

鋼旋削用コーティング材種  
Coated Grades for Steel Turning

エースコート **AC810P/AC820P/AC830P**

ACE-COAT AC810P/AC820P/AC830P 第9版

AC810Pによる鋼の高速連続加工  
High speed turning of Steel with AC810P

AC820Pによる鋼の一般加工  
General turning of Steel with AC820P

AC830Pによる鋼の断続加工  
Interrupted turning of Steel with AC830P

**鋼旋削の三役揃い踏み**  
3 Great Partners for Steel Turning

高速切削～断続切削まであらゆる領域をカバー!  
AC800P series cover applications from High Speed ~ Interrupted Turning!



**New release!**

ネガティブチップ

**115アイテム拡充**

115 items expansion

Excellent Productivity

**抜群の生産性**  
高速切削の

**AC810P**  
High Speed Turning



Excellent Versatility

**抜群の汎用性**  
汎用切削の

**AC820P**  
General Purpose Turning



Excellent Reliability

**抜群の信頼性**  
断続切削の

**AC830P**  
Interrupted Turning



## エスコート AC810P/AC820P/AC830P の特長 Feature of ACECOAT AC810P/AC820P/AC830P

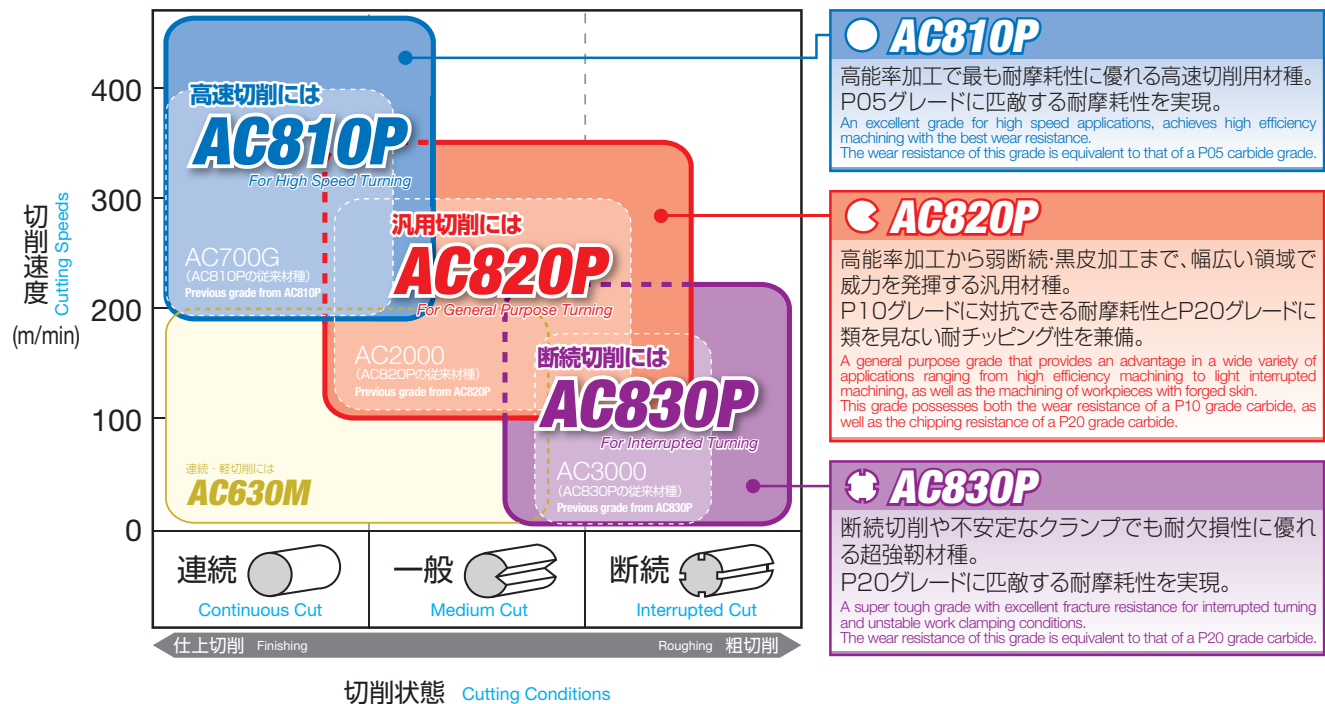
- 耐摩耗性、耐チッピング性に優れたスーパーFFコートを採用  
Both grades feature Super FF Coat, which has excellent wear and chipping resistance.
- 高送りが得意な汎用プレーカGE型で、高能率・長寿命を実現  
Versatile GE Type chipbreaker suited to high-feed applications. High efficiency, long tool life.

**AC810P** : 耐摩耗性、耐剥離性に優れたFF-TiCNに加え、新開発の粒成長制御技術によって強化された厚膜アルミナを採用、高速・高送り加工における抜群の耐摩耗性で長寿命を実現  
In addition to FF-TiCN, which has excellent peel-off and wear resistance, this grade features new grain growth technology, allowing toughened Al<sub>2</sub>O<sub>3</sub>, and achieving high wear resistance and long tool life for high efficiency applications.

**AC820P** : 耐摩耗性、耐剥離性に優れたFF-TiCNに加え、新開発の表面平滑化技術によって緻密化されたFF-Al<sub>2</sub>O<sub>3</sub>を採用、更に刃先の膜厚制御技術により、抜群の汎用性と安定性で長寿命を実現  
In addition to FF-TiCN, which has excellent peel-off and wear resistance, this grade features new smooth surface treatment technology, allowing densification of FF-Al<sub>2</sub>O<sub>3</sub>, and also employs coating thickness control technology to achieve excellent versatility, stability, and high efficiency.

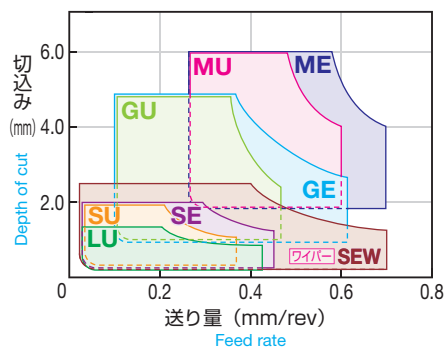
**AC830P** : 耐摩耗性、耐剥離性に優れたFF-TiCNに加え、新開発の応力制御技術によって強化されたFF-Al<sub>2</sub>O<sub>3</sub>を採用、強断続における抜群の信頼性と耐摩耗性で長寿命を実現  
In addition to FF-TiCN, which has excellent peel-off and wear resistance, this grade features new stress control technology, allowing strengthening of FF-Al<sub>2</sub>O<sub>3</sub>, and achieving long product lifetime, and superior reliability and wear resistance for heavy interrupted cutting applications.

## 適用領域 Application range

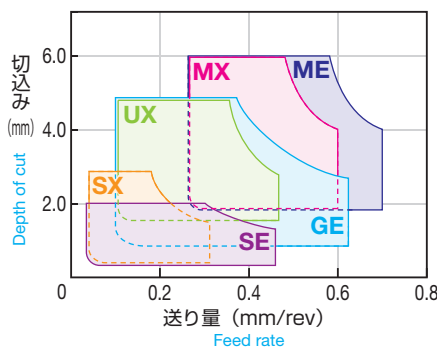


## チップブレーカ適用領域 Chipbreaker selection

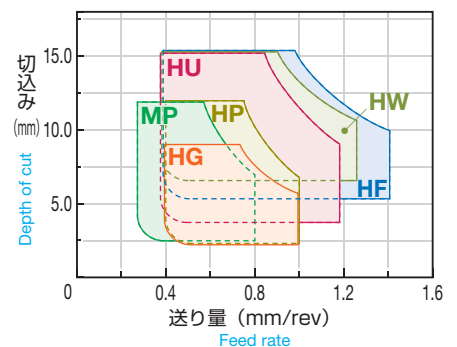
● 高速～弱断続加工  
High Speed ~ Light Interrupted cut



● 弱断続～強断続加工  
Light Interrupted ~ Heavy Interrupted cut



● 粗～重切削  
Rough ~ Heavy cut



## AC800Pシリーズの使い分け(例) Usage of AC800P Series

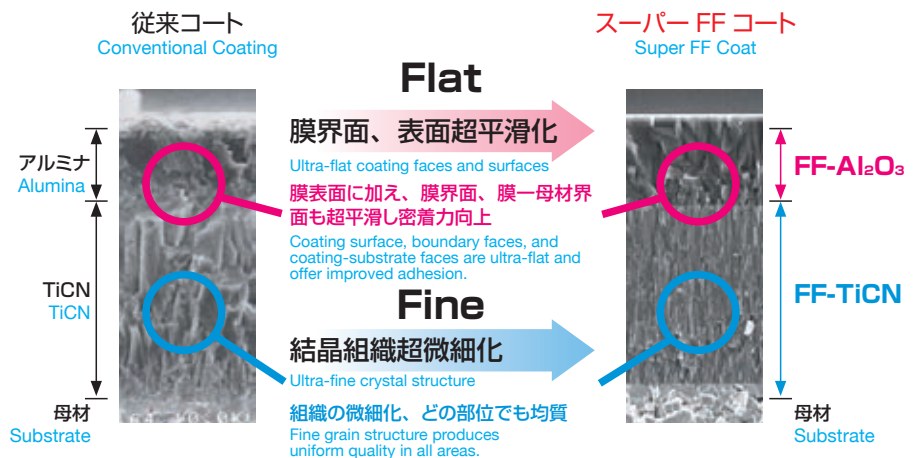
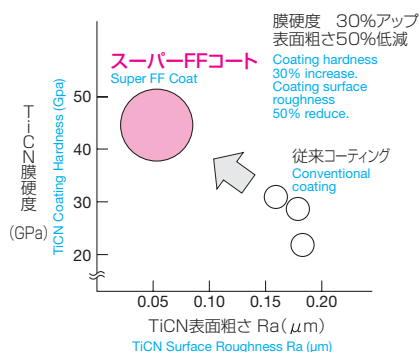


## スーパーFFコートの特長 Feature of Super FF coat

当社独自の新開発CVDプロセス「スーパーFFコート」技術により、コーティング膜同士の界面の超フラット化と、コーティング膜結晶粒子の超々微粒化を達成し、より高い信頼性と長寿命を実現しました。

Super FF Coat technology, Sumitomo Electric's new proprietary CVD process, has produced ultra-FLAT boundary faces between coating layers and super ultra-FINE coating particles to achieve higher reliability and longer tool life.

