PRODUCT CATALOG

ROHIT
SINCE 1963
CUTTING TOOLS
cuts everything* EXCEPT YOUR POCKET


## MAIN INDEX

## Carbide High Performance Drills (CTHS, CTHL series)

Newly Developed High Wear Resitance NOVA coating

Stable Low Thrust Point Form

Edge Chamfer to provide longer cutting edge life

Best suited for Drilling
Alloy Steel, SS, Titanium & Ni alloys

Details on Pg. 28-31



## Carbide High Performance Drills (C3HS, C3HL Series)

Newly Developed High Wear Resitance NOVA coating

Edge Honing to provide sturdy drill point

Edge Chamfer to provide longer cutting edge life

New chip Curling design for faster chip breakage

Best suited for Drilling
Alloy Steel, SS, Titanium & Ni alloys

Details on Pg.24-27

"**Carbide End Mills 301** or **302 Series**
especially designed for
Hard Machining up to 60HRc

Use our
**401 or 402 series**
for machining up to 70HRc"

Details on Pg. 74-75 & 69-70



"Wood machining tools to
cater to ever so growing
needs of the
**Wood Routing industry**

Details on Pg. 98-105

"Use **High Feed Cutters** or
**407 Series** for
Roughing operations
on your Hard-die materials
before you use
**RIGPL 402** or **302 series**
to finish them"

Details on Pg. 73



"**HSS M2, M35**
or
**PM Grade Punches**
to cater to Die-Mold, Press Tools,
Rivet & Fastener Industry"

Details on Pg. 144-160

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| | |
|---|---|
| 1st | 1st Choice |
| 2nd | 2nd choice |

## CARBIDE DRILLS



## CARBIDE REAMERS

# ICON GLOSSARY

## Icons

- Solid Carbide
- Coolant Fed
- 3X Drill Length
- 135° Drill Point Angle
- 12° Helix Angle
- >3mm DIN 6537L DIN Specs
- 45° Chamfer
- RHC Right hand Cutting
- Z2 Number of Flutes

## Carbide Grain Size

- NG Nano Fine Grain
- UMG Ultra Micro Fine Grain
- SMG Sub Micro Fine Grain
- MG Micro Fine Grain

## Coatings

- HYPERLOX
- NOVA
- TiALN
- ALDURA

## Workpiece Material Group

- Steels
- Hardened Steels (35-65Rc)
- Stainless Steels
- Cast Iron
- Special Alloys
- Non-Ferrous



# Mini Index Carbide Drills

**High Performance Drilling**

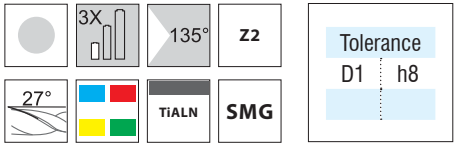
**Features**

- Advanced “Active Cut” Geometric Design
- Redefined Critical Cut Zone Characteristics
- High-Efficiency Flute Profile
- Stable Low-Thrust Point Form
- Coolant-Fed or Solid Carbide construction
- Diameter Range - 2.0mm to 25.0mm, 5/64” to 1”
- Stub (3X), Regular (5X), Long (7X+) and Extra Long (12X+)

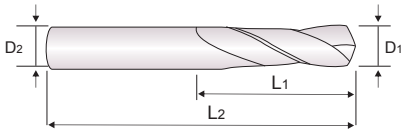
**Benefits**

- Extended Tool Life
- Elevated Metal Removal Rates (MRR)
- Lower cost Per Hole
- Improved Hole/Part Quality
- Increased Tool Reliability
- Factory Reconditioning Service






| Tolerance | |
|---|---|
| D1 | h8 |
| | |




**Application :**

- Solid Carbide GP Drills suitable for general purpose Drilling in materials like Cast Iron, high Al-Si Alloys, non-ferrous metals, abrasive plastics etc.

**For Feed & Speed Rates go to Page no. 38**

| Item Code TiALN Coated | Flute Dia(D1) | Flute Len(L1) | Overall Len(L2) | Shank Dia(D2) |
|---|---|---|---|---|
| CR11GDR004U3 | 2.0 | 12 | 39 | 2.0 |
| CR11GDR004Y4 | 2.1 | 14 | 39 | 2.1 |
| CR11GDR004Z2 | 2.2 | 14 | 39 | 2.2 |
| CR11GDR00503 | 2.3 | 14 | 39 | 2.3 |
| CR11GDR00511 | 2.4 | 14 | 39 | 2.4 |
| CR11GDR00529 | 2.5 | 14 | 39 | 2.5 |
| CR11GDR00545 | 2.6 | 20 | 54 | 2.6 |
| CR11GDR00552 | 2.7 | 20 | 54 | 2.7 |
| CR11GDR00560 | 2.8 | 20 | 54 | 2.8 |
| CR11GDR00586 | 2.9 | 20 | 54 | 2.9 |
| CR11GDR00594 | 3.0 | 20 | 54 | 3.0 |
| CR11GDR005C2 | 3.1 | 20 | 54 | 3.1 |
| CR11GDR005E7 | 3.2 | 20 | 54 | 3.2 |
| CR11GDR005G3 | 3.3 | 20 | 54 | 3.3 |
| CR11GDR005J6 | 3.4 | 20 | 54 | 3.4 |
| CR11GDR005M0 | 3.5 | 20 | 54 | 3.5 |
| CR11GDR005P3 | 3.6 | 22 | 54 | 3.6 |
| CR11GDR005R9 | 3.7 | 22 | 54 | 3.7 |
| CR11GDR005T4 | 3.8 | 22 | 54 | 3.8 |
| CR11GDR005V0 | 3.9 | 22 | 54 | 3.9 |
| CR11GDR005X5 | 4.0 | 22 | 54 | 4.0 |
| CR11GDR005Z1 | 4.1 | 24 | 63 | 4.1 |
| CR11GDR00610 | 4.2 | 24 | 63 | 4.2 |
| CR11GDR00636 | 4.3 | 24 | 63 | 4.3 |
| CR11GDR00651 | 4.4 | 24 | 63 | 4.4 |
| CR11GDR00677 | 4.5 | 24 | 63 | 4.5 |
| CR11GDR006A5 | 4.6 | 26 | 63 | 4.6 |

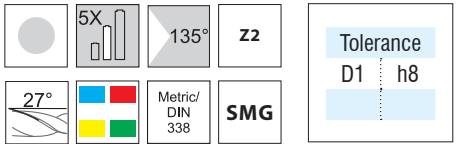
| Item Code TiALN Coated | Flute Dia(D1) | Flute Len(L1) | Overall Len(L2) | Shank Dia(D2) |
|---|---|---|---|---|
| CR11GDR006C1 | 4.7 | 26 | 63 | 4.7 |
| CR11GDR006E6 | 4.8 | 26 | 63 | 4.8 |
| CR11GDR006G2 | 4.9 | 26 | 63 | 4.9 |
| CR11GDR006J5 | 5.0 | 26 | 63 | 5.0 |
| CR11GDR006L1 | 5.1 | 28 | 63 | 5.1 |
| CR11GDR006N6 | 5.2 | 28 | 63 | 5.2 |
| CR11GDR006R8 | 5.3 | 28 | 63 | 5.3 |
| CR11GDR006U1 | 5.4 | 28 | 63 | 5.4 |
| CR11GDR006W7 | 5.5 | 28 | 63 | 5.5 |
| CR11GDR006Y2 | 5.6 | 28 | 63 | 5.6 |
| CR11GDR00701 | 5.7 | 28 | 63 | 5.7 |
| CR11GDR00727 | 5.8 | 28 | 63 | 5.8 |
| CR11GDR00743 | 5.9 | 28 | 63 | 5.9 |
| CR11GDR00768 | 6.0 | 28 | 63 | 6.0 |
| CR11GDR00784 | 6.1 | 31 | 63 | 6.1 |
| CR11GDR007A4 | 6.2 | 31 | 63 | 6.2 |
| CR11GDR007D7 | 6.3 | 31 | 63 | 6.3 |
| CR11GDR007F3 | 6.4 | 31 | 63 | 6.4 |
| CR11GDR007J4 | 6.5 | 31 | 63 | 6.5 |
| CR11GDR007L0 | 6.6 | 34 | 63 | 6.6 |
| CR11GDR007N5 | 6.7 | 34 | 63 | 6.7 |
| CR11GDR007Q9 | 6.8 | 34 | 63 | 6.8 |
| CR11GDR007T2 | 6.9 | 34 | 63 | 6.9 |
| CR11GDR007W6 | 7.0 | 34 | 63 | 7.0 |
| CR11GDR007Y1 | 7.1 | 34 | 79 | 7.1 |
| CR11GDR00800 | 7.2 | 34 | 79 | 7.2 |
| CR11GDR00826 | 7.3 | 34 | 79 | 7.3 |

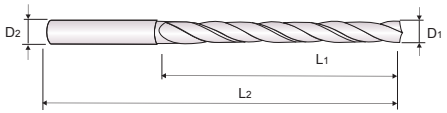




| Item Code TiALN Coated | Flute Dia(D1) | Flute Len(L1) | Overall Len(L2) | Shank Dia(D2) |
|---|---|---|---|---|
| CR11GDR00842 | 7.4 | 34 | 79 | 7.4 |
| CR11GDR00867 | 7.5 | 34 | 79 | 7.5 |
| CR11GDR008A3 | 7.6 | 37 | 79 | 7.6 |
| CR11GDR008C9 | 7.7 | 37 | 79 | 7.7 |
| CR11GDR008E4 | 7.8 | 37 | 79 | 7.8 |
| CR11GDR008G0 | 7.9 | 37 | 79 | 7.9 |
| CR11GDR008J3 | 8.0 | 37 | 79 | 8.0 |
| CR11GDR008L9 | 8.1 | 37 | 79 | 8.1 |
| CR11GDR008N4 | 8.2 | 37 | 79 | 8.2 |
| CR11GDR008R6 | 8.3 | 37 | 79 | 8.3 |
| CR11GDR008T1 | 8.4 | 37 | 79 | 8.4 |
| CR11GDR008W5 | 8.5 | 37 | 79 | 8.5 |
| CR11GDR00909 | 8.6 | 40 | 79 | 8.6 |
| CR11GDR00933 | 8.7 | 40 | 79 | 8.7 |
| CR11GDR00958 | 8.8 | 40 | 79 | 8.8 |
| CR11GDR00982 | 8.9 | 40 | 79 | 8.9 |
| CR11GDR009A2 | 9.0 | 40 | 79 | 9.0 |
| CR11GDR009E3 | 9.1 | 40 | 79 | 9.1 |
| CR11GDR009G9 | 9.2 | 40 | 79 | 9.2 |
| CR11GDR009J2 | 9.3 | 40 | 79 | 9.3 |
| CR11GDR009L8 | 9.4 | 40 | 79 | 9.4 |
| CR11GDR009N3 | 9.5 | 40 | 79 | 9.5 |
| CR11GDR009Q7 | 9.6 | 42 | 79 | 9.6 |
| CR11GDR009S2 | 9.7 | 42 | 79 | 9.7 |
| CR11GDR009V6 | 9.8 | 42 | 79 | 9.8 |
| CR11GDR009X1 | 9.9 | 42 | 79 | 9.9 |
| CR11GDR009Z7 | 10.0 | 42 | 79 | 10.0 |
| CR11GDR00A19 | 10.1 | 42 | 79 | 10.1 |
| CR11GDR00A27 | 10.2 | 42 | 79 | 10.2 |
| CR11GDR00A43 | 10.3 | 47 | 100 | 10.3 |
| CR11GDR00A50 | 10.4 | 47 | 100 | 10.4 |
| CR11GDR00A68 | 10.5 | 47 | 100 | 10.5 |
| CR11GDR00A92 | 10.6 | 47 | 100 | 10.6 |
| CR11GDR00AA4 | 10.7 | 47 | 100 | 10.7 |
| CR11GDR00AB2 | 10.8 | 47 | 100 | 10.8 |
| CR11GDR00AD7 | 10.9 | 47 | 100 | 10.9 |
| CR11GDR00AE5 | 11.0 | 47 | 100 | 11.0 |
| CR11GDR00AG1 | 11.1 | 47 | 100 | 11.1 |
| CR11GDR00AH9 | 11.2 | 47 | 100 | 11.2 |
| CR11GDR00AJ4 | 11.3 | 47 | 100 | 11.3 |
| CR11GDR00AK2 | 11.4 | 47 | 100 | 11.4 |

| Item Code TiALN Coated | Flute Dia(D1) | Flute Len(L1) | Overall Len(L2) | Shank Dia(D2) |
|---|---|---|---|---|
| CR11GDR00AL0 | 11.5 | 47 | 100 | 11.5 |
| CR11GDR00AN5 | 11.6 | 49 | 100 | 11.6 |
| CR11GDR00AP1 | 11.7 | 49 | 100 | 11.7 |
| CR11GDR00AQ9 | 11.8 | 49 | 100 | 11.8 |
| CR11GDR00AR7 | 11.9 | 49 | 100 | 11.9 |
| CR11GDR00AS4 | 12.0 | 49 | 100 | 12.0 |
| CR11GDR00AU0 | 12.1 | 51 | 102 | 12.1 |
| CR11GDR00AV8 | 12.2 | 51 | 102 | 12.2 |
| CR11GDR00AW6 | 12.3 | 51 | 102 | 12.3 |
| CR11GDR00AX3 | 12.4 | 51 | 102 | 12.4 |
| CR11GDR00AZ9 | 12.5 | 51 | 102 | 12.5 |
| CR11GDR00B00 | 12.6 | 51 | 102 | 12.6 |
| CR11GDR00B18 | 12.7 | 51 | 102 | 12.7 |
| CR11GDR00B34 | 12.8 | 51 | 102 | 12.8 |
| CR11GDR00B42 | 12.9 | 51 | 102 | 12.9 |
| CR11GDR00B59 | 13.0 | 51 | 102 | 13.0 |
| CR11GDR00B67 | 13.1 | 54 | 107 | 13.1 |
| CR11GDR00B75 | 13.2 | 54 | 107 | 13.2 |
| CR11GDR00B83 | 13.3 | 54 | 107 | 13.3 |
| CR11GDR00B91 | 13.4 | 54 | 107 | 13.4 |
| CR11GDR00BA3 | 13.5 | 54 | 107 | 13.5 |
| CR11GDR00BB1 | 13.6 | 54 | 107 | 13.6 |
| CR11GDR00BC9 | 13.7 | 54 | 107 | 13.7 |
| CR11GDR00BD6 | 13.8 | 54 | 107 | 13.8 |
| CR11GDR00BE4 | 13.9 | 54 | 107 | 13.9 |
| CR11GDR00BF2 | 14.0 | 54 | 107 | 14.0 |
| CR11GDR00BG0 | 14.1 | 56 | 109 | 14.1 |
| CR11GDR00BH8 | 14.2 | 56 | 109 | 14.2 |
| CR11GDR00BJ3 | 14.3 | 56 | 109 | 14.3 |
| CR11GDR00BK1 | 14.4 | 56 | 109 | 14.4 |
| CR11GDR00BL9 | 14.5 | 56 | 109 | 14.5 |
| CR11GDR00BM7 | 14.6 | 56 | 109 | 14.6 |
| CR11GDR00BN4 | 14.7 | 56 | 109 | 14.7 |
| CR11GDR00BP0 | 14.8 | 56 | 109 | 14.8 |
| CR11GDR00BQ8 | 14.9 | 56 | 109 | 14.9 |
| CR11GDR00BS3 | 15.0 | 56 | 109 | 15.0 |
| CR11GDR00BT1 | 16.0 | 56 | 109 | 16.0 |
| CR11GDR00BU9 | 17.0 | 56 | 109 | 17.0 |
| CR11GDR00BV7 | 18.0 | 56 | 109 | 18.0 |
| CR11GDR00BW5 | 19.0 | 56 | 109 | 19.0 |
| CR11GDR00BX2 | 20.0 | 56 | 109 | 20.0 |




**Application :**

- Solid Carbide GP Drills suitable for general purpose Drilling in materials like Cast Iron, high Al-Si Alloys, non-ferrous metals, abrasive plastics etc.

