DORMER PRAMET

CUTTING TOOLS FOR MAINTENANCE AND REPAIR APPLICATIONS (MRO)

DORMER

PRECISION

UNION BUTTERFIELD®

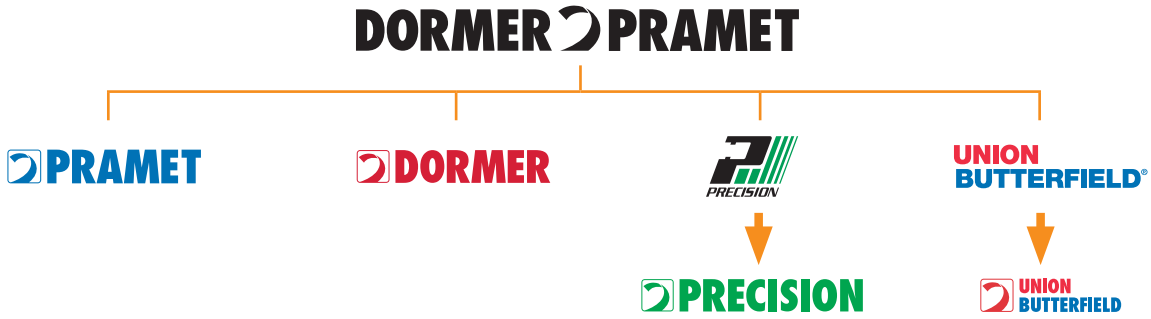
TOOLS FOR MAINTENANCE, REPAIR AND OPERATIONS

The team at Dormer Pramet has created a specific selection of cutting tools and accessories aimed at the MRO professional. The brands within this offer are Precision Twist Drill (PTD), Union Butterfield and Dormer.

Targeted at delivering MRO professionals an offer that is easy-to-select and comprehensive for their needs, our experts have identified drills, taps, dies, reamers, end mills and rotary burrs that will deliver reliable and cost effective results in portable and machine applications in a wide range of operating conditions in various materials.

Our core offer includes drilling, milling, threading and turning tools for the general engineering sector. As your full service supplier, we are committed to helping our customers carry out their machining processes efficiently with productivity as our goal.

2020 VISION: CLARITY IN BRAND ALIGNMENT



We acknowledge a unified appearance of our product logos will show that Dormer Pramet manufactures all our product brands – Precision Twist Drill, Dormer, Union Butterfield and Pramet.

In 2020, we are educating on the evolution of the Precision Twist Drill and Union Butterfield logos. Beginning in 2021, these logos will adopt the chip - our unifying symbol across the company and product brands that communicates our promise of quality manufacturing, products and logistics.

The Union Butterfield and Precision Twist Drill brands are pioneer brands for the North American marketplace. Since launching in 1885 and 1952, respectively, they represent a legacy of local support and quality tooling. Adding the chip to these logos aligns all brands visually and confirms to customers that when they add any of our tools to their shop, they add our entire team, including quality production facilities, reliable delivery and nationwide support.

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MRO Jobber Length Drills

118° Point, HSS, Steam Tempered
Designed for portable and machine drilling under a wide range of operating conditions in various materials. Surface treated with a steam tempered finish for abrasion resistance and improved coolant adherence.

301JD

Drill Sizes				Flute Length	Over-All-Length	Pkg Qty	EDP#
Fractional	Wire Gauge	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

MRO Jobber Length Drills

118° Point, HSS, Steam Tempered

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

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
301JDSET	301JD	29	1/16 - 1/2 x 64ths	1	46481072
301JDSET	301JD	15	1/16 - 1/2 x 32nds	1	47233502

General Purpose Jobber Length Drills

118° Point, HSS, Bright Finish

Designed for general purpose hole making in a wide variety of metals and synthetic materials.
Uncoated (bright) finish for general use applications.

R10P - Fractional Sizes

R15P - Letter Sizes

R18P - Wire Gauge Sizes

Drill Sizes				Flute Length	Over-All-Length	Pack Qty	EDP#
Fractional	Drill Gauge	Letter	Decimal				
	97		0.0059	1/16	3/4	12	018697
	96		0.0063	1/16	3/4	12	018696
	95		0.0067	1/16	3/4	12	018695
	94		0.0071	1/16	3/4	12	018694
	93		0.0075	1/16	3/4	12	018693
	92		0.0079	1/16	3/4	12	018692
	91		0.0083	5/64	3/4	12	018691
	90		0.0087	5/64	3/4	12	018690
	89		0.0091	5/64	3/4	12	018689
	88		0.0095	5/64	3/4	12	018688
	87		0.0100	5/64	3/4	12	018687
	86		0.0105	3/32	3/4	12	018686
	85		0.0110	3/32	3/4	12	018685
	84		0.0115	3/32	3/4	12	018684
	83		0.0120	3/32	3/4	12	018683
	82		0.0125	3/32	3/4	12	018682
	81		0.0130	3/32	3/4	12	018681
	80		0.0135	1/8	3/4	12	018680
	79		0.0145	1/8	3/4	12	018679
1/64			0.0156	3/16	3/4	12	010601
	78		0.0160	3/16	7/8	12	018678
	77		0.0180	3/16	7/8	12	018677
	76		0.0200	3/16	7/8	12	018676
	75		0.0210	1/4	1“	12	018675
	74		0.0225	1/4	1“	12	018674
	73		0.0240	5/16	1.1/8	12	018673
	72		0.0250	5/16	1.1/8	12	018672
	71		0.0260	3/8	1.1/4	12	018671
	70		0.0280	3/8	1.1/4	12	018670
	69		0.0292	1/2	1.3/8	12	018669
	68		0.0310	1/2	1.3/8	12	018668
1/32			0.0313	1/2	1.3/8	12	010602
	67		0.0320	1/2	1.3/8	12	018667
	66		0.0330	1/2	1.3/8	12	018666
	65		0.0350	5/8	1.1/2	12	018665
	64		0.0360	5/8	1.1/2	12	018664
	63		0.0370	5/8	1.1/2	12	018663
	62		0.0380	5/8	1.1/2	12	018662
	61		0.0390	11/16	1.5/8	12	018661
	60		0.0400	11/16	1.5/8	12	018660
	59		0.0410	11/16	1.5/8	12	018659
	58		0.0420	11/16	1.5/8	12	018658
	57		0.0430	3/4	1.3/4	12	018657
	56		0.0465	3/4	1.3/4	12	018656
3/64			0.0469	3/4	1.3/4	12	010603
	55		0.0520	7/8	1.7/8	12	018655
	54		0.0550	7/8	1.7/8	12	018654
	53		0.0595	7/8	1.7/8	12	018653
1/16			0.0625	7/8	1.7/8	12	010604
	52		0.0635	7/8	1.7/8	12	018652
	51		0.0670	1“	2“	12	018651
	50		0.0700	1“	2“	12	018650
	49		0.0730	1“	2“	12	018649
	48		0.0760	1“	2“	12	018648
5/64			0.0781	1“	2“	12	010605
	47		0.0785	1“	2“	12	018647
	46		0.0810	1.1/8	2.1/8	12	018646
	45		0.0820	1.1/8	2.1/8	12	018645
	44		0.0860	1.1/8	2.1/8	12	018644
	43		0.0890	1.1/4	2.1/4	12	018643
	42		0.0935	1.1/4	2.1/4	12	018642
3/32			0.0938	1.1/4	2.1/4	12	010606
	41		0.0960	1.3/8	2.3/8	12	018641
	40		0.0980	1.3/8	2.3/8	12	018640
	39		0.0995	1.3/8	2.3/8	12	018639
	38		0.1015	1.7/16	2.1/2	12	018638
	37		0.1040	1.7/16	2.1/2	12	018637
	36		0.1065	1.7/16	2.1/2	12	018636

General Purpose Jobber Length Drills

continued

Drill Sizes				Flute Length	Over-All-Length	Pack Qty	EDP#
Fractional	Drill Gauge	Letter	Decimal				
7/64			0.1094	1.1/2	2.5/8	12	010607
	35		0.1100	1.1/2	2.5/8	12	018635
	34		0.1110	1.1/2	2.5/8	12	018634
	33		0.1130	1.1/2	2.5/8	12	018633
	32		0.1160	1.5/8	2.3/4	12	018632
	31		0.1200	1.5/8	2.3/4	12	018631
1/8			0.1250	1.5/8	2.3/4	12	010608
	30		0.1285	1.5/8	2.3/4	12	018630
	29		0.1360	1.3/4	2.7/8	12	018629
	28		0.1405	1.3/4	2.7/8	12	018628
9/64			0.1406	1.3/4	2.7/8	12	010609
	27		0.1440	1.7/8	3“	12	018627
	26		0.1470	1.7/8	3“	12	018626
	25		0.1495	1.7/8	3“	12	018625
	24		0.1520	2“	3.1/8	12	018624
	23		0.1540	2“	3.1/8	12	018623
5/32			0.1563	2“	3.1/8	12	010610
	22		0.1570	2“	3.1/8	12	018622
	21		0.1590	2.1/8	3.1/4	12	018621
	20		0.1610	2.1/8	3.1/4	12	018620
	19		0.1660	2.1/8	3.1/4	12	018619
	18		0.1695	2.1/8	3.1/4	12	018618
11/64			0.1719	2.1/8	3.1/4	12	010611
	17		0.1730	2.3/16	3.3/8	12	018617
	16		0.1770	2.3/16	3.3/8	12	018616
	15		0.1800	2.3/16	3.3/8	12	018615
	14		0.1820	2.3/16	3.3/8	12	018614
	13		0.1850	2.5/16	3.1/2	12	018613
3/16			0.1875	2.5/16	3.1/2	12	010612
	12		0.1890	2.5/16	3.1/2	12	018612
	11		0.1910	2.5/16	3.1/2	12	018611
	10		0.1935	2.7/16	3.5/8	12	018610
	9		0.1960	2.7/16	3.5/8	12	018609
	8		0.1990	2.7/16	3.5/8	12	018608
	7		0.2010	2.7/16	3.5/8	12	018607
13/64			0.2031	2.7/16	3.5/8	12	010613
	6		0.2040	2.1/2	3.3/4	12	018606
	5		0.2055	2.1/2	3.3/4	12	018605
	4		0.2090	2.1/2	3.3/4	12	018604
	3		0.2130	2.1/2	3.3/4	12	018603
7/32			0.2188	2.1/2	3.3/4	12	010614
	2		0.2210	2.5/8	3.7/8	12	018602
	1		0.2280	2.5/8	3.7/8	12	018601
		A	0.2340	2.5/8	3.7/8	12	015601
15/64			0.2344	2.5/8	3.7/8	12	010615
		B	0.2380	2.3/4	4“	12	015602
		C	0.2421	2.3/4	4“	12	015603
		D	0.2461	2.3/4	4“	12	015604
		E	0.2500	2.3/4	4“	12	015605
1/4			0.2500	2.3/4	4“	12	010616
		F	0.2571	2.7/8	4.1/8	12	015606
		G	0.2610	2.7/8	4.1/8	12	015607
17/64			0.2656	2.7/8	4.1/8	12	010617
		H	0.2661	2.7/8	4.1/8	12	015608
		I	0.2720	2.7/8	4.1/8	12	015609
		J	0.2772	2.7/8	4.1/8	12	015610
		K	0.2811	2.15/16	4.1/4	12	015611
9/32			0.2813	2.15/16	4.1/4	12	010618
		L	0.2902	2.15/16	4.1/4	12	015612
		M	0.2949	3.1/16	4.3/8	12	015613
19/64			0.2969	3.1/16	4.3/8	12	010619
		N	0.3020	3.1/16	4.3/8	12	015614
5/16			0.3125	3.3/16	4.1/2	6	010620
		O	0.3161	3.3/16	4.1/2	6	015615
		P	0.3228	3.5/16	4.5/8	6	015616
21/64			0.3281	3.5/16	4.5/8	6	010621
		Q	0.3319	3.7/16	4.3/4	6	015617
		R	0.3390	3.7/16	4.3/4	6	015618
11/32			0.3437	3.7/16	4.3/4	6	010622
		S	0.3480	3.1/2	4.7/8	6	015619
		T	0.3580	3.1/2	4.7/8	6	015620
23/64			0.3594	3.1/2	4.7/8	6	010623
		U	0.3680	3.5/8	5“	6	015621
3/8			0.3750	3.5/8	5“	6	010624
		V	0.3772	3.5/8	5“	6	015622
		W	0.3858	3.3/4	5.1/8	6	015623
25/64			0.3906	3.3/4	5.1/8	6	010625
		X	0.3969	3.3/4	5.1/8	6	015624

General Purpose Jobber Length Drills

continued

Drill Sizes				Flute Length	Over-All-Length	Pack Qty	EDP#
Fractional	Drill Gauge	Letter	Decimal				
		Y	0.4039	3.7/8	5.1/4	6	015625
13/32			0.4063	3.7/8	5.1/4	6	010626
		Z	0.4130	3.7/8	5.1/4	6	015626
27/64			0.4219	3.15/16	5.3/8	6	010627
7/16			0.4375	4.1/16	5.1/2	6	010628
29/64			0.4531	4.3/16	5.5/8	6	010629
15/32			0.4687	4.5/16	5.3/4	6	010630
31/64			0.4844	4.3/8	5.7/8	6	010631
1/2			0.5000	4.1/2	6“	6	010632
33/64			0.5156	4.13/16	6.5/8	1	010633
17/32			0.5313	4.13/16	6.5/8	1	010634
35/64			0.5469	4.13/16	6.5/8	1	010635
9/16			0.5625	4.13/16	6.5/8	1	010636
37/64			0.5781	4.13/16	6.5/8	1	010637
19/32			0.5937	5.3/16	7.1/8	1	010638
39/64			0.6094	5.3/16	7.1/8	1	010639
5/8			0.6250	5.3/16	7.1/8	1	010640
41/64			0.6406	5.3/16	7.1/8	1	010641
21/32			0.6563	5.3/16	7.1/8	1	010642
43/64			0.6719	5.5/8	7.5/8	1	010643
11/16			0.6875	5.5/8	7.5/8	1	010644

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
C15R10P	R10P	15	1/16-1/2 x 32nds	1	090163
C29R10P	R10P	29	1/16 - 1/2 x 64ths	1	090162
C26R15P	R15P	26	A-Z	1	090126
C20R18P	R18P	20	N61-N80	1	090161
C60R18P	R18P	60	N1-N60	1	090101

General Purpose Jobber Drills

Designed for general purpose hole making, performing best in steel or cast iron.
Uncoated (bright) finish for general use applications.

2A - 118° Split Point, HSS

- ✱ *No split point below 2mm*
- ✱ *Bright Below 2mm*

Drill Sizes		Flute Length	Over-All-Length	EDP#
Metric	Decimal			
0.15	0.0059	1.5	19	016215
0.16	0.0063	1.5	19	016216
0.17	0.0067	1.5	19	016217
0.18	0.0070	1.5	19	016218
0.19	0.0075	1.5	19	016219
0.20	0.0078	2.5	19	016002
0.21	0.0083	2.5	19	016221
0.22	0.0087	2.5	19	016222
0.23	0.0091	2.5	19	016223
0.24	0.0094	2.5	19	016224
0.25	0.0098	3	19	016225
0.26	0.0102	3	19	016226
0.27	0.0106	3	19	016227
0.28	0.0110	3	19	016228
0.29	0.0114	3	19	016229
0.30	0.0118	3	19	016003
0.32	0.0126	4	19	016232
0.34	0.0134	4	19	016234
0.35	0.0138	4	19	016235
0.36	0.0142	4	19	016236
0.38	0.0150	4	19	016238
0.40	0.0157	5	20	016004
0.42	0.0165	5	20	016242
0.44	0.0173	5	20	016244
0.45	0.0177	5	20	016245
0.46	0.0181	5	20	016246
0.48	0.0189	5	20	016248
0.50	0.0197	6	22	016005
0.55	0.0217	7	24	016250
0.60	0.0236	7	24	016006
0.65	0.0256	8	26	016251
0.70	0.0276	9	28	016007
0.75	0.0295	9	28	016252
0.80	0.0315	10	30	016008
0.85	0.0335	10	30	016253
0.90	0.0354	11	32	016009
0.95	0.0374	11	32	016254
1.00	0.0394	12	34	016010
1.10	0.0433	14	36	016011
1.15	0.0453	14	36	016256
1.20	0.0472	16	38	016012
1.25	0.0492	16	38	016257
1.30	0.0512	16	38	016013
1.35	0.0531	18	40	016258
1.40	0.0551	18	40	016014
1.45	0.0571	18	40	016259
1.50	0.0591	18	40	016015
1.55	0.0610	20	43	016260
1.60	0.0630	20	43	016016
1.65	0.0650	20	43	016261
1.70	0.0669	20	43	016017
1.75	0.0689	22	46	016262
1.80	0.0709	22	46	016018
1.90	0.0748	22	46	016019
1.95	0.0768	24	49	46790303
2.00	0.0787	24	49	016020
2.10	0.0827	24	49	016021
2.15	0.0846	27	53	016266
2.20	0.0866	27	53	016022
2.25	0.0886	27	53	016267
2.30	0.0906	27	53	016023
2.35	0.0925	27	53	016268
2.40	0.0945	30	57	016024
2.50	0.0984	30	57	016025
2.60	0.1024	30	57	016026
2.70	0.1063	33	61	016027

Package quantities: 0.15mm - 7.90mm = **12**; 8.00mm - 12.50mm = **6**; 12.70mm and above = **1**

General Purpose Jobber Drills

continued

Drill Sizes		Flute Length	Over-All-Length	EDP#
Metric	Decimal			
2.75	0.1083	33	61	016270
2.90	0.1142	33	61	016029
3.00	0.1181	33	61	016030
3.10	0.1220	36	65	016031
3.20	0.1260	36	65	016032
3.25	0.1280	36	65	016271
3.30	0.1299	36	65	016033
3.40	0.1339	39	70	016034
3.50	0.1378	39	70	016035
3.60	0.1417	39	70	016036
3.70	0.1457	39	70	016037
4.00	0.1575	43	75	016040
4.10	0.1614	43	75	016041
4.20	0.1654	43	75	016042
4.30	0.1693	47	80	016043
4.40	0.1732	47	80	016044
4.50	0.1772	47	80	016045
4.60	0.1811	47	80	016046
4.80	0.1890	52	86	016048
5.00	0.1968	52	86	016050
5.10	0.2008	52	86	016051
5.20	0.2047	52	86	016052
5.30	0.2087	52	86	016053
5.40	0.2126	57	93	016054
5.50	0.2165	57	93	016055
5.60	0.2205	57	93	016056
5.70	0.2244	57	93	016057
5.75	0.2264	57	93	016276
5.80	0.2283	57	93	016058
6.00	0.2362	57	93	016060
6.10	0.2402	63	101	016061
6.20	0.2441	63	101	016062
6.30	0.2480	63	101	016063
6.40	0.2520	63	101	016064
6.50	0.2559	63	101	016065
6.60	0.2598	63	101	016066
6.70	0.2638	63	101	016067
6.75	0.2657	69	109	016278
6.80	0.2677	69	109	016068
7.00	0.2756	69	109	016070
7.20	0.2835	69	109	016072
7.25	0.2854	69	109	016279
7.30	0.2874	69	109	016073
7.40	0.2913	69	109	016074
7.50	0.2953	69	109	016075
7.60	0.2992	75	117	016076
7.80	0.3071	75	117	016078
7.90	0.3110	75	117	016079
8.00	0.3150	75	117	016080
8.10	0.3189	75	117	016081
8.20	0.3228	75	117	016082
8.25	0.3248	75	117	016282
8.40	0.3307	75	117	016084
8.50	0.3346	75	117	016085
8.60	0.3386	81	125	016086
8.70	0.3425	81	125	016087
8.75	0.3445	81	125	016283
8.80	0.3465	81	125	016088
8.90	0.3504	81	125	016089
9.00	0.3543	81	125	016090
9.30	0.3661	81	125	016093
9.40	0.3701	81	125	016094
9.50	0.3740	81	125	016095
9.60	0.3780	87	133	016096
9.70	0.3819	87	133	016097
9.80	0.3858	87	133	016098
9.90	0.3898	87	133	016099
10.00	0.3937	87	133	016100
10.20	0.4016	87	133	016102
10.30	0.4055	87	133	016103
10.50	0.4134	87	133	016105
10.60	0.4173	87	133	016106
10.80	0.4252	94	142	016108
10.90	0.4291	94	142	016109
11.00	0.4331	94	142	016110
11.20	0.4409	94	142	016112
11.30	0.4449	94	142	016113

Package quantities: 0.15mm - 7.90mm = **12**; 8.00mm - 12.50mm = **6**; 12.70mm and above = **1**

General Purpose Jobber Drills

continued

Drill Sizes		Flute Length	Over-All-Length	EDP#
Metric	Decimal			
11.40	0.4488	94	142	016114
11.50	0.4528	94	142	016115
11.70	0.4606	94	142	016117
11.80	0.4646	94	142	016118
12.00	0.4724	101	151	016120
12.10	0.4764	101	151	016121
12.20	0.4803	101	151	016122
12.50	0.4921	101	151	016125
12.80	0.5039	101	151	016128
13.00	0.5118	101	151	016130
13.50	0.5315	108	160	034135
14.00	0.5512	108	160	034140
14.50	0.5709	114	169	034145
15.00	0.5906	114	169	034150

Package quantities: 0.15mm - 7.90mm = **12**; 8.00mm - 12.50mm = **6**; 12.70mm and above = **1**

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
C252A	2A	25	1.0mm - 13mm x .5mm	1	099987

General Purpose Jobber Drills - Left Hand

Left hand helix for use in machines where spindle is counter-clockwise and can be used to remove broken parts without damaging threaded holes. Bright Finish improves chip flow in soft or non-ferrous materials.

L10 - 118° Point, HSS, Bright Finish

Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	EDP#
Fractional	Decimal				
1/32	0.0313	1/2	1.3/8	12	010902
3/64	0.0469	3/4	1.3/4	12	010903
1/16	0.0625	7/8	1.7/8	12	010904
5/64	0.0781	1“	2“	12	010905
3/32	0.0938	1.1/4	2.1/4	12	010906
7/64	0.1094	1.1/2	2.5/8	12	010907
1/8	0.1250	1.5/8	2.3/4	12	010908
9/64	0.1406	1.3/4	2.7/8	12	010909
5/32	0.1563	2“	3.1/8	12	010910
11/64	0.1719	2.1/8	3.1/4	12	010911
3/16	0.1875	2.5/16	3.1/2	12	010912
13/64	0.2031	2.7/16	3.5/8	12	010913
7/32	0.2188	2.1/2	3.3/4	12	010914
15/64	0.2344	2.5/8	3.7/8	12	010915
1/4	0.2500	2.3/4	4“	12	010916
17/64	0.2656	2.7/8	4.1/8	12	010917
9/32	0.2813	2.15/16	4.1/4	12	010918
19/64	0.2969	3.1/16	4.3/8	12	010919
5/16	0.3125	3.3/16	4.1/2	6	010920
21/64	0.3281	3.5/16	4.5/8	6	010921
11/32	0.3437	3.7/16	4.3/4	6	010922
23/64	0.3594	3.1/2	4.7/8	6	010923
3/8	0.3750	3.5/8	5“	6	010924
25/64	0.3906	3.3/4	5.1/8	6	010925
13/32	0.4063	3.7/8	5.1/4	6	010926
27/64	0.4219	3.15/16	5.3/8	6	010927
7/16	0.4375	4.1/16	5.1/2	6	010928
29/64	0.4531	4.3/16	5.5/8	6	010929
15/32	0.4687	4.5/16	5.3/4	6	010930
31/64	0.4844	4.3/8	5.7/8	6	010931
1/2	0.5000	4.1/2	6“	6	010932

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
C15L10	L10	15	1/16-1/2 x 32nds, Left Hand	1	099955
C29L10	L10	29	1/16 - 1/2 x 64ths, Left Hand	1	099935

Heavy Duty MRO Jobber Length Drills

135° Split Point, HSS

Heavier web construction than 301JD MRO drills, providing greater rigidity and strength in drilling medium strength alloy materials. The Self-Centering 135° Split Point reduces thrust requirements and minimizes 'walking' particularly on curved surfaces.

331HD - Steam Oxide
for improved abrasion resistance

332HD - Steam & Bronze Oxide
for improved abrasion resistance, lubricity and enhanced penetration

333HD - TiN Coated
Titanium Nitride (TiN) surface finish for an effective 'heat shield' with higher lubricity at higher speeds and feeds

Drill Sizes				Flute Length	Over-All-Length	Pkg Qty	331HD EDP#	332HD EDP#	333HD EDP#
Fractional	Wire Gauge	Letter	Decimal						
	N60		0.0400	11/16	1.5/8	12		47233745	*
	N59		0.0410	11/16	1.5/8	12		47233744	*
	N58		0.0420	11/16	1.5/8	12		47233743	*
	N57		0.0430	3/4	1.3/4	12		47233742	*
	N56		0.0465	3/4	1.3/4	12		47233741	*
	N55		0.0520	7/8	1.7/8	12		47233740	*
	N54		0.0550	7/8	1.7/8	12		47233739	*
	N53		0.0595	7/8	1.7/8	12		47233738	
1/16			0.0625	7/8	1.7/8	12	46480999	47233631	47233748
	N52		0.0635	7/8	1.7/8	12	47233620	47233737	
	N51		0.0670	1"	2"	12	47233619	47233736	
	N50		0.0700	1"	2"	12	47233618	47233735	
	N49		0.0730	1"	2"	12	47233617	47233734	
	N48		0.0760	1"	2"	12	47233616	47233733	
5/64			0.0781	1"	2"	12	46481000	47233632	47233749
	N47		0.0785	1"	2"	12	47233615	47233732	
	N46		0.0810	1.1/8	2.1/8	12	47233614	47233731	
	N45		0.0820	1.1/8	2.1/8	12	47233613	47233730	
	N44		0.0860	1.1/8	2.1/8	12	47233612	47233729	
	N43		0.0890	1.1/4	2.1/4	12	47233611	47233728	
	N42		0.0935	1.1/4	2.1/4	12	47233610	47233727	
3/32			0.0937	1.1/4	2.1/4	12	46481001	47233633	47233750
	N41		0.0960	1.3/8	2.3/8	12	47233609	47233726	
	N40		0.0980	1.3/8	2.3/8	12	47233608	47233725	
	N39		0.0995	1.3/8	2.3/8	12	47233607	47233724	
	N38		0.1015	1.7/16	2.1/2	12	47233606	47233723	
	N37		0.1040	1.7/16	2.1/2	12	47233605	47233722	
	N36		0.1065	1.7/16	2.1/2	12	47233604	47233721	
7/64			0.1094	1.1/2	2.5/8	12	46481002	47233634	47233751
	N35		0.1100	1.1/2	2.5/8	12	47233603	47233720	
	N34		0.1110	1.1/2	2.5/8	12	47233602	47233719	
	N33		0.1130	1.1/2	2.5/8	12	47233601	47233718	
	N32		0.1160	1.5/8	2.3/4	12	47233600	47233717	
	N31		0.1200	1.5/8	2.3/4	12	47233599	47233716	
1/8			0.1250	1.5/8	2.3/4	12	46481003	47233635	47233752
	N30		0.1285	1.5/8	2.3/4	12	47233598	47233715	
	N29		0.1360	1.3/4	2.7/8	12	47233597	47233714	
	N28		0.1405	1.3/4	2.7/8	12	47233596	47233713	
9/64			0.1406	1.3/4	2.7/8	12	46481004	47233636	47233753
	N27		0.1440	1.7/8	3"	12	47233595	47233712	
	N26		0.1470	1.7/8	3"	12	47233594	47233711	
	N25		0.1495	1.7/8	3"	12	47233593	47233710	
	N24		0.1520	2"	3.1/8	12	47233592	47233709	
	N23		0.1540	2"	3.1/8	12	47233591	47233708	
5/32			0.1563	2"	3.1/8	12	46481005	47233637	47233754
	N22		0.1570	2"	3.1/8	12	47233590	47233707	
	N21		0.1590	2.1/8	3.1/4	12	47233589	47233706	
	N20		0.1610	2.1/8	3.1/4	12	47233588	47233705	
	N19		0.1660	2.1/8	3.1/4	12	47233587	47233704	

* Not Split Point

Heavy Duty MRO Jobber Length Drills

135° Split Point, HSS

continued

Drill Sizes				Flute Length	Over-All-Length	Pkg Qty	331HD EDP#	332HD EDP#	333HD EDP#
Fractional	Wire Gauge	Letter	Decimal						
	N18		0.1695	2.1/8	3.1/4	12	47233586	47233703	
11/64			0.1719	2.1/8	3.1/4	12	46481006	47233638	47233755
	N17		0.1730	2.3/16	3.3/8	12	47233585	47233702	
	N16		0.1770	2.3/16	3.3/8	12	47233584	47233701	
	N15		0.1800	2.3/16	3.3/8	12	47233583	47233700	
	N14		0.1820	2.3/16	3.3/8	12	47233582	47233699	
	N13		0.1850	2.5/16	3.1/2	12	47233581	47233698	
3/16			0.1875	2.5/16	3.1/2	12	46481007	47233639	47233756
	N12		0.1890	2.5/16	3.1/2	12	47233580	47233697	
	N11		0.1910	2.5/16	3.1/2	12	47233579	47233696	
	N10		0.1935	2.7/16	3.5/8	12	47233578	47233695	
	N9		0.1960	2.7/16	3.5/8	12	47233577	47233694	
	N8		0.1990	2.7/16	3.5/8	12	47233576	47233693	
	N7		0.2010	2.7/16	3.5/8	12	47233575	47233692	
13/64			0.2031	2.7/16	3.5/8	12	46481008	47233640	47233757
	N6		0.2040	2.1/2	3.3/4	12	47233574	47233691	
	N5		0.2055	2.1/2	3.3/4	12	47233573	47233690	
	N4		0.2090	2.1/2	3.3/4	12	47233572	47233689	
	N3		0.2130	2.1/2	3.3/4	12	47233571	47233688	
7/32			0.2187	2.1/2	3.3/4	12	46481009	47233641	47233758
	N2		0.2210	2.5/8	3.7/8	12	47233570	47233687	
	N1		0.2280	2.5/8	3.7/8	12	47233569	47233686	
		A	0.2340	2.5/8	3.7/8	12	47233503	47233660	
15/64			0.2344	2.5/8	3.7/8	12	46481010	47233642	47233759
		B	0.2380	2.3/4	4"	12	47233504	47233661	
		C	0.2420	2.3/4	4"	12	47233505	47233662	
		D	0.2460	2.3/4	4"	12	47233506	47233663	
		E	0.2500	2.3/4	4"	12	47233507	47233664	
1/4			0.2500	2.3/4	4"	12	46481011	47233643	47233760
		F	0.2570	2.7/8	4.1/8	12	47233508	47233665	
		G	0.2610	2.7/8	4.1/8	12	47233509	47233666	
17/64			0.2656	2.7/8	4.1/8	12	46481012	47233644	47233761
		H	0.2660	2.7/8	4.1/8	12	47233550	47233667	
		I	0.2720	2.7/8	4.1/8	12	47233551	47233668	
		J	0.2770	2.7/8	4.1/8	12	47233552	47233669	
		K	0.2810	2.15/16	4.1/4	12	47233553	47233670	
9/32			0.2813	2.15/16	4.1/4	12	46481013	47233645	47233762
		L	0.2900	2.15/16	4.1/4	12	47233554	47233671	
		M	0.2950	3.1/16	4.3/8	12	47233555	47233672	
19/64			0.2969	3.1/16	4.3/8	12	46481014	47233646	47233763
		N	0.3020	3.1/16	4.3/8	12	47233556	47233673	
5/16			0.3125	3.3/16	4.1/2	6	46481015	47233647	47233764
		O	0.3160	3.3/16	4.1/2	6	47233557	47233674	
		P	0.3230	3.5/16	4.5/8	6	47233558	47233675	
21/64			0.3281	3.5/16	4.5/8	6	46481016	47233648	47233765
		Q	0.3320	3.7/16	4.3/4	6	47233559	47233676	
		R	0.3390	3.7/16	4.3/4	6	47233560	47233677	
11/32			0.3438	3.7/16	4.3/4	6	46481017	47233649	47233766
		S	0.3480	3.1/2	4.7/8	6	47233561	47233678	
		T	0.3580	3.1/2	4.7/8	6	47233562	47233679	
23/64			0.3594	3.1/2	4.7/8	6	46481018	47233650	47233767
		U	0.3680	3.5/8	5"	6	47233563	47233680	
3/8			0.3750	3.5/8	5"	6	46481019	47233651	47233768
		V	0.3770	3.5/8	5"	6	47233564	47233681	
		W	0.3860	3.3/4	5.1/8	6	47233565	47233682	
25/64			0.3906	3.3/4	5.1/8	6	46481020	47233652	47233769
		X	0.3970	3.3/4	5.1/8	6	47233566	47233683	
		Y	0.4040	3.7/8	5.1/4	6	47233567	47233684	
13/32			0.4063	3.7/8	5.1/4	6	46481021	47233653	47233770
		Z	0.4130	3.7/8	5.1/4	6	47233568	47233685	
27/64			0.4219	3.15/16	5.3/8	6	46481022	47233654	47233771
7/16			0.4375	4.1/16	5.1/2	6	46481023	47233655	47233772
29/64			0.4531	4.3/16	5.5/8	6	46481024	47233656	47233773
15/32			0.4687	4.5/16	5.3/4	6	46481025	47233657	47233774
31/64			0.4844	4.3/8	5.7/8	6	46481026	47233658	47233775
1/2			0.5000	4.1/2	6"	6	46481027	47233659	47233776

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
331HDSET	331HD	29	1/16 - 1/2 x 64ths	1	47233629
331HDSET	331HD	15	1/16 - 1/2 x 32nds	1	47233630
332HDSET	332HD	29	1/16 - 1/2 x 64ths	1	47233746
332HDSET	332HD	15	1/16 - 1/2 x 32nds	1	47233747
333HDSET	333HD	29	1/16 - 1/2 x 64ths	1	47233777

Trailer Bit Drills

Designed for Hand Drilling through stacked materials found in Bus and Truck Trailer manufacturing. Steam Oxide surface treatment for increased wear resistance. Conforms to NAS 907 Type B Aerospace Standards

239TBT - 135° Split Point, HSS, Steam Oxide

Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	EDP#
Inch	Decimal				
1/8	0.125	1.5/8	2.3/4	288	041957
11/64	0.172	2.1/8	3.1/4	288	041960
11	0.191	2.5/16	3.1/2	288	041926
7/32	0.219	2.1/2	3.3/4	288	041963
1/4	0.250	2.3/4	4"	288	041965
F	0.257	2.7/8	4.1/8	144	041948
17/64	0.266	2.7/8	4.1/8	144	041966
9/32	0.281	2.15/16	4.1/4	144	041967
5/16	0.313	3.3/16	4.1/2	144	041969

Jobber Length Carbide Tipped Drills

Designed for general purpose drilling with heavy duty brazed Carbide Tipped for abrasive materials or non-ferrous, such as cast iron.