### ● 膜の特長 Characteristics of Films



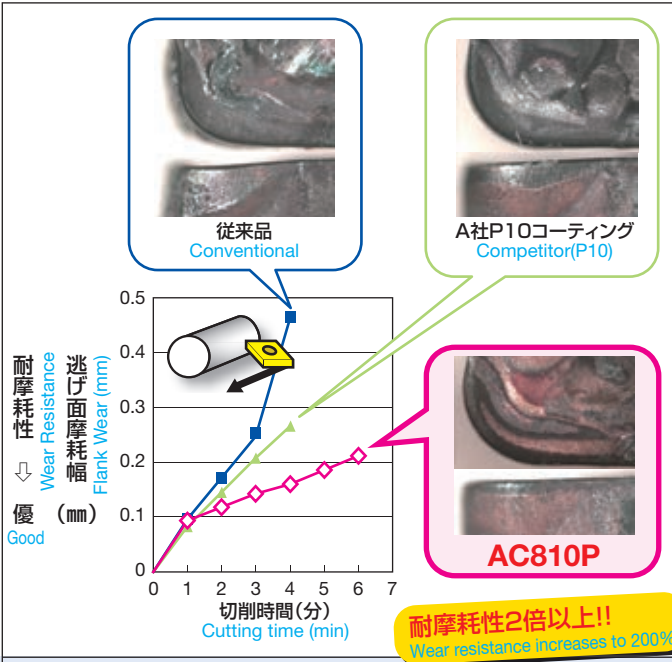
- 膜間および膜と母材との密着力が高く、膜表面が平滑で耐溶着性・耐チッピング性に優れる
- 従来のコーティング膜より硬く、耐摩耗性が大幅に向上
- 従来材種と比べて1.5倍以上の高速・高能率加工が可能
- 同一切削条件では、従来材種の2倍以上の長寿命を実現
- Higher adhesion strength between substrate and layers with smooth layer surfaces for excellent adhesion and chipping resistance.
- Harder than conventional coatings with huge improvements in wear resistance.
- High speed, high efficiency machining of more than 1.5 times that of conventional grades is possible.
- Achieving more than double the tool life of conventional grades under conventional cutting conditions.

# エスコート AC810P の切削性能

ACE COAT AC810P Cutting Efficiency

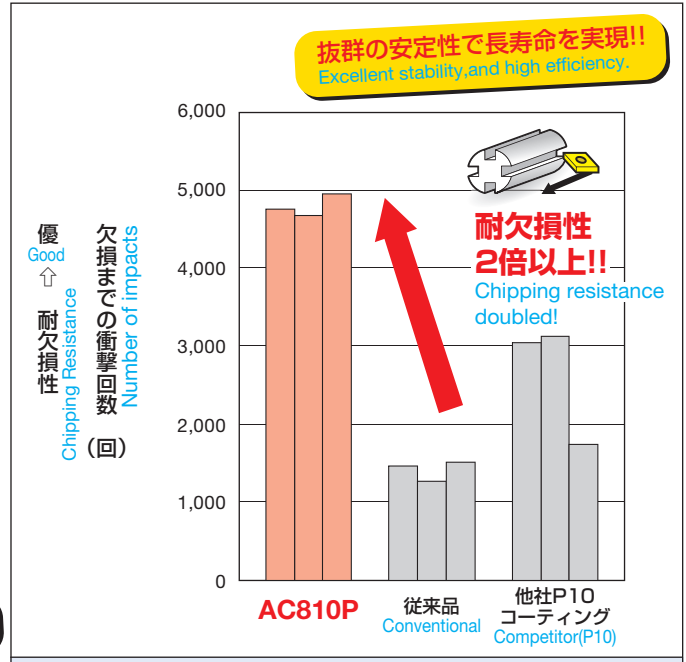
**抜群の生産性**  
Excellent Productivity

## ■耐摩耗性 Wear resistance



被削材 Work material : SCM435 34CrMo4  
チップ Insert : CNMG120408N-GU  
ホルダ Holder : PCLNR2525-43  
切削条件 Conditions :  $v_c=270\text{m/min}$ ,  $f=0.45\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Dry

## ■耐欠損性 Chipping resistance



被削材 Work material : SCM435溝材 34CrMo4 (4 deep grooves)  
チップ Insert : CNMG120408N-GU  
ホルダ Holder : PCLNR2525-43  
切削条件 Conditions :  $v_c=330\sim350\text{m/min}$ ,  $f=0.19\sim0.22\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Wet

## ■推奨切削条件 Recommended cutting conditions

凡例 Legend (下限値—上限値) Optimum Min. Max.

チップ形状・切刃長とチップブレイカ Insert specification and Chipbreaker	軟鋼(SS400など) 低炭素鋼(S10Cなど) 低合金鋼(SCM415など) 180HB以下			高炭素鋼(S45Cなど) 高合金鋼(SCM435など) 180HB以上			
	切削速度 $v_c$ (m/min)	送り量 $f$ (mm/rev)	切込み $a_p$ (mm)	切削速度 $v_c$ (m/min)	送り量 $f$ (mm/rev)	切込み $a_p$ (mm)	
CNM□12 DNM□15 SNM□12 TNM□16 TNM□22 WNM□08	LU	290	0.2	1.5	260	0.2	1.5
	SU	(170-430)	(0.1-0.4)	(0.5-2.0)	(170-360)	(0.1-0.4)	(0.5-2.0)
	SE						
	SEW	290	0.4	1.5	260	0.2	1.5
	UX	(170-430)	(0.1-0.6)	(0.5-2.5)	(170-360)	(0.1-0.6)	(0.5-2.5)
	GU	290	0.3	2.2	250	0.3	2.2
	GE	(170-430)	(0.1-0.45)	(0.8-5.0)	(150-350)	(0.1-0.45)	(0.8-5.0)
	UX						
	MU	260	0.35	3.0	230	0.35	3.0
CNM□16 SNM□15	MU	(140-360)	(0.2-0.6)	(1.8-6.0)	(130-330)	(0.2-0.6)	(1.8-6.0)
	ME	260	0.45	3.0	230	0.45	3.0
	ME	(140-360)	(0.2-0.7)	(1.0-6.0)	(130-330)	(0.2-0.7)	(1.0-6.0)
	HG	220	0.5	4.5	140	0.5	4.5
CNM□19 DNM□19 SNM□19 TNM□27	MU	(140-290)	(0.35-0.8)	(3.0-8.0)	(100-230)	(0.35-0.8)	(3.0-8.0)
	MU	220	0.4	5.0	160	0.4	5.0
	ME	(140-290)	(0.2-0.7)	(1.5-7.0)	(100-220)	(0.2-0.7)	(1.5-7.0)
	HG	190	0.6	5.0	140	0.6	5.0
	HG	(120-260)	(0.35-0.8)	(3.0-9.0)	(90-200)	(0.35-0.8)	(3.0-9.0)



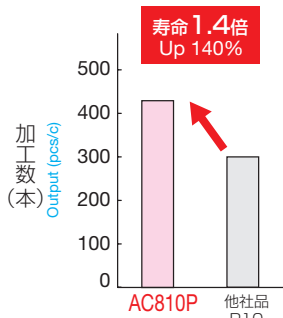
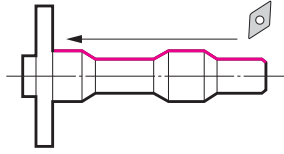
# エースコート AC810P の使用実例

ACE COAT AC810P Application Examples

## ● ハブ/SCr415 Hub

チップ：DNMG150612N-GE

切削条件： $v_c=204\text{m/min}$ ,  $f=0.35\sim 0.45\text{mm/rev}$ ,  $a_p=1.5\sim 3.0\text{mm}$ , Wet



**黒皮粗加工で長寿命!!**

Long tool life even in roughing of workpieces with forged skin !!

黒皮粗加工において、AC810Pは他社品(P10)よりも耐摩耗性、刃先安定性に優れ、1.4倍の工具寿命を達成できた。

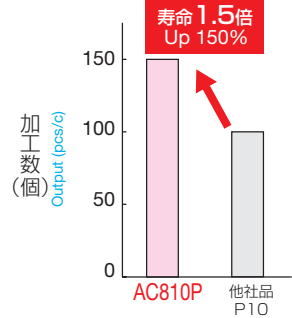
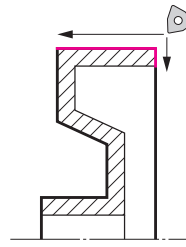
140% increase in tool life using AC810P.

-application roughing OD turning of forged skin.

## ● ハブ/S45C Hub

チップ：WNMG080412N-GU

切削条件： $v_c=250\text{m/min}$ ,  $f=0.4\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Wet



**黒皮粗加工で長寿命!!**

Long tool life even in roughing of workpieces with forged skin !!

黒皮粗加工において、AC810Pは他社品(P10)よりも耐摩耗性に優れ、1.5倍の工具寿命を達成できた。

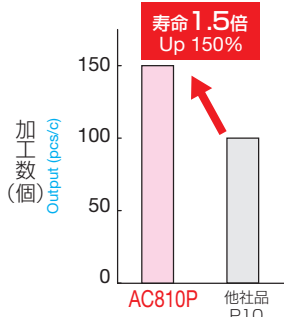
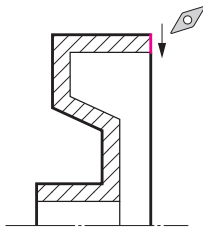
150% increase in tool life using AC810P.

-application roughing OD turning of forged skin.

## ● ハブ/S45C Hub

チップ：VBMT160408N-SU

切削条件： $v_c=240\text{m/min}$ ,  $f=0.25\text{mm/rev}$ ,  $a_p=0.7\text{mm}$ , Wet



**長寿命＋刃先安定!!**

Long tool life with cutting edge stability !!

AC810Pは他社品(P10)より高い刃先安定性を示し、1.5倍の工具寿命を達成できた。

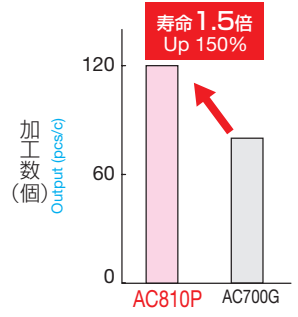
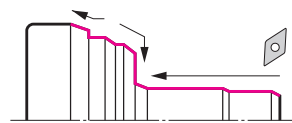
150% increase in tool life using AC810P

-application chamfering.

## ● CVJアウターレース/S45C CVJ Outer Race

チップ：DNMG150612N-LU

切削条件： $v_c=350\text{m/min}$ ,  $f=0.20\sim 0.45\text{mm/rev}$ ,  $a_p=0.4\sim 0.5\text{mm}$ , Dry



**高速加工で長寿命!!**

Long tool life even in high speed machining !!

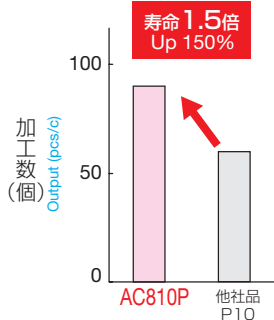
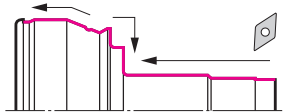
高速ドライ加工において、AC810Pは従来品(AC700G)より高い耐摩耗性を示し、1.5倍の工具寿命を達成できた。

150% increase in tool life using AC810P and the insert is still no end of the tool life. Application OD turning without coolant.

## ● CVJアウターレース/S53C CVJ Outer Race

チップ：DNMG150612N-GE

切削条件： $v_c=270\text{m/min}$ ,  $f=0.35\sim 0.38\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Dry



**ドライ切削で長寿命!!**

Long tool life in dry machining !!

ドライ加工において、AC810Pは他社品(P10)より高い耐摩耗性を示し、1.5倍の工具寿命を達成できた。

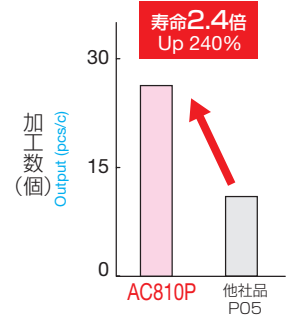
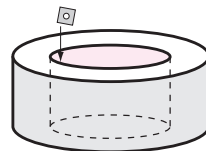
150% increase in tool life using AC810P.

-application OD turning without coolant.