**For Feed & Speed Rates go to Page no. 38**

| Item Code Uncoated | Flute Dia(D1) | Flute Len(L1) | Overall Len(L2) | Shank Dia(D2) |
|---|---|---|---|---|
| CR1XGDR000H7 | 2.0 | 24 | 49 | 2.0 |
| CR1XGDR000J2 | 2.1 | 24 | 49 | 2.1 |
| CR1XGDR000K0 | 2.2 | 27 | 53 | 2.2 |
| CR1XGDR000L8 | 2.3 | 27 | 53 | 2.3 |
| CR1XGDR000M6 | 2.4 | 30 | 57 | 2.4 |
| CR1XGDR000N3 | 2.5 | 30 | 57 | 2.5 |
| CR1XGDR000P9 | 2.6 | 30 | 57 | 2.6 |
| CR1XGDR000Q7 | 2.7 | 33 | 61 | 2.7 |
| CR1XGDR000R5 | 2.8 | 33 | 61 | 2.8 |
| CR1XGDR000S2 | 2.9 | 33 | 61 | 2.9 |
| CR1XGDR000T0 | 3.0 | 33 | 61 | 3.0 |
| CR1XGDR000U8 | 3.1 | 36 | 65 | 3.1 |
| CR1XGDR000V6 | 3.2 | 36 | 65 | 3.2 |
| CR1XGDR000W4 | 3.3 | 36 | 65 | 3.3 |
| CR1XGDR000X1 | 3.4 | 39 | 70 | 3.4 |
| CR1XGDR000Y9 | 3.5 | 39 | 70 | 3.5 |
| CR1XGDR000Z7 | 3.6 | 39 | 70 | 3.6 |
| CR1XGDR00108 | 3.7 | 39 | 70 | 3.7 |
| CR1XGDR00116 | 3.8 | 43 | 75 | 3.8 |
| CR1XGDR00124 | 3.9 | 43 | 75 | 3.9 |
| CR1XGDR00140 | 4.0 | 43 | 75 | 4.0 |
| CR1XGDR00157 | 4.1 | 43 | 75 | 4.1 |
| CR1XGDR00165 | 4.2 | 43 | 75 | 4.2 |
| CR1XGDR00173 | 4.3 | 47 | 80 | 4.3 |
| CR1XGDR00181 | 4.4 | 47 | 80 | 4.4 |
| CR1XGDR00199 | 4.5 | 47 | 80 | 4.5 |
| CR1XGDR001B9 | 4.6 | 47 | 80 | 4.6 |

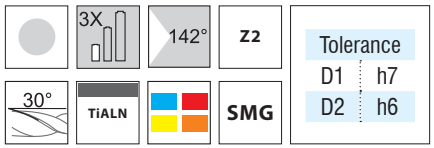
| Item Code Uncoated | Flute Dia(D1) | Flute Len(L1) | Overall Len(L2) | Shank Dia(D2) |
|---|---|---|---|---|
| CR1XGDR001C7 | 4.7 | 47 | 80 | 4.7 |
| CR1XGDR001D4 | 4.8 | 52 | 86 | 4.8 |
| CR1XGDR001E2 | 4.9 | 52 | 86 | 4.9 |
| CR1XGDR001G8 | 5.0 | 52 | 86 | 5.0 |
| CR1XGDR001H6 | 5.1 | 52 | 86 | 5.1 |
| CR1XGDR001J1 | 5.2 | 52 | 86 | 5.2 |
| CR1XGDR001K9 | 5.3 | 52 | 86 | 5.3 |
| CR1XGDR001L7 | 5.4 | 57 | 93 | 5.4 |
| CR1XGDR001M5 | 5.5 | 57 | 93 | 5.5 |
| CR1XGDR001N2 | 5.6 | 57 | 93 | 5.6 |
| CR1XGDR001P8 | 5.7 | 57 | 93 | 5.7 |
| CR1XGDR001Q6 | 5.8 | 57 | 93 | 5.8 |
| CR1XGDR001R4 | 5.9 | 57 | 93 | 5.9 |
| CR1XGDR001S1 | 6.0 | 57 | 93 | 6.0 |
| CR1XGDR001T9 | 6.1 | 63 | 101 | 6.1 |
| CR1XGDR001U7 | 6.2 | 63 | 101 | 6.2 |
| CR1XGDR001V5 | 6.3 | 63 | 101 | 6.3 |
| CR1XGDR001W3 | 6.4 | 63 | 101 | 6.4 |
| CR1XGDR001X0 | 6.5 | 63 | 101 | 6.5 |
| CR1XGDR001Y8 | 6.6 | 63 | 101 | 6.6 |
| CR1XGDR001Z6 | 6.7 | 63 | 101 | 6.7 |
| CR1XGDR00207 | 6.8 | 69 | 109 | 6.8 |
| CR1XGDR00215 | 6.9 | 69 | 109 | 6.9 |
| CR1XGDR00223 | 7.0 | 69 | 109 | 7.0 |
| CR1XGDR00231 | 7.1 | 69 | 109 | 7.1 |
| CR1XGDR00249 | 7.2 | 69 | 109 | 7.2 |
| CR1XGDR00256 | 7.3 | 69 | 109 | 7.3 |

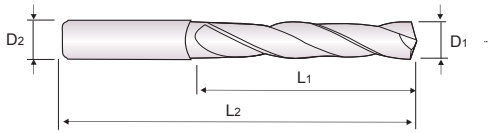




| Item Code Uncoated | Flute Dia(D1) | Flute Len(L1) | Overall Len(L2) | Shank Dia(D2) |
|---|---|---|---|---|
| CR1XGDR00264 | 7.4 | 69 | 109 | 7.4 |
| CR1XGDR00272 | 7.5 | 69 | 109 | 7.5 |
| CR1XGDR00280 | 7.6 | 75 | 117 | 7.6 |
| CR1XGDR00298 | 7.7 | 75 | 117 | 7.7 |
| CR1XGDR002A0 | 7.8 | 75 | 117 | 7.8 |
| CR1XGDR002B8 | 7.9 | 75 | 117 | 7.9 |
| CR1XGDR002C6 | 8.0 | 75 | 117 | 8.0 |
| CR1XGDR002E1 | 8.1 | 75 | 117 | 8.1 |
| CR1XGDR002F9 | 8.2 | 75 | 117 | 8.2 |
| CR1XGDR002G7 | 8.3 | 75 | 117 | 8.3 |
| CR1XGDR002H5 | 8.4 | 75 | 117 | 8.4 |
| CR1XGDR002J0 | 8.5 | 75 | 117 | 8.5 |
| CR1XGDR002K8 | 8.6 | 81 | 125 | 8.6 |
| CR1XGDR002L6 | 8.7 | 81 | 125 | 8.7 |
| CR1XGDR002M4 | 8.8 | 81 | 125 | 8.8 |
| CR1XGDR002N1 | 8.9 | 81 | 125 | 8.9 |
| CR1XGDR002P7 | 9.0 | 81 | 125 | 9.0 |
| CR1XGDR002Q5 | 9.1 | 81 | 125 | 9.1 |
| CR1XGDR002R3 | 9.2 | 81 | 125 | 9.2 |
| CR1XGDR002S0 | 9.3 | 81 | 125 | 9.3 |
| CR1XGDR002T8 | 9.4 | 81 | 125 | 9.4 |
| CR1XGDR002U6 | 9.5 | 81 | 125 | 9.5 |
| CR1XGDR002V4 | 9.6 | 87 | 133 | 9.6 |
| CR1XGDR002W2 | 9.7 | 87 | 133 | 9.7 |
| CR1XGDR002X9 | 9.8 | 87 | 133 | 9.8 |
| CR1XGDR002Y7 | 9.9 | 87 | 133 | 9.9 |
| CR1XGDR002Z5 | 10.0 | 87 | 133 | 10.0 |
| CR1XGDR00306 | 10.1 | 87 | 133 | 10.1 |
| CR1XGDR00322 | 10.2 | 87 | 133 | 10.2 |
| CR1XGDR00330 | 10.3 | 87 | 133 | 10.3 |
| CR1XGDR00348 | 10.4 | 87 | 133 | 10.4 |
| CR1XGDR00355 | 10.5 | 87 | 133 | 10.5 |
| CR1XGDR00363 | 10.6 | 87 | 133 | 10.6 |
| CR1XGDR00371 | 10.7 | 94 | 142 | 10.7 |
| CR1XGDR00389 | 10.8 | 94 | 142 | 10.8 |
| CR1XGDR00397 | 10.9 | 94 | 142 | 10.9 |
| CR1XGDR003A9 | 11.0 | 94 | 142 | 11.0 |
| CR1XGDR003B7 | 11.1 | 94 | 142 | 11.1 |
| CR1XGDR003C5 | 11.2 | 94 | 142 | 11.2 |
| CR1XGDR003D2 | 11.3 | 94 | 142 | 11.3 |
| CR1XGDR003E0 | 11.4 | 94 | 142 | 11.4 |

| Item Code Uncoated | Flute Dia(D1) | Flute Len(L1) | Overall Len(L2) | Shank Dia(D2) |
|---|---|---|---|---|
| CR1XGDR003F8 | 11.5 | 94 | 142 | 11.5 |
| CR1XGDR003G6 | 11.6 | 94 | 142 | 11.6 |
| CR1XGDR003H4 | 11.7 | 94 | 142 | 11.7 |
| CR1XGDR003J9 | 11.8 | 94 | 142 | 11.8 |
| CR1XGDR003K7 | 11.9 | 101 | 151 | 11.9 |
| CR1XGDR003L5 | 12.0 | 101 | 151 | 12.0 |
| CR1XGDR003M3 | 12.1 | 101 | 151 | 12.1 |
| CR1XGDR003N0 | 12.2 | 101 | 151 | 12.2 |
| CR1XGDR003P6 | 12.3 | 101 | 151 | 12.3 |
| CR1XGDR003Q4 | 12.4 | 101 | 151 | 12.4 |
| CR1XGDR003R2 | 12.5 | 101 | 151 | 12.5 |
| CR1XGDR003S9 | 12.6 | 101 | 151 | 12.6 |
| CR1XGDR003T7 | 12.7 | 101 | 151 | 12.7 |
| CR1XGDR003U5 | 12.8 | 101 | 151 | 12.8 |
| CR1XGDR003V3 | 12.9 | 101 | 151 | 12.9 |
| CR1XGDR003W1 | 13.0 | 101 | 151 | 13.0 |
| CR1XGDR003X8 | 13.1 | 101 | 151 | 13.1 |
| CR1XGDR003Y6 | 13.2 | 101 | 151 | 13.2 |
| CR1XGDR003Z4 | 13.3 | 101 | 151 | 13.3 |
| CR1XGDR00405 | 13.4 | 101 | 151 | 13.4 |
| CR1XGDR00413 | 13.5 | 101 | 151 | 13.5 |
| CR1XGDR00421 | 13.6 | 101 | 151 | 13.6 |
| CR1XGDR00439 | 13.7 | 101 | 151 | 13.7 |
| CR1XGDR00447 | 13.8 | 101 | 151 | 13.8 |
| CR1XGDR00454 | 13.9 | 101 | 151 | 13.9 |
| CR1XGDR00462 | 14.0 | 101 | 151 | 14.0 |
| CR1XGDR00470 | 14.1 | 101 | 151 | 14.1 |
| CR1XGDR00488 | 14.2 | 101 | 151 | 14.2 |
| CR1XGDR00496 | 14.3 | 101 | 151 | 14.3 |
| CR1XGDR004A8 | 14.4 | 101 | 151 | 14.4 |
| CR1XGDR004C4 | 14.5 | 101 | 151 | 14.5 |
| CR1XGDR004D1 | 14.6 | 101 | 151 | 14.6 |
| CR1XGDR004E9 | 14.7 | 101 | 151 | 14.7 |
| CR1XGDR004F7 | 14.8 | 101 | 151 | 14.8 |
| CR1XGDR004G5 | 14.9 | 101 | 151 | 14.9 |
| CR1XGDR004H3 | 15.0 | 101 | 151 | 15.0 |
| CR1XGDR004J8 | 16.0 | 101 | 151 | 16.0 |
| CR1XGDR004K6 | 17.0 | 101 | 151 | 17.0 |
| CR1XGDR004L4 | 18.0 | 101 | 151 | 18.0 |
| CR1XGDR004M2 | 19.0 | 101 | 151 | 19.0 |
| CR1XGDR004N9 | 20.0 | 101 | 151 | 20.0 |




**Application :**

- High Performance Carbide Drills best for Drilling in Cast Iron up to 350BHN, SG Iron, MS, Low carbon steel etc.

