

Everything you need to make reliable holes



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Heavy Duty Screw Machine Length Drills



135° Split Point

The short flute and overall length increases their rigidity, which improves hole accuracy and subsequently extends tool life. The Self-Centering 135° Split Point additionally reduces the thrust requirements and minimizes 'walking' particularly on curved surfaces. Recommended for use in portable power tools.

311SM - Steam Oxide
for improved abrasion resistance.



312SM - Steam & Bronze Oxide
WORK LIGHT abrasion resistance & improved lubricity, enhanced penetration geometry



Drill Sizes				Flute Length	Over-All-Length	Pkg Qty	311SM EDP#	312SM EDP#
Fractional	Wire Gauge	Letter	Decimal					
	N60		0.0400	1/2	1.3/8	12	46480855	
	N59		0.0410	1/2	1.3/8	12	46480856	
	N58		0.0420	1/2	1.3/8	12	46480857	
	N57		0.0430	1/2	1.3/8	12	46480858	
	N56		0.0465	1/2	1.3/8	12	46480859	
	N55		0.0520	5/8	1.5/8	12	46480860	
	N54		0.0550	5/8	1.5/8	12	46480861	
	N53		0.0595	5/8	1.5/8	12	46480862	
1/16			0.0625	5/8	1.5/8	12	46480863	47233779
	N52		0.0635	11/16	1.11/16	12	46480864	
	N51		0.0670	11/16	1.11/16	12	46480865	
	N50		0.0700	11/16	1.11/16	12	46480866	
	N49		0.0730	11/16	1.11/16	12	46480867	
	N48		0.0760	11/16	1.11/16	12	46480868	
5/64			0.0781	11/16	1.11/16	12	46480869	47233780
	N47		0.0785	11/16	1.11/16	12	46480870	
	N46		0.0810	3/4	1.3/4	12	46480871	
	N45		0.0820	3/4	1.3/4	12	46480872	
	N44		0.0860	3/4	1.3/4	12	46480873	
	N43		0.0890	3/4	1.3/4	12	46480874	
	N42		0.0935	3/4	1.3/4	12	46480875	
3/32			0.0937	3/4	1.3/4	12	46480876	47233781
	N41		0.0960	13/16	1.13/16	12	46480877	
	N40		0.0980	13/16	1.13/16	12	46480878	
	N39		0.0995	13/16	1.13/16	12	46480879	
	N38		0.1015	13/16	1.13/16	12	46480880	
	N37		0.1040	13/16	1.13/16	12	46480881	
	N36		0.1065	13/16	1.13/16	12	46480882	
7/64			0.1094	13/16	1.13/16	12	46480883	47233782
	N35		0.1100	7/8	1.7/8	12	46480884	
	N34		0.1110	7/8	1.7/8	12	46480885	
	N33		0.1130	7/8	1.7/8	12	46480886	
	N32		0.1160	7/8	1.7/8	12	46480887	
	N31		0.1200	7/8	1.7/8	12	46480888	
1/8			0.1250	7/8	1.7/8	12	46480889	47233783
	N30		0.1285	15/16	1.15/16	12	46480890	
	N29		0.1360	15/16	1.15/16	12	46480891	
	N28		0.1405	15/16	1.15/16	12	46480892	
9/64			0.1406	15/16	1.15/16	12	46480893	47233784
	N27		0.1440	1"	2.1/16	12	46480894	
	N26		0.1470	1"	2.1/16	12	46480895	
	N25		0.1495	1"	2.1/16	12	46480896	
	N24		0.1520	1"	2.1/16	12	46480897	
	N23		0.1540	1"	2.1/16	12	46480898	
5/32			0.1563	1"	2.1/16	12	46480899	47233785
	N22		0.1570	1.1/16	2.1/8	12	46480900	
	N21		0.1590	1.1/16	2.1/8	12	46480901	
	N20		0.1610	1.1/16	2.1/8	12	46480902	
	N19		0.1660	1.1/16	2.1/8	12	46480903	
	N18		0.1695	1.1/16	2.1/8	12	46480904	

Heavy Duty Screw Machine Length Drills

135° Split Point



continued

Drill Sizes				Flute Length	Over-All-Length	Pkg Qty	311SM EDP#	312SM EDP#
Fractional	Wire Gauge	Letter	Decimal					
11/64			0.1719	1.1/16	2.1/8	12	46480905	47233786
	N17		0.1730	1.1/8	2.3/16	12	46480906	
	N16		0.1770	1.1/8	2.3/16	12	46480907	
	N15		0.1800	1.1/8	2.3/16	12	46480908	
	N14		0.1820	1.1/8	2.3/16	12	46480909	
	N13		0.1850	1.1/8	2.3/16	12	46480910	
3/16			0.1875	1.1/8	2.3/16	12	46480911	47233787
	N12		0.1890	1.3/16	2.1/4	12	46480912	
	N11		0.1910	1.3/16	2.1/4	12	46480913	
	N10		0.1935	1.3/16	2.1/4	12	46480914	
	N9		0.1960	1.3/16	2.1/4	12	46480915	
	N8		0.1990	1.3/16	2.1/4	12	46480916	
	N7		0.2010	1.3/16	2.1/4	12	46480917	
13/64			0.2031	1.3/16	2.1/4	12	46480918	47233788
	N6		0.2040	1.1/4	2.3/8	12	46480919	
	N5		0.2055	1.1/4	2.3/8	12	46480920	
	N4		0.2090	1.1/4	2.3/8	12	46480921	
	N3		0.2130	1.1/4	2.3/8	12	46480922	
7/32			0.2187	1.1/4	2.3/8	12	46480923	47233789
	N2		0.2210	1.5/16	2.7/16	12	46480924	
	N1		0.2280	1.5/16	2.7/16	12	46480925	
		A	0.2340	1.5/16	2.7/16	12	46480926	
15/64			0.2344	1.5/16	2.7/16	12	46480927	47233790
		B	0.2380	1.3/8	2.1/2	12	46480928	
		C	0.2420	1.3/8	2.1/2	12	46480929	
		D	0.2460	1.3/8	2.1/2	12	46480930	
		E	0.2500	1.3/8	2.1/2	12	46480932	
1/4			0.2500	1.3/8	2.1/2	12	46480931	47233791
		F	0.2570	1.7/16	2.5/8	12	46480933	
		G	0.2610	1.7/16	2.5/8	12	46480934	
17/64			0.2656	1.7/16	2.5/8	12	46480935	47233792
		H	0.2660	1.1/2	2.11/16	12	46480936	
		I	0.2720	1.1/2	2.11/16	12	46480937	
		J	0.2770	1.1/2	2.11/16	12	46480938	
		K	0.2810	1.1/2	2.11/16	12	46480939	
9/32			0.2813	1.1/2	2.11/16	12	46480940	47233793
		L	0.2900	1.9/16	2.3/4	12	46480941	
		M	0.2950	1.9/16	2.3/4	12	46480942	
19/64			0.2969	1.9/16	2.3/4	12	46480943	47233794
		N	0.3020	1.5/8	2.13/16	12	46480944	
5/16			0.3125	1.5/8	2.13/16	6	46480945	47233795
		O	0.3160	1.11/16	2.15/16	6	46480946	
		P	0.3230	1.11/16	2.15/16	6	46480947	
21/64			0.3281	1.11/16	2.15/16	6	46480948	47233796
		Q	0.3320	1.11/16	3"	6	46480949	
		R	0.3390	1.11/16	3"	6	46480950	
11/32			0.3438	1.11/16	3"	6	46480951	47233797
		S	0.3480	1.3/4	3.1/16	6	46480952	
		T	0.3580	1.3/4	3.1/16	6	46480953	
23/64			0.3594	1.3/4	3.1/16	6	46480954	47233798
		U	0.3680	1.13/16	3.1/8	6	46480955	
3/8			0.3750	1.13/16	3.1/8	6	46480956	47233799
		V	0.3770	1.7/8	3.1/4	6	46480957	
		W	0.3860	1.7/8	3.1/4	6	46480958	
25/64			0.3906	1.7/8	3.1/4	6	46480959	47233800
		X	0.3970	1.15/16	3.5/16	6	46480960	
		Y	0.4040	1.15/16	3.5/16	6	46480961	
13/32			0.4063	1.15/16	3.5/16	6	46480962	47233801
		Z	0.4130	2"	3.3/8	6	46480963	
27/64			0.4219	2"	3.3/8	6	46480964	47233802
7/16			0.4375	2.1/16	3.7/16	6	46480965	47233803
29/64			0.4531	2.1/8	3.9/16	6	46480966	47233804
15/32			0.4687	2.1/8	3.5/8	6	46480967	47233805
31/64			0.4844	2.3/16	3.11/16	6	46480968	47233806
1/2			0.5000	2.1/4	3.3/4	6	46480969	47233807

General Purpose Jobber Length Drills



118° Point, Steam Oxide

Designed for general purpose portable and machine drilling under a wide range of operating conditions in various materials. Surface treated with a black steam oxide finish for abrasion resistance and improved coolant adherence.

301JD



Fractional	Wire Gauge	Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	EDP#
		Letter	Decimal				
	N60		0.0400	11/16	1.5/8	12	46480740
	N59		0.0410	11/16	1.5/8	12	46480741
	N58		0.0420	11/16	1.5/8	12	46480742
	N57		0.0430	3/4	1.3/4	12	46480743
	N56		0.0465	3/4	1.3/4	12	46480744
	N55		0.0520	7/8	1.7/8	12	46480745
	N54		0.0550	7/8	1.7/8	12	46480746
	N53		0.0595	7/8	1.7/8	12	46480747
1/16			0.0625	7/8	1.7/8	12	46480748
	N52		0.0635	7/8	1.7/8	12	46480749
	N51		0.0670	1"	2"	12	46480750
	N50		0.0700	1"	2"	12	46480751
	N49		0.0730	1"	2"	12	46480752
	N48		0.0760	1"	2"	12	46480753
5/64			0.0781	1"	2"	12	46480754
	N47		0.0785	1"	2"	12	46480755
	N46		0.0810	1.1/8	2.1/8	12	46480756
	N45		0.0820	1.1/8	2.1/8	12	46480757
	N44		0.0860	1.1/8	2.1/8	12	46480758
	N43		0.0890	1.1/4	2.1/4	12	46480759
	N42		0.0935	1.1/4	2.1/4	12	46480760
3/32			0.0937	1.1/4	2.1/4	12	46480761
	N41		0.0960	1.3/8	2.3/8	12	46480762
	N40		0.0980	1.3/8	2.3/8	12	46480763
	N39		0.0995	1.3/8	2.3/8	12	46480764
	N38		0.1015	1.7/16	2.1/2	12	46480765
	N37		0.1040	1.7/16	2.1/2	12	46480766
	N36		0.1065	1.7/16	2.1/2	12	46480767
7/64			0.1094	1.1/2	2.5/8	12	46480768
	N35		0.1100	1.1/2	2.5/8	12	46480769
	N34		0.1110	1.1/2	2.5/8	12	46480770
	N33		0.1130	1.1/2	2.5/8	12	46480771
	N32		0.1160	1.5/8	2.3/4	12	46480772
	N31		0.1200	1.5/8	2.3/4	12	46480773
1/8			0.1250	1.5/8	2.3/4	12	46480774
	N30		0.1285	1.5/8	2.3/4	12	46480775
	N29		0.1360	1.3/4	2.7/8	12	46480776
	N28		0.1405	1.3/4	2.7/8	12	46480777
9/64			0.1406	1.3/4	2.7/8	12	46480778
	N27		0.1440	1.7/8	3"	12	46480779
	N26		0.1470	1.7/8	3"	12	46480780
	N25		0.1495	1.7/8	3"	12	46480781
	N24		0.1520	2"	3.1/8	12	46480782
	N23		0.1540	2"	3.1/8	12	46480783
5/32			0.1563	2"	3.1/8	12	46480784
	N22		0.1570	2"	3.1/8	12	46480785
	N21		0.1590	2.1/8	3.1/4	12	46480786
	N20		0.1610	2.1/8	3.1/4	12	46480787
	N19		0.1660	2.1/8	3.1/4	12	46480788
	N18		0.1695	2.1/8	3.1/4	12	46480789
11/64			0.1719	2.1/8	3.1/4	12	46480790
			0.1730	2.3/16	3.3/8	12	46480791
	N16		0.1770	2.3/16	3.3/8	12	46480792
	N15		0.1800	2.3/16	3.3/8	12	46480793
	N14		0.1820	2.3/16	3.3/8	12	46480794
	N13		0.1850	2.5/16	3.1/2	12	46480795
3/16			0.1875	2.5/16	3.1/2	12	46480796
	N12		0.1890	2.5/16	3.1/2	12	46480797

