

Material Group



This is your **quick reference colour band guide** that you will see throughout this catalog. It will make your insert choice **quick, easy, and accurate.**



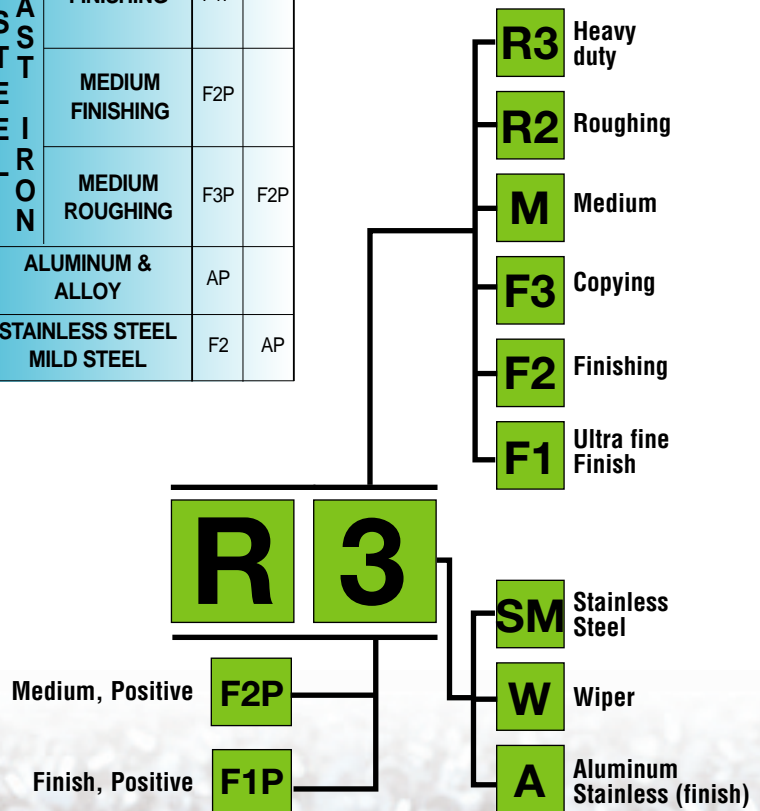
Material	Application	ISO Grade	Coating
<b>P =</b> Steel	<b>T =</b> Turning	<b>10 =</b> ISO 10 Grade	<b>C =</b> C.V.D. Coated
<b>M =</b> Stainless Steel	<b>M =</b> Milling	<b>20 =</b> ISO 20 Grade	<b>U =</b> Uncoated
<b>K =</b> Cast Iron Aluminum		<b>30 =</b> ISO 30 Grade	<b>S =</b> Cermet
		<b>40 =</b> ISO 40 Grade	<b>P =</b> P.V.D. Coated

