CTD CONSOLIDATED Toledo Drill

America's Finest High-Speed Steel Cutting Tools™



Super Premium MAGNUM

- HSS Twist Drills
- HSS Spiral Point Taps
- HSS Straight Flute Hand Taps
- Taper Pipe Taps
- High Performance Taps
- Car Reamers
- Hex Shank Erector Reamers
- Bridge Reamers
- Countersinks & Deburring Tools
- Ultra-Bit ™ Step Drills

www.ctddrill.com

Proudly Manufactured in the U.S.A.

WHY CHOOSE MAGNUM ?

✓ SUBSTANTIALLY LONGER CUTTING LIFE
The nitro-carburized flute has an increased Rockwell hardness.

✓ CUTS HARDER MATERIALS
The flatter point takes a smaller chip. More torque is directed to a smaller area. This allows drilling into materials with hardness of over 30 on the Rockwell "C" scale.

✓ STOPS DRILL WALKING
The split point design gives accurate starting without the use of a center punch.

✓ HOLDS TIGHTER HOLE SIZE
The split point design is self centering. This limits the normal oversize drilling characteristics.

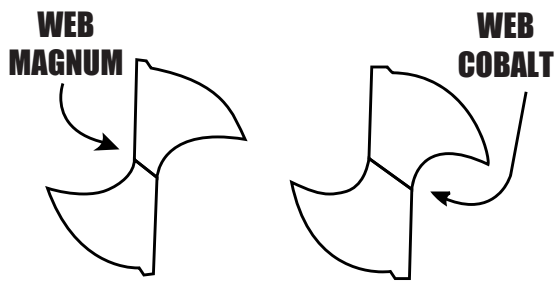
✓ OUTSTANDING QUALITY APPEARANCE
The rich amber gold color sets it apart from commodity cutting tools.

✓ RUNS COOLER, USES LESS TORQUE
135° point takes a smaller chip resulting in less heat. Friction is reduced by the amber gold surface treatment.

✓ STOPS CHUCK SLIPPAGE
Flats on drill shanks allow easy positive chuck grip.

MAGNUM VS. COBALT

A Magnum drill with its thin web will penetrate the work hardening stainless fast enough to continually cut beneath the chip which is hardening from deformation. This means the drill is cutting softer steel. The cobalt drill, with its thick web, cannot be fed at a fast enough rate to cut beneath the area which is hardening. As a result the cobalt drill is continually drilling into hardened steel.



MAGNUM PERFORMANCE

Magnum drills will substantially outperform cobalt drills in work hardening stainless steel applications. This performance advantage is the result of construction differences between the two types of drills. Cobalt drills, manufactured to Type J NAS 907 specs, have a very thick web. This web is necessary to limit breakage of the brittle cobalt steel.

Magnum drills are made of special hi-moly tool steel, which is much tougher than cobalt steel. The web on a Magnum drill can be thinned considerably due to the toughness of the steel. A Magnum drill with its thin web will penetrate the work hardening stainless fast enough to continually cut beneath the chip which is hardening from deformation.

This means the drill is cutting softer steel. The cobalt drill, with its thick web, cannot be fed at a fast enough rate to cut beneath the area which is hardening. As a result the cobalt drill is continually drilling into hardened steel.

STAINLESS STEEL - WORK HARDENING VS. FREE MACHINING

Work hardening grades of stainless steel are the 300 series (with the exception of 303), which is free machining. Free machining grades include the 400 series in addition to type 303.

A quick way to identify work hardening vs free machining stainless steel is to observe the chip formation. Work hardening chips break up during the drilling process, while free machining chips are long and stringy.

COBALT APPLICATIONS

Cobalt drills are recommended for free machining stainless (400 series & 303), titanium alloys and other high tensile strength materials.

These applications require the high red hot hardness of cobalt steel to counter the substantial heat generated in the drilling process.

JOBBER LENGTH DRILLS

Type 190-AG NAS 907B



135° Split Point

Special Hi-Molybdenum tool steel. 135° split point for fast penetration and accurate starting without a center punch. Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance. Body and clearance are gold surface treated for maximum lubricity.

Drills are heat treated at 2185°F and then nitro-carburize finished at 950°F to be measurably harder than high-speed steel. Space age nitro-carburized steel withstands substantially higher drilling temperatures while maintaining sharpness. **Recommended** for use in work hardening grades of stainless steel and other hard metal drilling applications. Sizes smaller than #52 have non-split points.

FRACTIONAL

Part#	Diameter Inches
05580	1/16
05590	5/64
05600	3/32
05610	7/64
05620	1/8
05630	9/64
05640	5/32
05650	11/64
05660	3/16
05670	13/64
05680	7/32
05690	15/64
05700	1/4
05710	17/64
05720	9/32
05730	19/64
05740	5/16
05750	21/64
05760	11/32
05770	23/64
05780	3/8
05790	25/64
05800	13/32
05810	27/64
05820	7/16
05830	29/64
05840	15/32
05850	31/64
05860	1/2
22210	33/64
22220	17/32
22230	35/64
22240	9/16
22250	37/64
22260	19/32
22270	39/64
22280	5/8
22290	41/64
22300	21/32
22310	43/64
22320	11/16
22330	45/64
22340	23/32
22350	47/64
22360	3/4

WIRE

Part#	Wire Size
38940	1
38950	2
38960	3
38970	4
38980	5
38990	6
39000	7
39010	8
39020	9
39030	10
39040	11
39050	12
39060	13
39070	14
39080	15
39090	16
39100	17
39110	18
39120	19
39130	20
39140	21
39150	22
39160	23
39170	24
39180	25
39190	26
39200	27
39210	28
39220	29
39230	30
92310	31
92300	32
92290	33
92280	34
92270	35
92260	36
92250	37
92240	38
92230	39
92220	40
88420	41
88410	42
88400	43
88390	44
88380	45
88370	46
88360	47
88350	48
88340	49
88330	50
88320	51
88310	52
88300	53
88290	54
88280	55
88270	56
88260	57
88250	58
88240	59
88230	60

LETTER

Part#	Letter Size
39460	A
39470	B
39480	C
39490	D
39500	E
39510	F
39520	G
39530	H
39540	I
39550	J
39560	K
39570	L
39580	M
39590	N
39600	O
39610	P
39620	Q
39630	R
39640	S
39650	T
39660	U
39670	V
39680	W
39690	X
39700	Y
39710	Z

SETS TYPE 190-AG

Part#	Description of Sizes
SP-13	13pc. Set
44110	1/16-1/4" by 64ths
SP-15	15pc. Set
44120	1/16-1/2" by 32nds
SP-21	21pc. Set
44130	1/16-3/8" by 64ths
SP-26	26pc. Set
88660	A - Z
SP-29	29pc. Set
44150	1/16-1/2" by 64ths
SP-60	60pc. Set
88640	#1-60
SP-115	115pc. Set
93840	1/16-1/2" by 64ths + A-Z & #1-60



SETS ULTRA-DEX

Part#	Description of Sizes
SP-29P	Ultra Dex - Black
44170	1/16" thru 1/2" by 64ths
SP-29PON	Ultra Dex - Blaze Orange
44190	1/16" thru 1/2" by 64ths

METRIC DRILLS

Type 170-AG NAS 907B



Jobber Length - 135° Split Point

Special Hi-Molybdenum tool steel with 135° split points for fast penetration and accurate starting without a center punch. Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance. Body and clearance are gold surface treated for maximum lubricity. **Recommended** for use in work hardening grades of stainless steel and other hard metal drilling applications.

METRIC TYPE 170-AG

Part#	Diameter MM	Part#	Diameter MM	Part#	Diameter MM	Part#	Diameter MM	Part#	Diameter MM
48760	0.70	48920	1.50	49140	2.70	49300	4.30	49460	5.90
48780	0.80	48930	1.55	49150	2.80	49310	4.40	49470	6.00
48790	0.85	48940	1.60	49160	2.90	49320	4.50	49480	6.10
48800	0.90	48950	1.65	49170	3.00	49330	4.60	49490	6.20
49990	0.95	48960	1.70	49180	3.10	49340	4.70	49500	6.30
48690	0.98	48970	1.75	49190	3.20	49350	4.80	49510	6.40
48820	1.00	48980	1.80	49200	3.30	49360	4.90	49520	6.50
48750	1.05	49000	1.90	49210	3.40	49370	5.00	49530	6.60
48840	1.10	49010	1.95	49220	3.50	49380	5.10	49540	6.70
48850	1.15	49020	2.00	49230	3.60	49390	5.20	49550	6.80
23270	1.18	49030	2.05	49240	3.70	49400	5.30	49560	6.90
48860	1.20	49040	2.10	49250	3.80	49410	5.40	49570	7.00
48870	1.25	49060	2.20	49260	3.90	49420	5.50	49580	7.10
48880	1.30	49080	2.30	49270	4.00	49430	5.60		
48890	1.35	49100	2.40	49280	4.10	49440	5.70		
48900	1.40	49120	2.50	49290	4.20	49450	5.80		
48910	1.45	49130	2.60						

Continued Page 3

METRIC DRILLS

Type 170-AG NAS 907B

Jobber Length - 135° Split Point

METRIC TYPE 170-AG					
Part #	Diameter MM	Part #	Diameter MM	Part #	Diameter MM
49590	7.20	49790	9.20	49920	11.20
49600	7.30	49800	9.30	12490	11.40
49610	7.40	49810	9.40	49930	11.50
49620	7.50	49820	9.50	12500	11.60
49630	7.60	49830	9.60	50250	11.70
49640	7.70	49840	9.70	49940	11.80
49650	7.80	49850	9.80	12520	11.90
49660	7.90	49860	9.90	49950	12.00
49670	8.00	49870	10.00	12530	12.10
49680	8.10	12450	10.10	49960	12.20
49690	8.20	49880	10.20	50260	12.30
49700	8.30	12510	10.30	12540	12.40
49710	8.40	50220	10.40	49970	12.50
49720	8.50	49890	10.50	12550	12.60
49730	8.60	12460	10.60	12570	12.70
49740	8.70	50230	10.70	50270	12.80
49750	8.80	49900	10.80	12560	12.90
49760	8.90	12470	10.90	49980	13.00
49770	9.00	49910	11.00		
49780	9.10	12480	11.10		

SETS 170-AG METRIC	
Part#	Description of Sizes
SP-11M	**11pc. Set**
58650	1.0mm-6.0mm x .5mm
SP-13M	**13pc. Set**
49042	1.0mm-7.0mm x .5mm
SP-19M	**19pc. Set**
58920	1.0mm-10.0mm x .5mm
SP-25M	**25pc. Set**
58660	1.0mm-13.0mm x .5mm
SP-41M	**41pc. Set**
49043	6.0mm-10.0mm x .1mm
SP-118M	**118pc. Set**
60090	1-2.45mm by 0.05mm, 2-10mm by 0.1mm & 10.2, 10.5, 10.8, 11, 11.2, 11.5, 11.8, 12, 12.2, 12.5, 12.8, 13.0

Type 128-AG

3/8" Reduced Shank



Type 190-AG with a 3/8" reduced shank

- 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.
- Body and clearance are gold surface treated for maximum lubricity.
- Heat treated at 2185°F and then nitro-carburize finished at 950°F to be measurably harder than high-speed steel.
- Space age nitro-carburized steel withstands substantially higher drilling temperatures while maintaining sharpness.
- **Recommended** for use in work hardening grades of stainless steel and other hard metal drilling applications.

3/8" REDUCED SHANK	
Part#	Diameter Inches
59200	25/64"
59210	13/32"
59220	27/64"
59230	7/16"
59240	29/64"
59250	15/32"
59260	31/64"
59270	1/2"
59280	17/32"
59290	9/16"
59300	19/32"
59310	5/8"

SETS TYPE 128-AG	
Part#	Description of Sizes
SP-21R	**21pc. Set**
92170	1/16 - 1/4" by 64ths, 9/32 - 1/2" by 32nds
RSP-15	**15pc. Set**
92110	1/16 - 1/2" by 32nds
RSP-29	**29pc. Set**
92100	1/16 - 1/2" by 64ths
RSP-29P - Ultra Dex	**29pc. Set**
92150	1/16 thru 1/2" by 64ths
RSP-29PO - Ultra Dex	**29pc. Set**
92152	1/16 thru 1/2" by 64ths

Type 190-SS NEW

High Helix Flutes 135° Split Point



- High Helix Flutes design allows for increased feed rates.
- 135° Split point provides fast penetration and accurate starting without a center punch.
- Recommended for stainless steel, aluminum, brass and all other non-ferrous metals.

