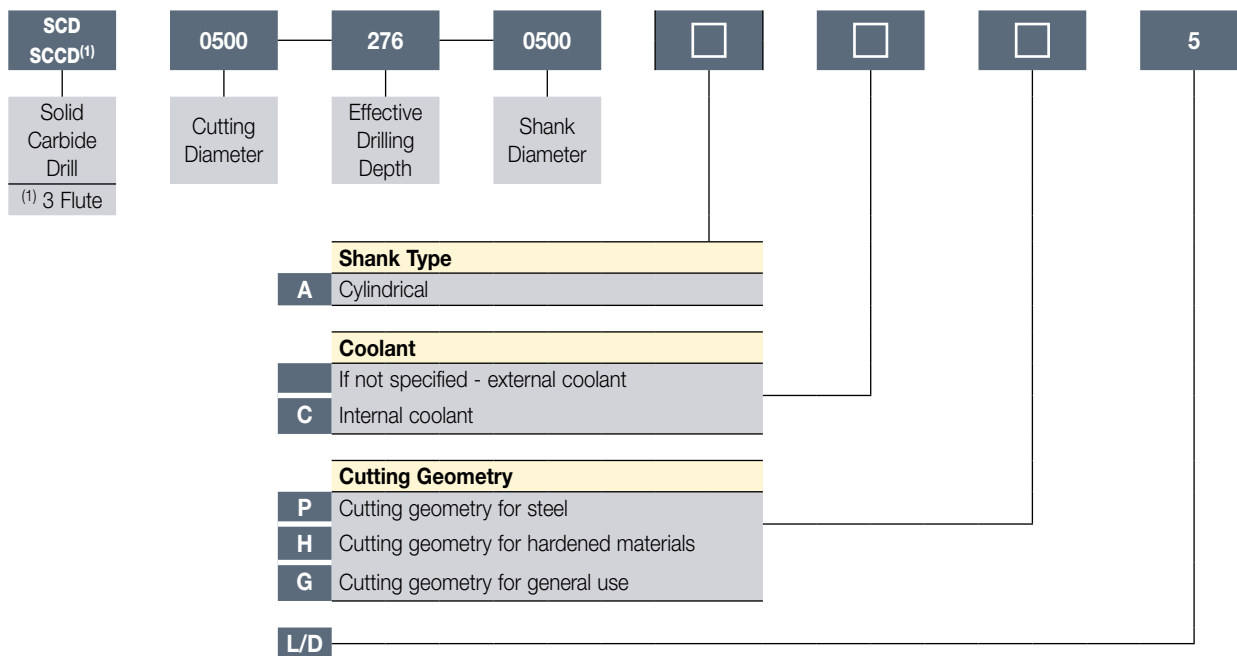


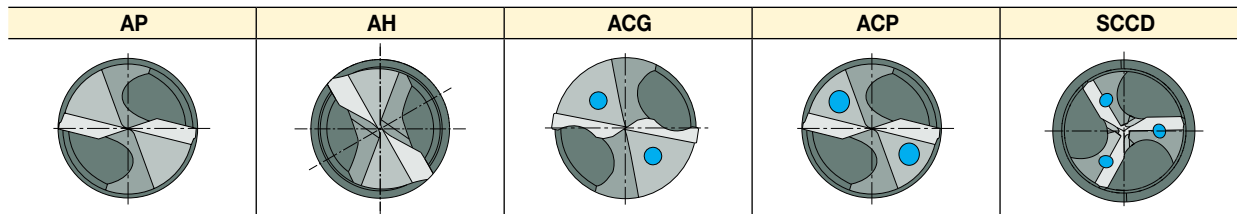
SOLID CARBIDE DRILLS



Identification System



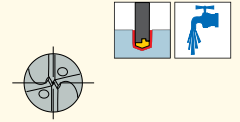
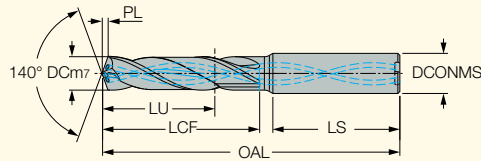
Cutting Edge Configurations



SCD-ACP3N (3xD)

DIN 6537 Solid Carbide Drills with
Coolant Holes, Drilling Depth 3xD

| DC | Tolerance m7 |
|-----------|---------------|
| .118-.236 | .00016-.00063 |
| .236-.394 | .00024-.00083 |
| .394-.709 | .00028-.00099 |
| .709-.827 | .00031-.00114 |



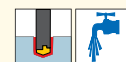
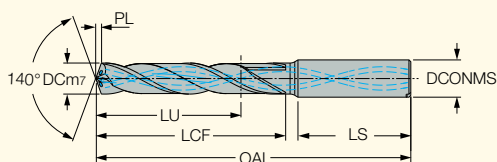
| Designation | Dimensions | | | | | | | | IC908 |
|-----------------------|------------|--------|--------|--------|------|------|-------|-------------------|-------|
| | DC | DCONMS | LU | PL | LCF | LS | OAL | Th ⁽¹⁾ | |
| SCD0136-075-0187ACP3N | .136 | .187 | .5300 | .02500 | .75 | 1.44 | 2.290 | - | ● |
| SCD0141-075-0187ACP3N | .141 | .187 | .5300 | .02600 | .75 | 1.44 | 2.290 | - | ● |
| SCD0150-075-0187ACP3N | .150 | .187 | .5300 | .02700 | .75 | 1.44 | 2.290 | - | ● |
| SCD0156-075-0187ACP3N | .156 | .187 | .5300 | .02800 | .75 | 1.44 | 2.290 | - | ● |
| SCD0159-075-0187ACP3N | .159 | .187 | .5300 | .02900 | .75 | 1.44 | 2.290 | - | ● |
| SCD0163-105-0187ACP3N | .163 | .187 | .8000 | .03000 | 1.05 | 1.44 | 2.580 | 10-32 UNF | ● |
| SCD0180-105-0187ACP3N | .180 | .187 | .8000 | .03300 | 1.05 | 1.44 | 2.580 | 12-24 UNC | ● |
| SCD0182-105-0187ACP3N | .182 | .187 | .8000 | .03300 | 1.05 | 1.44 | 2.580 | - | ● |
| SCD0187-105-0187ACP3N | .187 | .187 | .8000 | .03400 | 1.05 | 1.44 | 2.580 | - | ● |
| SCD0201-128-0250ACP3N | .201 | .250 | .9600 | .03700 | 1.28 | 1.44 | 2.820 | - | ● |
| SCD0207-128-0250ACP3N | .207 | .250 | .9600 | .03800 | 1.28 | 1.44 | 2.820 | 1/4-20 UNC | ● |
| SCD0209-128-0250ACP3N | .209 | .250 | .9600 | .03800 | 1.28 | 1.44 | 2.820 | - | ● |
| SCD0213-128-0250ACP3N | .213 | .250 | .9600 | .03900 | 1.28 | 1.44 | 2.820 | - | ● |
| SCD0218-128-0250ACP3N | .218 | .250 | .9600 | .04000 | 1.28 | 1.44 | 2.820 | - | ● |
| SCD0250-128-0250ACP3N | .250 | .250 | .9600 | .04500 | 1.28 | 1.44 | 2.820 | - | ● |
| SCD0257-146-0312ACP3N | .257 | .312 | 1.0700 | .04700 | 1.46 | 1.52 | 3.060 | - | ● |
| SCD0265-146-0312ACP3N | .265 | .312 | 1.0700 | .04800 | 1.46 | 1.52 | 3.060 | - | ● |
| SCD0272-146-0312ACP3N | .272 | .312 | 1.0700 | .04900 | 1.46 | 1.52 | 3.060 | - | ● |
| SCD0276-146-0312ACP3N | .276 | .312 | 1.0700 | .05000 | 1.46 | 1.52 | 3.060 | 5/16-24 UNF | ● |
| SCD0281-146-0312ACP3N | .281 | .312 | 1.0700 | .05100 | 1.46 | 1.52 | 3.060 | - | ● |
| SCD0296-146-0312ACP3N | .296 | .312 | 1.0700 | .05400 | 1.46 | 1.52 | 3.060 | - | ● |
| SCD0312-146-0312ACP3N | .312 | .312 | 1.0700 | .05700 | 1.46 | 1.52 | 3.060 | - | ● |
| SCD0321-172-0375ACP3N | .321 | .375 | 1.2700 | .05800 | 1.72 | 1.59 | 3.420 | - | ● |
| SCD0328-172-0375ACP3N | .328 | .375 | 1.2700 | .06000 | 1.72 | 1.59 | 3.420 | - | ● |
| SCD0332-172-0375ACP3N | .332 | .375 | 1.2700 | .06000 | 1.72 | 1.59 | 3.420 | - | ● |
| SCD0339-172-0375ACP3N | .339 | .375 | 1.2700 | .06200 | 1.72 | 1.59 | 3.420 | 3/8-24 UNF | ● |
| SCD0343-172-0375ACP3N | .343 | .375 | 1.2700 | .06200 | 1.72 | 1.59 | 3.420 | - | ● |
| SCD0359-172-0375ACP3N | .359 | .375 | 1.2700 | .06500 | 1.72 | 1.59 | 3.420 | - | ● |
| SCD0368-172-0375ACP3N | .368 | .375 | 1.2700 | .06700 | 1.72 | 1.59 | 3.420 | - | ● |
| SCD0376-185-0437ACP3N | .376 | .437 | 1.3400 | .06800 | 1.85 | 1.67 | 3.620 | 7/16-14 UNC | ● |
| SCD0382-185-0437ACP3N | .382 | .437 | 1.3400 | .07000 | 1.85 | 1.67 | 3.620 | - | ● |
| SCD0390-185-0437ACP3N | .390 | .437 | 1.3400 | .07100 | 1.85 | 1.67 | 3.620 | - | ● |
| SCD0394-185-0437ACP3N | .394 | .437 | 1.3400 | .07200 | 1.85 | 1.67 | 3.620 | 7/16-20 UNF | ● |
| SCD0406-185-0437ACP3N | .406 | .437 | 1.3400 | .07400 | 1.85 | 1.67 | 3.620 | - | ● |
| SCD0421-185-0437ACP3N | .421 | .437 | 1.3400 | .07700 | 1.85 | 1.67 | 3.620 | - | ● |
| SCD0434-185-0437ACP3N | .434 | .437 | 1.3400 | .07900 | 1.85 | 1.67 | 3.620 | 1/2-13 UNC | ● |
| SCD0437-185-0437ACP3N | .437 | .437 | 1.3400 | .08000 | 1.85 | 1.67 | 3.620 | - | ● |
| SCD0453-185-0500ACP3N | .453 | .500 | 1.3400 | .08200 | 1.85 | 1.79 | 3.740 | - | ● |
| SCD0457-185-0500ACP3N | .457 | .500 | 1.3400 | .08300 | 1.85 | 1.79 | 3.740 | 1/2-20 UNF | ● |
| SCD0468-185-0500ACP3N | .468 | .500 | 1.3400 | .08500 | 1.85 | 1.79 | 3.740 | - | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size.

SOLIDDRILL**SCD-ACP5N (5xD)**DIN 6537 Solid Carbide Drills with
Coolant Holes, Drilling Depth 5xD

| DC | Tolerance m7 |
|-----------|---------------|
| .118-.236 | .00016-.00063 |
| .236-.394 | .00024-.00083 |
| .394-.709 | .00028-.00099 |
| .709-.827 | .00031-.00114 |



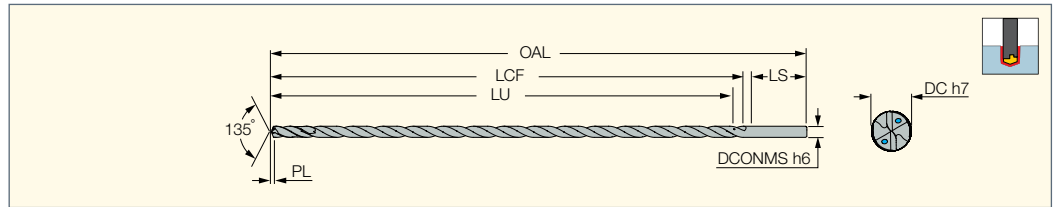
| Designation | Dimensions | | | | | | | | IC908 |
|-----------------------|------------|--------|--------|--------|------|------|-------|-------------------|-------|
| | DC | DCONMS | LU | PL | LCF | LS | OAL | Th ⁽¹⁾ | |
| SCD0136-106-0187ACP5N | .136 | .187 | .8400 | .02500 | 1.06 | 1.44 | 2.600 | - | ● |
| SCD0141-106-0187ACP5N | .141 | .187 | .8400 | .02600 | 1.06 | 1.44 | 2.600 | - | ● |
| SCD0150-106-0187ACP5N | .150 | .187 | .8400 | .02700 | 1.06 | 1.44 | 2.600 | - | ● |
| SCD0156-106-0187ACP5N | .156 | .187 | .8400 | .02800 | 1.06 | 1.44 | 2.600 | 10-30 UNF | ● |
| SCD0159-106-0187ACP5N | .159 | .187 | .8400 | .02900 | 1.06 | 1.44 | 2.600 | - | ● |
| SCD0163-138-0187ACP5N | .163 | .187 | 1.1300 | .03000 | 1.38 | 1.44 | 2.910 | - | ● |
| SCD0180-138-0187ACP5N | .180 | .187 | 1.1300 | .03300 | 1.38 | 1.44 | 2.910 | - | ● |
| SCD0182-138-0187ACP5N | .182 | .187 | 1.1300 | .03300 | 1.38 | 1.44 | 2.910 | - | ● |
| SCD0185-138-0187ACP5N | .185 | .187 | 1.1300 | .03400 | 1.38 | 1.44 | 2.910 | 12-28 UNF | ● |
| SCD0201-169-0250ACP5N | .201 | .250 | 1.3700 | .03700 | 1.69 | 1.44 | 3.230 | - | ● |
| SCD0207-169-0250ACP5N | .207 | .250 | 1.3700 | .03800 | 1.69 | 1.44 | 3.230 | - | ● |
| SCD0209-169-0250ACP5N | .209 | .250 | 1.3700 | .03800 | 1.69 | 1.44 | 3.230 | - | ● |
| SCD0213-169-0250ACP5N | .213 | .250 | 1.3700 | .03900 | 1.69 | 1.44 | 3.230 | 1/4-28 UNF | ● |
| SCD0218-169-0250ACP5N | .218 | .250 | 1.3700 | .04000 | 1.69 | 1.44 | 3.230 | 7/32 | ● |
| SCD0250-169-0250ACP5N | .250 | .250 | 1.3700 | .04500 | 1.69 | 1.44 | 3.230 | - | ● |
| SCD0257-197-0312ACP5N | .257 | .312 | 1.5900 | .04700 | 1.97 | 1.52 | 3.580 | 5/16-18 UNC | ● |
| SCD0265-197-0312ACP5N | .265 | .312 | 1.5900 | .04800 | 1.97 | 1.52 | 3.580 | 17/64 | ● |
| SCD0272-197-0312ACP5N | .272 | .312 | 1.5900 | .04900 | 1.97 | 1.52 | 3.580 | - | ● |
| SCD0276-197-0312ACP5N | .276 | .312 | 1.5900 | .05000 | 1.97 | 1.52 | 3.580 | - | ● |
| SCD0281-197-0312ACP5N | .281 | .312 | 1.5900 | .05100 | 1.97 | 1.52 | 3.580 | - | ● |
| SCD0296-197-0312ACP5N | .296 | .312 | 1.5900 | .05400 | 1.97 | 1.53 | 3.580 | - | ● |
| SCD0312-197-0312ACP5N | .312 | .312 | 1.5900 | .05700 | 1.97 | 1.53 | 3.580 | 3/8-16 UNC | ● |
| SCD0321-236-0375ACP5N | .321 | .375 | 1.9200 | .05800 | 2.36 | 1.59 | 4.060 | - | ● |
| SCD0328-236-0375ACP5N | .328 | .375 | 1.9200 | .06000 | 2.36 | 1.59 | 4.060 | 3/8-24 UNF | ● |
| SCD0332-236-0375ACP5N | .332 | .375 | 1.9200 | .06000 | 2.36 | 1.59 | 4.060 | - | ● |
| SCD0339-236-0375ACP5N | .339 | .375 | 1.9200 | .06200 | 2.36 | 1.59 | 4.060 | - | ● |
| SCD0343-236-0375ACP5N | .343 | .375 | 1.9200 | .06200 | 2.36 | 1.59 | 4.060 | - | ● |
| SCD0359-236-0375ACP5N | .359 | .375 | 1.9200 | .06500 | 2.36 | 1.59 | 4.060 | 23/64 | ● |
| SCD0368-236-0375ACP5N | .368 | .375 | 1.9200 | .06700 | 2.36 | 1.59 | 4.060 | - | ● |
| SCD0375-236-0375ACP5N | .375 | .375 | 1.9200 | .06800 | 2.36 | 1.59 | 4.060 | 3/8 | ● |
| SCD0376-260-0437ACP5N | .376 | .437 | 2.0900 | .06800 | 2.60 | 1.67 | 4.370 | - | ● |
| SCD0382-260-0437ACP5N | .382 | .437 | 2.0900 | .07000 | 2.60 | 1.67 | 4.370 | - | ● |
| SCD0390-260-0437ACP5N | .390 | .437 | 2.0900 | .07100 | 2.60 | 1.67 | 4.370 | 25/64 | ● |
| SCD0394-260-0437ACP5N | .394 | .437 | 2.0900 | .07200 | 2.60 | 1.67 | 4.370 | - | ● |
| SCD0406-260-0437ACP5N | .406 | .437 | 2.0900 | .07400 | 2.60 | 1.67 | 4.370 | - | ● |
| SCD0421-260-0437ACP5N | .421 | .437 | 2.0900 | .07700 | 2.60 | 1.67 | 4.370 | 1/2-13 UNC | ● |
| SCD0434-260-0437ACP5N | .434 | .437 | 2.0900 | .07900 | 2.60 | 1.67 | 4.370 | - | ● |
| SCD0437-260-0437ACP5N | .437 | .437 | 2.0900 | .08000 | 2.60 | 1.67 | 4.370 | 7/16 | ● |
| SCD0453-276-0500ACP5N | .453 | .500 | 2.1900 | .08200 | 2.76 | 1.79 | 4.650 | 1/2-20 UNF | ● |
| SCD0457-276-0500ACP5N | .457 | .500 | 2.1900 | .08300 | 2.76 | 1.79 | 4.650 | - | ● |
| SCD0468-276-0500ACP5N | .468 | .500 | 2.1900 | .08500 | 2.76 | 1.79 | 4.650 | 9/16-12 UNC | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size.

SCD-SXC16

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 16xD



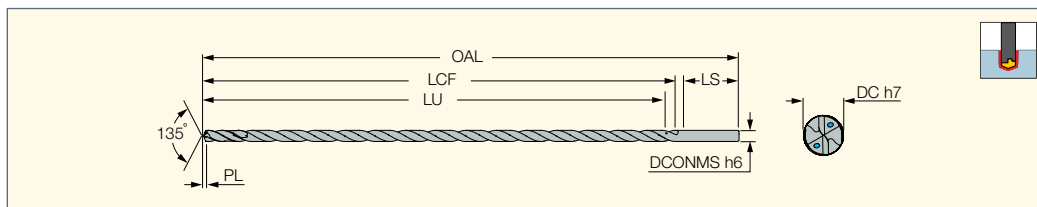
| Designation | Dimensions | | | | | | | | IC908 |
|------------------------|------------|--------|--------|---------|-------|------|--------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽¹⁾ | |
| SCD0125-0217-0236SXC16 | .125 | .236 | 3.940 | 2.1654 | 2.36 | 1.42 | .02062 | 16.0 | ● |
| SCD0141-0272-0236SXC16 | .141 | .236 | 4.530 | 2.7165 | 2.95 | 1.42 | .02320 | 16.0 | ● |
| SCD0156-0272-0236SXC16 | .156 | .236 | 4.530 | 2.7165 | 2.95 | 1.42 | .02578 | 16.0 | ● |
| SCD0172-0327-0236SXC16 | .172 | .236 | 5.120 | 3.2677 | 3.54 | 1.42 | .02835 | 16.0 | ● |
| SCD0188-0323-0236SXC16 | .188 | .236 | 5.120 | 3.2283 | 3.54 | 1.42 | .03093 | 16.0 | ● |
| SCD0203-0394-0236SXC16 | .203 | .236 | 5.910 | 3.9370 | 4.25 | 1.42 | .03351 | 16.0 | ● |
| SCD0204-0394-0236SXC16 | .204 | .236 | 5.910 | 3.9370 | 4.25 | 1.42 | .03366 | 16.0 | ● |
| SCD0219-0390-0236SXC16 | .219 | .236 | 5.910 | 3.8976 | 4.25 | 1.42 | .03609 | 16.0 | ● |
| SCD0234-0390-0236SXC16 | .234 | .236 | 5.910 | 3.8976 | 4.25 | 1.42 | .03867 | 16.0 | ● |
| SCD0250-0453-0315SXC16 | .250 | .315 | 6.500 | 4.5275 | 4.92 | 1.42 | .04125 | 16.0 | ● |
| SCD0266-0449-0315SXC16 | .266 | .315 | 6.500 | 4.4882 | 4.92 | 1.42 | .04382 | 16.0 | ● |
| SCD0281-0508-0315SXC16 | .281 | .315 | 7.090 | 5.0787 | 5.51 | 1.42 | .04640 | 16.0 | ● |
| SCD0297-0504-0315SXC16 | .297 | .315 | 7.090 | 5.0394 | 5.51 | 1.42 | .04898 | 16.0 | ● |
| SCD0313-0504-0315SXC16 | .313 | .315 | 7.090 | 5.0394 | 5.51 | 1.42 | .05156 | 16.0 | ● |
| SCD0328-0579-0394SXC16 | .328 | .394 | 8.070 | 5.7874 | 6.30 | 1.58 | .05414 | 16.0 | ● |
| SCD0344-0575-0394SXC16 | .344 | .394 | 8.070 | 5.7480 | 6.30 | 1.58 | .05671 | 16.0 | ● |
| SCD0359-0654-0394SXC16 | .359 | .394 | 8.860 | 6.5354 | 7.09 | 1.58 | .05929 | 16.0 | ● |
| SCD0375-0650-0394SXC16 | .375 | .394 | 8.860 | 6.4961 | 7.09 | 1.58 | .06187 | 16.0 | ● |
| SCD0391-0650-0394SXC16 | .391 | .394 | 8.860 | 6.4961 | 7.09 | 1.58 | .06445 | 16.0 | ● |
| SCD0406-0685-0472SXC16 | .406 | .472 | 9.450 | 6.8504 | 7.48 | 1.77 | .06703 | 16.0 | ● |
| SCD0422-0681-0472SXC16 | .422 | .472 | 9.450 | 6.8110 | 7.48 | 1.77 | .06960 | 16.0 | ● |
| SCD0438-0780-0472SXC16 | .438 | .472 | 10.430 | 7.7953 | 8.46 | 1.77 | .07218 | 16.0 | ● |
| SCD0453-0776-0472SXC16 | .453 | .472 | 10.430 | 7.7559 | 8.46 | 1.77 | .07476 | 16.0 | ● |
| SCD0469-0776-0472SXC16 | .469 | .472 | 10.430 | 7.7559 | 8.46 | 1.77 | .07734 | 16.0 | ● |
| SCD0484-0831-0551SXC16 | .484 | .551 | 11.020 | 8.3071 | 9.05 | 1.77 | .07992 | 16.0 | ● |
| SCD0500-0827-0551SXC16 | .500 | .551 | 11.020 | 8.2677 | 9.05 | 1.77 | .08250 | 16.0 | ● |
| SCD0531-0882-0551SXC16 | .531 | .551 | 11.610 | 8.8189 | 9.65 | 1.77 | .08765 | 16.0 | ● |
| SCD0563-0917-0630SXC16 | .563 | .630 | 12.010 | 9.1732 | 10.04 | 1.89 | .09281 | 16.0 | ● |
| SCD0625-0988-0630SXC16 | .625 | .630 | 12.800 | 9.8819 | 10.83 | 1.89 | .10312 | 16.0 | ● |
| SCD0750-1185-0787SXC16 | .750 | .787 | 14.960 | 11.8504 | 12.99 | 1.97 | .12375 | 16.0 | ● |

• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ Usable length diameter ratio

SOLIDDRILL**SCD-SXC20**

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 20xD



| Designation | Dimensions | | | | | | | | IC908 |
|------------------------|------------|--------|--------|---------|-------|------|--------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽¹⁾ | |
| SCD0125-0295-0236SXC20 | .125 | .236 | 4.720 | 2.9528 | 3.15 | 1.42 | .02062 | 20.0 | ● |
| SCD0141-0331-0236SXC20 | .141 | .236 | 5.120 | 3.3071 | 3.54 | 1.42 | .02320 | 20.0 | ● |
| SCD0156-0331-0236SXC20 | .156 | .236 | 5.120 | 3.3071 | 3.54 | 1.42 | .02578 | 20.0 | ● |
| SCD0172-0406-0236SXC20 | .172 | .236 | 6.300 | 4.0551 | 4.33 | 1.42 | .02835 | 20.0 | ● |
| SCD0188-0441-0236SXC20 | .188 | .236 | 6.300 | 4.4094 | 4.72 | 1.42 | .03093 | 20.0 | ● |
| SCD0203-0520-0236SXC20 | .203 | .236 | 7.280 | 5.1969 | 5.51 | 1.42 | .03351 | 20.0 | ● |
| SCD0204-0520-0236SXC20 | .204 | .236 | 7.280 | 5.1969 | 5.51 | 1.42 | .03366 | 20.0 | ● |
| SCD0219-0516-0236SXC20 | .219 | .236 | 7.280 | 5.1575 | 5.51 | 1.42 | .03609 | 20.0 | ● |
| SCD0234-0516-0236SXC20 | .234 | .236 | 7.280 | 5.1575 | 5.51 | 1.42 | .03867 | 20.0 | ● |
| SCD0250-0591-0315SXC20 | .250 | .315 | 8.270 | 5.9055 | 6.30 | 1.42 | .04125 | 20.0 | ● |
| SCD0266-0587-0315SXC20 | .266 | .315 | 8.270 | 5.8661 | 6.30 | 1.42 | .04382 | 20.0 | ● |
| SCD0281-0665-0315SXC20 | .281 | .315 | 9.060 | 6.6535 | 7.09 | 1.42 | .04640 | 20.0 | ● |
| SCD0297-0661-0315SXC20 | .297 | .315 | 9.060 | 6.6142 | 7.09 | 1.42 | .04898 | 20.0 | ● |
| SCD0313-0661-0315SXC20 | .313 | .315 | 9.060 | 6.6142 | 7.09 | 1.42 | .05156 | 20.0 | ● |
| SCD0328-0717-0394SXC20 | .328 | .394 | 10.240 | 7.1654 | 7.68 | 1.58 | .05414 | 20.0 | ● |
| SCD0344-0850-0394SXC20 | .344 | .394 | 11.420 | 8.5039 | 9.05 | 1.58 | .05671 | 20.0 | ● |
| SCD0359-0850-0394SXC20 | .359 | .394 | 11.420 | 8.5039 | 9.05 | 1.58 | .05929 | 20.0 | ● |
| SCD0375-0846-0394SXC20 | .375 | .394 | 11.420 | 8.4646 | 9.05 | 1.58 | .06187 | 20.0 | ● |
| SCD0391-0846-0394SXC20 | .391 | .394 | 11.420 | 8.4646 | 9.05 | 1.58 | .06445 | 20.0 | ● |
| SCD0406-0992-0472SXC20 | .406 | .472 | 12.400 | 9.9213 | 10.55 | 1.77 | .06703 | 20.0 | ● |
| SCD0422-0988-0472SXC20 | .422 | .472 | 12.400 | 9.8819 | 10.55 | 1.77 | .06960 | 20.0 | ● |
| SCD0438-0988-0472SXC20 | .438 | .472 | 12.400 | 9.8819 | 10.55 | 1.77 | .07218 | 20.0 | ● |
| SCD0453-0984-0472SXC20 | .453 | .472 | 12.400 | 9.8425 | 10.55 | 1.77 | .07476 | 20.0 | ● |
| SCD0469-0984-0472SXC20 | .469 | .472 | 12.400 | 9.8425 | 10.55 | 1.77 | .07734 | 20.0 | ● |
| SCD0484-1028-0551SXC20 | .484 | .551 | 12.800 | 10.2756 | 11.02 | 1.77 | .07992 | 20.0 | ● |
| SCD0500-1024-0551SXC20 | .500 | .551 | 12.800 | 10.2362 | 11.02 | 1.77 | .08250 | 20.0 | ● |
| SCD0531-1118-0551SXC20 | .531 | .551 | 13.980 | 11.1811 | 12.01 | 1.77 | .08765 | 20.0 | ● |
| SCD0563-1173-0630SXC20 | .563 | .630 | 14.570 | 11.7323 | 12.60 | 1.89 | .09281 | 20.0 | ● |
| SCD0625-1283-0630SXC20 | .625 | .630 | 15.750 | 12.8346 | 13.78 | 1.89 | .10312 | 20.0 | ● |

• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ Usable length diameter ratio



Recommended Machining Conditions for SCD-SXC16 & SCD-SXC20 Solid Carbide Drills

| ISO | Material | Condition | Tensile Strength [ksi] | Hardness HB | Material Group No. | Cutting Speed V _c (SFM) | Cutting Diameter | | | | |
|-----|--|-----------------------------|---------------------------|----------------|--------------------|--|------------------|--------------|--------------|--------------|--------------|
| | | | | | | | Feed (IPR) | | | | |
| | | | | | | | Ø.125"-.197" | Ø.200"-.315" | Ø.319"-.391" | Ø.393"-.625" | Ø.630"-.787" |
| P | Non-alloy steel and cast steel, free cutting steel | <0.25% C | 61 | 125 | 1 | 230-300 | .0039-.007 | .0055-.0094 | .0063-.01 | .007-.0118 | .0078-.0137 |
| | | ≥0.25% C | 94 | 190 | 2 | | | | | | |
| | | <0.55% C | 123 | 250 | 3 | | | | | | |
| | | Annealed | 109 | 220 | 4 | | | | | | |
| | | Quenched and tempered | 145 | 300 | 5 | | | | | | |
| | Low alloy and cast steel (less than 5% of alloying elements) | Annealed | 87 | 200 | 6 | 230-280 | .0039-.007 | .0055-.0094 | .0063-.01 | .007-.0118 | .0078-.0137 |
| | | Quenched and tempered | 135 | 275 | 7 | | | | | | |
| | | | 145 | 300 | 8 | | | | | | |
| | | | 174 | 350 | 9 | | | | | | |
| | High alloyed steel, cast steel and tool steel | Annealed | 99 | 200 | 10 | 230-280 | .0039-.007 | .0055-.0094 | .0063-.01 | .007-.0118 | .0078-.0137 |
| | | Quenched and tempered | 160 | 325 | 11 | | | | | | |
| | Stainless steel and cast steel | Ferritic/martensitic | 99 | 200 | 12 | 190-230 | .003-.0055 | .0039-.007 | .0047-.0078 | .0055-.0086 | .0063-.0094 |
| | | Martensitic | 119 | 240 | 13 | | | | | | |
| M | Stainless steel and cast steel | Austenitic, duplex | 87 | 180 | 14 | 180-220 | .0023-.0055 | .003-.0063 | .0039-.007 | .0047-.0078 | .0055-.0094 |
| K | Gray cast iron (GG) | Ferritic / pearlitic | | 180 | 15 | 260-330 | .0055-.0094 | .0063-.01 | .007-.0118 | .0078-.0137 | .0098-.0177 |
| | | Pearlitic / martensitic | | 260 | 16 | | | | | | |
| | Nodular cast iron (GGG) | Ferritic | | 160 | 17 | | | | | | |
| | | Pearlitic | | 250 | 18 | | | | | | |
| | Malleable cast iron | Ferritic | | 130 | 19 | | | | | | |
| | | Pearlitic | | 230 | 20 | | | | | | |
| S | High temperature alloys | Fe based | Annealed | 200 | 31 | 110-150 | .0023-.0047 | .003-.0063 | .0039-.007 | .0047-.0078 | .0055-.0086 |
| | | | Hardened | 280 | 32 | | | | | | |
| | | Ni or Co based | Annealed | 250 | 33 | 100-130 | .0023-.0047 | .003-.0063 | .0039-.007 | .0047-.0078 | .0055-.0086 |
| | | | Hardened | 350 | 34 | | | | | | |
| | Titanium alloys | Cast | | 320 | 35 | 110-150 | .0023-.0047 | .003-.0063 | .0039-.007 | .0047-.0078 | .0055-.0086 |
| | | Pure | 58 | 190 | 36 | | | | | | |
| | | Alpha+Beta alloys, hardened | 152 | 310 | 37 | 110-150 | .0023-.0047 | .003-.0063 | .0039-.007 | .0047-.0078 | .0055-.0086 |

TIPS & TRICKS for DEEP HOLE DRILLING

Using a G73 peck cycle helps Chip evacuation in deep hole drilling & materials which have poor chip formation

16xD - 50xD must utilize a Pilot hole drill

40xD - 50xD can utilize a 20xD intermediary drill if deemed necessary

TIR & tool alignment with material are the most important factors in deep hole drilling

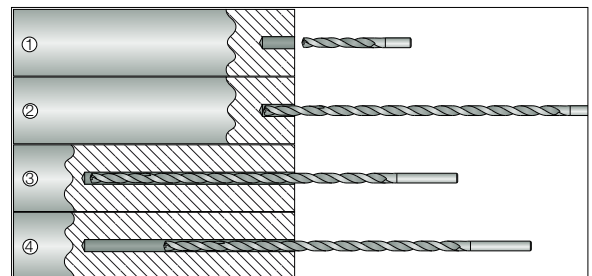
Use high pressure coolant when deep hole drilling

Slow the feedrate to 50% when breaking through the material

In through holes, the tool exit should not exceed .078"-.118".

