MQL Carbide Deep Hole Drills
MQL Drill for Deep Hole Drilling

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

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 1~2μm and machining while jetting in cutting edge.
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

<table>
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<tr>
<th>Conventional single margin</th>
<th>MQL Power Long Drill Double margin</th>
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<tbody>
<tr>
<td><img src="image1.png" alt="Conventional drill diagram" /></td>
<td><img src="image2.png" alt="MQL drill diagram" /></td>
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21 μm
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

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

Margin
- Double Margin
- Available also in Single Margin (Special)
Special Cutting Edge of MQL Power Long Drill

Special “S” Shaped Cutting Edge

“S” Shaped Geometry Creates Small Chips
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