## ● カップリング/S45C Coupling

チップ：SNMG150616N-MU

切削条件： $v_c=175\text{m/min}$ ,  $f=0.66\text{mm/rev}$ ,  $a_p=2.6\text{mm}$ , Wet



**P05グレードでも対抗可能!!**

Able to compete against P05 grade carbide !!

高送り加工において、AC810Pは他社品(P05)より高い耐摩耗性を示し、2.4倍の工具寿命を達成できた。

240% increase in tool life using AC810P.

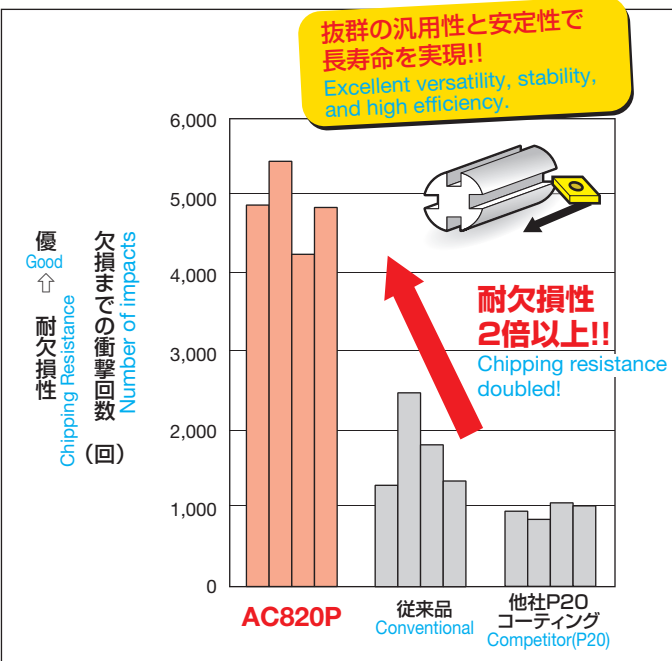
-application ID boring of forged skin.

# エスコート AC820P の切削性能

ACE COAT AC820P Cutting Efficiency

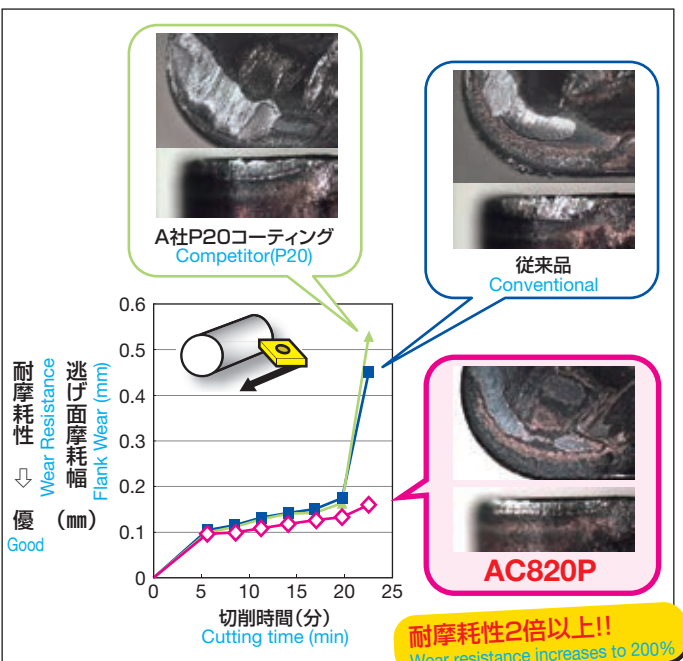
**抜群の  
汎用性**  
Excellent Versatility

## 耐欠損性 Chipping resistance



被削材 Work material : SCM435溝材 34CrMo4 (4 deep grooves)  
チップ Insert : CNMG120408N-GU  
ホルダ Holder : PCLNR2525-43  
切削条件 Conditions :  $v_c=350\text{m/min}$ ,  $f=0.2\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Wet

## 耐摩耗性 Wear resistance



被削材 Work material : S45C C45  
チップ Insert : CNMG120408N-GE  
ホルダ Holder : PCLNR2525-43  
切削条件 Conditions :  $v_c=250\text{m/min}$ ,  $f=0.4\text{mm/rev}$ ,  $a_p=1.2\text{mm}$ , Wet

## 推奨切削条件 Recommended cutting conditions

チップ形状・切刃長とチップブレイカ Insert specification and Chipbreaker	軟鋼(SS400など) 低炭素鋼(S10Cなど) 低合金鋼(SCM415など) 180HB以下			高炭素鋼(S45Cなど) 高合金鋼(SCM435など) 180HB以上			
	切削速度 $v_c$ (m/min)	送り量 $f$ (mm/rev)	切込み $a_p$ (mm)	切削速度 $v_c$ (m/min)	送り量 $f$ (mm/rev)	切込み $a_p$ (mm)	
CNM□12 DNM□15 SNM□12 TNM□16 TNM□22 WNM□08	LU	250	0.2	1.5	210	0.2	1.5
	SU	(150-350)	(0.1-0.4)	(0.5-2.0)	(120-300)	(0.1-0.4)	(0.5-2.0)
	SE						
	SEW	250	0.4	1.5	210	0.4	1.5
	ダイナ	(150-350)	(0.1-0.6)	(0.5-2.5)	(120-300)	(0.1-0.6)	(0.5-2.5)
	GU	230	0.3	2.2	180	0.3	2.2
	GE	(150-300)	(0.1-0.45)	(0.8-5.0)	(100-270)	(0.1-0.45)	(0.8-5.0)
	UX						
CNM□16 SNM□15	MU	200	0.35	3.0	150	0.35	3.0
		(130-280)	(0.2-0.6)	(1.8-6.0)	(80-230)	(0.2-0.6)	(1.8-6.0)
	ME	200	0.45	3.0	150	0.45	3.0
		(130-280)	(0.2-0.7)	(1.0-6.0)	(80-230)	(0.2-0.7)	(1.0-6.0)
CNM□19 DNM□25 SNM□19 SNM□25 TNM□27	HG	180	0.5	4.5	140	0.5	4.5
		(100-260)	(0.2-0.7)	(1.5-7.0)	(80-210)	(0.2-0.7)	(1.5-7.0)
	HG	160	0.6	5.0	120	0.6	5.0
		(80-240)	(0.35-0.8)	(3.0-8.0)	(70-180)	(0.35-0.8)	(3.0-8.0)
CNM□19 DNM□19 SNM□19 SNM□25 TNM□27	MU	180	0.4	5.0	140	0.4	5.0
		(100-260)	(0.2-0.6)	(1.8-6.0)	(80-210)	(0.2-0.6)	(1.8-6.0)
CNM□19 DNM□19 SNM□19 SNM□25 TNM□27	ME	180	0.5	5.0	140	0.5	5.0
		(100-260)	(0.2-0.7)	(2.0-8.0)	(80-210)	(0.2-0.7)	(2.0-8.0)
CNM□19 DNM□19 SNM□19 SNM□25 TNM□27	HG	160	0.6	6.5	120	0.6	6.5
		(80-240)	(0.35-0.8)	(3.0-9.0)	(70-180)	(0.35-0.8)	(3.0-9.0)
CNM□19 DNM□19 SNM□19 SNM□25 TNM□27	HF	170	0.8	8.0	140	0.8	8.0
		(135-220)	(0.45-1.15)	(4.5-13.5)	(105-190)	(0.45-1.15)	(4.5-13.5)



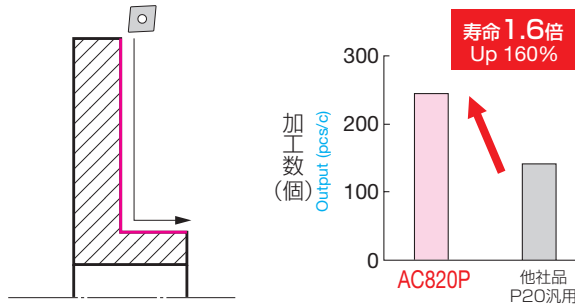
# エスコート AC820P の使用実例

ACE COAT AC820P Application Examples

## ● タービンハブ/S48C Turbine Hub

チップ：CNMG120408N-GE

切削条件： $v_c=210\text{m/min}$ ,  $f=0.3\text{mm/rev}$ ,  $a_p=1.0\text{mm}$ , Wet



### 黒皮粗加工で安定長寿命!!

Stable tool life even in roughing of workpieces with forged skin !!

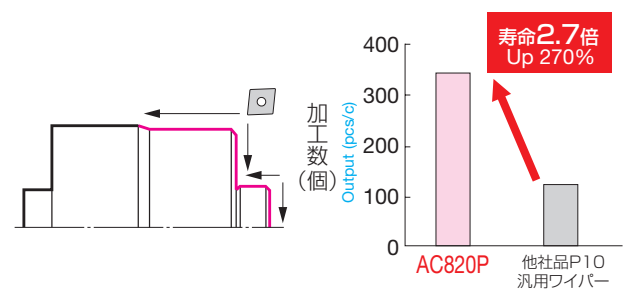
黒皮粗加工において、AC820Pは他社品(P20)より安定した耐剥離性を示し、1.6倍の工具寿命が達成できた。

1.6times longer tool life using AC820P – application forged skin and rough turning

## ● アウトプットシャフト/SCr420H Output Shaft

チップ：CNMG120408N-SX

切削条件： $v_c\sim 400\text{m/min}$ ,  $f=0.25\text{mm/rev}$ ,  $a_p=0.5\sim 1.2\text{mm}$ , Wet



### P10グレードにも対抗可能でより長寿命!!

Comparable to P10 grade with longer tool life !!

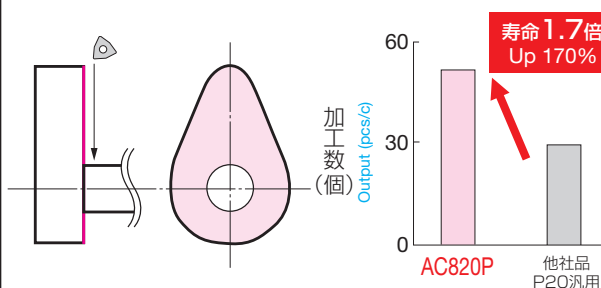
高速加工においてAC820Pは、他社品(P10)より高耐摩耗性を示し、2.7倍の工具寿命が達成できた。

2.7times longer tool life using AC820P – against P10 grade-application high speed turning.

## ● バランサー/SCM435 Balancer

チップ：WNMG080408N-GU

切削条件： $v_c=220\text{m/min}$ ,  $f=0.18\text{mm/rev}$ ,  $a_p=10\text{mm}$ , Wet



### 断続加工で信頼性抜群、長寿命!!

Excellent reliability and long tool life in interrupted machining !!

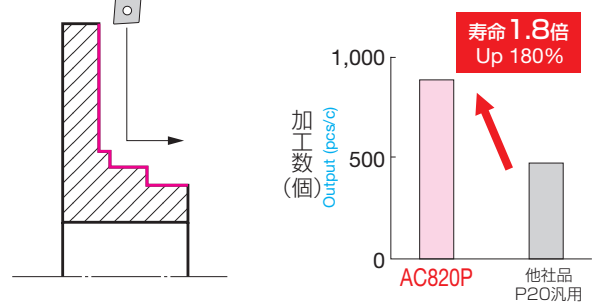
断続加工において、従来他社品(P20)がチップング寿命であったのに対し、チップングを抑制することで、1.7倍の工具寿命を達成できた。

1.7times longer tool life and Higher chipping resistance using AC820P – application interrupted turning

## ● タービンハブ/SCM415 Turbine Hub

チップ：CNMG120408N-GU

切削条件： $v_c=200\text{m/min}$ ,  $f=0.25\text{mm/rev}$ ,  $a_p=2.0\text{mm}$ , Wet



### 低合金鋼で仕上面良好、長寿命!!

Good finishing with long tool life for Low Alloy Steel machining !!

