



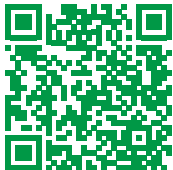
CLE-LINE®

THE BRAND FOR THE PROFESSIONALS



CATALOG 2023

**Holemaking
Threading
Dies
Masonry
Saws**





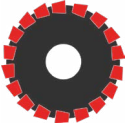

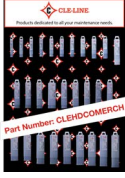
Make it Easy!
Download
our Catalog.





Cle-Line® is a familiar name to users of quality cutting tools. Our cutting tools have been manufactured for decades specifically for the construction, maintenance, repair, operating, and industrial markets. This catalog gives you all the tools you need to keep your industry working. A wide selection of high-quality drills, saw blades, taps, dies, and burs have been brought together to give you one complete resource for purchasing cutting tools. You can shop this catalog with confidence knowing the high standards of quality and service that come from Cle-Line®.

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Metalcutting Safety

(read this before using Cle-Line® products)


Modern metalcutting operations involve high energy, high spindle or cutter speeds, and high temperatures and cutting forces. Hot, flying chips may be projected from the workpiece during metal-cutting. Although advanced cutting tool materials are designed and manufactured to withstand the high cutting forces and temperatures that normally occur in these operations, they are susceptible to fragmenting in service, particularly if they are subjected to over-stress, severe impact or otherwise abused. Therefore, precautions should be taken to adequately protect workers, observers and equipment against hot, flying chips, fragmented cutting tools, broken work pieces or other similar projectiles. Machines should be fully guarded and personal protective equipment should be used at all times.

When grinding advanced cutting tool materials, a suitable means for collection and disposal of dust, mist or sludge should be provided. Over-exposure to dust or mist containing metallic particles can be hazardous to one's health particularly if exposure continues over an extended period of time and may cause eye, skin, and mucous membrane irritation and temporary or permanent respiratory disease. Certain existing pulmonary and skin conditions may be aggravated by exposure to dust or mist. Adequate ventilation, respiratory protection and eye protection should be provided when grinding and workers should avoid breathing of and prolonged skin contact with dust or mist.

General Industry Safety and Health Regulations, Part 1910, U.S. Department of Labor, published in Title 29 of the Code of Federal Regulations should be consulted. Obtain from Cle-Line® and read the applicable Safety Data Sheet before grinding.

Cutting tools are only one part of the worker-machine-tool system. Many variables exist in machining operations, including the metal removal rate; the workpiece size, shape, strength and rigidity; the chucking and fixturing; the load carrying capability of centers; the cutter and spindle speed and torque limitations; the holder and boring bar overhang; the available power; and the condition of the tooling and the machine. A safe metalcutting operation must take all of these variables, and others, into consideration.

Cle-Line® has no control over the end use of its products or the environment into which those products are placed. Cle-Line® urges that its customers adhere to the recommended standards of use of their metalcutting operations. The information included throughout this catalog under the heading "Technical Data" and other recommendations on machining practices referred to herein are only advisory in nature and do not constitute representations or warranties and are not necessarily appropriate for any particular work environment or application.

 **WARNING:** This product contains Cobalt and/or Nickel and/or Lead a chemical known to the state of California to cause cancer, or birth defects or other reproductive harm. For more information: www.P65Warnings.ca.gov



HOLEMAKING

* With flats





** Some items will be obsoleted. Available until inventory is depleted.

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Sets
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Jobber Drill

118° Point - General Purpose	HSS	<ul style="list-style-type: none"> 1600 1601 1899 1898 1898T 	<ul style="list-style-type: none"> Black Oxide Bright Black Oxide Bright TiN 		8-13	14	
	3/8" Reduced Shank	HSS	1900	Black		13	14
	Left Hand	HSS	1898L	Bright		15	
135° Split Point - Heavy Duty	HSS	<ul style="list-style-type: none"> 1602 1604 1607* 1801 1878* 	<ul style="list-style-type: none"> Black Oxide Black & Gold Black & Gold Black Oxide Black & Gold 		16-19	20	
	3/8" Reduced Shank	HSS	<ul style="list-style-type: none"> 1605 1809 1879* 	<ul style="list-style-type: none"> Black & Gold Black Oxide Black & Gold 		19	20
	TiN Tip	HSS Cobalt	<ul style="list-style-type: none"> 1500-TT 1501-TT 	<ul style="list-style-type: none"> TiN TiN 		21-23	23
135° Split Point - Heavy Duty, Parabolic Flute	HSS	<ul style="list-style-type: none"> 1872 1872TN 	<ul style="list-style-type: none"> Black & Gold TiN 		24-26	26	
135° Split Point - Hex Shank	Cobalt	1804	Straw		27	27	
135° Split Point - Heavy Duty	Cobalt	<ul style="list-style-type: none"> 1603 1802 	<ul style="list-style-type: none"> Straw Oxide Straw Oxide 		28-31	31	




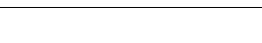
Mechanics Length Drill

135° Split Point	HSS	1620	Black & Gold		32	33
	HSS	1875R	Black & Gold		32	33
3/8" Reduced Shank	HSS	1876	Black & Gold		33	33
Left Hand	Cobalt	1880	Straw Oxide		34	





Screw Machine Length Drill

135° Split Point - Heavy Duty	HSS	<ul style="list-style-type: none"> 1621 1896** 	<ul style="list-style-type: none"> Black Oxide Black Oxide 		35-38	38
-------------------------------	-----	--	--	---	-------	----

Silver & Deming - Reduced Shank

118° Point	1/2" Reduced Shank	HSS	<ul style="list-style-type: none"> 1680 1813 	<ul style="list-style-type: none"> Black Oxide Black Oxide 		39-40	40
		HSS	<ul style="list-style-type: none"> 1681 1892 	<ul style="list-style-type: none"> Black Oxide Black Oxide 			
118° Split Point	3 Flatted Shank	HSS	1877*	Black & Gold			
		HSS	1877*	Black & Gold			
118° Point	1/4" Reduced Shank	HSS	1814	Black Oxide		41	41





Extra Length Drill

135° Split Point	6" Aircraft	HSS	<ul style="list-style-type: none"> 1630 1803 	<ul style="list-style-type: none"> Black Oxide Black Oxide 		42-43	
	12" Aircraft	HSS	<ul style="list-style-type: none"> 1631 1805 	<ul style="list-style-type: none"> Black Oxide Black Oxide 		42-43	
	118° Notched Point						
118° Notched Point	12" Heavy Duty	HSS	1806	Black Oxide		44	
	18" Extra Length	HSS	1807	Black Oxide		44	

Taper Shank Drill

118° Point	General Purpose	HSS	<ul style="list-style-type: none"> 1682 1894 	<ul style="list-style-type: none"> Black Oxide Black Oxide, Tanged 		45-47	
------------	-----------------	-----	--	--	---	-------	--

Annular Cutter

1" Depth of Cut	HSS	<ul style="list-style-type: none"> 4500 4505 			48	
	Cobalt	<ul style="list-style-type: none"> 4501 4506 			48	
2" Depth of Cut	HSS	<ul style="list-style-type: none"> 4501 4506 			48	
Locator Pin		4502	1" & 2" Annular Cutter		48	

**HOLEMAKING** *continued*

** Some items will be obsoleted. Available until inventory is depleted.

Page
Sets
Page**Masonry - Carbide-Tipped**

HOLEMAKING	Carbide Tipped	HSS	1818			49	49
	Carbide Tipped	HSS	1889			50	
	Glass & Tile	HSS	1822			50	50
	SDS®	HSS	1821			51	51
	Drill Rebar - SDS®	HSS	1833			51	
	Multi-purpose	HSS	1838			52	52

Other Drills and Accessories

THREADING / DIES	Step Drill - 118° Split Point	HSS	1874 1874TN	Bright TiN		53	53	
	Double End	HSS	1683 1815	Black Oxide Black Oxide		54		
	1/4" Hex Shank - 135° Split Point	HSS	1816	Bright		55		
	Quick Change Chuck	HSS	1817	Black Oxide		55		
	Welding Point Drill	Cobalt	2195 2185 2185F	Straw Oxide Straw Oxide Flatted Shank		56		
	Power Wood Bit	HSS	1823**	Bright		56		
SAWS	Combined Drill and Countersink	HSS	1824	Bright		57		
	Die Drill	HSS	1844**	Reduced Shank		57		
	Screw Extractors	HSS	1829	Square Shank		58	58	
	Drill & Screw Extractor Set	HSS	1864	Black & Gold			58	
	Reamers							
	Step Reamer	HSS	2874	Black Oxide		59	59	
CARBIDE BURS / ROUTERS	Bridge Length Reamer	HSS	2616	Spiral Flute/Hex Shank		59		
	Car Length Reamer	HSS	2618 2619	Spiral Flute/Hex Shank Spiral Flute/Straight Shank		60		
	Sets							61-63
Technical Information							64-66	

**THREADING**Page
Sets
Page**Hand Taps**

MERCHANDISER	Taper Chamfer	HSS	0401	Bright		69-70	70
	Plug Chamfer		0402	Bright			
	Bottoming Chamfer		0403	Bright			
	Tap, Plug, Bottoming Chamfer Set		0404	Bright			70
	Taper Chamfer	Carbon HSS	1696 1690	Bright Bright		71	71
	Plug Chamfer	Carbon HSS	1697 1691	Bright Bright		71	71
	Bottoming Chamfer	Carbon HSS	1698 1692	Bright Bright		71	71
	Tap, Plug, Bottoming Chamfer Set	Carbon	1693	Bright			71
	Tap, Plug, Bottoming Chamfer Set	HSS	1699	Bright			

Spiral Point

INDEX	Plug Chamfer	HSS	1694 0411	Bright Bright		72-73	73
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Pipe Taps

INDEX	Taper Pipe	Carbon HSS HSS	1700	Bright		74	
	Regular Threads		1686	Bright			
			0462	Bright			
	Interrupted Threads	HSS	1688 0464	Bright Bright		74	
Straight Pipe	HSS	1687 0463	Bright Bright		74		

Combination Drill & Tap

Square Shank	HSS	0450	Bright		75	
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**DIES**

** Some items will be obsoleted. Available until inventory is depleted.

Page Sets
Page Page**Dies**

Hexagon - Re-Threading	Carbon	0650		75-76	77
Hexagon - Re-Threading	HSS	492			
Hexagon - Taper Pipe	Carbon	0660			
Round Adjustable	Carbon	0610		78-79	
Round Adjustable	HSS	0710			
Round - Taper Pipe	Carbon	0620			
Die Stock		222		79	
Quick-Set® Two-Piece Die Systems					
Die Assemblies	HSS	0554		82-83	
Die Only		0550			
Cap		0551			
Guide		0552			
Collet (Combined Cap & Guide)		0553			
Quick Two-Piece Die System	HSS	223		84	
Jr. Quick Die Stock		225			
Spanner Wrench		226			
Quick Die Sets		055			
Standard Straight	HSS	240		86-87	
Plain T-Handle		242			
Slip T-Handle		243			
Ratchet And Slip T-Handle		244			
Long Shank T-Handle		245			
Sets				79-80, 85, 88-89	

**SAWS**Page Sets
Page Page**Hole Saws**

M-3	HSS	1887		91	
M-42	Cobalt	1887		91	94
CLAW®	Cobalt	1886		92	94
Carbide Tipped	Bi-Metal	1881**		93	94
Accessories - Round & Hex Shank, Pilot Drill, Adaptor		1885		95	

Bi-Metal Reciprocating Saw Blades

Demolition - Wood / Nail	M-42	RSB-D		96	
Demolition - Metal / Rescue		RSB-P			
Pallet		RSB-BM			
Wood	Cobalt	RSB-BM		97-98	
Metal					
All-Purpose					
Plaster					
Air Saw					
Metal	Carbide	RSB-CT		98	
Air Saw	M-42	RSB-BM		99	

Bi-Metal Hacksaw Blades

	M-42	HB-BM		99	
	Cobalt				

Bi-Metal Band Saw Blades

Portable Band Saw	M-42	P1000		100	
Weld-To-Length	M-42	T1000 - T7000		101-103	
Straight Tooth / 5° Positive Rake Tooth / 10° High Positive Rake / Protective Tooth / Heavy Set					
Turtle Back / Narrow Width Bands (M42)					
Pre-Welded	M-42	T1000 - T7000		104	
Straight Tooth / 5° Positive Rake Tooth / 10° High Positive Rake / Narrow Width Bands (M42)					
Carbide Tipped	Carbide	1882	105		

Technical Information
























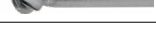

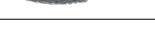



				106-113	
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BURS / ROUTERS

** Some items will be obsoleted. Available until inventory is depleted.

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Solid Carbide Burs

			Single Cut	Double Cut	Aluminum Cut		
HOLEMAKING	Cylindrical without End Cut	CLE-SA	1845				116
	Cylindrical with End Cut	CLE-SB	1846				116
	Cylindrical Ball Nose	CLE-SC	1847				117
	Round Nose Tree	CLE-SF	1848				118
	Pointed Tree	CLE-SG	1849				118
	Pointed Cone	CLE-SM	1850				119
	Egg Shaped	CLE-SE	1851				120
	Included Angle	CLE-SL	1852				120
	Ball Shaped	CLE-SD	1853				121
	Flame Shaped	CLE-SH	1854				121
SAWS	60° Included Angle (Countersink)	CLE-SJ	1856				122
	90° Included Angle (Countersink)	CLE-SK	1857				122
	Inverted Taper	CLE-SN	1858				122
	Sets						122

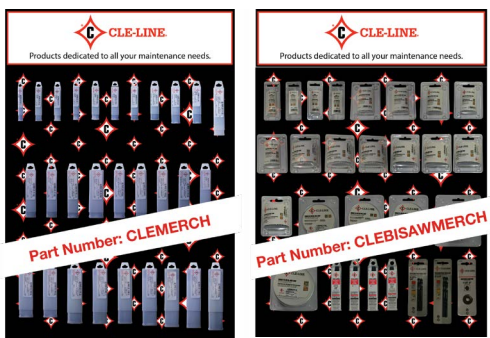
Sets

Router (Uncoated)

Fiberglass

CARBIDE BURS/ROUTERS	Plain End	Carbide	3100		123
	Bur End				
	Mill End				
	Drill End				
	Fiberglass & Composite	Carbide	3101		

Display Merchandiser

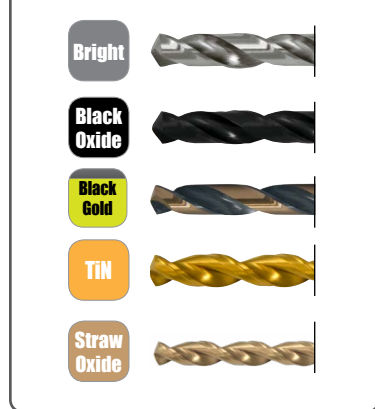
MERCHANDISER	Jobber Drills				124-125
	Black Oxide Drills, General Purpose	HSS	1899		
	Black Oxide Drills, Heavy Duty	HSS	1801		
	Black and Gold Drills, Heavy Duty	HSS	1878		
	Straw Oxide Drills, Cobalt, Heavy Duty	Cobalt	1802		
INDEX	Hole Saw Blades	HSS	1887		
	Reciprocating and Band Saw Blades	HSS	RSB		



✓ = BEST Performance * Also Suitable

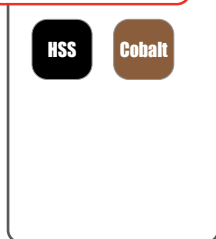
Icon	Material	Hardness	Surface Treatment Suggestion		
			TiN	TiCN	TiALN
M	Austenitic Stainless Steel	< 35 HRc		*	✓
	Martensitic Stainless Steel	< 35 HRc		*	✓
	Martensitic Stainless Steel	>= 35 HRc			✓
	PH Stainless Steel	< 35 HRc		*	✓
	PH Stainless Steel	<= 35 HRc		*	✓
S	Ni, Co, Fe Based Super Alloys				✓
	Titanium				✓
P	Alloy Steel	16-23 HRc	*	*	✓
	Alloy Steel	23-38 HRc	*	*	✓
	Alloy Steel	> 38 HRc		*	✓
	Carbon Steel	16-23 HRc	*	*	✓
	Carbon Steel	23-38 HRc	*	*	✓
	Carbon Steel	> 38 HRc		*	✓
	Low Carbon Steel	13-23 HRc	*	*	✓
	Low Carbon Steel	23-38 HRc	*	*	✓
Low Carbon Steel	> 38 HRc		*	✓	
K	Gray Cast Iron	18-22 HRc		*	✓
	Nodular Cast Iron	22-32 HRc	*	✓	
N	Aluminum	< 10% Si	*	✓	
	Aluminum	> 10% Si	*	✓	
H	Hardened Steel	>45 HRc		*	✓

Surface Treatment

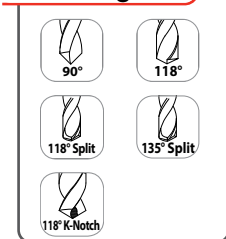


Additional treatments available upon request.

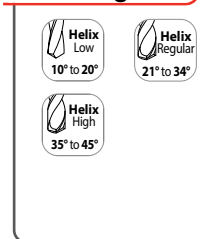
Base Material



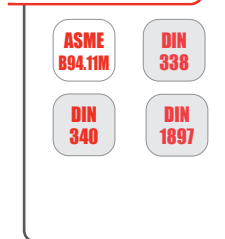
Point Angle



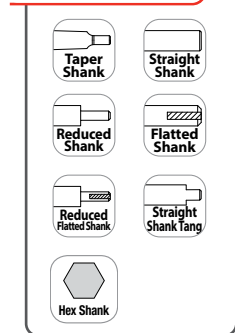
Helix Angle



Standard



Shank



HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

MERCHANDISER

INDEX



HOLEMAKING - General Application Drills

Jobber - Maintenance

Styles: 1600, 1601, 1899, 1898, 1898T



CLE-LINE

HOLEMAKING



Black Oxide



Bright



TiN



Note

For general purpose drilling and maintenance applications.

For Reduced Shank see Style #1900 or 1808.

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

MERCHANDISER

INDEX

order number

drill diameter frac/wire/let	mm	decimal equivalent	overall length	flute length	1600		1899		1898		1898T
					Black Oxide	Bright	Black Oxide	Black Oxide w/ Hanger	Bright	Bright w/ Hanger	TiN
0.35		.0138	19	4	—	—	C22780	—	—	—	—
0.40		.0157	20	5	—	—	C22781	—	C01802	—	—
0.45		.0177	20	5	—	—	C22782	—	C01807	—	—
0.50		.0197	22	6	—	—	C22783	—	C01810	—	—
0.55		.0217	24	7	—	—	C22784	—	—	—	—
0.60		.0236	24	7	—	—	C22785	—	C01815	—	—
0.65		.0256	26	8	—	—	C22786	—	—	—	—
0.70		.0276	28	9	—	—	C22787	—	C01820	—	—
0.75		.0295	28	9	—	—	C22788	—	—	—	—
1/32		.0312	1-3/8	1/2	—	—	C22643	—	—	—	—
0.80		.0315	30	10	—	—	C22789	—	C01826	—	—
0.85		.0335	30	10	—	—	C22790	—	C01829	—	—
0.90		.0354	32	11	—	—	C22791	—	C01831	—	—
0.95		.0374	32	11	—	—	C22792	—	C01834	—	—
1.00		.0394	34	12	C68606	—	C22793	—	C62793	—	C24325
60		.0400	1-5/8	11/16	—	—	C22645	C22645HT	C23024	—	C19159
59		.0410	1-5/8	11/16	—	—	C22646	C22646HT	C23025	—	C19158
	1.05	.0413	34	12	—	—	C22794	—	C62794	—	—
58		.0420	1-5/8	11/16	—	—	C22647	C22647HT	C23026	—	C19157
57		.0430	1-3/4	3/4	—	—	C22648	C22648HT	C23027	—	C19156
	1.10	.0433	36	14	—	—	C22795	—	C62795	—	—
	1.15	.0453	36	14	—	—	C22796	—	C62796	—	—
56		.0465	1-3/4	3/4	—	—	C22649	C22649HT	C23028	—	C19155
3/64		.0469	1-3/4	3/4	—	—	C22644	—	—	—	—
	1.20	.0472	38	16	—	—	C22797	—	C62797	—	C24326
	1.25	.0492	38	16	—	—	C22798	—	C62798	—	—
	1.30	.0512	38	16	—	—	C22799	—	C62799	—	—
55		.0520	1-7/8	7/8	—	—	C22650	C22650HT	C23029	—	C19154
	1.35	.0531	40	18	—	—	C22800	—	C62800	—	—
54		.0550	1-7/8	7/8	—	—	C22651	C22651HT	C23030	—	C19153
	1.40	.0551	40	18	—	—	C22801	—	C62801	—	—
	1.45	.0571	40	18	—	—	C22802	—	C62802	—	—
	1.50	.0591	40	18	C68607	—	C22803	—	C62803	—	C24327
53		.0595	1-7/8	7/8	—	—	C22652	C22652HT	C23031	—	C19152
	1.55	.0610	43	20	—	—	C22804	—	C62804	—	—
1/16		.0625	1-7/8	7/8	C68000	C68114	C22653	C22653HT	C22995	C22995HT	C19160
	1.60	.0630	43	20	—	—	C22805	—	C62805	—	C24306
52		.0635	1-7/8	7/8	—	—	C22654	C22654HT	C23032	—	C19151
	1.65	.0650	43	20	—	—	C22806	—	C62806	—	—

continued on next page



CLE-LINE

Jobber - Maintenance

Styles: 1600, 1601, 1899, 1898, 1898T (continued)

drill diameter		decimal	overall	flute	order number						
frac/wire/let	mm	equivalent	length	length	1600 Black Oxide	1601 Bright	1899 Black Oxide	1899 Black Oxide w/ Hanger	1898 Bright	1898 Bright w/ Hanger	1898T TIN
	1.70	.0669	43	20	—	—	C22807	—	C62807	—	—
51		.0670	2	1	—	—	C22655	C22655HT	C23033	—	C19150
	1.75	.0689	46	22	—	—	C22808	—	C62808	—	—
50		.0700	2	1	—	—	C22656	C22656HT	C23034	—	C19149
	1.80	.0709	46	22	—	—	C22809	—	C62809	—	—
	1.85	.0728	46	22	—	—	C22810	—	C62810	—	—
49		.0730	2	1	—	—	C22657	C22657HT	C23035	—	C19148
	1.90	.0748	46	22	—	—	C22811	—	C62811	—	—
48		.0760	2	1	—	—	C22658	C22658HT	C23036	—	C19147
	1.95	.0768	49	24	—	—	C22812	—	C62812	—	—
5/64		.0781	2	1	C68001	C68115	C22659	C22659HT	C22996	C22996HT	C19161
47		.0785	2	1	—	—	C22660	C22660HT	C23037	—	C19146
	2.00	.0787	49	24	C68608	—	C22813	—	C62813	—	C24328
	2.05	.0807	49	24	—	—	C22814	—	C62814	—	—
46		.0810	2-1/8	1-1/8	—	—	C22661	C22661HT	C23038	—	C19145
45		.0820	2-1/8	1-1/8	—	—	C22662	C22662HT	C23039	—	C19144
	2.10	.0827	49	24	—	—	C22815	—	C62815	—	—
	2.15	.0846	53	27	—	—	C22816	—	C62816	—	—
44		.0860	2-1/8	1-1/8	—	—	C22663	C22663HT	C23040	—	C19143
	2.20	.0866	53	27	—	—	C22817	—	C62817	—	—
	2.25	.0886	53	27	—	—	C22818	—	C62818	—	—
43		.0890	2-1/4	1-1/4	—	—	C22664	C22664HT	C23041	—	C19142
	2.30	.0906	53	27	—	—	C22819	—	C62819	—	C24329
	2.35	.0925	53	27	—	—	C22820	—	C62820	—	—
42		.0935	2-1/4	1-1/4	—	—	C22665	C22665HT	C23042	—	C19141
3/32		.0938	2-1/4	1-1/4	C68002	C68116	C22666	C22666HT	C22997	C22997HT	C19162
	2.40	.0945	57	30	—	—	C22821	—	C62821	—	C24330
41		.0960	2-3/8	1-3/8	—	—	C22667	C22667HT	C23043	—	C19140
	2.45	.0965	57	30	—	—	C22822	—	C62822	—	—
40		.0980	2-3/8	1-3/8	—	—	C22668	C22668HT	C23044	—	C19139
	2.50	.0984	57	30	C68609	—	C22823	—	C62823	—	C24331
39		.0995	2-3/8	1-3/8	—	—	C22669	C22669HT	C23045	—	C19138
38		.1015	2-1/2	1-7/16	—	—	C22670	C22670HT	C23046	—	C19137
	2.60	.1024	57	30	—	—	C22824	—	C62824	—	—
37		.1040	2-1/2	1-7/16	—	—	C22671	C22671HT	C23047	—	C19136
	2.70	.1063	61	33	—	—	C22825	—	C62825	—	C24332
36		.1065	2-1/2	1-7/16	—	—	C22672	C22672HT	C23048	—	C19135
	2.75	.1082	61	33	—	—	C01112	—	—	—	—
7/64		.1094	2-5/8	1-1/2	C68003	C68117	C22673	C22673HT	C22998	C22998HT	C19163
35		.1100	2-5/8	1-1/2	—	—	C22674	C22674HT	C23049	—	C19134
	2.80	.1102	61	33	—	—	C22826	—	C62826	—	C24333
34		.1110	2-5/8	1-1/2	—	—	C22675	C22675HT	C23050	—	C19133
33		.1130	2-5/8	1-1/2	—	—	C22676	C22676HT	C23051	—	C19132
	2.90	.1142	61	33	—	—	C22827	—	C62827	—	C24334
32		.1160	2-3/4	1-5/8	—	—	C22677	C22677HT	C23052	—	C19131
	3.00	.1181	61	33	C68610	—	C22828	—	C62828	—	C24335
31		.1200	2-3/4	1-5/8	—	—	C22678	C22678HT	C23053	—	C19130
	3.10	.1220	65	36	—	—	C22829	—	C62829	—	C24336
1/8		.1250	2-3/4	1-5/8	C68004	C68118	C22679	C22679HT	C22999	C22999HT	C19164
	3.20	.1260	65	36	—	—	C22830	—	C62830	—	C24337
	3.25	.1280	65	36	—	—	C01125	—	C01912	—	—
30		.1285	2-3/4	1-5/8	—	—	C22680	C22680HT	C23054	—	C19129
	3.30	.1299	65	36	—	—	C22831	—	C62831	—	C24338
	3.40	.1339	70	39	—	—	C22832	—	C62832	—	—

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HOLEMAKING	drill diameter		decimal equivalent	overall length	flute length	order number						
	frac/wire/let	mm				1600	1601	1899		1898		1898T
						Black Oxide	Bright	Black Oxide	Black Oxide w/ Hanger	Bright	Bright w/ Hanger	TiN
	29		.1360	2-7/8	1-3/4	—	—	C22681	C22681HT	C23055	—	C19128
		3.50	.1378	70	39	C68611	—	C22833	—	C62833	—	C24339
	28		.1405	2-7/8	1-3/4	—	—	C22682	C22682HT	C23056	—	C19127
	9/64		.1406	2-7/8	1-3/4	C68005	C68119	C22683	C22683HT	C23000	C23000HT	C19165
		3.60	.1417	70	39	—	—	C22834	—	C62834	—	C24340
	27		.1440	3	1-7/8	—	—	C22684	C22684HT	C23057	—	C19126
		3.70	.1457	70	39	—	—	C22835	—	C62835	—	C24341
	26		.1470	3	1-7/8	—	—	C22685	C22685HT	C23058	—	C19125
		3.75	.1476	70	39	—	—	C01137	—	C01924	—	—
	25		.1495	3	1-7/8	—	—	C22686	C22686HT	C23059	—	C19124
		3.80	.1496	75	43	—	—	C22836	—	C62836	—	C24342
	24		.1520	3-1/8	2	—	—	C22687	C22687HT	C23060	—	C19123
		3.90	.1535	75	43	—	—	C22837	—	C62837	—	—
	23		.1540	3-1/8	2	—	—	C22688	C22688HT	C23061	—	C19122
	5/32		.1562	3-1/8	2	C68006	C68120	C22689	C22689HT	C23001	C23001HT	C19166
			.1570	3-1/8	2	—	—	C22690	C22690HT	C23062	—	C19121
		4.00	.1575	75	43	C68612	—	C22838	—	C62838	—	C24343
	21		.1590	3-1/4	2-1/8	—	—	C22691	C22691HT	C23063	—	C19120
	20		.1610	3-1/4	2-1/8	—	—	C22692	C22692HT	C23064	—	C19119
		4.10	.1614	75	43	—	—	C22839	—	C62839	—	C24344
		4.20	.1654	75	43	—	—	C22840	—	C62840	—	C24345
	19		.1660	3-1/4	2-1/8	—	—	C22693	C22693HT	C23065	—	C19118
		4.25	.1673	75	43	—	—	C01338	—	C01938	—	—
		4.30	.1693	80	47	—	—	C22841	—	C62841	—	—
	18		.1695	3-1/4	2-1/8	—	—	C22694	C22694HT	C23066	—	C19117
	11/64		.1719	3-1/4	2-1/8	C68007	C68121	C22695	C22695HT	C23002	C23002HT	C19167
	17		.1730	3-3/8	2-3/16	—	—	C22696	C22696HT	C23067	—	C19116
		4.40	.1732	80	47	—	—	C22842	—	C62842	—	—
	16		.1770	3-3/8	2-3/16	—	—	C22697	C22697HT	C23068	—	C19115
		4.50	.1772	80	47	C68613	—	C22843	—	C62843	—	C24346
	15		.1800	3-3/8	2-3/16	—	—	C22698	C22698HT	C23069	—	C19114
		4.60	.1811	80	47	—	—	C22844	—	C62844	—	C24347
	14		.1820	3-3/8	2-3/16	—	—	C22699	C22699HT	C23070	—	C19113
	13		.1850	3-1/2	2-5/16	—	—	C22700	C22700HT	C23071	—	C19112
		4.70	.1850	80	47	—	—	C22845	—	C62845	—	—
		4.75	.1870	80	47	—	—	C01164	—	—	—	—
	3/16		.1875	3-1/2	2-5/16	C68008	C68122	C22701	C22701HT	C23003	C23003HT	C19168
	12		.1890	3-1/2	2-5/16	—	—	C22702	C22702HT	C23072	—	C19111
		4.80	.1890	86	52	—	—	C22846	—	C62846	—	C24348
	11		.1910	3-1/2	2-5/16	—	—	C22703	C22703HT	C23073	—	C19110
		4.90	.1929	86	52	—	—	C22847	—	C62847	—	C24349
	10		.1935	3-5/8	2-7/16	—	—	C22704	C22704HT	C23074	—	C19109
	9		.1960	3-5/8	2-7/16	—	—	C22705	C22705HT	C23075	—	C19108
		5.00	.1969	86	52	C68614	—	C22848	—	C62848	—	C24350
	8		.1990	3-5/8	2-7/16	—	—	C22706	C22706HT	C23076	—	C19107
		5.10	.2008	86	52	—	—	C22849	—	C62849	—	C24351
	7		.2010	3-5/8	2-7/16	—	—	C22707	C22707HT	C23077	—	C19106
	13/64		.2031	3-5/8	2-7/16	C68009	C68123	C22708	C22708HT	C23004	C23004HT	C19169
	6		.2040	3-3/4	2-1/2	—	—	C22709	C22709HT	C23078	—	C19105
		5.20	.2047	86	52	—	—	C22850	—	C62850	—	C24352
	5		.2055	3-3/4	2-1/2	—	—	C22710	C22710HT	C23079	—	C19104
		5.25	.2066	86	52	—	—	C01180	—	—	—	—
		5.30	.2087	86	52	—	—	C22851	—	C62851	—	—
	4		.2090	3-3/4	2-1/2	—	—	C22711	C22711HT	C23080	—	C19103

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drill diameter		decimal	overall	flute	order number						
frac/wire/let	mm	equivalent	length	length	1600 Black Oxide	1601 Bright	1899		1898		1898T
							Black Oxide	Black Oxide w/ Hanger	Bright	Bright w/ Hanger	TIN
	5.40	.2126	93	57	—	—	C22852	—	C62852	—	—
3		.2130	3-3/4	2-1/2	—	—	C22712	C22712HT	C23081	—	C19102
	5.50	.2165	93	57	C68615	—	C22853	—	C62853	—	C24353
7/32		.2188	3-3/4	2-1/2	C68010	C68124	C22713	C22713HT	C23005	C23005HT	C19170
	5.60	.2205	93	57	—	—	C22854	—	C62854	—	—
2		.2210	3-7/8	2-5/8	—	—	C22714	C22714HT	C23082	—	C19101
	5.70	.2244	93	57	—	—	C22855	—	C62855	—	—
	5.75	.2263	93	57	—	—	C01190	—	—	—	—
1		.2280	3-7/8	2-5/8	—	—	C22715	C22715HT	C23083	—	C19100
	5.80	.2283	93	57	—	—	C22856	—	C62856	—	—
	5.90	.2323	93	57	—	—	C22857	—	C62857	—	C24354
A		.2340	3-7/8	2-5/8	—	—	C22716	C22716HT	C22970	—	C24700
15/64		.2344	3-7/8	2-5/8	C68011	C68125	C22717	C22717HT	C23006	C23006HT	C19171
	6.00	.2362	93	57	C68616	—	C22858	—	C62858	—	C24355
B		.2380	4	2-3/4	—	—	C22718	C22718HT	C22971	—	C24701
	6.10	.2402	101	63	—	—	C22859	—	C62859	—	—
C		.2420	4	2-3/4	—	—	C22719	C22719HT	C22972	—	C19192
	6.20	.2441	101	63	—	—	C22860	—	C62860	—	—
D		.2460	4	2-3/4	—	—	C22720	C22720HT	C22973	—	C19193
	6.25	.2460	101	63	—	—	C01202	—	—	—	—
	6.30	.2480	101	63	—	—	C22861	—	C62861	—	—
1/4, E		.2500	4	2-3/4	C68012	C68126	C22721	C22721HT	C23007	C23007HT	C19172
	6.40	.2520	101	63	—	—	C22862	—	C62862	—	C24356
	6.50	.2559	101	63	C68617	—	C22863	—	C62863	—	C24357
F		.2570	4-1/8	2-7/8	—	—	C22722	C22722HT	C22974	—	C19194
	6.60	.2598	101	63	—	—	C22864	—	C62864	—	C24358
G		.2610	4-1/8	2-7/8	—	—	C22723	C22723HT	C22975	—	C19195
	6.70	.2638	101	63	—	—	C22865	—	C62865	—	C24359
17/64		.2656	4-1/8	2-7/8	C68013	C68127	C22724	C22724HT	C23008	C23008HT	C19173
	6.75	.2657	109	69	—	—	C01213	—	—	—	—
H		.2660	4-1/8	2-7/8	—	—	C22725	C22725HT	C22976	—	C19196
	6.80	.2677	109	69	—	—	C22866	—	C62866	—	C24360
	6.90	.2717	109	69	—	—	C22867	—	C62867	—	C24361
I		.2720	4-1/8	2-7/8	—	—	C22726	C22726HT	C22977	—	C19197
	7.00	.2756	109	69	C68618	—	C22868	—	C62868	—	C24362
J		.2770	4-1/8	2-7/8	—	—	C22727	C22727HT	C22978	—	C19198
	7.10	.2795	109	69	—	—	C22869	—	C62869	—	—
K		.2810	4-1/4	2-15/16	—	—	C22728	C22728HT	C22979	—	C24702
9/32		.2812	4-1/4	2-15/16	C68014	C68128	C22729	C22729HT	C23009	C23009HT	C19174
	7.20	.2835	109	69	—	—	C22870	—	C62870	—	C24363
	7.25	.2854	109	69	—	—	C01223	—	—	—	—
	7.30	.2874	109	69	—	—	C22871	—	C62871	—	C24317
L		.2900	4-1/4	2-15/16	—	—	C22730	C22730HT	C22980	—	C19199
	7.40	.2913	109	69	—	—	C22872	—	C62872	—	—
M		.2950	4-3/8	3-1/16	—	—	C22731	C22731HT	C22981	—	C24703
	7.50	.2953	109	69	C68619	—	C22873	—	C62873	—	C24364
19/64		.2969	4-3/8	3-1/16	C68015	C68129	C22732	C22732HT	C23010	C23010HT	C19175
	7.60	.2992	117	75	—	—	C22874	—	C62874	—	—
N		.3020	4-3/8	3-1/16	—	—	C22733	C22733HT	C22982	—	C19200
	7.70	.3031	117	75	—	—	C22875	—	C62875	—	—
	7.75	.3051	117	75	—	—	C01234	—	—	—	—
	7.80	.3071	117	75	—	—	C22876	—	C62876	—	—
	7.90	.3110	117	75	—	—	C22877	—	C62877	—	—
5/16		.3125	4-1/2	3-3/16	C68016	C68130	C22734	C22734HT	C23011	C23011HT	C19176
	8.00	.3150	117	75	C68620	—	C22878	—	C62878	—	C24365

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					order number							
	drill diameter frac/wire/let	decimal mm	overall equivalent	flute length	1600 Black Oxide	1601 Bright	1899 Black Oxide	1899 Black Oxide w/ Hanger	1898 Bright	1898 Bright w/ Hanger	1898T TIN	
HOLEMAKING	O		.3160	4-1/2	3-3/16	—	—	C22735	C22735HT	C22983	—	C19201
		8.10	.3189	117	75	—	—	C22879	—	C62879	—	—
		8.20	.3228	117	75	—	—	C22880	—	C62880	—	—
	P		.3230	4-5/8	3-5/16	—	—	C22736	C22736HT	C22984	—	C24704
		8.25	.3248	117	75	—	—	C01243	—	—	—	—
		8.30	.3268	117	75	—	—	C22881	—	C62881	—	C24366
	21/64		.3281	4-5/8	3-5/16	C68017	C68131	C22737	C22737HT	C23012	C23012HT	C19177
		8.40	.3307	117	75	—	—	C22882	—	C62882	—	—
	Q		.3320	4-3/4	3-7/16	—	—	C22738	C22738HT	C22985	—	C19202
		8.50	.3346	117	75	C68621	—	C22883	—	C62883	—	C24367
THREADING / DIES		8.60	.3386	125	81	—	—	C22884	—	C62884	—	—
	R		.3390	4-3/4	3-7/16	—	—	C22739	C22739HT	C22986	—	C19203
		8.70	.3425	125	81	—	—	C22885	—	C62885	—	—
	11/32		.3438	4-3/4	3-7/16	C68018	C68132	C22740	C22740HT	C23013	C23013HT	C19178
		8.75	.3444	125	81	—	—	C01253	—	—	—	—
		8.80	.3465	125	81	—	—	C22886	—	C62886	—	—
	S		.3480	4-7/8	3-1/2	—	—	C22741	C22741HT	C22987	—	C24705
		8.90	.3504	125	81	—	—	C22887	—	C62887	—	—
		9.00	.3543	125	81	C68622	—	C22888	—	C62888	—	C24368
	T		.3580	4-7/8	3-1/2	—	—	C22742	C22742HT	C22988	—	C19204
SAWS		9.10	.3583	125	81	—	—	C22889	—	C62889	—	—
	23/64		.3594	4-7/8	3-1/2	C68019	C68133	C22743	C22743HT	C23014	C23014HT	C19179
		9.20	.3622	125	81	—	—	C22890	—	C62890	—	—
		9.25	.3641	125	81	—	—	C01262	—	—	—	—
		9.30	.3661	125	81	—	—	C22891	—	C62891	—	—
	U		.3680	5	3-5/8	—	—	C22744	C22744HT	C22989	—	C19205
		9.40	.3701	125	81	—	—	C22892	—	C62892	—	—
		9.50	.3740	125	81	C68623	—	C22893	—	C62893	—	C24369
	3/8		.3750	5	3-5/8	C68020	C68134	C22745	C22745HT	C23015	C23015HT	C19180
	V		.3770	5	3-5/8	—	—	C22746	C22746HT	C22990	—	C24706
CARBIDE BURS/ROUTERS		9.60	.3780	133	87	—	—	C22894	—	C62894	—	—
		9.70	.3819	133	87	—	—	C22895	—	C62895	—	—
		9.80	.3858	133	87	—	—	C22896	—	C62896	—	—
	W		.3860	5-1/8	3-3/4	—	—	C22747	C22747HT	C22991	—	C19206
		9.90	.3898	133	87	—	—	C22897	—	C62897	—	—
	25/64		.3906	5-1/8	3-3/4	C68021	C68135	C22505	C22505HT	C23016	C23016HT	C19181
		10.00	.3937	133	87	C68624	—	C22898	—	C62898	—	C24370
	X		.3970	5-1/8	3-3/4	—	—	C22748	C22748HT	C22992	—	C24707
		10.10	.3976	133	87	—	—	C22941	—	—	—	—
		10.20	.4016	133	87	—	—	C22899	—	C62899	—	C24371
MERCHANDISER		10.25	.4035	133	87	—	—	C22942	—	—	—	—
	Y		.4040	5-1/4	3-7/8	—	—	C22749	C22749HT	C22993	—	C24708
	13/32		.4062	5-1/4	3-7/8	C68022	C68136	C22506	C22506HT	C23017	C23017HT	C19182
		10.40	.4094	133	87	—	—	C22944	—	—	—	—
	Z		.4130	5-1/4	3-7/8	—	—	C22750	C22750HT	C22994	—	C24709
		10.50	.4134	133	87	C68625	—	C22900	—	C62900	—	C24372
		10.70	.4212	142	94	—	—	C22947	—	C02070	—	—
	27/64		.4219	5-3/8	3-15/16	C68023	C68137	C22507	C22507HT	C23018	C23018HT	C19183
		10.80	.4252	142	94	—	—	C22901	—	C62901	—	C24373
		11.00	.4331	142	94	C68626	—	C22902	—	C62902	—	C24374
INDEX		11.10	.4370	142	94	—	—	C22951	—	C02073	—	—
	7/16		.4375	5-1/2	4-1/16	C68024	C68138	C22751	C22751HT	C23019	C23019HT	C19184
		11.20	.4409	142	94	—	—	C22903	—	C62903	—	—
		11.40	.4488	142	94	—	—	C22954	—	—	—	—

continued on next page



Jobber - Maintenance
Styles: 1600, 1601, 1899, 1898, 1898T (continued)

drill diameter		decimal	overall	flute	order number						
frac/wire/let	mm	equivalent	length	length	1600 Black Oxide	1601 Bright	1899 Black Oxide	1899 Black Oxide w/ Hanger	1898 Bright	1898 Bright w/ Hanger	1898T TiN
29/64	11.50	.4528	142	94	C68627	—	C22904	—	C62904	—	C24375
29/64	11.50	.4531	5-5/8	4-3/16	C68025	C68139	C22508	C22508HT	C23020	C23020HT	C19185
15/32	11.80	.4646	142	94	—	—	C22905	—	C62905	—	C24376
15/32	11.80	.4688	5-3/4	4-5/16	C68026	C68140	C22753	C22753HT	C23021	C23021HT	C19186
31/64	12.00	.4724	151	101	C68628	—	C22906	—	C62906	—	C24377
31/64	12.20	.4803	151	101	—	—	C22907	—	C62907	—	—
31/64	12.50	.4844	5-7/8	4-3/8	C68027	C68141	C22755	C22755HT	C23022	C23022HT	C19187
1/2	12.50	.4921	151	101	C68629	—	C22908	—	C62908	—	C24378
1/2	12.80	.5000	6	4-1/2	C68028	C68142	C22757	C22757HT	C23023	C23023HT	C19188
1/2	12.80	.5039	151	101	—	—	C22909	—	C62909	—	—
1/2	13.00	.5118	151	101	C68630	—	C22910	—	C62910	—	C24379
1/2	13.20	.5197	161	101	—	—	C22911	—	C62911	—	—
1/2	13.50	.5315	160	108	—	—	C22912	—	C62912	—	—
1/2	13.80	.5433	160	108	—	—	C22913	—	C62913	—	—
1/2	14.00	.5512	160	108	—	—	C22914	—	C62914	—	—
1/2	14.25	.5610	169	114	—	—	C22915	—	C62915	—	—
1/2	14.50	.5709	169	114	—	—	C22916	—	C62916	—	—
1/2	14.75	.5807	169	114	—	—	C22917	—	C62917	—	—
1/2	15.00	.5906	169	114	—	—	C22918	—	C62918	—	—
1/2	15.25	.6004	178	120	—	—	C22919	—	—	—	—
1/2	15.50	.6102	178	120	—	—	C22920	—	C62920	—	—
1/2	15.75	.6201	178	120	—	—	C22921	—	C62921	—	—
1/2	16.00	.6299	178	120	—	—	C22922	—	C62922	—	—
1/2	16.25	.6398	184	125	—	—	C22923	—	C62923	—	—
1/2	16.50	.6496	184	125	—	—	C22924	—	C62924	—	—
1/2	16.75	.6594	184	125	—	—	C22925	—	C62925	—	—
1/2	17.00	.6693	184	125	—	—	C22926	—	C62926	—	—
1/2	17.25	.6791	191	130	—	—	C22927	—	—	—	—
1/2	17.50	.6890	191	130	—	—	C22928	—	C62928	—	—
1/2	18.00	.7086	191	130	—	—	C22929	—	C62929	—	—
1/2	18.50	.7283	198	135	—	—	C22930	—	—	—	—
1/2	19.00	.7480	198	135	—	—	C22931	—	C62931	—	—
1/2	19.50	.7677	205	140	—	—	C22932	—	—	—	—
1/2	20.00	.7874	205	140	—	—	C22933	—	—	—	—

Jobber - 3/8" Reduced Shank
Styles: 1900

HSS **Bright** **118°**
Black Oxide **Helix Regular** **21° to 34°**
Reduced Shank



drill diameter		decimal	overall	flute	order number	
frac/wire/let	mm	equivalent	length	length	1900 Black Oxide	1900 Black Oxide w/ Hanger
27/64	7/16	.4219	5-3/8	3-15/16	C69371	C69371HT
29/64	7/16	.4375	5-1/2	4-1/16	C69372	C69372HT
29/64	7/16	.4531	5-5/8	4-3/16	C69373	C69373HT
15/32	15/32	.4688	5-3/4	4-5/16	C69374	C69374HT
31/64	31/64	.4844	5-7/8	4-3/8	C69375	C69375HT
1/2	1/2	.5000	6	4-1/2	C69376	C69376HT

HOLEMAKING

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SETS

Styles: **1600, 1899, 1900, 1898, 1898T**



CLE-LINE

HOLEMAKING

Metal Case (unless noted otherwise)

13-Piece Set
Black Oxide
#C21105



29-Piece Set
TiN
#C19211



60-Piece Set
Bright
#C21122



THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

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drill sizes	no. of pieces	order number				
		1600 Black Oxide	1899 Black Oxide	1900 Black Oxide 3/8" Shank	1898 Bright	1898T TiN
36, 29, 25, 21, 7, F, 5/16, U, 27/64 Taps: (Style# 0402) 6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13	18	—	—	—	C21190	—
1/16"– 3/8" x 1/32"	11	—	C21101	—	C21100	—
1/16"– 1/4" x 1/64"	13	C69034	C21105	—	C21104	—
1/16"– 1/2" x 1/32"	15	*C69035	C21109	C21156	C21108	C19210
1/16"– 3/8" x 1/64"	21	C69036	C21114	—	C21113	—
1/16"– 1/2" x 1/64"	29	*C69037	C21118	C21159	C21117	C19211
A – Z	26	—	C21158	—	—	—
#1 – #60	60	—	C21123	—	C21122	—
1/16"– 1/2" x 1/64", A to Z, #1 – #60	115	—	C21127	—	C21126	—
1mm – 6mm x 0.5mm	11	—	C21130	—	—	—
1mm – 10mm x 0.5mm	19	—	—	—	—	C24380
1mm – 13mm x 0.5mm	25	*C69038	C21131	—	C18127	—
Drill, Tap & Round Die Sets						
5.0, 6.0, 6.7, 8.5, 10.2mm *Plastic Case	Taps/Round Dies: (Style# 0411/0710M): M6 x 1.0, M7 x 1.0, M8 x 1.25, M10 x 1.5, M12 x 1.75	18	—	C00451	—	—

SETS Drill and Tap

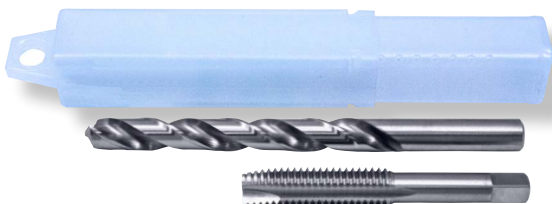
Styles: **1860**

Note

Drill style: **1898** bright

Uses Cle-Line Tap Style: #0411 Spiral Point

Plastic Tube Case



jobber drill sizes	plug tap spiral point	no. of pieces	order number 1860 bright
36	6-32	2	C22305
29	8-32	2	C22304
25	10-24	2	C22307
21	10-32	2	C22306
7	1/4-20	2	C22308
F	5/16-18	2	C22300
5/16"	3/8-16	2	C22303
U	7/16-14	2	C22302
27/64"	1/2-13	2	C22301



CLE-LINE



P	ASME B94.11M	118°
K	HSS	Helix Regular 21° to 34°
N	Bright	Straight Shank



Note
For general purpose drilling
and maintenance applications.

drill diameter	decimal equivalent	overall length	flute length	order number
				1898L Bright
3/64	.0469	1-3/4	3/4	C18400
1/16	.0625	1-7/8	7/8	C18401
5/64	.0781	2	1	C18402
3/32	.0938	2-1/4	1-1/4	C18403
7/64	.1094	2-5/8	1-1/2	C18404
1/8	.1250	2-3/4	1-5/8	C18405
9/64	.1406	2-7/8	1-3/4	C18406
5/32	.1562	3-1/8	2	C18407
11/64	.1719	3-1/4	2-1/8	C18408
3/16	.1875	3-1/2	2-5/16	C18409
13/64	.2031	3-5/8	2-7/16	C18410
7/32	.2188	3-3/4	2-1/2	C18411
15/64	.2344	3-7/8	2-5/8	C18412
1/4	.2500	4	2-3/4	C18413
17/64	.2656	4-1/8	2-7/8	C18414
9/32	.2812	4-1/4	2-15/16	C18415
19/64	.2969	4-3/8	3-1/16	C18416
5/16	.3125	4-1/2	3-3/16	C18417
21/64	.3281	4-5/8	3-5/16	C18418
11/32	.3438	4-3/4	3-7/16	C18419
23/64	.3594	4-7/8	3-1/2	C18420
3/8	.3750	5	3-5/8	C18421
25/64	.3906	5-1/8	3-3/4	C18422
13/32	.4062	5-1/4	3-7/8	C18423
27/64	.4219	5-3/8	3-15/16	C18424
7/16	.4375	5-1/2	4-1/16	C18425
29/64	.4531	5-5/8	4-3/16	C18426
15/32	.4688	5-3/4	4-5/16	C18427
31/64	.4844	5-7/8	4-3/8	C18428
1/2	.5000	6	4-1/2	C18429

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HOLEMAKING - General Application Drills

Jobber Maintenance - Heavy Duty

Styles: 1602, 1604, 1607, 1801, 1878



CLE-LINE

HOLEMAKING



Black Oxide



Black and Gold



Black and Gold with flats

P

ASME
B94.11M

HSS

135° Split

K

DIN
338

Black
Oxide

Straight
Shank

Black
Gold

Flatted
Shank

Note

Three Flats on sizes 3/16" (4.8mm) & larger for tighter chucking.

