FOR METRIC FLAT HEAD SOCKET CAP SCREWS

SpyroTec 90°

Ideal for fasteners with 90° heads.
Perfect choice for general deburring and chamfering of holes.

from p. 8

NEW

SpyroTec 90°
Sets now with Ø 25mm

90° Countersinks, spiral-fluted

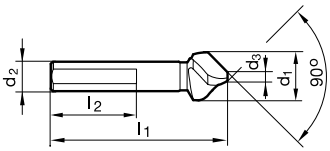
Series	5501
Tool material	HSCO
Coating	TiAlN A
Shank form	tri-flat

DIN 335 | 90° | C

Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	○
S	Ni / Ti alloys	○
H	Hardened steel	
●=Optimal	○=Secondary	

- 3 different convex cutting edges
- tri-flat shank prevents slipping in the chuck
- perfect for hand drills
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

Operating parameters pg. 22



d1 mm	d2 mm	d3 mm	l1 mm	l2 mm	Z	Code no.	EDP Number
6.300	5.000	1.500	45.000	30.000	3	6.300	**9055010063000**
8.000	6.000	2.000	50.000	30.000	3	8.000	**9055010080000**
8.300	6.000	2.000	50.000	30.000	3	8.300	**9055010083000**
10.000	6.000	2.500	50.000	30.000	3	10.000	**9055010100000**
10.400	6.000	2.500	50.000	30.000	3	10.400	**9055010104000**
11.500	8.000	2.800	56.000	30.000	3	11.500	**9055010115000**
12.400	8.000	2.800	56.000	30.000	3	12.400	**9055010124000**
15.000	10.000	3.200	60.000	30.000	3	15.000	**9055010150000**
16.500	10.000	3.200	60.000	30.000	3	16.500	**9055010165000**
19.000	10.000	3.500	63.000	30.000	3	19.000	**9055010190000**
20.500	10.000	3.500	63.000	30.000	3	20.500	**9055010205000**
23.000	10.000	3.800	67.000	30.000	3	23.000	**9055010230000**
25.000	10.000	3.800	67.000	30.000	3	25.000	**9055010250000**
31.000	12.000	4.200	71.000	30.000	3	31.000	**9055010310000**
40.000	12.000	10.000	75.000	30.000	3	40.000	**9055010400000**

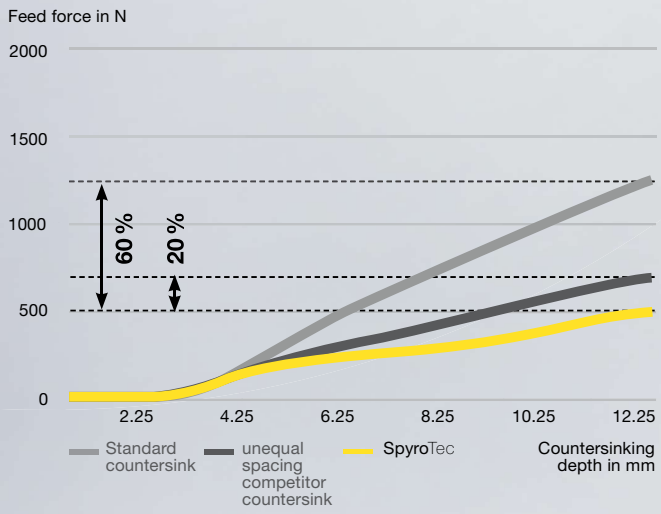
Series # 5500, 5501, 5538, 5539, 5674, 5675, 5676, 5677

Material group	Hardness			Feed Rate - IPR								
				6.30 mm	8.00 mm	10.00 mm	12.50 mm	16.00 mm	20.00 mm	25.00 mm	31.50 mm	41.00 mm
	HRc	Bhn	SFM	0.248 In.	0.315 In.	0.394 In.	0.492 In.	0.630 In.	0.787 In.	0.984 In.	1.240 In.	1.614 In.
Common structural steels	-	≤ 150	135	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
	≤ 32	≤ 301	130	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
Free-cutting steels	≤ 25	≤ 255	135	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
	≤ 32	≤ 301	130	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
Unalloyed heat-treatable steels	≤ 20	≤ 220	135	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
	≤ 25	≤ 255	130	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
	≤ 32	≤ 301	80	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
Alloyed heat-treatable steels	≤ 32	≤ 301	60	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
	≤ 43	≤ 402	50	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
Unalloyed case hardened steels	≤ 25	≤ 255	105	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
Alloyed case hardened steels	≤ 32	≤ 301	60	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
	≤ 43	≤ 402	45	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
Nitriding steels	≤ 32	≤ 301	60	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
	≤ 43	≤ 402	50	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
Tool steels	≤ 25	≤ 255	70	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
	≤ 43	≤ 402	60	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
High speed steels	≤ 43	≤ 402	60	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
Spring steels	≤ 38	≤ 354	45	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
Hardened steels	≤ 48	≤ 460										
	≤ 66	-										
Stainless steels, sulphured	≤ 28	≤ 273	65	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
austenitic	≤ 36	≤ 337	50	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
martensitic	≤ 46	≤ 435	60	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
Cast iron	≤ 23	≤ 242	105	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
	≤ 38	≤ 354	65	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
Spheroidal graphite iron and	≤ 23	≤ 242	90	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
malleable cast iron	≤ 38	≤ 354	80	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
Chilled cast iron	≤ 38	≤ 354	35	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
New cast materials GGV	≤ 20	≤ 220	90	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
	≤ 32	≤ 301	60	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
New cast materials ADI	≤ 32	≤ 301										
	≤ 43	≤ 402										
Special alloys	≤ 54	≤ 549	35	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
Ti and Ti-alloys	≤ 25	≤ 255	60	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0060	0.0065	0.0085
	≤ 43	≤ 402	45	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0035	0.0045	0.0055
Aluminium and Al-alloys	-	≤ 120	375	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Al wrought alloys	-	≤ 200	290	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Al cast alloys ≤ 10 % Si	-	≤ 180	165	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
> 10 % Si	-	≤ 180	130	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0085	0.0095	0.0110
Magnesium alloys	-	≤ 120	415	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Copper, low-alloyed	-	≤ 150	250	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Brass, short-chipping	-	≤ 180	330	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
long-chipping	-	≤ 180	210	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Bronze, short-chipping	-	≤ 180	130	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
	≤ 25	≤ 255	110	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Bronze, long-chipping	≤ 25	≤ 255	100	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
	≤ 32	≤ 301	80	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Duroplastics			130	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Thermoplastics			165	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0100	0.0120	0.0135
Reinforced plastics - Kevlar												
Reinforced plastics - GFK / CFK												