General Purpose Jobber Length Drills

118° Point, Steam Oxide



continued

Drill Sizes				Flute Length	Over-All-Length	Pkg Qty	EDP#
Fractional	Wire Gauge	Letter	Decimal				
	N11		0.1910	2.5/16	3.1/2	12	46480798
	N10		0.1935	2.7/16	3.5/8	12	46480799
	N9		0.1960	2.7/16	3.5/8	12	46480800
	N8		0.1990	2.7/16	3.5/8	12	46480801
	N7		0.2010	2.7/16	3.5/8	12	46480802
13/64			0.2031	2.7/16	3.5/8	12	46480803
	N6		0.2040	2.1/2	3.3/4	12	46480804
	N5		0.2055	2.1/2	3.3/4	12	46480805
	N4		0.2090	2.1/2	3.3/4	12	46480806
	N3		0.2130	2.1/2	3.3/4	12	46480807
7/32			0.2187	2.1/2	3.3/4	12	46480808
	N2		0.2210	2.5/8	3.7/8	12	46480809
	N1		0.2280	2.5/8	3.7/8	12	46480810
		A	0.2340	2.5/8	3.7/8	12	46480811
15/64			0.2344	2.5/8	3.7/8	12	46480812
		B	0.2380	2.3/4	4"	12	46480813
		C	0.2420	2.3/4	4"	12	46480814
		D	0.2460	2.3/4	4"	12	46480815
		E	0.2500	2.3/4	4"	12	46480817
1/4			0.2500	2.3/4	4"	12	46480816
		F	0.2570	2.7/8	4.1/8	12	46480818
		G	0.2610	2.7/8	4.1/8	12	46480819
17/64			0.2656	2.7/8	4.1/8	12	46480820
		H	0.2660	2.7/8	4.1/8	12	46480821
		I	0.2720	2.7/8	4.1/8	12	46480822
		J	0.2770	2.7/8	4.1/8	12	46480823
		K	0.2810	2.15/16	4.1/4	12	46480824
9/32			0.2813	2.15/16	4.1/4	12	46480825
		L	0.2900	2.15/16	4.1/4	12	46480826
		M	0.2950	3.1/16	4.3/8	12	46480827
19/64			0.2969	3.1/16	4.3/8	12	46480828
		N	0.3020	3.1/16	4.3/8	12	46480829
5/16			0.3125	3.3/16	4.1/2	6	46480830
		O	0.3160	3.3/16	4.1/2	6	46480831
		P	0.3230	3.5/16	4.5/8	6	46480832
21/64			0.3281	3.5/16	4.5/8	6	46480833
		Q	0.3320	3.7/16	4.3/4	6	46480834
		R	0.3390	3.7/16	4.3/4	6	46480835
11/32			0.3438	3.7/16	4.3/4	6	46480836
		S	0.3480	3.1/2	4.7/8	6	46480837
		T	0.3580	3.1/2	4.7/8	6	46480838
23/64			0.3594	3.1/2	4.7/8	6	46480839
		U	0.3680	3.5/8	5"	6	46480840
3/8			0.3750	3.5/8	5"	6	46480841
		V	0.3770	3.5/8	5"	6	46480842
		W	0.3860	3.3/4	5.1/8	6	46480843
25/64			0.3906	3.3/4	5.1/8	6	46480844
		X	0.3970	3.3/4	5.1/8	6	46480845
		Y	0.4040	3.7/8	5.1/4	6	46480846
13/32			0.4063	3.7/8	5.1/4	6	46480847
		Z	0.4130	3.7/8	5.1/4	6	46480848
27/64			0.4219	3.15/16	5.3/8	6	46480849
7/16			0.4375	4.1/16	5.1/2	6	46480850
29/64			0.4531	4.3/16	5.5/8	6	46480851
15/32			0.4687	4.5/16	5.3/4	6	46480852
31/64			0.4844	4.3/8	5.7/8	6	46480853
1/2			0.5000	4.1/2	6"	6	46480854

Reduced Shank Drills

118° Point, Steam Oxide & Bright



The 1/2" diameter reduced shank makes them ideal for portable drilling and drill presses where the maximum chuck capacity is 1/2". Surface treated with a black steam oxide finish for abrasion resistance and improved coolant adherence.

Not recommended for enlarging existing holes.



341SD - 1/2" Shank Diameter, Silver & Deming

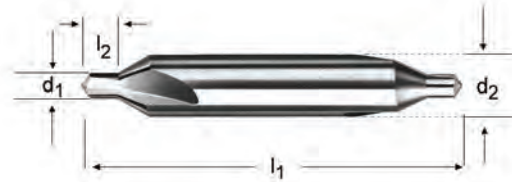
Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	341SD EDP#
Fractional	Decimal				
33/64	0.5156	3"	6"	1	46481031
17/32	0.5313	3"	6"	1	46481032
35/64	0.5469	3"	6"	1	46481033
9/16	0.5625	3"	6"	1	46481034
37/64	0.5781	3"	6"	1	46481035
19/32	0.5937	3"	6"	1	46481036
39/64	0.6094	3"	6"	1	46481030
5/8	0.6250	3"	6"	1	46481037
41/64	0.6406	3"	6"	1	46481038
21/32	0.6562	3"	6"	1	46481039
43/64	0.6719	3"	6"	1	46481040
11/16	0.6875	3"	6"	1	46481041
45/64	0.7031	3"	6"	1	46481042
23/32	0.7187	3"	6"	1	46481043
47/64	0.7344	3"	6"	1	46481044
3/4	0.7500	3"	6"	1	46481045
49/64	0.7656	3"	6"	1	46481046
25/32	0.7812	3"	6"	1	46481047
51/64	0.7969	3"	6"	1	46481048
13/16	0.8125	3"	6"	1	46481049
53/64	0.8281	3"	6"	1	46481050
27/32	0.8437	3"	6"	1	46481051
55/64	0.8594	3"	6"	1	46481052
7/8	0.8750	3"	6"	1	46481053
57/64	0.8906	3"	6"	1	46481028
29/32	0.9062	3"	6"	1	46481054
59/64	0.9219	3"	6"	1	46481055
15/16	0.9375	3"	6"	1	46481056
61/64	0.9531	3"	6"	1	46481029
31/32	0.9688	3"	6"	1	46481057
63/64	0.9844	3"	6"	1	46481058
1"	1.0000	3"	6"	1	46481059
1.1/32	1.0312	3"	6"	1	46481060
1.1/16	1.0625	3"	6"	1	46481061
1.3/32	1.0938	3"	6"	1	46481062
1.1/8	1.1250	3"	6"	1	46481063
1.5/32	1.1562	3"	6"	1	46481064
1.3/16	1.1875	3"	6"	1	46481065
1.7/32	1.2187	3"	6"	1	46481066
1.1/4	1.2500	3"	6"	1	46481067
1.5/16	1.3125	3"	6"	1	46481068
1.3/8	1.3750	3"	6"	1	46481069
1.7/16	1.4375	3"	6"	1	46481070
1.1/2	1.5000	3"	6"	1	46481071

Combined Drill and Countersink (Center Drill)



60° C'sink angle, Solid Carbide, Bright

Better abrasion resistance / Longer tool life. Bright finish improves chip flow in soft or non-ferrous materials

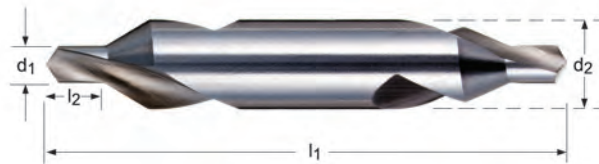


DC

Nr.	d ₁ Ø Inch	l ₂ Inch	l ₁ Inch	d ₂ Ø Inch	Pack Qty	DC
0	1/32	1/32	1.1/2	1/8	1	003251
1	3/64	3/64	1.1/2	1/8	1	003252
2	5/64	5/64	2"	3/16	1	003253
3	7/64	7/64	2"	1/4	1	003254
4	1/8	1/8	2.1/8	5/16	1	003255
5	3/16	3/16	2.3/4	7/16	1	003256
6	7/32	7/32	3"	1/2	1	003257

60° C'sink angle, HSS, Bright

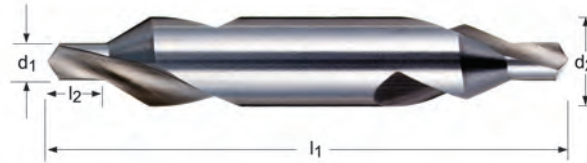
Bright Finish improves chip flow in soft or non-ferrous materials



76HA

Nr.	d ₁ Ø Inch	l ₂ Inch	l ₁ Inch	d ₂ Ø Inch	Pack Qty	76HA
000	0.0200	0.0300	1.1/4	1/8	12	097630
00	0.0250	0.0300	1.1/8	1/8	12	097620
0	1/32	0.0380	1.1/8	1/8	12	097610
1	3/64	3/64	1.1/4	1/8	12	097601
2	5/64	5/64	1.7/8	3/16	12	097602
3	7/64	7/64	2"	1/4	12	097603
4	1/8	1/8	2.1/8	5/16	12	097604
5	3/16	3/16	2.3/4	7/16	6	097605
6	7/32	7/32	3"	1/2	6	097606
7	1/4	1/4	3.1/4	5/8	1	097607
8	5/16	5/16	3.1/2	3/4	1	097608

Combined Drill and Countersink (Center Drill)



A225 60° C'sink. Bright Finish improves chip flow in soft or non-ferrous materials

A217 82° C'sink. Bright Finish improves chip flow in soft or non-ferrous materials

