

Counterbores

High Speed Steel – Solid Pilot – 3 Flute – Straight & Taper Shanks



Screw Size	Cutter Diameter	Pilot Diameter	Overall Length (Inch)	Straight Shank		Taper Shank	
				Shank Diameter (Inch)	Code	Morse Taper	Code
No. 5	7/32"	9/64"	3	3/16	545771	–	–
No. 6	1/4"	5/32"	3	7/32	545772	–	–
No. 8	19/64"	11/64"	3	1/4	545772	–	–
No. 10	21/64"	13/64"	3	5/16	545774	–	–
1/4	13/32"	9/32"	3-1/2	3/8	545775	2	545785
5/16	1/2"	11/32"	5	7/16	545776	2	545786
3/8	19/32"	13/32"	5	1/2	545777	2	545787
7/16	11/16"	15/32"	6	1/2	545778	2	545788
1/2	25/32"	17/32"	7	1/2	545779	2	545789
5/8	31/32"	21/32"	7-1/2	3/4	545780	2	545790
3/4	1-3/16"	13/16"	8	1	545781	3	545791
7/8	1-3/8"	15/16"	8	1	545782	3	545792
1	1-9/16"	1-1/16"	10	1	545784	3	545794
M3	6 mm	3.4 mm	–	7/32	545803	–	–
M4	8 mm	4.5 mm	–	5/16	545804	–	–
M5	10 mm	5.5 mm	–	3/8	545805	–	–
M6	11 mm	6.6 mm	–	7/16	545806	–	–
M8	15 mm	9 mm	–	1/2	545808	–	–
M10	18 mm	11 mm	–	1/2	545810	–	–
M12	20 mm	14 mm	–	1/2	545812	–	–
M14	24 mm	15 mm	–	–	–	2	545814
M16	26 mm	17 mm	–	–	–	2	545816
M20	33 mm	21 mm	–	–	–	2	545820

Counterbores

High Speed Steel – With Interchangeable Pilot Holes – Straight & Taper Shanks



Diameter (Inch)	Overall Length (Inch)	Shank Length (Inch)	No. of Flutes	Hole Diameter (Inch)	Straight Shank		Taper Shank	
					Shank Diameter (Inch)	Code	Morse Taper	Code
1/4	3-13/16	3-1/16	3	3/32	15/64	525650	–	–
9/32	3-13/16	3-1/16	3	3/32	17/64	525651	1	525751
5/16	3-13/16	3-1/16	3	3/32	19/64	525652	1	525752
11/32	3-13/16	3-1/16	3	3/32	5/16	525653	1	525753
3/8	4-1/16	3-1/16	3	5/32	5/16	525654	1	525754
13/32	4-1/16	3-1/16	3	5/32	3/8	525655	1	525755
7/16	4-1/16	3-1/16	3	5/32	3/8	525656	1	525756
15/32	4-5/16	3-1/16	3	3/16	7/16	525657	1	525757
1/2	4-5/16	3-1/16	3	3/16	7/16	525658	1	525758
17/32	4-5/16	3-1/16	3	3/16	1/2	525659	1	525759
9/16	4-5/16	3-1/16	3	3/16	1/2	525660	1	525760
19/32	5-1/8	3-7/8	3	3/16	1/2	525661	2	525761
5/8	5-1/8	3-7/8	3	3/16	1/2	525662	2	525762
21/32	5-1/8	3-7/8	3	3/16	1/2	525663	2	525763
11/16	5-1/8	3-7/8	3	3/16	1/2	525664	2	525764
23/32	5-3/8	3-7/8	3	1/4	1/2	525665	2	525765
3/4	5-3/8	3-7/8	3	1/4	1/2	525666	2	525766

Counterbores

High Speed Steel – With Interchangeable Pilot Holes – Straight & Taper Shanks (continued)