低合金鋼の加工において、従来他社品(P20)が摩耗で寿命になっていたのに対し、

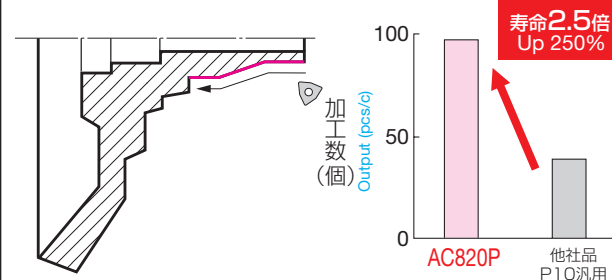
AC820Pは1.7倍の工具寿命を達成できた。

1.7times longer tool life and good surface finishing using AC820P – application low carbon alloy steel turning.

## ● 小型ナックル/S48C Compact Knuckle

チップ：WNMG080412N-LU

切削条件： $v_c=191\text{m/min}$ ,  $f=0.45\text{mm/rev}$ ,  $a_p=1\sim 2.0\text{mm}$ , Wet



### P10グレードに対し、突発欠損無く安定性大幅向上!!

Comparable to P10 grade with improved stability against sudden chip off !!

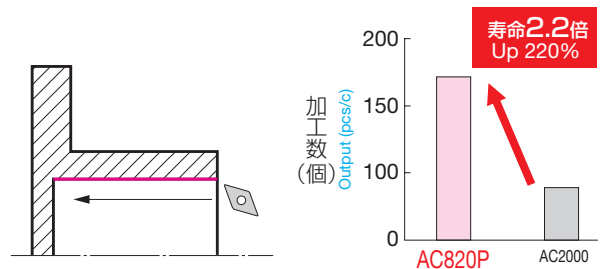
高炭素鋼の黒皮粗加工において、従来他社品(P10)が突発欠損が発生し、寿命が不安定だったのに対し、AC820Pは安定して2.5倍の工具寿命を達成できた。

250% increase in tool life and more stability using AC820P – against P10 grade- application forged high carbon steel turning.

## ● キャリアフランジ/S35C Carrier Flange

チップ：DCMT11T308N-SU

切削条件： $v_c=180\text{m/min}$ ,  $f=0.17\text{mm/rev}$ ,  $a_p=1\text{mm}$ , Wet



### 内径加工でも耐摩耗性良好、長寿命!!

Good wear resistance and long tool life even for ID boring !!

内径加工において従来品(AC2000)が逃げ面摩耗により寿命になっていたのに対し、AC820Pは耐摩耗性向上で2.2倍の工具寿命を達成できた。

Tool life more than double using AC820P by improving flank wear resistance application boring

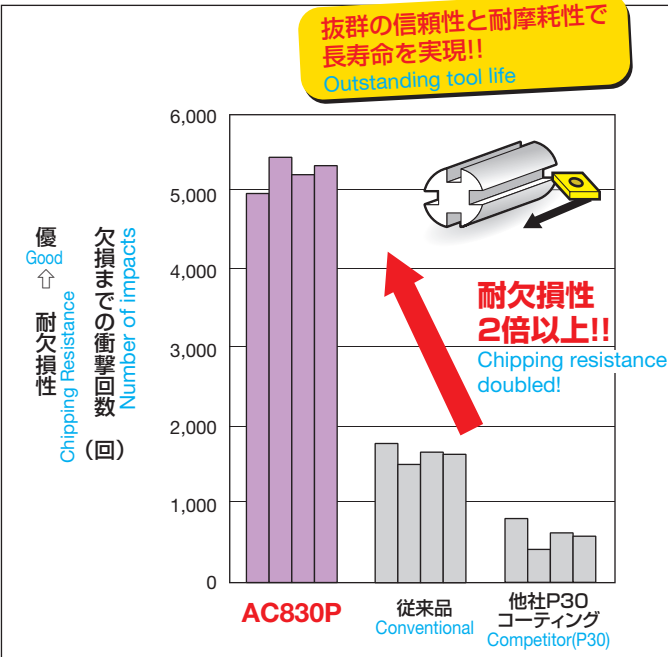
# エスコート AC830P の切削性能

ACE COAT AC830P Cutting Efficiency

抜群の信頼性  
Excellent Reliability

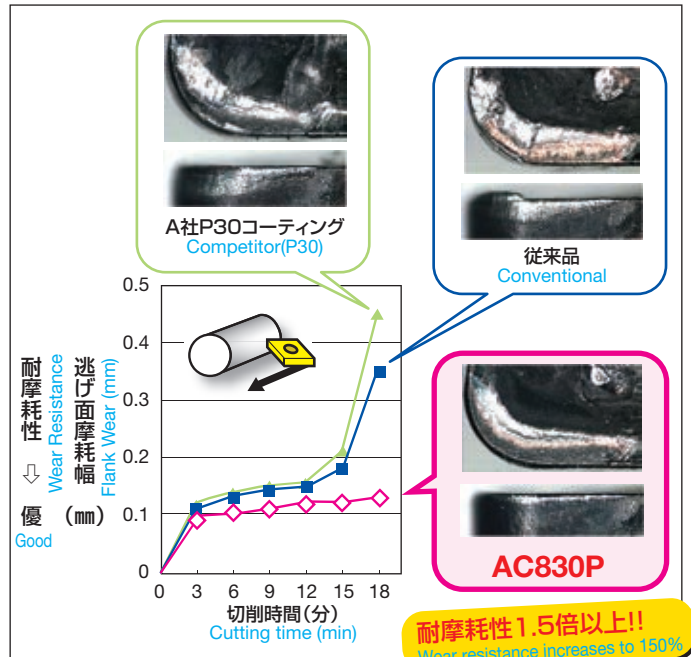
## 耐欠損性

Chipping resistance



## 耐摩耗性

Wear resistance



被削材 Work material : SCM435溝材 34CrMo4 (4 grooves)  
チップ Insert : CNMG120408N-GU  
ホルダ Holder : PCLNR2525-43  
切削条件 Conditions :  $v_c=220\text{m/min}$ ,  $f=0.3\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Wet

被削材 Work material : SCM435 34CrMo4  
チップ Insert : CNMG120408N-GU  
ホルダ Holder : PCLNR2525-43  
切削条件 Conditions :  $v_c=220\text{m/min}$ ,  $f=0.3\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Wet

## 推奨切削条件

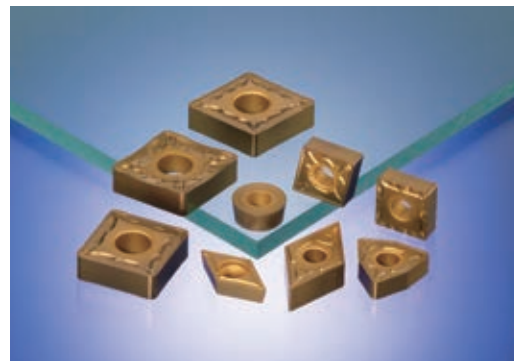
Recommended cutting conditions

凡例 Legend

推奨値

(下限値—上限値)  
Min. Max.

チップ形状・切刃長とチップブレイカ Insert specification and Chipbreaker	軟鋼(SS400など) 低炭素鋼(S10Cなど) 低合金鋼(SCM415など) 180HKB以下			高炭素鋼(S45Cなど) 高合金鋼(SCM435など) 180HKB以上				
	切削速度 $v_c$ (m/min)	送り量 $f$ (mm/rev)	切込み $a_p$ (mm)	切削速度 $v_c$ (m/min)	送り量 $f$ (mm/rev)	切込み $a_p$ (mm)		
CNM□12 DNM□15 SNM□12 TNM□16 TNM□22 WNM□08	LU SU SE	200 (120-300)	0.2 (0.1-0.4)	1.3 (0.5-2.0)	180 (120-250)	0.2 (0.1-0.4)	1.3 (0.5-2.0)	
	GU GE	200 (120-300)	0.3 (0.1-0.45)	2.2 (0.8-5.0)	150 (100-200)	0.3 (0.1-0.45)	2.2 (0.8-5.0)	
	MU	180 (100-250)	0.35 (0.2-0.6)	3.0 (1.8-6.0)	130 (80-180)	0.35 (0.2-0.6)	3.0 (1.8-6.0)	
	ME	180 (100-250)	0.45 (0.2-0.7)	3.0 (1.0-6.0)	130 (80-180)	0.45 (0.2-0.7)	3.0 (1.0-6.0)	
	HG	150 (100-200)	0.5 (0.35-0.8)	4.5 (3.0-8.0)	100 (70-160)	0.5 (0.35-0.8)	4.5 (3.0-8.0)	
	CNM□16 SNM□15	GU GE UX	180 (100-250)	0.3 (0.15-0.45)	3.5 (0.8-5.0)	130 (90-170)	0.3 (0.15-0.45)	3.5 (0.8-5.0)
		MU	150 (100-200)	0.4 (0.2-0.6)	4.5 (1.8-6.0)	110 (70-150)	0.4 (0.2-0.6)	4.5 (1.8-6.0)
ME		150 (100-200)	0.5 (0.2-0.7)	4.5 (1.5-7.0)	110 (70-150)	0.5 (0.2-0.7)	4.5 (1.5-7.0)	
HG		130 (80-180)	0.6 (0.35-0.8)	5.0 (3.0-8.0)	100 (60-140)	0.6 (0.35-0.8)	5.0 (3.0-8.0)	
CNM□19 CNM□25 DNM□19 SNM□19 SNM□25 TNM□27	MU	150 (100-200)	0.4 (0.2-0.6)	5.0 (1.8-6.0)	110 (70-150)	0.4 (0.2-0.6)	5.0 (1.8-6.0)	
	ME	150 (100-200)	0.5 (0.2-0.7)	5.0 (2.0-8.0)	110 (70-150)	0.5 (0.2-0.7)	5.0 (2.0-8.0)	
	HG	130 (80-180)	0.6 (0.35-0.8)	6.5 (3.0-9.0)	100 (60-140)	0.6 (0.35-0.8)	6.5 (3.0-9.0)	
	HF	150 (120-190)	0.8 (0.45-1.15)	8.0 (4.5-13.5)	120 (90-160)	0.8 (0.45-1.15)	8.0 (4.5-13.5)	
SNM□31	HF	110 (70-150)	1.2 (0.8-1.6)	8.0 (5.0-27.0)	80 (50-120)	1.2 (0.8-1.6)	8.0 (5.0-27.0)	



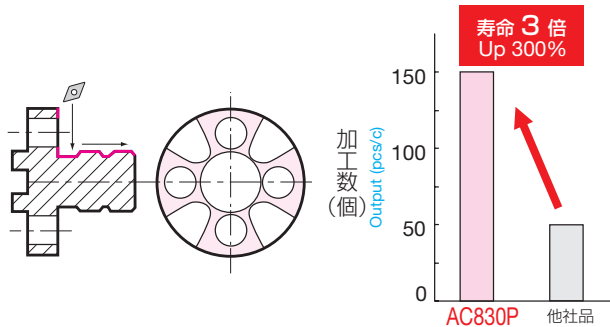


# エースコート AC830P の使用実例

ACE COAT AC830P Application Examples

## ● ハブユニット/S55C Hub

チップ：DNMG150412N-UX  
 切削条件： $v_c=150\text{m/min}$ ,  $f=0.25\text{mm/rev}$ ,  $a_p=1.0\text{mm}$ , Wet



**断続+連続切削で長寿命!!**

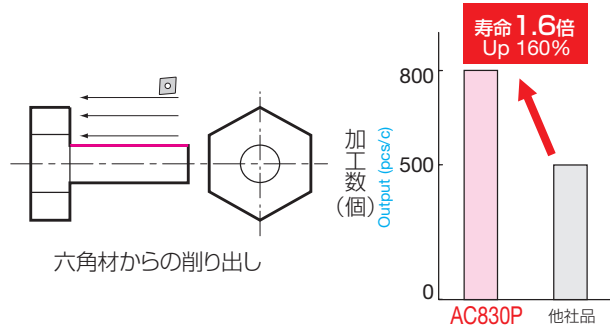
Long tool life in applications with a combination of continuous and interrupted machining !!