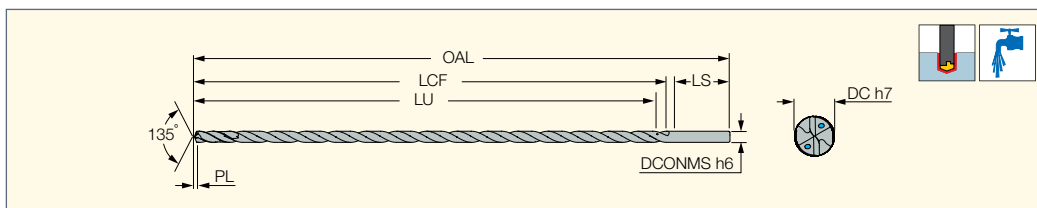
Recommended Drilling Procedure for Deep Hole Drilling

- 1 Drill a pilot hole 1-2xD deep with a short drill. The pilot drill should be .0011"-.0019" larger than the long drill and its point angle should also be larger (over 135°).
- 2 Enter the pre-hole using low feed and rotate at low speed (50-100 RPM) until it engages the material.
- 3 Activate the coolant system and increase rotation speed to the recommended cutting parameter, maintain for 2-3 seconds, then continue at recommended drilling feed. **No pecking is required.**
- 4 After having reached the required depth, reduce speed to 50-100 RPM before retracting from the hole.



SOLIDDRILL**SCD-SXC30**

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 30xD



| Designation | Dimensions | | | | | | | | IC908 |
|------------------------|------------|--------|--------|---------|-------|------|--------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽¹⁾ | |
| SCD0125-0382-0236SXC30 | .125 | .236 | 5.906 | 3.8190 | 4.13 | 1.58 | .02100 | 30.0 | ● |
| SCD0141-0500-0236SXC30 | .141 | .236 | 7.283 | 5.0000 | 5.32 | 1.77 | .02300 | 30.0 | ● |
| SCD0156-0500-0236SXC30 | .156 | .236 | 7.283 | 5.0000 | 5.32 | 1.77 | .02600 | 30.0 | ● |
| SCD0172-0618-0236SXC30 | .172 | .236 | 8.465 | 6.1810 | 6.50 | 1.77 | .02800 | 30.0 | ● |
| SCD0188-0618-0236SXC30 | .188 | .236 | 8.465 | 6.1810 | 6.50 | 1.77 | .03100 | 30.0 | ● |
| SCD0203-0677-0236SXC30 | .203 | .236 | 9.055 | 6.7720 | 7.09 | 1.77 | .03400 | 30.0 | ● |
| SCD0204-0677-0236SXC30 | .204 | .236 | 9.055 | 6.7720 | 7.09 | 1.77 | .03400 | 30.0 | ● |
| SCD0219-0677-0236SXC30 | .219 | .236 | 9.055 | 6.7720 | 7.09 | 1.77 | .03600 | 30.0 | ● |
| SCD0234-0677-0236SXC30 | .234 | .236 | 9.055 | 6.7720 | 7.09 | 1.77 | .03900 | 30.0 | ● |
| SCD0250-0815-0315SXC30 | .250 | .315 | 11.024 | 8.1500 | 8.47 | 2.36 | .04100 | 30.0 | ● |
| SCD0266-0874-0315SXC30 | .266 | .315 | 11.024 | 8.7400 | 9.06 | 1.77 | .04400 | 30.0 | ● |
| SCD0281-0874-0315SXC30 | .281 | .315 | 11.024 | 8.7400 | 9.06 | 1.77 | .04600 | 30.0 | ● |
| SCD0297-1012-0315SXC30 | .297 | .315 | 12.402 | 10.1180 | 10.43 | 1.77 | .04900 | 30.0 | ● |
| SCD0313-1012-0315SXC30 | .313 | .315 | 12.402 | 10.1180 | 10.43 | 1.77 | .05200 | 30.0 | ● |
| SCD0328-1130-0394SXC30 | .328 | .394 | 13.780 | 11.2990 | 11.61 | 1.97 | .05400 | 30.0 | ● |
| SCD0344-1268-0394SXC30 | .344 | .394 | 14.961 | 12.6770 | 12.99 | 1.77 | .05700 | 30.0 | ● |
| SCD0359-1268-0394SXC30 | .359 | .394 | 14.961 | 12.6770 | 12.99 | 1.77 | .05900 | 30.0 | ● |
| SCD0375-1268-0394SXC30 | .375 | .394 | 14.961 | 12.6770 | 12.99 | 1.77 | .06200 | 30.0 | ● |
| SCD0391-1268-0394SXC30 | .391 | .394 | 14.961 | 12.6770 | 12.99 | 1.77 | .06400 | 30.0 | ● |

• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ Usable length diameter ratio

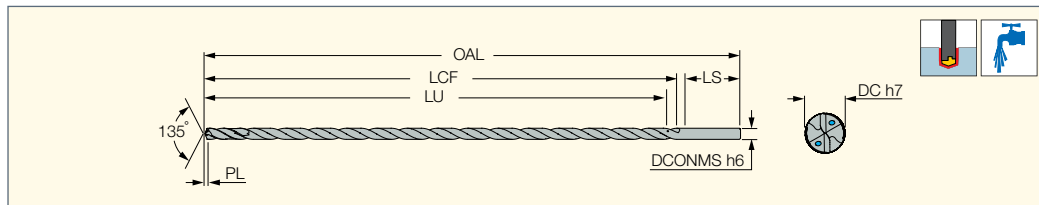
Recommended Machining Conditions for SCD-SXC30 Solid Carbide Drills

| ISO | Material | | Condition | Tensile Strength [ksi] | Hardness HB | Material Group No. | Cutting Speed v_c [SFM] | Feed f [IPR] | | | |
|--------------------------------|--|-----------------------|-----------------------------|------------------------|-------------|--------------------|---------------------------|----------------|-------------|-------------|---|
| | | | | | | | | .125-.196 | .196-.314 | .314-.390 | |
| P | Non-alloy steel and cast steel, free cutting steel | <0.25% C | Annealed | 61 | 125 | 1 | 213-246 | .003-.0063 | .0047-.0078 | .0063-.0094 | |
| | | ≥0.25% C | Annealed | 94 | 190 | 2 | | | | | |
| | | <0.55% C | Quenched and tempered | 123 | 250 | 3 | | | | | |
| | | ≥0.55% C | Annealed | 109 | 220 | 4 | | | | | |
| | | | Quenched and tempered | 145 | 300 | 5 | | | | | |
| | Low alloy and cast steel (less than 5% of alloying elements) | Annealed | 87 | 200 | 6 | 196-230 | | | | | |
| | | Quenched and tempered | | 135 | 275 | | | | | | 7 |
| | | | | 145 | 300 | | | | | | 8 |
| | | | | 174 | 350 | | | | | | 9 |
| | High alloyed steel, cast steel and tool steel | Annealed | 99 | 200 | 10 | 147-180 | | | | | |
| | | Quenched and tempered | 160 | 325 | 11 | | | | | | |
| Stainless steel and cast steel | Ferritic/martensitic | 99 | 200 | 12 | .0023-.0047 | .003-.0063 | .0039-.007 | | | | |
| | Martensitic | 119 | 240 | 13 | | | | | | | |
| M | Stainless steel and cast steel | | Austenitic, duplex | 87 | 180 | 14 | 114-147 | .0023-.0047 | .003-.0063 | .0039-.007 | |
| K | Gray cast iron (GG) | | Ferritic / pearlitic | | 180 | 15 | 246-278 | .0055-.0086 | .007-.0118 | .0086-.0157 | |
| | | | Pearlitic / martensitic | | 260 | 16 | | | | | |
| | Nodular cast iron (GGG) | | Ferritic | | 160 | 17 | | | | | |
| | | | Pearlitic | | 250 | 18 | | | | | |
| | Malleable cast iron | | Ferritic | | 130 | 19 | | | | | |
| | | | Pearlitic | | 230 | 20 | | | | | |
| S | High temperature alloys | Fe based | Annealed | | 200 | 31 | 147-164 | .0023-.0047 | .003-.0063 | .0039-.007 | |
| | | | Hardened | | 280 | 32 | 98-147 | .0023-.0047 | .003-.0063 | .0039-.007 | |
| | | Ni or Co based | Annealed | | 250 | 33 | | | | | |
| | | | Hardened | | 350 | 34 | | | | | |
| | | | Cast | | 320 | 35 | | | | | |
| | Titanium alloys | | Pure | 58 | 110 | 36 | 114-164 | .0023-.0047 | .003-.0063 | .0039-.007 | |
| | | | Alpha+Beta alloys, hardened | 152 | 310 | 37 | | | | | |

SOLIDDRILL

SCD-SXC40

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 40xD



| Designation | Dimensions | | | | | | | | IC908 |
|------------------------|------------|--------|--------|---------|-------|------|--------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽¹⁾ | |
| SCD0125-0520-0236SXC40 | .125 | .236 | 7.480 | 5.1970 | 5.51 | 1.77 | .02100 | 40.0 | ● |
| SCD0141-0677-0236SXC40 | .141 | .236 | 9.055 | 6.7720 | 7.09 | 1.77 | .02300 | 40.0 | ● |
| SCD0156-0677-0236SXC40 | .156 | .236 | 9.055 | 6.7720 | 7.09 | 1.77 | .02600 | 40.0 | ● |
| SCD0172-0835-0236SXC40 | .172 | .236 | 10.630 | 8.3460 | 8.66 | 1.77 | .02800 | 40.0 | ● |
| SCD0188-0835-0236SXC40 | .188 | .236 | 10.630 | 8.3460 | 8.66 | 1.77 | .03100 | 40.0 | ● |
| SCD0203-0913-0236SXC40 | .203 | .236 | 11.417 | 9.1340 | 9.45 | 1.77 | .03400 | 40.0 | ● |
| SCD0204-0913-0236SXC40 | .204 | .236 | 11.417 | 9.1340 | 9.45 | 1.77 | .03400 | 40.0 | ● |
| SCD0219-0913-0236SXC40 | .219 | .236 | 11.417 | 9.1340 | 9.45 | 1.77 | .03600 | 40.0 | ● |
| SCD0234-0913-0236SXC40 | .234 | .236 | 11.417 | 9.1340 | 9.45 | 1.77 | .03900 | 40.0 | ● |
| SCD0250-1110-0315SXC40 | .250 | .315 | 13.386 | 11.1020 | 11.42 | 1.77 | .04100 | 40.0 | ● |
| SCD0266-1228-0315SXC40 | .266 | .315 | 14.567 | 12.2830 | 12.60 | 1.77 | .04400 | 40.0 | ● |
| SCD0281-1228-0315SXC40 | .281 | .315 | 14.567 | 12.2830 | 12.60 | 1.77 | .04600 | 40.0 | ● |
| SCD0297-1347-0315SXC40 | .297 | .315 | 15.748 | 13.4650 | 13.78 | 1.77 | .04900 | 40.0 | ● |
| SCD0313-1347-0315SXC40 | .313 | .315 | 15.748 | 13.4650 | 13.78 | 1.77 | .05200 | 40.0 | ● |

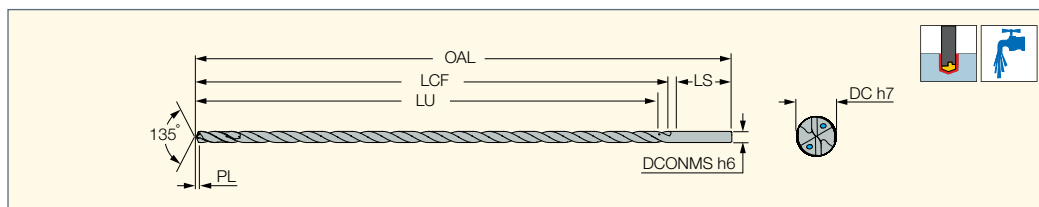
• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ Usable length diameter ratio

SOLIDDRILL

SCD-SXC50

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 50xD



| Designation | Dimensions | | | | | | | | IC908 |
|------------------------|------------|--------|--------|---------|-------|------|--------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽¹⁾ | |
| SCD0172-1051-0236SXC50 | .172 | .236 | 12.598 | 10.5120 | 10.83 | 1.58 | .02800 | 50.0 | ● |
| SCD0188-1051-0236SXC50 | .188 | .236 | 12.598 | 10.5120 | 10.83 | 1.58 | .03100 | 50.0 | ● |
| SCD0203-1189-0236SXC50 | .203 | .236 | 14.173 | 11.8900 | 12.21 | 1.77 | .03400 | 50.0 | ● |
| SCD0204-1189-0236SXC50 | .204 | .236 | 14.173 | 11.8900 | 12.21 | 1.77 | .03400 | 50.0 | ● |
| SCD0219-1189-0236SXC50 | .219 | .236 | 14.173 | 11.8900 | 12.21 | 1.77 | .03600 | 50.0 | ● |
| SCD0234-1189-0236SXC50 | .234 | .236 | 14.173 | 11.8900 | 12.21 | 1.77 | .03900 | 50.0 | ● |
| SCD0250-1307-0315SXC50 | .250 | .315 | 15.157 | 13.0710 | 13.39 | 1.58 | .04100 | 50.0 | ● |

• For user guide and cutting conditions, see pages 225-235

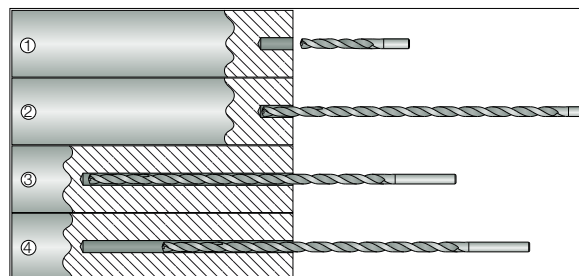
⁽¹⁾ Usable length diameter ratio

Recommended Machining Conditions for SCD-SXC40 & SCD-SXC50 Solid Carbide Drills

| ISO | Material | | Condition | Tensile Strength [ksi] | Hardness HB | Material Group No. | Cutting Speed v_c [SFM] | Feed f [IPR] | | | | |
|-----|--|-----------------------|-----------------------------|------------------------|-------------|--------------------|---------------------------|----------------|-------------|-------------|-------------|-------------|
| | | | | | | | | .125-.157 | .161-.196 | .2-.236 | .24-.275 | .28-.314 |
| P | Non-alloy steel and cast steel, free cutting steel | <0.25% C | Annealed | 61 | 125 | 1 | 180-213 | .0023-.0047 | .0023-.0055 | .003-.0063 | .0039-.007 | .0047-.0078 |
| | | $\geq 0.25\%$ C | Annealed | 94 | 190 | 2 | | | | | | |
| | | <0.55% C | Quenched and tempered | 123 | 250 | 3 | | | | | | |
| | | $\geq 0.55\%$ C | Annealed | 109 | 220 | 4 | | | | | | |
| | | | Quenched and tempered | 145 | 300 | 5 | | | | | | |
| | Low alloy and cast steel (less than 5% of alloying elements) | Annealed | 87 | 200 | 6 | 147-213 | .0023-.0039 | .0023-.0047 | .003-.0055 | .0039-.0063 | .0047-.007 | |
| | | | Quenched and tempered | 135 | 275 | | | | | | | 7 |
| | | | | 145 | 300 | | | | | | | 8 |
| | | | | 174 | 350 | | | | | | | 9 |
| | High alloyed steel, cast steel and tool steel | Annealed | 99 | 200 | 10 | 114-180 | .0015-.003 | .0023-.0039 | .0023-.0047 | .003-.0055 | .0039-.0063 | |
| | | Quenched and tempered | 160 | 325 | 11 | | | | | | | |
| | Stainless steel and cast steel | Ferritic/martensitic | 99 | 200 | 12 | 98-147 | .0015-.003 | .0023-.0039 | .0023-.0047 | .003-.0055 | .0039-.0063 | |
| | | Martensitic | 119 | 240 | 13 | | | | | | | |
| M | Stainless steel and cast steel | | Austenitic, duplex | 87 | 180 | 14 | 82-148 | .0015-.003 | .0023-.0039 | .0023-.0047 | .003-.0055 | .0039-.0063 |
| K | Gray cast iron (GG) | | Ferritic / pearlitic | | 180 | 15 | 198-230 | .0039-.007 | .0047-.0078 | .0055-.0086 | .0055-.0094 | .0063-.0100 |
| | | | Pearlitic / martensitic | | 260 | 16 | | | | | | |
| | Nodular cast iron (GGG) | | Ferritic | | 160 | 17 | 180-213 | | | | | |
| | | | Pearlitic | | 250 | 18 | | | | | | |
| | Malleable cast iron | | Ferritic | | 130 | 19 | 164-198 | | | | | |
| | | | Pearlitic | | 230 | 20 | | | | | | |
| S | High temperature alloys | Fe based | Annealed | | 200 | 31 | 98-114 | .0015-.003 | .0023-.0039 | .0023-.0047 | .003-.0055 | .0039-.0063 |
| | | | Hardened | | 280 | 32 | | | | | | |
| | | Ni or Co based | Annealed | | 250 | 33 | 82-98 | | | | | |
| | | | Hardened | | 350 | 34 | | | | | | |
| | Titanium alloys | Cast | | | 320 | 35 | 98-114 | | | | | |
| | | | Pure | 58 | 110 | 36 | | | | | | |
| | | | Alpha+Beta alloys, hardened | 152 | 310 | 37 | | | | | | |

Recommended Drilling Procedure for Deep Hole Drilling

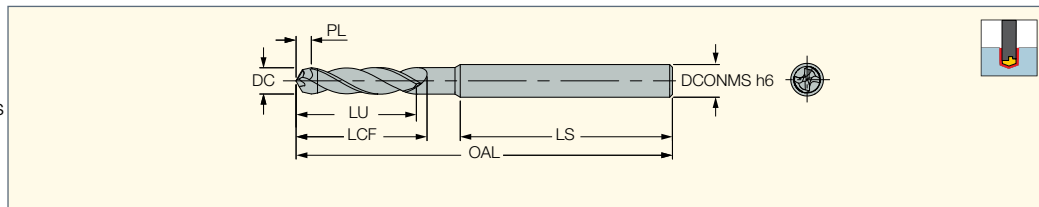
- 1 Drill a pilot hole 1-2xD deep with a short drill. The pilot drill should be .001"-.002" larger than the long drill and its point angle should also be larger (over 135°).
- 2 Enter the pre-hole using low feed and rotate at low speed (50-100 RPM) until it engages the material.
- 3 Activate the coolant system and increase rotation speed to the recommended cutting parameter, maintain for 2-3 seconds, then continue at recommended drilling feed. No pecking is required.
- 4 After having reached the required depth, reduce speed to 50-100 RPM before retracting from the hole.



- 40xD & 50xD must utilize a 20xD intermediary drill along with pilot drill.
- In through holes, the tool exit should not exceed .078"-.118".

SOLIDDRILL**SCD-FNPCD**

Solid Carbide Drills with PCD Full Nib Insert for Composite Materials (CFRP) and Stack Machining

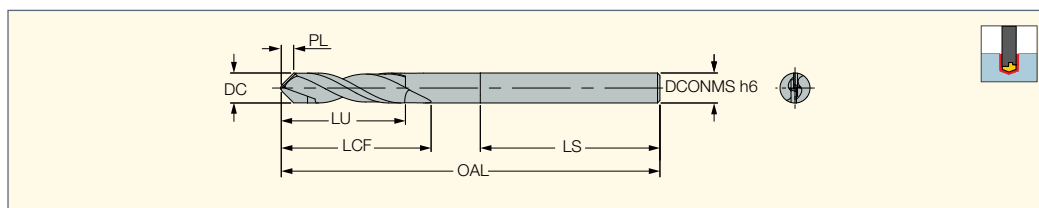


| Designation | DC | DCONMS | LU | LCF | LS | OAL | PL |
|-------------------------------|------|--------|--------|------|------|-------|--------|
| SCD 0130-100-188 FNPCD | .130 | .187 | 1.0000 | 1.19 | 1.42 | 2.750 | .12500 |
| SCD 0165-112-250 FNPCD | .165 | .250 | 1.1300 | 1.37 | 1.34 | 2.750 | .08200 |
| SCD 0191-112-250 FNPCD | .191 | .250 | 1.1300 | 1.41 | 1.34 | 2.750 | .09500 |
| SCD 0251-125-312 FNPCD | .251 | .312 | 1.2500 | 1.63 | 1.26 | 3.000 | .12500 |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

SOLIDDRILL**SCD-WPCD**

Solid Carbide Drills with PCD Insert for Composite Materials (CFRP) and Stack Machining

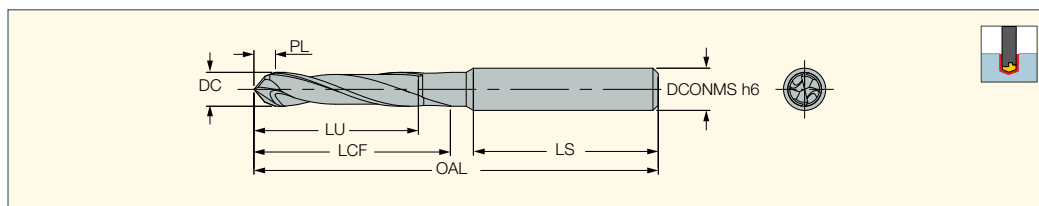


| Designation | DC | DCONMS | LU | LCF | LS | OAL | PL |
|------------------------------|------|--------|--------|------|------|-------|--------|
| SCD 0165-112-250 WPCD | .165 | .250 | 1.1300 | 1.37 | 1.34 | 2.750 | .08200 |
| SCD 0191-112-250 WPCD | .191 | .250 | 1.1300 | 1.41 | 1.34 | 2.750 | .09500 |
| SCD 0251-125-312 WPCD | .251 | .313 | 1.2500 | 1.63 | 1.26 | 3.000 | .12500 |
| SCD 0312-125-312 WPCD | .312 | .313 | 1.2500 | 1.72 | 1.18 | 3.000 | .15600 |
| SCD 0375-150-375 WPCD | .375 | .375 | 1.5000 | 2.06 | 1.57 | 3.500 | .19700 |
| SCD 0438-175-500 WPCD | .438 | .500 | 1.7500 | 2.41 | 1.57 | 3.500 | .23600 |
| SCD 0500-200-500 WPCD | .500 | .500 | 2.0000 | 2.75 | 1.57 | 4.000 | .25000 |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

SOLIDDRILL**SCD-CVD**

Solid Carbide Drills with CVD Coating for Composite Materials (CFRP) and Stack Machining

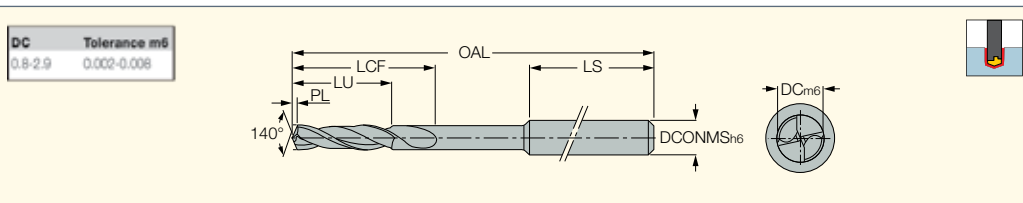


| Designation | DC | DCONMS | LU | LCF | LS | OAL | PL |
|-----------------------------|------|--------|--------|------|------|-------|--------|
| SCD 0130-100-188 CVD | .130 | .187 | 1.0000 | 1.20 | 1.42 | 2.750 | .12500 |
| SCD 0165-112-250 CVD | .165 | .250 | 1.1300 | 1.37 | 1.26 | 2.750 | .13800 |
| SCD 0191-112-250 CVD | .191 | .250 | 1.1300 | 1.41 | 1.26 | 2.750 | .15700 |
| SCD 0251-125-312 CVD | .251 | .313 | 1.2500 | 1.63 | 1.26 | 3.000 | .21100 |
| SCD 0312-125-375 CVD | .312 | .375 | 1.2500 | 1.72 | 1.18 | 3.000 | .26300 |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

SOLIDDRILL**SCD-AP4 (4xD)**

DIN 6537 Solid Carbide
Drills without Coolant Holes,
Drilling Depth 4xD

**M E T R I C**

| Designation | Dimensions | | | | | | | | IC908 |
|---------------------|------------|--------|------|------|------|-------|---------------------|-------|-------|
| | DC | DCONMS | LU | LCF | LS | OAL | FTDZ ⁽¹⁾ | PL | |
| SCD 008-003-030 AP4 | 0.80 | 3.00 | 3.2 | 4.8 | 37.2 | 46.00 | - | 0.150 | ● |
| SCD 009-003-030 AP4 | 0.90 | 3.00 | 3.6 | 5.4 | 36.6 | 46.00 | - | 0.160 | ● |
| SCD 010-004-030 AP4 | 1.00 | 3.00 | 4.0 | 6.0 | 36.0 | 46.00 | - | 0.180 | ● |
| SCD 011-004-030 AP4 | 1.10 | 3.00 | 4.4 | 6.6 | 35.4 | 46.00 | M1.4 | 0.200 | ● |
| SCD 012-004-030 AP4 | 1.20 | 3.00 | 4.8 | 7.2 | 34.8 | 46.00 | - | 0.220 | ● |
| SCD 013-005-030 AP4 | 1.30 | 3.00 | 5.2 | 7.8 | 34.2 | 46.00 | - | 0.240 | ● |
| SCD 014-005-030 AP4 | 1.40 | 3.00 | 5.6 | 8.4 | 33.6 | 46.00 | - | 0.250 | ● |
| SCD 015-006-030 AP4 | 1.50 | 3.00 | 6.0 | 9.0 | 33.0 | 46.00 | - | 0.270 | ● |
| SCD 016-006-030 AP4 | 1.60 | 3.00 | 6.4 | 9.6 | 32.4 | 46.00 | M2 | 0.290 | ● |
| SCD 017-006-030 AP4 | 1.70 | 3.00 | 6.8 | 10.2 | 31.8 | 46.00 | - | 0.310 | ● |
| SCD 018-007-030 AP4 | 1.80 | 3.00 | 7.2 | 10.8 | 31.2 | 46.00 | - | 0.330 | ● |
| SCD 019-007-030 AP4 | 1.90 | 3.00 | 7.6 | 11.4 | 30.6 | 46.00 | - | 0.350 | ● |
| SCD 020-008-030 AP4 | 2.00 | 3.00 | 8.0 | 12.0 | 44.0 | 60.00 | - | 0.360 | ● |
| SCD 021-008-030 AP4 | 2.10 | 3.00 | 8.4 | 12.6 | 43.4 | 60.00 | - | 0.380 | ● |
| SCD 022-008-030 AP4 | 2.20 | 3.00 | 8.8 | 13.2 | 42.8 | 60.00 | - | 0.400 | ● |
| SCD 023-009-030 AP4 | 2.30 | 3.00 | 9.2 | 13.8 | 42.2 | 60.00 | - | 0.420 | ● |
| SCD 024-009-030 AP4 | 2.40 | 3.00 | 9.6 | 14.4 | 41.6 | 60.00 | - | 0.440 | ● |
| SCD 025-010-030 AP4 | 2.50 | 3.00 | 10.0 | 15.0 | 41.0 | 60.00 | M3 | 0.450 | ● |
| SCD 026-010-030 AP4 | 2.60 | 3.00 | 10.4 | 15.6 | 40.4 | 60.00 | - | 0.470 | ● |
| SCD 027-010-030 AP4 | 2.70 | 3.00 | 10.8 | 16.2 | 39.8 | 60.00 | - | 0.490 | ● |
| SCD 028-011-030 AP4 | 2.80 | 3.00 | 11.2 | 16.8 | 39.2 | 60.00 | - | 0.510 | ● |
| SCD 029-011-030 AP4 | 2.90 | 3.00 | 11.6 | 17.4 | 38.6 | 60.00 | M3.5 | 0.530 | ● |

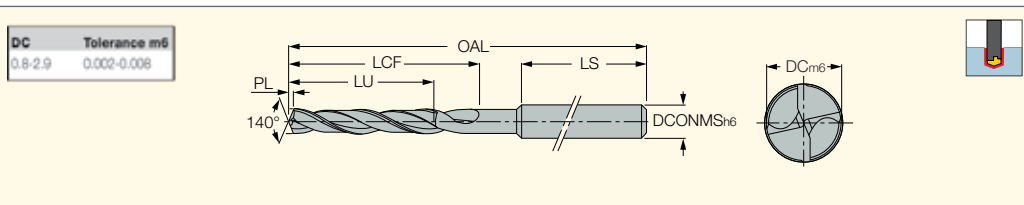
• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size



SCD-AP6 (6xD)

DIN 6537 Solid Carbide
Drills without Coolant Holes,
Drilling Depth 6xD



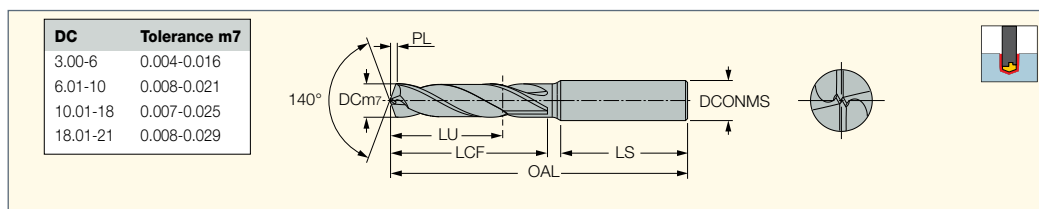
| M E T R I C | | | | | | | | | |
|---------------------|------|--------|------|------|------|-------|---------------------|-------|-------|
| Dimensions | | | | | | | | | IC908 |
| Designation | DC | DCONMS | LU | LCF | LS | OAL | FTDZ ⁽¹⁾ | PL | |
| SCD 008-004-030 AP6 | 0.80 | 3.00 | 4.8 | 6.4 | 35.5 | 46.00 | - | 0.150 | ● |
| SCD 009-005-030 AP6 | 0.90 | 3.00 | 5.4 | 7.2 | 34.5 | 46.00 | - | 0.160 | ● |
| SCD 010-006-030 AP6 | 1.00 | 3.00 | 6.0 | 8.0 | 33.8 | 46.00 | - | 0.180 | ● |
| SCD 011-006-030 AP6 | 1.10 | 3.00 | 6.6 | 8.8 | 33.0 | 46.00 | M1.4 | 0.200 | ● |
| SCD 012-007-030 AP6 | 1.20 | 3.00 | 7.2 | 9.6 | 32.3 | 46.00 | - | 0.220 | ● |
| SCD 013-007-030 AP6 | 1.30 | 3.00 | 7.8 | 10.4 | 31.5 | 46.00 | - | 0.240 | ● |
| SCD 014-008-030 AP6 | 1.40 | 3.00 | 8.4 | 11.2 | 30.8 | 46.00 | - | 0.250 | ● |
| SCD 015-009-030 AP6 | 1.50 | 3.00 | 9.0 | 12.0 | 30.0 | 46.00 | - | 0.270 | ● |
| SCD 016-009-030 AP6 | 1.60 | 3.00 | 9.6 | 12.8 | 29.3 | 46.00 | M2 | 0.290 | ● |
| SCD 017-010-030 AP6 | 1.70 | 3.00 | 10.2 | 13.6 | 42.5 | 60.00 | - | 0.310 | ● |
| SCD 018-010-030 AP6 | 1.80 | 3.00 | 10.8 | 14.4 | 41.8 | 60.00 | - | 0.330 | ● |
| SCD 019-011-030 AP6 | 1.90 | 3.00 | 11.4 | 15.2 | 41.1 | 60.00 | - | 0.350 | ● |
| SCD 020-012-030 AP6 | 2.00 | 3.00 | 12.0 | 16.0 | 40.3 | 60.00 | - | 0.360 | ● |
| SCD 021-012-030 AP6 | 2.10 | 3.00 | 12.6 | 16.8 | 39.6 | 60.00 | - | 0.380 | ● |
| SCD 022-013-030 AP6 | 2.20 | 3.00 | 13.2 | 17.6 | 38.9 | 60.00 | - | 0.400 | ● |
| SCD 023-013-030 AP6 | 2.30 | 3.00 | 13.8 | 18.4 | 38.2 | 60.00 | - | 0.420 | ● |
| SCD 024-014-030 AP6 | 2.40 | 3.00 | 14.4 | 19.2 | 37.5 | 60.00 | - | 0.440 | ● |
| SCD 025-015-030 AP6 | 2.50 | 3.00 | 15.0 | 20.0 | 36.8 | 60.00 | M3 | 0.450 | ● |
| SCD 026-015-030 AP6 | 2.60 | 3.00 | 15.6 | 20.8 | 36.1 | 60.00 | - | 0.470 | ● |
| SCD 027-016-030 AP6 | 2.70 | 3.00 | 16.2 | 21.6 | 35.5 | 60.00 | - | 0.490 | ● |
| SCD 028-016-030 AP6 | 2.80 | 3.00 | 16.8 | 22.4 | 34.8 | 60.00 | - | 0.510 | ● |
| SCD 029-017-030 AP6 | 2.90 | 3.00 | 17.4 | 23.2 | 34.4 | 60.00 | M3.5 | 0.530 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