Diameter (Inch)	Overall Length (Inch)	Shank Length (Inch)	No. of Flutes	Hole Diameter (Inch)	Straight Shank		Taper Shank	
					Shank Diameter (Inch)	Code	Morse Taper	Code
25/32	5-3/8	3-7/8	3	1/4	5/8	525667	2	525767
13/16	5-3/8	3-7/8	3	1/4	5/8	525668	2	525768
27/32	5-3/8	3-7/8	3	1/4	3/4	525669	–	–
7/8	5-3/8	3-7/8	3	1/4	3/4	525670	2	525769
29/32	6-1/8	4-5/8	3	1/4	3/4	525671	–	–
15/16	6-1/8	4-5/8	3	1/4	3/4	525672	3	525770
31/32	6-3/8	4-5/8	3	5/16	3/4	525673	–	–
1	6-3/8	4-5/8	3	5/16	3/4	525674	3	525771
1-1/16	6-3/8	4-5/8	3	5/16	3/4	525675	3	525772
1-1/8	6-3/8	4-5/8	3	5/16	1	525676	3	525773
1-3/16	6-3/8	4-5/8	3	5/16	1	525677	3	525774
1-1/4	6-5/8	4-5/8	5	3/8	1	525678	3	525775
1-5/16	6-5/8	4-5/8	5	3/8	1	525685	3	525776
1-3/8	6-5/8	4-5/8	5	3/8	1	525679	3	525777
1-7/16	7-7/8	5-7/8	5	3/8	1-1/4	525686	4	525790
1-1/2	7-7/8	5-7/8	5	3/8	1-1/4	525680	4	525778
1-5/8	8-1/8	5-7/8	5	7/16	1-1/4	525681	4	525779
1-11/16	8-1/8	5-7/8	5	7/16	1-1/4	525688	4	525792
1-3/4	8-1/8	5-7/8	5	7/16	1-1/4	525682	4	525780
1-13/16	8-1/8	5-7/8	5	7/16	–	–	4	525793
1-7/8	8-1/8	5-7/8	5	7/16	1-1/2	525683	4	525781
2	8-3/8	5-7/8	5	1/2	1-1/2	525684	4	525782
2-1/8	9-7/8	5-7/8	5	1/2	–	–	5	525783
2-1/4	9-7/8	5-7/8	5	1/2	–	–	5	525784
2-3/8	9-7/8	7-3/8	5	1/2	–	–	5	525785
2-1/2	9-7/8	7-3/8	5	1/2	–	–	5	525786

Counterbore Pilots

Precision Ground



- Pilots of different diameters can be used with each counterbore
- Used in spot facing and counterboring operations with same pilot
- A wide range of pilots can be used with each tool (*The shank diameter must be the same as the pilot hole size in the counterbore*)

Pilot Diameter (Inch)	Shank Diameter (Inch)							
	3/32	5/32	3/16	1/4	5/16	3/8	7/16	1/2
	Code	Code	Code	Code	Code	Code	Code	Code
1/8	311586	–	–	–	–	–	–	–
5/32	311587	–	–	–	–	–	–	–
3/16	311588	311593	–	–	–	–	–	–
7/32	311589	311594	311600	–	–	–	–	–
1/4	311590	311595	311601	–	–	–	–	–
9/32	311591	311596	311602	311615	–	–	–	–
5/16	311592	311597	311603	311616	–	–	–	–
11/32	–	311598	311604	311617	–	–	–	–
3/8	–	311599	311605	311618	311634	–	–	–
13/32	–	–	311606	311619	311635	311656	–	–
7/16	–	–	311607	311620	311636	311657	–	–
15/32	–	–	311608	311621	311637	311658	–	–
1/2	–	–	311609	311622	311638	311659	311682	–
17/32	–	–	311610	311623	311639	311660	311683	–
9/16	–	–	311611	311624	311640	311661	311684	311712
19/32	–	–	311612	311625	311641	311662	311685	–
5/8	–	–	311613	311626	311642	311663	–	311713
21/32	–	–	311614	311627	311643	311664	311687	–



Counterbore Pilots

Precision Ground (continued)

