# QUADTWIST™

**Drill Diameters:**
.4724" - .5315" NEW
(12.0 - 13.5mm)
.5512" - 2.000"
(14.0 - 50.8mm)

**Drill Bodies:**
2xD
3xD
4xD
5xD

**Grades:**
IN2505
IN6505* (Outboard Pocket Only)
IN1030
IN2510
IN10K

**Features:**
- Side coolant port
- Twisted flute for maximum chip evacuation

PRODUCT ANNOUNCEMENT UPDATE 2019

Ingersoll Cutting Tools is proud to announce the expansion to the QUADTWIST™ drilling diameter range. The expanded diameter range will now include .4724"-.5315" (D12.0-13.5mm) diameters which will utilize the new SOMT040204 -SK insert for standard 2xD, 3xD, 4xD and 5xD QUADTWIST™ bodies. The entire product line can now accommodate applications from .4724" – 2.000" (D12.0-50.8mm).

We have implemented a longer shank (-R02) that will give the QUADTWIST™ bodies additional stability when used in stationary applications, allowing two-screw contact with the shank flat creating a more rigid set up. We have also included a cutoff notch to shorten the shank for rotating applications, if necessary.

Ingersoll is also proud to announce -PS chipbreaker that has been specifically designed for the drilling of mild & low carbon steel applications. Additional information is included and can also be found in NPA (NEW-291-1).

Member IMC Group
Ingersoll Cutting Tools

# CARBIDE GRADES

## IN2505 (PVD) - GENERAL PURPOSE

- Sub-micron grade with high hardness and toughness
- New Multi-layered coating for higher chipping resistance
- Post-coat surface treatment improves chipping resistance and reduces cutting forces
- First choice for general applications
- Inboard and outboard pockets

## IN2510 (PVD) - CAST IRON

- Sub-micron grade with high hardness and toughness
- New Multi-layered coating for higher chipping resistance
- Post-coat surface treatment improves chipping resistance and reduces cutting forces
- Inboard and outboard pockets

## IN6505 (CVD) - STEEL APPLICATION

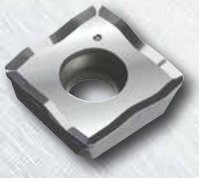
- Multi-layered CVD coating along with post coat surface treatment provides excellent wear resistance and improves chipping resistance
- Peripheral (Outboard) pocket only


## IN1030 (PVD) - C.I., ALU., STAINLESS, TITANIUM

- Tough, slower speed applications
- If inboard chipping is an issue, IN1030 can tolerate low SFM
- More forgiving when machine rigidity is an issue

## IN10K (UNCOATED) - ALUMINUM

- Polished
- Upsharp



# MAXIMUM OFFSET DIMENSIONS

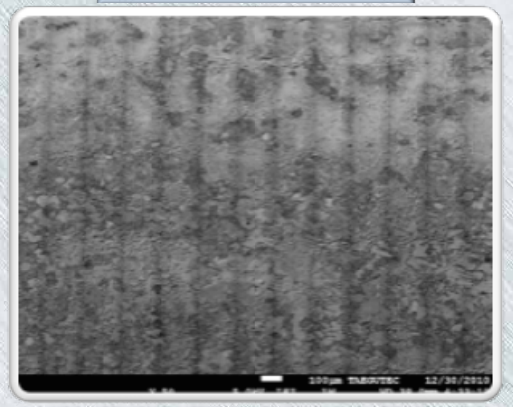
| Drill Diameter | Insert | X-Max: Radial Adjustment | Max Offset Diameter |
|---|---|---|---|
| 0.500" (12.7mm) | SOMT 040204 | 0.012 | 0.524 |
| 0.531" (13.5mm) | SOMT 040204 | 0.008 | 0.547 |
| 0.563" (14.3mm) | SOMT 050204 | 0.015 | 0.593 |
| 0.594" (15.0mm) | SOMT 050204 | 0.013 | 0.620 |
| 0.626" (15.9mm) | SOMT 050204 | 0.011 | 0.648 |
| 0.657" (16.7mm) | SOMT 060204 | 0.018 | 0.693 |
| 0.688" (17.5mm) | SOMT 060204 | 0.013 | 0.714 |
| 0.719" (18.3mm) | SOMT 060204 | 0.011 | 0.741 |
| 0.750" (19.1mm) | SOMT 060204 | 0.010 | 0.770 |
| 0.781" (19.8mm) | SOMT 070306 | 0.020 | 0.821 |
| 0.813" (20.6mm) | SOMT 070306 | 0.015 | 0.843 |
| 0.843" (21.4mm) | SOMT 070306 | 0.011 | 0.865 |
| 0.875" (22.2mm) | SOMT 070306 | 0.008 | 0.891 |
| 0.906" (23.0mm) | SOMT 08T306 | 0.025 | 0.956 |
| 0.938" (23.8mm) | SOMT 08T306 | 0.022 | 0.982 |
| 0.969" (24.6mm) | SOMT 08T306 | 0.018 | 1.005 |
| 0.984" (25.0mm) | SOMT 08T306 | 0.015 | 1.014 |
| 1.000" (25.4mm) | SOMT 08T306 | 0.015 | 1.030 |
| 1.031" (26.2mm) | SOMT 08T306 | 0.011 | 1.053 |
| 1.063" (27.0mm) | SOMT 090308 | 0.028 | 1.119 |
| 1.094" (27.8mm) | SOMT 090308 | 0.024 | 1.142 |
| 1.125" (28.6mm) | SOMT 090308 | 0.015 | 1.155 |
| 1.156" (29.4mm) | SOMT 090308 | 0.015 | 1.186 |
| 1.187" (30.2mm) | SOMT 090308 | 0.011 | 1.209 |
| 1.219" (31.0mm) | SOMT 090308 | 0.008 | 1.235 |
| 1.250" (31.8mm) | SOMT 11T308 | 0.035 | 1.320 |
| 1.281" (32.5mm) | SOMT 11T308 | 0.031 | 1.343 |
| 1.312" (33.3mm) | SOMT 11T308 | 0.031 | 1.374 |
| 1.343" (34.1mm) | SOMT 11T308 | 0.028 | 1.399 |
| 1.375" (34.9mm) | SOMT 11T308 | 0.024 | 1.423 |
| 1.406" (35.7mm) | SOMT 11T308 | 0.015 | 1.436 |
| 1.437" (36.5mm) | SOMT 130408 | 0.047 | 1.531 |
| 1.468" (37.3mm) | SOMT 130408 | 0.047 | 1.562 |
| 1.500" (38.1mm) | SOMT 130408 | 0.039 | 1.578 |
| 1.531" (38.9mm) | SOMT 130408 | 0.035 | 1.601 |
| 1.562" (39.7mm) | SOMT 130408 | 0.028 | 1.618 |
| 1.594" (40.5mm) | SOMT 130408 | 0.024 | 1.642 |
| 1.625" (41.3mm) | SOMT 130408 | 0.024 | 1.673 |
| 1.687" (42.8mm) | SOMT 130408 | 0.012 | 1.711 |
| 1.719" (43.7mm) | SOMT 150510 | 0.047 | 1.813 |
| 1.750" (44.5mm) | SOMT 150510 | 0.043 | 1.836 |
| 1.781" (45.2mm) | SOMT 150510 | 0.043 | 1.867 |
| 1.813" (46.0mm) | SOMT 150510 | 0.039 | 1.891 |
| 1.875" (47.6mm) | SOMT 150510 | 0.028 | 1.931 |
| 1.937" (49.2mm) | SOMT 150510 | 0.024 | 1.985 |
| 1.969" (50.0mm) | SOMT 150510 | 0.020 | 2.009 |
| 2.000" (50.8mm) | SOMT 150510 | 0.015 | 2.030 |

Note: Only Recommended For 2xD and 3xD Drill Bodies

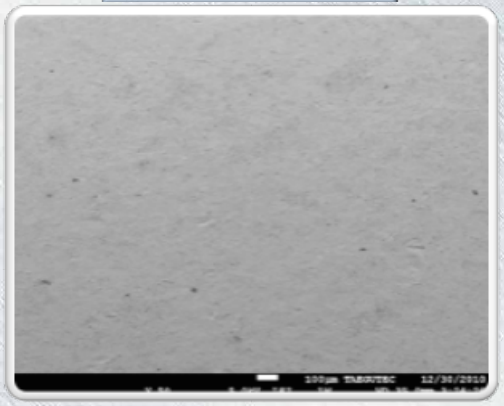
## IMPROVED BODY RIGIDITY & PROLONGED TOOL LIFE

Drill Body Hardness - over HRc 50
Special Surface Treatment - Surface hardening & smooth chip flow
- Increases resistance to fatigue failure, corrosion and stress cracking

[Before treatment]



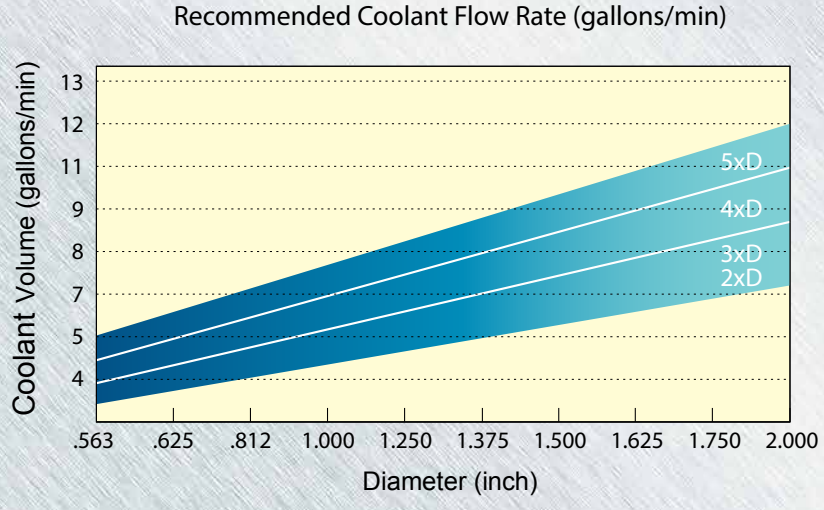
[After treatment]



## INSERT TOLERANCE

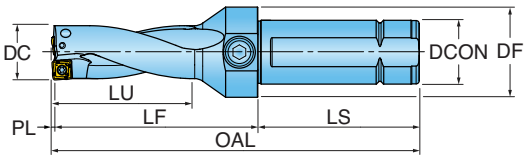
| L/D | Hole Tolerance | |
|---|---|---|
| | Quad-Twist | Quad-Drill+ |
| 2XD | 0/+0.006 | 0/+0.008 |
| 3XD | 0/+0.008 | 0/+0.010 |
| 4XD | 0/+0.010 | 0/+0.012 |
| 5XD | 0/+0.012 | 0/+0.014 |

## INTERNAL COOLING



# QR SERIES 2XD INDEXABLE DRILL (-R02 SHANK)

NOTE: Coolant fittings PF0012, PF0013 & PF0015 are ordered separately.