For Reduced Shank see Style #1605, 1809, 1879.

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

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order number

drill diameter frac/wire/let	decimal mm	overall equivalent	overall length	flute length	order number						
					1602 Black Oxide	1604 Black & Gold	1607 Black & Gold w/flats	1801		1878	
								Black Oxide w/Hanger	Black & Gold w/flats	Black & Gold w/flats w/Hanger	
*1.00	.0394	34	12	—	—	—	—	—	C74001	—	
*60	.0400	1-5/8	11/16	C68342	—	—	C23154	—	C18113	—	
*59	.0410	1-5/8	11/16	C68341	—	—	C23155	—	C18112	—	
*58	.0420	1-5/8	11/16	C68340	—	—	C23156	—	C18111	—	
*57	.0430	1-3/4	3/4	C68339	—	—	C23157	—	C18110	—	
*56	.0465	1-3/4	3/4	C68338	—	—	C23158	—	C18109	—	
*3/64	.0469	1-3/4	3/4	—	—	—	C23214	—	—	—	
*1.20	.0472	38	16	—	—	—	—	—	C74025	—	
*55	.0520	1-7/8	7/8	C68337	—	—	C23159	—	C18108	—	
*54	.0550	1-7/8	7/8	C68336	—	—	C23160	—	C18107	—	
*1.50	.0591	40	18	—	—	—	—	—	C74002	—	
*53	.0595	1-7/8	7/8	C68335	—	—	C23161	—	C18106	—	
1/16	.0625	1-7/8	7/8	C68229	C69042	C69339	C23125	C23125HT	C18000	C18000HT	
1.60	.0630	43	20	—	—	—	—	—	C74026	—	
52	.0635	1-7/8	7/8	C68334	—	—	C23162	—	C18105	—	
51	.0670	2	1	C68333	—	—	C23163	—	C18104	—	
50	.0700	2	1	C68332	—	—	C23164	—	C18103	—	
49	.0730	2	1	C68331	—	—	C23165	—	C18102	—	
48	.0760	2	1	C68330	—	—	C23166	—	C18101	—	
5/64	.0781	2	1	C68230	C69043	C69340	C23126	C23126HT	C18001	C18001HT	
47	.0785	2	1	C68329	—	—	C23167	—	C18100	—	
2.00	.0787	49	24	—	—	—	—	—	C74003	—	
46	.0810	2-1/8	1-1/8	C68328	—	—	C23168	—	C18099	—	
45	.0820	2-1/8	1-1/8	C68327	—	—	C23169	—	C18098	—	
44	.0860	2-1/8	1-1/8	C68326	—	—	C23170	—	C18097	—	
43	.0890	2-1/4	1-1/4	C68325	—	—	C23171	—	C18096	—	
2.30	.0906	53	27	—	—	—	—	—	C74027	—	
42	.0935	2-1/4	1-1/4	C68324	—	—	C23172	—	C18095	—	
3/32	.0938	2-1/4	1-1/4	C68231	C69044	C69341	C23127	C23127HT	C18002	C18002HT	
2.40	.0945	57	30	—	—	—	—	—	C74028	—	
41	.0960	2-3/8	1-3/8	C68323	—	—	C23173	—	C18094	—	
40	.0980	2-3/8	1-3/8	C68322	—	—	C23174	—	C18093	—	
2.50	.0984	57	30	—	—	—	—	—	C74004	—	
39	.0995	2-3/8	1-3/8	C68321	—	—	C23175	—	C18092	—	
38	.1015	2-1/2	1-7/16	C68320	—	—	C23176	—	C18091	—	
37	.1040	2-1/2	1-7/16	C68319	—	—	C23177	—	C18090	—	

*Not split point under 1/16".

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CLE-LINE



drill diameter frac/wire/let	decimal mm	overall equivalent length	flute length	order number							
				1602 Black Oxide	1604 Black & Gold	1607 Black & Gold w/flats	1801 Black Oxide	Black Oxide w/Hanger	1878 Black & Gold w/flats	Black & Gold w/flats w/Hanger	
2.70	.1063	61	33	—	—	—	—	—	C74029	—	
36	.1065	2-1/2	1-7/16	C68318	—	—	C23178	—	C18089	—	
7/64	.1094	2-5/8	1-1/2	C68232	C69045	C69342	C23128	C23128HT	C18003	C18003HT	
35	.1100	2-5/8	1-1/2	C68317	—	—	C23179	—	C18088	—	
2.80	.1102	61	33	—	—	—	—	—	C74030	—	
34	.1110	2-5/8	1-1/2	C68316	—	—	C23180	—	C18087	—	
33	.1130	2-5/8	1-1/2	C68315	—	—	C23181	—	C18086	—	
2.90	.1142	61	33	—	—	—	—	—	C74031	—	
32	.1160	2-3/4	1-5/8	C68314	—	—	C23182	—	C18085	—	
3.00	.1181	61	33	—	—	—	—	—	C74005	—	
31	.1200	2-3/4	1-5/8	C68313	—	—	C23183	—	C18084	—	
3.10	.1220	65	36	—	—	—	—	—	C74032	—	
1/8	.1250	2-3/4	1-5/8	C68233	C69046	C69343	C23129	C23129HT	C18004	C18004HT	
3.20	.1260	65	36	—	—	—	—	—	C74033	—	
30	.1285	2-3/4	1-5/8	C68312	—	—	C23184	—	C18083	—	
3.30	.1299	65	36	—	—	—	—	—	C74034	—	
29	.1360	2-7/8	1-3/4	C68311	—	—	C23185	—	C18082	—	
3.50	.1378	70	39	—	—	—	—	—	C74006	—	
28	.1405	2-7/8	1-3/4	C68310	—	—	C23186	—	C18081	—	
9/64	.1406	2-7/8	1-3/4	C68234	C69047	C69344	C23130	C23130HT	C18005	C18005HT	
3.60	.1417	70	39	—	—	—	—	—	C74035	—	
27	.1440	3	1-7/8	C68309	—	—	C23187	—	C18080	—	
3.70	.1457	70	39	—	—	—	—	—	C74036	—	
26	.1470	3	1-7/8	C68308	—	—	C23188	—	C18079	—	
25	.1495	3	1-7/8	C68307	—	—	C23189	—	C18078	—	
3.80	.1496	75	43	—	—	—	—	—	C74037	—	
24	.1520	3-1/8	2	C68306	—	—	C23190	—	C18077	—	
23	.1540	3-1/8	2	C68305	—	—	C23191	—	C18076	—	
5/32	.1562	3-1/8	2	C68235	C69048	C69345	C23131	C23131HT	C18006	C18006HT	
22	.1570	3-1/8	2	C68304	—	—	C23192	—	C18075	—	
4.00	.1575	75	43	—	—	—	—	—	C74007	—	
21	.1590	3-1/4	2-1/8	C68303	—	—	C23193	—	C18074	—	
20	.1610	3-1/4	2-1/8	C68302	—	—	C23194	—	C18073	—	
4.10	.1614	75	43	—	—	—	—	—	C74038	—	
4.20	.1654	75	43	—	—	—	—	—	C74039	—	
19	.1660	3-1/4	2-1/8	C68301	—	—	C23195	—	C18072	—	
18	.1695	3-1/4	2-1/8	C68300	—	—	C23196	—	C18071	—	
11/64	.1719	3-1/4	2-1/8	C68236	C69049	C69346	C23132	C23132HT	C18007	C18007HT	
17	.1730	3-3/8	2-3/16	C68299	—	—	C23197	—	C18070	—	
16	.1770	3-3/8	2-3/16	C68298	—	—	C23198	—	C18069	—	
4.50	.1772	80	47	—	—	—	—	—	C74008	—	
15	.1800	3-3/8	2-3/16	C68297	—	—	C23199	—	C18068	—	
4.60	.1811	80	47	—	—	—	—	—	C74040	—	
14	.1820	3-3/8	2-3/16	C68296	—	—	C23200	—	C18067	—	
13	.1850	3-1/2	2-5/16	C68295	—	—	C23201	—	C18066	—	
3/16	.1875	3-1/2	2-5/16	C68237	C69050	C69347	C23133	C23133HT	C18008	C18008HT	
12	.1890	3-1/2	2-5/16	C68294	—	—	C23202	—	C18065	—	
4.80	.1890	86	52	—	—	—	—	—	C74041	—	
11	.1910	3-1/2	2-5/16	C68293	—	—	C23203	—	C18064	—	
4.90	.1929	86	52	—	—	—	—	—	C74042	—	
10	.1935	3-5/8	2-7/16	C68292	—	—	C23204	—	C18063	—	
9	.1960	3-5/8	2-7/16	C68291	—	—	C23205	—	C18062	—	
5.00	.1969	86	52	—	—	—	—	—	C74009	—	
8	.1990	3-5/8	2-7/16	C68290	—	—	C23206	—	C18061	—	
5.10	.2008	86	52	—	—	—	—	—	C74043	—	
7	.2010	3-5/8	2-7/16	C68289	—	—	C23207	—	C18060	—	

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HOLEMAKING - General Application Drills

Jobber Maintenance - Heavy Duty

Styles: 1602, 1604, 1607, 1801, 1878 (continued)



CLE-LINE

HOLEMAKING					order number							
	drill diameter frac/wire/let	decimal mm	overall equivalent	flute length	1602 Black Oxide	1604 Black & Gold	1607 Black & Gold w/flats	1801 Black Oxide	Black Oxide w/Hanger	1878 Black & Gold w/flats	Black & Gold w/flats w/Hanger	
HOLEMAKING	13/64	.2031	3-5/8	2-7/16	C68238	C69051	C69348	C23134	C23134HT	C18009	C18009HT	
	6	.2040	3-3/4	2-1/2	C68288	—	—	C23208	—	C18059	—	
		5.20	.2047	86	52	—	—	—	—	C74044	—	
	5	.2055	3-3/4	2-1/2	C68287	—	—	C23209	—	C18058	—	
	4	.2090	3-3/4	2-1/2	C68286	—	—	C23210	—	C18057	—	
	3	.2130	3-3/4	2-1/2	C68285	—	—	C23211	—	C18056	—	
		5.50	.2165	93	57	—	—	—	—	C74010	—	
	7/32	.2188	3-3/4	2-1/2	C68239	C69052	C69349	C23135	C23135HT	C18010	C18010HT	
	2	.2210	3-7/8	2-5/8	C68284	—	—	C23212	—	C18055	—	
	1	.2280	3-7/8	2-5/8	C68283	—	—	C23213	—	C18054	—	
	5.90	.2323	93	57	—	—	—	—	C74045	—		
THREADING / DIES	A	.2340	3-7/8	2-5/8	C68258	—	—	C23100	—	C18029	—	
	15/64	.2344	3-7/8	2-5/8	C68240	C69053	C69350	C23136	C23136HT	C18011	C18011HT	
		6.00	.2362	93	57	—	—	—	—	C74011	—	
	B	.2380	4	2-3/4	C68259	—	—	C23101	—	C18030	—	
	C	.2420	4	2-3/4	C68260	—	—	C23102	—	C18031	—	
	D	.2460	4	2-3/4	C68261	—	—	C23103	—	C18032	—	
	1/4, E	.2500	4	2-3/4	C68241	C69054	C69351	C23137	C23137HT	C18012	C18012HT	
		6.40	.2520	101	63	—	—	—	—	C74046	—	
		6.50	.2559	101	63	—	—	—	—	C74012	—	
	F	.2570	4-1/8	2-7/8	C68262	—	—	C23104	—	C18033	—	
	6.60	.2598	101	63	—	—	—	—	C74047	—		
SAWS	G	.2610	4-1/8	2-7/8	C68263	—	—	C23105	—	C18034	—	
		6.70	.2638	101	63	—	—	—	—	C74048	—	
	17/64	.2656	4-1/8	2-7/8	C68242	C69055	C69352	C23138	C23138HT	C18013	C18013HT	
	H	.2660	4-1/8	2-7/8	C68264	—	—	C23106	—	C18035	—	
		6.80	.2677	109	69	—	—	—	—	C74049	—	
		6.90	.2717	109	69	—	—	—	—	C74050	—	
	I	.2720	4-1/8	2-7/8	C68265	—	—	C23107	—	C18036	—	
		7.00	.2756	109	69	—	—	—	—	C74013	—	
	J	.2770	4-1/8	2-7/8	C68266	—	—	C23108	—	C18037	—	
	K	.2810	4-1/4	2-15/16	C68267	—	—	C23109	—	C18038	—	
CARBIDE BURS/ROUTERS	9/32	.2812	4-1/4	2-15/16	C68243	C69056	C69353	C23139	C23139HT	C18014	C18014HT	
		7.20	.2835	109	69	—	—	—	—	C74051	—	
		7.30	.2874	109	69	—	—	—	—	C74052	—	
	L	.2900	4-1/4	2-15/16	C68268	—	—	C23110	—	C18039	—	
	M	.2950	4-3/8	3-1/16	C68269	—	—	C23111	—	C18040	—	
		7.50	.2953	109	69	—	—	—	—	C74014	—	
	19/64	.2969	4-3/8	3-1/16	C68244	C69057	C69354	C23140	C23140HT	C18015	C18015HT	
	N	.3020	4-3/8	3-1/16	C68270	—	—	C23112	—	C18041	—	
	5/16	.3125	4-1/2	3-3/16	C68245	C69058	C69355	C23141	C23141HT	C18016	C18016HT	
		8.00	.3150	117	75	—	—	—	—	C74015	—	
MERCHANDISER	O	.3160	4-1/2	3-3/16	C68271	—	—	C23113	—	C18042	—	
	P	.3230	4-5/8	3-5/16	C68272	—	—	C23114	—	C18043	—	
		8.30	.3268	117	75	—	—	—	—	C74053	—	
	21/64	.3281	4-5/8	3-5/16	C68246	C69059	C69356	C23142	C23142HT	C18017	C18017HT	
	Q	.3320	4-3/4	3-7/16	C68273	—	—	C23115	—	C18044	—	
		8.50	.3346	117	75	—	—	—	—	C74016	—	
	R	.3390	4-3/4	3-7/16	C68274	—	—	C23116	—	C18045	—	
	11/32	.3438	4-3/4	3-7/16	C68247	C69060	C69357	C23143	C23143HT	C18018	C18018HT	
	S	.3480	4-7/8	3-1/2	C68275	—	—	C23117	—	C18046	—	
		9.00	.3543	125	81	—	—	—	—	C74017	—	
INDEX	T	.3580	4-7/8	3-1/2	C68276	—	—	C23118	—	C18047	—	
	23/64	.3594	4-7/8	3-1/2	C68248	C69061	C69358	C23144	C23144HT	C18019	C18019HT	
	U	.3680	5	3-5/8	C68277	—	—	C23119	—	C18048	—	
		9.50	.3740	125	81	—	—	—	—	C74018	—	

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drill diameter frac/wire/let mm	decimal equivalent	overall length	flute length	order number							
				1602 Black Oxide	1604 Black & Gold	1607 Black & Gold w/flats	1801		1878		
3/8	.3750	5	3-5/8	C68249	C69062	C69359	C23145	C23145HT	C18020	C18020HT	
V	.3770	5	3-5/8	C68278	—	—	C23120	—	C18049	—	
W	.3860	5-1/8	3-3/4	C68279	—	—	C23121	—	C18050	—	
25/64	.3906	5-1/8	3-3/4	C68250	C69063	C69360	C23146	C23146HT	C18021	C18021HT	
	10.00	.3937	133	87	—	—	—	—	C74019	—	
X	.3970	5-1/8	3-3/4	C68280	—	—	C23122	—	C18051	—	
	10.20	.4016	133	87	—	—	—	—	C74054	—	
Y	.4040	5-1/4	3-7/8	C68281	—	—	C23123	—	C18052	—	
13/32	.4062	5-1/4	3-7/8	C68251	C69064	C69361	C23147	C23147HT	C18022	C18022HT	
Z	.4130	5-1/4	3-7/8	C68282	—	—	C23124	—	C18053	—	
	10.50	.4134	133	87	—	—	—	—	C74020	—	
27/64	.4219	5-3/8	3-15/16	C68252	C69065	C69362	C23148	C23148HT	C18023	C18023HT	
	10.80	.4252	142	94	—	—	—	—	C74055	—	
	11.00	.4331	142	94	—	—	—	—	C74021	—	
7/16	.4375	5-1/2	4-1/16	C68253	C69066	C69363	C23149	C23149HT	C18024	C18024HT	
	11.50	.4528	142	94	—	—	—	—	C74022	—	
29/64	.4531	5-5/8	4-3/16	C68254	C69067	C69364	C23150	C23150HT	C18025	C18025HT	
	11.80	.4646	142	94	—	—	—	—	C74056	—	
15/32	.4688	5-3/4	4-5/16	C68255	C69068	C69365	C23151	C23151HT	C18026	C18026HT	
	12.00	.4724	151	101	—	—	—	—	C74023	—	
31/64	.4844	5-7/8	4-3/8	C68256	C69069	C69366	C23152	C23152HT	C18027	C18027HT	
	12.50	.4921	151	101	—	—	—	—	C74024	—	
1/2	.5000	6	4-1/2	C68257	C69070	C69367	C23153	C23153HT	C18028	C18028HT	
	13.00	.5118	151	101	—	—	—	—	C74057	—	

Heavy Duty 3/8" Reduced Shank

Styles: 1605, 1809, 1879



Style #1605



Style #1809



Style #1879

drill diameter	decimal equivalent	overall length	flute length	order number			
				1605 Black and Gold	1809 Black Oxide	1879	
25/64	.3906	5-1/8	3-3/4	—	—	C18114	C18114HT
13/32	.4062	5-1/4	3-7/8	—	—	C18115	C18115HT
27/64	.4219	5-3/8	3-15/16	C69073	C20633	C18116	C18116HT
7/16	.4375	5-1/2	4-1/16	C69074	C20634	C18117	C18117HT
29/64	.4531	5-5/8	4-3/16	C69075	C20635	C18118	C18118HT
15/32	.4688	5-3/4	4-5/16	C69076	C20636	C18119	C18119HT
31/64	.4844	5-7/8	4-3/8	C69077	C20637	C18120	C18120HT
1/2	.5000	6	4-1/2	C69078	C20638	C18121	C18121HT
*17/32	.5312	6-5/8	4-13/16	—	C20659	—	—
*9/16	.5625	6-5/8	4-13/16	—	C20660	—	—
*5/8	.6094	7-1/8	5-3/16	—	C20661	—	—
*11/16	.6875	7-5/8	5-5/8	—	C20662	—	—

*118° conventional point on size above 1/2" diameter



HOLEMAKING - General Application Drills

SETS Jobber - Heavy Duty

Styles: **1602, 1604, 1605, 1607, 1801, 1878, 1879**



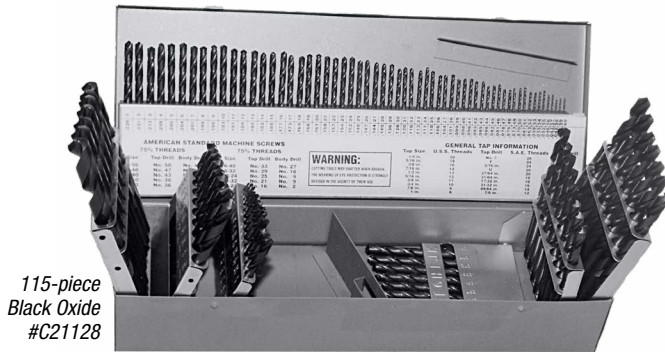
CLE-LINE

Metal Case (unless noted otherwise)

HOLEMAKING



29-piece Bit Barrel Set #C18128



115-piece Black Oxide #C21128

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CARBIDE BURS/ROUTERS

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		order number						
	no. of pieces	1602 Black Oxide	1604 Black & Gold	1605 3/8" shank Black & Gold	1607 with flats Black & Gold	1801 Black Oxide	1878 with flats Black & Gold	1878/1879 3/8" shank Black & Gold
drill sizes								
36, 29, 25, 21, 7, F, 5/16, U, 27/64	18	—	—	—	—	—	**C21191	—
Taps: 6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13		—	—	—	—	—	**C21192	—
1/16" - 1/4" x 1/64"	13	C69381	C69030	—	C68343	C21157	C18123	—
1/16" - 1/2" x 1/32"	15	C69382	C69031	—	C68461	C21110	C18124	—
1/16" - 3/8" x 1/64"	21	—	—	—	—	C21115	—	—
1/16" - 1/2" x 1/64"	29	*C69383	*C69032	*C69033	*C69368	C21119	C18125	C18122
Bit Barrel™								
1/16" - 1/2" x 1/64"	29	—	—	—	*C69385	—	*C18128	—
#1 - #60	60	—	—	—	—	C21124	—	—
1/16" - 1/2" x 1/64", A to Z, #1 - #60	115	—	—	—	—	C21128	—	—
Metric: 1mm to 6mm	11						C74058	
1mm to 13mm	25						C74059	

*Plastic Case **C21191 - Hand taps **C21192 - Spiral point taps

SETS Specialty Drill & Screw Extractors

Styles: **1864**

Plastic Tube



P Black Gold
K
H

Note
Drill style: **1878** Black & Gold

jobber drill	screw extractor	no. of pcs.	order number	jobber drill	screw extractor	no. of pcs.	order number
5/64"	#1	2	1864 C22311	1/4", E	#4	2	C22314
7/64"	#2	2	C22312	17/64"	#5	2	C22315
5/32"	#3	2	C22313	13/32"	#6	2	C22316



Jobber - TiN Tip

Styles: 1500-TT, 1501-TT

P **ASME B94.11M** **1500-TT** **HSS** **Helix Regular** 21° to 34°

K **135° Split** **1501-TT** **HS-Co** **Straight Shank**

N **TiN**



drill diameter frac/wire/let	decimal equivalent	overall length	flute length	order number	
				1500-TT HSS TiN	1501-TT HS-Co TiN
1/16	.0625	1-7/8	7/8	C97301	C66001
52	.0635	1-7/8	7/8	C97406	C66106
51	.0670	2	1	C97405	C66105
50	.0700	2	1	C97404	C66104
49	.0730	2	1	C97403	C66103
48	.0760	2	1	C97402	C66102
5/64	.0781	2	1	C97302	C66002
47	.0785	2	1	C97401	C66101
46	.0810	2-1/8	1-1/8	C97400	C66100
45	.0820	2-1/8	1-1/8	C97399	C66099
44	.0860	2-1/8	1-1/8	C97398	C66098
43	.0890	2-1/4	1-1/4	C97397	C66097
42	.0935	2-1/4	1-1/4	C97396	C66096
3/32	.0938	2-1/4	1-1/4	C97303	C66003
41	.0960	2-3/8	1-3/8	C97395	C66095
40	.0980	2-3/8	1-3/8	C97394	C66094
39	.0995	2-3/8	1-3/8	C97393	C66093
38	.1015	2-1/2	1-7/16	C97392	C66092
37	.1040	2-1/2	1-7/16	C97391	C66091
36	.1065	2-1/2	1-7/16	C97390	C66090
7/64	.1094	2-5/8	1-1/2	C97304	C66004
35	.1100	2-5/8	1-1/2	C97389	C66089
34	.1110	2-5/8	1-1/2	C97388	C66088
33	.1130	2-5/8	1-1/2	C97387	C66087
32	.1160	2-3/4	1-5/8	C97386	C66086
31	.1200	2-3/4	1-5/8	C97385	C66085
1/8	.1250	2-3/4	1-5/8	C97305	C66005
30	.1285	2-3/4	1-5/8	C97384	C66084
29	.1360	2-7/8	1-3/4	C97383	C66083
28	.1405	2-7/8	1-3/4	C97382	C66082
9/64	.1406	2-7/8	1-3/4	C97306	C66006
27	.1440	3	1-7/8	C97381	C66081
26	.1470	3	1-7/8	C97380	C66080
25	.1495	3	1-7/8	C97379	C66079
24	.1520	3-1/8	2	C97378	C66078
23	.1540	3-1/8	2	C97377	C66077
5/32	.1562	3-1/8	2	C97307	C66007
22	.1570	3-1/8	2	C97376	C66076
21	.1590	3-1/4	2-1/8	C97375	C66075
20	.1610	3-1/4	2-1/8	C97374	C66074
19	.1660	3-1/4	2-1/8	C97373	C66073
18	.1695	3-1/4	2-1/8	C97372	C66072

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HOLEMAKING

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	drill diameter frac/wire/let	decimal equivalent	overall length	flute length	order number		
					1500-TT	1501-TT	
					HSS TiN	HS-Co TiN	
HOLEMAKING	11/64	.1719	3-1/4	2-1/8	C97308	C66008	
	17	.1730	3-3/8	2-3/16	C97371	C66071	
	16	.1770	3-3/8	2-3/16	C97370	C66070	
	15	.1800	3-3/8	2-3/16	C97369	C66069	
	14	.1820	3-3/8	2-3/16	C97368	C66068	
	13	.1850	3-1/2	2-5/16	C97367	C66067	
THREADING / DIES	3/16	.1875	3-1/2	2-5/16	C97309	C66009	
	12	.1890	3-1/2	2-5/16	C97366	C66066	
	11	.1910	3-1/2	2-5/16	C97365	C66065	
	10	.1935	3-5/8	2-7/16	C97364	C66064	
	9	.1960	3-5/8	2-7/16	C97363	C66063	
	8	.1990	3-5/8	2-7/16	C97362	C66062	
	7	.2010	3-5/8	2-7/16	C97361	C66061	
	13/64	.2031	3-5/8	2-7/16	C97310	C66010	
	6	.2040	3-3/4	2-1/2	C97360	C66060	
	5	.2055	3-3/4	2-1/2	C97359	C66059	
	4	.2090	3-3/4	2-1/2	C97358	C66058	
	3	.2130	3-3/4	2-1/2	C97357	C66057	
SAWS	7/32	.2188	3-3/4	2-1/2	C97311	C66011	
	2	.2210	3-7/8	2-5/8	C97356	C66056	
	1	.2280	3-7/8	2-5/8	C97355	C66055	
	A	.2340	3-7/8	2-5/8	C97330	C66030	
	15/64	.2344	3-7/8	2-5/8	C97312	C66012	
	B	.2380	4	2-3/4	C97331	C66031	
	C	.2420	4	2-3/4	C97332	C66032	
	D	.2460	4	2-3/4	C97333	C66033	
	1/4-E	.2500	4	2-3/4	C97313	C66013	
	F	.2570	4-1/8	2-7/8	C97334	C66034	
CARBIDE BURS/ROUTERS	G	.2610	4-1/8	2-7/8	C97335	C66035	
	17/64	.2656	4-1/8	2-7/8	C97314	C66014	
	H	.2660	4-1/8	2-7/8	C97336	C66036	
	I	.2720	4-1/8	2-7/8	C97337	C66037	
	J	.2770	4-1/8	2-7/8	C97338	C66038	
	K	.2810	4-1/4	2-15/16	C97339	C66039	
	9/32	.2812	4-1/4	2-15/16	C97315	C66015	
	L	.2900	4-1/4	2-15/16	C97340	C66040	
	M	.2950	4-3/8	3-1/16	C97341	C66041	
	19/64	.2969	4-3/8	3-1/16	C97316	C66016	
	N	.3020	4-3/8	3-1/16	C97342	C66042	
	MERCHANDISER	5/16	.3125	4-1/2	3-3/16	C97317	C66017
O		.3160	4-1/2	3-3/16	C97343	C66043	
P		.3230	4-5/8	3-5/16	C97344	C66044	
21/64		.3281	4-5/8	3-5/16	C97318	C66018	
Q		.3320	4-3/4	3-7/16	C97345	C66045	
R		.3390	4-3/4	3-7/16	C97346	C66046	
11/32		.3438	4-3/4	3-7/16	C97319	C66019	
S		.3480	4-7/8	3-1/2	C97347	C66047	
T		.3580	4-7/8	3-1/2	C97348	C66048	
23/64		.3594	4-7/8	3-1/2	C97320	C66020	
INDEX		U	.3680	5	3-5/8	C97349	C66049
		3/8	.3750	5	3-5/8	C97321	C66021
	V	.3770	5	3-5/8	C97350	C66050	
	W	.3860	5-1/8	3-3/4	C97351	C66051	
	25/64	.3906	5-1/8	3-3/4	C97322	C66022	

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CLE-LINE

Jobber - TiN Tip

Styles: 1500-TT, 1501-TT

drill diameter frac/wire/let	decimal equivalent	overall length	flute length	order number	
				1500-TT HSS TiN	1501-TT HS-Co TiN
X	.3970	5-1/8	3-3/4	C97352	C66052
Y	.4040	5-1/4	3-7/8	C97353	C66053
13/32	.4062	5-1/4	3-7/8	C97323	C66023
Z	.4130	5-1/4	3-7/8	C97354	C66054
27/64	.4219	5-3/8	3-15/16	C97324	C66024
7/16	.4375	5-1/2	4-1/16	C97325	C66025
29/64	.4531	5-5/8	4-3/16	C97326	C66026
15/32	.4688	5-3/4	4-5/16	C97327	C66027
31/64	.4844	5-7/8	4-3/8	C97328	C66028
1/2	.5000	6	4-1/2	C97329	C66029

Jobber - TiN Tip SETS
Styles: 1500-TT, 1501-TT

Metal Case

drill sizes	no. of pieces	order number	
		1500-TT HSS TiN	1501-TT HS-Co TiN
1/16-1/2 x 1/32	15	C97414	C66114
1/16-1/2 x 1/64	29	C97413	C66113

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CLE-LINE

HOLEMAKING



Black and Gold



TiN

Note

For a wide range of material applications.

Exceptional for deeper drilling.

Faster penetration rates than conventional HSS heavy duty jobber drills.

Aerospace-style 135° split point reduces drill "walking".



THREADING / DIES

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drill diameter		decimal equivalent	overall length	flute length	order number	
frac/wire/let	mm				1872 Black & Gold	1872TN TiN
	*1.00	.0394	34	12	C18570	—
	*1.50	.0591	40	18	C18573	—
1/16		.0625	1-7/8	7/8	C18430	C18630
	1.60	.0630	43	20	C18574	—
	1.65	.0650	43	20	C18575	—
	1.75	.0689	46	22	C18576	—
	1.80	.0709	46	22	C18577	—
5/64		.0781	2	1	C18431	C18631
	2.00	.0787	49	24	C18578	—
	2.05	.0807	49	24	C18579	—
	2.30	.0906	53	27	C18580	—
3/32		.0938	2-1/4	1-1/4	C18432	C18632
41		.0960	2-3/8	1-3/8	C18541	—
40		.0980	2-3/8	1-3/8	C18540	—
	2.50	.0984	57	30	C18581	—
39		.0995	2-3/8	1-3/8	C18539	—
38		.1015	2-1/2	1-7/16	C18538	—
	2.60	.1024	57	30	C18582	—
37		.1040	2-1/2	1-7/16	C18537	—
36		.1065	2-1/2	1-7/16	C18536	—
7/64		.1094	2-5/8	1-1/2	C18433	C18633
35		.1100	2-5/8	1-1/2	C18535	—
34		.1110	2-5/8	1-1/2	C18534	—
33		.1130	2-5/8	1-1/2	C18533	—
	2.90	.1142	61	33	C18583	—
32		.1160	2-3/4	1-5/8	C18532	—
	3.00	.1181	61	33	C18584	—
31		.1200	2-3/4	1-5/8	C18531	—
1/8		.1250	2-3/4	1-5/8	C18434	C18634
	3.20	.1260	65	36	C18585	—
30		.1285	2-3/4	1-5/8	C18530	—
	3.30	.1299	65	36	C18586	—
29		.1360	2-7/8	1-3/4	C18529	—
	3.50	.1378	70	39	C18587	—
28		.1405	2-7/8	1-3/4	C18528	—
9/64		.1406	2-7/8	1-3/4	C18435	C18635
27		.1440	3	1-7/8	C18527	—
	3.70	.1457	70	39	C18588	—
26		.1470	3	1-7/8	C18526	—
25		.1495	3	1-7/8	C18525	—
24		.1520	3-1/8	2	C18524	—
23		.1540	3-1/8	2	C18523	—
5/32		.1562	3-1/8	2	C18436	C18636
22		.1570	3-1/8	2	C18522	—
	4.00	.1575	75	43	C18589	—
21		.1590	3-1/4	2-1/8	C18521	—

*Not split point.

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CLE-LINE



drill diameter		decimal equivalent	overall length	flute length	order number	
frac/wire/let	mm				1872 Black & Gold	1872TN TiN
20		.1610	3-1/4	2-1/8	C18520	—
	4.10	.1614	75	43	C18590	—
	4.20	.1654	75	43	C18591	—
19		.1660	3-1/4	2-1/8	C18519	—
18		.1695	3-1/4	2-1/8	C18518	—
11/64		.1719	3-1/4	2-1/8	C18437	C18637
17		.1730	3-3/8	2-3/16	C18517	—
16		.1770	3-3/8	2-3/16	C18516	—
	4.50	.1772	80	47	C18592	—
15		.1800	3-3/8	2-3/16	C18515	—
14		.1820	3-3/8	2-3/16	C18514	—
13		.1850	3-1/2	2-5/16	C18513	—
3/16		.1875	3-1/2	2-5/16	C18438	C18638
12		.1890	3-1/2	2-5/16	C18512	—
11		.1910	3-1/2	2-5/16	C18511	—
10		.1935	3-5/8	2-7/16	C18510	—
9		.1960	3-5/8	2-7/16	C18509	—
	5.00	.1969	86	52	C18593	—
8		.1990	3-5/8	2-7/16	C18508	—
7		.2010	3-5/8	2-7/16	C18507	—
13/64		.2031	3-5/8	2-7/16	C18439	C18639
6		.2040	3-3/4	2-1/2	C18506	—
5		.2055	3-3/4	2-1/2	C18505	—
4		.2090	3-3/4	2-1/2	C18504	—
3		.2130	3-3/4	2-1/2	C18503	—
	5.50	.2165	93	57	C18594	—
7/32		.2188	3-3/4	2-1/2	C18440	C18640
2		.2210	3-7/8	2-5/8	C18502	—
1		.2280	3-7/8	2-5/8	C18501	—
15/64		.2344	3-7/8	2-5/8	C18441	C18641
	6.00	.2362	93	57	C18595	—
1/4		.2500	4	2-3/4	C18442	C18642
	6.50	.2559	101	63	C18596	—
F		.2570	4-1/8	2-7/8	C18474	—
	6.70	.2638	101	63	C18597	—
17/64		.2656	4-1/8	2-7/8	C18443	C18643
	6.80	.2677	109	69	C18598	—
	7.00	.2756	109	69	C18599	—
9/32		.2812	4-1/4	2-15/16	C18444	C18644
	7.40	.2913	109	69	C18600	—
	7.50	.2953	109	69	C18601	—
19/64		.2969	4-3/8	3-1/16	C18445	C18645
	7.80	.3071	117	75	C18602	—
5/16		.3125	4-1/2	3-3/16	C18446	C18646
	8.00	.3150	117	75	C18603	—
21/64		.3281	4-5/8	3-5/16	C18447	C18647
Q		.3320	4-3/4	3-7/16	C18485	—
	8.50	.3346	117	75	C18604	—
	8.70	.3425	125	81	C18605	—
11/32		.3438	4-3/4	3-7/16	C18459	C18648
	9.00	.3543	125	81	C18606	—
23/64		.3594	4-7/8	3-1/2	C18449	C18649
	9.40	.3701	125	81	C18607	—
	9.50	.3740	125	81	C18608	—
3/8		.3750	5	3-5/8	C18450	C18650
25/64		.3906	5-1/8	3-3/4	C18451	C18651
	10.00	.3937	133	87	C18609	—
	10.20	.4016	133	87	C18610	—
13/32		.4062	5-1/4	3-7/8	C18452	C18652
	10.50	.4134	133	87	C18611	—

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HOLEMAKING

frac/wire/let	drill diameter mm	decimal equivalent	overall length	flute length	order number	
					1872 Black & Gold	1872TN TiN
27/64		.4219	5-3/8	3-15/16	C18453	C18653
	10.80	.4252	142	94	C18612	—
	11.00	.4331	142	94	C18613	—
7/16		.4375	5-1/2	4-1/16	C18454	C18654
	11.20	.4409	142	94	C18614	—
	11.50	.4528	142	94	C18615	—
29/64		.4531	5-5/8	4-3/16	C18455	C18655
15/32		.4688	5-3/4	4-5/16	C18456	C18656
	12.00	.4724	151	101	C18616	—
	31/64	.4844	5-7/8	4-3/8	C18457	C18657
1/2	12.50	.4921	151	101	C18617	—
	13.00	.5000	6	4-1/2	C18458	C18658
		.5118	151	101	C18618	—

THREADING / DIES

SETS Heavy Duty Parabolic Flute**Styles: 1872, 1872TN**

SAWS

Metal Case, unless noted otherwise



29-Piece Set
Black & Gold
#C18622

CARBIDE BURS/ROUTERS

drill sizes	no. of pieces	order number	
		1872 Black & Gold	1872TN TiN
1/16" - 1/4" x 1/64"	13	C18619	—
1/16" - 1/2" x 1/32"	15	C18620	—
1/16" - 3/8" x 1/64"	21	C18621	—
1/16" - 1/2" x 1/64"	29	C18622	*C18623
1mm - 6mm x 0.5mm	11	C18626	—
1mm - 13mm x 1mm	25	C18628	—

*Bit Barrel

MERCHANDISER

INDEX



P Hex Shank **Cobalt** Helix Regular 21° to 34°

K Straw Oxide 135° Split

N



Note
*11/64" and smaller have a straight shank with no flats.
3/16" and larger have a straight shank with 6 flats.

drill diameter	decimal equivalent	overall length	flat length	order number	
				straw	straw w/ Hanger
*1/16	.0625	1.875	—	C10600	C10600HT
*5/64	.0781	2.000	—	C10601	C10601HT
*3/32	.0938	2.250	—	C10602	C10602HT
*7/64	.1094	2.625	—	C10603	C10603HT
*1/8	.1250	2.750	—	C10604	C10604HT
*9/64	.1406	2.875	—	C10605	C10605HT
*5/32	.1562	3.125	—	C10606	C10606HT
*11/64	.1719	3.250	—	C10607	C10607HT
3/16	.1875	3.500	1.125	C10608	C10608HT
13/64	.2031	3.625	1.125	C10609	C10609HT
7/32	.2188	3.750	1.125	C10610	C10610HT
15/64	.2344	3.875	1.125	C10611	C10611HT
1/4	.2500	4.000	1.125	C10612	C10612HT
17/64	.2656	4.125	1.125	C10613	C10613HT
9/32	.2812	4.250	1.125	C10614	C10614HT
19/64	.2969	4.375	1.125	C10615	C10615HT
5/16	.3125	4.500	1.125	C10616	C10616HT
21/64	.3281	4.625	1.125	C10617	C10617HT
11/32	.3438	4.750	1.125	C10618	C10618HT
23/64	.3594	4.875	1.125	C10619	C10619HT
3/8	.3750	5.000	1.125	C10620	C10620HT
25/64	.3906	5.125	1.125	C10621	C10621HT
13/32	.4062	5.250	1.125	C10622	C10622HT
27/64	.4219	5.375	1.125	C10623	C10623HT
7/16	.4375	5.500	1.125	C10624	C10624HT
29/64	.4531	5.625	1.125	C10625	C10625HT
15/32	.4688	5.750	1.125	C10626	C10626HT
31/64	.4844	5.875	1.125	C10627	C10627HT
1/2	.5000	6.000	1.125	C10628	C10628HT

Jobber - Hex Shank, Cobalt SETS
Style: 1804

drill sizes	no. of pieces	order number
		1804 straw
1/16" - 1/2" x 1/64"	29	C10629



HOLEMAKING
THREADING / DIES
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HOLEMAKING

S N Cobalt 135° Split
P H Straw Oxide Helix Regular 21° to 34°
K ASME B94.11M Straight Shank



Note
 Designed to drill tough, high-tensile materials and work-hardening materials like high-strength alloy steels, stainless steel, titanium, manganese steel, armor plate, and inconel.

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

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					order number		
drill diameter		decimal	overall	flute	1603	1802	Straw Oxide
frac/wire/let	mm	equivalent	length	length	Straw Oxide	Straw Oxide	w/ Hanger
	*1.00	.0394	34	12	—	C18900	—
*60		.0400	1-5/8	11/16	C68460	C23374	—
*59		.0410	1-5/8	11/16	C68459	C23375	—
*58		.0420	1-5/8	11/16	C68458	C23376	—
*57		.0430	1-3/4	3/4	C68457	C23377	—
*56		.0465	1-3/4	3/4	C68456	C23378	—
	*1.20	.0472	38	16	—	C18902	—
*55		.0520	1-7/8	7/8	C68455	C23379	—
*54		.0550	1-7/8	7/8	C68454	C23380	—
	*1.50	.0591	40	18	—	C18905	—
*53		.0595	1-7/8	7/8	C68453	C23381	—
1/16		.0625	1-7/8	7/8	C68344	C23345	C23345HT
	1.60	.0630	43	20	—	C18906	—
52		.0635	1-7/8	7/8	C68452	C23382	—
51		.0670	2	1	C68451	C23383	—
50		.0700	2	1	C68450	C23384	—
49		.0730	2	1	C68449	C23385	—
48		.0760	2	1	C68448	C23386	—
5/64		.0781	2	1	C68345	C23346	C23346HT
47		.0785	2	1	C68447	C23387	—
	2.00	.0787	49	24	—	C18910	—
46		.0810	2-1/8	1-1/8	C68446	C23388	—
45		.0820	2-1/8	1-1/8	C68445	C23389	—
44		.0860	2-1/8	1-1/8	C68444	C23390	—
43		.0890	2-1/4	1-1/4	C68443	C23391	—
42		.0935	2-1/4	1-1/4	C68442	C23392	—
3/32		.0938	2-1/4	1-1/4	C68346	C23347	C23347HT
	2.40	.0945	57	30	—	C18914	—
41		.0960	2-3/8	1-3/8	C68441	C23393	—
40		.0980	2-3/8	1-3/8	C68440	C23394	—
	2.50	.0984	57	30	—	C18915	—
39		.0995	2-3/8	1-3/8	C68439	C23395	—
38		.1015	2-1/2	1-7/16	C68438	C23396	—
37		.1040	2-1/2	1-7/16	C68437	C23397	—
36		.1065	2-1/2	1-7/16	C68436	C23398	—
7/64		.1094	2-5/8	1-1/2	C68347	C23348	C23348HT
35		.1100	2-5/8	1-1/2	C68435	C23399	—

*Not split point.