FRACTIONAL TYPE 190-SS			
Part#	Diameter Sizes	Part#	Diameter Sizes
41301	1/16"	41451	19/64"
41311	5/64"	41461	5/16"
41321	3/32"	41471	21/64"
41331	7/64"	41481	11/32"
41341	1/8"	41491	23/64"
41351	9/64"	41501	3/8"
41361	5/32"	41511	25/64"
41371	11/64"	41521	13/32"
41381	3/16"	41531	27/64"
41391	13/64"	41541	7/16"
41401	7/32"	41551	29/64"
41411	15/64"	41561	15/32"
41421	1/4"	41571	31/64"
41431	17/64"	41581	1/2"
41441	9/32"		

SETS TYPE 190-SS	
Part#	Description of Sizes
SS-13	**13pc. Set**
41591	1/16" - 1/4" by 64ths
SS-15	**15pc. Set**
41601	1/16" - 1/2" by 32nds
SS-29	**29pc. Set**
41611	1/16 - 1/2" by 64ths
SS-29P - Ultra Dex	**29pc. Set**
41621	1/16 thru 1/2" by 64ths

MECHANIC LENGTH DRILLS

Type 175-AG

3-Flats on Shank - 135° Split Point



- Special Hi-Molybdenum tool steel.
- 135°split point for fast penetration and accurate starting without center punch.
- Specially designed for hand held drills.
- Flats on shank give positive chuck-grip (3/16" and larger).
- **Recommended** for use in work hardening grades of stainless steel and other hard metal drilling applications.

3-FLATS ON SHANK

Part #	Diameter Inches	Part #	Diameter Inches
22860	1/16"	87070	19/64"
22870	5/64"	87080	5/16"
22880	3/32"	87090	21/64"
86950	7/64"	87100	11/32"
86960	1/8"	87110	23/64"
86970	9/64"	87120	3/8"
86980	5/32"	87130	25/64"
86990	11/64"	87140	13/32"
87000	3/16"	87150	27/64"
87010	13/64"	87160	7/16"
87020	7/32"	87170	29/64"
87030	15/64"	87180	15/32"
87040	1/4"	87190	31/64"
87050	17/64"	87200	1/2"
87060	9/32"		

SETS TYPE 175-AG

Part#	Description of Sizes
SPM-13	13pc. Set
66460	1/16 - 1/4" by 64ths
SPM-15	15pc. Set
66470	1/16 - 1/2" by 32nds
SPM-21	21pc. Set
57810	1/16 - 3/8" by 64ths
SPM-29	29pc. Set
66480	1/16 - 1/2" by 64ths
SPM-29P Black Ultra Dex	
66820	29pc. Set 1/16 - 1/2" by 64ths
SPM-29PO Blaze Orange Ultra Dex	
67650	29pc. Set 1/16 - 1/2" by 64ths

Type 178-AG

3/8" Reduced Shank
3-Flats on Shank - 135° Split Point



3/8" REDUCED SHANK

Part #	Diameter Inches
81560	13/32"
81570	27/64"
81580	7/16"
81590	29/64"
81600	15/32"
81610	31/64"
81620	1/2"

SETS 3/8" SHANK

Part No.	Description of Sizes
SPM-21R	
92340	1/16-1/4" by 64ths + 9/32-1/2" by 32nds
RSPM-15	
57910	1/16 - 1/2" by 32nds
RSPM-29	
57920	1/16 - 1/2" by 64ths
RSPM-29P	Black - Ultra Dex
57950	1/16 - 1/2" by 64ths
RSPM-29PO	Blaze Orange - Ultra Dex
58150	1/16 - 1/2" by 64ths

MECHANIC LENGTH HEX SHANK QUICK RELEASE

Type QR-AG 1/4" Hex Shank

135°Split Point Magnum Super Premium



- Special Hi-Molybdenum tool steel.
- Body and clearance are treated for maximum lubricity.
- Especially designed for hand held drills and impacters.
- 135°split point for fast penetration and accurate starting without center punch.
- **Recommended** use in work hardening grades of stainless steel and other hard metal drilling applications.

QR-AG 1/4" HEX SHANK

Part#	CARDED Part#	Diameter Inches	Overall Length Inches	Flute Length Inches
34501	34507	1/16"	2-5/8"	7/8"
34521	34527	3/32"	3-1/4"	1 - 1/4"
34541	34547	1/8"	3-1/2"	1 - 7/16"
34561	34567	5/32"	3-1/2"	1 - 11/16"
34581	34587	3/16"	3-3/4"	1 - 7/8"
34611	34617	7/32"	4"	2"
34631	34637	1/4"	4-1/4"	2"
34651	34657	9/32"	3-13/16"	2 - 1/4"
34671	34677	5/16"	4"	2 - 1/2"
34691	34697	11/32"	4-7/32"	2 - 5/8"
34711	34717	3/8"	4-1/4"	2 - 11/16"
34731	34737	13/32"	4-1/2"	2 - 13/16"
34751	34757	7/16"	4-1/2"	2 - 15/16"
34771	34777	15/32"	4-7/8"	3 - 1/8"
34791	34797	1/2"	5"	3 - 3/8"



Quick Release Adaptor

#34801

#34807 CARDED

SET QR-12 HARD CASE - INDEX

Part#	Description of Sizes	Qty of each
34811	1/16", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", 1/2" & Quick Release Adaptor	1

SET QR -7A & QR-7B SOFT POUCH - INDEX

Part#	Description of Sizes	Qty of each
34803	1/16", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4"	1
	Sets QR-7A and QR-7B do not include Quick Release Adaptors.	
34804	1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2"	1

SET QR-16 SOFT POUCH - INDEX

Part#	Description of Sizes	Qty of each
34812	1/16", 3/32", 1/8", 5/32",3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8" 13/32", 7/16", 15/32", 1/2" & Quick Release Adaptor	1

Type QR-AG Extensions NEW

- 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.
- **Made in the USA** • **NOT Intended for Impact Tools**



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



SCREW MACHINE LENGTH DRILLS

Type 135-AG NAS 907C 135° Split Point



Special Hi-Moybdenum tool steel. Gold surface treated body and clearance for maximum lubricity. Heavy-duty construction, 135° split point, no center punch needed - will not walk. **Recommended** for work hardening grades of stainless steel and other hard metal drilling applications.

FRACTIONAL

Part #	Dia. Inches	Part #	Dia. Inches
87710	1/16	87930	13/32
87720	5/64	87940	27/64
87730	3/32	87950	7/16
87740	7/64	87960	29/64
87750	1/8	87970	15/32
87760	9/64	87980	31/64
87770	5/32	87990	1/2
87780	11/64	88000	33/64
87790	3/16	88010	17/32
87800	13/64	88020	35/64
87810	7/32	88030	9/16
87820	15/64	88040	37/64
87830	1/4	88050	19/32
87840	17/64	88060	39/64
87850	9/32	88070	5/8
87860	19/64	88080	41/64
87870	5/16	88090	21/32
87880	21/64	89210	43/64
87890	11/32	89220	11/16
87900	23/64	89230	45/64
87910	3/8	89240	23/32
87920	25/64	89250	47/64
		89260	3/4

WIRE

Part #	Wire Size	Part #	Wire Size	Part #	Wire Size
87600	1	87390	22	23380	43
87590	2	87380	23	23390	44
87580	3	87370	24	23400	45
87570	4	87360	25	23410	46
87560	5	87350	26	23420	47
87550	6	87340	27	23430	48
87540	7	87330	28	23440	49
87530	8	87320	29	23450	50
87520	9	87310	30	23460	51
87510	10	87300	31	23470	52
87500	11	87290	32	23480	53
87490	12	87280	33	23490	54
87480	13	87270	34	23500	55
87470	14	87260	35	23510	56
87460	15	87250	36	23520	57
87450	16	87240	37	23530	58
87440	17	87230	38	23540	59
87430	18	87220	39	23550	60
87420	19	87210	40		
87410	20	23360	41		
87400	21	23370	42		

LETTER

Part#	Letter Size	Part#	Letter Size
23601	A	23731	N
23611	B	23741	O
23621	C	23751	P
23631	D	23761	Q
23641	E	23771	R
23651	F	23781	S
23661	G	23791	T
23671	H	23801	U
23681	I	23811	V
23691	J	23821	W
23701	K	23831	X
23711	L	23841	Y
23721	M	23851	Z

SETS TYPE 135-AG

Part No.	Desciption of Sizes
SPT-26	**26pc. Set**
66850	A - Z
SPT-29	**29pc. Set**
66490	1/16-1/2" by 64ths
SPT-60	**60pc. Set**
23560	#1 - 60



EXTRA LENGTH DRILLS

Type XGT-AG 6"-9"-12"

Special Hi-Molybdenum tool steel. Gold surface treated for maximum lubricity. Heavy-duty construction, 135° split point, no center punch needed - will not walk. Gyroidal Torsion flute and land construction yields exceptional performance in deep hole drilling applications.

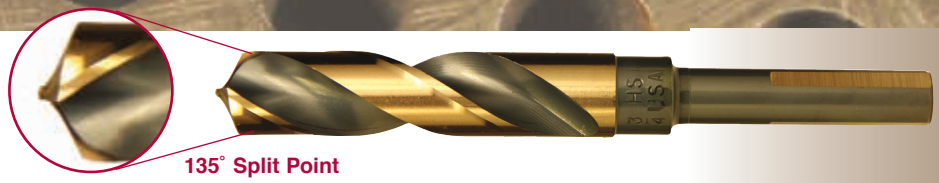
Recommended for work hardening grades of stainless steel and other hard metal drilling applications. These drills will drill 12 or more diameters deep without drill removal to clear chips. Feed rates twice that of standard drills.

FRACTIONAL - TYPE XGT-AG

Part#	Size x Length	Part #	Size x Length	Part #	Size x Length
39240	1/8 x 6	40780	1/8 x 9	43050	1/8 x 12
39250	#29 x 6	40890	9/64 x 9	53130	9/64 x 12
39260	9/64 x 6	40790	5/32 x 9	43060	5/32 x 12
39270	5/32 x 6	53140	11/64 x 9	53150	11/64 x 12
39280	11/64 x 6	40800	3/16 x 9	43070	3/16 x 12
39300	3/16 x 6	53160	13/64 x 9	53170	13/64x12
39310	#10 x 6	40810	7/32 x 9	43080	7/32 x 12
39320	13/64 x 6	53180	15/64 x 9	53190	15/64 x 12
39330	7/32 x 6	40820	1/4 x 9	43090	1/4 x 12
39340	#1 x 6	40830	9/32 x 9	43100	9/32 x 12
39350	15/64 x 6	40840	5/16 x 9	43110	5/16 x 12
39360	1/4 x 6	40850	11/32 x 9	43120	11/32 x 12
39370	"F" x 6	40860	3/8 x 9	43130	3/8 x 12
39380	9/32 x 6	40870	7/16 x 9	43140	7/16 x 12
39390	5/16 x 6	40880	1/2 x 9	43150	1/2 x 12
39400	11/32 x 6				
39410	3/8 x 6				
39420	13/32 x 6				
39430	7/16 x 6				
39440	1/2 x 6				

REDUCED SHANK DRILLS

Type 130-AG
Type 130-AGM - METRIC



1/2" Shank Silver & Deming 135° Split Point, 3-Flats on Shank, Heavy-Duty

- Special Hi-Molybdenum tool steel.
- 135° split point for fast penetration and accurate starting without a center punch.
- Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance.
- Body and clearance are gold surface treated for maximum lubricity.
- Space age nitro-carburized steel withstands higher drilling temperatures while maintaining sharpness.
- **Recommended** for use in work hardening grades of stainless steel and other hard metal drilling applications.
- 6" Overall Length

SETS	TYPE 130-AG 1/2" SHANK
Part#	**Description of Sizes**
S&D-4SP	**4pc. Set**
12250	9/16", 5/8", 3/4" & 1"
S&D-8SP	**8pc. Set**
92400	9/16-1" by 16ths
S&D-33SP	**33pc. Set**
92401	1/2-1" by 64ths

METRIC	TYPE 130-AGM
Part#	**Diameter Inches**
25500	14.0
25502	15.0
25504	16.0
25510	17.0
25512	18.0
25514	19.0
25520	20.0
25522	21.0
25524	22.0
25530	23.0
25532	24.0
25534	25.0

FRACTIONAL - TYPE 130-AG

Part#	Dia. Inches	Part#	Dia. Inches
29550	33/64	29770	55/64
29560	17/32	29780	7/8"
29570	35/64	29790	57/64
29580	9/16	29800	29/32
29590	37/64	29810	59/64
29600	19/32	29820	15/16
29610	39/64	29830	61/64
29620	5/8	29840	31/32
29630	41/64	29850	63/64
29640	21/32	29860	1"
29650	43/64	29870	1-1/32
29660	11/16	29880	1-1/16
29670	45/64	29890	1-3/32
29680	23/32	29900	1-1/8
29690	47/64	29910	1-5/32
29700	3/4	29920	1-3/16
29710	49/64	29930	1-7/32
29720	25/32	29940	1-1/4
29730	51/64	29950	1-5/16
29740	13/16	29960	1-3/8
29750	53/64	29970	1-7/16
29760	27/32	29980	1-1/2"

Type 130-AGX

1/2" Shank Silver & Deming 3-Flats on Shank 118° Split Point

- M-2 High Speed Steel
- Precision ground point, flutes, body and clearance.
- Standard 118° split point for general purpose drilling in metal, wood and plastic.