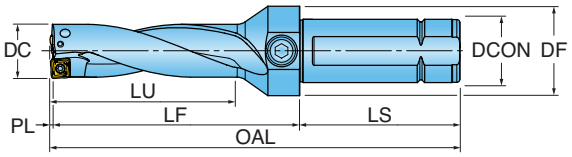



| 2xD Bodies | Dimensions (inch) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drill Number | DC (mm) | DC (inch) | PL | DCON | DF | LU | LF | OAL | LS | Insert | Screw | Torx | Torque (in. lbs.) | Coolant Fitting | Flange Plug |
| NEW QR0127025N5R02 | 12.7 | 0.500 | 0.032 | 1.000 | 1.26 | 1.02 | 2.05 | 5.20 | 3.16 | SOMT 040204 | TS 18041I/HG | DS-TP06S-NEU | 3.5-4.4 | PF-0012 | PP02-01 |
| NEW QR0135027N5R02 | 13.5 | 0.531 | 0.032 | 1.000 | 1.26 | 1.10 | 2.13 | 5.28 | 3.16 | | | | | | |
| QR0143029N5R02 | 14.3 | 0.563 | 0.030 | 1.000 | 1.26 | 1.13 | 2.13 | 5.28 | 3.16 | | | | | | |
| QR0150030N5R02 | 15.0 | 0.591 | 0.030 | 1.000 | 1.26 | 1.19 | 2.24 | 5.39 | 3.16 | SOMT050204 | SM20-043-00 | DS-TP06S-NEU | 5.0-9.0 | PF-0012 | PP02-01 |
| QR0159032N5R02 | 15.9 | 0.626 | 0.030 | 1.000 | 1.26 | 1.25 | 2.36 | 5.51 | 3.16 | | | | | | |
| QR0167033N5R02 | 16.7 | 0.658 | 0.033 | 1.000 | 1.26 | 1.31 | 2.44 | 5.59 | 3.16 | | | | | | |
| QR0175035N5R02 | 17.5 | 0.689 | 0.033 | 1.000 | 1.26 | 1.38 | 2.56 | 5.71 | 3.16 | SOMT060204 | TS 22052I/HG-P | DS-TP07S | 7.0-11.0 | PF-0012 | PP02-01 |
| QR0183037N5R02 | 18.3 | 0.721 | 0.033 | 1.000 | 1.26 | 1.44 | 2.56 | 5.71 | 3.16 | | | | | | |
| QR0191038N5R02 | 19.1 | 0.750 | 0.033 | 1.000 | 1.26 | 1.50 | 2.64 | 5.79 | 3.16 | | | | | | |
| QR0198040N5R02 | 19.8 | 0.781 | 0.045 | 1.000 | 1.26 | 1.56 | 2.80 | 5.94 | 3.16 | | | | | | |
| QR0206041N5R02 | 20.6 | 0.813 | 0.045 | 1.000 | 1.26 | 1.63 | 2.87 | 6.02 | 3.16 | SOMT070306 | TS 22052I/HG-P | DS-TP07S | 7.0-11.0 | PF-0012 | PP02-01 |
| QR0214042N5R02 | 21.4 | 0.843 | 0.045 | 1.000 | 1.26 | 1.69 | 2.95 | 6.10 | 3.16 | | | | | | |
| QR0222044N5R02 | 22.2 | 0.875 | 0.045 | 1.000 | 1.26 | 1.75 | 2.95 | 6.10 | 3.16 | | | | | | |
| QR0230046N6R02 | 23.0 | 0.906 | 0.049 | 1.250 | 1.77 | 1.81 | 3.19 | 6.34 | 3.16 | | | | | | |
| QR0238048N6R02 | 23.8 | 0.938 | 0.049 | 1.250 | 1.77 | 1.88 | 3.31 | 6.46 | 3.16 | | | | | | |
| QR0246049N6R02 | 24.6 | 0.969 | 0.049 | 1.250 | 1.77 | 1.94 | 3.43 | 6.57 | 3.16 | SOMT08T306 | SO 25065I | HZS.0004 | 7.0-11.0 | PF-0013 | PP04-01 |
| QR0250050N6R02 | 25.0 | 0.984 | 0.049 | 1.250 | 1.77 | 1.97 | 3.43 | 6.57 | 3.16 | | | | | | |
| QR0254051N6R02 | 25.4 | 1.000 | 0.049 | 1.250 | 1.77 | 2.00 | 3.50 | 6.65 | 3.16 | | | | | | |
| QR0262052N6R02 | 26.2 | 1.031 | 0.049 | 1.250 | 1.77 | 2.06 | 3.50 | 6.65 | 3.16 | | | | | | |
| QR0270054N6R02 | 27.0 | 1.063 | 0.059 | 1.250 | 1.77 | 2.13 | 3.43 | 6.57 | 3.16 | | | | | | |
| QR0278056N6R02 | 27.8 | 1.094 | 0.059 | 1.250 | 1.77 | 2.19 | 3.50 | 6.65 | 3.16 | | | | | | |
| QR0286057N6R02 | 28.6 | 1.125 | 0.059 | 1.250 | 1.77 | 2.25 | 3.58 | 6.73 | 3.16 | SOMT09T308 | SM35-088-60 | DS-T10S | 25.0-30.0 | PF-0013 | PP04-01 |
| QR0294059N6R02 | 29.4 | 1.156 | 0.059 | 1.250 | 1.77 | 2.31 | 3.58 | 6.73 | 3.16 | | | | | | |
| QR0302060N6R02 | 30.2 | 1.187 | 0.059 | 1.250 | 1.77 | 2.37 | 3.66 | 6.81 | 3.16 | | | | | | |
| QR0310062N6R02 | 31.0 | 1.219 | 0.059 | 1.250 | 1.77 | 2.44 | 3.74 | 6.89 | 3.16 | | | | | | |
| QR0318063N6R02 | 31.8 | 1.250 | 0.066 | 1.250 | 1.77 | 2.50 | 3.90 | 7.05 | 3.16 | | | | | | |
| QR0325065N6R02 | 32.5 | 1.281 | 0.066 | 1.250 | 1.77 | 2.56 | 3.98 | 7.13 | 3.16 | | | | | | |
| QR0333067N6R02 | 33.3 | 1.312 | 0.066 | 1.250 | 1.77 | 2.62 | 3.98 | 7.13 | 3.16 | SOMT11T308 | SM35-088-60 | DS-T10S | 25.0-30.0 | PF-0013 | PP04-01 |
| QR0341068N6R02 | 34.1 | 1.343 | 0.066 | 1.250 | 1.77 | 2.69 | 4.06 | 7.20 | 3.16 | | | | | | |
| QR0349070N6R02 | 34.9 | 1.375 | 0.066 | 1.250 | 1.77 | 2.75 | 4.13 | 7.28 | 3.16 | | | | | | |
| QR0357071N6R02 | 35.7 | 1.406 | 0.066 | 1.250 | 1.77 | 2.81 | 4.21 | 7.36 | 3.16 | | | | | | |
| QR0365073N6R02 | 36.5 | 1.437 | 0.074 | 1.250 | 2.16 | 2.87 | 4.37 | 7.52 | 3.16 | | | | | | |
| QR0373075N6R02 | 37.3 | 1.468 | 0.074 | 1.250 | 2.16 | 2.94 | 4.37 | 7.52 | 3.16 | | | | | | |
| QR0381076N6R02 | 38.1 | 1.500 | 0.074 | 1.250 | 2.16 | 3.00 | 4.45 | 7.60 | 3.16 | | | | | | |
| QR0389078N6R02 | 38.9 | 1.531 | 0.074 | 1.250 | 2.16 | 3.06 | 4.53 | 7.68 | 3.16 | SOMT130408 | SE02-82 | T-15/51 | 30.0-35.0 | PF-0013 | PP04-01 |
| QR0397079N6R02 | 39.7 | 1.562 | 0.074 | 1.250 | 2.16 | 3.12 | 4.61 | 7.76 | 3.16 | | | | | | |
| QR0405081N6R02 | 40.5 | 1.594 | 0.074 | 1.250 | 2.16 | 3.19 | 4.61 | 7.76 | 3.16 | | | | | | |
| QR0413083N6R02 | 41.3 | 1.625 | 0.074 | 1.250 | 2.16 | 3.25 | 4.69 | 7.83 | 3.16 | | | | | | |
| QR0428086N6R02 | 42.8 | 1.687 | 0.074 | 1.250 | 2.16 | 3.37 | 4.84 | 8.08 | 3.16 | | | | | | |
| QR0437087N7R02 | 43.7 | 1.719 | 0.084 | 1.500 | 2.36 | 3.43 | 5.04 | 8.19 | 3.16 | | | | | | |
| QR0445089N7R02 | 44.5 | 1.750 | 0.084 | 1.500 | 2.36 | 3.50 | 5.04 | 8.19 | 3.16 | | | | | | |
| QR0452090N7R02 | 45.2 | 1.781 | 0.084 | 1.500 | 2.36 | 3.56 | 5.12 | 8.27 | 3.16 | | | | | | |
| QR0460092N7R02 | 46.0 | 1.813 | 0.084 | 1.500 | 2.36 | 3.63 | 5.20 | 8.35 | 3.16 | SOMT150510 | SM50-113-20 | DS-0034 | 45.0-50.0 | PF-0015 | PP04-01 |
| QR0476095N7R02 | 47.6 | 1.875 | 0.084 | 1.500 | 2.36 | 3.75 | 5.35 | 8.50 | 3.16 | | | | | | |
| QR0492098N7R02 | 49.2 | 1.937 | 0.084 | 1.500 | 2.36 | 3.87 | 5.43 | 8.58 | 3.16 | | | | | | |
| QR0500100N7R02 | 50.0 | 1.969 | 0.084 | 1.500 | 2.36 | 3.94 | 5.51 | 8.66 | 3.16 | | | | | | |
| QR0508102N7R02 | 50.8 | 2.000 | 0.084 | 1.500 | 2.36 | 4.00 | 5.59 | 8.74 | 3.16 | | | | | | |

Note: Metric bodies also available. Please see ecat for more information.

# QR SERIES 3XD INDEXABLE DRILL (-R02 SHANK)

NOTE: Coolant fittings PF0012, PF0013 & PF0015 are ordered separately.