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CLE-LINE



drill diameter		decimal equivalent	overall length	flute length	order number		
frac/wire/let	mm				1603 Straw Oxide	1802 Straw Oxide	Straw Oxide w/ Hanger
34		.1110	2-5/8	1-1/2	C68434	C23400	—
33		.1130	2-5/8	1-1/2	C68433	C23401	—
32		.1160	2-3/4	1-5/8	C68432	C23402	—
	3.00	.1181	61	33	—	C18920	—
31		.1200	2-3/4	1-5/8	C68431	C23403	—
	3.10	.1220	65	36	—	C18921	—
1/8		.1250	2-3/4	1-5/8	C68351	C23349	C23349HT
	3.20	.1260	65	36	—	C18922	—
30		.1285	2-3/4	1-5/8	C68430	C23404	—
	3.30	.1299	65	36	—	C18923	—
29		.1360	2-7/8	1-3/4	C68429	C23405	—
	3.50	.1378	70	39	—	C18925	—
28		.1405	2-7/8	1-3/4	C68428	C23406	—
9/64		.1406	2-7/8	1-3/4	C68352	C23350	C23350HT
	3.60	.1417	70	39	—	C18926	—
27		.1440	3	1-7/8	C68427	C23407	—
	3.70	.1457	70	39	—	C18927	—
26		.1470	3	1-7/8	C68426	C23408	—
25		.1495	3	1-7/8	C68425	C23409	—
24		.1520	3-1/8	2	C68424	C23410	—
	3.90	.1535	75	43	—	C18929	—
23		.1540	3-1/8	2	C68423	C23411	—
5/32		.1562	3-1/8	2	C68353	C23351	C23351HT
22		.1570	3-1/8	2	C68422	C23412	—
	4.00	.1575	75	43	—	C18930	—
21		.1590	3-1/4	2-1/8	C68421	C23413	—
20		.1610	3-1/4	2-1/8	C68420	C23414	—
	4.10	.1614	75	43	—	C18931	—
	4.20	.1654	75	43	—	C18932	—
19		.1660	3-1/4	2-1/8	C68419	C23415	—
18		.1695	3-1/4	2-1/8	C68418	C23416	—
11/64		.1719	3-1/4	2-1/8	C68354	C23352	C23352HT
17		.1730	3-3/8	2-3/16	C68417	C23417	—
16		.1770	3-3/8	2-3/16	C68416	C23418	—
	4.50	.1772	80	47	—	C18935	—
15		.1800	3-3/8	2-3/16	C68415	C23419	—
	4.60	.1811	80	47	—	C18936	—
14		.1820	3-3/8	2-3/16	C68414	C23420	—
13		.1850	3-1/2	2-5/16	C68413	C23421	—
3/16		.1875	3-1/2	2-5/16	C68355	C23353	C23353HT
12		.1890	3-1/2	2-5/16	C68412	C23422	—
	4.80	.1890	86	52	—	C18938	—
11		.1910	3-1/2	2-5/16	C68411	C23423	—
	4.90	.1929	86	52	—	C18939	—
10		.1935	3-5/8	2-7/16	C68410	C23424	—
9		.1960	3-5/8	2-7/16	C68409	C23425	—
	5.00	.1969	86	52	—	C18940	—
8		.1990	3-5/8	2-7/16	C68408	C23426	—
	5.10	.2008	86	52	—	C18941	—
7		.2010	3-5/8	2-7/16	C68407	C23427	—
13/64		.2031	3-5/8	2-7/16	C68356	C23354	C23354HT
6		.2040	3-3/4	2-1/2	C68406	C23428	—
	5.20	.2047	86	52	—	C18942	—
5		.2055	3-3/4	2-1/2	C68405	C23429	—
4		.2090	3-3/4	2-1/2	C68404	C23430	—
3		.2130	3-3/4	2-1/2	C68403	C23431	—

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HOLEMAKING	drill diameter		decimal equivalent	overall length	flute length	order number		
	frac/wire/let	mm				1603	1802	
						Straw Oxide	Straw Oxide	Straw Oxide w/ Hanger
		5.50	.2165	93	57	—	C18945	—
	7/32		.2188	3-3/4	2-1/2	C68357	C23355	C23355HT
	2		.2210	3-7/8	2-5/8	C68402	C23432	—
	1		.2280	3-7/8	2-5/8	C68401	C23433	—
	A		.2340	3-7/8	2-5/8	C68376	C23320	—
	15/64		.2344	3-7/8	2-5/8	C68358	C23356	C23356HT
		6.00	.2362	93	57	—	C18950	—
	B		.2380	4	2-3/4	C68377	C23321	—
	C		.2420	4	2-3/4	C68378	C23322	—
	D		.2460	4	2-3/4	C68379	C23323	—
	1/4, E		.2500	4	2-3/4	C68359	C23357	C23357HT
		6.50	.2559	101	63	—	C18955	—
	F		.2570	4-1/8	2-7/8	C68380	C23324	—
	G		.2610	4-1/8	2-7/8	C68381	C23325	—
	17/64		.2656	4-1/8	2-7/8	C68360	C23358	C23358HT
	H		.2660	4-1/8	2-7/8	C68382	C23326	—
		6.80	.2677	109	69	—	C18958	—
	I		.2720	4-1/8	2-7/8	C68383	C23327	—
		7.00	.2756	109	69	—	C18960	—
	J		.2770	4-1/8	2-7/8	C68384	C23328	—
	K		.2810	4-1/4	2-15/16	C68385	C23329	—
	9/32		.2812	4-1/4	2-15/16	C68361	C23359	C23359HT
	L		.2900	4-1/4	2-15/16	C68386	C23330	—
	M		.2950	4-3/8	3-1/16	C68387	C24720	—
		7.50	.2953	109	69	—	C18965	—
	19/64		.2969	4-3/8	3-1/16	C68362	C23360	C23360HT
	N		.3020	4-3/8	3-1/16	C68388	C24721	—
	5/16		.3125	4-1/2	3-3/16	C68363	C23361	C23361HT
		8.00	.3150	117	75	—	C18970	—
	O		.3160	4-1/2	3-3/16	C68389	C24722	—
	P		.3230	4-5/8	3-5/16	C68390	C24723	—
	21/64		.3281	4-5/8	3-5/16	C68364	C23362	C23362HT
	Q		.3320	4-3/4	3-7/16	C68391	C23335	—
		8.50	.3346	117	75	—	C18975	—
	R		.3390	4-3/4	3-7/16	C68392	C23336	—
	11/32		.3438	4-3/4	3-7/16	C68365	C23363	C23363HT
	S		.3480	4-7/8	3-1/2	C68393	C24724	—
		9.00	.3543	125	81	—	C18980	—
	T		.3580	4-7/8	3-1/2	C68394	C24725	—
	23/64		.3594	4-7/8	3-1/2	C68366	C23364	—
	U		.3680	5	3-5/8	C68395	C23339	—
		9.50	.3740	125	81	—	C18985	—
	3/8		.3750	5	3-5/8	C68367	C23365	C23365HT
	V		.3770	5	3-5/8	C68396	C23340	—
	W		.3860	5-1/8	3-3/4	C68397	C23341	—
	25/64		.3906	5-1/8	3-3/4	C68368	C23366	C23366HT
		10.00	.3937	133	87	—	C18990	—
	X		.3970	5-1/8	3-3/4	C68398	C24726	—
		10.20	.4016	133	87	—	C18991	—
	Y		.4040	5-1/4	3-3/4	C68399	C24727	—
	13/32		.4062	5-1/4	3-7/8	C68369	C23367	C23367HT
	Z		.4130	5-1/4	3-7/8	C68400	C24728	—
		10.50	.4134	133	87	—	C18992	—
	27/64		.4219	5-3/8	3-15/16	C68370	C23368	C23368HT
		11.00	.4331	142	94	—	C18993	—
	7/16		.4375	5-1/2	4-1/16	C68371	C23369	C23369HT



CLE-LINE



drill diameter		decimal equivalent	overall length	flute length	order number		
frac/wire/let	mm				1603 Straw Oxide	1802 Straw Oxide	Straw Oxide w/ Hanger
	11.50	.4528	142	94	—	C18995	—
29/64		.4531	5-5/8	4-3/16	C68372	C23370	C23370HT
15/32		.4688	5-3/4	4-5/16	C68373	C23371	C23371HT
	12.00	.4724	151	101	—	C18996	—
31/64		.4844	5-7/8	4-3/8	C68374	C23372	C23372HT
	12.50	.4921	151	101	—	C18998	—
1/2		.5000	6	4-1/2	C68375	C23373	C23373HT
	13.00	.5118	151	101	—	C18999	—

HOLEMAKING

THREADING / DIES

SAWS

Jobber Cobalt Heavy Duty SETS

Styles: 1603, 1802

Metal Case (unless noted otherwise)

drill size	no. of pieces	order number	
		1603 Straw Oxide	1802 Straw Oxide
1/16"– 1/4" x 1/64"	13	C69377	C21107
1/16"– 1/2" x 1/32"	15	C69378	C21112
A to Z	26	—	C77016
1/16"– 1/2" x 1/64"	29	*C69379	C21121
#1 – #60	60	C69380	C21125
1/16"– 1/2" x 1/64", A to Z, #1 – #60	115	—	C21129

*Plastic Case

15-Piece Set
Straw Oxide
#C21112

CARBIDE BURS/ROUTERS

MERCHANDISER

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**Note**

Three flats on sizes above 11/64" for tighter chucking.

For Reduced Shank see Style #1876.



order number

THREADING / DIES	drill diameter	decimal equivalent	overall length	flute length	order number		
					1620 Black & Gold	1875R Black & Gold	Black & Gold w/ Hanger
	*1/16	.0625	1-7/8	7/8	C68462	C23830	C23830HT
	*5/64	.0781	2	1	C68463	C23831	C23831HT
	*3/32	.0938	2-1/4	1-1/4	C68464	C23832	C23832HT
	*7/64	.1094	2-3/8	1-5/16	C68465	C23833	C23833HT
	*1/8	.1250	2-1/2	1-7/16	C68466	C23834	C23834HT
	*9/64	.1406	2-5/8	1-9/16	C68467	C23835	C23835HT
	*5/32	.1562	2-3/4	1-11/16	C68468	C23836	C23836HT
	*11/64	.1719	2-7/8	1-13/16	C68469	C23837	C23837HT
SAWS	3/16	.1875	3	1-7/8	C68470	C23838	C23838HT
	13/64	.2031	3-1/8	1-15/16	C68471	C23839	C23839HT
	7/32	.2188	3-1/4	2	C68472	C23840	C23840HT
	15/64	.2344	3-3/8	2-1/16	C68473	C23841	C23841HT
	1/4	.2500	3-1/2	2	C68474	C23842	C23842HT
	17/64	.2656	3-5/8	2-1/8	C68475	C23843	C23843HT
CARBIDE BURS/ROUTERS	9/32	.2812	3-3/4	2-1/4	C68476	C23844	C23844HT
	19/64	.2969	3-7/8	2-3/8	C68477	C23845	C23845HT
	5/16	.3125	4	2-1/2	C68478	C23846	C23846HT
	21/64	.3281	4-1/16	2-9/16	C68479	C23847	C23847HT
	11/32	.3438	4-1/8	2-5/8	C68480	C23848	C23848HT
	23/64	.3594	4-3/16	2-11/16	C68481	C23849	C23849HT
	3/8	.3750	4-1/4	2-11/16	C68482	C23850	C23850HT
	**25/64	.3906	4-5/16	2-3/4	C68483	C23851	C23851HT
	**13/32	.4062	4-3/8	2-13/16	C68484	C23852	C23852HT
	27/64	.4219	4-7/16	2-7/8	C68485	C23853	C23853HT
MERCHANDISER	7/16	.4375	4-1/2	2-15/16	C68486	C23854	C23854HT
	29/64	.4531	4-5/8	3	C68487	C23855	C23855HT
	15/32	.4688	4-3/4	3-1/8	C68488	C23856	C23856HT
	31/64	.4844	4-7/8	3-1/4	C68489	C23857	C23857HT
	1/2	.5000	5	3-3/8	C68490	C23859	C23859HT

*No flats on shank.

**Style #1875 sizes 25/64" and 13/32" drills with flats will fit in 3/8" shank drill chucks without having reduced shanks.



ASME B94.11M HSS 135° Split
 Black Gold Reduced Flatted Shank



drill diameter	decimal equivalent	overall length	flute length	order number	
				1876 Black & Gold	1876 Black & Gold w/ Hanger
27/64	.4219	4-7/16	2-7/8	C23860	C23860HT
7/16	.4375	4-1/2	2-15/16	C23861	C23861HT
29/64	.4531	4-5/8	3	C23862	C23862HT
15/32	.4688	4-3/4	3-1/8	C23863	C23863HT
31/64	.4844	4-7/8	3-1/4	C23864	C23864HT
1/2	.5000	5	3-3/8	C23865	C23865HT

HOLEMAKING

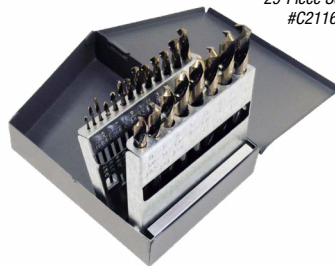
THREADING / DIES

Mechanics Length Heavy Duty SETS
 Styles: 1620, 1875R

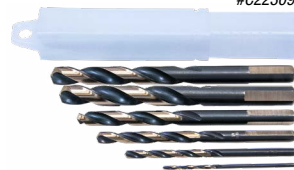
Metal unless noted below



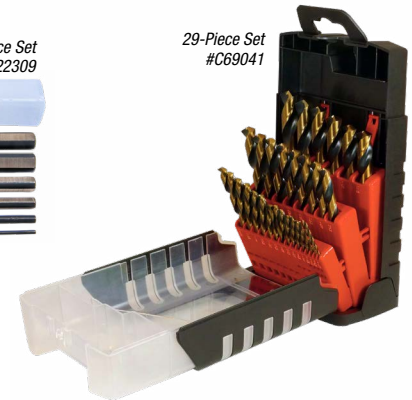
29-Piece Bit Barrel Set #C21165



29-Piece Set #C21161



6-Piece Set #C22309



29-Piece Set #C69041

SAWS

CARBIDE BURS/ROUTERS

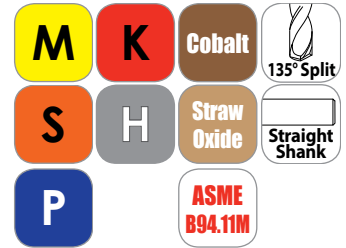
drill sizes	no. of pieces	order number					
		1620 Black & Gold	1620 Bit Barrel™ Black & Gold	1875R Black & Gold	1875R Bit Barrel™ Black & Gold	1875R Plastic Tube Black & Gold	1875/1876 3/8" Shank Black & Gold
1/16" - 1/4" x 1/64"	13	C69029		C18126	-	-	-
1/16" - 3/8" x 1/64"	21			C21161	-	-	-
1/16" - 1/2" x 1/64"	29	**C69041	**C69384	C21162	**C21165	-	*C21163
1/16" - 1/2" x 1/32"	15			C21160	-	-	-
1/16" - 1/4" x 1/16"	4			-	-	C22310	-
1/16" - 3/8" x 1/16"	6			-	-	C22309	-

*Includes Style #1875 in sizes 25/64" and 13/32" which will fit in 3/8" shank drill chucks without having reduced shanks.

**Plastic Case

MERCHANDISER

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**Note**

Superior rigidity in portable drilling.

drill diameter	decimal equivalent	overall length	flute length	order number 1880 Straw Oxide
5/64	.0781	2	1	C30505
7/64	.1094	2-3/16	1	C30507
1/8	.1250	2-1/4	1-1/16	C30508
5/32	.1562	2-9/16	1-1/4	C30510
3/16	.1875	2-7/8	1-1/2	C30512
7/32	.2188	3-1/8	1-5/8	C30514
1/4	.2500	3-5/16	1-3/4	C30516
9/32	.2812	3-9/16	2	C30518
19/64	.2969	3-5/8	2-1/16	C30519
5/16	.3125	3-3/4	2-1/8	C30520
11/32	.3438	3-15/16	2-1/4	C30522
3/8	.3750	4-1/8	2-3/8	C30524
13/32	.4063	4-3/8	2-1/2	C30526
7/16	.4375	4-9/16	2-5/8	C30528
15/32	.4688	4-3/4	2-3/4	C30530
1/2	.5000	5	2-7/8	C30532



P **HSS** **135° Split**
K **Black Oxide** **Straight Shank**
ASME B94.11M

Note
 Superior rigidity in hand or machine drilling.



****These items will be obsolete.**
 Available until inventory is depleted.

drill diameter frac/wire/let	mm	decimal equivalent	overall length	flute length	order number	
					1621 Black Oxide	1896 Black Oxide
*1.00		.0394	26	6	—	**C23885
*60		.0400	1-3/8	1/2	—	C23500
*59		.0410	1-3/8	1/2	—	C23501
*58		.0420	1-3/8	1/2	—	C23502
*57		.0430	1-3/8	1/2	—	C23503
*56		.0465	1-3/8	1/2	—	C23504
*1.25		.0492	30	8	—	**C23886
*55		.0520	1-5/8	5/8	—	C23505
*54		.0550	1-5/8	5/8	—	C23506
*1.50		.0591	32	9	—	**C23887
*53		.0595	1-5/8	5/8	—	C23507
1/16		.0625	1-5/8	5/8	C68491	C23460
52		.0635	1-11/16	11/16	—	C23508
51		.0670	1-11/16	11/16	—	C23509
50		.0700	1-11/16	11/16	—	C23510
1.80		.0709	36	11	—	**C24018
49		.0730	1-11/16	11/16	—	C23511
48		.0760	1-11/16	11/16	—	C23512
5/64		.0781	1-11/16	11/16	C68492	C23461
47		.0785	1-3/4	3/4	—	C23513
2.00		.0787	38	12	—	**C23888
46		.0810	1-3/4	3/4	—	C23514
45		.0820	1-3/4	3/4	—	C23515
44		.0860	1-3/4	3/4	—	C23516
2.20		.0866	40	13	—	**C23889
43		.0890	1-3/4	3/4	—	C23517
2.30		.0906	40	13	—	**C23890
42		.0935	1-3/4	3/4	—	C23518
3/32		.0938	1-3/4	3/4	C68493	C23462
2.40		.0945	43	14	—	**C23891
41		.0960	1-13/16	13/16	—	C23519
40		.0980	1-13/16	13/16	—	C23520
2.50		.0984	43	14	—	**C23892
39		.0995	1-13/16	13/16	—	C23521
38		.1015	1-13/16	13/16	—	C23522
2.60		.1024	43	14	—	**C23893
37		.1040	1-13/16	13/16	—	C23523
36		.1065	1-13/16	13/16	—	C23524
7/64		.1094	1-13/16	13/16	C68494	C23463
35		.1100	1-7/8	7/8	—	C23525
2.80		.1102	46	16	—	**C23894

*Not split point.

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HOLEMAKING
 THREADING / DIES
 SAWS
 CARBIDE BURS/ROUTERS
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 INDEX



	drill diameter		decimal equivalent	overall length	flute length	order number	
	frac/wire/let	mm				1621 Black Oxide	1896 Black Oxide
HOLEMAKING	34		.1110	1-7/8	7/8	—	C23526
	33		.1130	1-7/8	7/8	—	C23527
	32		.1160	1-7/8	7/8	—	C23528
		3.00	.1181	46	16	—	**C23895
	31		.1200	1-7/8	7/8	—	C23529
		3.10	.1220	49	18	—	**C23896
	1/8		.1250	1-7/8	7/8	C68495	C23464
		3.20	.1260	49	18	—	**C23898
THREADING / DIES	30		.1285	1-15/16	15/16	—	C23530
		3.40	.1339	52	20	—	**C23900
	29		.1360	1-15/16	15/16	—	C23531
		3.50	.1378	52	20	—	**C23901
	28		.1405	1-15/16	15/16	—	C23532
	9/64		.1406	1-15/16	15/16	C68496	C23465
		3.60	.1417	52	20	—	**C24036
	27		.1440	2-1/16	1	—	C23533
	26		.1470	2-1/16	1	—	C23534
	25		.1495	2-1/16	1	—	C23535
SAWS		3.80	.1496	55	22	—	**C23903
	24		.1520	2-1/16	1	—	C23536
	23		.1540	2-1/16	1	—	C23537
	5/32		.1562	2-1/16	1	C68497	C23466
	22		.1570	2-1/8	1-1/16	—	C23538
	21		.1590	2-1/8	1-1/16	—	C23539
	20		.1610	2-1/8	1-1/16	—	C23540
	19		.1660	2-1/8	1-1/16	—	C23541
		4.30	.1693	58	24	—	**C23907
	18		.1695	2-1/8	1-1/16	—	C23542
CARBIDE BURS/ROUTERS	11/64		.1719	2-1/8	1-1/16	C68498	C23467
	17		.1730	2-3/16	1-1/8	—	C23543
	16		.1770	2-3/16	1-1/8	—	C23544
		4.50	.1772	58	24	—	**C23908
	15		.1800	2-3/16	1-1/8	—	C23545
	14		.1820	2-3/16	1-1/8	—	C23546
	13		.1850	2-3/16	1-1/8	—	C23547
		4.70	.1850	58	24	—	**C23910
MERCHANDISER	3/16		.1875	2-3/16	1-1/8	C68499	C23468
	12		.1890	2-1/4	1-3/16	—	C23548
		4.80	.1890	62	26	—	**C23911
	11		.1910	2-1/4	1-3/16	—	C23549
		4.90	.1929	62	26	—	**C23912
	10		.1935	2-1/4	1-3/16	—	C23550
	9		.1960	2-1/4	1-3/16	—	C23551
		5.00	.1969	62	26	—	**C23913
INDEX	8		.1990	2-1/4	1-3/16	—	C23552
		5.10	.2008	62	26	—	**C23914
	7		.2010	2-1/4	1-3/16	—	C23553
	13/64		.2031	2-1/4	1-3/16	C68500	C23469
	6		.2040	2-3/8	1-1/4	—	C23554
		5.20	.2047	62	26	—	**C23915
	5		.2055	2-3/8	1-1/4	—	C23555

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CLE-LINE



drill diameter		decimal equivalent	overall length	flute length	order number	
frac/wire/let	mm				1621 Black Oxide	1896 Black Oxide
	5.30	.2087	62	26	—	**C23916
4		.2090	2-3/8	1-1/4	—	C23556
3		.2130	2-3/8	1-1/4	—	C23557
	5.50	.2165	66	28	—	**C23917
7/32		.2188	2-3/8	1-1/4	C68501	C23470
	5.60	.2205	66	28	—	**C23918
2		.2210	2-7/16	1-5/16	—	C23558
	5.70	.2244	66	28	—	**C23919
1		.2280	2-7/16	1-5/16	—	C23559
	5.80	.2283	66	28	—	**C24058
A		.2340	2-7/16	1-5/16	—	C24060
15/64		.2344	2-7/16	1-5/16	C68502	C23471
B		.2380	2-1/2	1-3/8	—	C24061
	6.10	.2402	70	31	—	**C23921
C		.2420	2-1/2	1-3/8	—	C24062
D		.2460	2-1/2	1-3/8	—	C24063
	6.30	.2480	70	31	—	**C23922
1/4-E		.2500	2-1/2	1-3/8	C68503	C23472
	6.50	.2559	70	31	—	**C23923
F		.2570	2-5/8	1-7/16	—	C24064
	6.60	.2598	70	31	—	**C23924
G		.2610	2-5/8	1-7/16	—	C24065
17/64		.2656	2-5/8	1-7/16	C68504	C23473
H		.2660	2-11/16	1-1/2	—	C24066
	6.80	.2677	74	34	—	**C23925
	6.90	.2717	74	34	—	**C23926
I		.2720	2-11/16	1-1/2	—	C24067
J		.2770	2-11/16	1-1/2	—	C24068
K		.2810	2-11/16	1-1/2	—	C24069
9/32		.2812	2-11/16	1-1/2	C68505	C23474
	7.20	.2835	74	34	—	**C23928
	7.30	.2874	74	34	—	**C23929
L		.2900	2-3/4	1-9/16	—	C24070
M		.2950	2-3/4	1-9/16	—	C24071
	7.50	.2953	74	34	—	**C23930
19/64		.2969	2-3/4	1-9/16	C68506	C23475
N		.3020	2-13/16	1-5/8	—	C24072
5/16		.3125	2-13/16	1-5/8	C68507	C23476
	8.00	.3150	79	37	—	**C23931
O		.3160	2-15/16	1-11/16	—	C24073
P		.3230	2-15/16	1-11/16	—	C24074
21/64		.3281	2-15/16	1-11/16	C68508	C23477
Q		.3320	3	1-11/16	—	C24075
	8.50	.3346	79	37	—	**C23932
R		.3390	3	1-11/16	—	C24076
11/32		.3438	3	1-11/16	C68509	C23478
S		.3480	3-1/16	1-3/4	—	C24077
	9.00	.3543	84	40	—	**C23933
T		.3580	3-1/16	1-3/4	—	C24078
23/64		.3594	3-1/16	1-3/4	C68510	C23479
U		.3680	3-1/8	1-13/16	—	C24079

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HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

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order number

drill diameter frac/wire/let	mm	decimal equivalent	overall length	flute length	order number	
					1621 Black Oxide	1896 Black Oxide
	9.50	.3740	84	40	—	**C23934
3/8		.3750	3-1/8	1-13/16	C68511	C23480
V		.3770	3-1/4	1-7/8	—	C24080
W		.3860	3-1/4	1-7/8	—	C24081
25/64		.3906	3-1/4	1-7/8	C68512	C23481
X		.3970	3-5/16	1-15/16	—	C24082
	10.20	.4016	89	43	—	**C23936
Y		.4040	3-5/16	1-15/16	—	C24083
13/32		.4062	3-5/16	1-15/16	C68513	C23482
Z		.4130	3-3/8	2	—	C24084
	10.50	.4134	89	43	—	**C23937
27/64		.4219	3-3/8	2	C68514	C23483
	11.00	.4331	95	47	—	**C23938
7/16		.4375	3-7/16	2-1/16	C68515	C23484
	11.50	.4528	95	47	—	**C23939
29/64		.4531	3-9/16	2-1/8	C68516	C23485
15/32		.4688	3-5/8	2-1/8	C68517	C23486
	12.00	.4724	102	51	—	**C23940
31/64		.4844	3-11/16	2-3/16	C68518	C23487
1/2		.5000	3-3/4	2-1/4	C68519	C23488
	13.00	.5118	102	51	—	**C23943
	13.50	.5315	107	54	—	**C23964
	15.00	.5906	111	56	—	**C23967
	16.00	.6299	115	58	—	**C23969
	17.00	.6693	119	60	—	**C23971

SETS Screw Machine Length Heavy Duty

Styles: 1896

Metal Case



60-Piece Set
Black Oxide
#C21947

drill sizes	no. of pieces	order number	
		1896 Black Oxide	
1/16" - 1/2" x 1/64"	29	C21133	
#1 - #60	60	C21947	



Reduced Shank Silver & Deming
Styles: 1680, 1681, 1813, 1892, 1877

P **Black Oxide** **118°** **Reduced Shank**
 #1680 #1681 #1813 #1892*
 #1680 #1813

K **HSS** **118° Split** **Reduced Flatted Shank**
 #1892 #1877 #1892*
 #1681 #1892 #1877

Black Gold
 #1877

Note
 *Metric sizes made to order (minimum order quantities apply).
 Style 1892:
 *Sizes shorter than 1-1/4" are 118° point.
 *Sizes 1-1/4" and larger are 118° split point.
 1/2" reduced shank.



				order number				
drill diameter	decimal	overall	flute	1680	1681	1813	1892	1877
fractional	mm	length	length	Round Shank Black Oxide	(3)Flatted Shank Black Oxide	Round Shank Black Oxide	(3)Flatted Shank Black Oxide	(3)Flatted Shank Black & Gold
1/2		.5000	6	C68631	C68674	C20732	C20670	C27600
	13.0	.5118	152	—	—	C21070	—	C21170
33/64		.5156	6	C68632	C68675	C20733	C20671	C17031
17/32		.5312	6	C68633	C68676	C20734	C20672	C17032
	13.5	.5315	152	—	—	C21071	—	C21171
35/64		.5469	6	C68634	C68677	C20735	C20673	C17033
	14.0	.5512	152	—	—	C21072	—	C21172
9/16		.5625	6	C68635	C68678	C20736	C20674	C17034
	14.5	.5709	152	—	—	C21073	—	C21173
37/64		.5781	6	C68636	C68679	C20737	C20675	C17035
	15.0	.5906	152	—	—	C21074	—	C21174
19/32		.5938	6	C68637	C68680	C20738	C20676	C17036
39/64		.6094	6	C68638	C68681	C20739	C20677	C17037
	15.5	.6102	152	—	—	C21075	—	C21175
5/8		.6250	6	C68639	C68682	C20740	C20678	C17038
	16.0	.6299	152	—	—	C21076	—	C21176
41/64		.6406	6	C68640	C68683	C20741	C20679	C17039
	16.5	.6496	152	—	—	C21077	—	C21177
21/32		.6562	6	C68641	C68684	C20742	C20680	C17040
	17.0	.6693	152	—	—	C21078	—	C21178
43/64		.6719	6	C68642	C68685	C20743	C20681	C17041
11/16		.6875	6	C68643	C68686	C20744	C20682	C17042
	17.5	.6890	152	—	—	C21079	—	C21179
45/64		.7031	6	C68644	C68687	C20745	C20683	C17043
	18.0	.7087	152	—	—	C21080	—	C21180
23/32		.7188	6	C68645	C68688	C20746	C20684	C17044
	18.5	.7283	152	—	—	C21081	—	C21181
47/64		.7344	6	C68646	C68689	C20747	C20685	C17045
	19.0	.7480	152	—	—	C21082	—	C21182
3/4		.7500	6	C68647	C68690	C20748	C20686	C17046
49/64		.7656	6	C68648	C68691	C20749	C20687	C17047
	19.5	.7677	152	—	—	C21083	—	C21183
25/32		.7812	6	C68649	C68692	C20750	C20688	C17048
	20.0	.7874	152	—	—	C21084	—	C21184
51/64		.7969	6	C68650	C68693	C20669	C28415	C17049
13/16		.8125	6	C68651	C68694	C20751	C20689	C17050
	21.0	.8268	152	—	—	C21085	—	C21185
53/64		.8281	6	C68652	C68695	C20724	C28416	C17051
27/32		.8438	6	C68653	C68696	C20752	C20690	C17052
55/64		.8594	6	C68654	C68697	C20725	C28417	C17053
	22.0	.8661	152	—	—	C21086	—	C21186
7/8		.8750	6	C68655	C68698	C20753	C20691	C17054
57/64		.8906	6	C68656	C68699	C20726	C28418	C17055

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HOLEMAKING - General Application Drills

Reduced Shank Silver & Deming

Styles: 1680, 1681, 1813, 1892, 1877 (continued)



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order number

drill diameter fractional	drill diameter mm	decimal equivalent	overall length	flute length	1680	1681	1813	1892	1877
					Round Shank Black Oxide	(3)Flatted Shank Black Oxide	Round Shank Black Oxide	(3)Flatted Shank Black Oxide	(3)Flatted Shank Black & Gold
	23.0	.9055	152	79	—	—	C21087	—	C21187
29/32		.9062	6	3-1/8	C68657	C68700	C20754	C20692	C17056
59/64		.9219	6	3-1/8	C68658	C68701	C20727	C28419	C17057
15/16		.9375	6	3-1/8	C68659	C68702	C20755	C20693	C17058
	24.0	.9449	152	79	—	—	C21088	—	C21188
61/64		.9531	6	3-1/8	C68660	C68703	C20728	C28420	C17059
31/32		.9688	6	3-1/8	C68661	C68704	C20756	C20694	C17060
	25.0	.9843	152	79	—	—	C21089	—	C21189
63/64		.9844	6	3-1/8	C68662	C68705	C20729	C28421	C17061
1		1.0000	6	3-1/8	C68663	C68706	C20757	C20695	C17062
1-1/64		1.0156	6	3-1/8	—	C68707	C27100	C28422	C27601
1-1/32		1.0312	6	3-1/8	C68664	C68708	C20730	C28423	C27602
1-3/64		1.0469	6	3-1/8	—	C68709	C27101	C28424	C27603
1-1/16		1.0625	6	3-1/8	C68665	C68710	C20758	C20696	C17066
1-5/64		1.0781	6	3-1/8	—	C68711	C27102	C28425	C27604
1-3/32		1.0938	6	3-1/8	—	C68712	C27103	C28426	C27605
1-7/64		1.1094	6	3-1/8	—	C68713	C27104	C28427	C27606
1-1/8		1.1250	6	3-1/8	C68666	C68714	C20759	C20697	C17070
1-9/64		1.1406	6	3-1/8	—	C68715	C27105	C28428	C27607
1-5/32		1.1562	6	3-1/8	C68667	C68716	C20731	C28429	C27608
1-11/64		1.1719	6	3-1/8	—	C68717	C27106	C28430	C27609
1-3/16		1.1875	6	3-1/8	C68668	C68718	C20760	C20698	C17074
1-13/64		1.2031	6	3-1/8	—	C68719	C27107	C28431	C27610
1-7/32		1.2188	6	3-1/8	—	C68720	C27108	C28432	C27611
1-15/64		1.2344	6	3-1/8	—	C68721	C27109	C28433	C27612
*1-1/4		1.2500	6	3-1/8	C68669	C68722	C20761	C20699	C17078
*1-17/64		1.2656	6	3-1/8	—	C68723	C27110	C28434	C27613
*1-9/32		1.2812	6	3-1/8	—	C68724	C27111	C28435	C27614
*1-19/64		1.2969	6	3-1/8	—	C68725	C27112	C28436	C27615
*1-5/16		1.3125	6	3-1/8	C68670	C68726	C20762	C28437	C17082
*1-21/64		1.3281	6	3-1/8	—	C68727	C27113	C28438	C27616
*1-11/32		1.3438	6	3-1/8	—	C68728	C27114	C28439	C27617
*1-23/64		1.3594	6	3-1/8	—	C68729	C27115	C28440	C27618
*1-3/8		1.3750	6	3-1/8	C68671	C68730	C20763	C28441	C17086
*1-25/64		1.3906	6	3-1/8	—	C68731	C27116	C28442	C27619
*1-13/32		1.4062	6	3-1/8	—	C68732	C27117	C28443	C27620
*1-27/64		1.4219	6	3-1/8	—	C68733	C27118	C28444	C27621
*1-7/16		1.4375	6	3-1/8	C68672	C68734	C20764	C28445	C17090
*1-29/64		1.4531	6	3-1/8	—	C68735	C27119	C28446	C27622
*1-15/32		1.4688	6	3-1/8	—	—	C27120	C28447	C27623
*1-31/64		1.4844	6	3-1/8	—	C68736	C27121	C28448	C27624
*1-1/2		1.5000	6	3-1/8	C68673	C68737	C20765	C28449	C17094

SETS Reduced Shank Silver & Deming

Styles: 1680, 1681, 1813, 1892, 1877

8-Piece Set
Flatted Shank
#C2116433-Piece Set
Round Shank
#C21134

Metal Case (unless noted otherwise)

sizes	no. of pieces	order number				
		1680 Round Shank	1681 (3) Flatted Shank	1813 Round Shank	1892 (3) Flatted Shank	1877 (3) Flatted Shank
9/16" - 1" x 1/16"	8	C69039	C69040	C21135	C22761	*C21164
1/2" - 1" x 1/64"	33	—	—	C21134	—	—

*Plastic Case



NEW



fraction	drill diameter		shank diameter		overall length		flute length		order number
	decimal	mm	Inch	mm	inch	mm	inch	mm	1814 black oxide
1/4	.2500	6.35	.2500	6.35	2.5000	63.50	1.3750	34.93	C20150
5/16	.3125	7.94	.2500	6.35	2.8125	71.44	1.3750	34.93	C20151
3/8	.3750	9.53	.2500	6.35	3.1250	79.38	1.6875	42.86	C20152
7/16	.4375	11.11	.2500	6.35	3.4375	87.31	2.0000	50.80	C20153
1/2	.5000	12.70	.2500	6.35	3.7500	95.25	2.2500	57.15	C20154

Mechanics Length Heavy Duty SETS

Style: 1814

Metal unless noted below

Number of Tools	Size Range	order number
		1814 black oxide
5	1/4 - 1/2 X 1/16	C20155



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HOLEMAKING - General Application Drills

Extended Length Aircraft Extension 6" and 12"

Styles: 1630, 1631, 1803, 1805



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Note
Superior rigidity in hand or machine drilling.



6" OAL Black Oxide



12" OAL Black Oxide

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order number

drill diameter frac/wire/let	decimal equivalent	flute length	order number			
			1630 6" Overall	1631 12" Overall	1803 6" Overall	1805 12" Overall
1/16	.0625	7/8	C68867	C68936	C23621	C23721
5/64	.0781	1	C68868	C68937	C23622	C23722
3/32	.0938	1-1/4	C68869	C68938	C23623	C23723
40	.0980	1-3/8	C68935	C69004	C23700	C23800
39	.0995	1-3/8	C68934	C69003	C23699	C23799
38	.1015	1-7/16	C68933	C69002	C23698	—
37	.1040	1-7/16	C68932	C69001	C23697	—
36	.1065	1-7/16	C68931	C69000	C23696	—
7/64	.1094	1-1/2	C68870	C68939	C23624	C23724
35	.1100	1-1/2	C68930	C68999	C23695	—
34	.1110	1-1/2	C68929	C68998	C23694	—
33	.1130	1-1/2	C68928	C68997	C23693	—
32	.1160	1-5/8	C68927	C68996	C23692	—
31	.1200	1-5/8	C68926	C68995	C23691	C23791
1/8	.1250	1-5/8	C68871	C68940	C23625	C23725
30	.1285	1-5/8	C68925	C68994	C23690	C23790
29	.1360	1-3/4	C68924	C68993	C23689	C23789
28	.1405	1-3/4	C68923	C68992	C23688	—
9/64	.1406	1-3/4	C68872	C68941	C23626	C23726
27	.1440	1-7/8	C68922	C68991	C23687	—
26	.1470	1-7/8	C68921	C68990	C23686	—
25	.1495	1-7/8	C68920	C68989	C23685	C23785
24	.1520	2	C68919	C68988	C23684	—
23	.1540	2	C68918	C68987	C23683	—
5/32	.1562	2	C68873	C68942	C23627	C23727
22	.1570	2	C68917	C68986	C23682	—
21	.1590	2-1/8	C68916	C68985	C23681	C23781
20	.1610	2-1/8	C68915	C68984	C23680	C23780
19	.1660	2-1/8	C68914	C68983	C23679	C23779
18	.1695	2-1/8	C68913	C68982	C23678	—
11/64	.1719	2-1/8	C68874	C68943	C23628	C23728
17	.1730	2-3/16	C68912	C68981	C23677	—
16	.1770	2-3/16	C68911	C68980	C23676	C23776
15	.1800	2-3/16	C68910	C68979	C23675	—
14	.1820	2-3/16	C68909	C68978	C23674	—
13	.1850	2-5/16	C68908	C68977	C23673	C23773

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drill diameter	decimal equivalent	flute length	order number			
			1630	1631	1803	1805
			6" Overall	12" Overall	6" Overall	12" Overall
3/16	.1875	2-5/16	C68875	C68944	C23629	C23729
12	.1890	2-5/16	C68907	C68976	C23672	C23772
11	.1910	2-5/16	C68906	C68975	C23671	C23771
10	.1935	2-7/16	C68905	C68974	C23670	C23770
9	.1960	2-7/16	C68904	C68973	C23669	C23769
8	.1990	2-7/16	C68903	C68972	C23668	C23768
7	.2010	2-7/16	C68902	C68971	C23667	C23767
13/64	.2031	2-7/16	C68876	C68945	C23630	C23730
6	.2040	2-1/2	C68901	C68970	C23666	C23766
5	.2055	2-1/2	C68900	C68969	C23665	C23765
4	.2090	2-1/2	C68899	C68968	C23664	C23764
3	.2130	2-1/2	C68898	C68967	C23663	C23763
7/32	.2188	2-1/2	C68877	C68946	C23631	C23731
2	.2210	2-5/8	C68897	C68966	C23662	C23762
1	.2280	2-5/8	C68896	C68965	C23661	C23761
15/64	.2344	2-5/8	C68878	C68947	C23632	C23732
1/4, E	.2500	2-3/4	C68879	C68948	C23633	C23733
17/64	.2656	2-5/8	C68880	C68949	C23634	C23734
9/32	.2812	3-1/16	C68881	C68950	C23635	C23735
19/64	.2969	3-1/16	C68882	C68951	C23636	C23736
5/16	.3125	3-3/16	C68883	C68952	C23637	C23737
21/64	.3281	3-7/16	C68884	C68953	C23638	C23738
11/32	.3438	3-7/16	C68885	C68954	C23639	C23739
23/64	.3594	3-1/2	C68886	C68955	C23640	C23740
3/8	.3750	3-5/8	C68887	C68956	C23641	C23741
25/64	.3906	3-3/4	C68888	C68957	C23642	C23742
13/32	.4062	3-3/4	C68889	C68958	C23643	C23743
27/64	.4219	3-15/16	C68890	C68959	C23644	C23744
7/16	.4375	4-1/16	C68891	C68960	C23645	C23745
29/64	.4531	4-3/16	C68892	C68961	C23646	C23746
15/32	.4688	4-5/6	C68893	C68962	C23647	C23747
31/64	.4844	4-3/8	C68894	C68963	C23648	C23748
1/2	.5000	4-1/2	C68895	C68964	C23649	C23749

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HOLEMAKING - General Application Drills

Extra Length Extended 12", and 18"

Styles: 1806, 1807



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order number

drill diameter	decimal equivalent	order number	
		1806 9" Flute Length 12" Overall Length	1807 14" Flute Length 18" Overall Length
1/8	.1250	C20436	—
5/32	.1562	C20438	—
3/16	.1875	C20440	—
7/32	.2188	C20442	—
1/4	.2500	C20444	C20481
9/32	.2812	C20446	C20483
5/16	.3125	C20448	C20485
11/32	.3438	C20450	C20487
3/8	.3750	C20452	C20489
13/32	.4062	C20454	C20491
7/16	.4375	C20456	C20493
15/32	.4688	C20458	C20495
1/2	.5000	C20460	C20497
17/32	.5313	C20462	—
9/16	.5625	C20464	—
19/32	.5938	C20466	—
5/8	.6250	C20468	—
21/32	.6563	C20470	—
11/16	.6875	C20472	—
3/4	.7500	C24745	—



P **HSS** 118°
K **Black Oxide** Helix Regular
 21° to 34°
ASME B94.11M Taper Shank



drill diameter fraction	drill diameter mm	decimal equivalent	overall length	flute length	Morse taper number	order number		
						1682 Black Oxide	1894 Black Oxide	Black Oxide w/ Hanger
1/8		.1250	5-1/8	1-7/8	1	—	C20049	C20049HT
9/64		.1406	5-1/8	1-7/8	1	—	C20050	C20050HT
5/32		.1562	5-3/8	2-1/8	1	—	C20051	C20051HT
11/64		.1719	5-3/4	2-1/2	1	—	C20052	C20052HT
3/16		.1875	5-3/4	2-1/2	1	—	C20053	C20053HT
13/64		.2031	6	2-3/4	1	—	C20054	C20054HT
7/32		.2188	6	2-3/4	1	—	C20055	C20055HT
15/64		.2344	6-1/8	2-7/8	1	—	C20056	C20056HT
1/4		.2500	6-1/8	2-7/8	1	—	C20057	C20057HT
17/64		.2656	6-1/4	3	1	—	C20058	C20058HT
9/32		.2812	6-1/4	3	1	—	C20059	C20059HT
19/64		.2969	6-3/8	3-1/8	1	—	C20060	C20060HT
5/16		.3125	6-3/8	3-1/8	1	C68779	C20061	C20061HT
21/64		.3281	6-1/2	3-1/4	1	C68780	C20062	C20062HT
11/32		.3438	6-1/2	3-1/4	1	C68781	C20063	C20063HT
23/64		.3594	6-3/4	3-1/2	1	C68782	C20064	—
3/8		.3750	6-3/4	3-1/2	1	C68794	C20524	—
3/8		.3750	7-3/8	3-1/2	2	C68738	C20020	—
25/64		.3906	7	3-5/8	1	C68795	C20525	—
25/64		.3906	7	3-5/8	2	C68739	—	—
13/32		.4062	7	3-5/8	1	C68796	C20526	—
13/32		.4063	7-1/2	3-5/8	2	C68740	C20022	—
	10.50	.4134	165	85	1	C21950	—	—
27/64		.4219	7-1/4	3-7/8	1	C68797	C20527	—
27/64		.4219	7-3/4	3-7/8	2	C68741	—	—
7/16		.4375	7-1/4	3-7/8	1	C68798	C20528	—
7/16		.4375	7-3/4	3-7/8	2	C68742	C20024	—
29/64		.4531	7-1/2	4-1/8	1	C68799	C20529	—
29/64		.4531	8	4-1/8	2	C68743	—	—
15/32		.4688	7-1/2	4-1/8	1	C68800	C20530	—
31/64		.4844	8-1/4	4-3/8	2	C68801	C24730	—
	12.50	.4921	182	101	1	C21951	—	—
1/2		.5000	7-3/4	4-3/8	1	C68744	C20026	C20026HT
1/2		.5000	8-1/4	4-3/8	2	C68802	C24731	—
	12.80	.5039	182	101	1	C21952	—	—
33/64		.5156	8-1/2	4-5/8	2	C68803	C24732	—
17/32		.5312	8	4-5/8	1	C68745	—	—
17/32		.5312	8-1/2	4-5/8	2	C68804	C24733	—
	13.75	.5413	189	108	1	C21953	—	—
35/64		.5469	8-3/4	4-7/8	2	C68805	C20535	—
9/16		.5625	8-3/4	4-7/8	2	C68806	C24734	—
37/64		.5781	8-3/4	4-7/8	2	C68807	C24735	—
19/32		.5938	8-3/4	4-7/8	2	C68808	C24736	—
	15.25	.6004	218	120	2	C21954	—	—
39/64		.6094	8-3/4	4-7/8	2	C68809	C24737	—
5/8		.6250	8-3/4	4-7/8	2	C68810	C20540	—
	16.25	.6398	223	125	2	C21955	—	—
41/64		.6406	9	5-1/8	2	C68811	C24738	—

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HOLEMAKING	drill diameter		decimal equivalent	overall length	flute length	Morse taper number	order number		
	fraction	mm					1682		Black Oxide w/ Hanger
							Black Oxide	1894	
	21/32		.6562	9	5-1/8	2	C68812	C24739	—
	21/32		.6562	9-3/4	5-1/8	3	C68746	—	—
	43/64		.6719	9-1/4	5-3/8	2	C68813	7	—
	11/16		.6875	9-1/4	5-3/8	2	C68814	C24740	—
	11/16		.6875	10	5-3/8	3	C68747	C20029	—
	45/64		.7031	9-1/2	5-5/8	2	C68815	C20545	—
	23/32		.7188	9-1/2	5-5/8	2	C68816	C24741	—
		18.50	.7283	233	135	2	C21956	—	—
	47/64		.7344	9-3/4	5-7/8	2	C68817	C24742	—
	3/4		.7500	9-3/4	5-7/8	2	C68818	C24743	—
	3/4		.7500	10-1/2	5-7/8	3	C68748	C20030	—
		19.25	.7579	238	140	2	C21957	—	—
	49/64		.7656	9-7/8	6	2	C68819	C20549	—
	49/64		.7656	10-5/8	6	3	C68749	—	—
		19.50	.7677	238	140	2	C21958	—	—
	25/32		.7812	9-7/8	6	2	C68820	C20550	—
	25/32		.7812	10-5/8	6	3	C68750	—	—
	51/64		.7969	10-3/4	6-1/8	3	C68821	C20551	—
		20.50	.8071	243	145	2	C21959	—	—
	13/16		.8125	10	6-1/8	2	C68751	—	—
	13/16		.8125	10-3/4	6-1/8	3	C68822	C20552	—
	53/64		.8281	10-3/4	6-1/8	3	C68823	C20553	—
	27/32		.8438	10	6-1/8	2	C68752	—	—
	27/32		.8438	10-3/4	6-1/8	3	C68824	C20554	—
		21.50	.8465	248	150	2	C21960	—	—
	55/64		.8594	10-3/4	6-1/8	3	C68825	C20555	—
	7/8		.8750	10	6-1/8	2	C68753	C20035	—
	7/8		.8750	10-3/4	6-1/8	3	C68826	C20556	—
		22.50	.8858	253	155	2	C21961	—	—
	57/64		.8906	10-3/4	6-1/8	3	C68827	C20557	—
		23.00	.9055	253	155	2	C21962	—	—
	29/32		.9062	10-3/4	6-1/8	3	C68828	C20558	—
	59/64		.9219	10-3/4	6-1/8	3	C68829	C20559	—
		23.50	.9252	276	155	3	C21963	—	—
	15/16		.9375	10-3/4	6-1/8	3	C68830	C20560	—
	61/64		.9531	11	6-3/8	3	C68831	C20561	—
	31/32		.9688	11	6-3/8	3	C68832	C20562	—
	63/64		.9844	11	6-3/8	3	C68833	C20563	—
	1		1.0000	11	6-3/8	3	C68834	C20564	—
	1		1.0000	12	6-3/8	4	C68754	—	—
		25.50	1.0039	286	165	3	C21964	—	—
	1-1/64		1.0156	11-1/8	6-1/2	3	C68835	C20565	—
	1-1/32		1.0312	11-1/8	6-1/2	3	C68836	C20566	—
		26.50	1.0433	286	165	3	C21965	—	—
	1-3/64		1.0469	11-1/4	6-5/8	3	C68837	C20567	—
	1-1/16		1.0625	11-1/4	6-5/8	3	C68838	C20568	—
	1-1/16		1.0625	12-1/4	6-5/8	4	C68755	—	—
		27.00	1.0630	291	170	3	C21966	—	—
	1-5/64		1.0781	12-1/2	6-7/8	4	C68839	C20569	—
	1-3/32		1.0938	11-1/2	6-7/8	3	C68756	—	—
	1-3/32		1.0938	12-1/2	6-7/8	4	C68840	C20570	—
		28.00	1.1024	291	170	3	C21967	—	—
	1-7/64		1.1094	11-3/4	7-1/8	3	C68757	—	—
	1-7/64		1.1094	12-3/4	7-1/8	4	C68841	C20571	—
		28.50	1.1220	296	175	3	C21968	—	—
	1-1/8		1.1250	11-3/4	7-1/8	3	C68758	C20040	—
	1-1/8		1.1250	12-3/4	7-1/8	4	C68842	C20572	—
	1-9/64		1.1406	12-7/8	7-1/4	4	C68843	—	—

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drill diameter fraction	drill diameter mm	decimal equivalent	overall length	flute length	Morse taper number	order number		
						1682 Black Oxide	1894 Black Oxide	Black Oxide w/ Hanger
	29.00	1.1417	296	175	3	C21969	—	—
1-5/32		1.1562	11-7/8	7-1/4	3	C68759	—	—
1-5/32		1.1562	12-7/8	7-1/4	4	C68844	C20574	—
	29.50	1.1614	296	175	3	C21970	—	—
1-11/64		1.1719	13	7-3/8	4	C68845	C20575	—
	30.00	1.1811	296	175	3	C21971	—	—
1-3/16		1.1875	12	7-3/8	3	C68760	—	—
1-3/16		1.1875	13	7-3/8	4	C68846	C20576	—
	30.50	1.2008	301	180	3	C21972	—	—
1-13/64		1.2031	13-1/8	7-1/2	4	C68847	C20577	—
1-7/32		1.2188	13-1/8	7-1/2	4	C68848	C20578	—
1-15/64		1.2344	13-1/2	7-7/8	4	C68849	C20579	—
	31.00	1.2205	301	180	3	C21973	—	—
	31.50	1.2402	301	180	3	C21974	—	—
1-1/4		1.2500	12-1/2	7-7/8	3	C68761	C20043	—
1-1/4		1.2500	13-1/2	7-7/8	4	C68850	C20580	—
1-17/64		1.2656	14-1/8	8-1/2	4	C68851	C20581	—
1-9/32		1.2812	14-1/8	8-1/2	4	C68852	C20582	—
1-19/64		1.2969	14-1/4	8-5/8	4	C68853	C20583	—
	33.00	1.2992	334	185	4	C21975	—	—
1-5/16		1.3125	14-1/4	8-5/8	4	C68854	C20584	—
1-21/64		1.3281	14-3/8	8-3/4	4	C68855	C20585	—
	34.00	1.3386	339	190	4	C21976	—	—
1-11/32		1.3438	14-3/8	8-3/4	4	C68856	C20586	—
1-23/64		1.3594	14-1/2	8-7/8	4	C68857	C20587	—
1-3/8		1.3750	14-1/2	8-7/8	4	C68858	C20588	—
	35.00	1.3780	339	190	4	C21977	—	—
1-25/64		1.3906	14-5/8	9	4	C68859	C20589	—
1-13/32		1.4062	14-5/8	9	4	C68860	C20590	—
	36.00	1.4173	344	195	4	C21978	—	—
1-27/64		1.4219	14-3/4	9-1/8	4	C68861	C20591	—
1-7/16		1.4375	14-3/4	9-1/8	4	C68862	C20592	—
1-29/64		1.4531	14-7/8	9-1/4	4	C68863	—	—
1-15/32		1.4688	14-7/8	9-1/4	4	C68864	—	—
1-31/64		1.4844	15	9-3/8	4	C68865	—	—
	38.00	1.4961	349	200	4	C21979	—	—
1-1/2		1.5000	15	9-3/8	4	C68866	C20596	—
1-17/32		1.5312	15	9-3/8	4	C68762	—	—
1-17/32		1.5312	16-3/8	9-3/8	5	C68783	—	—
	39.00	1.5354	349	200	4	C21980	—	—
1-9/16		1.5625	16-5/8	9-5/8	5	C68784	C20068	—
	40.00	1.5748	349	200	4	C21981	—	—
1-19/32		1.5938	16-7/8	9-7/8	5	C68785	—	—
1-5/8		1.6250	15-5/8	10	4	C68763	—	—
1-5/8		1.6250	17	10	5	C68786	C20072	—
1-21/32		1.6562	17-1/8	10-1/8	5	C68787	—	—
1-11/16		1.6875	17-1/8	10-1/8	5	C68788	—	—
1-23/32		1.7188	17-1/8	10-1/8	5	C68764	—	—
1-3/4		1.7500	16-1/4	10-3/8	4	C68765	—	—
1-3/4		1.7500	17-1/8	10-3/8	5	C68789	—	—
	45.00	1.7717	359	210	4	C21982	—	—
1-13/16		1.8125	17-1/8	10-1/8	5	C68790	—	—
1-7/8		1.8750	17-3/8	10-3/8	5	C68791	—	—
1-15/16		1.9375	17-3/8	10-3/8	5	C68792	—	—
	49.00	1.9291	369	220	4	C21983	—	—
	50.00	1.9685	369	220	4	C21984	—	—
2		2.0000	16-5/8	10-5/8	4	C68766	—	—
2		2.0000	17-3/8	10-3/8	5	C68793	—	—

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**Note**

High Speed Steel - M2

Cobalt - M42

Can cut materials up a maximum tensile strength of 900 N/mm² (266 BHn / 27 HRc).

