



CLE-LINE.

New Products & Added Sizes

See additional pages for dimensional information

New Product Listing

1874 - HSS Step Drill with Hex Shank



2874 - HSS Step Reamer - Black Oxide



2619 HSS Straight Shank Car Reamer - Black & Gold



3100 - Carbide Fiberglass Router - Plain End - Uncoated



3100 - Carbide Fiberglass Router - Bur End - Uncoated



3100 - Carbide Fiberglass Router - Mill End - Uncoated



3100 - Carbide Fiberglass Router - Drill End - Uncoated



3101 - Carbide Fiberglass & Composite Router - Uncoated



4500 & 4501 - HSS Annular Cutter

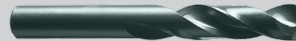


Added Sizes

1898 Jobber Length - TiN



1896 Screw Machine - Black Oxide



1806 HSS Extra Length Drill - Black Oxide



0450 Combination Drill & Tap



1894 HSS GP Taper Shank - Black Oxide



0462 HSS NPT Regular Thread



0650 Carbon Hex Die





CLEVELAND

New Products & Added Sizes

See additional pages for dimensional information

New Product Listing

Carbide Common Shank Drill 3xD
-AlTiN



Carbide Common Shank Drill 5xD
-AlTiN



Carbide Common Shank Drill 8xD
-AlTiN



Carbide Common Shank Drill 12xD
-AlTiN



1799 - Carbide Spot Drill - AlTiN



CFRP - Diamond Coated,
Carbon Fiber - Reinforced Polymer

3200 - CFRP Fine Pitch - Nicked Router



3201 - CFRP Comp Ruffer - Semi Finish



3202 - CFRP Comp Finisher



3203 - CFRP Herringbone Finisher



11001 - Carbide Countersink
Uncoated



11003 - Carbide Countersink
3 Flute - Uncoated



11006 - Carbide Countersink
6 Flute - Uncoated



Added Sizes

1727 - Carbide Jobber Length Drill
Uncoated



CEM-SE4 Carbide End Mill



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See the reverse side for
New and Added
Cle-Line® Brand Products



New Products & Added Sizes

1874 - HSS Step Drill with Hex Shank



Step Description	Hole Sizes	Decimal Equivalent	Shank Diameter	Overall Length	Part Number	
					Bright	TiN
3/16-1/2 x 1/16	3/16-1/2	.1875-.5000	1/4 Hex	3-1/8	C20310	C20312
1/8-1/2 x 1/32	1/8-1/2	.1250-.5000	1/4 Hex	3-1/8	C20311	C20313

2874 - HSS Step Reamer - Black Oxide



Set includes one of each size

Part number: C20303

Step Description	Hole Sizes	Decimal Equivalent	Shank Diameter	Step Length	Part Number
					Black Oxide
5/16 to 9/16 x 1/16	5/16 to 9/16	.3125 to .5625	3/8	1/2	C20300
9/16 to 13/16 x 1/16	9/16 to 13/16	.5625 to .8125	3/8	1/2	C20301
13/16 to 1-1/16 x 1/16	13/16 to 1-1/16	.8125 to 1.0625	3/8	1/2	C20302

2619 HSS Straight Shank Car Reamer - Black & Gold



Size	Decimal Equivalent	Diameter at PT	Length of Taper	Length of Flute	Overall Length	Number of Flutes	Helix	Shank Diameter	Part Number
5/16	0.3125	0.183	2.000	3.179	5.000	4	25 LHS	0.313	C24002
3/8	0.3750	0.193	2.000	3.179	5.000	4	25 LHS	0.375	C24003
7/16	0.4375	0.223	2.250	3.429	5.250	4	25 LHS	0.438	C24004
1/2	0.5000	0.236	2.625	4.117	5.938	5	25 LHS	0.500	C24005
9/16	0.5625	0.299	2.625	4.117	5.938	5	25 LHS	0.500	C24006
5/8	0.6250	0.264	3.375	4.742	6.563	5	25 LHS	0.500	C24007
11/16	0.6875	0.327	3.375	4.742	6.563	5	25 LHS	0.500	C24008
3/4	0.7500	0.458	3.750	5.179	7.000	5	25 LHS	0.500	C24009
13/16	0.8125	0.522	3.750	5.179	7.000	5	25 LHS	0.500	C24010
7/8	0.8750	0.585	3.875	5.429	7.250	5	25 LHS	0.500	C24011
15/16	0.9375	0.648	3.875	5.429	7.250	5	25 LHS	0.500	C24012
1	1.0000	0.713	3.875	5.429	7.250	5	25 LHS	0.500	C24013
1-1/16	1.0625	0.778	3.875	5.429	7.250	5	25 LHS	0.500	C24014



