	5.444722	7.859	7.816	7.640	0.1863	0.1835	0.1817	0.1804	0.1738	0.1725	0.1707	0.1679	7.800	7.624	7.581
78	7.800000	5.515433	7.959	7.916	7.740	0.1863	0.1835	0.1817	0.1804	0.1738	0.1725	0.1707	0.1679	7.900	7.724	7.681
79	7.900000	5.586144	8.059	8.016	7.840	0.1864	0.1836	0.1817	0.1804	0.1738	0.1725	0.1706	0.1678	8.000	7.824	7.781
80	8.000000	5.656854	8.159	8.117	7.940	0.1864	0.1836	0.1818	0.1804	0.1738	0.1724	0.1706	0.1678	8.100	7.924	7.881
81	8.100000	5.727565	8.259	8.217	8.040	0.1865	0.1837	0.1818	0.1804	0.1738	0.1724	0.1705	0.1677	8.200	8.023	7.981
82	8.200000	5.798276	8.359	8.317	8.140	0.1865	0.1837	0.1818	0.1804	0.1738	0.1724	0.1705	0.1677	8.300	8.123	8.081
83	8.300000	5.868986	8.459	8.417	8.240	0.1866	0.1837	0.1818	0.1805	0.1737	0.1724	0.1705	0.1676	8.400	8.223	8.181
84	8.400000	5.939697	8.560	8.517	8.340	0.1866	0.1838	0.1819	0.1805	0.1737	0.1723	0.1704	0.1676	8.500	8.323	8.280
85	8.500000	6.010408	8.660	8.617	8.440	0.1867	0.1838	0.1819	0.1805	0.1737	0.1723	0.1704	0.1675	8.600	8.423	8.380
86	8.600000	6.081118	8.760	8.718	8.540	0.1867	0.1839	0.1819	0.1805	0.1737	0.1723	0.1703	0.1675	8.700	8.522	8.480
87	8.700000	6.151829	8.860	8.818	8.640	0.1868	0.1839	0.1819	0.1805	0.1737	0.1723	0.1703	0.1674	8.800	8.622	8.580
88	8.800000	6.222540	8.960	8.918	8.740	0.1869	0.1839	0.1820	0.1806	0.1736	0.1722	0.1703	0.1673	8.900	8.722	8.680
89	8.900000	6.293251	9.060	9.018	8.840	0.1869	0.1840	0.1820	0.1806	0.1736	0.1722	0.1702	0.1673	9.000	8.822	8.780
90	9.000000	6.363961	9.160	9.118	8.940	0.1870	0.1840	0.1820	0.1806	0.1736	0.1722	0.1702	0.1672	9.100	8.921	8.880
91	9.100000	6.434672	9.260	9.219	9.040	0.1870	0.1840	0.1821	0.1806	0.1736	0.1721	0.1702	0.1672	9.200	9.021	8.980
92	9.200000	6.505383	9.360	9.319	9.140	0.1871	0.1841	0.1821	0.1806	0.1736	0.1721	0.1701	0.1671	9.300	9.121	9.080
93	9.300000	6.576093	9.460	9.419	9.240	0.1871	0.1841	0.1821	0.1807	0.1735	0.1721	0.1701	0.1671	9.400	9.221	9.180
94	9.400000	6.646804	9.560	9.519	9.340	0.1872	0.1842	0.1821	0.1807	0.1735	0.1721	0.1700	0.1670	9.500	9.321	9.280
95	9.500000	6.717515	9.660	9.619	9.440	0.1872	0.1842	0.1822	0.1807	0.1735	0.1720	0.1700	0.1670	9.600	9.421	9.380
96	9.600000	6.788225	9.760	9.720	9.540	0.1873	0.1842	0.1822	0.1807	0.1735	0.1720	0.1700	0.1669	9.700	9.520	9.480
97	9.700000	6.858936	9.860	9.820	9.640	0.1873	0.1843	0.1822	0.1807	0.1735	0.1720	0.1699	0.1669	9.800	9.620	9.580
98	9.800000	6.929647	9.960	9.920	9.740	0.1874	0.1843	0.1822	0.1808	0.1734	0.1720	0.1699	0.1668	9.900	9.720	9.680
99	9.900000	7.000357	10.060	10.020	9.840	0.1874	0.1843	0.1823	0.1808	0.1734	0.1719	0.1699	0.1668	10.000	9.820	9.780
100	10.000000	7.071068	10.160	10.120	9.940	0.1875	0.1844	0.1823	0.1808	0.1734	0.1719	0.1698	0.1667	10.100	9.920	9.880

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.  
 b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.  
 c. See Table 105.

d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.  
 e. Figures in bold type are modified values, see Section 25.



45 DEG PRESSURE ANGLE  
TABLE 54-45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 12/24 SPLINE PITCH

Table with columns: Internal and External (N, D, Db, Dri, DFi, Di), Internal (Sv: Min. Eff. Circ. Space Width, Max. Actual Circ. Space Width), External (Lv: Max. Eff. Circ. Tooth Thickness, Min. Actual Circ. Tooth Thickness), Do, DFe, Dre. Includes tolerance ranges and specific data rows for 6 to 60 teeth.

(continued on next page)

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
c. See Table 105.

- d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
e. Figures in bold type are modified values, see Section 25.
f. Form dia values for 6 thru 20 teeth corrected with 1996 reaffirmation.

