



# MC6100 SERIES

## RECOMMENDED CUTTING CONDITIONS

5° 7° POSITIVE INSERTS (FOR EXTERNAL TURNING)

Material	Properties	Conditions			Grade		Vc	f	ap
Mild steel	≤180HB	●	F	MC6115	FP	295-570	0.04-0.20	0.20-0.90	
		●	F	MC6115	FV	295-570	0.04-0.20	0.20-0.90	
		●	L	MC6115	LP	295-570	0.06-0.25	0.20-1.00	
		●	L	MC6115	SW	295-570	0.06-0.24	0.20-1.50	
		●	M	MC6115	MP	245-475	0.08-0.30	0.30-2.00	
		●	M	MC6115	MV	245-475	0.08-0.30	0.30-2.00	
		●	M	MC6115	MW	245-475	0.10-0.35	0.80-2.50	
		✚	F	MC6125	FP	320-505	0.04-0.20	0.20-0.90	
		✚	F	MC6125	FV	320-505	0.04-0.20	0.20-0.90	
		✚	L	MC6125	LP	320-505	0.06-0.25	0.20-1.00	
		✚	L	MC6125	SV	320-505	0.06-0.25	0.20-1.00	
		✚	L	MC6125	SW	320-505	0.06-0.24	0.20-1.50	
		✚	M	MC6125	MP	270-420	0.08-0.30	0.30-2.00	
		✚	M	MC6125	MV	270-420	0.08-0.30	0.30-2.00	
Carbon and alloy steels	180-280HB	●	F	MC6115	FP	220-420	0.04-0.20	0.20-0.90	
		●	F	MC6115	FV	220-420	0.04-0.20	0.20-0.90	
		●	L	MC6115	LP	220-420	0.06-0.25	0.20-1.00	
		●	L	MC6115	SW	220-420	0.06-0.24	0.20-1.50	
		●	M	MC6125	MP	200-310	0.08-0.30	0.30-2.00	
		●	M	MC6115	MP	180-350	0.08-0.30	0.30-2.00	
		●	M	MC6125	MV	200-310	0.08-0.30	0.30-2.00	
		●	M	MC6115	MV	180-350	0.08-0.30	0.30-2.00	
		●	M	MC6115	MW	180-350	0.10-0.35	0.80-2.50	
		✚	F	MC6125	FP	240-370	0.04-0.20	0.20-0.90	
		✚	F	MC6125	FV	240-370	0.04-0.20	0.20-0.90	
		✚	L	MC6125	LP	240-370	0.06-0.25	0.20-1.00	
		✚	L	MC6125	SV	240-370	0.06-0.25	0.20-1.00	
		✚	L	MC6125	SW	240-370	0.06-0.24	0.20-1.50	
Carbon and alloy steels	280-350HB	●	F	MC6115	FP	155-295	0.04-0.20	0.20-0.90	
		●	F	MC6115	FV	155-295	0.04-0.20	0.20-0.90	
		●	L	MC6115	LP	155-295	0.06-0.25	0.20-1.00	
		●	M	MC6115	MP	130-245	0.08-0.30	0.30-2.00	
		●	M	MC6115	MV	130-245	0.08-0.30	0.30-2.00	
		✚	F	MC6125	FP	170-265	0.04-0.20	0.20-0.90	
		✚	F	MC6125	FV	170-265	0.04-0.20	0.20-0.90	
		✚	L	MC6125	LP	170-265	0.06-0.25	0.20-1.00	
		✚	M	MC6125	MP	140-220	0.08-0.30	0.30-2.00	
		✚	M	MC6125	MV	140-220	0.08-0.30	0.30-2.00	

1. Recommended cutting conditions for 5°/7°/11° positive inserts are provided as a guideline only. Verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang.
2. Please use the QR code for a pamphlet of the recommended conditions for the XCMT profile holder insert.