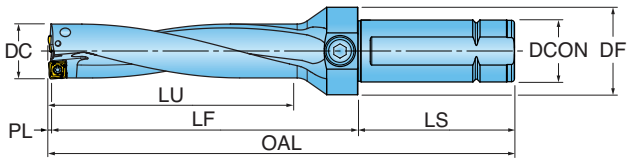



| 3xD Bodies | Dimensions (inch) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drill Number | DC (mm) | DC (inch) | PL | DCON | DF | LU | LF | OAL | LS | Insert | Screw | Torx | Torque (in. lbs.) | Coolant Fitting | Flange Plug |
| NEW QR0127038N5R02 | 12.7 | 0.500 | 0.032 | 1.000 | 1.26 | 1.54 | 2.56 | 5.71 | 3.16 | SOMT 040204 | TS 18041I/HG | DS-TP06S-NEU | 3.5-4.4 | PF-0012 | PP02-01 |
| NEW QR0135041N5R02 | 13.5 | 0.531 | 0.032 | 1.000 | 1.26 | 1.65 | 2.68 | 5.83 | 3.16 | | | | | | |
| QR0143043N5R02 | 14.3 | 0.563 | 0.030 | 1.000 | 1.26 | 1.69 | 2.68 | 5.83 | 3.16 | | | | | | |
| QR0150045N5R02 | 15.0 | 0.591 | 0.030 | 1.000 | 1.26 | 1.78 | 2.83 | 5.98 | 3.16 | SOMT050204 | SM20-043-00 | DS-TP06S-NEU | 5.0-9.0 | PF-0012 | PP02-01 |
| QR0159048N5R02 | 15.9 | 0.626 | 0.030 | 1.000 | 1.26 | 1.87 | 2.99 | 6.14 | 3.16 | | | | | | |
| QR0167050N5R02 | 16.7 | 0.658 | 0.033 | 1.000 | 1.26 | 1.97 | 3.11 | 6.26 | 3.16 | | | | | | |
| QR0175053N5R02 | 17.5 | 0.689 | 0.033 | 1.000 | 1.26 | 2.06 | 3.27 | 6.42 | 3.16 | SOMT060204 | TS 22052I/HG-P | DS-TP07S | 7.0-11.0 | PF-0012 | PP02-01 |
| QR0183055N5R02 | 18.3 | 0.721 | 0.033 | 1.000 | 1.26 | 2.16 | 3.27 | 6.42 | 3.16 | | | | | | |
| QR0191057N5R02 | 19.1 | 0.750 | 0.033 | 1.000 | 1.26 | 2.25 | 3.39 | 6.54 | 3.16 | | | | | | |
| QR0198059N5R02 | 19.8 | 0.781 | 0.045 | 1.000 | 1.26 | 2.34 | 3.58 | 6.73 | 3.16 | | | | | | |
| QR0206062N5R02 | 20.6 | 0.813 | 0.045 | 1.000 | 1.26 | 2.44 | 3.70 | 6.85 | 3.16 | SOMT070306 | TS 22052I/HG-P | DS-TP07S | 7.0-11.0 | PF-0012 | PP02-01 |
| QR0214064N5R02 | 21.4 | 0.843 | 0.045 | 1.000 | 1.26 | 2.53 | 3.82 | 6.97 | 3.16 | | | | | | |
| QR0222067N5R02 | 22.2 | 0.875 | 0.045 | 1.000 | 1.26 | 2.63 | 3.82 | 6.97 | 3.16 | | | | | | |
| QR0230069N6R02 | 23.0 | 0.906 | 0.049 | 1.250 | 1.77 | 2.72 | 4.09 | 7.24 | 3.16 | | | | | | |
| QR0238071N6R02 | 23.8 | 0.938 | 0.049 | 1.250 | 1.77 | 2.81 | 4.25 | 7.40 | 3.16 | | | | | | |
| QR0246074N6R02 | 24.6 | 0.969 | 0.049 | 1.250 | 1.77 | 2.91 | 4.41 | 7.56 | 3.16 | SOMT08T306 | SO 25065I | HZS.0004 | 7.0-11.0 | PF-0013 | PP04-01 |
| QR0250075N6R02 | 25.0 | 0.984 | 0.049 | 1.250 | 1.77 | 2.95 | 4.41 | 7.56 | 3.16 | | | | | | |
| QR0254076N6R02 | 25.4 | 1.000 | 0.049 | 1.250 | 1.77 | 3.00 | 4.53 | 7.68 | 3.16 | | | | | | |
| QR0262079N6R02 | 26.2 | 1.031 | 0.049 | 1.250 | 1.77 | 3.09 | 4.53 | 7.68 | 3.16 | | | | | | |
| QR0270081N6R02 | 27.0 | 1.063 | 0.059 | 1.250 | 1.77 | 3.19 | 4.49 | 7.64 | 3.16 | | | | | | |
| QR0278083N6R02 | 27.8 | 1.094 | 0.059 | 1.250 | 1.77 | 3.28 | 4.61 | 7.76 | 3.16 | | | | | | |
| QR0286086N6R02 | 28.6 | 1.125 | 0.059 | 1.250 | 1.77 | 3.38 | 4.72 | 7.87 | 3.16 | SOMT09T308 | SM35-088-60 | DS-T10S | 25.0-30.0 | PF-0013 | PP04-01 |
| QR0294088N6R02 | 29.4 | 1.156 | 0.059 | 1.250 | 1.77 | 3.47 | 4.72 | 7.87 | 3.16 | | | | | | |
| QR0302090N6R02 | 30.2 | 1.187 | 0.059 | 1.250 | 1.77 | 3.56 | 4.84 | 7.99 | 3.16 | | | | | | |
| QR0310093N6R02 | 31.0 | 1.219 | 0.059 | 1.250 | 1.77 | 3.66 | 4.96 | 8.11 | 3.16 | | | | | | |
| QR0318095N6R02 | 31.8 | 1.250 | 0.066 | 1.250 | 1.77 | 3.75 | 5.16 | 8.31 | 3.16 | | | | | | |
| QR0325098N6R02 | 32.5 | 1.281 | 0.066 | 1.250 | 1.77 | 3.84 | 5.28 | 8.43 | 3.16 | | | | | | |
| QR0333100N6R02 | 33.3 | 1.312 | 0.066 | 1.250 | 1.77 | 3.94 | 5.28 | 8.43 | 3.16 | SOMT11T308 | SM35-088-60 | DS-T10S | 25.0-30.0 | PF-0013 | PP04-01 |
| QR0341102N6R02 | 34.1 | 1.343 | 0.066 | 1.250 | 1.77 | 4.03 | 5.39 | 8.54 | 3.16 | | | | | | |
| QR0349105N6R02 | 34.9 | 1.375 | 0.066 | 1.250 | 1.77 | 4.13 | 5.51 | 8.66 | 3.16 | | | | | | |
| QR0357107N6R02 | 35.7 | 1.406 | 0.066 | 1.250 | 1.77 | 4.22 | 5.63 | 8.78 | 3.16 | | | | | | |
| QR0365110N6R02 | 36.5 | 1.437 | 0.074 | 1.250 | 2.16 | 4.31 | 5.83 | 8.98 | 3.16 | | | | | | |
| QR0373112N6R02 | 37.3 | 1.468 | 0.074 | 1.250 | 2.16 | 4.41 | 5.83 | 8.98 | 3.16 | | | | | | |
| QR0381114N6R02 | 38.1 | 1.500 | 0.074 | 1.250 | 2.16 | 4.50 | 5.94 | 9.09 | 3.16 | | | | | | |
| QR0389117N6R02 | 38.9 | 1.531 | 0.074 | 1.250 | 2.16 | 4.59 | 6.06 | 9.21 | 3.16 | | | | | | |
| QR0397119N6R02 | 39.7 | 1.562 | 0.074 | 1.250 | 2.16 | 4.69 | 6.18 | 9.33 | 3.16 | SOMT130408 | SE02-82 | T-15/51 | 30.0-35.0 | PF-0013 | PP04-01 |
| QR0405122N6R02 | 40.5 | 1.594 | 0.074 | 1.250 | 2.16 | 4.78 | 6.18 | 9.33 | 3.16 | | | | | | |
| QR0413124N6R02 | 41.3 | 1.625 | 0.074 | 1.250 | 2.16 | 4.87 | 6.30 | 9.45 | 3.16 | | | | | | |
| QR0428128N6R02 | 42.8 | 1.687 | 0.074 | 1.250 | 2.16 | 5.06 | 6.54 | 9.69 | 3.16 | | | | | | |
| QR0437131N7R02 | 43.7 | 1.719 | 0.084 | 1.500 | 2.36 | 5.16 | 6.77 | 9.92 | 3.16 | | | | | | |
| QR0445134N7R02 | 44.5 | 1.750 | 0.084 | 1.500 | 2.36 | 5.25 | 6.77 | 9.92 | 3.16 | | | | | | |
| QR0452136N7R02 | 45.2 | 1.781 | 0.084 | 1.500 | 2.36 | 5.34 | 6.89 | 10.04 | 3.16 | | | | | | |
| QR0460138N7R02 | 46.0 | 1.813 | 0.084 | 1.500 | 2.36 | 5.44 | 7.01 | 10.16 | 3.16 | SOMT150510 | SM50-113-20 | DS-0034 | 45.0-50.0 | PF-0015 | PP04-01 |
| QR0476143N7R02 | 47.6 | 1.875 | 0.084 | 1.500 | 2.36 | 5.63 | 7.24 | 10.39 | 3.16 | | | | | | |
| QR0492148N7R02 | 49.2 | 1.937 | 0.084 | 1.500 | 2.36 | 5.81 | 7.36 | 10.51 | 3.16 | | | | | | |
| QR0500150N7R02 | 50.0 | 1.969 | 0.084 | 1.500 | 2.36 | 5.91 | 7.48 | 10.63 | 3.16 | | | | | | |
| QR0508152N7R02 | 50.8 | 2.000 | 0.084 | 1.500 | 2.36 | 6.00 | 7.60 | 10.75 | 3.16 | | | | | | |

Note: Metric bodies also available. Please see ecat for more information.

# QR SERIES 4XD INDEXABLE DRILL (-R02 SHANK)

NOTE: Coolant fittings PF0012, PF0013 & PF0015 are ordered separately.