A217SET 5 pc. set consists of N1, N2, N3, N4 & N5

A218 90° C'sink. Bright Finish improves chip flow in soft or non-ferrous materials

A218SET 5 pc. set consists of N1, N2, N3, N4 & N5

Nr.	d ₁ Ø Inch	d ₁ decimal Inch	l ₂ max/min Inch	l ₁ Inch	d ₂ Ø Inch	Pack Qty	A225	A217	A218
BS1	3/64	0.0469	5/64 - 1/16	1.1/2	1/8	1	0172988	—	—
BS2	1/16	0.0625	3/32 - 5/64	1.3/4	3/16	1	0172995	—	—
BS3	3/32	0.0938	5/32 - 1/8	2"	1/4	1	0173008	—	—
BS4	1/8	0.1250	3/16 - 5/32	2.1/4	5/16	1	0173015	—	—
BS5	3/16	0.1875	9/32 - 1/4	2.1/2	7/16	1	0173022	—	—
BS5A	7/32	0.2188	5/16 - 9/32	2.3/4	1/2	1	0173039	—	—
BS6	1/4	0.2500	3/8 - 5/16	3"	5/8	1	0173046	—	—
BS7	5/16	0.3125	15/32 - 13/32	3.1/2	3/4	1	0173053	—	—
1		0.0469	.055-.067	1.1/4	1/8	1	—	0239216	—
1		0.0469	.055-.067	1.1/4	1/8	1	—	—	0239292
2		0.0781	.094-.106	1.7/8	3/16	1	—	0239223	—
2		0.0781	.094-.106	1.7/8	3/16	1	—	—	0239308
3		0.1094	.130-.154	2"	1/4	1	—	0239230	—
3		0.1094	.130-.154	2"	1/4	1	—	—	0239315
4		0.1250	.150-.173	2.1/8	5/16	1	—	0239247	—
4		0.1250	.150-.173	2.1/8	5/16	1	—	—	0239322
5		0.1875	.232-.256	2.3/4	7/16	1	—	0239254	—
5		0.1875	.232-.256	2.3/4	7/16	1	—	—	0239339
6		0.2188	.272-.295	3"	1/2	1	—	0239261	—
6		0.2188	.272-.295	3"	1/2	1	—	—	0239346
7		0.2500	.315-.339	3.1/4	5/8	1	—	0239278	—
7		0.2500	.315-.339	3.1/4	5/8	1	—	—	0239353
8		0.3125	.394-.417	3.1/2	3/4	1	—	0239285	—
8		0.3125	.394-.417	3.1/2	3/4	1	—	—	0239360

Set	Style	Pieces per set	Contents of set	Pack Qty	A217 set	A218 set
A217SET	A217	5	N1, N2, N3, N4, N5	1	0423912	—
A218SET	A218	5	N1, N2, N3, N4, N5	1	—	0423929

Drill Sets



331HDSET	Size	Decimal Size	Pkg Qty	EDP#
135° SP, HD, Black Jobber 29 pc. Set (1/16 - 1/2 x 64ths)	1/16 - 1/2 x 64ths	0.0625 - 0.5000 x 64ths	1	47233629
135° SP, HD, Black Jobber 15 pc. Set (1/16 - 1/2 x 32nds)	1/16 - 1/2 x 32nds	0.0625 - 0.5000 x 32nds	1	47233630

301JDSET	Size	Decimal Size	Pkg Qty	EDP#
118°, GP, Black Jobber 29 pc. Set (1/16 - 1/2 x 64ths)	1/16 - 1/2 x 64ths	0.0625 - 0.5000 x 64ths	1	46481072
118°, GP, Black Jobber 15 pc. Set (1/16 - 1/2 x 32nds)	1/16 - 1/2 x 32nds	0.0625 - 0.5000 x 32nds	1	47233502

332HDSET WORK LIGHT	Size	Decimal Size	Pkg Qty	EDP#
135° SP, HD, Black & Bronze Jobber 29 pc. Set (1/16 - 1/2 x 64ths)	1/16 - 1/2 x 64ths	0.0625 - 0.5000 x 64ths	1	47233746
135° SP, HD, Black & Bronze Jobber 15 pc. Set (1/16 - 1/2 x 32nds)	1/16 - 1/2 x 32nds	0.0625 - 0.5000 x 32nds	1	47233747

333HDSET WORK LIGHT	Size	Decimal Size	Pkg Qty	EDP#
135° SP, HD, TiN Coated Jobber 29 pc. Set (1/16 - 1/2 x 64ths)	1/16 - 1/2 x 64ths	0.0625 - 0.5000 x 64ths	1	47233777

311SMSET	Size	Decimal Size	Pkg Qty	EDP#
135° SP, HD, Black Screw Machine 29 pc. Set (1/16 - 1/2 x 64ths)	1/16 - 1/2 x 64ths	0.0625 - 0.5000 x 64ths	1	47233778

321MDSET	Size	Decimal Size	Pkg Qty	EDP#
135° SP Black & Bronze, HD, Mechanics Length 29 pc. Set (1/16 - 1/2 x 64ths)	1/16 - 1/2 x 64ths	0.0625 - 0.5000 x 64ths	1	46481073
135° SP Black & Bronze, HD, Mechanics Length 15 pc. Set (1/16 - 1/2 x 32nds)	1/16 - 1/2 x 32nds	0.0625 - 0.5000 x 32nds	1	47233808

322MDSET	Size	Decimal Size	Pkg Qty	EDP#
135° SP Black & Bronze, HD, Mechanics Length 29 pc. Set (1/16 - 1/2 x 64ths) Ø27/64" - Ø1/2" (6 sizes) with 3/8" reduced Shank	1/16 - 1/2 x 64ths	0.0625 - 0.5000 x 64ths	1	47233815

341SDSET	Size	Decimal Size	Pkg Qty	EDP#
118° Point Black & Bright, 1/2" reduced shank, S & D 8 pc. Set	Ø 9/16 - Ø 1" x 16ths	0.5625 - 1.0000 x 16ths	1	47233816

342SDTSET WORK LIGHT	Size	Decimal Size	Pkg Qty	EDP#
118° SP Black & Bronze, 1/2" reduced shank w/Tri-Flats, S & D 8 pc. Set	Ø 9/16 - Ø 1" x 16ths	0.5625 - 1.0000 x 16ths	1	47233849

JOBBER DRILL SETS



General Purpose Jobber Length Sets

118° Point, HSS, ANSI

C15R10P Bright Finish improves chip flow in
C29R10P soft or non-ferrous materials

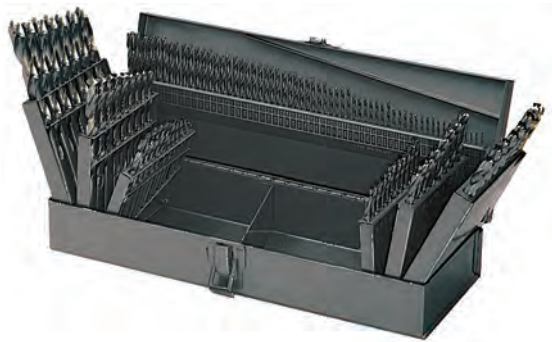
C15R10 Steam Oxide reduces wear and chip
C29R10 welding in harder ferrous materials.



Set	Style	Pieces per Set	Sizes	Pack Qty	R10P Sets	R10 Sets
C15R10	R10	15	1/16 - 1/2 x 32nds	1	—	099978
C29R10	R10	29	1/16 - 1/2 x 64ths	1	—	099977
C15R10P	R10P	15	1/16-1/2 x 32nds	1	090163	—
C29R10P	R10P	29	1/16 - 1/2 x 64ths	1	090162	—

General Purpose Jobber Length Combination Sets

118° Point, HSS, ANSI



Set	Style	Pieces per Set	Sizes	Pack Qty	C114COMB	C115COMB
C114COMB	R10, R18, 2AB	114	1/16-1/2 x 64ths, N1-N60, 1-13mm x .5 mm	1	099990	—
C115COMB	R10, R18, R15	115	1/16-1/2 x 64ths, N1-N60, A-Z	1	—	099982

JOBBER DRILL SETS



General Purpose Jobber Length Metric Sets

118° Point, HSS, DIN338

A191 Steam Oxide for increased wear
A190 resistance & lubricity.



C252A Bright Finish improves chip
flow in soft or non-ferrous
materials



C252AB Steam Oxide for increased
C502AB wear resistance & lubricity.



SPIRAL POINT TAPS



Multi-Application, Plug Chamfer

HSS-E, ANSI

E025 Premium substrate for through hole tapping in tough or abrasive materials. Bronze
E035 oxide body and shank reduces rust and corrosion. Bright finish flutes improve chip flow in soft or non-ferrous materials.

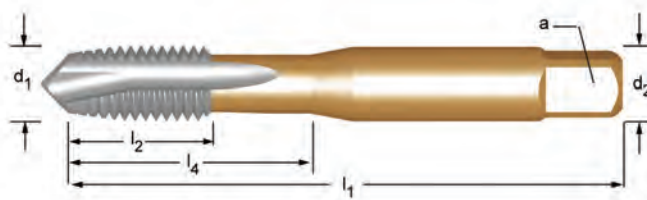
E025 = UNC Sizes, E035 = UNF Sizes

1.1 1.2 1.3 1.4 1.5 1.6 3.1 3.2 3.3 3.4 4.1 4.2 5.1 5.2 6.1
 6.2 6.3 7.1 7.2 7.3 7.4 8.1

E026 Premium substrate with steam oxide surface treatment reduces wear and prevents chip
E036 welding in abrasive or harder ferrous materials.

