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Specialty Tools

LEFT-HAND SPIRAL JOBBER LENGTH, LEFT-HAND **VORTEX-POINT™**

Type 190-AL Magnum Super Premium - Left Hand Spiral

- Special Hi-Molybdenum tool steel.
- 135° split point for fast penetration and accurate starting without center punch.
- Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance.
- Ideal for removing broken studs.



Part #	Diameter Inches	OAL Inches	Flute Length Inches	Qty. per/pack
92430	1/16"	1-7/8	7/8	6
23150	5/64	2"	1"	6
89290	3/32"	2-1/4	1-1/4	6
23160	7/64	2-5/8	1-1/2	6
92440	1/8"	2-3/4	1-5/8	6
92441	9/64	2-7/8	1-3/4	6
23170	5/32"	3-1/8	2"	6
92442	11/64	3-1/4	2-1/8	6
92450	3/16"	3-1/2	2-5/16	6
92443	13/64	3-5/8	2-7/16	6
92444	7/32"	3-3/4	2-1/2	6
92451	15/64	3-7/8	2-5/8	6
92460	1/4"	4"	2-3/4	6
92452	17/64	4-1/8	2-7/8	6
92453	9/32"	4-1/4	2-15/16	6
23180	19/64	4-3/8	3-1/16	3
92470	5/16"	4-1/2	3-3/16	3
92471	21/64	4-5/8	3-5/16	3
92472	11/32"	4-3/4	3-7/16	3
92473	23/64	4-7/8	3-1/2	3
92480	3/8"	5"	3-5/8	3
92481	25/64	5-1/8	3-3/4	3
92482	13/32"	5-1/4	3-7/8	3
92483	27/64	5-3/8	3-15/16	3
92490	7/16"	5-1/2	4-1/16	3
92491	29/64	5-5/8	4-3/16	3
92492	15/32"	5-3/4	4-5/16	3
92493	31/64	5-7/8	4-3/8	3
92500	1/2"	6"	4-1/2"	3

Type 175-VTL

Left-Hand **VORTEX-POINT™** & Spiral Hi-Carbon **NEW** Screw Pipe Extractor

- Unique tip geometry reduces heat generation & cutting tool wear increasing tool life.
- Remove broken screws, bolts threaded parts, and pipes.

Part #	Diameter Inches	OAL Inches	Flute Length Inches
35582	1/8"	2-1/2"	1-7/16"
35622	3/16"	3"	2-7/8"
35662	1/4"	3-1/2"	2"
35702	5/16"	4"	2-1/2"
35742	3/8"	4-1/4"	2-11/16"

TYPE 420 & **VORTEX-POINT™** SET

LEFT-HAND **VORTEX-POINT™** & SPIRAL EXTRACTOR

Part #	Description of Sizes	Qty of each
35852	BR-10VT EX 1, 2, 3, 4, 5 + 1/8", 3/16" 1/4", 5/16", 3/8"	1

Broken Bolt Remover Combo

Type 420-AL

- Carded left hand drill combined with spiral style screw extractor is ideal for removing broken studs.

Part #	Screw Extractor Number	Description of Sizes	Qty of each
30137	EX-1	3/32" LH drill	1
30147	EX-2	1/8" LH drill	1
30157	EX-3	3/16" LH drill	1
30167	EX-4	1/4" LH drill	1
30177	EX-5	5/16" LH drill	1



PRODUCT: TIPS

Bolt Remover Sets Include **BOTH** Left-Hand Spiral Drills and Bolt/Screw Extractors

TYPE 190-AL LEFT-HAND SPIRAL SETS

8 Pc.

Part #	Description of Sizes	Qty of each
87650	LF-8 1/16-1/2" by 16ths	1

12 Pc.

Part #	Description of Sizes	Qty of each
87651	LF-12 1/16-5/16" by 32nds, 3/8, 7/16 & 1/2"	1

13 Pc.

Part #	Description of Sizes	Qty of each
87652	LF-13 1/16-1/4" by 64ths	1

15 Pc.

Part #	Description of Sizes	Qty of each
87654	LF-15 1/16 - 1/2" by 32nds	1

17 Pc.

Part #	Description of Sizes	Qty of each
87853	LF-17 1/16-1/4" by 64ths, 5/16-1/2" by 16ths	1

29 Pc.

Part #	Description of Sizes	Qty of each
87854	LF-29 1/16-1/2" by 64ths	1

29 Pc. - Ultra Dex

Part #	Description of Sizes	Qty of each
87859	LF-29P 1/16-1/2" by 64ths	1

Left-Hand Screw Machine Length 135° Split Point, 3-Flats on Shank 3/16" & Larger

Type 135-AL Black & Gold

- Ideal for removing broken studs in tight areas.
- Left hand spiral drills often remove bolt without the need for an extractor.



135-AL Black/Gold

Part #	Diameter Inches	Overall Length Inches	Flute Length Inches	Qty. per/pack
35214	3/32"	1-3/4"	3/4"	6
35234	1/8"	1-7/8"	7/8"	6
35254	5/32"	2-1/16"	1"	6
35274	3/16"	2-3/16"	1-1/8"	6
35294	7/32"	2-3/8"	1-1/4"	6
35314	1/4"	2-1/2"	1-3/8"	6
35334	9/32"	2-11/16"	1-1/2"	3
35354	5/16"	2-13/16"	1-5/8"	3
35374	11/32"	3"	1-11/16"	3
35394	3/8"	3-1/8"	1-13/16"	3
35414	13/32"	3-5/16"	1-15/16"	3
35434	7/16"	3-7/16"	2-1/16"	3
35454	15/32"	3-5/8"	2-1/8"	3
35474	1/2"	3-3/4"	2-1/4"	3



#35491



#35484

TYPE 421-USA SET

SQUARE EXTRACTOR

Part #	Description of Sizes	Qty of each
35484	BR-10SQ E 1, 2, 3, 4, 5 + 3/32", 1/8" 3/16", 1/4", 5/16"	1
35491	BR-10SQX E 1, 2, 3, 4, 5 + 1/8" 3/16", 1/4", 5/16", 3/8"	1

Hi-Carbon Specialty Tools

HI-CARBON SCREW, STUD & PIPE EXTRACTORS

Type 420

Screw & Pipe Extractors Hi-Carbon Steel - Spiral Style

- Remove broken screws, bolts, threaded parts, and pipes.
- Broken piece is extracted with out damage to threads.



To remove the broken threaded part: Drill a hole in the end of the broken part (left hand spiral heavy duty drills are recommended for this drilling operation), insert extractor, then turn counterclockwise using a wrench on the exposed end of the extractor.

TYPE 420 SCREW & PIPE EXTRACTORS

Part #	Screw Extractor Number	To remove Diameter of Screw	Diameter. of Screw Extractor Shank Point		Drill Size	No. per/pack
57100	EX-1	3/32" to 5/32"	1/8"	.060	5/64"	5
57110	EX-2	5/32" to 7/32"	3/16"	.080	7/64"	5
57120	EX-3	7/32" to 9/32"	1/4"	1/8	5/32"	5
57130	EX-4	9/32 to 3/8" and 1/8" pipe	5/16"	3/16	1/4"	5
57140	EX-5	3/8 to 5/8" and 1/4" pipe	7/16"	1/4	17/64"	5
57150	EX-6	5/8 to 7/8" and 3/8" pipe	5/8"	3/8	13/32"	1
57160	EX-7	7/8 to 1-1/8" and 1/2" pipe	7/8"	15/32	17/32"	1
57170	EX-8	1-1/8 to 1-3/8 and 3/4" pipe	11/32"	3/4	13/16"	1
57180	EX-9	1-3/8" up and 1" pipe	1-9/32"	1	1-1/8"	1

TYPE 420 SCREW & PIPE EXTRACTORS - CARDED

57107	EX-1	3/32 to 5/32"	1/8	.060	5/64"	1
57117	EX-2	5/32 to 7/32"	3/16	.080	7/64"	1
57127	EX-3	7/32 to 9/32	1/4	1/8	5/32"	1
57137	EX-4	9/32 to 3/8 and 1/8" pipe	5/16	3/16	1/4"	1
57147	EX-5	3/8 to 5/8 and 1/4" pipe	7/16	1/4	17/64"	1

Type 421-AG

Studout™ Screw, Stud and Pipe Extractors - Square Style Forged Hi-Carbon Steel



- The square shape of these extractors gives the tools the ability to remove broken bolts, screws, and pipes with minimum deformation of the broken part.
- These extractors will not chew up or expand the object being removed.

To remove the broken threaded part: Drill a hole in the end of the broken part (left hand spiral heavy duty drills are recommended for this drilling operation), insert extractor, then turn counterclockwise using a wrench on the exposed end of the extractor.