New Products & Added Sizes

Continued

3100 - Carbide Fiberglass Router - Uncoated

Plain End



Bur End



Mill End



Drill End



Diameter		Decimal Equivalent	Length of Cut	Shank Diameter	Overall Length	Part Number			
Inch	Metric					Plain End	Bur End	Mill End	Drill End
	1.5	0.0591	5	3	38	C95365	C95394	C95423	C95452
1/16		0.0625	3/16	1/8	1-1/2	C95350	C95379	C95408	C95437
	2	0.0787	10	3	38	C95366	C95395	C95424	C95453
3/32		0.0938	3/8	1/8	1-1/2	C95351	C95380	C95409	C95438
	3	0.1181	12	3	38	C95367	C95396	C95425	C95454
1/8		0.1250	1/2	1/8	1-1/2	C95352	C95381	C95410	C95439
1/8		0.1250	1	1/8	2	C95353	C95382	C95411	C95440
3/16		0.1875	5/8	3/19	2	C95354	C95383	C95412	C95441
3/16		0.1875	5/8	1/4	2	C95355	C95384	C95413	C95442
	5	0.1969	16	5	50	C95368	C95397	C95426	C95455
	5	0.1969	16	6	50	C95369	C95398	C95427	C95456
	6	0.2362	18	6	50	C95370	C95399	C95428	C95457
	6	0.2362	18	6	63	C95371	C95400	C95429	C95458
	6	0.2362	25	6	63	C95372	C95401	C95430	C95459
	6	0.2362	18	6	75	C95373	C95402	C95431	C95460
	6	0.2362	25	6	75	C95374	C95403	C95432	C95461
	6	0.2362	38	6	75	C95375	C95404	C95433	C95462
1/4		0.2500	3/4	1/4	2	C95356	C95385	C95414	C95443
1/4		0.2500	3/4	1/4	2-1/2	C95357	C95386	C95415	C95444
1/4		0.2500	3/4	1/4	3	C95358	C95387	C95416	C95445
1/4		0.2500	1	1/4	2-1/2	C95359	C95388	C95417	C95446
1/4		0.2500	1	1/4	3	C95360	C95389	C95418	C95447
1/4		0.2500	1-1/2	1/4	3	C95361	C95390	C95419	C95448
5/16		0.3125	1	5/16	2-1/2	C95362	C95391	C95420	C95449
	8	0.3150	25	8	63	C95376	C95405	C95434	C95463
3/8		0.3750	1	3/8	2-1/2	C95363	C95392	C95421	C95450
	10	0.3937	25	10	63	C95377	C95406	C95435	C95464
	12	0.4724	25	12	75	C95378	C95407	C95436	C95465
1/2		0.5000	1	1/2	3	C95364	C95393	C95422	C95451

3101 - Carbide Fiberglass & Composite Router



Diameter	Decimal Equivalent	Length of Flute	Shank Diameter	Overall Length	Part Number
					Uncoated
1/4	0.2500	3/4	1/4	2-1/2	C95466
3/8	0.3750	7/8	3/8	2-1/2	C95467
1/2	0.500	1	1/2	3	C95468



New Products & Added Sizes

Continued

4500 & 4501 - HSS Annular Cutter



Diameter	Decimal Equivalent	Depth of Cut	Part Number
1/2	0.5000	1"	C34060
9/16	0.5625	1"	C34061
5/8	0.6250	1"	C34062
11/16	0.6875	1"	C34063
3/4	0.7500	1"	C34064
13/16	0.8125	1"	C34065
7/8	0.8750	1"	C34066
15/16	0.9375	1"	C34102
1	1.0000	1"	C34067
1-1/16	1.0625	1"	C34068
1-1/8	1.1250	1"	C34069
1-3/16	1.1875	1"	C34070
1-1/4	1.2500	1"	C34071
1-1/2	1.5000	1"	C34073
1-5/8	1.6250	1"	C34074
1-13/16	1.8125	1"	C34075
2	2.0000	1"	C34076
1/4	0.2500		C34100
1/4	0.2500		C34101
1/2	0.5000	2"	C34077
9/16	0.5625	2"	C34078
5/8	0.6250	2"	C34079
11/16	0.6875	2"	C34080
3/4	0.7500	2"	C34081
13/16	0.8125	2"	C34082
7/8	0.8750	2"	C34083
15/16	0.9375	2"	C34084
1	1.0000	2"	C34085
1-1/16	1.0625	2"	C34086
1-1/8	1.1250	2"	C34087
1-3/16	1.1875	2"	C34088
1-1/4	1.2500	2"	C34089
1-5/16	1.3125	2"	C34090
1-3/8	1.3750	2"	C34091
1-1/2	1.5000	2"	C34092
1-9/16	1.5625	2"	C34093
1-5/8	1.6250	2"	C34094
1-11/16	1.6875	2"	C34095
1-3/4	1.7500	2"	C34096
1-13/16	1.8125	2"	C34097
1-7/8	1.8750	2"	C34098
2	2.0000	2"	C34099



