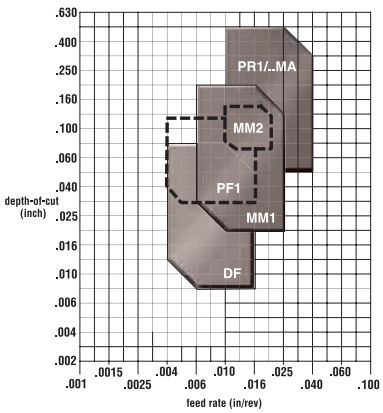
Turning Grades for Cutting Material

The Tungsten Carbide Grade group consists of uncoated, chemical vapor deposition (CVD) coated, and physical vapor deposition (PVD) coated materials. Each coated grade consists of various substrates of unalloyed (straight WC/Co) and alloyed (WC/TaC/TiC/NbC/Co) compositions.

Grades	Coating	Composition	Application	ISO Class
CVD Triphase Coated Carbide Grades				
RC2003		A multi-layer CVD TiN/Al_2O_3/MT-TiCN/TiN coated carbide grade.	A CVD-coated grade with a cobalt enriched substrate. Designed for medium machining of ductile and cast irons as well as steels. Cobalt enrichment provides an optimum combination of toughness and deformation resistance.	K15-K30 P20-P25
RC3503		A TiC/TiCN/TiN coating on an extra-strong, cobalt-enriched substrate.	A triphase coating for general purpose machining of many workpiece materials. RC3503 finds its best applications in heavy cutting of low, medium, and high carbon steels as well as medium hardness alloy and tool steels.	P20-P40 M25-M35 K30-K40* S25-S30*
PVD TiN (Titanium Nitride) Coated Carbide Grades				
RC1502		A PVD-coated carbide grade.	A PVD TiN coating over a very wear resistant unalloyed carbide substrate. For general purpose machining of high temperature alloys and 200 and 300 series stainless steels.	P10-P20 M10-M20 K10-K20 N10-N20* S10-S20* H10*
RC745M		A multi-layer PVD AlTiN/ TiN coated carbide grade.	A new milling grade engineered for high productivity wet and dry milling of carbon, alloy, and austenitic stainless steels. The high thermal shock resistance of the tough carbide substrate combined with the patented multi-layer coating provides long and reliable tool life in aggressive milling operations with or without coolant.	P20-P40 M25-M35 K20-K30* S25-S30*
RC2502		A PVD-coated carbide grade.	PowrNotch™ Grade with PVD TiN coating and tough substrate for general purpose applications in steels, SS, hi-temp alloys, cast irons, and nonferrous. Low to medium speeds with interruptions and high feed rates.	K20-K30 M20-M30 N20-N30 S20-S30

(*) ISO Class - Grade is minimally suited for this material.

1st Step – *Select the Insert Geometry*



2nd Step – *Select the Grade*

Cutting Condition	Insert Geometry PF1/DF ▼▼▼	MM1/MM2 ▼▼	..MA ▼	PR1 ▼
heavily interrupted cut	—	RC3503	RC3503	RC3503
lightly interrupted cut	RC3503	RC3503	RC3503 RC2003	RC3503 RC2003
varying depth of cut, casting or forging skin	RC1502 RC2003	RC3503	RC3503 RC2003	RC3503 RC2003
smooth cut, pre-turned surface	RC1502 RC2003	RC1502	RC2003	RC2003

▼▼▼ Finishing ▼▼ Medium Machining ▼ Roughing

3rd Step – *Select the Cutting Speed – ISO Turning*

Material	Grade	Speed - sfm 150	300	500	700	800	1000	1200	Starting Speeds sfm
Steel	RC1502								350
	RC2003								585
	RC3503								450
Stainless Steel	RC1502								400
	RC2003								500
	RC3503								400
Cast Iron	RC1502								500
	RC2003								850
	RC3503								500
High Temp Alloys	RC1502								125
	RC3503								125

3rd Step – *Select the Cutting Speed – Grooving and Threading*

Material	Grade	Speed - sfm 0	75	150	300	500	Starting Speeds sfm
Steel	RC2502						100
Stainless Steel	RC2502						80
Cast Iron	RC2502						150
High Temp Alloys	RC2502						35