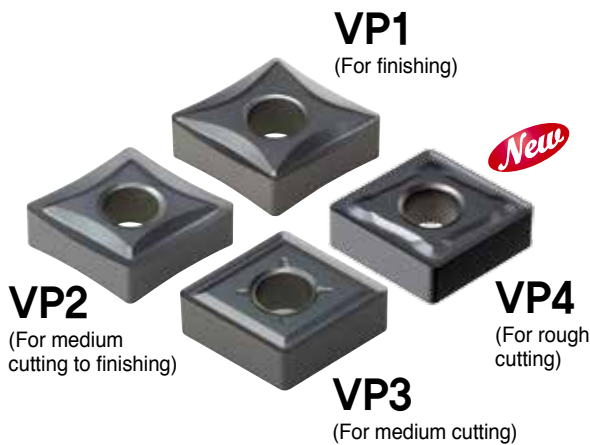


PC8105 / PC8110 / PC8115



Solution for Machining Hard-to-cut Materials

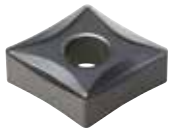
Turning inserts specialized in Inconel and titanium alloy machining

- **PC8100 Series**
Turning grades for heat resistant alloy, with exceptional resistance to wear and chipping
- **VP Chip Breaker Series**
Excellent cutting performance ensures efficient and stable machining in hard-to-cut materials



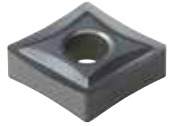
Turning Inserts for Heat Resistant Alloy

Heat resistant alloys (Inconel, etc.) create high cutting forces and temperatures on cutting edges from their high strength at high temperature and low heat conductivity. Thermal shock and work hardening contribute to chipping, breakage or notch wear, and a need to decrease velocities.



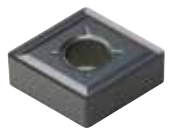
VP1

For finishing
Ground class



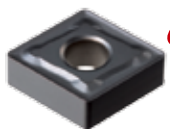
VP2

For medium
cutting to finishing



VP3

For medium
cutting



VP4

For rough
cutting

PC8105, PC8110 and PC8115 are PVD turning grades for Heat resistant alloys.

PC8105 (S05) is a grade used for finishing heat resistant alloys and stainless steels with its high wear resistance in continuous operation at high speed and high temperature.

PC8110 (S10) is a universal grade used for medium to finish cutting of heat resistant alloys and stainless steels with high wear and chipping resistance in continuous operations at mid to high speed and high temperature.

PC8115 (S15) is a universal grade used for finishing, medium cutting, and roughing of heat resistant alloys and stainless steels with high wear and chipping resistance in various machining conditions.

Titanium alloy is highly reactive to chemicals, commonly resulting in built-up edges on blades, which causes rapid increase of cutting loads or unnecessary overlapped cutting actions. These characteristics of low heat conductivity and high work hardening trigger notch wear, while low elasticity is blamed for elastic recovery and bending of workpieces creating chipping on cutting edges or

H01 and **H05** are specially designed for titanium alloy operation with its special surface treatment to prevent built-up edges and breakage, which in return increases tool life.

H01 (S05) is a grade used for finishing titanium alloy with its sharp cutting edge in continuous operation at high speed.

H05 (S15) is the grade highly recommended for medium cutting to finishing of titanium alloy in various machining conditions.

The VP Series ensures stability in Inconel and titanium machining.

VP1 / VP2 / VP3 / VP4 is a chip breaker series that features sharp cutting edges ideal for evacuating heat and preventing built-up edges. **VP1** is a chip breaker to carry out high quality machining with its sharp cutting edges. **VP2** is a chip breaker for medium cutting to finishing, with its characteristics of stable chip control even at varying depth of cuts. **VP3** is a chip breaker for medium cutting that provides stable chip control at high depth of cuts, and reduces cutting loads. **VP4** is a medium to roughing chip breaker ideally suited for Inconel which remains extremely hard at high temperature over 800°C and involves severe work hardening.

■ Stable tool life
→ **Higher productivity**

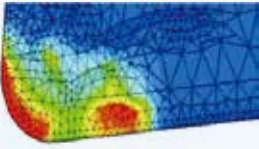
■ Longer tool life and high removal rate
→ **Difficult cutting conditions possible and shortened cutting time**

■ Perfect harmony between grades and chip breakers
→ **Increased tool life**
→ **Various operation range such as finishing and roughing**

■ Proper to machine heat resistant alloy and stainless steel
→ **Responsive to a wide range of hard-to-cut materials**

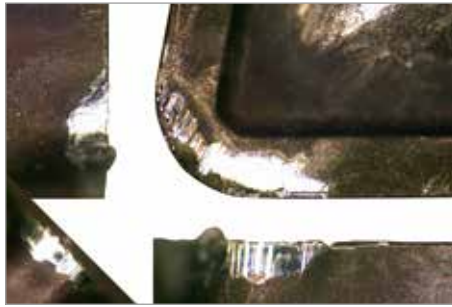


⇒ Common problems when Machining Heat Resistant Alloy

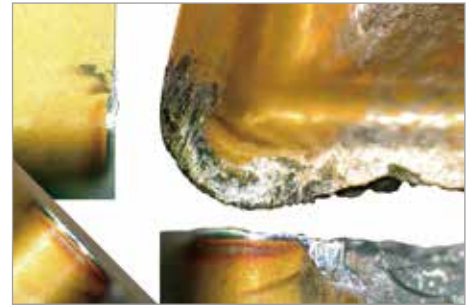


Hard-to-cut materials (Inconel, etc.) feature high hardness and low heat conductivity. This results in concentrated heat on cutting edges and thus rapid wear at a high temperature over 800°. In addition, thermal impact and work hardening cause involve chipping or breakage according to the depth of cut.

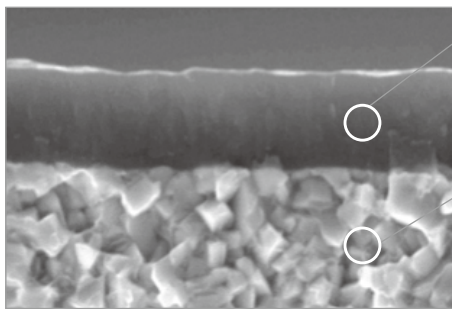
1. Severe wear



2. Chipping / fracture



⇒ Development of PC8100 Series



It prevents wear at a high temperature to apply excellent surface roughness and coating with oxidation resistance and high hardness.

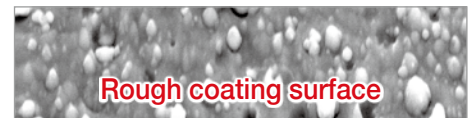
It improves wear resistance to equalize submicron matrix, secure stability between corners and improve chipping and wear resistance

Coating surface treatment technology (Pictures of coating layer)



Soft coating surface

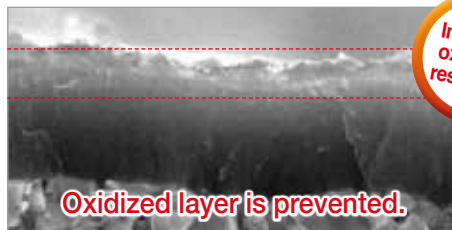
[PC8100 Series]



Rough coating surface

[Conventional coating]

Oxidation resistant coating technology (Pictures of coating layer heat-treated at 900°C)



Oxidized layer is prevented.

[PC8100 Series]



Oxidized layer easily happens

[Competitor]

⇒ Development Effect

1. Increased wear resistance



[PC8105]



[Competitor S05]

2. Reduced chipping / fracture



[PC8115]



[Competitor S15]

VP1 Chip Breaker Features

- Cutting edges designed in high-positive**
 Reduced contact area between rake surface and chip minimizes cutting heat and improved tool life.
- Recommended cutting conditions**
 $f_n(\text{mm/rev}) = 0.05 \sim 0.2$, $a_p(\text{mm}) = 0.1 \sim 1.5$

Optimized design for finishing



- Obtains excellent cutting performance and quality surface finish at low depth of cut and high speed

High-positive blade design

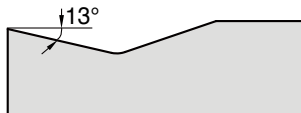
- Minimizes cutting heat by reducing the contact area between flank surface and chips
- Prevents built-up edge and extends tool life



VP2 Chip Breaker Features

- High-positive cutting edge design / Side rake angle applied**
 Stable chip control improves machinability when ball machining at variable depths of cut.
- Recommended cutting conditions**
 $f_n(\text{mm/rev}) = 0.1 \sim 0.4$, $a_p(\text{mm}) = 0.5 \sim 4.5$

Sharp blades and wide chip pockets



- Increase productivity
- Ideal for medium to finish cutting

High-positive blade design

- Improves cutting performance with its stable chip control at varying depth of cuts



➤ VP3 Chip Breaker Features

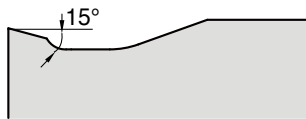
■ High-positive cutting edge design / Wide land applied

Improved stability at interrupted cutting when toughness is required. Stable chip control and machinability at high depth of cut.