New Products & Added Sizes

Continued

1898 Jobber Length - TiN



Size	Decimal Equivalent	Overall Length	Length of Flutes	Part Number
				TiN
A	.2340	3-7/8	2-5/8	C24700
B	.2380	4	2-3/4	C24701
K	.2810	4-1/4	2-15/16	C24702
M	.2950	4-3/8	3-1/16	C24703
P	.3230	4-5/8	3-5/16	C24704
S	.3480	4-7/8	3-1/2	C24705
V	.3770	5	3-5/8	C24706
X	.3970	5-1/8	3-3/4	C24707
Y	.4040	5-1/4	3-7/8	C24708
Z	.4130	5-1/4	3-7/8	C24709

1896 Screw Machine - Black Oxide



Size	Decimal Equivalent	Overall Length	Length of Flutes	Part Number
				Black Oxide
A	0.2340	2-7/16	1-5/16	C24060
B	0.2380	2-1/2	1-3/8	C24061
C	0.2420	2-1/2	1-3/8	C24062
D	0.2460	2-1/2	1-3/8	C24063
F	0.2570	2-5/8	1-7/16	C24064
G	0.2610	2-5/8	1-7/16	C24065
H	0.2660	2-11/16	1-1/2	C24066
I	0.2720	2-11/16	1-1/2	C24067
J	0.2770	2-11/16	1-1/2	C24068
K	0.2810	2-11/16	1-1/2	C24069
L	0.2900	2-3/4	1-9/16	C24070
M	0.2950	2-3/4	1-9/16	C24071
N	0.3020	2-13/16	1-5/8	C24072
O	0.3160	2-15/16	1-11/16	C24073
P	0.3230	2-15/16	1-11/16	C24074
Q	0.3320	3	1-11/16	C24075
R	0.3390	3	1-11/16	C24076
S	0.3480	3-1/16	1-3/4	C24077
T	0.3580	3-1/16	1-3/4	C24078
U	0.3680	3-1/8	1-13/16	C24079
V	0.3770	3-1/4	1-7/8	C24080
W	0.3860	3-1/4	1-7/8	C24081
X	0.3970	3-5/16	1-15/16	C24082
Y	0.4040	3-5/16	1-15/16	C24083
Z	0.4130	3-3/8	2	C24084

1806 HSS Extra Length Drill - Black Oxide



Size	Decimal Equivalent	Overall Length	Length of Flutes	Part Number
				Black Oxide
3/4	.7500	12	9	C24745





New Products & Added Sizes

Continued

0450 Combination Drill & Tap



Tap Size	TPI	Thread Series	Decimal Equivalent	Number of Flutes	Overall Length	Thread Length	Drill Length	Drill Size	Part Number
10	24	UNC	.1900	2	2.375	5/8	13/32	.1545	C29186
12	24	UNC	.2160	2	2.375	21/32	15/32	.1805	C29187
1/4	28	UNF	.2500	2	2.500	25/32	17/32	.2220	C29188
5/16	24	UNF	.3125	2	2.844	15/16	11/16	.2770	C29200
3/8	24	UNF	.3750	2	3.375	1-1/16	13/16	.3395	C29189
1/2	13	UNF	.5000	2	4.062	1-3/8	1-1/8	.4350	C29190
1/2	20	UNF	.5000	2	4.062	1-3/8	1-1/8	.4580	C29191