FRACTIONAL - TYPE 130-AGX

Part#	Dia. Inches	Part#	Dia. Inches	Part#	Dia. Inches
74001	33/64"	74141	47/64"	74261	59/64"
74011	17/32"	74151	3/4"	74271	15/16"
74021	35/64"	74161	49/64"	74281	61/64"
74031	9/16"	74171	25/32"	74291	31/32"
74041	37/64"	74181	51/64"	74301	63/64"
74051	19/32"	74191	13/16"	74311	1"
74061	39/64"	74201	53/64"	74321	1 - 1/16"
74071	5/8"	74211	27/32"	74331	1 - 1/8"
74081	41/64"	74221	55/64"	74341	1 - 5/32"
74091	21/32"	74231	7/8"	74351	1 - 3/16"
74101	43/64"	74241	57/64"	74361	1 - 1/4"
74111	11/16"	74251	29/32"		
74121	45/64"				
74131	23/32"				

SETS	TYPE 130-AGX
Part No.	**Description of Sizes**
S&D-4AGX	**4pc. Set**
74771	9/16", 5/8", 3/4", 1"
S&D-8AGX	**8pc. Set**
74781	9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1"

Type 131-AG

3/4" Shank, Silver & Deming 135° Split Point



These are high performance, close tolerance, tight runout spec tools designed for drilling with Bridgeport style or other production machines with 3/4" chucks.

FRACTIONAL - TYPE 131-AG

Part#	Diameter Inches
29741	13/16"
29781	7/8"
29821	15/16"
29861	1"
29901	1 - 1/8"
29941	1 - 1/4"
29961	1 - 3/8"
29981	1 - 1/2"



LEFT-HAND SPIRAL DRILLS
Type 190-AL



- Special Hi-Molybdenum tool steel.
- 135° split point for fast penetration and accurate starting without center punch.
- Body and clearance are gold surface treated for maximum lubricity.
- Ideal for drilling broken studs.
- Need for screw or bolt extractor may be eliminated.
- Left hand spiral drill may loosen the bolt stud while drilling a hole for use of the screw or bolt extractor.

LEFT-HAND SPIRAL - TYPE 190-AL

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



SETS TYPE 190-AL LEFT-HAND SPIRAL

Part No.		Description of Sizes
LF-8		**8pc. Set**
87650		1/16 - 1/2" by 16ths
LF-12		**12pc. Set**
87651		1/16 - 5/16 by 32nds, 3/8, 7/16 & 1/2"
LF-13		**13pc. Set**
87652		1/16 - 1/4" by 64ths
LF-15		**15pc. Set**
87654		1/16 - 1/2" by 32nds
LF-17		**17pc. Set**
87853		1/16-1/4" by 64ths, 5/16-1/2" by 16ths
LF-29		**29pc. Set**
87854		1/16 thru 1/2" by 64ths
LF-29P	Ultra Dex	**29pc. Set**
87859		1/16 thru 1/2" by 64ths

EXTRACTORS & SETS

Type 421-AG - Square Style



Forged Hi-Carbon Steel Studout™ Screw, Stud & Pipe Extractors

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 and turn counterclockwise using a wrench on the exposed end of the extractor. The broken part should unscrew without damage to the threads. These extractors will not chew up or expand the object being removed.

STUDOUT™ SQUARE STYLE

Part#	Screw Extractor Number	To remove Diameter of Screw	Diameter. of Screw Extractor Shank	Point	Drill Size
70760	E-1	3/16 - 9/32	3/16	1/8	1/8"
70770	E-2	9/32 - 11/32	1/4	11/64	3/16"
70780	E-3	11/32 - 1/2	5/16	7/32	1/4"
70800	E-4	1/2 - 3/4	3/8	9/32	5/16"
70810	E-5	5/8 - 7/8	7/16	21/64	3/8"
70820	E-6	7/8 - 1"	1/2	7/16	1/2"
70830	E-7	1"- 1- 1/4	5/8	1/2	9/16"
70860	E-8	1-1/8 - 1-1/2	3/4	9/16	5/8"
70870	E-9	1-1/4 - 1-3/4	7/8	5/8	11/16"

SETS TYPE 421-AG - BOLT EXTRACTOR

Part#	Description of Sizes
SQE-4 - Type 421-AG 70840	**4pc. Set** EX 2, 3, 4 & 5
BR-8SQ - Type 421-AG & 190-AL 70850	**8pc. Set with Drills** EX 1, 2, 3 & 4 + 1/8", 3/16", 1/4" & 5/16"

Type 420 - Spiral Style



Screw & Pipe Extractors - Hi-Carbon Steel

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
57100	EX-1	3/32" to 5/32"	1/8	.060	5/64"
57110	EX-2	5/32" to 7/32"	3/16	.080	7/64"
57120	EX-3	7/32" to 9/32"	1/4	1/8	5/32"
57130	EX-4	9/32 to 3/8" and 1/8" Pipe	5/16	3/16	1/4"
57140	EX-5	3/8 to 5/8" and 1/4" Pipe	7/16	1/4	17/64"
57150	EX-6	5/8 to 7/8" and 3/8" Pipe	5/8	3/8	13/32"
57160	EX-7	7/8 to 1-1/8" and 1/2" Pipe	7/8	15/32	17/32"
57170	EX-8	1-1/8 to 1-3/8" and 3/4" Pipe	11/32	3/4	13/16"
57180	EX-9	1-3/8" Up and 1" Pipe	1-9/32	1	1-1/8"
CARDED		**TYPE 420**			
57107	EX-1	3/32" to 5/32"	1/8	.060	5/64"
57117	EX-2	5/32" to 7/32"	3/16	.080	7/64"
57127	EX-3	7/32" to 9/32"	1/4	1/8	5/32"
57137	EX-4	9/32" to 3/8" and 1/8" Pipe	5/16	3/16	1/4"
57147	EX-5	3/8" to 5/8" and 1/4" Pipe	7/16	1/4	17/64"



BR-10

SETS TYPE 420 SCREW & PIPE EXTRACTORS

Part#	Description of Sizes
BR-10 - Type 420 & 190-AL 58510	**10pc. Set with Drills** EX 1, 2, 3, 4 & 5 + 3/32", 1/8", 3/16", 1/4" & 5/16"
SE-4N - Type 420 47170	**4pc. Set** EX 2, 3, 4 & 5
SE-5N - Type 420 47180	**5pc. Set** EX 1, 2, 3, 4 & 5
BR-8 - Type 420 & 190-AL 88550	**8pc. Set with Drills** EX 1, 2, 3 & 4 + 3/32", 1/8", 3/16" & 1/4"

CARDED - BROKEN BOLT REMOVER COMBO

Type 420-AL

Left hand drill combined with spiral style screw extractor is ideal for removing broken studs.

CARDED TYPE 420-AL

Part#	Extractor Sizes	Drill Size
30137	EX-1	3/32" LH drill
30147	EX-2	1/8" LH drill
30157	EX-3	3/16" LH drill
30167	EX-4	1/4" LH drill
30177	EX-5	5/16" LH drill

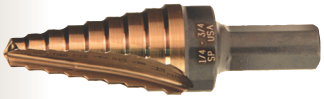


STEP DRILLS

Type B78-AG 3-Flatted Shank (Blister Pak) Type 78-QR Quick Release

Ultra Bit™ Multi-Diameter

Special axial and radial flute design speed work piece penetration. Split point self centers and easily starts with no pilot hole required. Dual flute construction drills clean accurate holes in thin materials, quickly and easily. Use for all thin metals, rigid plastics, wood or composite materials with a thickness equal to or less than the step thickness. When drilling steel with 1/8" or greater thickness, a starter hole of the smallest step diameter will speed the drilling process.





TYPE B78-AG STEP DRILLS - BLISTER PAK

Part#	Size	Hole Sizes	No. Range	Shank Size	Step Increments	Step Thickness
45401	1	13	1/8 - 1/2"	1/4"	1/32"	1/8"
45441	2	8	1/4 - 1"	3/8"	1/16"	5/32"
45431	3	9	1/4 - 3/4"	3/8"	1/16"	5/32"
45411	4	6	3/16 - 1/2"	1/4"	1/16"	3/8"
45481	7	11	1/4 -7/8"	3/8"	1/16"	1/16"
45421	8	12	3/16 - 7/8"	3/8"	1/16"	1/8"
45501	9	3	7/8 - 1-7/32"	3/8"	7/8"	—
45471	11	2	7/8 - 1-1/8"	3/8"	27/64"	9/64"
45461	12	10	1/4 - 1-3/8"	3/8"	1/8"	*SEE NOTE
45491	1/4A	16	1/4 - 1-1/8"	3/8"	1/16"	1/16"
45451	13/16	10	13/16 - 1-3/8"	1/2"	1/32"	5/32"

NOTE: Part No. 45461---- 7/8", 1-1/8", 1-7/32", 1-1/4",1-3/8" (1/2 and 3/4"conduit)

HANGING TUBES STEP DRILLS

00693	1/2" - Single Hole
00694	3/8" - Single Hole
00750	1-1/8" - Single Hole



SETS	SIZES
01911	1/8 - 1/2", 3/16 - 1/2", & 1/4 - 3/4" (#1, #4, #3)
01921	1/8 - 1/2", 3/16 - 1/2", & 3/16 - 7/8" (#1, #4, #8)
01931	1/8 - 1/2", 3/16 - 7/8", & 7/8 - 1-1/8" (#1, #4, #11)
01941	1/8 - 1/2", 3/16 - 1/2", & 9/16 - 1" (#1, #4, #2)
01981	4pc. 1/8 - 1/2", 1/4 - 3/4", 1/4 - 7/8", 7/8 - 1-1/8" (#1,#3,#7,#11)

TYPE 78-QR QUICK RELEASE - HEX SHANK STEP DRILLS

Part#	Size	Hole Sizes	No. Range	Shank Size	Step Increments	Step Thickness
01401	1	13	1/8 - 1/2	1/4"	1/32"	1/8"
01411	2	8	1/4" - 1"	1/4"	1/16"	5/32"
01404	3	9	1/4-3/4	1/4"	1/16"	5/32"
01402	4	6	3/16 - 1/2	1/4"	1/16"	3/8"
01412	7	11	1/4 - 7/8"	1/4"	1/16"	1/16"
01403	8	12	3/16 - 7/8	1/4"	1/16"	1/8"
01419	9	3	7/8 - 1-7/32"	1/4"	7/8"	—
01409	11	2	7/8 - 1-1/8	1/4"	27/64"	9/64"
01414	12	5	7/8 - 1-3/8"	1/4"	1/8"	SEE NOTE
01413	1/4A	16	1/4 - 1-1/8"	1/4"	1/16"	1/16"

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

SETS	SIZES
20751	1/8 - 1/2", 3/16 - 1/2" & 1/4 - 3/4" (#1,#4,#3)
20761	1/8 - 1/2", 3/16 - 1/2" & 3/16 - 7/8"(#1,#4,#8)
01461	ELECTRICIANS 1/8 - 1/2", 3/16 - 7/8" & 7/8 -1- 1/8"(#1,#4,#11)



TWIN END DRILLS

Type 140-G 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. Extra rugged uncleared construction gives superior performance and less breakage.

FRACTIONAL - TYPE 140-G

Part#	Diameter Inches	Overall Length Inches	Flute Length Inches
95090	3/32"	1-3/4"	9/16"
95080	7/64"	1-15/16"	5/8"
95980	1/8"	1-15/16"	5/8"
95070	9/64"	2"	5/8"
95060	5/32"	2-1/8"	5/8"
95050	3/16"	2-5/16"	5/8"
95040	7/32"	2-9/16"	3/4"
95030	1/4"	2-5/8"	13/16"

WIRE - TYPE 140-G

Part#	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

HOLE HOG™
Type 134-AG - 4-Flutes 3-Flats on Shank



Special Hi - Molybdenum tool steel, gold surface treated body and clearance for maximum lubricity. This tool is designed exclusively enlarging for existing holes. 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.

FRACTIONAL - TYPE 134-AG

Part#	Diameter Inches	Minimum Starting Hole Size
22030	3/8"	1/4"
22040	1/2"	5/16"
22060	9/16"	3/8"
22080	5/8"	25/64"
22100	11/16"	7/16"
22120	3/4"	15/32"



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

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

SETS — TYPE 134-AG HOLE HOG

SP-8HH
Set contains: 1 each:
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# 38880

SP-6HHS
Set contains: 1 each:
134-AG Core drill sizes: 3/8", 1/2" & 5/8"
175-AG Drill sizes 1/4", 5/16" & 25/64"
Part# 38860

SP-6HHL
Set contains: 1 each:
134-AG Core drill sizes 1/2", 5/8" & 3/4"
175-AG Drill sizes 5/16", 25/64" & 15/32"
Part# 38870



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

ULTRA S/P™ TYPE 11-AG

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



CAR REAMERS - STANDARD FLUTE
Type 50-AG



Standard Flute, 3-Flats on Shank

Used in steel erection, automotive, truck & trailer manufacturing and repair. These reamers are especially designed for the reaming of structural steel plate commonly found in truck frames, rail cars, bridges and pressure vessels. For use only to enlarge previously formed or drilled holes. All tools are constructed with left-hand spiral and right-hand cut. The left-hand spiral eliminates the tendency of the reamer to pull itself into holes.