Pilot Diameter (Inch)	Shank Diameter (Inch)							
	3/32	5/32	3/16	1/4	5/16	3/8	7/16	1/2
	Code	Code	Code	Code	Code	Code	Code	Code
11/16	-	-	-	311628	311644	311665	311688	311714
23/32	-	-	-	311629	311645	311666	311689	-
3/4	-	-	-	311630	311646	311667	311690	311715
25/32	-	-	-	311631	311647	311668	311691	311716
13/16	-	-	-	311632	311648	311669	311692	311717
7/8	-	-	-	311633	311649	311670	311693	311718
29/32	-	-	-	-	311650	311671	311694	311719
15/16	-	-	-	-	311651	311672	311695	311720
31/32	-	-	-	-	311652	311673	311696	311721
1	-	-	-	-	311653	311674	311697	311722
1-1/16	-	-	-	-	311654	311675	311698	311723
1-1/8	-	-	-	-	311655	311676	311699	311724
1-3/16	-	-	-	-	-	311677	311700	311725
1-1/4	-	-	-	-	-	311678	311701	311726
1-5/16	-	-	-	-	-	311679	311702	311727
1-3/8	-	-	-	-	-	311680	311703	311728
1-7/16	-	-	-	-	-	311681	311704	-
1-1/2	-	-	-	-	-	-	311705	311730
1-9/16	-	-	-	-	-	-	311706	311731
1-5/8	-	-	-	-	-	-	311707	311732
1-11/16	-	-	-	-	-	-	311708	311733
1-3/4	-	-	-	-	-	-	311709	311734
1-13/16	-	-	-	-	-	-	-	311735
1-7/8	-	-	-	-	-	-	-	311736
1-15/16	-	-	-	-	-	-	-	311737
2	-	-	-	-	-	-	-	311738

Indexable Counterbores

Carbide – For Sockethead Cap Screw Holes

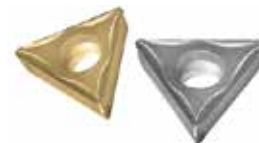
- Significant increase in cutting speeds over high speed steel
- No regrinding
- One carbide insert fits all size holders
- Outlasts high speed on abrasive materials
- No clamps to impede chip flow
- C5/C6 carbide insert and Torx® wrench included with each tool

HOLDERS & SETS



Carbide TPGH Inserts

- Triangle – positive rake
- Ground all over
- Chip groove on one side



Cap Screw Size (Inch)	Pilot Diameter (Inch)	Outer Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	No. of Flutes	Code
3/8	13/32	19/32	1/2	4-3/8	1	311032
7/16	15/32	11/16	1/2	4-7/16	1	311033
1/2	17/32	25/32	5/8	4-1/2	1	311034
5/8	21/32	31/32	5/8	4-5/8	2	311035
3/4	13/16	1-3/16	3/4	4-3/4	3	311036
7/8	15/16	1-3/8	3/4	4-7/8	3	311038
1	1-1/16	1-9/16	3/4	5	3	311038

Type	Radius (Inch)	I.C. (Inch)	Thickness (Inch)	Code
C2 Carbide	1/64	1/4	3/32	577459
C5 Carbide	1/64	1/4	3/32	577461
TiN Coated	0.008	1/4	3/32	210357
TiN Coated	1/64	1/4	3/32	577463

Replacement Screw

Description	Code
Torx® 6 screw for 1/4 inserts	577457

SETS – 4 Pieces – 3/8", 7/16", 1/2", 5/8", Torx® wrench Supplied in wooden block 311039

SETS – 3 Pieces – 3/4", 7/8", 1", Torx® wrench Supplied in wooden block 311040

Cap Screw Counterbores Multi-Tool System

Forward Counterbore Set

OPERATION FOR FORWARD AND BACKWARD APPLICATIONS

- STEP 1: Select appropriate pilot holder and blade for screw size needed
- STEP 2: Insert blade into pilot holder and tighten set screw
 - A) FORWARD COUNTERBORING: Use in clockwise direction
 - B) BACKWARD COUNTERBORING: Use in reverse spindle, counter-clockwise direction

- Simple design for standard cap screws
- More chip clearance
- Used in confined areas
- Using the same pilot holder you can forward counterbore or backward counterbore and spotface

Description	Code
SETS – 10 Pieces – One blade and one pilot holder for screw sizes No. 10, 1/4", 5/16", 3/8", and 1/2"	311031

