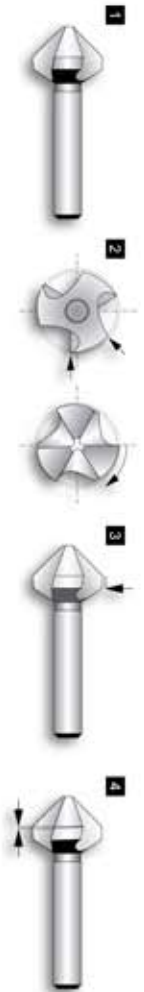


Countersink

The flutes of the new ZONO high-performance countersinks are CBN ground from the fully hardened material. A better and sharper cutting edge is achieved - without burrs. And, with higher dimensional precision the countersinks will last considerably longer while maintaining the precise tolerances. Because of the CBN deep-ground flutes the cutting edges are extremely sharp. Applicable for steel, cast iron, non-ferrous and light metals. Best results at low cutting speeds. This tough tool is suitable for all standard industrial materials: non-ferrous metal, stainless steel, as well as sheet metals. The countersink as per DIN 335 are suitable in particular for countersinking of type A and B of fine execution as per DIN 74. By using ZONO cutting spray or ZONO cutting paste, longer tool life and superior surface quality of the work piece is guaranteed.



1. CBN ground flute

CBN deep-ground flutes have better and sharper cutting edges-without burrs unlike conventional milled flutes. This guarantees a superior cutting edge and considerably longer tool life. The CBN ground countersinks ensure an excellent chip flow, chatter free working, scratch-free surface and have ideal centring features.

2. Radial adjusted relief produced by CBN grinding

Because the radial-adjusted relief produced by CBN grinding relates directly to its diameter, the cutting edge is always the highest point of the diameter.

3. Axial relief produced by CBN grinding

The axial relief produced by CBN grinding guarantees a smooth low-heat cut.

4. CBN ground relief angle

Each diameter has its own relief angle. Consequently the cutting edge is always the highest point too.