Part#	Shank Diameter	Diameter Inches	Point Diameter	Min. Starting Hole Size
06390	3/8"	3/8"	0.250	5/16"
06400	1/2"	1/2"	0.281	3/8"
06410	1/2"	9/16"	0.343	7/16"
06420	1/2"	5/8"	0.343	7/16"
06430	1/2"	1-1/16"	0.375	15/32"
06440	1/2"	3/4"	0.406	1/2"
06450	1/2"	1-3/16"	0.468	35/64"
06460	1/2"	7/8"	0.500	19/32"
06470	1/2"	15/16"	0.585	5/8"
06480	1/2"	1"	0.594	7/8"
06504	1/2"	1-1/16"	0.635	29/32"
06514	1/2"	1-1/8"	0.670	61/64"
06524	1/2"	1-3/16"	0.710	1"
06484	1/2"	1-1/4"	0.719	1"
06534	3/4"	1-5/16"	0.785	1-3/32"
06544	3/4"	1-3/8"	0.820	1-7/64"
06554	3/4"	1-7/16"	0.860	1-9/64"
06564	3/4"	1-1/2"	0.900	1-3/16"

SET	CR-4SP
12270	3/8", 1/2", 5/8" & 3/4"

See page 22 for Reamer Stocked Counter Displays

CAR REAMERS - FAST SPIRAL
Type 51-AG



Fast Spiral, Hole Buster™ 3-Flats on Shank

Special Hi-Tungsten tool steel, gold surface treated body and clearance for maximum lubricity. For use only to enlarge previously formed or drilled holes. All tools are constructed with left-hand spiral and right-hand cut. The left-hand spiral eliminates the tendency of the reamer to pull itself into holes. 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 Diameter	Diameter Inches	Point Diameter	Min. Starting Hole Size
06381	5/16"	5/16"	0.215	17/64"
06391	3/8"	3/8"	0.250	5/16"
06501	7/16"	7/16"	0.250	3/8"
06401	1/2"	1/2"	0.281	3/8"
06411	1/2"	9/16"	0.343	7/16"
06421	1/2"	5/8"	0.343	7/16"
06432	1/2"	0.652	0.375	15/32"
06431	1/2"	11/16"	0.375	15/32"
06441	1/2"	3/4"	0.406	1/2"
06531	1/2"	0.776	0.406	1/2"
06451	1/2"	13/16"	0.468	35/64"
06461	1/2"	7/8"	0.500	19/32"
06471	1/2"	15/16"	0.585	5/8"
06481	1/2"	1"	0.594	7/8"
06491	1/2"	1-1/16"	0.635	29/32"
06541	1/2"	1-1/8"	0.670	61/64"
06551	1/2"	1-3/16"	0.710	1"
06482	1/2"	1-1/4"	0.719	1"
06561	3/4"	1-5/16"	0.785	1-3/32"
06571	3/4"	1-3/8"	0.820	1-7/64"
06581	3/4"	1-7/16"	0.860	1-9/64"
06591	3/4"	1-1/2"	0.900	1-3/16"

SET	CR-4FS
12271	3/8", 1/2", 5/8" & 3/4"

SET	SM-4FS
12281	5/16", 3/8", 7/16" & 1/2"

BRIDGE REAMERS - STRAIGHT FLUTE
Type 54-AG



BRIDGE REAMERS - SPIRAL FLUTE
Type 55-AG



Bridge Reamers - Taper Shank High-Speed Steel

These special Hi-Tungsten tool steel reamers with gold surface treated body and clearance are designed to be used with Morse 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. The tapered design permits the reamer to enter out-of-line holes often encountered in structural work.

TYPE 54-AG STRAIGHT FLUTE

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

TYPE 55-AG SPIRAL FLUTE

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

HEX DRIVE REAMERS

Type 52-AG & Type 53-AG - Spiral Flute



Hex Drive Reamers - Black & Gold Finish, High Speed Steel

Designed for aligning and enlarging holes in structural steel applications. For use in rotary impact sockets. Shank diameter matches socket size for bolt which will be driven through reamed hole. Gold treated for maximum lubricity.

TYPE 52-AG — BRIDGE LENGTH

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

TYPE 53-AG — CAR LENGTH

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

ACRYLIC DRILLS



Type 183-AG

Acrylic Drills with Chipfree™ Point

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 "break out" when drill breaks through plastic, acrylic or laminate surfaces.

All sizes over 1/4" have 1/4" shanks

FRACTIONAL - TYPE 183-AG

Part #	Diameter Inches	Overall Length Inches	Flute Length Inches
32260	3/32"	2-1/4"	1-1/4"
31500	1/8"	2-5/8"	1-5/8"
32200	9/64	2-7/8	1-3/4"
31510	5/32"	3"	2"
31520	3/16"	3-3/8"	2-5/16"
32210	13/64	3-21/32"	2-7/16"
32220	7/32"	3-13/16"	2-1/2"
31530	1/4"	3-15/16"	2-3/4"
32240	9/32"	3-9/16"	1-15/16"
32230	19/64	3-23/32"	2"
31540	5/16"	3-13/16"	2-1/8"
32290	11/32"	4-1/32"	2-11/32"
31550	3/8"	4-1/4"	2-5/16"
32250	25/64	4-11/32"	2-9/16"
32460	13/32"	4-15/32"	2-11/16"
31560	7/16"	4-11/16"	2-7/8"
32470	15/32"	4-7/8"	3-1/16"
31570	1/2"	5"	3-3/16"



SETS — TYPE 183-AG

Part No.	Description of Sizes
AD-7	7pc. Set
31580	1/8", 3/16",1/4", 5/16" 3/8", 7/16", 1/2"

CHATTERPROOF™ COUNTERSINK & DEBURRING TOOLS

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

Special Hi-molybdenum tool steel, gold surface treated points for maximum lubricity and chatter-proof finish.

These High Performance, Flute-less Tools are:

- Free cutting - for ease of use
- Single cutting edge - for fast stock removal
- Chatterproof - for a micro smooth finish
- Easily resharpened - for extra long life
- Wide selection of styles & angles
- **Recommended** for superior finishes in metal, plastic and wood applications.



Type 82-AG, Piloted



Type 82-AG, Pilotless



Type 90-AG, Deburring

Type 82-AG — 82° Piloted Countersinks

Part#	Size	Style	Screw Size	A	Shank Diameter B	Overall Length C	D	E	F	# 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 right for technical diagram.

Type 82-AG — 82° Pilotless Countersinks

Part#	Size	Style	Diameter of Cut Min	Diameter of Cut Max	Screw Size	Shank Diameter B	Overall Length C	D	E	# per/ pack
67110	CS073	3	0.073	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	1	0.307	25/32	---	1/2	2-5/8	13/16	1-3/8"	1
67140	CS307A	1	0.307	25/32	---	1/4	2-1/16	13/16	1-1/4"	1
67150	CS431	2	0.431	7/8	---	1/2	2-13/16	1-1/8	1-9/16"	1
67160	CS1/2B	1	1/2	1-15/32	---	1/2	3-1/2	1-1/2	2-1/8"	1
67170	CS5S	2	---	---	No. 4,	1/4	1-1/2	17/64	5/8"	1
67180	CS6S	2	---	---	No..6	1/4	1-1/2	19/64	5/8"	1
67190	CS8S	2	---	---	No. 8	1/4	1-5/8	11/32	3/4"	1
67200	CS10S	2	---	---	No.10	1/4	1-5/8	25/64	3/4"	1

See right for technical diagram.

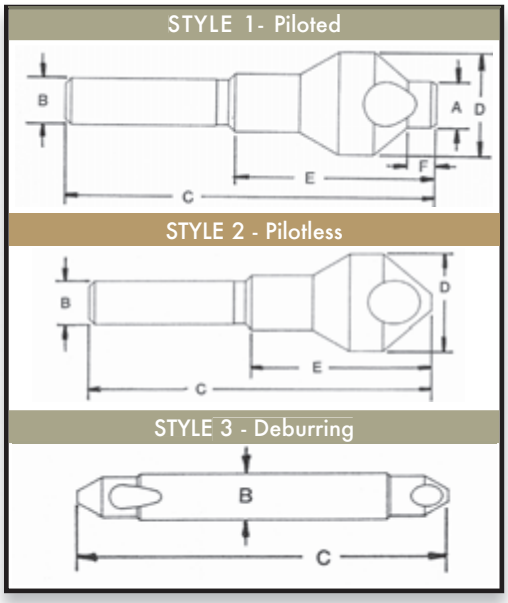
Type 90-AG — 90° Deburring Tools

Part#	Size	Style	Diameter of Cut Min	Diameter of Cut Max	Shank Diameter B	Overall Length C	D	E	# 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 right for technical diagram.

SETS — TYPE 82-AG & 90-AG

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



6-Flute 82º Chatter-less HSS Countersink

NEW

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.
- **Made in the USA.**



TYPE 83-AG — HSS 82º COUNTERSINK

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

MACHINE SCREW / FRACTIONAL & METRIC
HIGH PERFORMANCE SPIRAL POINT TAPS
Type 29-AG

Designed for difficult materials including: stainless steel, alloy steels and high carbon steel, special tool geometry creates less torque, better removal of chips and runs cooler. Necked design enhances flow of cutting fluid to cutting teeth and reduces surface contact between the tool and workpiece for more efficient threading.

Red = Most Common size taps

TYPE 29-AG HIGH PERFORMANCE SPIRAL POINT

Size	# of Flutes	H Limits	Part #
2-56	2	H2	44264
3-48	2	H2	44284
4-40	2	H2	44300
4-48	2	H2	44294
5-40	2	H2	44304
5-44	2	H2	44309
6-32	3	H3	44310
6-40	3	H2	44320
8-32	2	H3	44334
8-32A	3	H3	44330
8-36	2	H2	44344
8-36A	3	H2	44340
10-24	2	H3	44354
10-24A	3	H3	44350
10-32	2	H3	44364
10-32A	3	H3	44360
12-24	2	H3	44374
12-24A	3	H3	44370
12-28	2	H3	44384
12-28A	3	H3	44380
1/4-20	2	H3	20013
1/4-20A	3	H3	20010
1/4-28	2	H3	20023
1/4-28A	3	H2	20020
5/16-18	2	H3	20033
5/16-18A	3	H3	20030
5/16-24	2	H3	20043
5/16-24A	3	H2	20040
3/8-16	3	H3	20050
3/8-24	3	H3	20060
7/16-14	3	H3	20100
7/16-20	3	H3	20110
1/2-13	3	H3	20120
1/2-20	3	H3	20130
9/16-12	3	H3	20163
9/16-18	3	H3	20173
5/8-11	3	H3	20183
5/8-18	3	H3	20193
3/4-10	3	H3	20203
3/4-16	3	H3	20213
7/8-9	3	H3	20223
7/8-14	3	H3	20233
1-8	3	H3	20243
1-14	3	H3	20253



METRIC HIGH PERFORMANCE SPIRAL POINT

Size	# Flutes	D Limits	Part #	Size	# Flutes	D Limits	Part #
3-.50	2	D3	24494	10-1.50	3	D6	24594
4-.70	3	D4	24514	12-1.75	3	D6	24614
5-.80	3	D4	24534	14-2.00	3	D7	24634
6-1.00	3	D5	24544	16-2.00	3	D7	24654
8-1.25	3	D5	24574				

METRIC
GUN TAP - MACHINE SCREW / FRACTIONAL
SPIRAL POINT PLUG TAPS
Type 20-AG & 21-AG
Spiral Point - Plug Style

Special Hi-Molybdenum tool steel, gold surface treated for maximum lubricity. Spiral point construction drives chips ahead of the tap, permitting higher speeds and faster cutting with less torque. Precision ground threads for accuracy and performance.

Recommended for stainless and other hard metals. Plug style spiral pointed taps are ideal for production tapping of through holes.