Countersinks – 3 Flute

Metric – Cobalt M35, TiN Coated & Carbide



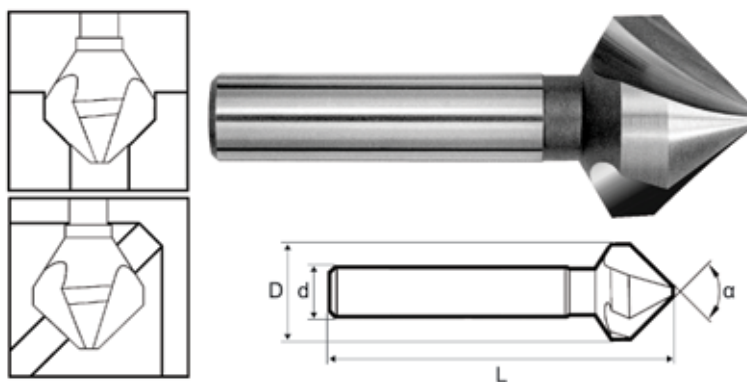
This highly productive countersinking cutter is a much improved version of the traditional multiflute milling cutter:

- wide flutes provide good chip evacuation
- positive cut
- constant profile aids regrinding of the tool
- self-centering of the cutting mill (three bearing points)
- virtually eliminates vibration

Dimensions are adapted so as to sink 90 degree screw caps up to M12. We recommend lubricating.

Carbide:

- Diameter 12.4 to 31 = 3 flatted shanks
- Diameter 4.3 to 8.3 = cylindrical shank
- Diameter 10.4 to 31 = brazed carbide head



Metric – Cobalt M35 & TiN Coated – 60°, 82°, 90°, 100°, & 120° Angles

D Overall Diameter (mm)	d Shank Diameter (mm)	Chamfer Range Min/Max (mm)	L Overall Length (Inch)	60° Angle	82° Angle	82° Angle	90° Angle	90° Angle	100° Angle	120° Angle
				Series 432	Series 434	Series 4834 - TiN	Series 431	Series 4831 - TiN	Series 435	Series 433
				Code	Code	Code	Code	Code	Code	Code
10.4	6	2.5-10.4	2	540301	540311	540361	540321	540371	540331	540341
16.5	10	3.2-16.5	2-1/4	540302	540312	540362	540322	540372	540332	540342
20.5	10	3.5-20.5	2-1/2	540303	540313	540363	540323	540373	540333	540343
25.0	10	3.8-25	2-5/8	540304	540314	540364	540324	540374	540334	540344
31.0	12	4.2-31	2-3/4	540305	540315	540365	540325	540375	540335	540345
40.0	16	8-40	4-1/2	–	–	–	*540326	–	–	–
50.0	16	10-50	5	–	–	–	*540327	–	–	–
63.0	16	10-63	5-1/2	–	–	–	*540328	–	–	–
80.0	16	14-80	6-1/2	–	–	–	*540329	–	–	–

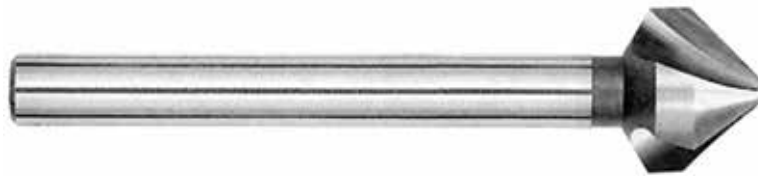
*Three gripping flats on shank

Countersinks – 3 Flute

Metric – Cobalt M35, TiN Coated & Carbide (continued)



Metric – Cobalt – 90° Angle – Extra-Long



D Overall Diameter (mm)	d Shank Diameter (mm)	Chamfer Range Min/Max (mm)	L Overall Length (Inch)	Series 4303 Code
6.3	6	1.3-6.3	3.3	540500
8.3	8	1.8-8.3	3.3	540501
10.4	10	2.2-10.4	3.42	540502
12.4	10	2.5-12.4	4.25	540503