45 DEG PRESSURE ANGLE  
TABLE 54—45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 12/24 SPLINE PITCH

Internal and External			Internal (see Drawing Data)							External (see Drawing Data)						
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	S <sub>v</sub> Min. Eff. Circ. Space Width 0.1476 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness 0.1476 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.
						s Max. Actual Circ. Space Width for Tolerance Class				t Min. Actual Circ. Tooth Thickness for Tolerance Class						
						7	6	5	4	4	5	6	7			
						s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>			
1	2	3.3	4.5	5.1	6.3	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.3	18.4
					Note e	Notes a & b							Note e			
Tolerance in Ten Thousandths					+50 -0								+0 -50			
61	5.083333	3.594460	5.217	5.177	5.034	0.1559	0.1534	0.1517	0.1505	0.1447	0.1435	0.1418	0.1393	5.167	5.023	4.983
62	5.166667	3.653385	5.300	5.261	5.117	0.1559	0.1534	0.1518	0.1506	0.1446	0.1434	0.1418	0.1393	5.250	5.106	5.067
63	5.250000	3.712311	5.383	5.344	5.200	0.1560	0.1535	0.1518	0.1506	0.1446	0.1434	0.1417	0.1392	5.333	5.189	5.150
64	5.333333	3.771236	5.467	5.428	5.284	0.1561	0.1535	0.1518	0.1506	0.1446	0.1434	0.1417	0.1391	5.417	5.272	5.233
65	5.416667	3.830162	5.550	5.511	5.367	0.1561	0.1536	0.1519	0.1506	0.1446	0.1433	0.1416	0.1391	5.500	5.355	5.316
66	5.500000	3.889087	5.634	5.595	5.450	0.1562	0.1536	0.1519	0.1506	0.1446	0.1433	0.1416	0.1390	5.583	5.439	5.400
67	5.583333	3.948013	5.717	5.678	5.534	0.1562	0.1536	0.1519	0.1507	0.1445	0.1433	0.1416	0.1390	5.667	5.522	5.483
68	5.666667	4.006939	5.800	5.762	5.617	0.1563	0.1537	0.1519	0.1507	0.1445	0.1433	0.1415	0.1389	5.750	5.605	5.566
69	5.750000	4.065864	5.884	5.845	5.700	0.1563	0.1537	0.1520	0.1507	0.1445	0.1432	0.1415	0.1389	5.833	5.688	5.650
70	5.833333	4.124790	5.967	5.929	5.784	0.1564	0.1537	0.1520	0.1507	0.1445	0.1432	0.1415	0.1388	5.917	5.771	5.733
71	5.916667	4.183715	6.051	6.012	5.867	0.1564	0.1538	0.1520	0.1507	0.1445	0.1432	0.1414	0.1388	6.000	5.854	5.816
72	6.000000	4.242641	6.134	6.096	5.950	0.1565	0.1538	0.1520	0.1508	0.1444	0.1432	0.1414	0.1387	6.083	5.938	5.899
73	6.083333	4.301566	6.217	6.179	6.034	0.1565	0.1539	0.1521	0.1508	0.1444	0.1431	0.1413	0.1387	6.167	6.021	5.983
74	6.166667	4.360492	6.301	6.263	6.117	0.1566	0.1539	0.1521	0.1508	0.1444	0.1431	0.1413	0.1386	6.250	6.104	6.066
75	6.250000	4.419418	6.384	6.346	6.200	0.1566	0.1539	0.1521	0.1508	0.1444	0.1431	0.1413	0.1385	6.333	6.187	6.149
76	6.333333	4.478343	6.467	6.430	6.284	0.1567	0.1540	0.1522	0.1508	0.1444	0.1430	0.1412	0.1385	6.417	6.270	6.233
77	6.416667	4.537269	6.551	6.513	6.367	0.1568	0.1540	0.1522	0.1509	0.1443	0.1430	0.1412	0.1384	6.500	6.353	6.316
78	6.500000	4.596194	6.634	6.597	6.450	0.1568	0.1540	0.1522	0.1509	0.1443	0.1430	0.1412	0.1384	6.583	6.437	6.399
79	6.583333	4.655120	6.718	6.680	6.534	0.1569	0.1541	0.1522	0.1509	0.1443	0.1430	0.1411	0.1383	6.667	6.520	6.482
80	6.666667	4.714045	6.801	6.764	6.617	0.1569	0.1541	0.1523	0.1509	0.1443	0.1429	0.1411	0.1383	6.750	6.603	6.566
81	6.750000	4.772971	6.884	6.847	6.700	0.1570	0.1542	0.1523	0.1509	0.1443	0.1429	0.1410	0.1382	6.833	6.686	6.649
82	6.833333	4.831896	6.968	6.931	6.784	0.1570	0.1542	0.1523	0.1509	0.1443	0.1429	0.1410	0.1382	6.917	6.769	6.732
83	6.916667	4.890822	7.051	7.014	6.867	0.1571	0.1542	0.1523	0.1510	0.1442	0.1429	0.1410	0.1381	7.000	6.852	6.816
84	7.000000	4.949748	7.135	7.098	6.950	0.1571	0.1543	0.1524	0.1510	0.1442	0.1428	0.1409	0.1381	7.083	6.936	6.899
85	7.083333	5.008673	7.218	7.181	7.034	0.1572	0.1543	0.1524	0.1510	0.1442	0.1428	0.1409	0.1380	7.167	7.019	6.982
86	7.166667	5.067599	7.301	7.265	7.117	0.1572	0.1544	0.1524	0.1510	0.1442	0.1428	0.1408	0.1380	7.250	7.102	7.065
87	7.250000	5.126524	7.385	7.348	7.200	0.1573	0.1544	0.1524	0.1510	0.1442	0.1428	0.1408	0.1379	7.333	7.185	7.149
88	7.333333	5.185450	7.468	7.432	7.284	0.1574	0.1544	0.1525	0.1511	0.1441	0.1427	0.1408	0.1378	7.417	7.268	7.232
89	7.416667	5.244375	7.551	7.515	7.367	0.1574	0.1545	0.1525	0.1511	0.1441	0.1427	0.1407	0.1378	7.500	7.351	7.315
90	7.500000	5.303301	7.635	7.599	7.450	0.1575	0.1545	0.1525	0.1511	0.1441	0.1427	0.1407	0.1377	7.583	7.435	7.398
91	7.583333	5.362227	7.718	7.682	7.534	0.1575	0.1545	0.1526	0.1511	0.1441	0.1426	0.1407	0.1377	7.667	7.518	7.482
92	7.666667	5.421152	7.802	7.766	7.617	0.1576	0.1546	0.1526	0.1511	0.1441	0.1426	0.1406	0.1376	7.750	7.601	7.565
93	7.750000	5.480078	7.885	7.849	7.700	0.1576	0.1546	0.1526	0.1512	0.1440	0.1426	0.1406	0.1376	7.833	7.684	7.648
94	7.833333	5.539003	7.968	7.933	7.784	0.1577	0.1547	0.1526	0.1512	0.1440	0.1426	0.1405	0.1375	7.917	7.767	7.732
95	7.916667	5.597929	8.052	8.016	7.867	0.1577	0.1547	0.1527	0.1512	0.1440	0.1425	0.1405	0.1375	8.000	7.850	7.815
96	8.000000	5.656854	8.135	8.100	7.950	0.1578	0.1547	0.1527	0.1512	0.1440	0.1425	0.1405	0.1374	8.083	7.934	7.898
97	8.083333	5.715780	8.219	8.183	8.034	0.1578	0.1548	0.1527	0.1512	0.1440	0.1425	0.1404	0.1374	8.167	8.017	7.981
98	8.166667	5.774706	8.302	8.267	8.117	0.1579	0.1548	0.1527	0.1513	0.1439	0.1425	0.1404	0.1373	8.250	8.100	8.065
99	8.250000	5.833631	8.385	8.350	8.200	0.1579	0.1548	0.1528	0.1513	0.1439	0.1424	0.1404	0.1373	8.333	8.183	8.148
100	8.333333	5.892557	8.469	8.434	8.284	0.1580	0.1549	0.1528	0.1513	0.1439	0.1424	0.1403	0.1372	8.417	8.266	8.231

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.  
 b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.  
 c. See Table 105.  
 d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.  
 e. Figures in bold type are modified values, see Section 25.



45 DEG PRESSURE ANGLE

TABLE 55—45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 16/32 SPLINE PITCH

Internal and External		Internal (see Drawing Data)								External (see Drawing Data)						
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>Fi</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	s <sub>v</sub> Min. Eff. Circ. Space Width = 0.1107 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.1107 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.
						s Max. Actual Circ. Space Width for Tolerance Class				t Min. Actual Circ. Tooth Thickness for Tolerance Class						
						7	6	5	4	4	5	6	7			
						s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>			
1	2	3.3	4.5	5.1	6.3	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.3	18.4
Tolerance in Ten Thousandths					Note e	Notes a & b								Note e		
					+ 50 - 0									+ 0 - 50		
61	3.812500	2.695845	3.913	3.883	3.775	0.1178	0.1157	0.1143	0.1132	0.1082	0.1071	0.1057	0.1036	3.875	3.767	3.737
62	3.875000	2.740039	3.976	3.946	3.838	0.1179	0.1157	0.1143	0.1132	0.1082	0.1071	0.1057	0.1035	3.937	3.829	3.799
63	3.937500	2.784233	4.038	4.008	3.900	0.1179	0.1157	0.1143	0.1133	0.1081	0.1071	0.1057	0.1035	4.000	3.892	3.862
64	4.000000	2.828427	4.101	4.071	3.963	0.1179	0.1158	0.1143	0.1133	0.1081	0.1071	0.1056	0.1035	4.062	3.954	3.924
65	4.062500	2.872621	4.164	4.134	4.025	0.1180	0.1158	0.1143	0.1133	0.1081	0.1071	0.1056	0.1034	4.125	4.016	3.986
66	4.125000	2.916816	4.226	4.196	4.088	0.1180	0.1158	0.1144	0.1133	0.1081	0.1070	0.1056	0.1034	4.187	4.079	4.049
67	4.187500	2.961010	4.289	4.259	4.150	0.1180	0.1158	0.1144	0.1133	0.1081	0.1070	0.1056	0.1034	4.250	4.141	4.111
68	4.250000	3.005204	4.351	4.321	4.213	0.1181	0.1159	0.1144	0.1133	0.1081	0.1070	0.1055	0.1033	4.312	4.204	4.174
69	4.312500	3.049398	4.414	4.384	4.275	0.1181	0.1159	0.1144	0.1133	0.1081	0.1070	0.1055	0.1033	4.375	4.266	4.236
70	4.375000	3.093592	4.476	4.447	4.338	0.1182	0.1159	0.1144	0.1133	0.1081	0.1070	0.1055	0.1032	4.437	4.328	4.299
71	4.437500	3.137786	4.539	4.509	4.400	0.1182	0.1159	0.1144	0.1134	0.1080	0.1070	0.1055	0.1032	4.500	4.391	4.361
72	4.500000	3.181981	4.601	4.572	4.463	0.1182	0.1160	0.1145	0.1134	0.1080	0.1069	0.1054	0.1032	4.562	4.453	4.424
73	4.562500	3.226175	4.664	4.635	4.525	0.1183	0.1160	0.1145	0.1134	0.1080	0.1069	0.1054	0.1031	4.625	4.515	4.486
74	4.625000	3.270369	4.726	4.697	4.588	0.1183	0.1160	0.1145	0.1134	0.1080	0.1069	0.1054	0.1031	4.687	4.578	4.549
75	4.687500	3.314563	4.789	4.760	4.650	0.1183	0.1161	0.1145	0.1134	0.1080	0.1069	0.1053	0.1030	4.750	4.640	4.611
76	4.750000	3.358757	4.851	4.822	4.713	0.1184	0.1161	0.1145	0.1134	0.1080	0.1069	0.1053	0.1030	4.812	4.703	4.674
77	4.812500	3.402951	4.914	4.885	4.775	0.1184	0.1161	0.1146	0.1134	0.1080	0.1068	0.1053	0.1030	4.875	4.765	4.736
78	4.875000	3.447146	4.977	4.948	4.838	0.1185	0.1161	0.1146	0.1135	0.1079	0.1068	0.1053	0.1029	4.937	4.827	4.798
79	4.937500	3.491340	5.039	5.010	4.900	0.1185	0.1162	0.1146	0.1135	0.1079	0.1068	0.1052	0.1029	5.000	4.890	4.861
80	5.000000	3.535534	5.102	5.073	4.963	0.1185	0.1162	0.1146	0.1135	0.1079	0.1068	0.1052	0.1029	5.062	4.952	4.923
81	5.062500	3.579728	5.164	5.136	5.025	0.1186	0.1162	0.1146	0.1135	0.1079	0.1068	0.1052	0.1028	5.125	5.014	4.986
82	5.125000	3.623922	5.227	5.198	5.088	0.1186	0.1162	0.1147	0.1135	0.1079	0.1067	0.1052	0.1028	5.187	5.077	5.048
83	5.187500	3.668117	5.289	5.261	5.150	0.1187	0.1163	0.1147	0.1135	0.1079	0.1067	0.1051	0.1027	5.250	5.139	5.111
84	5.250000	3.712311	5.352	5.323	5.213	0.1187	0.1163	0.1147	0.1135	0.1079	0.1067	0.1051	0.1027	5.312	5.202	5.173
85	5.312500	3.756505	5.414	5.386	5.275	0.1187	0.1163	0.1147	0.1136	0.1078	0.1067	0.1051	0.1027	5.375	5.264	5.236
86	5.375000	3.800699	5.477	5.449	5.338	0.1188	0.1163	0.1147	0.1136	0.1078	0.1067	0.1051	0.1026	5.437	5.326	5.298
87	5.437500	3.844893	5.539	5.511	5.400	0.1188	0.1164	0.1148	0.1136	0.1078	0.1066	0.1050	0.1026	5.500	5.389	5.361
88	5.500000	3.889087	5.602	5.574	5.463	0.1188	0.1164	0.1148	0.1136	0.1078	0.1066	0.1050	0.1026	5.562	5.451	5.423
89	5.562500	3.933282	5.664	5.637	5.525	0.1189	0.1164	0.1148	0.1136	0.1078	0.1066	0.1050	0.1025	5.625	5.513	5.486
90	5.625000	3.977476	5.727	5.699	5.588	0.1189	0.1165	0.1148	0.1136	0.1078	0.1066	0.1049	0.1025	5.687	5.576	5.548
91	5.687500	4.021670	5.790	5.762	5.650	0.1190	0.1165	0.1148	0.1136	0.1078	0.1066	0.1049	0.1024	5.750	5.638	5.610
92	5.750000	4.065864	5.852	5.824	5.713	0.1190	0.1165	0.1148	0.1136	0.1078	0.1066	0.1049	0.1024	5.812	5.701	5.673
93	5.812500	4.110058	5.915	5.887	5.775	0.1190	0.1165	0.1149	0.1137	0.1077	0.1065	0.1049	0.1024	5.875	5.763	5.735
94	5.875000	4.154252	5.977	5.950	5.838	0.1191	0.1166	0.1149	0.1137	0.1077	0.1065	0.1048	0.1023	5.937	5.825	5.798
95	5.937500	4.198447	6.040	6.012	5.900	0.1191	0.1166	0.1149	0.1137	0.1077	0.1065	0.1048	0.1023	6.000	5.888	5.860
96	6.000000	4.242641	6.102	6.075	5.963	0.1191	0.1166	0.1149	0.1137	0.1077	0.1065	0.1048	0.1023	6.062	5.950	5.923
97	6.062500	4.286835	6.165	6.138	6.025	0.1192	0.1166	0.1149	0.1137	0.1077	0.1065	0.1048	0.1022	6.125	6.012	5.985
98	6.125000	4.331029	6.227	6.200	6.088	0.1192	0.1167	0.1150	0.1137	0.1077	0.1064	0.1047	0.1022	6.187	6.075	6.048
99	6.187500	4.375223	6.290	6.263	6.150	0.1193	0.1167	0.1150	0.1137	0.1077	0.1064	0.1047	0.1021	6.250	6.137	6.110
100	6.250000	4.419418	6.352	6.325	6.213	0.1193	0.1167	0.1150	0.1138	0.1076	0.1064	0.1047	0.1021	6.312	6.200	6.173