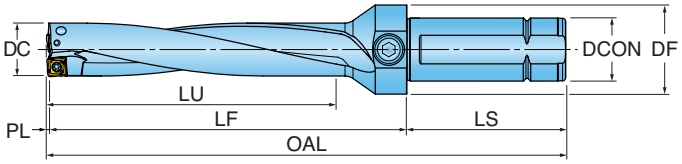



| 4xD Bodies | Dimensions (inch) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drill Number | DC (mm) | DC (inch) | PL | DCON | DF | LU | LF | OAL | LS | Insert | Screw | Torx | Torque (in. lbs.) | Coolant Fitting | Flange Plug |
| NEW QR0127051N5R02 | 12.7 | 0.500 | 0.032 | 1.000 | 1.26 | 2.05 | 3.07 | 6.22 | 3.16 | SOMT 040204 | TS 18041I/HG | DS-TP06S-NEU | 3.5-4.4 | PF-0012 | PP02-01 |
| NEW QR0135054N5R02 | 13.5 | 0.531 | 0.032 | 1.000 | 1.26 | 2.20 | 3.23 | 6.38 | 3.16 | | | | | | |
| QR0143057N5R02 | 14.3 | 0.563 | 0.030 | 1.000 | 1.26 | 2.25 | 3.23 | 6.38 | 3.16 | | | | | | |
| QR0150060N5R02 | 15.0 | 0.591 | 0.030 | 1.000 | 1.26 | 2.37 | 3.43 | 6.58 | 3.16 | SOMT050204 | SM20-043-00 | DS-TP06S-NEU | 5.0-9.0 | PF-0012 | PP02-01 |
| QR0159064N5R02 | 15.9 | 0.626 | 0.030 | 1.000 | 1.26 | 2.50 | 3.62 | 6.77 | 3.16 | | | | | | |
| QR0167067N5R02 | 16.7 | 0.658 | 0.033 | 1.000 | 1.26 | 2.63 | 3.78 | 6.93 | 3.16 | | | | | | |
| QR0175070N5R02 | 17.5 | 0.689 | 0.033 | 1.000 | 1.26 | 2.75 | 3.98 | 7.13 | 3.16 | SOMT060204 | TS 22052I/HG-P | DS-TP07S | 7.0-11.0 | PF-0012 | PP02-01 |
| QR0183073N5R02 | 18.3 | 0.721 | 0.033 | 1.000 | 1.26 | 2.87 | 3.98 | 7.13 | 3.16 | | | | | | |
| QR0191076N5R02 | 19.1 | 0.750 | 0.033 | 1.000 | 1.26 | 3.00 | 4.13 | 7.28 | 3.16 | | | | | | |
| QR0198079N5R02 | 19.8 | 0.781 | 0.045 | 1.000 | 1.26 | 3.13 | 4.37 | 7.52 | 3.16 | | | | | | |
| QR0206082N5R02 | 20.6 | 0.813 | 0.045 | 1.000 | 1.26 | 3.25 | 4.53 | 7.68 | 3.16 | SOMT070306 | TS 22052I/HG-P | DS-TP07S | 7.0-11.0 | PF-0012 | PP02-01 |
| QR0214086N5R02 | 21.4 | 0.843 | 0.045 | 1.000 | 1.26 | 3.37 | 4.69 | 7.84 | 3.16 | | | | | | |
| QR0222089N5R02 | 22.2 | 0.875 | 0.045 | 1.000 | 1.26 | 3.50 | 4.69 | 7.84 | 3.16 | | | | | | |
| QR0230092N6R02 | 23.0 | 0.906 | 0.049 | 1.250 | 1.77 | 3.62 | 5.00 | 8.15 | 3.16 | | | | | | |
| QR0238095N6R02 | 23.8 | 0.938 | 0.049 | 1.250 | 1.77 | 3.75 | 5.20 | 8.35 | 3.16 | | | | | | |
| QR0246098N6R02 | 24.6 | 0.969 | 0.049 | 1.250 | 1.77 | 3.87 | 5.39 | 8.54 | 3.16 | SOMT08T306 | SO 25065I | HZS.0004 | 7.0-11.0 | PF-0013 | PP04-01 |
| QR0250100N6R02 | 25.0 | 0.984 | 0.049 | 1.250 | 1.77 | 3.94 | 5.39 | 8.54 | 3.16 | | | | | | |
| QR0254102N6R02 | 25.4 | 1.000 | 0.049 | 1.250 | 1.77 | 4.00 | 5.55 | 8.70 | 3.16 | | | | | | |
| QR0262105N6R02 | 26.2 | 1.031 | 0.049 | 1.250 | 1.77 | 4.13 | 5.55 | 8.70 | 3.16 | | | | | | |
| QR0270108N6R02 | 27.0 | 1.063 | 0.059 | 1.250 | 1.77 | 4.25 | 5.71 | 8.86 | 3.16 | | | | | | |
| QR0278111N6R02 | 27.8 | 1.094 | 0.059 | 1.250 | 1.77 | 4.38 | 5.71 | 9.06 | 3.16 | | | | | | |
| QR0286114N6R02 | 28.6 | 1.125 | 0.059 | 1.250 | 1.77 | 4.50 | 5.87 | 9.21 | 3.16 | SOMT09T308 | SM35-088-60 | DS-T10S | 25.0-30.0 | PF-0013 | PP04-01 |
| QR0294118N6R02 | 29.4 | 1.156 | 0.059 | 1.250 | 1.77 | 4.62 | 5.87 | 9.49 | 3.16 | | | | | | |
| QR0302120N6R02 | 30.2 | 1.187 | 0.059 | 1.250 | 1.77 | 4.75 | 6.02 | 9.49 | 3.16 | | | | | | |
| QR0310124N6R02 | 31.0 | 1.219 | 0.059 | 1.250 | 1.77 | 4.87 | 6.18 | 9.69 | 3.16 | | | | | | |
| QR0318127N6R02 | 31.8 | 1.250 | 0.066 | 1.250 | 1.77 | 5.00 | 6.42 | 9.84 | 3.16 | | | | | | |
| QR0325130N6R02 | 32.5 | 1.281 | 0.066 | 1.250 | 1.77 | 5.13 | 6.57 | 10.04 | 3.16 | | | | | | |
| QR0333133N6R02 | 33.3 | 1.312 | 0.066 | 1.250 | 1.77 | 5.25 | 6.57 | 10.04 | 3.16 | SOMT11T308 | SM35-088-60 | DS-T10S | 25.0-30.0 | PF-0013 | PP04-01 |
| QR0341136N6R02 | 34.1 | 1.343 | 0.066 | 1.250 | 1.77 | 5.37 | 6.73 | 10.19 | 3.16 | | | | | | |
| QR0349140N6R02 | 34.9 | 1.375 | 0.066 | 1.250 | 1.77 | 5.50 | 6.89 | 10.39 | 3.16 | | | | | | |
| QR0357143N6R02 | 35.7 | 1.406 | 0.066 | 1.250 | 1.77 | 5.62 | 7.05 | 10.59 | 3.16 | | | | | | |
| QR0365146N6R02 | 36.5 | 1.437 | 0.074 | 1.250 | 2.16 | 5.75 | 7.28 | 10.79 | 3.16 | | | | | | |
| QR0373149N6R02 | 37.3 | 1.468 | 0.074 | 1.250 | 2.16 | 5.87 | 7.28 | 10.79 | 3.16 | | | | | | |
| QR0381152N6R02 | 38.1 | 1.500 | 0.074 | 1.250 | 2.16 | 6.00 | 7.44 | 10.98 | 3.16 | | | | | | |
| QR0389156N6R02 | 38.9 | 1.531 | 0.074 | 1.250 | 2.16 | 6.13 | 7.60 | 11.14 | 3.16 | SOMT130408 | SE02-82 | T-15/51 | 30.0-35.0 | PF-0013 | PP04-01 |
| QR0397159N6R02 | 39.7 | 1.562 | 0.074 | 1.250 | 2.16 | 6.25 | 7.76 | 11.34 | 3.16 | | | | | | |
| QR0405162N6R02 | 40.5 | 1.594 | 0.074 | 1.250 | 2.16 | 6.38 | 7.76 | 11.54 | 3.16 | | | | | | |
| QR0413165N6R02 | 41.3 | 1.625 | 0.074 | 1.250 | 2.16 | 6.50 | 7.91 | 11.54 | 3.16 | | | | | | |
| QR0428171N6R02 | 42.8 | 1.687 | 0.074 | 1.250 | 2.16 | 6.75 | 8.23 | 11.89 | 3.16 | | | | | | |
| QR0437175N7R02 | 43.7 | 1.719 | 0.084 | 1.500 | 2.36 | 6.87 | 8.50 | 12.05 | 3.16 | | | | | | |
| QR0445178N7R02 | 44.5 | 1.750 | 0.084 | 1.500 | 2.36 | 7.00 | 8.50 | 12.28 | 3.16 | | | | | | |
| QR0452181N7R02 | 45.2 | 1.781 | 0.084 | 1.500 | 2.36 | 7.13 | 8.66 | 12.28 | 3.16 | | | | | | |
| QR0460184N7R02 | 46.0 | 1.813 | 0.084 | 1.500 | 2.36 | 7.25 | 8.82 | 12.48 | 3.16 | SOMT150510 | SM50-113-20 | DS-0034 | 45.0-50.0 | PF-0015 | PP04-01 |
| QR0476190N7R02 | 47.6 | 1.875 | 0.084 | 1.500 | 2.36 | 7.50 | 9.13 | 12.84 | 3.16 | | | | | | |
| QR0492197N7R02 | 49.2 | 1.937 | 0.084 | 1.500 | 2.36 | 7.75 | 9.29 | 12.99 | 3.16 | | | | | | |
| QR0500200N7R02 | 50.0 | 1.969 | 0.084 | 1.500 | 2.36 | 7.87 | 9.45 | 13.19 | 3.16 | | | | | | |
| QR0508203N7R02 | 50.8 | 2.000 | 0.084 | 1.500 | 2.36 | 8.00 | 9.61 | 13.39 | 3.16 | | | | | | |

Note: Metric bodies also available. Please see ecat for more information.

# QR SERIES 5XD INDEXABLE DRILL (-R02 SHANK)

NOTE: Coolant fittings PF0012 & PF0013 are ordered separately.