■ Recommended cutting conditions

$f_n(\text{mm/rev}) = 0.1 \sim 0.45$, $a_p(\text{mm}) = 0.5 \sim 5.0$

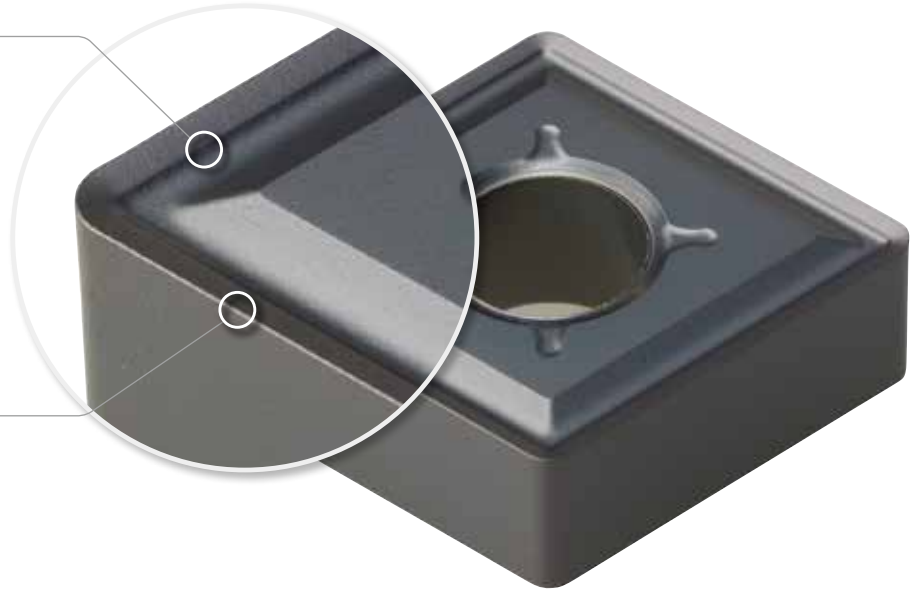
Chip pocket design leading to a R-shaped cutting edge



- Creates a stepped space between edge and land to make smooth chip flow at low and high depth of cuts

High-positive blade design / Wide land

- Minimize heat concentration at high depth of cut
- Improves stability in interrupted machining of a tough workpiece



➤ VP4 Chip Breaker Features *New*

■ The 1st recommended chip breakers for machining Inconel which remains highly resistant to and hard at high temperature

■ Rough machining stability resulting from reinforced cutting edges and wide chip pockets

Rake angle design resistant to high hardness cutting



- Reinforces cutting edges and prevents notch wear in rough surface machining
- Prevents chipping in interrupted cutting

Wide chip pockets

- Reduce cutting loads and improve stability even at high depth of cut in roughing



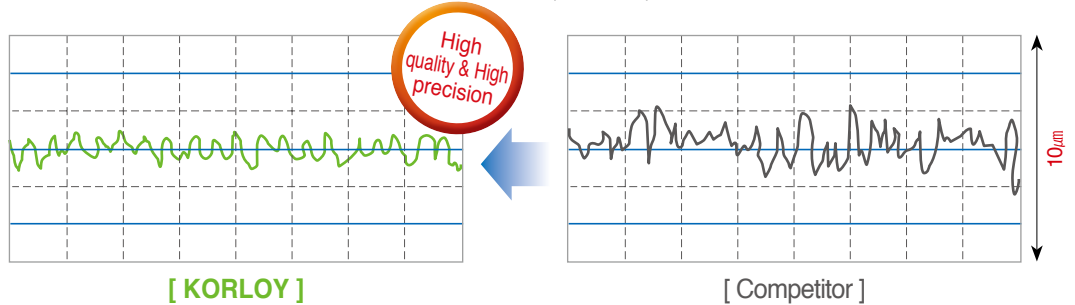
⇒ Performance Evaluation

• VP1 chip breaker :

A ground class insert realizes high quality and high precision machining

VP1 evaluation of surface roughness

- Workpiece Inconel718 (HRC45)
- Cutting conditions $vc(m/min) = 60$, $fn(mm/rev) = 0.1$, $ap(mm) = 0.2$, wet
- Tools Insert CNGG120408-VP1 (PC8110) Holder DCLNR2525-M12

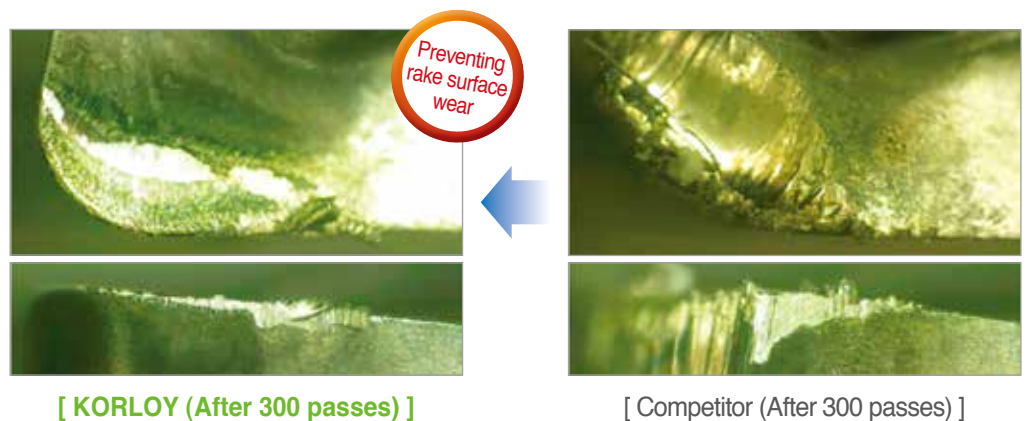


• VP2 chip breaker :

Smooth chip control prevents wear on rake surface of insert when machining hard-to-cut materials

VP2 evaluation of tool life

- Workpiece X5CrNi18-9 / X5CrNiMo17-12-2 (HRC25~30)
- Cutting conditions $vc(m/min) = 60$, $fn(mm/rev) = 0.25$, $ap(mm) = 1.5$, wet
- Tools Insert CNMG120408-VP2 (PC8110) Holder DCLNR2525-M12

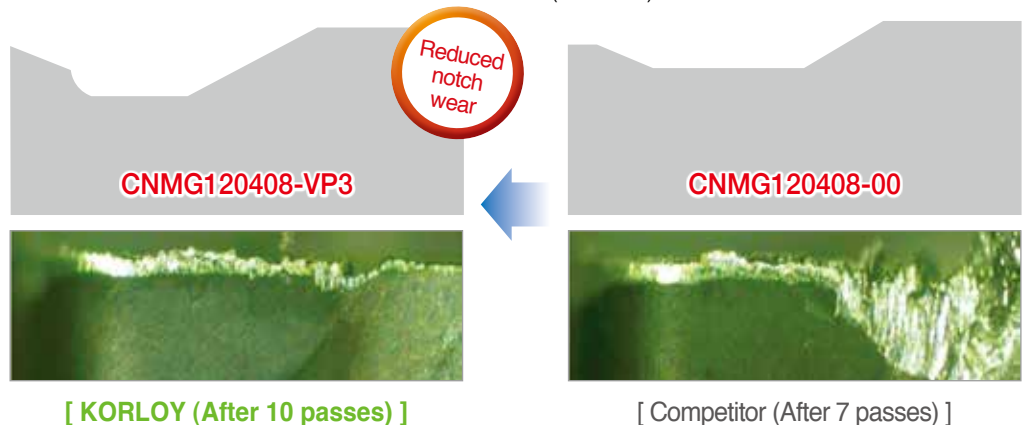


• VP3 chip breaker :