Cutting conditions: ●: Stable cutting ●: General cutting ✚: Unstable cutting

# MC6100 SERIES

## RECOMMENDED CUTTING CONDITIONS

11° POSITIVE INSERTS (FOR EXTERNAL TURNING)

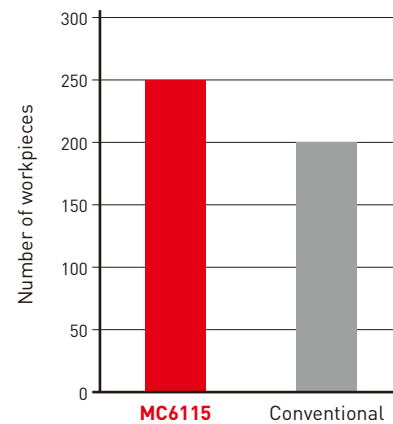
Material	Properties	Conditions			Grade		Vc	f	ap
			F	L					
Mild steel	≤180HB	●	F	MC6125	FV	320-505	0.04-0.20	0.20-0.90	
		●	L	MC6125	LP	320-505	0.06-0.25	0.20-1.00	
		●	L	MC6115	R-Std	245-475	0.08-0.30	0.30-2.00	
		●	M	MC6125	MV	270-420	0.08-0.30	0.30-2.00	
		●	M	MC6115	MV	245-475	0.08-0.30	0.30-2.00	
		●	M	MC6125	R-Std	270-420	0.08-0.30	0.30-2.00	
		✚	L	MC6125	LP	320-505	0.06-0.25	0.20-1.00	
		✚	L	MC6125	R-Std	270-420	0.08-0.30	0.30-2.00	
		✚	M	MC6125	MV	270-420	0.08-0.30	0.30-2.00	
		✚	M	MC6125	R-Std	270-420	0.08-0.30	0.30-2.00	
Carbon and alloy steels	180-280HB	●	F	MC6125	FV	240-370	0.04-0.20	0.20-0.90	
		●	L	MC6125	LP	240-370	0.06-0.25	0.20-1.00	
		●	L	MC6115	R-Std	180-350	0.08-0.30	0.30-2.00	
		●	L	MC6125	R-Std	200-310	0.08-0.30	0.30-2.00	
		●	M	MC6125	MV	200-310	0.08-0.30	0.30-2.00	
		●	M	MC6115	R-Std	180-350	0.08-0.30	0.30-2.00	
		●	M	MC6125	R-Std	200-310	0.08-0.30	0.30-2.00	
		✚	L	MC6125	LP	240-370	0.06-0.25	0.20-1.00	
		✚	L	MC6125	R-Std	200-310	0.08-0.30	0.30-2.00	
		✚	M	MC6125	MV	200-310	0.08-0.30	0.30-2.00	
✚	M	MC6125	R-Std	200-310	0.08-0.30	0.30-2.00			

# MC6115

## APPLICATION EXAMPLES

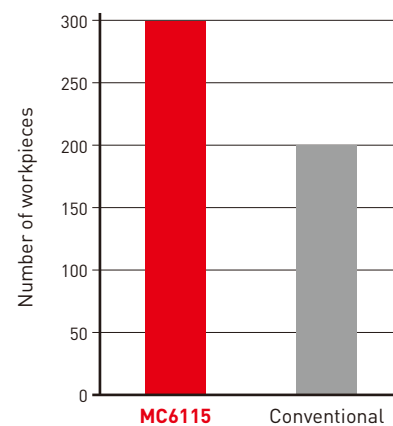
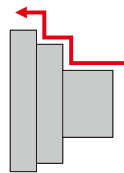
Tool	WNMG080412-MP
Material	DIN 20MnCr5
Component	Machine parts
Application	Face turning
Vc (m/min)	235
f (mm/rev)	0.35
ap (mm)	1.0
Cutting mode	Wet cutting

**Results** MC6115 achieved long tool life with excellent wear resistance and stable cutting, compared to a conventional product.