DIN335C 90° COUNTERSINK



| Ø2 mm | Ø1 mm | L1 mm | Ø3 mm | DIN74 | | Article no. HSS | Article no. HSS-E | Article no. HSS-TiN | Article no. HSS-TiAlN |
|----------|----------|----------|----------|-------|-----|--------------------|----------------------|------------------------|--------------------------|
| | | | | AF | BF | | | | |
| 4.3 | 1.3 | 40.0 | 4.0 | | | 60301 | 60301E | 60301T | 60301F |
| 4.8 | 1.5 | 40.0 | 4.0 | | | 60302 | 60302E | 60302T | 60302F |
| 5.0 | 1.5 | 40.0 | 4.0 | M2.5 | | 60303 | 60303E | 60303T | 60303F |
| 5.3 | 1.5 | 40.0 | 4.0 | | | 60304 | 60304E | 60304T | 60304F |
| 5.8 | 1.5 | 45.0 | 5.0 | | | 60305 | 60305E | 60305T | 60305F |
| 6.0 | 1.5 | 45.0 | 5.0 | M3 | | 60306 | 60306E | 60306T | 60306F |
| 6.3 | 1.5 | 45.0 | 5.0 | | M3 | 60307 | 60307E | 60307T | 60307F |
| 7.0 | 1.8 | 50.0 | 6.0 | M3.5 | | 60308 | 60308E | 60308T | 60308F |
| 7.3 | 1.8 | 50.0 | 6.0 | | | 60309 | 60309E | 60309T | 60309F |
| 8.0 | 2.0 | 50.0 | 6.0 | M4 | | 60310 | 60310E | 60310T | 60310F |
| 8.3 | 2.0 | 50.0 | 6.0 | | M4 | 60311 | 60311E | 60311T | 60311F |
| 9.4 | 2.2 | 50.0 | 6.0 | | | 60312 | 60312E | 60312T | 60312F |
| 10.0 | 2.5 | 50.0 | 6.0 | M5 | | 60313 | 60313E | 60313T | 60313F |
| 10.4 | 2.5 | 50.0 | 6.0 | | M5 | 60314 | 60314E | 60314T | 60314F |
| 11.5 | 2.8 | 56.0 | 8.0 | M6 | | 60315 | 60315E | 60315T | 60315F |
| 12.4 | 2.8 | 56.0 | 8.0 | | M6 | 60316 | 60316E | 60316T | 60316F |
| 13.4 | 2.9 | 56.0 | 8.0 | | | 60317 | 60317E | 60317T | 60317F |
| 15.0 | 3.2 | 60.0 | 10.0 | M8 | | 60318 | 60318E | 60318T | 60318F |
| 16.5 | 3.2 | 60.0 | 8.0 | | M8 | 60319 | 60319E | 60319T | 60319F |
| 16.5 | 3.2 | 60.0 | 10.0 | | M8 | 60320 | 60320E | 60320T | 60320F |
| 19.0 | 3.5 | 63.0 | 10.0 | M10 | | 60321 | 60321E | 60321T | 60321F |
| 20.5 | 3.5 | 63.0 | 10.0 | | M10 | 60322 | 60322E | 60322T | 60322F |
| 23.0 | 3.8 | 67.0 | 10.0 | M12 | | 60323 | 60323E | 60323T | 60323F |
| 25.0 | 3.8 | 67.0 | 10.0 | | M12 | 60324 | 60324E | 60324T | 60324F |
| 26.0 | 3.9 | 71.0 | 12.0 | M14 | | 60325 | 60325E | 60325T | 60325F |
| 28.0 | 4.0 | 71.0 | 12.0 | | M14 | 60326 | 60326E | 60326T | 60326F |
| 30.0 | 4.1 | 71.0 | 12.0 | M16 | | 60327 | 60327E | 60327T | 60327F |
| 31.0 | 4.2 | 71.0 | 12.0 | | M16 | 60328 | 60328E | 60328T | 60328F |
| 37.0 | 4.8 | 90.0 | 12.0 | | | 60329 | 60329E | 60329T | 60329F |
| 40.0 | 10.0 | 80.0 | 15.0 | | | 60330 | 60330E | 60330T | 60330F |



DIN335C 90° COUNTERSINK LONG SHANK



| Ø2 mm | Ø1 mm | L1 mm | Ø3 mm | Countersinkings as per DIN 74 | | Article no. HSS |
|----------|----------|----------|----------|----------------------------------|-----|--------------------|
| | | | | AF | BF | |
| 6.3 | 1.5 | 85.0 | 5.0 | | M3 | 61501 |
| 8.3 | 2.0 | 85.0 | 6.0 | | M4 | 61502 |
| 10.4 | 2.5 | 88.0 | 6.0 | | M5 | 61503 |
| 12.4 | 2.8 | 108.0 | 8.0 | | M6 | 61504 |
| 15.0 | 3.2 | 110.0 | 10.0 | M8 | | 61505 |
| 16.5 | 3.2 | 112.0 | 10.0 | | M8 | 61506 |
| 20.5 | 3.5 | 115.0 | 10.0 | | M10 | 61507 |
| 25.0 | 3.8 | 118.0 | 10.0 | | M12 | 61508 |

| Ø2 mm | Ø1 mm | L1 mm | Ø3 mm | Countersinkings as per DIN 74 | | Article no. HSS |
|----------|----------|----------|----------|----------------------------------|-----|--------------------|
| | | | | AF | BF | |
| 6.3 | 1.5 | 154.0 | 5.0 | | M3 | |
| 8.3 | 2.0 | 155.0 | 6.0 | | M4 | 61511 |
| 10.4 | 2.5 | 157.0 | 6.0 | | M5 | 61512 |
| 12.4 | 2.8 | 158.0 | 8.0 | | M6 | 61513 |
| 15.0 | 3.2 | 158.0 | 10.0 | M8 | | 61514 |
| 16.5 | 3.2 | 161.0 | 10.0 | | M8 | 61515 |
| 20.5 | 3.5 | 164.0 | 10.0 | | M10 | 61516 |
| 25.0 | 3.8 | 164.0 | 10.0 | | M12 | 61517 |