連続を含む断続加工において、**AC830P**は他社品(P30)に対し、チッピングが抑制され、3倍の工具寿命を達成できた。

300% increase in tool life using AC830P – application interrupted and continuous turning.

## ● ボルト/SS400 Bolt (Construction machine)

チップ：CNMG120408N-GU  
 切削条件： $v_c=170\text{m/min}$ ,  $f=0.25\text{mm/rev}$ ,  $a_p=2.5\text{mm}$ , Wet



**断続+連続切削で長寿命!!**

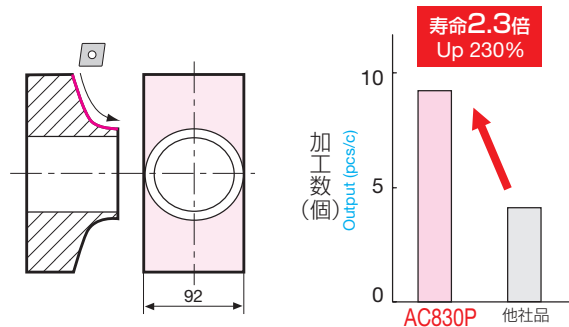
Long tool life in applications with a combination of continuous and interrupted machining !!

**AC830P**は他社品(P30)に対し、耐チッピング性、耐摩耗性に優れ、1.6倍の工具寿命を達成できた。

160% increase in tool life using AC830P - application interrupted and continuous turning.

## ● 機械部品/S50C Machine part

チップ：CNMG120412N-MU  
 切削条件： $v_c=120 \rightarrow 150\text{m/min}$ ,  $f=0.25\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Wet



**加工能率アップ+長寿命!!**

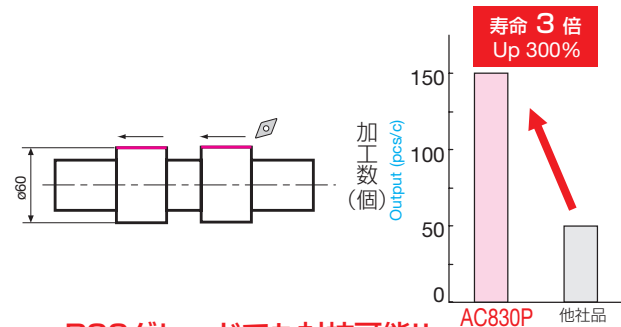
Improved efficiency and tool life !!

**AC830P**は他社品(P30)に対し、切削速度25%アップし、さらに2.3倍の工具寿命を達成できた。

Productivity up to 125% and tool life more than doubled using AC830P – application interrupted turning.

## ● カムシャフト/SCM415 Cam shaft

チップ：DNMG150408N-GU  
 切削条件： $v_c=220\text{m/min}$ ,  $f=0.25\text{mm/rev}$ ,  $a_p=1.0\text{mm}$ , Wet



**P20グレードでも対抗可能!!**

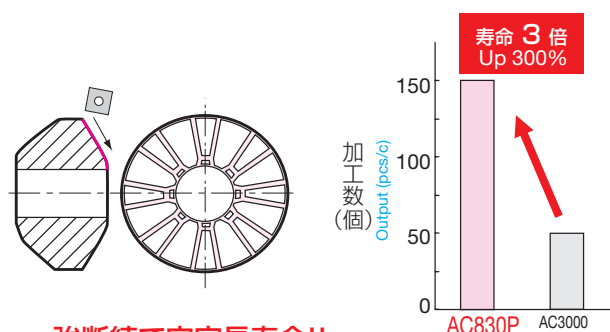
Able to compete against P20 grade carbide !!

従来(他社P20)は突発的欠損により、寿命が不安定(30~70個)であったが、**AC830P**は安定して3倍(140~160個)の工具寿命を達成できた。

300% increase in tool life using AC830P – against P20 grade application continuous turning.

## ● ピニオンギヤ/SCr420 Pinion gear

チップ：SNMG120412N-UX  
 切削条件： $v_c=170\text{m/min}$ ,  $f=0.35\text{mm/rev}$ ,  $a_p=1.5\text{mm}$ , Wet



**強断続で安定長寿命!!**

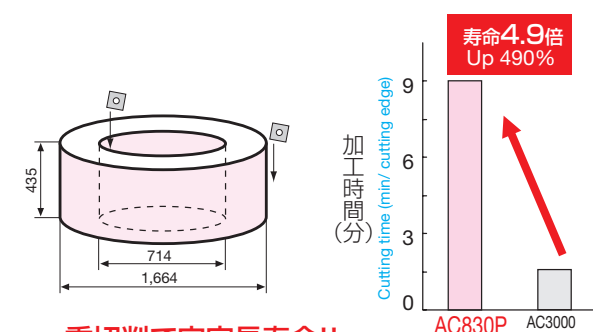
Long tool life even for heavy interrupted cutting !!

ギヤ強断続加工において、**AC830P**は従来品(AC3000)に対し、異常損傷が抑制され、安定して3倍の工具寿命を達成できた。

300% increase in tool life using AC830P – application hardly interrupted turning.

## ● 建機用大型ギヤ/SNCM420 Gear (Construction machine)

チップ：SNMM190616N-HG  
 切削条件： $v_c=115\text{m/min}$ ,  $f=0.8\text{mm/rev}$ ,  $a_p=5 \sim 10\text{mm}$ , Wet



**重切削で安定長寿命!!**

Stable and long tool life in heavy roughing !!

切込み変動の大きい重切削において、**AC830P**は従来品(AC3000)に対し、4.9倍の工具寿命を達成できた。

490% increase in tool life using AC830P – application heavy roughing with large fluctuations in depth.

# 刃先交換ISOチップ (ネガティブチップ)

ISO Indexable Inserts (Negative Insert)

## ◇ ネガティブ 80° 菱形 Negative 80° Diamond Type

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
FL	CNMG 090308N-FL	●	●		9.525	3.18	3.81	0.8
	CNMG 120404N-FL	●	●		12.7	4.76	5.16	0.4
	120408N-FL	●	●		12.7	4.76	5.16	0.8
LU	CNMG 090304N-LU	●	●		9.525	3.18	3.81	0.4
	090308N-LU	●	●		9.525	3.18	3.81	0.8
	CNMG 120404N-LU	●	●	●	12.7	4.76	5.16	0.4
LUW	120408N-LU	●	●	●	12.7	4.76	5.16	0.8
	120412N-LU	●	●	●	12.7	4.76	5.16	1.2
	CNMG 120404N-LUW	●	●		12.7	4.76	5.16	0.4
SU	120408N-LUW	●	●		12.7	4.76	5.16	0.8
	120412N-LUW	●	●		12.7	4.76	5.16	1.2
	CNMG 090304N-SU	●	●		9.525	3.18	3.81	0.4
SEW	090308N-SU	●	●		9.525	3.18	3.81	0.8
	CNMG 09T304N-SU	●	●		9.525	3.97	3.81	0.4
	09T308N-SU	●	●		9.525	3.97	3.81	0.8
SX	CNMG 090404N-SU	●	●		9.525	4.76	3.81	0.4
	090408N-SU	●	●		9.525	4.76	3.81	0.8
	CNMG 120404N-SU	●	●	●	12.7	4.76	5.16	0.4
SE	120408N-SU	●	●	●	12.7	4.76	5.16	0.8
	120412N-SU	●	●	●	12.7	4.76	5.16	1.2
	CNMG 120404N-SE	●	●		12.7	4.76	5.16	0.4
UZ	120408N-SE	●	●		12.7	4.76	5.16	0.8
	120412N-SE	●	●		12.7	4.76	5.16	1.2
	CNMG 120404N-SEW	●	●		12.7	4.76	5.16	0.4
SX	120408N-SEW	●	●		12.7	4.76	5.16	0.8
	120412N-SEW	●	●		12.7	4.76	5.16	1.2
	CNMG 120404N-SX	●	●	●	12.7	4.76	5.16	0.4
GU	120408N-SX	●	●	●	12.7	4.76	5.16	0.8
	120412N-SX	●	●	●	12.7	4.76	5.16	1.2
	CNMG 090304N-GU	●	●	●	9.525	3.18	3.81	0.4
GU	090308N-GU	●	●	●	9.525	3.18	3.81	0.8
	CNMG 120404N-GU	●	●	●	12.7	4.76	5.16	0.4
	120408N-GU	●	●	●	12.7	4.76	5.16	0.8
GU	120412N-GU	●	●	●	12.7	4.76	5.16	1.2
	120416N-GU	●	●	●	12.7	4.76	5.16	1.6
	CNMG 160608N-GU	●	●	●	15.875	6.35	6.35	0.8
GE	160612N-GU	●	●	●	15.875	6.35	6.35	1.2
	160616N-GU	●	●	●	15.875	6.35	6.35	1.6
	CNMG 120404N-GE	●	●		12.7	4.76	5.16	0.4
GE	120408N-GE	●	●		12.7	4.76	5.16	0.8
	120412N-GE	●	●		12.7	4.76	5.16	1.2
	120416N-GE	●	●		12.7	4.76	5.16	1.6
GUW	CNMG 160608N-GE	●	●	●	15.875	6.35	6.35	0.8
	160612N-GE	●	●	●	15.875	6.35	6.35	1.2
	160616N-GE	●	●	●	15.875	6.35	6.35	1.6
GUW	CNMG 190612N-GE	●	●	●	19.05	6.35	7.94	1.2
	190616N-GE	●	●	●	19.05	6.35	7.94	1.6
	CNMG 120408N-GUW	●	●		12.7	4.76	5.16	0.8
UX	120412N-GUW	●	●	●	12.7	4.76	5.16	1.2
	CNMG 160612N-GUW	●	●	●	15.875	6.35	6.35	1.2
	CNMG 090304N-UX	●	●		9.525	3.18	3.81	0.4
UX	090308N-UX	●	●		9.525	3.18	3.81	0.8
	CNMG 120404N-UX	●	●	●	12.7	4.76	5.16	0.4
	120408N-UX	●	●	●	12.7	4.76	5.16	0.8
UX	120412N-UX	●	●	●	12.7	4.76	5.16	1.2
	120416N-UX	●	●	●	12.7	4.76	5.16	1.6
	CNMG 160608N-UX	●	●	●	15.875	6.35	6.35	0.8
UX	160612N-UX	●	●	●	15.875	6.35	6.35	1.2
	160616N-UX	●	●	●	15.875	6.35	6.35	1.6
	CNMG 190608N-UX	●	●	●	19.05	6.35	7.94	0.8
UG	190612N-UX	●	●	●	19.05	6.35	7.94	1.2
	190616N-UX	●	●	●	19.05	6.35	7.94	1.6
	CNMG 090304N-UG	●	●		9.525	3.18	3.81	0.4
UG	090308N-UG	●	●		9.525	3.18	3.81	0.8
	CNMG 09T304N-UG	●	●		9.525	3.97	3.81	0.4
	09T308N-UG	●	●		9.525	3.97	3.81	0.8
UG	CNMG 090404N-UG	●	●		9.525	4.76	3.81	0.4
	090408N-UG	●	●		9.525	4.76	3.81	0.8
	CNMG 120404N-UG	●	●	●	12.7	4.76	5.16	0.4
UG	120408N-UG	●	●	●	12.7	4.76	5.16	0.8
	120412N-UG	●	●	●	12.7	4.76	5.16	1.2
	120416N-UG	●	●	●	12.7	4.76	5.16	1.6
UG	CNMG 160608N-UG	●	●	●	15.875	6.35	6.35	0.8
	160612N-UG	●	●	●	15.875	6.35	6.35	1.2
	160616N-UG	●	●	●	15.875	6.35	6.35	1.6
UP	CNMG 190608N-UG	●	●	●	19.05	6.35	7.94	0.8
	190612N-UG	●	●	●	19.05	6.35	7.94	1.2
	190616N-UG	●	●	●	19.05	6.35	7.94	1.6
UP	CNMG 120404N-UP	●	●		12.7	4.76	5.16	0.4
	120408N-UP	●	●		12.7	4.76	5.16	0.8
	120412N-UP	●	●		12.7	4.76	5.16	1.2
UP	CNMG 190612N-UP	●	●		19.05	6.35	7.94	1.2

