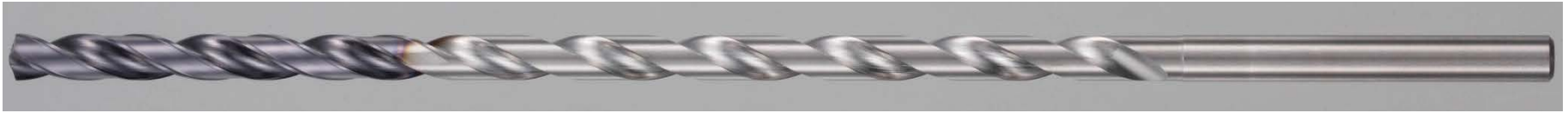


MQL Carbide Deep Hole Drills

MQL Drill for Deep Hole Drilling



What's MQL

MQL = Minimum Quantity Lubrication
= Mist Machining = Semi Dry Machining

Use a very small quantity of oil of 1~3cc per one hour, make oil mist of 1~2 μ m and machining while jetting in cutting edge.

Features Of Nachi MQL Drill

- **“S” Shaped Cutting Edge for Superior Chip Removal**
- **Micro Grain Carbide with new Composite Multi Layer GS-Coating (Al-Ti-Cr Based Coating)**
- **GS Coating Provides Superior Heat Resistance and Lubricity During Deep Hole Drilling Applications**
- **GS Coating is Smoother than Regular TiALN Coating and can Withstand Higher Temperature than Regular TiALN Coating**
- **GS Coating = 1100° C Service Temperature**
- **Regular TiALN = 900° C Service Temperature**
- **Double Margin for Increased Drilling Stability and Performance**

MQL Power Long Drills

MQL Power Long Drills



Non-step drilling to a depth 20 times the drill diameter is possible and the drilling efficiency is also improved five times

MQL drills can be operated at five or more times the efficiency of conventional HSS drills used for deep hole drilling, revolutionizing the deep hole drilling of typical items such as crankshafts.

Enhanced tool life through stable performance

Stable drilling achieved through double margin, tip coating, and unique drill shape that balances rigidity and chip removal performance.



[MQL Power Long Drills /Product Description](#)

MQL Power Long Drills

Drill shape ideal for deep hole drilling (1)

- High-rigidity parabolic shape ideal for deep hole drilling
- Optimum web diameter balances chip removal characteristics with tool rigidity

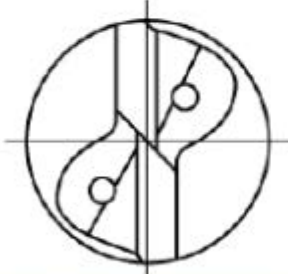
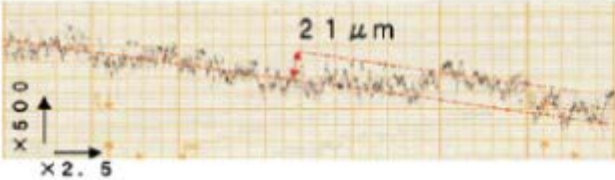
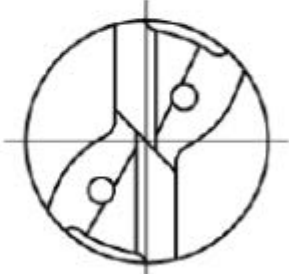
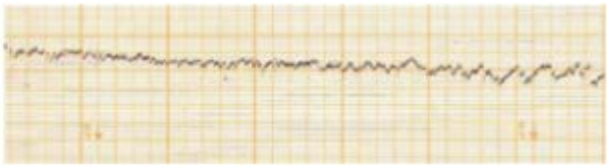


Highly efficient non-step drilling of deep holes

MQL Power Long Drills

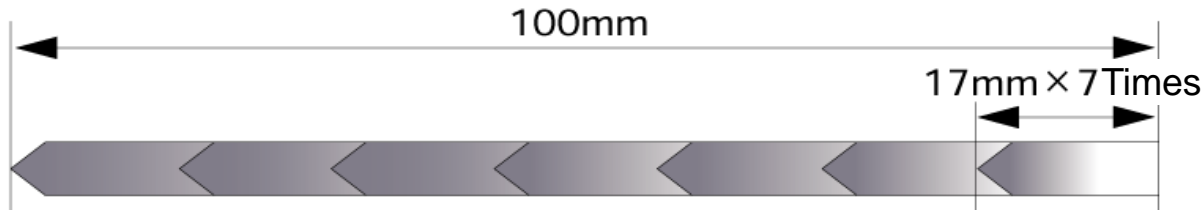
Drill shape ideal for deep hole drilling (2)

- Improved drilling straightness and stability through the use of a double margin

| Conventional single margin | MQL Power Long Drill Double margin |
|--|--|
|   |   |

Cutting Efficiency

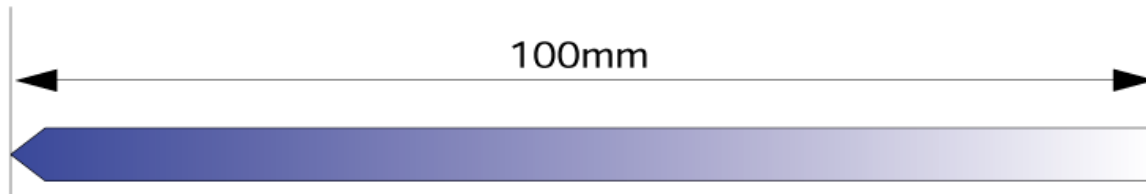
■ Conventional Process



HSS long Drill
 Diameter: 5mm
 Rotation Speed: 20m/min
 Feed Speed: 150 mm/min

Cutting Time 51 sec

■ MQL Drill Process



MQL Power Long Drill
 Diameter: 5mm
 Rotation Speed: 80m/min
 Feed Speed: 750 mm/min