DIN335D 90° COUNTERSINK TAPER SHANK



| Ø2 mm | Ø1 mm | L1 mm | S1 Shank | Senkungen nach DIN74 | | Article no. HSS | Cont. pcs. |
|----------|----------|----------|-------------|-------------------------|------|--------------------|---------------|
| | | | | AF | BF | | |
| 15,0 | 3,2 | 85,0 | MT 1 | M 8 | - | 60226 | 1 |
| 16,5 | 3,2 | 85,0 | MT 1 | - | M 8 | 60227 | 1 |
| 19,0 | 3,5 | 100,0 | MT 2 | M 10 | - | 60228 | 1 |
| 20,5 | 3,5 | 100,0 | MT 2 | - | M 10 | 60229 | 1 |
| 23,0 | 3,8 | 106,0 | MT 2 | M 12 | - | 60230 | 1 |
| 25,0 | 3,8 | 106,0 | MT 2 | - | M 12 | 60231 | 1 |
| 26,0 | 3,8 | 106,0 | MT 2 | M 14 | - | 60232 | 1 |
| 28,0 | 4,0 | 112,0 | MT 2 | - | M 14 | 60233 | 1 |
| 30,0 | 4,2 | 112,0 | MT 2 | M 16 | - | 60234 | 1 |
| 31,0 | 4,2 | 112,0 | MT 2 | - | M 16 | 60235 | 1 |
| 34,0 | 4,5 | 118,0 | MT 2 | M 18 | M 18 | 60236 | 1 |
| 37,0 | 4,8 | 118,0 | MT 2 | M 20 | M 20 | 60237 | 1 |
| 40,0 | 10,0 | 140,0 | MT 3 | - | - | 60238 | 1 |
| 50,0 | 14,0 | 150,0 | MT 3 | - | - | 60239 | 1 |
| 63,0 | 16,0 | 180,0 | MT 4 | - | - | 60240 | 1 |
| 80,0 | 22,0 | 190,0 | MT 4 | - | - | 60241 | 1 |

DIN335C 90° COUNTERSINK Quick Cut



| Ø2 mm | Ø1 mm | L1 mm | Ø3 mm | Countersinkings as per DIN 74/BF | Article no. HSS | Article no. HSS-TiAlN |
|----------|----------|----------|----------|-------------------------------------|--------------------|--------------------------|
| 6.3 | 1.5 | 45.0 | 5.0 | M3 | 60201 | 60201F |
| 8.3 | 2.0 | 50.0 | 6.0 | M4 | 60202 | 60202F |
| 10.4 | 2.5 | 50.0 | 6.0 | M5 | 60203 | 60203F |
| 12.4 | 2.8 | 56.0 | 8.0 | M6 | 60204 | 60204F |
| 15.0 | 3.2 | 60.0 | 10.0 | M8 | 60205 | 60205F |
| 16.5 | 3.2 | 60.0 | 10.0 | M8 | 60206 | 60206F |
| 19.0 | 3.5 | 63.0 | 10.0 | M10 | 60207 | 60207F |
| 20.5 | 3.5 | 63.0 | 10.0 | M10 | 60208 | 60208F |
| 23.0 | 3.8 | 67.0 | 10.0 | M12 | 60209 | 60209F |
| 25.0 | 3.8 | 67.0 | 10.0 | M12 | 60210 | 60210F |
| 31.0 | 4.2 | 71.0 | 12.0 | M16 | 60211 | 60211F |

