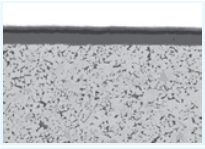
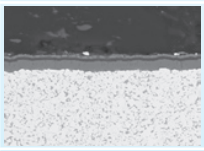
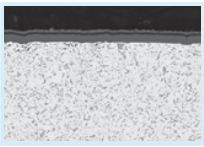
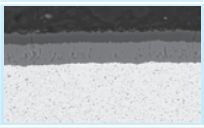
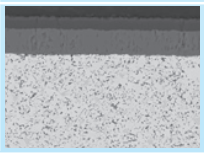
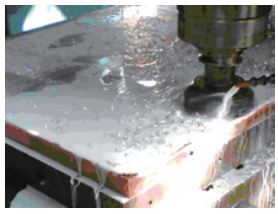
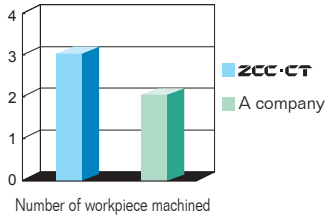
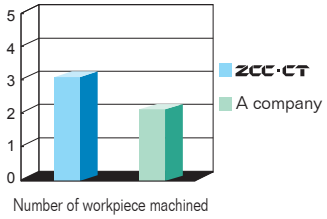
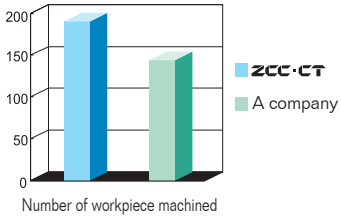
Indexable Milling Tools

Grade classification for milling inserts

Coated Cemented Carbide CVD

Grade	Coating structure	Micro-structure	ISO applied range	Application field
YBC301	Combination of high toughness and strength substrate and the coating comprised of TiCN, thin Al_2O_3, TiN		P15~35	Applicable for semi-finish and rough milling P type material
YBM251	Combination of high toughness and strength substrate and the coating comprised of TiCN, thin Al_2O_3, TiN		P15~40 M10~30	Applicable for semi-finish and rough milling P, M type materials
YBM351	Combination of high toughness substrate and the coating composed of TiCN, thin Al_2O_3, TiN		P25~40 M20~35	Applicable for rough milling P, M type materials
YBD152	Good combination of substrate with high wear-resistance and TiCN, thick Al_2O_3 coating		K05~25	Applicable for finish and semi-finish milling K type material
YBD252	Good combination of substrate with high wear-resistance and TiCN, thick Al_2O_3 coating		K15~35	Applicable for rough and semi-finish milling K type material

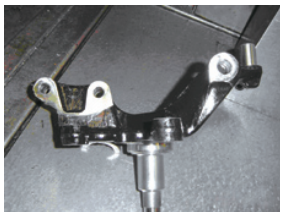
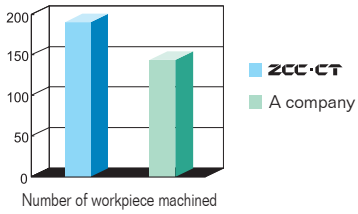
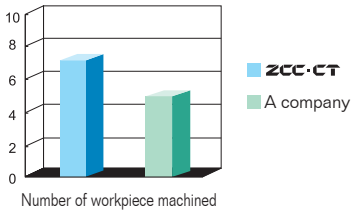
Application case

Component shape			
Machine and cooling	NC plane milling machine, wet machining	Vertical machining center, dry machining	Horizontal machining center, dry machining
Workpiece material and hardness	Casting stainless steel HB220-260	#45 Forged steel HB240-270	HT250 HB220
Type of machining	Milling surface	Milling surface	Milling surface
Applicable tool	FMA04-200-C60-OF07-12	FMA01-125-B40-SE12-08	FMP02-100-B32-SE12-07
Applicable insert	YBM251/OFKR0704-DM	YBM351/SEET12T3-DR	YBD252/SEET120308PER-PM
Cutting parameters	Vc=120m/min, fz=0.15mm/z, a_p=2mm	Vc=212m/min, fz=0.2mm/z, a_p=3mm	Vc=160m/min, fz=0.2mm/z, a_p=1.5mm
Application results			

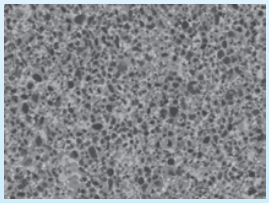
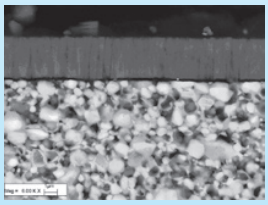
Coated Cemented Carbide PVD

Grade	Coating structure	ISO applied range	Application field
YBG102	Fine grain carbide substrate + Nano coating	K05~K20	Applicable for finish and semi-finish milling K type material
YBG202	Carbide substrate with excellent deformation resistance + Nano coating	P10~30 M10~30 S05~20	PVD grade with wide application, widely applicable for semi-finish milling type P, M, S materials
YBG302	Substrate with good toughness and strength + Nano coating	P 25~40 M 25~40	Applicable for rough milling type P and M materials
YBG152	Substrate with reasonable hardness and strength+ Nano coating	K 20~35	Applicable for rough and semi-finish milling type K material

