

ASME B94.11M-1993

(REVISION OF ANSI B94.11-1979)

Twist Drills

AN AMERICAN NATIONAL STANDARD



The American Society of
Mechanical Engineers

AN AMERICAN NATIONAL STANDARD

Twist Drills

ASME B94.11M-1993

(REVISION OF ANSI B94.11-1979)



The American Society of
Mechanical Engineers

345 East 47th Street, New York, N.Y. 10017

Date of Issuance: March 31, 1994

This Standard will be revised when the Society approves the issuance of a new edition. There will be no addenda or written interpretations of the requirements of this Standard issued to this Edition.

ASME is the registered trademark of The American Society of Mechanical Engineers.

This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Consensus Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment which provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

ASME does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable Letters Patent, nor assume any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this code or standard.

ASME accepts responsibility for only those interpretations issued in accordance with governing ASME procedures and policies which preclude the issuance of interpretations by individual volunteers.

No part of this document may be reproduced in any form,
in an electronic retrieval system or otherwise,
without the prior written permission of the publisher.

Copyright © 1994 by
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
All Rights Reserved
Printed in U.S.A.

FOREWORD

(This Foreword is not a part of ASME B94.11M-1993.)

The U.S.A. Standard Twist Drills-Straight Shank (USASI B5-12-1940) Standardized Drill Nomenclature and Major Dimensions, Technical Committee No. 7 on Twist Drills was established in 1946 and a revision dated March 22, 1950 was issued.

The committee was reactivated in 1956 and a revision dated December 15, 1958 was issued.

The committee was again reactivated in 1964 and a redesignated USAS B94.11-1967 was issued on May 4, 1967.

The above standard was reaffirmed in 1972 as ANSI B94.11-1967 (R1972).

Technical Committee No. 7 was again reactivated in March 1978 for the purpose of reviewing ANSI B94.11-1967 (R1972) and considered a proposed Inch and Metric Standard submitted by the Metal Cutting Tool Institute and industry that reflects current U.S. drill usage. The proposal added metric sizes in jobbers series, screw machine series, taper length series, and taper shank series that were reflective of current industry practices and usage patterns. Metric sizes were not included for core drills, and combined drills and countersinks. In addition the entire standard was dual-dimensioned because of the metric additions. The suggestions were reviewed and a draft was approved by the Technical Committee on November 15, 1978 for submission to sectional committee B94 and sponsor organizations of ANSI. The revision was approved by the American National Standards Institute on August 29, 1979 and redesignated ANSI B94.11M-1979.

Following the resignation and retirement of all but one of the members of the Technical Committee No. 7, new members were recruited so that revisions suggested by members of the United States Cutting Tool Institute could be considered. A draft of the results of the committee's deliberations was approved by the committee on February 28, 1991. In addition to dealing with the USCTI suggestions, the committee also corrected many numerical and editorial errors. Other changes, designed to make this document easier to use, were also recommended. The recommended revision was approved by the American National Standards Institute on September 29, 1993 and was redesignated ASME B94.11M-1993.

ASME STANDARDS COMMITTEE B94
Standardization of Cutting Tools, Holders, Drivers and Bushings

(The following is the roster of the Committee at the time of approval of this Standard.)

OFFICERS

E. J. Czopor, *Chairman*
E. W. McLaren, *Secretary*

COMMITTEE PERSONNEL

E. J. Czopor, E & S Sales, Inc., Bloomfield Hills, Michigan
M. E. Merchant, Metcut Res Associates, Inc., Cincinnati, Ohio
C. W. Preuss, Kingsford Broach and Tool, Inc., Westlake, Ohio
J. R. Strolberg, Rockton, Illinois
A. M. Bratkovich, *Alternate*, NMTBA, McLean, Virginia

TECHNICAL COMMITTEE 7—TWIST DRILLS

C. T. Wax, *Chairman*, Scully-Jones Corp., Chicago, Illinois
P. Field, Michigan Drill Co., Miami, Florida
R. C. Gulbrandsen, Precision Twist Drill Co., Crystal Lake, Illinois
M. N. Jarvis II, Jarvis Cutting Tools, Inc., Rochester, New Hampshire
D. L. Lewis, Kennametal, Inc., Raleigh, North Carolina
R. E. Moring, Greenfield Industries, Augusta, Georgia
C. W. Preuss, Kingsford Broach and Tool, Inc., Westlake, Ohio
D. E. Sisler, Caterpillar, Inc., Aurora, Illinois

CONTENTS

Foreword	iii
Standards Committee Roster	v
 1 Scope	 1
2 Twist Drills	
2.1 Nomenclature and Definitions	1
2.2 Classifications	3
3 Combined Drills and Countersinks	
3.1 Nomenclature and Definitions	3
3.2 Applicable Twist Drill Terms	6
 Figures	
1 Identity of Twist Drill Features	2
2 Identity of Core Drill Features	4
3 Identity of Combined Drill and Countersink Features	5
4 Dimensions of Fractional Size Twist Drills — High Speed Steel (Silver and Deming Style)	49
 Tables	
1 General Dimensions of Straight Shank Twist Drills — Jobbers Length	7
2 General Dimensions of Straight Shank Twist Drills — Taper Length	
A. Through 1/2 in. (12.7 mm) Dia.	16
B. Over 1/2 in. (12.7 mm) Dia.	21
3 General Dimensions of Straight Shank Twist Drills — Screw Machine Length	
A. Through 1 in. (25.4 mm) Dia.	25
B. Over 1 in. (25.4 mm) Dia.	33
4 General Dimensions of Tangs for Straight Shank Twist Drills	34
5 General Dimensions of Taper Shank Twist Drills	35
6 Specifications and Definitions for Split Point Drill Grinding	48
7 General Dimensions of Three and Four Flute Straight Shank Core Drills	50
8 General Dimensions of Three and Four Flute Taper Shank Core Drills	52
9 A. General Dimensions of Combined Drills and Countersinks (Plain and Bell Types)	54
B. Tolerances of Combined Drills and Countersinks	55
10 Element Tolerances for High Speed Steel General Purpose Twist Drills	56

TWIST DRILLS

(Straight Shank and Taper Shank Combined Drills and Countersinks)

1 SCOPE

This Standard covers nomenclature, definitions, sizes and tolerances of High Speed Steel, Straight and Taper Shank Drills, and Combined Drills and Countersinks, Plain and Bell Type. It covers both inch and metric size drills.

2 TWIST DRILLS

2.1 Nomenclature and Definitions

axis — the imaginary straight line which forms the longitudinal center line of the drill

back taper — a slight decrease in diameter from point to back in the body of the drill

body — the portion of the drill extending from the shank or neck to the outer corners of the cutting lips

body diameter clearance — that portion of the land that has been cut away so it will not rub against the walls of the hole

chisel edge — the edge at the end of the web that connects the cutting lips

chisel edge angle — the angle included between the chisel edge and the cutting lip as viewed from the end of the drill

clearance diameter — the diameter over the cut-away portion of the drill lands

drill diameter — the diameter over the margins of the drill measured at the point

flutes — helical or straight grooves cut or formed in the body of the drill to provide cutting lips, to permit removal of chips, and to allow cutting fluid to reach the cutting lips

flute length — the length from the outer corners of the cutting lip to the extreme back end of the flutes. It includes the sweep of the tool used to generate the flutes and, therefore, does not indicate the useable length of the flutes.

helix angle — the angle made by the leading edge of the land with a plane containing the axis of the drill

land — the peripheral portion of the drill body between adjacent flutes

land width — the distance between the leading edge and the heel of the land measured at a right angle to the leading edge

lips

(a) *two-flute drill* — the cutting edges extending from the chisel edge to the periphery

(b) *three- or four-flute drill (core drill)* — the cutting edges extending from the bottom of the chamfer to the periphery

lip relief — the axial relief on the drill point

lip relief angle — the axial relief angle at the outer corner of the lip. It is measured across the margin portion of the land.

margin — the cylindrical portion of the land which is not cut away to provide clearance

neck — the section of reduced diameter between the body and the shank of a drill

overall length — the length from the extreme end of the shank to the outer corners of the cutting lips. It does not include the conical shank end often used on straight shank drills, nor does it include the conical cutting point used on both straight and taper shank drills. (For core drills with an external center on the cutting end, same as for two flute drills. For core drills with internal centers on the cutting end, the overall length is to the extreme ends of the tool.)

point — the cutting end of a drill, made up of the ends of the lands, the web, and the lips. In form, it resembles a cone, but departs from a true cone to furnish clearance behind the cutting lips.

point angle — the angle included between the lips projected upon a plane parallel to the drill axis and parallel to the cutting lips

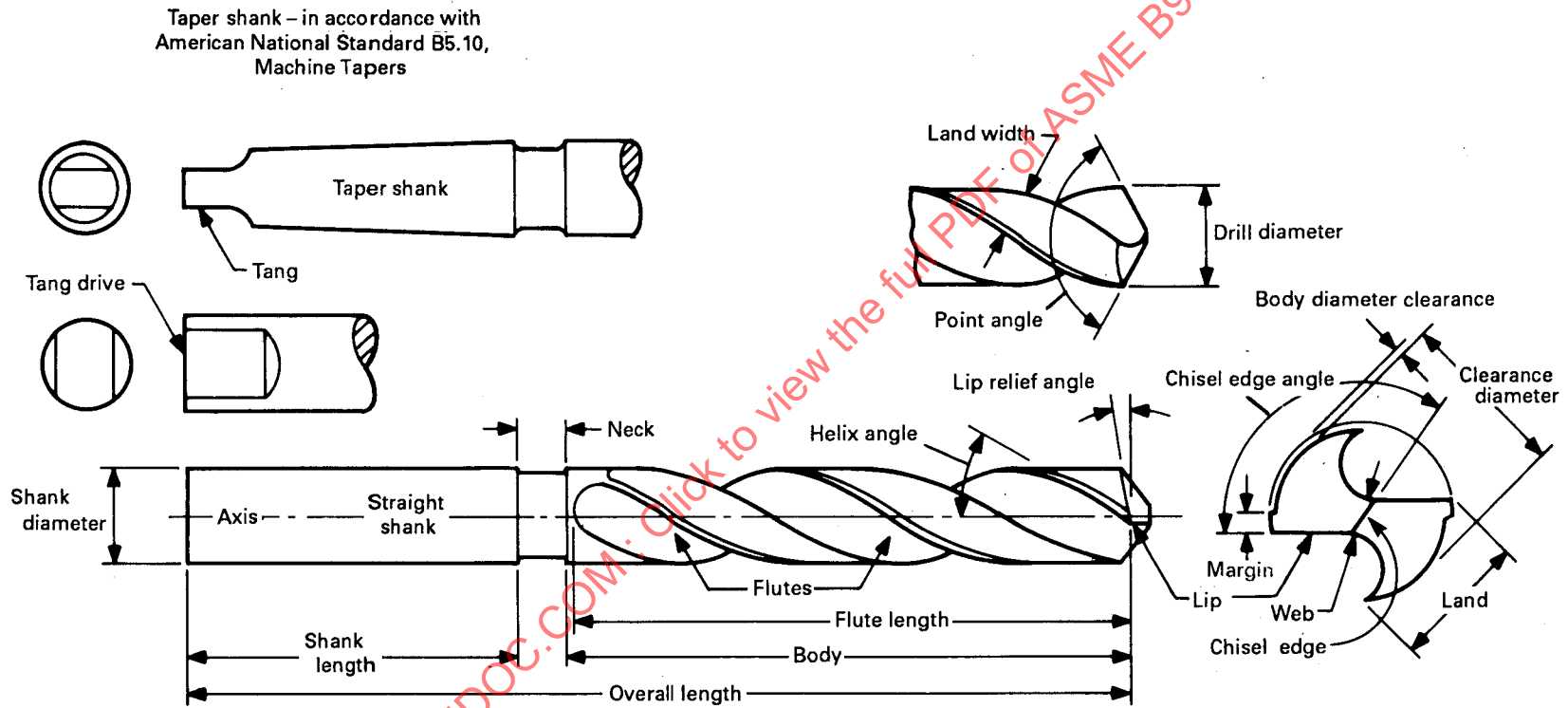


FIG. 1 IDENTITY OF TWIST DRILL FEATURES

Click to view the full PDF of ASME B94.11M 1993

shank — the part of the drill by which it is held and driven

tang — the flattened end of a taper shank, intended to fit into a slot in the socket

tang drive — two opposite parallel driving flats on the extreme end of a straight shank

twist drill — a rotary end cutting tool having one or more cutting lips and having one or more helical or straight flutes for the passage of chips and the admission of a cutting fluid

web — the central portion of the body that joins the lands. The extreme end of the web forms the chisel edge on a two-flute drill.

web thickness — the thickness of the web at the point unless another specific location is indicated

web thinning — the operation of reducing the web thickness at the point to reduce drilling thrust

2.2 Classifications

2.2.1 Based on Kind of Shank

straight shank drills — those having cylindrical shanks which may be the same or different diameter than the body of the drill. The shank may be with or without driving flats, tang, grooves or threads.

taper shank drills — those having conical shanks suitable for direct fitting into tapered holes in machine spindles, driving sleeves, or sockets. Tapered shanks generally have a tang, which is used with a drift bar to eject the drill from its mating socket.

2.2.2 Based on Number of Flutes

two-flute drills — the conventional type of drill used for originating holes

three-flute drills (core drills) — drills commonly used for enlarging and finishing drilled, cast or punched holes. They will not produce original holes.

four-flute drills (core drills) — used interchangeably with three-flute drills. They are of similar construction except for the number of flutes.

2.2.3 Based on Hand of Cut

right-hand cut — when viewed from the cutting point, the counterclockwise rotation of a drill in order to cut

left-hand cut — when viewed from the cutting point, the clockwise rotation of a drill in order to cut

3 COMBINED DRILLS AND COUNTERSINKS

3.1 Nomenclature and Definitions

These definitions are applicable to Tables 9 and 10.

axis — the imaginary straight line which forms the longitudinal center line of the combined drill and countersink.

back taper — a slight decrease in diameter from the front to back in the drill length

bell angle — the included angle of the secondary conical section providing clearance or protection for the countersink angle conical surface (it is normally 120 deg.)

bell diameter — the diameter at the intersection of the countersink portion and the bell portion at the leading edge of the land

body — the central portion of the body by which it is held or driven

combined drill and countersink — single or double-end cutting tool, having helical or straight flutes, and having a drill portion and an adjacent integral countersink portion, primarily used to produce center holes in work that will be held between machine centers

countersink angle — the included angle of the countersink portion (it is normally 60 deg.)

countersink relief angle — the angle between a plane at right angles to the axis of the tool, and a line tangent to the surface of the countersink portion at the intersection of the countersink portion and the body and at the leading edge of the land. For the bell type, the relief angle is measured at the intersection of the bell portion and the body.

countersink portion — that part of the tool which produces a conical bearing surface for the work centers. The bell type produces an additional secondary conical section to provide clearance or protection for the bearing surface.

drill diameter — the diameter of the drill portion measured across the outer corners of the cutting lips

drill diameter relief — the relief provided on the land of the drill portion to reduce contact with the walls of the hole. It is generally of an eccentric form.

drill length — the length of the drill portion from the outer corners of the cutting lips to its intersection with the countersink portion