1 Inch and 2 Inch Depth of Cut.

1/2 Inch (0.500") Diameter to 2 Inch (2.000") Diameter Range.

Used in Magnetic (MAG) Drills.

3/4" (0.750") Shanks on all sizes.

Used on the following applications: Mild Steel, Structural Steel, Construction Steel, Aluminum, Copper / Brass, Plastics.

Annular Cutters allows hole to be produced quicker and more efficiently, compared to conventional drills.

Due to the cutter design the load per tooth is greatly reduced and the power used by the machine is kept to a minimum.

This greatly increases productivity and the life expectancy of the tool and machine.

See Technical Section for cutting speeds and application information.

All cutter come with Locator Pin

diameter	decimal equivalent	depth of cut	order number		depth of cut	order number	
			4500 HSS	4505 Cobalt		4501 HSS	4506 Cobalt
1/2	0.5000	1"	C34060	C34130	2"	C34077	C34147
9/16	0.5625	1"	C34061	C34131	2"	C34078	C34148
5/8	0.6250	1"	C34062	C34132	2"	C34079	C34149
11/16	0.6875	1"	C34063	C34133	2"	C34080	C34150
3/4	0.7500	1"	C34064	C34134	2"	C34081	C34151
13/16	0.8125	1"	C34065	C34135	2"	C34082	C34152
7/8	0.8750	1"	C34066	C34136	2"	C34083	C34153
15/16	0.9375	1"	C34102	C34137	2"	C34084	C34154
1	1.0000	1"	C34067	C34138	2"	C34085	C34155
1-1/16	1.0625	1"	C34068	C34139	2"	C34086	C34156
1-1/8	1.1250	1"	C34069	C34140	2"	C34087	C34157
1-3/16	1.1875	1"	C34070	C34141	2"	C34088	C34158
1-1/4	1.2500	1"	C34071	C34142	2"	C34089	C34159
1-5/16	1.3125	—	—	—	2"	C34090	C34160
1-3/8	1.3750	—	—	—	2"	C34091	C34161
1-1/2	1.5000	1"	C34073	C34143	2"	C34092	C34162
1-9/16	1.5625	—	—	—	2"	C34093	C34163
1-5/8	1.6250	1"	C34074	C34144	2"	C34094	C34164
1-11/16	1.6875	—	—	—	2"	C34095	C34165
1-3/4	1.7500	—	—	—	2"	C34096	C34166
1-13/16	1.8125	1"	C34075	C34145	2"	C34097	C34167
1-7/8	1.8750	—	—	—	2"	C34098	C34168
2	2.0000	1"	C34076	C34146	2"	C34099	C34169

Locator Pin for Annular Cutter

Styles: 4502



diameter (mm)	decimal equivalent	locator pin for	order number
6	0.236	1" long cutter	4502 C34100
6.20	0.244	2" long cutter	4502 C34101



CLE-LINE

**Note**

Precision: squared tip for better centering.

High grade carbide for longer lasting life.

Use with rotation or rotary percussion drill motors.

Sandblasted finish.



Parts may vary slightly.
This style was updated;
previous style will be shipped
until inventory is depleted.



cutting diameter		shank diameter	working length	overall length	order number
fractional	decimal				
1/8	.1250	3/32"	1-3/8	3	C20930
3/16	.1875	5/32"	2-1/2	4	C20932
3/16	.1875	5/32"	4	6	C20910
1/4	.2500	7/32"	2-1/2	4	C20934
1/4	.2500	7/32"	4	6	C20935
1/4	.2500	3/16"	10	12	C20911
5/16	.3125	15/64"	2-1/2	4	C20937
5/16	.3125	15/64"	4	6	C20938
5/16	.3125	15/64"	10	12	C20912
3/8	.3750	5/16"	2-1/2	4	C20939
3/8	.3750	5/16"	4	6	C20940
3/8	.3750	5/16"	10	12	C20913
1/2	.5000	3/8"	4	6	C20944
1/2	.5000	3/8"	10	12	C20914
5/8	.6250	1/2"	4	6	C20946
5/8	.6250	1/2"	10	12	C20925
3/4	.7500	1/2"	4	6	C20948
3/4	.7500	1/2"	10	12	C20926
7/8	.8750	1/2"	10	12	C20927
1	1.0000	1/2"	4	6	C20950
1	1.0000	1/2"	10	12	C20928

Masonry Carbide Tipped SETS

Style: 1818

Plastic Case



drill sizes	no. of pieces	order number
1/8, 5/32, 3/16, 1/4, 5/16	5	C20929



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Masonry Carbide Tipped

Style: 1889



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**Note**

Durability in concrete, brick, and brittle materials.
Speeds up dust extraction.
Better resistance to high temperature when drilling.
Use with rotation or rotary percussion drill motors.
Sandblasted finish.

Parts may vary slightly. This style was updated; previous style will be shipped until inventory is depleted.



THREADING / DIES



cutting diameter		shank diameter	flute length	overall length	order number
fractional	decimal				
1/8	.1250	3/32"	1-9/16"	3	1889 C23286
3/16	.1875	5/32"	3-15/64	4	C23270
1/4	.2500	7/32"	2-11/64	4	C23287
1/4	.2500	7/32"	3-3/4	6	C23271
1/4	.2500	7/32"	8-25/32	12	C23272
5/16	.3125	15/64"	2-11/64	4	C23288
5/16	.3125	15/64"	3-3/4	6	C23273
5/16	.3125	15/64"	8-25/32	12	C23274
3/8	.3750	5/16"	2-11/64	4-1/2	C23289
3/8	.3750	5/16"	3-3/4	6	C23275
3/8	.3750	5/16"	8-25/32	12	C23276
1/2	.5000	3/8"	2-11/64	4-1/2	C23278
1/2	.5000	3/8"	3-3/4	6	C23280
1/2	.5000	3/8"	8-25/32	12	C23281
5/8	.6250	1/2"	3-11/32	6	C23282
3/4	.7500	1/2"	3-5/64	6	C23283

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CARBIDE BURS / ROUTERS

Masonry Glass & Tile

Style: 1822

Parts may vary slightly. This style was updated; previous style will be shipped until inventory is depleted.

Note

New harder carbide grade. Used dry.
4 Sided design "diamond style" tip improves precision and penetration Suitable for more materials: non-tempered glass, plastic, composite, brick, marble.
Drills through up to class 3 ceramic tiles.



cutting diameter		overall length	order number
fractional	decimal		
1/8	.1250	3-5/32	1822 C20718
3/16	.1875	3-5/32	C20719
1/4	.2500	3-15/16	C20720
5/16	.3125	3-15/16	C20721
3/8	.3750	3-15/16	C20722
1/2	.5000	3-15/16	C20723

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SETS - Masonry Glass & Tile

Style: 1822



drill sizes	no. of pieces	order number
1/8", 1/4", 3/8", 1/2"	4	1822 C21148



CLE-LINE

Masonry SDS® Carbide Tipped

Style: 1821 SDS® - plus 2 Cutting Premium

**Note**

Carbide Tip.

Self Centering And Concrete Breaker Tip.

160° Tip Angle.

Square Flute.

Compatible SDS-Plus Shank.

Chiseling Effect To Break Concrete.



Parts may vary slightly.
This style was updated;
previous style will be shipped
until inventory is depleted.



cutting diameter		shank diameter	working length	overall length	order number
fractional	decimal				
3/16	.1875	SDS + shank 3/8"	2	4	C21032
3/16	.1875	SDS + shank 3/8"	4	6	C20712
3/16	.1875	SDS + shank 3/8"	6	8	C21033
3/16	.1875	SDS + shank 3/8"	10	12	C21020
1/4	.2500	SDS + shank 3/8"	2	4	C21034
1/4	.2500	SDS + shank 3/8"	4	6	C20713
1/4	.2500	SDS + shank 3/8"	6	8	C21035
1/4	.2500	SDS + shank 3/8"	10	12	C21021
5/16	.3125	SDS + shank 3/8"	4	6	C21036
5/16	.3125	SDS + shank 3/8"	10	12	C21022
3/8	.3750	SDS + shank 3/8"	4	6	C20714
3/8	.3750	SDS + shank 3/8"	6	8	C21039
3/8	.3750	SDS + shank 3/8"	10	12	C21040
3/8	.3750	SDS + shank 3/8"	16	18	C21023
1/2	.5000	SDS + shank 3/8"	4	6	C20715
1/2	.5000	SDS + shank 3/8"	6	8	C21042
1/2	.5000	SDS + shank 3/8"	10	12	C21043
1/2	.5000	SDS + shank 3/8"	16	18	C21024
5/8	.6250	SDS + shank 3/8"	6	8	C21025
5/8	.6250	SDS + shank 3/8"	10	12	C21046
5/8	.6250	SDS + shank 3/8"	16	18	C21026
3/4	.7500	SDS + shank 3/8"	6	8	C20717
3/4	.7500	SDS + shank 3/8"	10	12	C21048
3/4	.6250	SDS + shank 3/8"	16	18	C21027
7/8	.8750	SDS + shank 3/8"	8	10	C21028
1	1.0000	SDS + shank 3/8"	10	12	C21029
1	1.0000	SDS + shank 3/8"	16	18	C21030



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Masonry SDS® Carbide Tipped

Styles: 1821

Plastic Case

drill sizes	no. of pieces	order number
3/16", 1/4", 5/16", 3/8", 1/2" x 6	5	C21031



Masonry SDS® - Drill ReBar

Style: 1833 - SDS® - plus 3 Cutting Premium

Note

Monobloc carbide tip with self centering point.

3 Cutting edges.

135° Tip angle.

Combines square and round flute shape.

Compatible SDS-plus shank.

The solution for drilling rebar and concrete without cracking.

cutting diameter		shank diameter	working length	overall length	order number
fractional	decimal				
3/16	.1875	SDS + shank 3/8"	2	4	C22100
3/16	.1875	SDS + shank 3/8"	4	6	C22101
1/4	.2500	SDS + shank 3/8"	2	4	C22102
1/4	.2500	SDS + shank 3/8"	4	6	C22103
1/4	.2500	SDS + shank 3/8"	10	12	C22104
5/16	.3125	SDS + shank 3/8"	4	6	C22105
5/16	.3125	SDS + shank 3/8"	10	12	C22106
3/8	.3750	SDS + shank 3/8"	4	6	C22107
3/8	.3750	SDS + shank 3/8"	10	12	C22108
1/2	.5000	SDS + shank 3/8"	4	6	C22109
1/2	.5000	SDS + shank 3/8"	10	12	C22110
9/16	.5625	SDS + shank 3/8"	4	6	C22111
9/16	.5625	SDS + shank 3/8"	10	12	C22112





Masonry Multi-purpose Carbide Tipped Style: 1838



CLE-LINE

HOLEMAKING

**Note**Carbide tip.118° point angle.Universal use.

*Used in low density
Wood, Alloy Steel, Non-
Ferrous Materials, Slate,
Composite, and Tile*

THREADING / DIES

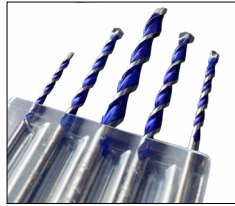


cutting diameter		shank diameter	working length	overall length	order number
fractional	decimal				
1/8	.1250	7/64"	25/32	2-1/2	1838 C22210
5/32	.1562	5/32"	1-3/8	3	C22211
3/16	.1875	3/16"	1-25/32	3-1/2	C22212
1/4	.2500	7/32"	2-1/2	4	C22213
5/16	.3125	19/64"	3	4-1/2	C22214
3/8	.3750	23/64"	3	4-1/2	C22215
1/2	.5000	31/64"	4	6	C22216
5/8	.6250	1/2"	4	6	C22217

SAWS

SETS - Masonry Multi-purpose Carbide Tipped Style: 1838

CARBIDE BURS/ROUTERS



drill sizes	no. of pieces	order number
1/8", 5/32", 3/16", 1/4", 5/16"	5	1838 C22218

MERCHANDISER

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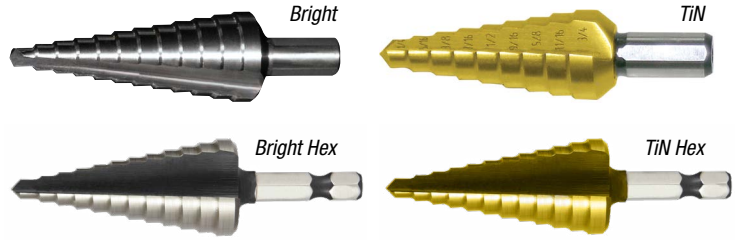
CLE-LINE

Specialty Step Drills
Styles: 1874, 1874TN

P **Bright**
N **TiN**



Note
 Standard off-the-shelf
 delivery from stock.



step description	hole sizes	decimal equivalent	shank diameter	overall length	order number	
					1874 Bright	1874TN TiN
3/16 - 1/2 x 1/16	3/16 - 1/2	.1875 - .5000	1/4	3-1/8	C20285	C20295
NEW 3/16 - 1/2 x 1/16	3/16 - 1/2	.1875 - .5000	1/4 Hex	3-1/8	C20310	C20312
3/16 - 7/8 x 1/16	3/16 - 7/8	.1875 - .8750	3/8	3-1/4	C20288	C20298
1/8 - 1/2 x 1/32	1/8 - 1/2	.1250 - .5000	1/4	3-1/8	C20286	C20296
NEW 1/8 - 1/2 x 1/32	1/8 - 1/2	.1250 - .5000	1/4 Hex	3-1/8	C20311	C20313
1/4 - 3/4 x 1/16	1/4 - 3/4	.2500 - .7500	3/8	2-3/4	C20287	C20297
1/4 - 1-3/8 x 1/8	1/4 - 1-3/8	.2500 - 1.3750	3/8	3-1/4	C20290	—
1/4 - 1-1/8 x 1/16	1/4 - 1-1/8	.2500 - 1.1250	3/8	3-7/64	C20293	—

Specialty Step Drills
Styles: 1874, 1874TN

Metal Case

drilling diameter range	no. of pieces	order number	
		1874 Bright	1874TN TiN
1/8 - 3/4	3	C20325	C20326



3-Piece Set
 TiN
 #C20326

HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

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**Note**

Made specifically for sheet metal and other thin materials having a thickness similar to the drill diameter.



HOLEMAKING

THREADING / DIES

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CARBIDE BURS/ROUTERS

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	drill diameter		decimal equivalent	overall length	flute length	order number	
	frac/wire	mm				1683 Black Oxide	1815 Black Oxide
		2.00	.0787	38	9	C69005	—
		2.10	.0826	38	9	C69006	—
		2.50	.0984	43	10	C69007	—
		3.00	.1181	46	11	C69008	—
1/8			.1250	1.929	.433	C69021	C20500
		3.20	.1259	49	12	C69009	—
		3.26	.1283	49	12	C69010	—
#30			.1285	1.875	.500	C69028	C23811
		3.30	.1299	49	12	C69012	—
		3.50	.1377	52	14	C69013	—
9/64			.1406	1.047	.551	C69022	C17618
5/32			.1562	2.165	.551	C69023	C17619
		4.00	.1574	55	14	C69014	—
#20			.1610	2.063	.625	C69027	C23810
		4.10	.1614	55	14	C69015	—
		4.20	.1653	55	14	C69016	—
3/16			.1875	2.441	.669	C69024	C20501
#11			.1910	2.334	.688	C69026	C23809
		4.90	.1929	62	17.5	C69017	—
		5.00	.1968	62	17.5	C69018	—
		5.10	.2007	62	17.5	C69019	—
		5.20	.2047	62	17.5	C69020	—
1/4			.2500	2.756	.787	C69025	C20503



CLE-LINE



Note

Use in quick change chucks, Style #1817, shown on previous page for fast size changes.

drill diameter	decimal equivalent	order number
		1816
		Bright
1/16	.0625	C20510
5/64	.0781	C20511
3/32	.0938	C20512
7/64	.1094	C20513
1/8	.1250	C20514
9/64	.1406	C20516
5/32	.1562	C20517
3/16	.1875	C20518
7/32	.2188	C20908
1/4	.2500	C20909

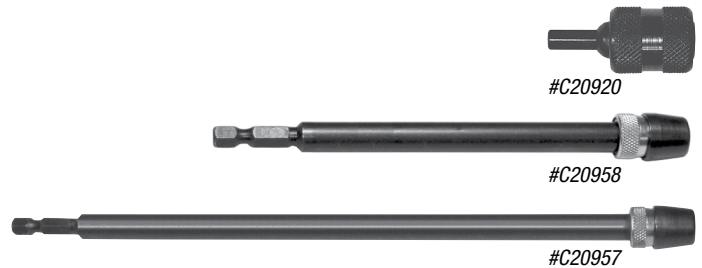
Specialty Quick Change Chucks

Style: 1817



Note

For use with 1/4" hex shank drills or for 1/4" and 3/8" shank drills. Installs in 3/8" or larger chucks. Converts standard power tool chucks to quick-change operation. No chuck keys needed.



description	order number
	1817
Quick-change chuck insert converts standard chucks to quick-change operation	C20920
Quick-change chuck for 1/4" hex shank drills	C20955
Extra length (6" OAL) quick-drive quick-change chuck for 1/4" hex shank tools	C20958
Extra length (12" OAL) quick-drive quick-change chuck for 1/4" hex shank tools	C20957

HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

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HOLEMAKING - Other Drills & Accessories

Specialty - Metric Welding Point Drills

Styles: **2195, 2185, 2185F**

CLE-LINE

HOLEMAKING



Cobalt



Cobalt Straw Oxide



Cobalt Straw Oxide w/ Flats

**Note**

Designed to drill rivet holes and other applications in thin sheet metal.

Ideal for hand drilling.

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

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order number

drill diameter (mm)	decimal equivalent	overall length	flute length	2195	2185	2185F
				Cobalt	Cobalt - Straw	Cobalt - Straw w/flats
6.0	.2362	66	28	C20988	C20478	C20878
6.5	.2559	70	31	—	—	C20877
8.0	.3150	79	37	C20989	C20479	C20879
10.0	.3937	89	43	C20990	C20480	C20880

Specialty Power Wood Bit

Style: **1823**

Bright

**Note**

Unique Turbo Twist™ clears holes of chips.

3 flats on shank.

Easy to re-sharpen.

This product is being obsoleted.
Available until inventory is depleted.

order number

drill diameter	decimal equivalent	overall length	1823
			Bright
1/4	.2500	6	C17100
5/16	.3125	6	C17101
3/8	.3750	6	C17102
7/16	.4375	6	C17103
1/2	.5000	6	C17104
9/16	.5625	6	C17105
5/8	.6250	6	C17106
11/16	.6875	6	C17107
3/4	.7500	6	C17108
13/16	.8125	6	C17109
7/8	.8750	6	C17110
15/16	.9375	6	C17111
1	1.0000	6	C17112
1-1/4	1.2500	6	C17114
1-3/8	1.3750	6	C17115
1-1/2	1.5000	6	C17116



K **P** Bright
N **HSS**



Note
 Produces a 60° included angle center, used for most applications.

size	drill diameter	decimal equivalent	body diameter	overall length	order number	
					1824	Bright
0	1/32	.0312	1/8	1-1/8	C20891	
1	3/64	.0469	1/8	1-1/4	C20892	
2	5/64	.0781	3/16	1-7/8	C20893	
3	7/64	.1094	1/4	2	C20894	
4	1/8	.1250	5/16	2-1/8	C20895	
5	3/16	.1875	7/16	2-3/4	C20896	
6	7/32	.2188	1/2	3	C20897	
7	1/4	.2500	5/8	3-1/4	C20898	
8	5/16	.2344	3/4	3-1/2	C20899	

Specialty Die Drill
Style: 1844

K **P** **H** Reduced Shank
N **M**



Note
 Long carbide tip to prevent chipping, to improve cutting, and for better cooling.
 Brazed tip for strength, performance and durability.
 Special fluting for rapid chip evacuations and heat dissipation.
 Specially tempered bodies for strength and longer tool life.
 Designed for hardened steel.
 Run at 75-100 SFM.

This product is being obsoleted.
 Available until inventory is depleted.

drill diameter	decimal equivalent	shank diameter	overall length	order number	
				Right-Hand	Left-Hand
3/16	.1875	3/16	3	C19000	C19005
1/4	.2500	1/4	4	C19001	C19006
1/4	.2500	1/4	6	—	C19007
5/16	.3125	1/4	4	C19003	—
3/8	.3750	3/8	4	—	C19009



Specialty Screw Extractors

Style: 1829



CLE-LINE



HOLEMAKING



Note

Removes broken cap screws, set screws, studs, bolts, pipe fittings and other threaded parts without damaging the threads in the hole.

THREADING / DIES

extractor size	small end	large diameter	length of taper	overall length	order number 1829 Bright
1	.0625	.1562	3/4	2	C17170
2	.0860	.1800	3/4	2-3/8	C17171
3	.1250	.2500	1	2-3/4	C17172
4	.1875	.3125	1	3	C17173
5	.2500	.4375	1-1/2	3-3/8	C17174

extractor size	small end	large diameter	length of taper	overall length	order number 1829 Bright
6	.3750	.5938	1-3/4	3-3/4	C17176
7	.5000	.7812	2-1/4	4-1/8	C17178
8	.7500	1.0312	2-1/4	4-3/8	C17180
9	1.0000	1.2812	2-1/4	4-5/8	C24750
10	1.2500	1.5625	2-1/2	5	C24751

SAWS

SETS Specialty Screw Extractors

Style: 1829

Fold-up Pouch



size range	no. of pieces	order number 1829 Bright
#1 - #5	5	C21149

CARBIDE BURS/ROUTERS

MERCHANDISER

SETS Specialty Drill & Screw Extractors

Style: 1864



Note

Drill style: 1878 Black & Gold

INDEX

jobber drill	screw extractor	no. of pcs.	order number 1864
5/64	#1	2	C22311
7/64	#2	2	C22312
5/32	#3	2	C22313

jobber drill	screw extractor	no. of pcs.	order number 1864
1/4", E	#4	2	C22314
17/64"	#5	2	C22315
13/32"	#6	2	C22316



CLE-LINE

Step Reamer

Styles: **2874**



HSS **Black Oxide**



step description	hole sizes	decimal equivalent	shank diameter	step length	No. of flutes	order number 2874 Black Oxide
5/16 - 9/16 x 1/16	5/16 - 9/16	.3125 - .5625	3/8	1/2	2	C20300
9/16 - 13/16 x 1/16	9/16 - 13/16	.5625 - .8125	3/8	1/2	2	C20301
13/16 - 1-1/16 x 1/16	13/16 - 1-1/16	.8125 - 1.0625	3/8	1/2	2	C20302

Specialty Step Reamer SETS

Styles: **2874**

Metal Case

drilling diameter range	no. of pieces	order number 2874 Black Oxide
5/16 - 1-1/16	3	C20303

Set includes one of each size



Bridge Length Reamer Spiral Flute / Hex Shank

Style: **2616**

P **K** **HSS** **LHS RHC** **Black Gold**

Note

Heavy duty reaming in steel assemblies.

Tapered at the point which is ideal for holes which are out of alignment.

Magnets are 180° apart in the hex shank to reduce the chance of falling out of the socket.



reamer size	point diameter	hex size	overall length	flute length	No. of flutes	order number 2616 Black & Gold		
9/16	.5625	11/32	.344	1-1/16	6-7/8	5-1/8	5	C36000
5/8	.6250	3/8	.375	1-1/16	7-7/8	6-1/8	5	C36001
11/16	.6875	3/8	.375	1-1/16	9-1/4	7-1/8	5	C36002
3/4	.7500	13/32	.406	1-1/4	9-3/8	7-3/8	5	C36003
13/16	.8125	1/2	.500	1-1/4	9-3/8	7-3/8	5	C36004
7/8	.8750	9/16	.563	1-7/16	9-3/8	7-3/8	5	C36005
15/16	.9375	19/32	.594	1-7/16	9-3/8	7-3/8	5	C36006
1	1.0000	11/16	.687	1-7/16	9-3/8	7-3/8	5	C36007
1-1/16	1.0625	3/4	.750	1-5/8	9-3/8	7-3/8	5	C36008
1-1/8	1.1250	13/16	.812	1-5/8	9-3/8	7-3/8	5	C36009
1-3/16	1.1875	7/8	.875	1-13/16	9-3/8	7-3/8	5	C36010
1-1/4	1.2500	15/16	.937	1-13/16	9-3/8	7-3/8	5	C36011
1-5/16	1.3125	1	1.000	2	10	7-3/8	6	C36012
1-3/8	1.3750	1-1/16	1.062	2	10	7-3/8	6	C36013
1-7/16	1.4375	1-1/8	1.125	2	10	7-3/8	6	C36014
1-1/2	1.5000	1-3/16	1.187	2'	10	7-3/8	6	C36015
1-9/16	1.5625	1-9/16	1.562	2	10	7-3/8	6	C36016
1-5/8	1.6250	1-5/16	1.312	2	10	7-3/8	6	C36017



Car Length Reamer Spiral Flute / Hex Shank

Style: 2618



CLE-LINE

HOLEMAKING

**Note***Heavy duty reaming in steel assemblies.**Tapered at the point which is ideal for holes which are out of alignment.**Magnets are 180° apart in the hex shank to reduce the chance of falling out of the socket.*

THREADING / DIES

SAWS

reamer size		point diameter		hex size	overall length	flute length	No. of flutes	order number 2618 Black & Gold
1/2	.5000	9/32	.281	1-1/16	5-1/2	4	6	C36018
9/16	.5625	11/32	.344	1-1/16	5-7/8	4	6	C36019
5/8	.6250	11/32	.344	1-1/16	6	4-1/2	6	C36020
11/16	.6875	3/8	.375	1-1/16	6-3/8	4-1/2	6	C36021
3/4	.7500	13/32	.406	1-1/4	7	5	6	C36022
13/16	.8125	1/2	.500	1-1/4	7	5	6	C36023
7/8	.8750	9/16	.562	1-7/16	7	5	6	C36024
15/16	.9375	19/32	.594	1-7/16	7	5	6	C36025
1	1.0000	11/16	.687	1-7/16	7	5	6	C36026
1-1/16	1.0625	3/4	.750	1-5/8	7	5	6	C36027
1-1/8	1.1250	13/16	.812	1-5/8	7	5	6	C36028
1-3/16	1.1875	7/8	.875	1-13/16	7	5	6	C36029
1-1/4	1.2500	15/16	.937	1-13/16	7	5	6	C36030
1-5/16	1.3125	1	1.000	2	7-7/8	5	6	C36031

CARBIDE BURS/ROUTERS

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Car Reamer Spiral Flute / Straight Shank

Style: 2619

**Note***3 flats on shank.*

reamer size	decimal equivalent	diameter at point	length of taper	length of flute	overall length	number of flutes	Helix	shank diameter	order number 2619 Black & Gold
5/16	.3125	0.183	2.000	3.179	5.000	4	25 LHS	0.313	C24002
3/8	.3750	0.193	2.000	3.179	5.000	4	25 LHS	0.375	C24003
7/16	.4375	0.223	2.250	3.429	5.250	4	25 LHS	0.438	C24004
1/2	.5000	0.236	2.625	4.117	5.938	5	25 LHS	0.500	C24005
9/16	.5625	0.299	2.625	4.117	5.938	5	25 LHS	0.500	C24006
5/8	.6250	0.264	3.375	4.742	6.563	5	25 LHS	0.500	C24007
11/16	.6875	0.327	3.375	4.742	6.563	5	25 LHS	0.500	C24008
3/4	.7500	0.458	3.750	5.179	7.000	5	25 LHS	0.500	C24009
13/16	.8125	0.522	3.750	5.179	7.000	5	25 LHS	0.500	C24010
7/8	.8750	0.585	3.875	5.429	7.250	5	25 LHS	0.500	C24011
15/16	.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



Cost Saving Drill SETS

See product specific page for additional information

size range	no. of pcs.	drill description	case type	style	order number
Jobber Length - Drills & Tap Set					
36 / 6-32	2	Bright, Drill: #36 Tap: 6-32 spiral point	plastic tube	1860	C22305
29 / 8-32	2	Bright, Drill: #29 Tap: 8-32 spiral point	plastic tube	1860	C22304
25 / 10-24	2	Bright, Drill: #25 Tap: 10-24 spiral point	plastic tube	1860	C22307
21 / 10-32	2	Bright, Drill: #21 Tap: 10-32 spiral point	plastic tube	1860	C22306
7 / 1/4-20	2	Bright, Drill: #7 Tap: 1/4-20 spiral point	plastic tube	1860	C22308
F / 5/16-18	2	Bright, Drill: F Tap: 5/16-18 spiral point	plastic tube	1860	C22300
5/16" / 3/8-16	2	Bright, Drill: 5/16" Tap: 3/8-16 spiral point	plastic tube	1860	C22303
U / 7/16-14	2	Bright, Drill: U Tap: 7/16-14 spiral point	plastic tube	1860	C22302
27/64" / 1/2-13	2	Bright, Drill: 27/64" Tap: 1/2-13 spiral point	plastic tube	1860	C22301
36, 29, 25, 21, 7, F, 5/16, U, 27/64, Taps: 6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13	18	Bright, drill & hand tap set	metal	1898	C21190
		Black & gold HD drill, Bright hand tap set	metal	1878	C21191
		Black & gold split pt. HD drill, Black oxide tap	metal	1878	C21192
Jobber Length - Drills Set					
1/16" - 3/8" x 1/32"	11	Bright, general purpose, 118° point	metal	1898	C21100
		Black, general purpose, 118° point	metal	1899	C21101
1/16" - 1/4" x 1/64"	13	Black Oxide, general purpose, 118° point	metal	1600	C69034
		Bright, general purpose, 118° point	metal	1898	C21104
		Black, general purpose, 118° point	metal	1899	C21105
		Heavy duty, 135° split point	metal	1801	C21157
		Black & gold, heavy duty 135° split point	metal	1604	C69030
		Black & gold, heavy duty 135° split point	metal	1878	C18123
		Heavy duty parabolic, 135° split point	metal	1872	C18619
		TiN heavy duty parabolic, 135° split point	metal	1872TN	C18700
		Cobalt heavy duty, 135° split point	metal	1603	C69377
		Cobalt heavy duty, 135° split point	metal	1802	C21107
		Black & gold heavy duty, flats on shank	metal	1607	C68343
1/16" - 1/2" x 1/32"	15	Bright, general purpose, 118° point	metal	1898	C21108
		Black, general purpose, 118° point	plastic	1600	C69035
		Black, general purpose, 118° point	metal	1899	C21109
		Black, general purpose, 3/8" shank, 118° pt	metal	1900	C21156
		TiN general purpose, 118° point	metal	1898T	C19210
		Heavy duty, 135° split point	metal	1801	C21110
		Black & gold, heavy duty	metal	1878	C18124
		Black & gold, heavy duty, 135° split point	plastic	1604	C69031
		Heavy duty parabolic, 135° split point	metal	1872	C18620
		TiN heavy duty parabolic, 135° split point	metal	1872TN	C18701
		Cobalt heavy duty, 135° split point	metal	1603	C69378
		Cobalt heavy duty, 135° split point	metal	1802	C21112
		Black & gold heavy duty, flats on shank	plastic	1607	C68461
1/16" - 3/8" x 1/64"	21	Bright, general purpose, 118° point	metal	1898	C21113
		Black, general purpose, 118° point	metal	1600	C69036
		Black, general purpose, 118° point	metal	1899	C21114
		Heavy duty, 135° split point	metal	1801	C21115
		Heavy duty parabolic, 135° split point	metal	1872	C18621
		TiN heavy duty parabolic, 135° split point	metal	1872TN	C18702
1/16" - 1/2" x 1/64"	29	Bright, general purpose, 118° point	metal	1898	C21117
		Black, general purpose, 118° point	plastic	1600	C69037
		Black, general purpose, 118° point	metal	1899	C21118
		Black, general purpose, 3/8" shank, 118°	metal	1899/1900	C21159
		TiN, general purpose, 118° point	metal	1898T	C19211
		Black & Gold, heavy duty	metal	1878	C18125
		Black & gold, heavy duty	Bit Barrel™	1878	C18128



2 Piece Set
Bright, Drill & Tap
#C22304



13 Piece Set
Bright
#C21104



15 Piece Set
Black & Gold
#C18124



29 Piece Set
Bright
#C21117

HOLEMAKING SETS

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continued on next page



See product specific page for additional information

size range	no. of pcs.	drill description	case type	style	order number		
Jobber Length - Drills Set (Continued)							
1mm to 6mm	11	Metric Black & Gold, flatted shank		1878	C74058		
1mm to 13mm	25	Metric Black & Gold, flatted shank		1878	C74059		
1/16" - 1/2" x 1/64"	29	Black & Gold, Heavy Duty, 3/8" shank	metal	1878/1879	C18122		
		Black & gold heavy duty, 135° split point	plastic	1604	C69032		
		Black & gold HD, 3/8" shank, 135° split pt	plastic	1605	C69033		
		Black & gold HD, flats on shank, 135° split pt	plastic	1607	C69368		
		Heavy Duty, 135° split	metal	1801	C21119		
		Heavy duty parabolic, 135° split point	metal	1872	C18622		
		TiN heavy duty parabolic, 135° split point	metal	1872TN	C18703		
		Cobalt heavy duty, 135° split point	plastic	1603	C69379		
		Cobalt heavy duty, 135° split	metal	1802	C21121		
		Cobalt hex shank, 135° split point	metal	1804	C10629		
		HSS, TiN Tip, 135° split point	metal	1500-TT	C97413		
HS-CO, TiN Tip, 135° split point	metal	1501-TT	C66113				
A - Z	26	Black, general purpose, 118° point	metal	1899	C21158		
#1 - #60	60	Bright, general purpose, 118° point	metal	1898	C21122		
		Black, general purpose, 118° point	metal	1899	C21123		
		Heavy duty, 135° split point	metal	1801	C21124		
		Cobalt heavy duty, 135° split point	metal	1603	C69380		
		Cobalt heavy duty, 135° split point	metal	1802	C21125		
		1/16" - 1/2" x 1/64", #1 - #60, A - Z	115	Bright, general purpose, 118° point	metal	1898	C21126
1mm - 6mm x 0.5mm	11	Black, general purpose, 118° point	metal	1899	C21127		
		Heavy duty, 135° split point	metal	1801	C21128		
		Cobalt, 135° split point	metal	1802	C21129		
		1mm - 10mm x 0.5mm	19	Black, 118° point	metal	1899	C21130
		Heavy duty parabolic, 135° split point	metal	1872	C18626		
		1mm - 13mm x 0.5mm	25	TiN, general purpose, 118° point	metal	1898T	C24380
		Black, general purpose, 118° point		plastic	1600	C69038	
		Bright, general purpose, 118° point		metal	1898	C18127	
		Black, general purpose, 118° point		metal	1899	C21131	
		Heavy duty parabolic, 135° split point		metal	1872	C18628	
		Mechanics Length					
1/16" - 1/4" x 1/64"	13	Black & gold, gen purpose, 135° sp point	metal	1620	C69029		
		Black & gold, heavy duty, 135° split point	metal	1875R	C18126		
1/16" - 3/8" x 1/64"	21	Black & gold, heavy duty, 135° split point	metal	1875R	C21161		
1/16" - 1/2" x 1/64"	29	Black & gold, gen purpose, 135° sp point	metal	1620	C69041		
		Black & gold, gen purpose, 135° sp point	Bit Barrel™	1620	C69384		
		Black & gold, heavy duty, 135° split point	metal	1875R	C21162		
		Black & gold, heavy duty	Bit Barrel™	1875R	C21165		
		Black & gold, 3/8" shank, 135° split point	metal	1875/1876	C21163		
		Black & gold, heavy duty, 135° split point	metal	1875R	C21160		
1/16" - 1/4" x 1/16"	4	Black & gold, heavy duty, 135° split point	plastic tube	1875R	C22310		
1/16" - 3/8" x 1/16"	6	Black & gold, heavy duty, 135° split point	plastic tube	1875R	C22309		

continued on next page



See product specific page for additional information

size range	no. of pcs.	drill description	case type	style	order number
Screw Machine Length					
1/16" - 1/2" x 1/64"	29	Black heavy duty, 135° split point	metal	1896	C21133
#1 - #60	60	Black heavy duty, 135° split point	metal	1896	C21947
Reduced Shank					
9/16" - 1" x 1/16"	8	1/2" reduced round shank, black	metal	1680	C69039
		1/2" reduced shank with flats, black	metal	1681	C69040
Silver & Deming					
9/16" - 1" x 1/16"	8	1/2" reduced round shank, black	metal	1813	C21135
		1/2" reduced shank with flats, black	metal	1892	C22761
		1/2" reduced shank with flats, black & gold	metal	1877	C21164
	33	1/2" reduced round shank, black	metal	1813	C21134
Step Drills					
3/16 - 3/4"	3	Bright, 118° split point	metal	1874	C20325
		TiN, 118° split point	metal	1874TN	C20326
Step Reamer					
5/16 - 1-1/16 (Hex)	3	Bright, 118° split point	plastic	2874	C20303
Masonry					
1/8, 5/32, 3/16, 1/4, 5/16"	5	Carbide Tipped	plastic	1818	C20929
3/16, 1/4, 5/16, 3/8, 1/2" x 6"	5	Carbide Tipped - SDS® plus 2 Cutting Premium	plastic	1821	C21031
1/8, 1/4, 3/8, 1/2"	4	Glass & Tile	plastic	1822	C21148
1/8", 5/32", 3/16", 1/4", 5/16"	5	Multi-purpose		1838	C22218
Screw Extractor Set in Fold-up Pouch					
#1 - #5	5	Screw extractors	fold-up	1829	C21149
Screw Extractor & Drill Set					
Extractor #1	2	5/64" drill - black and gold	plastic tube	1864	C22311
Extractor #2		7/64" drill - black and gold	plastic tube	1864	C22312
Extractor #3		5/32" drill - black and gold	plastic tube	1864	C22313
Extractor #4		1/4"(E) drill - black and gold	plastic tube	1864	C22314
Extractor #5		17/64" drill - black and gold	plastic tube	1864	C22315
Extractor #6		13/32" drill - black and gold	plastic tube	1864	C22316
Drill Dispensers					
1/16" - 1/2"		Dispenser Only	metal	1867	C23992
Letter A - Z		Dispenser Only	metal	1867	C23993
#1 - #60		Dispenser Only	metal	1867	C23994
Tap, Die and Drill - For additional sets with taps and drills - see Jobber Drills - Drill & Tap Set					
451	5 sizes	M6 x 1.0, M7 x 1.0, M8 x 1.25, M10 x 1.5, M12 x 1.75, 5.0mm, 6.0mm, 6.7mm, 8.5mm, 10.2mm	metal		C00451



33 piece Set
Silver & Deming
#C21134



5 piece Set
Masonry, Carbide
Tipped #C20929



Drill Dispenser
#C23992



5-Size Set
Tap, Die and Drill
#C00451



Diameter Tolerances

Diameter Range	Plus (+)	Minus (-)
through 1/8	.0000	.0005
over 1/8 through 1/4	.0000	.0007
over 1/4 through 1/2	.0000	.0010
over 1/2 through 1	.0000	.0012
over 1 through 2	.0000	.0015
over 2 through 3-1/2	.0000	.0020

Lip Height Tolerances

Diameter Range	Total Indicator Variation
1/16 through 1/8	.0020
over 1/8 through 1/4	.0030
over 1/4 through 1/2	.0040
over 1/2 through 1	.0050
over 1 through 3-1/2	.0060

Point Angle Tolerances

Diameter Range	Included Angle	Tolerance
1/16 through 1/2	118° / 135°	± 5°
over 1/2 through 1-1/2	118°	± 3°
over 1-1/2 through 3-1/2	118°	± 2°

Overall Length and Flute Length Tolerances

Diameter Range	Plus (+)	Minus (-)
#80 through 1/8	.1250	.0625
over 1/8 through 1/2	.1250	.1250
over 1/2 through 1	.2500	.1250
over 1 through 2	.2500	.2500
over 2 through 3-1/2	.3750	.3750

Tap Drill Sizes

Machine Screw and Fractional Sizes

nominal tap size	drill size	decimal equivalent	nominal tap size	drill size	decimal equivalent
0-80	3/64	.0469	5/16-18	F	.2570
1-64	53	.0595	5/16-24	I	.2720
1-72	53	.0595	3/8-16	5/16	.3125
2-56	50	.0700	3/8-24	Q	.3320
2-64	50	.0700	7/16-14	U	.3680
3-48	47	.0785	7/16-20	25/64	.3906
3-56	46	.0810	1/2-13	27/64	.4219
4-40	43	.0890	1/2-20	29/64	.4531
4-48	42	.0935	9/16-12	31/64	.4844
5-40	38	.1015	9/16-18	33/64	.5156
5-44	37	.1040	5/8-11	17/32	.5312
6-32	36	.1065	5/8-18	37/64	.5781
6-40	33	.1130	3/4-10	21/32	.6562
8-32	29	.1360	3/4-16	11/16	.6875
8-36	29	.1360	7/8-9	49/64	.7656
10-24	26	.1470	7/8-14	13/16	.8125
10-32	21	.1590	1-8	7/8	.8750
12-24	16	.1770	1-12	59/64	.9219
12-28	15	.1800			
1/4-20	7	.2010			
1/4-28	3	.2130			

Metric Sizes

nominal tap size	drill size	decimal equivalent	nominal tap size	drill size	decimal equivalent
M1.6 x 0.35	1.25	.0492	M18 x 2.5	15.5	.6102
M1.8 x 0.35	1.45	.0571	M18 x 1.5	16.5	.6496
M2 x 0.4	1.6	.0630	M20 x 2.5	17.5	.6890
M2.2 x 0.45	1.75	.0689	M20 x 1.5	18.5	.7283
M2.5 x 0.45	2.05	.0807	M22 x 2.5	19.5	.7677
M3 x 0.5	2.5	.0984	M22 x 1.5	20.5	.8071
M3.5 x 0.6	2.9	.1142	M24 x 3.0	21.0	.8268
M4 x 0.7	3.3	.1299	M24 x 2.0	22.0	.8661
M4.5 x 0.75	3.7	.1457	M27 x 3.0	24.0	.9449
M5 x 0.8	4.2	.1654	M27 x 2.0	25.0	.9843
M6 x 1.0	5.0	.1969	M30 x 3.5	26.5	1.0433
M7 x 1.0	6.0	.2362	M30 x 2.0	28.0	1.1024
M8 x 1.25	6.7	.2638	M33 x 3.5	29.5	1.1614
M8 x 1.0	7.0	.2756	M33 x 2.0	31.0	1.2205
M10 x 1.5	8.5	.3346	M36 x 4.0	32.0	1.2598
M10 x 1.25	8.7	.3425	M36 x 3.0	33.0	1.2992
M12 x 1.75	10.2	.4016			
M12 x 1.25	10.8	.4252			
M14 x 2.0	12.0	.4724			
M16 x 2.0	14.0	.5512			
M16 x 1.5	14.5	.5709			