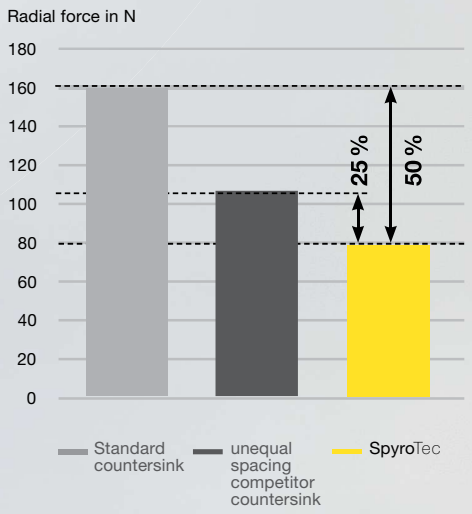
SpyroTec

THE INNOVATIVE, TWISTED HSS AND HSCO COUNTERSINK

The axial and radial forces that occur during countersinking operations are significantly reduced due to the unique geometry of the SpyroTec cutting edges. The convex form and variable pitch of the helical cutting edges results in a stable countersinking process with minimal vibration, even when using a hand drill. Round, precise, chatter-free countersinking is guaranteed. The TiAlN coating ensures higher wear resistance and thermal protection, which guarantees longer tool life in many different materials and applications.



LOWER FEED FORCE BY APPROX. 60%
COMPARED TO STANDARD COUNTERSINKS



LOWER RADIAL FORCE BY APPROX. 50%
COMPARED TO STANDARD COUNTERSINKS

- standard program
- 90°, 82°, and 60° countersinks
- round shank version
- tri-flat shank version
- long length round shank version

Countersinking with standard countersink

SpyroTec

CONVEX CUTTING EDGES

Three different convex cutting edges in combination with three unequal helix angles enable extremely stable and low-vibration cutting processes without any chatter marks.

TiAlN COATING

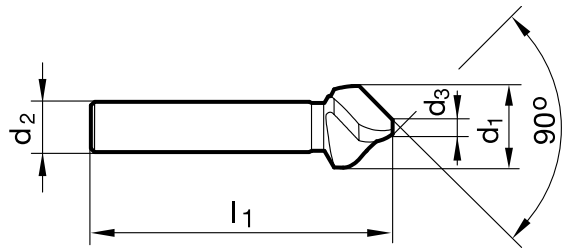
The TiAlN coating provides high hardness and excellent thermal protection.

CUTTING MATERIAL

The high-quality HSS and HSCO substrates hold up well in high-temperature applications, providing long tool life in a wide variety of materials.

SPYROTEC – SPIRAL-FLUTED COUNTERSINKS

Suitable for countersinking the smallest allowable hole diameters and screw sizes listed below.

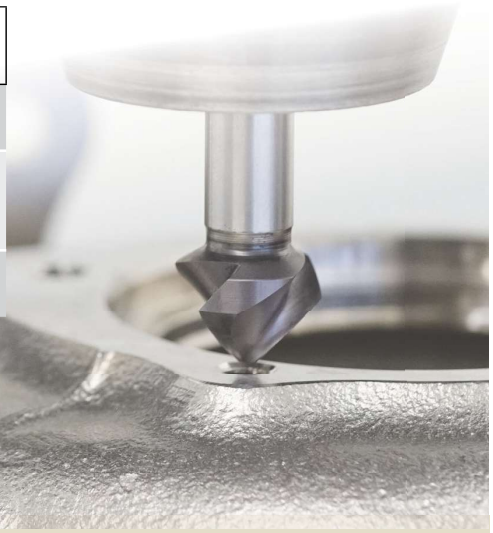


SpyroTec 90°

d1	smallest allowable hole Ø	for countersunk screws ISO 2009, 2010, 7046, 7047	for countersunk screws DIN 7991
6.300	2.00	-	M3
8.000	2.50	M4	-
8.300	2.50	-	M4
10.000	3.00	M5	-
10.400	3.00	-	M5
11.500	3.30	M6	-
12.400	3.30	-	M6
15.000	3.70	M8	-
16.500	3.70	-	M8
19.000	4.50	M10	-
20.500	4.50	-	M10
23.000	4.80	M12	-
25.000	4.80	-	M12
31.000	5.20	-	M16
40.000	12.00	-	M24

SpyroTec 82°

d1 frac.	Smallest hole - Ø to allow countersinking - inch
1/4	0.0830
5/16	0.1020
3/8	0.1100
1/2	0.1730
5/8	0.2010
3/4	0.2520
7/8	0.2720
1	0.2910
1 1/4	0.4090

SpyroTec 60°

d1	smallest hole - Ø to allow countersinking - mm
6.300	2.10
8.000	2.50
10.000	3.00
12.500	3.70
16.000	4.50
20.000	6.00
25.000	7.30