

GUHRING



90° countersinks with convex cutting edges

- universal application in nearly any material
- round, precise and chatter-free countersinking
- reduction of feed force by 60 %
- reduction of radial force by 50 %

SpyroTec

Helical HSS and HSCO countersink

GUHRING – YOUR WORLDWIDE PARTNER

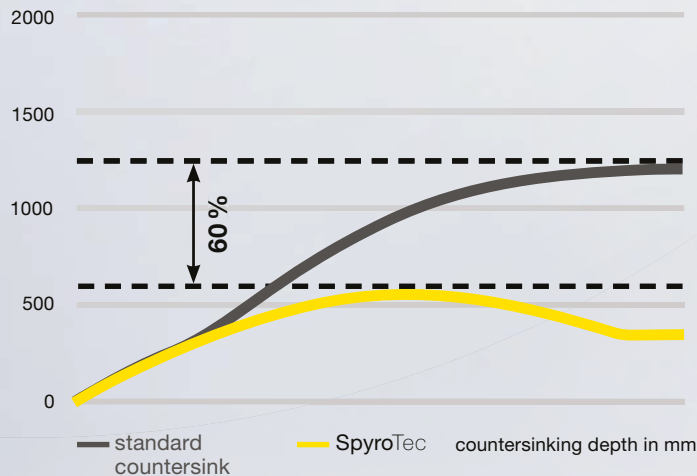
SpyroTec

THE INNOVATIVE, HELICAL 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

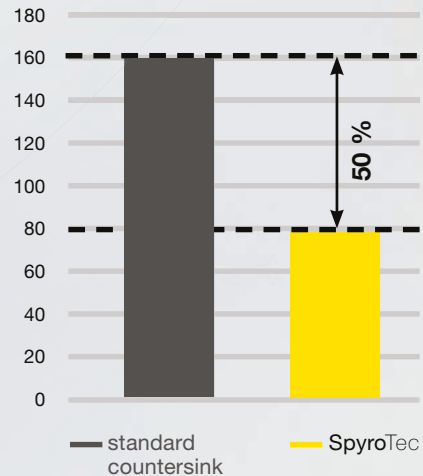
using a hand drill. Round, precise, chatter-free countersinking is guaranteed. The TiAlN coating ensures higher wear resistance and thermal protection, which guarantees longer tool life in many different materials and applications.

feed force in N



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

radial force in N



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

- standard program
- 14 dimensions $\text{\O}6.3\text{--}31.0\text{ mm}$
- 90° countersink according to DIN 335 form C
- 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.

TiAIN COATING

The titanium aluminum nitride coating provides high hardness and excellent thermal protection.

CUTTING MATERIAL

The high-speed steel cobalt substrate holds up well in high temperature applications, providing long tool life in a wide variety of materials.



90° Countersinks, spiral-fluted

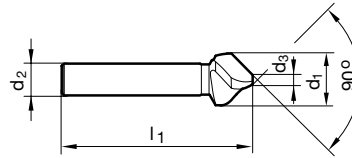
DIN
335



C

P	•	• 3 different convex cutting edges
M	•	• low-vibration cutting processes
K	•	• for round and chatter-free countersinking
N	○	• considerably lower feed force required
S	○	• for universal application
H		

Tool material	HSCO
Coating	TiAIN A
Shank form	cyl.

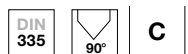


Article no. **5500**

d1	d2	d3	l1	Z	EDP Number
mm	mm	mm	mm		
6.300	5.000	1.500	45.000	3	9055000063000
8.000	6.000	2.000	50.000	3	9055000080000
8.300	6.000	2.000	50.000	3	9055000083000
10.000	6.000	2.500	50.000	3	9055000100000
10.400	6.000	2.500	50.000	3	9055000140000
11.500	8.000	2.800	56.000	3	9055000115000
12.400	8.000	2.800	56.000	3	9055000124000
15.000	10.000	3.200	60.000	3	9055000150000
16.500	10.000	3.200	60.000	3	9055000165000
19.000	10.000	3.500	63.000	3	9055000190000
20.500	10.000	3.500	63.000	3	9055000205000
23.000	10.000	3.800	67.000	3	9055000230000
25.000	10.000	3.800	67.000	3	9055000250000
31.000	12.000	4.200	71.000	3	9055000310000