SCD-AP3N (3xD)

DIN 6537 Solid Carbide
Drills without Coolant Holes,
Drilling Depth 3xD



| M E T R I C | | | | | | | | | |
|----------------------|------|--------|-------|-------|------|-------|------|---------------------|-------|
| Dimensions | | | | | | | | | IC908 |
| Designation | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 030-014-060 AP3N | 3.00 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | - | ● |
| SCD 031-014-060 AP3N | 3.10 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | - | ● |
| SCD 032-014-060 AP3N | 3.20 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | - | ● |
| SCD 033-014-060 AP3N | 3.30 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | M4 | ● |
| SCD 034-014-060 AP3N | 3.40 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | - | ● |
| SCD 035-014-060 AP3N | 3.50 | 6.00 | 62.00 | 14.00 | 20.0 | 0.600 | 34.0 | - | ● |
| SCD 036-014-060 AP3N | 3.60 | 6.00 | 62.00 | 14.00 | 20.0 | 0.600 | 34.0 | - | ● |
| SCD 037-014-060 AP3N | 3.70 | 6.00 | 62.00 | 14.00 | 20.0 | 0.600 | 34.0 | - | ● |
| SCD 038-017-060 AP3N | 3.80 | 6.00 | 66.00 | 17.00 | 24.0 | 0.600 | 35.0 | - | ● |
| SCD 039-017-060 AP3N | 3.90 | 6.00 | 66.00 | 17.00 | 24.0 | 0.600 | 35.0 | - | ● |
| SCD 040-017-060 AP3N | 4.00 | 6.00 | 66.00 | 17.00 | 24.0 | 0.600 | 35.0 | - | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

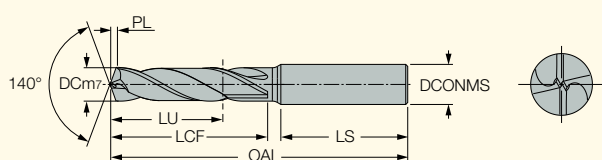
⁽¹⁾ Used for standard thread size

Continued

SOLIDDRILL**SCD-AP3N (3xD)**

DIN 6537 Solid Carbide
Drills without Coolant Holes,
Drilling Depth 3xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



| M E T R I C | | | | | | | | | IC908 |
|----------------------|------------|--------|-------|-------|------|-------|------|---------------------|-------|
| Designation | Dimensions | | | | | | | | |
| | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 041-017-060 AP3N | 4.10 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 042-017-060 AP3N | 4.20 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | M5 | ● |
| SCD 043-017-060 AP3N | 4.30 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 044-017-060 AP3N | 4.40 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 045-017-060 AP3N | 4.50 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 046-017-060 AP3N | 4.60 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 047-017-060 AP3N | 4.70 | 6.00 | 66.00 | 17.00 | 24.0 | 0.800 | 35.0 | - | ● |
| SCD 048-020-060 AP3N | 4.80 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 049-020-060 AP3N | 4.90 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 050-020-060 AP3N | 5.00 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | M6 | ● |
| SCD 051-020-060 AP3N | 5.10 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 052-020-060 AP3N | 5.20 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 053-020-060 AP3N | 5.30 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 054-020-060 AP3N | 5.40 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 055-020-060 AP3N | 5.50 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 056-020-060 AP3N | 5.60 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 057-020-060 AP3N | 5.70 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 058-020-060 AP3N | 5.80 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 059-020-060 AP3N | 5.90 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 060-020-060 AP3N | 6.00 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | M7 | ● |
| SCD 061-024-080 AP3N | 6.10 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 062-024-080 AP3N | 6.20 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 063-024-080 AP3N | 6.30 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 064-024-080 AP3N | 6.40 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 065-024-080 AP3N | 6.50 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 066-024-080 AP3N | 6.60 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 067-024-080 AP3N | 6.70 | 8.00 | 79.00 | 24.00 | 34.0 | 1.100 | 36.0 | - | ● |
| SCD 068-024-080 AP3N | 6.80 | 8.00 | 79.00 | 24.00 | 34.0 | 1.100 | 36.0 | M8 | ● |
| SCD 069-024-080 AP3N | 6.90 | 8.00 | 79.00 | 24.00 | 34.0 | 1.100 | 36.0 | - | ● |
| SCD 070-024-080 AP3N | 7.00 | 8.00 | 79.00 | 24.00 | 34.0 | 1.100 | 36.0 | - | ● |
| SCD 071-029-080 AP3N | 7.10 | 8.00 | 79.00 | 29.00 | 41.0 | 1.100 | 36.0 | - | ● |
| SCD 072-029-080 AP3N | 7.20 | 8.00 | 79.00 | 29.00 | 41.0 | 1.100 | 36.0 | - | ● |
| SCD 073-029-080 AP3N | 7.30 | 8.00 | 79.00 | 29.00 | 41.0 | 1.100 | 36.0 | - | ● |
| SCD 074-029-080 AP3N | 7.40 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | - | ● |
| SCD 075-029-080 AP3N | 7.50 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | - | ● |
| SCD 076-029-080 AP3N | 7.60 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | - | ● |
| SCD 077-029-080 AP3N | 7.70 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | - | ● |
| SCD 078-029-080 AP3N | 7.80 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | M9 | ● |
| SCD 079-029-080 AP3N | 7.90 | 8.00 | 79.00 | 29.00 | 41.0 | 1.300 | 36.0 | - | ● |
| SCD 080-029-080 AP3N | 8.00 | 8.00 | 79.00 | 29.00 | 41.0 | 1.300 | 36.0 | - | ● |
| SCD 081-035-100 AP3N | 8.10 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | - | ● |
| SCD 082-035-100 AP3N | 8.20 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | - | ● |
| SCD 083-035-100 AP3N | 8.30 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | - | ● |
| SCD 084-035-100 AP3N | 8.40 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | - | ● |
| SCD 085-035-100 AP3N | 8.50 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | M10 | ● |
| SCD 086-035-100 AP3N | 8.60 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 087-035-100 AP3N | 8.70 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 088-035-100 AP3N | 8.80 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 089-035-100 AP3N | 8.90 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 090-035-100 AP3N | 9.00 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 091-035-100 AP3N | 9.10 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 092-035-100 AP3N | 9.20 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |

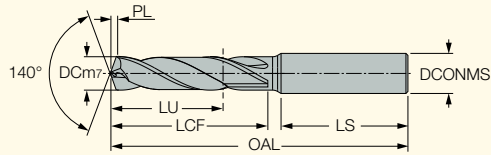
• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

(1) Used for standard thread size

SOLIDDRILL**SCD-AP3N (3xD)**

DIN 6537 Solid Carbide
Drills without Coolant Holes,
Drilling Depth 3xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



| M E T R I C | | | | | | | | | |
|----------------------|------------|--------|--------|-------|------|-------|------|---------------------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 093-035-100 AP3N | 9.30 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | - | ● |
| SCD 094-035-100 AP3N | 9.40 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | - | ● |
| SCD 095-035-100 AP3N | 9.50 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | M11 | ● |
| SCD 096-035-100 AP3N | 9.60 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | - | ● |
| SCD 097-035-100 AP3N | 9.70 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | - | ● |
| SCD 098-035-100 AP3N | 9.80 | 10.00 | 89.00 | 35.00 | 47.0 | 1.600 | 40.0 | - | ● |
| SCD 099-035-100 AP3N | 9.90 | 10.00 | 89.00 | 35.00 | 47.0 | 1.600 | 40.0 | - | ● |
| SCD 100-035-100 AP3N | 10.00 | 10.00 | 89.00 | 35.00 | 47.0 | 1.600 | 40.0 | - | ● |
| SCD 101-040-120 AP3N | 10.10 | 12.00 | 101.00 | 40.00 | 55.0 | 1.600 | 45.0 | - | ● |
| SCD 102-040-120 AP3N | 10.20 | 12.00 | 101.00 | 40.00 | 55.0 | 1.600 | 45.0 | M12 | ● |
| SCD 103-040-120 AP3N | 10.30 | 12.00 | 101.00 | 40.00 | 55.0 | 1.600 | 45.0 | - | ● |
| SCD 104-040-120 AP3N | 10.40 | 12.00 | 101.00 | 40.00 | 55.0 | 1.600 | 45.0 | - | ● |
| SCD 105-040-120 AP3N | 10.50 | 12.00 | 101.00 | 40.00 | 55.0 | 1.600 | 45.0 | - | ● |
| SCD 106-040-120 AP3N | 10.60 | 12.00 | 101.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 107-040-120 AP3N | 10.70 | 12.00 | 101.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 108-040-120 AP3N | 10.80 | 12.00 | 101.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 109-040-120 AP3N | 10.90 | 12.00 | 101.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 110-040-120 AP3N | 11.00 | 12.00 | 101.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 111-040-120 AP3N | 11.10 | 12.00 | 101.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 112-040-120 AP3N | 11.20 | 12.00 | 101.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 113-040-120 AP3N | 11.30 | 12.00 | 101.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 114-040-120 AP3N | 11.40 | 12.00 | 101.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 115-040-120 AP3N | 11.50 | 12.00 | 101.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 116-040-120 AP3N | 11.60 | 12.00 | 101.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 117-040-120 AP3N | 11.70 | 12.00 | 101.00 | 40.00 | 55.0 | 1.900 | 45.0 | - | ● |
| SCD 118-040-120 AP3N | 11.80 | 12.00 | 101.00 | 40.00 | 55.0 | 1.900 | 45.0 | - | ● |
| SCD 119-040-120 AP3N | 11.90 | 12.00 | 101.00 | 40.00 | 55.0 | 1.900 | 45.0 | - | ● |
| SCD 120-040-120 AP3N | 12.00 | 12.00 | 101.00 | 40.00 | 55.0 | 1.900 | 45.0 | M14 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

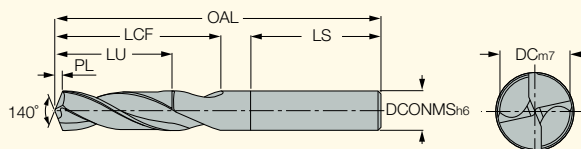
⁽¹⁾ Used for standard thread size



SOLIDDRILL**SCD-AP3 (3xD)**

DIN 6537 Solid Carbide
Drills without Coolant Holes,
Drilling Depth 3xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.006-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |

**M E T R I C**

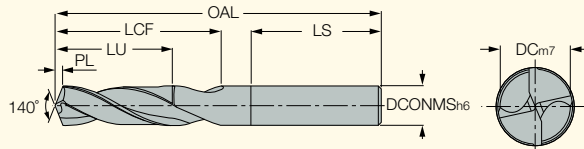
| Designation | Dimensions | | | | | | | | IC908 |
|---------------------|------------|--------|------|------|--------|------|---------------------|-------|-------|
| | DC | DCONMS | LU | LCF | OAL | LS | FTDZ ⁽¹⁾ | PL | |
| SCD 121-043-140 AP3 | 12.10 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.200 | ● |
| SCD 122-043-140 AP3 | 12.20 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.220 | ● |
| SCD 123-043-140 AP3 | 12.30 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.240 | ● |
| SCD 124-043-140 AP3 | 12.40 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.260 | ● |
| SCD 125-043-140 AP3 | 12.50 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.270 | ● |
| SCD 126-043-140 AP3 | 12.60 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.290 | ● |
| SCD 127-043-140 AP3 | 12.70 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.310 | ● |
| SCD 128-043-140 AP3 | 12.80 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.330 | ● |
| SCD 129-043-140 AP3 | 12.90 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.350 | ● |
| SCD 130-043-140 AP3 | 13.00 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.370 | ● |
| SCD 131-043-140 AP3 | 13.10 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.380 | ● |
| SCD 132-043-140 AP3 | 13.20 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.400 | ● |
| SCD 133-043-140 AP3 | 13.30 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.420 | ● |
| SCD 135-043-140 AP3 | 13.50 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.460 | ● |
| SCD 136-043-140 AP3 | 13.60 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.470 | ● |
| SCD 137-043-140 AP3 | 13.70 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.490 | ● |
| SCD 138-043-140 AP3 | 13.80 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.510 | ● |
| SCD 139-043-140 AP3 | 13.90 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | - | 2.530 | ● |
| SCD 140-043-140 AP3 | 14.00 | 14.00 | 43.0 | 60.0 | 107.00 | 45.0 | M16 | 2.550 | ● |
| SCD 141-045-160 AP3 | 14.10 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.570 | ● |
| SCD 142-045-160 AP3 | 14.20 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.580 | ● |
| SCD 143-045-160 AP3 | 14.30 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.600 | ● |
| SCD 144-045-160 AP3 | 14.40 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.620 | ● |
| SCD 145-045-160 AP3 | 14.50 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.640 | ● |
| SCD 146-045-160 AP3 | 14.60 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.660 | ● |
| SCD 147-045-160 AP3 | 14.70 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.680 | ● |
| SCD 148-045-160 AP3 | 14.80 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.690 | ● |
| SCD 149-045-160 AP3 | 14.90 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.710 | ● |
| SCD 150-045-160 AP3 | 15.00 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.730 | ● |
| SCD 151-045-160 AP3 | 15.10 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.750 | ● |
| SCD 152-045-160 AP3 | 15.20 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.770 | ● |
| SCD 153-045-160 AP3 | 15.30 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.780 | ● |
| SCD 154-045-160 AP3 | 15.40 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.800 | ● |
| SCD 155-045-160 AP3 | 15.50 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | M18 | 2.820 | ● |
| SCD 156-045-160 AP3 | 15.60 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.840 | ● |
| SCD 157-045-160 AP3 | 15.70 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.860 | ● |
| SCD 158-045-160 AP3 | 15.80 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.880 | ● |
| SCD 159-045-160 AP3 | 15.90 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.890 | ● |
| SCD 160-045-160 AP3 | 16.00 | 16.00 | 45.0 | 65.0 | 115.00 | 45.0 | - | 2.910 | ● |
| SCD 161-051-180 AP3 | 16.10 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 2.930 | ● |
| SCD 162-051-180 AP3 | 16.20 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 2.950 | ● |
| SCD 163-051-180 AP3 | 16.30 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 2.970 | ● |
| SCD 164-051-180 AP3 | 16.40 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 2.980 | ● |
| SCD 165-051-180 AP3 | 16.50 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.000 | ● |
| SCD 166-051-180 AP3 | 16.60 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.020 | ● |
| SCD 167-051-180 AP3 | 16.70 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.040 | ● |
| SCD 168-051-180 AP3 | 16.80 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.060 | ● |
| SCD 169-051-180 AP3 | 16.90 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.080 | ● |
| SCD 170-051-180 AP3 | 17.00 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.090 | ● |
| SCD 171-051-180 AP3 | 17.10 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.110 | ● |
| SCD 172-051-180 AP3 | 17.20 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.130 | ● |
| SCD 173-051-180 AP3 | 17.30 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.150 | ● |
| SCD 174-051-180 AP3 | 17.40 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.170 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

SCD-AP3 (3xD)
DIN 6537 Solid Carbide
Drills without Coolant Holes,
Drilling Depth 3xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.006-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



| M E T R I C | | | | | | | | | |
|---------------------|-------|--------|------|------|--------|------|---------------------|-------|-------|
| Dimensions | | | | | | | | | IC908 |
| Designation | DC | DCONMS | LU | LCF | OAL | LS | FTDZ ⁽¹⁾ | PL | |
| SCD 175-051-180 AP3 | 17.50 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | M20 | 3.180 | ● |
| SCD 176-051-180 AP3 | 17.60 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.200 | ● |
| SCD 177-051-180 AP3 | 17.70 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.220 | ● |
| SCD 178-051-180 AP3 | 17.80 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.240 | ● |
| SCD 179-051-180 AP3 | 17.90 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.260 | ● |
| SCD 180-051-180 AP3 | 18.00 | 18.00 | 51.0 | 73.0 | 123.00 | 48.0 | - | 3.280 | ● |
| SCD 181-055-200 AP3 | 18.10 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.290 | ● |
| SCD 182-055-200 AP3 | 18.20 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.310 | ● |
| SCD 183-055-200 AP3 | 18.30 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.330 | ● |
| SCD 184-055-200 AP3 | 18.40 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.350 | ● |
| SCD 185-055-200 AP3 | 18.50 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.370 | ● |
| SCD 186-055-200 AP3 | 18.60 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.380 | ● |
| SCD 187-055-200 AP3 | 18.70 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.400 | ● |
| SCD 188-055-200 AP3 | 18.80 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.420 | ● |
| SCD 189-055-200 AP3 | 18.90 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.440 | ● |
| SCD 190-055-200 AP3 | 19.00 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.460 | ● |
| SCD 191-055-200 AP3 | 19.10 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.480 | ● |
| SCD 192-055-200 AP3 | 19.20 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.490 | ● |
| SCD 193-055-200 AP3 | 19.30 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.510 | ● |
| SCD 194-055-200 AP3 | 19.40 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.530 | ● |
| SCD 195-055-200 AP3 | 19.50 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | M22 | 3.550 | ● |
| SCD 197-055-200 AP3 | 19.70 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.590 | ● |
| SCD 198-055-200 AP3 | 19.80 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.600 | ● |
| SCD 199-055-200 AP3 | 19.90 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.620 | ● |
| SCD 200-055-200 AP3 | 20.00 | 20.00 | 55.0 | 79.0 | 131.00 | 48.0 | - | 3.640 | ● |

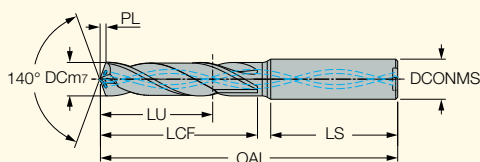
• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size



SOLIDDRILL**SCD-ACP3N (3XD)**DIN 6537 Solid Carbide Drills with
Coolant Holes, Drilling Depth 3xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



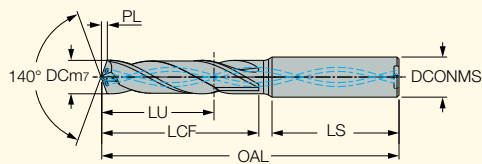
| M E T R I C | | | | | | | | | |
|-----------------------|------------|--------|-------|-------|------|-------|------|---------------------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 030-014-060 ACP3N | 3.00 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | - | ● |
| SCD 031-014-060 ACP3N | 3.10 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | - | ● |
| SCD 032-014-060 ACP3N | 3.20 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | - | ● |
| SCD 033-014-060 ACP3N | 3.30 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | M4 | ● |
| SCD 034-014-060 ACP3N | 3.40 | 6.00 | 62.00 | 14.00 | 20.0 | 0.500 | 34.0 | - | ● |
| SCD 035-014-060 ACP3N | 3.50 | 6.00 | 62.00 | 14.00 | 20.0 | 0.600 | 34.0 | - | ● |
| SCD 036-014-060 ACP3N | 3.60 | 6.00 | 62.00 | 14.00 | 20.0 | 0.600 | 34.0 | - | ● |
| SCD 037-014-060 ACP3N | 3.70 | 6.00 | 62.00 | 14.00 | 20.0 | 0.600 | 34.0 | - | ● |
| SCD 038-017-060 ACP3N | 3.80 | 6.00 | 66.00 | 17.00 | 24.0 | 0.600 | 35.0 | - | ● |
| SCD 039-017-060 ACP3N | 3.90 | 6.00 | 66.00 | 17.00 | 24.0 | 0.600 | 35.0 | - | ● |
| SCD 040-017-060 ACP3N | 4.00 | 6.00 | 66.00 | 17.00 | 24.0 | 0.600 | 35.0 | - | ● |
| SCD 041-017-060 ACP3N | 4.10 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 042-017-060 ACP3N | 4.20 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | M5 | ● |
| SCD 043-017-060 ACP3N | 4.30 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 044-017-060 ACP3N | 4.40 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 045-017-060 ACP3N | 4.50 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 046-017-060 ACP3N | 4.60 | 6.00 | 66.00 | 17.00 | 24.0 | 0.700 | 35.0 | - | ● |
| SCD 047-017-060 ACP3N | 4.70 | 6.00 | 66.00 | 17.00 | 24.0 | 0.800 | 35.0 | - | ● |
| SCD 048-020-060 ACP3N | 4.80 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 049-020-060 ACP3N | 4.90 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 050-020-060 ACP3N | 5.00 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | M6 | ● |
| SCD 051-020-060 ACP3N | 5.10 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 052-020-060 ACP3N | 5.20 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 053-020-060 ACP3N | 5.30 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 054-020-060 ACP3N | 5.40 | 6.00 | 66.00 | 20.00 | 28.0 | 0.800 | 36.0 | - | ● |
| SCD 055-020-060 ACP3N | 5.50 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 056-020-060 ACP3N | 5.60 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 057-020-060 ACP3N | 5.70 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 058-020-060 ACP3N | 5.80 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 059-020-060 ACP3N | 5.90 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | - | ● |
| SCD 060-020-060 ACP3N | 6.00 | 6.00 | 66.00 | 20.00 | 28.0 | 0.900 | 36.0 | M7 | ● |
| SCD 061-024-080 ACP3N | 6.10 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 062-024-080 ACP3N | 6.20 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 063-024-080 ACP3N | 6.30 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 064-024-080 ACP3N | 6.40 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 065-024-080 ACP3N | 6.50 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 066-024-080 ACP3N | 6.60 | 8.00 | 79.00 | 24.00 | 34.0 | 1.000 | 36.0 | - | ● |
| SCD 067-024-080 ACP3N | 6.70 | 8.00 | 79.00 | 24.00 | 34.0 | 1.100 | 36.0 | - | ● |
| SCD 068-024-080 ACP3N | 6.80 | 8.00 | 79.00 | 24.00 | 34.0 | 1.100 | 36.0 | M8 | ● |
| SCD 069-024-080 ACP3N | 6.90 | 8.00 | 79.00 | 24.00 | 34.0 | 1.100 | 36.0 | - | ● |
| SCD 070-024-080 ACP3N | 7.00 | 8.00 | 79.00 | 24.00 | 34.0 | 1.100 | 36.0 | - | ● |
| SCD 071-029-080 ACP3N | 7.10 | 8.00 | 79.00 | 29.00 | 41.0 | 1.100 | 36.0 | - | ● |
| SCD 072-029-080 ACP3N | 7.20 | 8.00 | 79.00 | 29.00 | 41.0 | 1.100 | 36.0 | - | ● |
| SCD 073-029-080 ACP3N | 7.30 | 8.00 | 79.00 | 29.00 | 41.0 | 1.100 | 36.0 | - | ● |
| SCD 074-029-080 ACP3N | 7.40 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | - | ● |
| SCD 075-029-080 ACP3N | 7.50 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | - | ● |
| SCD 076-029-080 ACP3N | 7.60 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | - | ● |
| SCD 077-029-080 ACP3N | 7.70 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | - | ● |
| SCD 078-029-080 ACP3N | 7.80 | 8.00 | 79.00 | 29.00 | 41.0 | 1.200 | 36.0 | M9 | ● |
| SCD 079-029-080 ACP3N | 7.90 | 8.00 | 79.00 | 29.00 | 41.0 | 1.300 | 36.0 | - | ● |
| SCD 080-029-080 ACP3N | 8.00 | 8.00 | 79.00 | 29.00 | 41.0 | 1.300 | 36.0 | - | ● |
| SCD 081-035-100 ACP3N | 8.10 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | - | ● |
| SCD 082-035-100 ACP3N | 8.20 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | - | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

SOLIDDRILL**SCD-ACP3N (3XD)**DIN 6537 Solid Carbide Drills with
Coolant Holes, Drilling Depth 3xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



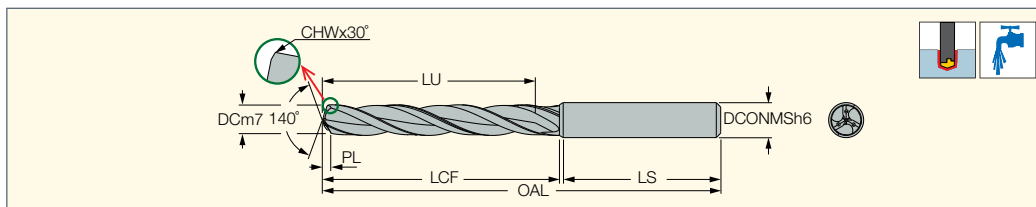
| M E T R I C | | | | | | | | | |
|-----------------------|------------|--------|--------|-------|------|-------|------|---------------------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 083-035-100 ACP3N | 8.30 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | - | ● |
| SCD 084-035-100 ACP3N | 8.40 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | - | ● |
| SCD 085-035-100 ACP3N | 8.50 | 10.00 | 89.00 | 35.00 | 47.0 | 1.300 | 40.0 | M10 | ● |
| SCD 086-035-100 ACP3N | 8.60 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 087-035-100 ACP3N | 8.70 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 088-035-100 ACP3N | 8.80 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 089-035-100 ACP3N | 8.90 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 090-035-100 ACP3N | 9.00 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 091-035-100 ACP3N | 9.10 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 092-035-100 ACP3N | 9.20 | 10.00 | 89.00 | 35.00 | 47.0 | 1.400 | 40.0 | - | ● |
| SCD 093-035-100 ACP3N | 9.30 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | - | ● |
| SCD 094-035-100 ACP3N | 9.40 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | - | ● |
| SCD 095-035-100 ACP3N | 9.50 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | M11 | ● |
| SCD 096-035-100 ACP3N | 9.60 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | - | ● |
| SCD 097-035-100 ACP3N | 9.70 | 10.00 | 89.00 | 35.00 | 47.0 | 1.500 | 40.0 | - | ● |
| SCD 098-035-100 ACP3N | 9.80 | 10.00 | 89.00 | 35.00 | 47.0 | 1.600 | 40.0 | - | ● |
| SCD 099-035-100 ACP3N | 9.90 | 10.00 | 89.00 | 35.00 | 47.0 | 1.600 | 40.0 | - | ● |
| SCD 100-035-100 ACP3N | 10.00 | 10.00 | 89.00 | 35.00 | 47.0 | 1.600 | 40.0 | - | ● |
| SCD 101-040-120 ACP3N | 10.10 | 12.00 | 102.00 | 40.00 | 55.0 | 1.600 | 45.0 | - | ● |
| SCD 102-040-120 ACP3N | 10.20 | 12.00 | 102.00 | 40.00 | 55.0 | 1.600 | 45.0 | M12 | ● |
| SCD 103-040-120 ACP3N | 10.30 | 12.00 | 102.00 | 40.00 | 55.0 | 1.600 | 45.0 | - | ● |
| SCD 104-040-120 ACP3N | 10.40 | 12.00 | 102.00 | 40.00 | 55.0 | 1.600 | 45.0 | - | ● |
| SCD 105-040-120 ACP3N | 10.50 | 12.00 | 102.00 | 40.00 | 55.0 | 1.600 | 45.0 | - | ● |
| SCD 106-040-120 ACP3N | 10.60 | 12.00 | 102.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 108-040-120 ACP3N | 10.80 | 12.00 | 102.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 109-040-120 ACP3N | 10.90 | 12.00 | 102.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 110-040-120 ACP3N | 11.00 | 12.00 | 102.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 111-040-120 ACP3N | 11.10 | 12.00 | 102.00 | 40.00 | 55.0 | 1.700 | 45.0 | - | ● |
| SCD 112-040-120 ACP3N | 11.20 | 12.00 | 102.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 113-040-120 ACP3N | 11.30 | 12.00 | 102.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 114-040-120 ACP3N | 11.40 | 12.00 | 102.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 115-040-120 ACP3N | 11.50 | 12.00 | 102.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 116-040-120 ACP3N | 11.60 | 12.00 | 102.00 | 40.00 | 55.0 | 1.800 | 45.0 | - | ● |
| SCD 117-040-120 ACP3N | 11.70 | 12.00 | 102.00 | 40.00 | 55.0 | 1.900 | 45.0 | - | ● |
| SCD 118-040-120 ACP3N | 11.80 | 12.00 | 102.00 | 40.00 | 55.0 | 1.900 | 45.0 | - | ● |
| SCD 119-040-120 ACP3N | 11.90 | 12.00 | 102.00 | 40.00 | 55.0 | 1.900 | 45.0 | - | ● |
| SCD 120-040-120 ACP3N | 12.00 | 12.00 | 102.00 | 40.00 | 55.0 | 1.900 | 45.0 | M14 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

SOLIDDRILL**SCCD-ACP3**

Three Flute Solid Carbide
Drills with Coolant Holes,
Drilling Depth 3xD

**M E T R I C**

| Designation | Dimensions | | | | | | | | | | IC908 |
|-----------------------|------------|--------|------|------|--------|------|-------|------|------|---------------------|-------|
| | DC | DCONMS | LU | LCF | OAL | LS | PL | KCH | CHW | FTDZ ⁽¹⁾ | |
| SCCD 040-017-060 ACP3 | 4.00 | 6.00 | 17.0 | 25.0 | 66.00 | 35.0 | 0.820 | 30.0 | 0.30 | - | ● |
| SCCD 045-017-060 ACP3 | 4.50 | 6.00 | 17.0 | 25.0 | 66.00 | 35.0 | 0.880 | 30.0 | 0.30 | - | ● |
| SCCD 050-020-060 ACP3 | 5.00 | 6.00 | 20.0 | 29.0 | 66.00 | 36.0 | 0.960 | 30.0 | 0.30 | M6 | ● |
| SCCD 051-020-060 ACP3 | 5.10 | 6.00 | 20.0 | 29.0 | 66.00 | 36.0 | 0.980 | 30.0 | 0.30 | M7 | ● |
| SCCD 055-020-060 ACP3 | 5.50 | 6.00 | 20.0 | 29.0 | 66.00 | 36.0 | 1.080 | 30.0 | 0.40 | - | ● |
| SCCD 060-020-060 ACP3 | 6.00 | 6.00 | 20.0 | 29.0 | 66.00 | 36.0 | 1.170 | 30.0 | 0.40 | - | ● |
| SCCD 065-024-080 ACP3 | 6.50 | 8.00 | 24.0 | 35.0 | 79.00 | 36.0 | 1.260 | 30.0 | 0.40 | - | ● |
| SCCD 068-024-080 ACP3 | 6.80 | 8.00 | 24.0 | 35.0 | 79.00 | 36.0 | 1.310 | 30.0 | 0.40 | M8 | ● |
| SCCD 070-024-080 ACP3 | 7.00 | 8.00 | 24.0 | 35.0 | 79.00 | 36.0 | 1.350 | 30.0 | 0.40 | - | ● |
| SCCD 075-029-080 ACP3 | 7.50 | 8.00 | 29.0 | 42.0 | 79.00 | 36.0 | 1.400 | 30.0 | 0.40 | - | ● |
| SCCD 080-029-080 ACP3 | 8.00 | 8.00 | 29.0 | 42.0 | 79.00 | 36.0 | 1.490 | 30.0 | 0.40 | - | ● |
| SCCD 085-035-100 ACP3 | 8.50 | 10.00 | 35.0 | 48.0 | 89.00 | 40.0 | 1.630 | 30.0 | 0.50 | M10 | ● |
| SCCD 086-035-100 ACP3 | 8.60 | 10.00 | 35.0 | 48.0 | 89.00 | 40.0 | 1.650 | 30.0 | 0.50 | - | ● |
| SCCD 090-035-100 ACP3 | 9.00 | 10.00 | 35.0 | 48.0 | 89.00 | 40.0 | 1.720 | 30.0 | 0.50 | - | ● |
| SCCD 095-035-100 ACP3 | 9.50 | 10.00 | 35.0 | 48.0 | 89.00 | 40.0 | 1.750 | 30.0 | 0.50 | M11 | ● |
| SCCD 100-035-100 ACP3 | 10.00 | 10.00 | 35.0 | 48.0 | 89.00 | 40.0 | 1.850 | 30.0 | 0.50 | - | ● |
| SCCD 103-040-120 ACP3 | 10.30 | 12.00 | 40.0 | 55.0 | 102.00 | 45.0 | 1.940 | 30.0 | 0.60 | - | ● |
| SCCD 105-040-120 ACP3 | 10.50 | 12.00 | 40.0 | 55.0 | 102.00 | 45.0 | 1.980 | 30.0 | 0.60 | - | ● |
| SCCD 110-040-120 ACP3 | 11.00 | 12.00 | 40.0 | 55.0 | 102.00 | 45.0 | 2.070 | 30.0 | 0.60 | - | ● |
| SCCD 115-040-120 ACP3 | 11.50 | 12.00 | 40.0 | 56.0 | 102.00 | 45.0 | 2.120 | 30.0 | 0.60 | - | ● |
| SCCD 120-040-120 ACP3 | 12.00 | 12.00 | 40.0 | 56.0 | 102.00 | 45.0 | 2.210 | 30.0 | 0.60 | M14 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

