

Insert Selection Guide

Sandvik Coromant Grade and Geometry Selection Guide

Step 1: Choose workpiece material (ISO P/Steel, ISO M/Stainless steel, ISO K/Cast iron, ISO N/ Aluminum alloys, ISO S/Heat-resistant alloys, ISO H/Hardened steel)

Step 2: Choose type of application (turning, parting and grooving, milling, drilling)

Step 3: Choose a grade based on operation (finishing/light, medium, roughing/heavy)

Step 4: Choose a geometry based on operation (finishing/light, medium, roughing/heavy)

First choice grades and geometries are starting points for most machining applications and mixed production.

Grade designations

GC=Coated carbide

CB=Cubic Boron

Nitride (CBN)

CD=Polycrystalline

diamond (PCD)

H=Uncoated

ISO P Steel

ISO M Stainless steel

ISO K Cast iron

ISO N Aluminum alloys

ISO S Heat resistant alloys

ISO H Hardened steel



Indexable Turning: T-Max P Negative inserts: CNMG, CNMA, DNMG, DNMA, TNMG, TNMA, SNMG, SNMA, VNMG, VNMA, WNMG, WNMA

CoroTurn 107/111 Positive inserts: CCMT, CCGT, CCET, CMPT, DCMX, DCMT, DCGT, DCET, RCMT, SCMT, TCMX, TCMT, TCGT, VBMT

Turning grades

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions (wear resistance)	CT5015 GC1525 GC4205 GC4215	GC2015 GC1025	GC3005 GC3205	CD10* H10	GC1005 GC1105	CB7015*
Average conditions (first choice)	GC4225	GC2025	GC3210	H13A	GC1115	CB7025*
Difficult conditions (toughness)	GC4235	GC2035	GC3215	H13A	GC1025 GC1125	CB7050*

Turning geometries

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Finishing 	-WF -PF	-WF -MF	-WF -KF	- -AL	- -MF	-WH*
Medium (first choice) 	-WM / WMX -PM	-WM / WMX -MM	-WM / WMX -KM	- -AL	- -QM	-WH* -WH*
Roughing (toughness)	-PR -HM	-MR	-KR	-QM	-QM	-
Complementary	-QF -QM	-UM			-23 -SR / -SM -UM	

* Order at www.grainger.com

Parting & Grooving grades

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions (wear resistance)	GC3115 GC4225	GC1105	GC3115	H10	GC1105	CB7015*
Average conditions (first choice)	GC1125	GC1125	GC1125	H13A	GC1125	CB7015*
Difficult conditions (toughness)	GC2135	GC2135	GC2135	GC1125	GC2135	GC1125

Parting & Grooving geometries (for all materials)

	Low feed		Medium feed		High feed		Optimizing		
	CoroCut	Q-Cut	CoroCut	Q-Cut	CoroCut	Q-Cut	CoroCut	Q-Cut	CoroCut3
Parting off	CF	7E	CM	5E	CR	4E	CS	9E/3F/5F	CS/CM
Turning	TF	7G	TM	5T	TM	4T			
Profiling	RO	4P	RM	5P			RO	4P	
Grooving	GF	4G	GM	5G/7G	TM	5G			
Facegrooving	TF	7G	CM	5E			RM	7P	

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ISO
P SteelISO
M Stainless
steelISO
K Cast
ironISO
N Aluminum
alloysISO
S Heat resistant
alloysISO
H Hardened
steel

Milling grades

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions (wear resistance)	GC4220 GC4230	GC1030	GC3220	CD10 H10	GC1030	CB50*
Average conditions (first choice)	GC4240	GC2030	GC1020	H13A	GC1030	GC1010
Difficult conditions (toughness)	GC1030	GC2040	GC3040	H13A	GC2030 GC2040	GC1030 GC4220

Milling geometries

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Light	-PL	-ML	-KL	-AL	-PL	-PL
Medium (first choice)	-PM	-MM	-KM	-AL	-ML	-PM
Heavy	-PH	-PH	-KH	-KM	-ML	-PH

* Order at www.grainger.com

Milling tool application recommendations

	CoroMill® 490	CoroMill® 390	CoroMill® 290	CoroMill® 345	CoroMill® 245	CoroMill® 331	CoroMill® 300	CoroMill® 200	CoroMill® 316
Facemilling	•	•	•	•••	•••	•	•	•	•
Shoulder milling	•••	•••	•	-	-	-	-	-	•
Profile milling	-	-	-	-	-	-	•••	•••	••
Slot milling	•	••	-	-	-	•••	-	-	•

••• = First choice for application

•• = Good choice

• = Acceptable

- = Not recommended

Drilling grades (Use GC1044 for central insert; select peripheral insert grade based on material/machining conditions)

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions (wear resistance)	P: GC4014	P: GC4014	P: GC4014	P: GC4014	P: GC4024	P: GC4014
Average conditions (first choice)	C: GC1044 P: GC4024	C: GC1044 P: GC4044	C: GC1044 P: GC4024	C: GC1044 P: H13A	C: GC1044 P: GC4044	C: GC1044 P: GC4024
Difficult conditions (toughness)	P: GC4044	P: GC4044	P: GC4034	P: GC4044	P: GC4044	P: GC4044

Drilling geometries

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions	-GM	-GM	-GM	-GM	-GM	-GM
Average conditions (first choice)	-LM	-LM	-GR	-LM	-LM	-GM
Difficult conditions	-GT	-GT	-GT	-GT	-GT	-GT