

# Ingersoll Cutting Tools Grade and Geometry Selection Guide

**Step 1:** Choose workpiece material (P/M/K/N/S/H) based on ISO color chart below

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

**Step 3:** Choose a grade based on machining conditions (good, average or difficult conditions)

**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.

<b>ISO P</b>	<b>ISO M</b>	<b>ISO K</b>	<b>ISO N</b>	<b>ISO S</b>	<b>ISO H</b>
Steel	Stainless Steel	Cast Iron	Aluminum Alloys	Super Alloys	Hardened Steel

## Turning Grades

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions (wear resistance)	TT8115	TT5030	TT1300	K10	TT5030	TT5030
<b>Average conditions (first choice)</b>	TT8125	TT5030 TT5100	TT7310	K10	TT5030	TT9030
Difficult conditions (toughness)	TT5100 TT7100	TT7100 TT8020	TT7310	K10	TT9030 TT8020	TT9030

## Turning Geometries

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Finishing	FA, FC, FG, WS*, WT*	FA, FG, ML	MT, WT*	FL	FG, ML	
<b>Medium (first choice)</b>	PC, MT, MG-, WT*, GU**	ML, MP, SU**	MT, RT	FL	ML, MP, SU**	MP
Roughing (toughness)	RT, GU	MT, MG-, RT	Flat Top (-NMA...)	FL, ML	MT, MG-, RT	MT

\* Wiper Insert Geometry    \*\* Chipbreaker for Hex-Turn Inserts only

## Parting, Grooving and Turn/Groove Grades

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions (wear resistance)	TT9030	TT9030	K10	K10	TT9030	TT9030
<b>Average conditions (first choice)</b>	TT5100, TT7220	TT9030, TT5100	K10	K10	TT9030, TT5100	TT9030
Difficult conditions (toughness)	TT8020	TT8020	TT9030	TT8020	TT8020	TT8020

## Parting, Grooving and Turn/Groove Geometries

	Low Feed	Medium Feed	High Feed	Hard Materials	Soft Materials	Tubes
Parting Off / Grooving	J	C, TDXU	C	C	J	J
Turning	TDXU, TDT	TDXU, TDT	TDXU, TDT			
Profiling	TDT, TDT-RU	TDT, TDT-RU	TDT, TDT-RU			
Face / ID Grooving	TDXU	TDXU	TDXU			

## Drilling Grades

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions (wear resistance)	IN6520 (outboard) IN2005 (inboard)	IN2005	IN2010	IN2010	IN2005	IN2005
<b>Average conditions (first choice)</b>	IN2005	IN2005	IN2010	IN10K	IN2005	IN2005
Difficult conditions (toughness)	IN1030	IN1030	IN2005	IN1030	IN1030	IN1030

## Drilling Geometries

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
<b>All conditions</b>	N-PH, N-PH1	N-PH, N-PH1	N	HP	N-PH, N-PH1	N-PH, N-PH1

## Milling Grades

	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
Good conditions (wear resistance)	IN2005 IN2505 IN5515	IN2005 IN2505	IN2015	IN10K	IN2005 IN2505	IN2005 IN2505
<b>Average conditions (first choice)</b>	IN2040 IN2005	IN2030 IN2005	IN2015	IN15K	IN2005 IN2505	IN2005 IN2505
Difficult conditions (toughness)	IN1030 IN2030 IN6530	IN1030 IN2030 IN6530	IN2005	IN05S	IN2030 IN6530	IN2030 IN6530

## Milling Tool Application Recommendations

	HiPos+	TETRA	ISO+ 45°	HiPos Deka	EvoTec	S-Max 45°	FormMaster	PowerFeed+ S-Max HiFeed	DHU Plunge SHU Plunge	Aluminator RoughAir
Face Milling	**	**	***	***	**	***	**	***	-	**
Shoulder Milling	***	***	-	-	***	-	**	**	.	***
Profile Milling	-	-	-	-	-	-	***	***	.	-
Slot Milling	***	***	-	-	***	-	.	**	**	***
Plunge Milling	**	.	-	-	.	-	.	**	***	.

\*\*\* = First Choice for application    \*\* = Good choice    \* = Acceptable    - = Not recommended