Red = Most Common size taps

TYPE 20 -AG SPIRAL PLUG

Size	Flutes	H	Part#	Size	Flutes	H	Part#
0-80	2	H1	67502	1/4-28	2	H3	60330
0-80	2	H2	60100	1/4-28	2	H4	67722
1-64	2	H1	67512	1/4-28	3	H2	67732
1-64	2	H2	60110	1/4-28	3	H4	67742
1-72	2	H1	67522	5/16-18	2	H1	67752
1-72	2	H2	60120	5/16-18	2	H2	67762
2-56	2	H2	60130	5/16-18	2	H3	60340
2-64	2	H2	60140	5/16-18	2	H5	67772
3-48	2	H2	60150	5/16-18	3	H3	67782
3-56	2	H1	67532	5/16-18	3	H5	67792
3-56	2	H2	60160	5/16-24	2	H1	67802
4-40	2	H1	67542	5/16-24	2	H2	67812
4-40	2	H2	60170	5/16-24	2	H3	60350
4-48	2	H1	67552	5/16-24	2	H4	67822
4-48	2	H2	60180	5/16-24	3	H2	67832
4-36	2	H2	60190	5/16-24	3	H4	67842
5-40	2	H1	67562	3/8-16	3	H1	67852
5-40	2	H2	60200	3/8-16	3	H2	67862
5-44	2	H2	60210	3/8-16	3	H3	60360
6-32	2	H1	67572	3/8-16	3	H5	67872
6-32	2	H2	67582	3/8-24	3	H1	67882
6-32	2	H3	60220	3/8-24	3	H2	67892
6-40	2	H2	60230	3/8-24	3	H3	60370
8-32	2	H1	67592	3/8-24	3	H4	67902
8-32	2	H2	67602	7/16-14	3	H2	67912
8-32	2	H3	60240	7/16-14	3	H3	60380
8-36	2	H2	60250	7/16-14	3	H5	67922
10-24	2	H1	67612	7/16-20	3	H3	60390
10-24	2	H2	67622	7/16-20	3	H5	67932
10-24	2	H3	60260	1/2-13	3	H2	67942
10-32	2	H1	67632	1/2-13	3	H3	60400
10-32	2	H2	67642	1/2-13	3	H5	67952
10-32	2	H3	60270	1/2-20	3	H1	67962
12-24	2	H3	60280	1/2-20	3	H2	67972
12-28	2	H3	60290	1/2-20	3	H3	60410
1/4-20	2	H1	67652	1/2-20	3	H5	67982
1/4-20	2	H2	67662	9/16-12	3	H3	67992
1/4-20	2	H3	60320	9/16-18	3	H3	68002
1/4-20	2	H5	67672	5/8-11	3	H3	60420
1/4-20	3	H3	67682	5/8-11	3	H5	68012
1/4-20	3	H5	67692	5/8-18	3	H3	60430
1/4-28	2	H1	67702	3/4-10	3	H3	60440
1/4-28	2	H2	67712	3/4-10	3	H5	68022
				3/4-16	3	H3	60450



METRIC TYPE 21 -AG

Size	Flutes	PD	Part#
1.6 - 0.35	2	3	68602
1.8 - 0.35	2	3	68612
2.0 - 0.40	2	3	68622
2.2 - 0.45	2	3	68632
2.5 - 0.45	2	3	60500
3.0 - 0.50	2	3	60510
3.5 - 0.60	2	4	60520
4.0 - 0.70	2	4	60530
4.5 - 0.75	2	4	68642
5.0 - 0.80	2	4	60550
6.0 - 1.00	2	5	60560
7.0 - 1.00	2	5	68652
8.0 - 1.00	2	5	68662
8.0 - 1.25	2	5	60580
10.0 - 1.25	3	5	68672
10.0 - 1.50	3	6	60600
12.0 - 1.25	3	5	68682
12.0 - 1.75	3	6	60620
14.0 - 1.50	3	6	68692
14.0 - 2.00	3	7	60630
16.0 - 1.50	3	6	68702
16.0 - 2.00	3	7	60640
18.0 - 2.50	3	7	60650
20.0 - 2.50	3	7	68712

MACHINE SCREW / FRACTIONAL
STRAIGHT FLUTE HAND TAPS
Type 23-AG, Type 24-AG
Straight Flute - Taper and Plug Style

Special Hi-Molybdenum tool steel, gold surface treated for maximum lubricity. For general use in production tapping or hand operations. Precision ground threads for the ultimate in accuracy and performance.

Taper, plug and bottoming styles provide great versatility in tough materials in both blind and through holes. These high performance taps are available in complete sets of one taper, plug and bottoming tap of the same size.

Red = Most Common size taps

TYPE 23 -AG STRAIGHT FLUTE

Size	Flutes	H	Part#
0-80	2	H1	72701
0-80	2	H2	72711
1-64	2	H1	72721
1-64	2	H2	72731
1-72	2	H1	72741
1-72	2	H2	72751
2-56	3	H1	72761
2-56	3	H2	60660
2-64	3	H2	72771
3-48	3	H1	72781
3-48	3	H2	60680
3-56	3	H2	60710
4-40	3	H2	60700
4-48	3	H2	60720
5-40	3	H1	72791
5-40	3	H2	60730
5-44	3	H2	60740
6-32	3	H1	72801
6-32	3	H2	72811
6-32	3	H3	60750
6-40	3	H1	72821
6-40	3	H2	60760
8-32	4	H1	72831
8-32	4	H2	72841
8-32	4	H3	60770
8-36	4	H2	60780
10-24	4	H1	72851
10-24	4	H2	72861
10-24	4	H3	60790
10-32	4	H1	72871
10-32	4	H2	72881
10-32	4	H3	60800
12-24	4	H3	60810
12-28	4	H3	60820
1/4-20	4	H1	72891
1/4-20	4	H2	72901
1/4-20	4	H3	60830
1/4-20	4	H5	72911
1/4-28	4	H1	72921
1/4-28	4	H2	72931
1/4-28	4	H3	60840
1/4-28	4	H4	72941
5/16-18	4	H2	72951
5/16-18	4	H3	60850
5/16-18	4	H5	72961
5/16-24	4	H2	72971
5/16-24	4	H3	60860
5/16-24	4	H4	72981

Size	Flutes	H	Part#
3/8-16	4	H1	72991
3/8-16	4	H2	73001
3/8-16	4	H3	60870
3/8-16	4	H5	73011
3/8-24	4	H1	73021
3/8-24	4	H2	73031
3/8-24	4	H3	60880
3/8-24	4	H4	73041
7/16-14	4	H3	60890
7/16-14	4	H5	73051
7/16-20	4	H3	60900
7/16-20	4	H5	73061
1/2-13	4	H1	73071
1/2-13	4	H3	60910
1/2-13	4	H5	73081
1/2-20	4	H1	73091
1/2-20	4	H3	60920
1/2-20	4	H5	73101
9/16-12	4	H3	60950
9/16-12	4	H5	73111
9/16-18	4	H2	73121
9/16-18	4	H3	60960
9/16-18	4	H5	73131
5/8-11	4	H2	73141
5/8-11	4	H3	60970
5/8-11	4	H5	73151
5/8-18	4	H2	73161
5/8-18	4	H3	60980
5/8-18	4	H5	73171
11/16-11	4	H3	73181
11/16-16	4	H3	73191
3/4-10	4	H3	60990
3/4-10	4	H5	73201
3/4-16	4	H1	73211
3/4-16	4	H2	73221
3/4-16	4	H3	61400
3/4-16	4	H5	73231
7/8-9	4	H4	61410
7/8-9	4	H6	73241
7/8-14	4	H2	73251
7/8-14	4	H4	61420
7/8-14	4	H6	73261
1"-8	4	H4	61430
1"-8	4	H6	73271
1"-12	4	H4	61440
1"-14	4	H4	27570
1"1/8-7	4	H4	61450
1"1/8-12	4	H4	61460

TAPER

Size	Flutes	H	Part#
1"1/4-7	4	H4	61470
1"1/4-12	6	H4	61480
1"3/8-6	4	H4	61490
1"3/8-12	6	H4	61500
1"1/2-6	4	H4	61510
1"1/2-12	6	H4	61520



TAPER STYLE

Starts the thread square with workpiece.

TYPE 24 -AG STRAIGHT FLUTE

Size	Flutes	H	Part#
0-80	2	H1	72702
0-80	2	H2	72712
1-64	2	H1	72722
1-64	2	H2	72732
1-72	2	H1	72742
1-72	2	H2	72752
2-56	3	H1	72762
2-56	3	H2	60661
2-64	3	H2	72772
3-48	3	H1	72782
3-48	3	H2	60681
3-56	3	H2	60711
4-40	3	H2	60701
4-48	3	H2	60721
5-40	3	H1	72792
5-40	3	H2	60731
5-44	3	H2	60741
6-32	3	H1	72802
6-32	3	H2	72812
6-32	3	H3	60751
6-40	3	H1	72822
6-40	3	H2	60761
8-32	4	H1	72832
8-32	4	H2	72842
8-32	4	H3	60771
8-36	4	H2	60781
10-24	4	H1	72852
10-24	4	H2	72862
10-24	4	H3	60791
10-32	4	H1	72872
10-32	4	H2	72882
10-32	4	H3	60801
12-24	4	H3	60811
12-28	4	H3	60821
1/4-20	4	H1	72892
1/4-20	4	H2	72902
1/4-20	4	H3	60831
1/4-20	4	H5	72912
1/4-28	4	H1	72922
1/4-28	4	H2	72932
1/4-28	4	H3	60841
1/4-28	4	H4	72942
5/16-18	4	H2	72952
5/16-18	4	H3	60851
5/16-18	4	H5	72962
5/16-24	4	H2	72972
5/16-24	4	H3	60861
5/16-24	4	H4	72982

Size	Flutes	H	Part#
3/8-16	4	H1	72992
3/8-16	4	H2	73002
3/8-16	4	H3	60871
3/8-16	4	H5	73012
3/8-24	4	H1	73022
3/8-24	4	H2	73032
3/8-24	4	H3	60881
3/8-24	4	H4	73042
7/16-14	4	H3	60891
7/16-14	4	H5	73052
7/16-20	4	H3	60901
7/16-20	4	H5	73062
1/2-13	4	H1	73072
1/2-13	4	H3	60911
1/2-13	4	H5	73082
1/2-20	4	H1	73092
1/2-20	4	H3	60921
1/2-20	4	H5	73102
9/16-12	4	H3	60951
9/16-12	4	H5	73112
9/16-18	4	H2	73122
9/16-18	4	H3	60961
9/16-18	4	H5	73132
5/8-11	4	H2	73142
5/8-11	4	H3	60971
5/8-11	4	H5	73152
5/8-18	4	H2	73162
5/8-18	4	H3	60981
5/8-18	4	H5	73172
11/16-11	4	H3	73182
11/16-16	4	H3	73192
3/4-10	4	H3	60991
3/4-10	4	H5	73202
3/4-16	4	H1	73212
3/4-16	4	H2	73222
3/4-16	4	H3	61401
3/4-16	4	H5	73232
7/8-9	4	H4	61411
7/8-9	4	H6	73242
7/8-14	4	H2	73252
7/8-14	4	H4	61421
7/8-14	4	H6	73262
1"-8	4	H4	61431
1"-8	4	H6	73272
1"-12	4	H4	61441
1"-14	4	H4	27571
1"1/8-7	4	H4	61451
1"1/8-12	4	H4	61461

PLUG

Size	Flutes	H	Part#
1"1/4-7	4	H4	61471
1"1/4-12	6	H4	61481
1"3/8-6	4	H4	61491
1"3/8-12	6	H4	61501
1"1/2-6	4	H4	61511
1"1/2-12	6	H4	61521



PLUG STYLE

Generally used in thru holes or in blind holes with sufficient clearance.

MACHINE SCREW / FRACTIONAL
STRAIGHT FLUTE HAND TAPS
Type 25-AG
Straight Flute - Bottoming Style

Special Hi-Tungsten and Hi-Molybdenum tool steels, gold surface treated for maximum lubricity. For general use in production tapping or hand operations. Precision ground threads for the ultimate in accuracy and performance. These high performance taps are available in complete sets of one taper, plug and bottoming tap of the same size.