TYPE 421-AG STUDOUT™ SCREW, STUD & PIPE EXTRACTOR

Part #	Screw Extractor Number	To remove Diameter of Screw	Diameter. of Screw Extractor Shank Point		Drill Size	No. per/pack
70760	E-1	3/16" - 9/32"	3/16"	1/8"	1/8"	5
70770	E-2	9/32" - 11/32"	1/4"	11/64"	3/16"	5
70780	E-3	11/32" - 1/2"	5/16"	7/32"	1/4"	5
70800	E-4	1/2" - 3/4"	3/8"	9/32"	5/16"	5
70810	E-5	5/8" - 7/8"	7/16"	21/64"	3/8"	5
70820	E-6	7/8" - 1"	1/2"	7/16"	1/2"	1
70830	E-7	1" - 1-1/4"	5/8"	1/2"	9/16"	1
70860	E-8	1-1/8" - 1-1/2"	3/4"	9/16"	5/8"	1
70870	E-9	1-1/4" - 1-3/4"	7/8"	5/8"	11/16"	1

Type 421-USA

Screw, Stud & Pipe Extractors - Square Style Forged Hi-Carbon Steel

- The square shape of these extractors gives the tools the ability to remove broken bolts, screws, and pipes with minimum deformation of the broken part.
- These extractors will not chew up or expand the object being removed.



To remove the broken threaded part: Drill a hole in the end of the broken part (left hand spiral heavy duty drills are recommended for this drilling operation), insert extractor, then turn counterclockwise using a wrench on the exposed end of the extractor.

TYPE 421-USA SCREW, STUD & PIPE EXTRACTOR

Part #	Screw Extractor Number	To remove Diameter of Screw	Diameter. of Screw Extractor Shank Point		Drill Size	No. per/pack
20890	E-1	3/16" - 9/32"	3/16"	1/8"	1/8"	5
20900	E-2	9/32" - 11/32"	1/4"	11/64"	3/16"	5
20910	E-3	11/32" - 1/2"	5/16"	7/32"	1/4"	5
20920	E-4	1/2" - 3/4"	3/8"	9/32"	5/16"	5
20930	E-5	5/8" - 7/8"	7/16"	21/64"	3/8"	5
20940	E-6	7/8" - 1"	1/2"	7/16"	1/2"	1
20950	E-7	1" - 1-1/4"	5/8"	1/2"	9/16"	1
20960	E-8	1-1/8" - 1-1/2"	3/4"	9/16"	5/8"	1
20970	E-9	1-1/4" - 1-3/4"	7/8"	5/8"	11/16"	1

Specialty Tools

BOLT EXTRACTOR SETS / GLASS TILE

Type 420 -Bolt Extractor Set Type 421-AG -Bolt Extractor Set

- Fast and easy stud removal
- Left-hand spiral drills often eliminate the need for use of extractor.
- Drill loosens bolt stud with counter clockwise rotation.
- 135° split point for fast penetration and accurate starting without center punch.
- Most broken studs are work hardened during the breaking process.

TYPE 420 BOLT EXTRACTOR SETS - SPIRAL EXTRACTOR

SE-4N - Type 420

Part No.	Description of Sizes	Qty of each
47170	EX 2, 3, 4 & 5	1

SE-5N - Type 420

Part No.	Description of Sizes	Qty of each
47180	EX 1, 2, 3, 4 & 5	1

TYPE 420 BOLT EXTRACTOR SETS - LEFT HAND DRILL

BR-8 - Type 420 & 190-AL

Part No.	Description of Sizes	Qty of each
88550	EX 1, 2, 3, 4 + 3/32, 1/8, 3/16 & 1/4	1

BR-10 - Type 420 & 190-AL

Part No.	Description of Sizes	Qty of each
58510	EX 1, 2, 3, 4 & 5 + 3/32, 1/8, 3/16, 1/4, 5/16	1



TYPE 421-AG BOLT EXTRACTOR SETS

SQE-4 - Type 421-AG

Part No.	Description of Sizes	Qty of each
70840	EX 2, 3, 4 & 5	1

TYPE 421-AG BOLT EXTRACTOR SETS - LEFT HAND DRILL

BR-8SQ - Type 421-AG & 190-AL

Part No.	Description of Sizes	Qty of each
70850	EX 1, 2, 3 & 4 + 1/8, 3/16, 1/4 & 5/16	1

GLASS & TILE DRILLS

Type 626

Carbide Tipped with Spear Point

- Designed for drilling in glass, tile, mirrors and ceramic materials.
- Spear point allows clean penetration with reduced cutting pressure and breakout.
- Carbide tip insures long tool life.



TYPE 626 CARBIDE TIPPED

Part #	Size Inches
56510	1/8"
56520	5/32"
56530	3/16"
56540	1/4"
56550	5/16"
56560	3/8"
56570	1/2"
56580 4pc. GT-4	1/8", 3/16", 1/4", 5/16"

Individually packaged in clear hanging tubes.

Hole Expansion Tools & Sets

CAR REAMERS & HEX NUT REAMERS

Type 50-AG

Car Reamers, Standard Flute 3-Flats on Shank

- All tools are constructed with left-hand spiral and right-hand cut.
- For use in enlarging previously formed or drilled holes.
- These reamers are especially designed for the reaming of structural steel plates commonly found in truck frames, rail cars, bridges, and pressure vessels.



Part#	Shank Dia.	Overall Length	Dia. Inches	Point Dia.	Min. Starting Hole Size	Qty. per/Pk
06390	3/8"	4-5/8"	*3/8"	0.244	9/32"	1
06400	1/2"	5-7/8"	*1/2"	0.291	5/16"	1
06410	1/2"	5-7/8"	*3/8"	0.291	5/16"	1
06420	1/2"	6-3/8"	*5/8"	0.323	11/32"	1
06430	1/2"	6-3/8"	11/16"	0.385	13/32"	1
06440	1/2"	6-7/8"	*3/4"	0.416	7/16"	1
06450	1/2"	6-7/8"	13/16"	0.478	1/2"	1
06460	1/2"	6-7/8"	7/8"	0.510	17/32"	1
06470	1/2"	6-7/8"	15/16"	0.595	19/32"	1
06480	1/2"	6-7/8"	1"	0.604	5/8"	1
06504	1/2"	6-7/8"	1-1/16"	0.635	21/32"	1

Part#	Shank Dia.	Overall Length	Dia. Inches	Point Dia.	Min. Starting Hole Size	Qty. per/Pk
06514	1/2"	6-7/8"	1-1/8"	0.670	11/16"	1
06524	1/2"	6-7/8"	1-3/16"	0.710	3/4"	1
06484	1/2"	6-7/8"	1-1/4"	0.729	3/4"	1
06534	3/4"	6-7/8"	1-5/16"	0.785	13/16"	1
06544	3/4"	6-7/8"	1-3/8"	0.820	7/8"	1
06554	3/4"	6-7/8"	1-7/16"	0.860	29/32"	1
06564	3/4"	6-7/8"	1-1/2"	0.900	15/16"	1

SET	TYPE 50-AG	Includes
12270	*4PC. CR-4SP	3/8", 1/2", 5/8", 3/4"

Type 51-AG

Car Reamers - Fast Spiral Hole Buster™ Super Premium 3-Flats on Shank

- Special Hi-Tungsten tool steel, gold surface treated body and clearance for maximum lubricity.
- The 51-AG, with the fast spiral, is the more aggressive of the two styles. It also will fit the needs of users who prefer a stop collar.



Part#	Shank Dia.	Overall Length	Dia. Inches	Point Dia.	Min. Starting Hole Size	Qty. per/Pk
06381	5/16"	4-5/8"	*5/16"	0.182	3/16"	1
06391	3/8"	4-5/8"	*3/8"	0.244	1/4"	1
06501	7/16"	5-7/8"	*7/16"	0.260	9/32"	1
06401	1/2"	5-7/8"	*1/2"	0.291	5/16"	1
06411	1/2"	5-7/8"	9/16"	0.291	5/16"	1
06421	1/2"	6-3/8"	*5/8"	0.323	11/32"	1
06432	1/2"	6-3/8"	0.652	0.385	13/32"	1
06431	1/2"	6-3/8"	11/16"	0.385	13/32"	1
06441	1/2"	6-7/8"	*3/4"	0.416	7/16"	1
06531	1/2"	6-7/8"	0.776	0.416	7/16"	1
06451	1/2"	6-7/8"	13/16"	0.478	1/2"	1
06461	1/2"	6-7/8"	7/8"	0.510	17/32"	1
06471	1/2"	6-7/8"	15/16"	0.595	19/32"	1

Part#	Shank Dia.	Overall Length	Dia. Inches	Point Dia.	Min. Starting Hole Size	Qty. per/Pk
06481	1/2"	6-7/8"	1"	0.604	5/8"	1
06491	1/2"	6-7/8"	1-1/16"	0.635	21/32"	1
06541	1/2"	6-7/8"	1-1/8"	0.670	11/16"	1
06551	1/2"	6-7/8"	1-3/16"	0.710	3/4"	1
06482	1/2"	6-7/8"	1-1/4"	0.729	3/4"	1
06561	3/4"	6-7/8"	1-5/16"	0.785	13/16"	1
06571	3/4"	6-7/8"	1-3/8"	0.820	7/8"	1
06581	3/4"	6-7/8"	1-7/16"	0.860	29/32"	1
06591	3/4"	6-7/8"	1-1/2"	0.900	15/16"	1

SETS	TYPE 51-AG	Includes
12271	*4PC. CR-4FS	3/8", 1/2", 5/8", 3/4"
12281	*4PC. SM-4FS	5/16, 3/8", 7/16", 1/2"



Type 52-AG -Bridge Length Type 53-AG -Car Length Hex Nut Reamers Black & Gold Finish HSS-Spiral Flute

- Designed for aligning and enlarging holes in structural steel applications.
- Gold treated for maximum lubricity.