Sharp blades and wide lands noticeably reduce notch wear

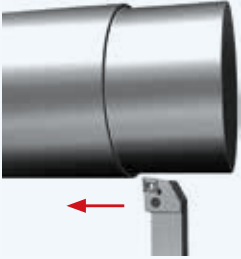
VP3 evaluation of tool life

- Workpiece Inconel718 (HRC40)
- Cutting conditions $vc(m/min) = 60$, $fn(mm/rev) = 0.2$, $ap(mm) = 2.0$, wet
- Tools Insert CNMG120408-VP3 (PC8110) Holder DCLNR2525-M12



Performance Evaluation

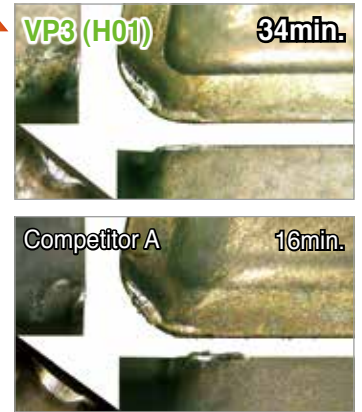
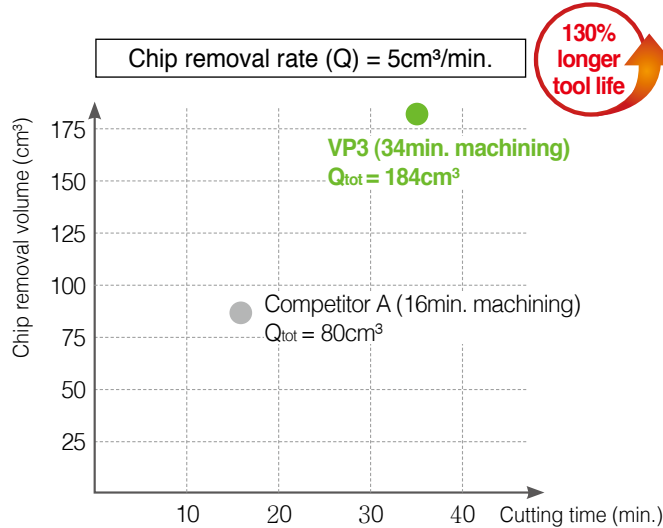
- 130% longer tool life thanks to the combination of the specialized chip breaker VP3 for titanium alloy, and the highly wear resistant substrate H01, at low depth of cut and high speed



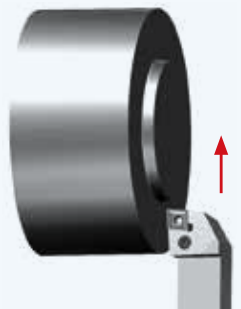
[Machining method]

VP3 evaluation of tool life

- **Workpiece** Ti-6Al-4V (HRC45~47)
- **Cutting conditions** $vc(m/min) = 100$, $fn(mm/rev) = 0.1$, $ap(mm) = 0.5$, wet
- **Tools** Insert CNMG120408-VP3 (H01) Holder PCLNR2525-M12



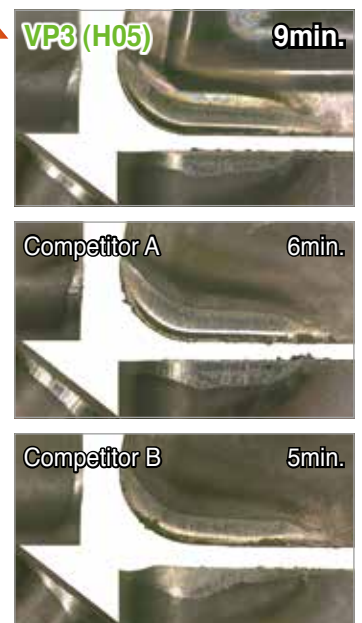
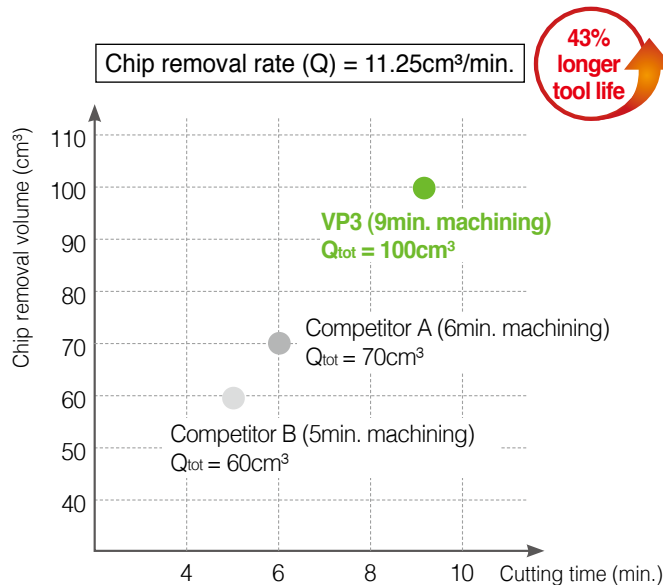
- 43% longer tool life thanks to the combination of the specialized chip breaker VP3 for titanium alloy, and the 1st recommended substrate H05, at medium depth of cut



[Machining method]

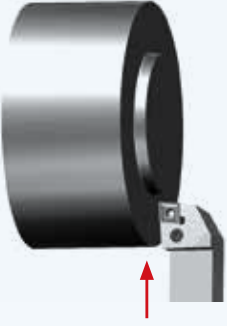
VP3 evaluation of tool life

- **Workpiece** Ti-6Al-4V (HRC45~47)
- **Cutting conditions** $vc(m/min) = 80$, $fn(mm/rev) = 0.2$, $ap(mm) = 2.0$, wet
- **Tools** Insert CNMG120408-VP3 (H05) Holder PCLNR2525-M12



Performance Evaluation

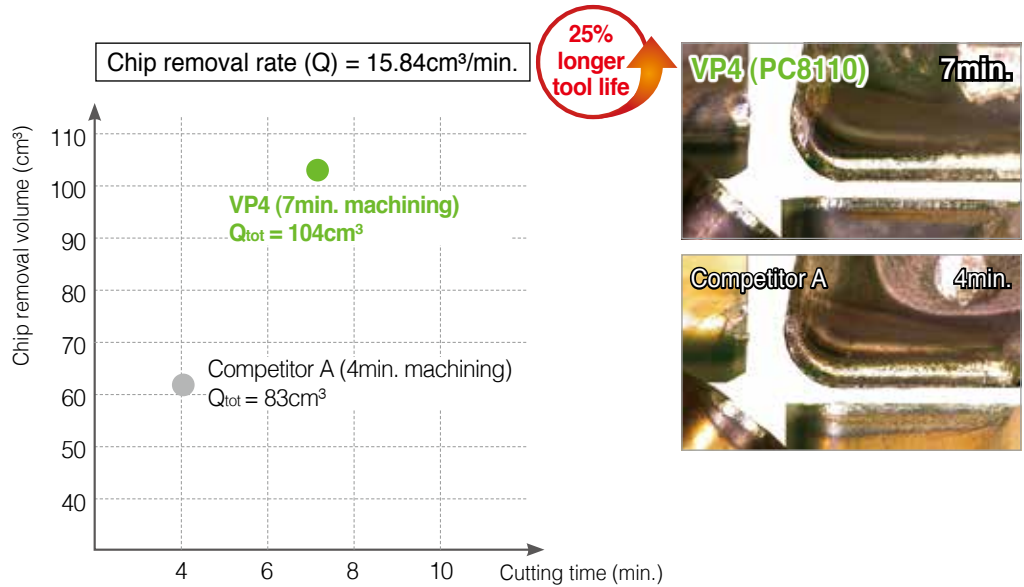
- 25% longer tool life thanks to the combination of the specialized chip breaker VP4 for Inconel, and the PVD coated grade PC8110 for continuous cutting of heat resistant alloy



[Machining method]

VP4 evaluation of tool life

- **Workpiece** Inconel718 (H_RC38~40)
- **Cutting conditions** vc(m/min) = 40, fn(mm/rev) = 0.2, ap(mm) = 3.0, wet
- **Tools** Insert CNMG120408-VP4 (PC8110) Holder PCLNR2525-M12