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.  
 b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.  
 c. See Table 105.

d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.  
 e. Figures in bold type are modified values, see Section 25.





45 DEG PRESSURE ANGLE

TABLE 56—45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 20/40 SPLINE PITCH

Internal and External			Internal (see Drawing Data)							External (see Drawing Data)						
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	s <sub>v</sub> Min. Eff. Circ. Space Width = 0.0885 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.0885 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.
						s Max. Actual Circ. Space Width for Tolerance Class				t Min. Actual Circ. Tooth Thickness for Tolerance Class						
						7	6	5	4	4	5	6	7			
						s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>			
1	2	3.3	4.5	5.1	6.3	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.3	18.4
Tolerance in Ten Thousandths					Note e	Notes a & b								Note e		
					+50 -0									+0 -50		
61	3.050000	2.156676	3.132	3.107	3.020	0.0956	0.0935	0.0921	0.0910	0.0860	0.0849	0.0835	0.0814	3.100	3.013	2.988
62	3.100000	2.192031	3.182	3.157	3.070	0.0957	0.0935	0.0921	0.0910	0.0860	0.0849	0.0835	0.0813	3.150	3.063	3.038
63	3.150000	2.227386	3.232	3.207	3.120	0.0957	0.0935	0.0921	0.0911	0.0859	0.0849	0.0835	0.0813	3.200	3.113	3.088
64	3.200000	2.262742	3.282	3.257	3.170	0.0957	0.0936	0.0921	0.0911	0.0859	0.0849	0.0834	0.0813	3.250	3.163	3.138
65	3.250000	2.298097	3.332	3.307	3.220	0.0958	0.0936	0.0921	0.0911	0.0859	0.0849	0.0834	0.0812	3.300	3.213	3.188
66	3.300000	2.333452	3.382	3.357	3.270	0.0958	0.0936	0.0922	0.0911	0.0859	0.0848	0.0834	0.0812	3.350	3.263	3.238
67	3.350000	2.368808	3.432	3.407	3.320	0.0958	0.0936	0.0922	0.0911	0.0859	0.0848	0.0834	0.0812	3.400	3.313	3.288
68	3.400000	2.404163	3.482	3.457	3.370	0.0959	0.0937	0.0922	0.0911	0.0859	0.0848	0.0833	0.0811	3.450	3.363	3.338
69	3.450000	2.439518	3.532	3.507	3.420	0.0959	0.0937	0.0922	0.0911	0.0859	0.0848	0.0833	0.0811	3.500	3.413	3.388
70	3.500000	2.474874	3.582	3.557	3.470	0.0960	0.0937	0.0922	0.0911	0.0859	0.0848	0.0833	0.0810	3.550	3.463	3.438
71	3.550000	2.510229	3.632	3.608	3.520	0.0960	0.0937	0.0922	0.0912	0.0858	0.0848	0.0833	0.0810	3.600	3.512	3.488
72	3.600000	2.545584	3.683	3.658	3.570	0.0960	0.0938	0.0923	0.0912	0.0858	0.0847	0.0832	0.0810	3.650	3.562	3.537
73	3.650000	2.580940	3.733	3.708	3.620	0.0961	0.0938	0.0923	0.0912	0.0858	0.0847	0.0832	0.0809	3.700	3.612	3.587
74	3.700000	2.616295	3.783	3.758	3.670	0.0961	0.0938	0.0923	0.0912	0.0858	0.0847	0.0832	0.0809	3.750	3.662	3.637
75	3.750000	2.651650	3.833	3.808	3.720	0.0961	0.0939	0.0923	0.0912	0.0858	0.0847	0.0831	0.0808	3.800	3.712	3.687
76	3.800000	2.687006	3.883	3.858	3.770	0.0962	0.0939	0.0923	0.0912	0.0858	0.0847	0.0831	0.0808	3.850	3.762	3.737
77	3.850000	2.722361	3.933	3.908	3.820	0.0962	0.0939	0.0924	0.0912	0.0858	0.0846	0.0831	0.0808	3.900	3.812	3.787
78	3.900000	2.757717	3.983	3.958	3.870	0.0963	0.0939	0.0924	0.0913	0.0857	0.0846	0.0831	0.0807	3.950	3.862	3.837
79	3.950000	2.793072	4.033	4.008	3.920	0.0963	0.0940	0.0924	0.0913	0.0857	0.0846	0.0830	0.0807	4.000	3.912	3.887
80	4.000000	2.828427	4.083	4.058	3.970	0.0963	0.0940	0.0924	0.0913	0.0857	0.0846	0.0830	0.0807	4.050	3.962	3.937
81	4.050000	2.863783	4.133	4.109	4.020	0.0964	0.0940	0.0924	0.0913	0.0857	0.0846	0.0830	0.0806	4.100	4.011	3.987
82	4.100000	2.899138	4.183	4.159	4.070	0.0964	0.0940	0.0925	0.0913	0.0857	0.0845	0.0830	0.0806	4.150	4.061	4.037
83	4.150000	2.934493	4.233	4.209	4.120	0.0965	0.0941	0.0925	0.0913	0.0857	0.0845	0.0829	0.0805	4.200	4.111	4.087
84	4.200000	2.969849	4.283	4.259	4.170	0.0965	0.0941	0.0925	0.0913	0.0857	0.0845	0.0829	0.0805	4.250	4.161	4.137
85	4.250000	3.005204	4.333	4.309	4.220	0.0965	0.0941	0.0925	0.0914	0.0856	0.0845	0.0829	0.0805	4.300	4.211	4.187
86	4.300000	3.040559	4.383	4.359	4.270	0.0966	0.0941	0.0925	0.0914	0.0856	0.0845	0.0829	0.0804	4.350	4.261	4.237
87	4.350000	3.075915	4.433	4.409	4.320	0.0966	0.0942	0.0926	0.0914	0.0856	0.0844	0.0828	0.0804	4.400	4.311	4.287
88	4.400000	3.111270	4.483	4.459	4.370	0.0966	0.0942	0.0926	0.0914	0.0856	0.0844	0.0828	0.0804	4.450	4.361	4.337
89	4.450000	3.146625	4.533	4.509	4.420	0.0967	0.0942	0.0926	0.0914	0.0856	0.0844	0.0828	0.0803	4.500	4.411	4.387
90	4.500000	3.181981	4.583	4.559	4.470	0.0967	0.0943	0.0926	0.0914	0.0856	0.0844	0.0827	0.0803	4.550	4.460	4.437
91	4.550000	3.217336	4.633	4.610	4.520	0.0968	0.0943	0.0926	0.0914	0.0856	0.0844	0.0827	0.0802	4.600	4.510	4.487
92	4.600000	3.252691	4.683	4.660	4.570	0.0968	0.0943	0.0926	0.0914	0.0856	0.0844	0.0827	0.0802	4.650	4.560	4.537
93	4.650000	3.288047	4.733	4.710	4.620	0.0968	0.0943	0.0927	0.0915	0.0855	0.0843	0.0827	0.0802	4.700	4.610	4.587
94	4.700000	3.323402	4.783	4.760	4.670	0.0969	0.0944	0.0927	0.0915	0.0855	0.0843	0.0826	0.0801	4.750	4.660	4.637
95	4.750000	3.358757	4.833	4.810	4.720	0.0969	0.0944	0.0927	0.0915	0.0855	0.0843	0.0826	0.0801	4.800	4.710	4.687
96	4.800000	3.394113	4.883	4.860	4.770	0.0969	0.0944	0.0927	0.0915	0.0855	0.0843	0.0826	0.0801	4.850	4.760	4.737
97	4.850000	3.429468	4.933	4.910	4.820	0.0970	0.0944	0.0927	0.0915	0.0855	0.0843	0.0826	0.0800	4.900	4.810	4.787
98	4.900000	3.464823	4.984	4.960	4.870	0.0970	0.0945	0.0928	0.0915	0.0855	0.0842	0.0825	0.0800	4.950	4.860	4.836
99	4.950000	3.500179	5.034	5.010	4.920	0.0971	0.0945	0.0928	0.0915	0.0855	0.0842	0.0825	0.0799	5.000	4.910	4.886
100	5.000000	3.535534	5.084	5.060	4.970	0.0971	0.0945	0.0928	0.0916	0.0854	0.0842	0.0825	0.0799	5.050	4.960	4.936