Cutting Time 10 sec

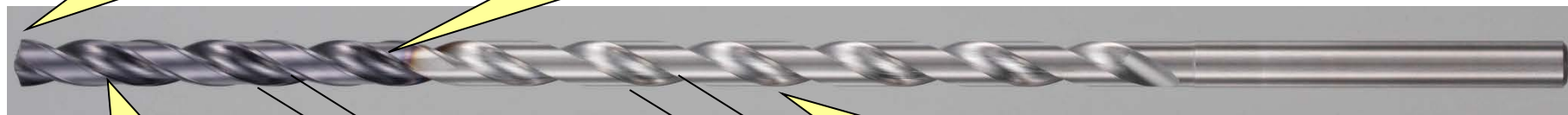
Features of Nachi MQL Power Long Drill

Geometry of Cutting Edge

Optimized Special
“S” Shaped

Coating

- Al-Ti-Cr Based GS Hard Coating
- Smoother Coating than TiALN
- Higher Service Temperature than TiALN Coating



Margin

- Double Margin
- Available also in Single Margin (Special)

Flute Geometry

- Two Step Flute Geometry; $A < B$
- Narrow Flute on Top and Wider Flute at the End of the Drill

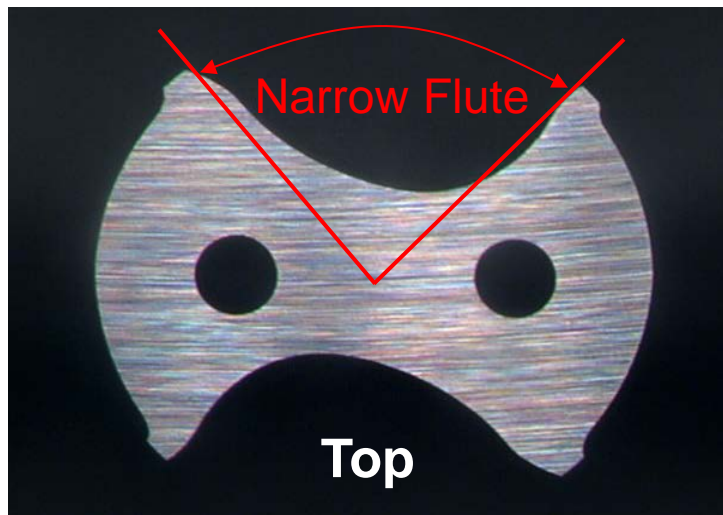
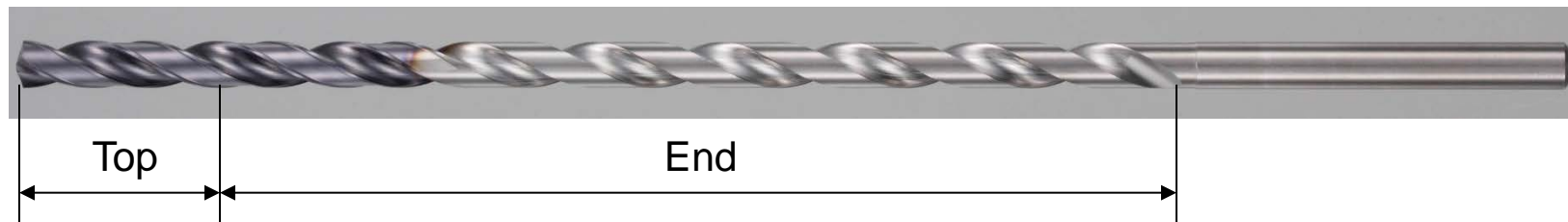
Special Cutting Edge of MQL Power Long Drill

Special “S” Shaped Cutting Edge

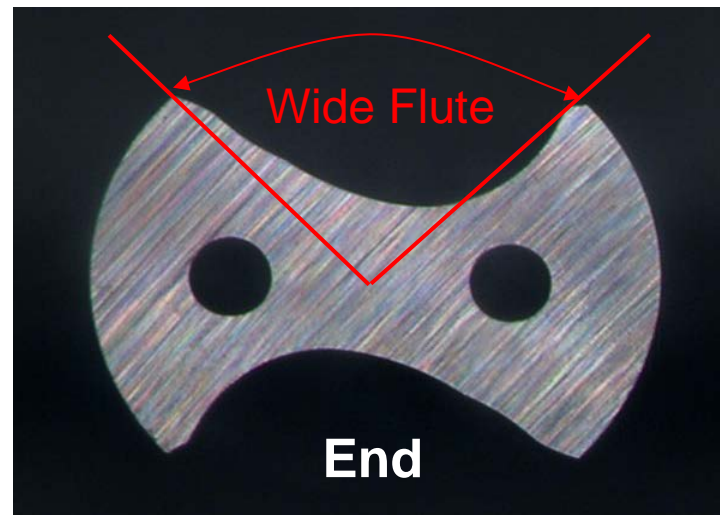


**“S” Shaped
Geometry
Creates Small
Chips**

Two Step Flute Geometry of Nachi MQL Power Long Drill



Narrower Flutes at the Top of the Drill
Ensures Small and Curled Chips
Result: Smaller Chips are Easier to Evacuate



Wider Flutes at the End of the Drill
Ensures Easier Chip Evacuation

Thank You