E026 = UNC Sizes, E036 = UNF Sizes

1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4



UNC	UNF	TPI	l_1 Inch	l_2 Inch	d_2 Ø Inch	a Inch	# of Flutes	Limits			l_4 Inch	Pack Qty	E025 E035	E026 E036
2		56	1.3/4	0.3140	0.1410	0.1100	2	H2	N50	1.80	0.3140	1	—	0583203 ¹⁾
4		40	1.7/8	0.6091	0.1410	0.1100	2	H2	N43	2.35	0.6091	1	—	0581254 ¹⁾
5		40	1.15/16	0.7404	0.1410	0.1100	2	H2	N38	2.65	0.7404	1	—	0581261 ¹⁾
	6	40	2"	0.2610	0.1410	0.1100	2	H2	N33	2.95	0.5938	1	0581957 ¹⁾	—
6		32	2"	0.2610	0.1410	0.1100	2	H2	N36	2.85	0.5938	1	0581070 ¹⁾	0581278 ¹⁾
	8	36	2.1/8	0.2484	0.1680	0.1310	2	H2	N29	3.50	0.6526	1	0581964	—
8		32	2.1/8	0.2484	0.1680	0.1310	2	H2	N29	3.50	0.6526	1	0581087 ¹⁾	0581285 ¹⁾
	10	32	2.3/8	0.4303	0.1940	0.1520	2	H2	N21	4.10	0.8434	1	0581971 ¹⁾	0582145 ¹⁾
10		24	2.3/8	0.4303	0.1940	0.1520	2	H3	N25	3.90	0.8434	1	0581094 ¹⁾	0581292 ¹⁾
	12	28	2.3/8	0.4173	0.2200	0.1650	2	H3	N14	4.70	0.8848	1	— ¹⁾	0582152 ¹⁾
12		24	2.3/8	0.4173	0.2200	0.1650	2	H3	N16	4.50	0.8848	1	0581100 ¹⁾	0581308 ¹⁾
	1/4	28	2.1/2	0.5075	0.2550	0.1910	2	H3	N3	5.50	1.0073	1	0581995 ¹⁾	0582169 ¹⁾
	1/4	28	2.1/2	0.5075	0.2550	0.1910	3	H3	N3	5.50	1.0073	1	0582008 ¹⁾	0582176 ¹⁾
1/4		20	2.1/2	0.5075	0.2550	0.1910	2	H3	N7	5.10	1.0073	1	0581117 ¹⁾	0581315 ¹⁾
1/4		20	2.1/2	0.5075	0.2550	0.1910	3	H3	N7	5.10	1.0073	1	0581124 ¹⁾	0581339 ¹⁾
1/4		20	2.1/2	0.5075	0.2550	0.1910	3	H11	N7	5.10	1.0073	1	—	0581322 ¹⁾³⁾
	5/16	24	2.23/32	0.5939	0.3180	0.2380	2	H3	I	6.90	1.1891	1	0582015 ¹⁾	0582183 ¹⁾
	5/16	24	2.23/32	0.5939	0.3180	0.2380	3	H3	I	6.90	1.1891	1	0582022 ¹⁾	0582190 ¹⁾
5/16		18	2.23/32	0.5939	0.3180	0.2380	2	H3	F	6.60	1.1891	1	0581131 ¹⁾	0581346 ¹⁾
5/16		18	2.23/32	0.5939	0.3180	0.2380	3	H3	F	6.60	1.1891	1	0581148 ¹⁾	0581360 ¹⁾
5/16		18	2.23/32	0.5939	0.3180	0.2380	3	H11	F	6.60	1.1891	1	—	0581353 ¹⁾³⁾
	3/8	24	2.15/16	0.6020	0.3810	0.2860	2	H3	Q	8.50	1.2915	1	0582039 ¹⁾	0582206 ¹⁾
	3/8	24	2.15/16	0.6020	0.3810	0.2860	3	H3	Q	8.50	1.2915	1	0582046 ¹⁾	—

¹⁾ Reinforced Shanks



²⁾ Reduced Shanks

³⁾ Oversize +.005", not 3B

SPIRAL POINT TAPS



continued

UNC	UNF	TPI	l ₁ Inch	l ₂ Inch	d ₂ ∅ Inch	a Inch	# of Flutes	Limits			l ₄ Inch	Pack Qty	E025 E035	E026 E036
3/8		16	2.15/16	0.6020	0.3810	0.2860	2	H3	5/16	8.00	1.2915	1	0581155	0581377
3/8		16	2.15/16	0.6020	0.3810	0.2860	3	H3	5/16	8.00	1.2915	1	0581162	0581391
3/8		16	2.15/16	0.6020	0.3810	0.2860	3	H11	5/16	8.00	1.2915	1	—	0581384
	7/16	20	3.5/32	0.9055	0.3230	0.2420	3	H3	25/64	9.90	—	1	0582053	0582220
7/16		14	3.5/32	0.9055	0.3230	0.2420	3	H3	U	9.40	—	1	0581179	0581407
	1/2	20	3.3/8	0.9055	0.3670	0.2750	2	H3	29/64	11.50	—	1	0582060	0582237
	1/2	20	3.3/8	0.9055	0.3670	0.2750	3	H3	29/64	11.50	—	1	0582077	0582244
1/2		13	3.3/8	0.9055	0.3670	0.2750	2	H3	27/64	10.80	—	1	0581186	0581414
1/2		13	3.3/8	0.9055	0.3670	0.2750	3	H3	27/64	10.80	—	1	0581193	0581438
1/2		13	3.3/8	0.9055	0.3670	0.2750	3	H11	27/64	10.80	—	1	—	0581421
	9/16	18	3.19/32	0.9843	0.4290	0.3220	3	H3	33/64	12.90	—	1	0582084	0582251
9/16		12	3.19/32	0.9843	0.4290	0.3220	3	H3	31/64	12.20	—	1	0581209	0581445
	5/8	18	3.13/16	0.9843	0.4800	0.3600	3	H3	37/64	14.50	—	1	0582091	0582268
5/8		11	3.13/16	0.9843	0.4800	0.3600	3	H3	17/32	13.50	—	1	0581216	0581469
5/8		11	3.13/16	0.9843	0.4800	0.3600	3	H11	17/32	13.50	—	1	—	0581452
	3/4	16	4.1/4	1.1614	0.5900	0.4420	3	H3	11/16	17.50	—	1	0582107	0582275
3/4		10	4.1/4	1.1614	0.5900	0.4420	3	H4	21/32	16.50	—	1	0581223	0581476
	7/8	14	4.11/16	1.1614	0.6970	0.5230	3	H4	13/16	20.40	—	1	0582114	0582282
7/8		9	4.11/16	1.1614	0.6970	0.5230	3	H4	49/64	19.50	—	1	0581230	0581483
	1"	12	5.1/8	1.3976	0.8000	0.6000	3	H4	59/64	23.25	—	1	—	0582299
	1"	14	5.1/8	1.3976	0.8000	0.6000	3	H4	59/64	23.50	—	1	0582138	0582305
1"		8	5.1/8	1.3976	0.8000	0.6000	3	H4	7/8	22.25	—	1	0581247	0581490

- ¹⁾ Reinforced Shanks
- ²⁾ Reduced Shanks
- ³⁾ Oversize +.005", not 3B

SPIRAL POINT TAPS - Metric



Multi-Application, Plug Chamfer

HSS-E, ANSI

E005 Premium substrate for through hole tapping in tough or abrasive materials. Bronze oxide body and shank reduces rust and corrosion. Bright finish flutes improve chip flow in soft or non-ferrous materials.

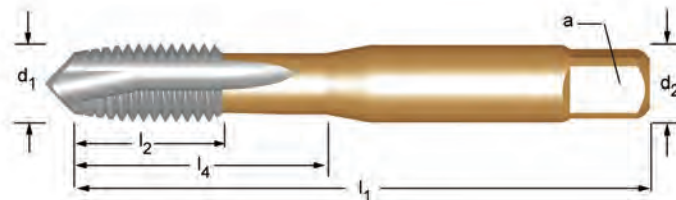
E005 = Metric Coarse

1.1 1.2 1.3 1.4 1.5 1.6 3.1 3.2 3.3 3.4 4.1 4.2 5.1 5.2 6.1
6.2 6.3 7.1 7.2 7.3 7.4 8.1

**E006/
E016** Premium substrate with steam oxide surface treatment reduces wear and prevents chip welding in abrasive or harder ferrous materials.

E006 = Metric Coarse, E016 = Metric Fine

1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4



M	P	l_1	l_2	d_2	a	# of Flutes	l_4	Limits	Pack Qty	E005	E006 E016		
MF	mm	Inch	Inch	Ø Inch	Inch		Inch						
4	0.70	2.1/8	0.2484	0.1680	0.1310	2	3.30	N30	0.6526	D4	1	0580301 ¹⁾	0580462 ¹⁾
4	0.70	2.1/8	0.2484	0.1680	0.1310	3	3.30	N30	0.6526	D4	1	0580318 ¹⁾	0583180 ¹⁾
5	0.80	2.3/8	0.4303	0.1940	0.1520	2	4.20	N19	0.8434	D4	1	0580325 ¹⁾	0580479 ¹⁾
5	0.80	2.3/8	0.4303	0.1940	0.1520	3	4.20	N19	0.8434	D4	1	0580332 ¹⁾	0580486 ¹⁾
6	1.00	2.1/2	0.5075	0.2550	0.1910	2	5.00	N9	1.0073	D5	1	0580349 ¹⁾	0580493 ¹⁾
6	1.00	2.1/2	0.5075	0.2550	0.1910	3	5.00	N9	1.0073	D5	1	0580356 ¹⁾	0580509 ¹⁾
8	1.00	2.23/32	0.5939	0.3180	0.2380	3	7.00	J	1.1891	D5	1	—	0580950 ¹⁾
8	1.25	2.23/32	0.5939	0.3180	0.2380	2	6.80	H	1.1891	D5	1	0580363 ¹⁾	0580516 ¹⁾
8	1.25	2.23/32	0.5939	0.3180	0.2380	3	6.80	H	1.1891	D5	1	0580370 ¹⁾	0583197 ¹⁾
10	1.00	2.15/16	0.6020	0.3810	0.2860	3	9.00	T	1.2915	D6	1	—	0580967 ¹⁾
10	1.50	2.15/16	0.6020	0.3810	0.2860	2	8.50	Q	1.2915	D6	1	0580387 ¹⁾	0580523 ¹⁾
10	1.50	2.15/16	0.6020	0.3810	0.2860	3	8.50	Q	1.2915	D6	1	0580394 ¹⁾	0580530 ¹⁾
12	1.75	3.3/8	0.9055	0.3670	0.2750	2	10.30	Y		D6	1	0580400 ²⁾	0580547 ²⁾
12	1.75	3.3/8	0.9055	0.3670	0.2750	3	10.30	Y		D6	1	0580417 ²⁾	0580554 ²⁾
14	1.50	3.19/32	0.9843	0.4290	0.3220	3	12.50	31/64		D7	1	—	0580974 ²⁾
14	2.00	3.19/32	0.9843	0.4290	0.3220	3	12.00	15/32		D7	1	0580424 ²⁾	0580561 ²⁾
16	2.00	3.13/16	0.9843	0.4800	0.3600	3	14.00	35/64		D7	1	0580431 ²⁾	0580578 ²⁾
18	2.50	4.1/32	1.1614	0.5420	0.4060	3	15.50	39/64		D7	1	0580448 ²⁾	0580585 ²⁾
20	2.50	4.15/32	1.1614	0.6520	0.4890	3	17.50	11/16		D7	1	0580455 ²⁾	0580592 ²⁾

¹⁾ Reinforced Shanks

²⁾ Reduced Shanks

SPIRAL FLUTE TAPS (45°)

Multi-Application, Semi-Bottoming

HSS-E, ANSI



E027
E037

Premium substrate for blind hole tapping in tough or abrasive materials. Bronze oxide body and shank reduces rust and corrosion. Bright finish flutes improve chip flow in soft and non-ferrous materials.

E027 = UNC Sizes, E037 = UNF Sizes

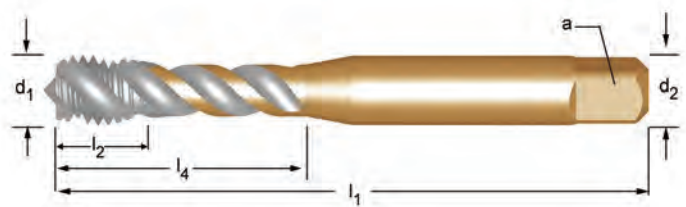
1.1 1.2 1.3 1.4 1.5 4.1 4.2 5.1 5.2 6.1 6.2 6.3 7.1 7.2 7.3
7.4 8.1

E028
E038

Premium substrate with Steam Oxide surface treatment reduces wear and prevents chip welding in abrasive or harder ferrous materials.