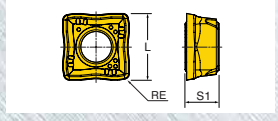



| 5xD Bodies | Dimensions (inch) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drill Number | DC (mm) | DC (inch) | PL | DCON | DF | LU | LF | OAL | LS | Insert | Screw | Torx | Torque (in. lbs.) | Coolant Fitting | Flange Plug |
| NEW QR0127064N5R02 | 12.7 | 0.500 | 0.032 | 1.000 | 1.26 | 2.56 | 3.58 | 6.73 | 3.16 | SOMT 040204 | TS 18041I/HG | DS-TP06S-NEU | 3.5-4.4 | PF-0012 | PP02-01 |
| NEW QR0135068N5R02 | 13.5 | 0.531 | 0.032 | 1.000 | 1.26 | 2.76 | 3.78 | 6.93 | 3.16 | | | | | | |
| QR0143072N5R02 | 14.3 | 0.563 | 0.030 | 1.000 | 1.26 | 2.81 | 3.78 | 6.93 | 3.16 | | | | | | |
| QR0150075N5R02 | 15.0 | 0.591 | 0.030 | 1.000 | 1.26 | 2.96 | 4.02 | 7.17 | 3.16 | SOMT050204 | SM20-043-00 | DS-TP06S-NEU | 5.0-9.0 | PF-0012 | PP02-01 |
| QR0159080N5R02 | 15.9 | 0.626 | 0.030 | 1.000 | 1.26 | 3.13 | 4.25 | 7.40 | 3.16 | | | | | | |
| QR0167084N5R02 | 16.7 | 0.658 | 0.033 | 1.000 | 1.26 | 3.29 | 4.45 | 7.60 | 3.16 | | | | | | |
| QR0175088N5R02 | 17.5 | 0.689 | 0.033 | 1.000 | 1.26 | 3.44 | 4.69 | 7.83 | 3.16 | SOMT060204 | TS 22052I/HG-P | DS-TP07S | 7.0-11.0 | PF-0012 | PP02-01 |
| QR0183092N5R02 | 18.3 | 0.721 | 0.033 | 1.000 | 1.26 | 3.59 | 4.69 | 7.83 | 3.16 | | | | | | |
| QR0191095N5R02 | 19.1 | 0.750 | 0.033 | 1.000 | 1.26 | 3.75 | 4.88 | 8.03 | 3.16 | | | | | | |
| QR0198099N5R02 | 19.8 | 0.781 | 0.045 | 1.000 | 1.26 | 3.91 | 5.16 | 8.31 | 3.16 | | | | | | |
| QR0206103N5R02 | 20.6 | 0.813 | 0.045 | 1.000 | 1.26 | 4.07 | 5.35 | 8.50 | 3.16 | SOMT070306 | TS 22052I/HG-P | DS-TP07S | 7.0-11.0 | PF-0012 | PP02-01 |
| QR0214107N5R02 | 21.4 | 0.843 | 0.045 | 1.000 | 1.26 | 4.22 | 5.55 | 8.70 | 3.16 | | | | | | |
| QR0222111N5R02 | 22.2 | 0.875 | 0.045 | 1.000 | 1.26 | 4.38 | 5.55 | 8.70 | 3.16 | | | | | | |
| QR0230115N6R02 | 23.0 | 0.906 | 0.049 | 1.250 | 1.77 | 4.53 | 5.91 | 9.06 | 3.16 | | | | | | |
| QR0238119N6R02 | 23.8 | 0.938 | 0.049 | 1.250 | 1.77 | 4.69 | 6.14 | 9.29 | 3.16 | | | | | | |
| QR0246123N6R02 | 24.6 | 0.969 | 0.049 | 1.250 | 1.77 | 4.85 | 6.38 | 9.53 | 3.16 | SOMT08T306 | SO 25065I | HZS.0004 | 7.0-11.0 | PF-0013 | PP04-01 |
| QR0250125N6R02 | 25.0 | 0.984 | 0.049 | 1.250 | 1.77 | 4.92 | 6.38 | 9.53 | 3.16 | | | | | | |
| QR0254127N6R02 | 25.4 | 1.000 | 0.049 | 1.250 | 1.77 | 5.00 | 6.57 | 9.72 | 3.16 | | | | | | |
| QR0262131N6R02 | 26.2 | 1.031 | 0.049 | 1.250 | 1.77 | 5.16 | 6.57 | 9.72 | 3.16 | | | | | | |
| QR0270135N6R02 | 27.0 | 1.063 | 0.059 | 1.250 | 1.77 | 5.31 | 6.61 | 9.76 | 3.16 | | | | | | |
| QR0278139N6R02 | 27.8 | 1.094 | 0.059 | 1.250 | 1.77 | 5.47 | 6.81 | 9.96 | 3.16 | | | | | | |
| QR0286143N6R02 | 28.6 | 1.125 | 0.059 | 1.250 | 1.77 | 5.63 | 7.01 | 10.16 | 3.16 | SOMT09T308 | SM35-088-60 | DS-T10S | 25.0-30.0 | PF-0013 | PP04-01 |
| QR0294147N6R02 | 29.4 | 1.156 | 0.059 | 1.250 | 1.77 | 5.78 | 7.01 | 10.16 | 3.16 | | | | | | |
| QR0302151N6R02 | 30.2 | 1.187 | 0.059 | 1.250 | 1.77 | 5.94 | 7.20 | 10.35 | 3.16 | | | | | | |
| QR0310155N6R02 | 31.0 | 1.219 | 0.059 | 1.250 | 1.77 | 6.09 | 7.40 | 10.55 | 3.16 | | | | | | |
| QR0318159N6R02 | 31.8 | 1.250 | 0.066 | 1.250 | 1.77 | 6.25 | 7.68 | 10.83 | 3.16 | | | | | | |
| QR0325163N6R02 | 32.5 | 1.281 | 0.066 | 1.250 | 1.77 | 6.41 | 7.87 | 11.02 | 3.16 | | | | | | |
| QR0333167N6R02 | 33.3 | 1.312 | 0.066 | 1.250 | 1.77 | 6.56 | 7.87 | 11.02 | 3.16 | SOMT11T308 | SM35-088-60 | DS-T10S | 25.0-30.0 | PF-0013 | PP04-01 |
| QR0341171N6R02 | 34.1 | 1.343 | 0.066 | 1.250 | 1.77 | 6.72 | 8.07 | 11.22 | 3.16 | | | | | | |
| QR0349175N6R02 | 34.9 | 1.375 | 0.066 | 1.250 | 1.77 | 6.88 | 8.27 | 11.42 | 3.16 | | | | | | |
| QR0357179N6R02 | 35.7 | 1.406 | 0.066 | 1.250 | 1.77 | 7.03 | 8.46 | 11.61 | 3.16 | | | | | | |
| QR0365182N6R02 | 36.5 | 1.437 | 0.074 | 1.250 | 2.16 | 7.19 | 8.74 | 11.89 | 3.16 | | | | | | |
| QR0373186N6R02 | 37.3 | 1.468 | 0.074 | 1.250 | 2.16 | 7.34 | 8.74 | 11.89 | 3.16 | | | | | | |
| QR0381191N6R02 | 38.1 | 1.500 | 0.074 | 1.250 | 2.16 | 7.50 | 8.94 | 12.09 | 3.16 | | | | | | |
| QR0389194N6R02 | 38.9 | 1.531 | 0.074 | 1.250 | 2.16 | 7.66 | 9.13 | 12.28 | 3.16 | SOMT130408 | SE02-82 | T-15/51 | 30.0-35.0 | PF-0013 | PP04-01 |
| QR0397198N6R02 | 39.7 | 1.562 | 0.074 | 1.250 | 2.16 | 7.81 | 9.33 | 12.48 | 3.16 | | | | | | |
| QR0405202N6R02 | 40.5 | 1.594 | 0.074 | 1.250 | 2.16 | 7.97 | 9.33 | 12.48 | 3.16 | | | | | | |
| QR0413206N6R02 | 41.3 | 1.625 | 0.074 | 1.250 | 2.16 | 8.13 | 9.53 | 12.68 | 3.16 | | | | | | |
| QR0428214N6R01 | 42.8 | 1.687 | 0.074 | 1.250 | 2.16 | 8.43 | 9.92 | 13.07 | 3.16 | | | | | | |
| QR0437218N7R01 | 43.7 | 1.719 | 0.084 | 1.500 | 2.36 | 8.59 | 10.24 | 13.39 | 3.16 | | | | | | |
| QR0445222N7R01 | 44.5 | 1.750 | 0.084 | 1.500 | 2.36 | 8.75 | 10.24 | 13.39 | 3.16 | | | | | | |
| QR0452226N7R01 | 45.2 | 1.781 | 0.084 | 1.500 | 2.36 | 8.91 | 10.43 | 13.58 | 3.16 | | | | | | |
| QR0460230N7R01 | 46.0 | 1.813 | 0.084 | 1.500 | 2.36 | 9.06 | 10.63 | 13.78 | 3.16 | SOMT150510 | SM50-113-20 | DS-0034 | 45.0-50.0 | PF-0015 | PP04-01 |
| QR0476238N7R01 | 47.6 | 1.875 | 0.084 | 1.500 | 2.36 | 9.37 | 11.02 | 14.17 | 3.16 | | | | | | |
| QR0492246N7R01 | 49.2 | 1.937 | 0.084 | 1.500 | 2.36 | 9.69 | 11.22 | 14.37 | 3.16 | | | | | | |
| QR0500250N7R01 | 50.0 | 1.969 | 0.084 | 1.500 | 2.36 | 9.84 | 11.42 | 14.57 | 3.16 | | | | | | |
| QR0508254N7R01 | 50.8 | 2.000 | 0.084 | 1.500 | 2.36 | 10.00 | 11.61 | 14.76 | 3.16 | | | | | | |

Note: Metric bodies also available. Please see ecat for more information.

