DIA EDGE

TOOL NEWS B237G

PVD Coated Grade for Carbon Steel and Alloy Steel Drilling

DP6020 Special Products

New Products

Demonstrates excellent wear resistance during high-speed, high efficiency machining of carbon and alloy steels

MITSUBISHI MATERIALS CORPORATION

PVD Coated Grade for Carbon Steel and Alloy Steel Drilling

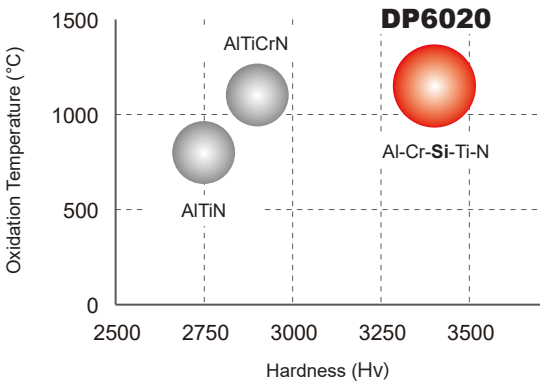
DP6020 Special Products

Demonstrates excellent wear resistance during high-speed, high efficiency machining of carbon and alloy steels

Al-Cr-Si-Ti-N Multilayer Coating

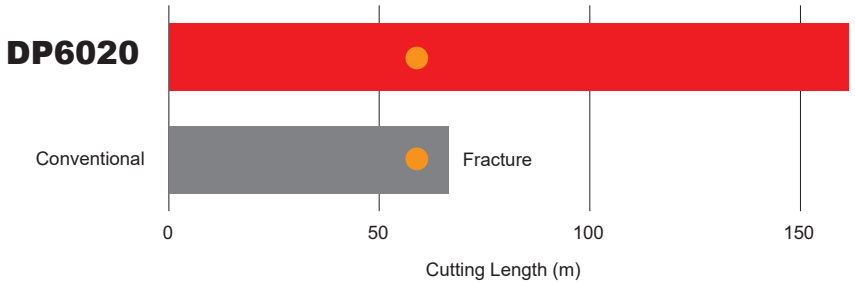
By adding Si, the coating hardness and the temperature at which oxidation started to occur were significantly raised. This multi-layer structure also improves wear and crack resistance during cutting and provided excellent wear resistance even during high-speed, high feed machining.

*By Image



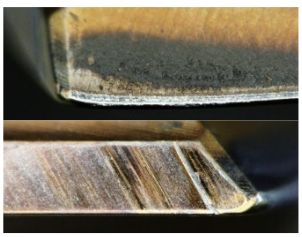
Comparison of wear resistance at high-speed and high efficiency conditions, when machining Workpiece Material

DP6020 exhibits particularly excellent wear resistance.

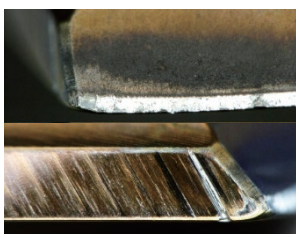


Double wear resistance

After 57 m drilling



DP6020



Conventional

<Cutting Conditions>
Workpiece Material : JIS S50C
Tools : ø8, 5D Solid Carbide Drill
Cutting Speed : vc=200 m/min
Feed per Rev. : fr=0.35 mm/rev
Hole Depth : 25 mm
Cutting Mode : Wet Cutting
Internal Coolant
(Water-soluble Coolants)

PVD Coated Grade for Carbon Steel and Alloy Steel Drilling

DP6020 Specials Range

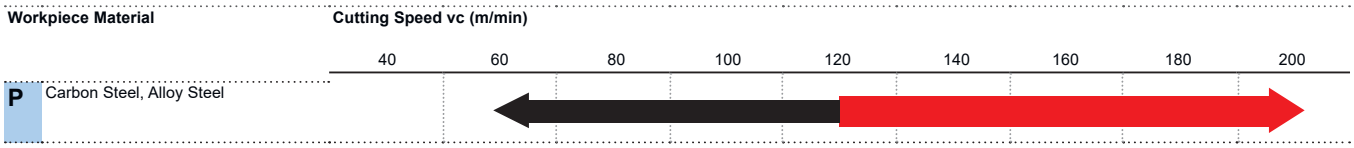
Compatibility Range

Solid drill range size shown in the table below.
Contact us for details on cutting edge specifications.
Both external and internal lubrication methods are possible.
Special geometries such as stepped shapes can be possible on a case-by-case basis so please contact our sales department.