TYPE 52-AG BRIDGE LENGTH

Part #	Diameter Inches	Hex Shank Inches	Flute Length	Overall Length	Qty. per/Pk
20480	9/16"	1-1/16"	5-1/8	6-7/8	1
20490	5/8"	1-1/16"	6-1/8	7-7/8	1
20510	11/16"	1-1/16"	7-1/8	9-1/4	1
20520	3/4"	1-1/4"	7-3/8	9-3/8	1
20530	13/16"	1-1/4"	7-3/8	9-3/8	1
20540	7/8"	1-7/16"	7-3/8	9-3/8	1
20550	15/16"	1-7/16"	7-3/8	9-3/8	1
20560	1"	1-7/16"	7-3/8	9-3/8	1
20570	1-1/16"	1-5/8"	7-3/8	9-3/8	1
20500	1-1/8"	1-5/8"	7-3/8	9-3/8	1
20580	1-3/16"	1-13/16"	7-3/8	9-3/8	1
20590	1-5/16"	2"	7-3/8	10	1
21120	1-3/8"	2"	7-3/8	10	1
21130	1-7/16"	2"	7-3/8	10	1
21140	1-1/2"	2"	7-3/8	10	1
21150	1-9/16"	2"	7-3/8	10	1
21160	1-5/8"	2"	7-1/2	10	1

TYPE 53-AG CAR LENGTH

Part #	Diameter Inches	Hex Shank Inches	Flute Length	Overall Length	Qty. per/Pk
35580	9/16	1-1/16	4	5-1/2	1
35590	5/8	1-1/16	4-1/2	6	1
35610	11/16	1-1/16	4-1/2	6-3/8	1
35620	3/4	1-1/4	5	7	1
35630	13/16	1-1/4	5	7	1
35640	7/8	1-7/16	5	7	1
35650	15/16	1-7/16	5	7	1
35660	1"	1-7/16	5	7	1
35670	1-1/16	1-5/8	5	7	1
35600	1-1/8	1-5/8	5	7	1
35680	1-3/16	1-13/16	5	7	1
35690	1-5/16	2	5	7-7/8	1

Hole Expansion Tools & Sets

BRIDGE REAMERS & STEP REAMERS & **VORTEX-POINT™/REAMER**

Type 54-AG - Straight Flute Type 55-AG - Spiral Flute

Bridge Reamers - Straight & Spiral Flutes - Taper Shank High-Speed Steel, Surface Treated

- These special Hi-Tungsten tool steel reamers with gold surface treated body and clearance are designed to be used with Taper shank equipment.
- They are available in both straight and spiral flute configuration and are designed for heavy-duty reaming as encountered in the fabrication of structural steel assemblies, bridge erection, and ship construction.



TYPE 54-AG STRAIGHT FLUTE

Part #	Diameter Inches	Flute Length	Overall Length	Taper Shank	Qty. per/pack
81630	7/16"	4-3/8	8-1/4	#2	1
81640	1/2"	5-1/8	9	#2	1
81650	9/16"	5-1/8	9	#2	1
81660	5/8"	6-1/8	10	#2	1
81670	11/16"	7-1/8	11-3/4	#3	1
81680	3/4"	7-3/8	12	#3	1
81690	13/16"	7-3/8	12	#3	1
81700	7/8"	7-3/8	12	#3	1
81710	15/16"	7-3/8	12	#3	1
81720	1"	7-3/8	12	#3	1
81730	1-1/16"	7-3/8	12	#3	1
81740	1-1/8"	7-3/8	12	#3	1
81750	1-3/16"	7-3/8	12	#3	1
81760	1-1/4"	7-3/8	13	#4	1
81770	1-5/16"	7-3/8	13	#4	1

TYPE 55-AG SPIRAL FLUTE

Part #	Diameter Inches	Flute Length	Overall Length	Taper Shank	Qty. per/pack
83310	7/16"	4-3/8	8-1/4	#2	1
83320	1/2"	5-1/8	9	#2	1
83330	9/16"	5-1/8	9	#2	1
83340	5/8"	6-1/8	10	#2	1
83350	11/16"	7-1/8	11-3/4	#3	1
83360	3/4"	7-3/8	12	#3	1
83370	13/16"	7-3/8	12	#3	1
83380	7/8"	7-3/8	12	#3	1
83390	15/16"	7-3/8	12	#3	1
83400	1"	7-3/8	12	#3	1
83410	1-1/16"	7-3/8	12	#3	1
83420	1-1/8"	7-3/8	12	#3	1
83430	1-3/16"	7-3/8	12	#3	1
83440	1-1/4"	7-3/8	13	#4	1
83450	1-5/16"	7-3/8	13	#4	1

Type 51-AGM

Car Reamers - Fast Spiral Hole Buster™ Super Premium Mechanics Length 3-Flats on Shank



- For use in enlarging previously formed or drilled holes.
- These reamers are especially designed for the reaming of structural steel plates commonly found in truck frames, rail cars, bridges, and pressure vessels.



Part #	Diameter Inches	OAL Inches	Point Diameter	Min. Starting Hole Size	Qty. per/pack
82100	3/8"	4.160	.183	3/16"	1
82120	1/2"	4.625	.245	1/4"	1
82140	5/8"	5.200	.310	5/16"	1
82170	3/4"	5.750	.370	3/8"	1

Type VT&R-8P

VORTEX-POINT™ & Car Reamers Mechanics Length

- **VORTEX-POINT™** Split-point design gives accurate starting and its self-centering eliminating the need for the use of a center punch.
- **VORTEX-POINT™** Unique tip geometry reduces heat generation & cutting tool wear increasing tool life.
- **Type 51-AGM** Mechanics Length reamers are especially designed for the reaming of structural steel plates commonly found in truck frames, rail cars, bridges, and pressure vessels.



SET

8 Pc. Ultra Dex

Part #	3/16", 1/4", 5/16", 3/8" + 3/8", 1/2", 5/8", 3/4"	Qty of ea.
82340	VORTEX-POINT™ + Fast Spiral Car Reamer Type 175-VT & 51-UBM	1

Type 78-GR -Gold Oxide

Type 78-ZR -White Gold & SETS

HSS Step Reamers, 3-Flats on Shank



- Accurately starts, enlarge and deburrs in holes in material up to 1/2" thick.
- 90° notch point starts holes easily.
- Each reamer has five hole enlargement steps.

Gold Oxide - low temperature stress relief that enhances lubricity, reduces friction and increases toughness.

Zirconium Nitride - cutting machining aluminum magnesium, titanium alloys. Increased lubricity.



TYPE 78-GR GOLD OXIDE & TYPE 78-ZR WHITE GOLD

78-GR Gold Oxide Part #	78-ZR Zirconium Nitride Part #	Hole Sizes	Range	Shank Sizes	Step Thickness
83710	99940	5	5/16" - 9/16"	3/8"	1/2"
83720	99950	5	9/16" - 13/16"	3/8"	1/2"
83730	99960	5	13/16" - 1-1/16"	3/8"	1/2"

SETS

78-GR Part #	78-ZR Part #	Hole Sizes	Range	Shank Sizes	Step Thickness
83750	99980	3pc. 5	5/16" - 1-1/16"	3/8"	1/2"
83760	99990	2pc. 5	5/16" - 13/16"	3/8"	1/2"



#83750



#99980

Hole Expansion Tools & Sets

STANDARD WOOD AUGERS, HOLE HOG™, DRYWAL BITS

Type 134-AG & Sets

Hole Hog™ 1/2" Shank 4-Flute Core Drill
Super Premium, 3-Flats on Shank

- The 4-flute design eliminates the catching and hogging-in experienced with standard S&D drills when breaking through thinner materials such as truck frames.
- These core drills may replace tapered reamers in many applications.



This tool is designed exclusively for enlarging existing holes.

Part #	Diameter Inches	Minimum Starting Hole Size	OAL Inches	Flute Length Inches	Qty. per/pack
22030	3/8"	1/4"	4-5/16"	1-7/8"	1
22040	1/2"	5/16"	4-5/16"	1-7/8"	1
22060	9/16"	3/8"	4-5/16"	1-7/8"	1
22080	5/8"	25/64"	4-5/16"	1-7/8"	1
22100	11/16"	7/16"	4-5/16"	1-7/8"	1
22120	3/4"	15/32"	4-5/16"	1-7/8"	1

TYPE 134-AG SETS

Part# 38880 SP-8HH Set

Contains 1ea:

134-AG Core drill sizes: 3/8", 1/2", 5/8" & 3/4"

175-AG Drill sizes: 1/4", 5/16", 25/64" & 15/32"

Part# 38870 SP-6HHL Set

Contains 1ea:

134-AG Core drill sizes: 1/2", 5/8" & 3/4"

175-AG Drill sizes: 5/16", 25/64" & 15/32"

Part# 38860 SP-6HHS Set

Contains 1ea:

134-AG Core drill sizes: 3/8", 1/2" & 5/8"

175-AG Drill sizes: 1/4", 5/16" & 25/64"



A selection of core drills and companion (minimum starting hole size) pilot drills in a black steel index.