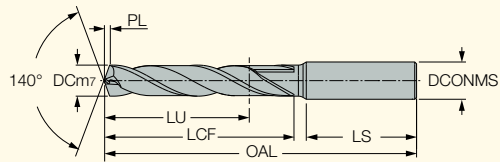
Recommended Machining Conditions for SCCD-ACP Solid Carbide Drills

| ISO | Material No. | Material | Material Condition | Cutting Speed V _c , m/min | Cutting Diameter | | | | |
|-----|--------------|--|-----------------------------------|---|------------------|-----------|-----------|-----------|-----------|
| | | | | | Feed f, mm/rev | | | | |
| | | | | | Ø4-5 | Ø5.1-6 | Ø6.1-8 | Ø8.1-10 | Ø10.1-12 |
| P | 1 | Non-alloy steel and cast steel, free cutting steel | <0.25% C Annealed | 80-140 | 0.15-0.25 | 0.20-0.35 | 0.25-0.45 | 0.30-0.55 | 0.35-0.60 |
| | 2 | | ≥0.25% C Annealed | 80-130 | | | | | |
| | 3 | | <0.55% C Quenched and tempered | 80-120 | | | | | |
| | 4 | | ≥0.55% C Annealed | 70-110 | | | | | |
| | 5 | | Quenched and tempered | 50-90 | | | | | |
| | 6 | Low alloy steel and cast steel (less than 5% of alloying elements) | Annealed | 80-120 | | | 0.25-0.40 | 0.30-0.50 | 0.35-0.55 |
| | 7 | | Quenched and tempered | 70-110 | | | | | |
| | 8 | | Quenched and tempered | 50-90 | | | | | |
| | 9 | | Quenched and tempered | 40-70 | | | | | |
| | 10 | High alloyed steel, cast steel, and tool steel | Annealed | 50-90 | 0.15-0.20 | 0.20-0.30 | 0.25-0.35 | 0.30-0.45 | 0.35-0.50 |
| | 11 | | Quenched and tempered | 40-80 | | | | | |
| K | 15 | Grey cast iron | Ferritic/pearlitic | 80-140 | 0.20-0.30 | 0.25-0.45 | 0.35-0.55 | 0.40-0.60 | 0.45-0.65 |
| | 16 | | Pearlitic | 70-120 | | | | | |
| | 17 | Nodular cast iron | Ferritic | 80-120 | | 0.20-0.40 | 0.30-0.50 | 0.35-0.55 | 0.40-0.60 |
| | 18 | | Pearlitic | 70-110 | | | | | |
| | 19 | Malleable cast iron | Ferritic | 80-120 | | | | | |
| | 20 | | Pearlitic | 70-110 | | | | | |

SCD-AP5N (5xD)

DIN 6537 Solid Carbide
Drills without Coolant Holes,
Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



| M E T R I C | | | | | | | | | |
|----------------------|------------|--------|-------|-------|------|-------|------|---------------------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 030-023-060 AP5N | 3.00 | 6.00 | 66.00 | 23.00 | 28.0 | 0.500 | 34.0 | - | ● |
| SCD 031-023-060 AP5N | 3.10 | 6.00 | 66.00 | 23.00 | 28.0 | 0.500 | 34.0 | - | ● |
| SCD 032-023-060 AP5N | 3.20 | 6.00 | 66.00 | 23.00 | 28.0 | 0.500 | 34.0 | - | ● |
| SCD 033-023-060 AP5N | 3.30 | 6.00 | 66.00 | 23.00 | 28.0 | 0.500 | 34.0 | M4 | ● |
| SCD 034-023-060 AP5N | 3.40 | 6.00 | 66.00 | 23.00 | 28.0 | 0.500 | 34.0 | - | ● |
| SCD 035-023-060 AP5N | 3.50 | 6.00 | 66.00 | 23.00 | 28.0 | 0.600 | 34.0 | - | ● |
| SCD 036-023-060 AP5N | 3.60 | 6.00 | 66.00 | 23.00 | 28.0 | 0.600 | 34.0 | - | ● |
| SCD 037-023-060 AP5N | 3.70 | 6.00 | 66.00 | 23.00 | 28.0 | 0.600 | 34.0 | - | ● |
| SCD 038-029-060 AP5N | 3.80 | 6.00 | 74.00 | 29.00 | 36.0 | 0.600 | 35.0 | - | ● |
| SCD 039-029-060 AP5N | 3.90 | 6.00 | 74.00 | 29.00 | 36.0 | 0.600 | 35.0 | - | ● |
| SCD 040-029-060 AP5N | 4.00 | 6.00 | 74.00 | 29.00 | 36.0 | 0.600 | 35.0 | - | ● |
| SCD 041-029-060 AP5N | 4.10 | 6.00 | 74.00 | 29.00 | 36.0 | 0.700 | 35.0 | - | ● |
| SCD 042-029-060 AP5N | 4.20 | 6.00 | 74.00 | 29.00 | 36.0 | 0.700 | 35.0 | M5 | ● |
| SCD 043-029-060 AP5N | 4.30 | 6.00 | 74.00 | 29.00 | 36.0 | 0.700 | 35.0 | - | ● |
| SCD 044-029-060 AP5N | 4.40 | 6.00 | 74.00 | 29.00 | 36.0 | 0.700 | 35.0 | - | ● |
| SCD 045-029-060 AP5N | 4.50 | 6.00 | 74.00 | 29.00 | 36.0 | 0.700 | 35.0 | - | ● |
| SCD 046-029-060 AP5N | 4.60 | 6.00 | 74.00 | 29.00 | 36.0 | 0.700 | 35.0 | - | ● |
| SCD 047-029-060 AP5N | 4.70 | 6.00 | 74.00 | 29.00 | 36.0 | 0.800 | 35.0 | - | ● |
| SCD 048-035-060 AP5N | 4.80 | 6.00 | 74.00 | 35.00 | 44.0 | 0.800 | 36.0 | - | ● |
| SCD 049-035-060 AP5N | 4.90 | 6.00 | 82.00 | 35.00 | 44.0 | 0.800 | 36.0 | - | ● |
| SCD 050-035-060 AP5N | 5.00 | 6.00 | 82.00 | 35.00 | 44.0 | 0.800 | 36.0 | M6 | ● |
| SCD 051-035-060 AP5N | 5.10 | 6.00 | 82.00 | 35.00 | 44.0 | 0.800 | 36.0 | - | ● |
| SCD 052-035-060 AP5N | 5.20 | 6.00 | 82.00 | 35.00 | 44.0 | 0.800 | 36.0 | - | ● |
| SCD 053-035-060 AP5N | 5.30 | 6.00 | 82.00 | 35.00 | 44.0 | 0.800 | 36.0 | - | ● |
| SCD 054-035-060 AP5N | 5.40 | 6.00 | 82.00 | 35.00 | 44.0 | 0.800 | 36.0 | - | ● |
| SCD 055-035-060 AP5N | 5.50 | 6.00 | 82.00 | 35.00 | 44.0 | 0.900 | 36.0 | - | ● |
| SCD 056-035-060 AP5N | 5.60 | 6.00 | 82.00 | 35.00 | 44.0 | 0.900 | 36.0 | - | ● |
| SCD 057-035-060 AP5N | 5.70 | 6.00 | 82.00 | 35.00 | 44.0 | 0.900 | 36.0 | - | ● |
| SCD 058-035-060 AP5N | 5.80 | 6.00 | 82.00 | 35.00 | 44.0 | 0.900 | 36.0 | - | ● |
| SCD 059-035-060 AP5N | 5.90 | 6.00 | 82.00 | 35.00 | 44.0 | 0.900 | 36.0 | - | ● |
| SCD 060-035-060 AP5N | 6.00 | 6.00 | 82.00 | 35.00 | 44.0 | 0.900 | 36.0 | M7 | ● |
| SCD 061-043-080 AP5N | 6.10 | 8.00 | 91.00 | 43.00 | 53.0 | 1.000 | 36.0 | - | ● |
| SCD 062-043-080 AP5N | 6.20 | 8.00 | 91.00 | 43.00 | 53.0 | 1.000 | 36.0 | - | ● |
| SCD 063-043-080 AP5N | 6.30 | 8.00 | 91.00 | 43.00 | 53.0 | 1.000 | 36.0 | - | ● |
| SCD 064-043-080 AP5N | 6.40 | 8.00 | 91.00 | 43.00 | 53.0 | 1.000 | 36.0 | - | ● |
| SCD 065-043-080 AP5N | 6.50 | 8.00 | 91.00 | 43.00 | 53.0 | 1.000 | 36.0 | - | ● |
| SCD 066-043-080 AP5N | 6.60 | 8.00 | 91.00 | 43.00 | 53.0 | 1.000 | 36.0 | - | ● |
| SCD 067-043-080 AP5N | 6.70 | 8.00 | 91.00 | 43.00 | 53.0 | 1.100 | 36.0 | - | ● |
| SCD 068-043-080 AP5N | 6.80 | 8.00 | 91.00 | 43.00 | 53.0 | 1.100 | 36.0 | M8 | ● |
| SCD 069-043-080 AP5N | 6.90 | 8.00 | 91.00 | 43.00 | 53.0 | 1.100 | 36.0 | - | ● |
| SCD 070-043-080 AP5N | 7.00 | 8.00 | 91.00 | 43.00 | 53.0 | 1.100 | 36.0 | - | ● |
| SCD 071-043-080 AP5N | 7.10 | 8.00 | 91.00 | 43.00 | 53.0 | 1.100 | 36.0 | - | ● |
| SCD 072-043-080 AP5N | 7.20 | 8.00 | 91.00 | 43.00 | 53.0 | 1.100 | 36.0 | - | ● |
| SCD 073-043-080 AP5N | 7.30 | 8.00 | 91.00 | 43.00 | 53.0 | 1.100 | 36.0 | - | ● |
| SCD 074-043-080 AP5N | 7.40 | 8.00 | 91.00 | 43.00 | 53.0 | 1.200 | 36.0 | - | ● |
| SCD 075-043-080 AP5N | 7.50 | 8.00 | 91.00 | 43.00 | 53.0 | 1.200 | 36.0 | - | ● |
| SCD 076-043-080 AP5N | 7.60 | 8.00 | 91.00 | 43.00 | 53.0 | 1.200 | 36.0 | - | ● |
| SCD 077-043-080 AP5N | 7.70 | 8.00 | 91.00 | 43.00 | 53.0 | 1.200 | 36.0 | - | ● |
| SCD 078-043-080 AP5N | 7.80 | 8.00 | 91.00 | 43.00 | 53.0 | 1.200 | 36.0 | M9 | ● |
| SCD 079-043-080 AP5N | 7.90 | 8.00 | 91.00 | 43.00 | 53.0 | 1.300 | 36.0 | - | ● |
| SCD 080-043-080 AP5N | 8.00 | 8.00 | 91.00 | 43.00 | 53.0 | 1.300 | 36.0 | - | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

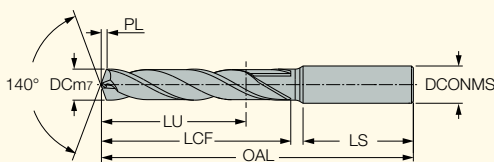
Continued

SOLIDDRILL**SCD-AP5N (5xD)**

DIN 6537 Solid Carbide

Drills without Coolant Holes,
Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |

**M E T R I C**

| Designation | Dimensions | | | | | | | | IC908 |
|----------------------|------------|--------|--------|-------|------|-------|------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 081-049-100 AP5N | 8.10 | 10.00 | 103.00 | 49.00 | 61.0 | 1.300 | 40.0 | - | ● |
| SCD 082-049-100 AP5N | 8.20 | 10.00 | 103.00 | 49.00 | 61.0 | 1.300 | 40.0 | - | ● |
| SCD 083-049-100 AP5N | 8.30 | 10.00 | 103.00 | 49.00 | 61.0 | 1.300 | 40.0 | - | ● |
| SCD 084-049-100 AP5N | 8.40 | 10.00 | 103.00 | 49.00 | 61.0 | 1.300 | 40.0 | - | ● |
| SCD 085-049-100 AP5N | 8.50 | 10.00 | 103.00 | 49.00 | 61.0 | 1.300 | 40.0 | M10 | ● |
| SCD 086-049-100 AP5N | 8.60 | 10.00 | 103.00 | 49.00 | 61.0 | 1.400 | 40.0 | - | ● |
| SCD 087-049-100 AP5N | 8.70 | 10.00 | 103.00 | 49.00 | 61.0 | 1.400 | 40.0 | - | ● |
| SCD 088-049-100 AP5N | 8.80 | 10.00 | 103.00 | 49.00 | 61.0 | 1.400 | 40.0 | - | ● |
| SCD 089-049-100 AP5N | 8.90 | 10.00 | 103.00 | 49.00 | 61.0 | 1.400 | 40.0 | - | ● |
| SCD 090-049-100 AP5N | 9.00 | 10.00 | 103.00 | 49.00 | 61.0 | 1.400 | 40.0 | - | ● |
| SCD 091-049-100 AP5N | 9.10 | 10.00 | 103.00 | 49.00 | 61.0 | 1.400 | 40.0 | - | ● |
| SCD 092-049-100 AP5N | 9.20 | 10.00 | 103.00 | 49.00 | 61.0 | 1.400 | 40.0 | - | ● |
| SCD 093-049-100 AP5N | 9.30 | 10.00 | 103.00 | 49.00 | 61.0 | 1.500 | 40.0 | - | ● |
| SCD 094-049-100 AP5N | 9.40 | 10.00 | 103.00 | 49.00 | 61.0 | 1.500 | 40.0 | - | ● |
| SCD 095-049-100 AP5N | 9.50 | 10.00 | 103.00 | 49.00 | 61.0 | 1.500 | 40.0 | M11 | ● |
| SCD 096-049-100 AP5N | 9.60 | 10.00 | 103.00 | 49.00 | 61.0 | 1.500 | 40.0 | - | ● |
| SCD 097-049-100 AP5N | 9.70 | 10.00 | 103.00 | 49.00 | 61.0 | 1.500 | 40.0 | - | ● |
| SCD 098-049-100 AP5N | 9.80 | 10.00 | 103.00 | 49.00 | 61.0 | 1.600 | 40.0 | - | ● |
| SCD 099-049-100 AP5N | 9.90 | 10.00 | 103.00 | 49.00 | 61.0 | 1.600 | 40.0 | - | ● |
| SCD 100-049-100 AP5N | 10.00 | 10.00 | 103.00 | 49.00 | 61.0 | 1.600 | 40.0 | - | ● |
| SCD 101-056-120 AP5N | 10.10 | 12.00 | 118.00 | 56.00 | 71.0 | 1.600 | 45.0 | - | ● |
| SCD 102-056-120 AP5N | 10.20 | 12.00 | 118.00 | 56.00 | 71.0 | 1.600 | 45.0 | M12 | ● |
| SCD 103-056-120 AP5N | 10.30 | 12.00 | 118.00 | 56.00 | 71.0 | 1.600 | 45.0 | - | ● |
| SCD 104-056-120 AP5N | 10.40 | 12.00 | 118.00 | 56.00 | 71.0 | 1.600 | 45.0 | - | ● |
| SCD 105-056-120 AP5N | 10.50 | 12.00 | 118.00 | 56.00 | 71.0 | 1.600 | 45.0 | - | ● |
| SCD 106-056-120 AP5N | 10.60 | 12.00 | 118.00 | 56.00 | 71.0 | 1.700 | 45.0 | - | ● |
| SCD 107-056-120 AP5N | 10.70 | 12.00 | 118.00 | 56.00 | 71.0 | 1.700 | 45.0 | - | ● |
| SCD 108-056-120 AP5N | 10.80 | 12.00 | 118.00 | 56.00 | 71.0 | 1.700 | 45.0 | - | ● |
| SCD 109-056-120 AP5N | 10.90 | 12.00 | 118.00 | 56.00 | 71.0 | 1.700 | 45.0 | - | ● |
| SCD 110-056-120 AP5N | 11.00 | 12.00 | 118.00 | 56.00 | 71.0 | 1.700 | 45.0 | - | ● |
| SCD 111-056-120 AP5N | 11.10 | 12.00 | 118.00 | 56.00 | 71.0 | 1.700 | 45.0 | - | ● |
| SCD 112-056-120 AP5N | 11.20 | 12.00 | 118.00 | 56.00 | 71.0 | 1.800 | 45.0 | - | ● |
| SCD 113-056-120 AP5N | 11.30 | 12.00 | 118.00 | 56.00 | 71.0 | 1.800 | 45.0 | - | ● |
| SCD 114-056-120 AP5N | 11.40 | 12.00 | 118.00 | 56.00 | 71.0 | 1.800 | 45.0 | - | ● |
| SCD 115-056-120 AP5N | 11.50 | 12.00 | 118.00 | 56.00 | 71.0 | 1.800 | 45.0 | - | ● |
| SCD 116-056-120 AP5N | 11.60 | 12.00 | 118.00 | 56.00 | 71.0 | 1.800 | 45.0 | - | ● |
| SCD 117-056-120 AP5N | 11.70 | 12.00 | 118.00 | 56.00 | 71.0 | 1.900 | 45.0 | - | ● |
| SCD 118-056-120 AP5N | 11.80 | 12.00 | 118.00 | 56.00 | 71.0 | 1.900 | 45.0 | - | ● |
| SCD 119-056-120 AP5N | 11.90 | 12.00 | 118.00 | 56.00 | 71.0 | 1.900 | 45.0 | - | ● |
| SCD 120-056-120 AP5N | 12.00 | 12.00 | 118.00 | 56.00 | 71.0 | 1.900 | 45.0 | M14 | ● |

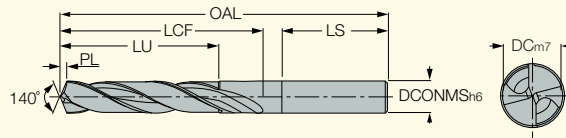
• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

(1) Used for standard thread size

SCD-AP5 (5xD)

Solid Carbide Drills without
Coolant Holes, Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



| M E T R I C | | | | | | | | | |
|---------------------|------------|--------|------|-------|--------|------|---------------------|-------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | LU | LCF | OAL | LS | FTDZ ⁽¹⁾ | PL | |
| SCD 121-060-140 AP5 | 12.10 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.200 | ● |
| SCD 122-060-140 AP5 | 12.20 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.220 | ● |
| SCD 124-060-140 AP5 | 12.40 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.260 | ● |
| SCD 125-060-140 AP5 | 12.50 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.270 | ● |
| SCD 127-060-140 AP5 | 12.70 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.310 | ● |
| SCD 128-060-140 AP5 | 12.80 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.330 | ● |
| SCD 130-060-140 AP5 | 13.00 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.370 | ● |
| SCD 131-060-140 AP5 | 13.10 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.380 | ● |
| SCD 132-060-140 AP5 | 13.20 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.400 | ● |
| SCD 133-060-140 AP5 | 13.30 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.420 | ● |
| SCD 135-060-140 AP5 | 13.50 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.460 | ● |
| SCD 136-060-140 AP5 | 13.60 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.470 | ● |
| SCD 137-060-140 AP5 | 13.70 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.490 | ● |
| SCD 138-060-140 AP5 | 13.80 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.510 | ● |
| SCD 139-060-140 AP5 | 13.90 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | - | 2.530 | ● |
| SCD 140-060-140 AP5 | 14.00 | 14.00 | 60.0 | 77.0 | 124.00 | 45.0 | M16 | 2.550 | ● |
| SCD 141-063-160 AP5 | 14.10 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.570 | ● |
| SCD 142-063-160 AP5 | 14.20 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.580 | ● |
| SCD 143-063-160 AP5 | 14.30 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.600 | ● |
| SCD 145-063-160 AP5 | 14.50 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.640 | ● |
| SCD 146-063-160 AP5 | 14.60 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.660 | ● |
| SCD 147-063-160 AP5 | 14.70 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.680 | ● |
| SCD 148-063-160 AP5 | 14.80 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.690 | ● |
| SCD 149-063-160 AP5 | 14.90 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.710 | ● |
| SCD 150-063-160 AP5 | 15.00 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.730 | ● |
| SCD 151-063-160 AP5 | 15.10 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.750 | ● |
| SCD 152-063-160 AP5 | 15.20 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.770 | ● |
| SCD 153-063-160 AP5 | 15.30 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.780 | ● |
| SCD 155-063-160 AP5 | 15.50 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | M18 | 2.820 | ● |
| SCD 157-063-160 AP5 | 15.70 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.860 | ● |
| SCD 158-063-160 AP5 | 15.80 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.880 | ● |
| SCD 159-063-160 AP5 | 15.90 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.890 | ● |
| SCD 160-063-160 AP5 | 16.00 | 16.00 | 63.0 | 83.0 | 133.00 | 45.0 | - | 2.910 | ● |
| SCD 161-071-180 AP5 | 16.10 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 2.930 | ● |
| SCD 164-071-180 AP5 | 16.40 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 2.980 | ● |
| SCD 165-071-180 AP5 | 16.50 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.000 | ● |
| SCD 166-071-180 AP5 | 16.60 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.020 | ● |
| SCD 167-071-180 AP5 | 16.70 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.040 | ● |
| SCD 168-071-180 AP5 | 16.80 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.060 | ● |
| SCD 169-071-180 AP5 | 16.90 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.080 | ● |
| SCD 170-071-180 AP5 | 17.00 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.090 | ● |
| SCD 171-071-180 AP5 | 17.10 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.110 | ● |
| SCD 172-071-180 AP5 | 17.20 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.130 | ● |
| SCD 173-071-180 AP5 | 17.30 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.150 | ● |
| SCD 174-071-180 AP5 | 17.40 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.170 | ● |
| SCD 175-071-180 AP5 | 17.50 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | M20 | 3.180 | ● |
| SCD 176-071-180 AP5 | 17.60 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.200 | ● |
| SCD 177-071-180 AP5 | 17.70 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.220 | ● |
| SCD 178-071-180 AP5 | 17.80 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.240 | ● |
| SCD 179-071-180 AP5 | 17.90 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.260 | ● |
| SCD 180-071-180 AP5 | 18.00 | 18.00 | 71.0 | 93.0 | 143.00 | 48.0 | - | 3.280 | ● |
| SCD 182-077-200 AP5 | 18.20 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.310 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

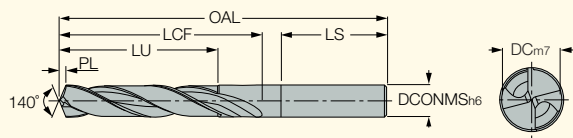
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SOLIDDRILL

SCD-AP5 (5xD)

Solid Carbide Drills without
Coolant Holes, Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



M E T R I C

| Designation | Dimensions | | | | | | | | IC908 |
|---------------------|------------|--------|------|-------|--------|------|---------------------|-------|-------|
| | DC | DCONMS | LU | LCF | OAL | LS | FTDZ ⁽¹⁾ | PL | |
| SCD 183-077-200 AP5 | 18.30 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.330 | ● |
| SCD 184-077-200 AP5 | 18.40 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.350 | ● |
| SCD 185-077-200 AP5 | 18.50 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.370 | ● |
| SCD 186-077-200 AP5 | 18.60 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.380 | ● |
| SCD 187-077-200 AP5 | 18.70 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.400 | ● |
| SCD 188-077-200 AP5 | 18.80 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.420 | ● |
| SCD 189-077-200 AP5 | 18.90 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.440 | ● |
| SCD 190-077-200 AP5 | 19.00 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.460 | ● |
| SCD 191-077-200 AP5 | 19.10 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.480 | ● |
| SCD 192-077-200 AP5 | 19.20 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.490 | ● |
| SCD 193-077-200 AP5 | 19.30 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.510 | ● |
| SCD 194-077-200 AP5 | 19.40 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.530 | ● |
| SCD 195-077-200 AP5 | 19.50 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | M22 | 3.550 | ● |
| SCD 196-077-200 AP5 | 19.60 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.570 | ● |
| SCD 197-077-200 AP5 | 19.70 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.590 | ● |
| SCD 198-077-200 AP5 | 19.80 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.600 | ● |
| SCD 199-077-200 AP5 | 19.90 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.620 | ● |
| SCD 200-077-200 AP5 | 20.00 | 20.00 | 77.0 | 101.0 | 153.00 | 48.0 | - | 3.640 | ● |

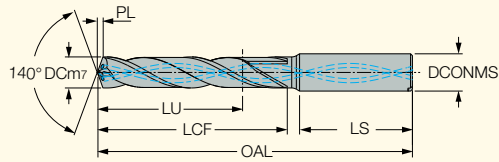
• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

SCD-ACP5N (5xD)

DIN 6537 Solid Carbide Drills with
Coolant Holes, Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



| M E T R I C | | | | | | | | | |
|-----------------------|------------|--------|--------|-------|------|-------|------|---------------------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 030-023-060 ACP5N | 3.00 | 6.00 | 66.00 | 23.00 | 28.0 | 0.550 | 34.0 | - | ● |
| SCD 031-023-060 ACP5N | 3.10 | 6.00 | 66.00 | 23.00 | 28.0 | 0.560 | 34.0 | - | ● |
| SCD 032-023-060 ACP5N | 3.20 | 6.00 | 66.00 | 23.00 | 28.0 | 0.580 | 34.0 | - | ● |
| SCD 033-023-060 ACP5N | 3.30 | 6.00 | 66.00 | 23.00 | 28.0 | 0.600 | 34.0 | M4 | ● |
| SCD 034-023-060 ACP5N | 3.40 | 6.00 | 66.00 | 23.00 | 28.0 | 0.620 | 34.0 | - | ● |
| SCD 035-023-060 ACP5N | 3.50 | 6.00 | 66.00 | 23.00 | 28.0 | 0.640 | 34.0 | - | ● |
| SCD 036-023-060 ACP5N | 3.60 | 6.00 | 66.00 | 23.00 | 28.0 | 0.660 | 34.0 | - | ● |
| SCD 037-023-060 ACP5N | 3.70 | 6.00 | 66.00 | 23.00 | 28.0 | 0.670 | 34.0 | - | ● |
| SCD 038-029-060 ACP5N | 3.80 | 6.00 | 74.00 | 29.00 | 36.0 | 0.690 | 35.0 | - | ● |
| SCD 039-029-060 ACP5N | 3.90 | 6.00 | 74.00 | 29.00 | 36.0 | 0.710 | 35.0 | - | ● |
| SCD 040-029-060 ACP5N | 4.00 | 6.00 | 74.00 | 29.00 | 36.0 | 0.730 | 35.0 | - | ● |
| SCD 041-029-060 ACP5N | 4.10 | 6.00 | 74.00 | 29.00 | 36.0 | 0.750 | 35.0 | - | ● |
| SCD 042-029-060 ACP5N | 4.20 | 6.00 | 74.00 | 29.00 | 36.0 | 0.760 | 35.0 | M5 | ● |
| SCD 043-029-060 ACP5N | 4.30 | 6.00 | 74.00 | 29.00 | 36.0 | 0.780 | 35.0 | - | ● |
| SCD 044-029-060 ACP5N | 4.40 | 6.00 | 74.00 | 29.00 | 36.0 | 0.800 | 35.0 | - | ● |
| SCD 045-029-060 ACP5N | 4.50 | 6.00 | 74.00 | 29.00 | 36.0 | 0.820 | 35.0 | - | ● |
| SCD 046-029-060 ACP5N | 4.60 | 6.00 | 74.00 | 29.00 | 36.0 | 0.840 | 35.0 | - | ● |
| SCD 047-029-060 ACP5N | 4.70 | 6.00 | 74.00 | 29.00 | 36.0 | 0.860 | 35.0 | - | ● |
| SCD 048-035-060 ACP5N | 4.80 | 6.00 | 82.00 | 35.00 | 44.0 | 0.870 | 36.0 | - | ● |
| SCD 049-035-060 ACP5N | 4.90 | 6.00 | 82.00 | 35.00 | 44.0 | 0.890 | 36.0 | - | ● |
| SCD 050-035-060 ACP5N | 5.00 | 6.00 | 82.00 | 35.00 | 44.0 | 0.910 | 36.0 | M6 | ● |
| SCD 051-035-060 ACP5N | 5.10 | 6.00 | 82.00 | 35.00 | 44.0 | 0.930 | 36.0 | - | ● |
| SCD 052-035-060 ACP5N | 5.20 | 6.00 | 82.00 | 35.00 | 44.0 | 0.950 | 36.0 | - | ● |
| SCD 053-035-060 ACP5N | 5.30 | 6.00 | 82.00 | 35.00 | 44.0 | 0.960 | 36.0 | - | ● |
| SCD 054-035-060 ACP5N | 5.40 | 6.00 | 82.00 | 35.00 | 44.0 | 0.980 | 36.0 | - | ● |
| SCD 055-035-060 ACP5N | 5.50 | 6.00 | 82.00 | 35.00 | 44.0 | 1.000 | 36.0 | - | ● |
| SCD 056-035-060 ACP5N | 5.60 | 6.00 | 82.00 | 35.00 | 44.0 | 1.020 | 36.0 | - | ● |
| SCD 057-035-060 ACP5N | 5.70 | 6.00 | 82.00 | 35.00 | 44.0 | 1.040 | 36.0 | - | ● |
| SCD 058-035-060 ACP5N | 5.80 | 6.00 | 82.00 | 35.00 | 44.0 | 1.060 | 36.0 | - | ● |
| SCD 059-035-060 ACP5N | 5.90 | 6.00 | 82.00 | 35.00 | 44.0 | 1.070 | 36.0 | - | ● |
| SCD 060-035-060 ACP5N | 6.00 | 6.00 | 82.00 | 35.00 | 44.0 | 1.090 | 36.0 | M7 | ● |
| SCD 061-043-080 ACP5N | 6.10 | 8.00 | 91.00 | 43.00 | 53.0 | 1.110 | 36.0 | - | ● |
| SCD 062-043-080 ACP5N | 6.20 | 8.00 | 91.00 | 43.00 | 53.0 | 1.130 | 36.0 | - | ● |
| SCD 063-043-080 ACP5N | 6.30 | 8.00 | 91.00 | 43.00 | 53.0 | 1.150 | 36.0 | - | ● |
| SCD 064-043-080 ACP5N | 6.40 | 8.00 | 91.00 | 43.00 | 53.0 | 1.160 | 36.0 | - | ● |
| SCD 065-043-080 ACP5N | 6.50 | 8.00 | 91.00 | 43.00 | 53.0 | 1.000 | 36.0 | - | ● |
| SCD 066-043-080 ACP5N | 6.60 | 8.00 | 91.00 | 43.00 | 53.0 | 1.200 | 36.0 | - | ● |
| SCD 067-043-080 ACP5N | 6.70 | 8.00 | 91.00 | 43.00 | 53.0 | 1.220 | 36.0 | - | ● |
| SCD 068-043-080 ACP5N | 6.80 | 8.00 | 91.00 | 43.00 | 53.0 | 1.240 | 36.0 | M8 | ● |
| SCD 069-043-080 ACP5N | 6.90 | 8.00 | 91.00 | 43.00 | 53.0 | 1.260 | 36.0 | - | ● |
| SCD 070-043-080 ACP5N | 7.00 | 8.00 | 91.00 | 43.00 | 53.0 | 1.270 | 36.0 | - | ● |
| SCD 071-043-080 ACP5N | 7.10 | 8.00 | 91.00 | 43.00 | 53.0 | 1.290 | 36.0 | - | ● |
| SCD 072-043-080 ACP5N | 7.20 | 8.00 | 91.00 | 43.00 | 53.0 | 1.310 | 36.0 | - | ● |
| SCD 073-043-080 ACP5N | 7.30 | 8.00 | 91.00 | 43.00 | 53.0 | 1.330 | 36.0 | - | ● |
| SCD 074-043-080 ACP5N | 7.40 | 8.00 | 91.00 | 43.00 | 53.0 | 1.350 | 36.0 | - | ● |
| SCD 075-043-080 ACP5N | 7.50 | 8.00 | 91.00 | 43.00 | 53.0 | 1.360 | 36.0 | - | ● |
| SCD 076-043-080 ACP5N | 7.60 | 8.00 | 91.00 | 43.00 | 53.0 | 1.380 | 36.0 | - | ● |
| SCD 077-043-080 ACP5N | 7.70 | 8.00 | 91.00 | 43.00 | 53.0 | 1.400 | 36.0 | - | ● |
| SCD 078-043-080 ACP5N | 7.80 | 8.00 | 91.00 | 43.00 | 53.0 | 1.420 | 36.0 | M9 | ● |
| SCD 079-043-080 ACP5N | 7.90 | 8.00 | 91.00 | 43.00 | 53.0 | 1.300 | 36.0 | - | ● |
| SCD 080-043-080 ACP5N | 8.00 | 8.00 | 91.00 | 43.00 | 53.0 | 1.460 | 36.0 | - | ● |
| SCD 081-049-100 ACP5N | 8.10 | 10.00 | 103.00 | 49.00 | 61.0 | 1.470 | 40.0 | - | ● |
| SCD 082-049-100 ACP5N | 8.20 | 10.00 | 103.00 | 49.00 | 61.0 | 1.490 | 40.0 | - | ● |