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.  
 b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.  
 c. See Table 105.

d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.  
 e. Figures in bold type are modified values, see Section 25.

45 DEG PRESSURE ANGLE
TABLE 57-45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 24/48 SPLINE PITCH

Table with 17 columns: N (No. of Teeth), D (Pitch Dia.), Db (Base Dia.), Dri (Major Dia. Max.), DFi (Form Dia.), Di (Minor Dia.), Sv (Min. Eff. Circ. Space Width = 0.0738), Sv (Max. Actual Circ. Space Width for Tolerance Class), tv (Max. Eff. Circ. Tooth Thickness = 0.0738), tv (Min. Actual Circ. Tooth Thickness for Tolerance Class), Do (Major Dia.), DFe (Form Dia.), Dre (Minor Dia. Min.). Includes tolerance notes and numerical data rows for teeth counts 6 through 60.

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
c. See Table 105.

d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
e. Figures in bold type are modified values, see Section 25.
f. Form dia values for 6 thru 43 teeth corrected with 1996 reaffirmation.

(continued on next page)

45 DEG PRESSURE ANGLE

TABLE 57—45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 24/48 SPLINE PITCH

Internal and External			Internal (see Drawing Data)							External (see Drawing Data)						
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	S <sub>v</sub> Min. Eff. Circ. Space Width = 0.0738 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.0738 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.
						s Max. Actual Circ. Space Width for Tolerance Class				t Min. Actual Circ. Tooth Thickness for Tolerance Class						
						7	6	5	4	4	5	6	7			
						s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>			
1	2	3.3	4.5	5.1	6.3	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.3	18.4
					Note e	Notes a & b										Note e
Tolerance in Ten Thousandths					+50 -0											+0 -50
61	2.541667	1.797230	2.611	2.589	2.517	0.0805	0.0785	0.0772	0.0762	0.0714	0.0704	0.0691	0.0671	2.583	2.511	2.489
62	2.583333	1.826693	2.653	2.631	2.559	0.0806	0.0785	0.0772	0.0762	0.0714	0.0704	0.0691	0.0670	2.625	2.553	2.531
63	2.625000	1.856155	2.694	2.672	2.600	0.0806	0.0786	0.0772	0.0762	0.0714	0.0704	0.0690	0.0670	2.667	2.594	2.572
64	2.666667	1.885618	2.736	2.714	2.642	0.0806	0.0786	0.0772	0.0762	0.0714	0.0704	0.0690	0.0670	2.708	2.636	2.614
65	2.708333	1.915081	2.778	2.756	2.684	0.0807	0.0786	0.0772	0.0762	0.0714	0.0704	0.0690	0.0669	2.750	2.677	2.656
66	2.750000	1.944544	2.819	2.798	2.725	0.0807	0.0786	0.0773	0.0763	0.0713	0.0703	0.0689	0.0669	2.792	2.719	2.697
67	2.791667	1.974006	2.861	2.839	2.767	0.0807	0.0787	0.0773	0.0763	0.0713	0.0703	0.0689	0.0669	2.833	2.761	2.739
68	2.833333	2.003469	2.903	2.881	2.809	0.0808	0.0787	0.0773	0.0763	0.0713	0.0703	0.0689	0.0668	2.875	2.802	2.781
69	2.875000	2.032932	2.945	2.923	2.850	0.0808	0.0787	0.0773	0.0763	0.0713	0.0703	0.0689	0.0668	2.917	2.844	2.822
70	2.916667	2.062395	2.986	2.965	2.892	0.0809	0.0787	0.0773	0.0763	0.0713	0.0703	0.0689	0.0667	2.958	2.885	2.864
71	2.958333	2.091858	3.028	3.006	2.934	0.0809	0.0788	0.0773	0.0763	0.0713	0.0703	0.0688	0.0667	3.000	2.927	2.905
72	3.000000	2.121320	3.070	3.048	2.975	0.0809	0.0788	0.0774	0.0763	0.0713	0.0702	0.0688	0.0667	3.042	2.969	2.947
73	3.041667	2.150783	3.111	3.090	3.017	0.0810	0.0788	0.0774	0.0763	0.0713	0.0702	0.0688	0.0666	3.083	3.010	2.989
74	3.083333	2.180246	3.153	3.132	3.059	0.0810	0.0788	0.0774	0.0764	0.0712	0.0702	0.0688	0.0666	3.125	3.052	3.030
75	3.125000	2.209709	3.195	3.173	3.100	0.0810	0.0789	0.0774	0.0764	0.0712	0.0702	0.0687	0.0666	3.167	3.093	3.072
76	3.166667	2.239172	3.236	3.215	3.142	0.0811	0.0789	0.0774	0.0764	0.0712	0.0702	0.0687	0.0665	3.208	3.135	3.114
77	3.208333	2.268634	3.278	3.257	3.184	0.0811	0.0789	0.0775	0.0764	0.0712	0.0701	0.0687	0.0665	3.250	3.176	3.155
78	3.250000	2.298097	3.320	3.299	3.225	0.0812	0.0790	0.0775	0.0764	0.0712	0.0701	0.0686	0.0664	3.292	3.218	3.197
79	3.291667	2.327560	3.362	3.340	3.267	0.0812	0.0790	0.0775	0.0764	0.0712	0.0701	0.0686	0.0664	3.333	3.260	3.238
80	3.333333	2.357023	3.403	3.382	3.309	0.0812	0.0790	0.0775	0.0764	0.0712	0.0701	0.0686	0.0664	3.375	3.301	3.280
81	3.375000	2.386485	3.445	3.424	3.350	0.0813	0.0790	0.0775	0.0765	0.0711	0.0701	0.0686	0.0663	3.417	3.343	3.322
82	3.416667	2.415948	3.487	3.466	3.392	0.0813	0.0791	0.0776	0.0765	0.0711	0.0700	0.0685	0.0663	3.458	3.384	3.363
83	3.458333	2.445411	3.528	3.507	3.434	0.0814	0.0791	0.0776	0.0765	0.0711	0.0700	0.0685	0.0662	3.500	3.426	3.405
84	3.500000	2.474874	3.570	3.549	3.475	0.0814	0.0791	0.0776	0.0765	0.0711	0.0700	0.0685	0.0662	3.542	3.468	3.447
85	3.541667	2.504337	3.612	3.591	3.517	0.0814	0.0791	0.0776	0.0765	0.0711	0.0700	0.0685	0.0662	3.583	3.509	3.488
86	3.583333	2.533799	3.654	3.633	3.559	0.0815	0.0792	0.0776	0.0765	0.0711	0.0700	0.0684	0.0661	3.625	3.551	3.530
87	3.625000	2.563262	3.695	3.674	3.600	0.0815	0.0792	0.0777	0.0765	0.0711	0.0700	0.0684	0.0661	3.667	3.592	3.571
88	3.666667	2.592725	3.737	3.716	3.642	0.0815	0.0792	0.0777	0.0765	0.0711	0.0699	0.0684	0.0661	3.708	3.634	3.613
89	3.708333	2.622188	3.779	3.758	3.684	0.0816	0.0792	0.0777	0.0766	0.0710	0.0699	0.0684	0.0660	3.750	3.675	3.655
90	3.750000	2.651650	3.820	3.800	3.725	0.0816	0.0793	0.0777	0.0766	0.0710	0.0699	0.0683	0.0660	3.792	3.717	3.696
91	3.791667	2.681113	3.862	3.841	3.767	0.0817	0.0793	0.0777	0.0766	0.0710	0.0699	0.0683	0.0659	3.833	3.759	3.738
92	3.833333	2.710576	3.904	3.883	3.809	0.0817	0.0793	0.0777	0.0766	0.0710	0.0699	0.0683	0.0659	3.875	3.800	3.780
93	3.875000	2.740039	3.945	3.925	3.850	0.0817	0.0794	0.0778	0.0766	0.0710	0.0698	0.0682	0.0659	3.917	3.842	3.821
94	3.916667	2.769502	3.987	3.967	3.892	0.0818	0.0794	0.0778	0.0766	0.0710	0.0698	0.0682	0.0658	3.958	3.883	3.863
95	3.958333	2.798964	4.029	4.008	3.934	0.0818	0.0794	0.0778	0.0766	0.0710	0.0698	0.0682	0.0658	4.000	3.925	3.904
96	4.000000	2.828427	4.071	4.050	3.975	0.0818	0.0794	0.0778	0.0767	0.0709	0.0698	0.0682	0.0658	4.042	3.967	3.946
97	4.041667	2.857890	4.112	4.092	4.017	0.0819	0.0795	0.0778	0.0767	0.0709	0.0698	0.0681	0.0657	4.083	4.008	3.988
98	4.083333	2.887353	4.154	4.134	4.059	0.0819	0.0795	0.0779	0.0767	0.0709	0.0697	0.0681	0.0657	4.125	4.050	4.029
99	4.125000	2.916816	4.196	4.175	4.100	0.0820	0.0795	0.0779	0.0767	0.0709	0.0697	0.0681	0.0656	4.167	4.091	4.071
100	4.166667	2.946278	4.237	4.217	4.142	0.0820	0.0795	0.0779	0.0767	0.0709	0.0697	0.0681	0.0656	4.208	4.133	4.113