D444 - 118°, HSS / HM, Bright Finish

Diameter Inch	Diameter Decimal	Flute Length	Over-All-Length	Pack Qty	D444
32	0.1160	1.5/8	2.3/4	1	034632
1/8	0.1250	1.5/8	2.3/4	1	034408
30	0.1285	1.5/8	2.3/4	1	034630
29	0.1360	1.3/4	2.7/8	1	034629
9/64	0.1406	1.3/4	2.7/8	1	034409
25	0.1495	1.7/8	3“	1	034625
5/32	0.1563	2“	3.1/8	1	034410
21	0.1590	2.1/8	3.1/4	1	034621
20	0.1610	2.1/8	3.1/4	1	034620
19	0.1660	2.1/8	3.1/4	1	034619
18	0.1695	2.1/8	3.1/4	1	034618
11/64	0.1719	2.1/8	3.1/4	1	034411
17	0.1730	2.3/16	3.3/8	1	034617
15	0.1800	2.3/16	3.3/8	1	034615
14	0.1820	2.3/16	3.3/8	1	034614
13	0.1850	2.5/16	3.1/2	1	034613
3/16	0.1875	2.5/16	3.1/2	1	034412
11	0.1910	2.5/16	3.1/2	1	034611
10	0.1935	2.7/16	3.5/8	1	034610
9	0.1960	2.7/16	3.5/8	1	034609
7	0.2010	2.7/16	3.5/8	1	034607
13/64	0.2031	2.7/16	3.5/8	1	034413
3	0.2130	2.1/2	3.3/4	1	034603
7/32	0.2188	2.1/2	3.3/4	1	034414
1	0.2280	2.5/8	3.7/8	1	034601
15/64	0.2344	2.5/8	3.7/8	1	034415
B	0.2380	2.3/4	4“	1	034502
C	0.2420	2.3/4	4“	1	034503
E	0.2500	2.3/4	4“	1	034505
1/4	0.2500	2.3/4	4“	1	034416
F	0.2570	2.7/8	4.1/8	1	034506

Jobber Length Carbide Tipped Drills

continued

Diameter Inch	Diameter Decimal	Flute Length	Over-All-Length	Pack Qty	D444
G	0.2610	2.7/8	4.1/8	1	034507
17/64	0.2656	2.7/8	4.1/8	1	034417
H	0.2660	2.7/8	4.1/8	1	034508
I	0.2720	2.7/8	4.1/8	1	034509
J	0.2770	2.7/8	4.1/8	1	034510
K	0.2810	2.15/16	4.1/4	1	034511
9/32	0.2813	2.15/16	4.1/4	1	034418
L	0.2900	2.15/16	4.1/4	1	034512
19/64	0.2969	3.1/16	4.3/8	1	034419
N	0.3020	3.1/16	4.3/8	1	034514
5/16	0.3125	3.3/16	4.1/2	1	034420
O	0.3160	3.3/16	4.1/2	1	034515
P	0.3230	3.5/16	4.5/8	1	034516
21/64	0.3281	3.5/16	4.5/8	1	034421
Q	0.3320	3.7/16	4.3/4	1	034517
R	0.3390	3.7/16	4.3/4	1	034518
11/32	0.3437	3.7/16	4.3/4	1	034422
S	0.3480	3.1/2	4.7/8	1	034519
T	0.3580	3.1/2	4.7/8	1	034520
23/64	0.3594	3.1/2	4.7/8	1	034423
U	0.3680	3.5/8	5“	1	034521
3/8	0.3750	3.5/8	5“	1	034424
25/64	0.3906	3.3/4	5.1/8	1	034425
13/32	0.4063	3.7/8	5.1/4	1	034426
Z	0.4130	3.7/8	5.1/4	1	034526
27/64	0.4219	3.15/16	5.3/8	1	034427
7/16	0.4375	4.1/16	5.1/2	1	034428
29/64	0.4531	4.3/16	5.5/8	1	034429
15/32	0.4687	4.5/16	5.3/4	1	034430
31/64	0.4844	4.3/8	5.7/8	1	034431
1/2	0.5000	4.1/2	6“	1	034432

Jobber Length Solid Carbide Drills

Designed for heavy duty general purpose use in a variety of materials. 4-Facet Self Centering Point with low thrust design.

D33F - Fractional Sizes

D33W - Wire Gauge Sizes

D33L - Letter Sizes

Drill Sizes				Flute Length	Over-All-Length	Pack Qty	D33F EDP#	D33W EDP#	D33L EDP#
Fractional	Wire Gauge	Letter	Decimal						
	68		0.0310	5/16	1.1/4	1	—	003500	—
1/32			0.0313	5/16	1.1/4	1	003501	—	—
	67		0.0320	5/16	1.1/4	1	—	003502	—
	66		0.0330	5/16	1.1/4	1	—	003503	—
	65		0.0350	5/8	1.3/8	1	—	003504	—
	64		0.0360	5/8	1.3/8	1	—	003505	—
	63		0.0370	5/8	1.3/8	1	—	003506	—
	62		0.0380	5/8	1.3/8	1	—	003507	—
	61		0.0390	5/8	1.3/8	1	—	003508	—
	60		0.0400	3/4	1.1/2	1	—	003509	—
	59		0.0410	3/4	1.1/2	1	—	003510	—
	58		0.0420	3/4	1.1/2	1	—	003511	—

Jobber Length Solid Carbide Drills

continued

Drill Sizes				Flute Length	Over-All-Length	Pack Qty	D33F EDP#	D33W EDP#	D33L EDP#
Fractional	Wire Gauge	Letter	Decimal						
	57		0.0430	3/4	1.1/2	1	—	003512	—
	56		0.0465	3/4	1.1/2	1	—	003513	—
3/64			0.0469	3/4	1.1/2	1	003514	—	—
	55		0.0520	3/4	1.1/2	1	—	003515	—
	54		0.0550	3/4	1.1/2	1	—	003516	—
	53		0.0595	3/4	1.1/2	1	—	003517	—
1/16			0.0625	3/4	1.1/2	1	003518	—	—
	52		0.0635	3/4	1.1/2	1	—	003519	—
	51		0.0670	3/4	1.1/2	1	—	003520	—
	50		0.0700	7/8	1.3/4	1	—	003521	—
	49		0.0730	7/8	1.3/4	1	—	003522	—
	48		0.0760	7/8	1.3/4	1	—	003523	—
5/64			0.0781	7/8	1.3/4	1	003524	—	—
	47		0.0785	7/8	1.3/4	1	—	003525	—
	46		0.0810	7/8	1.3/4	1	—	003526	—
	45		0.0820	7/8	1.3/4	1	—	003527	—
	44		0.0860	1“	2“	1	—	003528	—
	43		0.0890	1“	2“	1	—	003529	—
	42		0.0935	1“	2“	1	—	003530	—
3/32			0.0938	1“	2“	1	003531	—	—
	41		0.0960	1“	2“	1	—	003532	—
	40		0.0980	1“	2“	1	—	003533	—
	39		0.0995	1.1/4	2.1/4	1	—	003534	—
	38		0.1015	1.1/4	2.1/4	1	—	003535	—
	37		0.1040	1.1/4	2.1/4	1	—	003536	—
	36		0.1065	1.1/4	2.1/4	1	—	003537	—
7/64			0.1094	1.1/4	2.1/4	1	003538	—	—
	35		0.1100	1.1/4	2.1/4	1	—	003539	—
	34		0.1110	1.1/4	2.1/4	1	—	003540	—
	33		0.1130	1.1/4	2.1/4	1	—	003541	—
	32		0.1160	1.1/4	2.1/4	1	—	003542	—
	31		0.1200	1.1/4	2.1/4	1	—	003543	—
1/8			0.1250	1.1/4	2.1/4	1	003544	—	—
	30		0.1285	1.3/8	2.1/2	1	—	003545	—
	29		0.1360	1.3/8	2.1/2	1	—	003546	—
	28		0.1405	1.3/8	2.1/2	1	—	003547	—
9/64			0.1406	1.3/8	2.1/2	1	003548	—	—
	27		0.1440	1.3/8	2.1/2	1	—	003549	—
	26		0.1470	1.3/8	2.1/2	1	—	003550	—
	25		0.1495	1.3/8	2.1/2	1	—	003551	—
	24		0.1520	1.3/8	2.1/2	1	—	003552	—
	23		0.1540	1.3/8	2.1/2	1	—	003553	—
5/32			0.1563	1.3/8	2.1/2	1	003554	—	—
	22		0.1570	1.3/8	2.1/2	1	—	003555	—
	21		0.1590	1.3/8	2.1/2	1	—	003556	—
	20		0.1610	1.3/8	2.1/2	1	—	003557	—
	19		0.1660	1.5/8	2.3/4	1	—	003558	—
	18		0.1695	1.5/8	2.3/4	1	—	003559	—
11/64			0.1719	1.5/8	2.3/4	1	003560	—	—
	17		0.1730	1.5/8	2.3/4	1	—	003561	—
	16		0.1770	1.5/8	2.3/4	1	—	003562	—
	15		0.1800	1.5/8	2.3/4	1	—	003563	—
	14		0.1820	1.5/8	2.3/4	1	—	003564	—
	13		0.1850	1.5/8	2.3/4	1	—	003565	—
3/16			0.1875	1.5/8	2.3/4	1	003566	—	—
	12		0.1890	1.5/8	2.3/4	1	—	003567	—
	11		0.1910	1.5/8	2.3/4	1	—	003568	—
	10		0.1935	1.5/8	2.3/4	1	—	003569	—
	9		0.1960	1.3/4	3“	1	—	003570	—
	8		0.1990	1.3/4	3“	1	—	003571	—
	7		0.2010	1.3/4	3“	1	—	003572	—
13/64			0.2031	1.3/4	3“	1	003573	—	—

Jobber Length Solid Carbide Drills

continued

Drill Sizes				Flute Length	Over-All-Length	Pack Qty	D33F EDP#	D33W EDP#	D33L EDP#
Fractional	Wire Gauge	Letter	Decimal						
	6		0.2040	1.3/4	3“	1	—	003574	—
	5		0.2055	1.3/4	3“	1	—	003575	—
	4		0.2090	1.3/4	3“	1	—	003576	—
	3		0.2130	1.3/4	3“	1	—	003577	—
7/32			0.2188	1.3/4	3“	1	003578	—	—
	2		0.2210	1.3/4	3“	1	—	003579	—
	1		0.2280	1.3/4	3“	1	—	003580	—
		A	0.2340	2“	3.1/4	1	—	—	003581
15/64			0.2344	2“	3.1/4	1	003582	—	—
		B	0.2380	2“	3.1/4	1	—	—	003583
		C	0.2420	2“	3.1/4	1	—	—	003584
		D	0.2460	2“	3.1/4	1	—	—	003585
1/4			0.2500	2“	3.1/4	1	003586	—	—
		F	0.2570	2“	3.1/4	1	—	—	003587
		G	0.2610	2.1/8	3.1/2	1	—	—	003588
17/64			0.2656	2.1/8	3.1/2	1	003589	—	—
		H	0.2660	2.1/8	3.1/2	1	—	—	003590
		I	0.2720	2.1/8	3.1/2	1	—	—	003591
		J	0.2770	2.1/8	3.1/2	1	—	—	003592
		K	0.2810	2.1/8	3.1/2	1	—	—	003593
9/32			0.2813	2.1/8	3.1/2	1	003594	—	—
		L	0.2900	2.1/8	3.1/2	1	—	—	003595
		M	0.2950	2.3/8	4“	1	—	—	003596
19/64			0.2969	2.3/8	4“	1	003597	—	—
		N	0.3020	2.3/8	4“	1	—	—	003598
5/16			0.3125	2.3/8	4“	1	003599	—	—
		O	0.3160	2.3/8	4“	1	—	—	003600
		P	0.3230	2.3/8	4“	1	—	—	003601
21/64			0.3281	2.3/8	4“	1	003602	—	—
		Q	0.3320	2.3/8	4“	1	—	—	003603
		R	0.3390	2.3/8	4“	1	—	—	003604
11/32			0.3437	2.3/8	4“	1	003605	—	—
		S	0.3480	2.3/8	4“	1	—	—	003606
		T	0.3580	2.3/4	4.1/4	1	—	—	003607
23/64			0.3594	2.3/4	4.1/4	1	003608	—	—
		U	0.3680	2.3/4	4.1/4	1	—	—	003609
3/8			0.3750	2.3/4	4.1/4	1	003610	—	—
		V	0.3770	2.3/4	4.1/4	1	—	—	003611
		W	0.3860	2.7/8	4.1/2	1	—	—	003612
25/64			0.3906	2.7/8	4.1/2	1	003613	—	—
		X	0.3970	2.7/8	4.1/2	1	—	—	003614
		Y	0.4040	2.7/8	4.1/2	1	—	—	003615
13/32			0.4063	2.7/8	4.1/2	1	003616	—	—
		Z	0.4130	2.7/8	4.1/2	1	—	—	003617
27/64			0.4219	2.7/8	4.1/2	1	003618	—	—
7/16			0.4375	2.7/8	4.1/2	1	003619	—	—
29/64			0.4531	3“	4.3/4	1	003620	—	—
15/32			0.4687	3“	4.3/4	1	003621	—	—
31/64			0.4844	3“	4.3/4	1	003622	—	—
1/2			0.5000	3“	4.3/4	1	003623	—	—

Metric Jobber Length Solid Carbide Drills

Designed for heavy duty general purpose use in a variety of materials. Self-centering point with low thrust design.

D33M - 118° Point, Bright Finish

Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	EDP#
Inch	Decimal				
0.80	0.0315	5/16	1.1/4	1	003470
0.90	0.0354	5/8	1.3/8	1	003471
1.00	0.0394	5/8	1.1/2	1	003472
1.50	0.0591	3/4	1.1/2	1	003473
2.00	0.0787	7/8	1.3/4	1	003474
2.05	0.0807	7/8	1.3/4	1	003475
2.50	0.0984	1“	2“	1	003476
3.00	0.1181	1.1/4	2.1/4	1	003477
3.30	0.1299	1.3/8	2.1/2	1	003624
3.50	0.1378	1.3/8	2.1/2	1	003478
4.00	0.1575	1.3/8	2.1/2	1	003626
4.50	0.1772	1.5/8	2.3/4	1	003479
5.00	0.1969	1.3/4	3“	1	003630
5.50	0.2165	1.3/4	3“	1	003480
6.00	0.2362	2“	3.1/4	1	003481
6.50	0.2559	2“	3.1/4	1	003482
7.00	0.2756	2.1/8	3.1/2	1	003483
7.50	0.2953	2.3/8	4“	1	003484
8.00	0.3150	2.3/8	4“	1	003485
8.50	0.3346	2.3/8	4“	1	003486
9.00	0.3543	2.3/4	4.1/4	1	003487
9.50	0.3740	2.3/4	4.1/4	1	003488
10.00	0.3937	2.7/8	4.1/2	1	003631
10.50	0.4134	2.7/8	4.1/2	1	003489
10.75	0.4232	2.7/8	4.1/2	1	003490
11.00	0.4331	2.7/8	4.1/2	1	003491
11.50	0.4528	3“	4.3/4	1	003492
12.00	0.4724	3“	4.3/4	1	003493

Heavy Duty MRO Mechanics Length Drills

135° Split Point, HSS, Steam & Bronze Tempered
Designed with a shorter flute and overall length than the MRO 332HD drills for superior rigidity when used in portable drills. Additionally, features 3 flats on the shank for tighter chucking particularly in keyless chucks.

The Self-Centering 135° Split Point for reduced thrust requirements. Steam & Bronze tempered surface treatment provides both abrasion resistance & improved lubricity.

321MD

Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	EDP#	
Fractional	Decimal					
1/16	0.0625	7/8	1.7/8	12	46480970	*
5/64	0.0781	1"	2"	12	46480971	*
3/32	0.0937	1.1/4	2.1/4	12	46480972	*
7/64	0.1094	1.5/16	2.3/8	12	46480973	*
1/8	0.1250	1.7/16	2.1/2	12	46480974	*
9/64	0.1406	1.9/16	2.5/8	12	46480975	*
5/32	0.1563	1.11/16	2.3/4	12	46480976	*
11/64	0.1719	1.13/16	2.7/8	12	46480977	*
3/16	0.1875	1.7/8	3"	12	46480978	
13/64	0.2031	1.15/16	3.1/8	12	46480979	
7/32	0.2187	2"	3.1/4	12	46480980	
15/64	0.2344	2.1/16	3.3/8	12	46480981	
1/4	0.2500	2"	3.1/2	12	46480982	
17/64	0.2656	2.1/8	3.5/8	12	46480983	
9/32	0.2813	2.1/4	3.3/4	12	46480984	
19/64	0.2969	2.3/8	3.7/8	12	46480985	
5/16	0.3125	2.1/2	4"	6	46480986	
21/64	0.3281	2.9/16	4.1/16	6	46480987	
11/32	0.3438	2.5/8	4.1/8	6	46480988	
23/64	0.3594	2.11/16	4.3/16	6	46480989	
3/8	0.3750	2.11/16	4.1/4	6	46480990	
25/64	0.3906	2.3/4	4.5/16	6	46480991	
13/32	0.4063	2.13/16	4.3/8	6	46480992	
27/64	0.4219	2.7/8	4.7/16	6	46480993	
7/16	0.4375	2.15/16	4.1/2	6	46480994	
29/64	0.4531	3"	4.5/8	6	46480995	
15/32	0.4687	3.1/8	4.3/4	6	46480996	
31/64	0.4844	3.1/4	4.7/8	6	46480997	
1/2	0.5000	3.3/8	5"	6	46480998	

* No Tri Flats on Shank

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
321MDSET	321MD	29	1/16 - 1/2 x 64ths	1	46481073
321MDSET	321MD	15	1/16 - 1/2 x 32nds	1	47233808

Heavy Duty MRO Stub Length Drills

135° Split Point, HSS

Designed with a short flute and overall length for increased rigidity, hole accuracy and tool life. Self-Centering 135° Split Point for reduced 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 and Bronze Tempered
for improved abrasion resistance, lubricity and enhanced penetration

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	
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	

* Not Split Point

Heavy Duty MRO Stub Length Drills

135° Split Point, HSS

continued

Drill Sizes				Flute Length	Over-All-Length	Pkg Qty	311SM EDP#	312SM EDP#
Fractional	Wire Gauge	Letter	Decimal					
	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

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
311SMSET	311SM	29	1/16 - 1/2 x 64ths	1	47233778

MRO Reduced Shank Drills

118° Point, HSS. Steam Tempered and Bright

Designed with a ½" diameter reduced shank, ideal for portable drilling and drill presses where the maximum chuck capacity is ½". 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	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

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
341SDSET	341SD	8	9/16 - 1" x 16ths	1	47233816

MRO Reduced Shank Drills

118° Split Point, HSS, Steam and Bronze Tempered

Designed with a ½" diameter reduced shank, ideal for portable drilling and drill presses where the maximum chuck capacity is ½". Self-Centering 118° Split Point for reduced thrust. Steam & Bronze tempered surface treatment provides both abrasion resistance and improved lubricity.

342SDT - 1/2" Shank Diameter, Silver & Deming with Tri- Flats, enhanced penetration geometry

Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	EDP#
Fractional	Decimal				
33/64	0.5156	3"	6"	1	47233817
17/32	0.5313	3"	6"	1	47233818
35/64	0.5469	3"	6"	1	47233819
9/16	0.5625	3"	6"	1	47233820
37/64	0.5781	3"	6"	1	47233821
19/32	0.5937	3"	6"	1	47233822
39/64	0.6094	3"	6"	1	47233823
5/8	0.6250	3"	6"	1	47233824
41/64	0.6406	3"	6"	1	47233825
21/32	0.6562	3"	6"	1	47233826
43/64	0.6719	3"	6"	1	47233827
11/16	0.6875	3"	6"	1	47233828
45/64	0.7031	3"	6"	1	47233829
23/32	0.7187	3"	6"	1	47233830
47/64	0.7344	3"	6"	1	47233831
3/4	0.7500	3"	6"	1	47233832
49/64	0.7656	3"	6"	1	47233833
25/32	0.7812	3"	6"	1	47233834
51/64	0.7969	3"	6"	1	47233835
13/16	0.8125	3"	6"	1	47233836
53/64	0.8281	3"	6"	1	47233837
27/32	0.8437	3"	6"	1	47233838
55/64	0.8594	3"	6"	1	47233839
7/8	0.8750	3"	6"	1	47233840
57/64	0.8906	3"	6"	1	47233841
29/32	0.9062	3"	6"	1	47233842
59/64	0.9219	3"	6"	1	47233843
15/16	0.9375	3"	6"	1	47233844
61/64	0.9531	3"	6"	1	47233845
31/32	0.9688	3"	6"	1	47233846
63/64	0.9844	3"	6"	1	47233847
1	1.0000	3"	6"	1	47233848

Set	Style	Pieces per Set	Sizes	Pack Qty	EDP#
342SDTSET	342SDT	8	9/16 - 1" x 16ths	1	47233849

General Purpose Taper Shank Drills

118°, HSS, Steam Oxide

209 - Standard Taper

S209 - Small Taper

Drill Sizes		Flute Length	Over-All-Length	MTS	Pack Qty	209	S209
Inch	Decimal						
1/8	0.1250	1.7/8	5.1/8	1	1	020008	—
9/64	0.1406	2.1/8	5.3/8	1	1	020009	—
5/32	0.1563	2.1/8	5.3/8	1	1	020010	—
11/64	0.1719	2.1/2	5.3/4	1	1	020011	—
3/16	0.1875	2.1/2	5.3/4	1	1	020012	—
13/64	0.2031	2.3/4	6“	1	1	020013	—
7/32	0.2188	2.3/4	6“	1	1	020014	—
15/64	0.2344	2.7/8	6.1/8	1	1	020015	—
1/4	0.2500	2.7/8	6.1/8	1	1	020016	—
17/64	0.2656	3“	6.1/4	1	1	020017	—
9/32	0.2813	3“	6.1/4	1	1	020018	—
19/64	0.2969	3.1/8	6.3/8	1	1	020019	—
5/16	0.3125	3.1/8	6.3/8	1	1	020020	—
21/64	0.3281	3.1/4	6.1/2	1	1	020021	—
11/32	0.3437	3.1/4	6.1/2	1	1	020022	—
23/64	0.3594	3.1/2	6.3/4	1	1	020023	—
3/8	0.3750	3.1/2	6.3/4	1	1	020024	—
25/64	0.3906	3.5/8	7“	1	1	020025	—
13/32	0.4063	3.5/8	7“	1	1	020026	—
27/64	0.4219	3.7/8	7.1/4	1	1	020027	—
7/16	0.4375	3.7/8	7.1/4	1	1	020028	—
29/64	0.4531	4.1/8	7.1/2	1	1	020029	—
15/32	0.4687	4.1/8	7.1/2	1	1	020030	—
31/64	0.4844	4.3/8	8.1/4	2	1	020031	—
1/2	0.5000	4.3/8	7.3/4	1	1	—	023032
1/2	0.5000	4.3/8	8.1/4	2	1	020032	—
33/64	0.5156	4.5/8	8“	1	1	—	023033
33/64	0.5156	4.5/8	8.1/2	2	1	020033	—
17/32	0.5313	4.5/8	8“	1	1	—	023034
17/32	0.5313	4.5/8	8.1/2	2	1	020034	—
35/64	0.5469	4.7/8	8.1/4	1	1	—	023035
35/64	0.5469	4.7/8	8.3/4	2	1	020035	—
9/16	0.5625	4.7/8	8.1/4	1	1	—	023036
9/16	0.5625	4.7/8	8.3/4	2	1	020036	—
37/64	0.5781	4.7/8	8.3/4	2	1	020037	—
19/32	0.5937	4.7/8	8.3/4	2	1	020038	—
39/64	0.6094	4.7/8	8.3/4	2	1	020039	—
5/8	0.6250	4.7/8	8.3/4	2	1	020040	—
41/64	0.6406	5.1/8	9“	2	1	020041	—
21/32	0.6563	5.1/8	9“	2	1	020042	—
43/64	0.6719	5.3/8	9.1/4	2	1	020043	—
11/16	0.6875	5.3/8	9.1/4	2	1	020044	—
45/64	0.7031	5.5/8	9.1/2	2	1	020045	—
23/32	0.7188	5.5/8	9.1/2	2	1	020046	—
47/64	0.7344	5.7/8	9.3/4	2	1	020047	—
3/4	0.7500	5.7/8	9.3/4	2	1	020048	—
49/64	0.7656	6“	9.7/8	2	1	020049	—
25/32	0.7813	6“	9.7/8	2	1	020050	—
51/64	0.7969	6.1/8	10“	2	1	—	023051
51/64	0.7969	6.1/8	10.3/4	3	1	020051	—
13/16	0.8125	6.1/8	10“	2	1	—	023052
13/16	0.8125	6.1/8	10.3/4	3	1	020052	—
53/64	0.8281	6.1/8	10“	2	1	—	023053
53/64	0.8281	6.1/8	10.3/4	3	1	020053	—
27/32	0.8438	6.1/8	10“	2	1	—	023054
27/32	0.8438	6.1/8	10.3/4	3	1	020054	—
55/64	0.8594	6.1/8	10.3/4	3	1	020055	—

General Purpose Taper Shank Drills

continued

Drill Sizes		Flute Length	Over-All-Length	MTS	Pack Qty	209	S209
Inch	Decimal						
7/8	0.8750	6.1/8	10“	2	1	—	023056
7/8	0.8750	6.1/8	10.3/4	3	1	020056	—
57/64	0.8906	6.1/8	10.3/4	3	1	020057	—
29/32	0.9063	6.1/8	10“	2	1	—	023058
29/32	0.9063	6.1/8	10.3/4	3	1	020058	—
59/64	0.9219	6.1/8	10.3/4	3	1	020059	—
15/16	0.9375	6.1/8	10.3/4	3	1	020060	—
61/64	0.9531	6.3/8	11“	3	1	020061	—
31/32	0.9688	6.3/8	11“	3	1	020062	—
63/64	0.9844	6.3/8	11“	3	1	020063	—
1“	1.0000	6.3/8	11“	3	1	020100	—
1.1/64	1.0156	6.1/2	11.1/8	3	1	020101	—
1.1/32	1.0312	6.1/2	11.1/8	3	1	020102	—
1.3/64	1.0469	6.5/8	11.1/4	3	1	020103	—
1.1/16	1.0625	6.5/8	11.1/4	3	1	020104	—
1.5/64	1.0781	6.7/8	12.1/2	4	1	020105	—
1.3/32	1.0937	6.7/8	11.1/2	3	1	—	023106
1.3/32	1.0937	6.7/8	12.1/2	4	1	020106	—
1.7/64	1.1094	7.1/8	11.3/4	3	1	—	023107
1.7/64	1.1094	7.1/8	12.3/4	4	1	020107	—
1.1/8	1.1250	7.1/8	11.3/4	3	1	—	023108
1.1/8	1.1250	7.1/8	12.3/4	4	1	020108	—
1.9/64	1.1406	7.1/4	11.7/8	3	1	—	023109
1.9/64	1.1406	7.1/4	12.7/8	4	1	020109	—
1.5/32	1.1563	7.1/4	11.7/8	3	1	—	023110
1.5/32	1.1563	7.1/4	12.7/8	4	1	020110	—
1.11/64	1.1719	7.3/8	12“	3	1	—	023111
1.11/64	1.1719	7.3/8	13“	4	1	020111	—
1.3/16	1.1875	7.3/8	12“	3	1	—	023112
1.3/16	1.1875	7.3/8	13“	4	1	020112	—
1.13/64	1.2031	7.1/2	12.1/8	3	1	—	023113
1.7/32	1.2187	7.1/2	12.1/8	3	1	—	023114
1.7/32	1.2187	7.1/2	13.1/8	4	1	020114	—
1.15/64	1.2344	7.7/8	13.1/2	4	1	020115	—
1.1/4	1.2500	7.7/8	12.1/2	3	1	—	023116
1.1/4	1.2500	7.7/8	13.1/2	4	1	020116	—
1.17/64	1.2656	8.1/2	14.1/8	4	1	020117	—
1.9/32	1.2813	8.1/2	14.1/8	4	1	020118	—
1.19/64	1.2969	8.5/8	14.1/4	4	1	020119	—
1.5/16	1.3125	8.5/8	14.1/4	4	1	020120	—
1.21/64	1.3281	8.3/4	14.3/8	4	1	020121	—
1.11/32	1.3437	8.3/4	14.3/8	4	1	020122	—
1.3/8	1.3750	8.7/8	14.1/2	4	1	020124	—
1.13/32	1.4063	9“	14.5/8	4	1	020126	—
1.27/64	1.4219	9.1/8	14.3/4	4	1	020127	—
1.7/16	1.4375	9.1/8	14.3/4	4	1	020128	—
1.15/32	1.4687	9.1/4	14.7/8	4	1	020130	—
1.31/64	1.4844	9.3/8	15“	4	1	020131	—
1.1/2	1.5000	9.3/8	15“	4	1	020132	—
1.33/64	1.5156	9.3/8	15“	4	1	—	023133
1.17/32	1.5313	9.3/8	15“	4	1	—	023134
1.17/32	1.5313	9.3/8	16.3/8	5	1	020134	—
1.35/64	1.5469	9.5/8	15.1/4	4	1	—	023135
1.9/16	1.5625	9.5/8	15.1/4	4	1	—	023136
1.9/16	1.5625	9.5/8	16.5/8	5	1	020136	—
1.19/32	1.5937	9.7/8	15.1/2	4	1	—	023138
1.39/64	1.6094	10“	15.5/8	4	1	—	023139
1.5/8	1.6250	10“	15.5/8	4	1	—	023140
1.5/8	1.6250	10“	17“	5	1	020140	—
1.21/32	1.6563	10.1/8	15.3/4	4	1	—	023142
1.11/16	1.6875	10.1/8	15.3/4	4	1	—	023144
1.11/16	1.6875	10.1/8	17.1/8	5	1	020144	—
1.47/64	1.7344	10.3/8	16.1/4	4	1	—	023147

General Purpose Taper Shank Drills

continued

Drill Sizes		Flute Length	Over-All-Length	MTS	Pack Qty	209	S209
Inch	Decimal						
1.3/4	1.7500	10.1/8	17.1/8	5	1	020148	—
1.3/4	1.7500	10.3/8	16.1/4	4	1	—	023148
1.25/32	1.7813	10.3/8	16.1/4	4	1	—	023150
1.13/16	1.8125	10.1/8	17.1/8	5	1	020152	—
1.13/16	1.8125	10.3/8	16.1/4	4	1	—	023152
1.7/8	1.8750	10.1/2	16.1/2	4	1	—	023156
1.7/8	1.8750	10.3/8	17.3/8	5	1	020156	—
1.15/16	1.9375	10.3/8	17.3/8	5	1	020160	—
1.15/16	1.9375	10.5/8	16.5/8	4	1	—	023160
1.31/32	1.9687	10.5/8	16.5/8	4	1	—	023162
2“	2.0000	10.3/8	17.3/8	5	1	020200	—
2“	2.0000	10.5/8	16.5/8	4	1	—	023200

Core Drill

Taper Shank - 4-Flute

HSS, Steam tempered

Designed with a taper shank for enlarging pre-drilled or cast holes in a wide range of materials.