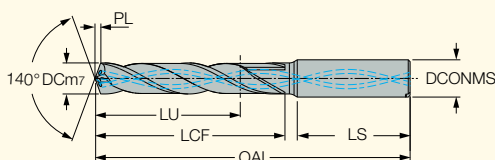
• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

Continued

SOLIDDRILL**SCD-ACP5N (5xD)**DIN 6537 Solid Carbide Drills with
Coolant Holes, Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |

**M E T R I C**

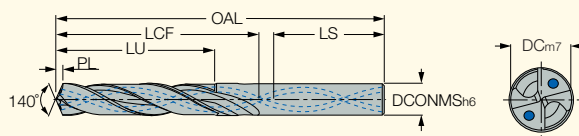
| Designation | Dimensions | | | | | | | | IC908 |
|-----------------------|------------|--------|--------|-------|------|-------|------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | PL | LS | FTDZ ⁽¹⁾ | |
| SCD 083-049-100 ACP5N | 8.30 | 10.00 | 103.00 | 49.00 | 61.0 | 1.510 | 40.0 | - | ● |
| SCD 084-049-100 ACP5N | 8.40 | 10.00 | 103.00 | 49.00 | 61.0 | 1.530 | 40.0 | - | ● |
| SCD 085-049-100 ACP5N | 8.50 | 10.00 | 103.00 | 49.00 | 61.0 | 1.550 | 40.0 | M10 | ● |
| SCD 086-049-100 ACP5N | 8.60 | 10.00 | 103.00 | 49.00 | 61.0 | 1.570 | 40.0 | - | ● |
| SCD 087-049-100 ACP5N | 8.70 | 10.00 | 103.00 | 49.00 | 61.0 | 1.580 | 40.0 | - | ● |
| SCD 088-049-100 ACP5N | 8.80 | 10.00 | 103.00 | 49.00 | 61.0 | 1.600 | 40.0 | - | ● |
| SCD 089-049-100 ACP5N | 8.90 | 10.00 | 103.00 | 49.00 | 61.0 | 1.620 | 40.0 | - | ● |
| SCD 090-049-100 ACP5N | 9.00 | 10.00 | 103.00 | 49.00 | 61.0 | 1.640 | 40.0 | - | ● |
| SCD 091-049-100 ACP5N | 9.10 | 10.00 | 103.00 | 49.00 | 61.0 | 1.660 | 40.0 | - | ● |
| SCD 092-049-100 ACP5N | 9.20 | 10.00 | 103.00 | 49.00 | 61.0 | 1.670 | 40.0 | - | ● |
| SCD 093-049-100 ACP5N | 9.30 | 10.00 | 103.00 | 49.00 | 61.0 | 1.690 | 40.0 | - | ● |
| SCD 094-049-100 ACP5N | 9.40 | 10.00 | 103.00 | 49.00 | 61.0 | 1.710 | 40.0 | - | ● |
| SCD 095-049-100 ACP5N | 9.50 | 10.00 | 103.00 | 49.00 | 61.0 | 1.730 | 40.0 | M11 | ● |
| SCD 096-049-100 ACP5N | 9.60 | 10.00 | 103.00 | 49.00 | 61.0 | 1.750 | 40.0 | - | ● |
| SCD 097-049-100 ACP5N | 9.70 | 10.00 | 103.00 | 49.00 | 61.0 | 1.770 | 40.0 | - | ● |
| SCD 098-049-100 ACP5N | 9.80 | 10.00 | 103.00 | 49.00 | 61.0 | 1.780 | 40.0 | - | ● |
| SCD 099-049-100 ACP5N | 9.90 | 10.00 | 103.00 | 49.00 | 61.0 | 1.800 | 40.0 | - | ● |
| SCD 100-049-100 ACP5N | 10.00 | 10.00 | 103.00 | 49.00 | 61.0 | 1.820 | 40.0 | - | ● |
| SCD 101-056-120 ACP5N | 10.10 | 12.00 | 118.00 | 56.00 | 71.0 | 1.840 | 45.0 | - | ● |
| SCD 102-056-120 ACP5N | 10.20 | 12.00 | 118.00 | 56.00 | 71.0 | 1.860 | 45.0 | M12 | ● |
| SCD 103-056-120 ACP5N | 10.30 | 12.00 | 118.00 | 56.00 | 71.0 | 1.870 | 45.0 | - | ● |
| SCD 104-056-120 ACP5N | 10.40 | 12.00 | 118.00 | 56.00 | 71.0 | 1.890 | 45.0 | - | ● |
| SCD 105-056-120 ACP5N | 10.50 | 12.00 | 118.00 | 56.00 | 71.0 | 1.910 | 45.0 | - | ● |
| SCD 106-056-120 ACP5N | 10.60 | 12.00 | 118.00 | 56.00 | 71.0 | 1.930 | 45.0 | - | ● |
| SCD 107-056-120 ACP5N | 10.70 | 12.00 | 118.00 | 56.00 | 71.0 | 1.950 | 45.0 | - | ● |
| SCD 108-056-120 ACP5N | 10.80 | 12.00 | 118.00 | 56.00 | 71.0 | 1.970 | 45.0 | - | ● |
| SCD 109-056-120 ACP5N | 10.90 | 12.00 | 118.00 | 56.00 | 71.0 | 1.980 | 45.0 | - | ● |
| SCD 110-056-120 ACP5N | 11.00 | 12.00 | 118.00 | 56.00 | 71.0 | 2.000 | 45.0 | - | ● |
| SCD 111-056-120 ACP5N | 11.10 | 12.00 | 118.00 | 56.00 | 71.0 | 2.020 | 45.0 | - | ● |
| SCD 112-056-120 ACP5N | 11.20 | 12.00 | 118.00 | 56.00 | 71.0 | 2.040 | 45.0 | - | ● |
| SCD 113-056-120 ACP5N | 11.30 | 12.00 | 118.00 | 56.00 | 71.0 | 1.800 | 45.0 | - | ● |
| SCD 114-056-120 ACP5N | 11.40 | 12.00 | 118.00 | 56.00 | 71.0 | 2.070 | 45.0 | - | ● |
| SCD 115-056-120 ACP5N | 11.50 | 12.00 | 118.00 | 56.00 | 71.0 | 2.090 | 45.0 | - | ● |
| SCD 116-056-120 ACP5N | 11.60 | 12.00 | 118.00 | 56.00 | 71.0 | 2.110 | 45.0 | - | ● |
| SCD 117-056-120 ACP5N | 11.70 | 12.00 | 118.00 | 56.00 | 71.0 | 2.130 | 45.0 | - | ● |
| SCD 118-056-120 ACP5N | 11.80 | 12.00 | 118.00 | 56.00 | 71.0 | 2.150 | 45.0 | - | ● |
| SCD 119-056-120 ACP5N | 11.90 | 12.00 | 118.00 | 56.00 | 71.0 | 2.170 | 45.0 | - | ● |
| SCD 120-056-120 ACP5N | 12.00 | 12.00 | 118.00 | 56.00 | 71.0 | 2.180 | 45.0 | M14 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

SOLIDDRILL**SCD-ACP5 (5xD)**Solid Carbide Drills with Coolant
Holes, Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



| M E T R I C | | | | | | | | | |
|----------------------|------------|--------|------|-------|--------|---------------------|------|-------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | LU | LCF | OAL | FTDZ ⁽¹⁾ | LS | PL | |
| SCD 121-060-140 ACP5 | 12.10 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.200 | ● |
| SCD 122-060-140 ACP5 | 12.20 | 14.00 | 60.0 | 77.0 | 124.00 | M14 | 45.0 | 2.220 | ● |
| SCD 124-060-140 ACP5 | 12.40 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.260 | ● |
| SCD 125-060-140 ACP5 | 12.50 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.270 | ● |
| SCD 126-060-140 ACP5 | 12.60 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.290 | ● |
| SCD 127-060-140 ACP5 | 12.70 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.310 | ● |
| SCD 128-060-140 ACP5 | 12.80 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.330 | ● |
| SCD 129-060-140 ACP5 | 12.90 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.350 | ● |
| SCD 130-060-140 ACP5 | 13.00 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.370 | ● |
| SCD 131-060-140 ACP5 | 13.10 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.380 | ● |
| SCD 132-060-140 ACP5 | 13.20 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.400 | ● |
| SCD 133-060-140 ACP5 | 13.30 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.420 | ● |
| SCD 135-060-140 ACP5 | 13.50 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.460 | ● |
| SCD 136-060-140 ACP5 | 13.60 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.470 | ● |
| SCD 137-060-140 ACP5 | 13.70 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.490 | ● |
| SCD 138-060-140 ACP5 | 13.80 | 14.00 | 60.0 | 77.0 | 124.00 | - | 45.0 | 2.510 | ● |
| SCD 140-060-140 ACP5 | 14.00 | 14.00 | 60.0 | 77.0 | 124.00 | M16 | 45.0 | 2.550 | ● |
| SCD 141-063-160 ACP5 | 14.10 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.570 | ● |
| SCD 142-063-160 ACP5 | 14.20 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.580 | ● |
| SCD 143-063-160 ACP5 | 14.30 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.600 | ● |
| SCD 145-063-160 ACP5 | 14.50 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.640 | ● |
| SCD 146-063-160 ACP5 | 14.60 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.660 | ● |
| SCD 147-063-160 ACP5 | 14.70 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.680 | ● |
| SCD 148-063-160 ACP5 | 14.80 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.690 | ● |
| SCD 149-063-160 ACP5 | 14.90 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.710 | ● |
| SCD 150-063-160 ACP5 | 15.00 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.730 | ● |
| SCD 151-063-160 ACP5 | 15.10 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.750 | ● |
| SCD 152-063-160 ACP5 | 15.20 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.770 | ● |
| SCD 153-063-160 ACP5 | 15.30 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.780 | ● |
| SCD 155-063-160 ACP5 | 15.50 | 16.00 | 63.0 | 83.0 | 133.00 | M18 | 45.0 | 2.820 | ● |
| SCD 156-063-160 ACP5 | 15.60 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.840 | ● |
| SCD 157-063-160 ACP5 | 15.70 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.860 | ● |
| SCD 158-063-160 ACP5 | 15.80 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.880 | ● |
| SCD 160-063-160 ACP5 | 16.00 | 16.00 | 63.0 | 83.0 | 133.00 | - | 45.0 | 2.910 | ● |
| SCD 161-071-180 ACP5 | 16.10 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 2.930 | ● |
| SCD 162-071-180 ACP5 | 16.20 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 2.950 | ● |
| SCD 163-071-180 ACP5 | 16.30 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 2.970 | ● |
| SCD 164-071-180 ACP5 | 16.40 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 2.980 | ● |
| SCD 165-071-180 ACP5 | 16.50 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.000 | ● |
| SCD 166-071-180 ACP5 | 16.60 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.020 | ● |
| SCD 167-071-180 ACP5 | 16.70 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.040 | ● |
| SCD 168-071-180 ACP5 | 16.80 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.060 | ● |
| SCD 169-071-180 ACP5 | 16.90 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.080 | ● |
| SCD 170-071-180 ACP5 | 17.00 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.090 | ● |
| SCD 171-071-180 ACP5 | 17.10 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.110 | ● |
| SCD 172-071-180 ACP5 | 17.20 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.130 | ● |
| SCD 174-071-180 ACP5 | 17.40 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.170 | ● |
| SCD 175-071-180 ACP5 | 17.50 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.180 | ● |
| SCD 176-071-180 ACP5 | 17.60 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.200 | ● |
| SCD 177-071-180 ACP5 | 17.70 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.220 | ● |
| SCD 178-071-180 ACP5 | 17.80 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.240 | ● |
| SCD 179-071-180 ACP5 | 17.90 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.260 | ● |
| SCD 180-071-180 ACP5 | 18.00 | 18.00 | 71.0 | 93.0 | 143.00 | - | 48.0 | 3.280 | ● |
| SCD 181-077-200 ACP5 | 18.10 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.290 | ● |

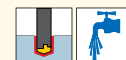
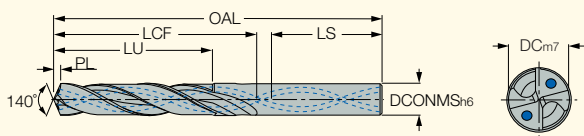
• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

Continued

SOLIDDRILL**SCD-ACP5 (5xD)**Solid Carbide Drills with Coolant
Holes, Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |

**M E T R I C**

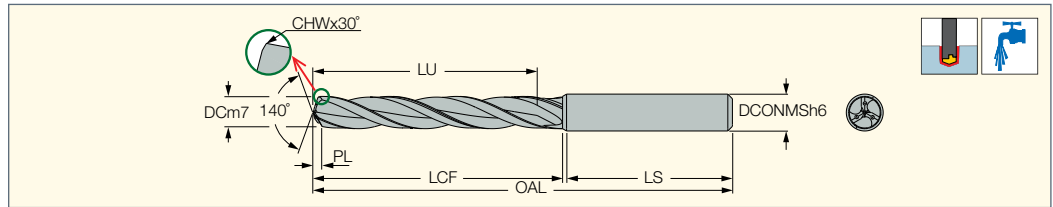
| Designation | Dimensions | | | | | | | | IC908 |
|----------------------|------------|--------|------|-------|--------|---------------------|------|-------|-------|
| | DC | DCONMS | LU | LCF | OAL | FTDZ ⁽¹⁾ | LS | PL | |
| SCD 182-077-200 ACP5 | 18.20 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.310 | ● |
| SCD 183-077-200 ACP5 | 18.30 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.330 | ● |
| SCD 184-077-200 ACP5 | 18.40 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.350 | ● |
| SCD 185-077-200 ACP5 | 18.50 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.370 | ● |
| SCD 186-077-200 ACP5 | 18.60 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.380 | ● |
| SCD 187-077-200 ACP5 | 18.70 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.400 | ● |
| SCD 188-077-200 ACP5 | 18.80 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.420 | ● |
| SCD 189-077-200 ACP5 | 18.90 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.440 | ● |
| SCD 191-077-200 ACP5 | 19.10 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.480 | ● |
| SCD 192-077-200 ACP5 | 19.20 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.490 | ● |
| SCD 193-077-200 ACP5 | 19.30 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.510 | ● |
| SCD 194-077-200 ACP5 | 19.40 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.530 | ● |
| SCD 195-077-200 ACP5 | 19.50 | 20.00 | 77.0 | 101.0 | 153.00 | M22 | 48.0 | 3.550 | ● |
| SCD 196-077-200 ACP5 | 19.60 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.570 | ● |
| SCD 197-077-200 ACP5 | 19.70 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.590 | ● |
| SCD 198-077-200 ACP5 | 19.80 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.600 | ● |
| SCD 199-077-200 ACP5 | 19.90 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.620 | ● |
| SCD 200-077-200 ACP5 | 20.00 | 20.00 | 77.0 | 101.0 | 153.00 | - | 48.0 | 3.640 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

(1) Used for standard thread size

SCCD-ACP5

Three Flute Solid Carbide
Drills with Coolant Holes,
Drilling Depth 5xD



| M E T R I C | | | | | | | | | | | |
|-----------------------|------------|--------|------|------|--------|------|-------|------|------|---------------------|-------|
| Designation | Dimensions | | | | | | | | | | IC908 |
| | DC | DCONMS | LU | LCF | OAL | LS | PL | KCH | CHW | FTDZ ⁽¹⁾ | |
| SCCD 040-029-060 ACP5 | 4.00 | 6.00 | 29.0 | 37.0 | 74.00 | 35.0 | 0.820 | 30.0 | 0.30 | - | ● |
| SCCD 045-029-060 ACP5 | 4.50 | 6.00 | 29.0 | 37.0 | 74.00 | 35.0 | 0.880 | 30.0 | 0.30 | - | ● |
| SCCD 050-035-060 ACP5 | 5.00 | 6.00 | 35.0 | 45.0 | 82.00 | 36.0 | 0.960 | 30.0 | 0.30 | M6 | ● |
| SCCD 051-035-060 ACP5 | 5.10 | 6.00 | 35.0 | 45.0 | 82.00 | 36.0 | 0.980 | 30.0 | 0.30 | - | ● |
| SCCD 055-035-060 ACP5 | 5.50 | 6.00 | 35.0 | 45.0 | 82.00 | 36.0 | 1.080 | 30.0 | 0.40 | - | ● |
| SCCD 060-035-060 ACP5 | 6.00 | 6.00 | 35.0 | 45.0 | 82.00 | 36.0 | 1.170 | 30.0 | 0.40 | M7 | ● |
| SCCD 065-043-080 ACP5 | 6.50 | 8.00 | 43.0 | 54.0 | 91.00 | 36.0 | 1.260 | 30.0 | 0.40 | - | ● |
| SCCD 068-043-080 ACP5 | 6.80 | 8.00 | 43.0 | 54.0 | 91.00 | 36.0 | 1.310 | 30.0 | 0.40 | M8 | ● |
| SCCD 070-043-080 ACP5 | 7.00 | 8.00 | 43.0 | 54.0 | 91.00 | 36.0 | 1.350 | 30.0 | 0.40 | - | ● |
| SCCD 075-043-080 ACP5 | 7.50 | 8.00 | 43.0 | 54.0 | 91.00 | 36.0 | 1.400 | 30.0 | 0.40 | - | ● |
| SCCD 080-043-080 ACP5 | 8.00 | 8.00 | 43.0 | 54.0 | 91.00 | 36.0 | 1.490 | 30.0 | 0.40 | - | ● |
| SCCD 085-049-100 ACP5 | 8.50 | 10.00 | 49.0 | 62.0 | 103.00 | 40.0 | 1.630 | 30.0 | 0.50 | M10 | ● |
| SCCD 086-049-100 ACP5 | 8.60 | 10.00 | 49.0 | 62.0 | 103.00 | 40.0 | 1.650 | 30.0 | 0.50 | - | ● |
| SCCD 090-049-100 ACP5 | 9.00 | 10.00 | 49.0 | 62.0 | 103.00 | 40.0 | 1.720 | 30.0 | 0.50 | - | ● |
| SCCD 095-049-100 ACP5 | 9.50 | 10.00 | 49.0 | 62.0 | 103.00 | 40.0 | 1.750 | 30.0 | 0.50 | M11 | ● |
| SCCD 100-049-100 ACP5 | 10.00 | 10.00 | 49.0 | 62.0 | 103.00 | 40.0 | 1.850 | 30.0 | 0.50 | - | ● |
| SCCD 103-056-120 ACP5 | 10.30 | 12.00 | 56.0 | 71.0 | 118.00 | 45.0 | 1.940 | 30.0 | 0.60 | - | ● |
| SCCD 105-056-120 ACP5 | 10.50 | 12.00 | 56.0 | 71.0 | 118.00 | 45.0 | 1.980 | 30.0 | 0.60 | - | ● |
| SCCD 110-056-120 ACP5 | 11.00 | 12.00 | 56.0 | 71.0 | 118.00 | 45.0 | 2.070 | 30.0 | 0.60 | - | ● |
| SCCD 115-056-120 ACP5 | 11.50 | 12.00 | 56.0 | 72.0 | 118.00 | 45.0 | 2.120 | 30.0 | 0.60 | - | ● |
| SCCD 120-056-120 ACP5 | 12.00 | 12.00 | 56.0 | 72.0 | 118.00 | 45.0 | 2.210 | 30.0 | 0.60 | M14 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

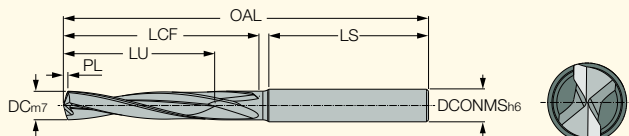
⁽¹⁾ Used for standard thread size



SOLIDDRILL**SCD-AH5 (5xD)**

Solid Carbide Drills for Hard Materials, Drilling Depth 5xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.008-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |

**M E T R I C**

| Designation | Dimensions | | | | | | | | IC903 |
|---------------------|------------|------|------|--------|------|--------|---------------------|-------|-------|
| | DC | LU | LCF | DCONMS | LS | OAL | FTDZ ⁽¹⁾ | PL | |
| SCD 030-015-060 AH5 | 3.00 | 15.0 | 26.0 | 6.00 | 35.0 | 66.00 | - | 0.550 | ● |
| SCD 033-017-060 AH5 | 3.30 | 16.5 | 26.0 | 6.00 | 35.0 | 66.00 | M4 | 0.600 | ● |
| SCD 040-020-060 AH5 | 4.00 | 20.0 | 29.0 | 6.00 | 32.0 | 66.00 | - | 0.730 | ● |
| SCD 042-021-060 AH5 | 4.20 | 21.0 | 32.0 | 6.00 | 46.0 | 82.00 | M5 | 0.760 | ● |
| SCD 045-023-060 AH5 | 4.50 | 22.5 | 32.0 | 6.00 | 46.0 | 82.00 | - | 0.820 | ● |
| SCD 050-025-060 AH5 | 5.00 | 25.0 | 37.0 | 6.00 | 41.0 | 82.00 | M6 | 0.910 | ● |
| SCD 053-027-060 AH5 | 5.30 | 26.5 | 39.0 | 6.00 | 37.0 | 82.00 | - | 0.960 | ● |
| SCD 060-030-060 AH5 | 6.00 | 30.0 | 43.0 | 6.00 | 37.0 | 82.00 | M7 | 1.090 | ● |
| SCD 068-034-080 AH5 | 6.80 | 34.0 | 49.0 | 8.00 | 39.0 | 91.00 | M8 | 1.240 | ● |
| SCD 070-035-080 AH5 | 7.00 | 35.0 | 49.0 | 8.00 | 39.0 | 91.00 | - | 1.270 | ● |
| SCD 078-039-080 AH5 | 7.80 | 42.0 | 55.0 | 8.00 | 34.0 | 91.00 | M9 | 1.420 | ● |
| SCD 080-040-080 AH5 | 8.00 | 40.0 | 55.0 | 8.00 | 34.0 | 91.00 | - | 1.460 | ● |
| SCD 085-043-100 AH5 | 8.50 | 42.5 | 59.0 | 10.00 | 46.0 | 112.00 | M10 | 1.550 | ● |
| SCD 088-044-100 AH5 | 8.80 | 44.0 | 63.0 | 10.00 | 46.0 | 112.00 | - | 1.600 | ● |
| SCD 090-045-100 AH5 | 9.00 | 45.0 | 63.0 | 10.00 | 46.0 | 112.00 | - | 1.640 | ● |
| SCD 100-050-100 AH5 | 10.00 | 50.0 | 70.0 | 10.00 | 39.0 | 112.00 | - | 1.820 | ● |
| SCD 105-053-120 AH5 | 10.50 | 52.5 | 71.0 | 12.00 | 45.0 | 122.00 | - | 1.910 | ● |

• For user guide see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size**Recommended Machining Conditions for SCD-AH5 Solid Carbide Drills**

| Co | Material | Hardness | Material No. | Cutting Speed | Feed vs. Drill Diameter (mm/rev) | | |
|----|----------------|-----------|--------------|------------------------|----------------------------------|-----------|-----------|
| | | | | V _c (m/min) | Ø3-5 | Ø5.1-8 | Ø8.1-12 |
| H | Hardened steel | 50-55 HRC | 38 | 25-40 | 0.04-0.07 | 0.05-0.08 | 0.06-0.10 |
| | Hardened steel | 56-60 HRC | 39 | 15-25 | 0.03-0.06 | 0.04-0.07 | 0.05-0.08 |
| | Hardened steel | 61-70 HRC | 39 | 10-15 | 0.02-0.04 | 0.03-0.05 | 0.03-0.05 |

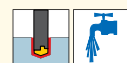
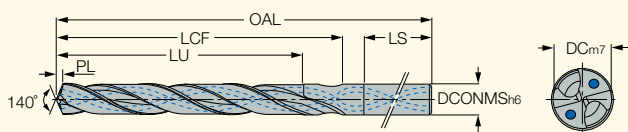
Materials over 50 HRC must be used with external cooling while machining.

Use of semi-synthetic or emulsion with more than 6% oil concentration is highly recommended to extend tool life and hole quality.

SOLIDDRILL**SCD-ACG8 (8xD)**

DIN 6537 Solid Carbide Drills with Coolant Holes, Drilling Depth 8xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.006-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |

**M E T R I C**

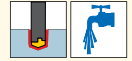
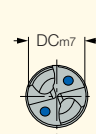
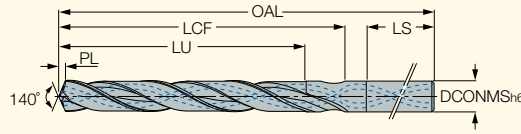
| Designation | Dimensions | | | | | | | IC908 |
|----------------------|------------|--------|------|------|--------|------|-------|-------|
| | DC | DCONMS | LU | LCF | OAL | LS | PL | |
| SCD 084-080-100 ACG8 | 8.40 | 10.00 | 80.0 | 95.0 | 142.00 | 38.0 | 1.530 | ● |
| SCD 089-080-100 ACG8 | 8.90 | 10.00 | 80.0 | 95.0 | 142.00 | 38.0 | 1.620 | ● |
| SCD 096-080-100 ACG8 | 9.60 | 10.00 | 80.0 | 95.0 | 142.00 | 38.0 | 1.750 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

SCD-ACP8N (8xD)

Solid Carbide Drills with Coolant
Holes, Drilling Depth 8xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.006-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



| M E T R I C | | | | | | | | | |
|-----------------------|------------|--------|-------|------|--------|------|---------------------|-------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | LU | LCF | OAL | LS | FTDZ ⁽¹⁾ | PL | |
| SCD 030-029-060 ACP8N | 3.00 | 6.00 | 29.00 | 34.0 | 72.00 | 34.0 | - | 0.550 | ● |
| SCD 031-029-060 ACP8N | 3.10 | 6.00 | 29.00 | 34.0 | 72.00 | 34.0 | - | 0.560 | ● |
| SCD 032-029-060 ACP8N | 3.20 | 6.00 | 29.00 | 34.0 | 72.00 | 34.0 | - | 0.580 | ● |
| SCD 033-029-060 ACP8N | 3.30 | 6.00 | 29.00 | 34.0 | 72.00 | 34.0 | M4 | 0.600 | ● |
| SCD 034-029-060 ACP8N | 3.40 | 6.00 | 29.00 | 34.0 | 72.00 | 34.0 | - | 0.620 | ● |
| SCD 035-029-060 ACP8N | 3.50 | 6.00 | 29.00 | 34.0 | 72.00 | 34.0 | - | 0.640 | ● |
| SCD 036-029-060 ACP8N | 3.60 | 6.00 | 29.00 | 34.0 | 72.00 | 34.0 | - | 0.660 | ● |
| SCD 037-029-060 ACP8N | 3.70 | 6.00 | 29.00 | 34.0 | 72.00 | 34.0 | - | 0.670 | ● |
| SCD 038-036-060 ACP8N | 3.80 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.690 | ● |
| SCD 039-036-060 ACP8N | 3.90 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.710 | ● |
| SCD 040-036-060 ACP8N | 4.00 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.730 | ● |
| SCD 041-036-060 ACP8N | 4.10 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.750 | ● |
| SCD 042-036-060 ACP8N | 4.20 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | M5 | 0.760 | ● |
| SCD 043-036-060 ACP8N | 4.30 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.780 | ● |
| SCD 044-036-060 ACP8N | 4.40 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.800 | ● |
| SCD 045-036-060 ACP8N | 4.50 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.820 | ● |
| SCD 046-036-060 ACP8N | 4.60 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.840 | ● |
| SCD 047-036-060 ACP8N | 4.70 | 6.00 | 36.00 | 43.0 | 81.00 | 35.0 | - | 0.860 | ● |
| SCD 048-048-060 ACP8N | 4.80 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 0.870 | ● |
| SCD 049-048-060 ACP8N | 4.90 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 0.890 | ● |
| SCD 050-048-060 ACP8N | 5.00 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | M6 | 0.910 | ● |
| SCD 051-048-060 ACP8N | 5.10 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 0.930 | ● |
| SCD 052-048-060 ACP8N | 5.20 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 0.950 | ● |
| SCD 053-048-060 ACP8N | 5.30 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 0.960 | ● |
| SCD 054-048-060 ACP8N | 5.40 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 0.980 | ● |
| SCD 055-048-060 ACP8N | 5.50 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 1.000 | ● |
| SCD 056-048-060 ACP8N | 5.60 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 1.020 | ● |
| SCD 057-048-060 ACP8N | 5.70 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 1.040 | ● |
| SCD 058-048-060 ACP8N | 5.80 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 1.060 | ● |
| SCD 059-048-060 ACP8N | 5.90 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | - | 0.900 | ● |
| SCD 060-048-060 ACP8N | 6.00 | 6.00 | 48.00 | 57.0 | 95.00 | 36.0 | M7 | 1.090 | ● |
| SCD 061-064-080 ACP8N | 6.10 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.110 | ● |
| SCD 062-064-080 ACP8N | 6.20 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.130 | ● |
| SCD 063-064-080 ACP8N | 6.30 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.150 | ● |
| SCD 064-064-080 ACP8N | 6.40 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.160 | ● |
| SCD 065-064-080 ACP8N | 6.50 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.180 | ● |
| SCD 066-064-080 ACP8N | 6.60 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.200 | ● |
| SCD 067-064-080 ACP8N | 6.70 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.220 | ● |
| SCD 068-064-080 ACP8N | 6.80 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | M8 | 1.240 | ● |
| SCD 069-064-080 ACP8N | 6.90 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.260 | ● |
| SCD 070-064-080 ACP8N | 7.00 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.270 | ● |
| SCD 071-064-080 ACP8N | 7.10 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.290 | ● |
| SCD 072-064-080 ACP8N | 7.20 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.310 | ● |
| SCD 073-064-080 ACP8N | 7.30 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.330 | ● |
| SCD 074-064-080 ACP8N | 7.40 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.350 | ● |
| SCD 075-064-080 ACP8N | 7.50 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.360 | ● |
| SCD 076-064-080 ACP8N | 7.60 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.380 | ● |
| SCD 077-064-080 ACP8N | 7.70 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.400 | ● |
| SCD 078-064-080 ACP8N | 7.80 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | M9 | 1.420 | ● |
| SCD 079-064-080 ACP8N | 7.90 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.440 | ● |

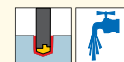
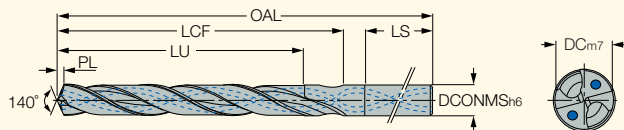
• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

⁽¹⁾ Used for standard thread size

Continued

SOLIDDRILL**SCD-ACP8N (8xD)**Solid Carbide Drills with Coolant
Holes, Drilling Depth 8xD

| DC | Tolerance m7 |
|----------|--------------|
| 3.00-6 | 0.004-0.016 |
| 6.01-10 | 0.006-0.021 |
| 10.01-18 | 0.007-0.025 |
| 18.01-21 | 0.008-0.029 |