Type 950- 9", Type 951 - 16" Wood Auger Bits Type 952- 18", Type 953 - 24" Wood Auger Bits

- High quality auger bits with hex shanks produced from alloy tool steel.
- For deep drilling wood applications, quickly and easily drill holes in all types of wood products.



TYPE 950 9"

Part #	Flute Length	Description of Sizes
53200	5"	3/8"
53210	5"	1/2"
53220	5"	9/16"
53230	5"	5/8"
53240	5"	11/16"
53250	5"	3/4"
53260	5"	7/8"
53270	5"	15/16"
53280	5"	1"
53290	5"	1-1/8"

TYPE 951 16"

Part #	Flute Length	Description of Sizes
53300	12"	3/8"
53310	12"	1/2"
53320	12"	9/16"
53330	12"	5/8"
53340	12"	11/16"
53350	12"	3/4"
53360	12"	7/8"
53370	12"	15/16"
53380	12"	1"
53390	12"	1-1/8"

TYPE 952 18"

Part #	Flute Length	Description of Sizes
53400	14"	3/8"
53410	14"	1/2"
53420	14"	9/16"
53430	14"	5/8"
53440	14"	11/16"
53450	14"	3/4"
53460	14"	7/8"
53470	14"	15/16"
53480	14"	1"
53490	14"	1-1/8"

TYPE 953 24"

Part #	Flute Length	Description of Sizes
53500	18"	3/8"
53510	18"	1/2"
53520	18"	9/16"
53530	18"	5/8"
53540	18"	11/16"
53550	18"	3/4"
53560	18"	7/8"
53570	18"	15/16"
53580	18"	1"
53590	18"	1-1/8"

DRYWALL BITS FOR CUTOUTS

Type 180-GP - Black & Gold

High-Speed Steel - Guide Point Left-Hand Cut

- Cuts material Up to 1" thick
- Left-hand spiral, Right hand cut.
- For use with Rotozip Spiral saws.

Type 180-SA - Bright Finish

High-Speed Steel - Left-Hand Cut

- Can cut material Up to 1" thick.
- Left hand spiral, Right hand cut.
- For use in Rotozip Spiral saws.
- Cuts a variety of materials from wood to fiberglass.



Type 180-GP

Gold oxide treated body and clearance for maximum lubricity.



Type 180-SA

It is recommended for non-ferrous metals wood and fiberglass.

TYPE 180-GP DRYWALL BITS

Part No	Diameter Inches	Overall Length Inches	Qty per/pack
68000	1/8"	2-1/4"	8
68020	5/32"	2-1/4"	10
68070	1/4"	2-7/8"	2

TYPE 180-SA DRYWALL BITS

Part No	Diameter Inches	Overall Length Inches	Qty per/pack
68030	1/8"	2-1/4"	8
68040	5/32"	2-1/4"	2

CAUTION: Safety glasses and dust mask must be worn at all times when using super Drywall bits.

Specialty Tools

BRAD POINT DRILLS

Type 16-AG

Jobber Length - Burrouter™ Brad Point Super Premium

- These high performance drills made from Hi-Moly tool steel will cut holes in wood or plastics and leave no burr.
- The special BURROUT™ point cuts at the circumference of the hole to avoid the break through burr problems common with standard point drills.

(Sizes 7/16" and 1/2" have 3/8" Reduced Shanks)



Part #	Diameter Inches	Overall Length Inches	Flute Length Inches	Qty. per/pack
01041	5/64	2	1	12
01051	3/32	2 1/4	1 1/4	12
01061	7/64	2 5/8	1 1/2	12
01071	1/8	2 3/4	1 5/8	12
01081	9/64	2 7/8	1 3/4	12
01091	5/32	3 1/8	2	12
01101	11/64	3 1/4	2 1/8	12
01111	3/16	3 1/2	2 5/16	12
01131	7/32	3 3/4	2 1/2	12
01151	1/4	4	2 3/4	12
01191	5/16	4 1/2	3 3/16	6
01231	3/8	5	3 5/8	6
01271	7/16	5 1/2	4 1/16	6
01311	1/2	6	4 1/2	6

TYPE 16-AG BURROUT™ SETS

BF-10

Part #	Description of Sizes	Qty of each
42001	5/64-3/16" by 64ths + 7/32", 1/4"	1

BF-14

Part #	Description of Sizes	Qty of each
42031	5/64-3/16" by 64ths + 7/32, 1/4"-1/2" by 16ths	1

TYPE QR-AG EXTENSIONS

- One handed operation – Simply push your PTA into the extension and it will automatically load and lock the accessory.
- Patented All Hex connection system will hold any 1/4" hex shape including, **Power groove** and **Notched product**.
- Patented all Hex connection system holds the accessory without any wobble or play. Tight fit for a professional feel.
- **Not intended for Impact Tools.** • **Made in the USA.**



Part #	Size	Qty. per/pack
34821	3" Quick Release Extension	1
34831	6" Quick Release Extension	1
34841	12" Quick Release Extension	1

VORTEX-POINT™

Type 175-VT

Mechanic Length, 3-Flat on Shank



Step drill design

3-Flats on Shank eliminates slippage



Mechanic length - Shorter sturdier construction

- Unique tip geometry reduces heat generation & cutting tool wear increasing tool life.
- Easily enlarges existing holes without damaging the point.
- Split-point design gives accurate starting and its self-centering eliminating the need for the use of a center punch.
- Ideal for **Hard steel, Sheet metal, Brass and Acrylics.**

POWER BITS

Type 935

Quick Release 1/4" Hex Shank - Power Bits

- Cuts clean accurate holes in all soft and hard woods plus foam core, plastic, many non-metallic building siding, and foam insulation.

TYPE 935 1/4" HEX SHANK

Part #	Diameter Inches	Qty. per/pack
52005	1/4"	1
52015	5/16"	1
52025	3/8"	1
52035	7/16"	1
52045	1/2"	1
52055	9/16"	1
52065	5/8"	1
52075	11/16"	1
52085	3/4"	1
52095	13/16"	1
52105	7/8"	1
52115	15/16"	1
52125	1 INCH	1
52135	1-1/8"	1
52145	1-1/4"	1
52155	1-3/8"	1
52165	1-1/2"	1

EXTENSIONS

Part #	Size	Qty. per/pack
27555	6"	1
52175	12"	1

TYPE 935 1/4" HEX SHANK SETS

4pc. SET EASY-CUT

One each: 3/8", 1/2", 5/8" & 3/4" in plastic pouch.

Part# 52185

6pc. SET EASY-CUT

One each: 3/8", 1/2", 5/8", 3/4", 7/8" & 1" in plastic pouch.

Part# 52195

13pc. SET EASY-CUT

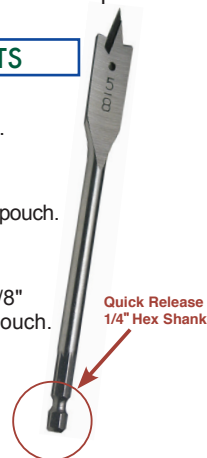
One each: 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8"

11/16", 3/4", 13/16", 7/8", 15/16" & 1" in plastic pouch.

Part# 52205

EASY-CUT 6" - 12" EXTENSION

For all bits with 1/4" shanks. For those jobs that require extra reach with Allen wrench.



Part #	Diameter Inches	Qty. per/pack
22573	1/16"	6
22583	5/64"	6
22593	3/32"	6
22603	7/64"	6
22613	1/8"	6
22623	9/64"	6
22633	5/32"	6
22643	11/64"	6
22653	3/16"	6
22663	13/64"	6
22673	7/32"	6
22683	15/64"	6
22693	1/4"	6
22703	17/64"	6
22713	9/32"	6
22723	19/64"	3
22733	5/16"	3
22743	21/64"	3
22753	11/32"	3

Part #	Diameter Inches	Qty. per/pack
22763	23/64"	3
22773	3/8"	3
22783	25/64"	3
22793	13/32"	3
22803	27/64"	3
22813	7/16"	3
22823	29/64"	3
22833	15/32"	3
22843	31/64"	3
22853	1/2"	3

TYPE 175-VT SETS

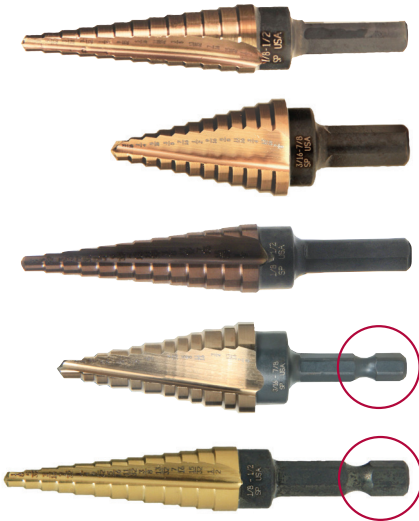
22863	VT-13	1/16" - 1/4" by 64ths
22873	VT-15	1/16" - 1/2" by 32nd
22883	VT-21	1/16" - 3/8" by 64ths
22893	VT-29	1/16" - 1/2" by 64ths
22903	VT-29P	1/16" - 1/2" by 64ths
22913	VT-29PO	1/16" - 1/2" by 64ths

Call Toll Free

1.800.328.4655

STEP DRILLS ULTRA BIT™ MULTI-DIAMETER

Made in the U.S.A

**Type B78-AG Gold Oxide, 3-flats on Shank - Blister pak**

- Special Axial and Radial flute design increases work piece penetration.
- Dual flute construction drills clean accurate holes in thin materials, quickly and easily.