drill portion — that part of the tool extending beyond

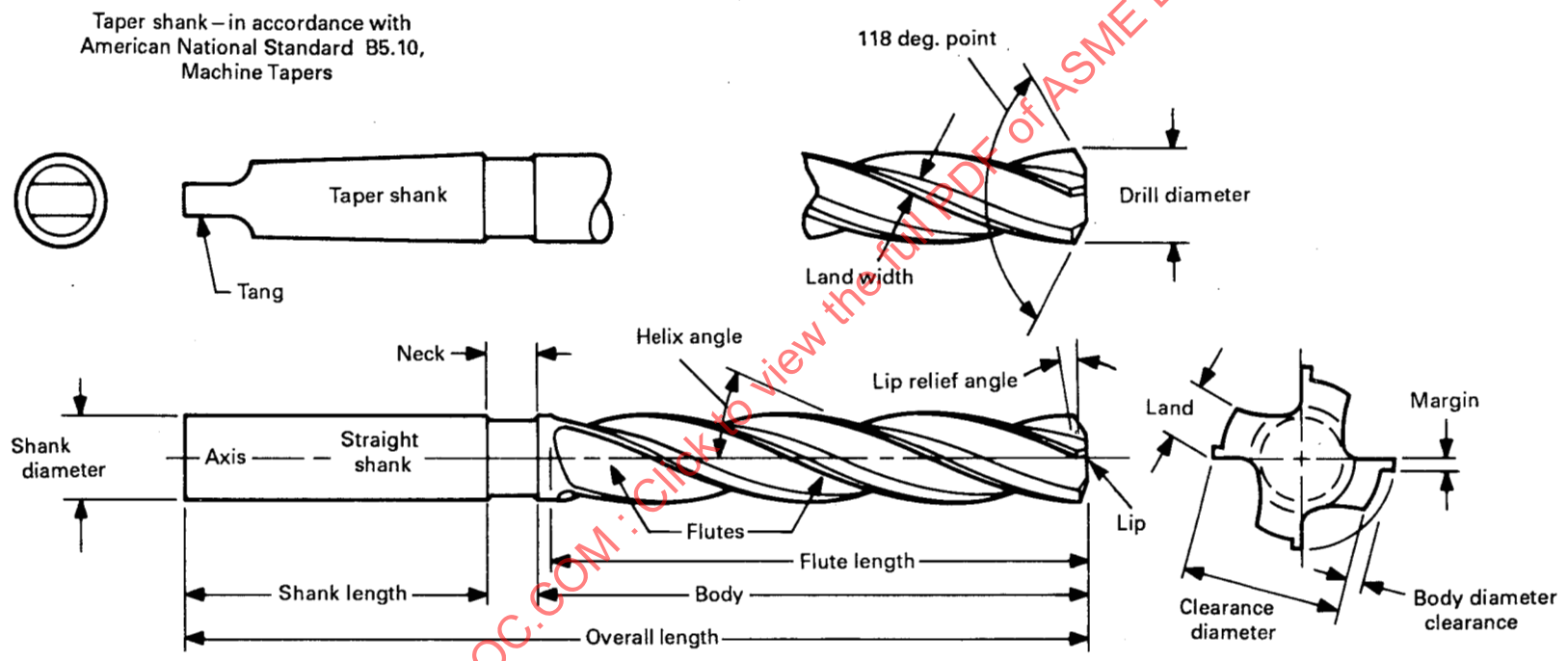


FIG. 2 IDENTITY OF CORE DRILL FEATURES

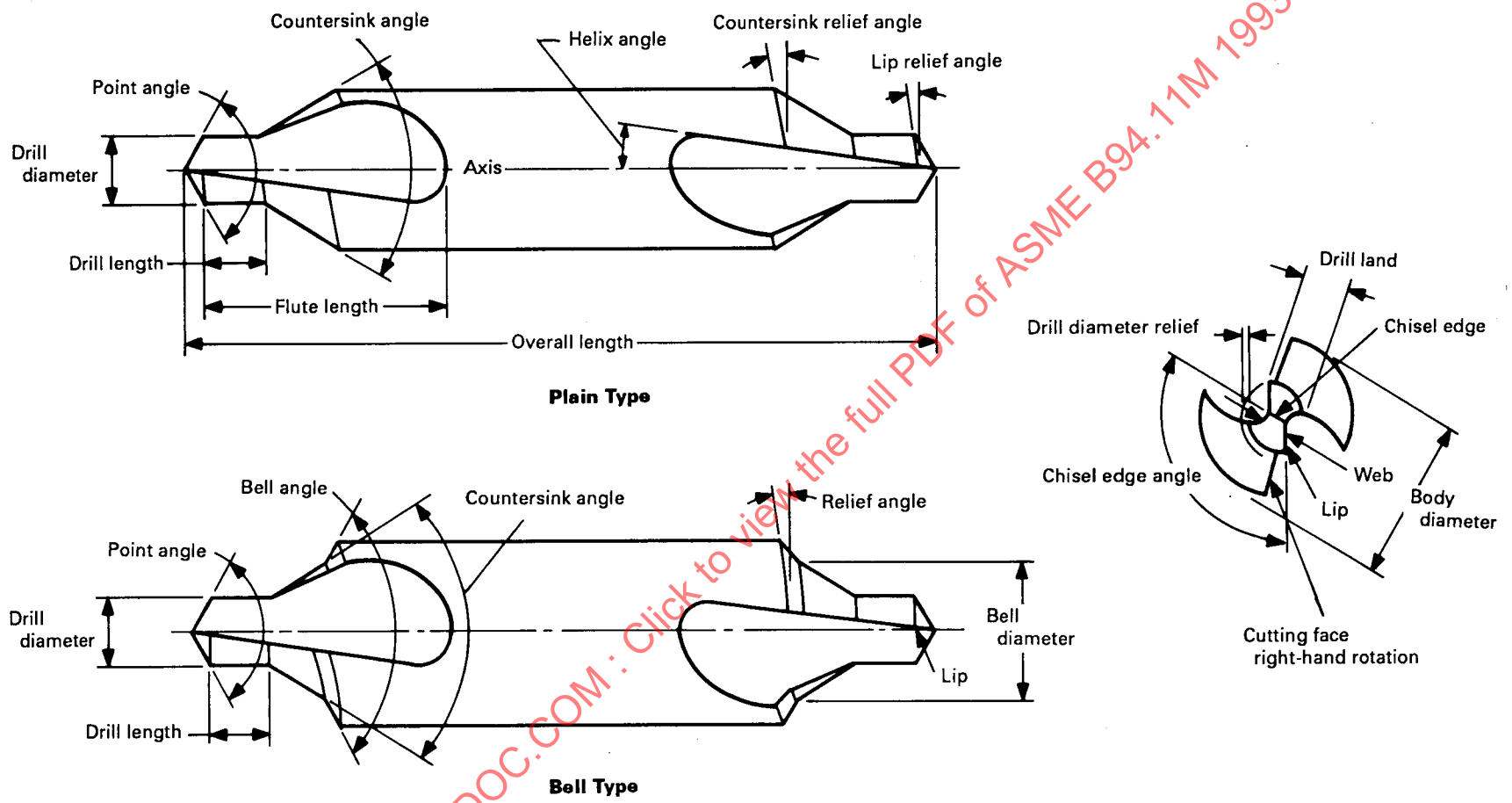


FIG. 3 IDENTITY OF COMBINED DRILL AND COUNTERSINK FEATURES

ASME NORMDOC.COM : Click to view the full PDF of ASME B94.11M 1993

the countersink portion to produce clearance for the point of a conical center

flutes — the helical or straight grooves cut or formed in the cutting portions and the body to provide cutting edges on both the drill and countersink portions, to permit removal of chips and to allow cutting fluid to reach the cutting lips

flute length — the length from the outer corners of the cutting lips to the extreme ends of the flutes. It includes the sweep of the tool used to generate the flutes and, therefore, does not indicate the usable length of flutes.

land — the peripheral drill and countersink portions between the adjacent flutes

overall length — the length between the extreme points of the tools

3.2 Applicable Twist Drill Terms

For definitions, see para. 2.1.

chisel edge

chisel edge angle

helix angle

lips

lip relief

lip relief angle

point angle

web

web thickness

ASMENORMDOC.COM : Click to view the full PDF of ASME B94.11M 1993

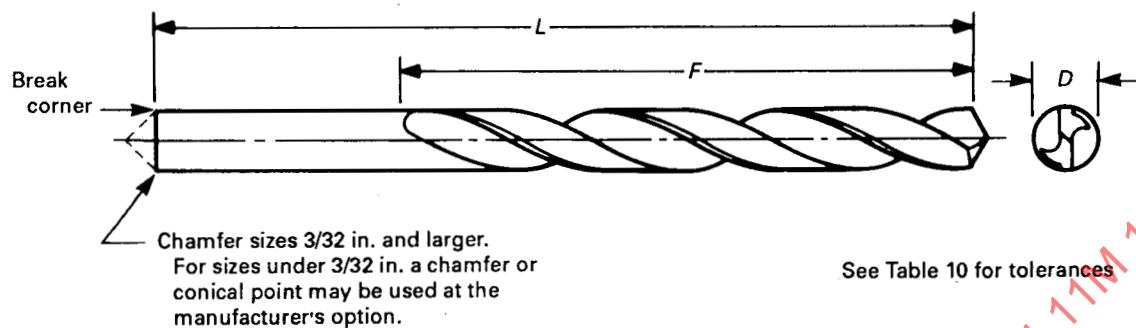


TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS — JOBBERS LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES

Diameter of Drill						Flute Length		Overall Length	
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
1/64	97		0.15	0.0059	0.150	1/16	1.6	3/4	19
	96		0.16	0.0063	0.160	1/16	1.6	3/4	19
	95		0.17	0.0067	0.170	1/16	1.6	3/4	19
	94		0.18	0.0071	0.180	1/16	1.6	3/4	19
	93		0.19	0.0075	0.190	1/16	1.6	3/4	19
	92		0.20	0.0079	0.201	1/16	1.6	3/4	19
	91			0.0083	0.211	5/64	2.0	3/4	19
	90		0.22	0.0087	0.221	5/64	2.0	3/4	19
	89			0.0091	0.231	5/64	2.0	3/4	19
	88			0.0095	0.241	5/64	2.0	3/4	19
			0.25	0.0098	0.250	5/64	2.0	3/4	19
	87			0.0100	0.254	5/64	2.0	3/4	19
	86			0.0105	0.267	3/32	2.4	3/4	19
	85		0.28	0.0110	0.280	3/32	2.4	3/4	19
	84			0.0115	0.292	3/32	2.4	3/4	19
			0.30	0.0118	0.300	3/32	2.4	3/4	19
	83			0.0120	0.305	3/32	2.4	3/4	19
	82			0.0125	0.318	3/32	2.4	3/4	19
			0.32	0.0126	0.320	3/32	2.4	3/4	19
	81			0.0130	0.330	3/32	2.4	3/4	19
	80			0.0135	0.343	1/8	3	3/4	19
			0.35	0.0138	0.350	1/8	3	3/4	19
	79			0.0145	0.368	1/8	3	3/4	19
			0.38	0.0150	0.380	3/16	5	3/4	19
			0.0156	0.396	3/16	5	3/4	19	
		0.40	0.0157	0.400	3/16	5	3/4	19	
78			0.0160	0.406	3/16	5	7/8	22	
		0.42	0.0165	0.420	3/16	5	7/8	22	
		0.45	0.0177	0.450	3/16	5	7/8	22	
77			0.0180	0.457	3/16	5	7/8	22	

**TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
JOBBER LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
<i>D</i>				Decimal Inch Equivalent	Millimeter Equivalent	<i>F</i>		<i>L</i>	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
$\frac{1}{32}$			0.48	0.0189	0.480	$\frac{3}{16}$	5	$\frac{7}{8}$	22
			0.50	0.0197	0.500	$\frac{3}{16}$	5	$\frac{7}{8}$	22
	76			0.0200	0.508	$\frac{3}{16}$	5	$\frac{7}{8}$	22
	75			0.0210	0.533	$\frac{1}{4}$	6	1	25
			0.55	0.0217	0.550	$\frac{1}{4}$	6	1	25
	74			0.0225	0.572	$\frac{1}{4}$	6	1	25
			0.60	0.0236	0.600	$\frac{5}{16}$	8	$1\frac{1}{8}$	29
	73			0.0240	0.610	$\frac{5}{16}$	8	$1\frac{1}{8}$	29
	72			0.0250	0.635	$\frac{5}{16}$	8	$1\frac{1}{8}$	29
			0.65	0.0256	0.650	$\frac{3}{8}$	10	$1\frac{1}{4}$	32
	71			0.0260	0.660	$\frac{3}{8}$	10	$1\frac{1}{4}$	32
			0.70	0.0276	0.700	$\frac{3}{8}$	10	$1\frac{1}{4}$	32
	70			0.0280	0.711	$\frac{3}{8}$	10	$1\frac{1}{4}$	32
	69			0.0292	0.742	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
			0.75	0.0295	0.750	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
	68			0.0310	0.787	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
				0.0312	0.792	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
			0.80	0.0315	0.800	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
	67			0.0320	0.813	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
	66			0.0330	0.838	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
			0.85	0.0335	0.850	$\frac{5}{8}$	16	$1\frac{1}{2}$	38
	65			0.0350	0.889	$\frac{5}{8}$	16	$1\frac{1}{2}$	38
			0.90	0.0354	0.899	$\frac{5}{8}$	16	$1\frac{1}{2}$	38
	64			0.0360	0.914	$\frac{5}{8}$	16	$1\frac{1}{2}$	38
	63			0.0370	0.940	$\frac{5}{8}$	16	$1\frac{1}{2}$	38
			0.95	0.0374	0.950	$\frac{5}{8}$	16	$1\frac{1}{2}$	38
	62			0.0380	0.965	$\frac{5}{8}$	16	$1\frac{1}{2}$	38
	61			0.0390	0.991	$1\frac{1}{16}$	17	$1\frac{5}{8}$	41
			1.00	0.0394	1.000	$1\frac{1}{16}$	17	$1\frac{5}{8}$	41
	60			0.0400	1.016	$1\frac{1}{16}$	17	$1\frac{5}{8}$	41
	59			0.0410	1.041	$1\frac{1}{16}$	17	$1\frac{5}{8}$	41
			1.05	0.0413	1.050	$1\frac{1}{16}$	17	$1\frac{5}{8}$	41
	58			0.0420	1.067	$1\frac{1}{16}$	17	$1\frac{5}{8}$	41
	57			0.0430	1.092	$\frac{3}{4}$	19	$1\frac{3}{4}$	44
			1.10	0.0433	1.100	$\frac{3}{4}$	19	$1\frac{3}{4}$	44
			1.15	0.0453	1.150	$\frac{3}{4}$	19	$1\frac{3}{4}$	44
$\frac{3}{64}$	56			0.0465	1.181	$\frac{3}{4}$	19	$1\frac{3}{4}$	44
				0.0469	1.191	$\frac{3}{4}$	19	$1\frac{3}{4}$	44
			1.20	0.0472	1.200	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
			1.25	0.0492	1.250	$\frac{7}{8}$	22	$1\frac{7}{8}$	48

**TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
JOBBER LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
$\frac{1}{16}$	55		1.30	0.0512	1.300	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
				0.0520	1.321	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
			1.35	0.0531	1.350	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
	54			0.0550	1.397	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
			1.40	0.0551	1.400	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
	53		1.45	0.0571	1.450	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
			1.50	0.0591	1.500	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
				0.0595	1.511	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
			1.55	0.0610	1.550	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
				0.0625	1.588	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
	52		1.60	0.0630	1.600	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
				0.0635	1.613	$\frac{7}{8}$	22	$1\frac{7}{8}$	48
			1.65	0.0650	1.650	1	25	2	51
	51		1.70	0.0669	1.700	1	25	2	51
				0.0670	1.702	1	25	2	51
	50		1.75	0.0689	1.750	1	25	2	51
				0.0700	1.778	1	25	2	51
			1.80	0.0709	1.800	1	25	2	51
	49		1.85	0.0728	1.850	1	25	2	51
				0.0730	1.854	1	25	2	51
	48		1.90	0.0748	1.900	1	25	2	51
				0.0760	1.930	1	25	2	51
			1.95	0.0768	1.950	1	25	2	51
	47			0.0781	1.984	1	25	2	51
				0.0785	1.994	1	25	2	51
	46		2.00	0.0787	2.000	1	25	2	51
			2.05	0.0807	2.050	$1\frac{1}{8}$	29	$2\frac{1}{8}$	54
				0.0810	2.057	$1\frac{1}{8}$	29	$2\frac{1}{8}$	54
	45			0.0820	2.083	$1\frac{1}{8}$	29	$2\frac{1}{8}$	54
			2.10	0.0827	2.100	$1\frac{1}{8}$	29	$2\frac{1}{8}$	54
	44		2.15	0.0846	2.150	$1\frac{1}{8}$	29	$2\frac{1}{8}$	54
				0.0860	2.184	$1\frac{1}{8}$	29	$2\frac{1}{8}$	54
			2.20	0.0866	2.200	$1\frac{1}{4}$	32	$2\frac{1}{4}$	57
	43		2.25	0.0886	2.250	$1\frac{1}{4}$	32	$2\frac{1}{4}$	57
				0.0890	2.261	$1\frac{1}{4}$	32	$2\frac{1}{4}$	57
	42		2.30	0.0906	2.300	$1\frac{1}{4}$	32	$2\frac{1}{4}$	57
			2.35	0.0925	2.350	$1\frac{1}{4}$	32	$2\frac{1}{4}$	57
				0.0935	2.375	$1\frac{1}{4}$	32	$2\frac{1}{4}$	57
				0.0938	2.383	$1\frac{1}{4}$	32	$2\frac{1}{4}$	57
			2.40	0.0945	2.400	$1\frac{3}{8}$	35	$2\frac{3}{8}$	60

**TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
JOBBER LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
<i>D</i>				Decimal Inch Equivalent	Millimeter Equivalent	<i>F</i>		<i>L</i>	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
$\frac{7}{64}$	41			0.0960	2.438	$1\frac{3}{8}$	35	$2\frac{3}{8}$	60
			2.46	0.0965	2.450	$1\frac{3}{8}$	35	$2\frac{3}{8}$	60
	40			0.0980	2.489	$1\frac{3}{8}$	35	$2\frac{3}{8}$	60
			2.50	0.0984	2.500	$1\frac{3}{8}$	35	$2\frac{3}{8}$	60
	39			0.0995	2.527	$1\frac{3}{8}$	35	$2\frac{3}{8}$	60
	38			0.1015	2.578	$1\frac{7}{16}$	37	$2\frac{1}{2}$	64
			2.60	0.1024	2.600	$1\frac{7}{16}$	37	$2\frac{1}{2}$	64
	37			0.1040	2.642	$1\frac{7}{16}$	37	$2\frac{1}{2}$	64
			2.70	0.1063	2.700	$1\frac{7}{16}$	37	$2\frac{1}{2}$	64
	36			0.1065	2.705	$1\frac{7}{16}$	37	$2\frac{1}{2}$	64
				0.1094	2.779	$1\frac{1}{2}$	38	$2\frac{5}{8}$	67
	35			0.1100	2.794	$1\frac{1}{2}$	38	$2\frac{5}{8}$	67
			2.80	0.1102	2.800	$1\frac{1}{2}$	38	$2\frac{5}{8}$	67
	34			0.1110	2.819	$1\frac{1}{2}$	38	$2\frac{5}{8}$	67
	33			0.1130	2.870	$1\frac{1}{2}$	38	$2\frac{5}{8}$	67
$\frac{1}{8}$			2.90	0.1142	2.900	$1\frac{5}{8}$	41	$2\frac{3}{4}$	70
	32			0.1160	2.946	$1\frac{5}{8}$	41	$2\frac{3}{4}$	70
			3.00	0.1181	3.000	$1\frac{5}{8}$	41	$2\frac{3}{4}$	70
	31			0.1200	3.048	$1\frac{5}{8}$	41	$2\frac{3}{4}$	70
			3.10	0.1220	3.100	$1\frac{5}{8}$	41	$2\frac{3}{4}$	70
				0.1250	3.175	$1\frac{5}{8}$	41	$2\frac{3}{4}$	70
			3.20	0.1260	3.200	$1\frac{5}{8}$	41	$2\frac{3}{4}$	70
	30			0.1285	3.264	$1\frac{5}{8}$	41	$2\frac{3}{4}$	70
				0.1299	3.300	$1\frac{3}{4}$	44	$2\frac{7}{8}$	73
			3.40	0.1339	3.400	$1\frac{3}{4}$	44	$2\frac{7}{8}$	73
	29			0.1360	3.454	$1\frac{3}{4}$	44	$2\frac{7}{8}$	73
			3.50	0.1378	3.500	$1\frac{3}{4}$	44	$2\frac{7}{8}$	73
	28			0.1405	3.569	$1\frac{3}{4}$	44	$2\frac{7}{8}$	73
				0.1406	3.571	$1\frac{3}{4}$	44	$2\frac{7}{8}$	73
			3.60	0.1417	3.600	$1\frac{7}{8}$	48	3	76
$\frac{9}{64}$	27			0.1440	3.658	$1\frac{7}{8}$	48	3	76
			3.70	0.1457	3.700	$1\frac{7}{8}$	48	3	76
	26			0.1470	3.734	$1\frac{7}{8}$	48	3	76
				0.1495	3.797	$1\frac{7}{8}$	48	3	76
	25			0.1496	3.800	$1\frac{7}{8}$	48	3	76
			3.80						
	24			0.1520	3.861	2	51	$3\frac{1}{8}$	79
			3.90	0.1535	3.900	2	51	$3\frac{1}{8}$	79
	23			0.1540	3.912	2	51	$3\frac{1}{8}$	79
				0.1562	3.967	2	51	$3\frac{1}{8}$	79
	22			0.1570	3.988	2	51	$3\frac{1}{8}$	79

**TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
JOBBER LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
11/64	21		4.00	0.1575	4.000	2 1/8	54	3 1/4	83
				0.1590	4.039	2 1/8	54	3 1/4	83
	20		4.10	0.1610	4.089	2 1/8	54	3 1/4	83
				0.1614	4.100	2 1/8	54	3 1/4	83
			4.20	0.1654	4.200	2 1/8	54	3 1/4	83
	19		4.30	0.1660	4.216	2 1/8	54	3 1/4	83
				0.1693	4.300	2 1/8	54	3 1/4	83
	18			0.1695	4.305	2 1/8	54	3 1/4	83
				0.1719	4.366	2 1/8	54	3 1/4	83
	17			0.1730	4.394	2 3/16	56	3 3/8	86
	16		4.40	0.1732	4.400	2 3/16	56	3 3/8	86
				0.1770	4.496	2 3/16	56	3 3/8	86
	15		4.50	0.1772	4.500	2 3/16	56	3 3/8	86
				0.1800	4.572	2 3/16	56	3 3/8	86
3/16			4.60	0.1811	4.600	2 3/16	56	3 3/8	86
	14			0.1820	4.623	2 3/16	56	3 3/8	86
				0.1850	4.700	2 5/16	59	3 1/2	89
	13		4.70	0.1875	4.762	2 5/16	59	3 1/2	89
				0.1890	4.800	2 5/16	59	3 1/2	89
	12		4.80	0.1890	4.800	2 5/16	59	3 1/2	89
				0.1910	4.851	2 5/16	59	3 1/2	89
	11								
	10		4.90	0.1929	4.900	2 7/16	62	3 5/8	92
				0.1935	4.915	2 7/16	62	3 5/8	92
	9			0.1960	4.978	2 7/16	62	3 5/8	92
				0.1969	5.000	2 7/16	62	3 5/8	92
	8			0.1990	5.055	2 7/16	62	3 5/8	92
13/64	7		5.10	0.2008	5.100	2 7/16	62	3 5/8	92
				0.2010	5.105	2 7/16	62	3 5/8	92
				0.2031	5.159	2 7/16	62	3 5/8	92
				0.2040	5.182	2 1/2	64	3 3/4	95
	6		5.20	0.2047	5.200	2 1/2	64	3 3/4	95
	5			0.2055	5.220	2 1/2	64	3 3/4	95
				0.2087	5.300	2 1/2	64	3 3/4	95
	4		5.30	0.2090	5.309	2 1/2	64	3 3/4	95
				0.2126	5.400	2 1/2	64	3 3/4	95
	3			0.2130	5.410	2 1/2	64	3 3/4	95
			5.50	0.2165	5.500	2 1/2	64	3 3/4	95
				0.2188	5.558	2 1/2	64	3 3/4	95
	2		5.60	0.2205	5.600	2 5/8	67	3 7/8	98
				0.2210	5.613	2 5/8	67	3 7/8	98
7/32			5.70	0.2244	5.700	2 5/8	67	3 7/8	98

**TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
JOBBER LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
<i>D</i>				Decimal Inch Equivalent	Millimeter Equivalent	<i>F</i>		<i>L</i>	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
$\frac{15}{64}$	1	A	5.80	0.2280	5.791	$2\frac{5}{8}$	67	$3\frac{7}{8}$	98
			5.90	0.2283	5.800	$2\frac{5}{8}$	67	$3\frac{7}{8}$	98
				0.2323	5.900	$2\frac{5}{8}$	67	$3\frac{7}{8}$	98
				0.2340	5.944	$2\frac{5}{8}$	67	$3\frac{7}{8}$	98
				0.2344	5.953	$2\frac{5}{8}$	67	$3\frac{7}{8}$	98
		B	6.00	0.2362	6.000	$2\frac{3}{4}$	70	4	102
				0.2380	6.045	$2\frac{3}{4}$	70	4	102
			6.10	0.2402	6.100	$2\frac{3}{4}$	70	4	102
				0.2420	6.147	$2\frac{3}{4}$	70	4	102
			6.20	0.2441	6.200	$2\frac{3}{4}$	70	4	102
$\frac{1}{4}$	1	C		0.2460	6.248	$2\frac{3}{4}$	70	4	102
				0.2480	6.300	$2\frac{3}{4}$	70	4	102
			6.30	0.2500	6.350	$2\frac{3}{4}$	70	4	102
				0.2520	6.400	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
			6.50	0.2559	6.500	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
		D		0.2570	6.528	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
				0.2598	6.600	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
			6.60	0.2610	6.629	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
				0.2638	6.700	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
			6.70	0.2656	6.746	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
$\frac{17}{64}$	1	E		0.2660	6.756	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
				0.2677	6.800	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
			6.80	0.2717	6.900	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
				0.2720	6.909	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
			6.90	0.2756	7.000	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
		F		0.2770	7.036	$2\frac{7}{8}$	73	$4\frac{1}{8}$	105
				0.2795	7.100	$2\frac{5}{16}$	75	$4\frac{1}{4}$	108
			7.10	0.2810	7.137	$2\frac{5}{16}$	75	$4\frac{1}{4}$	108
				0.2812	7.142	$2\frac{5}{16}$	75	$4\frac{1}{4}$	108
			7.20	0.2835	7.200	$2\frac{5}{16}$	75	$4\frac{1}{4}$	108
$\frac{9}{32}$	1	G		0.2874	7.300	$2\frac{5}{16}$	75	$4\frac{1}{4}$	108
				0.2900	7.366	$2\frac{5}{16}$	75	$4\frac{1}{4}$	108
			7.30	0.2913	7.400	$3\frac{1}{16}$	78	$4\frac{3}{8}$	111
				0.2950	7.493	$3\frac{1}{16}$	78	$4\frac{3}{8}$	111
			7.40	0.2953	7.500	$3\frac{1}{16}$	78	$4\frac{3}{8}$	111
		H		0.2969	7.541	$3\frac{1}{16}$	78	$4\frac{3}{8}$	111
				0.2992	7.600	$3\frac{1}{16}$	78	$4\frac{3}{8}$	111
			7.60	0.3020	7.671	$3\frac{1}{16}$	78	$4\frac{3}{8}$	111
				0.3031	7.700	$3\frac{3}{16}$	81	$4\frac{1}{2}$	114
			7.70	0.3071	7.800	$3\frac{3}{16}$	81	$4\frac{1}{2}$	114
$\frac{19}{64}$	1	I							
		J							
		K							
$\frac{11}{16}$	1	L							
		M							
$\frac{13}{16}$	1	N							
		O							

**TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
JOBBER LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

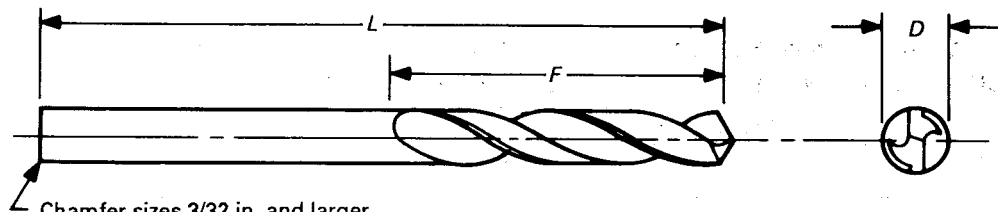
Diameter of Drill						Flute Length		Overall Length	
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
$\frac{5}{16}$		O	7.90	0.3110	7.900	$3\frac{3}{16}$	81	$4\frac{1}{2}$	114
				0.3125	7.938	$3\frac{3}{16}$	81	$4\frac{1}{2}$	114
			8.00	0.3150	8.000	$3\frac{3}{16}$	81	$4\frac{1}{2}$	114
				0.3160	8.026	$3\frac{3}{16}$	81	$4\frac{1}{2}$	114
			8.10	0.3189	8.100	$3\frac{5}{16}$	84	$4\frac{5}{8}$	117
$\frac{21}{64}$		P	8.20	0.3228	8.200	$3\frac{5}{16}$	84	$4\frac{5}{8}$	117
				0.3230	8.204	$3\frac{5}{16}$	84	$4\frac{5}{8}$	117
			8.30	0.3268	8.300	$3\frac{5}{16}$	84	$4\frac{5}{8}$	117
				0.3281	8.334	$3\frac{5}{16}$	84	$4\frac{5}{8}$	117
			8.40	0.3307	8.400	$3\frac{7}{16}$	87	$4\frac{3}{4}$	121
$\frac{11}{32}$		Q		0.3320	8.433	$3\frac{7}{16}$	87	$4\frac{3}{4}$	121
			8.50	0.3346	8.500	$3\frac{7}{16}$	87	$4\frac{3}{4}$	121
			8.60	0.3386	8.600	$3\frac{7}{16}$	87	$4\frac{3}{4}$	121
				0.3390	8.611	$3\frac{7}{16}$	87	$4\frac{3}{4}$	121
			8.70	0.3425	8.700	$3\frac{7}{16}$	87	$4\frac{3}{4}$	121
$\frac{23}{64}$		S		0.3438	8.733	$3\frac{7}{16}$	87	$4\frac{3}{4}$	121
			8.80	0.3465	8.800	$3\frac{1}{2}$	89	$4\frac{7}{8}$	124
				0.3480	8.839	$3\frac{1}{2}$	89	$4\frac{7}{8}$	124
			8.90	0.3504	8.900	$3\frac{1}{2}$	89	$4\frac{7}{8}$	124
			9.00	0.3543	9.000	$3\frac{1}{2}$	89	$4\frac{7}{8}$	124
$\frac{3}{8}$		T		0.3580	9.093	$3\frac{1}{2}$	89	$4\frac{7}{8}$	124
			9.10	0.3583	9.100	$3\frac{1}{2}$	89	$4\frac{7}{8}$	124
				0.3594	9.129	$3\frac{1}{2}$	89	$4\frac{7}{8}$	124
			9.20	0.3622	9.200	$3\frac{5}{8}$	92	5	127
			9.30	0.3661	9.300	$3\frac{5}{8}$	92	5	127
$\frac{25}{64}$		U		0.3680	9.347	$3\frac{5}{8}$	92	5	127
			9.40	0.3701	9.400	$3\frac{5}{8}$	92	5	127
			9.50	0.3740	9.500	$3\frac{5}{8}$	92	5	127
				0.3750	9.525	$3\frac{5}{8}$	92	5	127
				0.3770	9.576	$3\frac{5}{8}$	92	5	127
$\frac{3}{8}$		V		0.3680	9.347	$3\frac{5}{8}$	92	5	127
			9.40	0.3701	9.400	$3\frac{5}{8}$	92	5	127
			9.50	0.3740	9.500	$3\frac{5}{8}$	92	5	127
				0.3750	9.525	$3\frac{5}{8}$	92	5	127
				0.3770	9.576	$3\frac{5}{8}$	92	5	127
$\frac{25}{64}$		W	9.60	0.3780	9.600	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
			9.70	0.3819	9.700	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
			9.80	0.3858	9.800	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
				0.3860	9.804	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
			9.90	0.3898	9.900	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
$\frac{25}{64}$		X		0.3906	9.921	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
			10.00	0.3937	10.000	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
				0.3970	10.084	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
			10.20	0.4016	10.200	$3\frac{7}{8}$	98	$5\frac{1}{4}$	133
				0.4040	10.262	$3\frac{7}{8}$	98	$5\frac{1}{4}$	133
$\frac{25}{64}$		Y		0.3906	9.921	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
			10.00	0.3937	10.000	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
				0.3970	10.084	$3\frac{3}{4}$	95	$5\frac{1}{8}$	130
			10.20	0.4016	10.200	$3\frac{7}{8}$	98	$5\frac{1}{4}$	133
				0.4040	10.262	$3\frac{7}{8}$	98	$5\frac{1}{4}$	133

**TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
JOBBER LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
$\frac{13}{32}$		Z	10.50	0.4062	10.317	$\frac{3}{8}$	98	$\frac{5}{4}$	133
				0.4130	10.490	$\frac{3}{8}$	98	$\frac{5}{4}$	133
				0.4134	10.500	$\frac{3}{8}$	98	$\frac{5}{4}$	133
$\frac{27}{64}$			10.80	0.4219	10.716	$3\frac{15}{16}$	100	$\frac{5}{8}$	137
				0.4252	10.800	$4\frac{1}{16}$	103	$\frac{5}{2}$	140
$\frac{7}{16}$			11.00	0.4331	11.000	$4\frac{1}{16}$	103	$\frac{5}{2}$	140
				0.4375	11.112	$4\frac{1}{16}$	103	$\frac{5}{2}$	140
			11.20	0.4409	11.200	$4\frac{3}{16}$	106	$\frac{5}{8}$	143
				0.4528	11.500	$4\frac{3}{16}$	106	$\frac{5}{8}$	143
$\frac{29}{64}$			11.50	0.4531	11.509	$4\frac{3}{16}$	106	$\frac{5}{8}$	143
$\frac{15}{32}$			11.80	0.4646	11.800	$4\frac{5}{16}$	110	$\frac{5}{4}$	146
				0.4688	11.908	$4\frac{5}{16}$	110	$\frac{5}{4}$	146
			12.00	0.4724	12.000	$4\frac{3}{8}$	111	$\frac{5}{8}$	149
				0.4803	12.200	$4\frac{3}{8}$	111	$\frac{5}{8}$	149
$\frac{31}{64}$			12.20	0.4844	12.304	$4\frac{3}{8}$	111	$\frac{5}{8}$	149
$\frac{1}{2}$			12.50	0.4921	12.500	$4\frac{1}{2}$	114	6	152
				0.5000	12.700	$4\frac{1}{2}$	114	6	152
			12.90	0.5039	12.800	$4\frac{1}{2}$	114	6	152
				0.5118	13.000	$4\frac{1}{2}$	114	6	152
$\frac{33}{64}$			13.00	0.5156	13.096	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
$\frac{17}{32}$			13.20	0.5197	13.200	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
				0.5312	13.494	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
			13.50	0.5315	13.500	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
				0.5433	13.800	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
$\frac{35}{64}$			13.80	0.5469	13.891	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
$\frac{9}{16}$			14.00	0.5512	14.000	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
				0.5610	14.250	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
			14.25	0.5625	14.288	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
				0.5709	14.500	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
$\frac{37}{64}$			14.50	0.5781	14.684	$4\frac{13}{16}$	122	$6\frac{5}{8}$	168
$\frac{19}{32}$			14.75	0.5807	14.750	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
				0.5906	15.000	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
			15.00	0.5938	15.083	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
				0.6004	15.250	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
$\frac{39}{64}$			15.25	0.6094	15.479	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
$\frac{5}{8}$			15.50	0.6102	15.500	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
				0.6201	15.750	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
			15.75	0.6250	15.875	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
				0.6299	16.000	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
$\frac{5}{8}$			16.00	0.6398	16.250	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181

**TABLE 1 GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
JOBBERS LENGTH — FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
<i>D</i>				Decimal Inch Equivalent	Millimeter Equivalent	<i>F</i>		<i>L</i>	
Fraction	No.	Ltr.	Millimeter			Inch	mm	Inch	mm
$\frac{41}{64}$				0.6406	16.271	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
			16.50	0.6496	16.500	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
$\frac{21}{32}$				0.6562	16.667	$5\frac{3}{16}$	132	$7\frac{1}{8}$	181
			16.75	0.6594	16.750	$5\frac{5}{8}$	143	$7\frac{5}{8}$	194
			17.00	0.6693	17.000	$5\frac{5}{8}$	143	$7\frac{5}{8}$	194
$\frac{43}{64}$				0.6719	17.066	$5\frac{5}{8}$	143	$7\frac{5}{8}$	194
			17.25	0.6791	17.250	$5\frac{5}{8}$	143	$7\frac{5}{8}$	194
$\frac{11}{16}$				0.6875	17.462	$5\frac{5}{8}$	143	$7\frac{5}{8}$	194
			17.50	0.6890	17.500	$5\frac{5}{8}$	143	$7\frac{5}{8}$	194



Chamfer sizes 3/32 in. and larger.
For sizes under 3/32 in. a chamfer or
conical point may be used at the
manufacturer's option.

See Table 10 for tolerances

**TABLE 2A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — THROUGH 1/2 in. (12.7 mm) DIA.
FRACTIONAL, NUMBER, AND METRIC SIZES**

Diameter of Drill					Flute Length		Overall Length	
D			Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	mm			Inch	mm	Inch	mm
3/64	60	1.00	0.0394	1.000	1 1/8	29	2 1/4	57
	59		0.0400	1.016	1 1/8	29	2 1/4	57
			0.0410	1.041	1 1/8	29	2 1/4	57
		1.05	0.0413	1.050	1 1/8	29	2 1/4	57
	58		0.0420	1.067	1 1/8	29	2 1/4	57
	57		0.0430	1.092	1 1/8	29	2 1/4	57
		1.10	0.0433	1.100	1 1/8	29	2 1/4	57
		1.15	0.0453	1.150	1 1/8	29	2 1/4	57
	56		0.0465	1.181	1 1/8	29	2 1/4	57
			0.0469	1.191	1 1/8	29	2 1/4	57
		1.20	0.0472	1.200	1 3/4	44	3	76
		1.25	0.0492	1.250	1 3/4	44	3	76
		1.30	0.0512	1.300	1 3/4	44	3	76
	55		0.0520	1.321	1 3/4	44	3	76
		1.35	0.0531	1.350	1 3/4	44	3	76
1/16	54		0.0550	1.397	1 3/4	44	3	76
		1.40	0.0551	1.400	1 3/4	44	3	76
		1.45	0.0571	1.450	1 3/4	44	3	76
		1.50	0.0591	1.500	1 3/4	44	3	76
	53		0.0595	1.511	1 3/4	44	3	76
		1.55	0.0610	1.550	1 3/4	44	3	76
			0.0625	1.588	1 3/4	44	3	76
		1.60	0.0630	1.600	2	51	3 3/4	95
			0.0635	1.613	2	51	3 3/4	95
		1.65	0.0650	1.650	2	51	3 3/4	95
		1.70	0.0669	1.700	2	51	3 3/4	95
	51		0.0670	1.702	2	51	3 3/4	95
		1.75	0.0689	1.750	2	51	3 3/4	95
	50		0.0700	1.778	2	51	3 3/4	95
		1.80	0.0709	1.800	2	51	3 3/4	95

**TABLE 2A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — THROUGH 1/2 in. (12.7 mm) DIA.
FRACTIONAL, NUMBER, AND METRIC SIZES (CONT'D)**

Diameter of Drill					Flute Length		Overall Length	
D			Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	mm			Inch	mm	Inch	mm
5/64	49	1.85	0.0728	1.850	2	51	3 3/4	95
			0.0730	1.854	2	51	3 3/4	95
	48	1.90	0.0748	1.900	2	51	3 3/4	95
			0.0760	1.930	2	51	3 3/4	95
		1.95	0.0768	1.950	2	51	3 3/4	95
	47		0.0781	1.984	2	51	3 3/4	95
			0.0785	1.994	2 1/4	57	4 1/4	108
		2.00	0.0787	2.000	2 1/4	57	4 1/4	108
			0.0807	2.050	2 1/4	57	4 1/4	108
	46	2.05	0.0810	2.057	2 1/4	57	4 1/4	108
	45		0.0820	2.083	2 1/4	57	4 1/4	108
		2.10	0.0827	2.100	2 1/4	57	4 1/4	108
	44	2.15	0.0846	2.150	2 1/4	57	4 1/4	108
			0.0860	2.184	2 1/4	57	4 1/4	108
3/32		2.20	0.0866	2.200	2 1/4	57	4 1/4	108
	43	2.25	0.0886	2.250	2 1/4	57	4 1/4	108
			0.0890	2.261	2 1/4	57	4 1/4	108
		2.30	0.0906	2.300	2 1/4	57	4 1/4	108
			0.0925	2.350	2 1/4	57	4 1/4	108
	42	2.35	0.0935	2.375	2 1/4	57	4 1/4	108
			0.0938	2.383	2 1/4	57	4 1/4	108
		2.40	0.0945	2.400	2 1/2	64	4 5/8	117
	41		0.0960	2.438	2 1/2	64	4 5/8	117
		2.45	0.0965	2.450	2 1/2	64	4 5/8	117
	40		0.0980	2.489	2 1/2	64	4 5/8	117
	39	2.50	0.0984	2.500	2 1/2	64	4 5/8	117
			0.0995	2.527	2 1/2	64	4 5/8	117
7/64	38		0.1015	2.578	2 1/2	64	4 5/8	117
		2.60	0.1024	2.600	2 1/2	64	4 5/8	117
	37		0.1040	2.642	2 1/2	64	4 5/8	117
	36	2.70	0.1063	2.700	2 1/2	64	4 5/8	117
			0.1065	2.705	2 1/2	64	4 5/8	117
			0.1094	2.779	2 1/2	64	4 5/8	117
			0.1100	2.794	2 3/4	70	5 1/8	130
	35	2.80	0.1102	2.800	2 3/4	70	5 1/8	130
	34		0.1110	2.819	2 3/4	70	5 1/8	130
			0.1130	2.870	2 3/4	70	5 1/8	130
	33	2.90	0.1142	2.900	2 3/4	70	5 1/8	130
			0.1160	2.946	2 3/4	70	5 1/8	130
	32	3.00	0.1181	3.000	2 3/4	70	5 1/8	130