E028 = UNC Sizes, E038 = UNF Sizes

1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3



UNC	UNF	TPI	l_1 Inch	l_2 Inch	d_2 Ø Inch	a Inch	# of Flutes	Limits		l_4 Inch	Pack Qty	E027 E037	E028 E038	
4		40	1.7/8	0.6091	0.1410	0.1100	3	H2	N43	2.35	0.6091	1	—	0581643 ¹⁾
5		40	1.15/16	0.7404	0.1410	0.1100	3	H2	N38	2.65	0.7404	1	—	0581650 ¹⁾
6		32	2"	0.2610	0.1410	0.1100	3	H2	N36	2.85	0.5938	1	0581506	0581667 ¹⁾
8		32	2.1/8	0.2484	0.1680	0.1310	3	H2	N29	3.50	0.6526	1	0581513	0581674 ¹⁾
	10	32	2.3/8	0.2650	0.1940	0.1520	3	H2	N21	4.10	0.8434	1	0582312	0582435 ¹⁾
10		24	2.3/8	0.2650	0.1940	0.1520	3	H3	N25	3.90	0.8434	1	0581520	0581681 ¹⁾
12		24	2.3/8	0.2520	0.2200	0.1650	3	H3	N16	4.50	0.8848	1	0581537	0581698 ¹⁾
	1/4	28	2.1/2	0.3937	0.2550	0.1910	3	H3	N3	5.50	1.0993	1	0582329	0582442 ¹⁾
1/4		20	2.1/2	0.3937	0.2550	0.1910	3	H3	N7	5.10	1.0993	1	0581544	0581704 ¹⁾
	5/16	24	2.23/32	0.4567	0.3180	0.2380	3	H3	I	6.90	1.3094	1	0582336	0582459 ¹⁾
5/16		18	2.23/32	0.4567	0.3180	0.2380	3	H3	F	6.60	1.3094	1	0581551	0581711 ¹⁾
	3/8	24	2.15/16	0.5315	0.3810	0.2860	3	H3	Q	8.50	1.4415	1	0582343	0582466 ¹⁾
3/8		16	2.15/16	0.5315	0.3810	0.2860	3	H3	5/16	8.00	1.4415	1	0581568	0581728 ¹⁾
3/8		16	2.15/16	0.5315	0.3810	0.2860	3	H5	5/16	8.00	1.4415	1	—	0581735 ¹⁾³⁾
	7/16	20	3.5/32	0.6299	0.3230	0.2420	3	H3	25/64	9.90	-	1	0582350	0582473 ²⁾
7/16		14	3.5/32	0.6299	0.3230	0.2420	3	H3	U	9.40	-	1	0581575	0581742 ²⁾
	1/2	20	3.3/8	0.6890	0.3670	0.2750	3	H3	29/64	11.50	-	1	0582367	0582480 ²⁾
1/2		13	3.3/8	0.6890	0.3670	0.2750	3	H3	27/64	10.80	-	1	0581582	0581759 ²⁾
	9/16	18	3.19/32	0.7087	0.4290	0.3220	3	H3	33/64	12.90	-	1	0582374	0582497 ²⁾
9/16		12	3.19/32	0.7087	0.4290	0.3220	3	H3	31/64	12.20	-	1	0581599	0581766 ²⁾
	5/8	18	3.13/16	0.7087	0.4800	0.3600	3	H3	37/64	14.50	-	1	0582381	0582503 ²⁾
5/8		11	3.13/16	0.7087	0.4800	0.3600	3	H3	17/32	13.50	-	1	0581605	0581773 ²⁾
	3/4	16	4.1/4	0.8858	0.5900	0.4420	3	H3	11/16	17.50	-	1	0582398	0582510 ²⁾
3/4		10	4.1/4	0.8858	0.5900	0.4420	3	H4	21/32	16.50	-	1	0581612	0581780 ²⁾
	7/8	14	4.11/16	0.9843	0.6970	0.5230	3	H4	13/16	20.40	-	1	0582404	0582527 ²⁾
7/8		9	4.11/16	0.9843	0.6970	0.5230	3	H4	49/64	19.50	-	1	0581629	0581797 ²⁾
	1"	14	5.1/8	1.1811	0.8000	0.6000	3	H4	59/64	23.50	-	1	0582428	0582541 ²⁾
1"		8	5.1/8	1.1811	0.8000	0.6000	3	H4	7/8	22.25	-	1	0581636	0581803 ²⁾

¹⁾ Reinforced Shanks
²⁾ Reduced Shanks
³⁾ Class of fit: 2B

SPIRAL FLUTE TAPS (45°) - Metric



Multi-Application, Semi-Bottoming

HSS-E, ANSI

E007 Premium substrate for blind hole tapping in tough or abrasive materials. Bronze oxide body and shank reduces rust and corrosion. Bright finish flutes improve chip flow in soft and non-ferrous materials.

E007 = Metric Coarse, E017 = Metric Fine

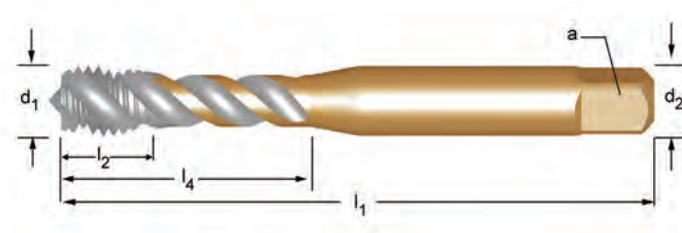
1.1 1.2 1.3 1.4 1.5 4.1 4.2 5.1 5.2 7.1 7.2 7.3 7.4

E008 Premium substrate with Steam Oxide surface treatment reduces wear and prevents chip welding in abrasive or harder ferrous materials.

E018

E008 = Metric Coarse, E018 = Metric Fine

1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3



M	MF	P mm	l ₁ Inch	l ₂ Inch	d ₂ Ø Inch	a Inch	# of flutes	Limits	↔	l ₄ Inch	Pack Qty	E007	E008 E018	
4		0.70	2.1/8	0.2484	0.1680	0.1310	3	D4	3.30	N30	0.6526	1	0580608 ¹⁾	0580707 ¹⁾
5		0.80	2.3/8	0.2650	0.1940	0.1520	3	D4	4.20	N19	0.8434	1	0580615 ¹⁾	0580714 ¹⁾
6		1.00	2.1/2	0.3937	0.2550	0.1910	3	D5	5.00	N9	1.0993	1	0580622 ¹⁾	0580721 ¹⁾
	8	1.00	2.23/32	0.4567	0.3180	0.2380	3	D5	7.00	J	1.3094	1	—	0581032 ¹⁾
8		1.25	2.23/32	0.4567	0.3180	0.2380	3	D5	6.80	H	1.3094	1	0580639 ¹⁾	0580738 ¹⁾
	10	1.00	2.15/16	0.5315	0.3810	0.2860	3	D6	9.00	T	1.4415	1	—	0581049 ¹⁾
10		1.50	2.15/16	0.5315	0.3810	0.2860	3	D6	8.50	Q	1.4415	1	0580646 ¹⁾	0580745 ¹⁾
12		1.75	3.3/8	0.6890	0.3670	0.2750	3	D6	10.30	Y		1	0580653 ²⁾	0580752 ²⁾
	14	1.50	3.19/32	0.7087	0.4290	0.3220	3	D7	12.50	31/64		1	—	0581056 ²⁾
14		2.00	3.19/32	0.7087	0.4290	0.3220	3	D7	12.00	15/32		1	—	0580769 ²⁾
16		2.00	3.13/16	0.7087	0.4800	0.3600	3	D7	14.00	35/64		1	0580677 ²⁾	0580776 ²⁾
20		2.50	4.15/32	0.8858	0.6520	0.4890	3	D7	17.50	11/16		1	— ²⁾	0580790 ²⁾

¹⁾ Reinforced Shanks

²⁾ Reduced Shanks

HAND TAPS

General Purpose

HSS, ANSI

1500 The most versatile taps for hand use or machine tapping in a wide variety of materials in through or blind hole applications. Available in 3 chamfer lengths - taper, plug, and bottoming.

1500S

1528

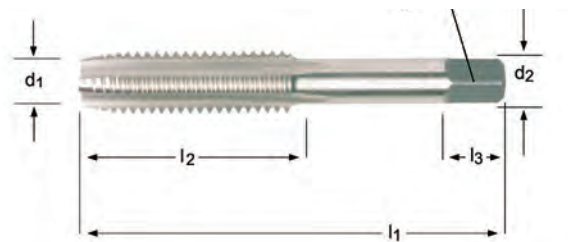
1528S

Taper - 7-10 pitch chamfer length
 Plug - 3-5 pitch chamfer length
 Bottoming - 1-2 pitch chamfer length

1500 - Fractional sizes

1528 - Machine screw sizes

1500S / 1528S - Sets include 1 of each tap (Taper, Plug, and Bottoming)



- Sizes 0 thru 3/8 have male centers on thread end
- Sizes larger than 3/8 all have female centers / flat ends