Type B78-AGN Titanium Nitride, 3-flats on Shank - Blister pak

- Titanium nitride coated tools last six times longer than uncoated tools.
- Cutting edge stays sharper longer.
- Titanium nitride coating reduces friction.

Type B78-ACN Titanium Carbon Nitride, 3-flats on Shank - Blister pak

- 2 - 4x the tool life of Titanium Nitride coated tools.
- Improved lubricity for better performance in steel and aluminum.
- Twice as hard as titanium nitride coating.

Quick Release - Ultra Bit™ Multi-Diameter

Type 78-QR Gold Oxide

- Use for all thin metals, rigid plastics, wood or composite materials with a thickness equal to or less than the step thickness.
- Split point self centers and easily starts with no pilot hole required.

Type 78-QRN Titanium Nitride Coated

- Titanium nitride coated tools last six times longer than uncoated tools.
- Cutting edge stays sharper longer.
- Titanium nitride coating reduces friction.

TYPE B78-AG, B78-AGN, B78-ACN 3-FLATTED SHANK

B78-AG Gold Oxide Part #	B78-AGN Titanium Nitride Part #	B78-ACN Titanium Carbon Nitride Part #	Size	Hole Sizes	No. Range	Shank Size	Step Increments	Step Thickness
45401	45701	65301	1	13	1/8 - 1/2"	1/4"	1/32"	1/8
45441	45751	65311	2	8	1/4 - 1"	3/8"	1/16"	5/32
45431	45731	65321	3	9	1/4 - 3/4"	3/8"	1/16"	5/32
45411	45711	65331	4	6	3/16 - 1/2"	1/4"	1/16"	3/8
45481	45741	65341	7	11	1/4 - 7/8"	3/8"	1/16"	1/16
45421	45721	65351	8	12	3/16 - 7/8"	3/8"	1/16"	1/8
45501	-----	-----	9	3	1/4 - 1-7/32"	3/8"	7/8"	-----
45471	45771	65361	11	2	1/4 - 1-1/8"	3/8"	27/64"	9/64
*45461	45791	65371	12	5	1/4 - 1-3/8"	3/8"	1/8"	*SEE NOTE
45491	45781	65391	1/4 A	16	1/4 - 1-1/8"	3/8"	1/16"	1/16
45451	45761	65381	13/16	10	13/16 - 1-3/8"	1/2"	1/32"	5/32

*NOTE: Parts # 45461, 45791, 65371 - 7/8", 1 - 1/8", 1 - 7/32", 1 - 1/4", 1 - 3/8" (1/2" and 3/4" conduit)

HANGING TUBES

00693	-----	-----	10	1	1/2"	1/4"	-----	1/16"
00694	-----	-----	12	1	3/8"	1/4"	-----	-----
00750	-----	-----	13	1	1-1/8"	1/2"	-----	-----

3 & 4 PC. SETS

Gold Oxide	Titanium Nitride	Titanium Carbon Nitride	
01911	01811	65431	1/8 - 1/2", 3/16 - 1/2" & 1/4 - 3/4" (#1, #4, #3)
01921	01821	65411	1/8 - 1/2", 3/16 - 1/2" & 3/16 - 7/8" (#1, #4, #8)
01931	01831	-----	1/8 - 1/2", 3/16 - 7/8" & 7/8 - 1-1/8" (#1, #8, #11)
01941	01841	65421	1/8 - 1/2", 3/16 - 1/2" & 1/4" - 1" (#1, #4, #2)
4pc. 01981	01871	65441	1/8 - 1/2", 1/4 - 3/4", 1/4 - 7/8", 7/8 - 1-1/8" (#1, #3, #7, #11)

TYPE 78-QR, 78-QRN QUICK RELEASE

78-QR Gold Oxide Part #	78-QRN Titanium Nitride Part #	Size	Hole Sizes	No. Range	Shank Size	Step Increments	Step Thickness
01401	68491	1	13	1/8 - 1/2"	1/4"	1/32"	1/8
01411	68534	2	8	1/4 - 1"	1/4"	1/16"	5/32
01404	68521	3	9	1/4 - 3/4"	1/4"	1/16"	5/32
01402	68501	4	6	3/16 - 1/2"	1/4"	1/16"	3/8
01412	68541	7	11	1/4 - 7/8"	1/4"	1/16"	1/16
01403	68511	8	12	3/16 - 7/8"	1/4"	1/16"	1/8
01409	68531	11	2	1/4 - 1-1/8"	1/4"	27/64"	9/64
*01414	68524	12	5	1/4 - 1-3/8"	1/4"	1/8"	*SEE NOTE
01413	68551	1/4 A	16	1/4 - 1-1/8"	1/4"	1/16"	1/16

*NOTE: Parts # 01414, 68524 - 7/8", 1 - 1/8", 1 - 7/32", 1 - 1/4", 1 - 3/8" (1/2" and 3/4" conduit)

3 PC. SETS

20751	68801	1/8 - 1/2", 3/16 - 1/2" & 1/4 - 3/4" (#1, #4, #3)
20761	68811	1/8 - 1/2", 3/16 - 1/2" & 3/16 - 7/8" (#1, #4, #8)
01461	68581	1/8 - 1/2", 3/16 - 7/8" & 7/8 - 1-1/8" (#1, #8, #11)

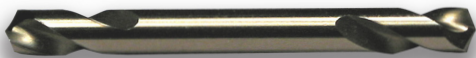
Specialty Tools

TWIN END & PILOT DRILLS, ALL PURPOSE HEAVY-DUTY

TYPE 140-G -SUPER PREMIUM

Twin End - Super Premium 135° Split Point

- Special Hi-Molybdenum tool steel, gold surface treated for maximum lubricity.
- 135° split point for fast penetration and accurate starting without a center punch.



TYPE 140-G FRACTIONAL

Part No.	Diameter Inches	Overall Length Inches	Flute Length Inches	Qty. per/pack
95090	3/32	1-3/4	9/16	12
95080	7/64	1-15/16	5/8	12
95980	1/8	1-15/16	5/8	12
95070	9/64	2	5/8	12
95060	5/32	2-1/8	5/8	12
95050	3/16	2-5/16	5/8	12
95040	7/32	2-9/16	3/4	12
95030	1/4	2-5/8	13/16	12

TYPE 140-G WIRE

Part No.	Diameter Wire Gauge	Overall Length Inches	Flute Length Inches	Qty. per/pack
95020	10	2-5/16	5/8	12
95010	11	2-5/16	5/8	12
95000	20	2-1/8	5/8	12
94990	30	2	5/8	12

TYPE 140 -HEAVY DUTY

Twin End - Heavy-Duty - 135° Split Point

- This twin end drill has wide applications in drilling any thin sheet metal or wood.
- Automotive body shops will find twin end drills especially productive.
- Black Oxide finish.



TYPE 140 FRACTIONAL

Part No.	Diameter Inches	Overall Length Inches	Flute Length Inches	Qty. per/pack
28470	3/32	1-3/4	9/16	12
28480	7/64	1-15/16	5/8	12
28490	1/8	1-15/16	5/8	12
28500	9/64	2	5/8	12
28510	5/32	2-1/8	5/8	12
28530	3/16	2-5/16	5/8	12
28550	7/32	2-9/16	3/4	12
28570	1/4	2-5/8	13/16	12

TYPE 140 WIRE

Part No.	Diameter Wire Gauge	Overall Length Inches	Flute Length Inches	Qty. per/pack
27940	10	2-5/16	5/8	12
27950	11	2-5/16	5/8	12
28040	20	2-1/8	5/8	12
28140	30	2	5/8	12

PILOT DRILLS

Type 185

Pilot Drills For HSS Hole Saws



Part#	Size Inches	Description	Diameter Inches	Overall Length Inches	Qty. per/pack
95100	1/4" x 4	Universal pilot with two whistle notch flats. Fits most hole saws needing 4" length - Bright finish	1/4"	4"	12
95101	1/4" x 3"	Fits most arbors with one set screw One flat on shank . Bright finish. Lennox, Starrett, Morse, Milwaukee & more.	1/4"	3	12
95102	1/4" x 4"L	Three long flats on shank allow for set screw and eliminate slippage Fits through the arbor drive. Surface treated. (Replaces Lennox and others).	1/4"	4	12
95103	1/4" x 3"L	Same as 95101 except surface treated. (Replaces Lennox and others).	1/4"	3	12
95104	1/4" x 4-1/4"L	Three long flats on shank allow for set screw and eliminate slippage Fits through the arbor drive. Black Surface treated. (Replaces Lennox L-series).	1/4"	4-1/4"	12

ALL PURPOSE HEAVY-DUTY

Type 214



- Carbide tipped, hardened steel bodies (3/8" diameter and smaller), 6% cobalt carbide grade, lifetime tip warranty against braze failure, and slow spiral.
- Black surface finish with bronze colored tip.
- Recommended for both impact and rotary use.
- Especially suited for drilling 2500-5000 psi concrete.