**Features:**

- Self Centering - Center Drilling not required
- Excellent Positioning - Bush is not necessary
- Special Design for Powerful Drilling & Good chip removal

**For Feed & Speed Rates go to Page no. 39**

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| C1HP0300-F | 3.0 | 28 | 63 | 3.0 |
| C1HP0310-F | 3.1 | 28 | 63 | 3.1 |
| C1HP0320-F | 3.2 | 28 | 63 | 3.2 |
| C1HP0330-F | 3.3 | 28 | 63 | 3.3 |
| C1HP0340-F | 3.4 | 28 | 63 | 3.4 |
| C1HP0350-F | 3.5 | 28 | 63 | 3.5 |
| C1HP0360-F | 3.6 | 28 | 63 | 3.6 |
| C1HP0370-F | 3.7 | 28 | 63 | 3.7 |
| C1HP0380-F | 3.8 | 28 | 63 | 3.8 |
| C1HP0390-F | 3.9 | 28 | 63 | 3.9 |
| C1HP0400-F | 4.0 | 40 | 80 | 4.0 |
| C1HP0410-F | 4.1 | 40 | 80 | 4.1 |
| C1HP0420-F | 4.2 | 40 | 80 | 4.2 |
| C1HP0430-F | 4.3 | 40 | 80 | 4.3 |
| C1HP0440-F | 4.4 | 40 | 80 | 4.4 |
| C1HP0450-F | 4.5 | 40 | 80 | 4.5 |
| C1HP0460-F | 4.6 | 40 | 80 | 4.6 |
| C1HP0470-F | 4.7 | 40 | 80 | 4.7 |
| C1HP0480-F | 4.8 | 40 | 80 | 4.8 |
| C1HP0490-F | 4.9 | 40 | 80 | 4.9 |
| C1HP0500-F | 5.0 | 40 | 80 | 5.0 |
| C1HP0510-F | 5.1 | 40 | 80 | 5.1 |
| C1HP0520-F | 5.2 | 40 | 80 | 5.2 |

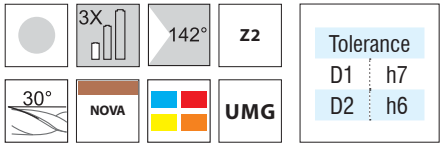
| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| C1HP0530-F | 5.3 | 40 | 80 | 5.3 |
| C1HP0540-F | 5.4 | 40 | 80 | 5.4 |
| C1HP0550-F | 5.5 | 40 | 80 | 5.5 |
| C1HP0560-F | 5.6 | 40 | 80 | 5.6 |
| C1HP0570-F | 5.7 | 40 | 80 | 5.7 |
| C1HP0580-F | 5.8 | 40 | 80 | 5.8 |
| C1HP0590-F | 5.9 | 40 | 80 | 5.9 |
| C1HP0600-F | 6.0 | 40 | 80 | 6.0 |
| C1HP0610-F | 6.1 | 40 | 80 | 6.1 |
| C1HP0620-F | 6.2 | 40 | 80 | 6.2 |
| C1HP0630-F | 6.3 | 40 | 80 | 6.3 |
| C1HP0640-F | 6.4 | 40 | 80 | 6.4 |
| C1HP0650-F | 6.5 | 40 | 80 | 6.5 |
| C1HP0660-F | 6.6 | 40 | 80 | 6.6 |
| C1HP0670-F | 6.7 | 40 | 80 | 6.7 |
| C1HP0680-F | 6.8 | 40 | 80 | 6.8 |
| C1HP0690-F | 6.9 | 40 | 80 | 6.9 |
| C1HP0700-F | 7.0 | 40 | 80 | 7.0 |
| C1HP0710-F | 7.1 | 40 | 80 | 7.1 |
| C1HP0720-F | 7.2 | 40 | 80 | 7.2 |
| C1HP0730-F | 7.3 | 40 | 80 | 7.3 |
| C1HP0740-F | 7.4 | 40 | 80 | 7.4 |
| C1HP0750-F | 7.5 | 40 | 80 | 7.5 |



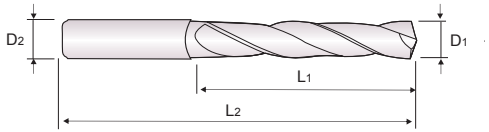


| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| C1HP0760-F | 7.6 | 40 | 80 | 7.6 |
| C1HP0770-F | 7.7 | 40 | 80 | 7.7 |
| C1HP0780-F | 7.8 | 40 | 80 | 7.8 |
| C1HP0790-F | 7.9 | 40 | 80 | 7.9 |
| C1HP0800-F | 8.0 | 60 | 105 | 8.0 |
| C1HP0810-F | 8.1 | 60 | 105 | 8.1 |
| C1HP0820-F | 8.2 | 60 | 105 | 8.2 |
| C1HP0830-F | 8.3 | 60 | 105 | 8.3 |
| C1HP0840-F | 8.4 | 60 | 105 | 8.4 |
| C1HP0850-F | 8.5 | 60 | 105 | 8.5 |
| C1HP0860-F | 8.6 | 60 | 105 | 8.6 |
| C1HP0870-F | 8.7 | 60 | 105 | 8.7 |
| C1HP0880-F | 8.8 | 60 | 105 | 8.8 |
| C1HP0890-F | 8.9 | 60 | 105 | 8.9 |
| C1HP0900-F | 9.0 | 60 | 105 | 9.0 |
| C1HP0910-F | 9.1 | 60 | 105 | 9.1 |
| C1HP0920-F | 9.2 | 60 | 105 | 9.2 |
| C1HP0930-F | 9.3 | 60 | 105 | 9.3 |
| C1HP0940-F | 9.4 | 60 | 105 | 9.4 |
| C1HP0950-F | 9.5 | 60 | 105 | 9.5 |
| C1HP0960-F | 9.6 | 60 | 105 | 9.6 |
| C1HP0970-F | 9.7 | 60 | 105 | 9.7 |
| C1HP0980-F | 9.8 | 60 | 105 | 9.8 |
| C1HP0990-F | 9.9 | 60 | 105 | 9.9 |
| C1HP1000-F | 10.0 | 60 | 105 | 10.0 |
| C1HP1010-F | 10.1 | 60 | 105 | 10.1 |

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| C1HP1020-F | 10.2 | 60 | 105 | 10.2 |
| C1HP1030-F | 10.3 | 60 | 105 | 10.3 |
| C1HP1020-F | 10.4 | 60 | 105 | 10.4 |
| C1HP1050-F | 10.5 | 60 | 105 | 10.5 |
| C1HP1020-F | 10.6 | 60 | 105 | 10.6 |
| C1HP1070-F | 10.7 | 60 | 105 | 10.7 |
| C1HP1020-F | 10.8 | 60 | 105 | 10.8 |
| C1HP1090-F | 10.9 | 60 | 105 | 10.9 |
| C1HP1020-F | 11.0 | 60 | 105 | 11.0 |
| C1HP1110-F | 11.1 | 60 | 105 | 11.1 |
| C1HP1020-F | 11.2 | 60 | 105 | 11.2 |
| C1HP1130-F | 11.3 | 60 | 105 | 11.3 |
| C1HP1020-F | 11.4 | 60 | 105 | 11.4 |
| C1HP1150-F | 11.5 | 60 | 105 | 11.5 |
| C1HP1020-F | 11.6 | 60 | 105 | 11.6 |
| C1HP1170-F | 11.7 | 60 | 105 | 11.7 |
| C1HP1020-F | 11.8 | 60 | 105 | 11.8 |
| C1HP1190-F | 11.9 | 60 | 105 | 11.9 |
| C1HP1200-F | 12.0 | 60 | 105 | 12.0 |
| C1HP1300-F | 13.0 | 60 | 105 | 13.0 |
| C1HP1350-F | 13.5 | 60 | 105 | 13.5 |
| C1HP1400-F | 14.0 | 60 | 105 | 14.0 |
| C1HP1450-F | 14.5 | 60 | 105 | 14.5 |
| C1HP1500-F | 15.0 | 60 | 105 | 15.0 |
| C1HP1550-F | 15.5 | 60 | 105 | 15.5 |
| C1HP1600-F | 16.0 | 60 | 105 | 16.0 |




| Tolerance | |
|---|---|
| D1 | h7 |
| D2 | h6 |




**Applications:**

- High Performance Carbide Drills for Drilling Cast Steel, Forged Steel, Cast Iron up to 40HRc.

***Note: Machining Austenitic Stainless Steel (300 series) generally requires Drills with Internal Coolant like our CTHS Series.***

**Features:**

- Ultra Micro-Fine Carbide Grade
- Multi-Layer NOVA coating to protect carbide tools at machining temp. up to 1,300°C
- Best Caride Drill for machining Alloy steel, Cast Iron up to 450BHN, SS & other tough materials
- Rapid chip curling to promote chip breakage.

**For Feed & Speed Rates go to Page no. 39**

| Item Code | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CR3AHDR00C23 | 2.0 | 14 | 50 | 4.0 |
| CR3AHDR00C31 | 2.1 | 14 | 50 | 4.0 |
| CR3AHDR00C49 | 2.2 | 14 | 50 | 4.0 |
| CR3AHDR00C56 | 2.3 | 14 | 50 | 4.0 |
| CR3AHDR00C64 | 2.4 | 14 | 50 | 4.0 |
| CR3AHDR00C72 | 2.5 | 14 | 50 | 4.0 |
| CR3AHDR00C80 | 2.6 | 14 | 50 | 4.0 |
| CR3AHDR00C98 | 2.7 | 14 | 50 | 4.0 |
| CR3AHDR00CA0 | 2.8 | 14 | 50 | 4.0 |
| CR3AHDR00CB8 | 2.9 | 14 | 50 | 4.0 |
| CR3AHDR00CC6 | 3.0 | 20 | 62 | 6.0 |
| CR3AHDR00CD3 | 3.1 | 20 | 62 | 6.0 |
| CR3AHDR00CE1 | 3.2 | 20 | 62 | 6.0 |
| CR3AHDR00CF9 | 3.3 | 20 | 62 | 6.0 |
| CR3AHDR00CG7 | 3.4 | 20 | 62 | 6.0 |
| CR3AHDR00CH5 | 3.5 | 20 | 62 | 6.0 |
| CR3AHDR00CJ0 | 3.6 | 20 | 62 | 6.0 |
| CR3AHDR00CK8 | 3.7 | 20 | 62 | 6.0 |
| CR3AHDR00CL6 | 3.8 | 24 | 62 | 6.0 |

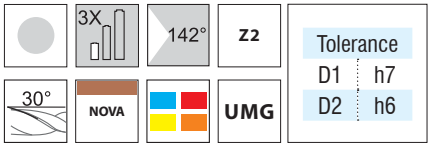
| Item Code | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CR3AHDR00CM4 | 3.9 | 24 | 62 | 6.0 |
| CR3AHDR00CN1 | 4.0 | 24 | 62 | 6.0 |
| CR3AHDR00CP7 | 4.1 | 24 | 62 | 6.0 |
| CR3AHDR00CQ5 | 4.2 | 24 | 62 | 6.0 |
| CR3AHDR00CR3 | 4.3 | 24 | 62 | 6.0 |
| CR3AHDR00CS0 | 4.4 | 24 | 62 | 6.0 |
| CR3AHDR00CT8 | 4.5 | 24 | 62 | 6.0 |
| CR3AHDR00CU6 | 4.6 | 24 | 62 | 6.0 |
| CR3AHDR00CV4 | 4.7 | 24 | 62 | 6.0 |
| CR3AHDR00CW2 | 4.8 | 28 | 62 | 6.0 |
| CR3AHDR00CX9 | 4.9 | 28 | 62 | 6.0 |
| CR3AHDR00CY7 | 5.0 | 28 | 62 | 6.0 |
| CR3AHDR00CZ5 | 5.1 | 28 | 62 | 6.0 |
| CR3AHDR00D06 | 5.2 | 28 | 62 | 6.0 |
| CR3AHDR00D14 | 5.3 | 28 | 62 | 6.0 |
| CR3AHDR00D22 | 5.4 | 28 | 62 | 6.0 |
| CR3AHDR00D30 | 5.5 | 28 | 62 | 6.0 |
| CR3AHDR00D48 | 5.6 | 28 | 62 | 6.0 |
| CR3AHDR00D55 | 5.7 | 28 | 62 | 6.0 |

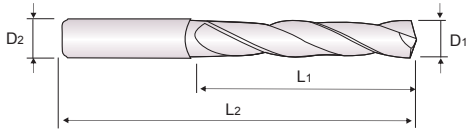




| Item Code | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CR3AHDR00D63 | 5.8 | 28 | 62 | 6.0 |
| CR3AHDR00D71 | 5.9 | 28 | 62 | 6.0 |
| CR3AHDR00D89 | 6.0 | 28 | 62 | 6.0 |
| CR3AHDR00D97 | 6.1 | 34 | 75 | 8.0 |
| CR3AHDR00DA9 | 6.2 | 34 | 75 | 8.0 |
| CR3AHDR00DB7 | 6.3 | 34 | 75 | 8.0 |
| CR3AHDR00DC5 | 6.4 | 34 | 75 | 8.0 |
| CR3AHDR00DD2 | 6.5 | 34 | 75 | 8.0 |
| CR3AHDR00DE0 | 6.6 | 34 | 75 | 8.0 |
| CR3AHDR00DF8 | 6.7 | 34 | 75 | 8.0 |
| CR3AHDR00DG6 | 6.8 | 34 | 75 | 8.0 |
| CR3AHDR00DH4 | 6.9 | 34 | 75 | 8.0 |
| CR3AHDR00DJ9 | 7.0 | 34 | 75 | 8.0 |
| CR3AHDR00DK7 | 7.1 | 40 | 80 | 8.0 |
| CR3AHDR00DL5 | 7.2 | 40 | 80 | 8.0 |
| CR3AHDR00DM3 | 7.3 | 40 | 80 | 8.0 |
| CR3AHDR00DN0 | 7.4 | 40 | 80 | 8.0 |
| CR3AHDR00DP6 | 7.5 | 40 | 80 | 8.0 |
| CR3AHDR00DQ4 | 7.6 | 40 | 80 | 8.0 |
| CR3AHDR00DR2 | 7.7 | 40 | 80 | 8.0 |
| CR3AHDR00DS9 | 7.8 | 40 | 80 | 8.0 |
| CR3AHDR00DT7 | 7.9 | 40 | 80 | 8.0 |
| CR3AHDR00DU5 | 8.0 | 40 | 80 | 8.0 |
| CR3AHDR00DV3 | 8.1 | 51 | 100 | 10.0 |
| CR3AHDR00DW1 | 8.2 | 51 | 100 | 10.0 |
| CR3AHDR00DX8 | 8.3 | 51 | 100 | 10.0 |
| CR3AHDR00DY6 | 8.4 | 51 | 100 | 10.0 |
| CR3AHDR00DZ4 | 8.5 | 51 | 100 | 10.0 |
| CR3AHDR00E05 | 8.6 | 51 | 100 | 10.0 |
| CR3AHDR00E13 | 8.7 | 51 | 100 | 10.0 |
| CR3AHDR00E21 | 8.8 | 51 | 100 | 10.0 |
| CR3AHDR00E39 | 8.9 | 51 | 100 | 10.0 |
| CR3AHDR00E47 | 9.0 | 51 | 100 | 10.0 |
| CR3AHDR00E54 | 9.1 | 51 | 100 | 10.0 |
| CR3AHDR00E62 | 9.2 | 51 | 100 | 10.0 |
| CR3AHDR00E70 | 9.3 | 51 | 100 | 10.0 |
| CR3AHDR00E88 | 9.4 | 51 | 100 | 10.0 |
| CR3AHDR00E96 | 9.5 | 51 | 100 | 10.0 |
| CR3AHDR00EA8 | 9.6 | 51 | 100 | 10.0 |