Red = Most Common size taps

TYPE 25 -AG STRAIGHT FLUTE

Size	Flutes	H	Part#
0-80	2	H1	72703
0-80	2	H2	72713
1-64	2	H1	72723
1-64	2	H2	72733
1-72	2	H1	72743
1-72	2	H2	72753
2-56	3	H1	72763
2-56	3	H2	60662
2-64	3	H2	72773
3-48	3	H1	72783
3-48	3	H2	60682
3-56	3	H2	60712
4-40	3	H2	60702
4-48	3	H2	60722
5-40	3	H1	72793
5-40	3	H2	60732
5-44	3	H2	60742
6-32	3	H1	72803
6-32	3	H2	72813
6-32	3	H3	60752
6-40	3	H1	72823
6-40	3	H2	60762
8-32	4	H1	72833
8-32	4	H2	72843
8-32	4	H3	60772
8-36	4	H2	60782
10-24	4	H1	72853
10-24	4	H2	72863
10-24	4	H3	60792
10-32	4	H1	72873
10-32	4	H2	72883
10-32	4	H3	60802
12-24	4	H3	60812
12-28	4	H3	60822
1/4-20	4	H1	72893
1/4-20	4	H2	72903
1/4-20	4	H3	60832
1/4-20	4	H5	72913
1/4-28	4	H1	72923
1/4-28	4	H2	72933
1/4-28	4	H3	60842
1/4-28	4	H4	72943
5/16-18	4	H2	72953
5/16-18	4	H3	60852
5/16-18	4	H5	72963
5/16-24	4	H2	72973
5/16-24	4	H3	60862
5/16-24	4	H4	72983
3/8-16	4	H1	72993
3/8-16	4	H2	73003
3/8-16	4	H3	60872
3/8-16	4	H5	73013
3/8-24	4	H1	73023
3/8-24	4	H2	73033
3/8-24	4	H3	60882
3/8-24	4	H4	73043
7/16-14	4	H3	60892
7/16-14	4	H5	73053
7/16-20	4	H3	60902
7/16-20	4	H5	73063
1/2-13	4	H1	73073
1/2-13	4	H3	60912
1/2-13	4	H5	73083
1/2-20	4	H1	73093
1/2-20	4	H3	60922
1/2-20	4	H5	73103
9/16-12	4	H3	60952
9/16-12	4	H5	73113
9/16-18	4	H2	73123
9/16-18	4	H3	60962
9/16-18	4	H5	73133
5/8-11	4	H2	73143
5/8-11	4	H3	60972
5/8-11	4	H5	73153
5/8-18	4	H2	73163
5/8-18	4	H3	60982
5/8-18	4	H5	73173
11/16-11	4	H3	73183
11/16-16	4	H3	73193
3/4-10	4	H3	60992
3/4-10	4	H5	73203
3/4-16	4	H1	73213
3/4-16	4	H2	73223
3/4-16	4	H3	61402
3/4-16	4	H5	73233
7/8-9	4	H4	61412
7/8-9	4	H6	73243
7/8-14	4	H2	73253
7/8-14	4	H4	61422
7/8-14	4	H6	73263
1"-8	4	H4	61432
1"-8	4	H6	73273
1"-12	4	H4	61442
1"-14	4	H4	27572
1"1/8-7	4	H4	61452

BOTTOMING

Size	Flutes	H	Part#
1"1/8-12	4	H4	61462
1" 1/4-7	4	H4	61472
1"1/4-12	6	H4	61482
1" 3/8-6	4	H4	61492
1"3/8-12	6	H4	61502
1" 1/2-6	4	H4	61512
1" 1/2-12	6	H4	61522

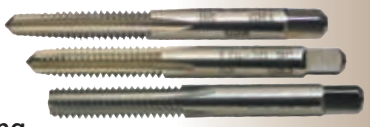


BOTTOMING STYLE

Cuts the thread to the bottom of blind holes.

3pc. SETS
STRAIGHT FLUTE HAND TAP
GROUND THREAD - HIGH SPEED STEEL
Type 26-AG - Sets

Includes one of each size:
Type 23-AG Taper
Type 24-AG Plug
Type 25-AG Bottoming



SETS TYPE 26 -AG TAPER, PLUG, BOTTOMING

Size	Flutes	H	Part #
2-56	3	H2	60663
3-48	3	H2	60683
4-40	3	H2	60703
4-48	3	H2	60723
5-40	3	H2	60733
5-44	3	H2	60743
6-32	3	H3	60753
6-40	3	H2	60763
8-32	4	H3	60773
8-36	4	H2	60783
10-24	4	H3	60793
10-32	4	H3	60803
12-24	4	H3	60813
12-28	4	H3	60823
1/4-20	4	H3	60833
1/4-28	4	H3	60843
5/16-18	4	H3	60853
5/16-24	4	H3	60863
3/8-16	4	H3	60873
3/8-24	4	H3	60883
7/16-14	4	H3	60893
7/16-20	4	H3	60903
1/2-13	4	H3	60913
1/2-20	4	H3	60923
9/16-12	4	H3	60953
9/16-18	4	H3	60963
5/8-11	4	H3	60973
5/8-18	4	H3	60983
3/4-10	4	H3	60993
3/4-16	4	H3	61403
7/8-9	4	H4	61413
7/8-14	4	H4	61423
1"-8	4	H4	61433
1"-12	4	H4	61443
1"-14	4	H4	27573
1"1/8-7	4	H4	61453
1"1/8-12	4	H4	61463
1"1/4-7	4	H4	61473
1"1/4-12	6	H4	61483
1"3/8-6	4	H4	61493
1"3/8-12	6	H4	61503
1"1/2-6	4	H4	61513
1"1/2-12	6	H4	61523



METRIC
STRAIGHT FLUTE HAND TAPS
Type 31-AG, 32-AG & 33-AG
Straight Flute - Taper, Plug & Bottoming Style

Special Hi-Molybdenum tool steel, gold surface treated for maximum lubricity. For general use in production tapping or hand operations. Precision ground threads for the ultimate in accuracy and performance. Taper, plug and bottoming styles provide great versatility in tough materials, both blind and through holes.

TYPE 31 -AG TAPER

MM Size	Flutes	D	Part#
1.6-0.35	2	3	60329
1.8-0.35	2	3	60339
2.0-0.40	3	3	60349
2.2-0.45	3	3	60359
2.5-0.45	3	3	60379
3.0-0.50	3	3	60389
3.5-0.60	3	4	60519
4.0-0.70	4	4	60529
4.5-0.75	4	4	60369
5.0-0.80	4	4	60539
6.0-1.00	4	5	60549
7.0-1.00	4	5	60559
8.0-1.00	4	5	60569
8.0-.1.25	4	5	60579
10.0-1.25	4	5	60589
10.0-1.50	4	6	60611
12.0-1.25	4	5	61601
12.0-1.50	4	6	61901
12.0-1.75	4	6	61602
14.0-1.50	4	6	61603
14.0-2.00	4	7	61604
16.0-1.50	4	6	61609
16.0-2.00	4	7	61611
18.0-1.50	4	6	61281
18.0-2.50	4	7	61612
20.0-1.50	4	6	66361
20.0-2.50	4	7	61613
22.0-1.50	4	6	66371
22.0-2.50	4	7	66381
24.0-2.00	4	7	66391
24.0-3.00	4	8	61614
27.0-2.00	4	7	66401
27.0-3.00	4	8	61619
30.0-2.00	4	7	66411
30.0-3.50	4	9	61621
33.0-2.00	6	7	66421
33.0-3.50	4	9	61622
36.0-3.00	4	8	66431
36.0-4.00	4	9	61623
39.0-3.00	6	8	66441
39.0-4.00	6	9	61624



TAPER STYLE

Starts the thread square with workpiece.

TYPE 32 -AG PLUG

MM Size	Flutes	D	Part#
1.6-0.35	2	3	61569
1.8-0.35	2	3	61579
2.0-0.40	3	3	61589
2.2-0.45	3	3	61599
2.5-0.45	3	3	61629
3.0-0.50	3	3	61631
3.5-0.60	3	4	61632
4.0-0.70	4	4	61633
4.5-0.75	4	4	61634
5.0-0.80	4	4	61639
6.0-1.00	4	5	61641
7.0-1.00	4	5	61642
8.0-1.00	4	5	61643
8.0-.1.25	4	5	61644
10.0-1.25	4	5	61649
10.0-1.50	4	6	61651
12.0-1.25	4	5	61652
12.0-1.50	4	6	61911
12.0-1.75	4	6	61653
14.0-1.50	4	6	61654
14.0-2.00	4	7	61659
16.0-1.50	4	6	61661
16.0-2.00	4	7	61662
18.0-1.50	4	6	61282
18.0-2.50	4	7	61663
20.0-1.50	4	6	66362
20.0-2.50	4	7	61664
22.0-1.50	4	6	66372
22.0-2.50	4	7	66382
24.0-2.00	4	7	66392
24.0-3.00	4	8	61669
27.0-2.00	4	7	66402
27.0-3.00	4	8	61671
30.0-2.00	4	7	66412
30.0-3.50	4	9	61672
33.0-2.00	6	7	66422
33.0-3.50	4	9	61673
36.0-3.00	4	8	66432
36.0-4.00	4	9	61674
39.0-3.00	6	8	66442
39.0-4.00	6	9	61679



PLUG STYLE

Generally used in thru holes or in blind holes with sufficient clearance.

TYPE 33 -AG BOTTOMING

MM Size	Flutes	D	Part#
1.6-0.35	2	3	61561
1.8-0.35	2	3	61571
2.0-0.40	3	3	61581
2.2-0.45	3	3	61591
2.5-0.45	3	3	61681
3.0-0.50	3	3	61682
3.5-0.60	3	4	61683
4.0-0.70	4	4	61684
4.5-0.75	4	4	61689
5.0-0.80	4	4	61691
6.0-1.00	4	5	61692
7.0-1.00	4	5	61693
8.0-1.00	4	5	61694
8.0-.1.25	4	5	61699
10.0-1.25	4	5	61701
10.0-1.50	4	6	61702
12.0-1.25	4	5	61703
12.0-1.50	4	6	61921
12.0-1.75	4	6	61704
14.0-1.50	4	6	61709
14.0-2.00	4	7	61711
16.0-1.50	4	6	61712
16.0-2.00	4	7	61713
18.0-1.50	4	6	61283
18.0-2.50	4	7	61714
20.0-1.50	4	6	66363
20.0-2.50	4	7	61719
22.0-1.50	4	6	66373
22.0-2.50	4	7	66383
24.0-2.00	4	7	66393
24.0-3.00	4	8	61721
27.0-2.00	4	7	66403
27.0-3.00	4	8	61722
30.0-2.00	4	7	66413
30.0-3.50	4	9	61723
33.0-2.00	6	7	66423
33.0-3.50	4	9	61724
36.0-3.00	4	8	66433
36.0-4.00	4	9	61729
39.0-3.00	6	8	66443
39.0-4.00	6	9	61731



BOTTOMING

Cuts the thread to the bottom of blind holes.

METRIC - 3Pc. SETS
STRAIGHT FLUTE HAND TAP GROUND THREAD HIGH SPEED STEEL
Type 35-AG Sets

Includes one of each size:

Type 31-AG Taper Type 32-AG Plug, Type 33-AG Bottoming

SETS TYPE 35-AG PLUG-TAPER-BOTTOM

Part#	Size	# of Flutes	GH Limit	Qty.per/ pack ea.
61741	3.0-.50	3	D-3	1
61742	4.0-.70	4	D-4	1
61743	5.0-.80	4	D-4	1
61744	6.0-1.00	4	D-5	1
61749	7.0-1.00	4	D-5	1
61751	8.0-1.00	4	D-5	1
61752	8.0-1.25	4	D-5	1
61753	10.0-1.25	4	D-5	1
61754	10.0-1.50	4	D-6	1
61759	12.0-1.25	4	D-5	1

Part#	Size	# of Flutes	GH Limit	Qty.per/ pack ea.
61761	12.0-1.75	4	D-6	1
61762	14.0-1.50	4	D-6	1
61763	14.0-2.00	4	D-7	1
61764	16.0-1.50	4	D-6	1
61769	16.0-2.00	4	D-7	1
61772	18.0-2.50	4	D-7	1
61774	20.0-2.50	4	D-7	1

TAPS - LEFT HAND STRAIGHT FLUTE
Type 23L-AG, 24L-AG & 25L-AG
Straight Flute Left-Hand Thread
-Taper, Plug & Bottoming Style

TYPE 23L-AG STRAIGHT FLUTE LEFT-HAND — TAPER

Size	Flutes	H	Part#	Size	Flutes	H	Part#	Size	Flutes	H	Part#
6-32	3	H3	60223	9/16-12	4	H3	60423	1-1/8-12	4	H4	60563
8-32	4	H3	60243	9/16-18	4	H3	60433	1-1/4-7	4	H4	60573
10-24	4	H3	60263	5/8-11	4	H3	60443	1-1/4-12	6	H4	60583
10-32	4	H3	60273	5/8-18	4	H3	60453	1-3/8-6	4	H4	60593
1/4-20	4	H3	60323	11/16-11	4	H3	60463	1-3/8-12	6	H4	60603
1/4-28	4	H3	60333	11/16-16	4	H3	60473	1-1/2-6	4	H4	60613
5/16-18	4	H3	60343	3/4-10	4	H3	60483	1-1/2-12	6	H4	60609
5/16-24	4	H3	60353	3/4-16	4	H3	60493				
3/8-16	4	H3	60363	7/8-9	4	H4	60503				
3/8-24	4	H3	60373	7/8-14	4	H4	60513				
7/16-14	4	H3	60383	1-8	4	H4	60523				
7/16-20	4	H3	60393	1-12	4	H4	60533				
1/2-13	4	H3	60403	1-14	4	H4	60543				
1/2-20	4	H3	60413	1-1/8-7	4	H4	60553				



Taper Style
Starts the thread square with workpiece.