Part #	Diameter Inches	Overall Length Inches	Qty. per/pack
94600	1/8	3	12
94610	3/16	4	12
94620	3/16	6	12
94640	1/4	4	12
94650	1/4	6	12
94670	5/16x1/4	4	6
94680	5/16x1/4	6	6
94700	3/8x1/4	4	6
94710	3/8x1/4	6	6
94720	3/8x1/4	13	1

Part #	Diameter Inches	Overall Length Inches	Qty. per/pack
94730	3/8x3/8	6	6
94750	7/16x1/4	4	6
94760	7/16x1/4	6	6
94810	1/2x1/4	6	6
94830	1/2x3/8	6	6
94860	9/16x3/8	13	1
94890	5/8x3/8	6	1
94910	5/8x1/2	6	1
94920	5/8x1/2	13	1

Specialty Tools

ACRYLIC, HARD STEEL, SOLID CARBON DRILL, SHEETERS DRILLS & CUTTING TOOL LUBRICANT

Type 183-AG

Acrylic Drills with Chipfree™ Point Magnum Super Premium

- Super **CHIPFREE™** point is precision ground at a 60° angle for gradual penetration to avoid cracking and chipping of the acrylic material.
- Special 0° rake angle on cutting edge eliminates "grabbing" when drill breaks through plastic, acrylic, or laminate surfaces.
- All sizes over 1/4" have 1/4" shanks.



Part No.	Diameter Inches	Overall Length Inches	Flute Length Inches	Qty. per/pack
32260	3/32	2-1/4"	1-1/4"	12
31500	1/8	2-5/8"	1-5/8"	12
32200	9/64	2-7/8"	1-3/4"	12
31510	5/32	3"	2"	12
31520	3/16	3-3/8"	2-5/16"	12
32210	13/64	3-21/32"	2-7/16"	12
32220	7/32	3-13/16"	2-1/2"	12
31530	1/4	3-15/16"	2-3/4"	12
32240	9/32	3-9/16"	1-31/32"	12
32230	19/64	3-23/32"	2"	12
31540	5/16	3-13/16"	2-1/8"	6
32290	11/32	4-1/32"	2-11/32"	6
31550	3/8	4-1/4"	2-5/16"	6
32250	25/64	4-11/32"	2-9/16"	6
32460	13/32	4-15/32"	2-11/16"	6
31560	7/16	4-11/16"	2-7/8"	6
32470	15/32	4-7/8"	3-1/16"	6
31570	1/2	5"	3-3/16"	6

Type 224

Sheeters Drill - Black Surface Treated

Heavy-duty 135° split point high-speed steel drill is excellent for drilling sheet metal and corrugated construction panels.



Part #	Diameter Wire Gauge	Overall Length Inches	Flute Length Inches	Qty. per/pack
27010	1	3"	1-5/16"	12
27030	1	4-1/2"	1-5/16"	12
27040	1	6"	1-5/16"	12

CUTTING TOOL LUBRICANT

Type 11-AG Ultra S/P™ Super Premium High Viscosity

- Super concentrated no run formula.
- Clings to vertical surfaces for continual lubrication.
- Virtually smoke free in even the most heat prone applications.
- Contains no ozone depleting substances.

This fluid will extend tool life and yield a super machined finish.



Part #	Size MM	Bottles Per Case	Weight Per Case
96050	12 - 4 OZ.	12	4.4 Lbs./2 Kgs.
96060	48 - 4 OZ.	48	18 Lbs./8.2 Kgs.
96070	12 - 16 OZ.	12	15 Lbs./6.8 Kgs.

Part No. 96071 is a self selling display with an attractive attention getting decal applied to the inside of the display flap. Dispose of display when empty.

Type 602-C Solid Carbide

Solid Carbide Drills, Straight Flute

- Excellent for removing broken screw extractors, tap and drills bits. For use in extremely hard and difficult to machine materials. Produces accurate holes.



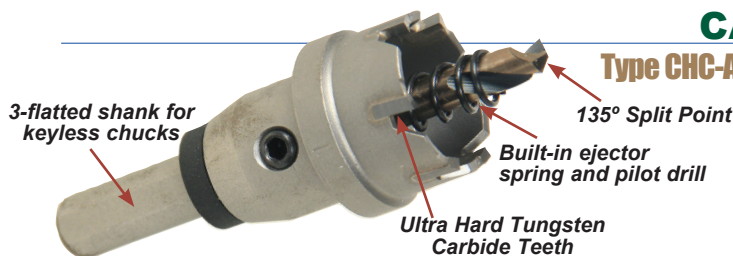
Type 602-C

Designed for drilling holes in 48-65 RC hardened steel, stainless steels, and high temperature alloys.

Part No.	Diameter Inches	Shank Diameter Inches	Overall Length Inches	Qty. per/pack
36173	1/16	1/16	1-5/8	1
36193	3/32	3/32	1-3/4	1
36213	1/8	1/8	1-7/8	1
36233	5/32	5/32	2-1/16	1
36253	3/16	3/16	2-3/16	1
36273	7/32	7/32	2-3/8	1
36293	1/4	1/4	2-1/2	1
36313	9/32	9/32	2-11/16	1
36333	5/16	1/4	2-13/16	1
36353	11/32	11/32	3	1
36373	3/8	3/8	3-1/8	1
36393	13/32	13/32	3-5/16	1
36413	7/16	7/16	3-7/16	1
36433	15/32	15/32	3-5/8	1
36453	1/2	1/2	3-3/4	1
36473	5/8	5/8	4	1
36483	3/4	3/4	4	1

CARBIDE TIPPED HOLECUTTERS

Type CHC-AG Carbide Tipped Holecutters CUTS UP TO 3/16"



Part#	Diameter Inches	Shank Diameter	Qty. per/pack
62000	9/16	3/8	1
62010	5/8	3/8	1
62020	11/16	3/8	1
62030	3/4	3/8	1
62040	13/16	3/8	1
62050	7/8	3/8	1
62060	15/16	3/8	1
62070	1"	3/8	1
62080	1-1/16	3/8	1
62090	1-1/8	3/8	1
62100	1-3/16	3/8	1
62110	1-1/4	3/8	1
62120	1-5/16	3/8	1
62130	1-3/8	3/8	1

Part#	Diameter Inches	Shank Diameter	Qty. per/pack
62140	1-7/16	3/8	1
62150	1-1/2	3/8	1
62160	1-9/16	3/8	1
62170	1-5/8	3/8	1
62180	1-11/16	3/8	1
62190	1-3/4	3/8	1
62200	1-13/16	3/8	1
62210	1-7/8	3/8	1
62220	1-15/16	3/8	1
62230	2"	3/8	1
62240	2-1/16	3/8	1
62250	2-1/8	3/8	1
62260	2-3/16	3/8	1
62270	2-1/4	3/8	1

Part#	Diameter Inches	Shank Diameter	Qty. per/pack
62280	2-5/16	3/8"	1
62290	2-3/8	3/8"	1
62300	2-7/16	3/8"	1
62310	2-1/2	3/8"	1
62320	2-9/16	3/8"	1
62330	2-5/8	3/8"	1
62340	2-11/16	1/2"	1
62350	2-3/4	1/2"	1
62360	2-13/16	1/2"	1
62370	2-7/8	1/2"	1
62380	2-15/16	1/2"	1
62390	3"	1/2"	1
62400	3-1/4	1/2"	1
62410	3-1/2	1/2"	1
62420	3-3/4	1/2"	1
62430	4"	1/2"	1
62440	4-1/4	1/2"	1
62450	4-1/2	1/2"	1
62460	4-3/4	1/2"	1
62470	5"	1/2"	1
62480	PILOT DRILL		1
62490	SCREW		1
62500	SPRING		1

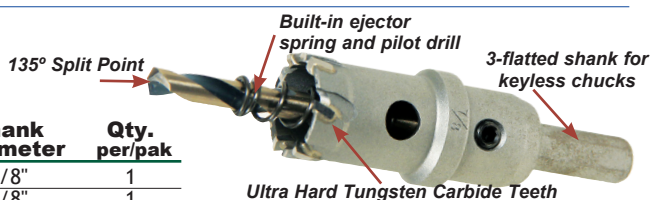
Type CHD-AG

Deephole Carbide Tipped Holecutters CUTS UP TO 1"

- Produces overlapping and interrupted holes easily
- Cuts 3 times faster than bi-metal hole saws.