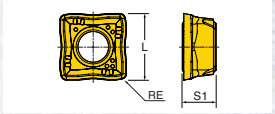
# INSERTS

**- SK**



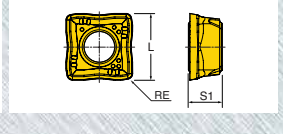

GRADE: IN2505
For General Purpose

**- SK**



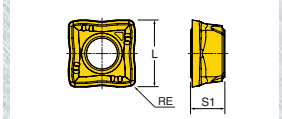

GRADE: IN6505
For Steel Applications
For Peripheral Pockets Only

**- SK**



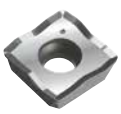

GRADE: IN1030
For Cast Iron, Stainless
and Titanium Applications

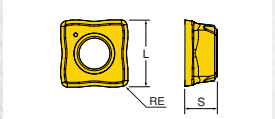
**- NG**




GRADE: IN2510
For Cast Iron

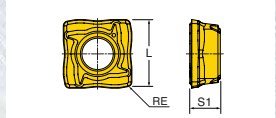
**- HP**






GRADE: IN10K
For Aluminum

**- PS**




GRADE: IN2505
For Low Carbon and Mild Steel Applications

| Designation | Dimension (inch) L | S1 / S | RE | Tool Dia. Range Min-Max | Carbide Grades IN1030 | IN2505 | IN6505 | IN2510 | IN10K |
|---|---|---|---|---|---|---|---|---|---|
| NEW SOMT 040204 SK | 0.173 | 0.100 | 0.016 | 12.0mm(.472") - 13.5mm(.531") | ■ | ■ | | | |
| SOMT 050204 SK | 0.193 | 0.100 | 0.016 | 14.3mm(.563") - 15.9mm(.626") | ■ | ■ | ■ | | |
| SOMT 060204 SK | 0.224 | 0.100 | 0.016 | 16.7mm(.658") - 19.05mm(.750") | ■ | ■ | ■ | | |
| SOMT 070306 SK | 0.268 | 0.114 | 0.024 | 19.8mm(.780") - 22.22mm(.875") | ■ | ■ | ■ | | |
| SOMT 08T306 SK | 0.311 | 0.164 | 0.024 | 23.0mm(.906") - 26.2mm(1.031") | ■ | ■ | ■ | | |
| SOMT 09T308 SK | 0.362 | 0.166 | 0.031 | 27.0mm(1.063") - 31.0mm(1.219") | ■ | ■ | ■ | | |
| SOMT 11T308 SK | 0.433 | 0.166 | 0.031 | 31.8mm(1.250") - 35.7mm(1.406") | ■ | ■ | ■ | | |
| SOMT 130408 SK | 0.504 | 0.183 | 0.031 | 36.5mm(1.437") - 42.8mm(1.687") | ■ | ■ | ■ | | |
| SOMT 150510 SK | 0.590 | 0.199 | 0.039 | 43.7mm(1.720") - 50.8mm(2.000") | ■ | ■ | ■ | | |
| SOMT 050204 NG | 0.193 | 0.100 | 0.016 | 14.3mm(.563") - 15.9mm(.626") | | | | ■ | |
| SOMT 060204 NG | 0.224 | 0.100 | 0.016 | 16.7mm(.658") - 19.05mm(.750") | | | | ■ | |
| SOMT 070306 NG | 0.268 | 0.114 | 0.024 | 19.8mm(.780") - 22.22mm(.875") | | | | ■ | |
| SOMT 08T306 NG | 0.311 | 0.164 | 0.024 | 23.0mm(.906") - 26.2mm(1.031") | | | | ■ | |
| SOMT 09T308 NG | 0.362 | 0.166 | 0.031 | 27.0mm(1.063") - 31.0mm(1.219") | | | | ■ | |
| SOMT 11T308 NG | 0.433 | 0.166 | 0.031 | 31.8mm(1.250") - 35.7mm(1.406") | | | | ■ | |
| SOMT 130408 NG | 0.504 | 0.183 | 0.031 | 36.5mm(1.437") - 42.8mm(1.687") | | | | ■ | |
| SOMT 150510 NG | 0.590 | 0.199 | 0.039 | 43.7mm(1.720") - 50.8mm(2.000") | | | | ■ | |
| SOMT 050204 HP | 0.193 | 0.094 | 0.016 | 14.3mm(.563") - 15.9mm(.626") | | | | | ■ |
| SOMT 060204 HP | 0.224 | 0.094 | 0.016 | 16.7mm(.658") - 19.05mm(.750") | | | | | ■ |
| SOMT 070306 HP | 0.268 | 0.110 | 0.024 | 19.8mm(.780") - 22.22mm(.875") | | | | | ■ |
| SOMT 08T306 HP | 0.311 | 0.156 | 0.024 | 23.0mm(.906") - 26.2mm(1.031") | | | | | ■ |
| SOMT 09T308 HP | 0.362 | 0.156 | 0.031 | 27.0mm(1.063") - 31.0mm(1.219") | | | | | ■ |
| SOMT 11T308 HP | 0.433 | 0.156 | 0.031 | 31.8mm(1.250") - 35.7mm(1.406") | | | | | ■ |
| SOMT 130408 HP | 0.504 | 0.173 | 0.031 | 36.5mm(1.437") - 42.8mm(1.687") | | | | | ■ |
| SOMT 150510 HP | 0.590 | 0.189 | 0.039 | 43.7mm(1.720") - 50.8mm(2.000") | | | | | ■ |
| NEW SOMT 050204 PS | 0.193 | 0.100 | 0.016 | 14.3mm (.563") - 15.9mm (.626") | | ■ | | | |
| NEW SOMT 060204 PS | 0.224 | 0.100 | 0.016 | 16.7mm (.658") - 19.05mm (.750") | | ■ | | | |
| NEW SOMT 070306 PS | 0.268 | 0.114 | 0.024 | 19.8mm (.780") - 22.22mm (.875") | | ■ | | | |
| NEW SOMT 08T306 PS | 0.311 | 0.164 | 0.024 | 23.0mm (.906") - 26.2mm (1.031") | | ■ | | | |
| NEW SOMT 09T308 PS | 0.362 | 0.166 | 0.031 | 27.0mm (1.063") - 31.0mm (1.219") | | ■ | | | |
| NEW SOMT 11T308 PS | 0.433 | 0.166 | 0.031 | 31.8mm (.1.250") - 35.7mm (1.406") | | ■ | | | |
| NEW SOMT 130408 PS | 0.504 | 0.183 | 0.031 | 36.5mm (1.437") - 42.8mm (1.687") | | ■ | | | |
| NEW SOMT 150510 PS | 0.590 | 0.199 | 0.039 | 43.7mm (1.720" - 50.8mm (2.000") | | ■ | | | |

# -SK, -NG, -HP CHIPBREAKERS - 2xD, 3xD, 4xD RECOMMENDED CUTTING CONDITIONS

| ISO | Material | Condition | Tensile Strength Rm (N/mm²) | Hardness (HB) | Matl No. | Cutting Speed Vc (SFM) | Feed v.s. Drill Diameter In/Rev Drill Length 2, 3, 4xD | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SOMT 04 Ø.472-.531 (inch) | SOMT 05 Ø.551-.645 (inch) | SOMT 06 Ø.649-.763 (inch) | SOMT 07 Ø.767-.882 (inch) | SOMT 08 Ø.886-1.039 (inch) | SOMT 09 Ø 1.063-1.220 (inch) | SOMT 11 Ø 1.250-1.460 (inch) | SOMT 13 Ø 1.437-1.687 (inch) | SOMT 15 Ø 1.719-2.000 (inch) |
| P | Non-alloy steel <0.25% C & cast steel, > = 0.25% C free cutting <0.55% C steel > = 0.55% C | Annealed | 420 | 125 | 1 | 700 -1200 | .002-.003 | .002-.003 | .002-.003 | .002-.004 | .002-.004 | .003-.004 | .003-.005 | .003-.005 | .003-.005 |
| | | Annealed | 650 | 190 | 2 | 600 - 950 | .003-.004 | .003-.004 | .003-.004 | .003-.005 | .003-.005 | .003-.006 | .003-.006 | .003-.0065 | .003-.0065 |
| | | Quenched & Tempered | 850 | 250 | 3 | 450 - 800 | .003-.005 | .003-.005 | .003-.005 | .003-.006 | .003-.006 | .004-.006 | .004-.006 | .004-.007 | .004-.007 |
| | | Annealed | 750 | 220 | 4 | 450 - 800 | .003-.005 | .003-.005 | .003-.005 | .003-.006 | .003-.006 | .004-.007 | .004-.007 | .004-.007 | .004-.007 |
| | | Quenched & Tempered | 1000 | 300 | 5 | 450 - 800 | .003-.005 | .003-.005 | .003-.005 | .003-.006 | .003-.006 | .004-.007 | .004-.007 | .004-.007 | .004-.007 |
| | Low alloy steel & cast steek (less than 5% alloying elements) | Annealed | 600 | 200 | 6 | 450 - 800 | .003-.006 | .003-.006 | .003-.006 | .003-.007 | .003-.007 | .004-.007 | .004-.009 | .004-.009 | .004-.0095 |
| | | Quenched & Tempered | 930 | 275 | 7 | 325 - 600 | .003-.006 | .003-.006 | .003-.006 | .003-.008 | .003-.008 | .004-.008 | .004-.0085 | .004-.0085 | .004-.0085 |
| | | | 1000 | 300 | 8 | 325 - 600 | .003-.006 | .003-.006 | .003-.006 | .003-.008 | .003-.008 | .004-.008 | .004-.0085 | .004-.0085 | .004-.0085 |
| | | | 1200 | 350 | 9 | 325 - 600 | .003-.006 | .003-.006 | .003-.006 | .003-.008 | .003-.008 | .004-.008 | .004-.0085 | .004-.0085 | .004-.0085 |
| | High alloy steel, cast steel, & tool steel | Annealed | 680 | 200 | 10 | 450 - 675 | .002-.005 | .002-.005 | .0025-.005 | .0025-.005 | .003-.006 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | | Quenched & Tempered | 1100 | 325 | 11 | 325 - 525 | .0025-.005 | .0025-.005 | .0025-.005 | .003-.006 | .003-.006 | .0035-.007 | .0035-.008 | .004-.008 | .004-.008 |
| M | Stainless steel & cast stainless steel | Ferritic/ martensitic | 680 | 200 | 12 | 500 - 800 | .0025-.005 | .0025-.005 | .0025-.005 | .003-.006 | .003-.006 | .003-.007 | .0035-.008 | .004-.008 | .004-.008 |
| | | Martensitic | 820 | 240 | 13 | 500 - 800 | .0025-.005 | .0025-.005 | .0025-.005 | .003-.006 | .003-.006 | .003-.007 | .0035-.008 | .004-.008 | .004-.008 |
| | | Austenitic | 600 | 180 | 14 | 500 - 800 | .0025-.005 | .0025-.005 | .0025-.005 | .003-.006 | .003-.006 | .003-.007 | .0035-.008 | .004-.008 | .004-.008 |
| K | GreyCast Iron (GG) | Ferritic | | 160 | 15 | 525 - 850 | .003-.007 | .003-.007 | .003-.007 | .004-.008 | .004-.008 | .004-.008 | .004-.008 | .004-.0085 | .004-.0085 |
| | | Pearlitic | | 250 | 16 | 525 - 850 | .003-.007 | .003-.007 | .003-.007 | .004-.008 | .004-.008 | .004-.008 | .004-.008 | .004-.0085 | .004-.0085 |
| | Cast Iron Nodular (GGG) | Ferritic | | 180 | 17 | 525 - 850 | .003-.007 | .003-.007 | .003-.007 | .004-.008 | .004-.008 | .004-.008 | .004-.008 | .004-.0085 | .004-.0085 |
| | | Pearlitic | | 260 | 18 | 525 - 850 | .003-.007 | .003-.007 | .003-.007 | .004-.008 | .004-.008 | .004-.008 | .004-.008 | .004-.0085 | .004-.0085 |
| | Malleable Cast Iron | Ferritic | | 130 | 19 | 400 - 725 | .003-.0055 | .003-.0055 | .003-.0055 | .004-.006 | .004-.006 | .004-.0065 | .004-.007 | .004-.007 | .004-.007 |
| | | Pearlitic | | 230 | 20 | 400 - 725 | .003-.0055 | .003-.0055 | .003-.0055 | .004-.006 | .004-.006 | .004-.0065 | .004-.007 | .004-.007 | .004-.007 |
| N | Aluminum - wrought alloy | Not cureable | | 60 | 21 | 650 - 1150 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .0035-.007 | .0035-.007 | .004-.0075 | .004-.0075 |
| | | Cured | | 100 | 22 | 650 - 1150 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .0035-.007 | .0035-.007 | .004-.0075 | .004-.0075 |
| | Aluminum - cast, alloyed <=12% Si / >12% Si | Not cureable | | 75 | 23 | 650 - 1150 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .0035-.007 | .0035-.007 | .004-.0075 | .004-.0075 |
| | | Cured | | 90 | 24 | 650 - 1150 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .0035-.007 | .0035-.007 | .004-.0075 | .004-.0075 |
| | | High temperature | | 130 | 25 | 650 - 1150 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .0035-.007 | .0035-.007 | .004-.0075 | .004-.0075 |
| | Copper alloys > 1% Pb | Free cutting | | 110 | 26 | 490 - 825 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | | Brass | | 90 | 27 | 490 - 825 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | | Electrolitic copper | | 100 | 28 | 490 - 825 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | Non-metallic | Duro & fiber plastics | | | 29 | 490 - 825 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | | Hard rubber | | | 30 | 490 - 825 | .0025-.006 | .0025-.006 | .0025-.006 | .003-.0065 | .003-.0065 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| S | High temp alloys Fe based / Ni or Co based | Annealed | | 200 | 31 | 100 - 200 | .002-.003 | .002-.003 | .002-.003 | .002-.0035 | .002-.0035 | .003-.004 | .003-.004 | .003-.005 | .003-.005 |
| | | Cured | | 280 | 32 | 100 - 200 | .002-.003 | .002-.003 | .002-.003 | .002-.0035 | .002-.0035 | .003-.004 | .003-.004 | .003-.005 | .003-.005 |
| | | Annealed | | 250 | 33 | 100 - 200 | .002-.003 | .002-.003 | .002-.003 | .002-.0035 | .002-.0035 | .003-.004 | .003-.004 | .003-.005 | .003-.005 |
| | | Cured | | 350 | 34 | 100 - 200 | .002-.003 | .002-.003 | .002-.003 | .002-.0035 | .002-.0035 | .003-.004 | .003-.004 | .003-.005 | .003-.005 |
| | | Cast | | 320 | 35 | 100 - 200 | .002-.003 | .002-.003 | .002-.003 | .002-.0035 | .002-.0035 | .003-.004 | .003-.004 | .003-.005 | .003-.005 |
| | Titanium, Ti alloys | | Rm 400 | | 36 | 165 - 265 | .0025-.0035 | .0025-.0035 | .0025-.0035 | .003-.004 | .003-.004 | .003-.004 | .003-.004 | .003-.004 | .003-.004 |
| | | Alpha+beta alloys cured | Rm 1050 | | 37 | 165 - 265 | .0025-.0035 | .0025-.0035 | .0025-.0035 | .003-.004 | .003-.004 | .003-.004 | .003-.004 | .003-.004 | .003-.004 |
| H | Hardened steel | Hardened | | 55 HRC | 38 | 100 - 200 | .002-.0035 | .002-.0035 | .002-.0035 | .002-.004 | .002-.004 | .002-.0045 | .002-.0045 | .002-.0045 | .002-.0045 |
| | | Hardened | | 60 HRC | 39 | 100 - 200 | .002-.0035 | .002-.0035 | .002-.0035 | .002-.004 | .002-.004 | .002-.0045 | .002-.0045 | .002-.0045 | .002-.0045 |
| | Chilled cast iron | Cast | | 400 | 40 | 100 - 200 | .002-.0035 | .002-.0035 | .002-.0035 | .002-.004 | .002-.004 | .002-.0045 | .002-.0045 | .002-.0045 | .002-.0045 |
| | Cast iron nodular | Hardened | | 55 HRC | 41 | 100 - 200 | .002-.0035 | .002-.0035 | .002-.0035 | .002-.004 | .002-.004 | .002-.0045 | .002-.0045 | .002-.0045 | .002-.0045 |