| Item Code | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CR3AHDR00EB6 | 9.7 | 51 | 100 | 10.0 |
| CR3AHDR00EC4 | 9.8 | 51 | 100 | 10.0 |
| CR3AHDR00ED1 | 9.9 | 51 | 100 | 10.0 |
| CR3AHDR00EE9 | 10.0 | 51 | 100 | 10.0 |
| CR3AHDR00EF7 | 10.1 | 55 | 100 | 12.0 |
| CR3AHDR00EG5 | 10.2 | 55 | 100 | 12.0 |
| CR3AHDR00EH3 | 10.3 | 55 | 100 | 12.0 |
| CR3AHDR00EJ8 | 10.4 | 55 | 100 | 12.0 |
| CR3AHDR00EK6 | 10.5 | 55 | 100 | 12.0 |
| CR3AHDR00EL4 | 10.6 | 55 | 100 | 12.0 |
| CR3AHDR00EM2 | 10.7 | 55 | 100 | 12.0 |
| CR3AHDR00EN9 | 10.8 | 55 | 100 | 12.0 |
| CR3AHDR00EP5 | 10.9 | 55 | 100 | 12.0 |
| CR3AHDR00EQ3 | 11.0 | 55 | 100 | 12.0 |
| CR3AHDR00ER1 | 11.1 | 55 | 100 | 12.0 |
| CR3AHDR00ES8 | 11.2 | 55 | 100 | 12.0 |
| CR3AHDR00ET6 | 11.3 | 55 | 100 | 12.0 |
| CR3AHDR00EU4 | 11.4 | 55 | 100 | 12.0 |
| CR3AHDR00EV2 | 11.5 | 55 | 100 | 12.0 |
| CR3AHDR00EW0 | 11.6 | 55 | 100 | 12.0 |
| CR3AHDR00EX7 | 11.7 | 55 | 100 | 12.0 |
| CR3AHDR00EY5 | 11.8 | 55 | 100 | 12.0 |
| CR3AHDR00EZ3 | 11.9 | 55 | 100 | 12.0 |
| CR3AHDR00F04 | 12.0 | 55 | 100 | 12.0 |
| CR3AHDR00F12 | 12.5 | 55 | 105 | 14.0 |
| CR3AHDR00F20 | 13.0 | 55 | 105 | 14.0 |
| CR3AHDR00F38 | 13.5 | 55 | 105 | 14.0 |
| CR3AHDR00F46 | 14.0 | 55 | 105 | 14.0 |
| CR3AHDR00F53 | 14.5 | 58 | 105 | 16.0 |
| CR3AHDR00F61 | 15.0 | 58 | 105 | 16.0 |
| CR3AHDR00F79 | 15.5 | 58 | 105 | 16.0 |
| CR3AHDR00F87 | 16.0 | 58 | 105 | 16.0 |
| CR3AHDR00F95 | 16.5 | 58 | 105 | 18.0 |
| CR3AHDR00FA7 | 17.0 | 58 | 105 | 18.0 |
| CR3AHDR00FB5 | 17.5 | 58 | 105 | 18.0 |
| CR3AHDR00FC3 | 18.0 | 58 | 105 | 18.0 |
| CR3AHDR00FD0 | 18.5 | 58 | 105 | 20.0 |
| CR3AHDR00FE8 | 19.0 | 58 | 105 | 20.0 |
| CR3AHDR00FF6 | 19.5 | 58 | 105 | 20.0 |
| CR3AHDR00FG4 | 20.0 | 58 | 105 | 20.0 |




**Applications:**

- High Performance Carbide Drills for Drilling Cast Steel, Forged Steel, Cast Iron up to 40HRc.

***Note: Machining Austenitic Stainless Steel (300 series) generally requires Drills with Internal Coolant like our CTHS Series.***

**Features:**

- Ultra Micro-Fine Carbide Grade
- Multi-Layer NOVA coating to protect carbide tools at machining temp. up to 1,300°C.
- Best Carbide Drill for machining Alloy steel, Cast Iron up to 450BHN, SS & other tough materials
- Rapid chip curling to promote chip breakage

**For Feed & Speed Rates go to Page no. 39.**

| Item Code | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CR3AHDR00FH2 | 2.0 | 21 | 57 | 4.0 |
| CR3AHDR00FJ7 | 2.1 | 21 | 57 | 4.0 |
| CR3AHDR00FK5 | 2.2 | 21 | 57 | 4.0 |
| CR3AHDR00FL3 | 2.3 | 21 | 57 | 4.0 |
| CR3AHDR00FM1 | 2.4 | 21 | 57 | 4.0 |
| CR3AHDR00FN8 | 2.5 | 21 | 57 | 4.0 |
| CR3AHDR00FP4 | 2.6 | 21 | 57 | 4.0 |
| CR3AHDR00FQ2 | 2.7 | 21 | 57 | 4.0 |
| CR3AHDR00FR0 | 2.8 | 21 | 57 | 4.0 |
| CR3AHDR00FS7 | 2.9 | 21 | 57 | 4.0 |
| CR3AHDR00FT5 | 3.0 | 28 | 62 | 6.0 |
| CR3AHDR00FU3 | 3.1 | 28 | 62 | 6.0 |
| CR3AHDR00FV1 | 3.2 | 28 | 62 | 6.0 |
| CR3AHDR00FW9 | 3.3 | 28 | 62 | 6.0 |
| CR3AHDR00FX6 | 3.4 | 28 | 62 | 6.0 |
| CR3AHDR00FY4 | 3.5 | 28 | 62 | 6.0 |
| CR3AHDR00FZ2 | 3.6 | 28 | 62 | 6.0 |
| CR3AHDR00G03 | 3.7 | 28 | 62 | 6.0 |

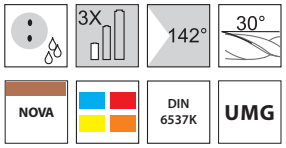
| Item Code | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CR3AHDR00G11 | 3.8 | 36 | 75 | 6.0 |
| CR3AHDR00G29 | 3.9 | 36 | 75 | 6.0 |
| CR3AHDR00G37 | 4.0 | 36 | 75 | 6.0 |
| CR3AHDR00G45 | 4.1 | 36 | 75 | 6.0 |
| CR3AHDR00G52 | 4.2 | 36 | 75 | 6.0 |
| CR3AHDR00G60 | 4.3 | 36 | 75 | 6.0 |
| CR3AHDR00G78 | 4.4 | 36 | 75 | 6.0 |
| CR3AHDR00G86 | 4.5 | 36 | 75 | 6.0 |
| CR3AHDR00G94 | 4.6 | 36 | 75 | 6.0 |
| CR3AHDR00GA6 | 4.7 | 36 | 75 | 6.0 |
| CR3AHDR00GB4 | 4.8 | 42 | 80 | 6.0 |
| CR3AHDR00GC2 | 4.9 | 42 | 80 | 6.0 |
| CR3AHDR00GD9 | 5.0 | 42 | 80 | 6.0 |
| CR3AHDR00GE7 | 5.1 | 42 | 80 | 6.0 |
| CR3AHDR00GF5 | 5.2 | 42 | 80 | 6.0 |
| CR3AHDR00GG3 | 5.3 | 42 | 80 | 6.0 |
| CR3AHDR00GH1 | 5.4 | 42 | 80 | 6.0 |
| CR3AHDR00GJ6 | 5.5 | 42 | 80 | 6.0 |



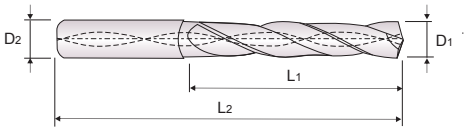


| Item Code | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CR3AHDR00GK4 | 5.6 | 42 | 80 | 6.0 |
| CR3AHDR00GL2 | 5.7 | 42 | 80 | 6.0 |
| CR3AHDR00GM0 | 5.8 | 42 | 80 | 6.0 |
| CR3AHDR00GN7 | 5.9 | 42 | 80 | 6.0 |
| CR3AHDR00GP3 | 6.0 | 42 | 80 | 6.0 |
| CR3AHDR00GQ1 | 6.1 | 55 | 100 | 8.0 |
| CR3AHDR00GR9 | 6.2 | 55 | 100 | 8.0 |
| CR3AHDR00GS6 | 6.3 | 55 | 100 | 8.0 |
| CR3AHDR00GT4 | 6.4 | 55 | 100 | 8.0 |
| CR3AHDR00GU2 | 6.5 | 55 | 100 | 8.0 |
| CR3AHDR00GV0 | 6.6 | 55 | 100 | 8.0 |
| CR3AHDR00GW8 | 6.7 | 55 | 100 | 8.0 |
| CR3AHDR00GX5 | 6.8 | 55 | 100 | 8.0 |
| CR3AHDR00GY3 | 6.9 | 55 | 100 | 8.0 |
| CR3AHDR00GZ1 | 7.0 | 55 | 100 | 8.0 |
| CR3AHDR00H02 | 7.1 | 60 | 105 | 8.0 |
| CR3AHDR00H10 | 7.2 | 60 | 105 | 8.0 |
| CR3AHDR00H28 | 7.3 | 60 | 105 | 8.0 |
| CR3AHDR00H36 | 7.4 | 60 | 105 | 8.0 |
| CR3AHDR00H44 | 7.5 | 60 | 105 | 8.0 |
| CR3AHDR00H51 | 7.6 | 60 | 105 | 8.0 |
| CR3AHDR00H69 | 7.7 | 60 | 105 | 8.0 |
| CR3AHDR00H77 | 7.8 | 60 | 105 | 8.0 |
| CR3AHDR00H85 | 7.9 | 60 | 105 | 8.0 |
| CR3AHDR00H93 | 8.0 | 60 | 105 | 8.0 |
| CR3AHDR00HA5 | 8.1 | 75 | 125 | 10.0 |
| CR3AHDR00HB3 | 8.2 | 75 | 125 | 10.0 |
| CR3AHDR00HC1 | 8.3 | 75 | 125 | 10.0 |
| CR3AHDR00HD8 | 8.4 | 75 | 125 | 10.0 |
| CR3AHDR00HE6 | 8.5 | 75 | 125 | 10.0 |
| CR3AHDR00HF4 | 8.6 | 75 | 125 | 10.0 |
| CR3AHDR00HG2 | 8.7 | 75 | 125 | 10.0 |
| CR3AHDR00HH0 | 8.8 | 75 | 125 | 10.0 |
| CR3AHDR00HJ5 | 8.9 | 75 | 125 | 10.0 |
| CR3AHDR00HK3 | 9.0 | 75 | 125 | 10.0 |
| CR3AHDR00HL1 | 9.1 | 75 | 125 | 10.0 |
| CR3AHDR00HM9 | 9.2 | 75 | 125 | 10.0 |
| CR3AHDR00HN6 | 9.3 | 75 | 125 | 10.0 |
| CR3AHDR00HP2 | 9.4 | 75 | 125 | 10.0 |
| CR3AHDR00HQ0 | 9.5 | 75 | 125 | 10.0 |

| Item Code | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CR3AHDR00HR8 | 9.6 | 75 | 125 | 10.0 |
| CR3AHDR00HS5 | 9.7 | 75 | 125 | 10.0 |
| CR3AHDR00HT3 | 9.8 | 75 | 125 | 10.0 |
| CR3AHDR00HU1 | 9.9 | 75 | 125 | 10.0 |
| CR3AHDR00HV9 | 10.0 | 75 | 125 | 10.0 |
| CR3AHDR00HW7 | 10.1 | 85 | 140 | 12.0 |
| CR3AHDR00HX4 | 10.2 | 85 | 140 | 12.0 |
| CR3AHDR00HY2 | 10.3 | 85 | 140 | 12.0 |
| CR3AHDR00HZ0 | 10.4 | 85 | 140 | 12.0 |
| CR3AHDR00J00 | 10.5 | 85 | 140 | 12.0 |
| CR3AHDR00J18 | 10.6 | 85 | 140 | 12.0 |
| CR3AHDR00J26 | 10.7 | 85 | 140 | 12.0 |
| CR3AHDR00J34 | 10.8 | 85 | 140 | 12.0 |
| CR3AHDR00J42 | 10.9 | 85 | 140 | 12.0 |
| CR3AHDR00J59 | 11.0 | 85 | 140 | 12.0 |
| CR3AHDR00J67 | 11.1 | 85 | 140 | 12.0 |
| CR3AHDR00J75 | 11.2 | 85 | 140 | 12.0 |
| CR3AHDR00J83 | 11.3 | 85 | 140 | 12.0 |
| CR3AHDR00J91 | 11.4 | 85 | 140 | 12.0 |
| CR3AHDR00JA3 | 11.5 | 85 | 140 | 12.0 |
| CR3AHDR00JB1 | 11.6 | 85 | 140 | 12.0 |
| CR3AHDR00JC9 | 11.7 | 85 | 140 | 12.0 |
| CR3AHDR00JD6 | 11.8 | 85 | 140 | 12.0 |
| CR3AHDR00JE4 | 11.9 | 85 | 140 | 12.0 |
| CR3AHDR00JF2 | 12.0 | 85 | 140 | 12.0 |
| CR3AHDR00JG0 | 12.5 | 85 | 140 | 14.0 |
| CR3AHDR00JH8 | 13.0 | 85 | 140 | 14.0 |
| CR3AHDR00JJ3 | 13.5 | 85 | 140 | 14.0 |
| CR3AHDR00JK1 | 14.0 | 85 | 140 | 14.0 |
| CR3AHDR00JL9 | 14.5 | 90 | 145 | 16.0 |
| CR3AHDR00JM7 | 15.0 | 90 | 145 | 16.0 |
| CR3AHDR00JN4 | 15.5 | 90 | 145 | 16.0 |
| CR3AHDR00JP0 | 16.0 | 90 | 145 | 16.0 |
| CR3AHDR00JQ8 | 16.5 | 95 | 150 | 18.0 |
| CR3AHDR00JR6 | 17.0 | 95 | 150 | 18.0 |
| CR3AHDR00JS3 | 17.5 | 95 | 150 | 18.0 |
| CR3AHDR00JT1 | 18.0 | 95 | 150 | 18.0 |
| CR3AHDR00JU9 | 18.5 | 98 | 150 | 20.0 |
| CR3AHDR00JV7 | 19.0 | 98 | 150 | 20.0 |
| CR3AHDR00JW5 | 19.5 | 98 | 150 | 20.0 |
| CR3AHDR00JX2 | 20.0 | 98 | 150 | 20.0 |




| Tolerance | |
|---|---|
| D1 | h7 |
| D2 | h6 |




**Applications:**

- High Performance Coolant Drills for maximum productivity in Steels, Cast Iron, Stainless Steel (300 series) & non-ferrous metals.
- Extremely high feed & cutting speeds with superior process reliability and surface quality