TYPE 24L-AG STRAIGHT FLUTE LEFT - HAND — PLUG

Size	Flutes	H	Part#	Size	Flutes	H	Part#	Size	Flutes	H	Part#
6-32	3	H3	60222	9/16-12	4	H3	60422	1-1/8-12	4	H4	60562
8-32	4	H3	60242	9/16-18	4	H3	60432	1-1/4-7	4	H4	60572
10-24	4	H3	60262	5/8-11	4	H3	60442	1-1/4-12	6	H4	60582
10-32	4	H3	60272	5/8-18	4	H3	60452	1-3/8-6	4	H4	60592
1/4-20	4	H3	60322	11/16-11	4	H3	60462	1-3/8-12	6	H4	60602
1/4-28	4	H3	60332	11/16-16	4	H3	60472	1-1/2-6	4	H4	60612
5/16-18	4	H3	60342	3/4-10	4	H3	60482	1-1/2-12	6	H4	60619
5/16-24	4	H3	60352	3/4-16	4	H3	60492				
3/8-16	4	H3	60362	7/8-9	4	H4	60502				
3/8-24	4	H3	60372	7/8-14	4	H4	60512				
7/16-14	4	H3	60382	1-8	4	H4	60522				
7/16-20	4	H3	60392	1-12	4	H4	60532				
1/2-13	4	H3	60402	1-14	4	H4	60542				
1/2-20	4	H3	60412	1-1/8-7	4	H4	60552				



Plug Style
Generally used in thru holes or in blind holes with sufficient clearance.

TYPE 25L-AG STRAIGHT FLUTE LEFT - HAND — BOTTOMING

Size	Flutes	H	Part#	Size	Flutes	H	Part#	Size	Flutes	H	Part#
6-32	3	H3	60224	9/16-12	4	H3	60424	1-1/8-12	4	H4	60564
8-32	4	H3	60244	9/16-18	4	H3	60434	1-1/4-7	4	H4	60574
10-24	4	H3	60264	5/8-11	4	H3	60444	1-1/4-12	6	H4	60584
10-32	4	H3	60274	5/8-18	4	H3	60454	1-3/8-6	4	H4	60594
1/4-20	4	H3	60324	11/16-11	4	H3	60464	1-3/8-12	6	H4	60604
1/4-28	4	H3	60334	11/16-16	4	H3	60474	1-1/2-6	4	H4	60614
5/16-18	4	H3	60344	3/4-10	4	H3	60484	1-1/2-12	6	H4	60599
5/16-24	4	H3	60354	3/4-16	4	H3	60494				
3/8-16	4	H3	60364	7/8-9	4	H4	60504				
3/8-24	4	H3	60374	7/8-14	4	H4	60514				
7/16-14	4	H3	60384	1-8	4	H4	60524				
7/16-20	4	H3	60394	1-12	4	H4	60534				
1/2-13	4	H3	60404	1-14	4	H4	60544				
1/2-20	4	H3	60414	1-1/8-7	4	H4	60554				



Bottoming
Cuts the thread to the bottom of blind holes.

HSS COMBINATION DRILL & TAP
Type 40-AG
Combination drill and taps are ideally suited for on-site tapping construction, maintenance and repair, assembly, production and in other environments where one pass drilling and tapping saves time and cost. Hi-Molybdenum tool steel ensures longer tool life. Gold surface treatment provides maximum lubricity. The self-centering split point provides excellent drilling precision and accuracy.



Part#	Size
73770	4-40
73780	4-48
73790	5-40
73800	5-44
73810	6-32
73820	6-40
73830	8-32
73840	8-36
73850	10-24
73860	10-32
73870	12-24
73880	12-28
73890	1/4-20
73900	1/4-28
73910	5/16-18
73920	5/16-24
73930	3/8-16
73940	3/8-24
73950	7/16-14

Part#	Size
73960	7/16-20
73970	1/2-13
73980	1/2-20
75540	9/16-12
75550	9/16-18
75560	5/8-11
75570	5/8-18

METRIC

Part#	Size MM
85921	3.0 x 0.5
85931	4.0 x 0.7
85941	5.0 x 0.8
85951	6.0 x 1.00
85961	7.0 x 1.00
85971	8.0 x 1.25
85991	10.0 x 1.50
86001	12.0 x 1.75



SETS

Part#	Description of Sizes
73991	7pc. Set
40-AG	DT-7F, NF
	8-36,10-32,1/4-28,5/16-24, 3/8-24, 7/16-20, 1/2-20
73990	7pc. Set
40-AG	DT-7C, NC
	8-32,10-24,1/4-20,5/16-18, 3/8-16, 7/16-14, 1/2-13

HSS COMBINATION DRILL & TAP
Type 40-QR 1/4" Quick Release



Hi-Molybdenum tool steel ensures longer tool life. Combination drill and taps are ideally suited for on-site tapping in construction, maintenance and repair, assembly, production environments.

Pitch Diameter and Thread tolerances are designed to produce a Class 2B fit.

Part#	Size	Max Material Thickness	Thread Length
73814	6-32	0.170	0.283
73834	8-32	0.200	0.283
73854	10-24	0.200	0.363
73864	10-32	0.200	0.363
73874	12-24	0.200	0.369
73894	1/4-20	0.230	0.326
73904	1/4-28	0.230	0.326
73914	5/16-18	0.480	0.614
73934	3/8-16	0.480	0.585

Pitch Diameter and Thread tolerances are designed to produce a Class 6H fit.

Part #	MM Size	Max Material Thickness	Thread Length
85924	3.0 x 0.50	0.170	0.334
85934	4.0 x 0.70	0.170	0.269
85944	5.0 x 0.80	0.200	0.404
85954	6.0 x 1.00	0.230	0.376
85974	8.0 x 1.25	0.480	0.638
85994	10.0 x 1.50	0.480	0.595

Part#	SET	Description of Sizes
21324	40-QR DT-5	5pc. set 6-32, 8-32, 10-24, 10-32, 1/4-20



REGULAR - TAPER PIPE NPT TAPS Ground Thread, High Speed Steel

Regular Thread NPT Taper Pipe taps are used for tapping pipe fittings and couplings in a wide variety of materials.
Available in taper style with 3" to 3-1/2" thread chamfer.

INTERRUPTED - TAPER PIPE NPT TAPS Ground Thread, High Speed Steel

Interrupted - Thread taper pipe taps reduce friction, increase chip capacity, and enhance coolant flow.
Recommended for a wide variety of materials including soft ductile NPT materials that produce long stringy chips.
(*Black Oxide Taper Pipe Tap for use Cast Iron)

Type 30-UB, Type I30-UB - Gold Oxide

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



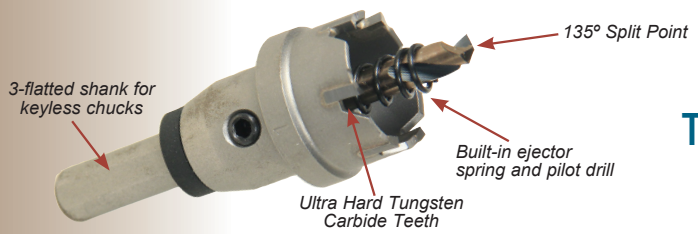
Type 30-AG Gold Oxide
Regular



Type I30-AG Gold Oxide
Interrupted

TYPE 30-AG & TYPE I30-AG TAPER PIPE TAPS

Size	# of Flutes	OAL	Shank Diameter	Tap Drill Size	QTY. per/pack	30-AG Gold Oxide Part #	Type I30-AG Gold Oxide Part #
1/16-27	4	2-1/8"	.3125	D	3	60570	—
1/8-27 (5/16 Shk)	4	2-1/8"	.3125	11/32"	3	61240	—
1/8-27	4	2-1/8"	.4375	11/32"	3	61250	81410
1/4-18	4	2-7/16"	.5625	7/16"	3	61260	81420
3/8-18	4	2-9/16"	.7000	37/64"	1	61270	81430
1/2-14	4	3-1/8"	.6875	23/32"	1	61280	81440
3/4-14	5	3-1/4"	.9063	59/64"	1	61290	81450
1"-11 1/2	5	3-3/4"	1.1250	1-5/32"	1	61300	81460
1" 1/4"-11 1/2	5	4"	1.3125	1-1/2"	1	61310	81470
1" 1/2"-11 1/2	7	4-1/4"	1.500	1-47/64"	1	61320	81480
2"-11 1/2	7	4-1/2"	1.8750	2-7/32"	1	61330	81490



CARBIDE TIPPED HOLECUTTERS

Type CHC-AG Cuts up to 3/16"

Type CHD-AG Deephole Cuts up to 1"

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

TYPE CHC-AG & TYPE CHD-AG

CHC-AG Part#	CHD-AG Part#	Diameter Inches	Shank Diameter
62000	63990	9/16"	3/8"
62010	64000	5/8"	3/8"
62020	64010	11/16"	3/8"
62030	64020	3/4"	3/8"
62040	64030	13/16"	3/8"
62050	64040	7/8"	3/8"
62060	64050	15/16"	3/8"
62070	64060	1"	3/8"
62080	64070	1-1/16"	3/8"
62090	64080	1-1/8"	3/8"
62100	64090	1-3/16"	3/8"
62110	64100	1-1/4"	3/8"
62120	64110	1-5/16"	3/8"
62130	64120	1-3/8"	3/8"
62140	64130	1-7/16"	3/8"
62150	64140	1-1/2"	3/8"
62160	64150	1-9/16"	3/8"
62170	64160	1-5/8"	3/8"
62180	64170	1-11/16"	3/8"
62190	64180	1-3/4"	3/8"
62200	64190	1-13/16"	3/8"
62210	64200	1-7/8"	3/8"
62220	64210	1-15/16"	3/8"
62230	64220	2"	3/8"
62240	64240	2-1/16"	3/8"
62250	64250	2-1/8"	3/8"
62260	64260	2-3/16"	3/8"
62270	64270	2-1/4"	3/8"
62280	64280	2-5/16"	3/8"
62290	64290	2-3/8"	3/8"
62300	64330	2-7/16"	3/8"
62310	64340	2-1/2"	3/8"
62320	64350	2-9/16"	3/8"
62330	64360	2-5/8"	3/8"
62340	64370	2-11/16"	1/2"
62350	64380	2-3/4"	1/2"
62360	64390	2-13/16"	1/2"
62370	64400	2-7/8"	1/2"
62400	64430	3-1/4"	1/2"
62410	64440	3-1/2"	1/2"
62420	64450	3-3/4"	1/2"
62430	64460	4"	1/2"
62380	64410	2-15/16"	1/2"
62390	64420	3"	1/2"
62440	64470	4-1/4"	1/2"
62450	64480	4-1/2"	1/2"
62460	64490	4-3/4"	1/2"
62470	----	5"	1/2"
62480	64231	PILOT DRILL	
62490	62490	SCREW	
62500	62530	SPRING	

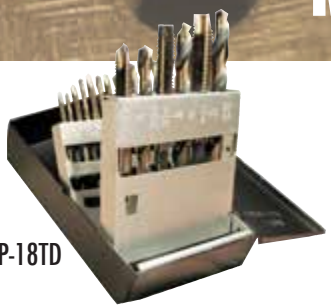
TYPE CHC-AG	CUTS UP TO 3/16"
62600	11/16", 13/16", 15/16", 1-1/16"
62610	5/8", 3/4", 7/8", 1"
62620	7/8", 1-1/8", 1-3/8", 1-3/4", 2"

CHC-AG Individual sizes available **9/16" to 5"**

TYPE CHD-AG	CUTS UP TO 1"
64300	11/16", 13/16", 15/16", 1-1/16"
64310	5/8", 3/4", 7/8", 1"
64320	7/8", 1-1/8", 1-3/8",1-3/4", 2"
64520	5/8", 3/4", 7/8", 1", 1-1/8"

CHD-AG Individual sizes available **5/8" to 2"**

TAP & DRILL SETS


SP-18TD

SP-18TD Spiral Point, NC

Part# 57580		Description of Sizes
190-AG	Drill sizes	#36, 29, 25, 21, 7, F, 5/16, U & 27/64
20-AG	Tap sizes	6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14 & 1/2-13

SP-18TDM Spiral Point METRIC

Part# 57990		Description of Sizes
170-AG	Drill sizes – mm	2.05, 2.50, 2.90, 3.30, 4.20 5.00, 6.70, 8.50 & 10.20
21-AG	Tap sizes – mm	2.5-.45, 3.0-.50, 3.5-.60, 4.0-.70, 5.0-.80, 6.0-1.00, 8.0-1.25,10.0-1.50 & 12.0-1.75

SP-18TDF Spiral Point, NF

Part# 58010		Description of Sizes
190-AG	Drill sizes	#33, 29, 25, 21, 3, I, Q, 25/64 & 29/64
20-AG	Tap sizes	6-40, 8-36, 10-24, 10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20 & 1/2-20

SP-12TD Spiral Point, NC

Part# 58501		Description of Sizes
190-AG	Drill Sizes	#36, 29, 25, 21, 7, F
20-AG	Tap Sizes	6-32, 8-32, 10-24, 10-32, 1/4-20, & 5/16-18

SF-18TDC Straight Flute, NC

Part# 60930		Description of Sizes
190-AG	Drill Sizes	#36, 29, 25, 21, 7, F, 5/16, U & 27/64
24-AG	Tap Sizes	6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14 & 1/2-13

SF-18TDF Straight Flute, NF

Part# 60940		Description of Sizes
190-AG	Drill Sizes	#33, 29, 25, 21, 3, I, Q, 25/64 & 29/64
24-AG	Tap Sizes	6-40, 8-36, 10-24, 10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20 & 1/2-20

SF-10TD Straight Flute, NC

Part# 58500		Description of Sizes
190-AG	Drill Size	31/64"
130-AG	Drill Sizes	17/32", 21/32", 49/64" & 7/8"
24-AG	Tap Sizes	9/16-12, 5/8-11, 3/4-10, 7/8-9 & 1-8

TDC-12 Drill, Tap & Countersink

Part# 20470		Description of Sizes
190-AG	Drill Sizes	#7, 21, 25, 29, & 36
20-AG	Tap Sizes	6-32, 8-32, 10-24, 10-32, 1/4-20
82-AG	Countersink Sizes	No.8 screw size & 3/16"-17/32" range cut

CARDED - DRILL & TAP COMBO

Type 34-AG Drill & Tap Combo

Hi-Molybdenum Super premium twist drill combined with the corresponding Hi-Molybdenum magnum spiral point tap. Both tools are gold surface treated for maximum lubricity. Precision ground tools for accuracy and performance.