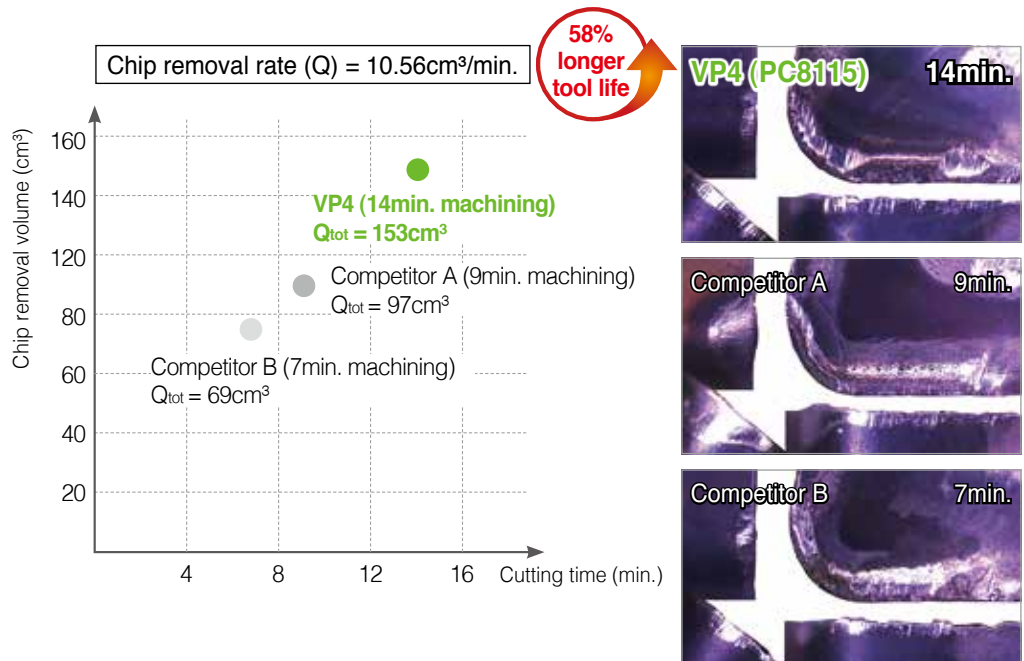
- 58% longer tool life thanks to the combination of the specialized chip breaker VP4 for Inconel, and the PVD coated grade PC8115 for heat resistant alloy available under various cutting conditions



[Machining method]

VP4 evaluation of tool life

- **Workpiece** Inconel718 (H_RC38~40)
- **Cutting conditions** vc(m/min) = 50, fn(mm/rev) = 0.15, ap(mm) = 1.5, wet
- **Tools** Insert CNMG120408-VP3(PC8115) Holder PCLNR2525-M12



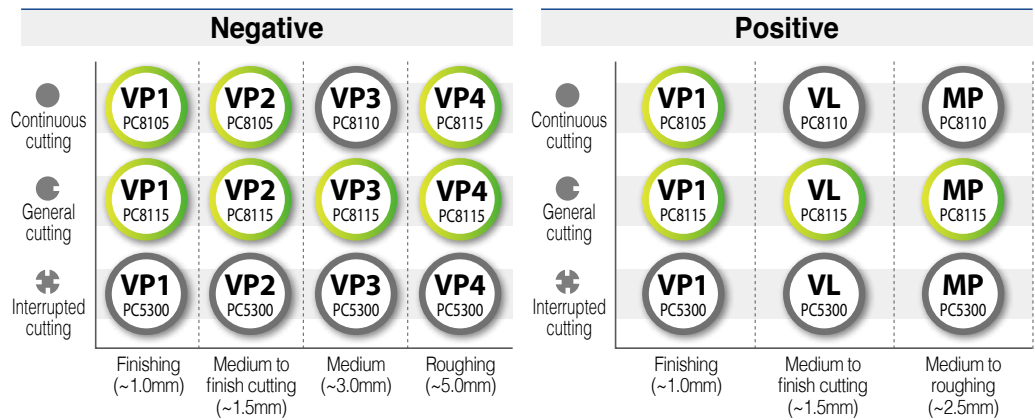
➤ Recommended Cutting Conditions (Negative Type)

• It is important to select an appropriate chip breaker and grade dependent upon machining characteristics of either Inconel or titanium alloy

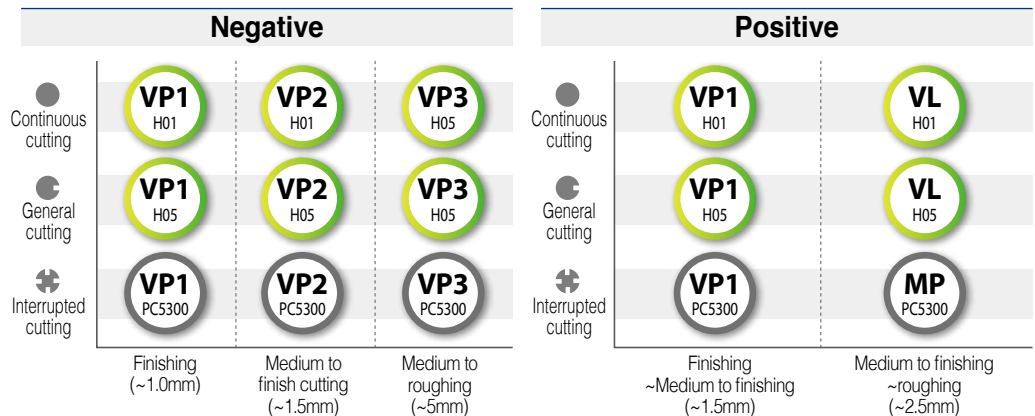
Workpiece	Application	Chip breaker	Recommended cutting conditions		
			vc(m/min)	fn(mm/rev)	ap(mm)
Heat resistant alloy (Inconel)	Finishing	VP1	25 ~ 85	0.1 ~ 0.25	0.2 ~ 1.5
	Medium to finish cutting	VP2	25 ~ 80	0.1 ~ 0.25	0.2 ~ 3.0
	Medium	VP3	25 ~ 80	0.1 ~ 0.25	0.5 ~ 4.0
	Roughing	VP4	20 ~ 75	0.2 ~ 0.35	1.0 ~ 4.5
Titanium alloy (Ti-6Al-4V)	Finishing	VP1	40 ~ 85	0.1 ~ 0.25	0.2 ~ 1.5
	Medium to finish cutting	VP2	40 ~ 85	0.1 ~ 0.25	0.2 ~ 3.0
	Medium to roughing	VP3	40 ~ 80	0.1 ~ 0.25	0.5 ~ 4.5

➤ Chip Breaker Line-Up

▶ Heat Resistant Alloy



▶ Titanium Alloy



* Detailed depth of cut and feed rate for each designation can differ from the above data, dependent upon the insert shape and nose radius. See page 13~16 for detailed information.

Application Examples



Parts for an aircraft turbine

- Workpiece Inconel718 (HRC40)
- Cutting conditions $vc(m/min) = 50\sim 80$, $fn(mm/rev) = 0.25$, $ap(mm) = 0.2\sim 0.7$, wet
- Tools Insert CNMG120404-VP2 (PC8115)

VP2 **5ea / corner**

Competitor 4ea / corner

25% longer

➔ 25% longer tool life per corner



Aircraft pipe ring

- Workpiece Inconel718 (HRC46)
- Cutting conditions $vc(m/min) = 30$, $fn(mm/rev) = 0.2$, $ap(mm) = 1.0$, wet
- Tools Insert CNMG120404-VP3 (PC8105)

VP3 **4ea / corner**

Competitor 2ea / corner

100% longer

➔ 100% longer tool life per corner



Aircraft turbine spool

- Workpiece Inconel718 (HRC45)
- Cutting conditions $vc(m/min) = 50\sim 60$, $fn(mm/rev) = 0.2$, $ap(mm) = 3.0$, wet
- Tools Insert CNMG120408-VP3 (PC8110)

VP3 **3ea / corner**

Competitor 2ea / corner

50% longer

➔ 50% longer tool life per corner



Parts for an aircraft turbine

- Workpiece Alloy400 (HRC40)
- Cutting conditions $vc(m/min) = 103$, $fn(mm/rev) = 0.127$, $ap(mm) = 1.3$, wet
- Tools Insert CNMG120408-VP3 (PC8115)