T400

Drill Sizes		Flute Length	Over-All-Length	MTS	Pack Qty	T400
Inch	Decimal					
1/2	0.5000	4.3/8	8.1/4	2	1	024532
17/32	0.5312	4.5/8	8.1/2	2	1	024534
9/16	0.5625	4.7/8	8.3/4	2	1	024536
5/8	0.6250	4.7/8	8.3/4	2	1	024540
21/32	0.6562	5.1/8	9“	2	1	024542
3/4	0.7500	5.7/8	9.3/4	2	1	024548
25/32	0.7812	6“	9.7/8	2	1	024550
7/8	0.8750	6.1/8	10.3/4	3	1	024556
1“	1.0000	6.3/8	11“	3	1	024600
1.1/32	1.0312	6.1/2	11.1/8	3	1	024602
1.1/16	1.0625	6.5/8	11.1/4	3	1	024604
1.1/8	1.1250	7.1/8	12.3/4	4	1	024608
1.5/32	1.1562	7.1/4	12.7/8	4	1	024610
1.1/4	1.2500	7.7/8	13.1/2	4	1	024616
1.5/16	1.3125	8.5/8	14.1/4	4	1	024620
1.11/32	1.3438	8.3/4	14.3/8	4	1	024622
1.3/8	1.3750	8.7/8	14.1/2	4	1	024624
1.1/2	1.5000	9.3/8	15“	4	1	024632
1.9/16	1.5625	9.5/8	16.5/8	5	1	024636
1.5/8	1.6250	10“	17“	5	1	024640

Center Drills

60° Countersink, Solid Carbide, Bright Finish

Combined drill and countersink (center drill) designed for better abrasion resistance and longer tool live in soft or non ferrous materials.

DC

Nr.	Pilot Diameter	Pilot Length	Over-All-Length	Shank Diameter	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° Countersink, HSS, Bright Finish

Combined drill and countersink (center drill) for general purpose use in soft or non ferrous materials.

76HA

Nr.	Pilot Diameter	Pilot Length	Over-All-Length	Shank Diameter	Pack Qty	DC
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

HSS, Bright
Combined drill and countersink (center drill) for use in soft or non ferrous materials.

A225 60° Countersink
A217 82° Countersink
A217SET 5 pc. set consists of N1, N2, N3, N4 & N5
A218 90° Countersink
A218SET 5 pc. set consists of N1, N2, N3, N4 & N5

Nr.	Pilot Diameter	Pilot Diameter Decimal	Pilot Length max/min	Over-All-Length	Shank Diameter	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

Special Purpose Drills

Spotting Drill - Short Length

SPS-90 90°, HSS, Bright Finish

SPS-120 120°, HSS, Bright Finish

Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	SPS-90	SPS-120
Inch	Decimal					
1/4	0.2500	3/4	2.1/2	1	087900	087950
3/8	0.3750	1.1/8	3.1/8	1	087901	087951
1/2	0.5000	1.3/8	3.3/4	1	087902	087952
5/8	0.6250	1.5/8	4.3/8	1	087903	087953
3/4	0.7500	1.7/8	5“	1	087904	087954
1“	1.0000	2.1/4	6“	1	087905	087955

Spotting Drill - Regular Length

SPR-90 90°, HSS, Bright Finish

SPR-120 120°, HSS, Bright Finish

Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	SPR-90	SPR-120
Inch	Decimal					
1/4	0.2500	3/4	4“	1	087912	087962
3/8	0.3750	1.1/8	5“	1	087913	087963
1/2	0.5000	1.3/8	6“	1	087914	087964
5/8	0.6250	1.5/8	7“	1	087915	087965
3/4	0.7500	1.7/8	8“	1	087916	087966
1“	1.0000	2.1/4	8“	1	087917	087967

Spotting Drill - Long Length

SPL-90 90°, HSS, Bright Finish

SPL-120 120°, HSS, Bright Finish

Drill Sizes		Flute Length	Over-All-Length	Pkg Qty	SPL-90	SPL-120
Inch	Decimal					
1/4	0.2500	3/4	6“	1	087924	087974
3/8	0.3750	1.1/8	7“	1	087925	087975
1/2	0.5000	1.3/8	8“	1	087926	087976
5/8	0.6250	1.5/8	9“	1	087927	087977
3/4	0.7500	1.7/8	10“	1	087928	—
1“	1.0000	2.1/4	10“	1	087929	—

Sheet Metal Stub Length Drill, Double Ended

120° point, HSS, Steam Tempered
Designed for drilling thin materials.

A119

Drill Sizes		Flute Length mm	Over-All-Length mm	A119
Metric	Decimal Inch			
3.30	0.1299	11	49	47189827
3.60	0.1417	12	52	47189828
4.10	0.1614	14	55	47189829
4.20	0.1654	14	55	47189840
4.90	0.1929	17	62	47189841
5.10	0.2008	17	62	47189842

Sheet Metal Stub Length Drills

120° point, HSS, Steam Tempered
Designed for drilling thin materials.

A123

Drill Sizes			Flute Length mm	Over-All-Length mm	A123
Fractional	Metric	Decimal Inch			
3/32	2.38	0.0937	14	43	47189761
	2.50	0.0984	14	43	47189762
	3.00	0.1181	16	46	47189763
1/8	3.18	0.1252	18	49	47189764
	3.20	0.1260	18	49	47189765
	3.30	0.1299	18	49	47189766
	3.50	0.1378	18	52	47189767
	3.70	0.1457	18	52	47189769
5/32	3.97	0.1563	18	55	47189780
	4.00	0.1575	18	55	47189781
	4.10	0.1614	18	55	47189782
	4.20	0.1654	18	55	47189783
	4.50	0.1772	18	58	47189784
3/16	4.76	0.1874	18	62	47189785
	4.80	0.1890	18	62	47189786
	4.90	0.1929	18	62	47189787
	5.00	0.1969	18	62	47189788
	5.50	0.2165	18	66	47189789
7/32	5.56	0.2189	18	66	47189790
	6.00	0.2362	18	66	47189791
1/4	6.35	0.2500	19	70	47189792

Spot Weld Drill

Spot weld drill point, HSCO, Bronze Tempered
Designed with special point to center and create a flat drilling surface prior to drilling holes in welded areas.

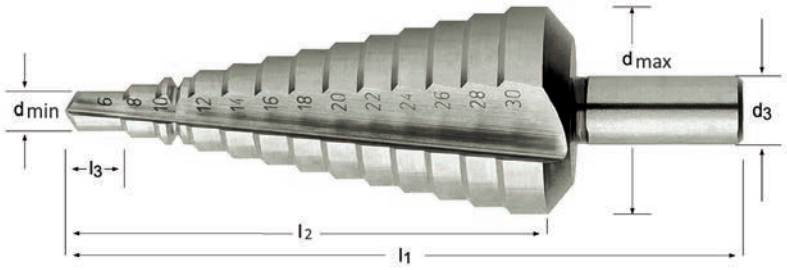
A723

Drill Sizes		Flute Length mm	Over-All-Length mm	A119
Metric	Decimal Inch			
6.00	0.2362	18	66	47189822
6.00	0.2362	18	93	47189823
8.00	0.3150	24	79	47189824
8.00	0.3150	24	117	47189825

Special Purpose Drills

Conical Drill

HSS, Bright Finish
Designed to drill holes in sheet metal up to 1/4" thick. Each step enlarges the original hole from the previous step and can drill a range of hole sizes with a single bit.



G314

Nr.	d min-max mm	l_3 mm	l_2 mm	l_1 mm	d_3 Ø mm	G314
412	4.0 mm - 12.0 mm x 1.0 mm	5.0	61	80	6.0	0149416
1220	12.0 mm - 20.0 mm x 1.0 mm	4.0	55	76	9.0	0149423
2030	20.0 mm - 30.0 mm x 1.0 mm	4.0	67	88	12.0	0149430
3040	30.0 mm - 40.0 mm x 1.0 mm	4.0	74	98	13.0	0149447
420	4.0 mm - 20.0 mm x 2.0 mm	4.0	48	76	8.0	0149461
630	6.0 mm - 30.0 mm x 2.0 mm	4.0	73	98	10.0	0149478
M	9.0 mm - 36.0 mm x 3.0 mm	3.0	57	86	12.0	0149485

Drilling Troubleshooting

Problem	Solution
Wear on Outer Corners	Reduce cutting speed
	Increase feed (IPR)
	Improve direction of coolant flow
	Increase coolant pressure
	Add corner break
Chipping of Chisel Edge	Check accuracy of drill runout
	Check workpiece clamping accuracy and movement
	Check point centrality and lip height
	Increase feed rate
Chipping of Cutting Lips	Check accuracy of drill runout
	Check workpiece clamping accuracy and movement
	Reduce speed
	Reduce point clearance
	Increase hone
Cracking of Lands	Check movement of workpiece
	Increase back taper
	Check accuracy of drill runout
	Chip packing; increase flute form opening or peck drill (HSS or HSCO only)
	Slow down helix, horizontal drilling
	Increase feed
	When spot drilling, reduce feed
	Improve direction of coolant flow
	Increase coolant pressure
Oversize Hole	Increase speed, reduce feed
	Check workpiece clamping accuracy and movement
	Check accuracy of drill runout
	Chip packing, increase flute form opening or peck drill (HSS or HSCO only)
	Check point centrality and lip height
Undersize Hole	Improve direction of coolant flow
	Reduce cutting speed, increase feed
	Check drill diameter
Hole Not Round	Check accuracy of drill runout
	Check workpiece clamping accuracy and movement
	Check point centrality and lip height
	Chip packing, increase flute form opening or peck drill (HSS or HSCO only)
Drill Breakage	Chip packing, increase flute form opening or peck drill (HSS or HSCO only)
	Check workpiece clamping accuracy and movement
	Check accuracy of drill runout
	Reduce feed rate, increase feed rate
	Improve direction of coolant flow
	Increase coolant pressure

General Purpose Hand Taps

UNION BUTTERFIELD®

The most versatile HSS 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.

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)

Nominal Point Diameter	TPI UNC	TPI UNF	TPI UNS	Over-All-Length	Thread Length	Shank Diameter Inch	Square Diameter	Square Length	# 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	—
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

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

General Purpose Hand Taps

Nominal Point Diameter	TPI UNC	TPI UNF	TPI UNS	Over-All-Length	Thread Length	Shank Diameter Inch	Square Diameter	Square Length	# of Flutes	Limits	Pack Qty	Taper	Plug	Bottoming	Sets
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

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

HSS General Purpose Hand Taps - Left Hand

Similar in design to the standard 1500 series but finished with left hand threads, which when viewed axially, wind in a counter-clockwise and receding direction. Available in plug chamfer.
For through or blind hole applications.

1500L

UNC	UNF	UNS	TPI	Over-All-Length	Thread Length	Shank Diameter	Square Diameter	Square Length	# of Flutes	Limits	Chamfer	Pack Qty	EDP#
	1/4		28	2.1/2	1“	0.2550	0.1910	5/16	4	H3	Plug	1	1011775
1/4			20	2.1/2	1“	0.2550	0.1910	5/16	4	H3	Plug	1	1011772
	5/16		24	2.23/32	1.1/8	0.3180	0.2380	3/8	4	H3	Plug	1	1011781
5/16			18	2.23/32	1.1/8	0.3180	0.2380	3/8	4	H3	Plug	1	1011778
	3/8		24	2.15/16	1.1/4	0.3810	0.2860	7/16	4	H3	Plug	1	1011787
3/8			16	2.15/16	1.1/4	0.3810	0.2860	7/16	4	H3	Plug	1	1011784
	7/16		20	3.5/32	1.7/16	0.3230	0.2420	13/32	4	H3	Plug	1	1011793
7/16			14	3.5/32	1.7/16	0.3230	0.2420	13/32	4	H3	Plug	1	1011790
	1/2		20	3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	Plug	1	1011799
1/2			13	3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	Plug	1	1011796
	9/16		18	3.19/32	1.21/32	0.4290	0.3220	1/2	4	H3	Plug	1	1011805
9/16			12	3.19/32	1.21/32	0.4290	0.3220	1/2	4	H3	Plug	1	1011802
	5/8		18	3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	Plug	1	1011811
5/8			11	3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	Plug	1	1011808
	3/4		16	4.1/4	2“	0.5900	0.4420	11/16	4	H3	Plug	1	1011823
3/4			10	4.1/4	2“	0.5900	0.4420	11/16	4	H3	Plug	1	1011820
	7/8		14	4.11/16	2.7/32	0.6970	0.5230	3/4	4	H4	Plug	1	1011829
7/8			9	4.11/16	2.7/32	0.6970	0.5230	3/4	4	H4	Plug	1	1011826
		1“	14	5.1/8	2.1/2	0.8000	0.6000	13/16	4	H4	Plug	1	1011838
	1“		12	5.1/8	2.1/2	0.8000	0.6000	13/16	4	H4	Plug	1	1011835
1“			8	5.1/8	2.1/2	0.8000	0.6000	13/16	4	H4	Plug	1	1011832

HSS General Purpose Hand Taps

Similar in design to the standard 1500 series, but steam oxide treated to reduce wear and chip welding in harder ferrous materials. Not recommended for non-ferrous applications. For through or blind hole tapping.

1500A

UNC	UNF	TPI	Over-All-Length	Thread Length Inch	Shank Diameter Inch	Square Diameter Inch	Square Length Inch	# of Flutes	Limits	Chamfer	Pack Qty	1500A	
1/4		20	2.1/2	1.000	0.2550	0.1910	5/16	4	H3	Plug	1	1050006	1)
	1/4	28	2.1/2	1.000	0.2550	0.1910	5/16	4	H3	Bottoming	1	1050021	1)
	5/16	24	2.23/32	1.1/8	0.3180	0.2380	3/8	4	H3	Plug	1	1050039	1)
5/16		18	2.23/32	1.1/8	0.3180	0.2380	3/8	4	H3	Plug	1	1050028	1)
	3/8	24	2.15/16	1.1/4	0.3810	0.2860	7/16	4	H3	Plug	1	1050061	1)
3/8		16	2.15/16	1.1/4	0.3810	0.2860	7/16	4	H3	Plug	1	1050050	1)
	7/16	20	3.5/32	1.7/16	0.3230	0.2420	13/32	4	H3	Plug	1	1050079	2)
7/16		14	3.5/32	1.7/16	0.3230	0.2420	13/32	4	H3	Plug	1	1050070	2)
	1/2	20	3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	Plug	1	1050097	2)
1/2		13	3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	Plug	1	1050088	2)
	9/16	18	3.19/32	1.21/32	0.4290	0.3220	1/2	4	H3	Plug	1	1050113	2)
9/16		12	3.19/32	1.21/32	0.4290	0.3220	1/2	4	H3	Plug	1	1050106	2)
	5/8	18	3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	Plug	1	1050128	2)
5/8		11	3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	Plug	1	1050121	2)
	3/4	16	4.1/4	2“	0.5900	0.4420	11/16	4	H3	Plug	1	1050149	2)
3/4		10	4.1/4	2“	0.5900	0.4420	11/16	4	H3	Plug	1	1050142	2)
	7/8	14	4.11/16	2.7/32	0.6970	0.5230	3/4	4	H4	Plug	1	1050163	2)
7/8		9	4.11/16	2.7/32	0.6970	0.5230	3/4	4	H4	Plug	1	1050157	2)
1“		8	5.1/8	2.1/2	0.8000	0.6000	13/16	4	H4	Plug	1	1050170	2)

[1] Male centers on thread end
[2] Female centers / flat ends

Similar in design to the 1500 series but TiN coated for enhanced performance. The hard, smooth finish provides greater lubricity, increases tool life, improves thread flank finish, and allows higher tapping speeds. For through or blind hole tapping.

TN1500

UNC	UNF	TPI	Over-All-Length	Thread Length Inch	Shank Diameter Inch	Square Diameter Inch	Square Length Inch	# of Flutes	Limits	Chamfer	Pack Qty	TN1500	
	1/4	28	2.1/2	1.0000	0.2550	0.1910	5/16	4	H3	Plug	1	1060017	1)
1/4		20	2.1/2	1.0000	0.2550	0.1910	5/16	4	H3	Plug	1	1060006	1)
	5/16	24	2.23/32	1.1/8	0.3180	0.2380	3/8	4	H3	Plug	1	1060039	1)
5/16		18	2.23/32	1.1/8	0.3180	0.2380	3/8	4	H3	Plug	1	1060028	1)
	3/8	24	2.15/16	1.1/4	0.3810	0.2860	7/16	4	H3	Plug	1	1060061	1)
3/8		16	2.15/16	1.1/4	0.3810	0.2860	7/16	4	H3	Plug	1	1060050	1)
	7/16	20	3.5/32	1.7/16	0.3230	0.2420	13/32	4	H3	Plug	1	1060079	2)
7/16		14	3.5/32	1.7/16	0.3230	0.2420	13/32	4	H3	Plug	1	1060070	2)
	1/2	20	3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	Plug	1	1060097	2)
1/2		13	3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	Plug	1	1060088	2)
1/2		13	3.3/8	1.21/32	0.3670	0.2750	7/16	4	H3	Bottoming	1	1060092	2)
5/8		11	3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	Plug	1	1060121	2)
	5/8	18	3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	Bottoming	1	1060131	2)
5/8		11	3.13/16	1.13/16	0.4800	0.3600	9/16	4	H3	Bottoming	1	1060123	2)
	3/4	16	4.1/4	2“	0.5900	0.4420	11/16	4	H3	Bottoming	1	1060152	2)
3/4		10	4.1/4	2“	0.5900	0.4420	11/16	4	H3	Bottoming	1	1060144	2)
7/8		9	4.11/16	2.7/32	0.6970	0.5230	3/4	4	H4	Plug	1	1060157	2)

[1] Male centers on thread end
[2] Female centers / flat ends

HSS General Purpose Hand Taps

Versatile HSS metric 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.

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

1700(M) Metric Hand Tap

1700S Sets include 1 of each tap (Taper, Plug, and Bottoming).

Nominal Point Diameter	Pitch M	Over-All-Length	Thread Length	Shank Diameter	Square Length	Square Diameter	# of Flutes	Limits	Pack Qty	Taper	Plug	Bottoming	Sets
M1.6	0.35	1.5/8	5/16	0.1410	3/16	0.1100	2	D3	1	1012408	1012409	1012410	—
M1.8	0.35	1.11/16	3/8	0.1410	3/16	0.1100	2	D3	1	1012411	1012412	—	—
M2	0.40	1.3/4	7/16	0.1410	3/16	0.1100	3	D3	1	1012414	1012415	1012416	1012558
M2.3	0.40	1.3/4	7/16	0.1410	3/16	0.1100	3	D3	1	—	1012421	1012422	—
M2.5	0.45	1.13/16	1/2	0.1410	3/16	0.1100	3	D3	1	1012423	1012424	1012425	1012560
M2.6	0.45	1.13/16	1/2	0.1410	3/16	0.1100	3	D3	1	1012426	1012427	—	—
M3	0.50	1.15/16	5/8	0.1410	3/16	0.1100	3	D3	1	1012432	1012433	1012434	1012561
M3.5	0.60	2“	11/16	0.1410	3/16	0.1100	3	D4	1	1012435	1012436	1012437	1012562
M4	0.70	2.1/8	3/4	0.1680	1/4	0.1310	4	D4	1	1012441	1012442	1012443	1012563
M4.5	0.75	2.3/8	7/8	0.1940	1/4	0.1520	4	D4	1	1012444	1012445	—	-—
M5	0.80	2.3/8	7/8	0.1940	1/4	0.1520	4	D4	1	1012453	1012454	1012455	1012564
M6	1.00	2.1/2	1“	0.2550	5/16	0.1910	4	D5	1	1012459	1012460	1012461	1012565
M7	1.00	2.23/32	1.1/8	0.3180	3/8	0.2380	4	D5	1	1012465	1012466	1012467	1012576
M8	1.00	2.23/32	1.1/8	0.3180	3/8	0.2380	4	D5	1	1012468	1012469	1012470	1012577
M8	1.25	2.23/32	1.1/8	0.3180	3/8	0.2380	4	D5	1	1012471	1012472	1012473	1012566
M9	1.25	2.15/16	1.1/4	0.3810	7/16	0.2860	4	D5	1	—	1012478	1012479	-—
M10	1.25	2.15/16	1.1/4	0.3810	7/16	0.2860	4	D5	1	1012480	1012481	1012482	1012578
M10	1.50	2.15/16	1.1/4	0.3810	7/16	0.2860	4	D6	1	1012483	1012484	1012485	1012567
M11	1.50	3.5/32	1.7/16	0.3230	13/32	0.2420	4	D6	1	—	1012493	1012494	-—
M12	1.25	3.3/8	1.21/32	0.3670	7/16	0.2750	4	D5	1	1012498	1012499	1012500	1012579
M12	1.75	3.3/8	1.21/32	0.3670	7/16	0.2750	4	D6	1	1012495	1012496	1012497	1012568
M14	1.50	3.19/32	1.21/32	0.4290	1/2	0.3220	4	D6	1	1012501	1012502	1012503	—
M14	2.00	3.19/32	1.21/32	0.4290	1/2	0.3220	4	D7	1	1012504	1012505	1012506	1012580
M16	1.50	3.13/16	1.13/16	0.4800	9/16	0.3600	4	D6	1	1012513	1012514	1012515	-—
M16	2.00	3.13/16	1.13/16	0.4800	9/16	0.3600	4	D7	1	1012516	1012517	1012518	1012581
M18	1.50	4.1/32	1.13/16	0.5420	5/8	0.4060	4	D6	1	1012522	1012523	1012524	—
M18	2.50	4.1/32	1.13/16	0.5420	5/8	0.4060	4	D7	1	1012525	1012526	1012527	1012582
M20	1.50	4.15/32	2“	0.6520	11/16	0.4890	4	D6	1	1012534	1012535	1012536	—
M20	2.50	4.15/32	2“	0.6520	11/16	0.4890	4	D7	1	1012537	1012538	1012539	1012583
M22	1.50	4.11/16	2.7/32	0.6970	3/4	0.5230	4	D6	1	1012540	1012541	1012542	—
M22	2.50	4.11/16	2.7/32	0.6970	3/4	0.5230	4	D7	1	1012543	1012544	1012545	—
M24	2.00	4.29/32	2.7/32	0.7600	3/4	0.5700	4	D7	1	1012546	1012547	1012548	—
M24	3.00	4.29/32	2.7/32	0.7600	3/4	0.5700	4	D8	1	1012555	1012556	1012557	—
M30	3.50	5.7/16	2.9/16	1.0210	1“	0.7660	4	D9	1	1012570	1012571	1012572	—
M36	4.00	6.1/16	3“	1.2330	1.1/8	0.9250	4	D9	1	—	1012574	1012575	—

HSS General Purpose Hand Taps, 8-Pitch

Proven performers for manufacturers of oil field equipment, large valves, electric utilities, power generation machinery, and general construction. For through or blind hole applications.

1505

Nominal Point Diameter	TPI UNS	Over-All-Length	Thread Length	Shank Diameter	Square Diameter	Square Length	# of Flutes	Limits	Pack Qty	Taper	Plug	Bottoming
1.1/8	8	5.7/16	2.9/16	0.8960	0.6720	7/8	4	H5	1	1013310	1013311	1013312
1.1/4	8	5.3/4	2.9/16	1.0210	0.7660	1“	4	H5	1	1013313	1013314	1013315
1.3/8	8	6.1/16	3“	1.1080	0.8310	1.1/16	4	H5	1	1013316	1013317	1013318
1.1/2	8	6.3/8	3“	1.2330	0.9250	1.1/8	6	H5	1	1013319	1013320	1013321
1.5/8	8	6.11/16	3.3/16	1.3050	0.9780	1.1/8	6	H6	1	1013322	1013323	1013324
1.3/4	8	7“	3.3/16	1.4300	1.0720	1.1/4	6	H6	1	1013325	1013326	1013327
1.7/8	8	7.5/16	3.9/16	1.5190	1.1390	1.1/4	6	H6	1	1013328	1013329	1013330
2“	8	7.5/8	3.9/16	1.6440	1.2330	1.3/8	6	H6	1	1013331	1013332	1013333

Non-Relieved Style, Machine Screw Sizes

Feature concentric threads with no pitch diameter relief. These taps are recommended for applications requiring close gauging fits and in older equipment that is not sufficiently rigid to accommodate the free cutting action of the 1534/1585 series. For through hole applications. Sizes in bold font indicate the most commonly used flute and 'H' limit for that size.

1534NR

UNC	UNF	UNS	TPI	Over-All-Length	Thread Length	Shank Diameter	Square Diameter	Square Length	# of Flutes	Limits	Chamfer	Pack Qty	1534NR
	0		80	1.5/8	5/16	0.1410	0.1100	3/16	2	H1	Plug	1	1010775
	0		80	1.5/8	5/16	0.1410	0.1100	3/16	2	H2	Plug	1	1010776
	0		80	1.5/8	5/16	0.1410	0.1100	3/16	2	H2	Bottoming	1	1010778
	1		72	1.11/16	3/8	0.1410	0.1100	3/16	2	H1	Plug	1	1010783
	1		72	1.11/16	3/8	0.1410	0.1100	3/16	2	H2	Plug	1	1010784
1			64	1.11/16	3/8	0.1410	0.1100	3/16	2	H1	Plug	1	1010779
1			64	1.11/16	3/8	0.1410	0.1100	3/16	2	H2	Plug	1	1010780
	2		64	1.3/4	7/16	0.1410	0.1100	3/16	2	H1	Plug	1	1010791
	2		64	1.3/4	7/16	0.1410	0.1100	3/16	2	H2	Plug	1	1010792
2			56	1.3/4	7/16	0.1410	0.1100	3/16	2	H1	Plug	1	1010787
2			56	1.3/4	7/16	0.1410	0.1100	3/16	2	H2	Plug	1	1010788
2			56	1.3/4	7/16	0.1410	0.1100	3/16	2	H2	Bottoming	1	1010790
	3		56	1.13/16	1/2	0.1410	0.1100	3/16	2	H1	Plug	1	1010799
	3		56	1.13/16	1/2	0.1410	0.1100	3/16	2	H2	Plug	1	1010800
3			48	1.13/16	1/2	0.1410	0.1100	3/16	2	H2	Plug	1	1010796
3			48	1.13/16	1/2	0.1410	0.1100	3/16	2	H2	Bottoming	1	1010798
		4	36	1.7/8	9/16	0.1410	0.1100	3/16	2	H2	Plug	1	1010803
	4		48	1.7/8	9/16	0.1410	0.1100	3/16	2	H2	Plug	1	1010809
4			40	1.7/8	9/16	0.1410	0.1100	3/16	2	H1	Plug	1	1010804
4			40	1.7/8	9/16	0.1410	0.1100	3/16	2	H2	Plug	1	1010805
	4		48	1.7/8	9/16	0.1410	0.1100	3/16	2	H2	Bottoming	1	1010811
4			40	1.7/8	9/16	0.1410	0.1100	3/16	2	H2	Bottoming	1	1010807
	5		44	1.15/16	5/8	0.1410	0.1100	3/16	2	H2	Plug	1	1010817
5			40	1.15/16	5/8	0.1410	0.1100	3/16	2	H2	Plug	1	1010813
5			40	1.15/16	5/8	0.1410	0.1100	3/16	2	H2	Bottoming	1	1010815
	6		40	2"	11/16	0.1410	0.1100	3/16	2	H2	Plug	1	1010825
6			32	2"	11/16	0.1410	0.1100	3/16	2	H1	Plug	1	1010818
6			32	2"	11/16	0.1410	0.1100	3/16	2	H2	Plug	1	1010819
6			32	2"	11/16	0.1410	0.1100	3/16	2	H3	Plug	1	1010820
	6		40	2"	11/16	0.1410	0.1100	3/16	2	H2	Bottoming	1	1010827
6			32	2"	11/16	0.1410	0.1100	3/16	2	H2	Bottoming	1	1010822
6			32	2"	11/16	0.1410	0.1100	3/16	2	H3	Bottoming	1	1010823
	8		36	2.1/8	3/4	0.1680	0.1310	1/4	2	H2	Plug	1	1010835
8			32	2.1/8	3/4	0.1680	0.1310	1/4	2	H1	Plug	1	1010828
8			32	2.1/8	3/4	0.1680	0.1310	1/4	2	H2	Plug	1	1010829
8			32	2.1/8	3/4	0.1680	0.1310	1/4	2	H3	Plug	1	1010830
8			32	2.1/8	3/4	0.1680	0.1310	1/4	2	H2	Bottoming	1	1010832
8			32	2.1/8	3/4	0.1680	0.1310	1/4	2	H3	Bottoming	1	1010833
	10		32	2.3/8	7/8	0.1940	0.1520	1/4	2	H1	Plug	1	1010843
	10		32	2.3/8	7/8	0.1940	0.1520	1/4	2	H2	Plug	1	1010844
	10		32	2.3/8	7/8	0.1940	0.1520	1/4	2	H3	Plug	1	1010845
	10		32	2.3/8	7/8	0.1940	0.1520	1/4	2	H2	Bottoming	1	1010847
	10		32	2.3/8	7/8	0.1940	0.1520	1/4	2	H3	Bottoming	1	1010848
10			24	2.3/8	7/8	0.1940	0.1520	1/4	2	H1	Plug	1	1010837
10			24	2.3/8	7/8	0.1940	0.1520	1/4	2	H2	Plug	1	1010838
10			24	2.3/8	7/8	0.1940	0.1520	1/4	2	H3	Plug	1	1010839
10			24	2.3/8	7/8	0.1940	0.1520	1/4	2	H2	Bottoming	1	1010841
10			24	2.3/8	7/8	0.1940	0.1520	1/4	2	H3	Bottoming	1	1010842
	12		28	2.3/8	15/16	0.2200	0.1650	9/32	2	H3	Plug	1	1010853
12			24	2.3/8	15/16	0.2200	0.1650	9/32	2	H3	Plug	1	1011071
12			24	2.3/8	15/16	0.2200	0.1650	9/32	2	H3	Bottoming	1	1011072

HSS Spiral Point Taps

Non-Relieved Style, Fractional Sizes

Feature concentric threads with no pitch diameter relief. These taps are particularly recommended for applications requiring close gauging fits and in older equipment that is not sufficiently rigid to accommodate the free cutting action of the regular 1534/1585 series. For through hole applications.
Sizes in bold font indicate the most commonly used flute and 'H' limit for that size.