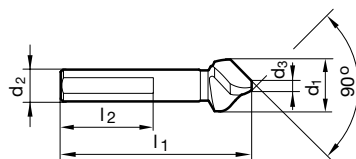
90° Countersinks, spiral-fluted



C

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

Tool material	HSCO
Coating	TiAlN A
Shank form	3-surface



Article no. **5501**

d1	d2	d3	l1	l2	Z	EDP Number
mm	mm	mm	mm	mm		
6.300	5.000	1.500	45.000	30.000	3	9055010063000
8.000	6.000	2.000	50.000	30.000	3	9055010080000
8.300	6.000	2.000	50.000	30.000	3	9055010083000
10.000	6.000	2.500	50.000	30.000	3	9055010100000
10.400	6.000	2.500	50.000	30.000	3	9055010140000
11.500	8.000	2.800	56.000	30.000	3	9055010115000
12.400	8.000	2.800	56.000	30.000	3	9055010124000
15.000	10.000	3.200	60.000	30.000	3	9055010150000
16.500	10.000	3.200	60.000	30.000	3	9055010165000
19.000	10.000	3.500	63.000	30.000	3	9055010190000
20.500	10.000	3.500	63.000	30.000	3	9055010205000
23.000	10.000	3.800	67.000	30.000	3	9055010230000
25.000	10.000	3.800	67.000	30.000	3	9055010250000
31.000	12.000	4.200	71.000	30.000	3	9055010310000



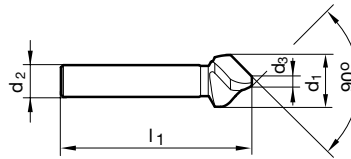
90° Countersinks, spiral-fluted



C

P	•	• long version for recessed machining points
M	○	• 3 different convex cutting edges
K	•	• low-vibration cutting processes
N	○	• for round and chatter-free countersinking
S	○	• considerably lower feed force required
H		• for universal application

Tool material	HSS
Coating	TiAlN A
Shank form	cyl.



Article no. 5503

d1	d2	d3	l1	Z	EDP Number
mm	mm	mm	mm		
6.300	5.000	1.500	104.000	3	9055030006300
8.300	6.000	2.000	105.000	3	9055030008300
10.400	6.000	2.500	107.000	3	9055030010400
12.400	8.000	2.800	108.000	3	9055030012400
16.500	10.000	3.200	111.000	3	9055030016500
20.500	10.000	3.500	114.000	3	9055030020500
25.000	10.000	3.800	118.000	3	9055030025000
31.000	12.000	4.200	140.000	3	9055030031000



90° Countersink sets, spiral-fluted

DIN 335 C

P	•	<ul style="list-style-type: none"> • consisting of art. no. 5500 • 3 different convex cutting edges • low-vibration cutting processes • for round and chatter-free countersinking • considerably lower feed force required • for universal application
M	•	
K	•	
N	○	
S	○	
H		

Tool material	HSCO
Coating	TiAIN A
Shank form	cyl.



Article no. **5538**

Ø-range mm	Pieces/set
6,3/8,3/10,4/12,4/16,5/20,5	6

EDP Number



90° Countersink sets, spiral-fluted

DIN
335

C

Tool material	HSCO
Coating	TiAIN ^A
Shank form	3-surface

P	•	• consisting of art. no. 5501
M	•	• 3 different convex cutting edges
K	•	• 3-surface shank prevents slipping in the chuck
N	○	• perfect for hand drills
S	○	• low-vibration cutting processes
H		• for round and chatter-free countersinking
		• considerably lower feed force required
		• for universal application