**TABLE 2A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — THROUGH 1/2 in. (12.7 mm) DIA.
FRACTIONAL, NUMBER, AND METRIC SIZES (CONT'D)**

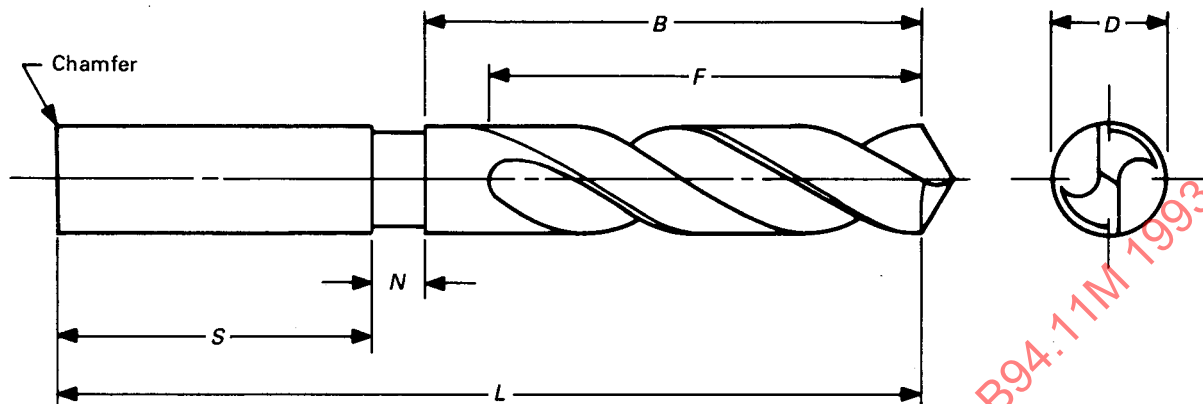
Diameter of Drill					Flute Length		Overall Length		
D			Decimal Inch Equivalent	Millimeter Equivalent	F		L		
Fraction	No.	mm			Inch	mm	Inch	mm	
1/8	31	3.10	0.1200	3.048	2 3/4	70	5 1/8	130	
			0.1220	3.100	2 3/4	70	5 1/8	130	
			0.1250	3.175	2 3/4	70	5 1/8	130	
	30	3.20	0.1260	3.200	3	76	5 3/8	137	
			0.1285	3.264	3	76	5 3/8	137	
		3.30	0.1299	3.300	3	76	5 3/8	137	
			0.1339	3.400	3	76	5 3/8	137	
			0.1360	3.454	3	76	5 3/8	137	
	29	3.50	0.1378	3.500	3	76	5 3/8	137	
			0.1405	3.569	3	76	5 3/8	137	
	9/64		3.60	0.1406	3.571	3	76	5 3/8	137
0.1417				3.600	3	76	5 3/8	137	
0.1440				3.658	3	76	5 3/8	137	
27		3.70	0.1457	3.700	3	76	5 3/8	137	
			0.1470	3.734	3	76	5 3/8	137	
25		3.80	0.1495	3.797	3	76	5 3/8	137	
			0.1496	3.800	3	76	5 3/8	137	
			0.1520	3.861	3	76	5 3/8	137	
24		3.90	0.1535	3.900	3	76	5 3/8	137	
			0.1540	3.912	3	76	5 3/8	137	
5/32		22	4.00	0.1562	3.967	3	76	5 3/8	137
				0.1570	3.988	3 3/8	86	5 3/4	146
	0.1575			4.000	3 3/8	86	5 3/4	146	
	21		0.1590	4.039	3 3/8	86	5 3/4	146	
			0.1610	4.089	3 3/8	86	5 3/4	146	
	20	4.10							
			0.1614	4.100	3 3/8	86	5 3/4	146	
			0.1654	4.200	3 3/8	86	5 3/4	146	
	19	4.20	0.1660	4.216	3 3/8	86	5 3/4	146	
			0.1693	4.300	3 3/8	86	5 3/4	146	
	11/64	18	4.30	0.1695	4.305	3 3/8	86	5 3/4	146
17		4.40	0.1719	4.366	3 3/8	86	5 3/4	146	
			0.1730	4.394	3 3/8	86	5 3/4	146	
			0.1732	4.400	3 3/8	86	5 3/4	146	
16		4.50	0.1770	4.496	3 3/8	86	5 3/4	146	
			0.1772	4.500	3 3/8	86	5 3/4	146	
15		4.60							
			0.1800	4.572	3 3/8	86	5 3/4	146	
			0.1811	4.600	3 3/8	86	5 3/4	146	
14			0.1820	4.623	3 3/8	86	5 3/4	146	
			0.1850	4.700	3 3/8	86	5 3/4	146	
3/16	13	4.70							
			0.1875	4.762	3 3/8	86	5 3/4	146	

**TABLE 2A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — THROUGH 1/2 in. (12.7 mm) DIA.
FRACTIONAL, NUMBER, AND METRIC SIZES (CONT'D)**

Diameter of Drill					Flute Length		Overall Length	
D			Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	mm			Inch	mm	Inch	mm
13/64	12	4.80	0.1890	4.800	3 5/8	92	6	152
	11	4.90	0.1910	4.851	3 5/8	92	6	152
			0.1929	4.900	3 5/8	92	6	152
	10		0.1935	4.915	3 5/8	92	6	152
	9		0.1960	4.978	3 5/8	92	6	152
		5.00	0.1969	5.000	3 5/8	92	6	152
	8		0.1990	5.055	3 5/8	92	6	152
		5.10	0.2008	5.100	3 5/8	92	6	152
	7		0.2010	5.105	3 5/8	92	6	152
			0.2031	5.159	3 5/8	92	6	152
	6		0.2040	5.182	3 5/8	92	6	152
		5.20	0.2047	5.200	3 5/8	92	6	152
7/32	5		0.2055	5.220	3 5/8	92	6	152
		5.30	0.2087	5.300	3 5/8	92	6	152
	4		0.2090	5.309	3 5/8	92	6	152
		5.40	0.2126	5.400	3 5/8	92	6	152
	3		0.2130	5.410	3 5/8	92	6	152
		5.50	0.2165	5.500	3 5/8	92	6	152
			0.2188	5.558	3 5/8	92	6	152
		5.60	0.2205	5.600	3 3/4	95	6 1/8	156
	2		0.2210	5.613	3 3/4	95	6 1/8	156
		5.70	0.2244	5.700	3 3/4	95	6 1/8	156
	1		0.2280	5.791	3 3/4	95	6 1/8	156
		5.80	0.2283	5.800	3 3/4	95	6 1/8	156
15/64		5.90	0.2323	5.900	3 3/4	95	6 1/8	156
			0.2344	5.954	3 3/4	95	6 1/8	156
		6.00	0.2362	6.000	3 3/4	95	6 1/8	156
		6.10	0.2402	6.100	3 3/4	95	6 1/8	156
		6.20	0.2441	6.200	3 3/4	95	6 1/8	156
		6.30	0.2480	6.300	3 3/4	95	6 1/8	156
	1/4		0.2500	6.350	3 3/4	95	6 1/8	156
		6.40	0.2520	6.400	3 7/8	98	6 1/4	159
		6.50	0.2559	6.500	3 7/8	98	6 1/4	159
	17/64		0.2656	6.746	3 7/8	98	6 1/4	159
		6.80	0.2677	6.800	3 7/8	98	6 1/4	159
		7.00	0.2756	7.000	3 7/8	98	6 1/4	159
9/32			0.2812	7.142	3 7/8	98	6 1/4	159
		7.20	0.2835	7.200	4	102	6 3/8	162
		7.50	0.2953	7.500	4	102	6 3/8	162
19/64			0.2969	7.541	4	102	6 3/8	162

**TABLE 2A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — THROUGH 1/2 in. (12.7 mm) DIA.
FRACTIONAL, NUMBER, AND METRIC SIZES (CONT'D)**

Diameter of Drill					Flute Length		Overall Length	
D			Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	mm			Inch	mm	Inch	mm
5/16		7.80	0.3071	7.800	4	102	6 3/8	162
			0.3125	7.938	4	102	6 3/8	162
		8.00	0.3150	8.000	4 1/8	105	6 1/2	165
		8.20	0.3228	8.200	4 1/8	105	6 1/2	165
21/64			0.3281	8.334	4 1/8	105	6 1/2	165
		8.50	0.3346	8.500	4 1/8	105	6 1/2	165
11/32			0.3438	8.733	4 1/8	105	6 1/2	165
		8.80	0.3465	8.800	4 1/4	108	6 3/4	171
		9.00	0.3543	9.000	4 1/4	108	6 3/4	171
23/64			0.3594	9.129	4 1/4	108	6 3/4	171
		9.20	0.3622	9.200	4 1/4	108	6 3/4	171
3/8		9.50	0.3740	9.500	4 1/4	108	6 3/4	171
			0.3750	9.525	4 1/4	108	6 3/4	171
		9.80	0.3858	9.800	4 3/8	111	7	178
25/64			0.3906	9.921	4 3/8	111	7	178
		10.00	0.3937	10.000	4 3/8	111	7	178
13/32		10.20	0.4016	10.200	4 3/8	111	7	178
			0.4062	10.317	4 3/8	111	7	178
		10.50	0.4134	10.500	4 5/8	117	7 1/4	184
27/64			0.4219	10.716	4 5/8	117	7 1/4	184
		10.80	0.4252	10.800	4 5/8	117	7 1/4	184
7/16		11.00	0.4331	11.000	4 5/8	117	7 1/4	184
			0.4375	11.112	4 5/8	117	7 1/4	184
		11.20	0.4409	11.200	4 3/4	121	7 1/2	190
		11.50	0.4528	11.500	4 3/4	121	7 1/2	190
29/64			0.4531	11.509	4 3/4	121	7 1/2	190
		11.80	0.4646	11.800	4 3/4	121	7 1/2	190
15/32			0.4688	11.908	4 3/4	121	7 1/2	190
		12.00	0.4724	12.000	4 3/4	121	7 3/4	197
		12.20	0.4803	12.200	4 3/4	121	7 3/4	197
31/64			0.4844	12.304	4 3/4	121	7 3/4	197
		12.50	0.4921	12.500	4 3/4	121	7 3/4	197
1/2			0.5000	12.700	4 3/4	121	7 3/4	197



Nominal shank size is same as nominal drill size

See Table 10 for drill tolerances

**TABLE 2B GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — OVER $\frac{1}{2}$ in. (12.7 mm) DIA.
FRACTIONAL AND METRIC SIZES**

Diameter of Drill				Flute Length		Overall Length		Length of Body		Minimum Length of Shank		Maximum Length of Neck	
<i>D</i>		Decimal Inch Equiv.	Milli-meter Equiv.	<i>F</i>		<i>L</i>		<i>B</i>		<i>S</i>		<i>N</i>	
Frac.	mm			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
$\frac{33}{64}$	12.80	0.5039	12.800	$\frac{4}{8}$	121	8	203	$\frac{4}{8}$	124	$\frac{2}{8}$	66	$\frac{1}{2}$	13
	13.00	0.5118	13.000	$\frac{4}{8}$	121	8	203	$\frac{4}{8}$	124	$\frac{2}{8}$	66	$\frac{1}{2}$	13
		0.5156	13.096	$\frac{4}{8}$	121	8	203	$\frac{4}{8}$	124	$\frac{2}{8}$	66	$\frac{1}{2}$	13
	13.20	0.5197	13.200	$\frac{4}{8}$	121	8	203	$\frac{4}{8}$	124	$\frac{2}{8}$	66	$\frac{1}{2}$	13
$\frac{17}{32}$		0.5312	13.492	$\frac{4}{8}$	121	8	203	$\frac{4}{8}$	124	$\frac{2}{8}$	66	$\frac{1}{2}$	13
$\frac{35}{64}$	13.50	0.5315	13.500	$\frac{4}{8}$	121	8	203	$\frac{4}{8}$	124	$\frac{2}{8}$	66	$\frac{1}{2}$	13
	13.80	0.5433	13.800	$\frac{4}{8}$	124	$\frac{8}{16}$	210	5	127	$\frac{2}{8}$	70	$\frac{1}{2}$	13
		0.5469	13.891	$\frac{4}{8}$	124	$\frac{8}{16}$	210	5	127	$\frac{2}{8}$	70	$\frac{1}{2}$	13
	14.00	0.5512	14.000	$\frac{4}{8}$	124	$\frac{8}{16}$	210	5	127	$\frac{2}{8}$	70	$\frac{1}{2}$	13
$\frac{9}{16}$	14.25	0.5610	14.250	$\frac{4}{8}$	124	$\frac{8}{16}$	210	5	127	$\frac{2}{8}$	70	$\frac{1}{2}$	13
		0.5625	14.288	$\frac{4}{8}$	124	$\frac{8}{16}$	210	5	127	$\frac{2}{8}$	70	$\frac{1}{2}$	13
	14.50	0.5709	14.500	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
		0.5781	14.684	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
$\frac{37}{64}$	14.75	0.5807	14.750	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
$\frac{19}{32}$	15.00	0.5906	15.000	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
		0.5938	15.083	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
	15.25	0.6004	15.250	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
		0.6094	15.479	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
$\frac{39}{64}$	15.50	0.6102	15.500	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
$\frac{5}{8}$	15.75	0.6201	15.750	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
		0.6250	15.875	$\frac{4}{8}$	124	$\frac{8}{16}$	222	5	127	$\frac{3}{8}$	79	$\frac{5}{8}$	16
	16.00	0.6299	16.000	$\frac{5}{8}$	130	9	229	$\frac{5}{16}$	133	$\frac{3}{8}$	79	$\frac{5}{8}$	16
	16.25	0.6398	16.250	$\frac{5}{8}$	130	9	229	$\frac{5}{16}$	133	$\frac{3}{8}$	79	$\frac{5}{8}$	16
$\frac{41}{64}$		0.6406	16.271	$\frac{5}{8}$	130	9	229	$\frac{5}{16}$	133	$\frac{3}{8}$	79	$\frac{5}{8}$	16
	16.50	0.6496	16.500	$\frac{5}{8}$	130	9	229	$\frac{5}{16}$	133	$\frac{3}{8}$	79	$\frac{5}{8}$	16

**TABLE 2B GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — OVER 1/2 in. (12.7 mm) DIA.
FRACTIONAL AND METRIC SIZES (CONT'D)**

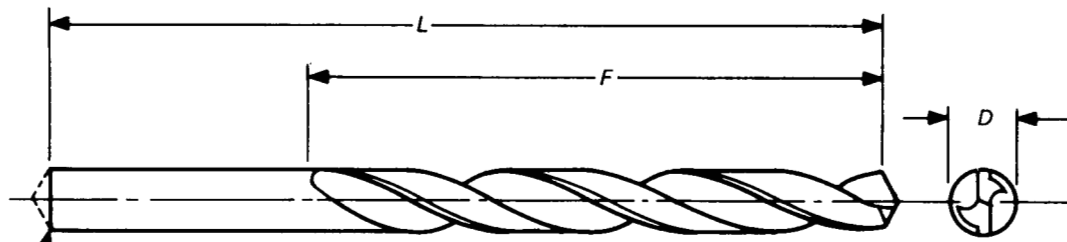
Diameter of Drill				Flute Length		Overall Length		Length of Body		Minimum Length of Shank		Maximum Length of Neck	
D		Decimal Inch Equiv.	Milli-meter Equiv.	F		L		B		S		N	
Frac.	mm			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
21/32		0.6562	16.667	5/8	130	9	229	5/4	133	3/8	79	5/8	16
	16.75	0.6594	16.750	5/8	137	9 1/4	235	5/2	140	3/8	79	5/8	16
	17.00	0.6693	17.000	5/8	137	9 1/4	235	5/2	140	3/8	79	5/8	16
43/64		0.6719	17.066	5/8	137	9 1/4	235	5/2	140	3/8	79	5/8	16
	17.25	0.6791	17.250	5/8	137	9 1/4	235	5/2	140	3/8	79	5/8	16
11/16		0.6875	17.462	5/8	137	9 1/4	235	5/2	140	3/8	79	5/8	16
	17.50	0.6890	17.500	5/8	143	9 1/2	241	5/4	146	3/8	79	5/8	16
45/64		0.7031	17.859	5/8	143	9 1/2	241	5/4	146	3/8	79	5/8	16
	18.00	0.7087	18.000	5/8	143	9 1/2	241	5/4	146	3/8	79	5/8	16
23/32		0.7188	18.258	5/8	143	9 1/2	241	5/4	146	3/8	79	5/8	16
	18.50	0.7283	18.500	5/8	149	9 3/4	248	6	152	3/8	79	5/8	16
47/64		0.7344	18.654	5/8	149	9 3/4	248	6	152	3/8	79	5/8	16
	19.00	0.7480	19.000	5/8	149	9 3/4	248	6	152	3/8	79	5/8	16
3/4		0.7500	19.050	5/8	149	9 3/4	248	6	152	3/8	79	5/8	16
49/64		0.7656	19.446	6	152	9 7/8	251	6 1/8	156	3/8	79	5/8	16
	19.50	0.7677	19.500	6	152	9 7/8	251	6 1/8	156	3/8	79	5/8	16
25/32		0.7812	19.842	6	152	9 7/8	251	6 1/8	156	3/8	79	5/8	16
	20.00	0.7874	20.000	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
51/64		0.7969	20.241	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
	20.50	0.8071	20.500	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
13/16		0.8125	20.638	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
	21.00	0.8268	21.000	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
53/64		0.8281	21.034	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
27/32		0.8438	21.433	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
	21.50	0.8465	21.500	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
55/64		0.8594	21.829	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
	22.00	0.8661	22.000	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
7/8		0.8750	22.225	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
	22.50	0.8858	22.500	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
57/64		0.8906	22.621	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
	23.00	0.9055	23.000	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
29/32		0.9062	23.017	6 1/8	156	10	254	6 1/4	159	3/8	79	5/8	16
59/64		0.9219	23.416	6 1/8	156	10 3/4	273	6 1/4	159	3/8	98	5/8	16
	23.50	0.9252	23.500	6 1/8	156	10 3/4	273	6 1/4	159	3/8	98	5/8	16
15/16		0.9375	23.812	6 1/8	156	10 3/4	273	6 1/4	159	3/8	98	5/8	16
	24.00	0.9449	24.000	6 3/8	162	11	279	6 1/2	165	3/8	98	5/8	16
61/64		0.9531	24.209	6 3/8	162	11	279	6 1/2	165	3/8	98	5/8	16
	24.50	0.9646	24.500	6 3/8	162	11	279	6 1/2	165	3/8	98	5/8	16
31/32		0.9688	24.608	6 3/8	162	11	279	6 1/2	165	3/8	98	5/8	16
	25.00	0.9843	25.000	6 3/8	162	11	279	6 1/2	165	3/8	98	5/8	16