1585NR

Nominal Point Diameter	TPI UNC	TPI UNF	Over-All-Length	Thread Length	Shank Diameter Inch	Square Diameter Inch	Square Length Inch	# of Flutes	Limits	Pack Qty	Plug	Bottoming
1/4	20		2.1/2	1"	0.2550	0.1910	5/16	2	H1	1	1012813	—
1/4	20		2.1/2	1"	0.2550	0.1910	5/16	2	H2	1	1012814	—
1/4	20		2.1/2	1"	0.2550	0.1910	5/16	2	H3	1	1012815	1012817
1/4	20		2.1/2	1"	0.2550	0.1910	5/16	2	H5	1	1012816	—
1/4	20		2.1/2	1"	0.2550	0.1910	5/16	3	H3	1	1012818	—
1/4		28	2.1/2	1"	0.2550	0.1910	5/16	2	H1	1	1012820	—
1/4		28	2.1/2	1"	0.2550	0.1910	5/16	2	H2	1	1012821	—
1/4		28	2.1/2	1"	0.2550	0.1910	5/16	2	H3	1	1012822	1012824
5/16	18		2.23/32	1.1/8	0.3180	0.2380	3/8	2	H2	1	1012828	—
5/16	18		2.23/32	1.1/8	0.3180	0.2380	3/8	2	H3	1	1012829	47197820
5/16	18		2.23/32	1.1/8	0.3180	0.2380	3/8	2	H5	1	1012830	—
5/16	18		2.23/32	1.1/8	0.3180	0.2380	3/8	3	H3	1	1012832	1012831
5/16		24	2.23/32	1.1/8	0.3180	0.2380	3/8	2	H3	1	1012836	—
3/8	16		2.15/16	1.1/4	0.3810	0.2860	7/16	3	H2	1	1012842	—
3/8	16		2.15/16	1.1/4	0.3810	0.2860	7/16	3	H3	1	1012843	—
3/8	16		2.15/16	1.1/4	0.3810	0.2860	7/16	3	H5	1	1012844	—
3/8		24	2.15/16	1.1/4	0.3810	0.2860	7/16	3	H3	1	1012847	—
7/16	14		3.5/32	1.7/16	0.3230	0.2420	13/32	3	H2	1	1012849	—
7/16	14		3.5/32	1.7/16	0.3230	0.2420	13/32	3	H3	1	1012850	—
7/16	14		3.5/32	1.7/16	0.3230	0.2420	13/32	3	H5	1	1012851	—
7/16		20	3.5/32	1.7/16	0.3230	0.2420	13/32	3	H3	1	1012853	—
1/2	13		3.3/8	1.21/32	0.3670	0.2750	7/16	3	H2	1	1012856	—
1/2	13		3.3/8	1.21/32	0.3670	0.2750	7/16	3	H3	1	1012857	—
1/2	13		3.3/8	1.21/32	0.3670	0.2750	7/16	3	H5	1	1012858	—
1/2		20	3.3/8	1.21/32	0.3670	0.2750	7/16	3	H3	1	1012861	—
5/8	11		3.13/16	1.13/16	0.4800	0.3600	9/16	3	H3	1	1012863	—
5/8	11		3.13/16	1.13/16	0.4800	0.3600	9/16	3	H5	1	1012864	—
5/8		18	3.13/16	1.13/16	0.4800	0.3600	9/16	3	H3	1	1012867	—
3/4	10		4.1/2	2"	0.5900	0.4420	11/16	3	H3	1	1012865	—
3/4	10		4.1/2	2"	0.5900	0.4420	11/16	3	H5	1	1012866	—
3/4		16	4.1/2	2"	0.5900	0.4420	11/16	3	H3	1	1012868	—

Non-Relieved, Metric Sizes

Feature concentric threads with no pitch diameter relief. These taps are particularly recommended for applications requiring close gauging fits and in older equipment that is not sufficiently rigid to accommodate the free cutting action of the regular 1785 series. For through hole applications.

1785NR

M	P	l_1	l_2	l_3	d_2 Ø	▨ a	# of		Chamfer	Pack	1785NR
	mm	Inch	Inch	Inch	Inch	Inch	Flutes	Limits		Qty	
1.6	0.35	1.5/8	5/16	0.1410	0.1100	3/16	2	D3	Plug	1	1012890
2	0.40	1.3/4	7/16	0.1410	0.1100	3/16	2	D3	Plug	1	1012891
2.5	0.45	1.13/16	1/2	0.1410	0.1100	3/16	2	D3	Plug	1	1012893
3	0.50	1.15/16	5/8	0.1410	0.1100	3/16	2	D3	Plug	1	1012896
3.5	0.60	2“	11/16	0.1410	0.1100	3/16	2	D4	Plug	1	1012897
4	0.70	2.1/8	3/4	0.1680	0.1310	1/4	2	D4	Plug	1	1012898
4.5	0.75	2.3/8	7/8	0.1940	0.1520	1/4	2	D4	Plug	1	1012899
5	0.80	2.3/8	7/8	0.1940	0.1520	1/4	2	D4	Plug	1	1012900
6	1.00	2.1/2	1“	0.2550	0.1910	5/16	2	D5	Plug	1	1012901
7	1.00	2.23/32	1.1/8	0.3180	0.2380	3/8	2	D5	Plug	1	1012902
8	1.25	2.23/32	1.1/8	0.3180	0.2380	3/8	2	D5	Plug	1	1012903
10	1.50	2.15/16	1.1/4	0.3810	0.2860	7/16	3	D6	Plug	1	1012904
12	1.75	3.3/8	1.21/32	0.3670	0.2750	7/16	3	D6	Plug	1	1012905
14	2.00	3.19/32	1.21/32	0.4290	0.3220	1/2	3	D7	Plug	1	1012906
16	2.00	3.13/16	1.13/16	0.4800	0.3600	9/16	3	D7	Plug	1	1012907
20	2.50	4.15/32	2“	0.6520	0.4890	11/16	3	D7	Plug	1	1012909

Extension / Non-Relieved Style

Similar in design and thread geometries to the standard 1534NR series, but with a longer shank length. Bright finish improves chip flow in soft or non-ferrous materials. For through hole applications.

1534NE

UNC	UNF	TPI	Over-All-Length	Thread Length Inch	Shank Diameter Inch	Square Diameter Inch	Square Length Inch	# of Flutes	Limits	Pack Qty	Chamfer	1534NE
4		40	4“	9/16	0.1410	0.1100	3/16	2	H2	1	Plug	1020002
6		32	4“	11/16	0.1410	0.1100	3/16	2	H3	1	Plug	1020004
6		32	6“	11/16	0.1410	0.1100	3/16	2	H3	1	Plug	1020006
8		32	4“	3/4	0.1680	0.1310	1/4	2	H3	1	Plug	1020008
8		32	6“	3/4	0.1680	0.1310	1/4	2	H3	1	Plug	1020010
	10	32	4“	7/8	0.1940	0.1520	1/4	2	H3	1	Plug	1020016
	10	32	6“	7/8	0.1940	0.1520	1/4	2	H3	1	Plug	1020018
10		24	4“	7/8	0.1940	0.1520	1/4	2	H3	1	Plug	1020012
10		24	6“	7/8	0.1940	0.1520	1/4	2	H3	1	Plug	1020014
	1/4	28	4“	1“	0.2550	0.1910	5/16	2	H3	1	Plug	1020024
	1/4	28	6“	1“	0.2550	0.1910	5/16	2	H3	1	Plug	1020026
1/4		20	4“	1“	0.2550	0.1910	5/16	2	H3	1	Plug	1020020
1/4		20	6“	1“	0.2550	0.1910	5/16	2	H3	1	Plug	1020022
	5/16	24	4“	1.1/8	0.3180	0.2380	3/8	2	H3	1	Plug	1020032
	5/16	24	6“	1.1/8	0.3180	0.2380	3/8	2	H3	1	Plug	1020034
5/16		18	4“	1.1/8	0.3180	0.2380	3/8	2	H3	1	Plug	1020028
5/16		18	6“	1.1/8	0.3180	0.2380	3/8	2	H3	1	Plug	1020030
	3/8	24	4“	1.1/4	0.3810	0.2860	7/16	3	H3	1	Plug	1020040
	3/8	24	6“	1.1/4	0.3810	0.2860	7/16	3	H3	1	Plug	1020042
3/8		16	4“	1.1/4	0.3810	0.2860	7/16	3	H3	1	Plug	1020036
3/8		16	6“	1.1/4	0.3810	0.2860	7/16	3	H3	1	Plug	1020038
	7/16	20	6“	1.7/16	0.3230	0.2420	13/32	3	H3	1	Plug	1020046
7/16		14	6“	1.7/16	0.3230	0.2420	13/32	3	H3	1	Plug	1020044
	1/2	20	6“	1.21/32	0.3670	0.2750	7/16	3	H3	1	Plug	1020050
1/2		13	6“	1.21/32	0.3670	0.2750	7/16	3	H3	1	Plug	1020048

HSS Spiral Flute Taps

Regular Spiral 30°

Generally used where chip disposal is a problem. The spiral flute design effictively draws chips out of the hole. Recommended for use when tapping blind or through holes in a variety of materials. Excellent choice for non-ferrous applications.

1582 - Machine Screw Sizes

1586 - Fractional Sizes

Nominal Point Diameter	TPI UNC	TPI UNF	Over-All-Length	Thread Length Inch	Shank Diameter Inch	Square Diameter Inch	Square Length Inch	# of Flutes	Limits	Pack Qty	Plug	Bottoming
4	40		1.7/8	9/16	0.1410	0.1100	3/16	2	H2	1	1010905	1010906
6	32		2“	11/16	0.1410	0.1100	3/16	2	H3	1	1010909	1010910
8	32		2.1/8	3/4	0.1680	0.1310	1/4	2	H3	1	1010913	1010914
10	24		2.3/8	7/8	0.1940	0.1520	1/4	2	H3	1	1010915	1010916
10		32	2.3/8	7/8	0.1940	0.1520	1/4	2	H3	1	1010917	1010918
1/4	20		2.1/2	1“	0.2550	0.1910	5/16	2	H3	1	1010346	1010347
1/4	20		2.1/2	1“	0.2550	0.1910	5/16	3	H3	1	1010348	1010349
1/4		28	2.1/2	1“	0.2550	0.1910	5/16	2	H3	1	1010350	1010351
1/4		28	2.1/2	1“	0.2550	0.1910	5/16	3	H3	1	1010352	1010353
5/16	18		2.23/32	1.1/8	0.3180	0.2380	3/8	3	H3	1	1010354	1010355
5/16		24	2.23/32	1.1/8	0.3180	0.2380	3/8	3	H3	1	1010356	1010357
3/8	16		2.15/16	1.1/4	0.3810	0.2860	7/16	3	H3	1	1010358	1010359
3/8		24	2.15/16	1.1/4	0.3810	0.2860	7/16	3	H3	1	1010360	1010361
7/16	14		3.5/32	1.7/16	0.3230	0.2420	13/32	3	H3	1	1010362	1010363
1/2	13		3.3/8	1.21/32	0.3670	0.2750	7/16	3	H3	1	1010366	1010367
1/2		20	3.3/8	1.21/32	0.3670	0.2750	7/16	3	H3	1	1010368	1010369

High Spiral Helicut 52°

Similar to the regular spiral flute design of 1582/1586 except that the faster spiral improves the chip drawing action and permits the bridging of larger gaps inside a hole. For blind or through hole applications. Excellent choice for non-ferous applications.

1587 - Machine Screw Sizes

1588 - Fractional Sizes

Nominal Point Diameter	TPI UNC	TPI UNF	Over-All-Length	Thread Length Inch	Shank Diameter Inch	Square Diameter Inch	Square Length Inch	# of Flutes	Limits	Pack Qty	Plug	Bottoming
4	40		1.7/8	9/16	0.1410	0.1100	3/16	2	H2	1	1010887	1010888
6	32		2“	11/16	0.1410	0.1100	3/16	2	H3	1	1010891	1010892
8	32		2.1/8	3/4	0.1680	0.1310	1/4	3	H3	1	1010895	1010896
10	24		2.3/8	7/8	0.1940	0.1520	1/4	3	H3	1	1010897	1010898
10		32	2.3/8	7/8	0.1940	0.1520	1/4	3	H3	1	1010899	1010900
1/4	20		2.1/2	1.000	0.2550	0.1910	5/16	3	H3	1	1010398	1010399
1/4		28	2.1/2	1.000	0.2550	0.1910	5/16	3	H3	1	1010400	1010401
5/16	18		2.23/32	1.1/8	0.3180	0.2380	3/8	3	H3	1	1010402	1010403
5/16		24	2.23/32	1.1/8	0.3180	0.2380	3/8	3	H3	1	1010404	1010405
3/8	16		2.15/16	1.1/4	0.3810	0.2860	7/16	3	H3	1	1010406	1010407
3/8		24	2.15/16	1.1/4	0.3810	0.2860	7/16	3	H3	1	1010408	1010409
7/16	14		3.5/32	1.7/16	0.3230	0.2420	13/32	3	H3	1	1010410	1010411
7/16		20	3.5/32	1.7/16	0.3230	0.2420	13/32	3	H3	1	1010412	1010413
1/2	13		3.3/8	1.21/32	0.3670	0.2750	7/16	3	H3	1	1010414	1010415
1/2		20	3.3/8	1.21/32	0.3670	0.2750	7/16	3	H3	1	1010416	1010417

High Spiral Helicut 52°, Metric

Similar to the regular spiral flute design of 1582/1586 except that the faster spiral improves the chip drawing action and permits the bridging of larger gaps inside a hole. For blind or through hole applications. Excellent choice for non-ferrous applications.

1788(M)

Nominal Point Diameter mm	Pitch M	Over-All-Length	Thread Length inch	Shank Diameter Inch	Square Diameter Inch	Square Length Inch	No. of Flutes	Limits	Pack Qty	Plug	Bottoming
M3	0.50	1.15/16	5/8	0.1410	0.1100	3/16	2	D3	1	1012920	1012940
M4	0.70	2.1/8	3/4	0.1680	0.1310	1/4	3	D4	1	1012923	1012943
M5	0.80	2.3/8	7/8	0.1940	0.1520	1/4	3	D4	1	1012925	1012945
M6	1.00	2.1/2	1"	0.2550	0.1910	5/16	3	D5	1	1012926	1012946
M8	1.25	2.23/32	1.1/8	0.3180	0.2380	3/8	3	D5	1	1012928	1012948
M10	1.50	2.15/16	1.1/4	0.3810	0.2860	7/16	3	D6	1	1012930	1012950
M12	1.75	3.3/8	1.21/32	0.3670	0.2750	7/16	3	D6	1	1012932	1012952

Heavy Duty Spiral 40°

A slower helix angle, larger core diameter, three flutes and wider throat dimensions than the regular 1587/1588 series. Designed for tough blind or through hole tapping. Chip ejection is more efficient and problems such as chipping and breakage are largely eliminated. A steam oxide finish makes this tap ideal for use in ferrous materials and higher strength alloys.

1590 - Machine Screw Sizes

1591 - Fractional Sizes

Nominal Point Diameter	TPI UNC	TPI UNF	Over-All-Length	Thread Length inch	Shank Diameter Inch	Square Diameter Inch	Square Length Inch	No. of Flutes	Limits	Pack Qty	Plug	Bottoming
6	32		2"	11/16	0.1410	0.1100	3/16	2	H3	1	1010937	1010938
6		40	2"	11/16	0.1410	0.1100	3/16	2	H3	1	—	1010940
10	24		2.3/8	7/8	0.1940	0.1520	1/4	3	H3	1	1010945	1010946
10		32	2.3/8	7/8	0.1940	0.1520	1/4	3	H3	1	1010947	1010948
1/4	20		2.1/2	1"	0.2550	0.1910	5/16	3	H3	1	1010953	1010954
1/4		28	2.1/2	1"	0.2550	0.1910	5/16	3	H3	1	1010955	1010956
5/16	18		2.23/32	1.1/8	0.3180	0.2380	3/8	3	H3	1	1010957	1010958
3/8	16		2.5/16	1.1.4	0.3810	0.2860	7/16	3	H3	1	1010961	1010962
7/16	14		3.5/32	1.7/16	0.3230	0.2420	13/32	3	H3	1	1010965	1010966
1/2	13		3.3/8	1.21/32	0.3670	0.2750	7/16	3	H3	1	1010969	1010970

HSS General Purpose, Medium Hook, NPT Taps

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.
Made to Metal Cutting Tool Institute Standards

1541 Bright finish

TN1541 TiN coating increases surface hardness and improves tool life.

Nominal Point Diameter	TPI	Over-All-Length	Thread Length	Shank Length	Square Diameter	Square Length	# of Flutes	Pack Qty	1541	TN1541
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 General Purpose, NPT Taps - Work-Rite

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.

6541

NPT	TPI	Over-All-Length	Thread Length	Shank Diameter	Square Diameter	Square Length	# of Flutes	Pack Qty	6541
1/8	27	2.1/8	3/4	0.4380	0.3280	3/8	4	1	8110601
1/4	18	2.7/16	1.1/16	0.5630	0.4210	7/16	4	1	8110602
3/8	18	2.9/16	1.1/16	0.7000	0.5310	1/2	4	1	8110603
1/2	14	3.1/8	1.3/8	0.6880	0.5150	5/8	4	1	8110604
3/4	14	3.1/4	1.3/8	0.9060	0.6790	11/16	5	1	8110605
1"	11.5	3.3/4	1.3/4	1.1250	0.8430	13/16	5	1	8110606
1.1/4	11.5	4"	1.3/4	1.3130	0.9840	15/16	5	1	8110607
1.1/2	11.5	4.1/4	1.3/4	1.5000	1.1250	1	7	1	8110608
2"	11.5	4.1/2	1.3/4	1.8750	1.4060	1.1/8	7	1	8110609

UNION BUTTERFIELD®

HSS High Hook, NPT Pipe Taps

Designed with a high hook and deep flutes to handle the tough curly chips of free cutting materials such as low carbon and leaded steels, boiler plate, aluminum and die castings.

1545 Bright finish

1545A Identical to the 1545 series but with steam oxide surface treatment to prevent galling and chipping.

NPT	TPI	Over-All-Length	Thread Length	Shank Diameter	Square Diameter	Square Length	# of Flutes	Pack Qty	1545	1545A
1/16	27	2.1/8	11/16	0.3130	0.2340	3/8	4	1	—	1052869
1/8	27	2.1/8	3/4	0.3130	0.2340	3/8	4	1	1012879	—
1/8	27	2.1/8	3/4	0.4380	0.3280	3/8	4	1	1012870	1052870
1/4	18	2.7/16	1.1/16	0.5630	0.4210	7/16	4	1	1012871	1052871
3/8	18	2.9/16	1.1/16	0.7000	0.5310	1/2	4	1	1012872	1052872
1/2	14	3.1/8	1.3/8	0.6880	0.5150	5/8	4	1	1012873	1052873
3/4	14	3.1/4	1.3/8	0.9060	0.6790	11/16	5	1	1012874	1052874
1“	11.5	3.3/4	1.3/4	1.1250	0.8430	13/16	5	1	1012875	—

HSS Combination Drill & Tap, NPT Pipe Threads

Spiral Flute 27°. Drills and taps in a single pass, reducing cycle time. Commonly used in multi-spindle operations with reversing capacity. Bright finish improves chip flow in soft or non-ferrous materials.

E653

NPT	TPI	Drill Diameter inch	Over-All-Length inch	Thread Length inch	Drilling Length inch	Shank Diameter inch	Square Diameter inch	Square Length inch	# of Flutes	Pack Qty	E653
1/8	27	0.3346	2.7/8	3/4	3/4	0.4370	0.3280	3/8	2	1	0297285
1/4	18	0.4331	3.5/16	1.1/16	7/8	0.5620	0.4210	7/16	2	1	0297278
3/8	18	0.5709	3.1/2	1.1/16	15/16	0.7000	0.5310	1/2	2	1	0297308
1/2	14	0.7087	4.3/8	1.3/8	1.1/4	0.6870	0.5150	5/8	2	1	0297261
3/4	14	0.9055	4.9/16	1.3/8	1.5/16	0.9060	0.6790	11/16	2	1	0297292
1“	11.5	1.1417	5.3/8	1.3/4	1.5/8	1.1250	0.8430	13/16	2	1	0297247

HSS Combination Drill & Tap

UNION BUTTERFIELD®

Spiral Flute 15°. Drills and taps in a single pass, reducing cycle time. Commonly used in multi-spindle operations with reversing capacity. Designed to provide 65% thread engagement and a 2B class of fit. Bright finish improves chip flow in soft or non-ferrous materials.

1994

UNC	UNF	TPI	Drilling Diameter Inch	Over-All-Length	Thread Length	Shank Diameter	Square Diameter	Square Length	Drilling Length	# of Flutes	Pack Qty	1994
4		40	0.0890	1.7/8	3/8	0.1410	0.1100	3/16	1/4	2	1	1110010
5		40	0.1015	1.15/16	13/32	0.1410	0.1100	3/16	9/32	2	1	1110020
6		32	0.1110	2“	7/16	0.1410	0.1100	3/16	5/16	2	1	1110030
8		32	0.1360	2.1/8	1/2	0.1680	0.1310	1/4	3/8	2	1	1110040
10		24	0.1540	2.3/8	5/8	0.1940	0.1520	1/4	13/32	2	1	1110050
	10	32	0.1610	2.3/8	5/8	0.1940	0.1520	1/4	13/32	2	1	1110054
12		24	0.1800	2.3/8	21/32	0.2200	0.1650	9/32	15/32	2	1	1110060
	12	28	0.1850	2.3/8	21/32	0.2200	0.1650	9/32	15/32	2	1	1110064
1/4		20	0.2055	2.1/2	25/32	0.2550	0.1910	5/16	17/32	2	1	1110080
	1/4	28	0.2188	2.1/2	25/32	0.2550	0.1910	5/16	17/32	2	1	1110084
5/16		18	0.2660	2.27/32	15/16	0.3180	0.2380	3/8	11/16	2	1	1110090
	5/16	24	0.2770	2.27/32	15/16	0.3180	0.2380	3/8	11/16	2	1	1110094
3/8		16	0.3230	3.3/8	1.1/16	0.3810	0.2860	7/16	13/16	2	1	1110100
	3/8	24	0.3390	3.3/8	1.1/16	0.3810	0.2860	7/16	13/16	2	1	1110104
7/16		14	0.3770	3.3/4	1.1/4	0.3230	0.2420	13/32	1“	2	1	1110110
	7/16	20	0.3937	3.3/4	1.1/4	0.3230	0.2420	13/32	1“	2	1	1110114
1/2		13	0.4331	4.1/16	1.3/8	0.3670	0.2750	7/16	1.1/8	2	1	1110120
	1/2	20	0.4531	4.1/16	1.3/8	0.3670	0.2750	7/16	1.1/8	2	1	1110124

DORMER

Metric, Spiral Flute 30°. Drills and taps in a single pass, reducing cycle time. Commonly used in multi-spindle operations with reversing capacity. Designed to provide 65% thread engagement and a 2B class of fit. Steam oxide finish reduces wear and chip welding in harder ferrous materials.

E651
E654

UNC	UNF	TPI	Drilling Diameter mm	Over-All-Length mm	Thread Length mm	Drilling Length mm	Shank Diam-eter mm	Square Diameter mm	# of Flutes	Pack Qty	E651 / E654
6		32	2.85	56.9	12	6.0	3.50	2.90	2	1	0388907
8		32	3.50	64.0	12	8.0	4.50	3.55	2	1	0273272
	8	36	3.50	64.0	13	8.0	4.50	3.55	2	1	0339053
10		24	3.90	72.0	15	10.0	5.00	4.00	2	1	0273197
	10	32	4.10	72.0	16	10.0	5.00	4.00	2	1	0338971
12		24	4.50	77.0	15	11.0	5.60	4.50	2	1	0273210
	12	28	4.70	77.0	17	11.0	5.60	4.50	2	1	0338995
1/4		20	5.10	83.0	17	13.0	6.30	5.00	2	1	0273227
	1/4	28	5.50	83.0	19	13.0	6.30	5.00	2	1	0339008
5/16		18	6.60	94.0	21	16.0	8.00	6.30	2	1	0273241
	5/16	24	6.90	94.0	22	16.0	8.00	6.30	2	1	0339022
3/8		16	8.00	104.0	23	19.0	10.00	8.00	2	1	0273234
	3/8	24	8.50	104.0	24	19.0	10.00	8.00	2	2	0339015
7/16		14	9.40	107.0	25	22.0	8.00	6.30	2	1	0273265
	7/16	20	9.90	107.0	25	22.0	8.00	6.30	2	1	0339046
1/2		13	10.80	114.0	29	25.0	9.00	7.10	2	1	0273203
	1/2	20	11.50	114.0	29	25.0	9.00	7.10	2	1	0338988
9/16		12	12.20	124.0	29	28.0	11.20	9.00	2	1	0273289
5/8		11	13.50	134.0	31	32.5	12.50	10.00	2	1	0273258
	5/8	18	14.50	134.0	32	32.0	12.50	10.00	2	1	0339039

DORMER

HSS Combination Drill & Tap

Spiral Flute 30° Drills and taps in a single pass, reducing cycle time. Commonly used in multi-spindle operations with reversing capacity. Designed to provide 65% thread engagement and a 2B class of fit. Steam oxide finish reduces wear and chip welding in harder ferrous materials.

E650

M	P mm	Drill Diameter mm	Over-All-Length mm	Thread Length mm	Drilling Length mm	Shank Diameter mm	Square Diameter mm	Square Length mm	# of Flutes	Pack Qty	E650
3	0.50	2.5	56	10	6	3.15	2.5	5.0	2	1	0167861
4	0.70	3.3	65	12	8	4.0	3.15	6.0	2	1	0127551
5	0.80	4.2	69	15	10	5.0	4.00	7.0	2	1	0127568
6	1.00	5.0	84	18	12	6.3	5.00	8.0	2	1	0127575
8	1.25	6.8	96	21	16	8.0	6.30	9.0	2	1	0127582
10	1.50	8.5	108	22	20	10.0	8.00	11.0	2	1	0127513
12	1.75	10.2	113	29	24	9.0	7.10	10.0	2	1	0127520
14	2.00	12.0	123	30	28	11.2	9.00	12.0	2	1	0127537
16	2.00	14.0	134	32	32	12.5	10.00	13.0	2	1	0127544

UNION BUTTERFIELD®

HSS Tap & Drill Combination Sets

18 piece tap (styles 1500 and 1528) with corresponding drills (styles R10P & R18P). Metal index.

229CSET

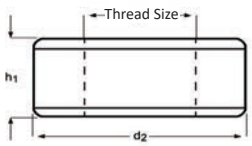
Set	Style	Pieces per Set	UNC Tap Sizes	Tap Drill Sizes	Pack Qty	229CSET
229C	1500,1528 Taps; R10P,R15P,R18P Drills	18	6-32,8-32,10-24,10-32,1/4-20,5/16-18,3/8-16,7/16-14,1/2-13	#36,#29,#25,#21,#7,F,5/16,U,27/64	1	4111502

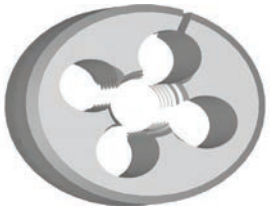
HSS Round Adjustable, Split Type Die

DORMER

Round adjustable dies can be closed down by approximately 0.006” on diameter. Bright finish improves chip flow in soft or non-ferrous materials.

Note: Die pictured has 4 clearance holes. The number of clearance holes will increase or decrease depending on the size of the die.





F320 - UNF

F330 - UNC

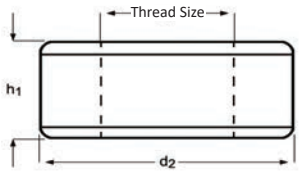
UNC	UNF	TPI	d_1 nom mm	d_2 Ø Inch	h_1 Inch	Pack Qty	F320 EDP	F330 EDP
	4	48	2.85	13/16	1/4	1	—	0207307
4		40	2.85	13/16	1/4	1	0206614	—
	5	44	3.18	13/16	1/4	1	—	0207314
5		40	3.18	13/16	1/4	1	0206621	—
	6	40	3.51	13/16	1/4	1	—	0207338
6		32	3.51	13/16	1/4	1	0206645	—
	8	36	4.17	13/16	1/4	1	—	0207352
8		32	4.17	1“	3/8	1	0206676	—
8		32	4.17	13/16	1/4	1	0206669	—
	10	32	4.83	13/16	1/4	1	—	0207376
	10	32	4.83	1“	3/8	1	—	0207383
10		24	4.83	1“	3/8	1	0206690	—
10		24	4.83	13/16	1/4	1	0206683	—
	12	28	5.49	13/16	1/4	1	—	0207390
12		24	5.49	13/16	1/4	1	0206706	—
	1/4	28	6.35	1“	3/8	1	—	0207420
	1/4	28	6.35	1.1/2	1/2	1	—	0207444
	1/4	28	6.35	13/16	1/4	1	—	0207413
1/4		20	6.35	1“	3/8	1	0206737	—
1/4		20	6.35	1.1/2	1/2	1	0206751	—
1/4		20	6.35	1.5/16	7/16	1	0206744	—
1/4		20	6.35	13/16	1/4	1	0206720	—
	5/16	24	7.94	1“	3/8	1	—	0207451
	5/16	24	7.94	1.1/2	1/2	1	—	0207475
	5/16	24	7.94	1.5/16	7/16	1	—	0207468
5/16		18	7.94	1“	3/8	1	0206768	—
5/16		18	7.94	1.1/2	1/2	1	0206782	—
	3/8	24	9.53	1“	3/8	1	—	0207482
	3/8	24	9.53	1.1/2	1/2	1	—	0207505
	3/8	24	9.53	1.5/16	7/16	1	—	0207499
3/8		16	9.53	1“	3/8	1	0206799	—
3/8		16	9.53	1.1/2	1/2	1	0206812	—
3/8		16	9.53	1.5/16	7/16	1	0206805	—
	7/16	20	11.11	1“	3/8	1	—	0207512
	7/16	20	11.11	1.1/2	1/2	1	—	0207536
	7/16	20	11.11	1.5/16	7/16	1	—	0207529
7/16		14	11.11	1.1/2	1/2	1	0206850	—
7/16		14	11.11	1.5/16	7/16	1	0206843	—
	1/2	20	12.70	1.1/2	1/2	1	—	0207550
	1/2	20	12.70	1.5/16	7/16	1	—	0207543
1/2		13	12.70	1.1/2	1/2	1	0206874	—
1/2		13	12.70	1.5/16	7/16	1	0206867	—
1/2		13	12.70	2“	5/8	1	0206881	—
	9/16	18	14.29	1.1/2	1/2	1	—	0207581
	9/16	18	14.29	1.5/16	7/16	1	—	0207574
9/16		12	14.29	1.1/2	1/2	1	0206904	—
	5/8	18	15.88	1.1/2	1/2	1	—	0207604
	5/8	18	15.88	2“	5/8	1	—	0207611
5/8		11	15.88	1.1/2	1/2	1	0206928	—
5/8		11	15.88	2“	5/8	1	0206935	—
	3/4	16	19.05	1.1/2	1/2	1	—	0207635
	3/4	16	19.05	2“	5/8	1	—	0207642
3/4		10	19.05	1.1/2	1/2	1	0206959	—
3/4		10	19.05	2“	5/8	1	0206966	—
	7/8	14	22.23	2“	5/8	1	—	0207659
7/8		9	22.23	2“	5/8	1	0206973	—
	1“	12	25.40	2“	5/8	1	—	0207666
1“		8	25.40	2“	5/8	1	0206980	—
	1.1/8	12	28.58	3“	7/8	1	—	0207673
1.1/8		7	28.58	3“	7/8	1	0206997	—
	1.1/4	12	31.75	3“	7/8	1	—	0207680
1.1/4		7	31.75	3“	7/8	1	0207000	—
	1.1/2	12	38.10	3“	7/8	1	—	0207703

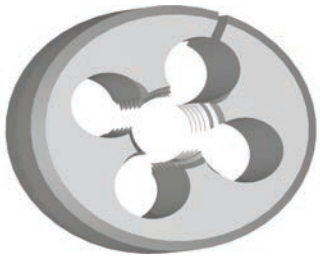
UNION BUTTERFIELD®

HSS Round Adjustable, Split Type Die

Round adjustable dies can be closed down by approximately 0.006” on diameter. Bright finish improves chip flow in soft or non-ferrous materials.