●印：標準在庫品、●印：標準在庫品 (拡充品)、無印：受注生産品、：ワイパーチップ  
 ●mark : Standard stock item, ●mark : Standard stocked item(expanded), Blank : Made to order item, : Wiper insert

## ◇ ネガティブ 80° 菱形 (つづき) Negative 80° Diamond Type (Con't)

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
MU	CNMG 120408N-MU	●	●		12.7	4.76	5.16	0.8
	120412N-MU	●	●		12.7	4.76	5.16	1.2
	120416N-MU	●	●		12.7	4.76	5.16	1.6
	CNMG 160608N-MU	●	●	●	15.875	6.35	6.35	0.8
	160612N-MU	●	●	●	15.875	6.35	6.35	1.2
	160616N-MU	●	●	●	15.875	6.35	6.35	1.6
MX	CNMG 190608N-MU	●	●	●	19.05	6.35	7.94	0.8
	190612N-MU	●	●	●	19.05	6.35	7.94	1.2
	190616N-MU	●	●	●	19.05	6.35	7.94	1.6
	CNMG 190624N-MU	●	●	●	25.4	9.52	9.12	2.4
	CNMG 120408N-MX	●	●		12.7	4.76	5.16	0.8
	120412N-MX	●	●		12.7	4.76	5.16	1.2
MX	120416N-MX	●	●		12.7	4.76	5.16	1.6
	CNMG 160608N-MX	●	●	●	15.875	6.35	6.35	0.8
	160612N-MX	●	●	●	15.875	6.35	6.35	1.2
	160616N-MX	●	●	●	15.875	6.35	6.35	1.6
	CNMG 190612N-MX	●	●	●	19.05	6.35	7.94	1.2
	190616N-MX	●	●	●	19.05	6.35	7.94	1.6
UZ	CNMG 120404N-UZ	●	●		12.7	4.76	5.16	0.4
	120408N-UZ	●	●		12.7	4.76	5.16	0.8
	120412N-UZ	●	●		12.7	4.76	5.16	1.2
	120416N-UZ	●	●		12.7	4.76	5.16	1.6
	CNMG 160608N-UZ	●	●	●	15.875	6.35	6.35	0.8
	160612N-UZ	●	●	●	15.875	6.35	6.35	1.2
UZ	160616N-UZ	●	●	●	15.875	6.35	6.35	1.6
	CNMG 190608N-UZ	●	●	●	19.05	6.35	7.94	0.8
	190612N-UZ	●	●	●	19.05	6.35	7.94	1.2
	190616N-UZ	●	●	●	19.05	6.35	7.94	1.6
	CNMG 120404N-GZ	●	●		12.7	4.76	5.16	0.4
	120408N-GZ	●	●		12.7	4.76	5.16	0.8
GZ	120412N-GZ	●	●		12.7	4.76	5.16	1.2
	120416N-GZ	●	●		12.7	4.76	5.16	1.6
	CNMM 120408N-MP	●	●	●	12.7	4.76	5.16	0.8
	120412N-MP	●	●	●	12.7	4.76	5.16	1.2
	120416N-MP	●	●	●	12.7	4.76	5.16	1.6
	CNMM 160608N-MP	●	●	●	15.875	6.35	6.35	0.8
MP	160612N-MP	●	●	●	15.875	6.35	6.35	1.2
	160616N-MP	●	●	●	15.875	6.35	6.35	1.6
	CNMM 190608N-MP	●	●	●	19.05	6.35	7.94	0.8
	190612N-MP	●	●	●	19.05	6.35	7.94	1.2
	190616N-MP	●	●	●	19.05	6.35	7.94	1.6
	190624N-MP	●	●	●	25.4	9.52	9.12	2.4
ME	CNMM 250724N-MP	●	●	●	25.4	7.94	9.12	2.4
	CNMM 250924N-MP	●	●	●	25.4	9.52	9.12	2.4
	CNMG 120408N-ME	●	●		12.7	4.76	5.16	0.8
	120412N-ME	●	●		12.7	4.76	5.16	1.2
	120416N-ME	●	●		12.7	4.76	5.16	1.6
	CNMG 160608N-ME	●	●	●	15.875	6.35	6.35	0.8
ME	160612N-ME	●	●	●	15.875	6.35	6.35	1.2
	160616N-ME	●	●	●	15.875	6.35	6.35	1.6
	CNMG 190612N-ME	●	●	●	19.05	6.35	7.	

◇ ネガティブ 55° 菱形 Negative 55° Diamond Type

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
FL	DNMG 150404N-FL	●	●		12.7	4.76	5.16	0.4
	150408N-FL	●	●					0.8
LU	DNMG 110404N-LU	●	●		9.525	4.76	3.81	0.4
	110408N-LU	●	●					0.8
	DNMG 150402N-LU	●	●					0.2
	150404N-LU	●	●		12.7	4.76	5.16	0.4
SU	150408N-LU	●	●					0.8
	150412N-LU	●	●					1.2
	DNMG 110404N-SU	●	●		9.525	4.76	3.81	0.4
	110408N-SU	●	●					0.8
	110412N-SU	●	●					1.2
	DNMG 150404N-SU	●	●		12.7	4.76	5.16	0.4
SE	150408N-SU	●	●					0.8
	150412N-SU	●	●					1.2
	150604N-SU	●	●		12.7	6.35	5.16	0.4
	150608N-SU	●	●					0.8
SEW	150612N-SU	●	●					1.2
	150616N-SU	●	●					1.6
	DNMG 110408N-SE	●	●		9.525	4.76	3.81	0.8
	150404N-SE	●	●		12.7	4.76	5.16	0.4
	150412N-SE	●	●					1.2
SX	150416N-SE	●	●					1.6
	150604N-SE	●	●		12.7	6.35	5.16	0.4
	150608N-SE	●	●					0.8
	150612N-SE	●	●					1.2
	150616N-SE	●	●					1.6
GU	DNMX 110404N-SEW	●	●	●	9.525	4.76	3.81	0.4*
	110408N-SEW	●	●	●				0.8*
	110412N-SEW	●	●	●				1.2*
	DNMX 150404N-SEW	●	●		12.7	4.76	5.16	0.4*
	150408N-SEW	●	●					0.8*
SX	150412N-SEW	●	●					1.2*
	150604N-SEW	●	●		12.7	6.35	5.16	0.4*
	150608N-SEW	●	●					0.8*
GU	150612N-SEW	●	●					1.2*
	150616N-SEW	●	●					1.6
GU	DNMG 150404N-SX	●	●		12.7	4.76	5.16	0.4
	150408N-SX	●	●					0.8
	150412N-SX	●	●					1.2
	DNMG 110404N-GU	●	●		9.525	4.76	3.81	0.4
	110408N-GU	●	●					0.8
GU	110412N-GU	●	●					1.2
	DNMG 150404N-GU	●	●		12.7	4.76	5.16	0.4
	150408N-GU	●	●					0.8
	150412N-GU	●	●					1.2
UG	150416N-GU	●	●					1.6
	150604N-GU	●	●		12.7	6.35	5.16	0.4
	150608N-GU	●	●					0.8
	150612N-GU	●	●					1.2
UX	150616N-GU	●	●					1.6
	DNMG 110408N-GE	●	●		9.525	4.76	3.81	0.8
	110412N-GE	●	●					1.2
	DNMG 150404N-GE	●	●		12.7	4.76	5.16	0.4
	150408N-GE	●	●					0.8
UG	150412N-GE	●	●					1.2
	150416N-GE	●	●					1.6
	DNMG 150604N-GE	●	●		12.7	6.35	5.16	0.4
	150608N-GE	●	●					0.8
	150612N-GE	●	●					1.2
UX	150616N-GE	●	●					1.6
	DNMG 110408N-UX	●	●		9.525	4.76	3.81	0.8
	150404N-UX	●	●		12.7	4.76	5.16	0.4
	150408N-UX	●	●					0.8
	150412N-UX	●	●					1.2
UG	150604N-UX	●	●		12.7	6.35	5.16	0.4
	150608N-UX	●	●					0.8
	150612N-UX	●	●					1.2
	150616N-UX	●	●					1.6
	DNMG 110404N-UG	●	●		9.525	4.76	3.81	0.4
UP	110408N-UG	●	●					0.8
	150404N-UG	●	●		12.7	4.76	5.16	0.4
	150408N-UG	●	●					0.8
	150412N-UG	●	●					1.2
	150604N-UG	●	●		12.7	6.35	5.16	0.4
UP	150608N-UG	●	●					0.8
	150612N-UG	●	●					1.2
	150616N-UG	●	●					1.6
	DNMG 150404N-UP	●	●		12.7	4.76	5.16	0.4
UP	150408N-UP	●	●					0.8
	150412N-UP	●	●					1.2

◇ ネガティブ 55° 菱形 (つづき) Negative 55° Diamond Type (Con't)