Part#	Diameter Inches	Shank Diameter	Qty. per/pak
63990	9/16	3/8"	1
64000	5/8	3/8"	1
64010	11/16	3/8"	1
64020	3/4	3/8"	1
64030	13/16	3/8"	1
64040	7/8	3/8"	1
64050	15/16	3/8"	1
64060	1"	3/8"	1
64070	1-1/16	3/8"	1
64080	1-1/8	3/8"	1
64090	1-3/16	3/8"	1
64100	1-1/4	3/8"	1
64110	1-5/16	3/8"	1
64120	1-3/8	3/8"	1
64130	1-7/16	3/8"	1
64140	1-1/2	3/8"	1
64150	1-9/16	3/8"	1
64160	1-5/8	3/8"	1

Part#	Diameter Inches	Shank Diameter	Qty. per/pak
64170	1-11/16	3/8"	1
64180	1-3/4	3/8"	1
64190	1-13/16	3/8"	1
64200	1-7/8	3/8"	1
64210	1-15/16	3/8"	1
64220	2"	3/8"	1
64240	2-1/16	3/8"	1
64250	2-1/8	3/8"	1
64260	2-3/16	3/8"	1
64270	2-1/4	3/8"	1
64280	2-5/16	3/8"	1
64290	2-3/8	3/8"	1
64330	2-7/16	3/8"	1
64340	2-1/2	3/8"	1
64350	2-9/16	3/8"	1
64360	2-5/8	3/8"	1
64370	2-11/16	1/2"	1
64380	2-3/4	1/2"	1



Part#	Diameter Inches	Shank Diameter	Qty. per/pak
64390	2-13/16	1/2"	1
64400	2-7/8	1/2"	1
64410	2-15/16	1/2"	1
64420	3"	1/2"	1
64430	3-1/4	1/2"	1
64440	3-1/2	1/2"	1
64450	3-3/4	1/2"	1
64460	4"	1/2"	1
64470	4-1/4	1/2"	1
64480	4-1/2	1/2"	1
64490	4-3/4	1/2"	1
64231	PILOT DRILL		1
62490	SCREW		1
62530	SPRING		1

Type CHC-QR Carbide Tipped Holecutters

1/4" Hex Shank Quick Release

- 3-flatted shank for keyless chucks.
- Produces overlapping and interrupted holes easily
- Cuts 3 times faster than bi-metal hole saws.



Part#	Diameter Inches	Shank Diameter	Qty. per/pack
83470	5/8	1/4	1
83480	11/16	1/4	1
83490	3/4	1/4	1
83500	13/16	1/4	1
83510	7/8	1/4	1
83520	15/16	1/4	1
83530	1"	1/4	1
83540	1-1/16"	1/4	1
83550	1-1/8"	1/4	1

Part#	Diameter Inches	Shank Diameter	Qty. per/pack
83560	1-3/16	1/4	1
83580	1-1/4	1/4	1
83590	1-5/16	1/4	1
83600	1-3/8	1/4	1
83950	PILOT DRILL		1
83960	SCREW		1
83970	SPRING		1

Type EXT - Extension

Carbide Tipped Holecutter - Extension

Includes: "Allen Wrench" (For CHC-UB & CHD-UB Holecutter only)



Part#	Bore/Shank	Diameter	Overall Length	Ext Length	Qty. per/pack
62710	3/8"	7/8"	6-1/4"	5 inches	1
62720	1/2"	7/8"	6-1/4"	5 inches	1

Type CHC-18

Carbide Tipped Holecutter - Hanging Display

Contents	Size	# of Ea.
CHC-AG	13/16", 7/8", 15/16", 1", 1-1/16"	1
Depth of cut 3/16"	1-1/8", 1-3/16", 1-1/4", 1-3/8"	
CHD-AG	13/16", 7/8", 15/16", 1", 1-1/16"	1
Depth of cut 1"	1-1/8", 1-3/16", 1-1/4", 1-3/8"	
Display Rack	16" width x 27" height	1
	(Display Rack Only Part #14120)	

Type CHC-3QR Quick Release SETS - 3 pc.

83990	7/8", 1-1/8" & 1-3/8"
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COUNTERSINKS & TECHNICAL DIAGRAMS & COMBINED DRILLS



Type 82-AG - Piloted



Type 82-AG - Pilotless



Type 90-AG - Deburring

Type 82-AG - Piloted Type 82-AG - Pilotless Type 90-AG - Deburring

Type 82-AG Chatter proof™ - Countersinks
Type 90-AG Chatter proof™ - Deburring Tools

Special Hi-Molybdenum tool steel, gold surface treated for maximum lubricity.

These high performance, flute-less tools are:

- Free cutting - for ease of use.
- Designed for fast stock removal.
- Chatter proof - for a micro smooth finish.
- Available in a wide selection of styles.
- Recommended for smooth finishes on metal, plastic and wood applications.
- Made in the U.S.A.

TYPE 82-AG 82° PILOTED COUNTERSINK

Part No.	Size	Style	Screw Size	A	Shank Diameter B	Overall Length C	D	E	F	No. per/pack
67010	CS1/4	1	1/4"	1/4"	3/8"	2"	33/64"	1"	5/32"	1
67020	CS1/4A	1	1/4"	17/64"	3/8"	2"	33/64"	1"	5/32"	1
67030	CS5/16	1	5/16"	5/16"	3/8"	2-3/16"	41/64"	1-3/16"	5/32"	1
67040	CS5/16A	1	5/16"	21/64"	3/8"	2-3/16"	41/64"	1-3/16"	5/32"	1
67050	CS3/8	1	3/8"	3/8"	1/2"	2-5/8"	49/64"	1-3/8"	5/32"	1
67060	CS3/8A	1	3/8"	25/64"	1/2"	2-5/8"	49/64"	1-3/8"	5/32"	1
67070	CS7/16	1	7/16"	7/16"	1/2"	2-3/4"	53/64"	1-1/2"	7/32"	1
67080	CS7/16A	1	7/16"	29/64"	1/2"	2-3/4"	53/64"	1-1/2"	7/32"	1
67090	CS1/2	1	1/2"	1/2"	1/2"	2-13/16"	15/16"	1-9/16"	1/4"	1
67100	CS1/2A	1	1/2"	33/64"	1/2"	2-13/16"	15/16"	1-9/16"	1/4"	1

See left for technical diagram.

TYPE 82-AG 82° PILOT LESS COUNTERSINK

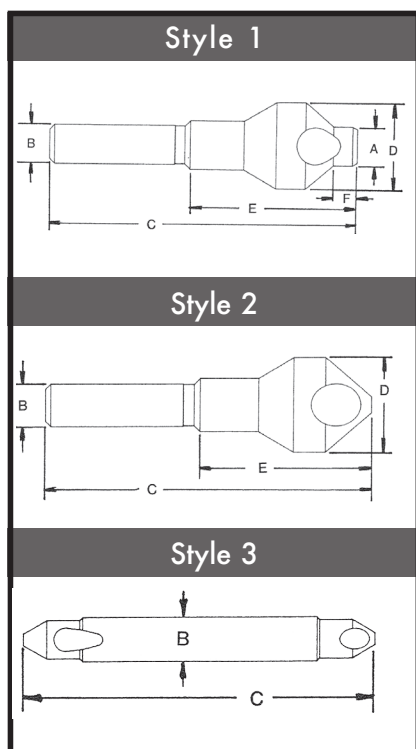
Part No.	Size	Style	Diameter of Cut Min	Max	Screw Size	Shank Diameter B	Overall Length C	D	E	No. per/pack
67110	CS073	3	5/64"	15/64"	---	1/4"	1-3/4"	---	---	1
67120	CS3/16	2	3/16"	17/32"	---	1/4"	1-15/16"	9/16"	1"	1
67130	CS307	2	5/16"	25/32"	---	1/2"	2-5/8"	13/16"	1-3/8"	1
67140	CS307A	2	5/16"	25/32"	---	1/4"	2-1/16"	13/16"	1-1/4"	1
67150	CS431	2	7/16"	7/8"	---	1/2"	2-13/16"	1-1/8"	1-9/16"	1
67160	CS1/2B	2	1/2"	1-15/32"	---	1/2"	3-1/2"	1-1/2"	2-1/8"	1
67170	CS55	2	1/8"	17/64"	No. 4	1/4"	1-1/2"	17/64"	5/8"	1
67180	CS65	2	1/8"	19/64"	No. 6	1/4"	1-1/2"	19/64"	5/8"	1
67190	CS85	2	1/8"	11/32"	No. 8	1/4"	1-5/8"	11/32"	3/4"	1
67200	CS105	2	9/64"	25/64"	No. 10	1/4"	1-5/8"	25/64"	3/4"	1

See left for technical diagram.

TYPE 90-AG 90° DEBURRING TOOLS

Part No.	Size	Style	Diameter of Cut Min	Max	Shank Diameter B	Overall Length C	D	E	No. per/pack
67210	DB1/64	3	1/64"	11/64"	3/16"	1-1/2"	---	---	1
67220	DB1/16	3	1/16"	11/64"	3/16"	1-1/2"	---	---	1
67230	DB1/8	3	1/8"	15/64"	1/4"	1-3/4"	---	---	1
67240	DB5/32	2	5/32"	13/32"	1/4"	1-11/16"	7/16"	13/16"	1
67250	DB3/16	2	3/16"	17/32"	1/4"	1-7/8"	9/16"	1"	1
67260	DB5/16	2	5/16"	25/32"	1/2"	2-19/32"	13/16"	1-3/8"	1
67270	DB5/16C	2	5/16"	25/32"	1/4"	2-1/32"	13/16"	1-5/32"	1
67280	DB9/16	2	9/16"	1-3/32"	1/2"	2-13/16"	1-1/8"	1-9/16"	1
67290	DB1/2	2	1/2"	1-15/32"	1/2"	3-1/2"	1-1/2"	2-1/8"	1

See left for technical diagram.