Nominal d ₁	TPI UNC	TPI UNF	TPI UNS	l ₁ Inch	l ₂ Inch	d ₂ Ø Inch /	∠ a Inch	l ₃ Inch	# of Flutes	Limits	Pack Qty	Taper	Plug	Bottoming	Sets
0	80			1.5/8	5/16	0.1410	0.1100	3/16	2	H1	1	1010593	1010594	1010596	1010999
0		80		1.5/8	5/16	0.1410	0.1100	3/16	2	H2	1	—	1010595	1010597	—
1	64			1.11/16	3/8	0.1410	0.1100	3/16	2	H1	1	1010598	1010599	1010601	1011000
1		72		1.11/16	3/8	0.1410	0.1100	3/16	2	H1	1	1010603	1010604	1010606	1011001
2	56			1.3/4	7/16	0.1410	0.1100	3/16	2	H2	1	—	1010615	1010617	—
2	56			1.3/4	7/16	0.1410	0.1100	3/16	3	H1	1	1010608	1010610	1010612	—
2		56		1.3/4	7/16	0.1410	0.1100	3/16	3	H2	1	1010609	1010611	1010613	1011003
2		64		1.3/4	7/16	0.1410	0.1100	3/16	3	H2	1	—	—	—	1011073
3	48			1.13/16	1/2	0.1410	0.1100	3/16	2	H2	1	—	1010631	—	—
3	48			1.13/16	1/2	0.1410	0.1100	3/16	3	H2	1	1010625	1010627	1010629	1011005
3		56		1.13/16	1/2	0.1410	0.1100	3/16	3	H2	1	1010634	1010636	1010637	1011074
4	40			1.7/8	9/16	0.1410	0.1100	3/16	2	H2	1	—	1010650	1010652	—
4	40			1.7/8	9/16	0.1410	0.1100	3/16	3	H1	1	1010643	1010645	1010647	—
4	40			1.7/8	9/16	0.1410	0.1100	3/16	3	H2	1	1010644	1010646	1010648	1011008
4		48		1.7/8	9/16	0.1410	0.1100	3/16	3	H2	1	1010653	1010655	1010656	1011075
4			36	1.7/8	9/16	0.1410	0.1100	3/16	3	H2	1	—	—	—	1011006
5	40			1.15/16	5/8	0.1410	0.1100	3/16	3	H2	1	1010660	1010662	1010664	1011010
5		44		1.15/16	5/8	0.1410	0.1100	3/16	3	H2	1	1010669	1010671	1010672	1011076
6	32			2"	11/16	0.1410	0.1100	3/16	2	H2	1	—	1010685	1010688	—
6	32			2"	11/16	0.1410	0.1100	3/16	2	H3	1	—	1010686	1010689	—
6	32			2"	11/16	0.1410	0.1100	3/16	3	H1	1	1010675	1010678	1010681	—
6	32			2"	11/16	0.1410	0.1100	3/16	3	H2	1	1010676	1010679	1010682	1011012
6	32			2"	11/16	0.1410	0.1100	3/16	3	H3	1	1010677	1010680	1010683	1011013
6		40		2"	11/16	0.1410	0.1100	3/16	3	H2	1	1010690	1010692	1010693	1011014
8	32			2.1/8	3/4	0.1680	0.1310	1/4	2	H2	1	—	1010706	1010709	—
8	32			2.1/8	3/4	0.1680	0.1310	1/4	2	H3	1	—	1010707	1010710	—
8	32			2.1/8	3/4	0.1680	0.1310	1/4	3	H2	1	—	1010712	1010715	—
8	32			2.1/8	3/4	0.1680	0.1310	1/4	3	H3	1	—	1010713	1010716	—
8	32			2.1/8	3/4	0.1680	0.1310	1/4	4	H1	1	—	1010699	—	—
8	32			2.1/8	3/4	0.1680	0.1310	1/4	4	H2	1	1010697	1010700	1010703	1011016
8	32			2.1/8	3/4	0.1680	0.1310	1/4	4	H3	1	1010698	1010701	1010704	1011017
8		36		2.1/8	3/4	0.1680	0.1310	1/4	4	H2	1	1010717	1010719	1010720	1011018
10	24			2.3/8	7/8	0.1940	0.1520	1/4	2	H2	1	—	1010733	1010736	—

HAND TAPS



continued

Nominal d ₁	TPI UNC	TPI UNF	TPI UNS	l ₁ Inch	l ₂ Inch	d ₂ Ø Inch /	□ a Inch	l ₃ Inch	# of Flutes	Limits	Pack Qty	Taper	Plug	Bottoming	Sets
10	24			2.3/8	7/8	0.1940	0.1520	1/4	2	H3	1	—	1010734	1010737	—
10	24			2.3/8	7/8	0.1940	0.1520	1/4	3	H2	1	—	1010739	—	—
10	24			2.3/8	7/8	0.1940	0.1520	1/4	3	H3	1	—	1010740	1010743	—
10	24			2.3/8	7/8	0.1940	0.1520	1/4	4	H1	1	—	1010726	—	—
10	24			2.3/8	7/8	0.1940	0.1520	1/4	4	H2	1	1010724	1010727	1010730	1011020
10	24			2.3/8	7/8	0.1940	0.1520	1/4	4	H3	1	1010725	1010728	1010731	1011021
10		32		2.3/8	7/8	0.1940	0.1520	1/4	2	H2	1	—	1010754	1010757	—
10		32		2.3/8	7/8	0.1940	0.1520	1/4	2	H3	1	—	1010755	1010758	—
10		32		2.3/8	7/8	0.1940	0.1520	1/4	3	H2	1	—	1010760	1010763	—
10		32		2.3/8	7/8	0.1940	0.1520	1/4	3	H3	1	—	1010761	1010764	—
10		32		2.3/8	7/8	0.1940	0.1520	1/4	4	H2	1	1010745	1010748	1010751	1011023
10	32			2.3/8	7/8	0.1940	0.1520	1/4	4	H3	1	1010746	1010749	1010752	1011024
12	24			2.3/8	15/16	0.2200	0.1650	9/32	4	H3	1	1010765	1010767	1010768	1011025
12		28		2.3/8	15/16	0.2200	0.1650	9/32	4	H3	1	1010769	1010771	1010772	1011026
1/4	20			2.1/2	1"	0.2550	0.1910	5/16	4	H1	1	1010001	1010004	1010008	—
1/4	20			2.1/2	1"	0.2550	0.1910	5/16	4	H2	1	1010002	1010005	1010009	—
1/4	20			2.1/2	1"	0.2550	0.1910	5/16	4	H3	1	1010003	1010006	1010010	1011029
1/4	20			2.1/2	1"	0.2550	0.1910	5/16	4	H5	1	—	1010007	1010011	—
1/4		28		2.1/2	1"	0.2550	0.1910	5/16	4	H2	1	—	1010016	1010020	—
1/4	28			2.1/2	1"	0.2550	0.1910	5/16	4	H3	1	1010014	1010017	1010021	1011032
1/4		28		2.1/2	1"	0.2550	0.1910	5/16	4	H4	1	—	1010018	1010022	—
5/16	18			2.23/32	1.1/8	0.3180	0.2380	3/8	4	H2	1	1010024	1010027	1010031	—
5/16	18			2.23/32	1.1/8	0.3180	0.2380	3/8	4	H3	1	1010025	1010028	1010032	1011035
5/16		24		2.23/32	1.1/8	0.3180	0.2380	3/8	4	H3	1	1010036	1010039	1010043	1011038
3/8	16			2.15/16	1.1/4	0.3810	0.2860	7/16	4	H2	1	1010046	1010049	1010053	—
3/8	16			2.15/16	1.1/4	0.3810	0.2860	7/16	4	H3	1	1010047	1010050	1010054	1011041
3/8	16			2.15/16	1.1/4	0.3810	0.2860	7/16	4	H5	1	—	1010051	1010055	—
3/8		24		2.15/16	1.1/4	0.3810	0.2860	7/16	4	H3	1	1010058	1010061	1010065	1011044
7/16	14			3.5/32	1.7/16	0.3230	0.2420	13/32	4	H3	1	1010067	1010070	1010074	1011045
7/16		20		3.5/32	1.7/16	0.3230	0.2420	13/32	4	H3	1	1010076	1010079	1010083	1011046
1/2	13			3.3/8	1.21/32	0.3670	0.2750	7/16	4	H2	1	—	1010087	1010091	—
1/2	13			3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	1	1010085	1010088	1010092	1011047
1/2	13			3.3/8	1.21/32	0.3670	0.2750	7/16	4	H5	1	—	1010089	1010093	—
1/2		20		3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	1	1010094	1010097	1010101	1011048
9/16	12			3.19/32	1.21/32	0.4290	0.3220	1/2	4	H3	1	1010103	1010106	1010108	1011049
9/16		18		3.19/32	1.21/32	0.4290	0.3220	1/2	4	H3	1	1010110	1010113	1010116	1011050
5/8	11			3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	1	1010118	1010121	1010123	1011051
5/8		18		3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	1	1010125	1010128	1010131	1011052
11/16			11	4.1/32	1.13/16	0.5420	0.4060	5/8	4	H3	1	—	—	—	1011053
11/16			16	4.1/32	1.13/16	0.5420	0.4060	5/8	4	H3	1	—	—	—	1011054
3/4	10			4.1/4	2"	0.5900	0.4420	11/16	4	H3	1	1010139	1010142	1010144	1011055
3/4		16		4.1/4	2"	0.5900	0.4420	11/16	4	H3	1	1010146	1010149	1010152	1011056
7/8	9			4.11/16	2.7/32	0.6970	0.5230	3/4	4	H4	1	1010154	1010157	1010159	1011057
7/8		14		4.11/16	2.7/32	0.6970	0.5230	3/4	4	H4	1	1010160	1010163	1010166	1011058
1"	8			5.1/8	2.1/2	0.8000	0.6000	13/16	4	H4	1	1010167	1010170	1010172	1011059
1"		12		5.1/8	2.1/2	0.8000	0.6000	13/16	4	H4	1	1010173	1010174	1010175	1011060
1"			14	5.1/8	2.1/2	0.8000	0.6000	13/16	4	H4	1	1010176	1010178	1010181	1011061
1.1/8	7			5.7/16	2.9/16	0.8960	0.6720	7/8	4	H4	1	1010182	1010183	1010184	1011062
1.1/8		12		5.7/16	2.9/16	0.8960	0.6720	7/8	4	H4	1	1010185	1010186	1010187	1011063
1.1/4	7			5.3/4	2.9/16	1.0210	0.7660	1"	4	H4	1	1010188	1010189	1010190	1011064
1.1/4		12		5.3/4	2.9/16	1.0210	0.7660	1"	6	H4	1	1010191	1010192	1010193	1011065
1.3/8	6			6.1/16	3"	1.1000	0.8310	1.1/16	4	H4	1	1010194	1010195	1010196	1011066
1.3/8		12		6.1/16	3"	1.1000	0.8310	1.1/16	6	H4	1	1010197	1010198	1010199	1011067
1.1/2	6			6.3/8	3"	1.2300	0.9250	1.1/8	4	H4	1	1010200	1010201	1010202	1011068
1.1/2		12		6.3/8	3"	1.2300	0.9250	1.1/8	6	H4	1	1010203	1010204	1010205	1011069

PIPE TAPS

General Purpose, Medium Hook, NPT

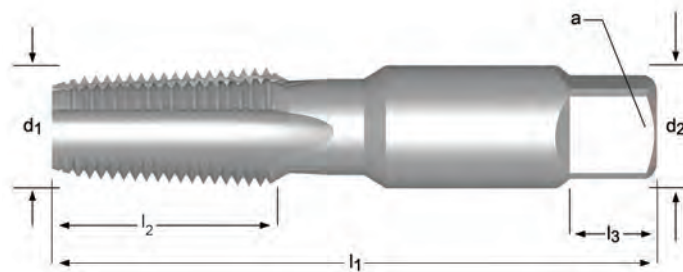
HSS, ANSI, NPT

1541 Straight Flute. Medium hook for multi-material tapping. Generally used for pipe fittings and couplings in most ferrous and non-ferrous materials. The nominal size of a pipe tap is that of the pipe fitting to be tapped and not the actual size of the tap. NPT threads require the use of a 'sealant' such as teflon tape or pipe compound to ensure a tight joint.

TN1541

TiN coating increases surface hardness and improves tool life.

