



Size $\phi 0.4 \sim \phi 3.5$

UDCMX



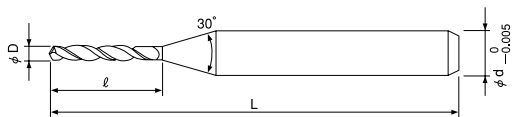
Material Applications (☆ Highly Recommended ● Recommended ○ Suggested)

Work Material															
Carbon Steels S45C S55C	Alloy Steels SK / SCM SUS	Prehardened Steels NAK HPM	Hardened Steels			Cast Iron	Aluminum Alloys	Graphite	Copper	Plastics	Glass Filled Plastics	Titanium Alloys	Heat Resistant Alloys	Cemented Carbide	Hard Brittle (Non-Metallic) Materials
			~55HRC	~60HRC	~70HRC										
														☆	●

* Hard Brittle (Non-Metallic) Materials: Ceramics (Alumina, Zirconia, etc.), Glasses and etc.

Features

UDC offers excellent drilling performance on Cemented Carbide and Hard Brittle (Non-Metallic) Materials. By combining the new coating with optimum cutting geometries, the tool improves hole quality and longer tool life. Makes mechanical drilling cost competitive!



Point Angle : 130°
Diameter Tolerance : 0/-0.02

Total 15 models

Unit (mm)

Model Number	Diameter ϕD	Flute Length l	Overall Length L	Shank Diameter ϕd	Price (¥)	Cemented Carbide		
						Spindle Speed (min^{-1})	Feed Rate (mm/min)	Peck Amount (mm)
UDCMX 2040-040	0.4	4	38	3	18,000	20,000	5	0.05
UDCMX 2050-050	0.5	5	38	3	18,000	15,000	5	0.05
UDCMX 2060-060	0.6	6	38	3	18,000	11,500	5	0.05
UDCMX 2070-070	0.7	7	38	3	18,000	9,000	5	0.05
UDCMX 2080-080	0.8	8	38	3	18,000	7,300	7.5	0.05
UDCMX 2090-090	0.9	9	38	3	18,000	6,000	7.5	0.05
UDCMX 2100-100	1	10	38	3	18,000	5,000	7.5	0.05
UDCMX 2150-100	1.5	10	38	3	18,000	3,200	6	0.1
UDCMX 2160-100	1.6	10	38	3	18,000	3,000	6	0.1
UDCMX 2200-100	2	10	38	3	18,000	2,400	5	0.15
UDCMX 2210-100	2.1	10	38	3	18,000	2,300	5	0.15
UDCMX 2250-100	2.5	10	38	3	18,000	2,000	5	0.2
UDCMX 2300-100	3	10	38	3	18,000	1,100	3.7	0.25
UDCMX 2330-120	3.3	12	50	4	20,000	1,000	3.4	0.3
UDCMX 2350-120	3.5	12	50	4	20,000	910	3.3	0.35

*Revised and reduced the spindle speed for better tool life.

* These milling parameters are based on VM-40 (CIS standard) and are for reference only.

Tool life may differ depending on the type of Cemented Carbide material.

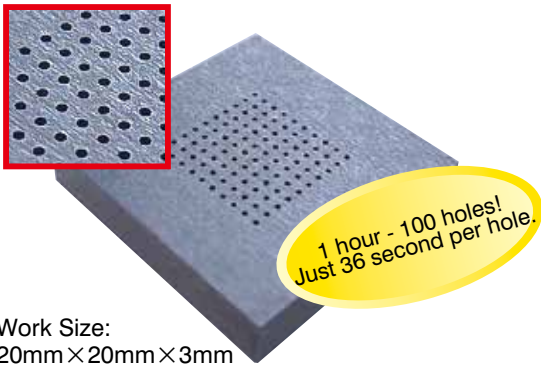
For best results, fine parameter adjustments may be required, depending on the Carbide material; milling shape and strategy; machine rigidity and spindle capability.

Note:

- Allow sufficient machine and spindle warm-up time for stability and to remove any expansion of the main spindle before running the program.
- Tool setting length should achieve the least possible overhang.
- Avoid contact with the coated area of the shank. This will prevent tip vibration and tool jamming in the collet /holder.
- Run-out and vibration should be checked dynamically at the tool point while mounted in the machine and both should achieve the lowest level possible.
- Recommend shallower drilling than flute length to promote good chip evacuation.
- Recommend using peck drilling cycle, but one-shot drilling may extend the tool life in some cases.
- Recommend air blow.
- Recommend water soluble coolant for Hard Brittle (Non-Metallic) Materials.
- Remove chips to prevent heat generation and ignition during milling process.
- Protective gear, such as safety glasses and face guards are required when milling.
- Chips/dust generated while milling can have adverse affects on the machine parts if they are not properly evacuated. Take steps to assure proper evacuation.

Drilling Cemented Carbide - Stunning!

Cemented Carbide One-shot drilled with UDCMX $\phi 0.4 \times 4\text{mm}$ VM-40 (90HRA)



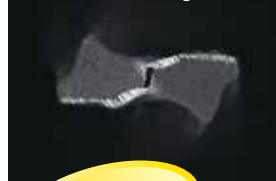
Work Size:
20mm × 20mm × 3mm

Tool	UDCMX 2040-040
Work Material	Cemented Carbide VM-40 (90HRA)
Spindle Speed	20,000min ⁻¹
Feed Rate	5mm/min
Peck Amount	One-shot
Coolant	Air Blow (Nozzle)
Hole Specification	Blind Hole (2.8mm depth x 100 holes)
Hole Pitch	1mm
Cycle Time	36 sec per hole

Hole Quality after drilling 100 holes



Tool wear after drilling 100 holes



UDCMX
Drilling Video



Square

Square
Long Neck
Square

Radius

Radius
Long Neck
RadiusBall / Long
Shank BallBall
Long Neck
BallTaper Neck
BallTaper
TaperSpiral
V CutterDrill
Thread Mill

EURO Series

Technical Data