COMBINED DRILLS, COUNTERSINK SETS & 6-FLUTE COUNTERSINK TOOL

TYPE 82-AG & TYPE 90-AG SETS

Part#	Description of Sizes
SP-4CS 10440	82-AG C/S sizes: CS5S, CS6S, CS8S, CS10S
SP-4ACS 10442	82-AG C/S sizes: CS6S, CS8S, CS10S, CS3/16
SP-6DB 10450	90-AG D/B sizes: DB1/16, DB1/8, DB5/32, DB3/16, DB5/16 & DB9/16
SP-9CS 10443	82-AG C/S sizes: CS5S, CS6S, CS8S, CS10S, CS1/4, CS5/16, CS3/8, CS7/16, & CS1/2



COMBINED DRILLS & COUNTERSINK

Type 296 -Plain

Drill ends are of equal diameter. The included angle is 60°.



TYPE 296 PLAIN COUNTERSINKS

Part#	Size	Dia. of Body Inches	Dia. & Length of drills	Overall Length Inches	No. per/Pack
26760	00	1/8	.025x.030	1-7/32	5
26770	0	1/8	1/32x.038	1-7/32	5
26780	1	1/8	3/64x3/64	1-1/4	5
26790	2	3/16	5/64x5/64	1-7/8	5
26800	3	1/4	7/64x7/64	2	5
26810	4	5/16	1/8x1/8	2-1/8	5
26820	5	7/16	3/16x3/16	2-3/4	5
26830	6	1/2	7/32x7/32	3	5
26840	7	5/8	1/4x1/4	3-1/4	1
26850	8	3/4	5/16x5/16	3-1/2	1

COMBINED DRILLS AND COUNTERSINK - SET

26861 5pc. Bright Finish Sizes: 1, 2, 3, 4 and 5



6-FLUTE 82° CHATTER-LESS HSS COUNTERSINK

Type 83-AG

- Chatter-less 6-flute design reduces vibration
- Multiple cutting edges extend tool life.
- 82° Countersink produce the ideal profile for the majority of flat head fasteners.
- 3-Flat on shank
- Made in the USA.



Type 83-AG

4pc. Type 83-AG



TYPE 83-AG HSS 82° COUNTERSINK

Part#	Size	Shank Size	# per/Pack
67700	1/4"	1/4"	1
67710	5/16"	1/4"	1
67720	3/8"	1/4"	1
67730	1/2"	3/8"	1
67740	5/8"	3/8"	1
67750	3/4"	1/2"	1
67760	7/8"	1/2"	1
67770	1"	1/2"	1
67780	1-1/4"	1/2"	1
67790	1-1/2"	3/4"	1

4PC. HSS 82° COUNTERSINK SET

Part#	Sizes	Shank Sizes	# per/Pack
67800	1/4", 5/16", 3/8", *1/2"	1/4", *3/8"	1

COMBINED DRILLS & COUNTERSINK

Type 296-XL - Long Length 60°

- 60° degree countersink angle fits all standard centers.
- Used for centering work ends, where the work piece is to be revolved on machine centers.
- Made in the USA.



TYPE 296-XL COMBINED DRILLS & COUNTERSINK

Part#	Size	Body Diameter	Drill Diameter	No. per/Pack
08603	1x3	1/8"	3/64"	1
08613	1x4	1/8"	3/64"	1
08623	1x5	1/8"	3/64"	1
08633	1x6	1/8"	3/64"	1
08643	2x3	3/16"	5/64"	1
08653	2x4	3/16"	5/64"	1
08663	2x5	3/16"	5/64"	1
08673	2x6	3/16"	5/64"	1
08683	3x3	1/4"	7/64"	1
08693	3x4	1/4"	7/64"	1
08703	3x5	1/4"	7/64"	1
08713	3x6	1/4"	7/64"	1
08723	4x4	5/16"	1/8"	1
08733	4x5	5/16"	1/8"	1
08743	4x6	5/16"	1/8"	1
08753	4-1/2x4	3/8"	9/64"	1
08763	4-1/2x5	3/8"	9/64"	1
08773	4-1/2x6	3/8"	9/64"	1
08783	5x4	7/16"	3/16"	1
08793	5x5	7/16"	3/16"	1
08803	5x6	7/16"	3/16"	1
08813	6x5	1/2"	7/32"	1
08823	6x6	1/2"	7/32"	1
08833	7x6	5/8"	1/4"	1
08843	8x6	3/4"	5/16"	1

SUPER COBALT - WELD OUT™ CARBIDE SPOT WELD DRILLS

Type 186

**Weldout™ Spot weld
Super Cobalt HSS
Gold Finish - Heavy-Duty Spur Point**

- This rugged high performance drill is designed to effectively cut auto body panel spot welds.



High red hardness of cobalt steel permits speeds 30% greater than HSS drill.

Part No.	Diameter MM	Approx. Spotweld Size, Inches	OAL Inches	Flat Length Inches	Qty. per/pack
66420	6.5mm	1/4	1.56	.44	5
37240	6.5mm	1/4	1.49	.44	5
37520	6.5mm	1/4	1.75	none	5
37660	6.5mm TE*	1/4	3.62	none	5
66430	8.0mm	5/16	1.56	.44	5
37250	8.0mm	5/16	1.49	.44	5
37510	8.0mm	5/16	1.69	.75	5
37470	8.0mm	5/16	1.75	none	5
37670	8.0mm TE*	5/16	3.62	none	5
37530	10.0mm	3/8	1.75	none	5
37680	10.0mm TE*	3/8	3.62	none	5

The spur point on the **Type 186** is designed to cut through the weld on one panel while leaving the second panel free of holes.

Type 187

**Weldout™ Spotweld Super Cobalt HSS
Gold Finish - Heavy-Duty Spur Point**

- This rugged high performance drill is designed to effectively cut auto body panel spot welds.



Our Super Cobalt HSS contains 8% cobalt.

Part No.	Diameter MM	Approx. Spotweld Size, Inches	OAL Inches	Flat Length Inches	Qty. per/pack
66180	8.0	5/16"	2.25	none	5
66190	10.00	3/8"	2.25	none	5
37671	8.0 TE*	5/16"	3.62	none	5
37681	10 TE	3/8"	3.62	none	5

The modified point on the **Type 187** drill is chip resistant with slightly greater penetration into the second panel.

Weldout™ Spot weld Drills Sets

- Cobalt steel is substantially more abrasion resistant, resulting in long wear cutting edges.



TYPE 186 WO-6 SET

Part No.	Description of Sizes
35010	6.5mm, 8.0mm & 10.0mm Single-end drills with 1.75" length
	6.5mm, 8.0mm & 10.0mm Twin end drills with 3.62" length

TYPE 187 WO-4 SET

Part No.	Description of Sizes
35050	8.0mm & 10mm Single-end 8.0mm & 10mm Twin-end In Type 187 Length

Type 187-B

**Carbide Aluminium Titanium Nitride
Spot weld Drills**

- Designed to cut spot welds from Boron Steel
- Use in high temperature operations and difficult to machine materials.
- ALTiN coating improves lubricity, eliminating lubrication requirements.

1-3/4" to 2-1/4" OAL - Recommended (900 RPM - 1,000 RPM)



Carbide ALTiN offers higher temperature resistance.

3" OAL with Round - Recommended (900 RPM - 1,000 RPM)



Carbide ALTiN typically last 3 to 10 times longer than uncoated tools. Created for abrasive and high temperature applications (> 800°C).

TYPE 187-B

Part No.	Diameter MM	Approx Spot weld Size, Inches	OAL Inches	Flat Length Inches	Qty. per/pack
85910	6.7	17/64"	3"	NONE	1
85890	8.0	5/16	2"	NONE	1
85900	10.0	3/8	2-1/4"	NONE	1

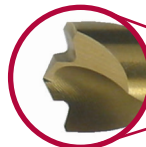
TYPE 187-B WITH FLAT

Part No.	Diameter MM	Approx Spotweld Size, Inches	OAL Inches	Flat Length Inches	Qty. per/pack
85920	6.7	17/64"	1-3/4"	.750	1
85880	8.0	5/16	1-3/4"	.750	1

Type 187-DN

**Titanium Nitride Weldout™ Spot weld Drills
Cobalt HSS - Heavy-Duty Spur Point**

- Titanium nitride coated M42 cobalt steel spot weld drills are designed for use in high strength high alloy steel commonly used in the automobile industry.
- Titanium nitride coating doubles the tool life, gives additional lubricity and protects the cutting edges of the drill in tough removal applications.
- Titanium nitride drills require a slower speed (490 RPM) when drilling difficult materials.



Heavy-Duty Spur Point



Designed for use in high strength high alloy steel commonly used in the automobile industry.

Part No.	Diameter MM	Approx Spotweld Size, Inches	AOL Inches	Flat Length Inches	Qty. per/pack
73450	8.0	5/16"	2.25	none	1
73460	10.00	3/8"	2.25	none	1
73470	8.0 TE*	5/16"	3.62	none	1
73480	10 TE	3/8"	3.62	none	1