Pipe Sizes

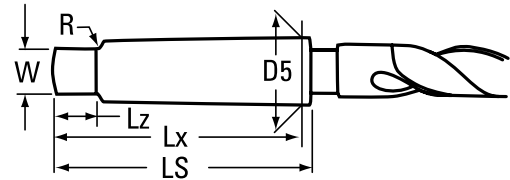
nominal tap size	NPT, NPTF		NPSM	NPSC	NPSF
	w/o reamer	w/reamer			
1/16-27	C (.242)	A (.234)	—	1/4	D (.246)
1/8-27	Q (.332)	21/64	T (.358)	11/32	R (.339)
1/4-18	7/16	27/64	15/32	7/16	7/16
3/8-18	9/16	9/16	(.603 special)	37/64	37/64
1/2-14	45/64	11/16	19mm	23/32	45/64
3/4-14	29/32	57/64	61/64	59/64	59/64
1-11½	1-9/64	1-1/8	1-13/64	1-5/32	1-5/32
1¼-11½	1-31/64	1-15/32	1-35/64	1-1/2	—
1½-11½	1-23/32	1-45/64	1-25/32	1-3/4	—
2-11½	2-3/16	2-11/64	2-1/4	2-7/32	—

**Drill Feeds**

Diameter Range (in)	Normal Feeds (IPR)	Heavy Feeds (IPR)
1/16 thru 1/8	.001-.002	.002-.004
over 1/8 thru 1/4	.002-.004	.004-.008
over 1/4 thru 1/2	.004-.008	.008-.016
over 1/2 thru 1	.008-.016	.016-.024
over 1	.016-.024	.024-.032

Recommended Drill Speeds and Coolants

Ferrous Materials		Brinell	Surface Feet per Minute	Coolant
Low Carbon Steel	85-125	80-95	Soluble Oil	
Medium Carbon Steel		125-175	70-85	Soluble Oil
High Carbon Steel	175-225	45-65	Soluble Oil	
Steels Alloyed		Under 200	60-90	Soluble Oil
		200-300	40-70	Soluble Oil
		Over 300	20-30	Soluble Oil
Steel Drop Forgings		330-370	30-40	Cutting Oil
Heat Treated		370-420	20-30	Cutting Oil
		Over 420	10-20	Cutting Oil
Grey Cast Iron	Soft	125	140-150	Dry
	Medium	120-200	50-80	Soluble Oil
	Hard	Up to 350	25-40	Soluble Oil
Titanium Alloys	Ti-75A	300-440	50-60	Cutting Oil
	Ti-150A, RS-120	300-440	40-50	Cutting Oil
	Ti-140A, RC 130B	300-440	30-40	Cutting Oil
	Ti-6AL -4V	300-440	20-30	Cutting Oil
Stainless Steel	300 Series	120-200	20-40	Cutting Oil
	400 Series	200-300	40-70	Cutting Oil
	Martensitic 416, 420, F416 Plus K, 400F, 4165SE, 440F	135-185	40-50	Cutting Oil
	Precipitation Hardening	325-375	30	Cutting Oil
	Cast Stainless Steel	400-450	20	Cutting Oil
Heat Resisting Steels		175-225	10-25	Cutting Oil
Nimonic Alloys		200-300	10-20	Cutting Oil
Manganese	12-14% min	125-220	10-12	Cutting Oil
Spring Steels		402	15-30	Soluble Oil
Non-Ferrous Materials		Brinell	Surface Feet per Minute	Coolant
Aluminum	Pure	140-350	130-200	Soluble Oil
	Aluminum Alloys	140-330	150-300	Soluble Oil
	Leaded	40-100	200-325	Soluble Oil
	Silicon Alloy Die Cast	40-100	25-50	Soluble Oil
Brass		190-210	200-250	Cutting or Soluble Oil
Bronze		150-200	200-250	Soluble Oil
Copper, Nickel & Copper Tin Alloy		65-100	140-200	Cutting or Soluble Oil
Copper Aluminum Alloys		30-100	120-200	Cutting or Soluble Oil
Magnesium Alloys	Wrought	50-90	140-330	Cutting or Soluble Oil
	Cast	50-90	140-365	Cutting or Soluble Oil
Nickel Alloys- Wrought and Cast	Monel	80-170	70	Cutting or Soluble Oil
		115-240	55	Cutting or Soluble Oil
Beryllium Nickel		200-250	12	Soluble Oil
Zinc Alloy		112-126	200-250	Soluble Oil
Armor Plate		200-250	40	Soluble Oil
		250-300	35	Soluble Oil
		300-350	30	Cutting Oil

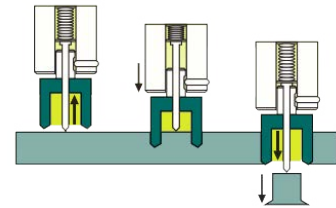


morse taper shank no.	taper per foot	taper per inch	D5 max shank diameter	LS length of shank	Lx shank length to gage line	Lz length of tang	W thickness of tang	R radius
1	.5985	.0498	.475	2.56	2.44	.37	.20	.19
2	.5994	.0499	.700	3.12	2.94	.44	.25	.25
3	.6023	.0501	.938	3.87	3.69	.56	.31	.28
4	.6232	.0519	1.231	4.87	4.62	.62	.47	.31
5	.6315	.0526	1.749	6.12	5.87	.75	.62	.37
6	.6256	.0521	2.494	8.56	8.25	1.12	.75	.50

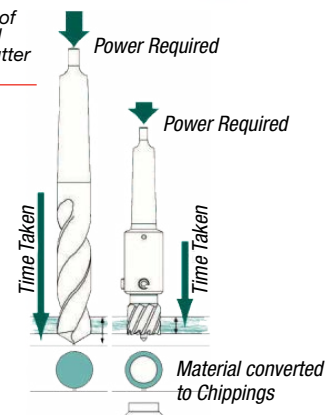
Annular Cutters Cutting Speeds (RPM) / Application

Styles: 4500, 4505 & 4501, 4506

Material Strength N/mm ²	Diameter						
	.472 to .709	.748 to .984	1.024 to 1.260	1.575 to 1.811	1.850 to 2.087	2.126 to 2.362	2.402 to 2.559
<500 High Speed	660	420	305	240	195	165	145
<500 Low Speed	440	320	250	200	170	150	130
<750 High Speed	530	340	245	195	160	135	115
<750 Low Speed	350	250	200	165	140	120	105
<900 High Speed	340	250	185	145	120	100	88
<900 Low Speed	265	190	150	125	105	90	80
Stainless Steel - High Speed	320	200	145	115	90	80	70
Stainless Steel - Low Speed	210	150	120	95	85	72	63
Aluminum - High Speed	980	620	455	360	295	250	220
Aluminum - Low Speed	655	470	370	305	255	225	195
Cast Iron - High Speed	480	300	200	175	143	122	106
Cast Iron - Low Speed	320	230	180	147	125	108	95
Brass - High Speed	660	420	305	240	195	165	145
Brass - Low Speed	440	320	250	200	170	150	130
Copper - High Speed	1060	670	490	390	320	270	235
Copper - Low Speed	700	510	400	330	280	240	210



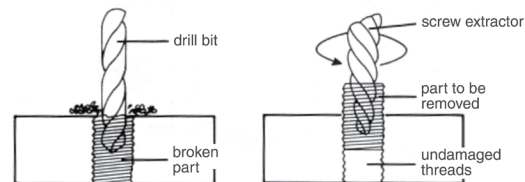
Comparison of twist drill and broaching cutter performance



Screw Extractor

How to Use

extractor size	use on this size		use
	screw or bolt	pipe drill size	
1	#8 to 1/4	—	5/64
2	#12 to 5/16	—	7/64
3	5/16 to 7/16	—	5/32
4	7/16 to 9/16	1/8	1/4
5	9/16 to 3/4	1/8	17/64
6	3/4 to 1	3/8	13/32
7	1 to 1-3/8	—	17/32
8	1-3/8 to 1-3/4	3/4	13/16



Screw extractors are used to remove broken screws, bolts, or other threaded parts. To remove a broken screw, follow this procedure.

- Drill a hole into the broken screw using the recommended drill size from the table at right.
- Insert the proper screw extractor into the hole and start a counter-clockwise (left-hand) rotation using a tap wrench on the square on the shank.
- The extractor will grip the wall of the hole in the screw and back the screw out without damaging the threads.
- A penetrating oil can be helpful in removing rusty or corroded parts.

**THREADING**Page
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Hand Taps							
Taper Chamfer			0401	Bright		69-70	70
Plug Chamfer	HSS		0402	Bright			
Bottoming Chamfer			0403	Bright			
Tap, Plug, Bottoming Chamfer Set			0404	Bright			70
Taper Chamfer	Carbon	1696		Bright		71	71
	HSS	1690		Bright			
Plug Chamfer	Carbon	1697		Bright		71	71
	HSS	1691		Bright			
Bottoming Chamfer	Carbon	1698		Bright		71	71
	HSS	1692		Bright			
Tap, Plug, Bottoming Chamfer Set	Carbon	1693		Bright			71
Tap, Plug, Bottoming Chamfer Set	HSS	1699		Bright			
Spiral Point							
Plug Chamfer	HSS	1694	0411	Bright Bright		72-73	73
Pipe Taps							
Taper Pipe	Regular Threads	Carbon	1700	Bright		74	
		HSS	1686	Bright			
		HSS	0462	Bright			
	Interrupted Threads	HSS	1688	Bright		74	
			0464	Bright			
Straight Pipe		HSS	1687	Bright		74	
			0463	Bright			
Combination Drill & Tap							
Square Shank		HSS	0450	Bright		75	

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Dies							
Hexagon - Re-Threading	Carbon	0650				75-76	77
Hexagon - Re-Threading	HSS	492					
Hexagon - Taper Pipe	Carbon	0660					
Round Adjustable	Carbon	0610				78-79	
Round Adjustable	HSS	0710					
Round - Taper Pipe	Carbon	0620					
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Cap	HSS	0551					
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Quick Two-Piece Die System		223				84	
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Plain T-Handle		242					
Slip T-Handle	HSS	243					
Ratchet And Slip T-Handle		244					
Long Shank T-Handle		245					
Sets						79-80, 85, 88-89	



Icon Glossary

HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

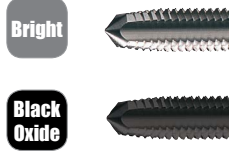
MERCHANDISER

INDEX

Material

- M** Steel
- S** Super Alloys
- P** Alloy/Steel
- K** Cast Iron
- N** Aluminum
- H** Hardened Steel

Surface Treatment

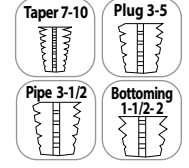


Additional treatments available upon request.

Base Material



Chamfers



Standard



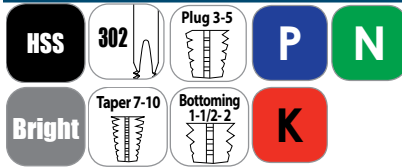
Thread Form



Refer to the Icon Glossary in the Drilling section for more detailed information



CLE-LINE

**Note**

General use:

- Taper chamfer: hand operations
- Plug chamfer: general purpose applications
- Bottoming chamfer: to thread close to an obstruction or blind hole.

Styles: #0404 Set - 1 each of taper, plug, bottoming tap.

Inch products provided with H-limits, Metric products provided with D-limits.



Taper Chamfer



Plug Chamfer



Bottoming Chamfer



tap size	TPI	series	tap size pitch	decimal equiv.	no. of flutes	limit	overall length	thread length	order number			
									0401 Taper	0402 Plug	0403 Bottoming	0404 Set of 1 each
0-80	UNF			.0600	2	H1	1-5/8	5/16	C00761	C00766	C00770	—
1-64	UNC			.0730	2	H1	1-11/16	3/8	C00762	C00767	C00771	—
1-72	UNF			.0730	2	H1	1-11/16	3/8	C00763	C00700	C00772	—
2-56	UNC			.0860	3	H2	1-3/4	7/16	C00764	C00768	C00701	C00323
2-64	UNF			.0860	3	H2	1-3/4	7/16	C00765	C00769	C00773	—
3-48	UNC			.0990	3	H2	1-13/16	1/2	C00702	C00703	C00704	C00325
3-56	UNF			.0990	3	H2	1-13/16	1/2	C00705	C00706	C00707	C00326
4-40	UNC			.1120	3	H2	1-7/8	9/16	C62001	C62002	C62003	C62004
4-48	UNF			.1120	3	H2	1-7/8	9/16	C00708	C00709	C00710	C00327
			M3 x 0.5	.1181	3	D3	49	16	C63201	C63202	C63203	C63204
5-40	UNC			.1250	2	H2	1-15/16	5/8	—	C00711	C00712	—
5-40	UNC			.1250	3	H2	1-15/16	5/8	C62005	C62006	C62007	C62008
5-44	UNF			.1380	3	H2	1-15/16	5/8	C00713	C00714	C00715	C00328
6-32	UNC			.1380	3	H2	2	11/16	C00716	C00717	C00718	C00329
6-32	UNC			.1380	3	H3	2	11/16	C62009	C62010	C62011	C62012
6-40	UNF			.1380	3	H2	2	11/16	C00719	C00720	C00721	C00330
			M4 x 0.7	.1575	4	D4	54	19	C63209	C63210	C63211	C63212
8-32	UNC			.1640	4	H2	2-1/8	3/4	C00722	C00723	C00724	C00331
8-32	UNC			.1640	4	H3	2-1/8	3/4	C62013	C62014	C62015	C62016
8-36	UNF			.1640	4	H2	2-1/8	3/4	C00725	C00726	C00727	C00332
10-24	UNC			.1900	4	H2	2-3/8	7/8	C00728	C00729	C00730	C00333
10-24	UNC			.1900	4	H3	2-3/8	7/8	C62017	C62018	C62019	C62020
10-32	UNF			.1900	4	H2	2-3/8	7/8	C00731	C00732	C00733	C00334
10-32	UNF			.1900	4	H3	2-3/8	7/8	C62021	C62022	C62023	C62024
			M5 x 0.8	.1969	4	D4	60	22	C63217	C63218	C63219	C63220
12-24	UNC			.2160	4	H3	2-3/8	15/16	C62025	C62026	C62027	C62028
12-28	UNF			.2160	4	H3	2-3/8	15/16	C00734	C00735	C00736	C00335
			M6 x 1	.2362	4	D5	63.5	25.4	C63221	C63222	C63223	C63224
1/4-20	UNC			.2500	4	H3	2-1/2	1	C62029	C62030	C62031	C62032
1/4-20	UNC			.2500	4	H5	2-1/2	1	—	C00737	C00738	—
1/4-28	UNF			.2500	4	H2	2-1/2	1	—	C00739	C00740	—
1/4-28	UNF			.2500	4	H3	2-1/2	1	C62033	C62034	C62035	C62036
			M7 x 1	.2756	4	D5	69	29	C63225	C63226	C63227	C63228
5/16-18	UNC			.3125	4	H3	2-23/32	1-1/8	C62037	C62038	C62039	C62040
5/16-18	UNC			.3125	4	H5	2-23/32	1-1/8	—	C00741	C00742	—
5/16-24	UNF			.3125	4	H3	2-23/32	1-1/8	C62041	C62042	C62043	C62044
			M8 x 1.25	.3150	4	D5	69	29	C63229	C63230	C63231	C63232
3/8-16	UNC			.3750	4	H3	2-15/16	1-1/4	C62045	C62046	C62047	C62048
3/8-16	UNC			.3750	4	H5	2-15/16	1-1/4	—	C00743	C00744	—
3/8-24	UNF			.3750	4	H3	2-15/16	1-1/4	C62049	C62050	C62051	C62052
			M10 x 1.5	.3937	4	D6	75	31.75	C63233	C63234	C63235	C63236
7/16-14	UNC			.4375	4	H3	3-5/32	1-7/16	C62053	C62054	C62055	C62056

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THREADING - General Purpose Taps & Dies

Hand Taps

Styles: **0401, 0402, 0403, 0404** (continued)



CLE-LINE

HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

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order number

tap size TPI	series	tap size pitch	decimal equiv.	no. of flutes	limit	overall length	thread length	0401 Taper	0402 Plug	0403 Bottoming	0404 Set of 1 each
7/16-14	UNC		.4375	4	H5	3-5/32	1-7/16	—	C00745	C00746	—
7/16-20	UNF		.4375	4	H3	3-5/32	1-7/16	C62057	C62058	C62059	C62060
7/16-20	UNF		.4375	4	H5	3-5/32	1-7/16	—	C00747	C00748	—
		M12 x 1.75	.4724	4	D6	86	42	C63237	C63238	C63239	C63240
1/2-13	UNC		.5000	4	H3	3-3/8	1-21/32	C62061	C62062	C62063	C62064
1/2-13	UNC		.5000	4	H5	3-3/8	1-21/32	—	C00749	C00750	—
1/2-20	UNF		.5000	4	H3	3-3/8	1-21/32	C62065	C62066	C62067	C62068
1/2-20	UNF		.5000	4	H5	3-3/8	1-21/32	—	C00751	—	—
		M14 x 2	.5512	4	D7	91	42	C63241	C63242	C63243	C63244
9/16-12	UNC		.5625	4	H3	3-19/32	1-21/32	C62069	C62070	C62071	C62072
9/16-18	UNF		.5625	4	H3	3-19/32	1-21/32	C62073	C62074	C62075	C62076
5/8-11	UNC		.6250	4	H3	3-13/16	1-13/16	C62077	C62078	C62079	C62080
5/8-11	UNC		.6250	4	H5	3-13/16	1-13/16	—	C00752	C00753	—
5/8-18	UNF		.6250	4	H3	3-13/16	1-13/16	C62081	C62082	C62083	C62084
		M16 x 2	.6299	4	D7	96	46	C63245	C63246	C63247	C63248
11/16-11	UNS		.6875	4	H3	4-1/32	1-13/16	C00754	C00756	C00757	C00336
11/16-16	UNS		.6875	4	H3	4-1/32	1-13/16	C00758	C00759	C00760	C00337
		M18 x 2.5	.7087	4	D7	102	46	C63249	C63250	C63251	C63252
3/4-10	UNC		.7500	4	H3	4-1/4	2	C62085	C62086	C62087	C62088
3/4-16	UNF		.7500	4	H3	4-1/4	2	C62089	C62090	C62091	C62092
		M20 x 2.5	.7874	4	D7	113.5	50.8	C63253	C63254	C63255	C63256
7/8-9	UNC		.8750	4	H4	4-11/16	2-7/32	C62093	C62094	C62095	C62096
7/8-14	UNF		.8750	4	H4	4-11/16	2-7/32	C62097	C62098	C62099	C62100
1-8	UNC		1.0000	4	H4	5-1/8	2-1/2	C62101	C62102	C62103	C62104
1-12	UNF		1.0000	4	H4	5-1/8	2-1/2	C62105	C62106	C62107	C62108
1-14	UNS		1.0000	4	H4	5-1/8	2-1/2	C62109	C62110	C62111	C62112

Hand Tap & Die Sets Quick-Set Die SETS

Style: **0402**



20 cutting sizes
#C00608

Plastic Case

Note

All use Cap Style #0551 and Guide style #0552, unless noted with an asterisks.

set no.	number of cutting sizes	Tap: 0402 threading sizes	collet 055 number	wrench number	die stock 0550 number	order number
558	20	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8	—	#5, #7	#1, #5	C00608
559	7	4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20	A1	T9, A1	A1	C00609
5510	5	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13	1	#5	#1	C00610
5511	10	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8	5	#5, #7	5A	C00611
5512	10	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13	1	#5	#1	C00612
5513	20	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8	1,5	#5, #7	#1, #5B	*C00613

*No Cap included

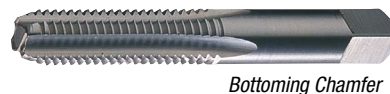


Maintenance Hand Taps



Styles: **1696, 1697, 1698, 1699, 1690, 1691, 1692, 1693**

P **N** **HSS** **Bright** **302** **Plug 3-5**
K **Carbon Steel** **Taper 7-10** **Bottoming 1-1/2-2**



Note

General use:

- Taper chamfer: hand operations
- Plug chamfer: general purpose applications
- Bottoming chamfer: thread close to an obstruction or blind hole.

Styles: #1693 and 1699 Set - 1 each of taper, plug, bottoming tap.

tap size TPI	tap size series	dec. pitch	no. of flutes	overall length	thread length	order number								
						1696 taper Carbon	1697 plug Carbon	1698 bottoming Carbon	1699 set 1 ea. Carbon	1690 taper HSS	1691 plug HSS	1692 bottoming HSS	1693 set 1 ea. HSS	
4-40	UNC	.1120	3	1-7/8	9/16	—	—	—	—	C69079	C69080	C69081	C69082	
		M3 x 0.5	.1181	3	49	16	C69513	C69514	C69515	C69516	C69267	C69268	C69269	C69270
5-40	UNC	.1250	3	1-15/16	5/8	—	—	—	—	C69083	C69084	C69085	C69086	
6-32	UNC	.1380	3	2	11/16	—	—	—	—	C69087	C69088	C69089	C69090	
		M4 x 0.7	.1575	4	54	19	C69517	C69518	C69519	C69520	C69271	C69272	C69273	C69274
8-32	UNC	.1640	4	2-1/8	3/4	—	—	—	—	C69091	C69092	C69093	C69094	
10-24	UNC	.1900	4	2-3/8	7/8	—	—	—	—	C69095	C69096	C69097	C69098	
10-32	UNF	.1900	4	2-3/8	7/8	—	—	—	—	C69099	C69100	C69101	C69102	
		M5 x 0.8	.1969	4	60	22	C69521	C69522	C69523	C69524	C69275	C69276	C69277	C69278
12-24	UNC	.2160	4	2-3/8	15/16	—	—	—	—	C69103	C69104	C69105	C69106	
		M6 x 1	.2362	4	63.5	25.4	C69526	C69527	C69528	C69529	C69279	C69280	C69281	C69282
1/4-20	UNC	.2500	4	2-1/2	1	—	C69409	C69410	C69411	C69412	C69107	C69108	C69109	C69110
1/4-28	UNF	.2500	4	2-1/2	1	—	C69413	C69414	C69415	C69416	C69111	C69112	C69113	C69114
		M7 x 1	.2756	4	69	29	—	—	—	—	C69283	C69284	C69285	C69286
5/16-18	UNC	.3125	4	2-23/32	1-1/8	—	C69417	C69418	C69419	C69420	C69115	C69116	C69117	C69118
5/16-24	UNF	.3125	4	2-23/32	1-1/8	—	C69421	C69422	C69423	C69424	C69119	C69120	C69121	C69122
		M8 x 1.25	.3150	4	69	29	C69531	C69532	C69533	C69534	C69287	C69288	C69289	C69290
3/8-16	UNC	.3750	4	2-15/16	1-1/4	—	C69425	C69426	C69427	C69428	C69123	C69124	C69125	C69126
3/8-24	UNF	.3750	4	2-15/16	1-1/4	—	C69429	C69430	C69431	C69432	C69127	C69128	C69129	C69130
		M10 x 1.5	.3937	4	75	31.75	C69535	C69536	C69537	C69538	C69291	C69292	C69293	C69294
7/16-14	UNC	.4375	4	3-5/32	1-7/16	—	C69433	C69434	C69435	C69436	C69131	C69132	C69133	C69134
7/16-20	UNF	.4375	4	3-5/32	1-7/16	—	C69437	C69438	C69439	C69440	C69135	C69136	C69137	C69138
		M12 x 1.75	.4724	4	86	42	C69539	C69540	C69541	C69542	C69295	C69296	C69297	C69298
1/2-13	UNC	.5000	4	3-3/8	1-21/32	—	C69441	C69442	C69443	C69444	C69139	C69140	C69141	C69142
1/2-20	UNF	.5000	4	3-3/8	1-21/32	—	C69445	C69446	C69447	C69448	C69143	C69144	C69145	C69146
		M14 x 2	.5512	4	91	42	C69543	C69544	C69545	C69546	C69299	C69300	C69301	C69302
9/16-12	UNC	.5625	4	3-19/32	1-21/32	—	C69449	C69450	C69451	C69452	C69147	C69148	C69149	C69150
9/16-18	UNF	.5625	4	3-19/32	1-21/32	—	C69453	C69454	C69455	C69456	C69151	C69152	C69153	C69154
5/8-11	UNC	.6250	4	3-13/16	1-13/16	—	C69457	C69458	C69459	C69460	C69155	C69156	C69157	C69158
5/8-18	UNF	.6250	4	3-13/16	1-13/16	—	C69461	C69462	C69463	C69464	C69159	C69160	C69161	C69162
		M16 x 2	.6299	4	96	46	C69547	C69548	C69549	C69550	C69303	C69304	C69305	C69306
		M18 x 2.5	.7087	4	102	46	—	—	—	—	C69307	C69308	C69309	C69310
3/4-10	UNC	.7500	4	4-1/4	2	—	C69465	C69466	C69467	C69468	C69163	C69164	C69165	C69166
3/4-16	UNF	.7500	4	4-1/4	2	—	C69469	C69470	C69471	C69472	C69167	C69168	C69169	C69170
		M20 x 2.5	.7874	4	113.5	50.8	C69551	C69552	C69553	C69554	C69311	C69312	C69313	C69314
7/8-9	UNC	.8750	4	4-11/16	2-7/32	—	—	—	—	—	C69171	C69172	C69173	C69174
7/8-14	UNF	.8750	4	4-11/16	2-7/32	—	C69473	C69474	C69475	C69476	C69175	C69176	C69177	C69178
1-8	UNC	1.0000	4	5-1/8	2-1/2	—	C69477	C69478	C69479	C69480	C69179	C69180	C69181	C69182
1-12	UNF	1.0000	4	5-1/8	2-1/2	—	C69481	C69482	C69483	C69484	C69183	C69184	C69185	C69186
1-14	UNS	1.0000	4	5-1/8	2-1/2	—	—	C69485	—	—	C69187	C69188	C69189	C69190

HOLEMAKING
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THREADING - General Purpose Taps & Dies

Spiral Point Tap

Styles: **1694**, **0411**



CLE-LINE

HOLEMAKING



Plug Chamfer



Plug Chamfer



Note

General use:

- Spiral point: pushes chips forward for through hole applications.
- Plug chamfer for general purpose applications.

Style 1694 are maintenance taps.

Style 0411 provided with H-limits.

THREADING / DIES

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CARBIDE BURS/ROUTERS

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order number

tap size	tap size	decimal	no. of	overall	thread	order number	
TPI	series	equivalent	flutes	length	length	1694 Plug	0411 Plug limit
0-80	UNF	.0600	2	1-11/16	3/8	—	C00775 H2
1-64	UNC	.0730	2	1-11/16	3/8	—	C00776 H2
1-72	UNF	.0730	2	1-11/16	3/8	—	C00777 H2
	M2 x 0.4	.0787	2	44	11	*C69205	C62172 D3
2-56	UNC	.0860	2	1-3/4	7/16	—	C00778 H2
2-64	UNF	.0860	2	1-3/4	7/16	—	C00779 H2
3-48	UNC	.0990	2	1-13/16	1/2	—	C00780 H2
3-56	UNF	.0990	2	1-13/16	1/2	—	C00781 H2
4-40	UNC	.1120	2	1-7/8	9/16	*C69191	C62151 H2
4-48	UNF	.1120	2	1-7/8	9/16	—	C00782 H2
	M3 x 0.5	.1181	2	49	16	*C69206	C62175 D3
5-40	UNC	.1250	2	1-15/16	5/8	*C69192	C62152 H2
6-32	UNC	.1380	2	2	11/16	—	C00783 H2
6-32	UNC	.1380	2	2	11/16	*C69193	C62153 H3
6-40	UNF	.1380	2	2	11/16	—	C00784 H2
	M4 x 0.7	.1575	2	54	19	*C69207	C62177 D4
8-32	UNC	.1640	2	2-1/8	3/4	—	C00785 H2
8-32	UNC	.1640	2	2-1/8	3/4	*C69194	C62154 H3
8-36	UNF	.1640	2	2-1/8	3/4	—	C00786 H2
10-24	UNC	.1900	2	2-3/8	7/8	—	C00787 H2
10-24	UNC	.1900	2	2-3/8	7/8	*C69195	C62155 H3
10-32	UNF	.1900	2	2-3/8	7/8	—	C00788 H2
10-32	UNF	.1900	2	2-3/8	7/8	*C69196	C62156 H3
	M5 x 0.8	.1969	2	60	22	*C69208	C62179 D4
12-24	UNC	.2160	2	2-3/8	15/16	*C69197	C62157 H3
12-28	UNF	.2160	2	2-3/8	15/16	—	C00789 H3
	M6 x 1	.2362	2	63.5	25.4	*C69209	C62180 D5
1/4-20	UNC	.2500	2	2-1/2	1	*C69198	C62158 H3
1/4-20	UNC	.2500	3	2-1/2	1	—	C00790 H3
1/4-20	UNC	.2500	3	2-1/2	1	—	C00791 H5
1/4-28	UNF	.2500	2	2-1/2	1	*C69199	C62159 H3
5/16-18	UNC	.3125	2	2-23/32	1-1/8	*C69200	C62160 H3
5/16-18	UNC	.3125	3	2-23/32	1-1/8	—	C00793 H3
5/16-18	UNC	.3125	3	2-23/32	1-1/8	—	C00794 H5
5/16-24	UNF	.3125	2	2-23/32	1-1/8	*C69201	C62161 H3
	M8 x 1.25	.3150	2	69	29	*C69210	C62183 D5
3/8-16	UNC	.3750	3	2-15/16	1-1/4	*C69202	C62162 H3
3/8-16	UNC	.3750	3	2-15/16	1-1/4	—	C00795 H5
3/8-24	UNF	.3750	3	2-15/16	1-1/4	*C69203	C62163 H3
	M10 x 1.5	.3937	3	75	31.75	*C69211	C62185 D6
7/16-14	UNC	.4375	3	3-5/32	1-7/16	—	C00796 H3
7/16-14	UNC	.4375	3	3-5/32	1-7/16	—	C00797 H5
7/16-20	UNF	.4375	3	3-5/32	1-7/16	—	C00798 H3
7/16-20	UNF	.4375	3	3-5/32	1-7/16	—	C00799 H5

*No H-limit

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CLE-LINE



Spiral Point Tap

Styles: **1694, 0411** (continued)

tap size TPI	series	tap size pitch	decimal equivalent	no. of flutes	overall length	thread length	order number		
							1694 Plug	0411 Plug	limit
		M12 x 1.75	.4724	3	86	42	*C69212	C62187	D6
1/2-13	UNC		.5000	3	3-3/8	1-21/32	*C69204	C62164	H3
1/2-13	UNC		.5000	3	3-3/8	1-21/32	—	C00800	H5
1/2-20	UNF		.5000	3	3-3/8	1-21/32	—	C00801	H3
5/8-11	UNC		.6250	3	3-13/16	1-13/16	—	C00802	H3
5/8-11	UNC		.6250	3	3-13/16	1-13/16	—	C00803	H5
5/8-18	UNF		.6250	3	3-13/16	1-13/16	—	C00804	H3
		M16 x 2	.6299	3	96	46	*C69213	C62191	D7
3/4-10	UNC		.7500	3	4-1/4	2	—	C00805	H3
3/4-10	UNC		.7500	3	4-1/4	2	—	C00806	H5
3/4-16	UNF		.7500	3	4-1/4	2	—	C00774	H3

*No H-limit

Spiral Point Tap & Die SETS

Style: **0411****Note**

Uses Cap Style #1383 and Guide style #1384
Uses Cleveland® Brand Tap Style #1011 unless
noted otherwise.

Plastic Case

set no.	number of cutting sizes	Tap: 0411 threading sizes	collet 055 number	wrench number	die stock 380 number	order number
448	7	M2.5 x 0.45, M3 x 0.5, M3.5 x 0.6, M4 x 0.7, M4.5 x 0.75, M5 x 0.8, M6 x 1.0				C00448
449	5	M6 x 1.0, M7 x 1.0, M8 x 1.25, M10 x 1.5, M12 x 1.75				C00449
5514	7	M6 x 1, M8 x 1.25, M10 x 1.5, M12 x 1.75, *M14 x 2, M16 x 2, *M18 x 2.5	5	#6	#5	C00614

*Uses Cleveland® Brand Tap Style #1002

7 cutting sizes
#C004485 cutting sizes
#C004497 cutting sizes
#C00614

Spiral Point Tap, Die, & Drill SETS

Plastic Case

set no.	number of cutting sizes	Tap: 0411 threading sizes	Drill: 1899 drill sizes (mm)	collet 055 number	wrench number	die stock 710 number	order number
451	5	M6 x 1.0, M7 x 1.0, M8 x 1.25, M10 x 1.5, M12 x 1.75	5.0, 6.0, 6.7, 8.5, 10.2	—	—	—	C00451





THREADING - General Purpose Taps & Dies

Pipe Tap Taper

Styles: 1700, 1686, 0462, 1688, 0464



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HOLEMAKING



Regular NPT Thread



Interrupted NPT Thread



Note

3-1/2 thread chamfer.

- Style #0462: regular NPT thread design
- Style #0464: interrupted thread for better lubrication and chip clearance.

THREADING / DIES

tap size	tap TPI	tap series	decimal equiv.	shank diameter	overall length	thread length	order number regular threads			order number interrupted thread			
							flutes	1700 carbon	1686 HSS	0462 HSS	flutes	1688 HSS	0464 HSS
1/16	27	NPT	0.0625	0.3125	2.125	0.688	4	—	—	C29000	—	—	—
1/8	27	NPT	.1250	.3125	2-1/8	3/4	4	C69507	C69315	C64213	5	C69325	C64223
*1/8	27	NPT	.1250	.4375	2-1/8	3/4	4	—	C69316	C64214	5	C69326	C64224
1/4	18	NPT	.2500	.5626	2-7/16	1-1/16	4	C69508	C69317	C64215	5	C69327	C64225
3/8	18	NPT	.3750	.7000	2-9/16	1-1/16	4	C69509	C69318	C64216	5	C69328	C64226
1/2	14	NPT	.5000	.6875	3-1/8	1-3/8	4	C69510	C69319	C64217	5	C69329	C64227
3/4	14	NPT	.7500	.9063	3-5/8	1-3/8	5	C69511	C69320	C64218	5	C69330	C64228
1	11-1/2	NPT	1.0000	1.1250	3-3/4	1-3/4	5	C69512	C69321	C64219	5	C69331	C64229
1-1/4	11-1/2	NPT	1.2500	1.3125	4	1-3/4	5	—	C69322	C64220	5	C69332	C64230
1-1/2	11-1/2	NPT	1.5000	1.5000	4-1/4	1-3/4	7	—	C69323	C64221	—	—	—
2	11-1/2	NPT	2.0000	1.8750	4-1/2	1-3/4	7	—	C69324	C64222	—	—	—

*large shank

CARBIDE BURS/ROUTERS

Pipe Tap Straight Pipe Taps

Styles: 1687, 0463

MERCHANDISER



Note

3-1/2 thread chamfer.

NPS thread design
- suitable for NPSC or NPSM.



INDEX

tap size	tap TPI	tap series	decimal equivalent	no. of flutes	shank diameter	overall length	thread length	order number	
								1687 Bright	0463 Bright
1/8	27	NPSC	.1250	4	.4375	2-1/8	3/4	C69333	C64231
1/4	18	NPSC	.2500	4	.5626	2-7/16	1-1/16	C69334	C64232
3/8	18	NPSC	.3750	4	.7000	2-9/16	1-1/16	C69335	C64233
1/2	14	NPSC	.5000	4	.6875	3-1/8	1-3/8	C69336	C64234
3/4	14	NPSC	.7500	5	.9063	3-1/4	1-3/8	C69337	C64235
1	11-1/2	NPSC	1.0000	5	1.1250	3-3/4	1-3/8	C69338	C64236



P **N** **HSS** **Bright**
K **Carbon Steel**

Note
Drill and tap in one operation without changing tools.
Two flutes run length of the tool.



tap size	tap TPI	thread series	decimal equivalent	no. of flutes	overall length	thread length	drill length	drill size	order number	
									0450	Bright
6	32	UNC	.1380	2	2	7/16	5/16	.1095	C64937	
8	32	UNC	.1640	2	2-1/8	1/2	3/8	.1360	C64960	
10	24	UNC	.1900	2	2.375	5/8	13/32	.1545	C29186	
10	32	UNF	.1900	2	2-3/8	5/8	13/32	.1610	C64961	
12	24	UNC	.2160	2	2.375	21/32	15/32	.1805	C29187	
1/4	20	UNC	.2500	2	2-1/2	25/32	17/32	.2010	C64949	
1/4	28	UNF	.2500	2	2.500	25/32	17/32	.2220	C29188	
5/16	18	UNC	.3125	2	3	15/16	11/16	.2570	C64952	
5/16	24	UNF	.3125	2	2.844	15/16	11/16	.2770	C29200	
3/8	16	UNC	.3750	2	3-1/2	1-1/16	13/16	.3225	C64955	
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	

HOLEMAKING

THREADING / DIES

SAWS

Die - Hexagon Re-Threading
Styles: **0650, 492**

P **N** **HSS** **Bright**
K **Carbon Steel**

Note
Used in repair work for dressing over bruised and rusty threads.
Can be used only in free machining materials.



die diameter TPI	series	die diameter pitch	decimal equivalent	length across flats	thickness	order number	
						0650 Carbon Steel	492 High-Speed Steel
		M3 x 0.5	.1181	19/32	1/4	C29192	—
		M4 x 0.7	.1575	19/32	1/4	C29193	—
		M5 x 0.8	.1969	19/32	1/4	C65580	—
		M6 x 1	.2362	19/32	1/4	C65581	—
1/4-20	UNC		.2500	19/32	1/4	C65601	C77600
1/4-28	UNF		.2500	19/32	1/4	C65602	C77602
		M7 x 1.0	.2756	11/16	5/16	C29194	—
5/16-18	UNC		.3125	11/16	5/16	C65603	C77604
5/16-24	UNF		.3125	11/16	5/16	C65605	C77606
		M8 x 1.25	.3150	11/16	5/16	C65582	—
3/8-16	UNC		.3750	25/32	3/8	C65606	C77608
3/8-24	UNF		.3750	25/32	3/8	C65607	C77610
		M10 x 1.25	.3937	7/8	7/16	C29195	—
		M10 x 1.5	.3937	7/8	7/16	C65583	—
7/16-14	UNC		.4375	7/8	7/16	C65608	C77612
7/16-20	UNF		.4375	7/8	7/16	C65609	C77614
		M12 x 1.75	.4724	1-1/16	1/2	C65584	—
1/2-13	UNC		.5000	1-1/16	1/2	C65610	C77616

CARBIDE BURS/ROUTERS

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Die - Hexagon Re-Threading

Styles: **0650, 492** (continued)

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HOLEMAKING

THREADING / DIES

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die diameter TPI	series	die diameter pitch	decimal equivalent	length across flats	thickness	order number	
						0650 Carbon Steel	492 High-Speed Steel
1/2-20	UNF		.5000	1-1/16	1/2	C65611	C77618
		M14 x 1.5	.5512	1-1/16	1/2	C29196	—
		M14 x 2	.5512	1-1/16	1/2	C65585	—
9/16-12	UNC		.5625	1-1/16	1/2	C65612	C77620
9/16-18	UNF		.5625	1-1/16	1/2	C65613	C77622
5/8-11	UNC		.6250	1-1/4	5/8	C65614	C77624
5/8-18	UNF		.6250	1-1/4	5/8	C65615	C77626
		M16 x 2	.6299	1-1/4	5/8	C65586	—
11/16-11	NS		.6875	1-7/16	3/4	C65616	—
11/16-16	NS		.6875	1-7/16	3/4	C65617	—
		M18x1.5	.7087	1-7/16	3/4	C29197	—
		M18x2.5	.7087	1-7/16	3/4	C29198	—
3/4-10	UNC		.7500	1-7/16	3/4	C65618	C77628
3/4-16	UNF		.7500	1-7/16	3/4	C65619	C77630
		M20 x 2.5	.7874	1-5/8	7/8	C65587	—
7/8-9	UNC		.8750	1-5/8	7/8	C65620	C77632
7/8-14	UNF		.8750	1-5/8	7/8	C65621	C77634
		M24x3.0	.9449	1-13/16	1	C29199	—
1-8	UNC		1.0000	1-13/16	1	C65622	C77636
1-12	UNF		1.0000	1-13/16	1	C65623	C77638
1-14	NS		1.0000	1-13/16	1	C65624	C77640
1-1/8-7	UNC		1.1250	2	1	C65625	C77642
1-1/8-12	UNF		1.1250	2	1	C65627	C77644
1-1/4-7	UNC		1.2500	2-3/16	1	C65628	C77646
1-1/4-12	UNF		1.2500	2-3/16	1	C65629	—
1-3/8-6	UNC		1.4100	2-3/8	1	C65630	C77648
1-3/8-12	UNF		1.4100	2-3/8	1	C65631	—
1-1/2-6	UNC		1.5000	2-9/16	1	C65632	C77650
1-1/2-12	UNF		1.5000	2-9/16	1	C65633	—

Die - Hexagon Taper Pipe - Carbon Steel

Style: **0660**

die diameter TPI and series	decimal equivalent	length across flats	thickness	order number
				0660 Carbon Steel
1/8 27 NPT	.1250	1-1/16	3/8	C65571
1/4 18 NPT	.2500	1-1/4	5/8	C65572
3/8 18 NPT	.3750	1-7/16	5/8	C65573
1/2 14 NPT	.5000	1-5/8	3/4	C65574
3/4 14 NPT	.7500	2	13/16	C65575
1 11-1/2 NPT	1.0000	2-3/8	1	C65576



CLE-LINE

Carbon
Steel**Note**

NC or NF sets
1 each of die sizes listed

UNC
UNF

Plastic Case

set number	number of sizes	die sizes		order number
42NC	8	1/4-20 NC	1/2-13 NC	C67275
		5/16-18 NC	9/16-12 NC	
		3/8-16 NC	5/8-11 NC	
		7/16-14 NC	3/4-10 NC	
42NF	8	1/4-28 NF	1/2-20 NF	C67276
		5/16-24 NF	9/16-18 NF	
		3/8-24 NF	5/8-18 NF	
		7/16-20 NF	3/4-16 NF	
44NC	10	1/4-20 NC	9/16-12 NC	C67278
		5/16-18 NC	5/8-11 NC	
		3/8-16 NC	3/4-10 NC	
		7/16-14 NC	7/8-9 NC	
		1/2-13 NC	1-8 NC	
45NCNF	20	1/4-20 NC	1/4-28 NF	C67282
		5/16-18 NC	5/16-24 NF	
		3/8-16 NC	3/8-24 NF	
		7/16-14 NC	7/16-20 NF	
		1/2-13 NC	1/2-20 NF	
		9/16-12 NC	9/16-18 NF	
		5/8-11 NC	5/8-18 NF	
		3/4-10 NC	3/4-16 NF	
		7/8-9 NC	7/8-14 NF	
		1-8 NC	1-14 NF	
NC/NF	10	1/4-20NC	1/4-28NF	C67284
		5/16-18NC	5/16-24NF	
		3/8-16NC	3/8-24NF	
		7/16-14NC	7/16-20NF	
		1/2-13NC	1/2-20NF	
49Metric	7	M6 x 1	M14 x 2	C67283
		M8 x 1.25	M16 x 2	
		M10 x 1.5	M20 x 2.5	
		M12 x 1.75		



8-Piece Die Set
#C67275



20-Piece Die Set
#C67282

HOLEMAKING

THREADING / DIES

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THREADING - General Purpose Taps & Dies

Die - Adjustable Round

Styles: **0610, 0710**



HOLEMAKING



Note

- Short chamfer on both sides of die to extend tool life.*
- Adjustable for wear and size.*
- Cut external threads when held in a die stock.*
- Produce UN thread form.*
- Can be used for close to shoulder work.*

P **N** **HSS** **Carbon Steel**
K **Bright**

THREADING / DIES

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TPI	series	diameter pitch	decimal equiv.	outside dia.	thick- ness	order number	
						0610 Carbon Steel	0710 HSS
0-80	UNF		.0600	13/16	1/4	C65022	—
1-64	UNC		.0730	13/16	1/4	C65026	—
1-72	UNF		.0730	13/16	1/4	C65027	—
2-56	UNC		.0860	13/16	1/4	C65036	—
2-64	UNF		.0860	13/16	1/4	C65037	—
	M2.5x 0.45	.0984	21	6		—	C65721
3-48	UNC		.0990	13/16	1/4	C65045	—
3-56	UNF		.0990	13/16	1/4	C65046	—
4-40	UNC		.1120	13/16	1/4	C65048	—
4-48	UNF		.1120	13/16	1/4	C65049	—
	M3 x 0.5	.1181	21	6		—	C65724
5-40	UNC		.1250	13/16	1/4	C65057	C65729
5-44	UNF		.1250	13/16	1/4	C65058	C65730
	M3.5 x 0.6	.1378	21	6		—	C65732
6-32	UNC		.1380	13/16	1/4	C65061	C65733
6-32	UNC		.1380	1	3/8	C65114	C65785
6-40	UNF		.1380	13/16	1/4	C65062	C65734
	M4 x 0.7	.1575	21	6		—	C65737
8-32	UNC		.1640	13/16	1/4	C65069	C65739
8-32	UNC		.1640	1	3/8	C65119	C65789
8-36	UNF		.1640	13/16	1/4	C65070	C65740
	M4.5 x 0.75	.1772	21	6		—	C65742
10-24	UNC		.1900	13/16	1/4	C65075	C65743
10-24	UNC		.1900	1	3/8	C65124	C65792
10-32	UNF		.1900	13/16	1/4	C65076	C65744
10-32	UNF		.1900	1	3/8	C65125	C65793
	M5 x 0.8	.1969	21	6		—	C65747
12-24	UNC		.2160	13/16	1/4	C65083	C65751
12-24	UNC		.2160	1	3/8	C65132	C65798
12-28	UNF		.2160	13/16	1/4	C65084	C65752
	M6 x 1	.2362	21	6		—	C65757
	M6 x 1	.2362	25.4	9.5		—	C65801
1/4-20	UNC		.2500	13/16	1/4	C65093	C65760
1/4-20	UNC		.2500	1	3/8	C65140	C65804
1/4-20	UNC		.2500	1-1/2	1/2	C65192	C65839
1/4-20	UNC		.2500	2	5/8	C65264	—
1/4-28	UNF		.2500	13/16	1/4	—	C65761
1/4-28	UNF		.2500	1	3/8	C65142	C65805
1/4-28	UNF		.2500	1-1/2	1/2	C65193	C65840
1/4-28	UNF		.2500	2	5/8	C65265	—
	M7 x 1	.2756	25.4	9.5		—	C65807
5/16-18	UNC		.3125	13/16	1/4	—	C65766
5/16-18	UNC		.3125	1	3/8	C65147	C65808
5/16-18	UNC		.3125	1-1/2	1/2	C65197	C65844
5/16-18	UNC		.3125	2	5/8	C65269	—
5/16-24	UNF		.3125	13/16	1/4	—	C65767
5/16-24	UNF		.3125	1	3/8	C65148	C65809

TPI	series	diameter pitch	decimal equiv.	outside dia.	thick- ness	order number	
						0610 Carbon Steel	0710 HSS
5/16-24	UNF		.3125	1-1/2	1/2	C65198	C65845
5/16-24	UNF		.3125	2	5/8	C65270	—
	M8 x 1.25	.3150	25.4	9.5		—	C65813
3/8-16	UNC		.3750	1	3/8	C65159	C65816
3/8-16	UNC		.3750	1-1/2	1/2	C65208	C65855
3/8-16	UNC		.3750	2	5/8	C65280	—
3/8-24	UNF		.3750	1	3/8	C65160	C65817
3/8-24	UNF		.3750	1-1/2	1/2	C65209	C65856
3/8-24	UNF		.3750	2	5/8	C65281	—
	M10 x 1.5	.3937	25.4	9.5		—	C65824
7/16-14	UNC		.4375	1	3/8	C65171	C65828
7/16-14	UNC		.4375	1-1/2	1/2	C65220	C65865
7/16-14	UNC		.4375	2	5/8	C65292	—
7/16-20	UNF		.4375	1	3/8	C65172	C65829
7/16-20	UNF		.4375	1-1/2	1/2	C65221	C65866
7/16-20	UNF		.4375	2	5/8	C65293	—
	M12 x 1.75	.4724	25.4	9.5		—	C65833
1/2-13	UNC		.5000	1	3/8	C65470	—
1/2-13	UNC		.5000	1-1/2	1/2	C65232	C65875
1/2-13	UNC		.5000	2	5/8	C65303	—
1/2-20	UNF		.5000	1	3/8	C65471	—
1/2-20	UNF		.5000	1-1/2	1/2	C65233	C65876
1/2-20	UNF		.5000	2	5/8	C65304	—
	M14 x 2	.5512	38	13		—	C65880
9/16-12	UNC		.5625	1-1/2	1/2	C65239	C65881
9/16-12	UNC		.5625	2	5/8	C65311	—
9/16-18	UNF		.5625	1-1/2	1/2	C65240	C65882
9/16-18	UNF		.5625	2	5/8	C65312	—
5/8-11	UNC		.6250	1-1/2	1/2	C65243	C65884
5/8-11	UNC		.6250	2	5/8	C65315	C65946
5/8-11	UNC		.6250	2-1/2	3/4	C65374	—
5/8-18	UNF		.6250	1-1/2	1/2	C65244	C65885
5/8-18	UNF		.6250	2	5/8	C65316	C65947
	M16 x 2	.6300	38	13		—	C65889
	M18 x 2.5	.7087	38	13		—	C65896
3/4-10	UNC		.7500	1-1/2	1/2	C65250	—
3/4-10	UNC		.7500	2	5/8	C65328	C65957
3/4-10	UNC		.7500	2-1/2	3/4	C65384	—
3/4-16	UNF		.7500	1-1/2	1/2	C65251	—
3/4-16	UNF		.7500	2	5/8	C65329	C65958
3/4-16	UNF		.7500	2-1/2	3/4	C65385	—
	M20 x 2.5	.7874	38	13		—	C65901
7/8-9	UNC		.8750	2	5/8	C65339	C65966
7/8-9	UNC		.8750	2-1/2	3/4	C65395	—
7/8-14	UNF		.8750	2	5/8	C65340	C65967
7/8-14	UNF		.8750	2-1/2	3/4	C65396	—

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diameter TPI	series	diameter pitch	decimal equiv.	outside dia.	thick- ness	order number	
						0610 Carbon Steel	0710 HSS
1-8	UNC		1.0000	2	5/8	C65349	—
1-8	UNC		1.0000	2-1/2	3/4	C65405	—
1-8	UNC		1.0000	3	1	C65416	—
1-12	UNF		1.0000	2	5/8	C65350	—
1-12	UNF		1.0000	2-1/2	3/4	C65406	—
1-12	UNF		1.0000	3	1	C65417	—
1-14	UNF		1.0000	2	5/8	C65407	—
1-1/8-7	UNC		1.1250	3	1	C65426	—
1-1/8-12	UNF		1.1250	3	1	C65427	—
1-1/4-7	UNC		1.2500	3	1	C65433	—
1-1/4-12	UNF		1.2500	3	1	C65434	—
1-3/8-6	UNC		1.3750	3	1	C65441	—
1-3/8-12	UNF		1.3750	3	1	C65442	—
1-1/2-6	UNC		1.5000	3	1	C65449	—
1-1/2-12	UNF		1.5000	3	1	C65450	—

Taper pipe sizes — Carbon Steel

die diameter TPI and series	decimal equiv.	outside dia.	thick- ness	order number	
				0620 Carbon Steel	
1/8 27 NPT	.1250	1	3/8	C65491	
1/8 27 NPT	.1250	1-1/2	1/2	C65492	
1/4 18 NPT	.2500	1-1/2	1/2	C65493	
1/4 18 NPT	.2500	2	5/8	C65495	
3/8 18 NPT	.3750	1-1/2	1/2	C65494	
3/8 18 NPT	.3750	2	5/8	C65496	
1/2 14 NPT	.5000	2	5/8	C65497	

Note: Pipe size round adjustable dies are not split.