# -SK, -NG, -HP CHIPBREAKERS - 5xD RECOMMENDED CUTTING CONDITIONS

| ISO | Material | Condition | Tensile Strength Rm (N/mm²) | Hardness (HB) | Matl No. | Cutting Speed Vc (SFM) | Feed v.s. Drill Diameter In/Rev Drill Length 5xD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SOMT 04 Ø.472-.531 (inch) | SOMT 05 Ø.551-.645 (inch) | SOMT 06 Ø.649-.763 (inch) | SOMT 07 Ø.767-.882 (inch) | SOMT 08 Ø.886-1.039 (inch) | SOMT 09 Ø 1.063-1.220 (inch) | SOMT 11 Ø 1.250-1.460 (inch) | SOMT 13 Ø 1.437-1.687 (inch) | SOMT 15 Ø 1.719-2.000 (inch) |
| P | Non-alloy steel <0.25% C & cast steel, > = 0.25% C free cutting <0.55% C steel > = 0.55% C | Annealed | 420 | 125 | 1 | 700 -1200 | .002-.003 | .0015-.002 | .0015-.002 | .0015-.002 | .0015-.002 | .0025-.0035 | .0025-.0035 | .0025-.004 | .0025-.004 |
| | | Annealed | 650 | 190 | 2 | 600 - 950 | .003-.004 | .002-.003 | .002-.003 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.0055 | .003-.0055 |
| | | Quenched & Tempered | 850 | 250 | 3 | 450 - 800 | .003-.005 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.007 | .003-.006 | .004-.007 | .004-.007 |
| | | Annealed | 750 | 220 | 4 | 450 - 800 | .003-.005 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.007 | .003-.006 | .004-.007 | .004-.007 |
| | | Quenched & Tempered | 1000 | 300 | 5 | 450 - 800 | .003-.005 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.007 | .003-.006 | .004-.007 | .004-.007 |
| | Low alloy steel & cast steek (less than 5% alloying elements) | Annealed | 600 | 200 | 6 | 450 - 800 | .003-.006 | .002-.005 | .002-.005 | .003-.006 | .003-.006 | .003-.007 | .003-.008 | .003-.008 | .004-.0085 |
| | | Quenched & Tempered | 930 | 275 | 7 | 325 - 600 | .003-.006 | .002-.005 | .002-.005 | .003-.006 | .003-.006 | .003-.007 | .003-.008 | .003-.008 | .004-.0085 |
| | | | 1000 | 300 | 8 | 325 - 600 | .003-.006 | .002-.005 | .002-.005 | .003-.006 | .003-.006 | .003-.007 | .003-.008 | .003-.008 | .004-.0085 |
| | | | 1200 | 350 | 9 | 325 - 600 | .003-.006 | .002-.005 | .002-.005 | .003-.006 | .003-.006 | .003-.007 | .003-.008 | .003-.008 | .004-.0085 |
| | High alloy steel, cast steel, & tool steel | Annealed | 680 | 200 | 10 | 450 - 675 | .002-.005 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.006 | .003-.007 | .003-.007 | .004-.008 |
| | | Quenched & Tempered | 1100 | 325 | 11 | 325 - 525 | .0025-.005 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.006 | .003-.007 | .004-.007 | .004-.008 |
| M | Stainless steel & cast stainless steel | Ferritic/ martensitic | 680 | 200 | 12 | 500 - 800 | .0025-.005 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.006 | .003-.007 | .004-.007 | .004-.008 |
| | | Martensitic | 820 | 240 | 13 | 500 - 800 | .0025-.005 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.006 | .003-.007 | .004-.007 | .004-.008 |
| | | Austenitic | 600 | 180 | 14 | 500 - 800 | .0025-.005 | .002-.004 | .002-.004 | .003-.005 | .003-.005 | .003-.006 | .003-.007 | .004-.007 | .004-.008 |
| K | GreyCast Iron (GG) | Ferritic | | 160 | 15 | 525 - 850 | .003-.007 | .003-.0055 | .003-.0055 | .003-.006 | .003-.006 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | | Pearlitic | | 250 | 16 | 525 - 850 | .003-.007 | .003-.0055 | .003-.0055 | .003-.006 | .003-.006 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | Cast Iron Nodular (GGG) | Ferritic | | 180 | 17 | 525 - 850 | .003-.007 | .003-.0055 | .003-.0055 | .003-.006 | .003-.006 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | | Pearlitic | | 260 | 18 | 525 - 850 | .003-.007 | .003-.0055 | .003-.0055 | .003-.006 | .003-.006 | .004-.007 | .004-.007 | .004-.008 | .004-.008 |
| | Malleable Cast Iron | Ferritic | | 130 | 19 | 400 - 725 | .003-.0055 | .0025-.0045 | .0025-.0045 | .003-.0055 | .003-.0055 | .004-.006 | .004-.006 | .004-.0065 | .004-.0065 |
| | | Pearlitic | | 230 | 20 | 400 - 725 | .003-.0055 | .0025-.0045 | .0025-.0045 | .003-.0055 | .003-.0055 | .004-.006 | .004-.006 | .004-.0065 | .004-.0065 |
| N | Aluminum - wrought alloy | Not cureable | | 60 | 21 | 650 - 1150 | .0025-.006 | .002-.0055 | .002-.0055 | .0025-.006 | .0025-.006 | .003-.006 | .003-.006 | .0035-.007 | .0035-.007 |
| | | Cured | | 100 | 22 | 650 - 1150 | .0025-.006 | .002-.0055 | .002-.0055 | .0025-.006 | .0025-.006 | .003-.006 | .003-.006 | .0035-.007 | .0035-.007 |
| | Aluminum - cast, alloyed <=12% Si / >12% Si | Not cureable | | 75 | 23 | 650 - 1150 | .0025-.006 | .002-.0055 | .002-.0055 | .0025-.006 | .0025-.006 | .003-.006 | .003-.006 | .0035-.007 | .0035-.007 |
| | | Cured | | 90 | 24 | 650 - 1150 | .0025-.006 | .002-.0055 | .002-.0055 | .0025-.006 | .0025-.006 | .003-.006 | .003-.006 | .0035-.007 | .0035-.007 |
| | | High temperature | | 130 | 25 | 650 - 1150 | .0025-.006 | .002-.0055 | .002-.0055 | .0025-.006 | .0025-.006 | .003-.006 | .003-.006 | .0035-.007 | .0035-.007 |
| | Copper alloys > 1% Pb | Free cutting | | 110 | 26 | 490 - 825 | .0025-.006 | .002-.0055 | .002-.0055 | .003-.006 | .003-.006 | .003-.0065 | .003-.0065 | .0035-.0075 | .0035-.0075 |
| | | Brass | | 90 | 27 | 490 - 825 | .0025-.006 | .002-.0055 | .002-.0055 | .003-.006 | .003-.006 | .003-.0065 | .003-.0065 | .0035-.0075 | .0035-.0075 |
| | | Electrolitic copper | | 100 | 28 | 490 - 825 | .0025-.006 | .002-.0055 | .002-.0055 | .003-.006 | .003-.006 | .003-.0065 | .003-.0065 | .0035-.0075 | .0035-.0075 |
| | Non-metallic | Duro & fiber plastics | | | 29 | 490 - 825 | .0025-.006 | .002-.0055 | .002-.0055 | .0025-.006 | .0025-.006 | .003-.006 | .0035-.006 | .0035-.0075 | .0035-.0075 |
| | | Hard rubber | | | 30 | 490 - 825 | .0025-.006 | .002-.0055 | .002-.0055 | .0025-.006 | .0025-.006 | .003-.006 | .0035-.006 | .0035-.0075 | .0035-.0075 |
| S | High temp alloys Fe based / Ni or Co based | Annealed | | 200 | 31 | 100 - 200 | .002-.003 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0025-.0035 | .0025-.0035 | .0025-.004 | .0025-.004 |
| | | Cured | | 280 | 32 | 100 - 200 | .002-.003 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0025-.0035 | .0025-.0035 | .0025-.004 | .0025-.004 |
| | | Annealed | | 250 | 33 | 100 - 200 | .002-.003 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0025-.0035 | .0025-.0035 | .0025-.004 | .0025-.004 |
| | | Cured | | 350 | 34 | 100 - 200 | .002-.003 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0025-.0035 | .0025-.0035 | .0025-.004 | .0025-.004 |
| | | Cast | | 320 | 35 | 100 - 200 | .002-.003 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0015-.0025 | .0025-.0035 | .0025-.0035 | .0025-.004 | .0025-.004 |
| | Titanium, Ti alloys | | Rm 400 | | 36 | 165 - 265 | .0025-.0035 | .002-.003 | .002-.003 | .0025-.0035 | .0025-.0035 | .0025-.0035 | .0025-.0035 | .0025-.0035 | .0025-.0035 |
| | | Alpha+beta alloys cured | Rm 1050 | | 37 | 165 - 265 | .0025-.0035 | .002-.003 | .002-.003 | .0025-.0035 | .0025-.0035 | .0025-.0035 | .0025-.0035 | .0025-.0035 | .0025-.0035 |
| H | Hardened steel | Hardened | | 55 HRC | 38 | 100 - 200 | .002-.0035 | .0015-.003 | .0015-.003 | .0015-.0035 | .0015-.0035 | .0015-.004 | .0015-.004 | .0015-.004 | .0015-.004 |
| | | Hardened | | 60 HRC | 39 | 100 - 200 | .002-.0035 | .0015-.003 | .0015-.003 | .0015-.0035 | .0015-.0035 | .0015-.004 | .0015-.004 | .0015-.004 | .0015-.004 |
| | Chilled cast iron | Cast | | 400 | 40 | 100 - 200 | .002-.0035 | .0015-.003 | .0015-.003 | .0015-.0035 | .0015-.0035 | .0015-.004 | .0015-.004 | .0015-.004 | .0015-.004 |
| | Cast iron nodular | Hardened | | 55 HRC | 41 | 100 - 200 | .002-.0035 | .0015-.003 | .0015-.003 | .0015-.0035 | .0015-.0035 | .0015-.004 | .0015-.004 | .0015-.004 | .0015-.004 |