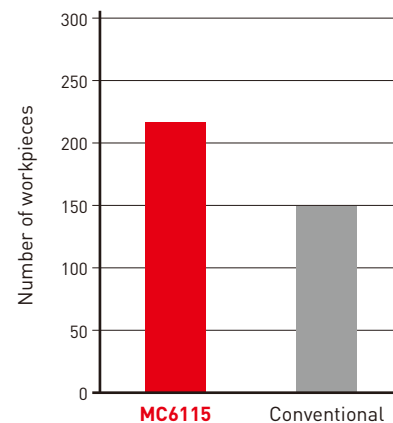
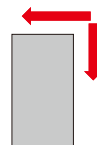
Tool	WNMG080408-MP
Material	DIN 41Cr4
Component	Hub
Application	External turning and facing
Vc (m/min)	300
f (mm/rev)	0.25-0.35
ap (mm)	1-2.5
Cutting mode	Wet cutting

**Results** Superior wear resistance means tool life was extended when compared to conventional products.



Tool	DNMG150612-SA
Material	Bearing steel
Component	Bearing parts
Application	External turning and facing
Vc (m/min)	260
f (mm/rev)	0.3-0.35
ap (mm)	0.5
Cutting mode	Wet cutting

**Results** Extreme resistance to chipping achieved 150 % tool life and enabled easy identification of worn edges.



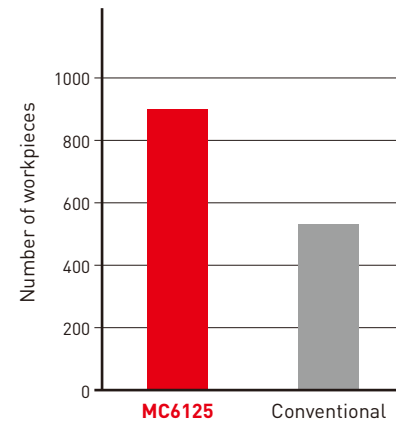
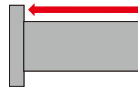
*The examples shown are customer's applications, therefore can differ from the recommended conditions.*

# MC6125

## APPLICATION EXAMPLES

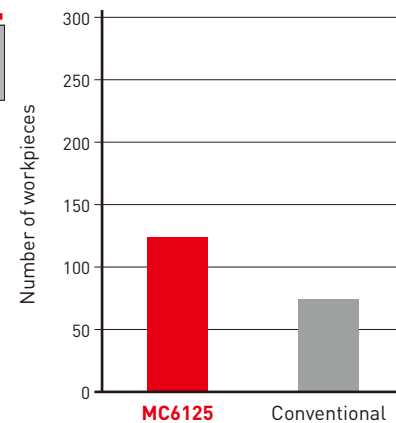
Tool	CNMG120408-MA
Material	C45
Component	Hex bar parts
Application	Interrupted finish turning
Vc (m/min)	150
f (mm/rev)	0.2
ap (mm)	2.0, 1.6
Cutting mode	Wet cutting

**Results** Conventional products fractured after chipping but MC6125 formed ideal chip shapes and achieved a longer tool life.



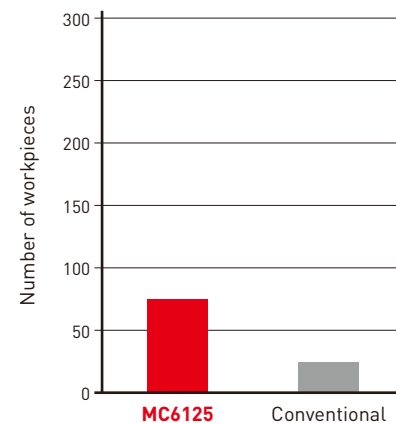
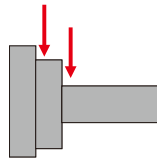
Tool	DNMG150412-SH
Material	DIN C50E
Application	Interrupted finish turning
Vc (m/min)	200
f (mm/rev)	0.3
ap (mm)	1.2
Cutting mode	Wet cutting

**Results** MC6125 provided a stable cutting action and achieved 1.5 times more tool life than conventional products.



Tool	CNMG120412-RP
Material	DIN 34CrMo4
Component	Flange parts
Application	External turning and facing
Vc (m/min)	200
f (mm/rev)	0.25
ap (mm)	1.5
Cutting mode	Wet cutting

**Results** Conventional products machined an inconsistent number of components. MC6125 was more consistent and improved tool life.



*The examples shown are customer's applications, therefore can differ from the recommended conditions.*