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.
- b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
- c. See Table 105.

- d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
- e. Figures in bold type are modified values, see Section 25.



TABLE 58—45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 32/64 SPLINE PITCH

Internal and External			Internal (see Drawing Data)							External (see Drawing Data)						
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	s <sub>v</sub> Min. Eff. Circ. Space Width = 0.0553 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.0553 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.
						s Max. Actual Circ. Space Width for Tolerance Class				t Min. Actual Circ. Tooth Thickness for Tolerance Class						
						7	6	5	4	4	5	6	7			
						s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>			
1	2	3.3	4.5	5.1	6.3	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.3	18.4
					Note e	Notes a & b									Note e	
Tolerance in Ten Thousandths					+30 -0								+0 -30			
61	1.906250	1.347922	1.960	1.942	1.888	0.0620	0.0600	0.0587	0.0577	0.0529	0.0519	0.0506	0.0486	1.937	1.883	1.865
62	1.937500	1.370019	1.991	1.973	1.919	0.0621	0.0600	0.0587	0.0577	0.0529	0.0519	0.0506	0.0485	1.969	1.914	1.896
63	1.968750	1.392117	2.022	2.004	1.950	0.0621	0.0601	0.0587	0.0577	0.0529	0.0519	0.0505	0.0485	2.000	1.946	1.928
64	2.000000	1.414214	2.054	2.036	1.982	0.0621	0.0601	0.0587	0.0577	0.0529	0.0519	0.0505	0.0485	2.031	1.977	1.959
65	2.031250	1.436311	2.085	2.067	2.013	0.0622	0.0601	0.0587	0.0577	0.0529	0.0519	0.0505	0.0484	2.062	2.008	1.990
66	2.062500	1.458408	2.116	2.098	2.044	0.0622	0.0601	0.0588	0.0578	0.0528	0.0518	0.0505	0.0484	2.094	2.039	2.021
67	2.093750	1.480505	2.148	2.130	2.075	0.0622	0.0602	0.0588	0.0578	0.0528	0.0518	0.0504	0.0484	2.125	2.070	2.052
68	2.125000	1.502602	2.179	2.161	2.107	0.0623	0.0602	0.0588	0.0578	0.0528	0.0518	0.0504	0.0483	2.156	2.102	2.084
69	2.156250	1.524699	2.210	2.192	2.138	0.0623	0.0602	0.0588	0.0578	0.0528	0.0518	0.0504	0.0483	2.187	2.133	2.115
70	2.187500	1.546796	2.241	2.224	2.169	0.0624	0.0602	0.0588	0.0578	0.0528	0.0518	0.0504	0.0482	2.219	2.164	2.146
71	2.218750	1.568893	2.273	2.255	2.200	0.0624	0.0603	0.0588	0.0578	0.0528	0.0518	0.0503	0.0482	2.250	2.195	2.177
72	2.250000	1.590990	2.304	2.286	2.232	0.0624	0.0603	0.0589	0.0578	0.0528	0.0517	0.0503	0.0482	2.281	2.226	2.208
73	2.281250	1.613087	2.335	2.318	2.263	0.0625	0.0603	0.0589	0.0578	0.0528	0.0517	0.0503	0.0481	2.312	2.257	2.240
74	2.312500	1.635184	2.367	2.349	2.294	0.0625	0.0603	0.0589	0.0579	0.0527	0.0517	0.0503	0.0481	2.344	2.289	2.271
75	2.343750	1.657282	2.398	2.380	2.325	0.0625	0.0604	0.0589	0.0579	0.0527	0.0517	0.0502	0.0481	2.375	2.320	2.302
76	2.375000	1.679379	2.429	2.411	2.357	0.0626	0.0604	0.0589	0.0579	0.0527	0.0517	0.0502	0.0480	2.406	2.351	2.333
77	2.406250	1.701476	2.460	2.443	2.388	0.0626	0.0604	0.0590	0.0579	0.0527	0.0516	0.0502	0.0480	2.437	2.382	2.365
78	2.437500	1.723573	2.492	2.474	2.419	0.0627	0.0605	0.0590	0.0579	0.0527	0.0516	0.0501	0.0479	2.469	2.413	2.396
79	2.468750	1.745670	2.523	2.505	2.450	0.0627	0.0605	0.0590	0.0579	0.0527	0.0516	0.0501	0.0479	2.500	2.445	2.427
80	2.500000	1.767767	2.554	2.537	2.482	0.0627	0.0605	0.0590	0.0579	0.0527	0.0516	0.0501	0.0479	2.531	2.476	2.458
81	2.531250	1.789864	2.586	2.568	2.513	0.0628	0.0605	0.0591	0.0580	0.0526	0.0516	0.0501	0.0478	2.562	2.507	2.489
82	2.562500	1.811961	2.617	2.599	2.544	0.0628	0.0606	0.0591	0.0580	0.0526	0.0515	0.0500	0.0478	2.594	2.538	2.521
83	2.593750	1.834058	2.648	2.631	2.575	0.0629	0.0606	0.0591	0.0580	0.0526	0.0515	0.0500	0.0477	2.625	2.569	2.552
84	2.625000	1.856155	2.679	2.662	2.607	0.0629	0.0606	0.0591	0.0580	0.0526	0.0515	0.0500	0.0477	2.656	2.601	2.583
85	2.656250	1.878252	2.711	2.693	2.638	0.0629	0.0606	0.0591	0.0580	0.0526	0.0515	0.0500	0.0477	2.687	2.632	2.614
86	2.687500	1.900350	2.742	2.725	2.669	0.0630	0.0607	0.0591	0.0580	0.0526	0.0515	0.0499	0.0476	2.719	2.663	2.645
87	2.718750	1.922447	2.773	2.756	2.700	0.0630	0.0607	0.0592	0.0580	0.0526	0.0514	0.0499	0.0476	2.750	2.694	2.677
88	2.750000	1.944544	2.805	2.787	2.732	0.0630	0.0607	0.0592	0.0580	0.0526	0.0514	0.0499	0.0476	2.781	2.725	2.708
89	2.781250	1.966641	2.836	2.819	2.763	0.0631	0.0607	0.0592	0.0581	0.0525	0.0514	0.0499	0.0475	2.812	2.756	2.739
90	2.812500	1.988738	2.867	2.850	2.794	0.0631	0.0608	0.0592	0.0581	0.0525	0.0514	0.0498	0.0475	2.844	2.788	2.770
91	2.843750	2.010835	2.898	2.881	2.825	0.0632	0.0608	0.0592	0.0581	0.0525	0.0514	0.0498	0.0474	2.875	2.819	2.802
92	2.875000	2.032932	2.930	2.912	2.857	0.0632	0.0608	0.0592	0.0581	0.0525	0.0514	0.0498	0.0474	2.906	2.850	2.833
93	2.906250	2.055029	2.961	2.944	2.888	0.0632	0.0609	0.0593	0.0581	0.0525	0.0513	0.0497	0.0474	2.937	2.881	2.864
94	2.937500	2.077126	2.992	2.975	2.919	0.0633	0.0609	0.0593	0.0581	0.0525	0.0513	0.0497	0.0473	2.969	2.912	2.895
95	2.968750	2.099223	3.024	3.006	2.950	0.0633	0.0609	0.0593	0.0581	0.0525	0.0513	0.0497	0.0473	3.000	2.944	2.926
96	3.000000	2.121320	3.055	3.038	2.982	0.0633	0.0609	0.0593	0.0582	0.0524	0.0513	0.0497	0.0473	3.031	2.975	2.958
97	3.031250	2.143417	3.086	3.069	3.013	0.0634	0.0610	0.0593	0.0582	0.0524	0.0513	0.0496	0.0472	3.062	3.006	2.989
98	3.062500	2.165515	3.117	3.100	3.044	0.0634	0.0610	0.0594	0.0582	0.0524	0.0512	0.0496	0.0472	3.094	3.037	3.020
99	3.093750	2.187612	3.149	3.132	3.075	0.0635	0.0610	0.0594	0.0582	0.0524	0.0512	0.0496	0.0471	3.125	3.068	3.051
100	3.125000	2.209709	3.180	3.163	3.107	0.0635	0.0610	0.0594	0.0582	0.0524	0.0512	0.0496	0.0471	3.156	3.100	3.082