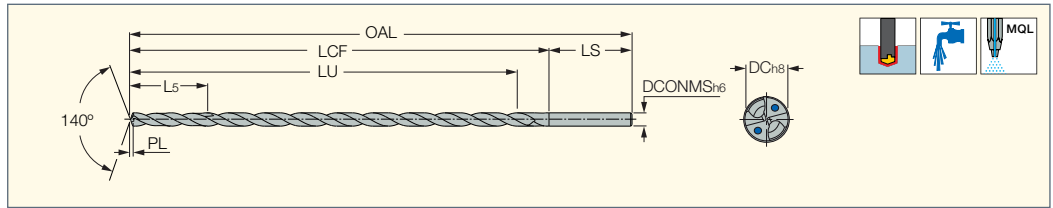
| M E T R I C | | | | | | | | | |
|-----------------------|------------|--------|-------|------|--------|------|---------------------|-------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | LU | LCF | OAL | LS | FTDZ ⁽¹⁾ | PL | |
| SCD 080-064-080 ACP8N | 8.00 | 8.00 | 64.00 | 76.0 | 114.00 | 36.0 | - | 1.460 | ● |
| SCD 081-080-100 ACP8N | 8.10 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.470 | ● |
| SCD 082-080-100 ACP8N | 8.20 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.490 | ● |
| SCD 083-080-100 ACP8N | 8.30 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.510 | ● |
| SCD 084-080-100 ACP8N | 8.40 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.530 | ● |
| SCD 085-080-100 ACP8N | 8.50 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | M10 | 1.550 | ● |
| SCD 086-080-100 ACP8N | 8.60 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.570 | ● |
| SCD 087-080-100 ACP8N | 8.70 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.580 | ● |
| SCD 088-080-100 ACP8N | 8.80 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.600 | ● |
| SCD 089-080-100 ACP8N | 8.90 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.620 | ● |
| SCD 090-080-100 ACP8N | 9.00 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.640 | ● |
| SCD 091-080-100 ACP8N | 9.10 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.660 | ● |
| SCD 092-080-100 ACP8N | 9.20 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.670 | ● |
| SCD 093-080-100 ACP8N | 9.30 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.690 | ● |
| SCD 094-080-100 ACP8N | 9.40 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.710 | ● |
| SCD 095-080-100 ACP8N | 9.50 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | M11 | 1.730 | ● |
| SCD 096-080-100 ACP8N | 9.60 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.750 | ● |
| SCD 097-080-100 ACP8N | 9.70 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.770 | ● |
| SCD 098-080-100 ACP8N | 9.80 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.780 | ● |
| SCD 100-080-100 ACP8N | 10.00 | 10.00 | 80.00 | 95.0 | 142.00 | 40.0 | - | 1.820 | ● |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

(1) Used for standard thread size



SCD-ACP-CS (20xD)
Solid Carbide Drills with
Coolant Holes for Automotive
Crankshaft Applications,
Drilling Depth 20-22xD



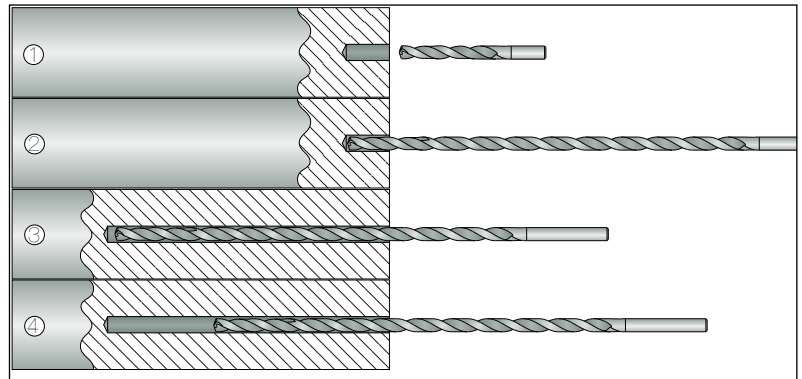
| M E T R I C | | | | | | | | | |
|------------------------------|------|-------|-------|--------|--------|-------|------|-------------------|-------|
| Dimensions | | | | | | | | | IC908 |
| Designation | DC | LU | LCF | OAL | DCONMS | PL | LS | L5 ⁽¹⁾ | |
| SCD 050-103-060ACP-CS | 5.00 | 103.0 | 118.0 | 156.00 | 6.00 | 0.910 | 38.0 | 40.00 | |
| SCD 060-120-060ACP-CS | 6.00 | 120.0 | 140.0 | 178.00 | 6.00 | 1.090 | 38.0 | 40.00 | |

• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ Up to 50% of this length may be reground

Recommended Drilling Procedure for Deep Hole Drilling (20XD)

- 1 Drill a pilot hole 1-2*D deep with a short drill. The pilot drill should be 0.03-0.05 mm larger than the long drill and its point angle should also be larger (over 140°).
- 2 Enter the pre-hole using low speed and feed, until it engages the material.
- 3 Increase cutting speed and feed to recommended conditions – **no pecking is required!**
- 4 After having reached the required depth, reduce speed by more than 50% while retracting from the hole.

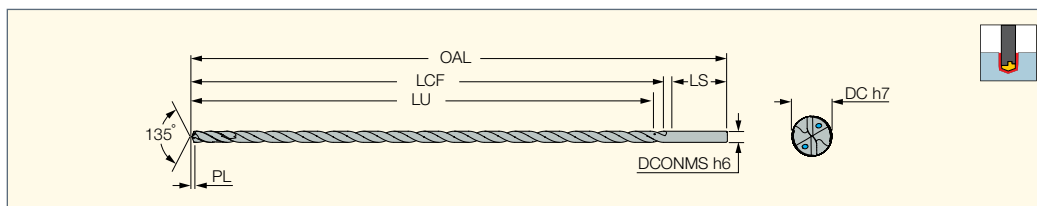


Recommended Machining Conditions for Solid Carbide 20xD Drills

| Drill Dia. (mm) | Carbon Steel (30 HRC) | | Alloy Steel (45 HRC) | | Stainless Steel | | Cast Iron (GG25) | | Ductile Cast Iron (GG45) | |
|-----------------|--------------------------|-----------|-------------------------|-----------|-----------------|------------|---------------------|-----------|-----------------------------|-----------|
| | V(m/min) | f(mm/rev) | V(m/min) | f(mm/rev) | V(m/min) | f(mm/rev) | V(m/min) | f(mm/rev) | V(m/min) | f(mm/rev) |
| 5 | 60-120 | 0.12-0.25 | 50-100 | 0.1-0.20 | 30-60 | 0.08-0.15 | 60-120 | 0.15-0.30 | 40-80 | 0.15-0.25 |
| 6 | 60-120 | 0.14-0.25 | 50-100 | 0.14-0.25 | 30-60 | 0.10-0.18 | 60-120 | 0.14-0.25 | 40-80 | 0.14-0.25 |
| 7-8 | 60-120 | 0.16-0.30 | 50-100 | 0.16-0.30 | 30-60 | 0.10-0.20 | 60-120 | 0.16-0.30 | 40-80 | 0.16-0.30 |
| 9-10 | 60-120 | 0.16-0.30 | 50-100 | 0.10-0.20 | 30-60 | 0.08-0.115 | 60-120 | 0.20-0.35 | 40-80 | 0.20-0.35 |

SOLIDDRILL**SCD-SXC16**

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 16xD

**M E T R I C**

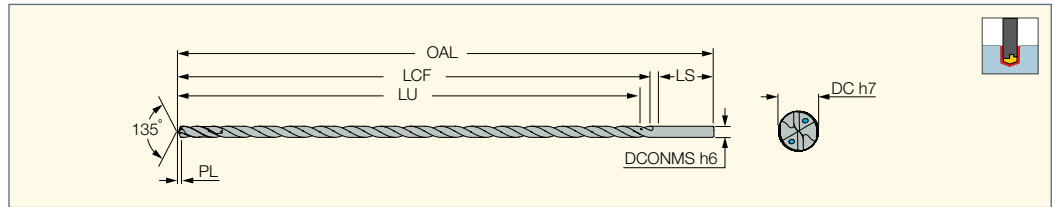
| Designation | Dimensions | | | | | | | | IC908 |
|-----------------------|------------|--------|--------|--------|-------|------|-------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽¹⁾ | |
| SCD 030-055-060 SXC16 | 3.00 | 6.00 | 100.00 | 55.00 | 60.0 | 36.0 | 0.495 | 16.0 | ● |
| SCD 032-055-060 SXC16 | 3.20 | 6.00 | 100.00 | 55.00 | 60.0 | 36.0 | 0.528 | 16.0 | ● |
| SCD 033-055-060 SXC16 | 3.30 | 6.00 | 100.00 | 55.00 | 60.0 | 36.0 | 0.544 | 16.0 | ● |
| SCD 035-054-060 SXC16 | 3.50 | 6.00 | 100.00 | 54.00 | 60.0 | 36.0 | 0.578 | 16.0 | ● |
| SCD 038-069-060 SXC16 | 3.80 | 6.00 | 115.00 | 69.00 | 75.0 | 36.0 | 0.627 | 16.0 | ● |
| SCD 040-069-060 SXC16 | 4.00 | 6.00 | 115.00 | 69.00 | 75.0 | 36.0 | 0.660 | 16.0 | ● |
| SCD 042-068-060 SXC16 | 4.20 | 6.00 | 115.00 | 68.00 | 75.0 | 36.0 | 0.693 | 16.0 | ● |
| SCD 045-083-060 SXC16 | 4.50 | 6.00 | 130.00 | 83.00 | 90.0 | 36.0 | 0.743 | 16.0 | ● |
| SCD 047-082-060 SXC16 | 4.70 | 6.00 | 130.00 | 82.00 | 90.0 | 36.0 | 0.775 | 16.0 | ● |
| SCD 048-082-060 SXC16 | 4.80 | 6.00 | 130.00 | 82.00 | 90.0 | 36.0 | 0.792 | 16.0 | ● |
| SCD 050-082-060 SXC16 | 5.00 | 6.00 | 130.00 | 82.00 | 90.0 | 36.0 | 0.825 | 16.0 | ● |
| SCD 055-099-060 SXC16 | 5.50 | 6.00 | 150.00 | 99.00 | 108.0 | 36.0 | 0.907 | 16.0 | ● |
| SCD 058-099-060 SXC16 | 5.80 | 6.00 | 150.00 | 99.00 | 108.0 | 36.0 | 0.957 | 16.0 | ● |
| SCD 060-099-060 SXC16 | 6.00 | 6.00 | 150.00 | 99.00 | 108.0 | 36.0 | 0.990 | 16.0 | ● |
| SCD 065-115-080 SXC16 | 6.50 | 8.00 | 165.00 | 115.00 | 125.0 | 36.0 | 1.073 | 16.0 | ● |
| SCD 068-114-080 SXC16 | 6.80 | 8.00 | 165.00 | 114.00 | 125.0 | 36.0 | 1.122 | 16.0 | ● |
| SCD 070-114-080 SXC16 | 7.00 | 8.00 | 165.00 | 114.00 | 125.0 | 36.0 | 1.155 | 16.0 | ● |
| SCD 075-128-080 SXC16 | 7.50 | 8.00 | 180.00 | 128.00 | 140.0 | 36.0 | 1.238 | 16.0 | ● |
| SCD 078-128-080 SXC16 | 7.80 | 8.00 | 180.00 | 128.00 | 140.0 | 36.0 | 1.287 | 16.0 | ● |
| SCD 080-128-080 SXC16 | 8.00 | 8.00 | 180.00 | 128.00 | 140.0 | 36.0 | 1.320 | 16.0 | ● |
| SCD 085-147-100 SXC16 | 8.50 | 10.00 | 205.00 | 147.00 | 160.0 | 40.0 | 1.403 | 16.0 | ● |
| SCD 088-146-100 SXC16 | 8.80 | 10.00 | 205.00 | 146.00 | 160.0 | 40.0 | 1.452 | 16.0 | ● |
| SCD 090-146-100 SXC16 | 9.00 | 10.00 | 205.00 | 146.00 | 160.0 | 40.0 | 1.485 | 16.0 | ● |
| SCD 098-165-100 SXC16 | 9.80 | 10.00 | 225.00 | 165.00 | 180.0 | 40.0 | 1.617 | 16.0 | ● |
| SCD 100-165-100 SXC16 | 10.00 | 10.00 | 225.00 | 165.00 | 180.0 | 40.0 | 1.650 | 16.0 | ● |
| SCD 102-174-120 SXC16 | 10.20 | 12.00 | 240.00 | 174.00 | 190.0 | 45.0 | 1.683 | 16.0 | ● |
| SCD 108-173-120 SXC16 | 10.80 | 12.00 | 240.00 | 173.00 | 190.0 | 45.0 | 1.782 | 16.0 | ● |
| SCD 110-173-120 SXC16 | 11.00 | 12.00 | 240.00 | 173.00 | 190.0 | 45.0 | 1.815 | 16.0 | ● |
| SCD 115-197-120 SXC16 | 11.50 | 12.00 | 265.00 | 197.00 | 215.0 | 45.0 | 1.898 | 16.0 | ● |
| SCD 120-197-120 SXC16 | 12.00 | 12.00 | 265.00 | 197.00 | 215.0 | 45.0 | 1.980 | 16.0 | ● |
| SCD 123-211-140 SXC16 | 12.30 | 14.00 | 280.00 | 211.00 | 230.0 | 45.0 | 2.030 | 16.0 | ● |
| SCD 130-210-140 SXC16 | 13.00 | 14.00 | 280.00 | 210.00 | 230.0 | 45.0 | 2.145 | 16.0 | ● |
| SCD 133-225-140 SXC16 | 13.30 | 14.00 | 295.00 | 225.00 | 245.0 | 45.0 | 2.195 | 16.0 | ● |
| SCD 135-224-140 SXC16 | 13.50 | 14.00 | 295.00 | 224.00 | 245.0 | 45.0 | 2.228 | 16.0 | ● |
| SCD 140-224-140 SXC16 | 14.00 | 14.00 | 295.00 | 224.00 | 245.0 | 45.0 | 2.310 | 16.0 | ● |
| SCD 145-233-160 SXC16 | 14.50 | 16.00 | 305.00 | 233.00 | 255.0 | 48.0 | 2.393 | 16.0 | ● |
| SCD 150-232-160 SXC16 | 15.00 | 16.00 | 305.00 | 232.00 | 255.0 | 48.0 | 2.475 | 16.0 | ● |
| SCD 155-251-160 SXC16 | 15.50 | 16.00 | 325.00 | 251.00 | 275.0 | 48.0 | 2.558 | 16.0 | ● |
| SCD 160-251-160 SXC16 | 16.00 | 16.00 | 325.00 | 251.00 | 275.0 | 48.0 | 2.640 | 16.0 | ● |
| SCD 165-295-180 SXC16 | 16.50 | 18.00 | 370.00 | 295.00 | 320.0 | 48.0 | 2.723 | 16.0 | ● |
| SCD 170-294-180 SXC16 | 17.00 | 18.00 | 370.00 | 294.00 | 320.0 | 48.0 | 2.805 | 16.0 | ● |
| SCD 175-293-180 SXC16 | 17.50 | 18.00 | 370.00 | 293.00 | 320.0 | 48.0 | 2.888 | 16.0 | ● |
| SCD 180-293-180 SXC16 | 18.00 | 18.00 | 370.00 | 293.00 | 320.0 | 48.0 | 2.970 | 16.0 | ● |
| SCD 185-302-200 SXC16 | 18.50 | 20.00 | 380.00 | 302.00 | 330.0 | 50.0 | 3.053 | 16.0 | ● |
| SCD 195-320-200 SXC16 | 19.50 | 20.00 | 400.00 | 320.00 | 350.0 | 50.0 | 3.217 | 16.0 | ● |
| SCD 200-320-200 SXC16 | 20.00 | 20.00 | 400.00 | 320.00 | 350.0 | 50.0 | 3.300 | 16.0 | ● |

• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ Usable length diameter ratio

SCD-SXC20

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 20xD



| M E T R I C | | | | | | | | | |
|-----------------------|------------|--------|--------|--------|-------|------|-------|---------------------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽¹⁾ | |
| SCD 030-075-060 SXC20 | 3.00 | 6.00 | 120.00 | 75.00 | 80.0 | 36.0 | 0.495 | 20.0 | ● |
| SCD 032-075-060 SXC20 | 3.20 | 6.00 | 120.00 | 75.00 | 80.0 | 36.0 | 0.528 | 20.0 | ● |
| SCD 033-075-060 SXC20 | 3.30 | 6.00 | 120.00 | 75.00 | 80.0 | 36.0 | 0.544 | 20.0 | ● |
| SCD 035-074-060 SXC20 | 3.50 | 6.00 | 120.00 | 74.00 | 80.0 | 36.0 | 0.578 | 20.0 | ● |
| SCD 038-084-060 SXC20 | 3.80 | 6.00 | 130.00 | 84.00 | 90.0 | 36.0 | 0.627 | 20.0 | ● |
| SCD 040-084-060 SXC20 | 4.00 | 6.00 | 130.00 | 84.00 | 90.0 | 36.0 | 0.660 | 20.0 | ● |
| SCD 042-103-060 SXC20 | 4.20 | 6.00 | 160.00 | 103.00 | 110.0 | 36.0 | 0.693 | 20.0 | ● |
| SCD 045-103-060 SXC20 | 4.50 | 6.00 | 160.00 | 103.00 | 110.0 | 36.0 | 0.743 | 20.0 | ● |
| SCD 047-112-060 SXC20 | 4.70 | 6.00 | 160.00 | 112.00 | 120.0 | 36.0 | 0.775 | 20.0 | ● |
| SCD 048-112-060 SXC20 | 4.80 | 6.00 | 160.00 | 112.00 | 120.0 | 36.0 | 0.792 | 20.0 | ● |
| SCD 050-112-060 SXC20 | 5.00 | 6.00 | 160.00 | 112.00 | 120.0 | 36.0 | 0.825 | 20.0 | ● |
| SCD 055-131-060 SXC20 | 5.50 | 6.00 | 185.00 | 131.00 | 140.0 | 36.0 | 0.907 | 20.0 | ● |
| SCD 058-131-060 SXC20 | 5.80 | 6.00 | 185.00 | 131.00 | 140.0 | 36.0 | 0.957 | 20.0 | ● |
| SCD 060-131-060 SXC20 | 6.00 | 6.00 | 185.00 | 131.00 | 140.0 | 36.0 | 0.990 | 20.0 | ● |
| SCD 065-150-080 SXC20 | 6.50 | 8.00 | 210.00 | 150.00 | 160.0 | 36.0 | 1.073 | 20.0 | ● |
| SCD 068-149-080 SXC20 | 6.80 | 8.00 | 210.00 | 149.00 | 160.0 | 36.0 | 1.122 | 20.0 | ● |
| SCD 070-149-080 SXC20 | 7.00 | 8.00 | 210.00 | 149.00 | 160.0 | 36.0 | 1.155 | 20.0 | ● |
| SCD 075-168-080 SXC20 | 7.50 | 8.00 | 230.00 | 168.00 | 180.0 | 36.0 | 1.238 | 20.0 | ● |
| SCD 078-168-080 SXC20 | 7.80 | 8.00 | 230.00 | 168.00 | 180.0 | 36.0 | 1.287 | 20.0 | ● |
| SCD 080-168-080 SXC20 | 8.00 | 8.00 | 230.00 | 168.00 | 180.0 | 36.0 | 1.320 | 20.0 | ● |
| SCD 085-182-100 SXC20 | 8.50 | 10.00 | 260.00 | 182.00 | 195.0 | 40.0 | 1.403 | 20.0 | ● |
| SCD 088-216-100 SXC20 | 8.80 | 10.00 | 290.00 | 216.00 | 230.0 | 40.0 | 1.452 | 20.0 | ● |
| SCD 090-216-100 SXC20 | 9.00 | 10.00 | 290.00 | 216.00 | 230.0 | 40.0 | 1.485 | 20.0 | ● |
| SCD 098-215-100 SXC20 | 9.80 | 10.00 | 290.00 | 215.00 | 230.0 | 40.0 | 1.617 | 20.0 | ● |
| SCD 100-215-100 SXC20 | 10.00 | 10.00 | 290.00 | 215.00 | 230.0 | 40.0 | 1.650 | 20.0 | ● |
| SCD 102-252-120 SXC20 | 10.20 | 12.00 | 315.00 | 252.00 | 268.0 | 45.0 | 1.683 | 20.0 | ● |
| SCD 108-251-120 SXC20 | 10.80 | 12.00 | 315.00 | 251.00 | 268.0 | 45.0 | 1.782 | 20.0 | ● |
| SCD 110-251-120 SXC20 | 11.00 | 12.00 | 315.00 | 251.00 | 268.0 | 45.0 | 1.815 | 20.0 | ● |
| SCD 115-250-120 SXC20 | 11.50 | 12.00 | 315.00 | 250.00 | 268.0 | 45.0 | 1.898 | 20.0 | ● |
| SCD 120-250-120 SXC20 | 12.00 | 12.00 | 315.00 | 250.00 | 268.0 | 45.0 | 1.980 | 20.0 | ● |
| SCD 123-261-140 SXC20 | 12.30 | 14.00 | 325.00 | 261.00 | 280.0 | 45.0 | 2.030 | 20.0 | ● |
| SCD 130-260-140 SXC20 | 13.00 | 14.00 | 325.00 | 260.00 | 280.0 | 45.0 | 2.145 | 20.0 | ● |
| SCD 133-285-140 SXC20 | 13.30 | 14.00 | 355.00 | 285.00 | 305.0 | 45.0 | 2.195 | 20.0 | ● |
| SCD 135-284-140 SXC20 | 13.50 | 14.00 | 355.00 | 284.00 | 305.0 | 45.0 | 2.228 | 20.0 | ● |
| SCD 140-284-140 SXC20 | 14.00 | 14.00 | 355.00 | 284.00 | 305.0 | 45.0 | 2.310 | 20.0 | ● |
| SCD 145-298-160 SXC20 | 14.50 | 16.00 | 370.00 | 298.00 | 320.0 | 48.0 | 2.393 | 20.0 | ● |
| SCD 150-297-160 SXC20 | 15.00 | 16.00 | 370.00 | 297.00 | 320.0 | 48.0 | 2.475 | 20.0 | ● |
| SCD 155-326-160 SXC20 | 15.50 | 16.00 | 400.00 | 326.00 | 350.0 | 48.0 | 2.558 | 20.0 | ● |
| SCD 160-326-160 SXC20 | 16.00 | 16.00 | 400.00 | 326.00 | 350.0 | 48.0 | 2.640 | 20.0 | ● |

• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ Usable length diameter ratio

Recommended Machining Conditions for SCD-SXC16 & SCD-SXC20 Solid Carbide Drills

| ISO | Material | Condition | Tensile Strength [N/mm ²] | Hardness HB | Material Group No. | Cutting Speed V _c (m/min) | Cutting Diameter Feed (mm/rev) | | | | |
|-----|--|--------------------------------|---------------------------------------|-------------|--------------------|--------------------------------------|--------------------------------|-----------|------------|-----------|-----------|
| | | | | | | | | | | | |
| | | | | | | | 3.0-5.0 | 5.0-8.0 | 8.0-10.0 | 10-16 | 16-20 |
| P | Non-alloy steel and cast steel, free cutting steel | <0.25% C Annealed | 420 | 125 | 1 | 70-90 | 0.1-0.18 | 0.14-0.24 | 0.16-0.26 | 0.18-0.3 | 0.2-0.35 |
| | | ≥0.25% C Annealed | 650 | 190 | 2 | | | | | | |
| | | <0.55% C Quenched and tempered | 850 | 250 | 3 | | | | | | |
| | | ≥0.55% C Annealed | 750 | 220 | 4 | | | | | | |
| | | ≥0.55% C Quenched and tempered | 1000 | 300 | 5 | | | | | | |
| | Low alloy and cast steel (less than 5% of alloying elements) | Annealed | 600 | 200 | 6 | 75-85 | 0.1-0.18 | 0.14-0.24 | 0.16-0.26 | 0.18-0.3 | 0.2-0.35 |
| | | Quenched and tempered | 930 | 275 | 7 | | | | | | |
| | | Quenched and tempered | 1000 | 300 | 8 | | | | | | |
| | | Quenched and tempered | 1200 | 350 | 9 | | | | | | |
| | High alloyed steel, cast steel and tool steel | Annealed | 680 | 200 | 10 | 75-85 | 0.1-0.18 | 0.14-0.24 | 0.16-0.26 | 0.18-0.3 | 0.2-0.35 |
| | | Quenched and tempered | 1100 | 325 | 11 | | | | | | |
| | Stainless steel and cast steel | Ferritic/martensitic | 680 | 200 | 12 | 60-70 | 0.08-0.14 | 0.1-0.18 | 0.12-0.2 | 0.14-0.22 | 0.16-0.24 |
| | | Martensitic | 820 | 240 | 13 | | | | | | |
| M | Stainless steel and cast steel | Austenitic, duplex | 600 | 180 | 14 | 55-65 | 0.06-0.14 | 0.08-0.16 | 0.1-0.18 | 0.12-0.2 | 0.14-0.24 |
| K | Gray cast iron (GG) | Ferritic / pearlitic | | 180 | 15 | 80-100 | 0.14-0.24 | 0.16-0.26 | 0.18-0.0.3 | 0.2-0.35 | 0.25-0.45 |
| | | Pearlitic / martensitic | | 260 | 16 | | | | | | |
| | Nodular cast iron (GGG) | Ferritic | | 160 | 17 | | | | | | |
| | | Pearlitic | | 250 | 18 | | | | | | |
| | Malleable cast iron | Ferritic | | 130 | 19 | | | | | | |
| | | Pearlitic | | 230 | 20 | | | | | | |
| S | High temperature alloys | Fe based Annealed | | 200 | 31 | 35-45 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | 0.12-0.2 | 0.12-0.22 |
| | | Fe based Hardened | | 280 | 32 | | | | | | |
| | | Ni or Co based Annealed | | 250 | 33 | 30-40 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | 0.12-0.2 | 0.12-0.22 |
| | | Ni or Co based Hardened | | 350 | 34 | | | | | | |
| | | Ni or Co based Cast | | 320 | 35 | | | | | | |
| | Titanium alloys | Pure | RM 400 | 190 | 36 | 35-45 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | 0.12-0.2 | 0.12-0.22 |
| | | Alpha+Beta alloys, hardened | RM 1050 | 310 | 37 | | | | | | |

TIPS & TRICKS for DEEP HOLE DRILLING

Using a G73 peck cycle helps Chip evacuation in deep hole drilling & materials which have a poor chip formation

16xD - 50xD must utilize a Pilot hole drill

40xD - 50xD can utilize a 20xD intermediary drill if deemed necessary

TIR & tool alignment with material are the most important factors in deep hole Drilling

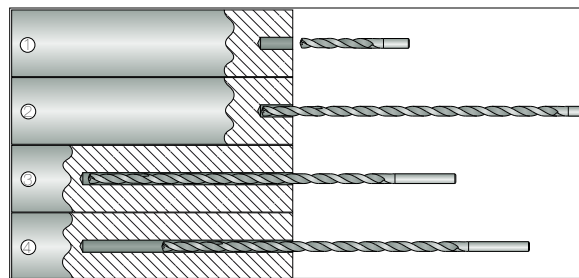
Use high pressure coolant when deep hole drilling

Slow the feedrate to 50% when breaking through the material

In through holes, the tool exit should not exceed 2-3 mm.

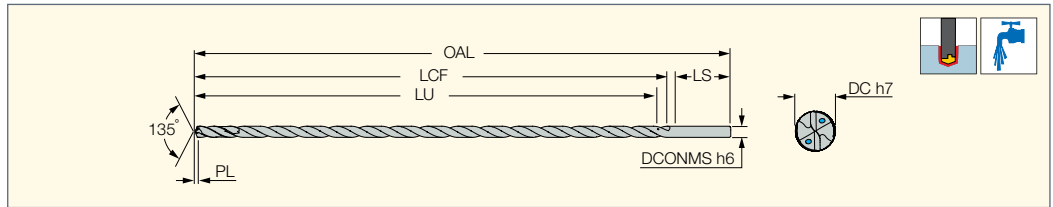
Recommended Drilling Procedure for Deep Hole Drilling

- 1 Drill a pilot hole 1-2xD deep with a short drill. The pilot drill should be 0.03-0.05 mm larger than the long drill and its point angle should also be larger (over 135°).
- 2 Enter the pre-hole using low feed and rotate at low speed (50-100 RPM) until it engages the material.
- 3 Activate the coolant system and increase rotation speed to the recommended cutting parameter, maintain for 2-3 seconds, then continue at recommended drilling feed. **No pecking is required.**
- 4 After having reached the required depth, reduce speed to 50-100 RPM before retracting from the hole.