## SOWA Chipbreaker Quick Choice

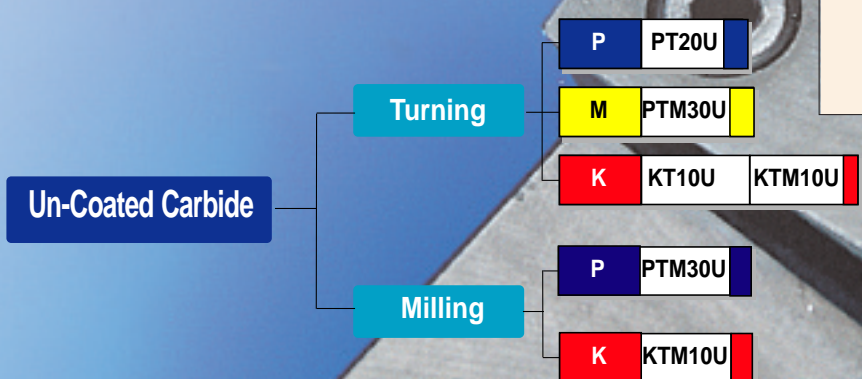
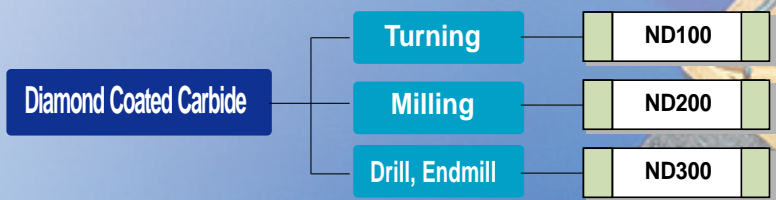
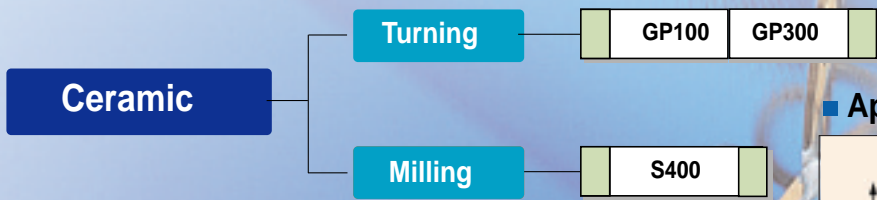
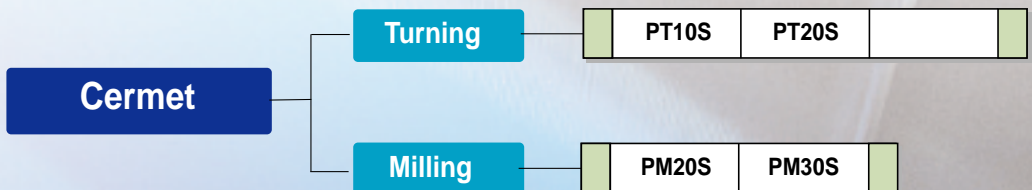
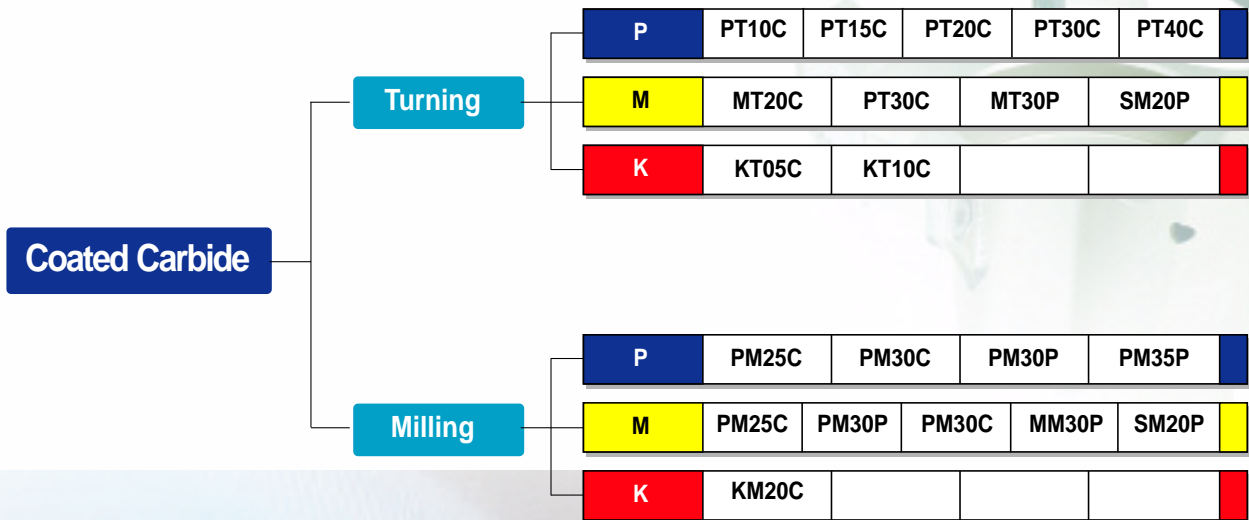
APPLICATION	SOWA			
	Main	Sub		
<b>NEGATIVE</b>	<b>STEELS</b>	EXTREME FINISHING	F1	
		FINISHING	F2	
		MEDIUM FINISHING	F3	M
		MEDIUM ROUGHING	M	
		ROUGHING	R2	R1
		HEAVY	R3	
		WIPER	W	
		GENERAL	G	R2
STAINLESS STEEL MILD STEEL	A	F3		
	SM MM	M R1		
CAST IRON	R1	G R2		
ALUMINUM	A			

APPLICATION	SOWA			
	Main	Sub		
<b>POSITIVE</b>	<b>CAST IRON</b>	FINISHING	F1P	
		MEDIUM FINISHING	F2P	
		MEDIUM ROUGHING	F3P	F2P
		ALUMINUM & ALLOY	AP	
		STAINLESS STEEL MILD STEEL	F2	AP