**TABLE 2B GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — OVER 1/2 in. (12.7 mm) DIA.
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Flute Length		Overall Length		Length of Body		Minimum Length of Shank		Maximum Length of Neck	
D		Decimal Inch Equiv.	Milli-meter Equiv.	F		L		B		S		N	
Frac.	mm			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
63/64		0.9844	25.004	63/64	162	11	279	6 1/2	165	37/8	98	5/8	16
1		1.0000	25.400	63/64	162	11	279	6 1/2	165	37/8	98	5/8	16
	25.50	1.0039	25.500	6 1/2	165	11 1/8	283	6 5/8	168	37/8	98	5/8	16
1 1/64		1.0156	25.796	6 1/2	165	11 1/8	283	6 5/8	168	37/8	98	5/8	16
	26.00	1.0236	26.000	6 1/2	165	11 1/8	283	6 5/8	168	37/8	98	5/8	16
1 1/32		1.0312	26.192	6 1/2	165	11 1/8	283	6 5/8	168	37/8	98	5/8	16
	26.50	1.0433	26.560	6 5/8	168	11 1/4	286	6 3/4	172	37/8	98	5/8	16
1 3/64		1.0469	26.591	6 5/8	168	11 1/4	286	6 3/4	172	37/8	98	5/8	16
1 1/16		1.0625	26.988	6 5/8	168	11 1/4	286	6 3/4	172	37/8	98	5/8	16
	27.00	1.0630	27.000	6 5/8	168	11 1/4	286	6 3/4	172	37/8	98	5/8	16
1 5/64		1.0781	27.384	6 7/8	175	11 1/2	292	7	178	37/8	98	5/8	16
	27.50	1.0827	27.500	6 7/8	175	11 1/2	292	7	178	37/8	98	5/8	16
1 3/32		1.0938	27.783	6 7/8	175	11 1/2	292	7	178	37/8	98	5/8	16
	28.00	1.1024	28.000	7 1/8	181	11 3/4	298	7 1/4	184	37/8	98	5/8	16
1 7/64		1.1094	28.179	7 1/8	181	11 3/4	298	7 1/4	184	37/8	98	5/8	16
	28.50	1.1220	28.500	7 1/8	181	11 3/4	298	7 1/4	184	37/8	98	5/8	16
1 1/8		1.1250	28.575	7 1/8	181	11 3/4	298	7 1/4	184	37/8	98	5/8	16
1 9/64		1.1406	28.971	7 1/4	184	11 7/8	302	7 3/8	187	37/8	98	5/8	16
	29.00	1.1437	29.000	7 1/4	184	11 7/8	302	7 3/8	187	37/8	98	5/8	16
1 5/32		1.1562	29.367	7 1/4	184	11 7/8	302	7 3/8	187	37/8	98	5/8	16
	29.50	1.1614	29.500	7 3/8	187	12	305	7 1/2	191	37/8	98	5/8	16
1 11/64		1.1719	29.766	7 3/8	187	12	305	7 1/2	191	37/8	98	5/8	16
	30.00	1.1811	30.000	7 3/8	187	12	305	7 1/2	191	37/8	98	5/8	16
1 3/16		1.1875	30.162	7 3/8	187	12	305	7 1/2	191	37/8	98	5/8	16
	30.50	1.2008	30.500	7 1/2	190	12 1/8	308	7 5/8	194	37/8	98	5/8	16
1 13/64		1.2031	30.559	7 1/2	190	12 1/8	308	7 5/8	194	37/8	98	5/8	16
1 7/32		1.2188	30.958	7 1/2	190	12 1/8	308	7 5/8	194	37/8	98	5/8	16
	31.00	1.2205	31.000	7 7/8	200	12 1/2	318	8	203	37/8	98	5/8	16
1 5/64		1.2344	31.354	7 7/8	200	12 1/2	318	8	203	37/8	98	5/8	16
	31.50	1.2402	31.500	7 7/8	200	12 1/2	318	8	203	37/8	98	5/8	16
1 1/4		1.2500	31.750	7 7/8	200	12 1/2	318	8	203	37/8	98	5/8	16
	32.00	1.2598	32.000	8 1/2	216	14 1/8	359	8 5/8	219	4 7/8	124	5/8	16
	32.50	1.2795	32.500	8 1/2	216	14 1/8	359	8 5/8	219	4 7/8	124	5/8	16
1 9/32		1.2812	32.542	8 1/2	216	14 1/8	359	8 5/8	219	4 7/8	124	5/8	16
	33.00	1.2992	33.000	8 5/8	219	14 1/4	362	8 3/4	222	4 7/8	124	5/8	16
1 5/16		1.3125	33.338	8 5/8	219	14 1/4	362	8 3/4	222	4 7/8	124	5/8	16
	33.50	1.3189	33.500	8 3/4	222	14 3/8	365	8 7/8	225	4 7/8	124	5/8	16
	34.00	1.3386	34.000	8 3/4	222	14 3/8	365	8 7/8	225	4 7/8	124	5/8	16
1 11/32		1.3438	34.133	8 3/4	222	14 3/8	365	8 7/8	225	4 7/8	124	5/8	16
	34.50	1.3583	34.500	8 7/8	225	14 1/2	368	9	229	4 7/8	124	5/8	16

**TABLE 2B GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
TAPER LENGTH — OVER $\frac{1}{2}$ in. (12.7 mm) DIA.
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Flute Length		Overall Length		Length of Body		Minimum Length of Shank		Maximum Length of Neck	
<i>D</i>		Decimal Inch Equiv.	Milli-meter Equiv.	<i>F</i>		<i>L</i>		<i>B</i>		<i>S</i>		<i>N</i>	
Frac.	mm			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
$\frac{1}{8}$		1.3750	34.925	$\frac{8}{16}$	225	$1\frac{1}{2}$	368	9	229	$\frac{4}{8}$	124	$\frac{5}{8}$	16
	35.00	1.3780	35.000	9	229	$1\frac{5}{8}$	371	$\frac{9}{16}$	232	$\frac{4}{8}$	124	$\frac{5}{8}$	16
	35.50	1.3976	35.500	9	229	$1\frac{5}{8}$	371	$\frac{9}{16}$	232	$\frac{4}{8}$	124	$\frac{5}{8}$	16
$1\frac{1}{32}$		1.4062	35.717	9	229	$1\frac{5}{8}$	371	$\frac{9}{16}$	232	$\frac{4}{8}$	124	$\frac{5}{8}$	16
	36.00	1.4173	36.000	$\frac{9}{16}$	232	$1\frac{3}{4}$	375	$\frac{9}{16}$	235	$\frac{4}{8}$	124	$\frac{5}{8}$	16
$\frac{1}{16}$	36.50	1.4370	36.500	$\frac{9}{16}$	232	$1\frac{3}{4}$	375	$\frac{9}{16}$	235	$\frac{4}{8}$	124	$\frac{5}{8}$	16
		1.4375	36.512	$\frac{9}{16}$	232	$1\frac{3}{4}$	375	$\frac{9}{16}$	235	$\frac{4}{8}$	124	$\frac{5}{8}$	16
	37.00	1.4567	37.000	$\frac{9}{16}$	235	$1\frac{7}{8}$	378	$\frac{9}{16}$	238	$\frac{4}{8}$	124	$\frac{5}{8}$	16
$1\frac{5}{32}$		1.4688	37.308	$\frac{9}{16}$	235	$1\frac{7}{8}$	378	$\frac{9}{16}$	238	$\frac{4}{8}$	124	$\frac{5}{8}$	16
	37.50	1.4764	37.500	$\frac{9}{16}$	238	15	381	$\frac{9}{16}$	241	$\frac{4}{8}$	124	$\frac{5}{8}$	16
$\frac{1}{2}$	38.00	1.4961	38.000	$\frac{9}{16}$	238	15	381	$\frac{9}{16}$	241	$\frac{4}{8}$	124	$\frac{5}{8}$	16
		1.5000	38.100	$\frac{9}{16}$	238	15	381	$\frac{9}{16}$	241	$\frac{4}{8}$	124	$\frac{5}{8}$	16
	$\frac{1}{16}$	1.5625	39.688	$\frac{9}{16}$	244	$1\frac{1}{4}$	387	$\frac{9}{16}$	247	$\frac{4}{8}$	124	$\frac{5}{8}$	16
$\frac{5}{8}$		1.6250	41.275	$\frac{9}{16}$	251	$1\frac{5}{8}$	397	10	254	$\frac{4}{8}$	124	$\frac{3}{4}$	19
$\frac{3}{4}$		1.7500	44.450	$1\frac{1}{2}$	267	$1\frac{1}{4}$	413	$10\frac{5}{8}$	270	$\frac{4}{8}$	124	$\frac{3}{4}$	19



Chamfer sizes $\frac{3}{32}$ in. and larger.
For sizes under $\frac{3}{32}$ in. a chamfer or
conical point may be used at the
manufacturer's option.

See Table 10 for tolerances

**TABLE 3A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — THROUGH 1 in. (25.4 mm) DIA.
FRACTIONAL, NUMBER, LETTER AND METRIC SIZES**

Diameter of Drill						Flute Length		Overall Length	
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	Ltr.	mm			Inch	mm	Inch	mm
$\frac{3}{64}$			1.00	0.0394	1.000	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
	60			0.0400	1.016	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
	59			0.0410	1.041	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
			1.05	0.0413	1.050	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
	58			0.0420	1.067	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
	57			0.0430	1.092	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
			1.10	0.0433	1.100	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
			1.15	0.0453	1.150	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
	56			0.0465	1.181	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
				0.0469	1.191	$\frac{1}{2}$	13	$1\frac{3}{8}$	35
			1.20	0.0472	1.200	$\frac{5}{8}$	16	$1\frac{5}{8}$	41
			1.25	0.0492	1.250	$\frac{5}{8}$	16	$1\frac{5}{8}$	41
			1.30	0.0512	1.300	$\frac{5}{8}$	16	$1\frac{5}{8}$	41
	55			0.0520	1.321	$\frac{5}{8}$	16	$1\frac{5}{8}$	41
		1.35	0.0531	1.350	$\frac{5}{8}$	16	$1\frac{5}{8}$	41	
54			0.0500	1.397	$\frac{5}{8}$	16	$1\frac{5}{8}$	41	
		1.40	0.0551	1.400	$\frac{5}{8}$	16	$1\frac{5}{8}$	41	
		1.45	0.0571	1.450	$\frac{5}{8}$	16	$1\frac{5}{8}$	41	
		1.50	0.0591	1.500	$\frac{5}{8}$	16	$1\frac{5}{8}$	41	
53			0.0595	1.511	$\frac{5}{8}$	16	$1\frac{5}{8}$	41	
		1.55	0.0610	1.550	$\frac{5}{8}$	16	$1\frac{5}{8}$	41	
			0.0625	1.588	$\frac{5}{8}$	16	$1\frac{5}{8}$	41	
$\frac{1}{16}$			1.60	0.0630	1.600	$1\frac{1}{16}$	17	$1\frac{11}{16}$	43
				0.0635	1.613	$1\frac{1}{16}$	17	$1\frac{11}{16}$	43
	52			0.0650	1.650	$1\frac{1}{16}$	17	$1\frac{11}{16}$	43
			1.65	0.0650	1.650	$1\frac{1}{16}$	17	$1\frac{11}{16}$	43

**TABLE 3A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — THROUGH 1 in. (25.4 mm) DIA.
FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
<i>D</i>				Decimal Inch Equivalent	Millimeter Equivalent	<i>F</i>		<i>L</i>	
Fraction	No.	Ltr.	mm			Inch	mm	Inch	mm
$\frac{5}{64}$	51		1.70	0.0669	1.700	$\frac{11}{16}$	17	$\frac{11}{16}$	43
				0.0670	1.702	$\frac{11}{16}$	17	$\frac{11}{16}$	43
	50		1.75	0.0689	1.750	$\frac{11}{16}$	17	$\frac{11}{16}$	43
				0.0700	1.778	$\frac{11}{16}$	17	$\frac{11}{16}$	43
			1.80	0.0709	1.800	$\frac{11}{16}$	17	$\frac{11}{16}$	43
	49		1.85	0.0728	1.850	$\frac{11}{16}$	17	$\frac{11}{16}$	43
				0.0730	1.854	$\frac{11}{16}$	17	$\frac{11}{16}$	43
			1.90	0.0748	1.900	$\frac{11}{16}$	17	$\frac{11}{16}$	43
	48			0.0760	1.930	$\frac{11}{16}$	17	$\frac{11}{16}$	43
			1.95	0.0768	1.950	$\frac{11}{16}$	17	$\frac{11}{16}$	43
	47			0.0781	1.984	$\frac{11}{16}$	17	$\frac{11}{16}$	43
				0.0785	1.994	$\frac{11}{16}$	17	$\frac{11}{16}$	43
			2.00	0.0787	2.000	$\frac{11}{16}$	17	$\frac{11}{16}$	43
			2.05	0.0807	2.050	$\frac{3}{4}$	19	$\frac{13}{4}$	44
	46			0.0810	2.057	$\frac{3}{4}$	19	$\frac{13}{4}$	44
				0.0820	2.083	$\frac{3}{4}$	19	$\frac{13}{4}$	44
	45		2.10	0.0827	2.100	$\frac{3}{4}$	19	$\frac{13}{4}$	44
			2.15	0.0846	2.150	$\frac{3}{4}$	19	$\frac{13}{4}$	44
				0.0860	2.184	$\frac{3}{4}$	19	$\frac{13}{4}$	44
			2.20	0.0866	2.200	$\frac{3}{4}$	19	$\frac{13}{4}$	44
	43		2.25	0.0886	2.250	$\frac{3}{4}$	19	$\frac{13}{4}$	44
				0.0890	2.261	$\frac{3}{4}$	19	$\frac{13}{4}$	44
			2.30	0.0906	2.300	$\frac{3}{4}$	19	$\frac{13}{4}$	44
			2.35	0.0925	2.350	$\frac{3}{4}$	19	$\frac{13}{4}$	44
$\frac{3}{32}$	42			0.0935	2.375	$\frac{3}{4}$	19	$\frac{13}{4}$	44
				0.0938	2.383	$\frac{3}{4}$	19	$\frac{13}{4}$	44
			2.40	0.0945	2.400	$\frac{13}{16}$	21	$\frac{13}{16}$	46
				0.0960	2.438	$\frac{13}{16}$	21	$\frac{13}{16}$	46
	41		2.45	0.0965	2.450	$\frac{13}{16}$	21	$\frac{13}{16}$	46
				0.0980	2.489	$\frac{13}{16}$	21	$\frac{13}{16}$	46
	40		2.50	0.0984	2.500	$\frac{13}{16}$	21	$\frac{13}{16}$	46
				0.0995	2.527	$\frac{13}{16}$	21	$\frac{13}{16}$	46
				0.1015	2.578	$\frac{13}{16}$	21	$\frac{13}{16}$	46
			2.60	0.1024	2.600	$\frac{13}{16}$	21	$\frac{13}{16}$	46
$\frac{7}{64}$	39			0.1040	2.642	$\frac{13}{16}$	21	$\frac{13}{16}$	46
			2.70	0.1063	2.700	$\frac{13}{16}$	21	$\frac{13}{16}$	46
	38			0.1065	2.705	$\frac{13}{16}$	21	$\frac{13}{16}$	46
				0.1094	2.779	$\frac{13}{16}$	21	$\frac{13}{16}$	46
	37			0.1100	2.794	$\frac{7}{8}$	22	$\frac{17}{8}$	48
			2.80	0.1102	2.800	$\frac{7}{8}$	22	$\frac{17}{8}$	48

**TABLE 3A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — THROUGH 1 in. (25.4 mm) DIA.
FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length		
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L		
Fraction	No.	Ltr.	mm			Inch	mm	Inch	mm	
1/8	34			0.1110	2.819	7/8	22	1 7/8	48	
	33			0.1130	2.870	7/8	22	1 7/8	48	
			2.90	0.1142	2.900	7/8	22	1 7/8	48	
	32			0.1160	2.946	7/8	22	1 7/8	48	
			3.00	0.1181	3.000	7/8	22	1 7/8	48	
	31			0.1200	3.048	7/8	22	1 7/8	48	
			3.10	0.1220	3.100	7/8	22	1 7/8	48	
				0.1250	3.175	7/8	22	1 7/8	48	
			3.20	0.1260	3.200	1 5/16	24	1 5/16	49	
	30			0.1285	3.264	1 5/16	24	1 5/16	49	
			3.30	0.1299	3.300	1 5/16	24	1 5/16	49	
			3.40	0.1339	3.400	1 5/16	24	1 5/16	49	
	29			0.1360	3.454	1 5/16	24	1 5/16	49	
			3.50	0.1378	3.500	1 5/16	24	1 5/16	49	
	28			0.1405	3.569	1 5/16	24	1 5/16	49	
9/64				0.1406	3.571	1 5/16	24	1 5/16	49	
			3.60	0.1417	3.600	1	25	2 1/16	52	
	27			0.1440	3.658	1	25	2 1/16	52	
			3.70	0.1457	3.700	1	25	2 1/16	52	
	26			0.1470	3.734	1	25	2 1/16	52	
	25			0.1495	3.797	1	25	2 1/16	52	
			3.80	0.1496	3.800	1	25	2 1/16	52	
	24			0.1520	3.861	1	25	2 1/16	52	
			3.90	0.1535	3.900	1	25	2 1/16	52	
	23			0.1540	3.912	1	25	2 1/16	52	
	5/32				0.1562	3.967	1	25	2 1/16	52
		22			0.1570	3.988	1 1/16	27	2 1/8	54
				4.00	0.1575	4.000	1 1/16	27	2 1/8	54
		21			0.1590	4.039	1 1/16	27	2 1/8	54
		20			0.1610	4.089	1 1/16	27	2 1/8	54
			4.10	0.1614	4.100	1 1/16	27	2 1/8	54	
			4.20	0.1654	4.200	1 1/16	27	2 1/8	54	
19				0.1660	4.216	1 1/16	27	2 1/8	54	
			4.30	0.1693	4.300	1 1/16	27	2 1/8	54	
18				0.1695	4.305	1 1/16	27	2 1/8	54	
11/64					0.1719	4.366	1 1/16	27	2 1/8	54
		17			0.1730	4.394	1 1/8	29	2 3/16	56
				4.40	0.1732	4.400	1 1/8	29	2 3/16	56
		16			0.1770	4.496	1 1/8	29	2 3/16	56
				4.50	0.1772	4.500	1 1/8	29	2 3/16	56