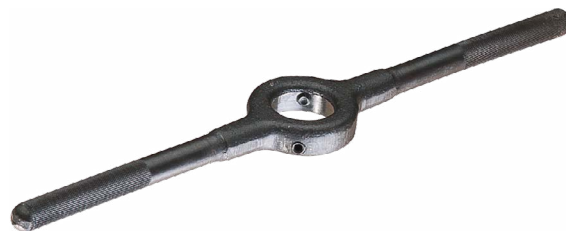
Die Stock Round Adjustable Style: 222

Note

Style #222: holds round adjustable dies with three adjusting screws.

Style #224: stocks have built-in workpiece guide and lock in place with two set screws.

product number	die O.D.	overall length	order number
			222
2	13/16	7	C67223
3	1	9-1/4	C67224
5	1-1/2	13-1/4	C67226
6	2	15-3/8	C67227
7	2-1/2	19-1/2	C67228
8	3	23	C67229





Tap & Die Sets Round - Adjustable

HOLEMAKING

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CARBIDE BURS/ROUTERS

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8 Size Set #C67271

Note

Each includes:
 Combination UNC/UNF sizes.
 1 each of tap and die sizes listed.
 Tap wrench and die stock included
 HSS Maintenance Hand Taps and Carbon Steel Round Adjustable Die.

Material and finish options: P, N, HSS, UNC, UNF, K, Carbon Steel.

set number	number of sizes	tap and die sizes		order number
26S	8	2-56 UNC	8-32 UNC	C67271
		3-48 UNC	10-24 UNC	
		4-40 UNC	10-32 UNF	
		6-32 UNC	12-24 UNC	
517	7	4-40 UNC	10-24 UNC	C00517
		6-32 UNC	10-32 UNF	
		8-32 UNC	12-24 UNC	
518	5	1/4-20 UNC	3/8-16 UNC	C00518
		5/16-18 UNC	7/16-14 UNC	
			1/2-13 UNC	
525	8	0-80 UNF	4-40 UNC	C00525
		1-72 UNF	6-32 UNC	
		2-56 UNC	8-32 UNC	
		3-48 UNC	10-24 UNC	
526	10	4-40 UNC	4-48 UNF	C00526
		6-32 UNC	6-40 UNF	
		8-32 UNC	8-36 UNF	
		10-24 UNC	10-32 UNF	
		12-24 UNC	12-28 UNF	
528	11	1/4-20 UNC	1/4-28 UNF	C00528
		5/16-18 UNC	5/16-24 UNF	
		3/8-16 UNC	3/8-24 UNF	
		7/16-14 UNC	7/16-20 UNF	
		1/2-13 UNC	1/2-20 UNF	
532	21	pipe size	1/8-27 (short shank)	C00532
		1/4-20 UNC	1/4-28 UNF	
		5/16-18 UNC	5/16-24 UNF	
		3/8-16 UNC	3/8-24 UNF	
		7/16-14 UNC	7/16-20 UNF	
		1/2-13 UNC	1/2-20 UNF	
		9/16-12 UNC	9/16-18 UNF	
		5/8-11 UNC	5/8-18 UNF	
		3/4-10 UNC	3/4-16 UNF	
		7/8-9 UNC	7/8-14 UNF	
		1-8 UNC	1-14 UNS	
pipe size	1/8-27 (long shank)			

set number	number of sizes	tap and die sizes		order number
815	20	1/4-20 UNC	1/4-28 UNF	C67293
		5/16-18 UNC	5/16-24 UNF	
		3/8-16 UNC	3/8-24 UNF	
		7/16-14 UNC	7/16-20 UNF	
		1/2-13 UNC	1/2-20 UNF	
		9/16-12 UNC	9/16-18 UNF	
		5/8-11 UNC	5/8-18 UNF	
		3/4-10 UNC	3/4-16 UNF	
		7/8-9 UNC	7/8-14 UNF	
		1-8 UNC	1-12 UNF	
533	28 Taps 15 Dies	4-40 UNC	1/4-20 UNC	C00533
		6-32 UNC	1/4-28 UNF	
		8-32 UNC	5/16-18 UNC	
		10-24 UNC	5/16-24 UNF	
		10-32 UNF	3/8-16 UNC	
		12-24 UNC	3/8-24 UNF	
		7/16-14 UNC	7/16-20 UNF	
		1/2-13 UNC	1/2-20 UNF	
		9/16-12 UNC	9/16-18 UNF	
			5/8-18 UNC	
			3/4-16 UNC	
			7/8-14 UNC	
			1-14 UNS	
	pipe sizes	1/8-27 (long shank)		
		1/4-18		
		3/8-18		
		1/2-14		
		M14 x 1.5		
	metric sizes	M18 x 1.5		



Tap & Die Sets Metric Round - Adjustable

P **N** **HSS**
K

Note
Tap & Die Sets with Maintenance Hand Taps and HSS Round Adjustable Dies (metric sizes).

set number	number of sizes	tap and die sizes		order number
448	7	M2.5 x 0.45	M4 x 0.7	C00448
		M3 x 0.5	M4.5 x 0.75	
		M3.5 x 0.6	M5 x 0.8	
			M6 x 1.0	
449	5	M6 x 1.0	M8 x 1.25	C00449
		M7 x 1.0	M10 x 1.5	
			M12 x 1.75	



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Tap, Die & Drill Set Metric Round - Adjustable

P **N** **HSS**
K

Note
Each includes:
1 HSS tap, die, and black jobber drill sizes listed.
Tap wrench, die stock, and screwdriver.
Metal case.

set number	number of sizes	tap and die sizes	drill size	order number
451	5	M6 x 1.0	5.0mm	C00451
		M7 x 1.0	6.0mm	
		M8 x 1.25	6.7mm	
		M10 x 1.5	8.5mm	
		M12 x 1.75	10.2mm	



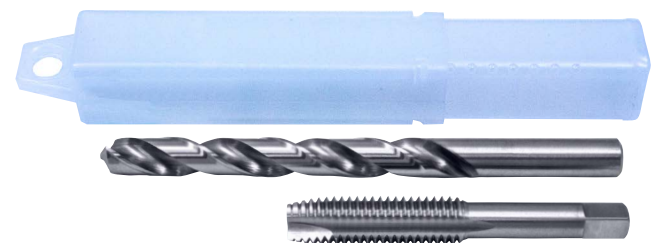
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Jobber Drill & Tap Sets
Style: 1860

P **N** **Note**
K
Drill style: 1898 bright
Uses Cle-Line Tap Style: #0411 Spiral Point

jobber drill sizes	plug tap spiral point	no. of pieces	order number
36	6-32	2	C22305
29	8-32	2	C22304
25	10-24	2	C22307
21	10-32	2	C22306
7	1/4-20	2	C22308
F	5/16-18	2	C22300
5/16"	3/8-16	2	C22303
U	7/16-14	2	C22302
27/64"	1/2-13	2	C22301



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Quick Two-Piece Die & Collet Assembly

Styles: **0550, 0551, 0552, 0553, 0554**



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THREADING / DIES

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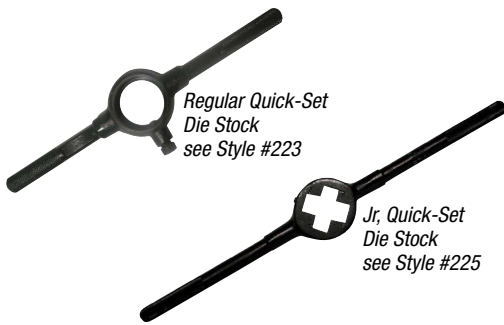
- Quick-Set Two-Piece Die System consists of these parts
Series 0550 — Die
Series 0551 — Cap
Series 0552 — Guide
Series 0553 — Collet
- Inch sizes are sold as a complete assembly (see table below), or in their component parts.
- Metric sizes are sold in their component parts only.
- Use with Quick-Set die stocks; see styles 0650, 0610, and 0710.

- Collets for use with Quick-Set dies consist of a cap and a guide; order cap and guide separately, or assembled as a collet (see below).
- Die halves are seated in the beveled cap slot and held in place by the guide, which screws into the underside of the cap.
- Die is adjusted by the set screws at either end of the slot.
- Caps of a given outside diameter are made with several different sizes of slots to take different sizes of dies as indicated in the table below.

- Separate guide is required for each cutting size.
- To order separate guides, specify cutting size of the die and the size of the collet for 1/4" and 1/2" dies.

Application Information:

- Use in most maintenance applications.
- Ideal for hand threading operations.



Note

Most cutting sizes may be ordered by size only; however, sizes 1/4" and 1/2" can be furnished in two different blanks, which should be ordered by size and collet number.

Unified and American National thread form standard.

Two-piece construction with two cutting edges in each piece.

Easy to sharpen.

One side has a 2 to 3 thread chamfer for threading; the other side has a 1 to 1-1/2 thread chamfer for threading close to a shoulder.

Unified and American National thread form standard.

Enables a wide range of adjustments.



Assembly
(combined Die & Collet)



Die



Cap



Guide



Collet
(combined Cap & Guide)

nominal dia. TPI	nominal dia. series	nominal dia. pitch	decimal equivalent	collet no.	collet O.D.	order number		order number			order number	
						0554 assembly	die blank no.	0550 die	cap O.D.	0551 cap	0552 guide	0553 collet
4-40	UNC		.1120	A1	1-1/4	C66782	A1	C66693	1-1/4	C66727	C66681	C66754
6-32	UNC		.1380	A1	1-1/4	C66783	A1	C66694	1-1/4	C66727	C66682	C66755
8-32	UNC		.1640	A1	1-1/4	C66784	A1	C66695	1-1/4	C66727	C66683	C66756
10-24	UNC		.1900	A1	1-1/4	C66785	A1	C66696	1-1/4	C66727	C66684	C66757
10-32	UNF		.1900	A1	1-1/4	C66786	A1	C66697	1-1/4	C66727	C66684	C66757
12-24	UNC		.2160	A1	1-1/4	C66787	A1	C66698	1-1/4	C66727	C66685	C66758
		M6 x 1	.2362	5	—	—	A	C66670	70	—	C66820	—
1/4-20	UNC		.2500	A1	1-1/4	C66788	A1	C66699	1-1/4	C66727	C66686	C66759
1/4-20	UNC		.2500	1,5	2	C66789	A	C66701	2	C66728	C66737	C66775
1/4-28	UNF		.2500	1	2	C66790	A1	C66700	2	C66728	C66737	C66775
1/4-28	UNF		.2500	1	2	C66790	A	C66702	2	C66728	C66737	C66775
5/16-18	UNC		.3125	1,5	2	C66791	A	C66703	2	C66728	C66738	C66776
5/16-24	UNF		.3125	1,5	2	C66792	A	C66704	2	C66728	C66738	C66776
		M8 x 1.25	.3150	5	—	—	A	C66671	70	—	C66821	—
3/8-16	UNC		.3750	1,5	2	C66793	B	C66705	2	C66729	C66739	C66777
3/8-24	UNF		.3750	1,5	2	C66794	B	C66706	2	C66729	C66739	C66777

continued on next page



CLE-LINE

Quick Two-Piece Die & Collet Assembly

Styles: 0550, 0551, 0552, 0553, 0554 (continued)



nominal dia. TPI	nominal dia. series	nominal dia. pitch	decimal equivalent	collet no.	collet O.D.	order number 0554 assembly	die blank no.	order number 0550 die	cap O.D.	order number 0551 cap	order number 0552 guide	order number 0553 collet
		M10 x 1.5	.3937	5	—	—	B	C66672	70	—	C66822	—
7/16-14	UNC		.4375	1,5	2	C66795	B	C66707	2	C66729	C66740	C66778
7/16-20	UNF		.4375	1,5	2	C66796	B	C66708	2	C66729	C66740	C66778
		M12 x 1.75	.4724	5	—	—	B	C66673	70	—	C66823	—
1/2-13	UNC		.5000	1	2	C66797	B	C66709	2	C66729	C66741	C66764
1/2-13	UNC		.5000	5	2-3/4	C66801	B	C66710	2	C66732	C66746	C66769
1/2-20	UNF		.5000	1	2	C66798	C	C66711	2-3/4	C66729	C66741	C66764
1/2-20	UNF		.5000	5	2-3/4	C66802	C	C66712	2-3/4	C66732	C66746	C66769
		M14 x 2	.5512	5	—	—	C	C66674	70	C66732	C66824	—
9/16-12	UNC		.5625	5	2-3/4	C66803	C	C66713	2-3/4	C66732	C66747	C66770
9/16-18	UNF		.5625	5	2-3/4	C66804	C	C66714	2-3/4	C66732	C66747	C66770
5/8-11	UNC		.6250	5	2-3/4	C66805	C	C66715	2-3/4	C66732	C66748	C66771
5/8-18	UNF		.6250	5	2-3/4	C66806	C	C66716	2-3/4	C66732	C66748	C66771
		M16 x 2	.6300	5	—	—	C	C66675	70	C66732	C66825	—
		M18 x 2.5	.7087	5	—	—	C	C66676	70	C66732	C66826	—
3/4-10	UNC		.7500	5	2-3/4	C66807	C	C66717	2-3/4	C66732	C66749	C66772
3/4-16	UNF		.7500	5	2-3/4	C66808	C	C66718	2-3/4	C66732	C66749	C66772
		M20 x 2.5	.7874	5	—	—	C	C66677	70	C66732	C66827	—
		M22 x 2.5	.8661	5	—	—	D	C66678	70	C66733	C66828	—
7/8-9	UNC		.8750	5	2-3/4	C66809	D	C66719	2-3/4	C66733	C66750	C66773
7/8-14	UNF		.8750	5	2-3/4	C66810	D	C66720	2-3/4	C66733	C66750	C66773
		M24 x 3	.9449	5	—	—	D	C66679	70	C66733	C66829	—
1-8	UNC		1.0000	5	2-3/4	C66811	D	C66721	2-3/4	C66733	C66751	C66774
1-12	UNF		1.0000	5	2-3/4	C66812	D	C66722	2-3/4	C66733	C66751	C66774
1-14	UNS		1.0000	5	2-3/4	C66813	D	C66723	2-3/4	C66733	C66751	C66774

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Quick Two-Piece Die System

Style: 223



CLE-LINE

Carbon Steel

HOLEMAKING

**Note**

Use with all Style #0554 Quick-Set collets with two-piece dies.

Application Information:

Quick-Set die stocks have center holes corresponding to the outside diameter of the Quick-Set collets.

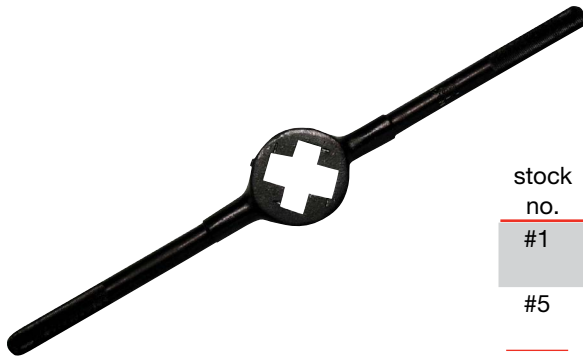
stock no.	collet no.	collet capacity	length of stock	order number
#A1	A1	1-1/4	7-1/2	C67216
#1	1	2	14-1/2	C67214
#5	5	2-3/4	23	C67217
#5A	5	2-3/4	26	C67215

THREADING / DIES

Jr. Quick Die Stock

Style: 225

SAWS

**Note**

Use with all Series 0550 Quick-Set two-piece dies without collet.

Application Information:

- Quick-Set Jr. die stocks are designed to use Quick-Set dies without collets.
- Double slots enable use of two different size blanks in the same stock.
- Dies fit directly into the stock and are held in place by a screw guide.

Carbon Steel

stock no.	cutting size	die blank size	guide no.	cutting size range	length of stock	order number
#1	1/4 to 5/16	A	1	1/4 to 1/2	14-1/2	C67220
	3/8 to 1/2	B				
#5	9/16 to 3/4	C	5	9/16 to 1	26	C67221
	7/8 to 1	D				

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Quick Set Spanner Wrench

Styles: 226

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**Note**

Because all guides are so small they are round not square, a standard wrench cannot be used.

Fits into two holes to turn guide.

Carbon Steel

stock no.	collet no.	collet capacity	order number
#A1	A1	1-1/4	C67232



CLE-LINE

General Purpose Taps & Dies - THREADING
Tap & Die Sets Quick-Set Two-Piece Die System
Style: 055


Carbon Steel

set no.	number of cutting sizes	threading sizes		collet number	tap wrench number	die stock number	order number
							055
559	7	4-40 NC	10-24 NC	A1	T9, A1	A1	C00609
		6-32 NC	10-32 NF				
		8-32 NC	12-24 NC				
			1/4-20 NC				
5510	5	1/4-20 NC	7/16-14 NC	1	#5	#1	C00610
		5/16-18 NC	1/2-13 NC				
		3/8-16 NC					
5511	10	1/4-20 NC	9/16-12 NC	5	#5,#7	5A	C00611
		5/16-18 NC	5/8-11 NC				
		3/8-16 NC	3/4-10 NC				
		7/16-14 NC	7/8-9 NC				
		1/2-13 NC	1-8 NC				
5512	10	1/4-20 NC	1/4-28 NF	1	#5	#1	C00612
		5/16-18 NC	5/16-24 NF				
		3/8-16 NC	3/8-24 NF				
		7/16-14 NC	7/16-20 NF				
		1/2-13 NC	1/2-20 NF				
5513	20	1/4-20 NC	1/4-28 NF	1,5	#5,#7	#1,#5B	C00613
		5/16-18 NC	5/16-24 NF				
		3/8-16 NC	3/8-24 NF				
		7/16-14 NC	7/16-20 NF				
		1/2-13 NC	1/2-20 NF				
		9/16-12 NC	9/16-18 NF				
		5/8-11 NC	5/8-18 NF				
		3/4-10 NC	3/4-16 NF				
		7/8-9 NC	7/8-14 NF				
		1-8 NC	1-14 NS				
5514	7	M6 x 1	M16 x 2	5	#6	#5	C00614
		M8 x 1.25	M18 x 2.5				
		M10 x 1.5					
		M12 x 1.75					
		M14 x 2					



7 Size Set
Tap & Die
#C00609

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Tap & Die Sets Quick-Set Jr. Tap & Die
Style: 055

HSS
Carbon Steel
Note

Die stock to hold dies without collet.

set no.	number of cutting sizes	threading sizes		wrench number	die stock number	order number
						055
558	20	1/4-20 NC	1/4-28 NF	#5, #7	#1, #5	C00608
		5/16-18 NC	5/16-24 NF			
		3/8-16 NC	3/8-24 NF			
		7/16-14 NC	7/16-20 NF			
		1/2-13 NC	1/2-20 NF			
		9/16-12 NC	9/16-18 NF			
		5/8-11 NC	5/8-18 NF			
		3/4-10 NC	3/4-16 NF			
		7/8-9 NC	7/8-14 NF			
		1-8 NC	1-14NS			





Standard Straight

Style: **240**

HOLEMAKING

THREADING / DIES


Note

Used for hand tapping.

product number	machine screw	tap size ranges		pipe	overall length	order number
		fractional	metric			240
0	0 to 14	1/16 to 1/4	M1.5 to M6.3	—	7	C67201
14	0 to 14	1/16 to 3/8	M1.5 to M10	—	9	C67197
5	8 to 14	5/32 to 1/2	M4 to M12.5	1/8	11	C67202
6	8 to 14	5/32 to 3/4	M4 to M19	1/8 to 1/4	15	C67203
7	—	1/4 to 1-1/8	M12 to M28	1/8 to 3/4	19	C67204
8	—	3/4 to 1-5/8	M19 to M40	3/8 to 1-1/4	40	C67205
22	—	1 to 2-1/2	M25 to M56	3/4 to 2	54	C67200

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Plain T-Handle

Style: **242**


Note

Used for hand tapping in out-in-the-open jobs.

product number	mach screw	tap size ranges		overall length	order number
		fractional	metric		242
T9	0 to 14	1/16 to 1/4	M1.5 to M6.3	2-3/4	C67206
T10	12 to 14	7/32 to 1/2	M5.5 to M12.5	3-5/8	C67207

Slip T-Handle

Style: **243**


Note

Used for hand tapping or in difficult spaces requiring a slip handle

product number	mach screw	tap size ranges		overall length	order number
		fractional	metric		243
T11	0 to 14	1/16 to 1/4	M1.5 to M6.3	2-3/4	C67208
T12	12 to 14	7/32 to 1/2	M5.5 to M12.5	3-5/8	C67209



CLE-LINE


Combination Ratchet and Slip Handle
Style: 244
Note

Used for hand tapping in difficult spaces needing ratchet drive.

product number	mach screw	tap size ranges		overall length	order number
		fractional	metric		244
T13	0 to 14	1/16 to 1/4	M1.5 to M6.3	3-3/4	C67210
T14	12 to 14	7/32 to 1/2	M5.5 to M12.5	5	C67211



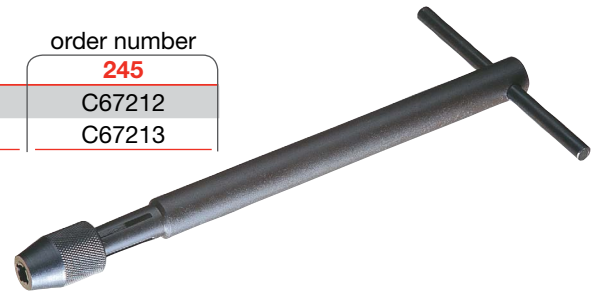
HOLEMAKING

THREADING / DIES

Long Shank T-Handle
Style: 245
Note

Used for hand tapping where extra reach is required.

product number	mach screw	tap size ranges		overall length	order number
		fractional	metric		245
T16	0 to 14	1/16 to 1/4	M1.5 to M6.3	8-3/4	C67212
T17	12 to 14	7/32 to 1/2	M5.5 to M12.5	10-5/8	C67213



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See product specific page for additional information

Make it Easy
SETS Cost Saving Sets
 Keep it organized!
Most styles
come in a set

HOLEMAKING

THREADING / DIES SETS



8 Size Set
 Re-Threading
 #C67275



20 Size Set
 Re-Threading
 #C67282



7 Size Set
 Tap and
 Round Adjustable
 #C00448



5 Size Set
 Tap and Round
 Adjustable
 #C00449

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set number	no. of sizes	sizes	case type	style number	order number
Carbon Steel Re-Threading					0650
42NC	8	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10	plastic		C67275
42NF	8	1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-11, 3/4-16	plastic		C67276
44NC	10	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8	plastic		C67278
45NCNF	20	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-14	plastic		C67282
NC/NF	10	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20	plastic		C67284
49Metric	7	M6 x 1, M8 x 1.25, M10 x 1.5, M12 x 1.75, M14 x 2, M16 x 2, M20 x 2.5	plastic		C67283
Tap and Round Adjustable Die HSS					
26S	8	2-56, 3-48, 4-40, 6-32, 8-32, 10-24, 10-32, 12-24	metal		C67271
517	7	4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20	metal		C00517
518	5	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13	metal		C00518
525	8	0-80, 1-72, 2-56, 3-48, 4-40, 6-32, 8-32, 10-24	metal		C00525
526	10	4-40, 4-48, 6-32, 6-40, 8-32, 8-36, 10-24, 10-32, 12-24, 12-28	metal		C00526
528	11	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, pipe size, 1/8-27 short shank	metal		C00528
532	21	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-14, pipe size, long shank	metal		C00532
815	20	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12	metal		C67293
533	28 Taps 15 Dies	4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-18, 3/4-16, 7/8-14, 1-14, pipe sizes, 1/8-27 - long shank, 1/4-18, 3/8-18, 1/2-14 metric: M14 x 1.5, M18 x 1.5	metal		C00533
Tap & Die					
448	7	M2.5 x 0.45, M3 x 0.5, M3.5 x 0.6, M4 x 0.7, M4.5 x 0.75, M5 x 0.8, M6 x 1.0		0411	C00448
449	5	M6 x 1.0, M7 x 1.0, M8 x 1.25, M10 x 1.5, M12 x 1.75		0411	C00449



See product specific page for additional information

set number	no. of sizes	sizes	case type	style number	order number
Tap & Die					
451	5	M6 x 1.0, M7 x 1.0, M8 x 1.25, M10 x 1.5, M12 x 1.75, 5.0mm, 6.0mm, 6.7mm, 8.5mm, 10.2mm	metal		C00451
Tap & Drill - Drill style: 1898 Bright, Uses Cle-Line Tap Style: #0411 Spiral Point					1860
	2	Bright, Drill: #36 Tap: 6-32 spiral point	plastic tube		C22305
	2	Bright, Drill: #29 Tap: 8-32 spiral point	plastic tube		C22304
	2	Bright, Drill: #25 Tap: 10-24 spiral point	plastic tube		C22307
	2	Bright, Drill: #21 Tap: 10-32 spiral point	plastic tube		C22306
	2	Bright, Drill: #7 Tap: 1/4-20 spiral point	plastic tube		C22308
	2	Bright, Drill: F Tap: 5/16-18 spiral point	plastic tube		C22300
	2	Bright, Drill: 5/16" Tap: 3/8-16 spiral point	plastic tube		C22303
	2	Bright, Drill: U Tap: 7/16-14 spiral point	plastic tube		C22302
	2	Bright, Drill: 27/64" Tap: 1/2-13 spiral point	plastic tube		C22301
Quick-Set Two-Piece Die System Uses: Die #380, Cap #1383, Guide #1384					055
559	7	4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20 collet: A1 - Tap wrench: T9, A1 - Die stock: A1		0402	C00609
5510	5	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 collet: 1 - Tap wrench: #5 - Die stock: #1		0402	C00610
5511	10	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8 collet: 5 - Tap wrench: #5, #7 - Die stock: 5A		0402	C00611
5512	10	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20 collet: 1 - Tap wrench: #5 - Die stock: #1		0402	C00612
5513	20	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-14 collet: 1, 5 - Tap wrench: #5, #7 - Die stock: #1, #5B		0402	C00613
5514	7	M6 x 1, M8 x 1.25, M10 x 1.5, M12 x 1.75, M14x2, M16 x 2, M18 x 2.5 collet: 5 - Tap wrench: #6 - Die stock: #5		0411 1002	C00614
Quick-Set Jr. Tap & Die Uses: Die #380, Guide #1384					055
558	20	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-14 Wrench: #5, #7 - Die stock: #1, #5		0402	C00608

5 Size Set
Tap, Die and Drill
#C004512 Piece Set
Bright, Drill & Tap
#C223047 Size Set
Quick-Set Two-Piece
Die System
#C00609

SAWS					Page	Sets Page
Hole Saws						
HOLEMAKING	M-3	HSS	1887		91	
	M-42	Cobalt	1887		91	94
	CLAW®	Cobalt	1886		92	94
	Carbide Tipped	Bi-Metal	1881**		93	94
	Accessories - Round & Hex Shank, Pilot Drill, Adaptor		1885		95	
Bi-Metal Reciprocating Saw Blades						
THREADING / DIES	Demolition - Wood / Nail Demolition - Metal / Rescue Pallet	M-42 Cobalt	RSB-D		96	
	Wood Metal All-Purpose Plaster Air Saw		RSB-P		97-98	
	Metal	Carbide	RSB-BM		98	
	Air Saw	M-42	RSB-CT		99	
	Bi-Metal Hacksaw Blades					
	M-42 Cobalt	HB-BM		99		
Bi-Metal Band Saw Blades						
SAWS	Portable Band Saw	M-42	P1000		100	
	Weld-To-Length Straight Tooth / 5° Positive Rake Tooth / 10° High Positive Rake / Protective Tooth / Heavy Set Turtle Back / Narrow Width Bands (M42)	M-42	T1000 - T7000		101- 103	
	Pre-Welded Straight Tooth / 5° Positive Rake Tooth 10° High Positive Rake / Narrow Width Bands (M42)	M-42	T1000 - T7000		104	
	Carbide Tipped	Carbide	1882		105	
	Technical Information					106-113

Cut to customer specifications

Weld-to-Length**Band Saw Program**

Reduce Cost • Custom Fit

Choose from the most common length

Pre-Welded**Band Saw Program**

to make delivery quick & easy!

You **SAW** it here!

Icon Glossary

Base Material

Bi-Metal

M42
Cobalt

Application

Nailed
Wood

Wood

Curved
Cutting

METAL



Plaster

Threads per Inch

4/6 TPI

(Teeth per inch)

3 TPI

(Teeth per inch)



CLE-LINE

SAWS / SAW BLADES

Hole Saws M-3 / M-42

Style: 1887

**Note**

Traditional narrow openings on the side wall.

High speed cutting edge.

1-7/8" (48mm) cutting depth.

*1-1/2" (32mm) cutting depth.

3/16" (5mm) thick heavy-duty backing plate eliminates need for drive plate.

Shock resistant teeth, resists tooth strippage, less vibration, cuts 30% faster than conventional saws.



Creates holes for pipe, tubing, door lock installations, electrical conduits, and antennas. Ideal for plumbing, construction, aircraft, electrical, maintenance and automotive applications.

Use in steel, aluminum, brass, cast iron, plastic or wood.

4/6 variable tooth configuration

1-7/8" (48mm) depth of cut

Unless noted otherwise

Thin kerf design 0.050" thickness for faster cutting. Prolongs battery life when used on cordless tools.

3/16" (5mm) thick heavy-duty backing plate eliminates need for drive plate

HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

MERCHANDISER

INDEX

diameter inch (mm)	order number	
	M3	M42
9/16" (14mm)	C25058	C25000
5/8" (16mm)	C26149	C26121
11/16" (17mm)	C26102	C25002
3/4" (19mm)	C25061	C26113
20mm	C25062	C25004
13/16" (21mm)	C26106	C26105
7/8" (22mm)	C25064	C25006
*7/8" (22mm)	C24998	C24999
15/16" (24mm)	C25065	C25007
1" (25mm)	C25066	C26101
1-1/16" (27mm)	C25067	C25009
1-1/8" (29mm)	C25068	C26103
1-3/16" (30mm)	C25069	C25011
1-1/4" (32mm)	C25070	C25012
1-5/16" (33mm)	C25071	C25013
1-3/8" (35mm)	C26108	C25014
1-7/16" (37mm)	C25073	C25015
1-1/2" (38mm)	C25074	C25016
1-9/16" (40mm)	C25075	C25017
1-5/8" (41mm)	C25076	C25018
1-11/16" (43mm)	C25077	C26104

diameter inch (mm)	order number	
	M3	M42
1-3/4" (44mm)	C25078	C26107
45mm	C26120	C25021
1-13/16" (46mm)	C25080	C25022
1-7/8" (48mm)	C25081	C25023
50mm	C25082	C25024
2" (51mm)	C25083	C25025
2-1/16" (52mm)	C25084	C25026
2-1/8" (54mm)	C25085	C25027
55mm	C25086	C25028
2-1/4" (57mm)	C26109	C25029
2-5/16" (59mm)	C25088	C25030
2-3/8" (60mm)	C25089	C25031
2-1/2" (64mm)	C25090	C25032
2-9/16" (65mm)	C25091	C25033
2-5/8" (67mm)	C25092	C26111
68mm	C25093	C25035
2-3/4" (70mm)	C26110	C25036
2-7/8" (73mm)	C26112	C25037
75mm	C25096	C25038
3" (76mm)	C25097	C25039

diameter inch (mm)	order number	
	M3	M42
3-1/8" (79mm)	C25098	C25040
3-1/4" (83mm)	C25099	C26115
3-3/8" (86mm)	C26116	C25042
3-1/2" (89mm)	C25001	C25043
3-5/8" (92mm)	C25102	C25044
3-3/4" (95mm)	C25103	C25045
3-7/8" (98mm)	C25104	C25046
100mm	C25105	C25047
4" (102mm)	C25106	C25048
4-1/8" (105mm)	C25107	C25049
4-1/4" (108mm)	C26118	C25050
4-3/8" (111mm)	C25109	C25051
4-1/2" (114mm)	C26117	C25052
4-3/4" (121mm)	C25111	C26119
5" (127mm)	C25112	C25054
5-1/2" (140mm)	C25113	C25055
5-3/4" (146mm)	C25114	C25056
6" (152mm)	C25115	C25057



- **CLAW** has a cutting edge made from M42 cobalt steel
- Shock resistant teeth
- Reduces tooth strippage
- 4/6 positive tooth
- Less vibration
- 1-7/8" Depth of Cut



"You asked for **speed** and a smooth finish
... Cle-Line **CLAW** delivers."

Easy Plug Removal

triple slot design makes plug removal easier

Size Range

9/16" to 6"

Turtle Back Tooth

reinforced tooth back

Heavy Duty Cutting

up to 40% faster than traditional bi-metal hole saws and a longer working life

Gullets

designed deeper for faster chip removal



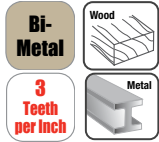
diameter inch (mm)	order number 1886
9/16" (14mm)	C43100
5/8" (16mm)	C43101
11/16" (17mm)	C43102
3/4" (19mm)	C43103
20mm	C43104
13/16" (21mm)	C43105
7/8" (22mm)	C43106
15/16" (24mm)	C43107
1" (25mm)	C43108
1-1/16" (27mm)	C43109
1-1/8" (29mm)	C43110
1-3/16" (30mm)	C43111
1-1/4" (32mm)	C43112
1-5/16" (33mm)	C43113
1-3/8" (35mm)	C43114
1-7/16" (37mm)	C43115
1-1/2" (38mm)	C43116
1-9/16" (40mm)	C43117
1-5/8" (41mm)	C43118
1-11/16" (43mm)	C43119

diameter inch (mm)	order number 1886
1-3/4" (44mm)	C43120
45mm	C43121
1-13/16" (46mm)	C43122
1-7/8" (48mm)	C43123
50mm	C43124
2" (51mm)	C43125
2-1/16" (52mm)	C43126
2-1/8" (54mm)	C43127
55mm	C43128
2-1/4" (57mm)	C43129
2-5/16" (59mm)	C43130
2-3/8" (60mm)	C43131
2-1/2" (64mm)	C43132
2-9/16" (65mm)	C43133
2-5/8" (67mm)	C43134
68mm	C43135
2-3/4" (70mm)	C43136
2-7/8" (73mm)	C43137
75mm	C43138
3" (76mm)	C43139

diameter inch (mm)	order number 1886
3-1/8" (79mm)	C43140
3-1/4" (83mm)	C43141
3-3/8" (86mm)	C43142
3-1/2" (89mm)	C43143
3-5/8" (92mm)	C43144
3-3/4" (95mm)	C43145
3-7/8" (98mm)	C43146
100mm	C43147
4" (102mm)	C43148
4-1/8" (105mm)	C43149
4-1/4" (108mm)	C43150
4-3/8" (111mm)	C43151
4-1/2" (114mm)	C43152
4-3/4" (121mm)	C43153
5" (127mm)	C43154
5-1/2" (140mm)	C43155
5-3/4" (146mm)	C43156
6" (152mm)	C43157



CLE-LINE



- Creates holes for pipes, tubing, door lock installations, electrical conduits, and antennas.
- Ideal for plumbing, construction, aircraft, electrical, maintenance, and automotive applications.
- Use in steel, brass, plastic, wood, fiberglass, drywall, counter tops, plaster, and fiberboard.



Carbide Tipped

up to 20x longer life for cutting wood and metal

Tooth Geometry

provides cleaner and faster cuts for aggressive cutting (3 teeth per inch)

1-1/2" Depth of Cut

This product is being obsoleted.
Available until inventory is depleted.

diameter	order number 1881
9/16" (14mm)	C43000
16mm	C43001
11/16" (17mm)	C43002
3/4" (19mm)	C43003
20mm	C43004
13/16" (21mm)	C43005
7/8" (22mm)	C43006
15/16" (24mm)	C43007
1-1/8" (29mm)	C43010
1-3/16" (30mm)	C43011
1-5/16" (33mm)	C43013
1-3/8" (35mm)	C43014
1-7/16" (37mm)	C43015
1-9/16" (40mm)	C43017
1-11/16" (43mm)	C43019
1-3/4" (44mm)	C43020
1-13/16" (46mm)	C43021
1-7/8" (48mm)	C43022

diameter	order number 1881
2-1/16" (52mm)	C43024
2-1/8" (54mm)	C43025
2-1/4" (57mm)	C43026
2-5/16" (59mm)	C43027
2-3/8" (60mm)	C43028
2-1/2" (64mm)	C43029
2-9/16" (65mm)	C43030
2-3/4" (70mm)	C43032
2-7/8" (73mm)	C43033
3-1/4" (83mm)	C43036
3-3/8" (86mm)	C43037
3-1/2" (89mm)	C43038
3-5/8" (92mm)	C43039
3-3/4" (95mm)	C43040
3-7/8" (98mm)	C43041
4-1/8" (105mm)	C43043
4-1/4" (108mm)	C43044
4-3/8" (111mm)	C43045

diameter	order number 1881
4-1/2" (114mm)	C43046
4-3/4" (121mm)	C43047
5" (127mm)	C43048
5-1/4" (133mm)	C43049
5-1/2" (140mm)	C43050
5-3/4" (146mm)	C43051
6" (152mm)	C43052



SAWS / SAW BLADES

Hole Saw Kits Cobalt

Styles: Styles: 1881, 1886, 1887



CLE-LINE

HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

MERCHANDISER

INDEX

Bi-Metal	4/6 TPI (Teeth per inch)	3 TPI (Teeth per inch)
M42 Cobalt	Style: 1887 & 1886	Style: 1881



M-42 Bi-Metal
9 piece
Electrician's Kit
#CHK04



CLAW® Fleam Ground
9 piece
Electrician's Kit
#C43161



Carbide Tipped
9 piece
Electrician's Kit
#C43053

Note
Hole Saw Kits available for cutting almost any material.
The M-42 and CLAW kits contain Bi-Metal 8% Cobalt hole saws of 4/6, Carbide contain .
Assortment of hole saws and accessories specifically designed for the application environment.
Provided in a heavy duty, plastic case.

This product is being **obsoleted**. Available until inventory is depleted.

Kit type	3/4" 19mm	7/8" 22mm	1" 25mm	1-1/8" 29mm	1-1/4" 32mm	1-3/8" 35mm	1-1/2" 38mm	1-3/4" 44mm	2" 51mm	2-1/8" 54mm	2-1/4" 57mm	2-1/2" 64mm	3" 76mm	3-1/4" 83mm	3-5/8" 92mm	3-3/4" 95mm	4-1/8" 105mm	4-1/2" 114mm	order number
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1887 - M-42 Bi-Metal

Handyman's Kit - 7 piece (includes 1 mandrel and 1 adaptor)																				
Sizes		✓	✓	✓	✓		✓													CHK01
Locksmith's Kit - 9 piece (includes 2 mandrels and 1 adaptor)																				
Sizes		✓	✓		✓		✓	✓		✓										CHK02
Plumber's Kit - 9 piece (includes 2 mandrels and 1 adaptor)																				
Sizes	✓	✓		✓			✓	✓			✓									CHK03
Electrician's Kit - 9 piece (includes 2 mandrels and 1 adaptor)																				
Sizes		✓		✓		✓		✓	✓			✓								CHK04
Electrician's Kit - Metric - 9 piece (includes 2 mandrels and 1 adaptor)																				
Sizes	16mm(5/8"), 20mm, 25mm(1"), 32mm(1-1/4"), 40mm(1-9/16"), 51mm(2")																		CHK05	
Journeyman's Kit - 13 piece (includes 2 mandrels, 1 pilot hole drill, and 1 adaptor)																				
Sizes	✓	✓		✓		✓	✓	✓	✓		✓	✓								CHK06

1886 - CLAW/Fleam Ground

Handyman's Kit - 7 piece (includes 1 mandrel / arbors, 1 adaptor)																				
Sizes		✓	✓	✓	✓		✓													C43158
Locksmith's Kit - 9 piece (includes 2 mandrels / arbors, 1 adaptor)																				
Sizes		✓	✓		✓		✓	✓		✓										C43159
Plumber's Kit - 9 piece (includes 2 mandrels / arbor, and 1 adaptor)																				
Sizes	✓	✓		✓			✓	✓			✓									C43160
Electrician's Kit - 9 piece (includes 2 mandrels / arbor, and 1 adaptor)																				
Sizes		✓		✓		✓		✓	✓			✓								C43161
Electrician's Kit - Metric - 9 piece (includes 2 mandrels / arbor, and 1 adaptor)																				
Sizes	16mm(5/8"), 20mm, 25mm(1"), 32mm(1-1/4"), 40mm(1-9/16"), 51mm(2")																		C43162	
Journeyman's Kit - 13 piece (includes 2 mandrels / arbor, 1 pilot hole drill, and 1 adaptor)																				
Sizes	✓	✓		✓		✓	✓	✓	✓		✓	✓								C43163



CLE-LINE



Round Shank

fits the following chuck size	hole saw size	order number
1/4" (6mm)	9/16" - 1-3/16" (14 to 30mm)	⊕ *C25116

*Included in kit #: C43158, C43159, C43160, C43161, C43162, C43163.



Hex Shank

fits the following chuck size	hole saw size	order number
3/8" (9mm)	9/16" - 1-3/16" (14 to 30mm)	⊕ C25118
7/16" (11mm)	9/16" - 1-3/16" (14 to 30mm)	⊕ C25119



Hex Shank Pinned

fits the following chuck size	hole saw size	order number
3/8" Pinned (9mm)	1-1/4" - 6" (32 to 152mm)	⊕ C26198
7/16" Pinned (11mm)	1-1/4" - 6" (32 to 152mm)	⊕ *C25121

*Included in kit #: C43159, C43160, C43161, C43162, C43163.



Hex Shank

fits the following chuck size	hole saw size	order number
3/8" (9mm)	1-1/4" - 6" (32 to 152mm)	⊕ C26195



Short Pilot Drill with Flat on Shank

description	order number (2 per pkg.)
3-1/4" overall length x 1/4" dia. (80mm)	⊕ C25123



Long Pilot Drill with Whistle Notch on Shank

description	order number (2 per pkg.)
4" overall length x 1/4" dia. (102mm)	⊕ C25124



Arbor Extension

description	order number (2 per pkg.)
3/8" x 12" (9mm dia. x 302mm)	⊕ C26199



Adaptor

fits hole saw size	order number
1-1/4" - 6" (32 to 152mm)	⊕ C26196





SAWS / SAW BLADES

Bi-Metal Reciprocating Blade Demolition - Wood / Nail

Style: **RSB-D**

CLE-LINE

M42
Cobalt**Note**

Wider (7/8") and thicker (.062) blades engineered for heavy-duty, tough cutting, demolition applications.

Available in 6", 9", and 12" lengths with 1/2" universal shanks.

order number

Inch (teeth per inch)	RSB-D		
	5 pc.	10 pc.	20 pc.
6" x 7/8" x 0.062" (6)	C30101	C30135	C30156
9" x 7/8" x 0.062" (6)	C30102	C30136	C30157
12" x 7/8" x 0.062" (6)	C30103	C30137	C30158

HOLEMAKING

THREADING / DIES

Bi-Metal Reciprocating Blade Demolition - Metal / Rescue

Style: **RSB-D**M42
Cobalt**Note**

Wider (1.0") and thicker (.042) blades engineered for heavy-duty, tough cutting, demolition applications.