Note: *Die pictured has 4 clearance holes. The number of clearance holes will increase or decrease depending on the size of the die.*





2710M

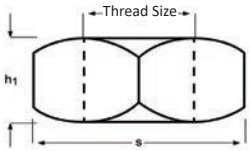
M	P mm	d_2 Ø Inch	h_1 Inch	Pack Qty	2710M
2	0.40	13/16	1/4	1	1410573
2.5	0.45	13/16	1/4	1	1410575
3	0.50	13/16	1/4	1	1410577
4	0.70	13/16	1/4	1	1410579
4.5	0.75	13/16	1/4	1	1410580
5	0.80	13/16	1/4	1	1410581
6	1.00	1“	3/8	1	1410582
8	1.25	1“	3/8	1	1410584
9	1.25	1“	3/8	1	1410585
10.0	1.50	1“	3/8	1	1410586
12	1.75	1“	3/8	1	1410630
12	1.75	1.1/2	1/2	1	1410588
14	2.00	1.1/2	1/2	1	1410589
16	2.00	1.1/2	1/2	1	1410590
18	2.50	2“	5/8	1	1410591
20	2.50	2“	5/8	1	1410592

CS Hexagon Rethreading Bolt Dies (Dienuts)

UNION BUTTERFIELD®

Rethreading bolt dies (dienuts) are used for reclaiming or cleaning up threads by hand. They are not normally used for cutting threads from solid. Bright finish improves chip flow in soft or non-ferrous materials. Made of CS tool material

Note: Die pictured has 4 clearance holes. The number of clearance holes will increase or decrease depending on the size of the die.



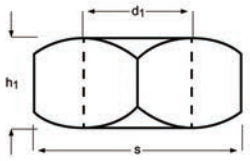
2025

UNC	UNF	UNS	NPT	TPI	S Inch	h_1 Inch	Pack Qty	2025(UNC)	2025(UNF)	2025(UNS)	2025(NPT)
			1/8	27	1.1/16	3/8	1	—	—	—	1410270
	1/4			28	19/32	1/2	1	—	1410240	—	—
1/4				20	19/32	1/2	1	1410239	—	—	—
			1/4	18	1.1/4	5/8	1	—	—	—	1410271
	5/16			24	11/16	5/16	1	—	1410242	—	—
5/16				18	11/16	5/16	1	1410241	—	—	—
	3/8			24	25/32	3/8	1	—	1410244	—	—
3/8				16	25/32	3/8	1	1410243	—	—	—
			3/8	18	1.7/16	5/8	1	—	—	—	1410272
	7/16			20	7/8	7/16	1	—	1410246	—	—
7/16				14	7/8	7/16	1	1410245	—	—	—
	1/2			20	1.1/16	1/2	1	—	1410248	—	—
1/2				13	1.1/16	1/2	1	1410247	—	—	—
			1/2	14	1.5/8	3/4	1	—	—	—	1410273
	9/16			18	1.1/16	1/2	1	—	1410250	—	—
9/16				12	1.1/16	1/2	1	1410249	—	—	—
	5/8			18	1.1/4	5/8	1	—	1410252	—	—
5/8				11	1.1/4	5/8	1	1410251	—	—	—
		11/16		11	1.7/16	3/4	1	—	—	1410253	—
		11/16		16	1.7/16	3/4	1	—	—	1410254	—
	3/4			16	1.7/16	3/4	1	—	1410256	—	—
3/4				10	1.7/16	3/4	1	1410255	—	—	—
			3/4	14	2“	13/16	1	—	—	—	1410274
	7/8			14	1.5/8	7/8	1	—	1410258	—	—
7/8				9	1.5/8	7/8	1	1410257	—	—	—
		1“		14	1.13/16	1“	1	—	—	1410261	—
	1“			12	1.13/16	1“	1	—	1410260	—	—
1“				8	1.13/16	1“	1	1410259	—	—	—
			1“	11.5	2.3/8	1“	1	—	—	—	1410275
	1.1/8			12	2“	1“	1	—	1410263	—	—
1.1/8				7	2“	1“	1	1410262	—	—	—
	1.1/4			12	2.3/16	1“	1	—	1410265	—	—
1.1/4				7	2.3/16	1“	1	1410264	—	—	—
	1.3/8			12	2.3/8	1“	1	—	1410267	—	—
1.3/8				6	2.3/8	1“	1	1410266	—	—	—
	1.1/2			12	2.9/16	1“	1	—	1410269	—	—
1.1/2				6	2.9/16	1“	1	1410268	—	—	—

HSS Hexagon Rethreading Bolt Dies (Dienuts)

Rethreading bolt dies (dienuts) are used for reclaiming or cleaning up threads by hand. They are not normally used for cutting threads from solid. Bright finish improves chip flow in soft or non-ferrous materials.

Note: Die pictured has 4 clearance holes. The number of clearance holes will increase or decrease depending on the size of the die.

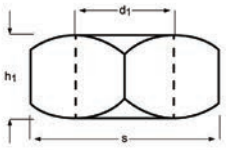


F302

M	P mm	S decimal Inch	h_1 Inch	Pack Qty	F302
3	0.50	0.7100	1/4	1	0105627
4	0.70	0.7100	1/4	1	0105672
5	0.80	0.7100	1/4	1	0105719
6	1.00	0.7100	1/4	1	0105733
7	1.00	0.8200	5/16	1	0105740
8	1.25	0.8200	5/16	1	0105757
10	1.50	0.9200	3/8	1	0105528
11	1.50	1.0100	7/16	1	0105535
12	1.75	1.1000	1/2	1	0105542
14	2.00	1.3000	5/8	1	0105559
16	2.00	1.3000	5/8	1	0105566
18	2.50	1.4800	11/16	1	0105573
20	2.50	1.4800	11/16	1	0105580
22	2.50	1.6700	13/16	1	0105597
24	3.00	2.0500	15/16	1	0105603
27	3.00	2.2200	1.1/16	1	0105610
30	3.50	2.2200	1.1/16	1	0105634
33	3.50	2.5800	1.1/8	1	0105641
36	4.00	2.7600	1.1/4	1	0105658

Rethreading bolt dies (dienuts) are used for reclaiming or cleaning up threads by hand. They are not normally used for cutting threads from solid. Bright finish improves chip flow in soft or non-ferrous materials.

Note: Die pictured has 4 clearance holes. The number of clearance holes will increase or decrease depending on the size of the die.



F312

MF	P mm	S decimal Inch	h_1 Inch	Pack Qty	F312
8	0.75	0.8200	5/16	1	0206331
8	1.00	0.8200	5/16	1	0206348
10	1.00	0.9200	3/8	1	0206379
10	1.25	0.9200	3/8	1	0206386
12	1.00	1.0100	7/16	1	0206393
12	1.25	1.0100	7/16	1	0206409
12	1.50	1.0100	7/16	1	0206416
14	1.50	1.3000	5/8	1	0206430
16	1.50	1.3000	5/8	1	0206454
18	1.50	1.4800	11/16	1	0206461
20	1.50	1.4800	11/16	1	0206485
22	1.50	1.6700	13/16	1	0206508
24	1.50	2.0500	15/16	1	0206522
24	2.00	2.0500	15/16	1	0206539

Miscellaneous

Sleeves & Keys

411 Taper shank (internal and external) adapters. Heat treated and externally ground. Steam oxide surface finish prevents corosion.

430 Drill Drift. Dropped forged steel keys used for removing taper shank tools from adapting sleeves and machine spindles.

430 MTS #	411 Inside Taper	411 Outside Taper	Length	Pack Qty	411	430
1			4.1/2	1	—	3210338
2			5.1/2	1	—	3210339
3			7	1	—	3210340
4			8	1	—	3210341
5			9.7/8	1	—	3210342
	1	2	3.1/2	1	3210046	—
	1	3	3.15/16	1	3210047	—
	1	4	4.13/16	1	3210048	—
	2	3	4.3/8	1	3210050	—
	2	4	4.13/16	1	3210051	—
	3	4	5.5/16	1	3210053	—
	3	5	6.1/16	1	3210054	—
	4	5	6.1/2	1	3210055	—
	5	6	8.1/2	1	3210057	—

Screw Extractor

1800 Screw Extractor

1816 Screw Extractor Set, 6 piece

Nr.	d_1 Ø Inch	Sizes in Set	d_2 Ø Inch	Pieces per Set	l_1 Inch	Capacity For Screws & Bolts	Capacity For Pipe Sizes	Pack Qty	1800	1816set
801	0.0540		5/32		2“	3/16 - 1/4		12	3210001	—
802	0.0860		3/16		2.3/8	1/4 - 5/16		12	3210002	—
803	1/8		1/4		2.3/4	5/16 - 7/16		12	3210003	—
804	11/64		5/16		3“	7/16 - 9/16		6	3210004	—
805	1/4		7/16		3.3/8	9/16 - 3/4	1/8 - 1/4	6	3210005	—
806	3/8		5/8		3.3/4	3/4 - 1“	3/8	1	3210006	—
807	31/64		3/4		4.1/8	1 - 1.3/8	1/2	1	3210007	—
808	47/64		1“		4.3/8	1.3/8 - 1.3/4	3/4	1	3210008	—
809	31/32		1.1/4		4.5/8	1.3/4 - 2.1/8	1	1	3210009	—
810	1.7/32		1.17/32		5“	2.1/8 - 2.1/2	1.1/4	1	3210010	—
811	1.15/32		1.27/32		5.5/8	2.1/2 - 3	1.1/2	1	3210011	—
812	1.27/32		2.9/32		6.1/4	3 - 3.1/2	2	1	3210012	—
1816		801 - 806		6		3/16 - 1	1/8 - 3/8	1	—	3210014

Drilling & Tapping Fluid

1900

Drilling & Tapping Fluid - A heavy oil for drilling & tapping all ferrous and non-ferrous materials. Increases productivity and extends tool life. Environmentally safe.

Wax Stick - Multi-purpose wax that sticks to the tool and effectively removes heat while adding lubrication. Withstands trememdous pressure. Can be used in lieu of drilling/tapping fluids and cutting oils.

Foam - Heavy duty aerosol foam coats the tools as it foams on contact. Will not contaminate existing coolant.

Light Tapping Fluid - A light viscosity heavy duty drilling & tapping fluid for reducing torque. Ideal for use with a re-circulation system. Can be added to existing cutting oils to increase lubricity. Will not contaminate existing coolant as it will float to the surface for easy skimming.

Sizes	Style	Description	Pack Qty	1900
1/2 oz	Trial Size	Drilling & Tapping Fluid	1	1910512
4 oz	Squirt Bottle	Drilling & Tapping Fluid	24	1910501
16 oz	Squirt Bottle	Drilling & Tapping Fluid	12	1930502
1 gal	Bottle	Drilling & Tapping Fluid	4	1930503
5 gal	Dispenser	Drilling & Tapping Fluid	1	1910506
5 gal	Pail	Drilling & Tapping Fluid	1	1910504
55 gal	Drum	Drilling & Tapping Fluid	1	1910505
1 lb	Stick	Wax	24	1950501
20 oz	Aerosal Can	Foam	12	1910509
1 gal	Bottle	Light Drilling & Tapping Fluid	4	1910503
16 oz	Squirt Bottle	Light Drilling & Tapping Fluid	12	1910502
16 oz	Squirt Bottle	Light Tapping Fluid (single)	1	46437347
16 oz	Squirt Bottle	Drilling & Tapping Fluid (single)	1	46437348
20 oz	Aerosal Can	Foam (single)	1	46437349
1 lb	Stick	Wax (single)	1	46437430

Miscellaneous

Tap Wrench, T-Handle

T-Handle tap wrenches have a sliding handle and chuck. Designed for hand tapping in tight places and can also be used with any tool that can be turned by hand.

1215

Tap Wrench #	Hand Reamer Capacity Inch	Hand Reamer Capacity mm	Hand Tap Capacity Inch	Hand Tap Capacity mm	Pack Qty	EDP#
T0	1/8 - 3/16	M3 - M5	1/16 - 5/32	M1 - M4	1	1810372
T1	3/16 - 5/16	M4 - M7	3/16 - 7/16	M4 - M10	1	1810373
T2	1/4 - 15/32	M6 - M14	1/4 - 9/16	M6 - M14	1	1810374

Tap Wrench, Straight Handle

Straight handle tap wrenches are ideal for hand tapping. The straight handle design provides greater leverage, particularly suited for use with larger diameters. Simple to operate. Hardened steel jaws are opened and closed by simply twisting one hand which is knurled for side gripping.

3850

Number	Hand Reamer Capacity Inch	Hand Reamer Capacity mm	Hand Tap Capacity Inch	Hand Tap Capacity mm	Over-All-Length	Pack Qty	EDP#
8	1/8 - 5/16	M3 - M8	1/16 - 5/16	M1 - M8	7“	1	1810017
9	3/16 - 3/8	M5 - M9	3/16 - 1/2	M4 - M12	10.1/2“	1	1810018
10	1/4 - 9/16	M6 - M14	1/4 - 3/4	M3 - M8	15“	1	1810019
11	3/8 - 3/4	M9 - M19	3/8 - 1“	M10 - M25	20“	1	1810020
12	3/8 - 7/8	M9 - M22	3/8 - 1.1/8	M10 - M27	25.5/8“	1	1810021
14	5/8 - 1.1/2	M16 - M39	7/8 - 1.7/8	M22 - M42	40.1/2“	1	1810022

Die Stocks, Straight Handle

Designed for use with Dormer gun nosed dies.
The die is held in place by two opposed cone point screws in the stock which locate in two indents in the die. When this is effected, the split in the die lines up opposite a third pointed set screw which can be run in to spread the die slightly for minute adjustment.

L110

Nr.	Die Size Ø x H	Pack Qty	EDP#
1“	16 x 5	1	0111604
2a	20 x 5	1	0111611
2b	20 x 7	1	0111628
3	25 x 9	1	0111635
4“	30 x 11	1	0111642
5	38 x 14	1	0111666
5f	38 x 10	1	0111659
6	45 x 18	1	0111680
6f	45 x 14	1	0111673
7	55 x 22	1	0111703
7f	55 x 16	1	0111697
8	65 x 25	1	0111727
8f	65 x 18	1	0111710
9	75 x 30	1	0111741
9f	75 x 20	1	0111734
10	90 x 36	1	0111765
10f	90 x 22	1	0111758
	13/16 x 1/4	1	0218013
	1 x 3/8	1	0218020
	1.5/16 x 7/16	1	0218037
	1.1/2 x 1/2	1	0218044
	2 x 5/8	1	0218051
	2.1/4 x 11/16	1	0218068
	3 x 7/8	1	0218075
	4 x 1	1	0218082

HSS Reamers

Hand Reamer, Square Drive

Straight flute hand reamer with square drive, right hand cut.
Widely used by hand for the final sizing of drilled holes. The square on the shank allows it to be held in either a tap wrench or a vise depending on whether it is the reamer or the part that is rotating. A long starting taper allows for ease of entry and accurate alignment. The straight flute style is recommended for most general purpose hand reaming applications.

4500

Diameter Inch	Diameter Decimal Inch	Flute Length Inch	Over-All-Length Inch	# of Flutes	Pack Qty	4500
1/8	0.1250	1.1/2	3“	4	1	5010928
3/16	0.1875	1.3/4	3.1/2	6	1	5010930
1/4	0.2500	2“	4“	6	1	5010932
5/16	0.3125	2.1/4	4.1/2	6	1	5010934
3/8	0.3750	2.1/2	5“	6	1	5010936
7/16	0.4375	2.3/4	5.1/2	6	1	5010938
1/2	0.5000	3“	6“	6	1	5010940
9/16	0.5625	3.1/4	6.1/2	8	1	5010942
5/8	0.6250	3.1/2	7“	8	1	5010944
3/4	0.7500	4.3/16	8.3/8	8	1	5010948
7/8	0.8750	4.7/8	9.3/4	8	1	5010950
1“	1.0000	5.7/16	10.7/8	8	1	5010952

Hand Reamer, Taper Pin Type, Square Drive

Straight flute taper pin (1/4” per foot), right hand cut.
Designed to convert a straight hole into a tapered hole into which standard taper pins (ASA B5.20-1958) will fit. The square on the shank is suitable for holding a tap wrench or vise, depending on whether the reamer or part is rotating, making them ideal for hand use. Recommended for most materials.
Produced per ASME B94.2-1995 standards.

4587

Nominal Diameter	Diameter Small End Inch	Diameter Large End Inch	Shank Diameter Inch	Flute Length Inch	Over-All-Length Inch	# of Flutes	Pack Qty	4587
0	0.1287	0.1638	11/64	1.11/16	2.15/16	6	1	5011129
1	0.1447	0.1798	3/16	1.11/16	2.15/16	6	1	5011130
2	0.1600	0.2010	13/64	1.15/16	3.3/16	6	1	5011131
3	0.1813	0.2294	15/64	2.5/16	3.11/16	6	1	5011132
4	0.2071	0.2600	17/64	2.9/16	4.1/16	6	1	5011133
5	0.2410	0.2994	5/16	2.13/16	4.5/16	6	1	5011134
6	0.2773	0.3540	23/64	3.11/16	5.7/16	6	1	5011135
7	0.3297	0.4220	13/32	4.7/16	6.5/16	6	1	5011136
8	0.3971	0.5050	7/16	5.3/16	7.3/16	6	1	5011137
9	0.4800	0.6066	9/16	6.1/16	8.5/16	8	1	5011138
10	0.5799	0.7216	5/8	6.13/16	9.5/16	8	1	5011139

Note: Nom Ø is the Taper Pin number
Per American Standard Taper Pin Specification (ASA B5.20-1958)

Hand Reamer, Taper Pin, Square Drive

Left hand slow spiral flute, right hand cut taper pin (1/4” per foot) hand reamer with square drive. Designed to convert a straight hole into a tapered hole into which standard taper pins (ASA B5.20-1958) will fit. The square on the shank is suitable for holding a tap wrench or vise, depending on whether the reamer or part is rotating, making them ideal for hand use. Recommended for most materials.
Produced per ASME B94.2-1995 standards.

4591

nom Ø	d_1 Ø Inch	d_2 Ø Inch	d_3 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	4591
0	0.1287	0.1638	11/64	1.11/16	2.15/16	6	1	5011146
1	0.1447	0.1798	3/16	1.11/16	2.15/16	6	1	5011147
2	0.1600	0.2010	13/64	1.15/16	3.3/16	6	1	5011148
3	0.1813	0.2294	15/64	2.5/16	3.11/16	6	1	5011149
4	0.2071	0.2600	17/64	2.9/16	4.1/16	6	1	5011150
5	0.2410	0.2994	5/16	2.13/16	4.5/16	6	1	5011151
6	0.2773	0.3540	23/64	3.11/16	5.7/16	6	1	5011152
7	0.3297	0.4220	13/32	4.7/16	6.5/16	6	1	5011153
8	0.3971	0.5050	7/16	5.3/16	7.3/16	6	1	5011154
9	0.4800	0.6066	9/16	6.1/16	8.5/16	8	1	5011155
10	0.5799	0.7216	5/8	6.13/16	9.5/16	8	1	5011156

Note: Nom Ø is the Taper Pin number
Per American Standard Taper Pin Specification (ASA B5.20-1958)

Hand Reamer, Taper Pin Type, Square Drive

DORMER

Straight flute taper pin (1/4” per foot), straight shank reamer.
Designed to convert a straight hole into a tapered hole into which standard taper pins will fit. The square on the shank is suitable for holding a tap wrench or vise, depending on whether the reamer or part is rotating, making them ideal for hand use. Recommended for most materials.

B301

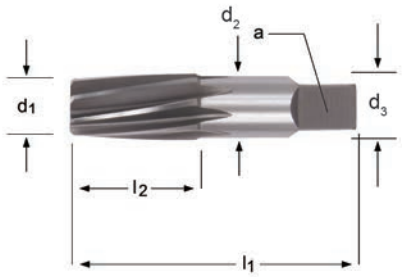
nom Ø	d_1 Ø mm	l_1 mm	l_2 mm	# of Flutes	☐ a mm	d_2 Ø mm	Pack Qty	B301
1/16	1.10	51	25	4	1.2	1.63	1	0182277 [1]
5/64	1.50	51	25	4	1.6	2.03	1	0182284 [1]
3/32	1.75	57	32	4	2.0	2.41	1	0182291 [1]
7/64	2.03	64	38	4	2.2	2.82	1	0182307 [1]
1/8	2.30	70	44	4	2.5	3.23	1	0182314 [1]
9/64	2.64	73	48	4	2.8	3.63	1	0182321 [1]
5/32	2.95	76	51	4	3.1	4.01	1	0182338 [1]
11/64	3.23	89	57	4	3.6	4.42	1	0182345 [1]
3/16	3.50	102	70	4	4.0	4.95	1	0182352 [1]
7/32	4.13	102	70	6	4.5	5.59	1	0182369 [1]
1/4	4.64	117	86	6	5.0	6.43	1	0182376 [2]
9/32	5.23	143	105	6	5.6	7.42	1	0182383 [2]
5/16	5.84	143	105	6	6.3	8.03	1	0182390 [2]
11/32	6.43	152	114	6	7.1	8.81	1	0182406 [2]
3/8	7.03	165	127	6	8.0	9.68	1	0182413 [2]
13/32	7.42	191	146	6	8.0	10.46	1	0182420 [2]
7/16	8.21	191	146	6	9.0	11.25	1	0182437 [2]
1/2	9.41	210	165	6	10.0	12.85	1	0182444 [2]

HSS Reamers

UNION BUTTERFIELD®

Hand Reamer, Taper Pipe Type, Square Drive

Left hand spiral flute, right hand cut taper (3/4” per foot) taper pipe reamer. Intended for reaming holes to be tapped with American Standard taper pipe taps. Generally used by hand with a tap wrench. Produced per ASME B94.2-1995 standards.



4600

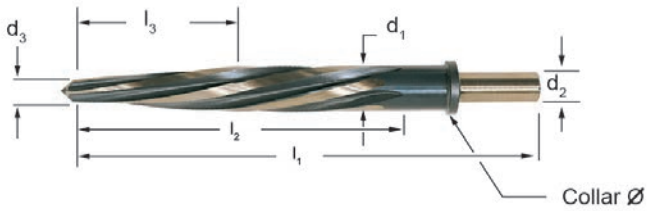
nom Ø	d_1 Ø Inch	d_2 Ø Inch	d_3 Ø Inch	l_2 Inch	l_1 Inch	▨ a mm	# of Flutes	Pack Qty	4600
1/8	0.3160	0.3620	0.4375	3/4	2.1/8	0.3280	6	1	1810007
1/4	0.4060	0.4720	0.5625	1.1/16	2.7/16	0.4210	6	1	1810008
3/8	0.5400	0.6060	0.7000	1.1/16	2.9/16	0.5310	8	1	1810009
1/2	0.6650	0.7510	0.6875	1.3/8	3.1/8	0.5150	8	1	1810010
3/4	0.8760	0.9620	0.9063	1.3/8	3.1/4	0.6790	10	1	1810011
1“	1.1030	1.2120	1.1250	1.3/4	3.3/4	0.8430	10	1	1810012

Note: Nom Ø (column 1) is the NPT pipe thread size.
This is not the tool diameter.

DORMER

Car Reamer (Alignment Reamer), Reduced Shank

Left Hand Helical Flute, Right Hand Cut. 1/2” Reduced Shank with Tri-Flats. Combination Bronze and Steam Oxide in flutes reduces wear and chip welding in harder ferrous materials. Used to align or enlarge holes.



B122

d_1 Ø Inch	d_1 decimal Inch	l_1 Inch	l_2 Inch	l_3 Inch	# of Flutes	d_2 Ø Inch	d_3 Ø Inch	Pack Qty	B122
3/8	0.3750	5.1/4	3.1/16	2	5	3/8	7/32	1	0426296
1/2	0.5000	5.5/16	3.3/4	2.5/8	5	1/2	1/4	1	0252376
9/16	0.5625	6.9/16	4.5/16	3.3/16	5	1/2	5/16	1	0252437
5/8	0.6250	6.9/16	4.5/16	3.3/16	5	1/2	3/8	1	0252413
11/16	0.6875	7	4.13/16	3.9/16	5	1/2	7/16	1	0252369
3/4	0.7500	7	4.13/16	3.9/16	5	1/2	1/2	1	0252406
13/16	0.8125	7.1/4	5.1/8	3.7/8	5	1/2	9/16	1	0252383
7/8	0.8750	7.1/4	5.1/8	3.7/8	5	1/2	5/8	1	0252420
15/16	0.9375	7.1/4	5.1/8	3.7/8	5	1/2	11/16	1	0252390
1“	1.0000	7.1/4	5.1/8	3.7/8	5	1/2	3/4	1	0252345
1.1/16	1.0625	7.1/4	5.1/4	3.7/8	5	1/2	13/16	1	0252352

Note: Collar diameter = d_1 + 1/8“
Collar thickness = 3/16“
Shank Length = 1.1/2“

Chucking Reamer, Straight Shank

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.

4533

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
	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

HSS Reamers

UNION BUTTERFIELD®

d_1 Ø "/Nr./letter	d_1 decimal Inch	d_2 decimal Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	4533
	0.1865	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
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
L	0.2900	0.2792	1.1/2	6“	6	1	5010630
M	0.2950	0.2792	1.1/2	6“	6	1	5010631
19/64	0.2969	0.2792	1.1/2	6“	6	1	5010632
N	0.3020	0.2792	1.1/2	6“	6	1	5010633
	0.3105	0.2792	1.1/2	6“	6	1	5010636
	0.3115	0.2792	1.1/2	6“	6	1	5010638
	0.3120	0.2792	1.1/2	6“	6	1	5010639
5/16	0.3125	0.2792	1.1/2	6“	6	1	5010640
	0.3135	0.2792	1.1/2	6“	6	1	5010642
O	0.3160	0.2792	1.1/2	6“	6	1	5010645
P	0.3230	0.2792	1.1/2	6“	6	1	5010647
21/64	0.3281	0.2792	1.1/2	6“	6	1	5010648
Q	0.3320	0.2792	1.1/2	6“	6	1	5010649
R	0.3390	0.2792	1.1/2	6“	6	1	5010650
11/32	0.3438	0.2792	1.1/2	6“	6	1	5010651
S	0.3480	0.3100	1.3/4	7“	6	1	5010652
T	0.3580	0.3100	1.3/4	7“	6	1	5010653
23/64	0.3594	0.3100	1.3/4	7“	6	1	5010654
U	0.3680	0.3100	1.3/4	7“	6	1	5010655
	0.3730	0.3100	1.3/4	7“	6	1	5010658
	0.3740	0.3100	1.3/4	7“	6	1	5010659
	0.3745	0.3100	1.3/4	7“	6	1	5010660
3/8	0.3750	0.3100	1.3/4	7“	6	1	5010661
	0.3760	0.3100	1.3/4	7“	6	1	5010662
V	0.3770	0.3100	1.3/4	7“	6	1	5010663
W	0.3860	0.3100	1.3/4	7“	6	1	5010665
25/64	0.3906	0.3100	1.3/4	7“	6	1	5010666
X	0.3970	0.3100	1.3/4	7“	6	1	5010667
Y	0.4040	0.3100	1.3/4	7“	6	1	5010668
13/32	0.4062	0.3100	1.3/4	7“	6	1	5010670
Z	0.4130	0.3730	1.3/4	7“	6	1	5010671
27/64	0.4219	0.3730	1.3/4	7“	6	1	5010672
	0.4355	0.3730	1.3/4	7“	6	1	5010673
	0.4365	0.3730	1.3/4	7“	6	1	5010674
	0.4370	0.3730	1.3/4	7“	6	1	5010675
7/16	0.4375	0.3730	1.3/4	7“	6	1	5010676
	0.4385	0.3730	1.3/4	7“	6	1	5010677
29/64	0.4531	0.3730	1.3/4	7“	6	1	5010678
15/32	0.4688	0.3730	1.3/4	7“	6	1	5010679
31/64	0.4844	0.4355	2“	8“	6	1	5010680
	0.4980	0.4355	2“	8“	6	1	5010681
	0.4990	0.4355	2“	8“	6	1	5010682
	0.4995	0.4355	2“	8“	6	1	5010683
1/2	0.5000	0.4355	2“	8“	6	1	5010684
	0.5010	0.4355	2“	8“	6	1	5010685
33/64	0.5156	0.4355	2“	8“	6	1	5010690
17/32	0.5312	0.4355	2“	8“	6	1	5010691

d_1 Ø "/Nr./letter	d_1 decimal Inch	d_2 decimal Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	4533
35/64	0.5469	0.4355	2“	8“	8	1	5010692
9/16	0.5625	0.4355	2“	8“	8	1	5010693
37/64	0.5781	0.4355	2“	8“	8	1	5010694
19/32	0.5938	0.4355	2“	8“	8	1	5010695
39/64	0.6094	0.5620	2.1/4	9“	8	1	5010696
5/8	0.6250	0.5620	2.1/4	9“	8	1	5010698
41/64	0.6406	0.5620	2.1/4	9“	8	1	5010700
21/32	0.6562	0.5620	2.1/4	9“	8	1	5010701
43/64	0.6719	0.5620	2.1/4	9“	8	1	5010702
11/16	0.6875	0.5620	2.1/4	9“	8	1	5010703
45/64	0.7031	0.5620	2.1/4	9“	8	1	5010704
23/32	0.7188	0.5620	2.1/4	9“	8	1	5010705
47/64	0.7344	0.6245	2.1/2	9.1/2	8	1	5010706
3/4	0.7500	0.6245	2.1/2	9.1/2	8	1	5010708
49/64	0.7656	0.6245	2.1/2	9.1/2	8	1	5010710
25/32	0.7812	0.6245	2.1/2	9.1/2	8	1	5010711
51/64	0.7969	0.6245	2.1/2	9.1/2	8	1	5010712
13/16	0.8125	0.6245	2.1/2	9.1/2	8	1	5010713
53/64	0.8281	0.6245	2.1/2	9.1/2	8	1	5010714
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

Bridge Reamer, Taper Shank

Left hand slow spiral, right hand cut tapered bridge reamer. Used in structural iron and steel applications for badly misaligned holes. Produced per ASME B94.2-1995 standards.

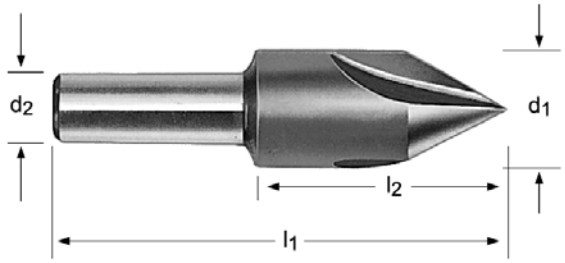
4579

nom Ø	d_1 Ø (min)	d_2 Ø (max)	MTS	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	4579
7/16	1/4	7/16	2	4.3/8	8.1/4	4	1	5011055
1/2	9/32	1/2	2	5.1/8	9“	4	1	5011056
9/16	11/32	9/16	2	5.1/8	9“	4	1	5011057
5/8	3/8	5/8	2	6.1/8	10“	4	1	5011058
11/16	25/64	11/16	3	7.1/8	11.3/4	4	1	5011059
3/4	7/16	3/4	3	7.3/8	12“	4	1	5011060
13/16	1/2	13/16	3	7.3/8	12“	4	1	5011061
7/8	9/16	7/8	3	7.3/8	12“	4	1	5011062
15/16	5/8	15/16	3	7.3/8	12“	4	1	5011063
1“	11/16	1“	3	7.3/8	12“	4	1	5011064
1.1/16	3/4	1.1/16	3	7.3/8	12“	4	1	5011065

HSS Reamers

Straight Shank, 3-Flute

Center Reamer for Countersinks, available in 60°, 82°, 90°, or 100° angles. Widely used to finish countersink angles for screw heads, rivet heads, and lathe centers. The odd number of flutes reduces vibrations while providing better accuracy than single-flute countersinks.