Made to Metal Cutting Tool Institute Standards, table 311



Nominal d ₁	TPI	l ₁		d ₂ ∅ Inch /	a Inch	l ₃ Inch	# of Flutes	Pack Qty	1541	TN1541
		Inch	Inch							
1/16	27	2.1/8	11/16	0.3130	0.2340	3/8	4	1	1010518	—
1/8	27	2.1/8	3/4	0.3130	0.2340	3/8	4	1	1010528	—
1/8	27	2.1/8	3/4	0.4380	0.3280	3/8	4	1	1010519	1060519
1/4	18	2.7/16	1.1/16	0.5630	0.4210	7/16	4	1	1010520	1060520
3/8	18	2.9/16	1.1/16	0.7000	0.5310	1/2	4	1	1010521	1060521
1/2	14	3.1/8	1.3/8	0.6880	0.5150	5/8	4	1	1010522	1060522
3/4	14	3.1/4	1.3/8	0.9060	0.6790	11/16	5	1	1010523	1060523
1"	11.5	3.3/4	1.3/4	1.1250	0.8430	13/16	5	1	1010524	—
1.1/4	11.5	4"	1.3/4	1.3130	0.9840	15/16	5	1	1010525	—
1.1/2	11.5	4.1/4	1.3/4	1.5000	1.1250	1"	7	1	1010526	—
2"	11.5	4.1/2	1.3/4	1.8750	1.4060	1.1/8	7	1	1010527	—

HSS REAMER

Chucking Reamer, Straight Shank

HSS, ANSI



4533 Straight Flute, Right Hand Cut. Chucking reamers have shorter and deeper flutes than hand reamers and are specifically designed for accurate machine reaming in most materials and equipment including screw machines, turret lathes, drill presses, and machining centers.

Recommended for most general purpose reaming.

Produced per ASME B94.2-1995 Standards.



d_1 Ø "/Nr./letter	d_1 decimal Inch	d_2 decimal Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	4533
N60	0.0400	0.0390	1/2	2.1/2	4	1	5010173
N59	0.0410	0.0390	1/2	2.1/2	4	1	5010175
N58	0.0420	0.0390	1/2	2.1/2	4	1	5010177
N57	0.0430	0.0390	1/2	2.1/2	4	1	5010179
N56	0.0465	0.0455	1/2	2.1/2	4	1	5010186
3/64	0.0469	0.0455	1/2	2.1/2	4	1	5010187
N55	0.0520	0.0510	1/2	2.1/2	4	1	5010198
N54	0.0550	0.0510	1/2	2.1/2	4	1	5010204
N53	0.0595	0.0585	1/2	2.1/2	4	1	5010213
1/16	0.0625	0.0585	1/2	2.1/2	4	1	5010219
N52	0.0635	0.0585	1/2	2.1/2	4	1	5010221
N51	0.0670	0.0660	3/4	3"	4	1	5010228
N50	0.0700	0.0660	3/4	3"	4	1	5010234
N49	0.0730	0.0660	3/4	3"	4	1	5010240
N48	0.0760	0.0720	3/4	3"	4	1	5010246
5/64	0.0781	0.0720	3/4	3"	4	1	5010251
N47	0.0785	0.0720	3/4	3"	4	1	5010252
N46	0.0810	0.0771	3/4	3"	4	1	5010257
N45	0.0820	0.0771	3/4	3"	4	1	5010259
N44	0.0860	0.0810	3/4	3"	4	1	5010267
N43	0.0890	0.0810	3/4	3"	4	1	5010273
N42	0.0935	0.0880	3/4	3"	4	1	5010282
3/32	0.0938	0.0880	3/4	3"	4	1	5010283
N41	0.0960	0.0928	7/8	3.1/2	4	1	5010288
N40	0.0980	0.0928	7/8	3.1/2	4	1	5010292
N39	0.0995	0.0928	7/8	3.1/2	4	1	5010295
N38	0.1015	0.0950	7/8	3.1/2	4	1	5010299
N37	0.1040	0.0950	7/8	3.1/2	4	1	5010304
N36	0.1065	0.1030	7/8	3.1/2	4	1	5010309
7/64	0.1094	0.1030	7/8	3.1/2	4	1	5010316
N35	0.1100	0.1030	7/8	3.1/2	4	1	5010318
N34	0.1110	0.1055	7/8	3.1/2	4	1	5010320
N33	0.1130	0.1055	7/8	3.1/2	4	1	5010324
N32	0.1160	0.1120	7/8	3.1/2	4	1	5010330
N31	0.1200	0.1120	7/8	3.1/2	4	1	5010338

HSS REAMER

continued

d ₁ Ø "Nr./letter	d ₁ decimal Inch	d ₂ decimal Inch	l ₂ Inch	l ₁ Inch	# of Flutes	Pack Qty	4533
	0.1230	0.1120	7/8	3.1/2	4	1	5010344
	0.1240	0.1190	7/8	3.1/2	4	1	5010346
	0.1247	0.1190	7/8	3.1/2	4	1	5010349
1/8	0.1250	0.1190	7/8	3.1/2	4	1	5010350
	0.1260	0.1190	7/8	3.1/2	4	1	5010354
N30	0.1285	0.1190	7/8	3.1/2	4	1	5010359
N29	0.1360	0.1275	1"	4"	4	1	5010374
N28	0.1405	0.1350	1"	4"	4	1	5010383
9/64	0.1410	0.1350	1"	4"	4	1	5010384
N27	0.1440	0.1350	1"	4"	4	1	5010391
N26	0.1470	0.1430	1"	4"	4	1	5010397
N25	0.1495	0.1430	1"	4"	4	1	5010402
N24	0.1520	0.1460	1"	4"	4	1	5010407
N23	0.1540	0.1460	1"	4"	4	1	5010411
5/32	0.1562	0.1510	1"	4"	6	1	5010416
N22	0.1570	0.1510	1"	4"	6	1	5010418
N21	0.1590	0.1530	1.1/8	4.1/2	6	1	5010422
N20	0.1610	0.1530	1.1/8	4.1/2	6	1	5010426
N19	0.1660	0.1595	1.1/8	4.1/2	6	1	5010436
N18	0.1695	0.1595	1.1/8	4.1/2	6	1	5010443
11/64	0.1719	0.1645	1.1/8	4.1/2	6	1	5010448
N17	0.1730	0.1645	1.1/8	4.1/2	6	1	5010451
N16	0.1770	0.1700	1.1/8	4.1/2	6	1	5010459
N15	0.1800	0.1755	1.1/8	4.1/2	6	1	5010465
N14	0.1820	0.1755	1.1/8	4.1/2	6	1	5010469
N13	0.1850	0.1800	1.1/8	4.1/2	6	1	5010475
	0.1855	0.1800	1.1/8	4.1/2	6	1	5010476
	0.1865	0.1800	1.1/8	4.1/2	6	1	5010478
	0.1870	0.1800	1.1/8	4.1/2	6	1	5010479
3/16	0.1875	0.1800	1.1/8	4.1/2	6	1	5010480
	0.1885	0.1800	1.1/8	4.1/2	6	1	5010482
N12	0.1890	0.1800	1.1/8	4.1/2	6	1	5010483
N11	0.1910	0.1860	1.1/4	5"	6	1	5010487
N10	0.1935	0.1860	1.1/4	5"	6	1	5010492
N9	0.1960	0.1895	1.1/4	5"	6	1	5010498
N8	0.1990	0.1895	1.1/4	5"	6	1	5010504
N7	0.2010	0.1945	1.1/4	5"	6	1	5010508
13/64	0.2031	0.1945	1.1/4	5"	6	1	5010513
N6	0.2040	0.1945	1.1/4	5"	6	1	5010515
N5	0.2055	0.2016	1.1/4	5"	6	1	5010518
N4	0.2090	0.2016	1.1/4	5"	6	1	5010525
N3	0.2130	0.2075	1.1/4	5"	6	1	5010533
7/32	0.2188	0.2075	1.1/4	5"	6	1	5010545
N2	0.2210	0.2173	1.1/2	6"	6	1	5010550
N1	0.2280	0.2173	1.1/2	6"	6	1	5010564
A	0.2340	0.2265	1.1/2	6"	6	1	5010576
15/64	0.2344	0.2265	1.1/2	6"	6	1	5010577
B	0.2380	0.2329	1.1/2	6"	6	1	5010585
C	0.2420	0.2329	1.1/2	6"	6	1	5010593
D	0.2460	0.2329	1.1/2	6"	6	1	5010602
	0.2480	0.2329	1.1/2	6"	6	1	5010606
	0.2490	0.2400	1.1/2	6"	6	1	5010608
	0.2495	0.2400	1.1/2	6"	6	1	5010609
1/4	0.2500	0.2400	1.1/2	6"	6	1	5010610
E	0.2500	0.2400	1.1/2	6"	6	1	5011202
	0.2510	0.2400	1.1/2	6"	6	1	5010612
F	0.2570	0.2485	1.1/2	6"	6	1	5010619
G	0.2610	0.2485	1.1/2	6"	6	1	5010622
17/64	0.2656	0.2485	1.1/2	6"	6	1	5010623
H	0.2660	0.2485	1.1/2	6"	6	1	5010624
I	0.2720	0.2485	1.1/2	6"	6	1	5010626
J	0.2770	0.2485	1.1/2	6"	6	1	5010627

HSS REAMER

continued



d ₁ Ø "/Nr./letter	d ₁ decimal Inch	d ₂ decimal Inch	l ₂ Inch	l ₁ Inch	# of Flutes	Pack Qty	4533
K	0.2810	0.2485	1.1/2	6"	6	1	5010628
9/32	0.2812	0.2485	1.1/2	6"	6	1	5010629
N32	0.1160	0.1120	7/8	3.1/2	4	1	5010330
N31	0.1200	0.1120	7/8	3.1/2	4	1	5010338
	0.1230	0.1120	7/8	3.1/2	4	1	5010344
	0.1240	0.1190	7/8	3.1/2	4	1	5010346
	0.1247	0.1190	7/8	3.1/2	4	1	5010349
1/8	0.1250	0.1190	7/8	3.1/2	4	1	5010350
	0.1260	0.1190	7/8	3.1/2	4	1	5010354
N30	0.1285	0.1190	7/8	3.1/2	4	1	5010359
N29	0.1360	0.1275	1"	4"	4	1	5010374
N28	0.1405	0.1350	1"	4"	4	1	5010383
9/64	0.1410	0.1350	1"	4"	4	1	5010384
N27	0.1440	0.1350	1"	4"	4	1	5010391
N26	0.1470	0.1430	1"	4"	4	1	5010397
N25	0.1495	0.1430	1"	4"	4	1	5010402
N24	0.1520	0.1460	1"	4"	4	1	5010407
N23	0.1540	0.1460	1"	4"	4	1	5010411
5/32	0.1562	0.1510	1"	4"	6	1	5010416
N22	0.1570	0.1510	1"	4"	6	1	5010418
N21	0.1590	0.1530	1.1/8	4.1/2	6	1	5010422
N20	0.1610	0.1530	1.1/8	4.1/2	6	1	5010426
N19	0.1660	0.1595	1.1/8	4.1/2	6	1	5010436
N18	0.1695	0.1595	1.1/8	4.1/2	6	1	5010443
11/64	0.1719	0.1645	1.1/8	4.1/2	6	1	5010448
N17	0.1730	0.1645	1.1/8	4.1/2	6	1	5010451
N16	0.1770	0.1700	1.1/8	4.1/2	6	1	5010459
N15	0.1800	0.1755	1.1/8	4.1/2	6	1	5010465
N14	0.1820	0.1755	1.1/8	4.1/2	6	1	5010469
N13	0.1850	0.1800	1.1/8	4.1/2	6	1	5010475
	0.1855	0.1800	1.1/8	4.1/2	6	1	5010476
	0.1865	0.1800	1.1/8	4.1/2	6	1	5010478
	0.1870	0.1800	1.1/8	4.1/2	6	1	5010479
3/16	0.1875	0.1800	1.1/8	4.1/2	6	1	5010480
	0.1885	0.1800	1.1/8	4.1/2	6	1	5010482
N12	0.1890	0.1800	1.1/8	4.1/2	6	1	5010483
N11	0.1910	0.1860	1.1/4	5"	6	1	5010487
N10	0.1935	0.1860	1.1/4	5"	6	1	5010492
N9	0.1960	0.1895	1.1/4	5"	6	1	5010498
N8	0.1990	0.1895	1.1/4	5"	6	1	5010504
N7	0.2010	0.1945	1.1/4	5"	6	1	5010508
13/64	0.2031	0.1945	1.1/4	5"	6	1	5010513
N6	0.2040	0.1945	1.1/4	5"	6	1	5010515
N5	0.2055	0.2016	1.1/4	5"	6	1	5010518
N4	0.2090	0.2016	1.1/4	5"	6	1	5010525
N3	0.2130	0.2075	1.1/4	5"	6	1	5010533
7/32	0.2188	0.2075	1.1/4	5"	6	1	5010545
N2	0.2210	0.2173	1.1/2	6"	6	1	5010550
N1	0.2280	0.2173	1.1/2	6"	6	1	5010564
A	0.2340	0.2265	1.1/2	6"	6	1	5010576
15/64	0.2344	0.2265	1.1/2	6"	6	1	5010577
B	0.2380	0.2329	1.1/2	6"	6	1	5010585
C	0.2420	0.2329	1.1/2	6"	6	1	5010593
D	0.2460	0.2329	1.1/2	6"	6	1	5010602
	0.2480	0.2329	1.1/2	6"	6	1	5010606
	0.2490	0.2400	1.1/2	6"	6	1	5010608
	0.2495	0.2400	1.1/2	6"	6	1	5010609
1/4	0.2500	0.2400	1.1/2	6"	6	1	5010610
E	0.2500	0.2400	1.1/2	6"	6	1	5011202
	0.2510	0.2400	1.1/2	6"	6	1	5010612
F	0.2570	0.2485	1.1/2	6"	6	1	5010619
G	0.2610	0.2485	1.1/2	6"	6	1	5010622