D Overall Diameter (mm)	d Shank Diameter (mm)	Chamfer Range Min/Max (mm)	L Overall Length (Inch)	Series 4303 Code
16.5	16	2.8-16.5	4.4	540504
20.5	16	3-20.5	4.52	540505
25	20	3.2-25	4.64	540506

Metric – Carbide – 90° Angle

Hard'X: AlTiN carbide tool coating with a high hardness of 3500 HV. This coating shows high thermic stability and excellent protection against heat and wear. Ideal for dry machining – high speed cut – in treated steels and dies up to 67 HRC

D Overall Diameter (mm)	d Shank Diameter (mm)	Chamfer Range Min/Max (mm)	L Overall Length (mm)	Series 8431 Code	Hard'X Series 8431-H Code
4.3	4	1.3-4.3	40	314357	314387
5.3	4	1.3-5.3	40	314360	314390
6.3	5	1.3-6.3	45	314363	314393
8.3	6	1.8-8.3	50	314366	314396
10.4	6	2.2-10.4	50	314369	314399
12.4	8	2.5-12.4	56	314372	314402

D Overall Diameter (mm)	d Shank Diameter (mm)	Chamfer Range Min/Max (mm)	L Overall Length (mm)	Series 8431 Code	Hard'X Series 8431-H Code
16.5	10	2.8-16.5	60	314375	314405
20.5	10	3-20.5	63	314378	314408
25	10	3.2-25	67	314381	314411
31	12	3.5-31	71	314384	314414

Metric – Carbide – 90° Angle – Extra-Long

D Overall Diameter (mm)	d Shank Diameter (mm)	Chamfer Range Min/Max (mm)	L Overall Length (mm)	Series 8431-L Code
6.3	6	1.3-6.3	84	314417
8.3	8	1.8-8.3	85	314420
10.4	10	2.2-10.4	87	314423
12.4	10	2.5-12.4	108	314426

D Overall Diameter (mm)	d Shank Diameter (mm)	Chamfer Range Min/Max (mm)	L Overall Length (mm)	Series 8431-L Code
16.5	16	2.8-16.5	112	314429
20.5	16	3-20.5	115	314432

Metric – Cobalt M35 & TiN Coated – 5-Piece Sets

- Sizes included: 10.4, 16.5, 20.5, 25 and 31mm (for other dimension see above "Cobalt M35 – 60°, 82°, 90°, 100°, and 120° Angles")
- Supplied in fitted storage case



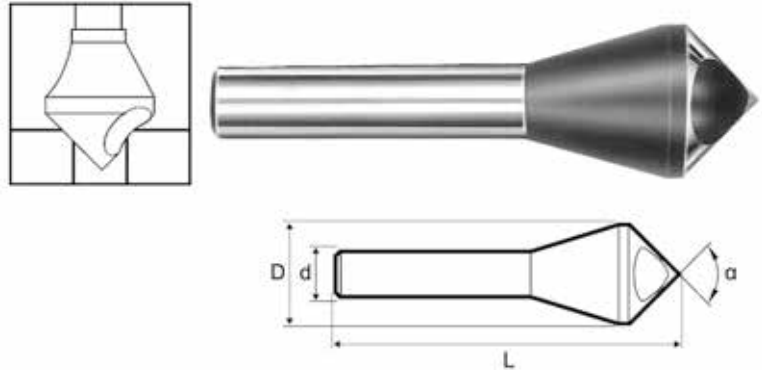
Included Angle	Cobalt M35	TiN Coated
	Code	Code
60°	540351	541351
82°	540352	541352
90°	540353	541353
100°	540354	541354
120°	540355	541355

Countersinks – Chatterless with Hole

Cobalt M35 & TiN Coated



- The hole-style deburring tool is designed to countersink and chamfer light metals and plastics
- The finish is smooth and free of burrs
- Lubrication is recommended