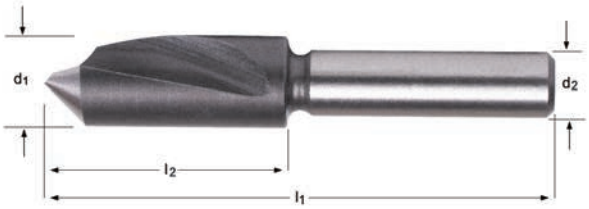
4608

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

Countersink, Straight Shank, Single-Flute

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.

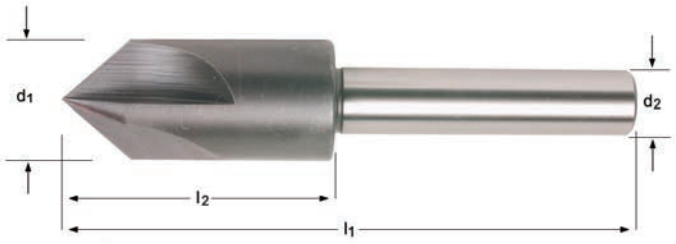


4603

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

Countersink, Straight Shank, 4-Flute

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.



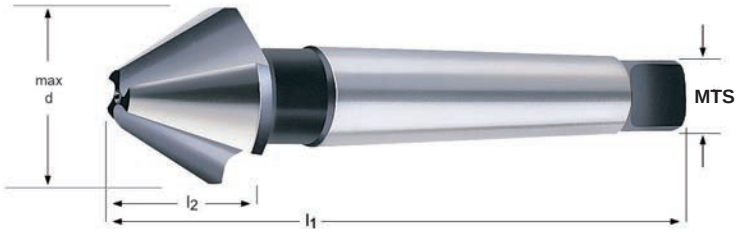
4602

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

HSS Countersinks

Taper Shank, 3-Flute

60° Countersink with MorseTaper Shank for multiple materials. Bright finish improves chip flow in soft ferrous and non-ferrous materials.



G137

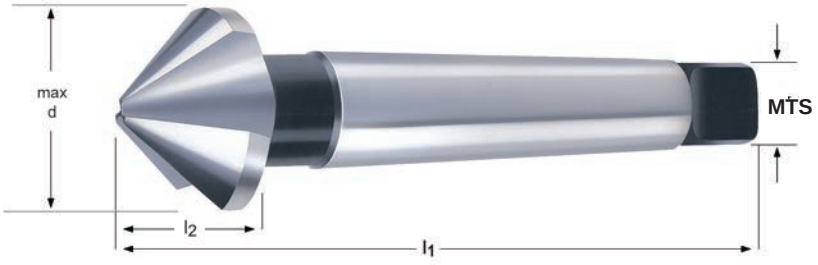
max d mm	min d mm	l_2 mm	l_1 mm	MTS	# of Flutes	Pack Qty	G137
16.0 (5/8)	4.0	14.5	90	1	3	1	0108765
20.0 (3/4)	5.0	17.5	106	2	3	1	0108772
25.0 (1")	6.3	20.0	112	2	3	1	0108789
31.5 (1.1/4)	10.0	23.0	118	2	3	1	0108796
40.0 (1.1/2)	12.5	28.5	150	3	3	1	0108802
50.0 (2")	16.0	36.0	160	3	3	1	0108819
63.0 (2.1/2)	20.0	43.0	190	4	3	1	0108826
80.0 (3")	25.0	54.0	200	4	3	1	0108833

Taper Shank, 3-Flute

90° Countersink with Morse Taper Shank for multiple materials.

G138 Bright finish improves chip flow in soft ferrous and non-ferrous materials. Excellent for steel, titanium & nickle alloys.

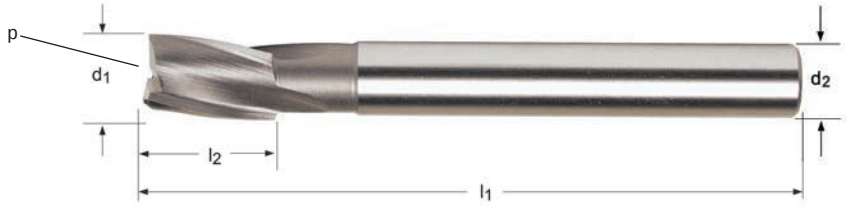
G338 TiN coating increases surface hardness and improves chip flow in steel, cast iron and aluminum alloys.



max d mm	min d mm	l_2 mm	l_1 mm	MTS	# of Flutes	Pack Qty	G138	G338
25.0	3.8	15.5	106	2	3	1	0108895	0109502
30.0	4.2	18.5	112	2	3	1	0108925	—
31.0	4.2	20.0	112	2	3	1	0108932	0109519
34.0	4.5	19.5	118	2	3	1	0108949	—
37.0	4.8	21.7	118	2	3	1	0108956	0109526
40.0	10.0	20.5	140	3	3	1	0108963	0109533
50.0	14.0	24.1	150	3	3	1	0108970	0109540
63.0	16.0	28.5	180	4	3	1	0108987	0109557
80.0	22.0	36.0	190	4	3	1	0108994	—

Counterbore Body - Interchangeable Pilot Type

Used to enlarge the end of a preformed hole when a flat bottom is required. The counterbore is an end cutting tool which utilizes and interchangeable pilot to align the enlarged hole being machined with the preformed hole. The 3 and 5 flute counterbore reduces chatter and improves finish.



4702 - Short Length

d_1 Ø Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pilot (p) Mounting Ø Inch	Pilot Ø min	Pilot Ø max	Pack Qty	4702
1/4	3/4	3.13/16	15/64	3	3/32	1/8	3/16	1	6210031
9/32	3/4	3.13/16	17/64	3	3/32	1/8	7/32	1	6210032
5/16	3/4	3.13/16	19/64	3	3/32	1/8	1/4	1	6210033
11/32	3/4	3.13/16	5/16	3	3/32	1/8	9/32	1	6210034
3/8	1“	4.1/16	5/16	3	5/32	3/16	5/16	1	6210035
13/32	1“	4.1/16	3/8	3	5/32	3/16	11/32	1	6210036
7/16	1“	4.1/16	3/8	3	5/32	3/16	3/8	1	6210037
15/32	1.1/4	4.5/16	7/16	3	3/16	3/16	13/32	1	6210038
1/2	1.1/4	4.5/16	7/16	3	3/16	3/16	7/16	1	6210039
9/16	1.1/4	4.5/16	1/2	3	3/16	3/16	1/2	1	6210041
19/32	1.1/4	5.1/8	1/2	3	3/16	3/16	17/32	1	6210042
5/8	1.1/4	5.1/8	1/2	3	3/16	3/16	9/16	1	6210043
11/16	1.1/4	5.1/8	1/2	3	3/16	3/16	5/8	1	6210045
3/4	1.1/2	5.3/8	1/2	3	1/4	5/16	11/16	1	6210047
25/32	1.1/2	5.3/8	5/8	3	1/4	5/16	23/32	1	6210048
13/16	1.1/2	5.3/8	5/8	3	1/4	5/16	3/4	1	6210049
27/32	1.1/2	5.3/8	3/4	3	1/4	5/16	25/32	1	6210050
7/8	1.1/2	5.3/8	3/4	3	1/4	5/16	13/16	1	6210051
1“	1.3/4	6.3/8	3/4	3	5/16	3/8	15/16	1	6210055
2“	2.1/2	8.3/8	1.1/2	5	1/2	9/16	1.15/16	1	6210065

HSS Counterbores

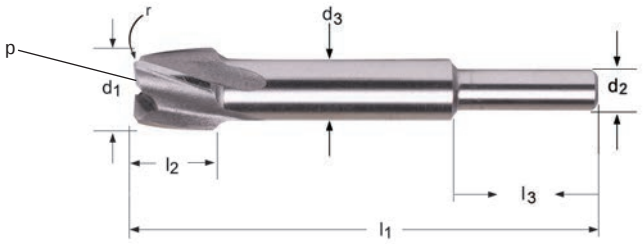
UNION BUTTERFIELD®

Counterbore Body, Aircraft Series - Interchangeable Pilot Type

Used for the facing of bosses, and counterboring recesses for spring pockets and screw heads. Supplied with corner radius to produce the fillets necessary for this type of work. Designed for pneumatic or electric drills.

4705 - Long Series, 3-flute

4706 - Short Series (Aircraft) 4-flute with corner radius

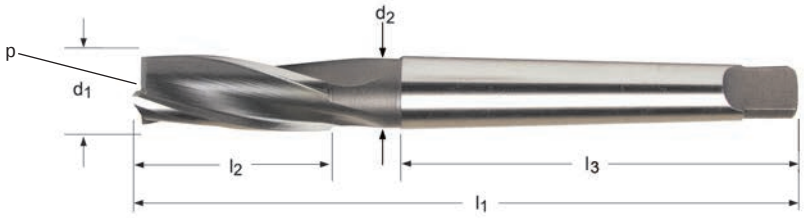


d_1 Ø Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	l_3 Inch	d_3 Ø Inch	# of Flutes	Pilot (p) Mounting Ø Inch	Pilot Ø min	Pilot Ø max	Pack Qty	4705	4706	
1/4	1/2	2.3/8	1/4	1.1/8	15/64	4	3/32	1/8	3/16	1	—	6210137	1)
1/4	3/4	3.13/16	15/64	3.1/16	15/64	3	3/32	1/8	3/16	1	6210107	—	
5/16	1/2	2.3/8	1/4	7/8	17/64	4	3/32	1/8	1/4	1	—	6210139	1)
5/16	3/4	3.13/16	19/64	3.1/16	19/64	3	3/32	1/8	1/4	1	6210109	—	
11/32	1/2	2.3/8	1/4	7/8	19/64	4	3/32	1/8	9/32	1	—	6210140	1)
3/8	1/2	2.3/8	1/4	7/8	5/16	4	3/32	3/16	5/16	1	—	6210141	2)
3/8	3/4	3.13/16	5/16	3.1/16	5/16	3	3/32	3/16	5/16	1	6210111	—	
13/32	1/2	2.13/16	1/4	7/8	5/16	4	1/8	3/16	11/32	1	—	6210142	2)
7/16	1/2	2.13/16	1/4	7/8	5/16	4	1/8	3/16	3/8	1	—	6210143	2)
7/16	3/4	3.13/16	3/8	3.1/16	3/8	3	1/8	3/16	3/8	1	6210113	—	
15/32	1/2	2.13/16	1/4	7/8	5/16	4	1/8	1/4	13/32	1	—	6210144	2)
1/2	1/2	2.13/16	1/4	7/8	3/8	4	1/8	1/4	7/16	1	—	6210145	2)
1/2	3/4	3.13/16	7/16	3.1/16	7/16	3	1/8	1/4	7/16	1	6210115	—	
17/32	1/2	2.13/16	1/4	7/8	3/8	4	1/8	1/4	15/32	1	—	6210146	2)
17/32	3/4	5.3/8	1/2	4.5/8	1/2	3	1/8	1/4	15/32	1	6210116	—	
9/16	1/2	2.13/16	1/4	7/8	3/8	4	1/8	1/4	1/2	1	—	6210147	2)
9/16	3/4	5.3/8	1/2	4.5/8	1/2	3	1/8	1/4	1/2	1	6210117	—	
19/32	3/4	5.3/8	1/2	4.3/16	9/16	3	1/8	1/4	17/32	1	6210118	—	
5/8	3/4	5.3/8	1/2	4.3/16	9/16	3	1/8	1/4	9/16	1	6210119	—	
11/16	1/2	2.13/16	1/4	7/8	1/2	4	1/8	1/4	5/8	1	—	6210151	3)
21/32	1.1/4	5.3/8	1/2	3.5/8	9/16	3	3/16	1/4	19/32	1	6210120	—	
11/16	1.1/4	5.3/8	1/2	3.5/8	5/8	3	3/16	1/4	5/8	1	6210121	—	
3/4	1.1/4	5.3/8	1/2	3.5/8	11/16	3	3/16	5/16	11/16	1	6210123	—	
3/4	1/2	2.13/16	1/4	7/8	1/2	4	3/16	5/16	11/16	1	—	6210153	3)
25/32	1.1/4	5.3/8	1/2	3.5/8	11/16	3	3/16	5/16	23/32	1	6210124	—	
13/16	1.1/4	5.3/8	1/2	3.5/8	3/4	3	3/16	5/16	3/4	1	6210125	—	
13/16	1/2	2.13/16	1/4	7/8	1/2	4	3/16	5/16	3/4	1	—	6210155	3)
7/8	1.1/4	5.3/8	1/2	3.5/8	3/4	3	3/16	5/16	13/16	1	6210126	—	
7/8	1/2	2.13/16	1/4	7/8	1/2	4	3/16	5/16	13/16	1	—	6210157	3)
15/16	1.1/4	5.3/8	1/2	3.5/8	3/4	3	3/16	5/16	7/8	1	6210127	—	
1“	1.1/4	5.3/8	1/2	3.5/8	3/4	3	3/16	3/8	15/16	1	6210128	—	
1“	1/2	2.13/16	1/4	7/8	1/2	4	3/16	3/8	15/16	1	—	6210161	3)

[1] 1/32 Corner Radius
[2] 3/64 Corner Radius
[3] 0.0550” Corner Radius

Counterbore Body, Taper Shank, Short Series - Interchangeable Pilot Type

Short counterbore body, with taper shank for use with detachable pilots which align counterbore to existing drilled hole. 3 & 5 Flute designs for less chatter.

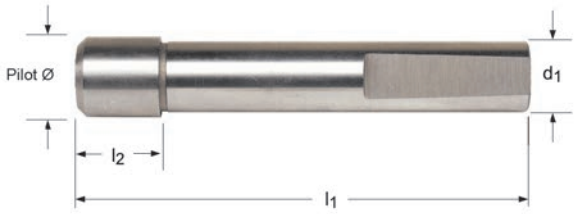


4703

d_1 Ø Inch	l_2 Inch	l_1 Inch	MTS	d_2 Neck Dia. Inch	l_3 Shank Length Inch	# of Flutes	pilot (p) mounting Ø Inch	pilot Ø min	pilot Ø max	Pack Qty	4703
1/2	1.1/4	4.5/16	1	29/64	2.9/16	3	3/16	1/4	7/16	1	6210074
11/16	1.1/4	5.1/8	2	5/8	3.1/8	3	3/16	1/4	5/8	1	6210080
3/4	1.1/2	5.3/8	2	21/32	3.1/8	3	1/4	5/16	11/16	1	6210082
13/16	1.1/2	5.3/8	2	21/32	3.1/8	3	1/4	5/16	3/4	1	6210084
7/8	1.1/2	5.3/8	2	21/32	3.1/8	3	1/4	5/16	13/16	1	6210085
15/16	1.1/2	6.1/8	2	7/8	3.7/8	3	1/4	5/16	7/8	1	6210086
1“	1.3/4	6.3/8	3	7/8	3.7/8	3	5/16	3/8	15/16	1	6210087
1.1/16	1.3/4	6.3/8	3	7/8	3.7/8	3	5/16	3/8	1“	1	6210088
1.1/8	1.3/4	6.3/8	3	7/8	3.7/8	3	5/16	3/8	1.1/16	1	6210089
1.3/16	1.3/4	6.3/8	3	7/8	3.7/8	3	5/16	3/8	1.1/8	1	6210090
1.1/4	2“	6.5/8	3	7/8	3.7/8	5	3/8	7/16	1.3/16	1	6210091
1.3/8	2“	6.5/8	3	7/8	3.7/8	5	3/8	7/16	1.5/16	1	6210093
1.1/2	2“	7.7/8	4	1.3/16	4.7/8	5	3/8	7/16	1.7/16	1	6210094
1.5/8	2.1/4	8.1/8	4	1.3/8	4.7/8	5	7/16	1/2	1.9/16	1	6210095
2“	2.1/2	8.3/8	4	1.1/2	4.7/8	5	1/2	9/16	1.5/16	1	6210098
2.1/8	2.1/2	9.7/8	5	1.3/4	6.1/8	5	1/2	9/16	2.1/16	1	6210099

Counterbore Pilot, Detachable

Interchangeable detachable pilots for use with counterbore bodies. Pilot shank diameters must match counterbore body “pilot diameter” for proper match.



4704

pilot Ø Inch	d_1 Ø Inch	l_2 Inch	l_1 Inch	Pack Qty	4704
1/8	3/32	1/8	1.1/4	1	3210114
5/32	3/32	3/16	1.5/16	1	3210115
3/16	3/32	3/16	1.5/16	1	3210116
7/32	3/32	1/4	1.3/8	1	3210117
1/4	3/32	1/4	1.3/8	1	3210118
1/8	1/8	1/8	1.7/16	1	3210249
5/32	1/8	3/16	1.1/2	1	3210251
3/16	1/8	3/16	1.1/2	1	3210255
7/32	1/8	1/4	1.9/16	1	3210258
1/4	1/8	1/4	1.9/16	1	3210259
9/32	1/8	5/16	1.5/8	1	3210261
5/16	1/8	5/16	1.5/8	1	3210262
3/8	1/8	3/8	1.11/16	1	3210263
7/16	1/8	7/16	1.3/4	1	3210264
1/2	1/8	1/2	1.13/16	1	3210265
3/16	5/32	3/16	1.9/16	1	3210119
7/32	5/32	1/4	1.5/8	1	3210120
1/4	5/32	1/4	1.5/8	1	3210121
9/32	5/32	5/16	1.11/16	1	3210122
5/16	5/32	5/16	1.11/16	1	3210123
3/8	5/32	3/8	1.3/4	1	3210124
3/16	3/16	1/4	1.7/8	1	3210281
7/32	3/16	1/4	1.7/8	1	3210284
1/4	3/16	1/4	1.7/8	1	3210125

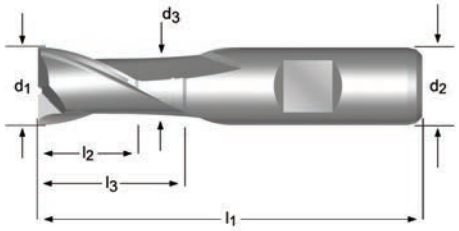
HSS Counterbores

UNION BUTTERFIELD®

pilot Ø Inch	d_1 Ø Inch	l_2 Inch	l_1 Inch	Pack Qty	4704
9/32	3/16	5/16	1.15/16	1	3210287
5/16	3/16	5/16	1.15/16	1	3210126
11/32	3/16	3/8	2“	1	3210444
3/8	3/16	3/8	2“	1	3210127
13/32	3/16	7/16	2.1/16	1	3210445
7/16	3/16	7/16	2.1/16	1	3210128
15/32	3/16	1/2	2.1/8	1	3210446
1/2	3/16	1/2	2.1/8	1	3210129
9/16	3/16	9/16	2.3/16	1	3210130
5/8	3/16	9/16	2.3/16	1	3210131
13/16	3/16	13/16	2.7/16	1	3210296
7/8	3/16	7/8	2.1/2	1	3210297
1/4	1/4	1/4	1.11/16	1	3210300
9/32	1/4	5/16	1.3/4	1	3210302
5/16	1/4	5/16	1.3/4	1	3210132
3/8	1/4	3/8	1.13/16	1	3210133
7/16	1/4	7/16	1.7/8	1	3210134
1/2	1/4	1/2	1.15/16	1	3210135
17/32	1/4	9/16	2“	1	3210447
9/16	1/4	9/16	2“	1	3210136
5/8	1/4	5/8	2.1/16	1	3210137
11/16	1/4	11/16	2.1/8	1	3210138
3/4	1/4	3/4	2.3/16	1	3210139
13/16	1/4	7/8	2.5/16	1	3210140
1“	1/4	1“	2.7/16	1	3210314
3/8	5/16	3/8	2“	1	3210142
7/16	5/16	7/16	2.1/16	1	3210143
1/2	5/16	1/2	2.1/8	1	3210144
9/16	5/16	9/16	2.3/16	1	3210145
5/8	5/16	5/8	2.1/4	1	3210146
11/16	5/16	11/16	2.5/16	1	3210147
3/4	5/16	3/4	2.3/8	1	3210148
13/16	5/16	7/8	2.1/2	1	3210149
15/16	5/16	1“	2.5/8	1	3210151
1“	5/16	1“	2.5/8	1	3210152
7/16	3/8	7/16	2.5/16	1	3210155
1/2	3/8	1/2	2.3/8	1	3210156
9/16	3/8	9/16	2.7/16	1	3210157
5/8	3/8	5/8	2.1/2	1	3210158
11/16	3/8	11/16	2.9/16	1	3210159
3/4	3/8	3/4	2.5/8	1	3210160
13/16	3/8	7/8	2.3/4	1	3210161
7/8	3/8	7/8	2.3/4	1	3210162
15/16	3/8	1“	2.5/8	1	3210163
9/16	7/16	5/8	2.7/8	1	3210173
11/16	7/16	3/4	3“	1	3210175
3/4	7/16	3/4	3“	1	3210176
13/16	7/16	7/8	3.1/8	1	3210177
7/8	7/16	7/8	3.1/8	1	3210178
15/16	7/16	1“	3.1/4	1	3210179
1“	7/16	1“	3.1/4	1	3210180
9/16	1/2	5/8	3.1/8	1	3210195
1“	1/2	1“	3.1/2	1	3210202
1.1/2	1/2	1.1/2	4“	1	3210210

Stub Length, Square End, Weldon Shank, 30° Helix

Powdered Metal. P9 slotting tolerance.



C110

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	# of Flutes	l_3 mm	d_3 Ø mm	Pack Qty	C110
	1.00	6	2.5	47	2	-	-	1	0353165
	1.50	6	3	47	2	-	-	1	0353172
1/16	1.59	6	3	47	2	-	-	1	0639795
	1.80	6	4	48	2	-	-	1	0353189
	2.00	6	4	48	2	-	-	1	0353301
3/32	2.38	6	5	49	2	-	-	1	0639801
	2.50	6	5	49	2	-	-	1	0353318
	2.80	6	5	49	2	-	-	1	0353325
	3.00	6	5	49	2	-	-	1	0353370
1/8	3.18	6	6	50	2	-	-	1	0639818
	3.50	6	6	50	2	-	-	1	0353387
	3.80	6	7	51	2	-	-	1	0353394
	4.00	6	7	51	2	-	-	1	0353424
	4.50	6	7	51	2	-	-	1	0353431
3/16	4.76	6	8	52	2	-	-	1	0639825
	4.80	6	8	52	2	-	-	1	0353448 [1)2)]
	5.00	6	8	52	2	-	-	1	0353455
	5.50	6	8	52	2	-	-	1	0353462
	5.75	6	8	52	2	-	-	1	0353479 [1)2)]
	6.00	6	8	52	2	-	-	1	0353486
1/4	6.35	10	10	60	2	-	-	1	0639832
	6.50	10	10	60	2	-	-	1	0353493
	6.75	10	10	60	2	-	-	1	0629031
	7.00	10	10	60	2	-	-	1	0353509
	7.50	10	10	60	2	-	-	1	0353516
	7.75	10	11	61	2	-	-	1	0573495 [1)2)]
5/16	7.94	10	11	61	2	-	-	1	0639849
	8.00	10	11	61	2	-	-	1	0353523
	8.50	10	11	61	2	-	-	1	0353530
	9.00	10	11	61	2	-	-	1	0353547
	9.50	10	11	61	2	-	-	1	0353554
3/8	9.52	10	13	63	2	22.5	9.5	1	0639856
	9.70	10	13	63	2	22.5	9.5	1	0573501 [1)2)]
	10.00	10	13	63	2	22.5	9.5	1	0353196
13/32	10.32	12	13	70	2	-	-	1	0639863
	10.50	12	13	70	2	-	-	1	0353202
	11.00	12	13	70	2	-	-	1	0353219
7/16	11.11	12	13	70	2	-	-	1	0639870
	11.50	12	13	70	2	-	-	1	0573433
	11.70	12	16	73	2	27.5	11.5	1	0573440 [1)2)]
	12.00	12	16	73	2	27.5	11.5	1	0353226
	12.50	12	16	73	2	27.5	11.5	1	0573457
1/2	12.70	12	16	73	2	27.5	11.5	1	0639887
	13.00	12	16	73	2	27.5	11.5	1	0353233
17/32	13.49	12	16	73	2	27.5	11.5	1	0639894
	13.70	12	16	73	2	27.5	11.5	1	0573464 [1)2)]
	14.00	12	16	73	2	27.5	11.5	1	0353240
9/16	14.29	12	16	73	2	27.5	11.5	1	0639900
	15.00	12	16	73	2	27.5	11.5	1	0353257
	15.70	16	19	79	2	30.5	15.5	1	0573471 [1)2)]
5/8	15.88	16	19	79	2	30.5	15.5	1	0639917
	16.00	16	19	79	2	30.5	15.5	1	0353264
	17.00	16	19	79	2	30.5	15.5	1	0353271
11/16	17.46	16	19	79	2	30.5	15.5	1	0639924
	17.70	16	19	79	2	30.5	15.5	1	0628942
	18.00	16	19	79	2	30.5	15.5	1	0353288
	19.00	16	19	79	2	30.5	15.5	1	0353295
3/4	19.05	20	22	88	2	37.5	18.5	1	0639931
	19.70	20	22	88	2	37.5	19.5	1	0628959
	20.00	20	22	88	2	37.5	19.5	1	0353332
	21.70	20	22	88	2	37.5	19.5	1	0628966
	22.00	20	22	88	2	37.5	19.5	1	0353349
7/8	22.22	20	22	88	2	37.5	19.5	1	0639948

[1)] Diameter tolerance h10
[2)] Slot not in P9 tolerance
[3)] Available in HSCo only

HSS-PM 2 Flute End Mills

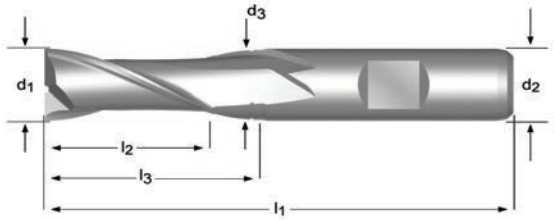
DORMER

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	# of Flutes	l_3 mm	d_3 Ø mm	Pack Qty	C110	
	24.00	25	26	102	2	45.5	23.5	1	0573488	
	24.70	25	26	102	2	45.5	24.5	1	0628973	
	25.00	25	26	102	2	45.5	24.5	1	0353356	
1“	25.40	25	26	102	2	45.5	24.5	1	0621929	
	26.00	25	26	102	2	45.5	24.5	1	0628980	
	28.00	25	26	102	2	45.5	24.5	1	0353363	
1.1/8	28.58	25	26	102	2	45.5	24.5	1	0639962	
	30.00	25	26	102	2	45.5	24.5	1	0353400	
1.1/4	31.75	32	32	112	2	51.5	31.5	1	0639979	
	32.00	32	32	112	2	51.5	31.5	1	0353417	
	35.00	32	32	112	2	51.5	31.5	1	0639986	1)3)
	36.00	32	32	112	2	51.5	31.5	1	0628997	1)3)
	40.00	40	38	130	2	59.5	39.0	1	0629000	1)3)
	45.00	40	38	130	2	59.5	38.0	1	0629017	1)3)
	50.00	50	45	147	2	66.5	48.0	1	0629024	1)3)

[1] Diameter tolerance h10
[2] Slot not in P9 tolerance
[3] Available in HSCo only

Regular Length, Square End, Weldon Shank, 30° Helix

Powdered Metal. P9 slotting tolerance.



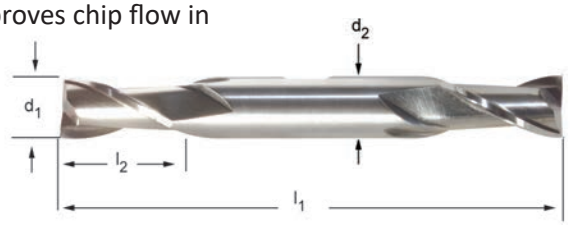
C123

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	# of Flutes	l_3 mm	d_3 Ø mm	Pack Qty	C123	
1/16	1.59	6	7	51	2	—	—	1	0640012	1)
	2.00	6	7	51	2	—	—	1	0353646	
	2.50	6	8	52	2	—	—	1	0353653	
	3.00	6	8	52	2	—	—	1	0353714	
1/8	3.18	6	10	54	2	—	—	1	0640029	1)
	3.50	6	10	54	2	—	—	1	0353721	
5/32	3.97	6	11	55	2	—	—	1	0640036	1)
	4.00	6	11	55	2	—	—	1	0353769	
	4.50	6	11	55	2	—	—	1	0353776	
3/16	4.76	6	13	57	2	—	—	1	0640043	1)
	5.00	6	13	57	2	—	—	1	0353790	
	5.50	6	13	57	2	—	—	1	0353806	
	6.00	6	13	57	2	—	—	1	0353813	
1/4	6.35	10	16	66	2	—	—	1	0640050	1)
	6.50	10	16	66	2	—	—	1	0353820	
	7.00	10	16	66	2	—	—	1	0353837	
	7.50	10	16	66	2	—	—	1	0353844	
5/16	7.94	10	19	69	2	—	—	1	0640067	1)
	8.00	10	19	69	2	—	—	1	0353851	
	8.50	10	19	69	2	—	—	1	0353868	
	9.00	10	19	69	2	—	—	1	0353875	
	9.50	10	19	69	2	—	—	1	0353882	
3/8	9.52	10	22	72	2	31.5	9.5	1	0640074	1)
	10.00	10	22	72	2	31.5	9.5	1	0353561	
	11.00	12	22	79	2	—	—	1	0353578	
	12.00	12	26	83	2	37.5	11.5	1	0353585	
1/2	12.70	12	26	83	2	37.5	11.5	1	0640081	1)
	13.00	12	26	83	2	37.5	11.5	1	0353592	
	14.00	12	26	83	2	37.5	11.5	1	0353608	
9/16	14.29	12	26	83	2	37.5	11.5	1	0640098	1)
	15.00	12	26	83	2	37.5	11.5	1	0353615	
5/8	15.88	16	32	92	2	43.5	15.5	1	0640104	1)
	16.00	16	32	92	2	43.5	15.5	1	0353622	
	18.00	16	32	92	2	43.5	15.5	1	0353639	
3/4	19.05	20	38	104	2	53.5	18.5	1	0640111	2)
	20.00	20	38	104	2	53.5	19.5	1	0353660	
	22.00	20	38	104	2	53.5	19.5	1	0353677	
	25.00	25	45	121	2	64.5	24.5	1	0353691	
1“	25.40	25	45	121	2	64.5	24.5	1	0640128	
	30.00	25	45	121	2	64.5	24.5	1	0353738	
	32.00	32	53	133	2	72.5	31.5	1	0353745	
	36.00	32	53	133	2	72.5	31.5	1	0353752	3)
	40.00	40	63	155	2	84.5	39.0	1	0353783	3)

[1] Diameter tolerance -.0005 inches / -.0013 inches • [2] Diameter tolerance -.0005 inches / -.0015 inches • [3] Available in HSCo only

Regular Length, Square End, Weldon Shank, 30° Helix

Double end provides two cutting ends in one tool. Bright finish improves chip flow in soft or non-ferrous materials.

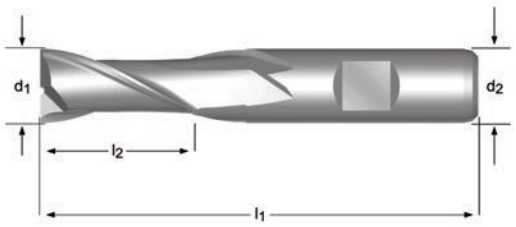


C600

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C600
1/8	0.1250	3/8	3.1/16	3/8	2	1	7647759
5/32	0.1562	7/16	3.1/8	3/8	2	1	7647820
3/16	0.1875	7/16	3.1/4	3/8	2	1	7647821
1/4	0.2500	1/2	3.3/8	3/8	2	1	7647822
9/32	0.2812	9/16	3.3/8	3/8	2	1	7647823
5/16	0.3125	9/16	3.1/2	3/8	2	1	7647824
11/32	0.3437	9/16	3.1/2	3/8	2	1	7647825
3/8	0.3750	9/16	3.1/2	3/8	2	1	7647826
13/32	0.4062	13/16	4.1/8	1/2	2	1	7647827
7/16	0.4375	13/16	4.1/8	1/2	2	1	7647828
1/2	0.5000	13/16	4.1/8	1/2	2	1	7647829
5/8	0.6250	1.1/8	5“	5/8	2	1	7647830
3/4	0.7500	1.5/16	5.5/8	3/4	2	1	7647831

Regular Length, Square End, Weldon Shank, 30° Helix

Bright finish improves chip flow in soft or non-ferrous materials.