1894 HSS GP Taper Shank - Black Oxide



Size	Decimal Equivalent	Overall Length	Length of Flutes	MTS #	Part Number Black Oxide
31/64	.4844	8-1/4	4-3/8	2	C24730
1/2	.5000	7-3/4	4-3/8	2	C24731
33/64	.5156	8-1/2	4-5/8	2	C24732
17/32	.5312	8-1/2	4-5/8	2	C24733
9/16	.5625	8-3/4	4-7/8	2	C24734
37/64	.5781	8-3/4	4-7/8	2	C24735
19/32	.5938	8-3/4	4-7/8	2	C24736
39/64	.6094	8-3/4	4-7/8	2	C24737
41/64	.6406	9	5-1/8	2	C24738
21/32	.6562	9	5-1/8	2	C24739
11/16	.6875	9-1/4	5-3/8	2	C24740
23/32	.7188	9-1/2	5-5/8	2	C24741
47/64	.7344	9-3/4	5-7/8	2	C24742
3/4	.7500	9-3/4	5-7/8	2	C24743

0462 HSS NPT Regular Thread



Tap Size	Tap TPI	Tap Series	Decimal Equivalent	Shank Diameter	Overall Length	Thread Length	Number of Flutes	Part Number
1/16	27	NPT	0.0625	0.3125	2.125	0.688	4	C29000

0650 Carbon Hex Die



Die Diameter Pitch	Decimal Equivalent	Length Across Flats	Thickness	Part Number
M3x0.5	.1181	19/32	1/4	C29192
M4x0.7	.1575	19/32	1/4	C29193
M7x1.0	.2756	11/16	5/16	C29194
M10x1.25	.3937	7/8	7/16	C29195
M14x1.5	.5512	1-1/16	1/2	C29196
M18x1.5	.7087	1-7/16	3/4	C29197
M18x2.5	.7087	1-7/16	3/4	C29198
M24x3.0	.9449	1-13/16	1	C29199





CLEVELAND

New Products & Added Sizes

Carbide Common Shank Drill 3xD - External Coolant - AlTiN



Inch	Diameter		Shank		Overall Length	Length of Flute	Part Number
	Metric	Decimal Equiv.	Dia. Ø	Decimal Equiv.			
1/8	3.00	0.1181	6.00	0.2362	2.441	0.787	C92500
	3.18	0.1250	6.00	0.2362	2.441	0.787	C92501
	3.30	0.1299	6.00	0.2362	2.441	0.787	C92502
5/32	3.80	0.1496	6.00	0.2362	2.598	0.945	C92503
	3.97	0.1563	6.00	0.2362	2.598	0.945	C92504
	4.20	0.1654	6.00	0.2362	2.598	0.945	C92505
3/16	4.76	0.1875	6.00	0.2362	2.598	0.945	C92506
	5.00	0.1969	6.00	0.2362	2.598	1.102	C92507
	5.10	0.2008	6.00	0.2362	2.598	1.102	C92508
7/32	5.56	0.2188	6.00	0.2362	2.598	1.102	C92509
	5.50	0.2165	6.00	0.2362	2.598	1.102	C92510
	5.80	0.2283	6.00	0.2362	2.598	1.102	C92511
1/4	6.00	0.2362	6.00	0.2362	2.598	1.102	C92512
	6.35	0.2500	8.00	0.315	3.110	1.457	C92513
	6.50	0.2559	8.00	0.315	3.110	1.339	C92514
	6.70	0.2638	8.00	0.315	3.110	1.339	C92515
	6.80	0.2677	8.00	0.315	3.110	1.339	C92516
	7.00	0.2756	8.00	0.315	3.110	1.339	C92517
9/32	7.15	0.2812	8.00	0.315	3.110	1.339	C92518
5/16	7.94	0.3125	8.00	0.315	3.110	1.339	C92519
	8.00	0.3150	8.00	0.315	3.110	1.339	C92520
	8.50	0.3346	10.00	0.3937	3.504	1.850	C92521
11/32	8.73	0.3438	10.00	0.3937	3.504	1.850	C92522
	9.00	0.3543	10.00	0.3937	3.504	1.850	C92523
	9.53	0.3750	10.00	0.3937	3.504	1.850	C92524
3/8	10.00	0.3937	10.00	0.3937	3.504	1.850	C92525
	10.20	0.4016	12.00	0.4724	4.016	2.165	C92526
	10.32	0.4063	12.00	0.4724	4.016	2.165	C92527
13/32	10.50	0.4134	12.00	0.4724	4.016	2.165	C92528
	11.00	0.4331	12.00	0.4724	4.016	2.165	C92529
	11.11	0.4375	12.00	0.4724	4.016	2.165	C92530
7/16	12.00	0.4724	12.00	0.4724	4.016	2.165	C92531
	12.50	0.4921	14.00	0.5512	4.213	2.362	C92532
	12.70	0.5000	14.00	0.5512	4.213	2.362	C92533
1/2	13.00	0.5118	14.00	0.5512	4.213	2.362	C92534
	13.50	0.5315	14.00	0.5512	4.213	2.362	C92535
	14.00	0.5512	14.00	0.5512	4.213	2.362	C92536