DIN334C 60° COUNTERSINK



| Ø2 mm | Ø1 mm | L1 mm | Ø3 mm | Article no. |
|-------|-------|-------|-------|-------------|
| 6.3 | 1.6 | 45.0 | 5.0 | 60101 |
| 8.0 | 2.0 | 50.0 | 6.0 | 60102 |
| 10.0 | 2.5 | 50.0 | 6.0 | 60103 |
| 12.5 | 3.2 | 56.0 | 8.0 | 60104 |
| 16.0 | 4.0 | 63.0 | 10.0 | 60105 |
| 20.0 | 5.0 | 67.0 | 10.0 | 60106 |
| 25.0 | 6.3 | 71.0 | 10.0 | 60107 |

DIN334D 60° COUNTERSINK



| Ø2 mm | Ø1 mm | L1 mm | S1 Shank | Article no. |
|-------|-------|-------|----------|-------------|
| 16.0 | 4.0 | 90.0 | MT1 | 61101 |
| 20.0 | 5.0 | 106.0 | MT2 | 61102 |
| 25.0 | 6.3 | 112.0 | MT2 | 61103 |
| 31.5 | 10.0 | 118.0 | MT2 | 61104 |
| 40.0 | 12.5 | 150.0 | MT3 | 61105 |
| 50.0 | 16.0 | 160.0 | MT3 | 61106 |
| 63.0 | 20.0 | 190.0 | MT4 | 61107 |
| 80.0 | 25.0 | 200.0 | MT4 | 61108 |

DIN334C 75° COUNTERSINK



| Ø2 mm | Ø1 mm | L1 mm | Ø3 mm | Article no. |
|-------|-------|-------|-------|-------------|
| 6.3 | 1.6 | 45.0 | 5.0 | 60401 |
| 8.3 | 2.0 | 50.0 | 6.0 | 60402 |
| 10.4 | 2.5 | 50.0 | 6.0 | 60403 |
| 12.4 | 3.2 | 56.0 | 8.0 | 60404 |
| 16.5 | 4.0 | 63.0 | 10.0 | 60405 |
| 20.5 | 5.0 | 67.0 | 10.0 | 60406 |
| 25.0 | 6.3 | 71.0 | 10.0 | 60407 |



DIN335C 90° COUNTERSINK HEX SHANK



| Ø2 mm | Ø1 mm | L1 mm | Ø3 inch | Countersinkings as per DIN 74/BF | Article no. HSS | Article no. HSS-TiN |
|----------|----------|----------|------------|-------------------------------------|--------------------|------------------------|
| 6.3 | 1.5 | 31.0 | 1/4" | M3 | 60801 | 60801T |
| 8.3 | 2.0 | 31.0 | 1/4" | M4 | 60802 | 60802T |
| 10.4 | 2.5 | 34.0 | 1/4" | M5 | 60803 | 60803T |
| 12.4 | 2.8 | 35.0 | 1/4" | M6 | 60804 | 60804T |
| 16.5 | 3.2 | 40.0 | 1/4" | M8 | 60805 | 60805T |
| 20.5 | 3.5 | 41.0 | 1/4" | M10 | 60806 | 60806T |