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
MU	DNMG 150408N-MU	●	●		12.7	4.76	5.16	0.8
	150412N-MU	●	●					1.2
	150416N-MU	●	●					1.6
MX	DNMG 150608N-MU	●	●		12.7	6.35	5.16	0.8
	150612N-MU	●	●					1.2
	150616N-MU	●	●					1.6
UZ	DNMG 150408N-MX	●	●		12.7	4.76	5.16	0.8
	150412N-MX	●	●					1.2
	150608N-MX	●	●		12.7	6.35	5.16	0.8
UZ	150612N-MX	●	●					1.2
	DNMG 150404N-UZ	●	●		12.7	4.76	5.16	0.4
	150408N-UZ	●	●					0.8
GZ	150412N-UZ	●	●					1.2
	150608N-UZ	●	●		12.7	6.35	5.16	0.8
	150612N-UZ	●	●					1.2
HM	DNMG 150404N-GZ	●	●		12.7	4.76	5.16	0.4
	150408N-GZ	●	●					0.8
	150412N-GZ	●	●					1.2
MP	DNMG 150608N-GZ	●	●		12.7	6.35	5.16	0.8
	150612N-GZ	●	●					1.2
	150616N-GZ	●	●					1.6
MP	DNMG 150404R-HM	●	●		12.7	4.76	5.16	0.4
	150404L-HM	●	●					0.4
	150408R-HM	●	●					0.8
MP	150408L-HM	●	●					0.8
	DNMM 150404N-MP	●	●		12.7	4.76	5.16	0.4
	150408N-MP	●	●					0.8
ME	150412N-MP	●	●					1.2
	150416N-MP	●	●					1.6
	DNMM 150604N-MP	●	●		12.7	6.35	5.16	0.4
HP	150608N-MP	●	●					0.8
	150612N-MP	●	●					1.2
	150616N-MP	●	●					1.6
ME	DNMG 150408N-ME	●	●		12.7	4.76	5.16	0.8
	150412N-ME	●	●					1.2
	150416N-ME	●	●					1.6
HP	DNMG 150608N-ME	●	●		12.7	6.35	5.16	0.8
	150612N-ME	●	●					1.2
	150616N-ME	●	●					1.6
HP	DNMM 150404N-HP	●	●		12.7	4.76	5.16	0.4
	150408N-HP	●	●					0.8
	150412N-HP	●	●					1.2
	150416N-HP	●	●					1.6
HP	DNMM 150604N-HP	●	●		12.7	6.35	5.16	0.4
	150608N-HP	●	●					0.8
	150612N-HP	●	●					1.2
HP	150616N-HP	●	●					1.6

○ ネガティブ正方形 Negative Square Type

FL	SNMG 120408N-FL	●			12.7	4.76	5.16	0.8
LU	SNMG 120408N-LU	●	●		12.7	4.76	5.16	0.8
	120412N-LU	●	●					1.2
SU	SNMG 120408N-SU	●	●	●	12.7	4.76	5.16	0.8
SE	SNMG 120408N-SE	●	●	●	12.7	4.76	5.16	0.8
	120412N-SE	●	●	●				1.2
SX	SNMG 120408N-SX	●	●	●	12.7	4.76	5.16	0.8
	120412N-SX	●	●	●				1.2
GU	SNMG 090304N-GU		●		9.525	3.18	3.81	0.4
	090308N-GU		●					0.8
	SNMG 120404N-GU	●	●		12.7	4.76	5.16	0.4
	120408N-GU	●	●					0.8
	120412N-GU	●	●					1.2
GU	120416N-GU	●	●					1.6
	SNMG 150608N-GU	●	●	●	15.875	6.35	6.35	0.8
	150612N-GU	●	●	●				1.2
GE	150616N-GU	●	●	●				1.6
	SNMG 120408N-GE	●	●		12.7	4.76	5.16	0.8
	120412N-GE	●	●					1.2
GE	120416N-GE	●	●					1.6
	SNMG 150608N-GE	●	●	●	15.875	6.35	6.35	0.8
	150612N-GE	●	●	●				1.2
GE	150616N-GE	●	●	●				1.6

\* 近似値、ISO規格に準拠しておりません。Approximation, ISO standard non-compliance

●印：標準在庫品、●印：標準在庫品(拡充品)、無印：受注生産品、：ワイパーチップ  
 ●mark: Standard stock item, ●mark: Standard stocked item(expanded), Blank: Made to order item, : Wiper insert

# 刃先交換ISOチップ（ネガティブチップ）

ISO Indexable Inserts (Negative Insert)

## ネガティブ正方形（つづき） Negative Square Type (Con't)

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
UX	SNMG 090308N-UX	●	●	●	9.525	3.18	3.81	0.8
	SNMG 120404N-UX	●	●	●				0.4
	120408N-UX	●	●	●	12.7	4.76	5.16	0.8
	SNMG 120412N-UX	●	●	●				1.2
	120416N-UX	●	●	●				1.6
	SNMG 190612N-UX	●	●	●	19.05	6.35	7.94	1.2
UG	SNMG 090308N-UG	●	●	●	9.525	3.18	3.81	0.8
	SNMG 120408N-UG	●	●	●				0.8
	120412N-UG	●	●	●	12.7	4.76	5.16	1.2
	120416N-UG	●	●	●				1.6
	SNMG 150612N-UG	●	●	●	15.875	6.35	6.35	1.2
	SNMG 190612N-UG	●	●	●	19.05	6.35	7.94	1.2
UG	190616N-UG	●	●	●				1.6
	SNMG 250924N-UG	●	●	●	25.4	9.52	9.12	2.4
UP	SNMG 120404N-UP	●	●	●				0.4
	120408N-UP	●	●	●	12.7	4.76	5.16	0.8
	120412N-UP	●	●	●				1.2
MU	SNMG 120408N-MU	●	●	●				0.8
	120412N-MU	●	●	●	12.7	4.76	5.16	1.2
	120416N-MU	●	●	●				1.6
	SNMG 150608N-MU	●	●	●				0.8
	150612N-MU	●	●	●	15.875	6.35	6.35	1.2
	150616N-MU	●	●	●				1.6
	SNMG 190612N-MU	●	●	●	19.05	6.35	7.94	1.2
	190616N-MU	●	●	●				1.6
	190624N-MU	●	●	●				2.4
	SNMG 250924N-MU	●	●	●	25.4	9.52	9.12	2.4
MX	SNMG 120408N-MX	●	●	●				0.8
	120412N-MX	●	●	●	12.7	4.76	5.16	1.2
	120416N-MX	●	●	●				1.6
	SNMG 150612N-MX	●	●	●	15.875	6.35	6.35	1.2
	150616N-MX	●	●	●				1.6
	SNMG 190612N-MX	●	●	●	19.05	6.35	7.94	1.2
	190616N-MX	●	●	●				1.6
	SNMG 120408N-UZ	●	●	●				0.8
120412N-UZ	●	●	●	12.7	4.76	5.16	1.2	
120416N-UZ	●	●	●				1.6	
UZ	SNMG 150612N-UZ	●	●	●	15.875	6.35	6.35	1.2
	SNMG 190612N-UZ	●	●	●	19.05	6.35	7.94	1.2
	190616N-UZ	●	●	●				1.6
GZ	SNMG 120408N-GZ	●	●	●				0.8
	120412N-GZ	●	●	●	12.7	4.76	5.16	1.2
	120416N-GZ	●	●	●				1.6
HM	SNMG 120408R-HM	●	●	●	12.7	4.76	5.16	0.8
	120408L-HM	●	●	●				0.8
MP	SNMM 120408N-MP	●	●	●				0.8
	120412N-MP	●	●	●	12.7	4.76	5.16	1.2
	120416N-MP	●	●	●				1.6
	120420N-MP	●	●	●				2.0
	SNMM 150612N-MP	●	●	●	15.875	6.35	6.35	1.2
	150616N-MP	●	●	●				1.6
	SNMM 190612N-MP	●	●	●	19.05	6.35	7.94	1.2
	190616N-MP	●	●	●				1.6
	SNMM 250724N-MP	●	●	●	25.4	7.94	9.12	2.4
	SNMM 250924N-MP	●	●	●	25.4	9.52	9.12	2.4
	SNMM 310924N-MP	●	●	●	31.75	9.52	8.8	2.4
ME	SNMG 120408N-ME	●	●	●				0.8
	120412N-ME	●	●	●	12.7	4.76	5.16	1.2
	120416N-ME	●	●	●				1.6
	SNMG 150608N-ME	●	●	●				0.8
	150612N-ME	●	●	●	15.875	6.35	6.35	1.2
	150616N-ME	●	●	●				1.6
	SNMG 190612N-ME	●	●	●	19.05	6.35	7.94	1.2
	190616N-ME	●	●	●				1.6
	190624N-ME	●	●	●				2.4
	SNMG 250924N-ME	●	●	●	25.4	9.52	9.12	2.4
HG	SNMM 120408N-HG	●	●	●				0.8
	120412N-HG	●	●	●	12.7	4.76	5.16	1.2
	120416N-HG	●	●	●				1.6
	SNMM 150616N-HG	●	●	●	15.875	6.35	6.35	1.6
	SNMM 190612N-HG	●	●	●				1.2
	190616N-HG	●	●	●	19.05	6.35	7.94	1.6
	190624N-HG	●	●	●				2.4
HP	SNMM 120408N-HP	●	●	●				0.8
	120412N-HP	●	●	●	12.7	4.76	5.16	1.2
	120416N-HP	●	●	●				1.6
	SNMM 190612N-HP	●	●	●	19.05	6.35	7.94	1.2
	190616N-HP	●	●	●				1.6
	SNMM 250724N-HP	●	●	●	25.4	7.94	9.12	2.4
	SNMM 250924N-HP	●	●	●	25.4	9.52	9.12	2.4
	SNMM 310924N-HP	●	●	●	31.75	9.52	8.8	2.4

## ネガティブ正方形（つづき） Negative Square Type (Con't)

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
HU	SNMM 250724N-HU	●	●	●	25.4	7.94	9.12	2.4
	SNMM 250924N-HU	●	●	●	25.4	9.52	9.12	2.4
	SNMM 310924N-HU	●	●	●	31.75	9.52	8.8	2.4
HW	SNMM 250724N-HW	●	●	●	25.4	7.94	9.12	2.4
	SNMM 250924N-HW	●	●	●	25.4	9.52	9.12	2.4
	SNMM 310924N-HW	●	●	●	31.75	9.52	8.8	2.4
HF	SNMM 190616N-HF	●	●	●	19.05	6.35	7.94	1.6
	190624N-HF	●	●	●				2.4
	SNMM 250724N-HF	●	●	●	25.4	7.94	9.12	2.4
	250732N-HF	●	●	●				3.2
	SNMM 250924N-HF	●	●	●	25.4	9.52	9.12	2.4
	250932N-HF	●	●	●				3.2
SNMM 310924N-HF	●	●	●	31.75	9.52	8.8	2.4	