Inch & Metric – Cobalt M35 & TiN Coated – 60°, 82°, 90°, 100°, & 120° Angles

D Overall Diameter (Inch)	D Overall Diameter (mm)	d Shank Diameter	Chamfer Range Min/Max	L Overall Length (Inch)	60° Angle	82° Angle	82° Angle	90° Angle	90° Angle	100° Angle	120° Angle
					Series 412	Series 414	Series 4814 - TiN	Series 411	Series 4811	Series 415	Series 413
					Code	Code	Code	Code	Code	Code	Code
1/4	–	1/4"	0.08"-0.20"	1-3/4	♦601076	♦601081	601281	♦601086	601286	–	–
–	10	6 mm	4 mm-9 mm	1-3/4	540101	540111	541111	540121	541121	540131	540141
7/16	–	1/4"	0.20"-0.39"	1-3/4	601077	601082	601282	601087	601287	–	–
9/16	–	1/4"	0.24"-0.51"	2	601078	601083	601283	601088	601288	–	–
–	15	8 mm	6 mm-14 mm	2	540102	540112	541112	540122	541122	540132	540142
–	20	10 mm	8 mm-18 mm	2-1/2	540103	540113	541113	540123	541123	540133	540143
13/16	–	1/2"	0.31"-0.70"	2-5/8	601079	601084	601284	601089	601289	–	–
–	25	12 mm	10 mm-23 mm	3	540104	540114	541114	540124	541124	540134	540144
–	30	12 mm	12 mm-28 mm	3-1/2	540105	540115	541115	540125	541125	540135	540145
1-3/16	–	1/2"	0.47"-1.10"	3-1/2	601080	601085	601285	601090	601290	–	–
–	35	16 mm	14 mm-33 mm	4	*540106	*540116	541136	*540126	541126	*540136	*540146
–	40	16 mm	16 mm-38 mm	4-1/2	–	–	–	540127	–	–	–
–	50	16 mm	20 mm-48 mm	5	–	–	–	540128	–	–	–

- ♦ Double Ended
- * Three gripping flats on shank

Inch & Metric – Cobalt M35 & TiN Coated – 5-Piece Sets

- Sizes included: Inch – 1/4", 7/16", 9/16", 13/16" and 1-3/16"
Metric – 10 mm, 15 mm, 20 mm, 25 mm and 30 mm
(for other dimension see above "Cobalt M35 – 60°, 82°, 90°, 100°, and 120° Angles")
- Supplied in fitted storage case



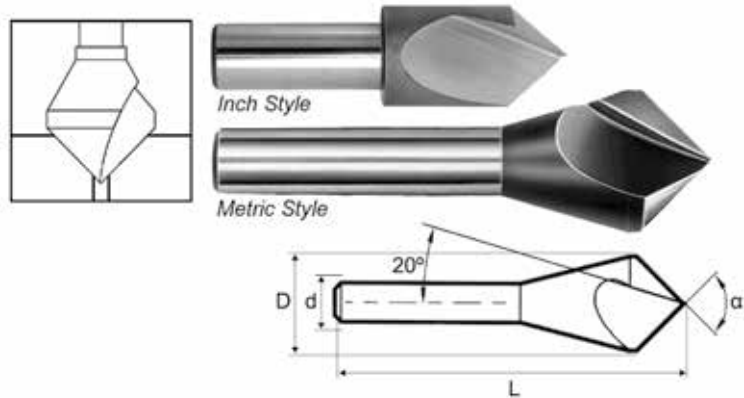
Included Angle	Inch Cobalt 35	Inch TiN Coated	Metric Cobalt 35	Metric TiN Coated
	Code	Code	Code	Code
60°	601091	601291	540151	541151
82°	601092	601292	540152	541152
90°	601093	601293	540153	541153
100°	–	–	540154	541154
120°	–	–	540155	541155

Countersinks – Single Flute

Cobalt M35 & TiN Coated



- Chamfers to outside diameter
- Up sharp cutting edge for smooth finish
- Lubrication is recommended
- Can be reground