C601

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C601
1/8	0.1250	3/8	2.5/16	3/8	2	1	7647832
3/16	0.1875	7/16	2.3/8	3/8	2	1	7647833
1/4	0.2500	1/2	2.7/16	3/8	2	1	7647834
5/16	0.3125	9/16	2.1/2	3/8	2	1	7647835
3/8	0.3750	9/16	2.1/2	3/8	2	1	7647836
7/16	0.4375	13/16	2.11/16	3/8	2	1	7647837
1/2	0.5000	13/16	2.11/16	3/8	2	1	7647838
1/2	0.5000	1“	3.1/4	1/2	2	1	7647839
9/16	0.5625	1.1/8	3.3/8	1/2	2	1	7647840
5/8	0.6250	1.1/8	3.3/8	1/2	2	1	7647841
5/8	0.6250	1.5/16	3.3/4	5/8	2	1	7647844
11/16	0.6875	1.5/16	3.5/8	1/2	2	1	7647842
11/16	0.6875	1.5/16	3.3/4	5/8	2	1	7647845
3/4	0.7500	1.5/16	3.5/8	1/2	2	1	7647843
3/4	0.7500	1.5/16	3.3/4	5/8	2	1	7647846
3/4	0.7500	1.5/16	3.7/8	3/4	2	1	7647859
13/16	0.8125	1.1/2	4“	5/8	2	1	7647847
7/8	0.8750	1.1/2	4“	5/8	2	1	7647848
7/8	0.8750	1.1/2	4.1/8	3/4	2	1	7647860
7/8	0.8750	1.1/2	4.1/8	7/8	2	1	7647851
15/16	0.9375	1.1/2	4“	5/8	2	1	7647849
1“	1.0000	1.1/2	4“	5/8	2	1	7647850

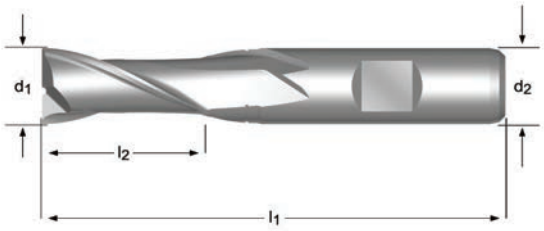
HSS & Cobalt 2 Flute End Mills

Continued

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C601
1“	1.0000	1.1/2	4.1/8	3/4	2	1	7647861
1“	1.0000	1.1/2	4.1/8	7/8	2	1	7647852
1“	1.0000	1.5/8	4.1/2	1“	2	1	7647853
1.1/8	1.1250	1.5/8	4.1/4	3/4	2	1	7647862
1.1/8	1.1250	1.5/8	4.1/2	1“	2	1	7647854
1.1/4	1.2500	1.5/8	4.1/2	1“	2	1	7647855
1.1/4	1.2500	1.5/8	4.1/2	1.1/4	2	1	7647857
1.1/2	1.5000	1.5/8	4.1/4	3/4	2	1	7647863
1.1/2	1.5000	1.5/8	4.1/2	1“	2	1	7647856
1.1/2	1.5000	1.5/8	4.1/2	1.1/4	2	1	7647858

Regular Length, Square End, Weldon Shank, 30° Helix

HSS, Keyway cutter, close tolerance (+0.0000”/-0.0015”). Bright finish improves chip flow in soft or non-ferrous materials.

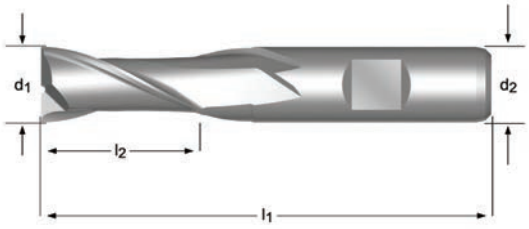


C602

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C602
1/8	0.1250	3/8	2.5/16	3/8	2	1	7647864
3/16	0.1875	7/16	2.3/8	3/8	2	1	7647865
1/4	0.2500	1/2	2.7/16	3/8	2	1	7647866
5/16	0.3125	9/16	2.1/2	3/8	2	1	7647867
3/8	0.3750	9/16	2.1/2	3/8	2	1	7647868
1/2	0.5000	1“	3.1/4	1/2	2	1	7647869
5/8	0.6250	1.5/16	3.3/4	5/8	2	1	7647870
3/4	0.7500	1.5/16	3.7/8	3/4	2	1	7647871
7/8	0.8750	1.1/2	4.1/8	7/8	2	1	7647872
1“	1.0000	1.5/8	4.1/2	1“	2	1	7647873

Regular Length, Square End, Weldon Shank, 30° Helix

HSS-E, Bright finish improves chip flow in soft or non-ferrous materials.

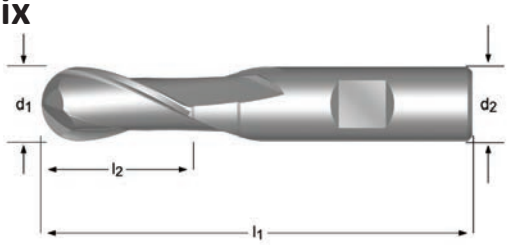


C603

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C603
1/8	0.1250	3/8	2.5/16	3/8	2	1	7647874
3/16	0.1875	7/16	2.3/8	3/8	2	1	7647875
1/4	0.2500	1/2	2.7/16	3/8	2	1	7647876
5/16	0.3125	9/16	2.1/2	3/8	2	1	7647877
3/8	0.3750	9/16	2.1/2	3/8	2	1	7647878
1/2	0.5000	1“	3.1/4	1/2	2	1	7647879
5/8	0.6250	1.5/16	3.3/4	5/8	2	1	7647880
3/4	0.7500	1.5/16	3.7/8	3/4	2	1	7647881
1“	1.0000	1.5/8	4.1/2	1“	2	1	7647882

Regular Length, Ball Nose, Weldon Shank, 30° Helix

HSS, Ball nose for cutting internal radius. Bright finish improves chip flow in soft or non-ferrous materials.

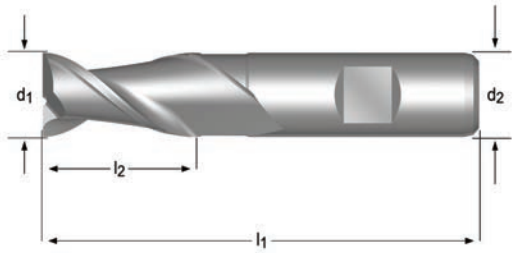


C604

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 inch	d_2 Ø Inch	# of Flutes	Pack Qty	C604
1/8	0.1250	3/8	2.5/16	3/8	2	1	7647883
3/16	0.1875	1/2	2.3/8	3/8	2	1	7647884
1/4	0.2500	5/8	2.7/16	3/8	2	1	7647885
5/16	0.3125	3/4	2.1/2	3/8	2	1	7647886
3/8	0.3750	3/4	2.1/2	3/8	2	1	7647887
7/16	0.4375	1“	3.1/4	1/2	2	1	7647888
1/2	0.5000	1“	3.1/4	1/2	2	1	7647889
9/16	0.5625	1.1/8	3.3/8	1/2	2	1	7647890
5/8	0.6250	1.1/8	3.3/8	1/2	2	1	7647891
3/4	0.7500	1.5/16	3.5/8	1/2	2	1	7647892

Regular Length, Square End, Weldon Shank, 37° Helix

HSS, High Helix design for aluminum and other non-ferrous materials.

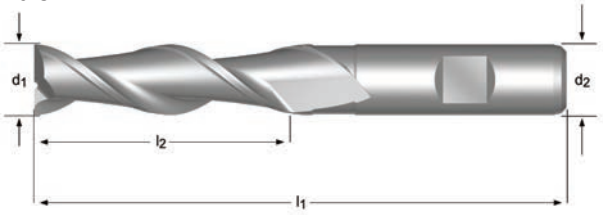


C605

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C605
1/4	0.2500	5/8	2.7/16	3/8	2	1	7647893
5/16	0.3125	3/4	2.1/2	3/8	2	1	7647894
3/8	0.3750	3/4	2.1/2	3/8	2	1	7647895
1/2	0.5000	1.1/4	3.1/4	1/2	2	1	7647896
3/4	0.7500	1.5/8	3.7/8	3/4	2	1	7647897
1“	1.0000	2“	4.1/2	1“	2	1	7647898

Long Length, Square End, Weldon Shank, 37° Helix

HSS, High Helix design for aluminum and other non-ferrous materials.



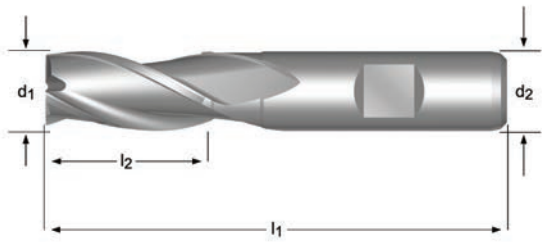
C606

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C606
1/4	0.2500	1.1/4	3.1/16	3/8	2	1	7647899
5/16	0.3125	1.3/8	3.1/8	3/8	2	1	7647900
3/8	0.3750	1.1/2	3.1/4	3/8	2	1	7647901
1/2	0.5000	2“	4“	1/2	2	1	7647902
3/4	0.7500	3“	5.1/4	3/4	2	1	7647903

HSS & Cobalt 3 Flute End Mills

Regular Length, Square End, Weldon Shank, 30° Helix

HSS, 3-flute design for less chatter. Bright finish improves chip flow in soft or non-ferrous materials.

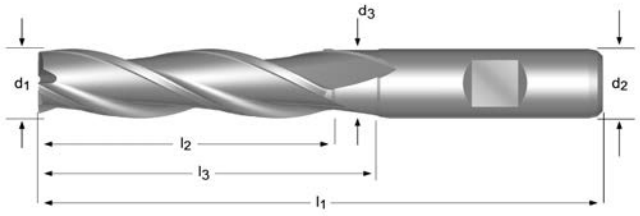


C607

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C607
1/8	0.1250	3/8	2.5/16	3/8	3	1	7647904
3/16	0.1875	1/2	2.3/8	3/8	3	1	7647905
1/4	0.2500	5/8	2.7/16	3/8	3	1	7647906
5/16	0.3125	3/4	2.1/2	3/8	3	1	7647907
3/8	0.3750	3/4	2.1/2	3/8	3	1	7647908
7/16	0.4375	1“	2.11/16	3/8	3	1	7647909
1/2	0.5000	1.1/4	3.1/4	1/2	3	1	7647910
9/16	0.5625	1.3/8	3.3/8	1/2	3	1	7658817
5/8	0.6250	1.5/8	3.3/4	5/8	3	1	7647912
3/4	0.7500	1.5/8	3.3/4	5/8	3	1	7647913
3/4	0.7500	1.5/8	3.7/8	3/4	3	1	7647916
1“	1.0000	1.7/8	4“	5/8	3	1	7647914
1“	1.0000	2“	4.1/2	1“	3	1	7647915

Long Length, Square End, Weldon Shank, 30° Helix

HSS-E (Cobalt), P9 slotting tolerance. 3 flute design provides less chatter.

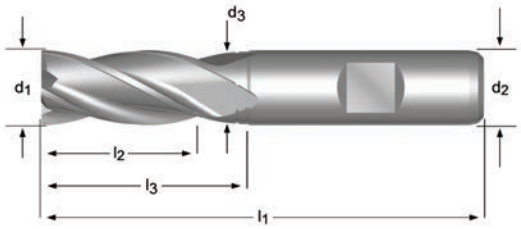


C346

d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	# of Flutes	l_3 mm	d_3 Ø mm	Pack Qty	C346
3.00	6	12	56	3	-	-	1	0122297
4.00	6	19	63	3	-	-	1	0122303
5.00	6	24	68	3	-	-	1	0122310
6.00	6	24	68	3	-	-	1	0122327
7.00	10	30	80	3	-	-	1	0126325
8.00	10	38	88	3	-	-	1	0126332
9.00	10	38	88	3	-	-	1	0126349
10.00	10	45	95	3	-	-	1	0126233
11.00	12	45	102	3	-	-	1	0126240
12.00	12	53	110	3	-	-	1	0126257
13.00	12	53	110	3	64.5	11.5	1	0126264
15.00	12	53	110	3	64.5	11.5	1	0126288
16.00	16	63	123	3	74.5	15.5	1	0126295
20.00	20	75	141	3	90.5	19.5	1	0126318

Regular Length, Square End, Weldon Shank, 30° Helix

HSS-E, Cobalt Powdered Metal. Bright finish improves chip flow in soft or non-ferrous materials.



C247

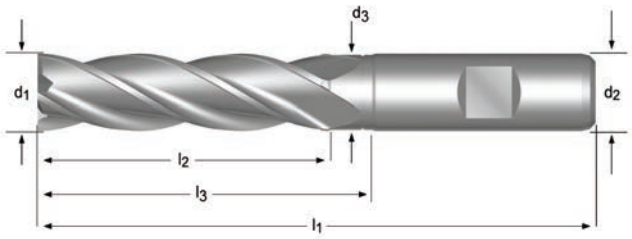
d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	# of Flutes	l_3 mm	d_3 Ø mm	Pack Qty	C247	
	2.00	6	7	51	4	—	—	1	0354667	
	2.50	6	8	52	4	—	—	1	0354674	
	3.00	6	8	52	4	—	—	1	0354728	
1/8	3.18	6	10	54	4	—	—	1	0640142	1)
	3.50	6	10	54	4	—	—	1	0354735	
	4.00	6	11	55	4	—	—	1	0354766	
	4.50	6	11	55	4	—	—	1	0354773	
3/16	4.76	6	13	57	4	—	—	1	0640159	1)
	5.00	6	13	57	4	—	—	1	0354780	
	5.50	6	13	57	4	—	—	1	0354797	
	6.00	6	13	57	4	—	—	1	0354803	
1/4	6.35	10	16	66	4	—	—	1	0640166	1)
	6.50	10	16	66	4	—	—	1	0354810	
	7.00	10	16	66	4	—	—	1	0354827	
	7.50	10	16	66	4	—	—	1	0354834	
5/16	7.94	10	19	69	4	—	—	1	0640173	1)
	8.00	10	19	69	4	—	—	1	0354841	
	8.50	10	19	69	4	—	—	1	0354858	
	9.00	10	19	69	4	—	—	1	0354865	
	9.50	10	19	69	4	—	—	1	0354872	
3/8	9.52	10	22	72	4	31.5	9.5	1	0640180	1)
	10.00	10	22	72	4	31.5	9.5	1	0354582	
	11.00	12	22	79	4	—	—	1	0354599	
	12.00	12	26	83	4	37.5	11.5	1	0354605	
1/2	12.70	12	26	83	4	37.5	11.5	1	0640197	1)
	13.00	12	26	83	4	37.5	11.5	1	0354612	
	14.00	12	26	83	4	37.5	11.5	1	0354629	
9/16	14.29	12	26	83	4	37.5	11.5	1	0640203	1)
	15.00	12	26	83	4	37.5	11.5	1	0354636	
5/8	15.88	16	32	92	4	43.5	15.5	1	0640210	1)
	16.00	16	32	92	4	43.5	15.5	1	0354643	
	17.00	16	32	92	4	43.5	15.5	1	0609316	
	18.00	16	32	92	4	43.5	15.5	1	0354650	
	19.00	16	32	92	4	43.5	15.5	1	0609323	
3/4	19.05	20	38	104	4	53.5	18.5	1	0640227	1)
	20.00	20	38	104	4	53.5	19.5	1	0354681	
	21.00	20	38	104	4	53.5	19.5	1	0609330	
	22.00	20	38	104	5	53.5	19.5	1	0354698	
7/8	22.22	20	38	104	5	53.5	19.5	1	0640234	1)
	23.00	20	38	104	5	53.5	19.5	1	0609347	
	24.00	25	45	121	5	64.5	23.5	1	0609354	
	25.00	25	45	121	5	64.5	24.5	1	0354704	
1“	25.40	25	45	121	5	64.5	24.5	1	0640241	1)
	26.00	25	45	121	6	64.5	24.5	1	0609361	
	28.00	25	45	121	6	64.5	24.5	1	0354711	
	30.00	25	45	121	6	64.5	24.5	1	0354742	
	32.00	32	53	133	6	72.5	31.5	1	0354759	
	36.00	32	53	133	6	72.5	31.5	1	0609378	2)3)
	40.00	40	63	155	6	84.5	39.0	1	0609385	2)3)
	50.00	50	75	177	8	96.5	48.0	1	0640258	2)3)

1) Diameter tolerance +.0025 inches / -.0005 inches
2) Not center Cutting
3) Available in HSCo only

Multi-Flute Cobalt End Mills

Long Length, Square End, Weldon Shank

HSS-E, Cobalt Powdered Metal. Bright finish improves chip flow in soft or non-ferrous materials.



C273

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	d_3 Ø mm	l_2 mm	l_1 mm	l_3 mm	# of Flutes	Pack Qty	C273	
	2.00	6	—	10	54	—	4	1	0354964	
	2.50	6	—	12	56	—	4	1	0354971	
	3.00	6	—	12	56	—	4	1	0355022	
1/8	3.18	6	—	15	59	—	4	1	0640265	1)
	3.50	6	—	15	59	—	4	1	0355039	
	4.00	6	—	19	63	—	4	1	0355060	
	4.50	6	—	19	63	—	4	1	0355077	
3/16	4.76	6	—	24	68	—	4	1	0640272	1)
	5.00	6	—	24	68	—	4	1	0355084	
	5.50	6	—	24	68	—	4	1	0355091	
	6.00	6	—	24	68	—	4	1	0355107	
1/4	6.35	10	—	30	80	—	4	1	0640289	1)
	7.00	10	—	30	80	—	4	1	0355114	
	8.00	10	—	38	88	—	4	1	0355121	
	9.00	10	—	38	88	—	4	1	0355138	
3/8	9.52	10	9.5	45	95	54.5	4	1	0640296	1)
	10.00	10	9.5	45	95	54.5	4	1	0354889	
	11.00	12	—	45	102	—	4	1	0354896	
	12.00	12	11.5	53	110	64.5	4	1	0354902	
1/2	12.70	12	11.5	53	110	64.5	4	1	0640302	1)
	13.00	12	11.5	53	110	64.5	4	1	0354919	
	14.00	12	11.5	53	110	64.5	4	1	0354926	
	15.00	12	11.5	53	110	64.5	4	1	0354933	
5/8	15.88	16	15.5	63	123	74.5	4	1	0640319	1)
	16.00	16	15.5	63	123	74.5	4	1	0354940	
	18.00	16	15.5	63	123	74.5	4	1	0354957	
3/4	19.05	20	18.5	75	141	90.5	4	1	0640326	1)
	20.00	20	19.5	75	141	90.5	4	1	0354988	
	22.00	20	19.5	75	141	90.5	5	1	0354995	
	25.00	25	24.5	90	166	109.5	5	1	0355008	
1“	25.40	25	24.5	90	166	109.5	5	1	0640340	1)
	28.00	25	24.5	90	166	109.5	6	1	0355015	
	30.00	25	24.5	90	166	109.5	6	1	0355046	
	32.00	32	31.5	106	186	125.5	6	1	0355053	
	40.00	40	39.0	125	217	146.5	6	1	0609309	2)3)

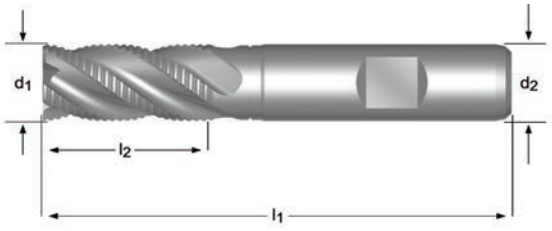
[1] Diameter tolerance +.0025 inches / -.0005 inches • [2] Available in HSCo only • [3] Not Center Cutting

Regular Length, Square End, Roughing, Weldon Shank, 30° Helix

HSS-E (Cobalt), Roughing, Fine Profile, provides a stronger edge and runs longer than conventional coarse profile roughers.

C608 Bright finish

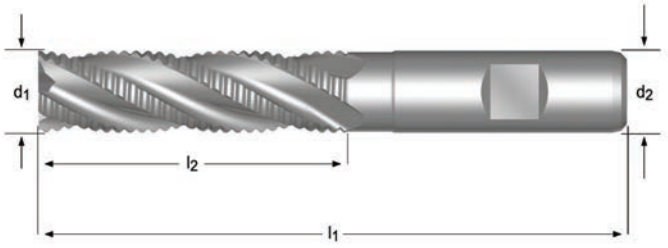
C609 TiCN coating lowers the coefficient of friction and improves wear resistance on the end mill.



d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C608	C609
1/4	0.2500	5/8	2.7/16	3/8	4	1	7647917	7647927
5/16	0.3125	3/4	2.1/2	3/8	4	1	7647918	7647928
3/8	0.3750	3/4	2.1/2	3/8	4	1	7647919	7647929
7/16	0.4375	1.1/4	3.1/4	1/2	4	1	7647920	7647930
1/2	0.5000	1.1/4	3.1/4	1/2	4	1	7647921	7647931
9/16	0.5625	1.3/8	3.3/8	1/2	4	1	7647922	—
5/8	0.6250	1.5/8	3.3/4	5/8	4	1	7647923	7647932
3/4	0.7500	1.5/8	3.7/8	3/4	4	1	7647924	7647933
7/8	0.8750	1.7/8	4.1/8	3/4	5	1	7647925	—
1“	1.0000	2“	4.1/2	1“	5	1	7647926	7647934

Long Length, Square End, Roughing, Weldon Shank, 30° Helix

HSS-E (Cobalt), Roughing, Fine Profile, provides a stronger edge and runs longer than conventional coarse profile roughers. Bright finish.



C613

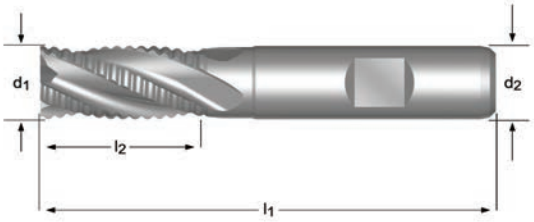
d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C613
1/4	0.2500	1.1/4	3.1/8	3/8	4	1	7647961
3/8	0.3750	1.1/2	3.1/4	3/8	4	1	7647962
1/2	0.5000	2“	4“	1/2	4	1	7647963
3/4	0.7500	3“	5.1/4	3/4	4	1	7647964

Multi-Flute Cobalt End Mills

Regular Length, Square End, Roughing, Weldon Shank, 30° Helix

C610 HSS-E (Cobalt), Roughing, Coarse Profile, for maximum metal removal in one pass. Bright finish.

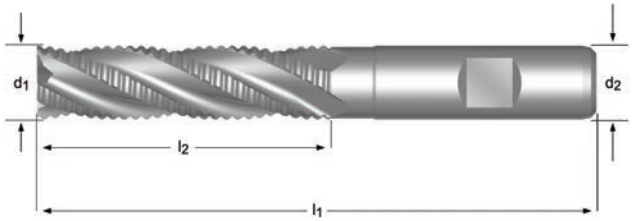
C611 HSS-E (Cobalt), TiCN coating lowers the coefficient of friction and improves wear resistance on the end mill.



d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C610	C611
1/4	0.2500	5/8	2.7/16	3/8	4	1	7647935	7647945
5/16	0.3125	3/4	2.1/2	3/8	4	1	7647936	7647946
3/8	0.3750	3/4	2.1/2	3/8	4	1	7647937	7647947
7/16	0.4375	1.1/4	3.1/4	1/2	4	1	7647938	7647948
1/2	0.5000	1.1/4	3.1/4	1/2	4	1	7647939	7647949
9/16	0.5625	1.3/8	3.3/8	1/2	4	1	7647940	—
5/8	0.6250	1.5/8	3.3/4	5/8	4	1	7647941	7647950
3/4	0.7500	1.5/8	3.7/8	3/4	4	1	7647942	7647951
7/8	0.8750	1.7/8	4.1/8	3/4	5	1	7647943	7647952
1“	1.0000	2“	4.1/2	1“	5	1	7647944	7647953

Long Length, Square End, Roughing, Weldon Shank, 30° Helix

HSS-E (Cobalt), Roughing, Coarse Profile, for maximum metal removal in one pass. Bright finish.

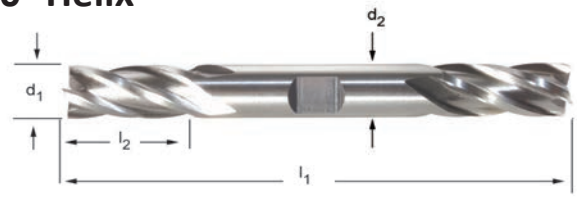


C612

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C612
1/4	0.2500	1.1/4	3.1/8	3/8	4	1	7647954
3/8	0.3750	1.1/2	3.1/4	3/8	4	1	7647955
1/2	0.5000	2“	4“	1/2	4	1	7647956
5/8	0.6250	2.1/2	4.5/8	5/8	4	1	7647957
3/4	0.7500	3“	5.1/4	3/4	4	1	7647958
7/8	0.8750	3.1/2	5.3/4	3/4	6	1	7647959
1“	1.0000	4“	6.1/2	1“	5	1	7647960

Regular Length, Square End, Weldon Shank, 30° Helix

HSS-E (Cobalt), Double end provides two cutting ends in one tool. Bright finish improves chip flow in soft or non-ferrous materials.

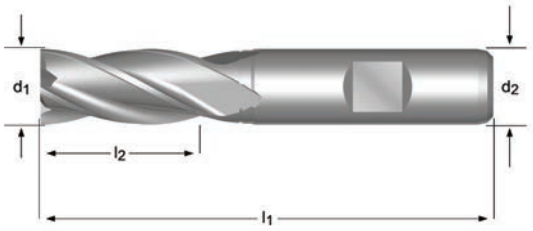


C614

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C614
1/8	0.1250	3/8	3.1/16	3/8	4	1	7647965
3/16	0.1875	1/2	3.1/4	3/8	4	1	7647966
1/4	0.2500	5/8	3.3/8	3/8	4	1	7647967
5/16	0.3125	3/4	3.1/2	3/8	4	1	7647968
3/8	0.3750	3/4	3.1/2	3/8	4	1	7647969
1/2	0.5000	1“	4.1/8	1/2	4	1	7647970
5/8	0.6250	1.3/8	5“	5/8	4	1	7647971
3/4	0.7500	1.5/8	5.5/8	3/4	4	1	7647972

Regular Length, Square End, Weldon Shank, 30° Helix

HSS-E (Cobalt), Bright finish improves chip flow in soft or non-ferrous materials.

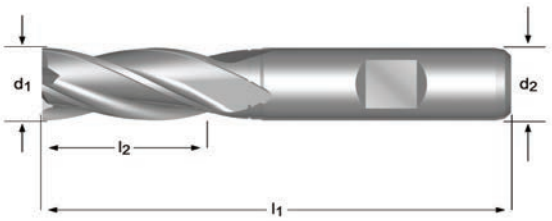


C615

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C615
1/8	0.1250	3/8	2.5/16	3/8	4	1	7647973
3/16	0.1875	1/2	2.3/8	3/8	4	1	7647974
1/4	0.2500	5/8	2.7/16	3/8	4	1	7647975
5/16	0.3125	3/4	2.1/2	3/8	4	1	7647976
3/8	0.3750	3/4	2.1/2	3/8	4	1	7647977
1/2	0.5000	1.1/4	3.1/4	1/2	4	1	7647978
5/8	0.6250	1.5/8	3.3/4	5/8	4	1	7647979
11/16	0.6875	1.5/8	3.3/4	5/8	4	1	7647980
3/4	0.7500	1.5/8	3.7/8	3/4	4	1	7647981
7/8	0.8750	1.7/8	4.1/8	7/8	4	1	7647982
1“	1.0000	2“	4.1/2	1“	4	1	7647983

Regular Length, Square End, Weldon Shank, 30° Helix

HSS, Multi-flute finishing. Bright finish improves chip flow in soft or non-ferrous materials.

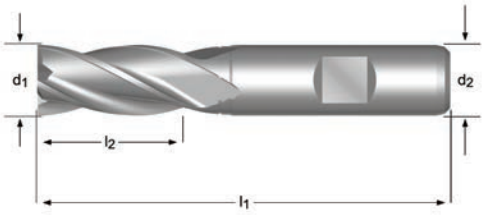


C617

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C617
1/8	0.1250	3/8	2.5/16	3/8	4	1	7647984
3/16	0.1875	1/2	2.3/8	3/8	4	1	7647985
1/4	0.2500	5/8	2.7/16	3/8	4	1	7647986
5/16	0.3125	3/4	2.1/2	3/8	4	1	7647987
3/8	0.3750	3/4	2.1/2	3/8	4	1	7647988
7/16	0.4375	1“	2.11/16	3/8	4	1	7647989
1/2	0.5000	1“	2.11/16	3/8	4	1	7647990
1/2	0.5000	1.1/4	3.1/4	1/2	4	1	7647991
9/16	0.5625	1.3/8	3.3/8	1/2	4	1	7647992
5/8	0.6250	1.3/8	3.3/8	1/2	4	1	7647993
5/8	0.6250	1.5/8	3.3/4	5/8	4	1	7647996
11/16	0.6875	1.5/8	3.5/8	1/2	4	1	7647994
11/16	0.6875	1.5/8	3.3/4	5/8	4	1	7647997
3/4	0.7500	1.5/8	3.5/8	1/2	4	1	7647995
3/4	0.7500	1.5/8	3.3/4	5/8	4	1	7647998
3/4	0.7500	1.5/8	3.7/8	3/4	4	1	7648005
13/16	0.8125	1.7/8	4“	5/8	6	1	7647999
7/8	0.8750	1.7/8	4“	5/8	6	1	7648000
7/8	0.8750	1.7/8	4.1/8	3/4	4	1	7648006
7/8	0.8750	1.7/8	4.1/8	7/8	4	1	7648002
1“	1.0000	1.7/8	4“	5/8	6	1	7648001
1“	1.0000	1.7/8	4.1/8	3/4	4	1	7648007
1“	1.0000	1.7/8	4.1/8	7/8	4	1	7648003
1“	1.0000	2“	4.1/2	1“	4	1	7648004

Long Length, Square End, Weldon Shank

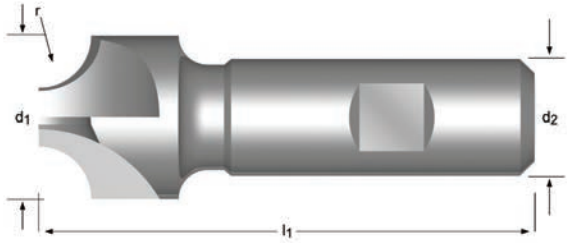
HSS-E (Cobalt) finishing style for high strength heat resistant materials, stainless and alloy steels, super alloys, and titanium alloys.