**Features:**

- Internal coolant
- Self Centering - Center Drilling not required
- Excellent Positioning - Bush is not necessary
- Special Design for Powerful Drilling & Good chip removal

**For Feed & Speed Rates go to Page no. 40**

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHS0410-N | 4.1 | 24 | 62 | 6.0 |
| CTHS0420-N | 4.2 | 24 | 62 | 6.0 |
| CTHS0430-N | 4.3 | 24 | 62 | 6.0 |
| CTHS0440-N | 4.4 | 24 | 62 | 6.0 |
| CTHS0450-N | 4.5 | 24 | 62 | 6.0 |
| CTHS0460-N | 4.6 | 24 | 62 | 6.0 |
| CTHS0470-N | 4.7 | 24 | 62 | 6.0 |
| CTHS0480-N | 4.8 | 28 | 62 | 6.0 |
| CTHS0490-N | 4.9 | 28 | 62 | 6.0 |
| CTHS0500-N | 5.0 | 28 | 62 | 6.0 |
| CTHS0510-N | 5.1 | 28 | 62 | 6.0 |
| CTHS0520-N | 5.2 | 28 | 62 | 6.0 |
| CTHS0530-N | 5.3 | 28 | 62 | 6.0 |
| CTHS0540-N | 5.4 | 28 | 62 | 6.0 |
| CTHS0550-N | 5.5 | 28 | 62 | 6.0 |
| CTHS0560-N | 5.6 | 28 | 62 | 6.0 |
| CTHS0570-N | 5.7 | 28 | 62 | 6.0 |
| CTHS0580-N | 5.8 | 28 | 62 | 6.0 |
| CTHS0590-N | 5.9 | 28 | 62 | 6.0 |
| CTHS0600-N | 6.0 | 28 | 62 | 6.0 |
| CTHS0610-N | 6.1 | 34 | 75 | 8.0 |

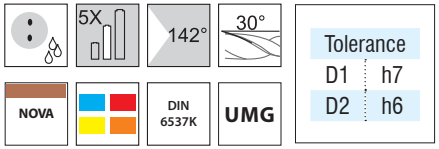
| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHS0620-N | 6.2 | 34 | 75 | 8.0 |
| CTHS0630-N | 6.3 | 34 | 75 | 8.0 |
| CTHS0640-N | 6.4 | 34 | 75 | 8.0 |
| CTHS0650-N | 6.5 | 34 | 75 | 8.0 |
| CTHS0660-N | 6.6 | 34 | 75 | 8.0 |
| CTHS0670-N | 6.7 | 34 | 75 | 8.0 |
| CTHS0680-N | 6.8 | 34 | 75 | 8.0 |
| CTHS0690-N | 6.9 | 34 | 75 | 8.0 |
| CTHS0700-N | 7.0 | 34 | 75 | 8.0 |
| CTHS0710-N | 7.1 | 40 | 80 | 8.0 |
| CTHS0720-N | 7.2 | 40 | 80 | 8.0 |
| CTHS0730-N | 7.3 | 40 | 80 | 8.0 |
| CTHS0740-N | 7.4 | 40 | 80 | 8.0 |
| CTHS0750-N | 7.5 | 40 | 80 | 8.0 |
| CTHS0760-N | 7.6 | 40 | 80 | 8.0 |
| CTHS0770-N | 7.7 | 40 | 80 | 8.0 |
| CTHS0780-N | 7.8 | 40 | 80 | 8.0 |
| CTHS0790-N | 7.9 | 40 | 80 | 8.0 |
| CTHS0800-N | 8.0 | 40 | 80 | 8.0 |
| CTHS0810-N | 8.1 | 51 | 100 | 10.0 |
| CTHS0820-N | 8.2 | 51 | 100 | 10.0 |

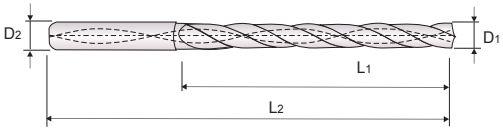




| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHS0830-N | 8.3 | 51 | 100 | 10.0 |
| CTHS0840-N | 8.4 | 51 | 100 | 10.0 |
| CTHS0850-N | 8.5 | 51 | 100 | 10.0 |
| CTHS0860-N | 8.6 | 51 | 100 | 10.0 |
| CTHS0870-N | 8.7 | 51 | 100 | 10.0 |
| CTHS0880-N | 8.8 | 51 | 100 | 10.0 |
| CTHS0890-N | 8.9 | 51 | 100 | 10.0 |
| CTHS0900-N | 9.0 | 51 | 100 | 10.0 |
| CTHS0910-N | 9.1 | 51 | 100 | 10.0 |
| CTHS0920-N | 9.2 | 51 | 100 | 10.0 |
| CTHS0930-N | 9.3 | 51 | 100 | 10.0 |
| CTHS0940-N | 9.4 | 51 | 100 | 10.0 |
| CTHS0950-N | 9.5 | 51 | 100 | 10.0 |
| CTHS0960-N | 9.6 | 51 | 100 | 10.0 |
| CTHS0970-N | 9.7 | 51 | 100 | 10.0 |
| CTHS0980-N | 9.8 | 51 | 100 | 10.0 |
| CTHS0990-N | 9.9 | 51 | 100 | 10.0 |
| CTHS1000-N | 10.0 | 51 | 100 | 10.0 |
| CTHS1010-N | 10.1 | 55 | 100 | 12.0 |
| CTHS1020-N | 10.2 | 55 | 100 | 12.0 |
| CTHS1030-N | 10.3 | 55 | 100 | 12.0 |
| CTHS1040-N | 10.4 | 55 | 100 | 12.0 |
| CTHS1050-N | 10.5 | 55 | 100 | 12.0 |
| CTHS1060-N | 10.6 | 55 | 100 | 12.0 |
| CTHS1070-N | 10.7 | 55 | 100 | 12.0 |
| CTHS1080-N | 10.8 | 55 | 100 | 12.0 |
| CTHS1090-N | 10.9 | 55 | 100 | 12.0 |
| CTHS1100-N | 11.0 | 55 | 100 | 12.0 |
| CTHS1110-N | 11.1 | 55 | 100 | 12.0 |
| CTHS1120-N | 11.2 | 55 | 100 | 12.0 |
| CTHS1130-N | 11.3 | 55 | 100 | 12.0 |
| CTHS1140-N | 11.4 | 55 | 100 | 12.0 |
| CTHS1150-N | 11.5 | 55 | 100 | 12.0 |
| CTHS1160-N | 11.6 | 55 | 100 | 12.0 |
| CTHS1170-N | 11.7 | 55 | 100 | 12.0 |
| CTHS1180-N | 11.8 | 55 | 100 | 12.0 |
| CTHS1190-N | 11.9 | 55 | 100 | 12.0 |
| CTHS1200-N | 12.0 | 55 | 100 | 12.0 |
| CTHS1250-N | 12.5 | 55 | 105 | 14.0 |
| CTHS1300-N | 13.0 | 55 | 105 | 14.0 |

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHS1350-N | 13.5 | 55 | 105 | 14.0 |
| CTHS1400-N | 14.0 | 55 | 105 | 14.0 |
| CTHS1450-N | 14.5 | 58 | 105 | 16.0 |
| CTHS1500-N | 15.0 | 58 | 105 | 16.0 |
| CTHS1550-N | 15.5 | 58 | 105 | 16.0 |
| CTHS1600-N | 16.0 | 58 | 105 | 16.0 |
| CTHS1650-N | 16.5 | 58 | 105 | 18.0 |
| CTHS1700-N | 17.0 | 58 | 105 | 18.0 |
| CTHS1750-N | 17.5 | 58 | 105 | 18.0 |
| CTHS1800-N | 18.0 | 58 | 105 | 18.0 |
| CTHS1850-N | 18.5 | 58 | 105 | 20.0 |
| CTHS1900-N | 19.0 | 58 | 105 | 20.0 |
| CTHS1950-N | 19.5 | 58 | 105 | 20.0 |
| CTHS2000-N | 20.0 | 58 | 105 | 20.0 |




**Applications:**

- High Performance Coolant Drills for maximum productivity in Steels, Cast Iron, Stainless Steel (300 series) & non-ferrous metals.
- Extremely high feed & cutting speeds with superior process reliability and surface quality

**Features:**

- Internal coolant
- Self Centering - Center Drilling not required
- Excellent Positioning - Bush is not necessary
- Special Design for Powerful Drilling & Good chip removal

**For Feed & Speed Rates go to Page no. 40**

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHL0410-N | 4.1 | 36 | 75 | 6.0 |
| CTHL0420-N | 4.2 | 36 | 75 | 6.0 |
| CTHL0430-N | 4.3 | 36 | 75 | 6.0 |
| CTHL0440-N | 4.4 | 36 | 75 | 6.0 |
| CTHL0450-N | 4.5 | 36 | 75 | 6.0 |
| CTHL0460-N | 4.6 | 36 | 75 | 6.0 |
| CTHL0470-N | 4.7 | 36 | 75 | 6.0 |
| CTHL0480-N | 4.8 | 42 | 80 | 6.0 |
| CTHL0490-N | 4.9 | 42 | 80 | 6.0 |
| CTHL0500-N | 5.0 | 42 | 80 | 6.0 |
| CTHL0510-N | 5.1 | 42 | 80 | 6.0 |
| CTHL0520-N | 5.2 | 42 | 80 | 6.0 |
| CTHL0530-N | 5.3 | 42 | 80 | 6.0 |
| CTHL0540-N | 5.4 | 42 | 80 | 6.0 |
| CTHL0550-N | 5.5 | 42 | 80 | 6.0 |
| CTHL0560-N | 5.6 | 42 | 80 | 6.0 |
| CTHL0570-N | 5.7 | 42 | 80 | 6.0 |
| CTHL0580-N | 5.8 | 42 | 80 | 6.0 |
| CTHL0590-N | 5.9 | 42 | 80 | 6.0 |
| CTHL0600-N | 6.0 | 42 | 80 | 6.0 |
| CTHL0610-N | 6.1 | 55 | 100 | 8.0 |

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHL0620-N | 6.2 | 55 | 100 | 8.0 |
| CTHL0630-N | 6.3 | 55 | 100 | 8.0 |
| CTHL0640-N | 6.4 | 55 | 100 | 8.0 |
| CTHL0650-N | 6.5 | 55 | 100 | 8.0 |
| CTHL0660-N | 6.6 | 55 | 100 | 8.0 |
| CTHL0670-N | 6.7 | 55 | 100 | 8.0 |
| CTHL0680-N | 6.8 | 55 | 100 | 8.0 |
| CTHL0690-N | 6.9 | 55 | 100 | 8.0 |
| CTHL0700-N | 7.0 | 55 | 100 | 8.0 |
| CTHL0710-N | 7.1 | 60 | 105 | 8.0 |
| CTHL0720-N | 7.2 | 60 | 105 | 8.0 |
| CTHL0730-N | 7.3 | 60 | 105 | 8.0 |
| CTHL0740-N | 7.4 | 60 | 105 | 8.0 |
| CTHL0750-N | 7.5 | 60 | 105 | 8.0 |
| CTHL0760-N | 7.6 | 60 | 105 | 8.0 |
| CTHL0770-N | 7.7 | 60 | 105 | 8.0 |
| CTHL0780-N | 7.8 | 60 | 105 | 8.0 |
| CTHL0790-N | 7.9 | 60 | 105 | 8.0 |
| CTHL0800-N | 8.0 | 60 | 105 | 8.0 |
| CTHL0810-N | 8.1 | 75 | 125 | 10.0 |
| CTHL0820-N | 8.2 | 75 | 125 | 10.0 |

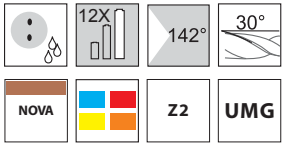




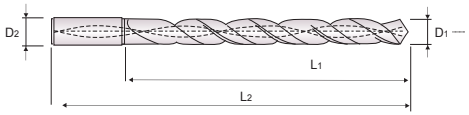
| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHL0830-N | 8.3 | 75 | 125 | 10.0 |
| CTHL0840-N | 8.4 | 75 | 125 | 10.0 |
| CTHL0850-N | 8.5 | 75 | 125 | 10.0 |
| CTHL0860-N | 8.6 | 75 | 125 | 10.0 |
| CTHL0870-N | 8.7 | 75 | 125 | 10.0 |
| CTHL0880-N | 8.8 | 75 | 125 | 10.0 |
| CTHL0890-N | 8.9 | 75 | 125 | 10.0 |
| CTHL0900-N | 9.0 | 75 | 125 | 10.0 |
| CTHL0910-N | 9.1 | 75 | 125 | 10.0 |
| CTHL0920-N | 9.2 | 75 | 125 | 10.0 |
| CTHL0930-N | 9.3 | 75 | 125 | 10.0 |
| CTHL0940-N | 9.4 | 75 | 125 | 10.0 |
| CTHL0950-N | 9.5 | 75 | 125 | 10.0 |
| CTHL0960-N | 9.6 | 75 | 125 | 10.0 |
| CTHL0970-N | 9.7 | 75 | 125 | 10.0 |
| CTHL0980-N | 9.8 | 75 | 125 | 10.0 |
| CTHL0990-N | 9.9 | 75 | 125 | 10.0 |
| CTHL1000-N | 10.0 | 75 | 125 | 10.0 |
| CTHL1010-N | 10.1 | 85 | 140 | 12.0 |
| CTHL1020-N | 10.2 | 85 | 140 | 12.0 |
| CTHL1030-N | 10.3 | 85 | 140 | 12.0 |
| CTHL1040-N | 10.4 | 85 | 140 | 12.0 |
| CTHL1050-N | 10.5 | 85 | 140 | 12.0 |
| CTHL1060-N | 10.6 | 85 | 140 | 12.0 |
| CTHL1070-N | 10.7 | 85 | 140 | 12.0 |
| CTHL1080-N | 10.8 | 85 | 140 | 12.0 |
| CTHL1090-N | 10.9 | 85 | 140 | 12.0 |
| CTHL1100-N | 11.0 | 85 | 140 | 12.0 |
| CTHL1110-N | 11.1 | 85 | 140 | 12.0 |
| CTHL1120-N | 11.2 | 85 | 140 | 12.0 |
| CTHL1130-N | 11.3 | 85 | 140 | 12.0 |
| CTHL1140-N | 11.4 | 85 | 140 | 12.0 |
| CTHL1150-N | 11.5 | 85 | 140 | 12.0 |
| CTHL1160-N | 11.6 | 85 | 140 | 12.0 |
| CTHL1170-N | 11.7 | 85 | 140 | 12.0 |
| CTHL1180-N | 11.8 | 85 | 140 | 12.0 |
| CTHL1190-N | 11.9 | 85 | 140 | 12.0 |
| CTHL1200-N | 12.0 | 85 | 140 | 12.0 |
| CTHL1250-N | 12.5 | 85 | 140 | 14.0 |