VP3 **35ea / corner**

Competitor 30ea / corner

17% longer

➔ 17% longer tool life per corner



Parts for an aircraft engine

- Workpiece Ti829 (HRC45)
- Cutting conditions $vc(m/min) = 35\sim 40$, $fn(mm/rev) = 0.25$, $ap(mm) = 1.0\sim 2.0$, wet
- Tools Insert SNMG120412-VP4 (PC8115)

VP4 **12ea / corner**

Competitor 6ea / corner

100% longer

➔ 100% longer tool life per corner

Application Examples



Parts for an aircraft turbine

- Workpiece Ti-6Al-4V (HRC50)
- Cutting conditions $vc(m/min) = 60$, $fn(mm/rev) = 0.2$, $ap(mm) = 0.8$, wet
- Tools Insert CNMG120404-VP2 (H01)

VP2 **12ea / corner**

Competitor 8ea / corner

50% longer

➔ 50% longer tool life per corner



Parts for precision machinery

- Workpiece Ti-6Al-4V (HRC47)
- Cutting conditions $vc(m/min) = 50$, $fn(mm/rev) = 0.15$, $ap(mm) = 2.0$, wet
- Tools Insert CNMG120404-VP3 (H05)

VP3 **15ea / corner**

Competitor 13ea / corner

15% longer

➔ 15% longer tool life per corner



Ball valve

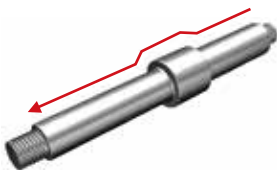
- Workpiece X2CrMiMo17-12-2 (HRC30)
- Cutting conditions $vc(m/min) = 70$, $fn(mm/rev) = 0.18$, $ap(mm) = 3.0$, wet
- Tools Insert CNMG120408-VP2 (PC8110)

VP2 **100ea / corner**

Competitor 80ea / corner

20% longer

➔ 20% longer tool life per corner



Parts for general machinery

- Workpiece X2CrMiMo17-12-2 (HRC22)
- Cutting conditions $vc(m/min) = 80$, $fn(mm/rev) = 0.2$, $ap(mm) = 2.0$, wet
- Tools Insert CNMG120408-VP3 (PC8115)

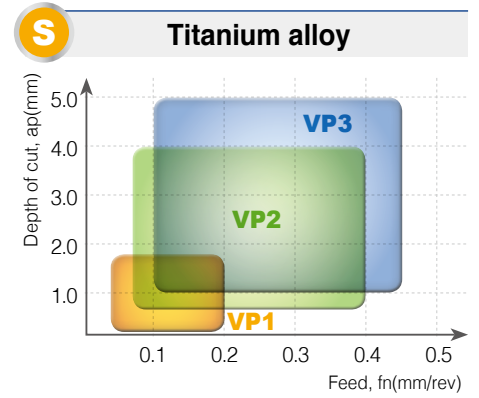
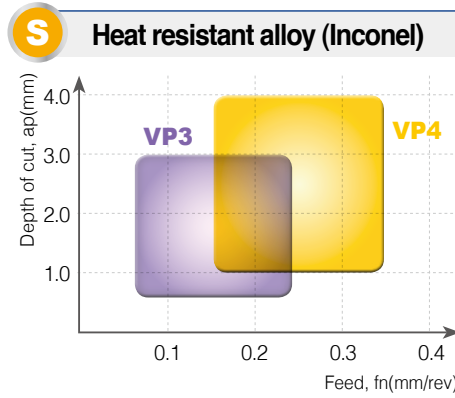
VP3 **6ea / corner**

Competitor 3ea / corner

100% longer

➔ 100% longer tool life per corner

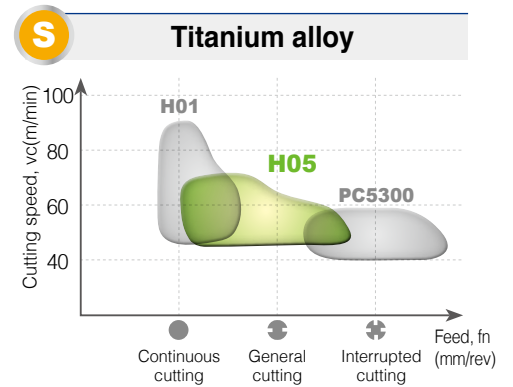
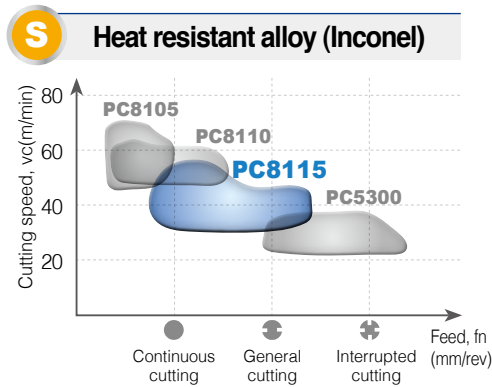
➔ Recommended Cutting Range per Chip Breaker



➔ Chip Breaker Comparison for Hard-to-Cut Materials (Heat Treated Alloy / Titanium Alloy)

ISO	KORLOY	Competitor A	Competitor B	Competitor C	Competitor D	Competitor E	Competitor F	Competitor G
R (Roughing)	VP4	SMR	RS, GJ	TF	MS	ET	MR4	NRT, NRS
M (Medium cutting)	VP3	SM	MS	VL	MU	EM	MR3	NMS
L (Medium to finish cutting)	VP2	NGP	MJ	PP	TK	ML	MF1	NMT
F (Finishing)	VP1	SF	LS, FJ	SF	MQ	EA	M1	NFT

➔ Grade Line-Up



➔ Grade Comparison

➤ Heat Resistant Alloy

ISO	KORLOY	Competitor A	Competitor B	Competitor C	Competitor D	Competitor E	Competitor F	Competitor G
S05	PC8105	S05F	MP9005 VP05RT	IC808	PR1305	TT5080	TS2000	WSM10
S10	PC8110	GC1105	VP10RT	IC907	PR1310			
S15	PC8115	GC1115	MP9015	-	-			
S25	PC5300	GC1125 GC2025	VP15TF VP20MF	IC908	PR1125	TT9030 TT9080	CP500 TS2500	WSM20
S35	PC5400	GC2035	MP7035	IC328	PRI325	TT8020 TT8080	TM4000 F40M	WSM30

➤ Titanium Alloy


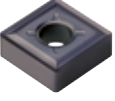








ISO	KORLOY	Competitor A	Competitor B	Competitor C	Competitor D	Competitor E	Competitor F	Competitor G
S05	H01	-	-	-	-	-	-	-
S15	H05	H13A	MT9015	IC20	-	TT5080	THR	WS10
S25	PC5300	GC1125	RT9015	IC908	PR1125 PR1325	TT9030 TT9080	CP500 TS2500	WSM20

Stock Management (Negative Type)