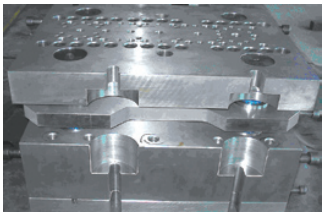
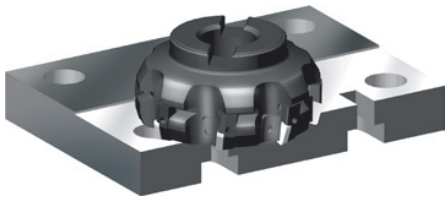
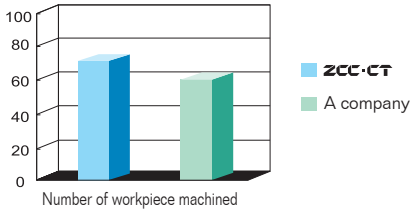
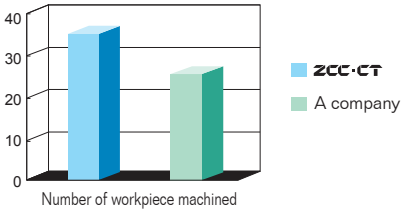
Application case

Component shape		
Machine and cooling	Machining center, dry cutting	Plane milling machine, dry cutting
Workpiece material and hardness	Nodular cast iron HB 220	7CrSiMoV HRC25
Type of machining	Milling surface	Cavity milling
Applicable tool	EMP02-050-A22-AP11-06	BMR03-050-MT5-M
Applicable insert	YBG102/APKT11T308-PM	YBG302/XPHT50R2507- GM
Cutting parameters	Vc=235m/min, fz=0.15mm/z, a_p=1~3mm	Vc=120m/min, fz=0.25mm/z, a_p=8mm
Application results		

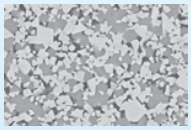
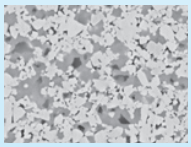
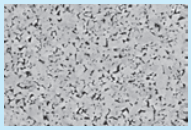
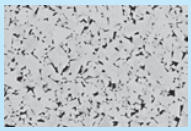
Cermet

Grade	Coating structure	ISO applied range	Application field
YNG151		P05~20 M05~20 K05~20	Wide application of finish milling P, M, K type materials
YNG151C		P01~20 M01~20 K01~20	Wide application of finish milling P, M, K type materials

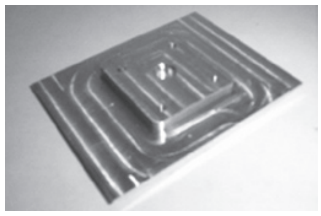
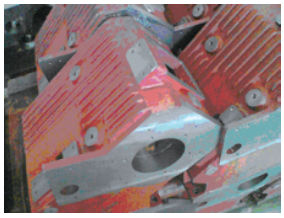
Application case

Component shape		
Machine and cooling	Machining center, dry cutting	Machining center, dry cutting
Workpiece material and hardness	#45 steel HB 170~220	NAK80 HRC42~48
Type of machining	Finish milling surface	Finish milling surface
Applicable tool	FMA03-160-B40-SE12-08	FME03-160-B40-SP12-10
Applicable insert	YNG151/SEEN1203AFTN	YNG151C/SPEN1203EDER
Cutting parameters	Vc=400m/min, fz=0.1mm/z, a_p=0.3mm	Vc=420m/min, fz=0.12mm/z, a_p=0.35mm
Application results		

Cemented Carbide

Grade	Coating structure	ISO applied range	Application field
YC30S		P25~40 M25~40	Applicable for rough milling P, M type materials
YD051		K05~20	Applicable for finish milling type K material
YD101		N05~25	Applicable for semi-finish and finish milling type N material
YD201		K15~35 N15~30	Applicable for rough and semi-finish type K material, and for rough milling type N material

Application case

Component shape			
Machine and cooling	Vertical machining center, wet machining	Plane milling machine, wet machining	plane milling machine, dry cutting
Workpiece material and hardness	Aluminum alloy HB100	40CrMnMo HB240	HT250 HB220
Type of machining	Milling surface	Milling surface	Milling surface
Applicable tool	FMA01-100-B32-SE12-07	FMP01-100-B32-TP22-06	FME03-160-B40-SP15-10
Applicable insert	YD101/SEET12T3-LH	YC30S/TPKN2204PDR	YD201/SPKN1504EDTR
Cutting parameters	Vc=300-350m/min, a_p=1-2mm, fz=0.2mm/z	Vc=170m/min, a_p=5-7mm fz=0.3mm/z	Vc=100-130m/min, a_p=7mm, fz=0.35mm/z
Application results