6 PCS DIN335C 90° COUNTERSINK HEX SHANK

Ø 6.3 MM 8.3MM 10.4MM 12.4MM 16.5MM 20.5MM

Article NO.: S60001

Counterbore 導向總鑽



Fine/medium grade for through hole

Material:HSS-M2 & HSS-Cos

| For thead 用于螺釘 | CSK Dia 倒角器直徑 | Pilot Dia 導向柱直徑 | Shank Dia 柄徑 | Overall Length 全長 | Art No. HSS CD41- | Art No. HSS-TIN CD41- |
|----------------------|---------------------|-----------------------|--------------------|-------------------------|-------------------------|-----------------------------|
| M3 | 6.0 | 3.2 | 5.0 | 71.0 | 060071 | 060071T |
| M4 | 8.0 | 4.3 | 5.0 | 71.0 | 080071 | 080071T |
| M5 | 10.0 | 5.3 | 8.0 | 80.0 | 100080 | 100080T |
| M6 | 11.0 | 6.4 | 8.0 | 80.0 | 110080 | 110080T |
| M8 | 15.0 | 8.4 | 12.5 | 100.0 | 150100 | 150100T |
| M10 | 18.0 | 10.5 | 12.5 | 100.0 | 180100 | 180100T |
| M12 | 20.0 | 13.0 | 12.5 | 100.0 | 200100 | 200100T |

For thread core hole 攻絲導向總鑽

Material:HSS-M2 & HSS-Cos

| For thead 用于螺釘 | CSK Dia 倒角器直徑 | Pilot Dia 導向柱直徑 | Shank Dia 柄徑 | Overall Length 全長 | Art No. HSS CD42- | Art No. HSS-TIN CD42- |
|----------------------|---------------------|-----------------------|--------------------|-------------------------|-------------------------|-----------------------------|
| M3 | 6.0 | 2.5 | 5.0 | 71.0 | 060071 | 060071T |
| M4 | 8.0 | 3.3 | 5.0 | 71.0 | 080071 | 080071T |
| M5 | 10.0 | 4.2 | 8.0 | 80.0 | 100080 | 100080T |
| M6 | 11.0 | 5.0 | 8.0 | 80.0 | 110080 | 110080T |
| M8 | 15.0 | 6.8 | 12.5 | 100.0 | 150100 | 150100T |
| M10 | 18.0 | 8.5 | 12.5 | 100.0 | 180100 | 180100T |
| M12 | 20.0 | 10.2 | 12.5 | 100.0 | 200100 | 200100T |

Counterbore with morse taper shank 錐柄導向總鑽



Fine/medium grade for through hole

Material:HSS-M2 & HSS-Cos

| For thead 用于螺釘 | CSK Dia 倒角器直徑 | Pilot Dia 導向柱直徑 | Shank Dia 柄徑 | Overall Length 全長 | Art No. HSS CD43- |
|----------------------|---------------------|-----------------------|--------------------|-------------------------|-------------------------|
| M10 | 18.0 | 10.5 | M2 | 150.0 | 180150 |
| M12 | 20.0 | 13.0 | M2 | 150.0 | 200150 |
| M14 | 24.0 | 15.0 | M2 | 160.0 | 240160 |
| M16 | 26.0 | 17.0 | M3 | 190.0 | 260190 |
| M18 | 30.0 | 19.0 | M3 | 190.0 | 300190 |
| M20 | 33.0 | 21.0 | M3 | 190.0 | 330190 |
| M22 | 36.0 | 23.0 | M3 | 205.0 | 360205 |

For thread core hole 攻絲導向總鑽

Material:HSS-M2 & HSS-Cos

| For thead 用于螺釘 | CSK Dia 倒角器直徑 | Pilot Dia 導向柱直徑 | Shank Dia 柄徑 | Overall Length 全長 | Art No. HSS CD44- |
|----------------------|---------------------|-----------------------|--------------------|-------------------------|-------------------------|
| M10 | 18.0 | 8.5 | M2 | 150.0 | 180150 |
| M12 | 20.0 | 10.2 | M2 | 150.0 | 200150 |
| M14 | 24.0 | 12.0 | M2 | 160.0 | 240160 |
| M16 | 26.0 | 14.0 | M3 | 190.0 | 260190 |
| M18 | 30.0 | 15.5 | M3 | 190.0 | 300190 |
| M20 | 33.0 | 17.5 | M3 | 190.0 | 330190 |
| M22 | 36.0 | 19.5 | M3 | 205.0 | 360205 |

▶ Special sizes available on request!
其它特殊規格也可生產!