**TABLE 3A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — THROUGH 1 in. (25.4 mm) DIA.
FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
<i>D</i>				Decimal Inch Equivalent	Millimeter Equivalent	<i>F</i>		<i>L</i>	
Fraction	No.	Ltr.	mm			Inch	mm	Inch	mm
$\frac{3}{16}$	15			0.1800	4.572	$\frac{1}{8}$	29	$2\frac{3}{16}$	56
			4.60	0.1811	4.600	$\frac{1}{8}$	29	$2\frac{3}{16}$	56
	14			0.1820	4.623	$\frac{1}{8}$	29	$2\frac{3}{16}$	56
	13		4.70	0.1850	4.700	$\frac{1}{8}$	29	$2\frac{3}{16}$	56
				0.1875	4.762	$\frac{1}{8}$	29	$2\frac{3}{16}$	56
	12		4.80	0.1890	4.800	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
	11			0.1910	4.851	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
			4.90	0.1929	4.900	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
	10			0.1935	4.915	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
	9			0.1960	4.978	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
$\frac{13}{64}$			5.00	0.1969	5.000	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
	8			0.1990	5.055	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
			5.10	0.2008	5.100	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
	7			0.2010	5.105	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
				0.2031	5.159	$\frac{13}{16}$	30	$2\frac{1}{4}$	57
	6			0.2040	5.182	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
			5.20	0.2047	5.200	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
	5			0.2055	5.220	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
			5.30	0.2087	5.300	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
	4			0.2090	5.309	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
$\frac{7}{32}$			5.40	0.2126	5.400	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
	3			0.2130	5.410	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
			5.50	0.2165	5.500	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
				0.2188	5.558	$\frac{11}{4}$	32	$2\frac{3}{8}$	60
			5.60	0.2205	5.600	$1\frac{5}{16}$	33	$2\frac{7}{16}$	62
	2			0.2210	5.613	$1\frac{5}{16}$	33	$2\frac{7}{16}$	62
			5.70	0.2244	5.700	$1\frac{5}{16}$	33	$2\frac{7}{16}$	62
	1			0.2280	5.791	$1\frac{5}{16}$	33	$2\frac{7}{16}$	62
			5.80	0.2283	5.800	$1\frac{5}{16}$	33	$2\frac{7}{16}$	62
			5.90	0.2323	5.900	$1\frac{5}{16}$	33	$2\frac{7}{16}$	62
$\frac{15}{64}$		<i>A</i>		0.2340	5.944	$1\frac{5}{16}$	33	$2\frac{7}{16}$	62
				0.2344	5.954	$1\frac{5}{16}$	33	$2\frac{7}{16}$	62
		<i>B</i>	6.00	0.2362	6.000	$\frac{13}{8}$	35	$2\frac{1}{2}$	64
				0.2380	6.045	$\frac{13}{8}$	35	$2\frac{1}{2}$	64
			6.10	0.2402	6.100	$\frac{13}{8}$	35	$2\frac{1}{2}$	64
		<i>C</i>		0.2420	6.147	$\frac{13}{8}$	35	$2\frac{1}{2}$	64
			6.20	0.2441	6.200	$\frac{13}{8}$	35	$2\frac{1}{2}$	64
		<i>D</i>		0.2460	6.248	$\frac{13}{8}$	35	$2\frac{1}{2}$	64
			6.30	0.2480	6.300	$\frac{13}{8}$	35	$2\frac{1}{2}$	64
		<i>E</i>		0.2500	6.350	$\frac{13}{8}$	35	$2\frac{1}{2}$	64

**TABLE 3A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — THROUGH 1 in. (25.4 mm) DIA.
FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
<i>D</i>				Decimal Inch Equivalent	Millimeter Equivalent	<i>F</i>		<i>L</i>	
Fraction	No.	Ltr.	mm			Inch	mm	Inch	mm
$\frac{17}{64}$		<i>F</i>	6.40	0.2520	6.400	$1\frac{7}{16}$	37	$2\frac{5}{8}$	67
			6.50	0.2559	6.500	$1\frac{7}{16}$	37	$2\frac{5}{8}$	67
		<i>G</i>	6.60	0.2598	6.600	$1\frac{7}{16}$	37	$2\frac{5}{8}$	67
				0.2610	6.629	$1\frac{7}{16}$	37	$2\frac{5}{8}$	67
	<i>H</i>		6.70	0.2638	6.700	$1\frac{7}{16}$	37	$2\frac{5}{8}$	67
				0.2656	6.746	$1\frac{7}{16}$	37	$2\frac{5}{8}$	67
				0.2660	6.756	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
			6.80	0.2677	6.800	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
			6.90	0.2717	6.900	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
	<i>I</i>			0.2720	6.909	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
			7.00	0.2756	7.000	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
		<i>J</i>		0.2770	7.036	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
			7.10	0.2795	7.100	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
$\frac{9}{32}$	<i>K</i>			0.2810	7.137	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
				0.2812	7.142	$1\frac{1}{2}$	38	$2\frac{1}{2}$	68
			7.20	0.2835	7.200	$1\frac{9}{16}$	40	$2\frac{3}{4}$	70
	<i>L</i>		7.30	0.2874	7.300	$1\frac{9}{16}$	40	$2\frac{3}{4}$	70
				0.2900	7.366	$1\frac{9}{16}$	40	$2\frac{3}{4}$	70
		<i>M</i>	7.40	0.2913	7.400	$1\frac{9}{16}$	40	$2\frac{3}{4}$	70
$\frac{19}{64}$				0.2950	7.493	$1\frac{9}{16}$	40	$2\frac{3}{4}$	70
			7.50	0.2953	7.500	$1\frac{9}{16}$	40	$2\frac{3}{4}$	70
		<i>N</i>		0.2969	7.541	$1\frac{9}{16}$	40	$2\frac{3}{4}$	70
			7.60	0.2992	7.600	$1\frac{5}{8}$	41	$2\frac{3}{8}$	71
				0.3020	7.671	$1\frac{5}{8}$	41	$2\frac{3}{8}$	71
			7.70	0.3031	7.700	$1\frac{5}{8}$	41	$2\frac{3}{8}$	71
			7.80	0.3071	7.800	$1\frac{5}{8}$	41	$2\frac{3}{8}$	71
$\frac{5}{16}$			7.90	0.3110	7.900	$1\frac{5}{8}$	41	$2\frac{3}{8}$	71
				0.3125	7.938	$1\frac{5}{8}$	41	$2\frac{3}{8}$	71
			8.00	0.3150	8.000	$1\frac{11}{16}$	43	$2\frac{5}{8}$	75
	<i>O</i>			0.3160	8.026	$1\frac{11}{16}$	43	$2\frac{5}{8}$	75
			8.10	0.3189	8.100	$1\frac{11}{16}$	43	$2\frac{5}{8}$	75
		<i>P</i>	8.20	0.3228	8.200	$1\frac{11}{16}$	43	$2\frac{5}{8}$	75
				0.3230	8.204	$1\frac{11}{16}$	43	$2\frac{5}{8}$	75
$\frac{21}{64}$	<i>Q</i>		8.30	0.3268	8.300	$1\frac{11}{16}$	43	$2\frac{5}{8}$	75
				0.3281	8.334	$1\frac{11}{16}$	43	$2\frac{5}{8}$	75
			8.40	0.3307	8.400	$1\frac{11}{16}$	43	3	76
				0.3320	8.433	$1\frac{11}{16}$	43	3	76
			8.50	0.3346	8.500	$1\frac{11}{16}$	43	3	76
			8.60	0.3386	8.600	$1\frac{11}{16}$	43	3	76

**TABLE 3A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — THROUGH 1 in. (25.4 mm) DIA.
FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

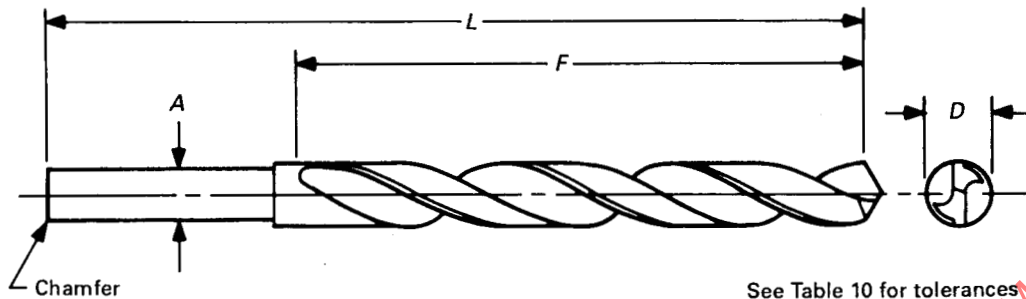
Diameter of Drill						Flute Length		Overall Length	
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	Ltr.	mm			Inch	mm	Inch	mm
11/32		R	8.70	0.3390	8.611	1 11/16	43	3	76
				0.3425	8.700	1 11/16	43	3	76
				0.3438	8.733	1 11/16	43	3	76
		S	8.80	0.3465	8.800	1 3/4	44	3 1/16	78
				0.3480	8.839	1 3/4	44	3 1/16	78
23/64		T	9.00	0.3504	8.900	1 3/4	44	3 1/16	78
				0.3543	9.000	1 3/4	44	3 1/16	78
				0.3580	9.093	1 3/4	44	3 1/16	78
		U	9.10	0.3583	9.100	1 3/4	44	3 1/16	78
				0.3594	9.129	1 3/4	44	3 1/16	78
3/8		V	9.20	0.3622	9.200	1 13/16	46	3 1/8	79
				0.3661	9.300	1 13/16	46	3 1/8	79
				0.3680	9.347	1 13/16	46	3 1/8	79
		W	9.40	0.3701	9.400	1 13/16	46	3 1/8	79
				0.3740	9.500	1 13/16	46	3 1/8	79
25/64		X	9.60	0.3750	9.525	1 13/16	46	3 1/8	79
				0.3770	9.576	1 7/8	48	3 1/4	83
				0.3780	9.600	1 7/8	48	3 1/4	83
		Y	9.70	0.3819	9.700	1 7/8	48	3 1/4	83
				0.3858	9.800	1 7/8	48	3 1/4	83
13/32		Z	10.00	0.3860	9.804	1 7/8	48	3 1/4	83
				0.3898	9.900	1 7/8	48	3 1/4	83
				0.3906	9.921	1 7/8	48	3 1/4	83
			10.20	0.3937	10.000	1 15/16	49	3 5/16	84
				0.3970	10.084	1 15/16	49	3 5/16	84
27/64			10.40	0.4016	10.200	1 15/16	49	3 5/16	84
				0.4040	10.262	1 15/16	49	3 5/16	84
				0.4062	10.320	1 15/16	49	3 5/16	84
			10.50	0.4130	10.490	2	51	3 3/8	86
				0.4134	10.500	2	51	3 3/8	86
7/16			10.80	0.4219	10.716	2	51	3 3/8	86
				0.4252	10.800	2 1/16	52	3 7/16	87
				0.4331	11.000	2 1/16	52	3 7/16	87
			11.00	0.4375	11.112	2 1/16	52	3 7/16	87
				0.4409	11.200	2 1/8	54	3 3/16	90
29/64			11.50	0.4528	11.500	2 1/8	54	3 3/16	90
				0.4531	11.509	2 1/8	54	3 3/16	90
				0.4646	11.800	2 1/8	54	3 5/8	92
				0.4688	11.908	2 1/8	54	3 5/8	92
15/32			12.00	0.4724	12.000	2 3/16	56	3 11/16	94

**TABLE 3A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — THROUGH 1 in. (25.4 mm) DIA.
FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

Diameter of Drill						Flute Length		Overall Length	
D				Decimal Inch Equivalent	Millimeter Equivalent	F		L	
Fraction	No.	Ltr.	mm			Inch	mm	Inch	mm
31/64			12.20	0.4803	12.200	23/16	56	31 1/16	94
				0.4844	12.304	23/16	56	31 1/16	94
			12.50	0.4921	12.500	21/4	57	33/4	95
1/2				0.5000	12.700	21/4	57	33/4	95
			12.80	0.5039	12.800	23/8	60	37/8	98
33/64			13.00	0.5118	13.000	23/8	60	37/8	98
				0.5156	13.096	23/8	60	37/8	98
			13.20	0.5197	13.200	23/8	60	37/8	98
17/32				0.5312	13.492	23/8	60	37/8	98
			13.50	0.5315	13.500	23/8	60	37/8	98
35/64			13.80	0.5433	13.800	21/2	64	4	102
				0.5469	13.891	21/2	64	4	102
			14.00	0.5512	14.000	21/2	64	4	102
			14.25	0.5610	14.250	21/2	64	4	102
9/16				0.5625	14.288	21/2	64	4	102
			14.50	0.5709	14.500	25/8	67	4 1/8	105
37/64				0.5781	14.684	25/8	67	4 1/8	105
			14.75	0.5807	14.750	25/8	67	4 1/8	105
			15.00	0.5906	15.000	25/8	67	4 1/8	105
19/32				0.5938	15.083	25/8	67	4 1/8	105
			15.25	0.6004	15.250	23/4	70	4 1/4	108
39/64				0.6094	15.479	23/4	70	4 1/4	108
			15.50	0.6102	15.500	23/4	70	4 1/4	108
			15.75	0.6201	15.750	23/4	70	4 1/4	108
5/8				0.6250	15.815	23/4	70	4 1/4	108
			16.00	0.6299	16.000	27/8	73	4 1/2	114
41/64			16.25	0.6398	16.250	27/8	73	4 1/2	114
				0.6406	16.271	27/8	73	4 1/2	114
			16.50	0.6496	16.500	27/8	73	4 1/2	114
21/32				0.6562	16.667	27/8	73	4 1/2	114
			16.75	0.6594	16.750	27/8	73	4 5/8	117
43/64				0.6693	17.000	27/8	73	4 5/8	117
			17.00	0.6719	17.066	27/8	73	4 5/8	117
			17.25	0.6791	17.250	27/8	73	4 5/8	117
11/16				0.6875	17.462	27/8	73	4 5/8	117
			17.50	0.6890	17.500	3	76	4 3/4	121
45/64				0.7031	17.859	3	76	4 3/4	121
			18.00	0.7087	18.000	3	76	4 3/4	121
23/32				0.7188	18.258	3	76	4 3/4	121
			18.50	0.7283	18.500	3 1/8	79	5	127

**TABLE 3A GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — THROUGH 1 in. (25.4 mm) DIA.
FRACTIONAL, NUMBER, LETTER AND METRIC SIZES (CONT'D)**

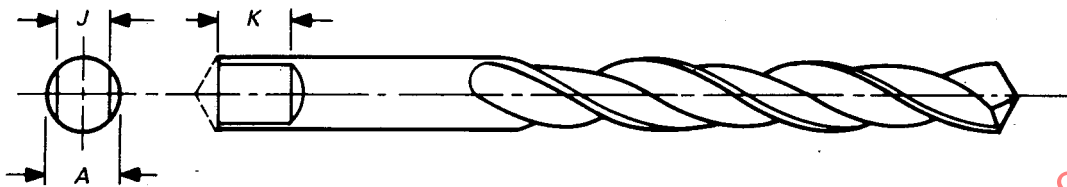
Diameter of Drill						Flute Length		Overall Length	
<i>D</i>				Decimal Inch Equivalent	Millimeter Equivalent	<i>F</i>		<i>L</i>	
Fraction	No.	Ltr.	mm			Inch	mm	Inch	mm
$\frac{47}{64}$			19.00	0.7344	18.654	$\frac{3}{8}$	79	5	127
				0.7480	19.000	$\frac{3}{8}$	79	5	127
$\frac{3}{4}$				0.7500	19.050	$\frac{3}{8}$	79	5	127
$\frac{49}{64}$			19.50	0.7656	19.446	$\frac{3}{4}$	83	$5\frac{1}{8}$	130
				0.7677	19.500	$\frac{3}{4}$	83	$5\frac{1}{8}$	130
$\frac{25}{32}$			20.00	0.7812	19.845	$\frac{3}{4}$	83	$5\frac{1}{8}$	130
				0.7874	20.000	$\frac{3}{8}$	86	$5\frac{1}{4}$	133
$\frac{51}{64}$				0.7969	20.241	$\frac{3}{8}$	86	$5\frac{1}{4}$	133
			20.50	0.8071	20.500	$\frac{3}{8}$	86	$5\frac{1}{4}$	133
$\frac{13}{16}$				0.8125	20.638	$\frac{3}{8}$	86	$5\frac{1}{4}$	133
			21.00	0.8268	21.000	$\frac{3}{2}$	89	$5\frac{3}{8}$	137
$\frac{53}{64}$				0.8281	21.034	$\frac{3}{2}$	89	$5\frac{3}{8}$	137
$\frac{27}{32}$			21.50	0.8438	21.433	$\frac{3}{2}$	89	$5\frac{3}{8}$	137
				0.8465	21.500	$\frac{3}{2}$	89	$5\frac{1}{2}$	140
$\frac{55}{64}$				0.8594	21.829	$\frac{3}{2}$	89	$5\frac{1}{2}$	140
			22.00	0.8661	22.000	$\frac{3}{2}$	89	$5\frac{1}{2}$	140
$\frac{7}{8}$				0.8750	22.225	$\frac{3}{2}$	89	$5\frac{1}{2}$	140
			22.50	0.8858	22.500	$\frac{3}{8}$	92	$5\frac{5}{8}$	143
$\frac{57}{64}$				0.8906	22.621	$\frac{3}{8}$	92	$5\frac{5}{8}$	143
			23.00	0.9055	23.000	$\frac{3}{8}$	92	$5\frac{5}{8}$	143
$\frac{29}{32}$				0.9062	23.017	$\frac{5}{8}$	92	$5\frac{5}{8}$	143
$\frac{59}{64}$			23.50	0.9219	23.416	$\frac{3}{4}$	95	$5\frac{3}{4}$	146
				0.9252	23.500	$\frac{3}{4}$	95	$5\frac{3}{4}$	146
$\frac{15}{16}$				0.9375	23.812	$\frac{3}{4}$	95	$5\frac{3}{4}$	146
			24.00	0.9449	24.000	$\frac{3}{8}$	98	$5\frac{7}{8}$	149
$\frac{61}{64}$				0.9531	24.209	$\frac{3}{8}$	98	$5\frac{7}{8}$	149
			24.50	0.9646	24.500	$\frac{3}{8}$	98	$5\frac{7}{8}$	149
$\frac{31}{32}$				0.9688	24.608	$\frac{3}{8}$	98	$5\frac{7}{8}$	149
			25.00	0.9843	25.000	4	102	6	152
$\frac{63}{64}$				0.9844	25.004	4	102	6	152
1				1.0000	25.400	4	102	6	152



See Table 10 for tolerances

**TABLE 3B GENERAL DIMENSIONS OF STRAIGHT SHANK TWIST DRILLS —
SCREW MACHINE LENGTH — OVER 1 in. (25.4 mm) DIA.
FRACTIONAL AND METRIC SIZES**