SCD-SXC30

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 30xD



| M E T R I C | | | | | | | | | |
|--------------------------------------|------------|--------|--------|--------|-------|------|-------|---------------------|-------|
| Designation | Dimensions | | | | | | | | IC908 |
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽²⁾ | |
| SCD 030-097-060 SXC30 | 3.00 | 6.00 | 150.00 | 97.00 | 105.0 | 40.0 | 0.495 | 30.0 | ● |
| SCD 032-097-060 SXC30 | 3.20 | 6.00 | 150.00 | 97.00 | 105.0 | 40.0 | 0.528 | 30.0 | ● |
| SCD 033-127-060 SXC30 | 3.30 | 6.00 | 185.00 | 127.00 | 135.0 | 45.0 | 0.544 | 30.0 | ● |
| SCD 035-127-060 SXC30 | 3.50 | 6.00 | 185.00 | 127.00 | 135.0 | 45.0 | 0.578 | 30.0 | ● |
| SCD 038-127-060 SXC30 ⁽¹⁾ | 3.80 | 6.00 | 185.00 | 127.00 | 135.0 | 45.0 | 0.627 | 30.0 | ● |
| SCD 040-127-060 SXC30 | 4.00 | 6.00 | 185.00 | 127.00 | 135.0 | 45.0 | 0.660 | 30.0 | ● |
| SCD 042-127-060 SXC30 | 4.20 | 6.00 | 185.00 | 127.00 | 135.0 | 45.0 | 0.693 | 30.0 | ● |
| SCD 045-157-060 SXC30 | 4.50 | 6.00 | 215.00 | 157.00 | 165.0 | 45.0 | 0.743 | 30.0 | ● |
| SCD 047-157-060 SXC30 ⁽¹⁾ | 4.70 | 6.00 | 215.00 | 157.00 | 165.0 | 45.0 | 0.775 | 30.0 | ● |
| SCD 048-157-060 SXC30 | 4.80 | 6.00 | 215.00 | 157.00 | 165.0 | 45.0 | 0.792 | 30.0 | ● |
| SCD 050-157-060 SXC30 | 5.00 | 6.00 | 215.00 | 157.00 | 165.0 | 45.0 | 0.825 | 30.0 | ● |
| SCD 055-172-060 SXC30 | 5.50 | 6.00 | 230.00 | 172.00 | 180.0 | 45.0 | 0.907 | 30.0 | ● |
| SCD 058-172-060 SXC30 ⁽¹⁾ | 5.80 | 6.00 | 230.00 | 172.00 | 180.0 | 45.0 | 0.957 | 30.0 | ● |
| SCD 060-172-060 SXC30 | 6.00 | 6.00 | 230.00 | 172.00 | 180.0 | 45.0 | 0.990 | 30.0 | ● |
| SCD 065-207-080 SXC30 | 6.50 | 8.00 | 280.00 | 207.00 | 215.0 | 60.0 | 1.072 | 30.0 | ● |
| SCD 068-222-080 SXC30 | 6.80 | 8.00 | 280.00 | 222.00 | 230.0 | 45.0 | 1.122 | 30.0 | ● |
| SCD 070-222-080 SXC30 | 7.00 | 8.00 | 280.00 | 222.00 | 230.0 | 45.0 | 1.155 | 30.0 | ● |
| SCD 075-222-080 SXC30 ⁽¹⁾ | 7.50 | 8.00 | 280.00 | 222.00 | 230.0 | 45.0 | 1.238 | 30.0 | ● |
| SCD 078-257-080 SXC30 ⁽¹⁾ | 7.80 | 8.00 | 315.00 | 257.00 | 265.0 | 45.0 | 1.287 | 30.0 | ● |
| SCD 080-257-080 SXC30 | 8.00 | 8.00 | 315.00 | 257.00 | 265.0 | 45.0 | 1.320 | 30.0 | ● |
| SCD 085-287-100 SXC30 | 8.50 | 10.00 | 350.00 | 287.00 | 295.0 | 50.0 | 1.402 | 30.0 | ● |
| SCD 088-322-100 SXC30 ⁽¹⁾ | 8.80 | 10.00 | 380.00 | 322.00 | 330.0 | 45.0 | 1.452 | 30.0 | ● |
| SCD 090-322-100 SXC30 | 9.00 | 10.00 | 380.00 | 322.00 | 330.0 | 45.0 | 1.485 | 30.0 | ● |
| SCD 098-322-100 SXC30 | 9.80 | 10.00 | 380.00 | 322.00 | 330.0 | 45.0 | 1.617 | 30.0 | ● |
| SCD 100-322-100 SXC30 | 10.00 | 10.00 | 380.00 | 322.00 | 330.0 | 45.0 | 1.650 | 30.0 | ● |

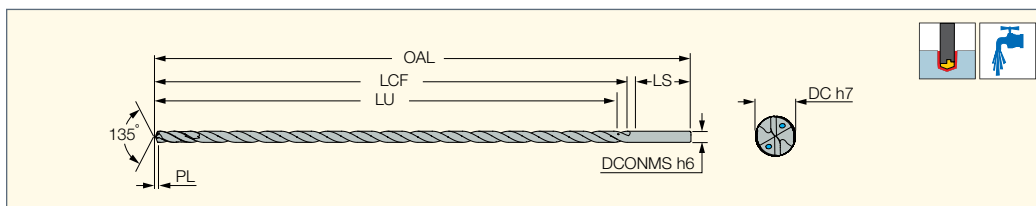
• For user guide and cutting conditions, see pages 225-235 ⁽¹⁾ On request ⁽²⁾ Usable length diameter ratio

Recommended Machining Conditions for SCD-SXC30 Solid Carbide Drills

| ISO | Material | | Condition | Tensile Strength [N/mm²] | Hardness HB | Material No. | Cutting Speed V _c (m/min) | Cutting Diameter Feed (mm/rev) | | | |
|--------------------------------|--|-----------------------|-------------------------|-----------------------------|----------------|--------------|---|--------------------------------|-----------|-----------|-------|
| | | | | | | | | 3.0-5.0 | 5.0-8.0 | 8.0-10.0 | |
| P | Non-alloy steel and cast steel, free cutting steel | < 0.25 %C | Annealed | 420 | 125 | 1 | 65-75 | 0.08-0.16 | 0.12-0.2 | 0.16-0.24 | |
| | | >= 0.25 %C | Annealed | 650 | 190 | 2 | | | | | |
| | | < 0.55 %C | Quenched and tempered | 850 | 250 | 3 | | | | | |
| | | >= 0.55 %C | Annealed | 750 | 220 | 4 | | | | | |
| | | >= 0.55 %C | Quenched and tempered | 1000 | 300 | 5 | | | | | |
| | Low alloy steel and cast steel (less than 5% of alloying elements) | Quenched and tempered | Annealed | 600 | 200 | 6 | | | | | 60-70 |
| | | | 930 | 275 | 7 | | | | | | |
| | | | 1000 | 300 | 8 | | | | | | |
| | | | 1200 | 350 | 9 | | | | | | |
| | High alloyed steel, cast steel, and tool steel | Annealed | 680 | 200 | 10 | 45-55 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | | |
| | | Quenched and tempered | 1100 | 325 | 11 | | | | | | |
| Stainless steel and cast steel | Ferritic/martensitic. | 680 | 200 | 12 | 45-55 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | | | |
| | Martensitic | 820 | 240 | 13 | | | | | | | |
| M | Stainless steel and cast steel | | Austenitic | 600 | 180 | 14 | 35-45 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | |
| K | Grey cast iron (GG) | | Ferritic/pearlitic | | | 180 | 75-85 | 0.14-0.22 | 0.18-0.30 | 0.22-0.40 | |
| | | | Pearlitic | | | 260 | | | | | 16 |
| | Cast iron nodular (GGG) | | Ferritic | | | 160 | | | | | 17 |
| | | | Pearlitic | | | 250 | | | | | 18 |
| | Malleable cast iron | | Ferritic | | | 130 | | | | | 19 |
| | | | Pearlitic | | | 230 | | | | | 20 |
| S | High temp. alloys | Fe based | Annealed | | | 200 | 35-50 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | |
| | | | Cured | | | 280 | | | | | 32 |
| | | Ni or Co based | Annealed | | | 250 | 30-45 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | |
| | | | Cured | | | 350 | | | | | 34 |
| | | | Cast | | | 320 | | | | | 35 |
| | Titanium Ti alloys | | Pure | RM 400 | 110 | 36 | 35-50 | 0.06-0.12 | 0.08-0.16 | 0.1-0.18 | |
| | | | Alpha+beta alloys cured | RM 1050 | 310 | 37 | | | | | |

SOLIDDRILL**SCD-SXC40**

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 40xD

**M E T R I C**

| Designation | Dimensions | | | | | | | | IC908 |
|--------------------------------------|------------|--------|--------|--------|-------|------|-------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽²⁾ | |
| SCD 030-132-060 SXC40 | 3.00 | 6.00 | 190.00 | 132.00 | 140.0 | 45.0 | 0.495 | 40.0 | ● |
| SCD 038-172-060 SXC40 ⁽¹⁾ | 3.80 | 6.00 | 230.00 | 172.00 | 180.0 | 45.0 | 0.627 | 40.0 | ● |
| SCD 040-172-060 SXC40 | 4.00 | 6.00 | 230.00 | 172.00 | 180.0 | 45.0 | 0.660 | 40.0 | ● |
| SCD 042-172-060 SXC40 | 4.20 | 6.00 | 230.00 | 172.00 | 180.0 | 45.0 | 0.693 | 40.0 | ● |
| SCD 045-212-060 SXC40 | 4.50 | 6.00 | 270.00 | 212.00 | 220.0 | 45.0 | 0.743 | 40.0 | ● |
| SCD 047-212-060 SXC40 ⁽¹⁾ | 4.70 | 6.00 | 270.00 | 212.00 | 220.0 | 45.0 | 0.775 | 40.0 | ● |
| SCD 048-212-060 SXC40 | 4.80 | 6.00 | 270.00 | 212.00 | 220.0 | 45.0 | 0.792 | 40.0 | ● |
| SCD 050-212-060 SXC40 | 5.00 | 6.00 | 270.00 | 212.00 | 220.0 | 45.0 | 0.825 | 40.0 | ● |
| SCD 055-232-060 SXC40 | 5.50 | 6.00 | 290.00 | 232.00 | 240.0 | 45.0 | 0.907 | 40.0 | ● |
| SCD 058-232-060 SXC40 ⁽¹⁾ | 5.80 | 6.00 | 290.00 | 232.00 | 240.0 | 45.0 | 0.957 | 40.0 | ● |
| SCD 060-232-060 SXC40 | 6.00 | 6.00 | 290.00 | 232.00 | 240.0 | 45.0 | 0.990 | 40.0 | ● |
| SCD 065-282-080 SXC40 | 6.50 | 8.00 | 340.00 | 282.00 | 290.0 | 45.0 | 1.072 | 40.0 | ● |
| SCD 068-312-080 SXC40 | 6.80 | 8.00 | 370.00 | 312.00 | 320.0 | 45.0 | 1.122 | 40.0 | ● |
| SCD 070-312-080 SXC40 | 7.00 | 8.00 | 370.00 | 312.00 | 320.0 | 45.0 | 1.155 | 40.0 | ● |
| SCD 075-312-080 SXC40 ⁽¹⁾ | 7.50 | 8.00 | 370.00 | 312.00 | 320.0 | 45.0 | 1.238 | 40.0 | ● |
| SCD 078-342-080 SXC40 ⁽¹⁾ | 7.80 | 8.00 | 400.00 | 342.00 | 350.0 | 45.0 | 1.287 | 40.0 | ● |
| SCD 080-342-080 SXC40 | 8.00 | 8.00 | 400.00 | 342.00 | 350.0 | 45.0 | 1.320 | 40.0 | ● |

• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ On request

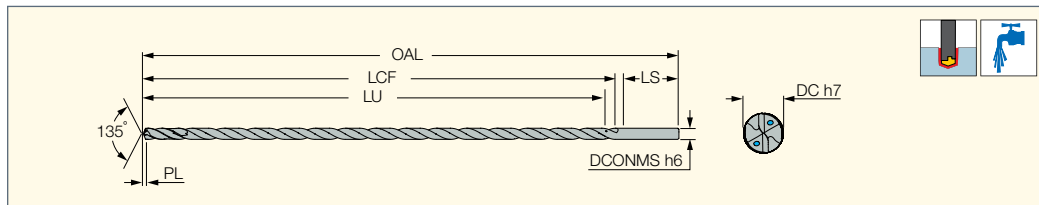
⁽²⁾ Usable length diameter ratio

Recommended Machining Conditions for SCD-SXC40 & SCD-SXC50 Solid Carbide Drills

| ISO | Material | | Condition | Tensile Strength [N/mm²] | Hardness HB | Material No. | Cutting Speed V _c (m/min) | Cutting Diameter Feed (mm/rev) | | | | | | | | | |
|-----|--|-----------------------|-------------------------|-----------------------------|----------------|--------------|---|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | | | | | 3.0-4.0 | 4.1-5.0 | 5.1-6.0 | 6.1-7.0 | 7.1-8.0 | | | | | |
| P | Non-alloy steel and cast steel, free cutting steel | < 0.25 %C | Annealed | 420 | 125 | 1 | 55-65 | 0.06-0.12 | 0.06-0.14 | 0.08-0.16 | 0.10-0.18 | 0.12-0.2 | | | | | |
| | | >= 0.25 %C | Annealed | 650 | 190 | 2 | | | | | | | | | | | |
| | | < 0.55 %C | Quenched and tempered | 850 | 250 | 3 | | | | | | | | | | | |
| | | >= 0.55 %C | Annealed | 750 | 220 | 4 | | | | | | | | | | | |
| | | >= 0.55 %C | Quenched and tempered | 1000 | 300 | 5 | | | | | | | | | | | |
| | Low alloy steel and cast steel (less than 5% of alloying elements) | Quenched and tempered | Annealed | 600 | 200 | 6 | 45-65 | 0.06-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | | | | | |
| | | | 930 | 275 | 7 | | | | | | | | | | | | |
| | | | 1000 | 300 | 8 | | | | | | | | | | | | |
| | | | 1200 | 350 | 9 | | | | | | | | | | | | |
| | High alloyed steel, cast steel, and tool steel | Annealed | 680 | 200 | 10 | 35-55 | 0.04-0.08 | 0.06-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | | | | | | |
| | | Quenched and tempered | 1100 | 325 | 11 | | | | | | | | | | | | |
| | Stainless steel and cast steel | Ferritic/martensitic. | 680 | 200 | 12 | 30-45 | 0.04-0.08 | 0.06-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | | | | | | |
| | | Martensitic | 820 | 240 | 13 | | | | | | | | | | | | |
| M | Stainless steel and cast steel | | Austenitic | 600 | 180 | 14 | 25-45 | 0.04-0.08 | 0.06-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | | | | | |
| K | Grey cast iron (GG) | | Ferritic/pearlitic | | 180 | 15 | 60-70 | 0.10-0.18 | 0.12-0.20 | 0.14-0.22 | 0.14-0.24 | 0.16-0.26 | | | | | |
| | | | Pearlitic | | 260 | 16 | | | | | | | | | | | |
| | Cast iron nodular (GGG) | | Ferritic | | 160 | 17 | 55-65 | | | | | | | | | | |
| | | | Pearlitic | | 250 | 18 | | | | | | | | | | | |
| | Malleable cast iron | | Ferritic | | 130 | 19 | 50-60 | | | | | | | | | | |
| | | | Pearlitic | | 230 | 20 | | | | | | | | | | | |
| S | High temp. alloys | Fe based | Annealed | | 200 | 31 | 30-35 | 0.04-0.08 | 0.06-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | | | | | |
| | | | Cured | | 280 | 32 | | | | | | | | | | | |
| | | Ni or Co based | Annealed | | 250 | 33 | 25-30 | | | | | | | | | | |
| | | | Cured | | 350 | 34 | | | | | | | | | | | |
| | | | Cast | | 320 | 35 | | | | | | | | | | | |
| | Titanium Ti alloys | | Pure | RM 400 | 110 | 36 | 30-35 | | | | | | 0.04-0.08 | 0.06-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 |
| | | | Alpha+beta alloys cured | RM 1050 | 310 | 37 | | | | | | | | | | | |

SCD-SXC50

Solid Carbide Drills with
Internal Coolant Channels,
Drilling Depth 50xD


M E T R I C

| Designation | Dimensions | | | | | | | | IC908 |
|---|------------|--------|--------|--------|-------|------|-------|---------------------|-------|
| | DC | DCONMS | OAL | LU | LCF | LS | PL | ULDR ⁽²⁾ | |
| SCD 040-217-060 SXC50 | 4.00 | 6.00 | 270.00 | 217.00 | 225.0 | 40.0 | 0.660 | 50.0 | • |
| SCD 042-217-060 SXC50 | 4.20 | 6.00 | 270.00 | 217.00 | 225.0 | 40.0 | 0.693 | 50.0 | • |
| SCD 045-267-060 SXC50 | 4.50 | 6.00 | 320.00 | 267.00 | 275.0 | 40.0 | 0.743 | 50.0 | • |
| SCD 047-267-060 SXC50 ⁽¹⁾ | 4.70 | 6.00 | 320.00 | 267.00 | 275.0 | 40.0 | 0.775 | 50.0 | • |
| SCD 048-267-060 SXC50 | 4.80 | 6.00 | 320.00 | 267.00 | 275.0 | 40.0 | 0.792 | 50.0 | • |
| SCD 050-267-060 SXC50 | 5.00 | 6.00 | 320.00 | 267.00 | 275.0 | 40.0 | 0.825 | 50.0 | • |
| SCD 055-302-060 SXC50 | 5.50 | 6.00 | 360.00 | 302.00 | 310.0 | 45.0 | 0.907 | 50.0 | • |
| SCD 058-302-060 SXC50 ⁽¹⁾ | 5.80 | 6.00 | 360.00 | 302.00 | 310.0 | 45.0 | 0.957 | 50.0 | • |
| SCD 060-302-060 SXC50 | 6.00 | 6.00 | 360.00 | 302.00 | 310.0 | 45.0 | 0.990 | 50.0 | • |

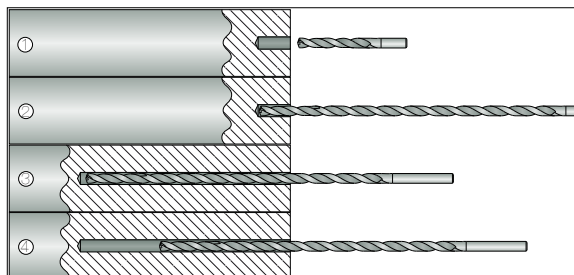
• For user guide and cutting conditions, see pages 225-235

⁽¹⁾ On request

⁽²⁾ Usable length diameter ratio

Recommended Drilling Procedure for Deep Hole Drilling

- 1 Drill a pilot hole 1-2xD deep with a short drill. The pilot drill should be 0.03-0.05 mm larger than the long drill and its point angle should also be larger (over 135°).
- 2 Enter the pre-hole using low feed and rotate at low speed (50-100 RPM) until it engages the material.
- 3 Activate the coolant system and increase rotation speed to the recommended cutting parameter, maintain for 2-3 seconds, then continue at recommended drilling feed. **No pecking is required.**
- 4 After having reached the required depth, reduce speed to 50-100 RPM before retracting from the hole.



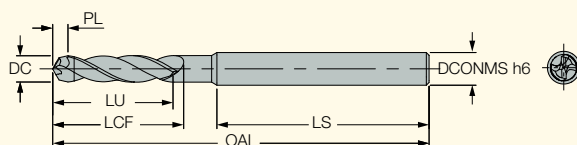
- 40xD & 50xD must utilize a 20xD intermediary drill along with pilot drill.

- In through holes, the tool exit should not exceed 2-3 mm.



SOLIDDRILL**SCD-FNPCD**

Solid Carbide Drills with PCD Full Nib Insert for Composite Materials (CFRP) and Stack Machining

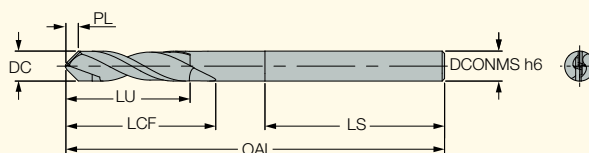


| M E T R I C | | | | | | | |
|-------------------------------|------|--------|-------|------|------|-------|-------|
| Designation | DC | DCONMS | LU | LCF | LS | OAL | PL |
| SCD 0330-025-040 FNPCD | 3.30 | 4.00 | 25.00 | 30.0 | 36.0 | 70.00 | 3.000 |
| SCD 0419-028-060 FNPCD | 4.19 | 6.00 | 28.00 | 34.3 | 34.0 | 70.00 | 2.100 |
| SCD 0485-028-060 FNPCD | 4.85 | 6.00 | 28.00 | 35.3 | 34.0 | 70.00 | 2.430 |
| SCD 0637-032-080 FNPCD | 6.37 | 8.00 | 32.00 | 41.6 | 32.0 | 76.00 | 3.190 |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

SOLIDDRILL**SCD-WPCD**

Solid Carbide Drills with PCD Insert for Composite Materials (CFRP) and Stack Machining

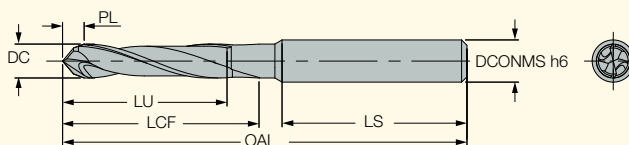


| M E T R I C | | | | | | | |
|------------------------------|-------|--------|-------|------|------|-------|-------|
| Designation | DC | DCONMS | LU | LCF | LS | OAL | PL |
| SCD 0419-028-060 WPCD | 4.19 | 6.00 | 28.00 | 34.3 | 34.0 | 70.00 | 2.100 |
| SCD 0485-028-060 WPCD | 4.85 | 6.00 | 28.00 | 35.3 | 34.0 | 70.00 | 2.430 |
| SCD 0637-032-080 WPCD | 6.37 | 8.00 | 32.00 | 41.6 | 32.0 | 75.00 | 3.190 |
| SCD 0794-032-080 WPCD | 7.94 | 8.00 | 32.00 | 43.9 | 30.0 | 75.00 | 3.970 |
| SCD 1000-040-100 WPCD | 10.00 | 10.00 | 40.00 | 50.0 | 40.0 | 84.00 | 5.000 |
| SCD 1200-045-120 WPCD | 12.00 | 12.00 | 45.00 | 55.0 | 40.0 | 89.00 | 6.000 |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

SOLIDDRILL**SCD-CVD**

Solid Carbide Drills with CVD Coating for Composite Materials (CFRP) and Stack Machining



| M E T R I C | | | | | | | |
|-----------------------------|------|--------|-------|------|------|-------|-------|
| Designation | DC | DCONMS | LU | LCF | LS | OAL | PL |
| SCD 0330-025-040 CVD | 3.30 | 4.00 | 25.00 | 30.0 | 36.0 | 70.00 | 3.000 |
| SCD 0419-028-060 CVD | 4.19 | 6.00 | 28.00 | 34.0 | 32.0 | 70.00 | 3.500 |
| SCD 0485-028-060 CVD | 4.85 | 6.00 | 28.00 | 35.0 | 32.0 | 70.00 | 4.000 |
| SCD 0637-032-080 CVD | 6.37 | 8.00 | 32.00 | 42.0 | 32.0 | 76.00 | 5.400 |
| SCD 0794-032-080 CVD | 7.94 | 8.00 | 32.00 | 44.0 | 30.0 | 76.00 | 6.700 |

• For user guide and cutting conditions, see pages 225-235 • For regrinding instructions, see pages 232-234

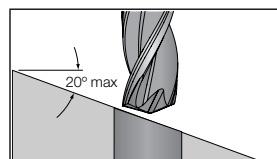
General Recommendations

- It is recommended to use an external coolant jet at a minimum pressure of 10 to 15 bar during drilling for prolonged tool life and to facilitate chip evacuation.
- When machining alloy and stainless steel, it is recommended to use **ER JET 2** collet to prolong tool life and prevent built-up edge.
- Semi-synthetic or emulsion lubricants should be used to extend tool life.
- Drilling stainless steel or high temperature alloys requires high oil pressure and 7-15% mineral or vegetable based oil emulsion for prolonged tool life. Dry machining may badly affect hole quality and drill tool life.
- In case of chip evacuation problems or when poor surface finish is obtained, it is recommended to use pecking cycle.
- For optimal performance, it is recommended to use the 3 flute, 5xD solid carbide drills in rotating or stationary applications with a maximum of .0008" runout. Larger runout will reduce drill performance and badly affect hole quality.
- The solid drills can be clamped into any of **ISCAR**'s tooling systems such as:
 - 1 Collet chucks
 - 2 Thermal shrink chucks
 - 3 ISCAR MAXIN power chucks
- It is recommended to use the solid drills in SHORTIN adapters with AA super precision collets to obtain a high level of hole quality and prolonged drill tool life. Balanceable adapters should be used for applications above 10,000 RPM in order to minimize vibrations and gain a reliable and prolonged cutting edge life.
- Interrupted cut applications reduce hole accuracy, quality and drill life.
- See pages 230-231 for troubleshooting guide for common problems.
- Solid carbide drills can be used on a wide range of materials and different cutting conditions with high reliability and performance repeatability. This can reduce tool inventory and logistic costs.

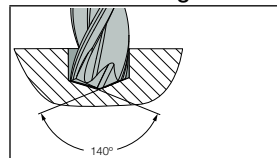
3 Flute Solid Carbide Drills

Three flute drills are used extensively on nonferrous metals because of their excellent performance on these materials. These solid carbide drills were designed with a special cutting edge geometry that can be used on a broad spectrum of materials including steel, stainless steel, high temperature alloys, cast iron and nonferrous materials. Their dimensions are according to DIN 6537 standard. The SCCD drills are manufactured in m7 diameter tolerance, with cylindrical shanks according to DIN 6535 HA standard, 30° spiral flute helix, 140° head point angle and a reinforced web taper.

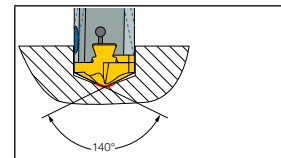
The drills can be used on surface applications of up to 20° sloped entry/exit. (In this case, the drill should be held in a thermal shrink collet or a **MAXIN** power chuck). The 3 flute solid carbide drills cannot be used on radial drill adjustment diameter devices such as our **FITBORE** adapter.



3 Flute Centering Drill



Followed by a
CHAMDRILL
SUMOCHAM/CHAMGUN

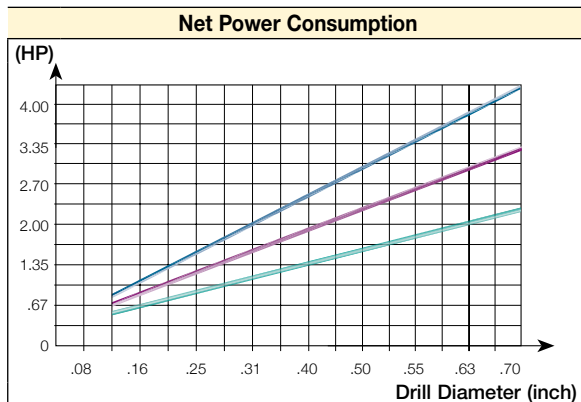
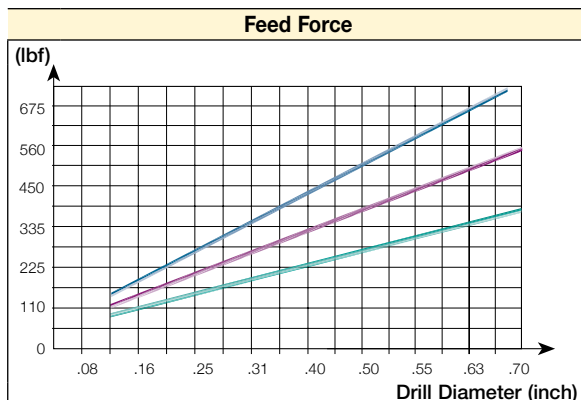


Advantages

The drills provide higher hole cylindricity, roundness, straightness, concentricity and surface finish when compared to 2 flute solid carbide drills. The 3 flute solid carbide drills with a 140° point head can serve as centering drills for **CHAMDRILL/ SUMOCHAM** or **CHAMGUN** if necessary.

Coolant Pressure and Volume Recommendations

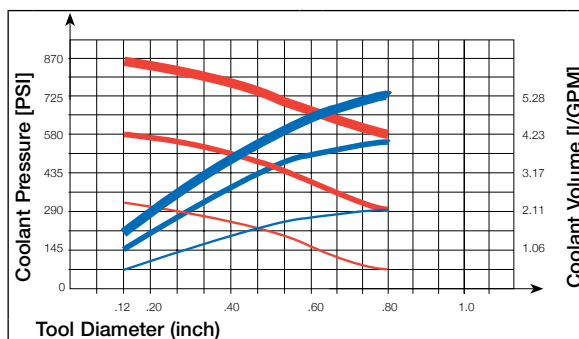
Force and Power Characteristics



Material: SAE 4340

Speed: 300 sfm

Values may change for different materials and drilling conditions.



Required Coolant Pressure

Optimum pressure

Good pressure

Minimum pressure

Required Coolant Volume

Optimum volume

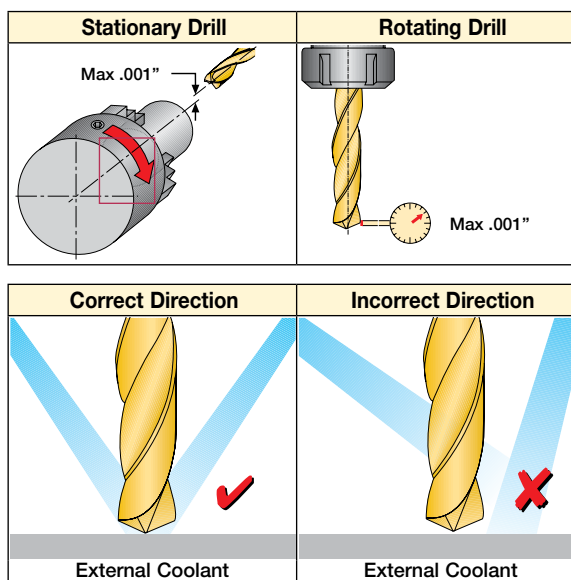
Good volume

Minimum pressure

Required coolant pressure and volume for **SCD** drills with internal coolant spiral nozzles.

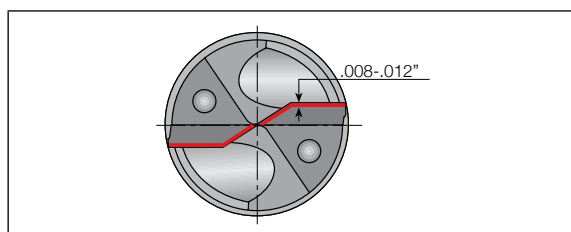
Stability

The stability of the application volume is important in order to obtain the very best tool life and hole accuracy. Check the condition of the machine spindle, fixture and fixturing of the component to secure maximum stability and rigidity. Unstable conditions can cause tool breakage.



Tool Life

Drills should not be used with flank wear exceeding .008-.012".



Machining Data for Solid Carbide Drills D=.031-.114"

| ISO | Material | Condition | Tensile Strength [ksi] | Hardness HB | Material Group No. ⁽¹⁾ | Cutting Speed V _c (SFM) | Feed (IPR) vs. Drill Diameter | | | |
|-----|--|--------------------------------|-----------------------------|-------------|-----------------------------------|------------------------------------|-------------------------------|-------------|-------------|-------------|
| | | | | | | | Ø.031-.055 | Ø.059-.075 | Ø.079-.094 | Ø.098-.114 |
| P | Non-alloy steel and cast steel, free cutting steel | <0.25% C Annealed | 61 | 125 | 1 | 160-330 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | ≥0.25% C Annealed | 94 | 190 | 2 | 130-330 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | <0.55% C Quenched and tempered | 123 | 250 | 3 | 130-280 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | ≥0.55% C Annealed | 109 | 220 | 4 | 130-280 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | Quenched and tempered | 145 | 300 | 5 | 130-280 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | Annealed | 87 | 200 | 6 | 130-250 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | Low alloy and cast steel (less than 5% of alloying elements) | Quenched and tempered | 135 | 275 | 7 | 130-200 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | | 145 | 300 | 8 | 130-200 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | | 174 | 350 | 9 | 130-200 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | High alloyed steel, cast steel and tool steel | Annealed | 99 | 200 | 10 | 100-160 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | Quenched and tempered | 160 | 325 | 11 | 100-160 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | Stainless steel and cast steel | Ferritic/martensitic | 99 | 200 | 12 | 70-110 | .0012-.0024 | .0016-.0031 | .0020-.0039 | .0024-.0039 |
| | | Martensitic | 119 | 240 | 13 | 70-110 | .0012-.0024 | .0016-.0031 | .0020-.0039 | .0024-.0039 |
| M | Stainless steel and cast steel | Austenitic, duplex | 87 | 180 | 14 | 70-110 | .0012-.0024 | .0016-.0031 | .0020-.0039 | .0024-.0039 |
| K | Gray cast iron (GG) | Ferritic / pearlitic | | 180 | 15 | 130-260 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | Pearlitic / martensitic | | 260 | 16 | 130-230 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | Nodular cast iron (GGG) | Ferritic | | 160 | 17 | 130-310 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | Pearlitic | | 250 | 18 | 130-260 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | Malleable cast iron | Ferritic | | 130 | 19 | 160-310 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | Pearlitic | | 230 | 20 | 130-260 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| N | Aluminum-wrought alloys | Not hardenable | | 60 | 21 | 260-490 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | Hardenable | | 100 | 22 | 260-490 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | Aluminum-cast alloys | ≤12% Si Not hardenable | | 75 | 23 | 260-490 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | ≥12% Si Hardenable | | 90 | 24 | 260-490 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | High temperature | | 130 | 25 | 260-490 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | >1% Pb | | | | | | | | |
| | Copper alloys | Free cutting | | 110 | 26 | 260-490 | .0012-.0039 | .0020-.0059 | .0028-.0067 | .0031-.0079 |
| | | Brass | | 90 | 27 | 160-490 | .0020-.0047 | .0028-.0059 | .0031-.0071 | .0035-.0071 |
| | | Electrolytic copper | | 100 | 28 | 200-520 | .0020-.0059 | .0028-.0071 | .0031-.0079 | .0035-.0087 |
| | Non metallic | Duroplastics, fiber plastics | | | 29 | | | | | |
| | | Hard rubber | | | 30 | | | | | |
| S | High temperature alloys | Fe based | Annealed | | 31 | 30-70 | .0008-.0016 | .0012-.0024 | .0016-.0028 | .0016-.0031 |
| | | | Hardened | | 32 | 30-70 | .0008-.0016 | .0012-.0024 | .0016-.0028 | .0016-.0031 |
| | | Ni or Co based | Annealed | | 33 | 30-70 | .0008-.0016 | .0012-.0024 | .0016-.0028 | .0016-.0031 |
| | | | Hardened | | 34 | 30-70 | .0008-.0016 | .0012-.0024 | .0016-.0028 | .0016-.0031 |
| | | | Cast | | 35 | 30-70 | .0008-.0016 | .0012-.0024 | .0016-.0028 | .0016-.0031 |
| | | Titanium alloys | Pure | 58 | 36 | 30-70 | .0008-.0012 | .0008-.0012 | .0012-.0016 | .0012-.0016 |
| | | | Alpha+Beta alloys, hardened | 152 | 37 | 30-70 | .0008-.0012 | .0008-.0012 | .0012-.0016 | .0012-.0016 |
| H | Hardened steel | Hardened | | 55 HRC | 38 | 30-70 | .0004-.0008 | .0004-.0008 | .0008-.0012 | .0008-.0012 |
| | | Hardened | | 60 HRC | 39 | 30-70 | .0004-.0008 | .0004-.0008 | .0008-.0012 | .0008-.0012 |
| | Chilled cast iron | Cast | | 400 | 40 | 30-70 | .0004-.0008 | .0004-.0008 | .0008-.0012 | .0008-.0012 |
| | Cast iron | Hardened | | 55 HRC | 41 | 30-70 | .0004-.0008 | .0004-.0008 | .0008-.0012 | .0008-.0012 |

- For drill with length to diameter ratio larger than 6xD, reduce feed by 20%
- If the RPM exceeds 10,000, a dynamic balance should be done to the system
- Maximal radial and axial runout should not exceed .0004"

⁽¹⁾ For workpiece materials list, see pages 727-758

As a starting value, the middle of the recommended machining range should be used.