New Products & Added Sizes

Continued

Carbide Common Shank Drill 5xD - Internal Coolant - AlTiN



Inch	Diameter		Shank		Overall Length	Length of Flute	Part Number
	Metric	Decimal Equiv.	Dia. Ø	Decimal Equiv.			
1/8	3.00	0.1181	6.00	0.2362	2.598	1.102	C92537
	3.18	0.1250	6.00	0.2362	2.598	1.102	C92538
	3.30	0.1299	6.00	0.2362	2.598	1.102	C92539
	4.00	0.1575	6.00	0.2362	2.913	1.417	C92540
	4.20	0.1654	6.00	0.2362	2.913	1.417	C92541
3/16	4.50	0.1772	6.00	0.2362	2.913	1.417	C92542
	4.76	0.1875	6.00	0.2362	3.228	1.732	C92543
	5.00	0.1969	6.00	0.2362	3.228	1.732	C92544
	5.10	0.2008	6.00	0.2362	3.228	1.732	C92545
	5.50	0.2165	6.00	0.2362	3.228	1.732	C92546
1/4	6.00	0.2362	6.00	0.2362	3.228	1.732	C92547
	6.35	0.2500	8.00	0.315	3.583	2.087	C92548
	6.50	0.2559	8.00	0.315	3.583	2.087	C92549
	6.80	0.2677	8.00	0.315	3.583	2.087	C92550
	7.00	0.2756	8.00	0.315	3.583	2.087	C92551
9/32	7.15	0.2812	8.00	0.315	3.583	2.087	C92552
5/16	7.94	0.3125	8.00	0.315	3.583	2.087	C92553
	8.00	0.3150	8.00	0.315	3.583	2.087	C92554
	8.33	0.3281	10.00	0.3937	3.583	2.087	C92555
21/64	8.50	0.3346	10.00	0.3937	4.055	2.402	C92556
	9.00	0.3543	10.00	0.3937	4.055	2.402	C92557
	9.40	0.3701	10.00	0.3937	4.055	2.402	C92558
	9.53	0.3750	10.00	0.3937	4.055	2.402	C92559
	9.90	0.3898	10.00	0.3937	4.055	2.402	C92560
3/8	10.00	0.3937	10.00	0.3937	4.055	2.402	C92561
	10.20	0.4016	12.00	0.4724	4.646	2.795	C92562
	10.32	0.4063	12.00	0.4724	4.646	2.795	C92563
	10.50	0.4134	12.00	0.4724	4.646	2.795	C92564
	10.70	0.4213	12.00	0.4724	4.646	2.795	C92565
7/16	11.00	0.4331	12.00	0.4724	4.646	2.795	C92566
	11.11	0.4375	12.00	0.4724	4.646	2.795	C92567
	11.60	0.4567	12.00	0.4724	4.646	2.795	C92568
	12.00	0.4724	12.00	0.4724	4.646	2.795	C92569
	12.30	0.4844	14.00	0.5512	4.882	3.031	C92570
31/64	12.50	0.4921	14.00	0.5512	4.882	3.031	C92571
	12.70	0.5000	14.00	0.5512	4.882	3.031	C92572
	13.00	0.5118	14.00	0.5512	4.882	3.031	C92573
1/2	13.50	0.5315	14.00	0.5512	4.882	3.031	C92574
	14.00	0.5512	14.00	0.5512	4.882	3.031	C92575
	14.50	0.5709	16.00	0.6299	5.236	3.268	C92576
	14.70	0.5787	16.00	0.6299	5.236	3.268	C92577
	15.00	0.5906	16.00	0.6299	5.236	3.268	C92578
	15.50	0.6102	16.00	0.6299	5.236	3.268	C92579
	15.80	0.6220	16.00	0.6299	5.236	3.268	C92580
5/8	15.88	0.6250	16.00	0.6299	5.236	3.268	C92581