Hole Depth L/D	Drill Diameter (mm)					
	3.0≤DC≤9.0	9.1≤DC≤10.0	10.1≤DC≤12.0	12.1≤DC≤14.0	14.1≤DC≤16.0	16.1≤DC≤20.0
≤ 5	○	○	○	○	○	○
6–8	○	○	○	○	○	–
9–20	○	○	○	○	–	–
21–25	○	○	○	–	–	–
26–35	○	○	–	–	–	–
36–40	○	–	–	–	–	–

○=Specialty Range

Recommended Cutting Conditions

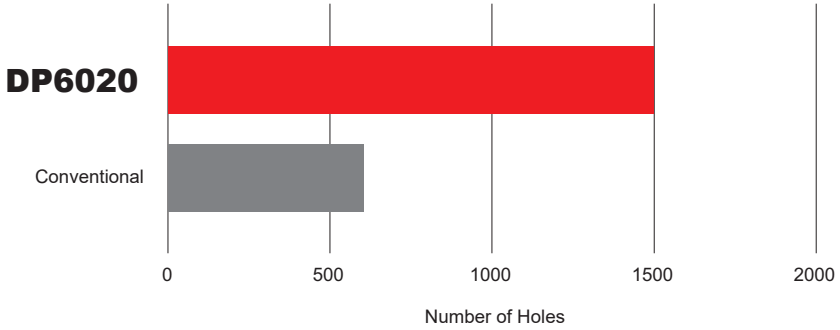


Note 1) The above cutting conditions are when water soluble coolant is used.
Note 2) Adjust the cutting conditions according to the style and design of the tool.
Note 3) Adjust the cutting conditions according to machine tool, workpiece rigidity and machining geometry etc.
Note 4) When using a water-insoluble coolant, reduce the cutting speed by 20% to ensure adequate lubrication.

Cutting Performance

Example when Machining an Automotive Part - Hub

Due to its excellent wear resistance, the tool life is 2.5 times longer than that of conventional products.

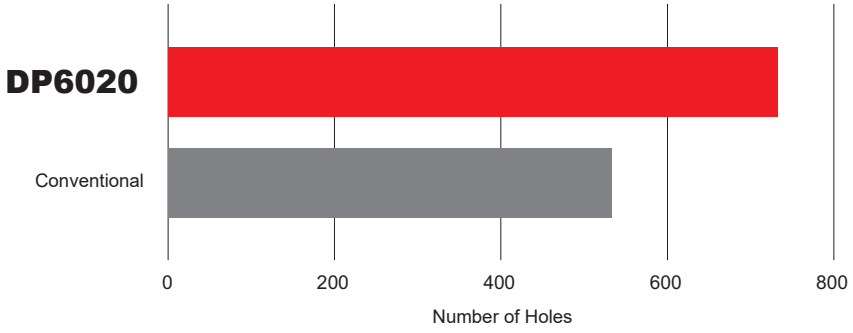


2.5 x tool life

<Cutting Conditions>
Workpiece Material : Carbon Steel
Tools : DC=14 mm
Cutting Speed : vc=70 m/min
Feed per Rev. : fr=0.2 mm/rev

Example when Machining an Automotive Part - Steering Knuckle

Achieves 1.4 times longer tool life due to suppressing flank wear.



Tool life x 1.4

<Cutting Conditions>
Workpiece Material : JIS S45C
Tools : DC=18.5 mm, L/D=3
Cutting Speed : vc=120 m/min
Feed per Rev. : fr=0.35 mm/rev
Hole Depth : 15 mm

For Your Safety
●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or driver. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

This brochure is published by

MITSUBISHI MATERIALS CORPORATION

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(Tools specifications subject to change without notice.)

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