Diameter of Drill				Flute Length		Overall Length		Shank Diameter	
D		Decimal Inch Equivalent	Millimeter Equivalent	F		L		A	
Frac.	mm			Inch	mm	Inch	mm	Decimal Inch	mm
$1\frac{1}{16}$	25.50	1.0039	25.500	4	102	$6\frac{1}{4}$	159	0.9843	25.00
	26.00	1.0236	26.000	4	102	$6\frac{1}{4}$	159	0.9843	25.00
		1.0625	26.988	4	102	$6\frac{1}{4}$	159	1.0000	25.40
$1\frac{1}{8}$	28.00	1.1024	28.000	4	102	$6\frac{3}{8}$	162	0.9843	25.00
		1.1250	28.575	4	102	$6\frac{3}{8}$	162	1.0000	25.40
$1\frac{3}{16}$	30.00	1.1811	30.000	$4\frac{1}{4}$	108	$6\frac{5}{8}$	168	0.9843	25.00
		1.1875	30.162	$4\frac{1}{4}$	108	$6\frac{5}{8}$	168	1.0000	25.40
		1.2500	31.750	$4\frac{3}{8}$	111	$6\frac{3}{4}$	171	1.0000	25.40
$1\frac{1}{4}$	32.00	1.2598	32.000	$4\frac{3}{8}$	111	7	178	1.2402	31.50
		1.3125	33.338	$4\frac{3}{8}$	111	7	178	1.2500	31.75
$1\frac{5}{16}$	34.00	1.3386	34.000	$4\frac{1}{2}$	114	$7\frac{1}{8}$	181	1.2402	31.50
		1.3750	34.925	$4\frac{1}{2}$	114	$7\frac{1}{8}$	181	1.2500	31.75
	36.00	1.4173	36.000	$4\frac{3}{4}$	121	$7\frac{3}{8}$	187	1.2402	31.50
$1\frac{7}{16}$		1.4375	36.512	$4\frac{3}{4}$	121	$7\frac{3}{8}$	187	1.2500	31.75
	38.00	1.4961	38.000	$4\frac{7}{8}$	124	$7\frac{1}{2}$	190	1.2402	31.50
$1\frac{1}{2}$		1.5000	38.100	$4\frac{7}{8}$	124	$7\frac{1}{2}$	190	1.2500	31.75
$1\frac{9}{16}$		1.5625	39.688	$4\frac{7}{8}$	124	$7\frac{3}{4}$	197	1.5000	38.10
		1.5748	40.000	$4\frac{7}{8}$	124	$7\frac{3}{4}$	197	1.4961	38.00
	40.00	1.6250	41.275	$4\frac{7}{8}$	124	$7\frac{3}{4}$	197	1.5000	38.10
$1\frac{5}{8}$	42.00	1.6535	42.000	$5\frac{1}{8}$	130	8	203	1.4961	38.00
		1.6875	42.862	$5\frac{1}{8}$	130	8	203	1.5000	38.10
$1\frac{3}{4}$	44.00	1.7323	44.000	$5\frac{1}{8}$	130	8	203	1.4961	38.00
		1.7500	44.450	$5\frac{1}{8}$	130	8	203	1.5000	38.10
	46.00	1.8110	46.000	$5\frac{3}{8}$	137	$8\frac{1}{4}$	210	1.4961	38.00
$1\frac{13}{16}$		1.8125	46.038	$5\frac{3}{8}$	137	$8\frac{1}{4}$	210	1.5000	38.10
		1.8750	47.625	$5\frac{3}{8}$	137	$8\frac{1}{4}$	210	1.5000	38.10
$1\frac{7}{8}$	48.00	1.8898	48.000	$5\frac{5}{8}$	143	$8\frac{1}{2}$	216	1.4961	38.00
		1.9375	49.212	$5\frac{5}{8}$	143	$8\frac{1}{2}$	216	1.5000	38.10
	50.00	1.9685	50.000	$5\frac{5}{8}$	143	$8\frac{1}{2}$	216	1.4961	38.00
2		2.0000	50.800	$5\frac{5}{8}$	143	$8\frac{1}{2}$	216	1.5000	38.10

**TABLE 4 GENERAL DIMENSIONS OF TANGS FOR STRAIGHT SHANK DRILLS¹**

Nominal Diameter of Drill Shank		Thickness of Tang				Length of Tang	
		J					
A		Inches		Millimeters		K	
Inches	Millimeters	Max.	Min.	Max.	Min.	Inches	Millimeters
1/8 through 3/16	3.18 through 4.76	0.094	0.090	2.39	2.29	9/32	7.0
Over 3/16 through 1/4	Over 4.76 through 6.35	0.122	0.118	3.10	3.00	5/16	8.0
Over 1/4 through 5/16	Over 6.35 through 7.94	0.162	0.158	4.11	4.01	11/32	8.5
Over 5/16 through 3/8	Over 7.94 through 9.53	0.203	0.199	5.16	5.06	3/8	9.5
Over 3/8 through 15/32	Over 9.53 through 11.91	0.243	0.239	6.17	6.07	7/16	11.0
Over 15/32 through 9/16	Over 11.91 through 14.29	0.303	0.297	7.70	7.55	1/2	12.5
Over 9/16 through 21/32	Over 14.29 through 16.67	0.373	0.367	9.47	9.32	9/16	14.5
Over 21/32 through 3/4	Over 16.67 through 19.05	0.443	0.437	11.25	11.10	5/8	16.0
Over 3/4 through 7/8	Over 19.05 through 22.23	0.514	0.508	13.05	12.90	11/16	17.5
Over 7/8 through 1	Over 22.23 through 25.40	0.609	0.601	15.47	15.27	3/4	19.0
Over 1 through 1 3/16	Over 25.40 through 30.16	0.700	0.692	17.78	17.58	1 3/16	20.5
Over 1 3/16 through 1 3/8	Over 30.16 through 34.93	0.817	0.809	20.75	20.55	7/8	22.0

NOTE:

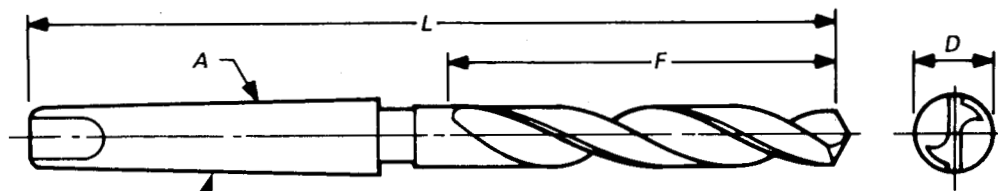
(1) To fit split sleeve collet type drill drivers, see ANSI B94.35.

Concentricity of Tang

Thickness of Tang (T)		Total Indicator Variation (T.I.V.) ¹	
Inches	Millimeters	Inches	Millimeters
From 0.090 through 0.243	From 2.29 through 6.17	0.006	0.16
Over 0.243 through 0.443	Over 6.17 through 11.25	0.007	0.18
Over 0.443 through 0.609	Over 11.25 through 15.47	0.008	0.21
Over 0.609 through 0.817	Over 15.47 through 20.75	0.009	0.23

NOTE:

(1) Method of measurement: Place shank of drill in V-block, level the tang surface. Set the tip of the dial indicator on the tang and set the indicator to zero. Rotate the drill 180 deg. and note the indicator reading.



Taper shank dimensions and tolerances in accordance with American National Standard B5.10, Machine Tapers.

See Table 10 for drill tolerances

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES**

Diameter of Drill				Regular Shank (Note 1)				
D		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number A	Flute Length F		Overall Length L	
					Inch	Millimeters	Inch	Millimeters
1/8	3.00	0.1181	3.000	1	1 7/8	48	5 1/8	130
		0.1250	3.175	1	1 7/8	48	5 1/8	130
	3.20	0.1260	3.200	1	2 1/8	54	5 3/8	137
9/64	3.50	0.1378	3.500	1	2 1/8	54	5 3/8	137
		0.1406	3.571	1	2 1/8	54	5 3/8	137
	3.80	0.1496	3.800	1	2 1/8	54	5 3/8	137
5/32		0.1562	3.967	1	2 1/8	54	5 3/8	137
	4.00	0.1575	4.000	1	2 1/2	64	5 3/4	146
	4.20	0.1654	4.200	1	2 1/2	64	5 3/4	146
11/64		0.1719	4.366	1	2 1/2	64	5 3/4	146
	4.50	0.1772	4.500	1	2 1/2	64	5 3/4	146
		0.1875	4.762	1	2 1/2	64	5 3/4	146
3/16	4.80	0.1890	4.800	1	2 3/4	70	6	152
	5.00	0.1969	5.000	1	2 3/4	70	6	152
		0.2031	5.159	1	2 3/4	70	6	152
13/64	5.20	0.2047	5.200	1	2 3/4	70	6	152
	5.50	0.2165	5.500	1	2 3/4	70	6	152
		0.2188	5.558	1	2 3/4	70	6	152
7/32	5.80	0.2283	5.800	1	2 7/8	73	6 1/8	156
		0.2344	5.954	1	2 7/8	73	6 1/8	156
	6.00	0.2362	6.000	1	2 7/8	73	6 1/8	156
15/64	6.20	0.2441	6.200	1	2 7/8	73	6 1/8	156
		0.2500	6.350	1	2 7/8	73	6 1/8	156
	6.50	0.2559	6.500	1	3	76	6 1/4	159
1/4		0.2656	6.746	1	3	76	6 1/4	159
	6.80	0.2677	6.800	1	3	76	6 1/4	159
	7.00	0.2756	7.000	1	3	76	6 1/4	159
9/32		0.2812	7.142	1	3	76	6 1/4	159
	7.20	0.2835	7.200	1	3 1/8	79	6 3/8	162
	7.50	0.2953	7.500	1	3 1/8	79	6 3/8	162

NOTE:

(1) No shanks smaller or larger than regular are used for these sizes.

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Regular Shank				
<i>D</i>		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number	Flute Length		Overall Length	
Fraction	Millimeters				<i>F</i>		<i>L</i>	
				<i>A</i>	Inch	Millimeters	Inch	Millimeters
$\frac{19}{64}$		0.2969	7.541	1	$3\frac{1}{8}$	79	$6\frac{3}{8}$	162
	7.80	0.3071	7.800	1	$3\frac{1}{8}$	79	$6\frac{3}{8}$	162
$\frac{5}{16}$		0.3125	7.938	1	$3\frac{1}{8}$	79	$6\frac{3}{8}$	162
	8.00	0.3150	8.000	1	$3\frac{1}{4}$	83	$6\frac{1}{2}$	165
	8.20	0.3228	8.200	1	$3\frac{1}{4}$	83	$6\frac{1}{2}$	165
$\frac{21}{64}$		0.3281	8.334	1	$3\frac{1}{4}$	83	$6\frac{1}{2}$	165
	8.50	0.3346	8.500	1	$3\frac{1}{4}$	83	$6\frac{1}{2}$	165
$\frac{11}{32}$		0.3438	8.733	1	$3\frac{1}{4}$	83	$6\frac{1}{2}$	165
	8.80	0.3465	8.800	1	$3\frac{1}{2}$	89	$6\frac{3}{4}$	171
	9.00	0.3543	9.000	1	$3\frac{1}{2}$	89	$6\frac{3}{4}$	171
$\frac{23}{64}$		0.3594	9.129	1	$3\frac{1}{2}$	89	$6\frac{3}{4}$	171
	9.20	0.3622	9.200	1	$3\frac{1}{2}$	89	$6\frac{3}{4}$	171
	9.50	0.3740	9.500	1	$3\frac{1}{2}$	89	$6\frac{3}{4}$	171
$\frac{3}{8}$		0.3750	9.525	1	$3\frac{1}{2}$	89	$6\frac{3}{4}$	171
	9.80	0.3858	9.800	1	$3\frac{5}{8}$	92	7	178
$\frac{25}{64}$		0.3906	9.921	1	$3\frac{5}{8}$	92	7	178
	10.00	0.3937	10.000	1	$3\frac{5}{8}$	92	7	178
	10.20	0.4016	10.200	1	$3\frac{5}{8}$	92	7	178
$\frac{13}{32}$		0.4063	10.319	1	$3\frac{5}{8}$	92	7	178
	10.50	0.4134	10.500	1	$3\frac{7}{8}$	98	$7\frac{1}{4}$	184
$\frac{27}{64}$		0.4219	10.716	1	$3\frac{7}{8}$	98	$7\frac{1}{4}$	184
	10.80	0.4252	10.800	1	$3\frac{7}{8}$	98	$7\frac{1}{4}$	184
	11.00	0.4331	11.000	1	$3\frac{7}{8}$	98	$7\frac{1}{4}$	184
$\frac{7}{16}$		0.4375	11.112	1	$3\frac{7}{8}$	98	$7\frac{1}{4}$	184
	11.20	0.4409	11.200	1	$4\frac{1}{8}$	105	$7\frac{1}{2}$	190
	11.50	0.4528	11.500	1	$4\frac{1}{8}$	105	$7\frac{1}{2}$	190
$\frac{29}{64}$		0.4531	11.509	1	$4\frac{1}{8}$	105	$7\frac{1}{2}$	190
	11.80	0.4646	11.800	1	$4\frac{1}{8}$	105	$7\frac{1}{2}$	190
$\frac{15}{32}$		0.4688	11.908	1	$4\frac{1}{8}$	105	$7\frac{1}{2}$	190
	12.00	0.4724	12.000	2	$4\frac{3}{8}$	111	$8\frac{1}{4}$	210
	12.20	0.4803	12.200	2	$4\frac{3}{8}$	111	$8\frac{1}{4}$	210
$\frac{31}{64}$		0.4844	12.304	2	$4\frac{3}{8}$	111	$8\frac{1}{4}$	210
	12.50	0.4921	12.500	2	$4\frac{3}{8}$	111	$8\frac{1}{4}$	210
$\frac{1}{2}$		0.5000	12.700	2	$4\frac{3}{8}$	111	$8\frac{1}{4}$	210
	12.80	0.5039	12.800	2	$4\frac{5}{8}$	117	$8\frac{1}{2}$	216
	13.00	0.5118	13.000	2	$4\frac{5}{8}$	117	$8\frac{1}{2}$	216
$\frac{33}{64}$		0.5156	13.096	2	$4\frac{5}{8}$	117	$8\frac{1}{2}$	216
	13.20	0.5197	13.200	2	$4\frac{5}{8}$	117	$8\frac{1}{2}$	216
$\frac{17}{32}$		0.5312	13.492	2	$4\frac{5}{8}$	117	$8\frac{1}{2}$	216
	13.50	0.5315	13.500	2	$4\frac{5}{8}$	117	$8\frac{1}{2}$	216

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

[illegible]

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Regular Shank				
<i>D</i>		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number	Flute Length		Overall Length	
Fraction	Millimeters				<i>F</i>		<i>L</i>	
				<i>A</i>	Inch	Millimeters	Inch	Millimeters
$\frac{35}{64}$	13.80	0.5433	13.800	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
		0.5469	13.891	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
	14.00	0.5512	14.000	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
	14.25	0.5610	14.250	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
$\frac{9}{16}$		0.5625	14.288	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
	14.50	0.5709	14.500	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
		0.5781	14.684	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
	14.75	0.5807	14.750	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
$\frac{37}{64}$	15.00	0.5906	15.000	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
		0.5938	15.083	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
	15.25	0.6004	15.250	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
		0.6094	15.479	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
$\frac{19}{32}$	15.50	0.6102	15.500	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
		0.6201	15.750	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
	15.75	0.6250	15.815	2	$\frac{47}{8}$	124	$\frac{83}{4}$	222
		0.6299	16.000	2	$\frac{51}{8}$	130	9	229
$\frac{39}{64}$	16.00	0.6299	16.000	2	$\frac{51}{8}$	130	9	229
	16.25	0.6398	16.250	2	$\frac{51}{8}$	130	9	229
		0.6406	16.271	2	$\frac{51}{8}$	130	9	229
	16.50	0.6496	16.500	2	$\frac{51}{8}$	130	9	229
$\frac{5}{8}$		0.6562	16.667	2	$\frac{51}{8}$	130	9	229
	16.75	0.6594	16.750	2	$\frac{53}{8}$	137	$9\frac{1}{4}$	235
		0.6693	17.000	2	$\frac{53}{8}$	137	$9\frac{1}{4}$	235
	17.00	0.6719	17.066	2	$\frac{53}{8}$	137	$9\frac{1}{4}$	235
$\frac{43}{64}$	17.25	0.6791	17.250	2	$\frac{53}{8}$	137	$9\frac{1}{4}$	235
		0.6875	17.462	2	$\frac{53}{8}$	137	$9\frac{1}{4}$	235
	17.50	0.6880	17.500	2	$\frac{55}{8}$	143	$9\frac{1}{2}$	241
		0.7031	17.859	2	$\frac{55}{8}$	143	$9\frac{1}{2}$	241
$\frac{45}{64}$	18.00	0.7087	18.000	2	$\frac{55}{8}$	143	$9\frac{1}{2}$	241
		0.7188	18.258	2	$\frac{55}{8}$	143	$9\frac{1}{2}$	241
	18.50	0.7283	18.500	2	$\frac{57}{8}$	149	$9\frac{3}{4}$	248
		0.7344	18.654	2	$\frac{57}{8}$	149	$9\frac{3}{4}$	248
$\frac{47}{64}$	19.00	0.7480	19.000	2	$\frac{57}{8}$	149	$9\frac{3}{4}$	248
		0.7500	19.050	2	$\frac{57}{8}$	149	$9\frac{3}{4}$	248
		0.7656	19.446	2	6	152	$9\frac{7}{8}$	251
	19.50	0.7677	19.500	2	6	152	$9\frac{7}{8}$	251
$\frac{49}{64}$		0.7812	19.843	2	6	152	$9\frac{7}{8}$	251
	20.00	0.7874	20.000	3	$\frac{61}{8}$	156	$10\frac{3}{4}$	273
		0.7969	20.241	3	$\frac{61}{8}$	156	$10\frac{3}{4}$	273
	20.50	0.8071	20.500	3	$\frac{61}{8}$	156	$10\frac{3}{4}$	273
$\frac{13}{16}$		0.8125	20.638	3	$\frac{61}{8}$	156	$10\frac{3}{4}$	273

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

[illegible]