New Products & Added Sizes

Continued

Carbide Common Shank Drill 8xD - Internal Coolant - AlTiN



Inch	Diameter		Shank		Overall Length	Length of Flute	Part Number
	Metric	Decimal Equiv.	Dia. Ø	Decimal Equiv.			
	4.00	0.1575	6.00	0.2362	3.150	1.654	C92582
	4.50	0.1772	6.00	0.2362	3.150	1.654	C92583
3/16	4.76	0.1875	6.00	0.2362	3.622	2.126	C92584
	5.00	0.1969	6.00	0.2362	3.622	2.126	C92585
	5.50	0.2165	6.00	0.2362	3.622	2.126	C92586
	6.00	0.2362	6.00	0.2362	3.622	2.126	C92587
1/4	6.35	0.2500	8.00	0.315	3.937	2.441	C92588
	6.50	0.2559	8.00	0.315	3.937	2.441	C92589
	6.80	0.2677	8.00	0.315	3.937	2.441	C92590
	7.00	0.2756	8.00	0.315	4.252	2.756	C92591
9/32	7.15	0.2812	8.00	0.315	4.252	2.756	C92592
	7.50	0.2812	8.00	0.315	4.252	2.756	C92593
5/16	7.94	0.3125	8.00	0.315	4.252	2.756	C92594
	8.00	0.3150	8.00	0.315	4.252	2.756	C92595
	8.50	0.3346	10.00	0.3937	4.803	3.150	C92596
	9.00	0.3543	10.00	0.3937	4.803	3.150	C92597
	9.50	0.3740	11.00	0.4331	5.118	3.465	C92598
3/8	9.53	0.3750	10.00	0.3937	5.118	3.465	C92599
	10.00	0.3937	10.00	0.3937	5.118	3.465	C92600
	10.20	0.4016	12.00	0.4724	5.984	4.134	C92601
	10.50	0.4134	12.00	0.4724	5.984	4.134	C92602
	11.00	0.4331	12.00	0.4724	5.984	4.134	C92603
7/16	11.11	0.4375	12.00	0.4724	5.984	4.134	C92604
	11.80	0.4646	12.00	0.4724	5.984	4.134	C92605
	12.00	0.4724	12.00	0.4724	5.984	4.134	C92606
	12.50	0.4921	14.00	0.5512	6.693	4.843	C92607
1/2	12.70	0.5000	14.00	0.5512	6.693	4.843	C92608
	13.00	0.5118	14.00	0.5512	6.693	4.843	C92609
	13.50	0.5315	14.00	0.5512	6.693	4.843	C92610
	14.00	0.5512	14.00	0.5512	6.693	4.843	C92611



New Products & Added Sizes

Continued

Carbide Common Shank Drill 12xD - Internal Coolant - AlTiN



Inch	Diameter		Shank		Overall Length	Length of Flute	Part Number
	Metric	Decimal Equiv.	Dia. Ø	Decimal Equiv.			
	4.00	0.1575	6.00	0.2362	4.016	2.520	C92612
	4.50	0.1772	6.00	0.2362	4.016	2.520	C92613
3/16	4.76	0.1875	6.00	0.2362	4.567	1.890	C92614
	5.00	0.1969	6.00	0.2362	4.567	3.071	C92615
	5.50	0.2165	6.00	0.2362	4.567	3.071	C92616
	6.00	0.2362	6.00	0.2362	4.567	3.071	C92617
1/4	6.35	0.2500	8.00	0.315	5.748	4.252	C92618
	6.50	0.2559	8.00	0.315	5.748	4.252	C92619
	6.80	0.2677	8.00	0.315	5.748	4.252	C92620
	7.00	0.2756	8.00	0.315	5.748	4.252	C92621
9/32	7.14	0.2812	8.00	0.315	5.748	4.252	C92622
	7.50	0.2812	8.00	0.315	5.748	4.252	C92623
5/16	7.94	0.3125	8.00	0.315	5.748	4.252	C92624
	8.00	0.3150	8.00	0.315	5.748	4.252	C92625
	8.50	0.3346	10.00	0.3937	6.378	4.724	C92626
	9.00	0.3543	10.00	0.3937	6.378	4.724	C92627
	9.50	0.3740	11.00	0.4331	6.378	4.724	C92628
3/8	9.53	0.3750	10.00	0.3937	6.378	4.724	C92629
	10.00	0.3937	10.00	0.3937	6.378	4.724	C92630
	10.20	0.4016	12.00	0.4724	8.031	6.142	C92631
	10.50	0.4134	12.00	0.4724	8.031	6.142	C92632
	11.00	0.4331	12.00	0.4724	8.031	6.142	C92633
7/16	11.11	0.4375	12.00	0.4724	8.031	6.142	C92634
	11.80	0.4646	12.00	0.4724	8.031	6.142	C92635
	12.00	0.4724	12.00	0.4724	8.031	6.142	C92636
	12.50	0.4921	14.00	0.5512	9.055	7.165	C92637
1/2	12.70	0.5000	14.00	0.5512	9.055	7.165	C92638
	13.00	0.5118	14.00	0.5512	9.055	7.165	C92639
	13.50	0.5315	14.00	0.5512	9.055	7.165	C92640
	14.00	0.5512	14.00	0.5512	9.055	7.165	C92641