Available in 6", 9", and 12" lengths with 1/2" universal shanks.

order number

Inch (teeth per inch)	RSB-D		
	5 pc.	10 pc.	20 pc.
6" x 1" x 0.042" (14)	C30104	C30138	C30159
9" x 1" x 0.042" (14)	C30105	C30139	C30160
12" x 1" x 0.042" (14)	C30106	C30140	C30161

SAWS

CARBIDE BURS/ROUTERS



Bi-Metal Reciprocating Blade Pallet

Style: **RSB-P**M42
Cobalt**Note**

Wider (3/4") and thicker (.035) blades engineered for the dismantling of pallets.

Available in 8" lengths with 1/2" universal shanks.

order number

Inch (teeth per inch)	RSB-P	
	10 pc.	200 pc.
8" x 3/4" x 0.035" (10)	C25217	C25217BP

- M42 cutting edge with 8% cobalt for longer life.
- Special heat treat for increased tooth life.
- Special blade backer for greater flexibility when cutting block pallets.
- Unique tooth design for fast cutting.
- Rounded nose for easy cutting and safe operation.

MERCHANDISER

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Bi-Metal Reciprocating Blade Wood
Style: **RSB-BM**



CLE-LINE



Bi-Metal

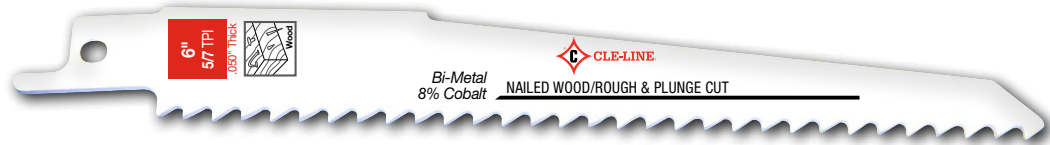
M42 Cobalt

Note

General roughing-in work for wood and nail embedded woods. Designed for efficient cutting in a wide variety of wood.

1/2" universal shank fits all standard 1/2" shank reciprocating saws.

Tapered end allows for plunge cutting.



Inch (teeth per inch)	order number		
	5 pc.	10 pc.	50 pc.
6" x 3/4" x 0.050" (5/7)	C30107	C30141	C30170
6" x 3/4" x 0.050" (6)	C30108	C30142	C30171
6" x 3/4" x 0.050" (10)	C30109	C30143	C30172
9" x 3/4" x 0.050" (6)	C30110	C30144	C30173
12" x 3/4" x 0.050" (6)	C30111	C30145	C30174

HOLEMAKING

THREADING / DIES

SAWS

Bi-Metal Reciprocating Blade Metal
Style: **RSB-BM**



Bi-Metal

M42 Cobalt

Note

See application information below.

Designed for efficient cutting in a wide variety of materials including metal, rod, pipe, and conduit.

1/2" universal shank fits all standard 1/2" shank reciprocating saws.

Quick and accurate cutting.



Inch (teeth per inch)	order number			Applications
	5 pc.	10 pc.	50 pc.	
6" x 3/4" x 0.035" (14)	C30112	C30146	C30175	14 teeth per inch: For metals heavier than 1/8", bar stock, angles, rubber, masonite, fiberglass, etc.
6" x 3/4" x 0.035" (18)	C30113	C30147	C30176	
6" x 3/4" x 0.035" (24)	C30114	C30148	C30177	
8" x 3/4" x 0.035" (18)	C30115	C30149	C30178	18 teeth per inch: For heavy gauge sheet metal, conduit, pipe, tubing, thin fiberglass.
9" x 3/4" x 0.035" (14)	C30116	C30150	C30179	
12" x 3/4" x 0.035" (18)	C30117	C30151	C30180	24 teeth per inch: For metals lighter than 18-gauge, thin wall tubing, formed sheet, trim, etc.

CARBIDE BURS/ROUTERS

MERCHANDISER

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SAWS / SAW BLADES

Bi-Metal Reciprocating Blade All-Purpose Cutting

Style: **RSB-BM** (continued)



CLE-LINE

HOLEMAKING



Note

Heavy gauge metals, composites, masonite, wood, etc.

Designed for efficient cutting in a wide variety of materials including wood, metal, and plastic.

1/2" universal shank fits all standard 1/2" shank reciprocating saws.

Quick and accurate cutting.

THREADING / DIES

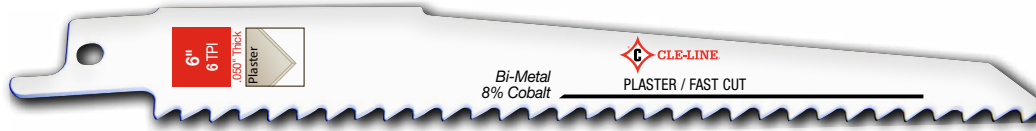
order number

Inch (teeth per inch)	order number		
	5 pc.	10 pc.	50 pc.
8" x 3/4" x 0.035" (10/14)	C30118	C30152	C30181
12" x 3/4" x 0.050" (10/14)	C30119	C30153	C30182
12" x 3/4" x 0.050" taper (10/14)	C30120	C30154	C30183

SAWS

Bi-Metal Reciprocating Blade Plaster Cutting

Style: **RSB-BM**



Note

High performance, and fast cutting for plaster.

Designed for efficient cutting in plaster or drywall by minimizing tear out.

CARBIDE BURS/ROUTERS

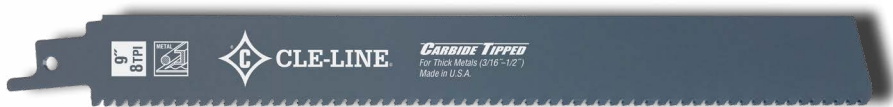
order number

Inch (teeth per inch)	order number		
	5 pc.	10 pc.	50 pc.
6" x 3/4" x 0.050" straight (6)	C30121	C30155	C30184

MERCHANDISER

Carbide Tipped Reciprocating Blade - Metal

Style: **RSB-CT**



Note

Cuts faster / lasts longer than a traditional bi-metal blade

Carbide teeth stay sharp

Faster cutting without binding

Less vibration

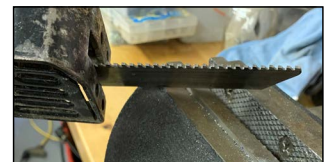
Straighter cuts

Recommended for:

Metal Alloys; Cast Iron; Stainless Steel; Steel Plate; Threaded Rod; EMT Conduit; Ferrous Metal; Steel Studs; Rubber; Black Iron Pipe; Rebar and Angle Iron

INDEX

Inch (teeth per inch)	Length	Width	Thickness	order number			
				RSB-CT (1 piece)			
8	6"	152mm	1"	25mm	0.050"	1.30mm	C30185
8	9"	229mm	1"	25mm	0.050"	1.30mm	C30186
8	12"	305mm	1"	25mm	0.050"	1.30mm	C30187

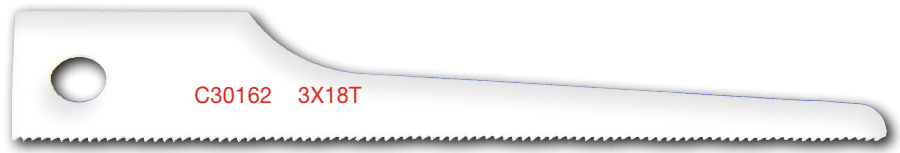




CLE-LINE

**Note**

See application information below.
Specifically designed blades for use in pneumatic saws. Air Saw blades have fine teeth for cutting metal.



Inch (teeth per inch)	order number		Applications
	RSB-BM	20 pc.	
3" x 1/2" x 0.025" (18)	C30162		18 teeth per inch: For scroll cutting metals lighter than 14 gauge.
3" x 1/2" x 0.025" (24)	C30163		24 teeth per inch: For scroll cutting metals lighter than 18 gauge, thin tubing, formed sheets, trim, etc.
3" x 1/2" x 0.025" (32)	C30164		
4" x 1/2" x 0.025" (18)	C30165		32 teeth per inch: For scroll cutting metals, very thin gauge metals, sheet, tubing, trim, etc.
4" x 1/2" x 0.025" (32)	C30166		
5" x 1/2" x 0.025" (18)	C30167		

Bi-Metal Hacksaw Blades

Style: **HB-BM**

**Note**

Cut medium metals (1/16" to 1/4") such as sheet metal, angle iron, bolts, channels, drill rod, threaded rod, pipes, and tubing.

Bi-Metal construction.

Flexible steel spring back.

High speed steel cutting edge.

Blade is heat, shock, and shatter resistant.

For heavy-duty cutting.



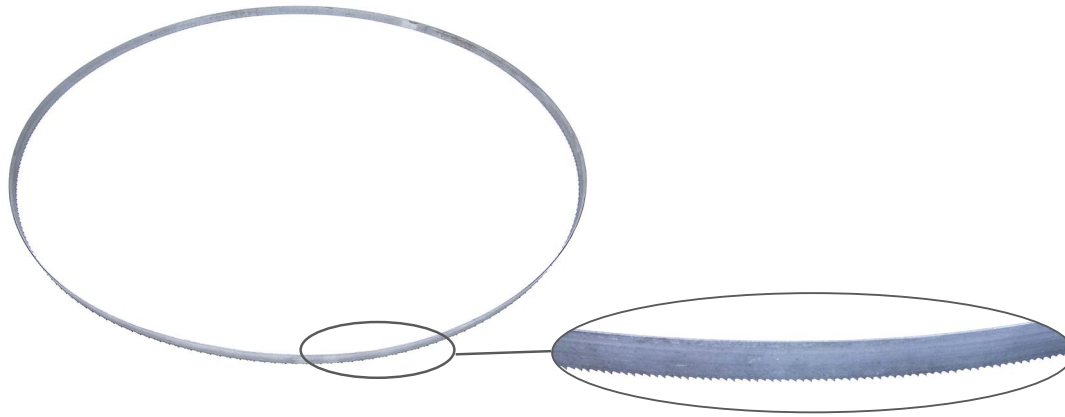
Inch (teeth per inch)	order number	
	10 pc.	100 pc.
10" x 1/2" x 0.025" (18)	C25239-10	C25239
10" x 1/2" x 0.025" (24)	C25240-10	C25240
10" x 1/2" x 0.025" (32)	C25241-10	C25241
12" x 1/2" x 0.025" (14)	C25242-10	C25242
12" x 1/2" x 0.025" (18)	C26125-10	C26125
12" x 1/2" x 0.025" (24)	C25244-10	C25244
12" x 1/2" x 0.025" (32)	C25245-10	C25245
12" x 1/2" x 0.025" (10/14)	C25246-10	C25246
12" x 1/2" x 0.025" (18/24)	C25248-10	C25248



Bi-Metal

M42 Cobalt

HOLEMAKING



THREADING / DIES

Note*Bi-metal construction.**Matrix II cutting edge containing 8% cobalt.**Available in standard and variable tooth style.**Less tooth chippage.**3 packs - 3 per box**150 pack - 3 per poly bag = 50 bags*

SAWS

order number

P1000

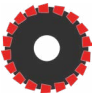
Inch (teeth per inch)	3 bands	150 bands
44-7/8" x 1/2" x 0.020" (10/14)	C25126	C25126-150
44-7/8" x 1/2" x 0.020" (14/18)	C25127	C25127-150
44-7/8" x 1/2" x 0.020" (10) Raker	C25129	C25129-150
44-7/8" x 1/2" x 0.020" (14) Raker	C25130	C25130-150
44-7/8" x 1/2" x 0.020" (18) Raker	C25131	C25131-150
44-7/8" x 1/2" x 0.020" (24) Raker	C25132	C25132-150



CARBIDE BURS/ROUTERS

MERCHANDISER

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>> Order Weld-to-Length <<

How To Order Example

Order Number	Add	*Add Length Required (specify in inches)
C25149	WTL	144"
New Part Number		
C26149WTL144"		
Available with all styles T1000 - T7000		
* Minimum Length = 60"		

Cut to customer specifications

Weld-to-Length
Band Saw Program

Please Note...



All Band Saw Coils

+/- 10% shipping policy on the number of feet sold. Coils thru 1-1/4" are 250 feet per coil, over 1-1/4" 150 feet per coil.

Bi-Metal Band Saws - Straight Tooth
Style: T1000

Note

Bi-metal construction.

M42 high speed steel cutting edge provides higher heat and wear durability.

Tooth hardness Rc 67-69.

Straight tooth 0° rake for smoother cutting and general applications.

* 150 foot coils, all others 250 feet

Minimum Length = 60"

All-purpose band for moderate to difficult to cut material.



Abbreviations below: C = Constant, V = Variable / R = Raker, W = Wavy

Inch (teeth per inch)	C / V	R / W	order number T1000
3/4" x 0.035" (6/10)	V	R	C25149
3/4" x 0.035" (8/12)	V	R	C25150
3/4" x 0.035" (10/14)	V	R	C26136
3/4" x 0.035" (10)	C	R	C25152
3/4" x 0.035" (14)	C	W	C25153
1" x 0.035" (3/4)	V	R	C25154
1" x 0.035" (4/6)	V	R	C26134
1" x 0.035" (5/8)	V	R	C25156
1" x 0.035" (6/10)	V	R	C25157

Inch (teeth per inch)	C / V	R / W	order number T1000
1" x 0.035" (8/12)	V	R	C25158
1" x 0.035" (10/14)	V	R	C26133
1" x 0.035" (14T)	C	W	C25160
1-1/4" x 0.042" (3/4)	V	R	C25161
1-1/4" x 0.042" (4/6)	V	R	C25162
1-1/4" x 0.042" (5/8)	V	R	C25163
1-1/4" x 0.042" (6/10)	V	R	C25164
1-1/2" x 0.050" (4/6)	V	R	*C26135

Bi-Metal Band Saws - 5° Positive Rake Tooth
Style: T2000

Note

Bi-metal construction.

M42 high speed steel cutting edge provides higher heat and wear durability.

Tooth hardness Rc 67-69.

5° Positive rake tooth for easier penetration and reduced vibration.

* 150 foot coils, all others 250 feet

Minimum Length = 60"

For both production or non-production cutting of solids and thick wall tubing of medium alloy. For work hardened materials such as stainless steel.



Abbreviations below: C = Constant, V = Variable / R = Raker, W = Wavy

Inch (teeth per inch)	C / V	R / W	order number T2000
3/4" x 0.035" (4/6)	V	R	C25166
3/4" x 0.035" (5/7)	V	R	C25167
1" x 0.035" (2/3)	V	R	C25168
1" x 0.035" (3/4)	V	R	C25169
1" x 0.035" (4/6)	V	R	C25170
1" x 0.035" (5/7)	V	R	C26137
1" x 0.035" (2) Hook	C	R	C25172
1" x 0.035" (6)	C	R	C25173
1" x 0.035" (8)	C	R	C25174

Inch (teeth per inch)	C / V	R / W	order number T2000
1-1/4" x 0.042" (2/3)	V	R	C25175
1-1/4" x 0.042" (3/4)	V	R	C25176
1-1/4" x 0.042" (4/6)	V	R	C25177
1-1/4" x 0.042" (5/7)	V	R	C26139
1-1/4" x 0.042" (6)	C	R	C25179
1-1/2" x 0.050" (2/3)	V	R	*C26138
1-1/2" x 0.050" (3/4)	V	R	*C25181
1-1/2" x 0.050" (4/6)	V	R	*C25182



SAWS / SAW BLADES

Bi-Metal Band Saws - 10° High Positive Rake

Style: **T3000**

CLE-LINE

HOLEMAKING

Production sawing of exotic materials such as Inconels, Monels, Hastalloys, Hi-Temp Alloys, Titanium, Stainless and more.



High positive rake with DUPLEX tooth design for maximum strength when cutting difficult material such as super alloys

**Note**

Bi-metal construction.

M42 high speed steel cutting edge provides higher heat and wear durability.

Tooth hardness Rc 67-69.

Duplex tooth design.

10° high positive rake with DUPLEX tooth design for maximum strength when cutting difficult material such as super alloy.

Specially engineered relief angle.

More aggressive acting for easier chip formation.

** 150 foot coils, all others 250 feet*

Minimum Length = 60"

Abbreviations below: C = Constant, V = Variable / R = Raker, W = Wavy

THREADING / DIES

Inch (teeth per inch)	C / V	R / W	order number
3/4" x 0.035" (4/6)	V	R	T3000 C26143
1" x 0.035" (2/3)	V	R	C25184
1" x 0.035" (3/4)	V	R	C26140
1" x 0.035" (4/6)	V	R	C25186
1-1/4" x 0.042" (2/3)	V	R	C26141
1-1/4" x 0.042" (3/4)	V	R	C25188
1-1/4" x 0.042" (4/6)	V	R	C25189

Inch (teeth per inch)	C / V	R / W	order number
1-1/2" x 0.050" (2/3)	V	R	*C25190
1-1/2" x 0.050" (3/4)	V	R	*C25191
1-1/2" x 0.050" (4/6)	V	R	*C25192
2" x 0.063" (2/3)	V	R	*C25193
2" x 0.063" (3/4)	V	R	*C26142
2" x 0.063" (4/6)	V	R	*C25195

Bi-Metal Band Saws - Protective Tooth

Style: **T4000**

Tubes, structures, small sizes bundles.



Positive Rake

**Note**

Bi-Metal construction.

M42 high speed steel cutting edge provides higher heat and wear durability.

Tooth hardness Rc 67-69.

Protective tooth specially designed for tube. To prevent tooth breakage by eliminating excessive tooth stripping due to the domino effect. To withstand the shock of interrupted cuts, allowing for heavier penetration under fast cutting rate.

** 150 foot coils, all others 250 feet*

Minimum Length = 60"

Abbreviations below: C = Constant, V = Variable / R = Raker, W = Wavy

Inch (teeth per inch)	C / V	R / W	order number
1" x 0.035" (4/6)	V	R	T4000 C25196
1-1/4" x 0.042" (4/6)	V	R	C25197
1-1/2" x 0.042" (4/6)	V	R	*C25198

SAWS

CARBIDE BURS/ROUTERS

Bi-Metal Band Saws - Heavy Set

Style: **T5000**

For large bundle cutting of structural steel. Ideal for applications where a larger kerf is needed to prevent blade pinching and stalling from material stresses and movement.



Positive Rake

**Note**

Bi-Metal construction.

M42 high speed steel cutting edge provides higher heat and wear durability.

Tooth hardness Rc 67-69.

Heavy Set teeth are individually set teeth similar to the Raker Set but are set wider preventing the blade from being pinched or becoming bound during cutting

** 150 foot coils, all others 250 feet*

Minimum Length = 60"

Abbreviations below: C = Constant, V = Variable / R = Raker, W = Wavy

Inch (teeth per inch)	C / V	R / W	order number
1" x 0.035" (4/6)	V	R	T5000 C25200
1" x 0.035" (2/3)	V	R	C25199
1" x 0.035" (5/7)	V	R	C25201
1-1/4" x 0.042" (3/4)	V	R	C25202
1-1/4" x 0.042" (4/6)	V	R	C26144
1-1/4" x 0.042" (5/7)	V	R	C25204

Inch (teeth per inch)	C = Constant	V = Variable	order number
1-1/2" x 0.050" (3/4)	V	R	*C25205
1-1/2" x 0.050" (4/6)	V	R	*C25206
1-1/2" x 0.050" (5/7)	V	R	*C25207
2" x 0.063" (2/3)	V	R	*C25208
2" x 0.063" (3/4)	V	R	*C25209
2" x 0.063" (4/6)	V	R	*C26145

MERCHANDISER

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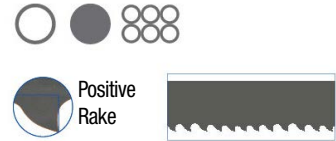
Bi-Metal Band Saws - Turtle Back
Style: **T6000**



Note
Bi-Metal construction. *Turtle Back Set is a tooth configuration that has a reinforced shoulder or "Turtle Back Hump" on the back of the cutting edge to prevent stripping out and interrupting cuts.*
M42 high speed steel cutting edge provides higher heat and wear durability. ** 150 foot coils, all others 250 feet*
Tooth hardness Rc 67-69. **Minimum Length = 60"**

Abbreviations below: C = Constant, V = Variable / R = Raker, W = Wavy

Profiles for thick wall tubing, alloy steel, single layer and bundle cutting steel girders.



Inch (teeth per inch)	C / V	R / W	order number
1" x 0.035" (3/4)	V	R	T6000 C26146
1-1/4" x 0.042" (3/4)	C	R	C26147
1-1/2" x 0.050" (3/4)	V	R	*C26148

Bi-Metal Band Saws - Narrow Width Bands (M42)
Style: **T7000**

Note
Narrow Width (M42) *Tooth hardness Rc 67-69.*
Bi-Metal construction. *Narrow width (1/2") for contour and miter cutting.*
M42 high speed steel cutting edge provides higher heat and wear durability. *Narrow width and gauge can be welded by customer for die building and internal cutting re-use.*
Solid and thick wall tubing of medium to difficult material, such as stainless steel. *HSS edge contains 8% cobalt.*
Minimum Length = 60"

Abbreviations below: C = Constant, V = Variable / R = Raker, W = Wavy



Inch (teeth per inch)	C / V	R / W	order number
1/2" x 0.025" (6/10)	V	R	T7000 C26127
1/2" x 0.025" (8/12)	V	R	C26128
1/2" x 0.025" (10/14)	V	R	C25141
1/2" x 0.025" (14) Raker	C	R	C25142
1/2" x 0.025" (18) Wavy	C	W	C25143
1/2" x 0.035" (8/12)	V	R	C25144

Inch (teeth per inch)	C / V	R / W	order number
1/2" x 0.035" (10/14)	V	R	T7000 C25145
1/2" x 0.035" (6) Positive	C	R	C25147
1/2" x 0.035" (14) Raker	C	R	C25148
1/2" x 0.035" (4) Hook	C	R	C26129

Please Note...

All Band Saw Coils
 +/- 10% shipping policy on the number of feet sold. Coils thru 1-1/4" are 250 feet per coil, over 1-1/4" 150 feet per coil.



SAWS / SAW BLADES

Band Saw Blades *Pre-Welded*Styles: **T1000, T2000, T3000, T7000**

CLE-LINE

HOLEMAKING

**Pre-Welded**

Choose from the most common length
to make delivery quick and easy!
Band Saw Program

Delivery: 1-2 business days!**Style (Tooth) Definitions:**

T1000 = 0° Straight

T2000 = 5° Positive Rake

T3000 = 10° High Positive Rake

T7000 = Narrow Width Bands (M42)

Other lengths, thicknesses, and
tooth configurations available. Call
for additional information.

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

MERCHANDISER

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teeth per inch (TPI)	Length x Width x Thickness	order number (1 piece)	teeth per inch (TPI)	Length x Width x Thickness	order number (1 piece)	teeth per inch (TPI)	Length x Width x Thickness	order number (1 piece)
T1000			T2000			T3000		
4/6	115.5" x 1 x .035	C254414WTL	5/8	162" x 1-1/4 x .042	C254459WTL	4/6	115.5" x 1 x .035	C254463WTL
4/6	119.5" x 1 x .035	C254415WTL	5/8	174" x 1-1/4 x .042	C254460WTL	4/6	119.5" x 1 x .035	C254464WTL
4/6	130.5 x 1 x .035	C254416WTL	5/8	180" x 1-1/4 x .042	C254461WTL	4/6	130.5 x 1 x .035	C254465WTL
4/6	138" x 1 x .035	C254417WTL	5/8	186" x 1-1/4 x .042	C254462WTL	4/6	138" x 1 x .035	C254466WTL
4/6	144" x 1 x .035	C254418WTL	5/7	80" x 3/4 x .035	C254407WTL	4/6	144" x 1 x .035	C254467WTL
4/6	162" x 1 x .035	C254419WTL	5/7	93" x 3/4 x .035	C254408WTL	4/6	162" x 1 x .035	C254468WTL
4/6	174" x 1 x .035	C254420WTL	5/7	120" x 3/4 x .035	C254409WTL	4/6	174" x 1 x .035	C254469WTL
3/4	138" x 1-1/4 x .042	C254421WTL	5/7	125" x 3/4 x .035	C254410WTL	3/4	138" x 1-1/4 x .042	C254491WTL
3/4	144" x 1-1/4 x .042	C254422WTL	5/7	130.5" x 3/4 x .035	C254411WTL	3/4	144" x 1-1/4 x .042	C254492WTL
3/4	150" x 1-1/4 x .042	C254423WTL	5/7	138" x 3/4 x .035	C254412WTL	3/4	150" x 1-1/4 x .042	C254493WTL
3/4	162" x 1-1/4 x .042	C254424WTL	5/7	174" x 3/4 x .035	C254413WTL	3/4	162" x 1-1/4 x .042	C254494WTL
3/4	174" x 1-1/4 x .042	C254425WTL	4/6	115.5" x 1 x .035	C254449WTL	3/4	174" x 1-1/4 x .042	C254495WTL
3/4	180" x 1-1/4 x .042	C254426WTL	4/6	119.5" x 1 x .035	C254450WTL	3/4	180" x 1-1/4 x .042	C254497WTL
3/4	186" x 1-1/4 x .042	C254427WTL	4/6	130.5 x 1 x .035	C254451WTL	3/4	186" x 1-1/4 x .042	C254498WTL
10/14	80" x 3/4 x .035	C254428WTL	4/6	138" x 1 x .035	C254452WTL	4/6	138" x 1-1/4 x .042	C254499WTL
10/14	93" x 3/4 x .035	C254429WTL	4/6	144" x 1 x .035	C254453WTL	4/6	144" x 1-1/4 x .042	C254500WTL
10/14	120" x 3/4 x .035	C254430WTL	4/6	162" x 1 x .035	C254454WTL	4/6	150" x 1-1/4 x .042	C254501WTL
10/14	125" x 3/4 x .035	C254431WTL	4/6	174" x 1 x .035	C254455WTL	4/6	162" x 1-1/4 x .042	C254502WTL
10/14	130.5" x 3/4 x .035	C254432WTL	3/4	138" x 1-1/4 x .042	C254470WTL	4/6	174" x 1-1/4 x .042	C254503WTL
10/14	138" x 3/4 x .035	C254433WTL	3/4	144" x 1-1/4 x .042	C254471WTL	4/6	180" x 1-1/4 x .042	C254504WTL
10/14	174" x 3/4 x .035	C254434WTL	3/4	150" x 1-1/4 x .042	C254472WTL	4/6	186" x 1-1/4 x .042	C254505WTL
10/14	115.5" x 1 x .035	C254435WTL	3/4	162" x 1-1/4 x .042	C254473WTL	T7000		
10/14	119.5" x 1 x .035	C254436WTL	3/4	174" x 1-1/4 x .042	C254474WTL	10/14	64.5" x 1/2 x .025	C254400WTL
10/14	130.5 x 1 x .035	C254437WTL	3/4	180" x 1-1/4 x .042	C254475WTL	10/14	89" x 1/2 x .025	C254401WTL
10/14	138" x 1 x .035	C254438WTL	3/4	186" x 1-1/4 x .042	C254476WTL	10/14	93" x 1/2 x .025	C254402WTL
10/14	144" x 1 x .035	C254439WTL	4/6	138" x 1-1/4 x .042	C254477WTL	10/14	93.5" x 1/2 x .025	C254403WTL
10/14	162" x 1 x .035	C254440WTL	4/6	144" x 1-1/4 x .042	C254478WTL	10/14	101" x 1/2 x .025	C254404WTL
10/14	174" x 1 x .035	C254441WTL	4/6	150" x 1-1/4 x .042	C254479WTL	10/14	120" x 1/2 x .025	C254405WTL
4/6	138" x 1-1/4 x .042	C254442WTL	4/6	162" x 1-1/4 x .042	C254480WTL	10/14	150" x 1/2 x .025	C254406WTL
4/6	144" x 1-1/4 x .042	C254443WTL	4/6	174" x 1-1/4 x .042	C254481WTL			
4/6	150" x 1-1/4 x .042	C254444WTL	4/6	180" x 1-1/4 x .042	C254482WTL			
4/6	162" x 1-1/4 x .042	C254445WTL	4/6	186" x 1-1/4 x .042	C254483WTL			
4/6	174" x 1-1/4 x .042	C254446WTL	5/7	138" x 1-1/4 x .042	C254484WTL			
4/6	180" x 1-1/4 x .042	C254447WTL	5/7	144" x 1-1/4 x .042	C254485WTL			
4/6	186" x 1-1/4 x .042	C254448WTL	5/7	150" x 1-1/4 x .042	C254486WTL			
5/8	138" x 1-1/4 x .042	C254456WTL	5/7	162" x 1-1/4 x .042	C254487WTL			
5/8	144" x 1-1/4 x .042	C254457WTL	5/7	174" x 1-1/4 x .042	C254488WTL			
5/8	150" x 1-1/4 x .042	C254458WTL	5/7	180" x 1-1/4 x .042	C254489WTL			
			5/7	186" x 1-1/4 x .042	C254490WTL			

You SAW it here!



CLE-LINE



The new, Cle-Line carbide tipped band saw blades deliver on **performance, productivity** and **cost savings** to a variety of applications including general manufacturing, steel service centers and forging operations.

HOLEMAKING

THREADING / DIES

SAWS

CARBIDE BURS/ROUTERS

MERCHANDISER

INDEX

Features and Benefits

Designed and manufactured to be extremely wear resistant in the toughest conditions.

Triple Tooth Geometry .

Produces a smooth finish which means less secondary work and cost savings.

General Purpose Series

Our multi-chip tooth geometry is designed for cutting solid steels and non-ferrous alloys. It allows for faster cutting rates, a vibration free operation and an optimum band saw blade life.

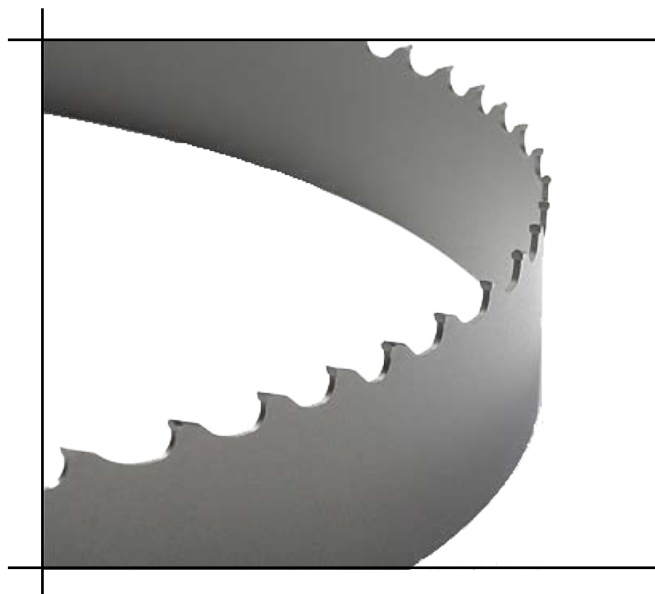
Recommended for:

Aluminum Silicon Alloys; Cold Steels; Copper-Nickel Alloys; Hardened Steel (up to 1900 N/mm²); Heat-Resistant Steels; Exotic Alloys; Stainless Steels; Titanium and Titanium Alloys; Applications and Materials Alloy Steels; Hardieboard Building Materials; Mold Steels; Nickel-Based Alloys; Plastic(s); Stainless Steels; Titanium Alloys; Tool Steels

Superior Quality

Custom, weld to length bands are welded in our modern weld center centrally located in the Chicago-land area.

Made in Germany to the highest manufacturing standards and a multi-step Quality Assurance process.



Description	Thickness		order number
	Inch	mm	1882
1" Band Saw Blade Carbide Tipped 2/3T	0.035	27	C43058
1" Band Saw Blade Carbide Tipped 3/4T	0.035	27	C43059
1-1/4" Band Saw Blade Carbide Tipped 1.4/2T	0.042	34	C43060
1-1/4" Band Saw Blade Carbide Tipped 2/3T	0.042	34	C43061
1-1/4" Band Saw Blade Carbide Tipped 3/4T	0.042	34	C43062
1-1/2" Band Saw Blade Carbide Tipped 1.4/2T	0.050	41	C43063
1-1/2" Band Saw Blade Carbide Tipped 2/3T	0.050	41	C43064
1-1/2" Band Saw Blade Carbide Tipped 3/4T	0.050	41	C43065
2" Band Saw Blade Carbide Tipped 1.4/2T	0.063	54	C43066
2" Band Saw Blade Carbide Tipped 2/3T	0.063	54	C43067



Recommended Operating Speeds for Hole Saws

Guidelines on generally recommended operating speeds. Always follow the recommendations of the hole saw manufacturer concerning use and operating speeds.

Bi-Metal Hole Saw Operating Speeds (RPM Table)

inches	mm	length	mild steel	tool steel & stainless	cast iron	brass	aluminum	wood
9/16	14	0.147	580	300	400	790	900	3000
5/8	16	0.164	550	275	365	730	825	3000
11/16	17	0.180	500	250	330	665	750	3000
3/4	19	0.196	460	230	300	600	690	3000
-	20	0.213	440	220	290	580	660	3000
7/8	22	0.229	390	195	260	520	585	3000
1	25	0.262	350	175	235	470	525	2700
1-1/16	27	0.278	325	160	215	435	480	2700
1-1/8	29	0.295	300	150	200	400	450	2700
1-3/16	30	0.311	285	145	190	380	425	2400
1-1/4	32	0.327	275	140	180	360	410	2400
1-5/16	33	0.344	260	135	175	345	390	2400
1-3/8	35	0.360	250	125	165	330	375	2400
1-7/16	37	0.376	240	120	160	315	360	2400
1-1/2	38	0.393	230	115	150	300	345	2400
1-9/16	40	0.409	220	110	145	290	330	2100
1-5/8	41	0.425	210	105	140	280	315	2100
1-11/16	43	0.442	205	100	135	270	305	2100
1-3/4	44	0.458	195	95	130	260	295	2100
1-13/16	46	0.475	190	95	125	250	285	2100
1-7/8	48	0.491	180	90	120	240	270	2100
2	51	0.524	170	85	115	230	255	2000
2-1/16	52	0.540	165	80	110	220	245	2000
2-1/8	54	0.556	160	80	105	210	240	2000
2 1/4	57	0.589	150	75	100	200	225	2000
2-5/16	59	0.605	145	75	95	195	225	2000
2-3/8	60	0.622	140	70	90	190	220	2000
2-1/2	64	0.655	135	65	85	180	205	1850
2-9/16	65	0.671	130	65	85	175	200	1850
2 5/8	67	0.687	130	65	85	170	195	1800
-	68	0.704	130	65	80	170	190	1800
2-3/4	70	0.720	125	60	80	160	185	1800
2-7/8	73	0.753	120	60	75	160	180	1800
3	76	0.785	115	55	70	150	170	1800
3-1/8	79	0.818	110	55	70	140	165	1500
3-1/4	83	0.851	105	50	65	140	155	1500
3-3/8	86	0.884	100	50	65	130	150	1500
3-1/2	89	0.916	95	45	60	130	145	1200
3 5/8	92	0.949	90	45	60	120	140	1200
3-3/4	95	0.982	90	45	60	120	135	1200
3-7/8	98	1.014	90	45	60	120	135	1200
4	102	1.047	85	40	55	110	130	1000
4-1/8	104	1.080	80	40	55	110	120	1000
4-1/4	108	1.113	80	40	55	110	120	900
4-3/8	111	1.145	80	40	50	100	120	900
4-1/2	114	1.178	75	35	50	100	105	900
4-3/4	121	1.244	75	35	50	92	95	900
5	127	1.309	65	30	45	90	90	800
5-1/2	140	1.440	60	25	40	85	85	800
5-3/4	146	1.505	55	25	35	75	75	800
6	152	1.571	55	25	35	75	75	800

Hole Saw Operating Speeds (RPM Table)

inches	mm	brick ceramic	slate	reinforced plastics	fiberglass
5/8	16	620	1540	2140	920
3/4	19	510	1280	1790	770
-	20	470	1180	1660	715
7/8	22	430	1090	1530	660
1	25	380	960	1340	580
1-1/8	29	340	850	1190	510
1-1/4	32	310	770	1070	460
1 3/8	35	280	700	980	420
1-1/2	38	260	640	890	390
1-3/4	44	220	550	770	330
1-7/8	48	200	510	720	310
2	51	190	480	670	290
2-1/8	54	180	450	630	280
2-1/4	57	170	430	600	270
2-3/8	60	160	400	570	250
2-1/2	64	150	380	540	230
2-3/4	70	140	350	500	210
3	76	130	320	450	190
3-1/4	83	120	295	415	180
3-3/8	86	115	285	400	175
3-3/4	95	102	255	350	160
4	102	95	240	330	150
4-1/2	114	82	215	290	125



CLE-LINE

HOLE SAWS - Technical Information

Reference Chart



diameter		pipe tap dia.		pipe entrance dia		order number	
inch	mm	inch	mm	inch	mm	M3	M42
9/16	14	—	—	—	—	C25058	C25000
5/8	16	—	—	—	—	C26149	C26121
11/16	17	—	—	—	—	C26102	C25002
3/4	19	1/2	13	3/8	10	C25061	C26113
—	20	—	—	—	—	C25062	C25004
13/16	21	—	—	—	—	C26106	C26105
7/8	22	3/4	19	1/2	13	C25064	C25006
*7/8	22	3/4	19	1/2	13	C24998	C24999
15/16	24	—	—	—	—	C25065	C25007
1	25	—	—	—	—	C25066	C26101
1-1/16	27	—	—	—	—	C25067	C25009
1-1/8	29	1	25	3/4	19	C25068	C26103
1-3/16	30	—	—	—	—	C25069	C25011
1-1/4	32	—	—	—	—	C25070	C25012
1-5/16	33	—	—	—	—	C25071	C25013
1-3/8	35	—	—	1	25	C26108	C25014
1-7/16	37	—	—	—	—	C25073	C25015
1-1/2	38	1-1/4	32	—	—	C25074	C25016
1-9/16	40	—	—	—	—	C25075	C25017
1-5/8	41	—	—	—	—	C25076	C25018
1-11/16	43	—	—	—	—	C25077	C26104
1-3/4	44	1-1/2	38	1-1/2	38	C25078	C26107
—	45	—	—	—	—	C26120	C25021
1-13/16	46	—	—	—	—	C25080	C25022
1-7/8	48	—	—	—	—	C25081	C25023
—	50	—	—	—	—	C25082	C25024
2	51	—	—	1-1/2	38	C25083	C25025
2-1/16	52	—	—	—	—	C25084	C25026
2-1/8	54	—	—	—	—	C25085	C25027
—	55	—	—	—	—	C25086	C25028
2-1/4	57	2	51	—	—	C26109	C25029
2-5/16	59	—	—	—	—	C25088	C25030
2-3/8	60	—	—	—	—	C25089	C25031
2-1/2	64	—	—	2	51	C25090	C25032
2-9/16	65	—	—	—	—	C25091	C25033
2-5/8	67	2-1/2	64	—	—	C25092	C26111
—	68	—	—	—	—	C25093	C25035
2-3/4	70	—	—	—	—	C26110	C25036
2-7/8	73	—	—	—	—	C26112	C25037
—	75	—	—	—	—	C25096	C25038
3	76	—	—	2-1/2	64	C25097	C25039
3-1/8	79	—	—	—	—	C25098	C25040
3-1/4	83	3	76	—	—	C25099	C26115
3-3/8	86	—	—	—	—	C26116	C25042
3-1/2	89	—	—	—	—	C25001	C25043
3-5/8	92	—	—	3	76	C25102	C25044
3-3/4	95	3-1/2	89	—	—	C25103	C25045
3-7/8	98	—	—	—	—	C25104	C25046
—	100	—	—	—	—	C25105	C25047
4	102	—	—	—	—	C25106	C25048
4-1/8	105	—	—	3-1/2	89	C25107	C25049
4-1/4	108	4	102	—	—	C26118	C25050
4-3/8	111	—	—	—	—	C25109	C25051
4-1/2	114	—	—	—	—	C26117	C25052
4-3/4	121	4-1/2	114	4	102	C25111	C26119
5	127	—	—	—	—	C25112	C25054
5-1/2	140	—	—	5	127	C25113	C25055
5-3/4	146	—	—	—	—	C25114	C25056
6	152	—	—	—	—	C25115	C25057

*1-1/2" (32mm) cutting depth

Tech Tip



- Always wear eye protection.
- Always be sure that the pilot drill extends beyond the cutting edge of the saw by at least 1/8".
- Be sure to secure the material to be cut to keep it from spinning or slipping.
- Start the cutting process with the saw square to the material being cut, this will ensure that all teeth begin to cut at the same time and will help prevent premature wear and damage to the saw.
- Follow the recommended operating speed for the saw size and the material being cut.
- Operator should feed the saw in and out to allow the material shavings to clear out of the hole being cut.
- Cutting oils or lubricants should be used to extend the life of the saw, except when cutting wood or cast iron.
- Occasionally check the mandrel's drive pins to be sure they are still fully engaged in the saw and that they have not vibrated out of the drive holes in the saw.
- When sawing in wood, finish the hole from the opposite side to prevent splintering. Once the pilot drill has broken through the other side, you can use this hole to guarantee you are in line with where you have already started cutting.
- When sawing resistant and difficult to cut materials, drill a couple of small holes on the circumference to allow chip to clear.
- Keep an oil soaked sponge inside the hole saw if you:
 - Cannot lubricate in the normal way
 - Operate in stainless steel
 - Operate in a vertical position from above.

Tech Tip



Pipe and Tap Entrance

- Pipe taps are used for threading holes created by a hole saw to receive a threaded pipe. Reference the product charts for proper selection. To cut a hole for a 1" pipe tap, select a 1-1/8" hole saw.
- Pipe entrance is the diameter for the hole through which a pipe of a given diameter will pass during installation or repair.
- Pipe size is defined by the inside diameter. To cut a hole through which a 3/4" pipe may be passed, a 1-1/8" hole saw is used.
- Tubing size is defined by the outside diameter. To cut an entrance hole of a given tubing diameter, the same diameter hole saw should be used.



Bi-Metal Band Saw Blades - Technical Information

Speed and Feeds



	Type of Material	Under 1"		1" to 3"		3" to 6"		6" - Over			
		Blade Speed (SFM)	Removal Rate (in ² /min.)	Blade Speed (SFM)	Removal Rate (in ² /min.)	Blade Speed (SFM)	Removal Rate (in ² /min.)	Blade Speed (SFM)	Removal Rate (in ² /min.)		
HOLEMAKING	Special Purpose Steel	L2, L6	210	3-5	210	4 - 7	190	5 - 8	175	4 - 7	
		L7	200	3 - 5	190	4 - 6	180	4 - 7	130	3 - 6	
	Water Hardening Steel	W1	265	3 - 6	240	5 - 7	220	5 - 7	180	3 - 5	
THREADING / DIES	High Speed Steel	M1, M2, M7	165	2 - 4	150	2 - 5	145	3 - 6	100	3 - 5	
		M3, M4, M10	125	2 - 4	100	2 - 5	100	3 - 5	80	3 - 4	
		M30, M33	100	1 - 3	90	2 - 3	75	2 - 3	70	1 - 3	
		M41, M42, M43	100	1 - 3	90	1 - 3	75	1 - 4	70	1 - 3	
		T1, T2	150	2 - 4	135	2 - 4	120	2 - 5	100	2 - 4	
		T4, T5, T6	125	1 - 3	110	1 - 4	100	2 - 4	85	1 - 3	
	Austenitic Stainless Steel	T15, M15	90	1 - 3	70	1 - 3	60	1 - 3	50	1 - 2	
		201, 202, 301 - 304	135	3 - 4	120	2 - 5	120	3 - 6	85	2 - 4	
		303, 303F, 303Se	160	3 - 6	140	3 - 6	135	4 - 6	90	3 - 5	
		305, 308 - 314	100	1 - 2	85	1 - 2	75	1 - 3	65	1 - 2	
		316, 317, 329	100	1 - 2	90	1 - 2	80	1 - 3	60	1 - 2	
		321, 347, 348	140	2 - 4	125	2 - 5	120	3 - 6	90	2 - 4	
		330	85	1 - 2	65	1 - 3	55	1 - 4	45	1 - 2	
	Ferritic Stainless Steel	429, 430	120	2 - 4	100	3 - 4	90	3 - 6	75	2 - 4	
		430F, 430FSe	130	3 - 5	115	5 - 6	100	5 - 7	90	4 - 6	
434, 436		100	2 - 4	80	3 - 4	75	3 - 5	55	3 - 4		
442		110	2 - 4	85	3 - 5	75	3 - 6	60	3 - 5		
446		90	2 - 4	70	3 - 4	60	2 - 5	50	1 - 3		
Martensitic Stainless	403, 410, 420	170	2 - 5	155	3 - 6	145	3 - 7	100	2 - 4		
	414, 416Se	235	5 - 9	210	6 - 9	195	7 - 11	170	5 - 9		
	420F, 416	220	3 - 8	200	5 - 9	190	6 - 10	150	4 - 8		
	440A, B, C	130	2 - 4	120	2 - 6	110	3 - 7	70	1 - 4		
	501, 502	135	1 - 2	120	2 - 4	100	3 - 4	80	2 - 3		
CARBIDE BURS/ROUTERS	Monel	Monel	100	1 - 4	90	1 - 4	85	2 - 4	65	1 - 3	
		K-Monel	115	1 - 4	90	1 - 4	70	2 - 4	50	1 - 2	
		R-Monel	130	2 - 4	100	2 - 5	90	3 - 5	60	1 - 4	
	K-R Monel	K-R Monel	115	1 - 4	100	1 - 4	100	2 - 5	65	1 - 3	
		Inconel	105	2 - 4	90	2 - 4	75	2 - 3	50	1 - 2	
		Inconel 625-x-750	95	1 - 2	80	1 - 2	70	1 - 2	40	1	
	Nickel Based Alloys	Inconel 718	95	1 - 2	80	1 - 2	70	1 - 2	40	1	
		Incoloy 800 - 802	95	1 - 2	75	1 - 2	60	1 - 2	35	1	
		Incoloy 804 - 825	60	1	40	1 - 2	40	1 - 2	30	1	
		Waspalloy	100	1	90	1 - 2	70	1 - 2	50	1	
		Hastelloy A	130	2 - 3	110	3 - 4	100	4 - 6	70	1-3	
	MERCHANDISER	Hastelloy B	Hastelloy B	110	1 - 2	80	1 - 3	75	1 - 4	60	1-2
			Hastelloy C	100	1 - 2	90	1 - 2	80	1 - 2	65	1
		Rene 41	90	1	80	1 - 2	60	1 - 2	50	1	
		Udimet 500	95	1	80	1 - 2	70	1 - 2	60	1	
Titanium		6AL 4V	65	.5-1	50	1 - 2	50	1 - 2	40	.5 - 1	
Maraging Steel		Most	190	3 - 4	145	4 - 6	110	6 - 7	90	4 - 6	
		Bronze	Most	230	6 - 9	205	10 - 12	180	10 - 12	140	7 - 9
Aluminum	Aluminum Bronze	100	2 - 4	95	3 - 4	85	3 - 5	70	3 - 4		
	Most	800		700		600		500			
INDEX	Cast Iron	Class 20	210	9 - 12	200	11 - 15	180	11 - 15	160	10 - 14	
		Class 40	170	7 - 9	160	7 - 10	140	8 - 12	120	7 - 11	
		Ductile - 60-40-18, 150 HB	240	6 - 8	230	8 - 10	230	8 - 10	220	6 - 7	
		Ductile - 80-55-06, 225 HB	140	3 - 4	130	4 - 5	120	5 - 7	110	3 - 5	



Technical Information - Carbide Tipped Band Saw Blades Speed and Feeds



Type of Material	Dim (FPM)	Speed (FPM)	Feed (IPM)	Cutting Time (h:min:sec)	Cutting Rate (sq/min)
INCONEL 718	4	79	0.33	0:12:01	1.03
	6	79	0.33	0:18:15	1.55
	8	79	0.33	0:24:10	2.07
17-4PH	4	82	0.38	0:10:23	1.21
	6	82	0.38	0:15:34	1.82
	8	82	0.38	0:20:46	2.42
WASPALLOY	4	79	0.33	0:12:10	1.03
	6	79	0.33	0:18:15	1.55
	8	79	0.33	0:24:20	2.07
P021	4	135	0.84	0:04:45	2.65
	6	135	0.84	0:07:07	3.97
	8	135	0.84	0:09:30	5.29
TITANIUM (T40)	4	148	0.77	0:05:11	2.42
	6	148	0.77	0:07:47	3.63
	8	148	0.77	0:10:23	4.84

Important Note:

Suggest reducing speed & feed around 10% every time when reducing widths
(1-½" bands around 90% of 2" bands, 1-¼" bands around 90% of the 1-½" bands, etc.).