HSS REAMER

continued

d ₁ Ø "/Nr./letter	d ₁ decimal Inch	d ₂ decimal Inch	l ₂ Inch	l ₁ Inch	# of Flutes	Pack Qty	4533
17/64	0.2656	0.2485	1.1/2	6"	6	1	5010623
H	0.2660	0.2485	1.1/2	6"	6	1	5010624
I	0.2720	0.2485	1.1/2	6"	6	1	5010626
J	0.2770	0.2485	1.1/2	6"	6	1	5010627
K	0.2810	0.2485	1.1/2	6"	6	1	5010628
9/32	0.2812	0.2485	1.1/2	6"	6	1	5010629
27/32	0.8438	0.6245	2.1/2	9.1/2	8	1	5010715
55/64	0.8594	0.7495	2.5/8	10"	8	1	5010716
7/8	0.8750	0.7495	2.5/8	10"	8	1	5010717
57/64	0.8906	0.7495	2.5/8	10"	8	1	5010718
29/32	0.9062	0.7495	2.5/8	10"	8	1	5010719
59/64	0.9219	0.7495	2.5/8	10"	8	1	5010720
15/16	0.9375	0.7495	2.5/8	10"	8	1	5010721
61/64	0.9531	0.7495	2.5/8	10"	8	1	5010722
31/32	0.9688	0.7495	2.5/8	10"	8	1	5010723
63/64	0.9844	0.8745	2.3/4	10.1/2	8	1	5010724
1"	1.0000	0.8745	2.3/4	10.1/2	8	1	5010725
1.1/16	1.0625	0.8745	2.3/4	10.1/2	8	1	5010726
1.1/8	1.1250	0.8745	2.7/8	11"	8	1	5010727
1.3/16	1.1875	0.9995	2.7/8	11"	8	1	5010728
1.1/4	1.2500	0.9995	3"	11.1/2	8	1	5010729
1.3/8	1.3750	0.9995	3.1/4	12"	8	1	5010731
1.1/2	1.5000	1.2495	3.1/2	12.1/2	8	1	5010733

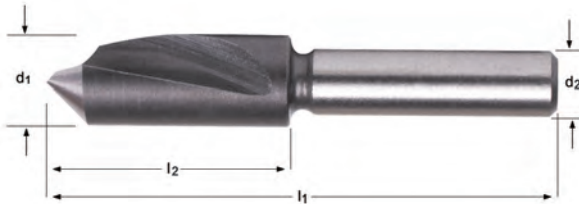
HSS COUNTERSINK

Countersink, Straight Shank, Single-Flute

HSS, ANSI

4603 Available in 60°, 82°, or 90° angles. Engineered for machine use and light portable work. Single flute construction and low controlled relief assure the user of chatterless operation.

Best results obtained using high speeds and low feed.
Recommended that the predrilled hole be at least 10% of the countersink diameter.



d_1 Ø Inch	angle	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	4603
1/4	82°	3/16	11/16	1.7/16	1	1	4710797
1/4	90°	3/16	11/16	1.7/16	1	1	4710805
3/8	60°	1/4	7/8	1.3/4	1	1	4710790
3/8	82°	1/4	25/32	1.21/32	1	1	4710798
3/8	90°	1/4	3/4	1.5/8	1	1	4710806
1/2	60°	1/4	1"	2"	1	1	4710791
1/2	82°	1/4	27/32	1.27/32	1	1	4710799
1/2	90°	1/4	13/32	1.13/16	1	1	4710807
5/8	82°	3/8	1.3/32	2.3/32	1	1	4710800
5/8	90°	3/8	1"	2"	1	1	4710808
3/4	60°	3/8	1.13/32	2.21/32	1	1	4710793
3/4	82°	3/8	1.5/32	2.13/32	1	1	4710801
3/4	90°	3/8	1.1/16	2.5/16	1	1	4710809
1"	60°	1/2	1.9/16	3.1/8	1	1	4710794
1"	82°	1/2	1.1/4	2.13/16	1	1	4710802
1"	90°	1/2	1.1/4	2.13/16	1	1	4710810
1.1/4	60°	1/2	1.3/4	3.3/4	1	1	4710795
1.1/4	82°	1/2	1.1/2	3.1/2	1	1	4710803
1.1/4	90°	1/2	1.9/16	3.9/16	1	1	4710811
1.1/2	60°	1/2	2.5/16	4.1/4	1	1	4710796
1.1/2	82°	1/2	1.15/16	3.7/8	1	1	4710804
1.1/2	90°	1/2	1.13/16	3.3/4	1	1	4710812

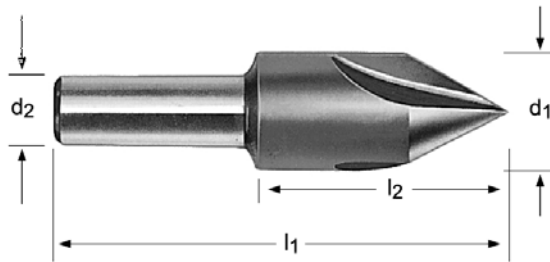
HSS COUNTERSINK

Straight Shank, 3-Flute

HSS, ANSI

4608

Center Reamer/Countersink, Available in 60°, 82°, 90°, or 100° angles. Widely used to countersink screw heads and rivet heads, and countersink holes for lathe centers. The odd number of flutes eliminates chatter in most applications while providing better accuracy than a single-flute countersink.



d_1 Ø Inch	Angle	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	4608
1/4	60°	3/16	3/4	1.1/2	3	1	5011093
1/4	82°	3/16	3/4	1.1/2	3	1	5011098
1/4	90°	3/16	3/4	1.1/2	3	1	5011103
1/4	100°	3/16	3/4	1.1/2	3	1	5011108
3/8	60°	1/4	7/8	1.3/4	3	1	5011094
3/8	82°	1/4	7/8	1.3/4	3	1	5011099
3/8	90°	1/4	7/8	1.3/4	3	1	5011104
3/8	100°	1/4	7/8	1.3/4	3	1	5011109
1/2	60°	3/8	1"	2"	3	1	5011095
1/2	82°	3/8	1"	2"	3	1	5011100
1/2	90°	3/8	1"	2"	3	1	5011105
1/2	100°	3/8	1"	2"	3	1	5011110
5/8	60°	3/8	1"	2.1/4	3	1	5011096
5/8	82°	3/8	1"	2.1/4	3	1	5011101
5/8	90°	3/8	1"	2.1/4	3	1	5011106
5/8	100°	3/8	1"	2.1/4	3	1	5011111
3/4	60°	1/2	1.1/4	2.5/8	3	1	5011097
3/4	82°	1/2	1.1/4	2.5/8	3	1	5011102
3/4	90°	1/2	1.1/4	2.5/8	3	1	5011107
3/4	100°	1/2	1.1/4	2.5/8	3	1	5011112
1"	60°	1/2	1"	3"	3	1	46262132
1"	82°	1/2	1"	3"	3	1	46262133
1"	90°	1/2	1"	3"	3	1	46262134
1"	100°	1/2	1"	3"	3	1	46262135

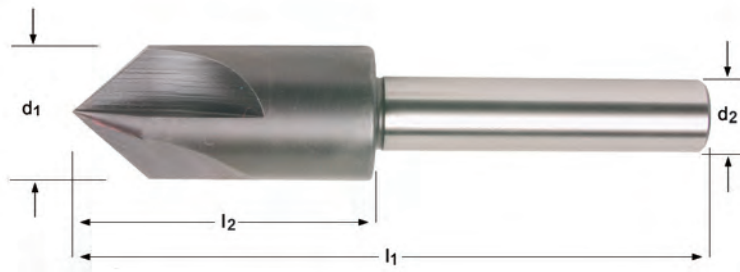
HSS COUNTERSINK

Countersink, Straight Shank, 4-Flute

HSS, ANSI

**UNION
BUTTERFIELD®**

4602 Countersink with angles of 60° for centers or 82° for flat head screws. Bright finish improves chip flow in soft ferrous or non-ferrous materials.



d_1 Ø Inch	angle	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	4602
1/2	60°	1/2	1.5/8	3.7/8	4	1	4710588
1/2	82°	1/2	1.5/8	3.7/8	4	1	4710593
5/8	60°	1/2	1.3/4	4"	4	1	4710589
5/8	82°	1/2	1.3/4	4"	4	1	4710594
3/4	60°	1/2	1.7/8	4.1/8	4	1	4710590
3/4	82°	1/2	1.7/8	4.1/8	4	1	4710595
7/8	60°	1/2	2"	4.1/4	4	1	4710591
7/8	82°	1/2	2"	4.1/4	4	1	4710596
1"	60°	1/2	2.1/8	4.3/8	4	1	4710592
1"	82°	1/2	2.1/8	4.3/8	4	1	4710597