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.
- b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
- c. See Table 105.

- d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
- e. Figures in bold type are modified values, see Section 25.



45 DEG PRESSURE ANGLE  
TABLE 59-45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 40/80 SPLINE PITCH

Table with columns: No. of Teeth (N), D Pitch Dia., Db Base Dia., Dri Major Dia. Max., DF1 Form Dia., Di Minor Dia., Sv Min. Eff. Circ. Space Width = 0.0443, ts Max. Eff. Circ. Tooth Thickness = 0.0443, Do Major Dia., DF2 Form Dia., Dre Minor Dia. Min., and tolerance values.

(continued on next page)

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
c. See Table 105.
d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
e. Figures in bold type are modified values, see Section 25.
f. Form dia values for 6 thru 60 teeth corrected with 1996 reaffirmation.

45 DEG PRESSURE ANGLE

TABLE 59—45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 40/80 SPLINE PITCH

Internal and External		Internal (see Drawing Data)								External (see Drawing Data)							
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	s <sub>v</sub> Min. Eff. Circ. Space Width = 0.0443 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.0443 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.	
						s Max. Actual Circ. Space Width for Tolerance Class				t Min. Actual Circ. Tooth Thickness for Tolerance Class							
						7	6	5	4	4	5	6	7				
						s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
					Note e	Notes a & b										Note e	
Tolerance in Ten Thousandths					+30									+0			-30
61	1.525000	1.078338	1.569	1.554	1.510	0.0510	0.0490	0.0477	0.0467	0.0419	0.0409	0.0396	0.0376	1.550	1.506	1.491	
62	1.550000	1.096016	1.594	1.579	1.535	0.0511	0.0490	0.0477	0.0467	0.0419	0.0409	0.0396	0.0375	1.575	1.531	1.516	
63	1.575000	1.113693	1.619	1.604	1.560	0.0511	0.0491	0.0477	0.0467	0.0419	0.0409	0.0395	0.0375	1.600	1.556	1.541	
64	1.600000	1.131371	1.644	1.629	1.585	0.0511	0.0491	0.0477	0.0467	0.0419	0.0409	0.0395	0.0375	1.625	1.581	1.566	
65	1.625000	1.149049	1.669	1.654	1.610	0.0512	0.0491	0.0477	0.0467	0.0419	0.0409	0.0395	0.0374	1.650	1.606	1.591	
66	1.650000	1.166726	1.694	1.679	1.635	0.0512	0.0491	0.0478	0.0468	0.0418	0.0408	0.0395	0.0374	1.675	1.631	1.616	
67	1.675000	1.184404	1.719	1.704	1.660	0.0512	0.0492	0.0478	0.0468	0.0418	0.0408	0.0394	0.0374	1.700	1.656	1.641	
68	1.700000	1.202082	1.744	1.729	1.685	0.0513	0.0492	0.0478	0.0468	0.0418	0.0408	0.0394	0.0373	1.725	1.681	1.666	
69	1.725000	1.219759	1.770	1.754	1.710	0.0513	0.0492	0.0478	0.0468	0.0418	0.0408	0.0394	0.0373	1.750	1.706	1.690	
70	1.750000	1.237437	1.795	1.779	1.735	0.0514	0.0492	0.0478	0.0468	0.0418	0.0408	0.0394	0.0372	1.775	1.731	1.715	
71	1.775000	1.255115	1.820	1.804	1.760	0.0514	0.0493	0.0478	0.0468	0.0418	0.0408	0.0393	0.0372	1.800	1.756	1.740	
72	1.800000	1.272792	1.845	1.829	1.785	0.0514	0.0493	0.0479	0.0468	0.0418	0.0407	0.0393	0.0372	1.825	1.781	1.765	
73	1.825000	1.290470	1.870	1.854	1.810	0.0515	0.0493	0.0479	0.0468	0.0418	0.0407	0.0393	0.0371	1.850	1.806	1.790	
74	1.850000	1.308148	1.895	1.879	1.835	0.0515	0.0493	0.0479	0.0469	0.0417	0.0407	0.0393	0.0371	1.875	1.831	1.815	
75	1.875000	1.325825	1.920	1.904	1.860	0.0515	0.0494	0.0479	0.0469	0.0417	0.0407	0.0392	0.0370	1.900	1.856	1.840	
76	1.900000	1.343503	1.945	1.929	1.885	0.0516	0.0494	0.0479	0.0469	0.0417	0.0407	0.0392	0.0370	1.925	1.881	1.865	
77	1.925000	1.361181	1.970	1.954	1.910	0.0516	0.0494	0.0480	0.0469	0.0417	0.0406	0.0392	0.0370	1.950	1.906	1.890	
78	1.950000	1.378858	1.995	1.979	1.935	0.0517	0.0495	0.0480	0.0469	0.0417	0.0406	0.0391	0.0369	1.975	1.931	1.915	
79	1.975000	1.396536	2.020	2.004	1.960	0.0517	0.0495	0.0480	0.0469	0.0417	0.0406	0.0391	0.0369	2.000	1.956	1.940	
80	2.000000	1.414214	2.045	2.029	1.985	0.0517	0.0495	0.0480	0.0469	0.0417	0.0406	0.0391	0.0369	2.025	1.981	1.965	
81	2.025000	1.431891	2.070	2.055	2.010	0.0518	0.0495	0.0480	0.0470	0.0416	0.0406	0.0391	0.0368	2.050	2.005	1.990	
82	2.050000	1.449569	2.095	2.080	2.035	0.0518	0.0496	0.0481	0.0470	0.0416	0.0405	0.0390	0.0368	2.075	2.030	2.015	
83	2.075000	1.467247	2.120	2.105	2.060	0.0519	0.0496	0.0481	0.0470	0.0416	0.0405	0.0390	0.0367	2.100	2.055	2.040	
84	2.100000	1.484924	2.145	2.130	2.085	0.0519	0.0496	0.0481	0.0470	0.0416	0.0405	0.0390	0.0367	2.125	2.080	2.065	
85	2.125000	1.502602	2.170	2.155	2.110	0.0519	0.0496	0.0481	0.0470	0.0416	0.0405	0.0390	0.0367	2.150	2.105	2.090	
86	2.150000	1.520280	2.195	2.180	2.135	0.0520	0.0497	0.0481	0.0470	0.0416	0.0405	0.0389	0.0366	2.175	2.130	2.115	
87	2.175000	1.537957	2.220	2.205	2.160	0.0520	0.0497	0.0482	0.0470	0.0416	0.0404	0.0389	0.0366	2.200	2.155	2.140	
88	2.200000	1.555635	2.245	2.230	2.185	0.0520	0.0497	0.0482	0.0470	0.0416	0.0404	0.0389	0.0366	2.225	2.180	2.165	
89	2.225000	1.573313	2.270	2.255	2.210	0.0521	0.0497	0.0482	0.0471	0.0415	0.0404	0.0389	0.0365	2.250	2.205	2.190	
90	2.250000	1.590990	2.295	2.280	2.235	0.0521	0.0498	0.0482	0.0471	0.0415	0.0404	0.0388	0.0365	2.275	2.230	2.215	
91	2.275000	1.608668	2.320	2.305	2.260	0.0522	0.0498	0.0482	0.0471	0.0415	0.0404	0.0388	0.0364	2.300	2.255	2.240	
92	2.300000	1.626346	2.345	2.330	2.285	0.0522	0.0498	0.0482	0.0471	0.0415	0.0403	0.0388	0.0364	2.325	2.280	2.265	
93	2.325000	1.644023	2.370	2.355	2.310	0.0522	0.0499	0.0483	0.0474	0.0415	0.0403	0.0387	0.0364	2.350	2.305	2.290	
94	2.350000	1.661701	2.395	2.380	2.335	0.0523	0.0499	0.0483	0.0471	0.0415	0.0403	0.0387	0.0363	2.375	2.330	2.315	
95	2.375000	1.679379	2.421	2.405	2.360	0.0523	0.0499	0.0483	0.0471	0.0415	0.0403	0.0387	0.0363	2.400	2.355	2.339	
96	2.400000	1.697056	2.446	2.430	2.385	0.0523	0.0499	0.0483	0.0472	0.0414	0.0403	0.0387	0.0363	2.425	2.380	2.364	
97	2.425000	1.714734	2.471	2.455	2.410	0.0524	0.0500	0.0483	0.0472	0.0414	0.0403	0.0386	0.0362	2.450	2.405	2.389	
98	2.450000	1.732412	2.496	2.480	2.435	0.0524	0.0500	0.0484	0.0472	0.0414	0.0402	0.0386	0.0362	2.475	2.430	2.414	
99	2.475000	1.750089	2.521	2.505	2.460	0.0525	0.0500	0.0484	0.0472	0.0414	0.0402	0.0386	0.0361	2.500	2.455	2.439	
100	2.500000	1.767767	2.546	2.530	2.485	0.0525	0.0500	0.0484	0.0472	0.0414	0.0402	0.0386	0.0361	2.525	2.480	2.464	