TYPE 34-AG DRILL & TAP COMBO					
Part#	Thread Size	Drill Size	Part#	Thread Size	Drill Size
51807	6-32	#36	51897	1/4-28	#3
51817	6-40	#33	51907	5/16-18	F
51827	8-32	#29	51917	5/16-24	I
51837	8-36	#29	51927	3/8-16	5/16"
51847	10-24	#25	51937	3/8-24	Q
51857	10-32	#21	51947	7/16-14	U
51867	12-24	#16	51957	7/16-20	25/64"
51877	12-28	#14	51967	1/2-13	27/64"
51887	1/4-20	#7	51977	1/2-20	29/64"

38pc. MRO
PRO-PACK CARDED DISPLAY
Type 34-AG

38pc. MRO Pro-pack drilling & tapping combo carded Super premium Black & Gold twist drill combined with the corresponding Hi-molybdenum spiral point Gold oxide taps.

PART# 52001



Includes: (Thread Size | Drill Size)

1 each of: 6/32 | #36, 6-40 | #33
12-24 | #16, 12-28 | #14

2 each of: 8-32 | #29, 8-36 | #29
10-24 | #25, 10-32 | #21
1/4-28 | #3, 5/16-18 | F
5/16-24 | I, 3/8-16 | 5/16"
3/8-24 | Q, 7/16-14 | U
7/16-20 | 25/64"
1/2-13 | 27/64", 1/2-20 | 29/64"

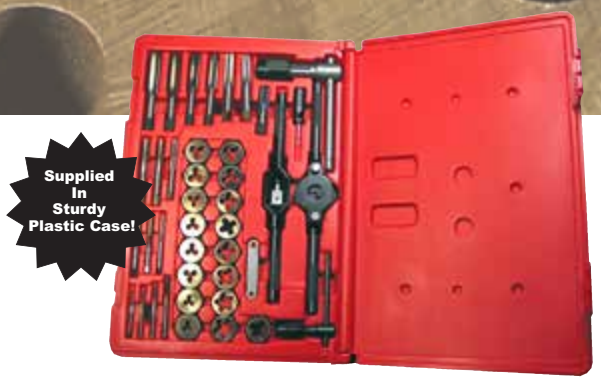
3 each of: 15/16-18 | F, 3/8-16 | 5/16"
7/16-14 | U, 1/2-13 | 27/64"

Quantity of 4: 1/4-20 | #7 Combinations

HIGH SPEED STEEL TAP & DIE SETS

Special Hi-tungsten and Hi-molybdenum tool steels, gold surface treated for maximum lubricity.

Recommended for use in production tapping and drilling of work hardening grades of stainless steel and other hard metal applications Precision ground tap threads for the ultimate in accuracy and performance.



25 pc. SPIRAL POINT PLUG TAPS & HEX DIES

Set Contains:

- HSS spiral point taps & HSS Hex dies sizes: 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
- HSS pipe tap and Hex die size: 1/8-27 NPT
- T-Handle tap wrench: 3/16" - 1/2"
- Die stock & Screw pitch gauge
- SP-25TDI

Supplied in sturdy plastic case.

PART# 35173

23 pc. SPIRAL POINT TAPS & HEX DIES METRIC

Set Contains:

- HSS Spiral point taps & HSS Hex dies sizes: 3.0-.50, 3.5-.60, 4.0-.70, 5.0-.80 6.0-1.00, 8.0-1.25, 10.0-1.50 & 12.0-1.75
- HSS Pipe tap and Hex die size: 1/8-27 NPT
- T-Handle tap wrenches: 0 - 1/4" & 3/16"-1/2"
- Straight handle tap wrench: #4 - 1/2"
- Die stock & Screw metric pitch gauge.
- SP-23TDI

Supplied in sturdy plastic case

PART# 35170

15 pc. SPIRAL POINT PLUG TAPS & HEX DIES

Set Contains:

- HSS Spiral point taps & HSS Hex dies sizes: 6-32, 8-32, 10-24,10-32, 12-24 & 1/4-20
- T-Handle tap wrench: 0 - 1/4"
- Economy Die stock & Screw pitch gauge.
- SP-15TDI

Supplied in sturdy plastic case

PART# 35174

14 pc. SPIRAL POINT TAPS & HEX DIES METRIC

Set Contains:

- HSS Spiral point taps sizes: 2.5-.45, 3.0-.50, 3.5-.60, 4.0-.70, 5.0-.80 & 6.0-1.00.
- HSS Hex dies sizes: 3.0-.50, 3.5-.60, 4.0-.70, 5.0-.80 & 6.0-1.00
- T-Handle tap wrench: 0 - 1/4"
- SP-14TDI

Economy Die stock & Screw Metric pitch gauge

Supplied in sturdy plastic case.

PART# 35172

58 pc. STRAIGHT FLUTE PLUG TAPS & HEX DIES

Set Contains:

- HSS Straight flute taps & HSS Hex dies sizes: 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, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 1/8-27 NPT & 1/4-18 NPT
- Straight Handle tap wrenches: #4-1/2" & 1/4" - 3/4"
- Die stocks: MED R/H & 1" R/H
- T-handle tap wrench: 0-1/4"
- Screw pitch gauge
- Screw driver & Spiral flute extractors sizes: EX: 1 thru EX: 5
- SF-58TDI

Supplied in sturdy plastic case

PART# 61680

40 pc. STRAIGHT FLUTE PLUG TAPS & HEX DIES

Set Contains:

- HSS Straight flute taps & HSS hex dies sizes: 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
- HSS Pipe tap and Hex die size: 1/8-27 NPT
- T-Handle tap wrenches: 0 - 1/4" & 3/16"-1/2"
- Straight Handle tap wrench: #4 - 1/2"
- Die stock, Screw pitch gauge & Screw driver
- SF-40TDI

Supplied in sturdy plastic case

PART# 35171

40 pc. SPIRAL POINT PLUG TAPS & HEX DIES

Set Contains:

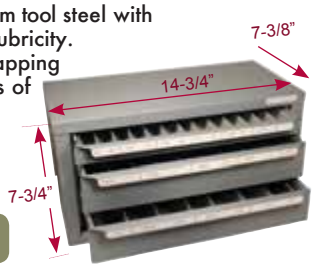
- HSS spiral point taps & HSS Hex dies sizes: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24,1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13 & 1/2-20
- HSS pipe tap and hex die size: 1/8-27 NPT
- T-Handle tap wrenches: 0 - 1/4" & 3/16"-1/2"
- Straight handle tap wrench: #4 - 1/2"
- Die stock, Screw pitch gauge & Screw driver
- SP-40TDI

Supplied in sturdy plastic case

PART# 35181

TAP & DRILL ASSORTMENTS SETS

Special Hi - tungsten and Hi - molybdenum tool steel with gold surface treatment for maximum lubricity. **Recommended** for use in production tapping and drilling of work hardening grades of stainless steel and other hard metal applications. Precision ground tap threads for the ultimate in accuracy and performance.



DISPLAY ONLY Part No. 35100

67pc. Tap & Drill Dispenser Assortment
Spiral point taps & Jobber length drills

67-SP Assortment contains:

Type 190-AG Super Premium Jobber drill sizes:
- 6 each: #36, #29, #25, #21
- 3 each: #7, F & 5/16"
- 2 each: #3, I, Q, U, 25/64", 27/64" & 29/64"

Type 20-AG Super Premium Spiral point Plug tap sizes:
- 3 each: 1/4"-20
- 2 each: 6-32, 8-32, 10-24, 10-32
- 1 each: 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

Includes 3-Drawer Stocking Cabinet

PART# 35121

123pc. Tap & Drill Dispenser Assortment
Spiral point Taps & Jobber Length Drills

123-SP Assortment contains:

Type 190-AG Super Premium Jobber drill sizes:
- 12 each: # 36, #29, #25, #21
- 6 each: #7, F & 5/16
- 3 each: #3, I, Q, U, 25/64, 27/64 & 29/64

Type 20-AG Super Premium Spiral point Plug tap sizes:
- 6 each: 1/4-20
- 3 each: 6-32, 8-32, 10-24, 10-32, 5/16-18 & 3/8-16
- 2 each: 1/4-28, 5/16-24, 3/8-24, 7/16-14 & 1/2-13
- 1 each: 7/16-20 & 1/2-20

Includes 3 drawer stocking cabinet

PART# 35120

123pc. Tap & Drill Dispenser Assortment
Straight Flute Taps & Jobber Length Drills

123-SF Assortment contains:

Type 190-AG Super Premium Jobber drill sizes:
- 12 each: #36, #29, #25, #21
- 6 each: #7, F & 5/16"
- 3 each: #3, I, Q, U, 25/64", 27/64" & 29/64"

Type 24-AG Super Premium Spiral point Plug tap sizes:
- 6 each: 1/4-20
- 3 each: 6-32, 8-32, 10-24, 10-32, 5/16-18 & 3/8-16
- 2 each: 1/4-28, 5/16-24, 3/8-24, 7/16-14 & 1/2-13
- 1 each: 7/16-20 & 1/2-20

Includes 3 drawer stocking cabinet

PART# 35110

TAP & DIE COUNTER-TOP DISPENSER



55pc. Super Premium Tap & Die Counter Top Dispenser Spiral Point Taps & Hex Dies

55-SP Assortment contains:

Type 20-AG Super premium Spiral point tap sizes:
- 3 each: 6-32, 8-32,10-24,10-32 & 1/4-20
- 2 each: 5/16-18, 3/8-16, 7/16-14 & 1/2-13
- 1 each: 4-40, 12-24, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 5/8-11, 5/8-18, 3/4-10, & 3/4-16

Type 27-AG Super premium Hex die sizes:
- 1each: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 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, 5/8-11, 5/8-18, 3/4-10, & 3/4-16
- 2 each: 1/4-20

Includes glass front stocking cabinet

PART # 35160

53pc. Super Premium Tap & Die Counter Top Dispenser Straight Flute Taps & Hex Die

53-SF Assortment contains:

Type 24-AG Super premium Straight flute plug tap sizes:
- 3 each: 6-32, 8-32,10-24,10- 32 & 1/4-20
- 2 each: 5/16-18, 3/8-16, 7/16-14 & 1/2-13
- 1 each: 4-40, 12-24, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-12, 5/8-11 & 3/4-10

Type 27-AG Super premium Hex die sizes:
- 1 each: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 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, 5/8-11, & 3/4-10
- 2 each: 1/4-20

Includes glass front stocking cabinet

PART# 35150 Display Only: **PART# 45010**

COUNTER DISPLAYS

Silver & Deming Drills

Compact lexan case attractively displays S&D drills. Scratch proof lexan front reduces pilferage and keeps merchandise clean.

Contents One Each of: 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16 & 1"



PART# 00940
Display Only: **PART# 00934**



Reamers

Compact lexan case attractively displays reamers. Scratch proof Lexan front reduces pilferage and keeps merchandise clean.

Contents One Each of: 3/8", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8" & 1"

PART# 00941
Display Only: **PART# 00934**

CTD CONSOLIDATED Toledo Drill

Corporate Office and Manufacturing Facility:

Consolidated Toledo Drill
355 State Street
St. Paul, Minnesota 55107

Order Toll Free:

1-800-328-4655 (Personally Answered)
1-800-328-4654 (Electronically Answered)

Warehouse:

355 State Street
St. Paul, Minnesota 55107

Phone: 651-227-8911
Toll Free: 1-800-328-4655
Fax: 651-227-1793

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CAUTION:
Any cutting tool may break or shatter under improper use. Government regulations require use of safety glasses and other appropriate safety equipment at all times in the vicinity of use.

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