MC6100 SERIES

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS (FOR EXTERNAL TURNING)

Cutting conditions: ●: Stable cutting ◐: General cutting ✠: Unstable cutting

	Material	Properties	Conditions	L M R	Grade		Vc	f	ap
P	Carbon and alloy steels	180–280HB	●	L	MC6115	LP	250–480	0.10–0.40	0.30–2.00
			●	L	MC6125	LP	275–425	0.10–0.40	0.30–2.00
			●	L	MC6115	SH	250–480	0.10–0.40	0.30–2.00
			●	L	MC6125	SH	275–425	0.10–0.40	0.30–2.00
			●	L	MC6115	SA	250–480	0.10–0.40	0.30–2.00
			●	L	MC6125	SA	275–425	0.10–0.40	0.30–2.00
			●	L	MC6115	SW	250–480	0.10–0.50	0.30–2.50
			●	L	MC6125	SW	275–425	0.10–0.50	0.30–2.50
			●	M	MC6115	MP	230–440	0.16–0.50	0.30–4.00
			●	M	MC6125	MP	250–390	0.16–0.50	0.30–4.00
			●	M	MC6115	MA	230–440	0.2–0.500	0.30–4.00
			●	M	MC6125	MA	250–390	0.20–0.50	0.30–4.00
			●	M	MC6115	Std	230–440	0.25–0.60	1.50–5.00
			●	M	MC6125	Std	250–390	0.25–0.60	1.50–5.00
			●	M	MC6115	MW	230–440	0.20–0.60	0.90–4.00
			●	M	MC6125	MW	250–390	0.20–0.60	0.90–4.00
			●	R	MC6115	RP	215–415	0.25–0.60	1.50–6.00
			●	R	MC6125	RP	235–370	0.25–0.60	1.50–6.00
			●	R	MC6115	GH	215–415	0.25–0.60	1.50–6.00
			●	R	MC6125	GH	235–370	0.25–0.60	1.50–6.00
			◐	L	MC6115	LP	250–480	0.10–0.40	0.30–2.00
			◐	L	MC6125	LP	275–425	0.10–0.40	0.30–2.00
			◐	L	MC6115	SH	250–480	0.10–0.40	0.30–2.00
			◐	L	MC6125	SH	275–425	0.10–0.40	0.30–2.00
			◐	L	MC6115	SA	250–480	0.10–0.40	0.30–2.00
			◐	L	MC6125	SA	275–425	0.10–0.40	0.30–2.00
			◐	L	MC6115	SW	250–480	0.10–0.50	0.30–2.50
			◐	L	MC6125	SW	275–425	0.10–0.50	0.30–2.50
			◐	M	MC6125	MP	250–390	0.16–0.50	0.30–4.00
			◐	M	MC6115	MP	230–440	0.16–0.50	0.30–4.00
			◐	M	MC6125	MA	250–390	0.20–0.50	0.30–4.00
			◐	M	MC6115	MA	230–440	0.20–0.50	0.30–4.00
			◐	M	MC6125	MH	250–390	0.20–0.55	1.00–4.00
			◐	M	MC6115	MH	230–440	0.20–0.55	1.00–4.00
			◐	M	MC6125	Std	250–390	0.25–0.60	1.50–5.00
			◐	M	MC6115	Std	230–440	0.25–0.60	1.50–5.00
			◐	M	MC6125	MW	250–390	0.20–0.60	0.90–4.00
			◐	M	MC6115	MW	230–440	0.20–0.60	0.90–4.00
			◐	R	MC6125	RP	235–370	0.25–0.60	1.50–6.00
			◐	R	MC6115	RP	215–415	0.25–0.60	1.50–6.00
			◐	R	MC6125	GH	235–370	0.25–0.60	1.50–6.00
			◐	R	MC6115	GH	215–415	0.25–0.60	1.50–6.00

1. Verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang.

MC6100 SERIES

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS (FOR EXTERNAL TURNING)

Cutting conditions: ●: Stable cutting ◐: General cutting ✠: Unstable cutting

	Material	Properties	Conditions	L M R	Grade		Vc	f	ap
P	Carbon and alloy steels	180–280HB	✠	L	MC6125	LP	275–425	0.10–0.40	0.30–2.00
			✠	L	MC6125	SH	275–425	0.10–0.40	0.30–2.00
			✠	L	MC6125	SA	275–425	0.10–0.40	0.30–2.00
			✠	M	MC6125	MP	250–390	0.16–0.50	0.30–4.00
			✠	M	MC6125	MA	250–390	0.20–0.50	0.30–4.00
			✠	M	MC6125	MH	250–390	0.20–0.55	1.00–4.00
			✠	M	MC6125	Std	250–390	0.25–0.60	1.50–5.00
			✠	M	MC6125	MW	250–390	0.20–0.60	0.90–4.00
			✠	R	MC6125	RP	235–370	0.25–0.60	1.50–6.00
			✠	R	MC6125	GH	235–370	0.25–0.60	1.50–6.00

SELECTION CRITERIA AND APPLICATION RANGE

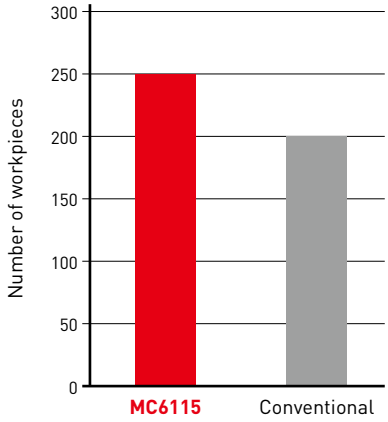
	Material	Cutting mode		Grade
P	Steels	Continuous cutting	*Low*	MC6115
		↕	*Medium*	MC6125
		Interrupted cutting	*High*	MC6035

P	CVD						
P10		MC6115	MC6015	UE6110	MC6125		
P20							
P30						MC6025	
P40							MC6035
P50							

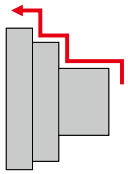
MC6115

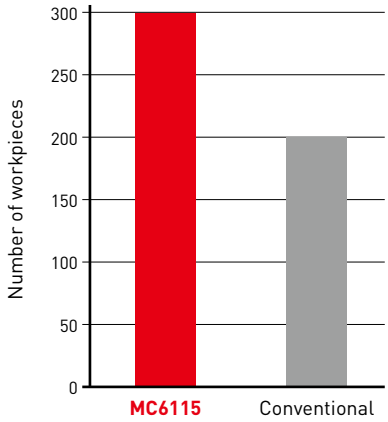
APPLICATION EXAMPLES

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 with conventional product.

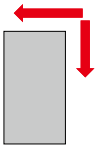


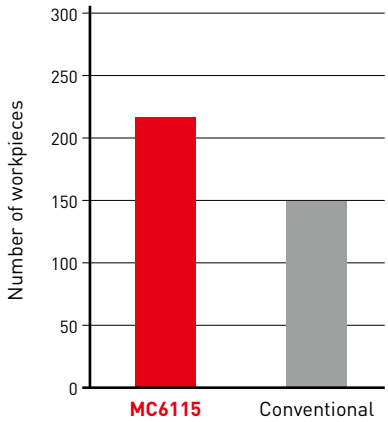
Tool	WNMG080408-MP
Material	DIN 41Cr4
Component	Hub
Application	External turning and facing
Vc (m/min)	300
f (mm/rev)	0.25-0.35
ap (mm)	1-2.5
Cutting mode	Wet cutting
Results	Superior wear resistance compared to conventional products means tool life was extended.





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 wear.





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