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.  
 b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.  
 c. See Table 105.

d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.  
 e. Figures in bold type are modified values, see Section 25.

45 DEG PRESSURE ANGLE
TABLE 60—45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 48/96 SPLINE PITCH

Main data table with columns for No. of Teeth (N), Pitch Dia. (D), Base Dia. (D\_b), Major Dia. (D\_fi), Form Dia. (D\_Fi), Minor Dia. (D\_i), Min. Eff. Circ. Space Width (S\_v), Max. Eff. Circ. Tooth Thickness (t\_v), Major Dia. (D\_o), Form Dia. (D\_Fe), and Minor Dia. (D\_re). It includes tolerance classes (7, 6, 5, 4) and specific tolerance values (s\_7, s\_6, s\_5, s\_4, t\_4, t\_5, t\_6, t\_7).

(continued on next page)

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness.
b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
c. See Table 105.
d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
e. Figures in bold type are modified values, see Section 25.
f. Form dia values for 6 thru 88 teeth corrected with 1996 reaffirmation.

45 DEG PRESSURE ANGLE

TABLE 60-45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 48/96 SPLINE PITCH

Internal and External			Internal (see Drawing Data)							External (see Drawing Data)						
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>ri</sub> Major Dia. Max.	D <sub>Fi</sub> Form Dia.	D <sub>i</sub> Minor Dia.	s <sub>v</sub> Min. Eff. Circ. Space Width = 0.0369 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.0369 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.
						s Max. Actual Circ. Space Width for Tolerance Class				t Min. Actual Circ. Tooth Thickness for Tolerance Class						
						7	6	5	4	4	5	6	7			
						s <sub>7</sub>	s <sub>6</sub>	s <sub>5</sub>	s <sub>4</sub>	t <sub>4</sub>	t <sub>5</sub>	t <sub>6</sub>	t <sub>7</sub>			
1	2	3.3	4.5	5.1	6.3	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.3	18.4
Tolerance in Ten Thousandths			Note f		Note e		Notes a & b							Note e		
					+30 -0									+0 -30		
														Note f		
61	1.270833	0.8986149	1.309	1.296	1.259	0.0436	0.0416	0.0403	0.0393	0.0345	0.0335	0.0322	0.0302	1.292	1.254	1.241
62	1.291667	0.9133463	1.330	1.317	1.280	0.0437	0.0416	0.0403	0.0393	0.0345	0.0335	0.0322	0.0301	1.312	1.275	1.262
63	1.312500	0.9280777	1.351	1.338	1.300	0.0437	0.0417	0.0403	0.0393	0.0345	0.0335	0.0321	0.0301	1.333	1.296	1.283
64	1.333333	0.9428091	1.371	1.359	1.321	0.0437	0.0417	0.0403	0.0393	0.0345	0.0335	0.0321	0.0301	1.354	1.316	1.304
65	1.354167	0.9575405	1.392	1.379	1.342	0.0438	0.0417	0.0403	0.0393	0.0345	0.0335	0.0321	0.0300	1.375	1.337	1.324
66	1.375000	0.9722718	1.413	1.400	1.363	0.0438	0.0417	0.0404	0.0394	0.0344	0.0334	0.0321	0.0300	1.396	1.358	1.345
67	1.395833	0.9870031	1.434	1.421	1.384	0.0438	0.0418	0.0404	0.0394	0.0344	0.0334	0.0320	0.0300	1.417	1.379	1.366
68	1.416667	1.001735	1.455	1.442	1.405	0.0439	0.0418	0.0404	0.0394	0.0344	0.0334	0.0320	0.0299	1.437	1.400	1.387
69	1.437500	1.016466	1.476	1.463	1.425	0.0439	0.0418	0.0404	0.0394	0.0344	0.0334	0.0320	0.0299	1.458	1.421	1.408
70	1.458333	1.031197	1.497	1.484	1.446	0.0440	0.0418	0.0404	0.0394	0.0344	0.0334	0.0320	0.0298	1.479	1.441	1.428
71	1.479167	1.045929	1.518	1.504	1.467	0.0440	0.0419	0.0404	0.0394	0.0344	0.0334	0.0319	0.0298	1.500	1.462	1.449
72	1.500000	1.060660	1.538	1.525	1.488	0.0440	0.0419	0.0405	0.0394	0.0344	0.0333	0.0319	0.0298	1.521	1.483	1.470
73	1.520833	1.075392	1.559	1.546	1.509	0.0441	0.0419	0.0405	0.0394	0.0344	0.0333	0.0319	0.0297	1.542	1.504	1.491
74	1.541667	1.090123	1.580	1.567	1.530	0.0441	0.0419	0.0405	0.0395	0.0343	0.0333	0.0319	0.0297	1.562	1.525	1.512
75	1.562500	1.104854	1.601	1.588	1.550	0.0441	0.0420	0.0405	0.0395	0.0343	0.0333	0.0318	0.0296	1.583	1.546	1.532
76	1.583333	1.119586	1.622	1.609	1.571	0.0442	0.0420	0.0405	0.0395	0.0343	0.0333	0.0318	0.0296	1.604	1.566	1.553
77	1.604167	1.134317	1.643	1.629	1.592	0.0442	0.0420	0.0406	0.0395	0.0343	0.0332	0.0318	0.0296	1.625	1.587	1.574
78	1.625000	1.149049	1.664	1.650	1.613	0.0443	0.0421	0.0406	0.0395	0.0343	0.0332	0.0317	0.0295	1.646	1.608	1.595
79	1.645833	1.163780	1.684	1.671	1.634	0.0443	0.0421	0.0406	0.0395	0.0343	0.0332	0.0317	0.0295	1.667	1.629	1.616
80	1.666667	1.178511	1.705	1.692	1.655	0.0443	0.0421	0.0406	0.0395	0.0343	0.0332	0.0317	0.0295	1.687	1.650	1.636
81	1.687500	1.193243	1.726	1.713	1.675	0.0444	0.0421	0.0406	0.0396	0.0342	0.0332	0.0317	0.0294	1.708	1.671	1.657
82	1.708333	1.207974	1.747	1.734	1.696	0.0444	0.0422	0.0407	0.0396	0.0342	0.0331	0.0316	0.0294	1.729	1.691	1.678
83	1.729167	1.222706	1.768	1.754	1.717	0.0445	0.0422	0.0407	0.0396	0.0342	0.0331	0.0316	0.0293	1.750	1.712	1.699
84	1.750000	1.237437	1.789	1.775	1.738	0.0445	0.0422	0.0407	0.0396	0.0342	0.0331	0.0316	0.0293	1.771	1.733	1.719
85	1.770833	1.252168	1.810	1.796	1.759	0.0445	0.0422	0.0407	0.0396	0.0342	0.0331	0.0316	0.0293	1.792	1.754	1.740
86	1.791667	1.266900	1.831	1.817	1.780	0.0446	0.0423	0.0407	0.0396	0.0342	0.0331	0.0315	0.0292	1.812	1.775	1.761
87	1.812500	1.281631	1.851	1.838	1.800	0.0446	0.0423	0.0408	0.0396	0.0342	0.0330	0.0315	0.0292	1.833	1.796	1.782
88	1.833333	1.296362	1.872	1.859	1.821	0.0446	0.0423	0.0408	0.0396	0.0342	0.0330	0.0315	0.0292	1.854	1.816	1.803
89	1.854167	1.311094	1.893	1.879	1.842	0.0447	0.0423	0.0408	0.0397	0.0341	0.0330	0.0315	0.0291	1.875	1.837	1.823
90	1.875000	1.325825	1.914	1.900	1.863	0.0447	0.0424	0.0408	0.0397	0.0341	0.0330	0.0314	0.0291	1.896	1.858	1.844
91	1.895833	1.340557	1.935	1.921	1.884	0.0448	0.0424	0.0408	0.0397	0.0341	0.0330	0.0314	0.0290	1.917	1.879	1.865
92	1.916667	1.355288	1.956	1.942	1.905	0.0448	0.0424	0.0408	0.0397	0.0341	0.0330	0.0314	0.0290	1.937	1.900	1.886
93	1.937500	1.370019	1.977	1.963	1.925	0.0448	0.0425	0.0409	0.0397	0.0341	0.0329	0.0313	0.0290	1.958	1.921	1.907
94	1.958333	1.384751	1.998	1.984	1.946	0.0449	0.0425	0.0409	0.0397	0.0341	0.0329	0.0313	0.0289	1.979	1.941	1.927
95	1.979167	1.399482	2.018	2.004	1.967	0.0449	0.0425	0.0409	0.0397	0.0341	0.0329	0.0313	0.0289	2.000	1.962	1.948
96	2.000000	1.414214	2.039	2.025	1.988	0.0449	0.0425	0.0409	0.0398	0.0340	0.0329	0.0313	0.0289	2.021	1.983	1.969
97	2.020833	1.428945	2.060	2.046	2.009	0.0450	0.0426	0.0409	0.0398	0.0340	0.0329	0.0312	0.0288	2.042	2.004	1.990
98	2.041667	1.443676	2.081	2.067	2.030	0.0450	0.0426	0.0410	0.0398	0.0340	0.0328	0.0312	0.0288	2.062	2.025	2.011
99	2.062500	1.458408	2.102	2.088	2.050	0.0451	0.0426	0.0410	0.0398	0.0340	0.0328	0.0312	0.0287	2.083	2.045	2.031
100	2.083333	1.473139	2.123	2.109	2.071	0.0451	0.0426	0.0410	0.0398	0.0340	0.0328	0.0312	0.0287	2.104	2.066	2.052