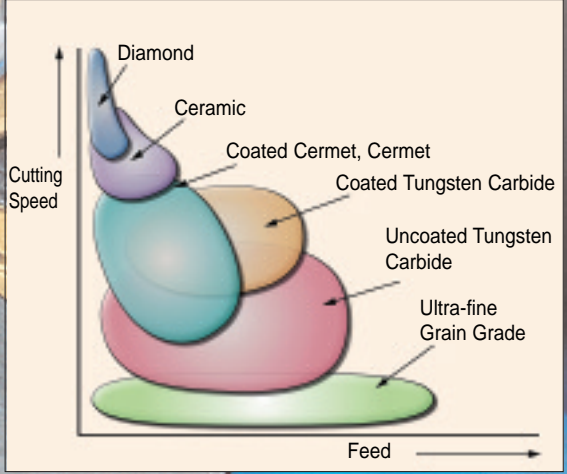
## Code Key



ie. **CNMG 432 R3 PT10C**



### Application range



Class	Class of symbol	Work-piece	Way of cut	Working condition	High performance direction	
					Cutting condition	Quality of tip
<b>P</b>	P01	Steels, Cast steels	Precision turning, precision boring	Small cutting area in high cutting speed. Expect good dimension and surface with no vibration.	 	 
	P10	Steels, Cast steels	Turning, Copy machining, Threading cutting, Surface finish milling	Small cutting area in high cutting speed. or Good working condition.		
	P20	Steels, Cast steels, Malleable cast iron	Turning, Copy machining, Milling, Planing	Medium cutting area in medium cutting speed. and Small cutting area in planing.		
	P30	Steels, Cast steels, Malleable cast iron	Turning, Milling, Planing	Medium/large cutting area in low/medium cutting speed. or poor working condition.		
<b>M</b>	M10	Steels, Cast steels, Cast iron	Turning, Milling	Small/medium cutting area in medium/high cutting speed. or Using in common for castability cast iron.	 	 
	M20	Steels, Cast steels, Cast iron	Turning, Milling	Medium cutting area in medium cutting speed. or No using in common for steels, cast iron. or poor working condition.		
		Hadfield, Steels, Austenite Steels, Special cast iron	Turning, Milling	Medium cutting area in medium cutting speed. or Poor working condition.		
M30	Steels, Cast steels, Cast iron, Austenite steels, Special cast iron, Heat resisting alloy	Turning, Milling, Planing, Cutting-off	Medium/large cutting area in medium cutting speed. or working condition is worse than M20.			
<b>K</b>	K01	Cast iron	Precision Turning, Precision boring, Surface finish milling	Small cutting area in high cutting speed. or No vibration.	 	 
		High hardness cast iron, Quenched steels	Turning	Small cutting area in exfrom low cutting speed. or No vibration.		
		Black lead, Hard paper, Ceramic High Si-Al		No vibration.		
	K10	Cast iron, Malleable cast iron	Turning, Milling, boring, Reamer	Small/medium cutting area in medium cutting speed. or Generd working in comparing.		
		Quenched steels	Turning	Small cutting area in low cutting speed. or No vibration in comparative.		
		Si-Al alloy, High hardness copper, Glass, Ceramic, Hard rubber, Hard paper, Synthetic resin		No vibration in comparative		
K20	Cast iron(Hb200 and below)	Turning, Milling, Planing, boring, Reamer, Broach	Medium/large cutting speed in medium cutting speed. or General working demanding high Toughness.			
K30	Low hardness cast iron, Copper, ALUMINUM	Turning, Milling, Planing, copy machining	Large cutting area or poor working condition.			

# GRADE APPLICATION

## ■ Turning

Cutting Condition		ISO	Coated Carbide	Cermet	C.B.N	Ceramic	Uncoated Carbide
P	Intermittent & Heavy Duty	P50					
		P40					
	Low Speed	P30					
		P20	PT10C	PT20C			
	Medium Speed	P10			PT10S		
P01						GP100	GP300
M	Low Speed	M40					
		M30					
	Medium Speed	M20	MT20C				
		M10					
K	Low Speed	K40					
		K30					
	Medium Speed	K20					
		K10	KT05C	KT10C			
	High Speed	K01			KB350	KB360	GP100

## ■ Milling

Cutting Condition		ISO	Coated Carbide	Cermet	C.B.N	Ceramic	Uncoated Carbide	Coated Carbide
P	Intermittent & Heavy Duty	P50						
		P40						
	Low Speed	P30						
		P20	PM10C	PM25C	PM30C	PM30P	PM40P	
	Medium Speed	P10						
P01								
M	Low Speed	M40						
		M30						
	Medium Speed	M20	MM30P					
		M10						
K	Low Speed	K40						
		K30						
	Medium Speed	K20	KM20C					
		K10						
	High Speed	K01			KB350	KB360	GP100	GP300

## ■ Drilling

Cutting Condition		ISO	Coated Carbide	Cermet	C.B.N	Ceramic	Uncoated Carbide	Coated Carbide
P	Intermittent & Heavy Duty	P50						
		P40						
	Low Speed	P30						
		P20						
	Medium Speed	P10						
P01								
M	Low Speed	M40						
		M30						
	Medium Speed	M20						
		M10						
K	Low Speed	K40						
		K30						
	Medium Speed	K20						
		K10						
	High Speed	K01			KB350	KB360	GP100	GP300