Then, according to wear results, conditions can be changed in order to optimize performance

Machining Data for Solid Carbide Drills - IC908 D=.118-.787"

| ISO | Material | Condition | Tensile Strength [ksi] | Hardness HB | Material Group No. ⁽¹⁾ | Cutting Speed V _c (SFM) | Feed (IPR) vs. Drill Diameter | | | | |
|-----|--|--------------------------------|------------------------|-------------|-----------------------------------|------------------------------------|-------------------------------|------------|------------|------------|-------------|
| | | | | | | | Ø.118-.197 | Ø.201-.315 | Ø.319-.472 | Ø.476-.630 | Ø .634-.787 |
| P | Non-alloy steel and cast steel, free cutting steel | <0.25% C Annealed | 61 | 125 | 1 | 260-390 | .004-.007 | .006-.010 | .008-.012 | .008-.014 | .010-.016 |
| | | ≥0.25% C Annealed | 94 | 190 | 2 | 260-360 | .004-.007 | .006-.010 | .008-.012 | .008-.014 | .010-.016 |
| | | <0.55% C Quenched and tempered | 123 | 250 | 3 | 230-330 | .004-.008 | .006-.011 | .008-.014 | .008-.015 | .010-.017 |
| | | Annealed | 109 | 220 | 4 | | | | | | |
| | | ≥0.55% C Quenched and tempered | 145 | 300 | 5 | | | | | | |
| | Low alloy and cast steel (less than 5% of alloying elements) | Annealed | 87 | 200 | 6 | 160-300 | .004-.007 | .006-.010 | .008-.012 | .008-.014 | .010-.016 |
| | | Quenched and tempered | 135 | 275 | 7 | 200-260 | .004-.007 | .006-.010 | .008-.012 | .008-.014 | .010-.016 |
| | | | 145 | 300 | 8 | | | | | | |
| | | | 174 | 350 | 9 | | | | | | |
| | High alloyed steel, cast steel and tool steel | Annealed | 99 | 200 | 10 | 200-260 | .004-.008 | .006-.011 | .007-.014 | .008-.015 | .010-.017 |
| | | Quenched and tempered | 160 | 325 | 11 | 160-230 | .004-.006 | .005-.008 | .006-.010 | .006-.012 | .007-.013 |
| | Stainless steel and cast steel | Ferritic/martensitic | 99 | 200 | 12 | 160-260 | .002-.004 | .002-.006 | .002-.007 | .003-.008 | .004-.008 |
| | | Martensitic | 119 | 240 | 13 | 80-220 | .002-.004 | .002-.006 | .002-.007 | .003-.008 | .004-.008 |
| M | Stainless steel and cast steel | Austenitic, duplex | 87 | 180 | 14 | 80-220 | .002-.004 | .002-.006 | .002-.007 | .003-.008 | .004-.008 |
| K | Gray cast iron (GG) | Ferritic / pearlitic | | 180 | 15 | 280-340 | .006-.010 | .008-.014 | .010-.018 | .012-.020 | .014-.022 |
| | | Pearlitic / martensitic | | 260 | 16 | 250-300 | .006-.010 | .008-.014 | .010-.018 | .012-.020 | .014-.022 |
| | Nodular cast iron (GGG) | Ferritic | | 160 | 17 | 210-260 | .005-.008 | .006-.010 | .008-.014 | .010-.016 | .012-.018 |
| | | Pearlitic | | 250 | 18 | | | | | | |
| | Malleable cast iron | Ferritic | | 130 | 19 | | | | | | |
| | | Pearlitic | | 230 | 20 | | | | | | |
| N | Aluminum-wrought alloys | Not hardenable | | 60 | 21 | 230-980 | .004-.010 | .006-.014 | .010-.018 | .012-.020 | .014-.022 |
| | | Hardenable | | 100 | 22 | | | | | | |
| | Aluminum-cast alloys | Not hardenable | | 75 | 23 | | | | | | |
| | | ≤12% Si Hardenable | | 90 | 24 | 230-660 | | | | | |
| | | >12% Si High temperature | | 130 | 25 | 230-980 | .003-.007 | .005-.010 | .008-.014 | .010-.018 | 0.12-.020 |
| | Copper alloys | >1% Pb Free cutting | | 110 | 26 | | | | | | |
| | | Brass | | 90 | 27 | | | | | | |
| | | Electrolytic copper | | 100 | 28 | | | | | | |
| | Non metallic | Duroplastics, fiber plastics | | | 29 | | | | | | |
| | | Hard rubber | | | 30 | | | | | | |
| S | High temperature alloys | Fe based | Annealed | 200 | 31 | 50-110 | .001-.003 | .002-.004 | .002-.005 | .003-.006 | .003-.007 |
| | | | Hardened | 280 | 32 | | | | | | |
| | | Ni or Co based | Annealed | 250 | 33 | | | | | | |
| | | | Hardened | 350 | 34 | | | | | | |
| | | | Cast | 320 | 35 | | | | | | |
| | Titanium alloys | Pure | 58 | 190 | 36 | | | | | | |
| | | Alpha+Beta alloys, hardened | 152 | 310 | 37 | | | | | | |
| H | Hardened steel | Hardened | | 55 HRC | 38 | 130-230 | .002-.004 | .003-.005 | .004-.006 | .005-.006 | .006-.007 |
| | | Hardened | | 60 HRC | 39 | | | | | | |
| | Chilled cast iron | Cast | | 400 | 40 | | | | | | |
| | Cast iron | Hardened | | 55 HRC | 41 | | | | | | |

• When using external coolant supply only, reduce cutting speed by 10%

• Use internal coolant supply when machining austenitic stainless steel

⁽¹⁾ For workpiece materials list, see pages 727-758

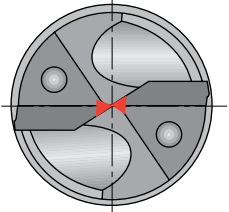
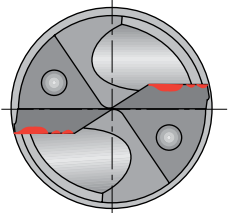
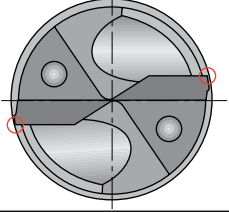
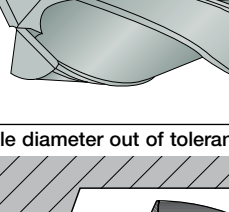
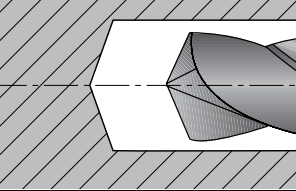
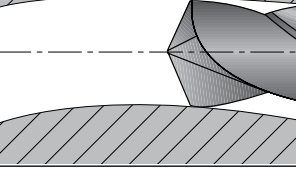
As a starting value, the middle of the recommended machining range should be used.

Then, according to wear results, conditions can be changed in order to optimize performance.

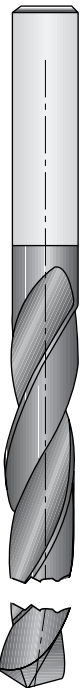
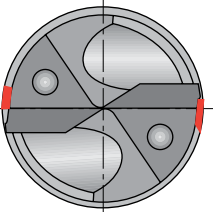
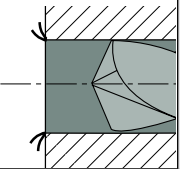
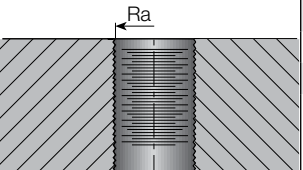
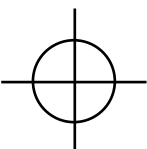
Cutting Recommendations for 3 Flute Solid Carbide Drills

| ISO | Material Group No. | Material | Material Condition | Cutting Speed V_c , (SFM) | Cutting Diameter | | | | | |
|-----|--------------------|--|-------------------------|-----------------------------|------------------|-------------|-------------|-------------|-------------|-----------|
| | | | | | Feed f , IPR | | | | | |
| | | | | | Ø.157-Ø.196 | Ø.200-Ø.236 | Ø.240-Ø.314 | Ø.318-Ø.393 | Ø.397-Ø.472 | |
| P | 1 | Non-alloy steel and cast steel, free cutting steel | <0.25% C | Annealed | 262-460 | .006-.010 | .008-.013 | .010-.017 | .011-.021 | .013-.023 |
| | 2 | | ≥0.25% C | Annealed | 262-426 | | | | | |
| | 3 | | <0.55% C | Quenched and tempered | 262-393 | | | | | |
| | 4 | | ≥0.55% C | Annealed | 230-361 | | | | | |
| | 5 | | | Quenched and tempered | 164-295 | | | | | |
| | 6 | Low alloy and cast steel (less than 5% of alloying elements) | Annealed | 262-393 | .010-.015 | | .011-.019 | .013-.021 | | |
| | 7 | | Quenched and tempered | 230-361 | | | | | | |
| | 8 | | | 164-295 | | | | | | |
| | 9 | | | 131-230 | | | | | | |
| | 10 | High alloyed steel, cast steel and tool steel | Annealed | 164-295 | .006-.008 | .008-.001 | .010-.013 | .010-.013 | .013-.019 | |
| | 11 | | Quenched and tempered | 131-262 | | | | | | |
| K | 15 | Gray cast iron (GG) | Ferritic / pearlitic | 262-460 | .008-.001 | .010-.017 | .013-.021 | .015-.023 | .017-.025 | |
| | 16 | | Pearlitic / martensitic | 230-393 | | | | | | |
| | 17 | Nodular cast iron (GGG) | Ferritic | 262-393 | | .008-.015 | .011-.019 | .013-.021 | .015-.023 | |
| | 18 | | Pearlitic | 230-361 | | | | | | |
| | 19 | Malleable cast iron | Ferritic | 262-393 | | | | | | |
| | 20 | | Pearlitic | 230-361 | | | | | | |

Troubleshooting

| Problem | Cause | Solution |
|---|---|---|
| Chipping on the chisel edge  | <ul style="list-style-type: none"> Poor clamping of the chuck Unsuitable cutting conditions Chisel runout Workpiece movement | <ul style="list-style-type: none"> Check the clamping. Use hydraulic clamping chuck, maxin power chuck or a shrink system. Decrease feed, increase coolant pressure. Check or replace the clamping adaptation. Increase workpiece chucking force. |
| Chipping on the cutting edges / built-up edge  | <ul style="list-style-type: none"> Poor clamping of the chuck Unsuitable cutting conditions Insufficient coolant Rough application | <ul style="list-style-type: none"> Check the clamping. Use hydraulic clamping chuck, maxin power chuck or a shrink system. Increase cutting speed, reduce feed rate. Check cooling lubricant. Increase coolant pressure. In the case of external coolant supply, improve jet direction and add cooling jets. Reduce feed rate by 30-50% during entry and while exiting. |
| Excessive wear on the cutting corners  | <ul style="list-style-type: none"> Insufficient coolant Large runout Unsuitable cutting conditions Rough application Poor clamping of the chuck | <ul style="list-style-type: none"> Check cooling lubricant. Increase coolant pressure. In the case of external coolant supply, improve jet direction and add coolant jets. Check if the runout is within .0008" T.I.R. (radial & axial) Reduce cutting speed, increase feed. Reduce feed rate by 30-50% during entry and exit. Check the clamping. Use hydraulic clamping chuck, maxin power chuck or a shrink system. |
| Chipping on the lands  | <ul style="list-style-type: none"> Workpiece movement Insufficient coolant Wrong drill Unsuitable cutting conditions | <ul style="list-style-type: none"> Increase workpiece chucking force. Check cooling lubricant. Increase coolant pressure. In the case of external coolant supply, improve jet direction and add coolant jets. Check drill type, drilling depth, cooling system and workpiece material. Increase feed. When spot drilling, reduce feed. |
| Hole diameter out of tolerance  | <ul style="list-style-type: none"> Unsuitable cutting conditions Poor clamping of the chuck Large runout Worn out center point (chisel) | <ul style="list-style-type: none"> If hole size is too large, increase cutting speed or reduce feed. If hole size is too small, reduce cutting speed or increase feed. Check the clamping. Use hydraulic clamping chuck, maxin power chuck or a shrink system. Make sure that the drill's runout is within .0008" (radial & axial). Reground cutting edge or replace the drill. |
| Hole not straight  | <ul style="list-style-type: none"> Insufficient chip evacuation Poor clamping of the chuck Workpiece rigidity Worn out drill center point (chisel) Unsuitable cutting conditions | <ul style="list-style-type: none"> Use pecking cycle. Check the clamping. Use hydraulic clamping chuck, maxin power chuck or a shrink system. Increase workpiece chucking force. Reground cutting edge. Increase feed. When spot drilling, reduce feed. |

Troubleshooting

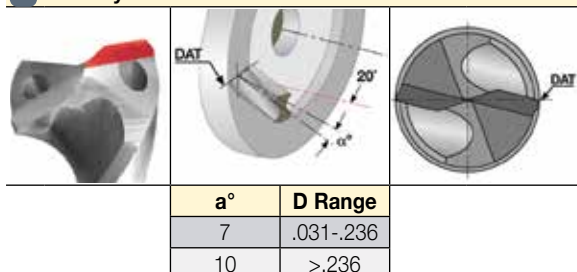
| Problem | Cause | Solution |
|---|--|--|
| Drill breakage  | <ul style="list-style-type: none"> Poor clamping of the chuck Workpiece movement Wrong drill Insufficient coolant Unsuitable cutting conditions Worn out drill center point (chisel) Insufficient chip evacuation | <ul style="list-style-type: none"> Check the clamping. Use hydraulic clamping chuck, maxin power chuck or a shrink system. Increase workpiece chucking force. Check drill type and drilling depth, cooling system and workpiece material. Check cooling lubricant. Increase coolant pressure. In the case of external coolant supply, improve jet direction and add cooling jets. Reduce feed. Regrind cutting edge. Use pecking cycle. |
| Chipping on the cutting corners  | <ul style="list-style-type: none"> Poor clamping of the chuck Workpiece movement Wrong drill Insufficient coolant Unsuitable cutting conditions Worn out or broken cutting corner | <ul style="list-style-type: none"> Check the clamping and adaptation. Use hydraulic clamping chuck, maxin power chuck or a shrink system. Increase workpiece chucking force. Check drill type and drilling depth, cooling system and workpiece material. Possibly use longer drill. Check cooling lubricant. Increase coolant pressure. In the case of external coolant supply, improve jet direction and add cooling jets. Check cutting parameters, and possibly reduce feed. Replace drill or regrind cutting edge. |
| Problem: Burrs on exit  | <ul style="list-style-type: none"> Unsuitable cutting conditions Worn out drill | <ul style="list-style-type: none"> Reduce feed by 30-50% during exit. Replace drill. |
| Rough surface finish  | <ul style="list-style-type: none"> Unsuitable cutting conditions Large runout Chip jamming | <ul style="list-style-type: none"> Adjust feed to improve chip flow. Make sure that the drill's runout is within .0008" (radial & axial). Reduce cutting speed. Increase coolant pressure. Apply pecking procedure. |
| Deviation of hole position  | <ul style="list-style-type: none"> Large runout Poor stability Rough application | <ul style="list-style-type: none"> Make sure that the drill runout is within .0008" (radial & axial). Check and improve drill and workpiece clamping rigidity. When drilling hard materials or sloped surfaces, reduce feed by 30-50% during entrance. Use a short pilot drill with 140° point angle. |

Regrinding Instructions

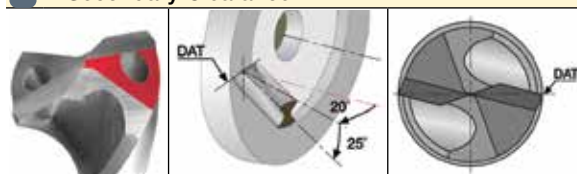
Regrinding Instructions for AP and ACP Geometries

For each grinding operation, rotate the drill 180° and repeat the grinding procedure.

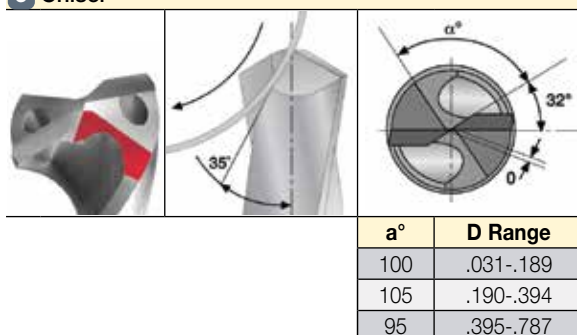
1 Primary Clearance



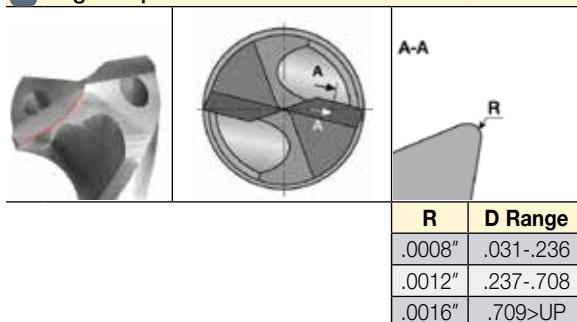
2 Secondary Clearance



3 Chisel



4 Edge Preparation



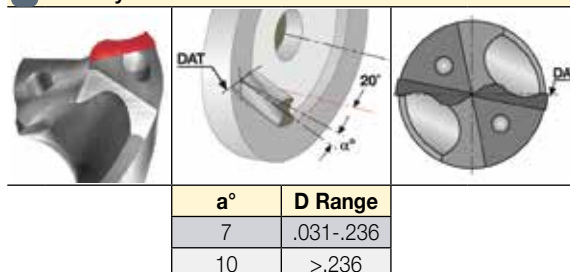
Grinding Wheel Recommended Specifications:

- 1 Diameter grinding wheel: GA2
- 2 Grinding wheel bond: synthetic resin
- 3 Grit size: 325/400 mesh (45/38μ)
- 4 Diamond concentration: C-75 (3.3 carat/cm³)
- 5 Cutting fluid emulsion 3%

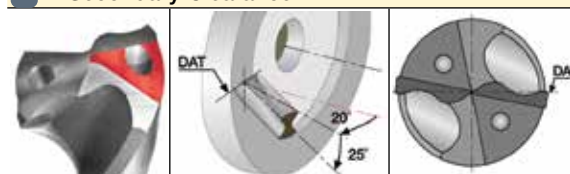
Regrinding Instructions for AG and ACG Geometries

For each grinding operation, rotate the drill 180° and repeat the grinding procedure.

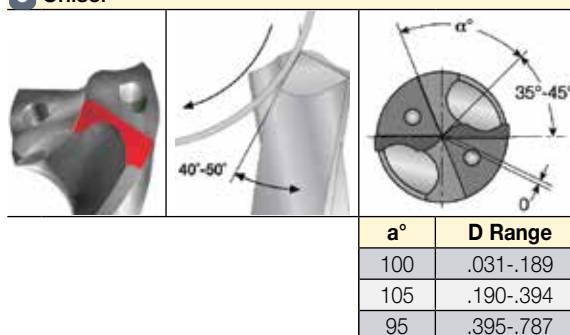
1 Primary Clearance



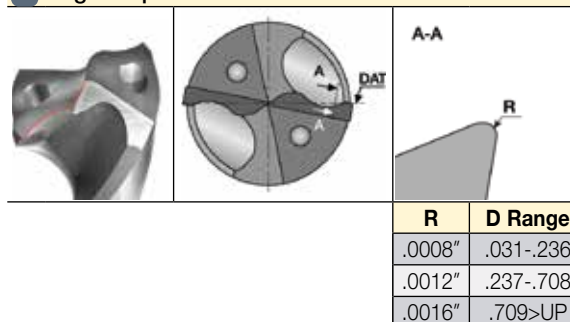
2 Secondary Clearance



3 Chisel



4 Edge Preparation



Grinding Wheel Recommended Specifications:

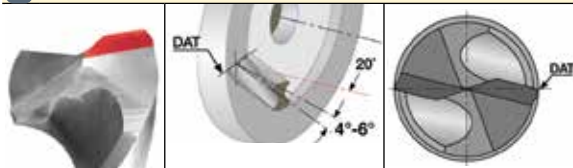
- 1 Diameter grinding wheel: GA2
- 2 Grinding wheel bond: synthetic resin
- 3 Grit size: 325/400 mesh (45/38μ)
- 4 Diamond concentration: C-75 (3.3 carat/cm³)
- 5 Cutting fluid emulsion 3%

Regrinding Instructions

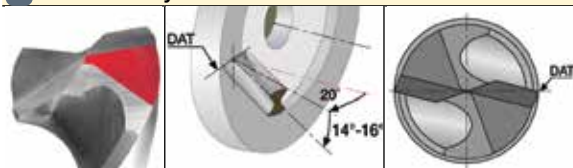
Regrinding Instructions for AH Geometry

For each grinding operation, rotate the drill 180° and repeat the grinding procedure.

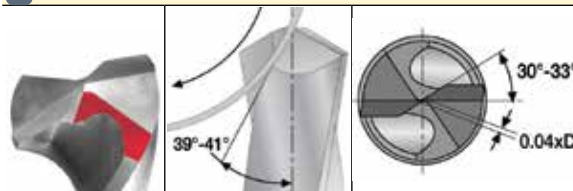
1 Primary Clearance



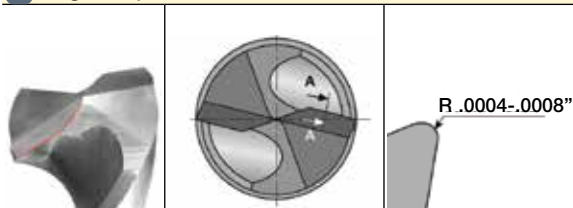
2 Secondary Clearance



3 Chisel



4 Edge Preparation



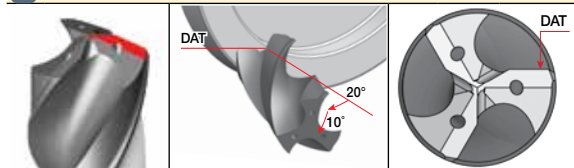
Grinding Wheel Recommended Specifications:

- 1 Diameter grinding wheel: GA2
- 2 Grinding wheel bond: synthetic resin
- 3 Grit size: 325/400 mesh (45/38μ)
- 4 Diamond concentration: C-75 (3.3 carat/cm³)
- 5 Cutting fluid emulsion 3%

Regrinding Instructions for 3 Flute SCCD Drills

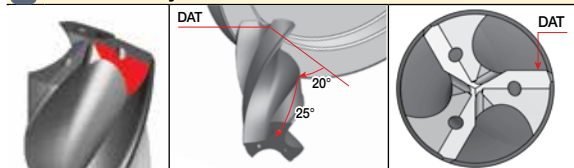
For each grinding operation, rotate the drill 180° and repeat the grinding procedure.

1 Primary Clearance

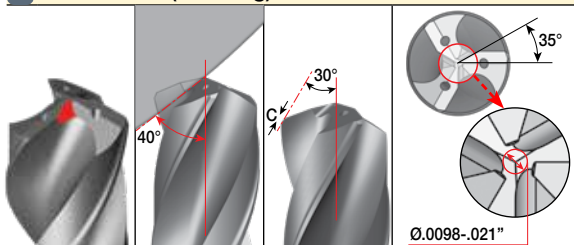


7 .0008" Shank

2 Secondary Clearance

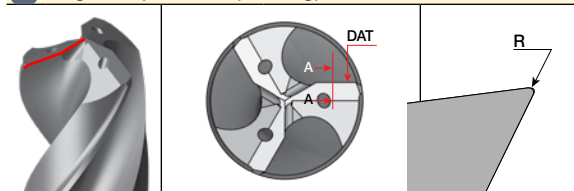


3 Grind chisel (Thinning)



| C | D range |
|-------------|-------------|
| 0.011-0.015 | 0.157-0.314 |
| 0.019-0.023 | 0.315-0.472 |

4 Edge Preparation (Honing)



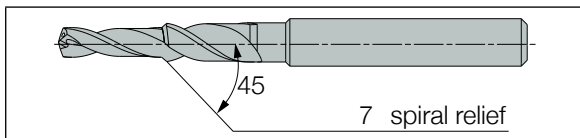
| R | D Range |
|-------------|-------------|
| .0013-.0017 | 0.157-0.236 |
| .0017-.0021 | 0.236-0.472 |

Grinding Wheel Recommended Specifications:

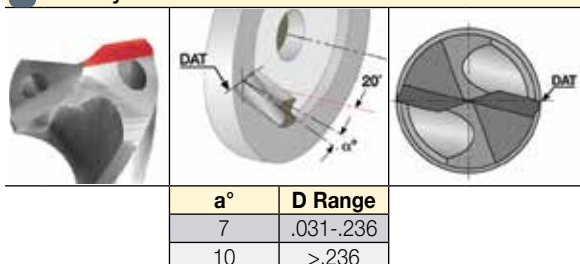
- 1 Diameter grinding wheel: GA2
- 2 Grinding wheel bond: synthetic resin
- 3 Grit size: 325/400 mesh (45/38μ)
- 4 Diamond concentration: C-75 (3.3 carat/cm³)
- 5 Cutting fluid emulsion 3

Regrinding Instructions for SCDT Pre-Thread Solid Drills

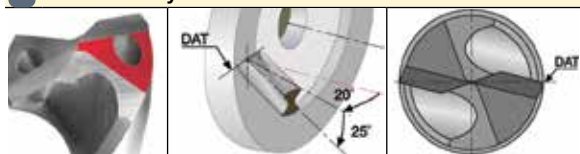
For each grinding operation, rotate the drill 180° and repeat the grinding procedure.



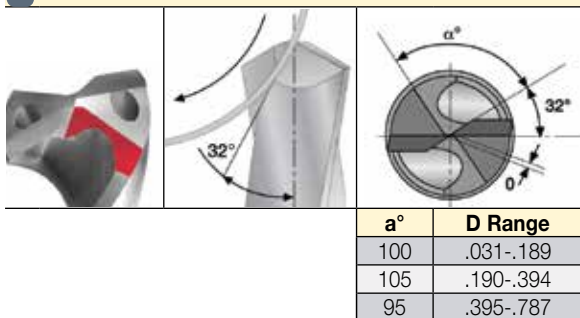
1 Primary Clearance



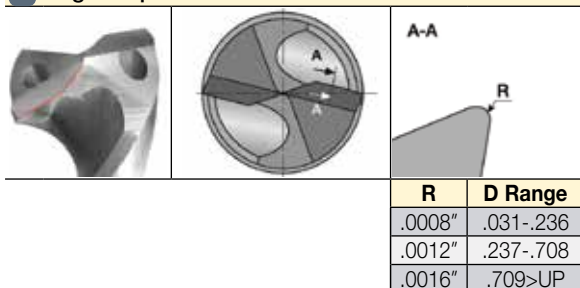
2 Secondary Clearance



3 Chisel



4 Edge Preparation



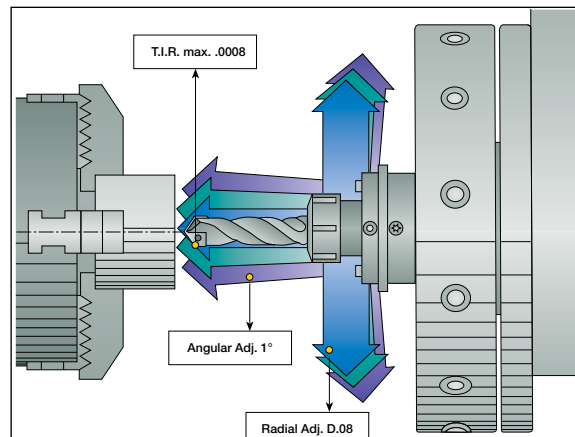
Grinding Wheel Recommended Specifications:

- 1 Diameter grinding wheel: GA2
- 2 Grinding wheel bond: synthetic resin
- 3 Grit size: 325/400 mesh (45/38μ)
- 4 Diamond concentration: C-75 (3.3 carat/cm³)
- 5 Cutting fluid emulsion 3%

GYRO Auxiliary Devices for Lathe Machines

Designed to Correct Misalignment on Stationary Operation

Drills can be used on sloped surfaces up to 6°. When drilling sloped surfaces of more than 6°, reduce feed by 30-50% during penetration of up to .2" depth, or use a spot or pre-hole drill to avoid drill deviation or poor drill performance.



General - Calculations

Spindle Speed (min⁻¹)

$$n = \frac{v_c \cdot 3.82}{\pi \cdot D}$$

Cutting Speed (sfm)

$$v_c = \frac{\pi \cdot D \cdot n}{1000}$$

Table Feed (in/min)

$$v_f = f \cdot n$$

Material Removal Rate (in³/min)

$$Q = \frac{v_f \cdot \pi \cdot D^2}{4000}$$

Power Requirement (kW)

$$P_c = \frac{Q}{395890 \cdot \eta} \cdot k_c \cdot \sin k$$

Torque (lbf*in)

$$M_c = \frac{f \cdot k_c}{1000} \cdot \frac{D^2}{8} \cdot \sin k \cdot km$$

Feed Force (approx.) (lbf)

$$F_f = 0.63 \cdot \frac{D}{2} \cdot f \cdot k_c \cdot \sin k \cdot kf$$

Machining Time (min/piece)

$$T_c = \frac{L+h}{v_f}$$

Machining Cost (\$/piece)

$$C_c = \frac{C_{Mh}}{60} \cdot T_c$$

| | |
|-----------------------|--|
| f | Feed/rev IPR |
| k_c | Material specific cutting force PSI |
| h | Distance from drill point to workpiece before feeding inch |
| L | Depth of hole inch |
| C_{Mh} | Cost/machine hour \$/h |
| η | Machine efficiency % |
| k | 90° } 180° bottom drills |
| sin k | 1 DR... |
| k | 70° } 140° point angle drills |
| sin k | 0.94 |

| | Drill Geometry Coefficient | | |
|------------|----------------------------|------|------|
| | DCM | DCN | SCD |
| km | 1 | 0.85 | 0.85 |
| kf1 | 0.85 | 0.85 | |

Example

Drill DR 220-044-25-07-2D-N (.875") - Material No. 4

$k_c=319080$ psi $k=90^\circ$, $\sin k=1$
 $v_c=650$ sfm $C_{Mh}=50$ \$/h $\eta=0.75$
 $km=1$ $kf=1$ $f=.006$ inch/rev $L=1''$ $h=5''$

$$n = \frac{v_c \cdot 3.82}{\pi \cdot D} = \frac{650 \cdot 3.82}{\pi \cdot .875} = 2838 \text{ min}^{-1}$$

$$v_f = f \cdot n = .006 \cdot 2838 = 17.0 \text{ inch/min}$$

$$Q = \frac{v_f \cdot \pi \cdot D^2}{4} = \frac{434 \cdot 3.14 \cdot (.22)^2}{4} = 10.24 \text{ in}^3/\text{min}$$

$$P_c = \frac{Q}{395890 \cdot \eta} \cdot K_c \cdot \sin k = \frac{10.24}{395890 \cdot 0.75} \cdot 319000 \cdot 1 = 10.89 \text{ HP}$$

$$M_c = \frac{f \cdot K_c}{10000} \cdot \frac{D^2}{8} \cdot \sin k = \frac{.006 \cdot 319000}{10000} \cdot \frac{.875^2}{8} \cdot 1 \cdot 1 = 183 \text{ lbf} \cdot \text{in}$$

$$F_f = .630 \cdot \frac{D}{2} \cdot f \cdot K_c \cdot \sin k = 0.63 \cdot \frac{.875}{2} \cdot .006 \cdot 319000 \cdot 1 \cdot 1 = 528 \text{ lbf}$$

$$T_c = \frac{L+h}{v_f} = \frac{1+5}{17.2} = .09 \text{ min/piece}$$

$$C_c = \frac{C_{Mh}}{60} \cdot T_c = \frac{50 \cdot 0.09}{60} = .073 \text{ $/piece}$$

k_c Values

| Material Group | K _c (ksi) | Material Group | K _c (ksi) |
|----------------|----------------------|----------------|----------------------|
| 1 | 290 | 19 | 131 |
| 2 | 305 | 20 | 145 |
| 3 | 312 | 21 | 73 |
| 4 | 319 | 22 | 116 |
| 5 | 319 | 23 | 116 |
| 6 | 305 | 26 | 102 |
| 7 | 305 | 27 | 102 |
| 8 | 305 | 28 | 247 |
| 9 | 305 | 31 | 435 |
| 10 | 363 | 32 | 450 |
| 11 | 471 | 33 | 479 |
| 12 | 334 | 34 | 479 |
| 13 | 406 | 35 | 464 |
| 14 | 377 | 36 | 247 |
| 15 | 160 | 37 | 247 |
| 16 | 189 | 38 | 667 |
| 17 | 160 | 39 | 682 |
| 18 | 261 | 40 | 667 |
| | | 41 | 653 |