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHL1300-N | 13.0 | 85 | 140 | 14.0 |
| CTHL1350-N | 13.5 | 85 | 140 | 14.0 |
| CTHL1400-N | 14.0 | 85 | 140 | 14.0 |
| CTHL1450-N | 14.5 | 90 | 145 | 16.0 |
| CTHL1500-N | 15.0 | 90 | 145 | 16.0 |
| CTHL1550-N | 15.5 | 90 | 145 | 16.0 |
| CTHL1600-N | 16.0 | 90 | 145 | 16.0 |
| CTHL1650-N | 16.5 | 95 | 150 | 18.0 |
| CTHL1700-N | 17.0 | 95 | 150 | 18.0 |
| CTHL1750-N | 17.5 | 95 | 150 | 18.0 |
| CTHL1800-N | 18.0 | 95 | 150 | 18.0 |
| CTHL1850-N | 18.5 | 98 | 150 | 20.0 |
| CTHL1900-N | 19.0 | 98 | 150 | 20.0 |
| CTHL1950-N | 19.5 | 98 | 150 | 20.0 |
| CTHL2000-N | 20.0 | 98 | 150 | 20.0 |

## CTHM Series | Carbide Coolant Hole - MQL Drills




| Tolerance | |
|---|---|
| D1 | h7 |
| D2 | h6 |




**Applications:**
- High Performance Coolant Drills for maximum productivity in Steels, Cast Iron, Stainless Steel (300 series) & non-ferrous metals.
- Extremely high feed & cutting speeds with superior process reliability and surface quality

**Features:**
- Excellent positioning
- Special Design for Powerful Drilling & Good chip removal
- Available for processing MQL (Minimum Quantity Lubrication)

**For Feed & Speed Rates go to Page no. 40**

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHM0420-N | 4.2 | 57 | 105 | 6.0 |
| CTHM0450-N | 4.5 | 57 | 105 | 6.0 |
| CTHM0500-N | 5.0 | 65 | 108 | 6.0 |
| CTHM0550-N | 5.5 | 72 | 127 | 6.0 |
| CTHM0600-N | 6.0 | 78 | 133 | 6.0 |
| CTHM0650-N | 6.5 | 85 | 141 | 8.0 |
| CTHM0700-N | 7.0 | 91 | 147 | 8.0 |
| CTHM0750-N | 7.5 | 98 | 155 | 8.0 |
| CTHM0800-N | 8.0 | 104 | 160 | 8.0 |

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| CTHM0850-S | 8.5 | 111 | 160 | 10.0 |
| CTHM0900-S | 9.0 | 117 | 175 | 10.0 |
| CTHM0950-S | 9.5 | 124 | 182 | 10.0 |
| CTHM1000-S | 10.0 | 130 | 188 | 10.0 |
| CTHM1050-S | 10.5 | 137 | 201 | 12.0 |
| CTHM1100-S | 11.0 | 143 | 207 | 12.0 |
| CTHM1150-S | 11.5 | 150 | 215 | 12.0 |
| CTHM1200-S | 12.0 | 156 | 221 | 12.0 |



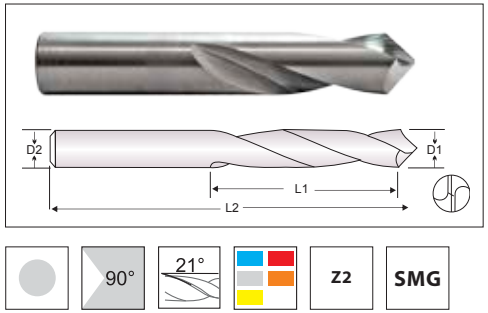
## C1N1 Series | Carbide NC-Spotting Drills 90°

**Applications:**
Designed for accurate Spotting on NC Machines

**Features:**
- To be used at higher speeds & feeds, compatible with other carbide tooling
- Easy to re-point as there is no web taper
- Short Flute Length & No Body Clearance makes this a very rigid tool

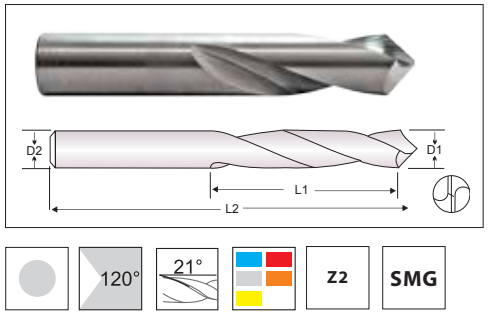
**For Feed & Speed Rates go to Page no. 42**

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| C1N10600-U | 6 | 13 | 50 | 6 |
| C1N10800-U | 8 | 23 | 60 | 8 |
| C1N11000-U | 10 | 24 | 70 | 10 |
| C1N11200-U | 12 | 24 | 70 | 12 |
| C1N11600-U | 16 | 29 | 75 | 16 |
| C1N12000-U | 20 | 35 | 100 | 20 |



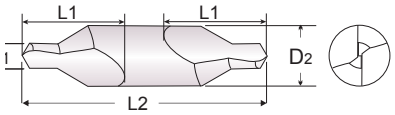

## C1N2 Series | Carbide NC-Spotting Drills 120°

| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| C1N20600-U | 6 | 13 | 50 | 6 |
| C1N20800-U | 8 | 23 | 60 | 8 |
| C1N21000-U | 10 | 24 | 70 | 10 |
| C1N21200-U | 12 | 24 | 70 | 12 |
| C1N21600-U | 16 | 29 | 75 | 16 |
| C1N22000-U | 20 | 35 | 100 | 20 |



## C1CB Series | Carbide Centre Drills BS 328 series

Metric/ DIN 333A | Z2 | SMG




**Applications:**
Designed for accurate Spotting on NC Machines

**Features:**
- Designed for accurate Center Holes in long production runs Or when precise centering is required.
- Solid Carbide construction helps reduce tool changes when abrasive material is machined.
- 60° Included Angle
- Other included angles can be provided on request

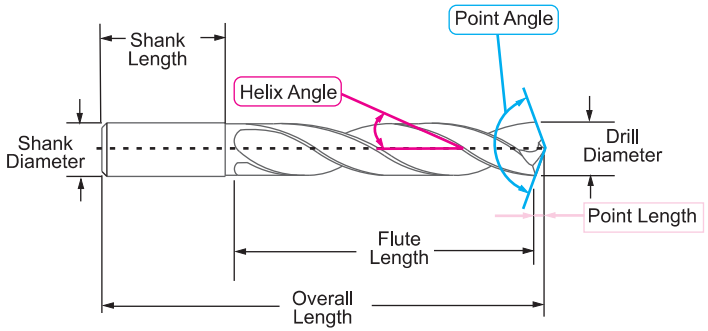
**For Feed & Speed Rates go to Page no. 42**

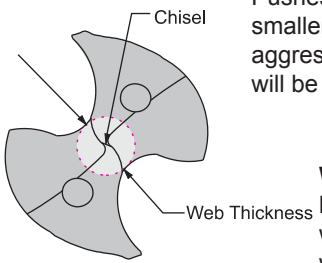
| Ordering No. | Size | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|---|
| C1CB-BS1-U | BS1 | 3/64 | 3/64 | 1-1/2 | 1/8 |
| C1CB-BS2-U | BS2 | 5/64 | 5/64 | 1-7/8 | 3/16 |
| C1CB-BS3-U | BS3 | 7/64 | 7/64 | 2 | 1/4 |
| C1CB-BS4-U | BS4 | 1/8 | 1/8 | 2-1/4 | 5/16 |
| C1CB-BS5-U | BS5 | 3/16 | 3/16 | 2-3/4 | 7/16 |
| C1CB-BS6-U | BS6 | 7/32 | 7/32 | 3 | 1/2 |
| C1CB-BS7-U | BS7 | 1/4 | 1/4 | 3-1/4 | 5/8 |
| C1CB-BS8-U | BS8 | 5/16 | 5/16 | 3-1/2 | 3/4 |

## C1CD Series | Carbide Centre Drills DIN 333

**For Applications, Advantages etc. pls. refer above C1CB Series**

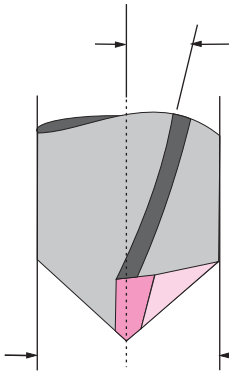
| Ordering No. | Flute Dia(**D1**) | Flute Len(**L1**) | Overall Len(**L2**) | Shank Dia(**D2**) |
|---|---|---|---|---|
| C1CD0125-U | 1.25 | 1.6 | 32 | 3.15 |
| C1CD0160-U | 1.6 | 2 | 36 | 4 |
| C1CD0200-U | 2 | 2.5 | 40 | 5 |
| C1CD0250-U | 2.5 | 3.1 | 45 | 6.3 |
| C1CD0315-U | 3.15 | 3.9 | 50 | 8 |
| C1CD0400-U | 4 | 5 | 56 | 10 |
| C1CD0500-U | 5 | 6.3 | 63 | 12.5 |
| C1CD0630-U | 6.3 | 8 | 71 | 16 |
| C1CD0800-U | 8 | 10.1 | 80 | 20 |




**Chisel Edge** – The non-cutting tip of the drill. Pushes, rather than cuts material. Having a smaller chisel means that a tool will cut more aggressively. A larger chisel means that a tool will be stronger.

**Web** – The core of the drill that is left from the fluting operation. A thicker web means added rigidity, while a smaller web means more chip evacuation. On two flute drills, typically varies from 16% - 30% of the tool diameter.

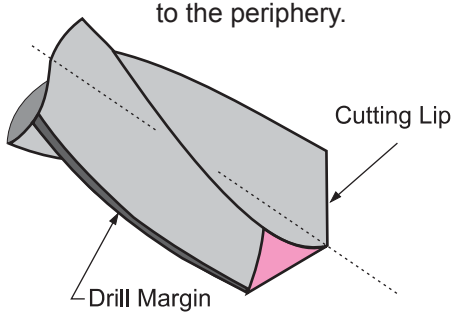



**Helix Angle** - Varies from 0° to 35° helix on standard tools. Lower helix angle means more rigidity and strength and a higher helix angle means more aggressive drilling and better chip evacuation.

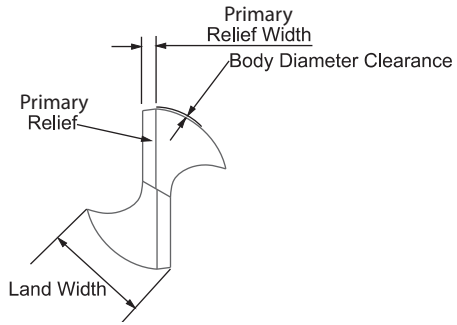




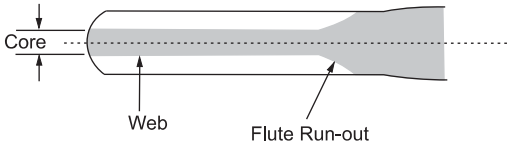
**Cutting Lip -** The cutting edges of a two flute drill extending from the chisel edge to the periphery.




**Margin Width** – Provides a surface to support the drill inside the hole during the drilling operation. RIGPL offers single margin geometries. Margin widths are a balancing act between friction build-up vs. tool support in the drilling operation.




**Land Width** – The amount of material left on the drill per side, from the fluting operation. Larger land widths mean more rigidity, while smaller land widths allow for better chip evacuation.



| Series: C1GS, C1GJ | | Carbide General Purpose Drills, STUB & JOBBER | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Workpiece Material Group | ISO | Examples | Cutting Speed(Vc) | Tool Diameter (in mm) | | | | | |
| | | | | <3 | 6 | 10 | 12 | 16 | 20 |
| | | | m/min | Feed per revolution (Fr) mm/rev | | | | | |
| Steels | P | Low Carbon Steels 1018 | 55 | 0.07 | 0.14 | 0.2 | 0.24 | 0.26 | 0.3 |
| | | Alloy Steels (up to 35 Rc) 4140 | 50 | 0.07 | 0.14 | 0.2 | 0.24 | 0.26 | 0.3 |
| | | Alloy Steels (36-45 Rc) 4140 | 45 | 0.07 | 0.14 | 0.2 | 0.24 | 0.26 | 0.3 |
| Austenitic | M | 304/316 | 40 | 0.07 | 0.14 | 0.2 | 0.24 | 0.26 | 0.3 |
| Precipitation Hardened Stainless Steels | M | 17-4 PH | X | | | | | | |
| Cast Irons | K | Grey Cast Iron A48 Class 20/G4000 | 85 | 0.07 | 0.14 | 0.2 | 0.24 | 0.26 | 0.3 |
| | | Ductile Cast Iron A536/60-40-18 | 55 | 0.07 | 0.14 | 0.2 | 0.24 | 0.26 | 0.3 |
| Non-Ferrous | N | Plastic | 120 | 0.05 | 0.07 | 0.1 | 0.14 | 0.2 | 0.21 |
| | | Kevlar/Graphite | 120 | 0.05 | 0.07 | 0.1 | 0.14 | 0.2 | 0.21 |





| Series: C3HS, C3HL | | Carbide High Performance Drills - SHORT & LONG | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Workpiece Material Group | ISO | Examples | Cutting Speed (Vc) | Tool Diameter (in mm) | | | | | |
| | | | | <3 | 6 | 10 | 12 | 16 | 20 |
| | | | m/min | Feed per revolution (Fr) mm/rev | | | | | |
| Steels | P | Low Carbon Steels 1018 | 90 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| | | Alloy Steels (up to 35 Rc) 4140 | 70 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| | | Alloy Steels (36-45 Rc) 4140 | 55 | 0.05 | 0.11 | 0.13 | 0.15 | 0.2 | 0.23 |
| Austenitic | M | 304/316 | 55 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| Precipitation Hardened Stainless Steels | M | 17-4 PH | 40 | 0.05 | 0.11 | 0.13 | 0.15 | 0.2 | 0.23 |
| Cast Irons | K | Grey Cast Iron A48 Class 20/G4000 | 130 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| | | Ductile Cast Iron A536/60-40-18 | 70 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| Special Alloys | S | Titanium 6AL-4V | 40 | 0.05 | 0.11 | 0.13 | 0.15 | 0.2 | 0.23 |
| | | High Temp Alloys Inconel/Hastelloy/ Waspelloy | 25 | 0.05 | 0.11 | 0.13 | 0.15 | 0.2 | 0.23 |

**Note:**

For C1HP Series Reduce the Feed & Speed by 30% from above table only for Steels (P) & Cast Irons (K) as C1HP is meant only for P & K material group.