Shape	Designation	Class	Coated				Uncoated		Dimensions(mm)					Cutting conditions(mm)		
			PC5300	PC8105	PC8110	PC8115	H01	H05	l	d	t	r	d ₁	Feed, fn(mm/rev)	Depth of cut, ap(mm)	
Finishing	CNGG	120402-VP1	G						12.6	12.7	4.76	0.2	5.16	0.01 ~ 0.10	0.10 ~ 1.50	
		120404-VP1	G						12.4	12.7	4.76	0.4	5.16	0.05 ~ 0.15	0.10 ~ 1.50	
		120408-VP1	G						12.0	12.7	4.76	0.8	5.16	0.07 ~ 0.20	0.10 ~ 1.50	
	CNMG	120404-VP1	M	●	●		●		12.4	12.7	4.76	0.4	5.16	0.05 ~ 0.15	0.10 ~ 1.50	
		120408-VP1	M	●	●		●		12.0	12.7	4.76	0.8	5.16	0.07 ~ 0.20	0.10 ~ 1.50	
Medium to finish cutting	CNMG	120404-VP2	M	●	●	●	●	●	12.4	12.7	4.76	0.4	5.16	0.07 ~ 0.25	0.30 ~ 3.00	
		120408-VP2	M	●	●	●	●	●	12.0	12.7	4.76	0.8	5.16	0.10 ~ 0.30	0.30 ~ 3.00	
Medium	CNGG	120404-VP3	G	●	●	●	●		12.4	12.7	4.76	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00	
		120408-VP3	G	●	●	●	●		12.0	12.7	4.76	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00	
		120412-VP3	G	●	●	●	●		11.6	12.7	4.76	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00	
		CNMG	120404-VP3	M	●	●	●	●	●	12.4	12.7	4.76	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00
			120408-VP3	M	●	●	●	●	●	12.0	12.7	4.76	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00
			120412-VP3	M	●	●	●	●	●	11.6	12.7	4.76	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00
Roughing	CNMG	120408-VP4	M				●		12.0	12.7	4.76	0.8	5.16	0.20 ~ 0.45	1.00 ~ 5.00	
		120412-VP4	M				●		11.6	12.7	4.76	1.2	5.16	0.25 ~ 0.50	1.00 ~ 5.00	
		190608-VP4	M				●		18.5	19.05	6.35	0.8	7.93	0.20 ~ 0.45	2.00 ~ 8.00	
		190612-VP4	M				●		18.1	19.05	6.35	1.2	7.93	0.25 ~ 0.50	2.00 ~ 8.00	
Finishing	DNGG	150404-VP1	G						15.1	12.7	4.76	0.4	5.16	0.05 ~ 0.15	0.10 ~ 1.50	
		150408-VP1	G						14.7	12.7	4.76	0.8	5.16	0.07 ~ 0.20	0.10 ~ 1.50	
		150604-VP1	G						15.1	12.7	6.35	0.4	5.16	0.05 ~ 0.15	0.10 ~ 1.50	
		150608-VP1	G						14.7	12.7	6.35	0.8	5.16	0.07 ~ 0.20	0.10 ~ 1.50	
		DNMG	150404-VP1	M	●	●	●	●		15.1	12.7	4.76	0.4	5.16	0.05 ~ 0.15	0.10 ~ 1.50
			150408-VP1	M	●	●	●	●		14.7	12.7	4.76	0.8	5.16	0.07 ~ 0.20	0.10 ~ 1.50
			150604-VP1	M	●	●	●	●		15.1	12.7	6.35	0.4	5.16	0.05 ~ 0.15	0.10 ~ 1.50
			150608-VP1	M	●	●	●	●		14.7	12.7	6.35	0.8	5.16	0.07 ~ 0.20	0.10 ~ 1.50
Medium to finish cutting	DNMG	150404-VP2	M	●	●	●	●	●	15.1	12.7	4.76	0.4	5.16	0.07 ~ 0.25	0.30 ~ 3.00	
		150408-VP2	M	●	●	●	●	●	14.7	12.7	4.76	0.8	5.16	0.10 ~ 0.30	0.30 ~ 3.00	
		150604-VP2	M	●	●	●	●	●	15.1	12.7	6.35	0.4	5.16	0.07 ~ 0.25	0.30 ~ 3.00	
		150608-VP2	M	●	●	●	●	●	14.7	12.7	6.35	0.8	5.16	0.10 ~ 0.30	0.30 ~ 3.00	
Medium	DNGG	150404-VP3	G	●	●	●	●		15.1	12.7	4.76	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00	
		150408-VP3	G	●	●	●	●		14.7	12.7	4.76	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00	
		150412-VP3	G	●	●	●	●		14.4	12.7	4.76	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00	
		150604-VP3	G	●	●	●	●		15.1	12.7	6.35	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00	
		150608-VP3	G	●	●	●	●		14.7	12.7	6.35	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00	
		150612-VP3	G	●	●	●	●		14.4	12.7	6.35	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00	
		DNMG	150404-VP3	M	●	●	●	●	●	15.1	12.7	4.76	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00
			150408-VP3	M	●	●	●	●	●	14.7	12.7	4.76	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00
			150412-VP3	M	●	●	●	●	●	14.4	12.7	4.76	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00
			150604-VP3	M	●	●	●	●	●	15.1	12.7	6.35	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00
			150608-VP3	M	●	●	●	●	●	14.7	12.7	6.35	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00
			150612-VP3	M	●	●	●	●	●	14.4	12.7	6.35	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00
Roughing	DNMG	150408-VP4	M						14.7	12.7	4.76	0.8	5.16	0.20 ~ 0.45	1.00 ~ 5.00	
		150412-VP4	M						14.4	12.7	4.76	1.2	5.16	0.25 ~ 0.50	1.00 ~ 5.00	
		150608-VP4	M				●		14.7	12.7	6.35	0.8	5.16	0.20 ~ 0.45	1.00 ~ 5.00	
		150612-VP4	M				●		14.4	12.7	6.35	1.2	5.16	0.25 ~ 0.50	1.00 ~ 5.00	










●: Managed stock

➔ Stock Management (Negative Type)

Shape	Designation	Class	Coated				Uncoated		Dimensions(mm)					Cutting conditions(mm)			
			PC5300	PC8105	PC8110	PC8115	H01	H05	l	d	t	r	d ₁	Feed, fn(mm/rev)	Depth of cut, ap(mm)		
Medium to finish cutting		SNMG	120404-VP2	M	●	●	●	●	●		12.3	12.7	4.76	0.4	5.16	0.07 ~ 0.25	0.30 ~ 3.00
			120408-VP2	M	●	●	●	●	●		11.9	12.7	4.76	0.8	5.16	0.10 ~ 0.30	0.30 ~ 3.00
			120412-VP2	M	●	●	●	●	●		11.5	12.7	4.76	1.2	5.16	0.15 ~ 0.35	0.30 ~ 3.00
Medium		SNGG	120404-VP3	G		●	●	●	●		12.3	12.7	4.76	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00
			120408-VP3	G		●	●	●	●		11.9	12.7	4.76	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00
			120412-VP3	G		●	●	●	●		11.5	12.7	4.76	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00
		SNMG	120404-VP3	M	●	●	●	●	●	●	12.3	12.7	4.76	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00
			120408-VP3	M	●	●	●	●	●	●	11.9	12.7	4.76	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00
			120412-VP3	M	●	●	●	●	●	●	11.5	12.7	4.76	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00
Roughing		SNMG	120408-VP4	M				●			11.9	12.7	4.76	0.8	5.16	0.20 ~ 0.45	1.00 ~ 5.00
			120412-VP4	M				●			11.5	12.7	4.76	1.2	5.16	0.25 ~ 0.50	1.00 ~ 5.00
			150612-VP4	M				●			14.6	15.875	6.35	1.2	6.35	0.25 ~ 0.50	1.50 ~ 6.50
			190608-VP4	M				●			18.2	19.05	6.35	0.8	7.93	0.20 ~ 0.45	2.00 ~ 8.00
			190612-VP4	M				●			17.8	19.05	6.35	1.2	7.93	0.25 ~ 0.50	2.00 ~ 8.00
			190616-VP4	M							17.4	19.05	6.35	1.6	7.93	0.30 ~ 0.55	2.00 ~ 8.00
Medium to finish cutting		TNMG	160404-VP2	M	●	●	●	●	●		15.5	9.525	4.76	0.4	3.81	0.07 ~ 0.25	0.30 ~ 2.80
			160408-VP2	M	●	●	●	●	●		14.5	9.525	4.76	0.8	3.81	0.10 ~ 0.30	0.30 ~ 2.80
			160412-VP2	M		●	●	●	●		13.5	9.525	4.76	1.2	3.81	0.15 ~ 0.35	0.30 ~ 2.80
			220404-VP2	M	●		●				21.0	12.7	4.76	0.4	5.16	0.07 ~ 0.25	0.50 ~ 3.50
			220408-VP2	M	●		●				20.0	12.7	4.76	0.8	5.16	0.10 ~ 0.30	0.50 ~ 3.50
Medium		TNGG	160404-VP3	G		●	●	●	●		15.5	9.525	4.76	0.4	3.81	0.10 ~ 0.30	0.40 ~ 3.50
			160408-VP3	G		●	●	●	●		14.5	9.525	4.76	0.8	3.81	0.15 ~ 0.35	0.50 ~ 3.50
		TNMG	160404-VP3	M	●	●	●	●	●	●	15.5	9.525	4.76	0.4	3.81	0.10 ~ 0.30	0.40 ~ 3.50
			160408-VP3	M	●	●	●	●	●	●	14.5	9.525	4.76	0.8	3.81	0.15 ~ 0.35	0.50 ~ 3.50
Roughing		TNMG	160408-VP4	M				●			14.5	9.525	4.76	0.8	3.81	0.20 ~ 0.45	1.00 ~ 4.80
			160412-VP4	M				●			13.5	9.525	4.76	1.2	3.81	0.25 ~ 0.50	1.00 ~ 4.80
Medium		VNGG	160404-VP3	G		●	●	●	●		15.6	9.525	4.76	0.4	3.81	0.10 ~ 0.30	0.40 ~ 3.50
			160408-VP3	G							14.6	9.525	4.76	0.8	3.81	0.15 ~ 0.35	0.50 ~ 3.50
		VNMG	160404-VP3	M	●	●	●	●	●	●	15.6	9.525	4.76	0.4	3.81	0.10 ~ 0.30	0.40 ~ 3.50
			160408-VP3	M	●	●	●	●	●	●	14.6	9.525	4.76	0.8	3.81	0.15 ~ 0.35	0.50 ~ 3.50
Medium to finish cutting		WNMG	080404-VP2	M	●		●				8.4	12.7	4.76	0.4	5.16	0.07 ~ 0.25	0.30 ~ 2.50
			080408-VP2	M	●	●	●	●	●		8.3	12.7	4.76	0.8	5.16	0.10 ~ 0.30	0.30 ~ 2.50
			080412-VP2	M	●	●	●	●	●		8.2	12.7	4.76	1.2	5.16	0.15 ~ 0.35	0.30 ~ 2.50
Medium		WNMG	080404-VP3	M	●	●	●	●	●	●	8.4	12.7	4.76	0.4	5.16	0.10 ~ 0.30	0.40 ~ 4.00
			080408-VP3	M	●	●	●	●	●	●	8.3	12.7	4.76	0.8	5.16	0.15 ~ 0.35	0.50 ~ 4.00
			080412-VP3	M	●	●	●	●	●	●	8.2	12.7	4.76	1.2	5.16	0.20 ~ 0.40	0.50 ~ 4.00
Roughing		WNMG	080408-VP4	M				●			8.3	12.7	4.76	0.8	5.16	0.20 ~ 0.45	1.00 ~ 4.50
			080412-VP4	M				●			8.2	12.7	4.76	1.2	5.16	0.25 ~ 0.50	1.00 ~ 4.50