1799 - Carbide Spot Drill - AlTiN



Size	Decimal Equivalent	Overall Length	Length of Flute	Part Number		
				90° Pt	120° Pt	142° Pt
1/8	0.1250	2	3/8	C46400	C46401	C46402
3/16	0.1875	3	3/4	C46403	C46404	C46405
1/4	0.2500	3	3/4	C46406	C46407	C46408
5/16	0.3125	3	1	C46409	C46410	C46411
3/8	0.3750	3	1	C46412	C46413	C46414
1/2	0.5000	4	1	C46415	C46416	C46417





New Products & Added Sizes

Continued

3200 - CFRP Fine Pitch - Nicked Router, Diamond Coated, Carbon Fiber - Reinforced Polymer



Diameter	Decimal Equivalent	Length of Cut	Shank Diameter	Overall Length	Number of Flutes	Part Number		
						Plain End	Bur End	Mill End
1/8	0.125	1/4	1/8	1-1/2	6	C95469	C95486	C95503
1/8	0.125	3/8	1/8	1-1/2	6	C95470	C95487	C95504
1/8	0.125	1/2	1/8	1-1/2	8	C95471	C95488	C95505
3/16	0.1875	3/8	3/16	2	6	C95472	C95489	C95506
3/16	0.1875	9/16	3/16	2	6	C95473	C95490	C95507
3/16	0.1875	3/4	3/16	2	8	C95474	C95491	C95508
1/4	0.25	1/2	1/4	2-1/2	8	C95475	C95492	C95509
1/4	0.25	3/4	1/4	2-1/2	10	C95476	C95493	C95510
1/4	0.25	1	1/4	3	10	C95477	C95494	C95511
1/4	0.25	1-1/4	1/4	4	12	C95478	C95495	C95512
5/16	0.3125	1	5/16	2-1/2	10	C95479	C95496	C95513
3/8	0.375	3/4	3/8	2-1/2	12	C95480	C95497	C95514
3/8	0.375	1-1/8	3/8	3	12	C95481	C95498	C95515
3/8	0.375	1-1/2	3/8	4	12	C95482	C95499	C95516
3/8	0.375	2	3/8	4	12	C95483	C95500	C95517
1/2	0.5	1	1/2	3	14	C95484	C95501	C95518
1/2	0.5	2	1/2	4	16	C95485	C95502	C95519

3201 - CFRP Comp Ruffer - Semi Finish - Diamond Coated, Carbon Fiber - Reinforced Polymer



Diameter	Decimal Equivalent	Length of Cut	Shank Diameter	Overall Length	Number of Flutes	Part Number
15/64	0.2344	3/4	1/4	2-1/2	4	C95520
1/4	0.2500	1/2	1/4	2-1/82	4	C95521
1/4	0.2500	3/4	1/4	2-1/2	4	C95522
11/32	0.3438	1-1/8	3/8	3	6	C95523
23/64	0.3594	1-1/8	3/8	3	6	C95524
3/8	0.3750	3/4	3/8	3	6	C95525
3/8	0.3750	1-1/2	3/8	3	6	C95526
7/16	0.4375	1-1/2	1/2	3	8	C95527
31/64	0.4844	1-1/2	1/2	3	8	C95528
1/2	0.5000	1	1/2	3	8	C95529
1/2	0.5000	1-1/2	1/2	3	8	C95530

3202 - CFRP Comp Finisher - Diamond Coated, Carbon Fiber - Reinforced Polymer



Diameter	Decimal Equivalent	Length of Cut	Shank Diameter	Overall Length	Number of Flutes	Part Number
1/4	0.2500	3/4	1/4	2-1/2	8	C95531
1/4	0.2500	1	1/4	3	8	C95532
3/8	0.3750	1-1/8	3/8	3	12	C95533
3/8	0.3750	1-1/2	3/8	3	12	C95534
1/2	0.5000	1-1/2	1/2	4	14	C95535
1/2	0.5000	2	1/2	4	14	C95536



New Products & Added Sizes

Continued

3203 - CFRP Herringbone Finisher - Diamond Coated, Carbon Fiber - Reinforced Polymer



Diameter	Decimal Equivalent	Length of Cut	Shank Diameter	Overall Length	Number of Flutes	Part Number
1/8	0.1250	3/8	1/8	1-1/2	4	C95537
1/4	0.2500	3/4	1/4	2-1/2	4	C95538
3/8	0.3750	1-1/8	3/8	3	4	C95539
1/2	0.5000	1-1/8	1/2	3	4	C95540