Inch & Metric – Cobalt M35 & TiN Coated – 60°, 82°, 90°, 100°, & 120° Angles

D Overall Diameter (Inch)	D Overall Diameter (mm)	d Shank Diameter	Chamfer Range Min/Max	L Overall Length (Inch)	60° Angle Series 422	82° Angle Series 424	82° Angle Series 4824 TiN	90° Angle Series 421	90° Angle Series 4821 TiN	100° Angle Series 425	120° Angle Series 423
					Code	Code	Code	Code	Code	Code	
1/8	–	1/8"	0"-1/8"	1-1/4	601094	601105	601305	601116	601416	–	–
3/16	–	3/16"	1/64"-3/16"	1-3/8	601095	601106	601306	601117	601417	–	–
1/4	–	1/4"	1/32"-1/4"	1-1/2	601096	601107	601307	601118	601418	–	–
5/16	–	1/4"	1/32"-5/16"	1-3/4	601097	601108	601308	601119	601419	–	–
3/8	–	1/4"	1/32"-3/8"	1-3/4	601098	601109	601309	601120	601420	–	–
–	10	6 mm	1 mm-10 mm	1-3/4	540201	540211	541211	540221	541221	540231	540241
1/2	–	1/4"	1/16"-1/2"	2	601099	601110	601310	601121	601421	–	–
–	15	8 mm	2 mm-15 mm	2-1/8	540202	540212	541212	540222	541222	540232	540242
5/8	–	3/8"	1/16"-5/8"	2-1/4	601100	601111	601311	601122	601422	–	–
3/4	–	1/2"	1/16"-3/4"	2-9/16	601101	601112	601312	601123	601423	–	–
–	20	10 mm	2 mm-20 mm	2-9/16	540203	540213	541213	540223	541223	540233	540243
7/8	–	1/2"	1/16"-7/8"	2-3/4	601102	601113	601313	601124	601424	–	–
–	25	12 mm	3 mm-25 mm	3	540204	540214	541214	540224	541224	540234	540244
1	–	1/2"	1/8"-1"	3	601103	601114	601314	601125	601425	–	–
–	30	12 mm	3 mm-30 mm	3-1/2	540205	540215	541215	540225	541225	540235	540245
1-1/4	–	1/2"	1/8"-1-1/4"	2-3/4	601104	601115	601315	601126	601426	–	–
–	35	16 mm	4 mm-35 mm	4	–	–	–	*540226	541226	–	–
–	40	16 mm	5 mm-40 mm	4-1/2	–	–	–	*540227	541227	–	–
–	50	16 mm	12 mm-50 mm	5	–	–	–	*540228	541228	–	–
–	63	MT3	12 mm-63 mm	7-5/32	–	–	–	540229	–	–	–

*Three gripping flats on shank

Inch & Metric – Cobalt M35 & TiN Coated – 5 & 6-Piece Sets

- Sizes included: Inch – 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4"
Metric – 10mm, 15mm, 20mm, 25mm and 30mm
(for other dimension see above "Cobalt M35 – 60°, 82°, 90°, 100°, and 120° Angles")
- Supplied in fitted storage case



Included Angle	Inch 6-Piece Set Cobalt 35	Inch 6-Piece Set TiN Coated	Metric 5-Piece Set Cobalt 35	Metric 5-Piece Set TiN Coated
	Code	Code	Code	Code
60°	601127	601227	540251	541251
82°	601128	601228	540252	541252
90°	601129	601229	540253	541253
100°	–	–	540254	541254
120°	–	–	540255	541255

Countersinks – Chatterless – 6 Flute High Speed Steel & Cobalt



- Designed for fast shearing cut

Inch – High Speed Steel & Cobalt – 60°, 82°, & 90° Angles

Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	HSS			Cobalt		
			60° Angle	82° Angle	90° Angle	60° Angle	82° Angle	90° Angle
			Code	Code	Code	Code	Code	Code
1/4	1/4	2	601130	601142	601154	601166	601178	601190
5/16	1/4	2	601131	601143	601155	601167	601179	601191
3/8	1/4	2	601132	601144	601156	601168	601180	601192
1/2	1/4	2	601133	601145	601157	601169	601181	601193
5/8	1/2	2-3/4	601134	601146	601158	601170	601182	601194
3/4	1/2	2-3/4	601135	601147	601159	601171	601183	601195
7/8	1/2	2-3/4	601136	601148	601160	601172	601184	601196
1	1/2	2-3/4	601137	601149	601161	601173	601185	601197
1-1/4	3/4	3-3/8	601138	601150	601162	601174	601186	601198
1-1/2	3/4	3-1/2	601139	601151	601163	601175	601187	601199
1-3/4	1	4-1/4	601140	601152	601164	601176	601188	601200
2	1	4-3/8	601141	601153	601165	601177	601189	601201

