CUTTING DATA

Carbide Turning Inserts • General Machining

POSITIVE INSERTS • 7° CLEARANCE

CCMT • DCMT • TCMT • VCMT

Including the CCGT / DCGT / TCGT / VCGT / VBGT / SCGT / RCGT ground inserts for aluminium

ISO P M N

MATERIAL		P STEEL		M STAINLESS STEEL		N ALUMINIUM & NON-FERROUS	
CUTTING SPEED VC		150 – 250 m/min		100 – 180 m/min		300 – 1000 m/min	
INSERT		f mm/rev	ap mm	f mm/rev	ap mm	f mm/rev	ap mm
	**CCGT 03 / 04** Mini type	0.02 – 0.08	0.1 – 0.8	0.02 – 0.08	0.1 – 0.8	0.02 – 0.08	0.1 – 0.8
	CCMT / CCGT 06 0602..	0.05 – 0.15	0.3 – 1.5	0.05 – 0.12	0.3 – 1.2	0.05 – 0.15	0.3 – 2.0
	CCMT / CCGT 09 09T3..	0.08 – 0.25	0.5 – 3.0	0.08 – 0.20	0.5 – 2.5	0.08 – 0.25	0.5 – 4.0
	CCMT / CCGT 12 1204..	0.10 – 0.30	0.8 – 4.0	0.10 – 0.25	0.8 – 3.0	0.10 – 0.30	1.0 – 5.0
	**DCMT / DCGT 07** 0702..	0.05 – 0.15	0.3 – 2.0	0.05 – 0.12	0.3 – 1.5	0.05 – 0.15	0.3 – 2.0
	DCMT / DCGT 11 11T3..	0.08 – 0.25	0.5 – 3.0	0.08 – 0.20	0.5 – 2.5	0.08 – 0.25	0.5 – 3.5
	**TCMT / TCGT 09** 0902..	0.05 – 0.15	0.3 – 1.5	0.05 – 0.12	0.3 – 1.2	0.05 – 0.15	0.3 – 2.0
	TCMT / TCGT 11 1102..	0.08 – 0.20	0.5 – 2.0	0.06 – 0.15	0.5 – 1.5	0.08 – 0.20	0.5 – 2.5
	TCMT / TCGT 16 16T3..	0.10 – 0.30	0.8 – 3.5	0.10 – 0.25	0.8 – 3.0	0.10 – 0.30	1.0 – 4.0
	**VCMT / VCGT / VBGT 11** 1103..	0.05 – 0.15	0.3 – 1.5	0.05 – 0.12	0.3 – 1.2	0.05 – 0.15	0.3 – 2.0
	VCMT / VCGT / VBGT 16 1604..	0.08 – 0.25	0.5 – 2.5	0.08 – 0.20	0.5 – 2.0	0.08 – 0.25	0.5 – 3.0
	**SCGT 09** 09T3..	–	–	–	–	0.08 – 0.25	0.5 – 4.0
	SCGT 12 1204..	–	–	–	–	0.10 – 0.30	1.0 – 5.0
	**RCGT 06 / 08** 0602 / 0803	–	–	–	–	0.05 – 0.20	0.3 – 2.0
	RCGT 10 / 12 1003 / 1204	–	–	–	–	0.10 – 0.30	0.5 – 3.0

USING THIS CHART

Vc Use the top of the range for finishing and light cuts, the bottom for heavier cuts and interrupted cuts.

ap Take at least the minimum depth of cut. Rubbing below it work-hardens stainless steel.

f Keep the feed within the limit for the nose radius (see page 2). Small radii need lower feeds.

– Insert style supplied for aluminium & non-ferrous only.

CUTTING DATA

Carbide Turning Inserts • General Machining

NEGATIVE INSERTS • 0° CLEARANCE

CNMG • DNMG • SNMG • TNMG • VNMG • WNMG

Double-sided inserts for medium to heavier cuts

ISO P M N

MATERIAL		P STEEL		M STAINLESS STEEL		N ALUMINIUM & NON-FERROUS	
CUTTING SPEED VC		150 – 280 m/min		100 – 200 m/min		300 – 1000 m/min	
INSERT		f mm/rev	ap mm	f mm/rev	ap mm	f mm/rev	ap mm
	CNMG 12 1204..	0.15 – 0.40	1.0 – 5.0	0.12 – 0.35	1.0 – 4.0	0.10 – 0.40	1.0 – 6.0
	DNMG 11 1104..	0.10 – 0.30	0.5 – 3.0	0.10 – 0.25	0.5 – 2.5	0.10 – 0.30	0.5 – 3.5
	DNMG 15 1506..	0.15 – 0.40	1.0 – 5.0	0.12 – 0.35	1.0 – 4.0	0.10 – 0.40	1.0 – 5.0
	SNMG 12 1204..	–	–	–	–	0.15 – 0.40	1.0 – 6.0
	TNMG 16 1604..	0.15 – 0.35	1.0 – 4.0	0.12 – 0.30	1.0 – 3.5	0.10 – 0.35	1.0 – 5.0
	VNMG 16 1604..	0.10 – 0.30	0.5 – 3.0	0.10 – 0.25	0.5 – 2.5	0.10 – 0.30	0.5 – 3.0
	WNMG 06 0604..	0.10 – 0.30	0.5 – 3.0	0.10 – 0.25	0.5 – 2.5	0.10 – 0.30	0.5 – 3.5
	WNMG 08 0804..	0.15 – 0.40	1.0 – 4.5	0.12 – 0.35	1.0 – 4.0	0.10 – 0.40	1.0 – 5.0

– Insert style supplied for aluminium & non-ferrous only.

FEED BY NOSE RADIUS

NOSE RADIUS (MM)	CODE	F (MM/REV)
r_ε 0.1	..01	0.02 – 0.08
r_ε 0.2	..02	0.05 – 0.15
r_ε 0.4	..04	0.10 – 0.25
r_ε 0.8	..08	0.15 – 0.40
r_ε 1.2	..12	0.20 – 0.50

FORMULAS

$n = (Vc \times 1000) / (\pi \times D)$	Spindle speed (rev/min)
$Vc = (\pi \times D \times n) / 1000$	Cutting speed (m/min)
$Vf = f \times n$	Feed rate (mm/min)
$Ra \approx (f^2 / 8r_\varepsilon) \times 1000$	Theoretical finish (µm)

Stainless: use plenty of coolant, keep the cut going and don't let the tool dwell.