Note: For 5xD, reduce feed rate by 40% for first .150" to stabilize and then up to 100% programmed feed.

## -PS CHIPBREAKER - 2xD, 3xD, 4xD, 5xD RECOMMENDED CUTTING CONDITIONS

| ISO | Material | Condition | Tensile Strength Rm (N/mm²) | Hardness (HB) | Matl No. | Cutting Speed Vc (SFM) | Feed vs. Drill Diameter In/Rev Drill Length 2, 3, 4, 5xD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SOMT 05 Ø.551-.645 (inch) | SOMT 06 Ø.649-.763 (inch) | SOMT 07 Ø.767-.882 (inch) | SOMT 08 Ø.886-1.039 (inch) | SOMT 09 Ø 1.063-1.220 (inch) | SOMT 11 Ø 1.250-1.460 (inch) | SOMT 13 Ø 1.437-1.687 (inch) | SOMT 15 Ø 1.719-2.000 (inch) |
| P | Non-alloy steel <0.25% C & cast steel, > = 0.25% C free cutting <0.55% C steel > = 0.55% C | Annealed | 420 | 125 | 1 | 700 -1200 | .0015-.003 | .0015-.003 | .0025-.004 | .0025-.004 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 |
| | | Annealed | 650 | 190 | 2 | 600 - 950 | .0025-.004 | .0025-.004 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 |
| | | Quenched & Tempered | 850 | 250 | 3 | 450 - 800 | .0025-.005 | .0025-.005 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 |
| | | Annealed | 750 | 220 | 4 | 450 - 800 | .0025-.005 | .0025-.005 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 |
| | | Quenched & Tempered | 1000 | 300 | 5 | 450 - 800 | .0025-.005 | .0025-.005 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 |
| | Low alloy steel & cast steek (less than 5% alloying elements) | Annealed | 600 | 200 | 6 | 450 - 800 | .0025-.005 | .0025-.005 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 | .0025-.006 |
| | | Quenched & Tempered | 930 | 275 | 7 | 325 - 600 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 |
| | | | 1000 | 300 | 8 | 325 - 600 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 |
| | | | 1200 | 350 | 9 | 325 - 600 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 |
| | High alloy steel, cast steel, & tool steel | Annealed | 680 | 200 | 10 | 450 - 675 | .0025-.004 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 |
| | | Quenched & Tempered | 1100 | 325 | 11 | 325 - 525 | .0025-.004 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 | .0025-.005 |

## -PS CHIPBREAKER - CASE STUDY

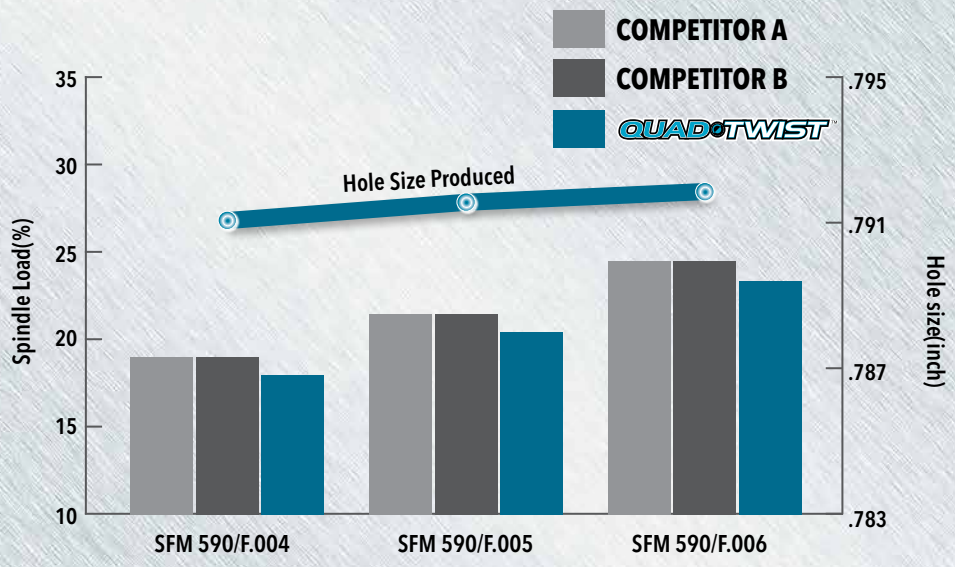
| | | | | |
|---|---|---|---|---|
| Machine | | Vertical machining center (Spindle-CAT50) | | |
| Coolant | | Internal (145 psi) | | |
| Workpiece Material | | Low carbon steel (1115) | | |
| Drill Body | | QR0222089N5R02 | | |
| Inserts | | **SOMT 070306 PS IN2505**<br>**SOMT 070306 SK IN2505** | | |
| Depth of Cut | ap (inch) | 2.00" | | |
| Cutting Speed | V (sfm) | 590 | 656 | 721 |
| Feed Rate | f (ipr) | .004" | | |

| | | | |
|---|---|---|---|
| PS |  |  |  |
| SK |  |  |  |

## -SK CHIPBREAKER - CASE STUDY

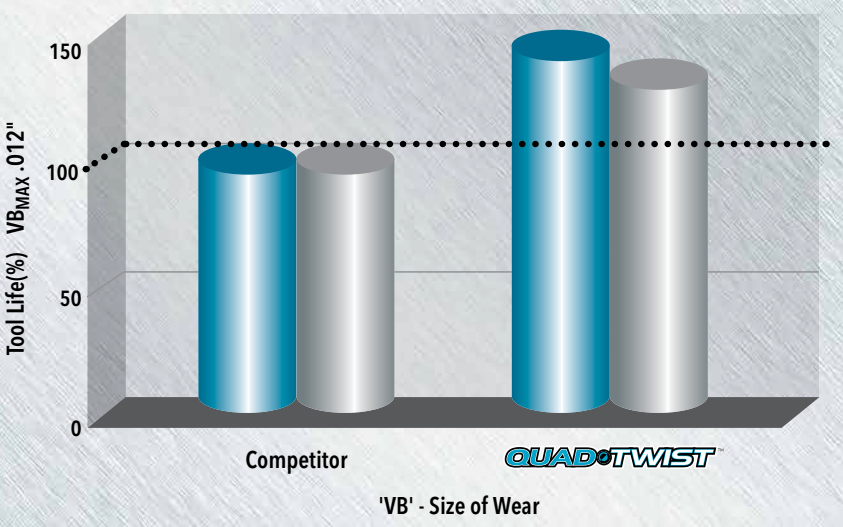
### SPINDLE LOAD COMPARISON

- Machine: Machining Center (Vertical/BT50)
- Material: Alloy Steel (AISI 4140)
- Tool: .787" X 4D (SOMT 070306 SK IN2505)
- Coolant supply: Internal coolant (145PSI)




### TOOL LIFE COMPARISON

- Machine: Machining Center (Vertical/BT50)
- Material: Alloy Steel (AISI 4140)
- Tool: .709" X 3D (SOMT 060204 SK IN2505)




TEST #1
TEST #2

**CUTTING CONDITION**

- Speed(V): 590 SFM
- Feed(f): .005 in/rev
- Depth(Ap): 2.0 in
- Internal coolant: 145 PSI

**AVAILABILITY**
In stock.

**PRICE**
Available in the GAL system.