11001 - Carbide Countersink - Uncoated



Overall Length	Number of Flutes	Part Number		
		60°	82°	90°
1-1/2	1	C46320	C46328	C46336
2	1	C46321	C46329	C46337
2	1	C46322	C46330	C46338
2-5/8	1	C46323	C46331	C46339
2-7/8	1	C46324	C46332	C46340
3	1	C46325	C46333	C46341
3	1	C46326	C46334	C46342
2-3/4	1	C46327	C46335	C46343

11003 - Carbide Countersink - 3 Flute - Uncoated



Overall Length	Number of Flutes	Part Number		
		60°	82°	90°
1-1/2	3	C46344	C46352	C46360
2	3	C46345	C46353	C46361
2	3	C46346	C46354	C46362
2-5/8	3	C46347	C46355	C46363
2-7/8	3	C46348	C46356	C46364
3	3	C46349	C46357	C46365
3	3	C46350	C46358	C46366
2-3/4	3	C46351	C46359	C46367

11006 - Carbide Countersink - 6 Flute - Uncoated



Overall Length	Number of Flutes	Part Number		
		60°	82°	90°
1-1/2	6	C46368	C46376	C46384
2	6	C46369	C46377	C46385
2	6	C46370	C46378	C46386
2-5/8	6	C46371	C46379	C46387
2-7/8	6	C46372	C46380	C46388
3	6	C46373	C46381	C46389
3	6	C46374	C46382	C46390
2-3/4	6	C46375	C46383	C46391





New Products & Added Sizes

Continued

1727 - Carbide Jobber Length Drill - Uncoated



Size (mm)	Decimal Equivalent	Overall Length	Length of Flute	Part #
3.0	0.1182	61	33	C47239
3.1	0.1221	65	36	C47240
3.2	0.1260	65	36	C47241
3.3	0.1300	65	36	C47242
3.4	0.1339	70	39	C47243
3.5	0.1378	70	39	C47244
4.0	0.1575	75	43	C47245
4.5	0.1615	80	47	C47246
5.0	0.1969	86	52	C47247
5.5	0.2166	93	57	C47248
6.0	0.2363	93	57	C47249
6.5	0.2560	101	63	C47250
7.0	0.2756	109	69	C47251
7.5	0.2953	109	69	C47252
8.0	0.3150	117	75	C47253
8.5	0.3347	117	75	C47254
9.0	0.3544	125	81	C47255
9.5	0.3741	125	81	C47256
10.0	0.3938	133	87	C47257
10.5	0.4134	133	87	C47258
11.0	0.4331	142	94	C47259
11.5	0.4528	142	94	C47260
12.0	0.4725	151	101	C47261

CEM-SE4 (4 Flute) Carbide End Mill



Diameter	Decimal Equivalent	Shank Diameter	Length of Cut	Overall Length	Part #	
					Bright	AITIN
1.00	0.0394	3	3.0	38	C98215	C98240
1.50	0.0591	3	5.0	38	C98216	C98241
2.00	0.0788	3	6.0	38	C98217	C98242
2.50	0.0985	3	7.0	38	C98218	C98243
3.00	0.1182	3	12.0	38	C98219	C98244
3.50	0.1378	4	12.0	50	C98220	C98245
4.00	0.1575	4	14.0	50	C98221	C98246
4.50	0.1772	5	14.0	50	C98222	C98247
5.00	0.1969	5	16.0	50	C98223	C98248
5.50	0.2166	6	16.0	50	C98224	C98249
6.00	0.2363	6	19.0	50	C98225	C98250
6.50	0.2560	8	19.0	63	C98226	C98251
7.00	0.2756	8	19.0	63	C98227	C98252
7.50	0.2953	8	19.0	63	C98228	C98253
8.00	0.3150	8	19.0	63	C98229	C98254
9.00	0.3544	10	22.0	70	C98230	C98255
10.00	0.3938	10	22.0	70	C98231	C98256
11.00	0.4331	11	25.0	70	C98232	C98257
12.00	0.4725	12	25.0	75	C98233	C98258
14.00	0.5512	14	30.0	88	C98234	C98259
16.00	0.6300	16	32.0	88	C98235	C98260
18.00	0.7087	18	36.0	100	C98236	C98261
20.00	0.7875	20	38.0	100	C98237	C98262
25.00	0.9843	25	38.0	100	C98238	C98263