C618

d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	d_2 Ø Inch	# of Flutes	Pack Qty	C618
1/8	0.1250	3/8	2.5/16	3/8	4	1	7648008
3/16	0.1875	1/2	2.3/8	3/8	4	1	7648009
1/4	0.2500	5/8	2.7/16	3/8	4	1	7648010
5/16	0.3125	3/4	2.1/2	3/8	4	1	7648011
3/8	0.3750	3/4	2.1/2	3/8	4	1	7648012
1/2	0.5000	1.1/4	3.1/4	1/2	4	1	7648013
5/8	0.6250	1.5/8	3.3/4	5/8	4	1	7648014
3/4	0.7500	1.5/8	3.7/8	3/4	4	1	7648015
1“	1.0000	2“	4.1/2	1“	4	1	7648016

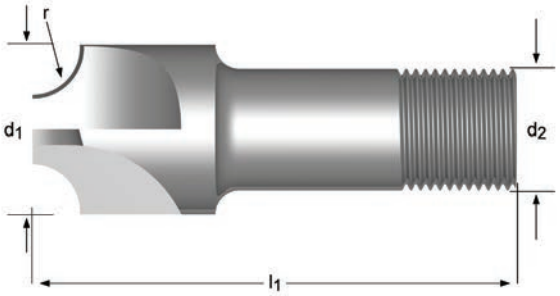
HSS-E (Cobalt), Corner rounding for cutting external radius on part. Bright finish improves chip flow in soft non-ferrous materials. Metric radius sizes on common metric shanks with Weldon Flats.



C700

r	d_1 Ø	d_2 Øh_6	l_1		C700
mm	mm	mm	mm	z	
1.00	10	10	60	4	C7001.0
1.50	10	10	60	4	C7001.5
2.00	10	10	60	4	C7002.0
2.50	10	10	60	4	C7002.5
3.00	12	12	60	4	C7003.0
3.50	12	12	60	4	C7003.5
4.00	15	12	60	4	C7004.0
5.00	18	16	70	4	C7005.0
6.00	21	16	70	4	C7006.0
7.00	24	16	70	4	C7007.0
8.00	24	16	70	4	C7008.0
9.00	28	20	85	4	C7009.0
10.00	28	20	85	4	C70010.0
12.00	35	20	100	4	C70012.0
12.50	35	20	100	4	C70012.5
14.00	42	25	100	4	C70014.0
15.00	48	25	105	5	C70015.0
16.00	48	25	105	5	C70016.0
20.00	60	32	115	6	C70020.0

HSS, Corner rounding for cutting external radius on part. Bright finish improves chip flow in soft non-ferrous materials. Fractional radius sizes on std. Inch size cylindrical shanks with threaded ends. Cylindrical shank can be used in std. chucks or threaded portion can be used in "Autolock Chuck" system which has mating internal threads for extra rigidity.



C710

r	d_1 Ø	d_2 Øh_8	d_2 Ø	l_1		C710
Inch	Inch	Inch	mm	mm	z	
1/16	3/8	3/8	9.53	60.5	4	C7101/16
1/8	1/2	1/2	12.70	60.5	4	C7101/8
5/32	9/16	1/2	12.70	60.5	4	C7105/32
3/16	5/8	5/8	15.88	60.5	4	C7103/16
1/4	7/8	5/8	15.88	63.5	4	C7101/4
3/8	1.1/16	1“	25.40	76.0	4	C7103/8
1/2	1.3/8	1“	25.40	82.5	4	C7101/2

Rotary Burr Nomenclature

Position 1	
Shape	
Code	**Description**
SA	Cylinder Without End Cut
SB	Cylinder With End Cut
SC	Cylinder With Ball Nose
SD	Ball
SE	Oval
SF	Tree - Radius End
SG	Tree - Pointed End
SH	Flame
SJ	60° Cone
SK	90° Cone
SL	Taper - Radius End
SM	Taper - Pointed End
SN	Inverted Cone
FGR	Fiber Glass Router
PDM	Piloted Die Mill
SET	Plastic Box Set

Position 2		
Cutting Diameter		
Code	**Description**	
	Fractional	Decimal
04	1/16"	0.0625
03	3/32"	0.0938
02	1/8"	0.1250
01	3/16"	0.1875
10	1/4"	0.2500
20	5/16"	0.3125
30	3/8"	0.3750
40	7/16"	0.4375
50	1/2"	0.5000
60	5/8"	0.6250
70	3/4"	0.7500
80	7/8"	0.8750
90	1"	1.0000

Position 3	
Length-of-Cut	
Code	**Description**
S	Short
-	Regular
M	Medium
L	Long
X	Extra Long

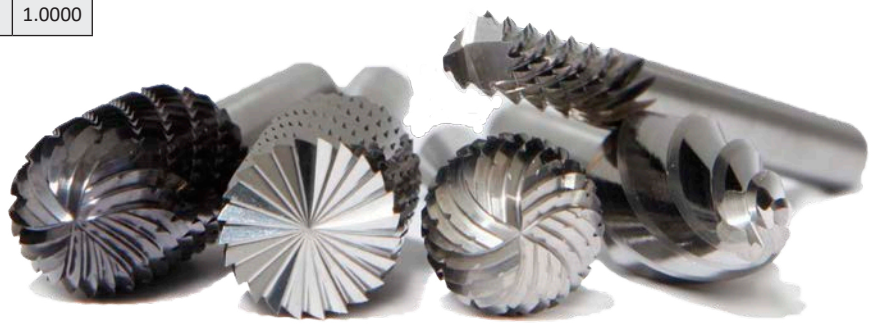
Position 4	
Cut Type	
Code	**Description**
DC	Double Cut
FM	Aluminum Cut

End Type	
Code	**Description**
A	Plainend
B	Burrend
C	Millend
D	Drillend

Position 5	
Over-All-Length	
Code	**Description**
S	Short
-	Regular
M	Medium
L	Long
X	Extra Long

8	8 pc. Set
12	12 pc. Set

Position 6	
Shank Diameter	
Code	**Description**
R	Reduced
-	Standard
H	Heavy Duty



Features & Benefits

- **The combination of premium grade materials for both the shank and head, with precise production process, results in the creation of a consistent and secure program of tools.**
- **Material specific designs offer up to 50% higher metal removal rates over standard carbide burrs.**

Solid Carbide Construction

- Provides rigidity and strength
- Resulting in improved tool life
- Ground to h_6 tolerance for accurate holding
- Prevents bending and reduces vibrations

Brazed Construction

- Toughness results in improved tool life
- Hardened steel shanks ground to +0.0000/-0.0005”
- Special brazing elements provide excellent braze
- strength and impact strength, able to withstand high cutting forces
- Able to withstand higher temperatures during operation without failing

SA-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SA-04DC	1/16	1/8	1/4	1.1/2	7466184	2)
SA-03DC	3/32	1/8	7/16	1.1/2	7466185	2)
SA-02DC	1/8	1/8	9/16	1.1/2	7466186	2)
SA-02DC-M	1/8	1/8	9/16	2	7466187	2)
SA-02DC-L	1/8	1/8	9/16	3	7466188	2)
SA-01DC-H	3/16	1/4	5/8	2	7466189	2)
SA-10SDC	1/4	1/8	1/2	2	7466210	1) 3)
SA-10DC	1/4	1/4	5/8	2	7466211	2)
SA-10LDC	1/4	1/4	1	2	7466212	2)
SA-20DC	5/16	1/4	3/4	2.1/2	7466213	1) 3)
SA-30DC	3/8	1/4	3/4	2.1/2	7466214	1) 3)
SA-30DCX	3/8	1/4	3/4	6.3/4	7466215	1) 3)
SA-50DC	1/2	1/4	1	2.3/4	7466216	1) 3)
SA-50DCX	1/2	1/4	1	7	7466217	1) 3)
SA-60DC	5/8	1/4	1	2.3/4	7466218	1) 3)
SA-70SDC-S	3/4	1/4	3/4	2.1/2	7466219	1) 3)
SA-70DC	3/4	1/4	1	2.3/4	7466220	1) 3)
SA-90DC	1	1/4	1	2.3/4	7466221	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SA-FM

- Solid Carbide or Brazed Construction
- Bright finish
- Aluminum cut for non-ferrous materials including plastics

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SA-10FM	1/4	1/4	5/8	2	7466222	2)
SA-30FM	3/8	1/4	3/4	2.1/2	7466223	1) 3)
SA-50FM	1/2	1/4	1	2.3/4	7466224	1) 3)
SA-60FM	5/8	1/4	1	2.3/4	7466225	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

Rotary Burr - Cylinder with Endcut

SB-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SB-02DC	1/8	1/8	9/16	1.1/2	7466226	2)
SB-02DC-M	1/8	1/8	9/16	2	7466227	2)
SB-10SDC-L	1/4	1/8	3/16	1.11/16	7466228	1) 3)
SB-02DC-H	1/8	1/4	5/8	2	7466229	2)
SB-10DC	1/4	1/4	5/8	2	7466230	2)
SB-20DC	5/16	1/4	3/4	2.1/2	7466231	1) 3)
SB-30DC	3/8	1/4	3/4	2.1/2	7466232	1) 3)
SB-30MDC-M	3/8	1/4	1	2.3/4	7466233	1) 3)
SB-30DC-X	3/8	1/4	3/4	6.3/4	7466234	1) 3)
SB-40DC	7/16	1/4	1	2.3/4	7466235	1) 3)
SB-50DC	1/2	1/4	1	2.3/4	7466236	1) 3)
SB-50DC-X	1/2	1/4	1	7	7466237	1) 3)
SB-60DC	5/8	1/4	1	2.3/4	7466238	1) 3)
SB-70DC	3/4	1/4	1	2.3/4	7466239	1) 3)
SB-90DC	1	1/4	1	2.3/4	7466240	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SB-FM

- Solid Carbide or Brazed Construction
- Bright finish
- Aluminum cut for non-ferrous materials including plastics

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SB-10FM	1/4	1/4	5/8	2	7466241	1) 3)
SB-30FM	3/8	1/4	3/4	2.1/2	7466242	2)
SB-50FM	1/2	1/4	1	2.3/4	7466243	2)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SC-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SC-03DC	3/32	1/8	7/16	1.1/2	7466244	2)
SC-02DC	1/8	1/8	9/16	1.1/2	7466245	2)
SC-02DC-M	1/8	1/8	9/16	2	7466246	2)
SC-02DC-L	1/8	1/8	9/16	3	7466247	2)
SC-02MDC	1/8	1/4	5/8	2	7466248	2)
SC-01DC	3/16	1/4	5/8	2	7466249	2)
SC-10SDC	1/4	1/8	1/2	2	7466250	2)
SC-10DC	1/4	1/4	5/8	2	7466251	2)
SC-10LDC	1/4	1/4	1	2	7466252	2)
SC-20DC	5/16	1/4	3/4	2.1/2	7466253	1) 3)
SC-30DC	3/8	1/4	3/4	2.1/2	7466254	1) 3)
SC-30DC-X	3/8	1/4	3/4	6.3/4	7466255	1) 3)
SC-40DC	7/16	1/4	1	2.3/4	7466256	1) 3)
SC-50DC	1/2	1/4	1	2.3/4	7466257	1) 3)
SC-50DC-X	1/2	1/4	1	7	7466258	1) 3)
SC-60DC	5/8	1/4	1	2.3/4	7466259	1) 3)
SC-60DC-X	5/8	1/4	1	7	7466260	1) 3)
SC-70DC	3/4	1/4	1	2.3/4	7466261	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SC-FM

- Solid Carbide or Brazed Construction
- Bright finish
- Aluminum cut for non-ferrous materials including plastics

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SC-10SFM-R	1/4	1/8	1/2	2	7466262	1) 3)
SC-10FM	1/4	1/4	5/8	2	7466263	2)
SC-30FM	3/8	1/4	3/4	2.1/2	7466264	1) 3)
SC-40FM	7/16	1/4	1	2.3/4	7466265	1) 3)
SC-50FM	1/2	1/4	1	2.3/4	7466266	1) 3)
SC-50FM-X	1/2	1/4	1	7	7466267	1) 3)
SC-70FM	3/4	1/4	1	2.3/4	7466268	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

Rotary Burr - Ball

SD-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SD-03DC	3/32	1/8	3/32	1.1/2	7466269	2)
SD-02DC	1/8	1/8	1/8	1.1/2	7466270	2)
SD-02DC-M	1/8	1/8	1/8	2	7466271	2)
SD-02DC-L	1/8	1/8	1/8	3	7466272	2)
SD-02SDC	1/8	1/4	3/32	2	7466273	2)
SD-02LDC	1/8	1/4	3/32	2	7466274	2)
SD-01DC	3/16	1/4	1/8	2	7466275	2)
SD-10DC-R	1/4	1/8	7/32	1.3/4	7466276	1) 3)
SD-10DC	1/4	1/4	7/32	2	7466277	2)
SD-10DC-L	1/4	1/4	7/32	6	7466278	2)
SD-10DC-X	1/4	1/4	7/32	6.3/4	7466279	2)
SD-20DC	5/16	1/4	1/4	2.1/16	7466280	1) 3)
SD-30DC	3/8	1/4	5/16	2.1/8	7466281	1) 3)
SD-30DC-X	3/8	1/4	5/16	6.3/8	7466282	1) 3)
SD-50DC	1/2	1/4	7/16	2.1/4	7466283	1) 3)
SD-50DC-X	1/2	1/4	7/16	6.1/2	7466284	1) 3)
SD-60DC	5/8	1/4	9/16	2.5/16	7466285	1) 3)
SD-70DC	3/4	1/4	11/16	2.1/2	7466286	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SD-FM

- Solid Carbide or Brazed Construction
- Bright finish
- Aluminum cut for non-ferrous materials including plastics

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SD-10FM	1/4	1/4	7/32	2	7466287	2)
SD-30FM	3/8	1/4	5/16	2.1/8	7466288	1) 3)
SD-50FM	1/2	1/4	7/16	2.1/4	7466289	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SE-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SE-02DC	1/8	1/8	7/32	1.1/2	7466290	2)
SE-10DC-R	1/4	1/8	3/8	1.3/4	7466291	1) 3)
SE-10DC	1/4	1/4	3/8	2	7466292	2)
SE-10DC-X	1/4	1/4	3/8	6.3/4	7466293	2)
SE-30DC	3/8	1/4	5/8	2.3/8	7466294	1) 3)
SE-30DC-X	3/8	1/4	5/8	6.5/8	7466295	1) 3)
SE-50DC	1/2	1/4	7/8	2.5/8	7466296	1) 3)
SE-50DC-X	1/2	1/4	7/8	6.7/8	7466297	1) 3)
SE-60DC	5/8	1/4	1	2.3/4	7466298	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SE-FM

- Solid Carbide or Brazed Construction
- Bright finish
- Aluminum cut for non-ferrous materials including plastics

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SE-30FM	3/8	1/4	5/8	2.3/8	7466287	1) 3)
SE-30FM-X	3/8	1/4	3/4	6.3/4	7466288	1) 3)
SE-50FM	1/2	1/4	7/8	2.5/8	7466289	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

Rotary Burr - Ball Nosed Tree

SF-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SF-02DC	1/8	1/8	1/4	1.1/2	7466302	2)
SF-02LDC	1/8	1/8	1/2	1.1/2	7466303	2)
SF-10DC-R	1/4	1/8	1/2	2	7466304	1) 3)
SF-10DC	1/4	1/4	5/8	2	7466305	2)
SF-10DC-X	1/4	1/4	5/8	6.3/4	7466306	2)
SF-30DC	3/8	1/4	3/4	2.1/2	7466307	1) 3)
SF-30DC-X	3/8	1/4	3/4	6.3/4	7466308	1) 3)
SF-40DC	7/16	1/4	1	2.3/4	7466309	1) 3)
SF-50DC	1/2	1/4	1	2.3/4	7466310	1) 3)
SF-50DC-X	1/2	1/4	1	7	7466311	1) 3)
SF-60DC	5/8	1/4	1	2.3/4	7466312	1) 3)
SF-70DC	3/4	1/4	1	2.3/4	7466313	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SF-FM

- Solid Carbide or Brazed Construction
- Bright finish
- Aluminum cut for non-ferrous materials including plastics

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SF-10FM-R	1/4	1/8	1/2	2	7466314	1) 3)
SF-10FM	1/4	1/4	5/8	2	7466315	2)
SF-30FM	3/8	1/4	3/4	2.1/2	7466316	1) 3)
SF-50FM	1/2	1/4	1	2.3/4	7466317	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SG-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SG-02DC	1/8	1/8	1/4	1.1/2	7466318	2)
SG-02MDC	1/8	1/8	3/8	1.1/2	7466319	2)
SG-02LDC	1/8	1/8	1/2	1.1/2	7466320	2)
SG-10DC-R	1/4	1/8	1/2	2	7466321	1) 3)
SG-10DC	1/4	1/4	5/8	2	7466322	2)
SG-20DC	5/16	1/4	3/4	2.1/2	7466323	1) 3)
SG-30DC	3/8	1/4	3/4	2.1/2	7466324	1) 3)
SG-30DC-X	3/8	1/4	3/4	6.3/4	7466325	1) 3)
SG-50SDC	1/2	1/4	3/4	2.1/2	7466326	1) 3)
SG-50DC	1/2	1/4	1	2.3/4	7466327	1) 3)
SG-50DC-X	1/2	1/4	1	7	7466328	1) 3)
SG-60DC	5/8	1/4	1	2.3/4	7466329	1) 3)
SG-70DC	3/4	1/4	1	2.3/4	7466330	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

Rotary Burr - Flame

SH-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	EDP#	
SH-02DC	1/8	1/8	1/4	1.1/2	7466331	2)
SH-10DC	1/4	1/4	1/2	2	7466332	2)
SH-20DC	5/16	1/4	3/4	2.1/2	7466333	1) 3)
SH-50DC	1/2	1/4	1.1/4	3	7466334	1) 3)
SH-60DC	5/8	1/4	1.7/16	3.3/16	7466335	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

Rotary Burr - 60° Countersink

SJ-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	Included Angle	EDP#	
SJ-02DC	1/8	1/8	3/32	1.1/2	60°	7466336	2)
SJ-10DC	1/4	1/4	3/16	2	60°	7466337	2)
SJ-30DC	3/8	1/4	5/16	2.1/16	60°	7466338	1) 3)
SJ-50DC	1/2	1/4	7/16	2.3/16	60°	7466339	1) 3)
SJ-60DC	5/8	1/4	9/16	2.5/16	60°	7466340	1) 3)

1) Brazed Construction
2) Shank tolerance h6
3) Shank tolerance +0.0000 / -0.0005“

Rotary Burr - 90° Countersink

SK-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	Included Angle	EDP#	
SK-02DC	1/8	1/8	3/32	1.1/2	90°	7466341	2)
SK-10DC	1/4	1/4	3/16	2	90°	7466342	2)
SK-30DC	3/8	1/4	5/16	2.1/16	90°	7466343	1) 3)
SK-50DC	1/2	1/4	7/16	2.3/16	90°	7466344	1) 3)
SK-60DC	5/8	1/4	9/16	2.5/16	90°	7466345	1) 3)

1) Brazed Construction
2) Shank tolerance h6
3) Shank tolerance +0.0000 / -0.0005“

SL-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	Included Angle	EDP#	
SL-02SDC	1/8	1/8	3/8	1.1/2	8°	7466346	2)
SL-02DC	1/8	1/8	1/2	1.1/2	8°	7466347	2)
SL-10DC	1/4	1/4	5/8	2	14°	7466348	2)
SL-20DC	5/16	1/4	7/8	2.5/8	14°	7466349	1) 3)
SL-30DC	3/8	1/4	1.1/16	2.13/16	14°	7466350	1) 3)
SL-30DC-X	3/8	1/4	1.1/16	7.1/16	14°	7466351	1) 3)
SL-40DC	1/2	1/4	1.1/8	2.7/8	14°	7466352	1) 3)
SL-40DC-X	1/2	1/4	1.1/8	7.1/8	14°	7466353	1) 3)
SL-50DC	5/8	1/4	1.3/16	2.15/16	14°	7466354	1) 3)
SL-60DC	5/8	1/4	1.5/16	3.1/16	14°	7466355	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

SL-FM

- Solid Carbide or Brazed Construction
- Bright finish
- Aluminum cut for non-ferrous materials including plastics

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	Included Angle	EDP#	
SL-30FM	3/8	1/4	1.1/16	2.13/16	14°	7466356	1) 3)
SL-40FM	1/2	1/4	1.1/8	2.7/8	14°	7466357	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

Rotary Burr - Cone

SM-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	Included Angle	EDP#	
SM-02SDC	1/8	1/8	11/32	1.1/2	12°	7466358	2)
SM-02DC	1/8	1/8	7/16	1.1/2	14°	7466359	2)
SM-02LDC	1/8	1/8	5/8	1.1/2	7°	7466360	2)
SM-02LDC-M	1/8	1/8	5/8	2	7°	7466361	2)
SM-02LDC-L	1/8	1/8	5/8	3	7°	7466362	2)
SM-10DC-R	1/4	1/8	1/2	2.1/8	22°	7466363	1) 3)
SM-10DC	1/4	1/4	1/2	2	22°	7466364	2)
SM-10MDC	1/4	1/4	3/4	2	14°	7466365	1) 3)
SM-10LDC	1/4	1/4	1	2	12°	7466366	1) 3)
SM-10XDC	1/4	1/4	1.1/4	2	10°	7466367	1) 3)
SM-30DC	3/8	1/4	5/8	2.1/2	28°	7466368	1) 3)
SM-50DC	1/2	1/4	7/8	2.5/8	28°	7466369	1) 3)
SM-60DC	5/8	1/4	1	2.3/4	31°	7466370	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

Rotary Burr - Inverted Cone

SN-DC

- Solid Carbide or Brazed Construction
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	Included Angle	EDP#	
SN-02DC	1/8	1/8	3/16	1.1/2	10°	7466371	2)
SN-10SDC	1/4	1/8	1/4	1.3/4	10°	7466372	1) 3)
SN-10DC	1/4	1/4	5/16	2	10°	7466373	2)
SN-30DC	3/8	1/4	3/8	2.1/8	13°	7466374	1) 3)
SN-50DC	1/2	1/4	1/2	2.1/4	28°	7466375	1) 3)
SN-60DC	5/8	1/4	3/4	2.1/2	18°	7466376	1) 3)

[1] Brazed Construction
[2] Shank tolerance h6
[3] Shank tolerance +0.0000 / -0.0005“

Rotary Burr - For Bolt Removal

A specially designed range of burrs to prepare the surface of broken bolts to improve drill location and prevent damaging the threaded hole and component.

P100

- Solid Carbide or Brazed Construction
- Plain cylinder with end cut

Ecode	Cutting Diameter Metric	Shank Diameter Metric	Length of Cut Metric	Overall Length Metric		EDP#
P1004.9	4.90	6	20	50	1/4-20, 24, 28, M6	7806111
P1006.4	6.40	6	5	50	5/16-18, 24, 32, M8	7806112
P1007.8	7.80	6	19	65	3/8-16, 24, M10	7806113
P1009.3	9.30	6	19	65	7/16-14, 20, M12	7806114
P10010.7	10.70	6	25	70	1/2-13, 20, M14	7806115

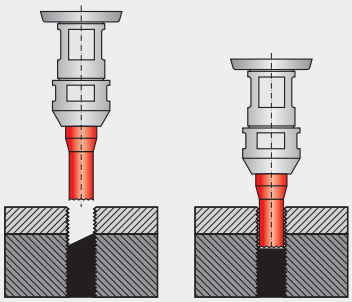
P101

- Solid Carbide or Brazed Construction
- 150° Countersink

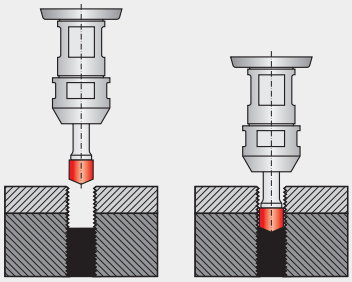
Ecode	Cutting Diameter Metric	Shank Diameter Metric	Length of Cut Metric	Overall Length Metric		EDP#
P1014.9	4.90	6	20	50	1/4-20, 24, 28, M6	7806116
P1016.4	6.40	6	5	50	5/16-18, 24, 32, M8	7806117
P1017.8	7.80	6	5	50	3/8-16, 24, M10	7806118
P1019.3	9.30	6	5	50	7/16-14, 20, M12	7806119
P10110.7	10.70	6	5	50	1/2-13, 20, M14	7806120

OPERATIONS

1



2



CUT STYLES

PLAIN CYLINDER WITH END CUT

150° COUNTERSINK

Diamond Cut Router - Plain End

FGR-A

- Solid Carbide
- Bright finish
- GRP cut for fiberglass and composite materials

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	FGR-A EDP#	
FGR-10A	1/4	1/4	3/4	2.1/2	7466377	1)
FGR-10A-L	1/4	1/4	1	3	7466378	1)
FGR-30A	3/8	3/8	1	2.1/2	7466379	1)

1) Shank tolerance h6

Diamond Cut Router - Burr End

FGR-B

- Solid Carbide
- Bright finish
- End Cut
- GRP cut for fiberglass and composite materials

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	FGR-B EDP#	
FGR-10B	1/4	1/4	3/4	2	7466380	1)
FGR-10B-L	1/4	1/4	1	3	7466381	1)
FGR-30B	3/8	3/8	1	2.1/2	7466382	1)
FGR-50B	1/2	1/2	1	3	7466383	1)

1) Shank tolerance h6

Diamond Cut Router - End Mill Cut

FGR-C

- Solid Carbide
- Bright finish
- GRP cut for fiberglass and composite materials

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	FGR-C EDP#	
FGR-02C	1/8	1/8	1/2	1.1/2	7466384	1)
FGR-10C	1/4	1/4	1	2.1/2	7466385	1)
FGR-10C-L	1/4	1/4	1	3	7466386	1)

1) Shank tolerance h6

Diamond Cut Router - 135° Drill Point

FGR-D

- Solid Carbide
- Bright finish
- GRP cut for fiberglass and composite materials

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	FGR-D EDP#	
FGR-10LD-L	1/4	1/4	1	3	7466387	1)
FGR-10MD-L	1/4	1/4	3/4	3	7466388	1)
FGR-10XD-L	1/4	1/4	1.1/2	3	7466389	1)

1) Shank tolerance h6

Piloted Die Mill

PDM-DC

- Solid Carbide
- Bright finish
- Double cut for general purpose use

Ecode	Cutting Diameter Inch	Shank Diameter Inch	Length of Cut Inch	Overall Length Inch	PDM-DC EDP#	
PDM-02DC	1/8	1/8	1	3	7466390	1)
PDM-01DC	3/16	3/16	2	3	7466391	1)
PDM-10DC	1/4	1/4	1.1/4	3	7466392	1)

1) Shank tolerance h6

Rotary Burr Set

SET-DC-12

- 12 pc set
- Double cut for general purpose use
- Extra small diameter - edp# 7466393
- Medium diameter - edp# 7466394

Styles in Set	Pieces in Set	Ecodes in Set	SET-DC-12 EDP#
SA-DC (2) + SC-DC (2) + SD-DC + SE-DC + SF-DC + SG-DC + SH-DC + SJ-DC + SL-DC + SN-DC	12	SA-03DC + SA-02DC + SC-03DC + SC-02DC + SD-02DC + SE-02DC + SF-02DC + SG-02DC + SH-02DC + SJ-02DC + SL-02DC + SN-02DC	7466393
SA-DC + SC-DC + SD-DC + SE-DC + SF-DC + SG-DC + SH-DC + SJ-DC + SK-DC + SL-DC + SM-DC + SN-DC	12	SA-10DC + SC-10DC + SD-10DC + SE-10DC + SF-10DC + SG-10DC + SH-10DC + SJ-10DC + SK-10DC + SL-10DC + SM-10DC + SN-10DC	7466394

SET-DC-8

- 8 pc set
- Double cut for general purpose use
- Medium / Large diameter

Styles in Set	Pieces in Set	Ecodes in Set	SET-DC-8 EDP#
SA-DC + SC-DC (2) + SD-DC + SF-DC(2) + SG-DC + SL-DC	8	SA-50DC + SC-30DC + SC-50DC + SD-50DC + SF-30DC + SF-50DC + SG-30DC + SL-40DC	7466395

SET-FM-8

- 8 pc set
- Aluminum cut for non-ferrous materials including plastics
- Medium / Large diameter

Styles in Set	Pieces in Set	Ecodes in Set	SET-FM-8 EDP#
SA-FM (2) + SC-FM + SD-FM (2) + SF-FM(2) + SL-FM	8	SA-10FM + SA-50FM + SC-50FM + SD-10FM + SD-50FM + SF-10FM + SF-50FM + SL-40FM	7466396

Recommended Speed (RPM) for Burrs

The following RPM chart holds general and approximate recommendations.
Variations to achieve desired results may be necessary.
Long shank burrs should be used at reduced speeds.
25% - 33% of normal speed is suggested.

Burr Diameter	RPM
1/8" Solid Carbide	45,000-50,000
3/16" Solid Carbide	35,000-40,000
3/16" Carbide Head Brazed to 1/8" Steel Shank	30,000-35,000
1/4" Solid Carbide	30,000-35,000
1/4" Carbide Head Brazed to 1/8" Steel Shank	25,000-30,000
5/16" Carbide Head Brazed to 1/4" Steel Shank	25,000-30,000
3/8" Carbide Head Brazed to 1/4" Steel Shank	25,000-30,000
7/16" Carbide Head Brazed to 1/4" Steel Shank	20,000-25,000
1/2" Carbide Head Brazed to 1/4" Steel Shank	20,000-25,000
5/8" Carbide Head Brazed to 1/4" Steel Shank	15,000-20,000
3/4" Carbide Head Brazed to 1/4" Steel Shank	15,000-20,000
1" Carbide Head Brazed to 1/4" Steel Shank	12,000-18,000

Rotary Burr Troubleshooting

Carbide Burrs - Troubleshooting

	Excessive Force	Heat from Rubbing Shank	Dull Flutes	Seized/Against Workpiece	Tool Dropped	Poor Location in Collet	Worn Handpiece Bearings	Bent Shank	Poor Working Stability	Use Coarser Geometry	Use Finer Geometry	Use Double Cut or Chip Breaker Geometry	Soft Material - Lighten Feed	Increase RPMs	Decrease RPMs	Avoid Diamond Cut	Use Anti-stick compound	Faster Feed Rate	Slower Feed	Abrasive Material	Poor Set-up	Failure to Support/Engage Prior to RPM
Braze Failure	X	X	X	X	X																	
Carbide Fracture				X	X				X													
Chipping				X	X				X					X								
Handpiece Vibration														X	X			X	X		X	
Lack of Available Hand-piece RPMs												X		X								
Plugging										X			X				X					
Poor Hand Control						X	X	X	X		X	X									X	
Poor Tool Life		X	X			X	X	X	X					X	X	X		X	X	X	X	
Poor Workpiece Finish						X	X	X	X		X			X	X			X			X	
Severely Bent Shanks of Long Series Burrs																					X	X
Work Hardening of Workpiece	X		X							X		X			X				X			

Semi-Special and Made-to-Order Taps

UNION BUTTERFIELD®

Dormer Pramet offers a unique value to your production process with the FlashTap service. Sold under the Union Butterfield brand, you have a selection of semi-special tap products that are quickly and reliably delivered in as fast as 24 hours to help solve your tap delivery requirements. Our expertise gives you optimal customer service at the lowest possible price.

FLASHTAP Service

SEMI-SPECIAL TAPS

- Machine Screw Sizes (0 - #14)
- Fractional Sizes (1/8" - 4")

Styles	Styles
Hand Taps - Straight Flute	Oversized Hand Taps
Spiral Point Taps	Spiral Flute Taps
Left-Hand Hand Taps	Double Lead Hand Taps
Oversized Spiral Point Taps	55° Modified Whitworth Pipe

- Metric Sizes (M1.5 - M100)
- Carried in classes 6H and 4H

Styles	Styles
Hand Taps - Straight Flute	Oversized Spiral Point Taps
Spiral Point Taps	Oversized Hand Taps
Left-Hand Hand Taps	

MADE-TO-ORDER TAPS

Styles	Styles
Tables 302,303 and 311	Spiral Flute #3 - 1"
Straight Flute #0 - 1"	Pipe (Straight or Taper)
Straight Flute 1-1/16" - 2-1/2"	Thread Forming

SURFACE TREATMENTS AND COATINGS:

All taps are standard bright finish

- Additional cost & delivery time will apply to items that are Steam Oxide, Bronze Oxide & Nitride
- Additional cost & delivery time will apply to items that are coated. TiN, TiCn, ZrN & TiAlN

Most semi-special taps are shipped within 24 to 48 hours of receipt of order. Full special “Made-to-Order” taps are also quoted upon request. Email your requests to cs@dormerpramet.com

SIMPLY RELIABLE

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **Simply Reliable**.

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