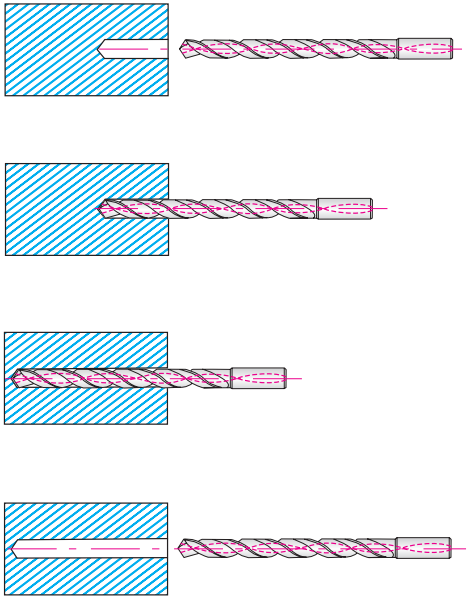
| Series: CTHS, CTHL, CTHM | | Carbide Coolant Fed Drills : SHORT, LONG, MQL Drills | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Workpiece Material Group | ISO | Examples | Cutting Speed (Vc) | Tool Diameter (in mm) | | | | | |
| | | | | ≤3 | ≤6 | ≤10 | ≤12 | ≤16 | ≤20 |
| | | | m/min | Feed per revolution (Fr) mm/rev | | | | | |
| Steels | P | Low Carbon Steels 1018 | 120 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| | | Alloy Steels (up to 35 Rc) 4140 | 90 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| | | Alloy Steels (36-45 Rc) 4140 | 70 | 0.05 | 0.11 | 0.13 | 0.15 | 0.2 | 0.23 |
| Austenitic | M | 304/316 | 70 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| Precipitation Hardened Stainless Steels | M | 17-4 PH | 55 | 0.05 | 0.11 | 0.13 | 0.15 | 0.2 | 0.23 |
| Cast Irons | K | Grey Cast Iron A48 Class 20/G4000 | 150 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| | | Ductile Cast Iron A536/60-40-18 | 90 | 0.07 | 0.15 | 0.2 | 0.25 | 0.3 | 0.36 |
| Special Alloys | S | Titanium 6AL-4V | 55 | 0.05 | 0.11 | 0.13 | 0.15 | 0.2 | 0.23 |
| | | High Temp Alloys Inconel/Hastelloy/ Waspelloy | 40 | 0.05 | 0.11 | 0.13 | 0.15 | 0.2 | 0.23 |

| L/D Ratio | Reduce Feed | Reduce RPM |
|---|---|---|
| 3XD | 100% | 100% |
| 5XD | 80% | 85% |
| 8XD | 60% | 75% |
| >8XD | 50% | 60% |





## FOR MQL DRILLS or DEEP HOLE DRILLS



1. Guide Drilling should be done as Diameter+0.1mm between 3xD and 5xD depth.
2. For Main Drilling, proceed with low RPM at Guide Drilling segment. (RPM 300, FEED 400mm/min)
3. Just before the end of Guide Drilling segment, reduce feed to zero and increase the RPM according to Recommended Cutting Condition chart (See above).
4. After then, proceed main drilling by increasing feed without step drilling.
5. When coming out from Guide Drilling start point after drilling, RPM should be reduced as 300 and feed should be 1000 mm/min.
6. When coming out from Guide Drilling segment to the outside, the feed should be decreased as 50%.

**Important Note:**

- For all deep hole drilling over 5XD guide holes are recommended
- Deep hole drills are prone to breakage without guide holes
- Minimum of 800+psi coolant pressure recommended

| Series: C1N1, C1N2, C1CB, C1CD | | NC Spotting Drills & Centre Drills | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Workpiece Material Group | ISO | Examples | Cutting Speed (Vc) | Tool Diameter (in mm) | | | | | |
| | | | | 1 | 1.5 | 3 | 6 | 10 | 12 |
| | | | m/min | Feed per revolution (Fr) mm/rev | | | | | |
| Steels | P | Low Carbon Steels 1018 | 55 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| | | Alloy Steels (up to 35 Rc) 4140 | 50 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| | | Alloy Steels (36-45 Rc) 4140 | 45 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| Austenitic | M | 304/316 | 40 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| Precipitation Hardened Stainless Steels | M | 17-4 PH | 20 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| Cast Irons | K | Grey Cast Iron A48 Class 20/G4000 | 85 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| | | Ductile Cast Iron A536/60-40-18 | 55 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| Special Alloys | S | Titanium 6AL-4V | 25 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| | | High Temp Alloys Inconel/Hastelloy/ Waspelloy | 10 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |
| "Hardened Steels" | H | ">45 Rc A2/52100" | 15 | 0.01 | 0.02 | 0.04 | 0.07 | 0.1 | 0.12 |





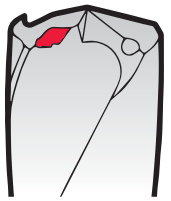
## Cutting edge build-up

**Cause:**

Low cutting speed

Excessive honing of cutting lip

Bright finish cutting lip



**Remedy:**

Increase cutting speed

Reduce cutting lip honing

Have tool coated

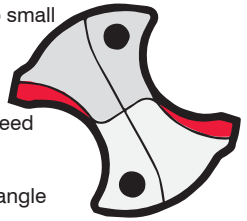
## Heavy wear and tear at flank

**Cause:**

Cutting speed too high

Feed too low

Clearance angle too small



**Remedy:**

Decrease cutting speed

Increase feed

Increase clearance angle

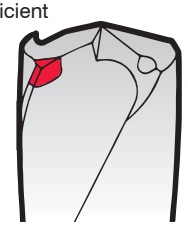
## Crumbling of outer corners

**Cause:**

Non-rigid conditions, insufficient work piece clamping

Excessive deviation from concentricity

Interrupted cut



**Remedy:**

Rigid clamping of work piece

Check and correct concentricity if possible

Reduce feed

## Crumbling on cutting lips

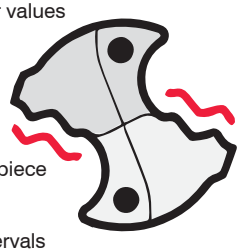
**Cause:**

Non-rigid conditions, insufficient work piece clamping

Interrupted cut

Maximum wear and tear values have been exceeded

Wrong tool type



**Remedy:**

Rigid clamping of work piece

Reduce feed

Reduce tool change intervals

Apply suitable tool

## Land wear

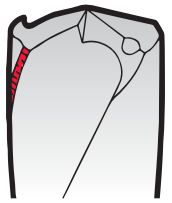
**Cause:**

Non-rigid conditions, insufficient work piece clamping

Large deviation from concentricity

Back taper too small

Wrong coolant/lubrication (oil), soluble oil too thin



**Remedy:**

Rigid clamping of work piece

Check and correct concentricity if possible

Increase back taper

Thicken soluble iol or use neat oil

## Scoring on tool body

**Cause:**

Non-rigid conditions, insufficient work piece clamping

Large deviation from concentricity

Interrupted cut

Abrasive work piece material

**Remedy:**

Rigid clamping of work piece

Check and correct concentricity if possible

Reduce feed

Thicken soluble oil or use neat oil

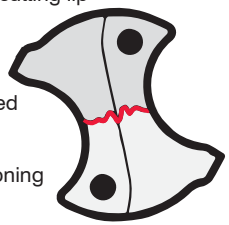
## Heavy chisel edge wear & tear

**Cause:**

Cutting speed too low

Feed too high

Excessive honing of cutting lip



**Remedy:**

Increase cutting speed

Decrease feed

Reduce cutting lip honing

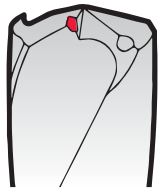
## Crumbling at intersection of web thinning and cutting lip

**Cause:**

Clearance angle too small

Excessive honing of cutting lip

Wrong tool type



**Remedy:**

Increase clearance angle

Reduce cutting lip honing

Apply suitable tool

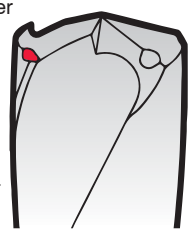
## Plastic deformation of outer corner

**Cause:**

Cutting speed too high

Incorrect or no honing at corner

Incorrect or no corner chamfer



**Remedy:**

Decrease cutting speed

Correct honing

Apply correct corner chamfer

## Misalignment, axis shifting

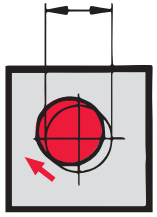
**Cause:**

Non-rigid conditions, insufficient work piece clamping

Excessive deviation from concentricity

Spotting area transverse

Chisel edge too large



**Remedy:**

Rigid clamping of work piece

Check and correct concentricity, if possible

Use twin-fluted milling cutter for spotting

Reduce chisel edge

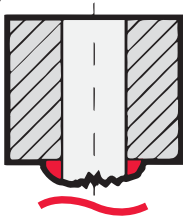
## Heavy burring on breakthrough

**Cause:**

Feed too high

Maximum wear and tear values have been exceeded

Excessive honing of cutting lip



**Remedy:**

Decrease feed

Reduce tool change intervals

Reduce cutting lip honing

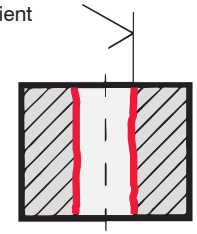
## Unsatisfactory surface quality

**Cause:**

Non-rigid conditions, insufficient work piece clamping

Excessive deviation from concentricity

Insufficient coolant



**Remedy:**

Rigid clamping of work piece

Check and correct concentricity, if possible

Increase coolant (volume, pressure)





**Carbide Reamers**

In applications that require high-precision hole finishes, or tighter diameter control ROHIT's Solid Carbide Reamers can be used with confidence in a wide range of sizes for virtually all materials, including cast iron, aluminium, stainless steel, exotic alloys, plastics and other non-ferrous materials.

**Material Removal Parameters**

For proper finishing with a reamer, the correct amount of material must be left in the hole. If the hole is too close to the finish size, the reamer will tend to burnish the hole, and excessive tool wear will occur. If too much material is left, chips can clog the flutes of the reamer, resulting in a poor finish, poor size control, and possible tool breakage.

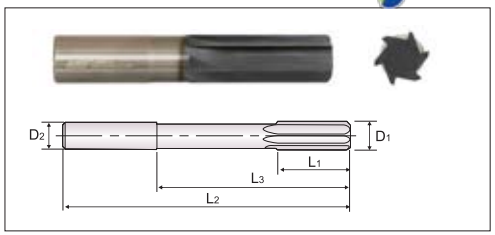


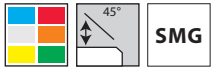
## C1RS Series | Carbide Straight Flute Reamers

**Applications:**

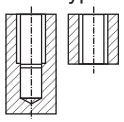
- Best suited for General Purpose Reaming in ferrous & non-ferrous materials
- Suited for both Through & blind hole construction
- Special sizes available on request

**For Feed & Speed Rates go to Page No. 53**




Hole Type



| Tolerance | |
|---|---|
| D1 | H7 |
| D2 | h6 |

| Ordering Code | Flute Diameter (D1) | Flute Length (L1) | Reach Length (L3) | Overall Length (L2) | Shank Diameter (D2) | No of Flutes |
|---|---|---|---|---|---|---|
| C1RS0300061-F | 3 | 15 | 31 | 61 | 4 | 4 |
| C1RS0350070-F | 3.5 | 18 | 36 | 70 | 4 | 4 |
| C1RS0400075-F | 4 | 19 | 42 | 75 | 4 | 4 |
| C1RS0450080-F | 4.5 | 21 | 46 | 80 | 5 | 4 |
| C1RS0500086-F | 5 | 23 | 51 | 86 | 5 | 4 |
| C1RS0550093-F | 5.5 | 26 | 56 | 93 | 6 | 4 |
| C1RS0600093-F | 6 | 26 | 56 | 93 | 6 | 4 |
| C1RS0650101-F | 6.5 | 28 | 62 | 101 | 7 | 6 |
| C1RS0700109-F | 7 | 31 | 68 | 109 | 7 | 6 |
| C1RS0750109-F | 7.5 | 31 | 68 | 109 | 8 | 6 |
| C1RS0800117-F | 8 | 33 | 74 | 117 | 8 | 6 |
| C1RS0850117-F | 8.5 | 33 | 74 | 117 | 9 | 6 |
| C1RS0900125-F | 9 | 36 | 80 | 125 | 9 | 6 |
| C1RS0950125-F | 9.5 | 36 | 80 | 125 | 10 | 6 |
| C1RS1000133-F | 10 | 38 | 86 | 133 | 10 | 6 |
| C1RS1050133-F | 10.5 | 38 | 86 | 133 | 12 | 6 |
| C1RS1100142-F | 11 | 41 | 95 | 142 | 12 | 6 |
| C1RS1200151-F | 12 | 44 | 104 | 151 | 12 | 6 |
| C1RS1300151-F | 13 | 44 | 104 | 151 | 14 | 6 |
| C1RS1400155-F | 14 | 47 | 106 | 155 | 14 | 6 |
| C1RS1500160-F | 15 | 50 | 110 | 160 | 16 | 6 |
| C1RS1600160-F | 16 | 52 | 110 | 160 | 16 | 6 |

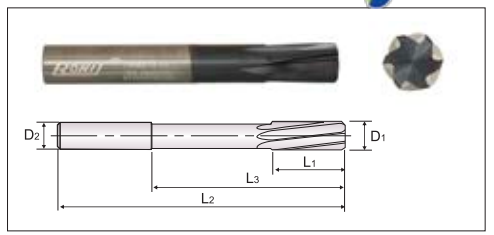


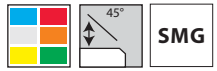
## C1RL Series | Carbide Left Hand Spiral Reamers

**Applications:**

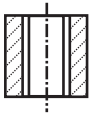
- Best suited for General Purpose Reaming in ferrous & non-ferrous materials
- Suited for Through hole construction
- Better Surface finish & Size control is achieved
- Special sizes available on request.