● : Managed stock

➔ Stock Management (Positive Type)

Shape	Designation	Class	Coated				Uncoated		Dimensions(mm)					Cutting conditions(mm)			
			PC5300	PC8105	PC8110	PC8115	H01	H05	l	d	t	r	d ₁	Feed, fn(mm/rev)	Depth of cut, ap(mm)		
Finishing		CCGT	060201-VP1	G	●	●	●	●	●		6.4	6.35	2.38	0.1	2.8	0.03 ~ 0.06	0.06 ~ 1.00
			060202-VP1	G	●	●	●	●	●		6.2	6.35	2.38	0.2	2.8	0.04 ~ 0.10	0.08 ~ 1.50
			060204-VP1	G	●	●	●	●	●		6.0	6.35	2.38	0.4	2.8	0.06 ~ 0.12	0.10 ~ 1.50
			09T301-VP1	G	●	●	●	●	●		9.6	9.525	3.97	0.1	4.4	0.03 ~ 0.13	0.06 ~ 1.00
			09T302-VP1	G	●	●	●	●	●		9.4	9.525	3.97	0.2	4.4	0.04 ~ 0.15	0.08 ~ 1.50
			09T304-VP1	G	●	●	●	●	●		9.2	9.525	3.97	0.4	4.4	0.06 ~ 0.20	0.10 ~ 1.50
Finishing		CCMT	060204-VL	M	●	●	●	●			6.0	6.35	2.38	0.4	2.8	0.04 ~ 0.10	0.08 ~ 0.90
			060208-VL	M							5.6	6.35	2.38	0.8	2.8	0.06 ~ 0.12	0.10 ~ 1.00
			09T304-VL	M	●	●	●	●	●	●	9.2	9.525	3.97	0.4	4.4	0.05 ~ 0.10	0.10 ~ 1.00
			09T308-VL	M	●	●	●	●	●	●	8.8	9.525	3.97	0.8	4.4	0.08 ~ 0.15	0.10 ~ 1.00
Medium		CCMT	060202-MP	M	●	●	●	●			6.2	6.35	2.38	0.2	2.8	0.04 ~ 0.12	0.20 ~ 1.50
			060204-MP	M	●	●	●	●			6.0	6.35	2.38	0.4	2.8	0.05 ~ 0.15	0.30 ~ 1.50
			060208-MP	M	●	●	●	●			5.8	6.35	2.38	0.8	2.8	0.07 ~ 0.15	0.50 ~ 2.00
			09T302-MP	M	●	●	●	●			9.4	9.525	3.97	0.2	4.4	0.07 ~ 0.15	0.30 ~ 2.00
			09T304-MP	M	●	●	●	●			9.2	9.525	3.97	0.4	4.4	0.08 ~ 0.20	0.50 ~ 2.50
			09T308-MP	M	●	●	●	●			8.8	9.525	3.97	0.8	4.4	0.10 ~ 0.30	0.50 ~ 2.50
			120404-MP	M							12.4	12.7	4.76	0.4	5.5	0.10 ~ 0.30	0.50 ~ 3.50
			120408-MP	M							12.0	12.7	4.76	0.8	5.5	0.15 ~ 0.35	0.80 ~ 3.50
Finishing		DCGT	070201-VP1	G	●	●	●	●	●		7.7	6.35	2.38	0.1	2.8	0.03 ~ 0.06	0.06 ~ 1.00
			070202-VP1	G	●	●	●	●	●		7.5	6.35	2.38	0.2	2.8	0.03 ~ 0.10	0.08 ~ 1.50
			070204-VP1	G	●	●	●	●	●		7.3	6.35	2.38	0.4	2.8	0.05 ~ 0.12	0.10 ~ 1.50
			11T301-VP1	G	●		●				11.6	9.525	3.97	0.1	4.4	0.03 ~ 0.13	0.06 ~ 1.00
			11T302-VP1	G	●	●	●	●	●		11.4	9.525	3.97	0.2	4.4	0.04 ~ 0.15	0.08 ~ 1.50
			11T304-VP1	G	●	●	●	●	●		11.2	9.525	3.97	0.4	4.4	0.06 ~ 0.20	0.10 ~ 1.50
Finishing		DCMT	070202-VL	M							7.5	6.35	2.38	0.2	2.8	0.02 ~ 0.10	0.06 ~ 0.80
			070204-VL	M	●	●	●	●	●	●	7.3	6.35	2.38	0.4	2.8	0.04 ~ 0.10	0.08 ~ 0.90
			070208-VL	M							6.8	6.35	2.38	0.8	2.8	0.06 ~ 0.12	0.10 ~ 1.00
			11T302-VL	M							11.4	9.525	3.97	0.2	4.4	0.03 ~ 0.10	0.07 ~ 0.80
			11T304-VL	M	●		●			●	11.2	9.525	3.97	0.4	4.4	0.05 ~ 0.10	0.10 ~ 1.00
			11T308-VL	M	●	●	●	●	●	●	10.8	9.525	3.97	0.8	4.4	0.08 ~ 0.15	0.10 ~ 1.00
Medium		DCMT	070202-MP	M	●	●	●	●			7.5	6.35	2.38	0.2	2.8	0.04 ~ 0.12	0.12 ~ 1.80
			070204-MP	M	●	●	●	●			7.3	6.35	2.38	0.4	2.8	0.05 ~ 0.15	0.30 ~ 1.80
			070208-MP	M	●	●	●	●			6.8	6.35	2.38	0.8	2.8	0.08 ~ 0.22	0.30 ~ 1.80
			11T302-MP	M	●	●	●	●			11.4	9.525	3.97	0.2	4.4	0.04 ~ 0.15	0.30 ~ 2.00
			11T304-MP	M	●	●	●	●			11.2	9.525	3.97	0.4	4.4	0.08 ~ 0.20	0.50 ~ 2.30
			11T308-MP	M	●	●	●	●			10.8	9.525	3.97	0.8	4.4	0.10 ~ 0.30	0.50 ~ 2.30
Finishing		SCMT	09T304-VL	M	●	●	●	●			9.1	9.525	3.97	0.4	4.4	0.05 ~ 0.10	0.10 ~ 1.00
			09T308-VL	M	●	●	●	●			8.7	9.525	3.97	0.8	4.4	0.08 ~ 0.15	0.10 ~ 1.00
Medium		SCMT	09T304-MP	M		●	●				9.1	9.525	3.97	0.4	4.4	0.02 ~ 0.25	0.30 ~ 2.80
			09T308-MP	M		●	●				8.7	9.525	3.97	0.8	4.4	0.10 ~ 0.30	0.50 ~ 2.80
			120408-MP	M		●	●				11.9	12.7	4.76	0.8	5.5	0.15 ~ 0.35	0.80 ~ 3.50
Finishing		TCMT	090208-VL	M							7.6	5.56	2.38	0.8	2.5	0.06 ~ 0.12	0.10 ~ 1.00
			110204-VL	M							10.0	6.35	2.38	0.4	2.8	0.05 ~ 0.15	0.10 ~ 1.30
			110208-VL	M							9.0	6.35	2.38	0.8	2.8	0.08 ~ 0.20	0.10 ~ 1.30
			16T304-VL	M	●	●	●	●			15.5	9.525	3.97	0.4	4.4	0.05 ~ 0.20	0.30 ~ 1.50
			16T308-VL	M	●	●	●	●			14.5	9.525	3.97	0.8	4.4	0.05 ~ 0.20	0.30 ~ 1.50

