

Special Features

SOWA uncoated carbide grades have exceptional wear resistance and toughness at the same time through special alloy design with WC, Co, and additives like TaC, TiC etc.



Special Features

- 1 Excellent resistance to thermal crack allows cutting with coolant.
2. Specially designed alloys have fine micro structure and low affinity with work piece.
3. They have excellent toughness in general.

● Special Features

ISO	Composition	Characteristics	Work piece
P	WC-TiC-TaC-Co	Excellent thermal shock resistance and resistance against plastic deformation.	Carbon steel, Alloy steel,
M	WC-TiC-TaC-Co	Comprehensive grades have excellent thermal shock resistance and superior strength.	Alloy steel, Stainless steel
K	WC-Co	Hard and strong grades	Cast iron, Non ferrous metal Plastic, Acryl etc

ISO	Grade	Hardness (HRA)	TRS(kg/mm ²)	Young's modulus (x103kg/mm ²)	Thermal conductivity (cal/cm·Sec·°C)	Thermal expansion coefficient (x10 ⁶ /°C)
P	PT20U	91.8	180	5.6	0.10	5.2
	PM20U	91.5	200	5.3	-	5.2
	PTM30U	91.3	210	5.3	-	5.2
M						
K	KT10U	92.8	190	6.6	0.26	4.7

Special Features

■ For Turning

Work-piece	1 st choice	Recommended cutting speed (sfm)	ISO	Application Range
Steel			P10	
	PT20U	425(225 - 600)	P20	
	PM20U,PTM30U	425(225 - 600)	P30	
Cast Iron			K01	
	KTM10U	500(325 - 650)	K10	
			K20	
Aluminum alloy	KT10U	1650(975 - 2625)		
Copper, Bronze	KT10U	650(500 - 975)	K30	

■ For Milling

Work-piece	1 st choice	Recommended cutting speed (sfm)	ISO	Application Range
Steel	PM20U	425(225 - 600)	P20	
	PTM30U	425(225 - 600)	P30	
Cast Iron	KTM10U	500(325 - 650)	K01	
			K10	
Aluminum alloy	KTM10U	1650(975 - 2625)	K20	
Copper, Bronze	KTM10U	650(500 - 975)	K30	