**For Feed & Speed Rates go to Page No. 53**




Hole Type



| Tolerance | |
|---|---|
| D1 | H7 |
| D2 | h6 |

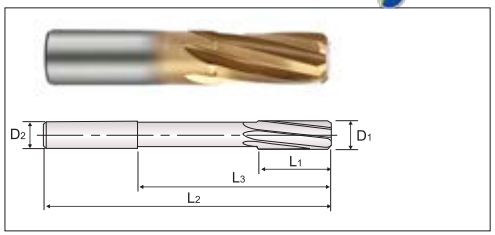
| Ordering Code | Flute Diameter (D1) | Flute Length (L1) | Reach Length (L3) | Overall Length (L2) | Shank Diameter (D2) | No of Flutes |
|---|---|---|---|---|---|---|
| C1RL0300061-F | 3 | 15 | 31 | 61 | 4 | 4 |
| C1RL0350070-F | 3.5 | 18 | 36 | 70 | 4 | 4 |
| C1RL0400075-F | 4 | 19 | 42 | 75 | 4 | 4 |
| C1RL0450080-F | 4.5 | 21 | 46 | 80 | 5 | 4 |
| C1RL0500086-F | 5 | 23 | 51 | 86 | 5 | 4 |
| C1RL0550093-F | 5.5 | 26 | 56 | 93 | 6 | 4 |
| C1RL0600093-F | 6 | 26 | 56 | 93 | 6 | 4 |
| C1RL0650101-F | 6.5 | 28 | 62 | 101 | 7 | 6 |
| C1RL0700109-F | 7 | 31 | 68 | 109 | 7 | 6 |
| C1RL0750109-F | 7.5 | 31 | 68 | 109 | 8 | 6 |
| C1RL0800117-F | 8 | 33 | 74 | 117 | 8 | 6 |
| C1RL0850117-F | 8.5 | 33 | 74 | 117 | 9 | 6 |
| C1RL0900125-F | 9 | 36 | 80 | 125 | 9 | 6 |
| C1RL0950125-F | 9.5 | 36 | 80 | 125 | 10 | 6 |
| C1RL1000133-F | 10 | 38 | 86 | 133 | 10 | 6 |
| C1RL1050133-F | 10.5 | 38 | 86 | 133 | 12 | 6 |
| C1RL1100142-F | 11 | 41 | 95 | 142 | 12 | 6 |
| C1RL1200151-F | 12 | 44 | 104 | 151 | 12 | 6 |
| C1RL1300151-F | 13 | 44 | 104 | 151 | 14 | 6 |
| C1RL1400155-F | 14 | 47 | 106 | 155 | 14 | 6 |
| C1RL1500160-F | 15 | 50 | 110 | 160 | 16 | 6 |
| C1RL1600160-F | 16 | 52 | 110 | 160 | 16 | 6 |

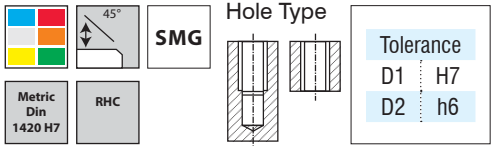
# C1RR Series | Carbide Right Hand Spiral Reamers

**Applications:**

- Best suited for General Purpose Reaming in ferrous & non-ferrous materials
- Special sizes available on request

**For Feed & Speed Rates go to Page No. 53**




| Tolerance | |
|---|---|
| D1 | H7 |
| D2 | h6 |

| Ordering Code | Flute Diameter (D1) | Flute Length (L1) | Reach Length (L3) | Overall Length (L2) | Shank Diameter (D2) | No of Flutes |
|---|---|---|---|---|---|---|
| C1RR0300061-F | 3 | 15 | 31 | 61 | 4 | 4 |
| C1RR0350070-F | 3.5 | 18 | 36 | 70 | 4 | 4 |
| C1RR0400075-F | 4 | 19 | 42 | 75 | 4 | 4 |
| C1RR0450080-F | 4.5 | 21 | 46 | 80 | 5 | 4 |
| C1RR0500086-F | 5 | 23 | 51 | 86 | 5 | 4 |
| C1RR0550093-F | 5.5 | 26 | 56 | 93 | 6 | 4 |
| C1RR0600093-F | 6 | 26 | 56 | 93 | 6 | 4 |
| C1RR0650101-F | 6.5 | 28 | 62 | 101 | 7 | 6 |
| C1RR0700109-F | 7 | 31 | 68 | 109 | 7 | 6 |
| C1RR0750109-F | 7.5 | 31 | 68 | 109 | 8 | 6 |
| C1RR0800117-F | 8 | 33 | 74 | 117 | 8 | 6 |
| C1RR0850117-F | 8.5 | 33 | 74 | 117 | 9 | 6 |
| C1RR0900125-F | 9 | 36 | 80 | 125 | 9 | 6 |
| C1RR0950125-F | 9.5 | 36 | 80 | 125 | 10 | 6 |
| C1RR1000133-F | 10 | 38 | 86 | 133 | 10 | 6 |
| C1RR1050133-F | 10.5 | 38 | 86 | 133 | 12 | 6 |
| C1RR1100142-F | 11 | 41 | 95 | 142 | 12 | 6 |
| C1RR1200151-F | 12 | 44 | 104 | 151 | 12 | 6 |
| C1RR1300151-F | 13 | 44 | 104 | 151 | 14 | 6 |
| C1RR1400155-F | 14 | 47 | 106 | 155 | 14 | 6 |
| C1RR1500160-F | 15 | 50 | 110 | 160 | 16 | 6 |
| C1RR1600160-F | 16 | 52 | 110 | 160 | 16 | 6 |

| Problem | Possible Solution | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Speed & Feed | | | | | | | Tool Geometry | | | | | | | Coolant & Stock Removal | | |
| | Reduce Feed | Increase Feed | Reduce Speed | Increase Speed | Use Larger Reamer | Use Smaller Reamer | Bad Speed & Feed | Worn Tool Margin | Worn Cutting Edge | Uneven Lip Height | Chip Capacity of Reamer | Too Much Clearance | Grind Larger Back Taper | Bent Reamer | Insufficient Stock | Too Much Stock | Use Coolant |
| Burnishing | | X | | | | | | | | | X | | | | X | | |
| Reamer Wear | X | | X | | | | X | | | | | | | | | X | X |
| Hole Quality | X | | X | | | | X | X | X | X | | | | | X | X | X |
| Hole Undersize | X | | X | | X | | | X | X | | | | | | X | X | X |
| Hole Oversize | | X | | X | | X | | X | X | | | | | X | | X | X |
| Accuracy | X | | | | | X | | | | X | | | | | | | X |
| Chatter | | X | X | | | | | | | X | X | X | | | X | | X |
| Out of Round Hole | | | | | X | | | X | X | X | X | | | | X | X | X |
| Hole Taper | | | | | | X | | X | X | X | | | X | | | X | X |
| Bell Mouth | | X | | | | | X | X | X | | X | | X | X | | | X |
| Reamer Life | | X | X | | | | X | | | X | | X | | | | | X |
| Scoring in Bore | | | | | | | X | X | X | X | | | | | X | X | X |
| Deflection | | | | | | | | | | | | | | | | | |





| Possible Solution | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coolant & Stock Removal | | | | | | | Set Up | | | | | | | | | Cutting Errors | | | | |
| Run Dry | Poor Hole Prep | Insufficient Stock | Too Much Stock | Use Coolant | Run Dry | Poor Hole Prep | Alignment | Holder Accuracy | Concentricity | Use Adjustable Holder | Use Floating Holder | Lack of Rigidity in Set-Up | Work Holding Error | Spindle Bearings | Tool Extended Too Far | Poor Regrind | Poor Machinability | Built Up Edge | Wrong Tool | Poor Chip Removal |
| | | X | | | | | X | | | | | | X | | | X | | | | |
| | X | | X | X | | X | X | X | | | | | X | | | X | X | | X | |
| | X | X | X | X | | X | X | | X | | | | X | | | X | X | X | X | |
| | | X | X | X | | | X | | | | | | | | | | X | | | |
| X | X | | X | X | X | X | X | | X | | | | X | | | X | X | X | X | |
| | | | | X | | | | | | | | | X | | | X | | | | |
| | | X | | X | | | X | X | | | | X | X | X | X | X | | | | |
| | | X | X | X | | | X | | | | | | X | | | | | | | |
| | | | X | X | | | X | X | X | X | X | | X | | | X | X | X | | |
| | | | | X | | | X | X | X | X | X | | X | | | X | X | | | |
| | | | | X | | | X | X | X | | | X | X | X | X | X | | | | |
| | X | X | X | X | | X | | | X | | | | | | | | X | X | | X |
| | | | | | | | X | | | | | | | | | | | | | | |

| | | Drill Size (mm) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2.8 | 3.8 | 4.8 | 5.8 | 7.8 | 9.8 | 11.8 | 15.7 |
| | | Reamer Diameter (mm) | | | | | | | |
| | | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 16 |
| Material | Example | Total Stock Allowance | | | | | | | |
| Magnesium | | 0.2 | 0.22 | 0.22 | 0.23 | 0.26 | 0.3 | 0.32 | 0.38 |
| Aluminium | <5%SI | 0.2 | 0.22 | 0.22 | 0.23 | 0.26 | 0.3 | 0.32 | 0.38 |
| | >5%SI | 0.2 | 0.22 | 0.22 | 0.23 | 0.24 | 0.26 | 0.29 | 0.33 |
| Brass & Soft Bronze | Brass | 0.2 | 0.22 | 0.22 | 0.23 | 0.24 | 0.26 | 0.29 | 0.33 |
| | Bronze | 0.2 | 0.22 | 0.22 | 0.23 | 0.25 | 0.28 | 0.3 | 0.35 |
| Copper & Hard Bronze | | 0.2 | 0.22 | 0.22 | 0.23 | 0.25 | 0.28 | 0.3 | 0.35 |
| Cast Iron | Cast | 0.17 | 0.19 | 0.2 | 0.21 | 0.23 | 0.25 | 0.27 | 0.33 |
| | Ductile | 0.17 | 0.19 | 0.2 | 0.21 | 0.23 | 0.25 | 0.27 | 0.3 |
| Steel | <35% C | 0.17 | 0.19 | 0.2 | 0.21 | 0.23 | 0.25 | 0.27 | 0.33 |
| | >35% C | 0.14 | 0.16 | 0.17 | 0.18 | 0.2 | 0.23 | 0.24 | 0.3 |
| | Tool | 0.14 | 0.16 | 0.17 | 0.18 | 0.2 | 0.23 | 0.24 | 0.3 |
| | Hard | 0.1 | 0.12 | 0.12 | 0.13 | 0.15 | 0.18 | 0.19 | 0.25 |
| Stainless | | 0.14 | 0.16 | 0.17 | 0.18 | 0.2 | 0.23 | 0.24 | 0.3 |
| High Temp Alloys | Soft | 0.14 | 0.16 | 0.17 | 0.18 | 0.19 | 0.21 | 0.24 | 0.28 |
| | Hard | 0.13 | 0.14 | 0.15 | 0.16 | 0.16 | 0.18 | 0.21 | 0.25 |
| Titanium | | 0.17 | 0.19 | 0.2 | 0.21 | 0.23 | 0.25 | 0.27 | 0.33 |





| Series : C1RS, C1RR, C1RL | | | Diameter(mm) | | | | |
|---|---|---|---|---|---|---|---|
| | | | | >1.5 - 3.0 | >3.0 - 6.0 | >6.0 - 12.0 | >12.0-25.0 |
| Material | ISO | Examples | Vc | Feed per rev (mm/rev) | | | |
| Steels | P | Steel - Mild (.2-.3 Carbon) 1018 | 45-70 | .035-.100 | .070-.175 | .100-.280 | .175-.550 |
| | | Alloy Steel up to 35 Rc 4140 | 30-45 | .035-.070 | .070-.100 | .100-0.175 | .175-.350 |
| | | Alloy Steel 36-45 Rc 4140/A2/D2 | 12-30 | .020-.035 | .035-.070 | .070-.100 | .100-0.175 |
| Stainless Steels | M | Free Machining/Austenitic Stainless 304/316 | 27-45 | .035-.070 | .070-.100 | .100-0.175 | .175-.350 |
| | | Ferritic/Martensitic | 18-28 | .035-.070 | .070-.100 | .100-0.175 | .175-.350 |
| | | 17-4 PH | 15-25 | .020-.070 | .035-.100 | .070-.175 | .100-.350 |
| Special Alloys | S | Inconel 625/718 | 10-15 | .020-.035 | .035-.070 | .070-.100 | .100-0.175 |
| | | Stellite/Cobalt Chrome | 7-12 | .020-.035 | .035-.070 | .070-.100 | .100-0.175 |
| | | Titanium 6AL-4V | 7-12 | .020-.070 | .035-.100 | .070-.175 | .100-.350 |
| Cast Iron | K | Gray Cast Iron A48 Class 20/G4000 | 35-60 | .020-.070 | .035-.100 | .070-.175 | .100-.350 |
| | | Malleable/Ductile Cast Iron A536/60-40-18 | 30-45 | .035-.070 | .070-.100 | .100-0.175 | .175-.350 |
| | | Hard (Martensitic) Cast Iron | 12-20 | .020-.035 | .035-.070 | .070-.100 | .100-0.175 |
| Non-Ferrous | N | Aluminium/ Aluminium Alloys | 150-300 | .035-.100 | .070-.175 | .100-.280 | .175-.550 |
| | | Brass/Bronze Free Machining | 75-120 | .035-.070 | .070-.100 | .100-0.175 | .175-.350 |
| | | Brass/Bronze (Hard) | 45-75 | .035-.070 | .070-.100 | .100-0.175 | .175-.350 |
| | | Magnesium/ Magnesium Alloys/Plastics/Bakelite Plastic-Glass Filled | 110-220 | .035-.100 | .070-.175 | .100-.280 | .175-.550 |
| | | Copper/Hard Bronze | 20-35 | .020-.035 | .035-.070 | .070-.100 | .100-0.175 |
| Hardened Steel | H | "Hardened Steels 23-32 Rc" | 30-45 | .035-.070 | .070-.100 | .100-0.175 | .175-.350 |
| | | "Hardened Steels 32-43 Rc" | 10-30 | .020-.035 | .035-.070 | .070-.100 | .100-0.175 |
| | | "Hardened Steels 43-52 Rc" | 7-12 | .020-.035 | .035-.070 | .070-.100 | .100-0.175 |