Countersinks – Single Flute Carbide – Steel Shanks



- For mild steels

Inch – 82°, 90° Angles

Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	82°	90°	Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	82°	90°
			Included Angle	Included Angle				Included Angle	Included Angle
			Code	Code				Code	Code
1/8	1/8	1-1/2	950024	950048	1/2	1/4	2-1/2	950032	950056
3/16	3/16	1-1/2	950026	950050	5/8	1/4	2-5/8	950034	950058
1/4	1/4	2	950028	950052	3/4	3/8	2-7/8	950036	950060
3/8	1/4	2-7/16	950030	950054	1	1/2	3	950038	950062

Countersinks – 3 Flute

Carbide – Steel Shanks



Inch – 60°, 82°, 90° Angles

Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	60°	82°	90°	Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	60°	82°	90°
			Included Angle	Included Angle	Included Angle				Included Angle	Included Angle	Included Angle
			Code	Code	Code				Code	Code	Code
3/16	3/16	1-1/2	950074	950098	950122	5/8	3/8	2-1/2	950082	950106	950130
1/4	1/4	2	950076	950100	950124	3/4	3/8	2-3/4	950084	950108	950132
3/8	1/4	2-1/2	950078	950102	950126	1	1/2	2-3/4	950086	950110	950134
1/2	1/4	2-1/2	950080	950104	950128						

Countersinks – 6 Flute

Carbide – Steel Shanks



Inch – 60°, 82°, & 90° Angles

Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	60°	82°	90°	Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	60°	82°	90°
			Included Angle	Included Angle	Included Angle				Included Angle	Included Angle	Included Angle
			Code	Code	Code				Code	Code	Code
1/4	1/4	2	950144	950166	950186	3/4	1/2	3	950152	950174	950194
3/8	1/4	2-13/16	950146	950168	950188	1	1/2	3-1/4	950154	950176	950196
1/2	1/4	2-7/8	950148	950170	950190	1-1/2	3/4	3-1/2	950156	–	–
5/8	3/8	3	950150	950172	950192						

Countersinks – Multi Flute

Carbide – Steel Shanks



- For hardened steel up to 60 HRC

Inch – 82°, & 90° Angles

Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	90°	Diameter (Inch)	Shank Diameter (Inch)	Overall Length (Inch)	90°
			Included Angle				Included Angle
			Code				Code
1/4	1/4	2	938762	3/4	1/4	2-9/32	938770
3/8	1/4	2-1/16	938764	1	1/4	2-3/8	938772
1/2	1/4	2-1/8	938766				
5/8	1/4	2-7/32	938768				

Machine Countersink Sets – 6 Flute

High Speed Steel



Included Angle	Description	Code
60°	SET – 5 Pieces – 1/4", 3/8", 1/2", 3/4", 1"	601202
60°	SET – 8 Pieces – 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1"	601203
82°	SET – 5 Pieces – 1/4", 3/8", 1/2", 3/4", 1"	601206
82°	SET – 8 Pieces – 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1"	601207
82°	SET – 11 Pieces – 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/4", 1-1/2"	601209
90°	SET – 5 Pieces – 1/4", 3/8", 1/2", 3/4", 1"	601210
90°	SET – 8 Pieces – 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1"	601211
90°	SET – 10 Pieces – 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/4", 1-1/2"	601212



Center Reamers – 3 Flute

High Speed Steel

Included Angle	Description	Code
60°	SET – 5 Pieces – 1/4", 3/8", 1/2", 3/4", 1"	601214
82°	SET – 5 Pieces – 1/4", 3/8", 1/2", 3/4", 1"	601216
82°	SET – 6 Pieces – 1/4", 3/8", 1/2", 5/8", 3/4", 1"	601217