HOLEMAKING

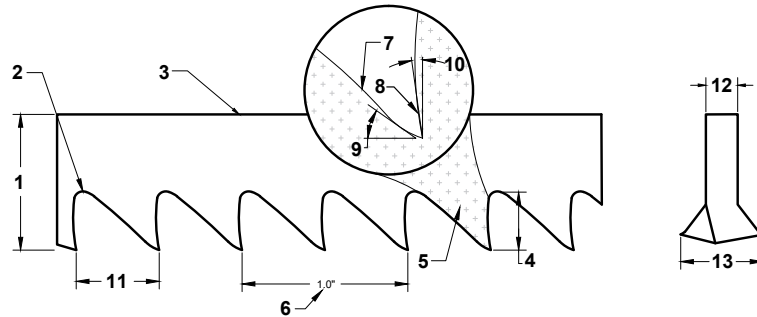
THREADING / DIES

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Terminology

1) Width

The nominal dimension of a saw blade, as measured from the tip of the tooth to the back of the blade.

2) Gullet

The curved area at the base of the tooth.

3) Blade Back

The blade body, not including the tooth portion.

4) Gullet Depth

The distance from the tooth tip to the bottom of the gullet.

5) Tooth

The cutting portion of the saw blade.

6) TPI

The number of teeth per inch.

7) Tooth Back or Relief Angle

The surface of the tooth opposite the cutting edge, or tooth face.

8) Tooth Face or Rake Angle

The cutting surface of the tooth.

9) Tooth Back Clearance Angle

The angle of the tooth back measured in relation to the cutting direction of the saw.

10) Tooth Rake Angle

The angle of the tooth face measured with respect to a line perpendicular to the cutting direction of the saw.

11) Tooth Pitch

The distance from one tooth tip to the next tooth tip.

12) Thickness (Gage)

The thickness of the blade.

13) Tooth Set

The bending of the teeth from right to left to allow clearance (**kerf**) of the blade back through the cut.

Tooth Form

Positive Rake

A positive rake is characterized by a 5° to 10° rake angle on the tooth face, resulting in better tooth penetration and easier chip formation. This tooth form is recommended for cutting difficult to machine materials, and solid cross-sections.

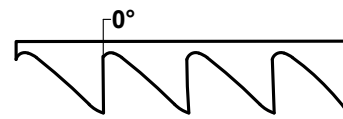
Positive Rake



Standard Straight

A standard straight tooth has a 0° cutting face, and is recommended for cutting easy-to-cut, low alloy materials. This is an efficient tooth form for cutting structural materials and interrupted cuts.

Standard Straight Rake



Tooth Type

Regular

This is a conventional tooth with a 0° cutting angle, ideal for a wide range of general purpose cutting applications.

Hook

This tooth type has a 10° positive rake angle for fast cutting with less feed pressure. The rounded, deeper gullets allow for fast chip removal, and is generally used for cutting nonmetallic and non-ferrous metals.

Skip

This tooth type has a 0° rake angle with shallow gullets and evenly spaced teeth for efficient chip removal. It is used for cutting large sections of soft, non-ferrous metal and nonmetal materials, such as wood, composite materials, cork, and plastic.

Turtle Back

This is a tooth configuration that has a reinforced shoulder or "Turtle Back Hump" on the back of the cutting edge to prevent stripping out and interrupted cuts.

Variable

A traditional tooth form that offers a 0° rake angle, varying gullet depths, and tooth sizes. Designed to reduce harmonic vibration, this blade efficiently removes chips, extending blade life in solids and structural.

Variable Positive

Variable positive tooth form offers varying gullet depths, tooth sizes, and a positive rake angle for maximum cutting speeds and better tooth penetration in harder to machine materials.

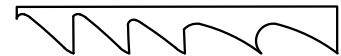
Duplex

Duplex blades offer deep, chip clearing gullets, large chip-resistant teeth, and a high positive rake angle. This results in faster sawing rates, and improved finishes. Duplex blades are recommended for production cutting of work hardened metals, tool steels, and exotic alloys.

Regular



Variable



Hook



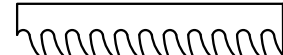
Variable Positive



Skip



Duplex



Turtle Back





Tooth Set

Raker Set

These are individually set teeth — first right then left — followed by an unset tooth. The unset tooth (raker tooth) allows for fast chip removal and a straight cutting actions. This tooth set is recommended for general purpose cutting applications.

Wavy Set

Wavy set teeth are set in groups, right and left, in varying degrees. Wavy set teeth are recommended for cutting light metal sections, such as sheet, tubing, and small solid shapes.

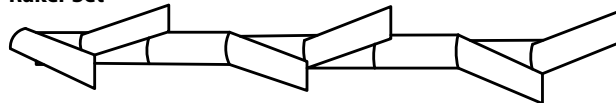
Alternate Set

In an alternate tooth set, every tooth is set — one left, one right — throughout the blade length. This tooth set is primarily used for cutting wood.

Variable Set

Variable set teeth are set in alternating groups with a single unset tooth (raker tooth). When these are combined with the varying set angles of the teeth, a faster, smoother, quieter cutting actions is achieved. Variable tooth blades perform extremely well on most applications and provide fast cutting on solids, shapes, structural, and piping.

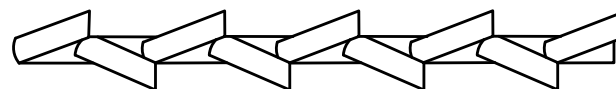
Raker Set



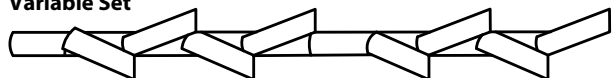
Wavy Set



Alternate Set



Variable Set



Successful Band Saw Operation and Geometries

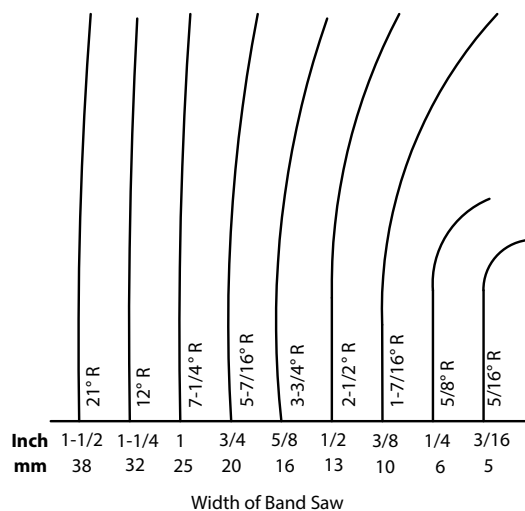
Blade Width Selection

The dimension from tooth tip to back edge of the blade is the blade width. The greater the width, the greater the resistance to deflection while cutting. For straight cutting applications, use the widest blade the machine can accept. For contour cutting use the widest blade that the contour radius will permit, see **Minimum Radii Cutting Chart** to the right.

Radii in this chart are based on manual feeding of one-inch thick milled steel. To cut close tolerance radii the following factors must be considered:

- Blade width
- Material thickness
- Machinability
- Feed force
- Location of pivot point

Minimum Radii Cut Chart



Teeth Per Inch

The pitch of the blade is defined by the number of TPI (Teeth Per Inch). Non-ferrous materials such as brass, bronze, and aluminum require a large chip area. A low TPI, or "course" pitch, prevents the chips from clogging and binding together in the gullets, which can diminish sawing and damage the blade.

On thin walled pipe, tubing, and sheet, many teeth per inch are required in order to avoid damaging or breaking the teeth. A low TPI blade is the best blade for cutting large cross-sections. The ability of each tooth to cut into the workpiece is increased because the saw's feed pressure is distributed over fewer teeth. A coarse pitch blade increases productivity and provides large chip clearing gullets.

Blade Break-In

Set Band Saw machine at the recommended speed for the material to be cut. When cutting easily machined metals, the cutting rate should be set at 1/3 to 1/2 of the recommended rate for the first 50 to 75 square inches.

When cutting difficult to machine metals, such as tool steels or workhardened alloys, set the cutting rate at 3/4 of the recommended rate for the first 25 square inches. Gradually increase the feed until you achieve the recommended cutting rate after 50 to 60 square inches.

continued on the next page



Tooth Selection

Tooth selection is based on the principle that there is a tooth pitch best suited for the cutting job. Blade selections should be based on the size, shape, accuracy, materials, and cutting rate expected. The chart below will help you select the correct pitch for cutting solids, tubes, and structurals.

Keep in mind these numbers: 3, 6, 12, and 24. There should be a minimum of three teeth in the work at all times for bi-metal bands. Ideally, 6-12 teeth should be in contact with the work; 24 teeth in the work is too many.

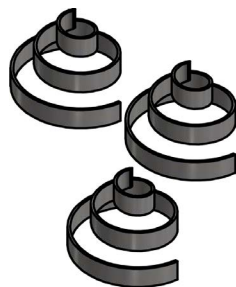
	Solids			Structural			Tubing	
	Cross-section	Pitch		Cross-section	Pitch		Wall Thickness	Pitch
	1/4"	10/14 TPI 14 TPI		1/4" - 1/2"	10/14 TPI 10 TPI 8/12 TPI		1/4" - 1/2"	10 TPI 10/14 TPI 8/12 TPI
	3/8" - 3/4"	8/12 TPI 10 TPI 8 TPI		1/2" - 3/4"	8 TPI 6/10 TPI 5/8 TPI		1/2" - 3/4"	8 TPI 6/10 TPI 5/8 TPI
	3/4" - 1-1/2"	4/6 TPI 6 TPI 5/8 TPI		3/4" - 1"	4/6 TPI 5/8 TPI 6 TPI		3/4" - 1"	4/6 TPI 6/10 TPI 6 TPI
	1-1/2" - 3"	4/6 TPI 4 TPI 3/4 TPI						
	3" - 6"	2/3 TPI 3/4 TPI 3 TPI						
	6" - 10"	2 TPI 2/3 TPI						
	10" - 14"	.75 TPI .8/1.5 TPI						

Feed Pressure

Chips tell you what is happening with your feed pressure and your blade. Powdery or fine chips indicate not enough feed pressure is being applied. Loosely curled chips tell you everything is going well. Heavy or thick / blue burned chips mean you are pushing the blade to hard, creating too much heat and load for the teeth. If a change in feed or speed rates is required, change one at a time and observe the results after each change.

Correct

Loosely Curled Chip
Correct feed, speed

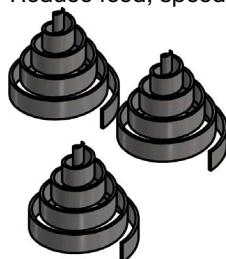


Incorrect

Thin or powdery chips
Increase feed, speed



Heavy, thick, blue chips
Reduce feed, speed



Tech Tip



Tips On Band Saw Cutting

Machine Checklist

- ___ The blade tension on the tension meter.
- ___ The performance of the chip brush.
- ___ The wear and alignment of the blade guides.
- ___ The band speed with a tachometer.
- ___ The cutting fluid concentration with a refractometer.

Cutting Fluid

The cutting fluid keeps the blade teeth cool; it prevents the chips from welding to the teeth; it also lubricates the chips, allowing them to move through the cut.

- ___ Use a high quality cutting fluid.
- ___ Make sure the cutting fluid is distributed throughout the cut.



CLE-LINE

Troubleshooting Guide - Band Saws

Problem / Solution



HOLEMAKING

THREADING / DIES

TECHNICAL

CARBIDE BURS/ROUTERS

MERCHANDISER

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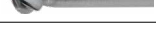

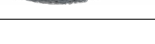



Problem	Reason	Solution
Premature and excessive tooth wear	Feed pressure too light	Increase feed pressure
	Band saw too slow	Adjust band speed
	Insufficient coolant, improper coolant mix, or wrong coolant	Apply proper coolant for type material being cut, check flow of coolant
	Improper tooth selection	Call Greenfield Industries for additional information
	Feed pressure too high	Call Greenfield Industries for additional information
Tooth Strippage	Guides hitting teeth alignment	Check blade
	Improper break-in with new band	Feed should be reduced for first few cuts
	Teeth too coarse for material thickness	Select finer pitch
	Material not securely vised	Adjust clamping pressure
	Insufficient or improper coolant	Apply proper coolant for type material begin cut, check flow of coolant
Finished Surface too Rough	Excessive feed pressure	Reduce feed pressure
	Band speed too slow	Increase band speed
	Chips loaded in gullet	Replace or adjust chip brush
	Improper blade selection	Select finer pitch
	Band speed too slow	Adjust band speed
Premature Blade Breakage	Feed rate too high	Slow down feed rate
	Improper coolant for type of material being cut	Apply proper coolant
	Thickness of blade too heavy for diameter of wheels	Select thinner blade
	Band tension too high	Adjust tension
	Improper speed	Call Greenfield Industries for additional information
Cutting Rate too Slow	Excessive feed pressure	Reduce feed pressure
	Brittle weld	Increase annealing period, decreasing heat gradually
	Saw out of alignment	Get machine properly re-aligned
	Improper coolant	Apply proper coolant for type of material being cut
	Band wheels worn	Replace wheels
Gullets Loading with Chips	Incorrect band speed	Adjust band speed
	Incorrect feed pressure	Adjust feed pressure
	Blade pitch too fine	Select coarser pitch blade
Band Squeals	Excessive cutting speed	Reduce cutting rate
	Blade pitch too fine	Select coarse pitch
	Chip brush not working	Replace or adjust chip brush
Belly Shaped Cuts	Insufficient coolant, improper coolant mix, or improper coolant	Apply proper coolant for type of material being cut, check flow of coolant
	Feed rate too slow	Increase feed rate
	Insufficient coolant flow	Check coolant flow
Blade Leading in Cut	Blade tension	Check blade tension with tension meter
	Guide arm is too far from work piece	Adjust guides closer to work piece
	Blade pitch too fine	Select coarser pitch blade
	Excessive feed force	Reduce feed force or feed rate
Band Develops Twist	Excessive feed force or feed rate	Reduce feed force or feed rate
	Possible hard inclusion	Use cutting oil to reduce leading
	Chip brush not working	Replace or adjust chip brush
	Blade tension too low	Check blade tension with tension meter
Band Develops Negative Camber	Wrong width for radius being cut	Select a narrower blade
	Binding in cut	Adjust blade tension
	Saw guides too close to work piece	Adjust saw guides further from work
Band Develops Positive Camber	Feed pressure too great	Reduce feed pressure
	Improper blade tension	Adjust blade tension
	Blade pitch too coarse for material being cut	Select finer pitch blade
Blade Scoring	Improper blade tension	Adjust blade tension
	Excessive feed pressure	Reduce feed pressure
	Blade pitch too fine	Select coarser pitch blade
Blade Not Running True against Saw Guide Backup Bearing	Improper guide adjustments	Adjust guides
	Band has side wear or grooving	Check saw guide inserts for wear and replace
	Improper alignment of saw guides	Adjust guides so they are square to front vise
Band Develops Negative Camber	Worn guides	Replace guides
	Clicking noise against the saw guide backup bearing indicates there is a burr on the back edge of the band	Remove burr on the band
	Weld not in proper alignment	Reweld blade straight and true
Band Develops Positive Camber	Saw guide backup bearing worn	Replace
	Improper blade tracking	Check band wheel alignment
	Band is riding on saw guide backup bearing too heavily	Adjust band alignment on top and bottom wheels
Blade Vibration	Excessive feed force	Reduce feed force
	Poor tooth penetration	Select a coarser pitch blade for increased tooth penetration
	Saw guide is too far from work piece or no locked	Adjust saw guides closer to work piece
Chip Welding	Guides poorly adjusted	Check guide adjustments
	Improper band speed	Increase or decrease band speed
	Low blade tension	Increase blade tension
	Feed rate too low	Increase feed rate
	Blade pitch too coarse for material being cut	Select variable pitch blade
	Work piece not properly secured	Adjust clamping pressure
	Excessive feed pressure	Reduce feed pressure
	Excessive cutting speed	Reduce blade speed
	Chip brush not working	Replace or adjust chip brush
	Insufficient or improper coolant	Apply proper coolant for the type of material being cut, check coolant flow

BURS / ROUTERS

** Some items will be obsoleted. Available until inventory is depleted.

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Solid Carbide Burs






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Sets

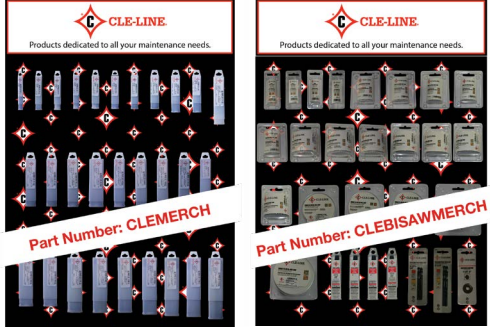
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Fiberglass & Composite Routers

Fiberglass

CARBIDE BURS/ROUTERS	Plain End	Carbide	3100		123
	Bur End				
	Mill End				
	Drill End				
Fiberglass & Composite	Carbide	3101			

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	Black Oxide Drills, Heavy Duty	HSS	1801		
	Black and Gold Drills, Heavy Duty	HSS	1878		
	Straw Oxide Drills, Cobalt, Heavy Duty	Cobalt	1802		
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Solid Carbide Burs Basic Information

Carbide Extension Burs

now available on many style types

- Wide selection of shapes and sizes.
- Constructed from solid carbide.
- Bright surface treatment.
- Right-hand spiral cut, double cut, and / or aluminum cut available.
- Solid carbide shanks (Styles A and D) and brazed steel shanks (Styles B and C) available.

Bur Cutting Speeds

Bur Diameter	Recommended RPM	Maximum RPM
1/16	60,000-90,000	100,000
1/8	40,000-70,000	90,000
3/16	35,000-60,000	80,000
1/4	30,000-50,000	70,000
5/16	20,000-40,000	68,000
3/8	20,000-40,000	66,000
7/16	15,000-40,000	58,000
1/2	15,000-40,000	50,000
5/8	12,000-25,000	40,000
3/4	10,000-20,000	33,000
1	7,500-20,000	25,000

Bur Selection by Material

Workpiece Material	First Choice	Alternative
aluminum	aluminum cut	-
brass	double cut	standard cut
bronze	double cut	standard cut
cast iron	double cut	standard cut
copper	aluminum cut	-
fiberglass	double cut	standard cut
inconel	double cut	standard cut
malleable iron	double cut	standard cut
magnesium	aluminum cut	-
masonite	double cut	standard cut
plastic	standard cut	-
steel alloy	double cut	-
carbon steel	double cut	-
stainless steel	double cut	-
titanium	double cut	-
zinc	aluminum cut	standard cut

HOLEMAKING

THREADING / DIES

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Standard Cut Styles



Single Cut — Cle-Line's right-hand spiral cut produces a smooth finish for general-purpose use on steel, cast iron, and other ferrous and non-ferrous materials.



Double Cut — The double cut style has right- and left-hand helical flutes combined to produce a chisel-type cutting tooth. This feature results in faster penetration and stock removal with minimal bounce or chatter. This results in higher productivity with less operator fatigue and a good finish on a variety of workpiece materials.



Aluminum (end mill) Cut — The aluminum cut can be used for deburring softer, non-ferrous metals and non-metallic materials. The wide clearance and end mill type geometry of the flutes promotes fast stock removal with minimum loading.

Standard Shank Styles

Shank A

1/8" (3mm) solid carbide



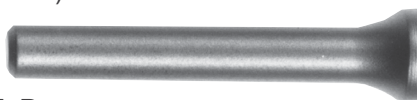
Shank B

1/8" (3mm) hardened steel



Shank C

1/4" (6mm) hardened steel



Shank D

1/4" (6mm) solid carbide



BURS - SOLID CARBIDE - General Application

Cylindrical without End Cut

Style: 1845 (CLE-SA)

**Note**

See index page for Standard Shank Styles explanation.



Single Cut



Double Cut

USCTI number	cutting diameter			shank diameter	length of cut	overall length	shank type	order number	
	fractional	mm	decimal					1845	
								Single Cut	Double Cut
SA-41	1/16		.0625	1/8	1/4	1-1/2	A	C10005	C10008
SA-42	3/32		.0938	1/8	7/16	1-1/2	A	C17601	C17550
SA-43		3	.1181	3	14.3	38.1	A	—	C17591
SA-43	1/8		.1250	1/8	9/16	1-1/2	A	C17602	C17551
SA-14	3/16		.1875	1/4	5/8	2	C	C17608	—
SA-1		6	.2362	6	15.9	50.8	D	—	C17588
SA-51	1/4		.2500	1/8	5/8	2	B	C17606	C17605
SA-1	1/4		.2500	1/4	5/8	2	D	C17609	C17552
SA-1L6	1/4		.2500	1/4	1/2	6-1/2	C	C17800	C17823
SA-2	5/16		.3125	1/4	3/4	2-1/2	C	C17610	C17553
SA-2		7.94	.3125	6	19.1	63.5	C	—	C17589
SA-3	3/8		.3750	1/4	3/4	2-1/2	C	C17611	C17554
SA-3		9.53	.3750	6	19.1	63.5	C	—	C17590
SA-3L6	3/8		.3750	1/4	3/4	6-3/4	C	C17801	C17824
SA-4	7/16		.4375	1/4	1	2-3/4	C	C17612	—
SA-5	1/2		.5000	1/4	1	2-3/4	C	C17613	C17555
SA-5L6	1/2		.5000	1/4	1	7	C	C17802	C17825
SA-5		12.7	.5000	6	25.4	69.9	C	—	C17592
SA-6	5/8		.6250	1/4	1	2-3/4	C	C10006	C17556
SA-7	3/4		.7500	1/4	1	2-3/4	C	C10007	C17615
SA-9	1		1.000	1/4	1	2-3/4	C	C17616	C17557

Cylindrical with End Cut

Style: 1846 (CLE-SB)



Single Cut



Double Cut



Aluminum Cut

Note

See index page for Standard Shank Styles explanation.

USCTI number	cutting diameter			shank dia	length of cut	overall length	shank type	order number		
	fractional	mm	decimal					1846		
								Single Cut	Double Cut	Aluminum Cut
SB-41	1/16		.0625	1/8	1/4	1-1/2	A	C10009	—	—
SB-42	3/32		.0938	1/8	7/16	1-1/2	A	C10010	—	—
SB-43		3	.1181	3	14.30	38.1	A	C17632	C17510	—
SB-43	1/8		.1250	1/8	9/16	1-1/2	A	C17622	—	—
SB-11	1/8		.1250	1/4	1/2	2	C	C17625	—	—
SB-14	3/16		.1875	1/4	5/8	2	C	C17626	—	—
SB-1		6	.2362	6	15.90	50.8	D	—	C17507	—
SB-1	1/4		.2500	1/4	5/8	2	D	C17627	C17546	C10015
SB-51	1/4		.2500	1/8	3/16	1-11/16	B	C17624	—	—
SB-51	1/4		.2500	1/8	3/16	1-11/16	A	C10011	C10013	—
SB-2		7.94	.3125	6	19.10	63.5	C	—	C17508	—
SB-3	3/8		.3750	1/4	3/4	2-1/2	C	C17629	C17547	C10016
SB-3		9.53	.3750	6	19.10	63.5	C	—	C17509	—
SB-5	1/2		.5000	1/4	1	2-3/4	C	C17631	C17548	C10017
SB-5		12.7	.5000	6	25.40	69.9	C	—	C17511	—
SB-6	5/8		.6250	1/4	1	2-3/4	C	—	C17549	C10018
SB-6		15.88	.6250	6	25.40	69.9	C	C17633	C17512	—
SB-7	3/4		.7500	1/4	1	2-3/4	C	—	C10014	C10019
SB-9	1		1.0000	1/4	1	2-3/4	C	C10012	—	—

Shank A = 1/8" (3mm) solid carbide Shank B = 1/8" (3mm) hardened steel Shank C = 1/4" (6mm) hardened steel Shank D = 1/4" (6mm) solid carbide



CLE-LINE

Cylindrical Ball Nose
Style: **1847** (CLE-SC)

Note

See index page for Standard Shank Styles explanation.



Single Cut



Double Cut



Aluminum Cut

USCTI number	cutting diameter		shank dia	length of cut	overall length	shank type	order number			
	fractional	mm					decimal	1847		
							Single Cut	Double Cut	Aluminum Cut	
SC-41	3/32		.0938	1/8	7/16	1-1/2	A	C17635	C10023	—
SC-43		3	.1181	3	14.3	38.1	A	C17634	C17517	—
SC-42	1/8		.1250	1/8	9/16	1-1/2	A	C17636	C17540	—
SC-11	1/8		.1250	1/4	1/2	2	C	—	C17539	—
SC-52		3.97	.1562	3	12.7	38.1	A	—	C17520	—
SC14	3/16		.1875	1/4	5/8	2	C	C17641	—	—
SC-53		4.76	.1875	3	12.7	38.1	A	—	C17521	—
SC-1		6	.2362	6	15.9	50.8	D	—	C17513	—
SC-51	1/4		.2500	1/8	1/2	1-3/4	B	C10020	C10024	—
SC-1	1/4		.2500	1/4	5/8	2	D	C17642	C17541	C10026
SC-51		6.35	.2500	3	12.7	44.5	B	—	C17519	—
SC-1L6	1/4		.2500	1/4	1/2	6-1/2	C	C17803	C17826	—
SC-2	5/16		.3125	1/4	3/4	2-1/2	C	—	C17542	—
SC-2		7.94	.3125	6	19.1	63.5	C	—	C17514	—
SC-3	3/8		.3750	1/4	3/4	2-1/2	C	C17644	C17543	C10027
SC-3		9.53	.3750	6	19.1	63.5	C	—	C17515	—
SC-3L6	3/8		.3750	1/4	3/4	6-3/4	C	C17804	C17827	—
SC-5	1/2		.5000	1/4	1	2-3/4	C	—	—	C10028
SC-5	1/2		.5000	1/4	1	2-3/4	C	C17646	C17544	—
SC-5		12.7	.5000	6	25.4	69.9	C	—	C17518	—
SC-5L6	1/2		.5000	1/4	1	7	C	C17805	C17828	—
SC-6	5/8		.6250	1/4	1	2-3/4	C	C10021	C17545	—
SC-6		15.88	.6250	6	25.4	69.9	C	—	C17522	—
SC-7	3/4		.7500	1/4	1	2-3/4	C	C10022	C10025	C10029
SC-7		19.05	.7500	6	25.4	69.9	C	—	C17523	—

HOLEMAKING

THREADING / DIES

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CARBIDE BURS/ROUTERS

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Shank A = 1/8" (3mm) solid carbide Shank B = 1/8" (3mm) hardened steel Shank C = 1/4" (6mm) hardened steel Shank D = 1/4" (6mm) solid carbide

BURS - SOLID CARBIDE - General Application

Round Nose Tree

Style: 1848 (CLE-SF)



CLE-LINE

Note

See index page for Standard Shank Styles explanation.



Single Cut



Double Cut



Aluminum Cut

order number

USCTI number	cutting diameter			shank dia	length of cut	overall length	shank type	order number		
	fractional	mm	decimal					1848		
								Single Cut	Double Cut	Aluminum Cut
SF-42		3	.1181	3	12.7	38	A	C17663	C17526	—
SF-41	1/8		.1250	1/8	1/4	1-1/2	A	C17650	C10033	—
SF-42	1/8		.1250	1/8	1/2	1-1/2	A	C17651	C10034	—
SF-53		4.76	.1875	3	12.7	38.1	A	—	C17528	—
SF-1		6	.2362	6	15.9	50.8	D	—	C17524	—
SF-51	1/4		.2500	1/8	1/2	1-3/4	B	C10030	C10035	—
SF-1	1/4		.2500	1/4	5/8	2	D	C17654	C17580	C10036
SF-1L6	1/4		.2500	1/4	1/2	6-1/2	C	C17812	C17835	—
SF-51		6.35	.2500	3	12.7	44.5	B	C17596	C17597	—
SF-3	3/8		.3750	1/4	3/4	2-1/2	C	C17655	C17581	C10037
SF-3L6	3/8		.3750	1/4	3/4	6-3/4	C	C17813	C17836	—
SF-3		9.53	.3750	6	19.1	63.5	C	—	C17525	—
SF-13	1/2		.5000	1/4	3/4	2-1/2	C	C17657	—	—
SF-5	1/2		.5000	1/4	1	2-3/4	C	C17658	C17582	C10038
SF-5L6	1/2		.5000	1/4	1	7	C	C17814	C17837	—
SF-5		12.7	.5000	6	25.4	69.9	C	—	C17527	—
SF-6	5/8		.6250	1/4	1	2-3/4	C	C10031	C17583	C10039
SF-7	3/4		.7500	1/4	1	2-3/4	C	C10032	C17584	—
SF-14	3/4		.7500	1/4	1-1/4	3	C	C17661	—	—
SF-15	3/4		.7500	1/4	1-1/2	3-1/4	C	C17662	—	—

Pointed Tree

Style: 1849 (CLE-SG)



Single Cut



Double Cut

Note

See index page for Standard Shank Styles explanation.

USCTI number	cutting diameter			shank diameter	length of cut	overall length	shank type	order number	
	fractional	mm	decimal					1849	
								Single Cut	Double Cut
SG-44		3	.1181	3	12.7	38	A	C17674	C17486
SG-41	1/8		.1250	1/8	1/4	1-1/2	A	C17675	C10044
SG-42	1/8		.1250	1/8	5/16	1-1/2	A	C17676	C10042
SG-43	1/8		.1250	1/8	3/8	1-1/2	A	C10040	C10043
SG-51	1/4		.2500	1/8	1/2	1-3/4	B	—	C10045
SG-53	3/16		.1875	1/8	1/2	1-1/2	A	C17679	—
SG-53		4.76	.1875	3	12.7	38.1	A	—	C17488
SG-1		6	.2362	6	15.9	50.8	D	—	C17483
SG-51	1/4		.2500	1/8	1/2	1-3/4	B	C17680	—
SG-1	1/4		.2500	1/4	5/8	2	D	C17681	C17575
SG-1L6	1/4		.2500	1/4	1/2	6-1/2	C	C17815	C17838
SG-2		7.94	.3125	6	19.1	63.5	C	—	C17484
SG-3	3/8		.3750	1/4	3/4	2-1/2	C	C17683	C17576
SG-3L6	3/8		.3750	1/4	3/4	6-3/4	C	C17816	C17839
SG-3		9.53	.3750	6	19.1	63.5	C	—	C17485
SG-13	1/2		.5000	1/4	3/4	2-1/2	C	—	C17577
SG-5	1/2		.5000	1/4	1	2-3/4	C	C17685	C17578
SG-5L6	1/2		.5000	1/4	1	7	C	C17817	C17840
SG-5		12.7	.5000	6	25.4	69.9	C	—	C17487
SG-6	5/8		.6250	1/4	1	2-3/4	C	C10041	C17579

Shank A = 1/8" (3mm) solid carbide Shank B = 1/8" (3mm) hardened steel Shank C = 1/4" (6mm) hardened steel Shank D = 1/4" (6mm) solid carbide



CLE-LINE

Pointed Cone

Style: 1850 (CLE-SM)

Note

See index page for
Standard Shank
Styles explanation.



Single Cut



Double Cut

USCTI Number	cutting diameter		shank diameter	length of cut	overall length	included angle	shank type	order number		
	fractional	mm						decimal	1850 Single Cut	Double Cut
SM-42		3	.1181	3	11.1	38.1	14°	A	C17672	C17498
SM-41	1/8		.1250	1/8	3/8	1-1/2	12°	A	C10046	C10049
SM-42	1/8		.1250	1/8	7/16	1-1/2	14°	A	C17690	C17568
SM-43	1/8		.1250	1/8	5/8	1-1/2	7°	A	C10047	C10050
SM-53		4.76	.1875	3	12.7	38.1	16°	A	C17664	—
SM-2		6	.2362	6	19.1	50.8	12°	D	—	C17496
SM-51	1/4		.2500	1/8	1/2	1-7/8	22°	B	C17693	C10076
SM-1	1/4		.2500	1/4	1/2	2	22°	D	C17694	C17569
SM-2	1/4		.2500	1/4	3/4	2	14°	D	C17695	C17570
SM-3	1/4		.2500	1/4	1	2	10°	D	C17696	C17571
SM-4	3/8		.3750	1/4	5/8	2-1/2	28°	C	C10048	C17572
SM-4		9.5	.3750	6	16	61	28°	C	—	C17497
SM-5	1/2		.5000	1/4	7/8	2-3/4	28°	C	C17698	C17573
SM-5		12.7	.5000	6	22.2	69.9	28°	C	C17673	C17499
SM-6	5/8		.6250	1/4	1	2-7/8	31°	C	C17699	C17574
SM-6		15.88	.6250	6	25.4	66.7	31°	C	—	C17502

HOLEMAKING

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Shank A = 1/8" (3mm) solid carbide Shank B = 1/8" (3mm) hardened steel Shank C = 1/4" (6mm) hardened steel Shank D = 1/4" (6mm) solid carbide

BURS - SOLID CARBIDE - General Application

Egg Shape

Style: 1851 (CLE-SE):



CLE-LINE

Note

See index page for Standard Shank Styles explanation.



Single Cut



Double Cut



Aluminum Cut

HOLEMAKING

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order number

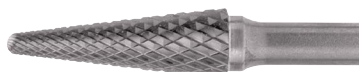
USCTI number	cutting diameter		shank dia	length of cut	overall length	shank type	order number			
	fractional	mm					decimal	1851	Single Cut	Double Cut
SE-41		3.0	.1181	3	5.5	38	A	C17708	—	—
SE-41	1/8		.1250	1/8	7/32	1-1/2	A	C17700	C10052	—
SE-53		4.76	.1875	3	7.1	38.1	A	—	C17489	—
SE-51	1/4		.2500	1/8	3/8	1-5/8	B	C17702	C10053	—
SE-1	1/4		.2500	1/4	3/8	2	D	C17703	C17558	—
SE-1L6	1/4		.2500	1/4	3/8	6-3/8	C	C17809	C17832	—
SE-3	3/8		.3750	1/4	5/8	2-3/8	C	C17704	C17559	C10054
SE-3L6	3/8		.3750	1/4	5/8	6-5/8	C	C17810	C17833	—
SE-5	1/2		.5000	1/4	7/8	2-5/8	C	C17705	C17560	C10055
SE-5L6	1/2		.5000	1/4	7/8	6-7/8	C	C17811	C17834	—
SE-6	5/8		.6250	1/4	1	2-3/4	C	C17706	—	C10056
SE-7	3/4		.7500	1/4	1	2-3/4	C	C10051	C17561	—

Included Angle

Style: 1852 (CLE-SL)



Single Cut



Double Cut



Aluminum Cut

Note

See index page for Standard Shank Styles explanation.

order number

USCTI number	cutting diameter		shank dia	length of cut	overall length	included angle	shank type	order number			
	fractional	mm						decimal	1852	Single Cut	Double Cut
SL-41		3	.1181	3	9.5	38	8°	A	C17720	C17595	—
SL-41	1/8		.1250	1/8	3/8	1-1/2	14°	A	C10057	C10058	—
SL-42	1/8		.1250	1/8	1/2	1-1/2	8°	A	C17711	C10059	C10060
SL-1	1/4		.2500	1/4	5/8	2	14°	D	C17713	C17564	C10061
SL-1L6	1/4		.2500	1/4	5/8	6-5/8	14°	C	C17820	C17843	—
SL-2	5/16		.3125	1/4	7/8	2-3/4	14°	C	C17714	C17565	—
SL-3	3/8		.3750	1/4	1-1/16	2-15/16	14°	C	C17715	C17566	—
SL-3L6	3/8		.3750	1/4	1-1/16	7-1/16	14°	C	C17821	C17844	—
SL-3		9.53	.3750	6	27.0	74.6	14°	C	C17719	C17593	—
SL-4	1/2		.5000	1/4	1-1/8	3	14°	C	C17716	C17567	C10062
SL-4L6	1/2		.5000	1/4	1-1/8	7-1/8	14°	C	C17822	C17845	—
SL-4		12.7	.5000	6	28	73	14°	C	—	C17594	—
SL-6	5/8		.6250	1/4	1-5/16	3-3/16	14°	C	C17717	C17587	C10063

Shank A = 1/8" (3mm) solid carbide Shank B = 1/8" (3mm) hardened steel Shank C = 1/4" (6mm) hardened steel Shank D = 1/4" (6mm) solid carbide



CLE-LINE

BURS - SOLID CARBIDE - General Application

Ball Shape

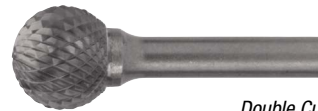
Style: 1853 (CLE-SD)

Note

See index page for
Standard Shank
Styles explanation.



Single Cut



Double Cut



Aluminum Cut

USCTI number	cutting diameter			shank dia	length of cut	overall length	shank type	order number		
	fractional	mm	decimal					1853 Single Cut	Double Cut	Aluminum Cut
SD-40		3	.0625	3	1.6	38	A	C17723	—	—
SD-40	1/16		.0625	1/8	1/16	1-1/2	A	C17725	—	—
SD-41	3/32		.0938	1/8	3/32	1-1/2	A	C17726	C10064	—
SD-42		3	.1181	3	2.5	38	A	C17724	C17457	—
SD-42	1/8		.1250	1/8	1/8	1-1/2	A	C17727	C17531	—
SD-11	1/8		.1250	1/4	1/8	2	A	C17730	C17530	—
SD-53	3/16		.1875	1/8	3/16	1-1/2	A	C17728	—	—
SD-14	3/16		.1875	1/4	1/8	2	A	C17731	C17532	—
SD-53		4.76	.1875	3	4.76	38.1	A	C17741	C17412	—
SD-1		6	.2362	6	6.0	50.8	D	C17721	C17455	—
SD-51	1/4		.2500	1/8	1/4	1-3/4	B	C17729	C10065	—
SD-1	1/4		.2500	1/4	1/4	2	D	C17732	C17533	C10068
SD-1L6	1/4		.2500	1/4	7/32	6-7/32	C	C17806	C17829	—
SD-51		6.35	.2500	3	6.35	44.45	B	—	C17411	—
SD-2	5/16		.3125	1/4	5/16	2-1/32	C	C17733	C17534	—
SD-3	3/8		.3750	1/4	3/8	2-5/64	C	C17734	C17535	C10069
SD-3L6	3/8		.3750	1/4	5/16	6-5/16	C	C17807	C17830	—
SD-3		9.53	.3750	6	9.53	52.8	C	C17722	C17456	—
SD-5	1/2		.5000	1/4	1/2	2-13/64	C	C17736	C17536	C10070
SD-5L6	1/2		.5000	1/4	7/16	6-7/16	C	C17808	C17831	—
SD-5		12.7	.5000	6	12.7	56.0	C	C17740	C17458	—
SD-6	5/8		.6250	1/4	5/8	2-5/16	C	C17737	C17537	—
SD-7	3/4		.7500	1/4	3/4	2-7/16	C	C17738	C17538	—
SD-9	1		1.0000	1/4	1	2-11/16	C	C17739	C10066	—

Flame Shape

Styles: 1854 (CLE-SH)

Note

See index page for
Standard Shank
Styles explanation.



Single Cut



Double Cut

USCTI number	cutting diameter			shank diameter	length of cut	overall length	shank type	order number	
	fractional	mm	decimal					1854 Single Cut	Double Cut
SH-41	1/8		.1250	1/8	1/4	1-1/2	A	C17750	C10072
SH-53		4.76	.1875	3.0	9.5	38.1	A	C17749	C17529
SH-2	5/16		.3125	1/4	3/4	2-1/2	C	C10071	C17562
SH-2L6	5/16		.3125	1/4	3/4	6-3/4	C	C17818	C17841
SH-5	1/2		.5000	1/4	1-1/4	3	C	C17753	C17563
SH-5L6	1/2		.5000	1/4	1-1/4	7-1/4	C	C17819	C17842

Shank A = 1/8" (3mm) solid carbide Shank B = 1/8" (3mm) hardened steel Shank C = 1/4" (6mm) hardened steel Shank D = 1/4" (6mm) solid carbide

BURS - SOLID CARBIDE - General Application

60°/ 90° Angle Burs (Countersink)Styles: **1856** (CLE-SJ), **1857** (CLE-SK)

CLE-LINE

HOLEMAKING

**Note**

See index page for Standard Shank Styles explanation.

USCTI number	cutting diameter		shank diameter	length of cut	overall length	included angle	shank type	order number	
	mm	decimal						1856 (60° incl.) Single Cut	1857 (90° incl.) Single Cut
SK-5	12.7	.5000	6	6.35	57.9	90°	C	—	C17742
SJ-6	15.88	.6250	6		61.9	60°	C	C17766	—
SK-6	15.88	.6250	6		61.9	90°	C	—	C17767

THREADING / DIES

Inverted Taper BursStyle: **1858** (CLE-SN)**Note**

See index page for Standard Shank Styles explanation.

SAWS

USCTI number	cutting diameter		shank diameter	length of cut	overall length	included angle	shank type	order number		
	fraction	mm						decimal	1858 Single Cut	Double Cut
SN-41	3/32		.0938	1/8	3/16	1-1/2	—	A	C10073	—
SN-51	1/4		.2500	1/8	1/4	1-3/4	10°	A	C10074	C10075
SN-51		6.35	.2500	3.0	6.4	38.1	10°	A	C17780	—

CARBIDE BURRS/ROUTERS

Variety SETStyle: **1855**

Plastic Case

8-Piece Set
Bright
#C17763**Note**

See index page for Standard Shank Styles explanation.

MERCHANDISER

set contains USCTI Nos.	cutting diameter			shank diameter	no. of pieces	shank type	order number	
	fractional	decimal	metric				1855 Single Cut	Double Cut
SA-42, SA-43, SC-41, SC-42, SF-42, SG-42 SM-43, SE-41, SD-42	3/32 & 1/8	.0938 .1250	2.38 3.18	1/8	9	A	C17760	C17768
SA-51, SB-51, SC-51, SF-51, SG-51, SM-51, SE-51, SD-51, SN-51	1/4	.2500	6.35	1/8	9	B	C17761	C17769
SA-1, SC-1, SF-1, SG-1, SM-2, SE-1, SL-1, SD-1	1/4	.2500	6.35	1/4	8	C	C17762	C17770
SA-5, SC-5, SF-5, SG-5, SM-5, SE-5, SL-4, SD-5	1/2	.5000	12.70	1/4	8	C	C17763	C17771

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Shank A = 1/8" (3mm) solid carbide Shank B = 1/8" (3mm) hardened steel Shank C = 1/4" (6mm) hardened steel Shank D = 1/4" (6mm) solid carbide



CLE-LINE

BURS - SOLID CARBIDE - General Application

Carbide Fiberglass Router - Uncoated

Style: 3100

Plain End



Bur End



Mill End



Drill End



diameter inch	metric	decimal equivalent	length of cut	shank diameter	overall length	order number			
						plain end	bur end	mill end	drill end
1/16	1.5	0.0591	5	3	38	C95365	C95394	C95423	C95452
		0.0625	3/16	1/8	1-1/2	C95350	C95379	C95408	C95437
3/32	2	0.0787	10	3	38	C95366	C95395	C95424	C95453
		0.0938	3/8	1/8	1-1/2	C95351	C95380	C95409	C95438
1/8	3	0.1181	12	3	38	C95367	C95396	C95425	C95454
		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

Carbide Fiberglass & Composite Router

Styles: 3101



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

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Display Merchandisers

Designed with everything included to fit your pegboard wall

Six Display Choices Jobber Drill Displays

Part # CLEMERCH #1899 - Black Oxide Drills, General Purpose

Part # CLEHDMERCH. . . . #1801 - Black Oxide Drills, Heavy Duty

Part # CLEHDBGMERCH . . #1878 - Black and Gold Drills, Heavy Duty

Part # CLEHDCOMERCH . . #1802 - Straw Oxide Drills, Cobalt, Heavy Duty

Saw Blade Displays

Part # CLEBISAWMERCH. . Hole Saw Blades

Part # CLESAWMERCH. . . Reciprocating and Band Saw Blades

See back page for display samples.

Each display includes:

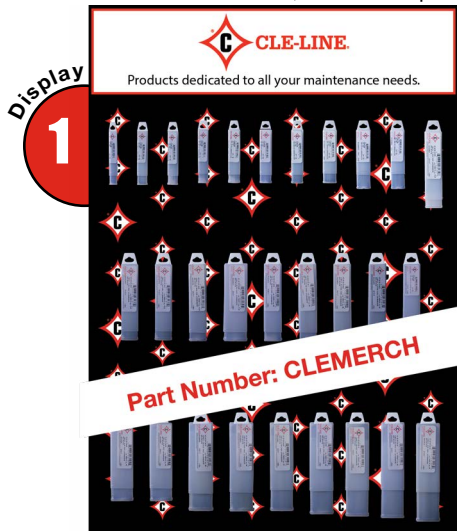
- Cle-Line® 24" x6" sign
- Cle-Line® 24" wide vinyl backdrop
- Cle-Line® products
- Hanging Hooks
- Labels with part number
- Detailed planogram instructions
- Does **not** include pegboard





Package Options

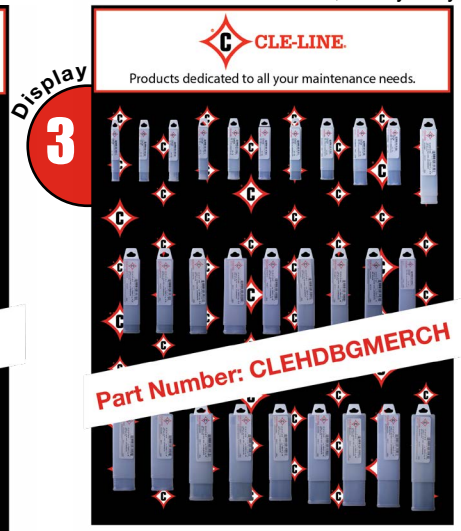
#1899 - Black Oxide, General Purpose



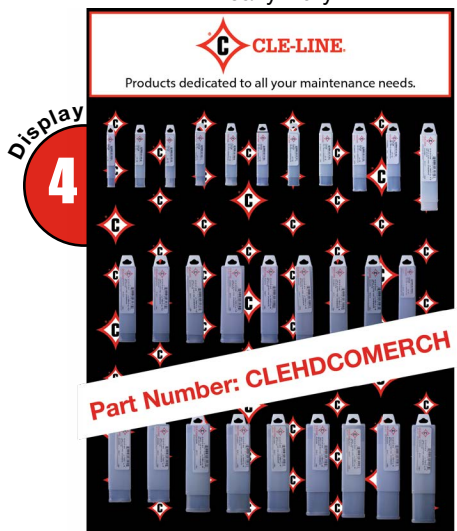
#1801 - Black Oxide, Heavy Duty



#1878 - Black and Gold, Heavy Duty



#1802 - Straw Oxide, Cobalt, Heavy Duty



Hole Saw Blades



Reciprocating Blades and Band Saw Blades



Product Choices:

1 #1899 - Black Oxide, General Purpose



2 #1801 - Black Oxide, Heavy Duty



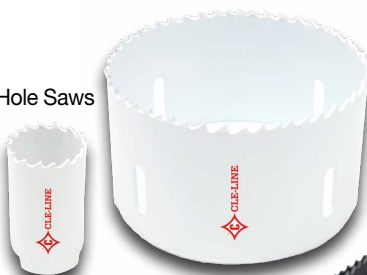
3 #1878 - Black and Gold, Heavy Duty



4 #1802 - Straw Oxide, Cobalt, Heavy Duty



5 Hole Saws



6 Reciprocating and Band Saw Blades



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