●: Managed stock

➔ Stock Management (Positive Type)

Shape	Designation		Class	Coated				Uncoated		Dimensions(mm)					Cutting conditions(mm)		
				PC5300	PC8105	PC8110	PC8115	H01	H05	l	d	t	r	d ₁	Feed, fn(mm/rev)	Depth of cut, ap(mm)	
Medium		TCMT	090204-MP	M						8.6	5.56	2.38	0.4	2.5	0.05 ~ 0.18	0.10 ~ 1.00	
			090208-MP	M						7.6	5.56	2.38	0.8	2.5	0.08 ~ 0.20	0.10 ~ 1.20	
			110202-MP	M	●	●					10.5	6.35	2.38	0.2	2.8	0.03 ~ 0.12	0.20 ~ 1.50
			110204-MP	M	●	●					10.0	6.35	2.38	0.4	2.8	0.05 ~ 0.15	0.20 ~ 1.50
			110208-MP	M	●	●					9.0	6.35	2.38	0.8	2.8	0.10 ~ 0.28	0.25 ~ 2.00
			16T304-MP	M	●	●	●	●			15.5	9.525	3.97	0.4	4.4	0.08 ~ 0.20	0.30 ~ 2.50
			16T308-MP	M	●	●	●	●			14.5	9.525	3.97	0.8	4.4	0.10 ~ 0.30	0.50 ~ 2.50
			16T312-MP	M	●	●	●			13.5	9.525	3.97	1.2	4.4	0.20 ~ 0.35	0.50 ~ 2.50	
Finishing		TPMT	090204-VL	M						8.6	5.56	2.38	0.4	2.5	0.04 ~ 0.10	0.08 ~ 0.90	
			110304-VL	M	●	●	●	●			10.0	6.35	3.18	0.4	3.4	0.05 ~ 0.15	0.10 ~ 1.30
			110308-VL	M							9.0	6.35	3.18	0.8	3.4	0.08 ~ 0.20	0.10 ~ 1.30
			160404-VL	M							15.5	9.525	4.76	0.4	4.4	0.05 ~ 0.20	0.30 ~ 1.50
			160408-VL	M						14.5	9.525	4.76	0.8	4.4	0.05 ~ 0.20	0.30 ~ 1.50	
Medium		TPMT	110304-MP	M	●					10.0	6.35	3.18	0.4	3.4	0.05 ~ 0.15	0.20 ~ 1.50	
			110308-MP	M							9.0	6.35	3.18	0.8	3.4	0.10 ~ 0.28	0.25 ~ 2.00
			160404-MP	M							15.5	9.525	4.76	0.4	4.4	0.08 ~ 0.20	0.30 ~ 2.50
			160408-MP	M							14.5	9.525	4.76	0.8	4.4	0.10 ~ 0.30	0.50 ~ 2.50
Finishing		VCGT	110301-VP1	G	●	●	●	●	●	11.0	6.35	3.18	0.1	2.8	0.02 ~ 0.15	0.05 ~ 0.50	
			110302-VP1	G	●	●	●	●	●		11.0	6.35	3.18	0.2	2.8	0.02 ~ 0.18	0.10 ~ 1.00
			110304-VP1	G	●	●	●	●	●		11.0	6.35	3.18	0.4	2.8	0.03 ~ 0.18	0.15 ~ 1.20
Finishing		VPGT	110301-VP1	G	●	●	●	●	●	11.0	6.35	3.18	0.1	2.8	0.02 ~ 0.15	0.05 ~ 0.50	
			110302-VP1	G	●	●	●	●	●		11.0	6.35	3.18	0.2	2.8	0.02 ~ 0.18	0.10 ~ 1.00
			110304-VP1	G	●	●	●	●	●		11.0	6.35	3.18	0.4	2.8	0.03 ~ 0.18	0.15 ~ 1.20
Finishing		VBMT	160404-VL	M	●	●	●	●		15.6	9.525	4.76	0.4	4.4	0.05 ~ 0.20	0.30 ~ 1.50	
			160408-VL	M	●	●	●	●			14.6	9.525	4.76	0.8	4.4	0.10 ~ 0.20	0.30 ~ 1.50
			160412-VL	M	●	●	●				13.5	9.525	4.76	1.2	4.4	0.10 ~ 0.25	0.30 ~ 1.50
Medium		VBMT	110304-MP	M						10.0	6.35	3.18	0.4	3.4	0.05 ~ 0.15	0.20 ~ 1.50	
			110308-MP	M							9.0	6.35	3.18	0.8	3.4	0.10 ~ 0.28	0.25 ~ 2.00
			160404-MP	M	●	●	●	●			15.6	9.525	4.76	0.4	4.4	0.08 ~ 0.18	0.30 ~ 2.00
			160408-MP	M	●	●	●	●			14.6	9.525	4.76	0.8	4.4	0.10 ~ 0.23	0.50 ~ 2.30
			160412-MP	M	●	●	●	●			13.5	9.525	4.76	1.2	4.4	0.10 ~ 0.35	0.50 ~ 2.30
Finishing		VCMT	080202-VL	M						8.0	4.76	2.38	0.2	2.3	0.03 ~ 0.08	0.08 ~ 0.80	
			080204-VL	M							7.5	4.76	2.38	0.4	2.3	0.04 ~ 0.10	0.08 ~ 0.90
			160404-VL	M	●	●					15.6	9.525	4.76	0.4	4.4	0.05 ~ 0.20	0.30 ~ 1.50
			160408-VL	M	●	●					14.6	9.525	4.76	0.8	4.4	0.10 ~ 0.20	0.30 ~ 1.50
			160412-VL	M							13.5	9.525	4.76	1.2	4.4	0.10 ~ 0.25	0.30 ~ 1.50
Medium		VCMT	080202-MP	M						8.0	4.76	2.38	0.2	2.3	0.03 ~ 0.15	0.10 ~ 1.00	
			080204-MP	M							7.5	4.76	2.38	0.4	2.3	0.05 ~ 0.18	0.10 ~ 1.00
			160404-MP	M	●	●					15.6	9.525	4.76	0.4	4.4	0.08 ~ 0.18	0.30 ~ 2.00
			160408-MP	M	●	●					14.6	9.525	4.76	0.8	4.4	0.10 ~ 0.23	0.50 ~ 2.30
			160412-MP	M	●	●					13.5	9.525	4.76	1.2	4.4	0.10 ~ 0.35	0.50 ~ 2.30

● : Managed stock



Holystar B/D, 1350, Nambusunhwan-ro, Geumcheon-gu, Seoul, 08536, Korea
Tel : +82-2-522-3181 Fax : +82-2-522-3184, +82-2-3474-4744 Web : www.korloy.com E-mail : export@korloy.com



620 Maple Avenue, Torrance, CA 90503, USA
Tel : +1-310-782-3800 Toll Free : +1-888-711-0001 Fax : +1-310-782-3885
www.korloyamerica.com E-mail : sales@korloy.us



Plot NO.415, Sector 8, IMT Manesar, Gurgaon 122051, Haryana, INDIA
Tel : +91-124-4391790 Fax : +91-124-4050032
www.korloyindia.com E-mail : sales.kip@korloy.com



Gablonz Str. 25-27, 61440 Oberursel, Germany
Tel : +49-6171-277-83-0 Fax : +49-6171-277-83-59
www.korloyeurope.com E-mail : sales@korloyeurope.com



Av. Aruana 280, conj.12, WLC, Alphaville, Barueri,
CEP06460-010, SP, Brasil
Tel : +55-11-4193-3810 E-mail : vendas@korloy.com