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Regular Shank				
<i>D</i>		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number	Flute Length		Overall Length	
Fraction	Millimeters				<i>F</i>		<i>L</i>	
				<i>A</i>	Inch	Millimeters	Inch	Millimeters
	21.00	0.8268	21.000	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
53/64		0.8281	21.034	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
27/32		0.8438	21.433	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
	21.50	0.8465	21.500	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
55/64		0.8594	21.829	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
	22.00	0.8661	22.000	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
7/8		0.8750	22.225	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
	22.50	0.8858	22.500	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
57/64		0.8906	22.621	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
	23.00	0.9055	23.000	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
29/32		0.9062	23.017	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
59/64		0.9219	23.416	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
	23.50	0.9252	23.500	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
15/16		0.9375	23.862	3	6 $\frac{1}{8}$	156	10 $\frac{3}{4}$	273
	24.00	0.9449	24.000	3	6 $\frac{3}{8}$	162	11	279
61/64		0.9531	24.209	3	6 $\frac{3}{8}$	162	11	279
	24.50	0.9646	24.500	3	6 $\frac{3}{8}$	162	11	279
31/32		0.9688	24.608	3	6 $\frac{3}{8}$	162	11	279
	25.00	0.9843	25.000	3	6 $\frac{3}{8}$	162	11	279
63/64		0.9844	25.004	3	6 $\frac{3}{8}$	162	11	279
1		1.0000	25.400	3	6 $\frac{3}{8}$	162	11	279
	25.50	1.0039	25.500	3	6 $\frac{1}{2}$	165	11 $\frac{1}{8}$	283
1 1/64		1.0156	25.796	3	6 $\frac{1}{2}$	165	11 $\frac{1}{8}$	283
	26.00	1.0236	26.000	3	6 $\frac{1}{2}$	165	11 $\frac{1}{8}$	283
1 1/32		1.0312	26.192	3	6 $\frac{1}{2}$	165	11 $\frac{1}{8}$	283
	26.50	1.0433	26.500	3	6 $\frac{5}{8}$	168	11 $\frac{1}{4}$	286
1 3/64		1.0469	26.591	3	6 $\frac{5}{8}$	168	11 $\frac{1}{4}$	286
1 1/16		1.0625	26.988	3	6 $\frac{5}{8}$	168	11 $\frac{1}{4}$	286
	27.00	1.0630	27.000	3	6 $\frac{5}{8}$	168	11 $\frac{1}{4}$	286
1 5/64		1.0781	27.384	4	6 $\frac{7}{8}$	175	12 $\frac{1}{2}$	318
	27.50	1.0827	27.500	4	6 $\frac{7}{8}$	175	12 $\frac{1}{2}$	318
1 3/32		1.0938	27.783	4	6 $\frac{7}{8}$	175	12 $\frac{1}{2}$	318
	28.00	1.1024	28.000	4	7 $\frac{1}{8}$	181	12 $\frac{3}{4}$	324
1 7/64		1.1094	28.179	4	7 $\frac{1}{8}$	181	12 $\frac{3}{4}$	324
	28.50	1.1220	28.500	4	7 $\frac{1}{8}$	181	12 $\frac{3}{4}$	324
1 1/8		1.1250	28.575	4	7 $\frac{1}{8}$	181	12 $\frac{3}{4}$	324
1 9/64		1.1406	28.971	4	7 $\frac{1}{4}$	184	12 $\frac{7}{8}$	327
	29.00	1.1417	29.000	4	7 $\frac{1}{4}$	184	12 $\frac{7}{8}$	327
1 5/32		1.1562	29.367	4	7 $\frac{1}{4}$	184	12 $\frac{7}{8}$	327
	29.50	1.1614	29.500	4	7 $\frac{3}{8}$	187	13	330

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

[illegible]

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Regular Shank				
<i>D</i>		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number	Flute Length		Overall Length	
Fraction	Millimeters				<i>F</i>		<i>L</i>	
				<i>A</i>	Inch	Millimeters	Inch	Millimeters
1 ¹¹ / ₆₄		1.1719	29.766	4	7 ³ / ₈	187	13	330
	30.00	1.1811	30.000	4	7 ³ / ₈	187	13	330
1 ³ / ₁₆		1.1875	30.162	4	7 ³ / ₈	187	13	330
	30.50	1.2008	30.500	4	7 ¹ / ₂	190	13 ¹ / ₈	333
1 ¹³ / ₆₄		1.2031	30.559	4	7 ¹ / ₂	190	13 ¹ / ₈	333
1 ⁷ / ₃₂		1.2188	30.958	4	7 ¹ / ₂	190	13 ¹ / ₈	333
	31.00	1.2205	31.000	4	7 ⁷ / ₈	200	13 ¹ / ₂	343
1 ¹⁵ / ₆₄		1.2344	31.354	4	7 ⁷ / ₈	200	13 ¹ / ₂	343
	31.50	1.2402	31.500	4	7 ⁷ / ₈	200	13 ¹ / ₂	343
1 ¹ / ₄		1.2500	31.750	4	7 ⁷ / ₈	200	13 ¹ / ₂	343
	32.00	1.2598	32.000	4	8 ¹ / ₂	216	14 ¹ / ₈	359
1 ¹⁷ / ₆₄		1.2656	32.146	4	8 ¹ / ₂	216	14 ¹ / ₈	359
	32.50	1.2795	32.500	4	8 ¹ / ₂	216	14 ¹ / ₈	359
1 ⁹ / ₃₂		1.2812	32.542	4	8 ¹ / ₂	216	14 ¹ / ₈	359
1 ¹⁹ / ₆₄		1.2969	32.941	4	8 ⁵ / ₈	219	14 ¹ / ₄	362
	33.00	1.2992	33.000	4	8 ⁵ / ₈	219	14 ¹ / ₄	362
1 ⁵ / ₁₆		1.3125	33.338	4	8 ⁵ / ₈	219	14 ¹ / ₄	362
	33.50	1.3189	33.500	4	8 ³ / ₄	222	14 ³ / ₈	365
1 ²¹ / ₆₄		1.3281	33.734	4	8 ³ / ₄	222	14 ³ / ₈	365
	34.00	1.3386	34.000	4	8 ³ / ₄	222	14 ³ / ₈	365
1 ¹¹ / ₃₂		1.3438	34.133	4	8 ³ / ₄	222	14 ³ / ₈	365
	34.50	1.3583	34.500	4	8 ⁷ / ₈	225	14 ¹ / ₂	368
1 ²³ / ₆₄		1.3594	34.529	4	8 ⁷ / ₈	225	14 ¹ / ₂	368
1 ³ / ₈		1.3750	34.925	4	8 ⁷ / ₈	225	14 ¹ / ₂	368
	35.00	1.3780	35.000	4	9	229	14 ⁵ / ₈	371
1 ²⁵ / ₆₄		1.3906	35.321	4	9	229	14 ⁵ / ₈	371
	35.50	1.3976	35.500	4	9	229	14 ⁵ / ₈	371
1 ¹³ / ₃₂		1.4062	35.717	4	9	229	14 ⁵ / ₈	371
	36.00	1.4173	36.000	4	9 ¹ / ₈	232	14 ³ / ₄	375
1 ²⁷ / ₆₄		1.4219	36.116	4	9 ¹ / ₈	232	14 ³ / ₄	375
	36.50	1.4370	36.500	4	9 ¹ / ₈	232	14 ³ / ₄	375
1 ⁷ / ₁₆		1.4375	36.512	4	9 ¹ / ₈	232	14 ³ / ₄	375
1 ²⁹ / ₆₄		1.4531	36.909	4	9 ¹ / ₄	235	14 ⁷ / ₈	378
	37.00	1.4567	37.000	4	9 ¹ / ₄	235	14 ⁷ / ₈	378
1 ⁵ / ₃₂		1.4688	37.308	4	9 ¹ / ₄	235	14 ⁷ / ₈	378
1 ³¹ / ₆₄		1.4764	37.500	4	9 ³ / ₈	238	15	381
	37.50	1.4844	37.704	4	9 ³ / ₈	238	15	381
1 ¹ / ₂		1.4961	38.000	4	9 ³ / ₈	238	15	381
	38.00	1.5000	38.100	4	9 ³ / ₈	238	15	381
1 ³³ / ₆₄		1.5156	38.496	...	...	...	...	...

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

[illegible]

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Regular Shank				
<i>D</i>		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number	Flute Length		Overall Length	
Fraction	Millimeters				<i>F</i>		<i>L</i>	
				<i>A</i>	Inch	Millimeters	Inch	Millimeters
$1^{17}/_{32}$		1.5312	38.892	5	$9^{3}/_{8}$	238	$16^{3}/_{8}$	416
	39.00	1.5354	39.000	5	$9^{5}/_{8}$	244	$16^{5}/_{8}$	422
$1^{35}/_{64}$		1.5469	39.291	...	...	...	...	...
$1^{9}/_{16}$		1.5625	39.688	5	$9^{5}/_{8}$	244	$16^{5}/_{8}$	422
	40.00	1.5748	40.000	5	$9^{7}/_{8}$	251	$16^{7}/_{8}$	429
$1^{37}/_{64}$		1.5781	40.084	...	...	...	...	...
$1^{19}/_{32}$		1.5938	40.483	5	$9^{7}/_{8}$	251	$16^{7}/_{8}$	429
$1^{39}/_{64}$		1.6094	40.879	...	...	...	...	...
	41.00	1.6142	41.000	5	10	254	17	432
$1^{5}/_{8}$		1.6250	41.275	5	10	254	17	432
$1^{41}/_{64}$		1.6406	41.671	...	...	...	...	...
	42.00	1.6535	42.000	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
$1^{21}/_{32}$		1.6562	42.067	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
$1^{43}/_{64}$		1.6719	42.466	...	...	...	...	...
$1^{11}/_{16}$		1.6875	42.862	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
	43.00	1.6929	43.000	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
$1^{45}/_{64}$		1.7031	43.259	...	...	...	...	...
$1^{23}/_{32}$		1.7188	43.658	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
	44.00	1.7323	44.000	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
$1^{47}/_{64}$		1.7344	44.054	...	...	...	...	...
$1^{3}/_{4}$		1.7500	44.450	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
	45.00	1.7717	45.000	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
$1^{25}/_{32}$		1.7812	45.242	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
	46.00	1.8110	46.000	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
$1^{13}/_{16}$		1.8125	46.038	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
$1^{27}/_{32}$		1.8438	46.833	5	$10^{1}/_{8}$	257	$17^{1}/_{8}$	435
	47.00	1.8504	47.000	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
$1^{7}/_{8}$		1.8750	47.625	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
	48.00	1.8898	48.000	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
$1^{29}/_{32}$		1.9062	48.417	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
	49.00	1.9291	49.000	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
$1^{15}/_{16}$		1.9375	49.212	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
	50.00	1.9685	50.000	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
$1^{31}/_{32}$		1.9688	50.008	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
2		2.0000	50.800	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
	51.00	2.0079	51.000	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
$2^{1}/_{32}$		2.0312	51.592	5	$10^{3}/_{8}$	264	$17^{3}/_{8}$	441
	52.00	2.0472	52.000	5	$10^{1}/_{4}$	260	$17^{3}/_{8}$	441
$2^{1}/_{16}$		2.0625	52.388	5	$10^{1}/_{4}$	260	$17^{3}/_{8}$	441
	53.00	2.0866	53.000	5	$10^{1}/_{4}$	260	$17^{3}/_{8}$	441

Upper Number	<i>F</i>		<i>L</i>		Paper Number	<i>F</i>		<i>L</i>	
A	Inch	Millimeters	Inch	Millimeters	A	Inch	Millimeters	Inch	Millimeters
4	9 ³ / ₈	238	15	381	...	...	...	...	...
4	9 ⁵ / ₈	244	15 ¹ / ₄	387	...	...	...	...	...
4	9 ⁵ / ₈	244	15 ¹ / ₄	387	...	...	...	...	...
4	9 ⁵ / ₈	244	15 ¹ / ₄	387	...	...	...	...	...
4	9 ⁷ / ₈	251	15 ¹ / ₂	394	...	...	...	...	...
4	9 ⁷ / ₈	251	15 ¹ / ₂	394	...	...	...	...	...
4	9 ⁷ / ₈	251	15 ¹ / ₂	394	...	...	...	...	...
4	10	254	15 ⁵ / ₈	397	...	...	...	...	...
4	10	254	15 ⁵ / ₈	397	...	...	...	...	...
4	10	254	15 ⁵ / ₈	397	...	...	...	...	...
4	10 ¹ / ₈	257	15 ³ / ₄	400	...	...	...	...	...
4	10 ¹ / ₈	257	15 ³ / ₄	400	...	...	...	...	...
4	10 ¹ / ₈	257	15 ³ / ₄	400	...	...	...	...	...
4	10 ¹ / ₈	257	15 ³ / ₄	400	...	...	...	...	...
4	10 ¹ / ₈	257	15 ³ / ₄	400	...	...	...	...	...
4	10 ¹ / ₈	257	15 ³ / ₄	400	...	...	...	...	...
4	10 ¹ / ₈	257	15 ³ / ₄	400	...	...	...	...	...
4	10 ¹ / ₈	257	15 ³ / ₄	400	...	...	...	...	...
4	10 ³ / ₈	264	16 ¹ / ₄	413	...	...	...	...	...
4	10 ³ / ₈	264	16 ¹ / ₄	413	...	...	...	...	...
4	10 ³ / ₈	264	16 ¹ / ₄	413	...	...	...	...	...
4	10 ³ / ₈	264	16 ¹ / ₄	413	...	...	...	...	...
4	10 ³ / ₈	264	16 ¹ / ₄	413	...	...	...	...	...
4	10 ³ / ₈	264	16 ¹ / ₄	413	...	...	...	...	...
4	10 ³ / ₈	264	16 ¹ / ₄	413	...	...	...	...	...
4	10 ³ / ₈	264	16 ¹ / ₄	413	...	...	...	...	...
4	10 ¹ / ₂	267	16 ¹ / ₂	419	...	...	...	...	...
4	10 ¹ / ₂	267	16 ¹ / ₂	419	...	...	...	...	...
4	10 ¹ / ₂	267	16 ¹ / ₂	419	...	...	...	...	...
4	10 ¹ / ₂	267	16 ¹ / ₂	419	...	...	...	...	...
4	10 ⁵ / ₈	270	16 ⁵ / ₈	422	...	...	...	...	...
4	10 ⁵ / ₈	270	16 ⁵ / ₈	422	...	...	...	...	...
4	10 ⁵ / ₈	270	16 ⁵ / ₈	422	...	...	...	...	...
4	10 ⁵ / ₈	270	16 ⁵ / ₈	422	...	...	...	...	...
4	10 ⁵ / ₈	270	16 ⁵ / ₈	422	...	...	...	...	...

[illegible]

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Regular Shank (Note 1)				
<i>D</i>		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number <i>A</i>	Flute Length <i>F</i>		Overall Length <i>L</i>	
Fraction	Millimeters				Inch	Millimeters	Inch	Millimeters
$2\frac{3}{32}$		2.0938	53.183	5	$10\frac{1}{4}$	260	$17\frac{3}{8}$	441
$2\frac{1}{8}$		2.1250	53.975	5	$10\frac{1}{4}$	260	$17\frac{3}{8}$	441
	54.00	2.1260	54.000	5	$10\frac{1}{4}$	260	$17\frac{3}{8}$	441
$2\frac{5}{32}$		2.1562	54.767	5	$10\frac{1}{4}$	260	$17\frac{3}{8}$	441
	55.00	2.1654	55.000	5	$10\frac{1}{4}$	260	$17\frac{3}{8}$	441
$2\frac{3}{16}$		2.1875	55.512	5	$10\frac{1}{4}$	260	$17\frac{3}{8}$	441
	56.00	2.2000	56.000	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
$2\frac{7}{32}$		2.2188	56.358	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
	57.00	2.2441	57.000	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
$2\frac{1}{4}$		2.2500	57.150	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
	58.00	2.2835	58.000	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
$2\frac{5}{16}$		2.3125	58.738	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
	59.00	2.3228	59.000	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
	60.00	2.3622	60.000	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
$2\frac{3}{8}$		2.3750	60.325	5	$10\frac{1}{8}$	257	$17\frac{3}{8}$	441
	61.00	2.4016	61.000	5	$11\frac{1}{4}$	286	$18\frac{3}{4}$	476
$2\frac{7}{16}$		2.4375	61.912	5	$11\frac{1}{4}$	286	$18\frac{3}{4}$	476
	62.00	2.4409	62.000	5	$11\frac{1}{4}$	286	$18\frac{3}{4}$	476
	63.00	2.4803	63.000	5	$11\frac{1}{4}$	286	$18\frac{3}{4}$	476
$2\frac{1}{2}$		2.5000	63.500	5	$11\frac{1}{4}$	286	$18\frac{3}{4}$	476
	64.00	2.5197	64.000	5	$11\frac{7}{8}$	302	$19\frac{1}{2}$	495
	65.00	2.5591	65.000	5	$11\frac{7}{8}$	302	$19\frac{1}{2}$	495
$2\frac{9}{16}$		2.5625	65.088	5	$11\frac{7}{8}$	302	$19\frac{1}{2}$	495
	66.00	2.5984	66.000	5	$11\frac{7}{8}$	302	$19\frac{1}{2}$	495
$2\frac{5}{8}$		2.6250	66.675	5	$11\frac{7}{8}$	302	$19\frac{1}{2}$	495
	67.00	2.6378	67.000	5	$12\frac{3}{4}$	324	$20\frac{3}{8}$	518
	68.00	2.6772	68.000	5	$12\frac{3}{4}$	324	$20\frac{3}{8}$	518
$2\frac{11}{16}$		2.6875	68.262	5	$12\frac{3}{4}$	324	$20\frac{3}{8}$	518
	69.00	2.7165	69.000	5	$12\frac{3}{4}$	324	$20\frac{3}{8}$	518
$2\frac{3}{4}$		2.7500	69.850	5	$12\frac{3}{4}$	324	$20\frac{3}{8}$	518
	70.00	2.7559	70.000	5	$13\frac{3}{8}$	340	$21\frac{1}{8}$	537
	71.00	2.7953	71.000	5	$13\frac{3}{8}$	340	$21\frac{1}{8}$	537
$2\frac{13}{16}$		2.8125	71.438	5	$13\frac{3}{8}$	340	$21\frac{1}{8}$	537
	72.00	2.8346	72.000	5	$13\frac{3}{8}$	340	$21\frac{1}{8}$	537
	73.00	2.8740	73.000	5	$13\frac{3}{8}$	340	$21\frac{1}{8}$	537
$2\frac{7}{8}$		2.8750	73.025	5	$13\frac{3}{8}$	340	$21\frac{1}{8}$	537
	74.00	2.9134	74.000	5	14	356	$21\frac{3}{4}$	552
$2\frac{15}{16}$		2.9375	74.612	5	14	356	$21\frac{3}{4}$	552
	75.00	2.9528	75.000	5	14	356	$21\frac{3}{4}$	552
	76.00	2.9921	76.000	5	14	356	$21\frac{3}{4}$	552

NOTE:

(1) No shanks smaller or larger than regular are used for these sizes.

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Regular Shank				
<i>D</i>		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number	Flute Length		Overall Length	
Fraction	Millimeters				<i>F</i>		<i>L</i>	
				<i>A</i>	Inch	Millimeters	Inch	Millimeters
3		3.0000	76.200	5	14	356	21 ³ / ₄	552
	77.00	3.0315	77.000	6	14 ⁵ / ₈	371	24 ¹ / ₂	622
	78.00	3.0709	78.000	6	14 ⁵ / ₈	371	24 ¹ / ₂	622
3 ¹ / ₈		3.1250	79.375	6	14 ⁵ / ₈	371	24 ¹ / ₂	622
3 ¹ / ₄		2.2500	82.550	6	15 ¹ / ₂	394	25 ¹ / ₂	648
3 ¹ / ₂		3.5000	88.900	...	...	...	...	...

**TABLE 5 GENERAL DIMENSIONS OF TAPER SHANK TWIST DRILLS
FRACTIONAL AND METRIC SIZES (CONT'D)**

Diameter of Drill				Shank Smaller Than Regular				
<i>D</i>		Decimal Inch Equivalent	Millimeter Equivalent	Morse Taper Number	Flute Length		Overall Length	
Fraction	Millimeters				<i>F</i>		<i>L</i>	
				<i>A</i>	Inch	Millimeters	Inch	Millimeters
3		3.0000	76.200	...	...	...	...	...
	77.00	3.0315	77.000	5	14 ¹ / ₄	362	22	559
	78.00	3.0709	78.000	5	14 ¹ / ₄	362	22	559
3 ¹ / ₈		3.1250	79.375	5	14 ¹ / ₄	362	22	559
3 ¹ / ₄		2.2500	82.550	5	15 ¹ / ₄	387	22	584
3 ¹ / ₂		3.5000	88.900	5	16 ¹ / ₄	413	24	610