a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.  
 b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.  
 c. See Table 105.

d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.  
 e. Figures in bold type are modified values, see Section 25.  
 f. Form dia values for 6 thru 88 teeth corrected with 1996 reaffirmation.

45 DEG PRESSURE ANGLE  
TABLE 61-45 DEG PRESSURE ANGLE, FILLET ROOT SIDE FIT, 64/128 SPLINE PITCH

Internal and External			Internal (see Drawing Data)							External (see Drawing Data)							
N No. of Teeth	D Pitch Dia.	D <sub>b</sub> Base Dia.	D <sub>r1</sub> Major Dia. Max.	D <sub>F</sub> Form Dia.	D <sub>i</sub> Minor Dia.	S <sub>v</sub> Min. Eff. Circ. Space Width = 0.0277 Notes c & d				t <sub>v</sub> Max. Eff. Circ. Tooth Thickness = 0.0277 Notes c & d				D <sub>o</sub> Major Dia.	D <sub>Fe</sub> Form Dia.	D <sub>re</sub> Minor Dia. Min.	
						s				t							
						Max. Actual Circ. Space Width for Tolerance Class				Min. Actual Circ. Tooth Thickness for Tolerance Class							
						7	6	5	4	4	5	6	7				
1	2	3.3	4.5	5.1	6.3	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.3	18.4	
					Note f	Note e	Notes a & b							Note e			
Tolerance in Ten Thousandths						+20 -0									+0 -20	Note f	
11	0.1718750	0.1215340	0.1995	0.1915	0.1625	0.0319	0.0306	0.0298	0.0292	0.0262	0.0256	0.0248	0.0235	0.1875	0.1585	0.1505	
12	0.1875000	0.1325825	0.2151	0.2072	0.1782	0.0319	0.0306	0.0298	0.0292	0.0262	0.0256	0.0248	0.0235	0.2031	0.1741	0.1661	
13	0.2031250	0.1436310	0.2308	0.2228	0.1938	0.0319	0.0307	0.0298	0.0292	0.0262	0.0256	0.0247	0.0235	0.2188	0.1897	0.1817	
14	0.2187500	0.1546796	0.2464	0.2384	0.2094	0.0319	0.0307	0.0298	0.0292	0.0262	0.0256	0.0247	0.0235	0.2344	0.2053	0.1973	
15	0.2343750	0.1657282	0.2621	0.2540	0.2250	0.0320	0.0307	0.0298	0.0292	0.0262	0.0256	0.0247	0.0234	0.2500	0.2210	0.2129	
16	0.2500000	0.1767767	0.2777	0.2697	0.2407	0.0320	0.0307	0.0299	0.0292	0.0262	0.0255	0.0247	0.0234	0.2656	0.2366	0.2285	
17	0.2656250	0.1878252	0.2934	0.2853	0.2563	0.0320	0.0307	0.0299	0.0292	0.0262	0.0255	0.0247	0.0234	0.2813	0.2522	0.2441	
18	0.2812500	0.1988738	0.3091	0.3009	0.2719	0.0321	0.0308	0.0299	0.0293	0.0261	0.0255	0.0246	0.0233	0.2969	0.2678	0.2597	
19	0.2968750	0.2099223	0.3247	0.3165	0.2875	0.0321	0.0308	0.0299	0.0293	0.0261	0.0255	0.0246	0.0233	0.3125	0.2835	0.2753	
20	0.3125000	0.2209709	0.3404	0.3322	0.3032	0.0321	0.0308	0.0299	0.0293	0.0261	0.0255	0.0246	0.0233	0.3281	0.2991	0.2909	
21	0.3281250	0.2320194	0.3560	0.3478	0.3188	0.0322	0.0308	0.0299	0.0293	0.0261	0.0255	0.0246	0.0232	0.3438	0.3147	0.3065	
22	0.3437500	0.2430680	0.3717	0.3634	0.3344	0.0322	0.0309	0.0300	0.0293	0.0261	0.0254	0.0245	0.0232	0.3594	0.3303	0.3221	
23	0.3593750	0.2541164	0.3873	0.3790	0.3500	0.0322	0.0309	0.0300	0.0293	0.0261	0.0254	0.0245	0.0232	0.3750	0.3460	0.3377	
24	0.3750000	0.2651650	0.4030	0.3947	0.3657	0.0323	0.0309	0.0300	0.0293	0.0261	0.0254	0.0245	0.0231	0.3906	0.3616	0.3532	
25	0.3906250	0.2762136	0.4187	0.4103	0.3813	0.0323	0.0309	0.0300	0.0293	0.0261	0.0254	0.0245	0.0231	0.4063	0.3772	0.3688	
26	0.4062500	0.2872621	0.4343	0.4259	0.3969	0.0323	0.0309	0.0300	0.0293	0.0261	0.0254	0.0245	0.0231	0.4219	0.3928	0.3844	
27	0.4218750	0.2983107	0.4500	0.4415	0.4125	0.0324	0.0310	0.0300	0.0294	0.0260	0.0254	0.0244	0.0230	0.4375	0.4085	0.4000	
28	0.4375000	0.3093592	0.4656	0.4572	0.4282	0.0324	0.0310	0.0300	0.0294	0.0260	0.0254	0.0244	0.0230	0.4531	0.4241	0.4156	
29	0.4531250	0.3204077	0.4813	0.4728	0.4438	0.0324	0.0310	0.0301	0.0294	0.0260	0.0253	0.0244	0.0230	0.4688	0.4397	0.4312	
30	0.4687500	0.3314562	0.4969	0.4884	0.4594	0.0325	0.0310	0.0301	0.0294	0.0260	0.0253	0.0244	0.0229	0.4844	0.4553	0.4468	
31	0.4843750	0.3425049	0.5126	0.5040	0.4750	0.0325	0.0311	0.0301	0.0294	0.0260	0.0253	0.0243	0.0229	0.5000	0.4710	0.4624	

- a. Measurement with pins cannot be used to determine effective space width and tooth thickness. Measurement with pins for actual space width and tooth thickness are in Tables 93-104.
- b. For REF minimum actual space width, and REF maximum actual tooth thickness, see Table 64.
- c. See Table 105.
- d. For REF maximum effective space width, and REF minimum effective tooth thickness, see Table 64.
- e. Figures in bold type are modified values, see Section 25.
- f. Form dia values for 11 thru 31 teeth corrected with 1996 reaffirmation.