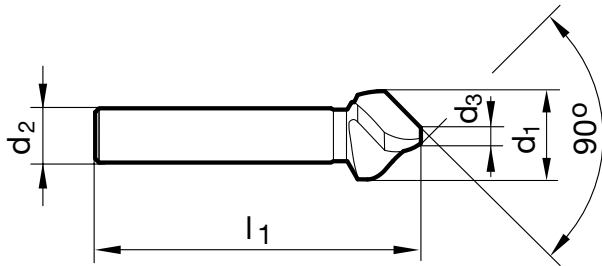
Article no. **5539**

Ø-range mm	Pieces/set	EDP Number
6,3/8,3/10,4/12,4/16,5/20,5	6	



SPYROTEC – SPIRAL-FLUTED COUNTERSINKS

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



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



Series # 5500, 5501, 5538, 5539

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



Series # 5503

Material group	Hardness		SFM	Feed Rate - IPR							
	HRC	Bhn		6.30 mm	8.00 mm	10.00 mm	12.50 mm	16.00 mm	20.00 mm	25.00 mm	31.50 mm
Common structural steels	-	≤ 150	120	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 32	≤ 301	115	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
Free-cutting steels	≤ 25	≤ 255	120	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 32	≤ 301	115	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
Unalloyed heat-treatable steels	≤ 20	≤ 220	120	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 25	≤ 255	115	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 32	≤ 301	75	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
Alloyed heat-treatable steels	≤ 32	≤ 301	55	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 43	≤ 402	45	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
Unalloyed case hardened steels	≤ 25	≤ 255	95	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
Alloyed case hardened steels	≤ 32	≤ 301	55	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 43	≤ 402	40	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
Nitriding steels	≤ 32	≤ 301	55	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
	≤ 43	≤ 402	45	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
Tool steels	≤ 25	≤ 255	65	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
	≤ 43	≤ 402	55	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
High speed steels	≤ 43	≤ 402	55	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
Spring steels	≤ 38	≤ 354	40	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
Hardened steels	≤ 48	≤ 460									
	≤ 66	-									
Stainless steels, sulphured	≤ 28	≤ 273	60	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
	≤ 36	≤ 337	45	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
	≤ 46	≤ 435	50	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
Cast iron	≤ 23	≤ 242	95	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 38	≤ 354	60	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	80	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 38	≤ 354	75	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
Chilled cast iron	≤ 38	≤ 354	30	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
New cast materials GGV	≤ 20	≤ 220	80	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	≤ 32	≤ 301	50	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
New cast materials ADI	≤ 32	≤ 301									
	≤ 43	≤ 402									
Special alloys	≤ 54	≤ 549	30	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
Ti and Ti-alloys	≤ 25	≤ 255	55	0.0030	0.0030	0.0035	0.0040	0.0045	0.0050	0.0065	0.0030
	≤ 43	≤ 402	40	0.0015	0.0020	0.0025	0.0025	0.0030	0.0030	0.0045	0.0015
Aluminium and Al-alloys	-	≤ 120	340	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Al wrought alloys	-	≤ 200	265	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Al cast alloys ≤ 10 % Si	-	≤ 180	150	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
	-	≤ 180	115	0.0045	0.0050	0.0055	0.0060	0.0065	0.0070	0.0095	0.0045
Magnesium alloys	-	≤ 120	375	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Copper, low-alloyed	-	≤ 150	225	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Brass, short-chipping	-	≤ 180	300	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
	-	≤ 180	190	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Bronze, short-chipping	-	≤ 180	115	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
	≤ 25	≤ 255	100	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Bronze, long-chipping	≤ 25	≤ 255	90	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
	≤ 32	≤ 301	75	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Duroplastics			115	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Thermoplastics			150	0.0060	0.0065	0.0065	0.0075	0.0085	0.0090	0.0120	0.0060
Reinforced plastics - Kevlar											
Reinforced plastics - GFK / CFK											



Milling

Tapping/Thread milling/
Fluteless tapping

Drilling

Countersinking

Reaming

PCD

Services

Modular systems

Special solutions

Grooving systems

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 Bloomfield, CT 06002

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 24975 Trans X Road,
 Novi, MI 48375

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Item No. 400001616