## ネガティブ三角形 Negative Triangular Type

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
FL	TNMG 160404N-FL	●	●	●	9.525	4.76	3.81	0.4
	160408N-FL	●	●	●				0.8
LU	TNMG 160404N-LU	●	●	●				0.4
	160408N-LU	●	●	●	9.525	4.76	3.81	0.8
	160412N-LU	●	●	●				1.2
SU	TNMG 160404N-SU	●	●	●				0.4
	160408N-SU	●	●	●	9.525	4.76	3.81	0.8
	160412N-SU	●	●	●				1.2
SE	TNMG 160404N-SE	●	●	●				0.4
	160408N-SE	●	●	●	9.525	4.76	3.81	0.8
	160412N-SE	●	●	●				1.2
	TNMG 220404N-SE	●	●	●				0.4
SX	TNMG 160304N-SX	●	●	●	9.525	3.18	3.81	0.8
	160308N-SX	●	●	●				0.8
	TNMG 160404N-SX	●	●	●	9.525	4.76	3.81	0.4
	160408N-SX	●	●	●				0.8
	TNMG 220404N-SX	●	●	●	12.7	4.76	5.16	0.8
GU	TNMG 220412N-SX	●	●	●				1.2
	TNMG 160404N-GU	●	●	●				0.4
	160408N-GU	●	●	●	9.525	4.76	3.81	0.8
	160412N-GU	●	●	●				1.2
	160416N-GU	●	●	●				1.6
	TNMG 220404N-GU	●	●	●				0.4
	220408N-GU	●	●	●	12.7	4.76	5.16	0.8
TNMG 220412N-GU	●	●	●				1.2	
GE	TNMG 160404N-GE	●	●	●				0.4
	160408N-GE	●	●	●	9.525	4.76	3.81	0.8
	160412N-GE	●	●	●				1.2
	TNMG 220408N-GE	●	●	●	12.7	4.76	5.16	0.8
UX	TNMG 220412N-GE	●	●	●				1.2
	TNMG 160404N-UX	●	●	●				0.4
	160408N-UX	●	●	●	9.525	4.76	3.81	0.8
	160412N-UX	●	●	●				1.2
UG	TNMG 220408N-UX	●	●	●	12.7	4.76	5.16	0.8
	220412N-UX	●	●	●				1.2
	TNMG 160404N-UG	●	●	●				0.4
UG	160408N-UG	●	●	●	9.525	4.76	3.81	0.8
	160412N-UG	●	●	●				1.2
	160416N-UG	●	●	●				1.6
UP	TNMG 220408N-UG	●	●	●	12.7	4.76	5.16	0.8
	220412N-UG	●	●	●				1.2
MU	TNMG 160404N-UP	●	●	●				0.4
	160408N-UP	●	●	●	9.525	4.76	3.81	0.8
	160412N-UP	●	●	●				1.2
	TNMG 220408N-UP	●	●	●	12.7	4.76	5.16	0.8
MX	220412N-UP	●	●	●				1.2
	TNMG 160408N-MU	●	●	●	9.525	4.76	3.81	0.8
	160412N-MU	●	●	●				1.2
	TNMG 220408N-MU	●	●	●	12.7	4.76	5.16	1.2
	220412N-MU	●	●	●				1.6
	TNMG 270612N-MU	●	●	●	15.875	6.35	6.35	1.2
MX	270616N-MU	●	●	●				1.6
	TNMG 160408N-MX	●	●	●	9.525	4.76	3.81	0.8
	160412N-MX	●	●	●				

△ ネガティブ三角形 (つづき) Negative Triangular Type (Con't)

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions				
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius	
UZ	TNMG 160404N-UZ	●	●	●	9.525	4.76	3.81	0.4	
	160408N-UZ	●	●	●				0.8	
	160412N-UZ	●	●	●				1.2	
	160416N-UZ	●	●	●				1.6	
	TNMG 160420N-UZ	●	●	●	12.7	4.76	5.16	2.0	
	TNMG 220408N-UZ	●	●	●				0.8	
	220412N-UZ	●	●	●				1.2	
	220416N-UZ	●	●	●				1.6	
	TNMG 270608N-UZ	●	●	●	15.875	6.35	6.35	0.8	
270612N-UZ	●	●	●	1.2					
270616N-UZ	●	●	●	1.6					
GZ	TNMG 160404N-GZ	●	●	●	12.7	4.76	3.81	0.4	
	160408N-GZ	●	●	●				0.8	
	160412N-GZ	●	●	●				1.2	
HM	TNMG 160404R-HM	●	●	●	9.525	4.76	3.81	0.4	
	160404L-HM	●	●	●				0.4	
	160408R-HM	●	●	●				0.8	
	TNMG 160408L-HM	●	●	●	12.7	4.76	5.16	0.8	
	TNMG 220404R-HM	●	●	●				0.4	
	220404L-HM	●	●	●				0.4	
	220408R-HM	●	●	●	0.8				
	220408L-HM	●	●	●	0.8				
MP	TNMM 160404N-MP	●	●	●	9.525	4.76	3.81	0.4	
	160408N-MP	●	●	●				0.8	
	160412N-MP	●	●	●				1.2	
	TNMM 220408N-MP	●	●	●	12.7	4.76	5.16	0.8	
	220412N-MP	●	●	●				1.2	
	220416N-MP	●	●	●				1.6	
	TNMM 270612N-MP	●	●	●				1.2	
	270616N-MP	●	●	●	1.6				
ME	TNMG 160408N-ME	●	●	●	9.525	4.76	3.81	0.8	
	160412N-ME	●	●	●				1.2	
	TNMG 220408N-ME	●	●	●				0.8	
	220412N-ME	●	●	●	12.7	4.76	5.16	1.2	
	220416N-ME	●	●	●	1.6				
HG	TNMM 220408N-HG	●	●	●	12.7	4.76	5.16	0.8	
	220412N-HG	●	●	●				1.2	
	220416N-HG	●	●	●				1.6	
HP	TNMM 160408N-HP	●	●	●	9.525	4.76	3.81	0.8	
	160412N-HP	●	●	●				1.2	
	TNMM 220408N-HP	●	●	●				0.8	
		220412N-HP	●	●	●	12.7	4.76	5.16	1.2
		220416N-HP	●	●	●	1.6			
		TNMM 270612N-HP	●	●	●	1.2			
		270616N-HP	●	●	●	1.6			

◇ ネガティブ 35° 菱形 Negative 35° Diamond Type

FL	VNMG 160404N-FL	●	●	●	9.525	4.76	3.81	0.4
	160408N-FL	●	●	●				0.8
LU	VNMG 160404N-LU	●	●	●	9.525	4.76	3.81	0.4
	160408N-LU	●	●	●				0.8
	160412N-LU	●	●	●				1.2
SU	VNMG 160404N-SU	●	●	●	9.525	4.76	3.81	0.4
	160408N-SU	●	●	●				0.8
SE	VNMG 160404N-SE	●	●	●	9.525	4.76	3.81	0.4
	160408N-SE	●	●	●				0.8
SX	VNMG 160404N-SX	●	●	●	9.525	4.76	3.81	0.4
	160408N-SX	●	●	●				0.8
	VNMG 160404N-GU	●	●	●				9.525
160408N-GU	●	●	●	0.8				
160412N-GU	●	●	●	1.2				
GE	VNMG 160404N-GE	●	●	●	9.525	4.76	3.81	0.4
	160408N-GE	●	●	●				0.8
	160412N-GE	●	●	●				1.2
UX	VNMG 160404N-UX	●	●	●	9.525	4.76	3.81	0.4
	160408N-UX	●	●	●				0.8
	160412N-UX	●	●	●				1.2
UG	VNMG 160404N-UG	●	●	●	9.525	4.76	3.81	0.4
	160408N-UG	●	●	●				0.8
UP	VNMG 160404N-UP	●	●	●	9.525	4.76	3.81	0.4
	160408N-UP	●	●	●				0.8
UZ	VNMG 160404N-UZ	●	●	●	9.525	4.76	3.81	0.4
	160408N-UZ	●	●	●				0.8
	160412N-UZ	●	●	●				1.2
GZ	VNMG 160404N-GZ	●	●	●	9.525	4.76	3.81	0.4
	160408N-GZ	●	●	●				0.8
	160412N-GZ	●	●	●	1.2			













◇ ネガティブ六角形 Negative Trigon Type

形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions						
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius			
FL	WNMG 080404N-FL	●	●	●	12.7	4.76	5.16	0.4			
	080408N-FL	●	●	●				0.8			
LU	WNMG 060404N-LU	●	●	●	9.525	4.76	3.81	0.4			
	060408N-LU	●	●	●				0.8			
	060412N-LU	●	●	●				1.2			
	WNMG 080404N-LU	●	●	●				12.7	4.76	5.16	0.4
080408N-LU	●	●	●	0.8							
	080412N-LU	●	●	●	1.2						
LUW	WNMG 060404N-LUW	●	●	●	9.525	4.76	3.81	0.4			
	060408N-LUW	●	●	●				0.8			
	060412N-LUW	●	●	●				1.2			
	WNMG 080404N-LUW	●	●	●				12.7	4.76	5.16	0.4
080408N-LUW	●	●	●	0.8							
	080412N-LUW	●	●	●	1.2						
SU	WNMG 06T304N-SU	●	●	●	9.525	3.97	3.81	0.4			
	06T308N-SU	●	●	●				0.8			
	WNMG 060404N-SU	●	●	●				9.525	4.76	3.81	0.4
	060408N-SU	●	●	●							0.8
	060412N-SU	●	●	●	1.2						
	WNMG 080404N-SU	●	●	●	12.7	4.76	5.16	0.4			
	080408N-SU	●	●	●				0.8			
	080412N-SU	●	●	●				1.2			
SE	WNMG 080404N-SE	●	●	●	12.7	4.76	5.16	0.4			
	080408N-SE	●	●	●				0.8			
	080412N-SE	●	●	●				1.2			
SEW	WNMG 060404N-SEW	●	●	●	9.525	4.76	3.81	0.4			
	060408N-SEW	●	●	●				0.8			
	WNMG 080404N-SEW	●	●	●				12.7	4.76	5.16	0.4
	080408N-SEW	●	●	●							0.8
	080412N-SEW	●	●	●	1.2						
SX	WNMG 080404N-SX	●	●	●	12.7	4.76	5.16	0.4			
	080408N-SX	●	●	●				0.8			
	080412N-SX	●	●	●				1.2			
GU	WNMG 060404N-GU	●	●	●	9.525	4.76	3.81	0.4			
	060408N-GU	●	●	●				0.8			
	060412N-GU	●	●	●				1.2			
	WNMG 080404N-GU	●	●	●				12.7	4.76	5.16	0.4
080408N-GU	●	●	●	0.8							
	080412N-GU	●	●	●	1.2						
GE	WNMG 060408N-GE	●	●	●	9.525	4.76	3.81	0.8			
	060412N-GE	●	●	●				1.2			
	WNMG 080404N-GE	●	●	●				12.7	4.76	5.16	0.4
	080408N-GE	●	●	●							0.8
	080412N-GE	●	●	●	1.2						
	080416N-GE	●	●	●	1.6						
GUW	WNMG 060408N-GUW	●	●	●	9.525	4.76	3.81	0.8			
	WNMG 080408N-GUW	●	●	●				12.7	4.76	5.16	0.8
	080412N-GUW	●	●	●							1.2
UX	WNMG 080404N-UX	●	●	●	12.7	4.76	5.16	0.4			
	080408N-UX	●	●	●				0.8			
	080412N-UX	●	●	●				1.2			
UG	WNMG 06T304N-UG	●	●	●	9.525	3.97	3.81	0.4			
	06T308N-UG	●	●	●				0.8			
	WNMG 060404N-UG	●	●	●				9.525	4.76	3.81	0.4
	060408N-UG	●	●	●							0.8
	080408N-UG	●	●	●	12.7	4.76	5.16	0.8			
	080412N-UG	●	●	●				1.2			
UP	WNMG 080408N-UP	●	●	●	12.7	4.76	5.16	0.8			
	080412N-UP	●	●	●				1.2			
MU	WNMG 060408N-MU	●	●	●	9.525	4.76	3.81	0.8			
	060412N-MU	●	●	●				1.2			
	WNMG 080408N-MU	●	●	●				12.7	4.76	5.16	0.8
	080412N-MU	●	●	●							1.2
	080416N-MU	●	●	●	1.6						
MX	WNMG 080408N-MX	●	●	●	12.7	4.76	5.16	0.8			
	080412N-MX	●	●	●				1.2			
UZ	WNMG 080404N-UZ	●	●	●	12.7	4.76	5.16	0.4			
	080408N-UZ	●	●	●				0.8			
	080412N-UZ	●	●	●				1.2			
GZ	WNMG 080404N-GZ	●	●	●	12.7	4.76	5.16	0.4			
	080408N-GZ	●	●	●				0.8			
	080412N-GZ	●	●	●	1.2						
ME	WNMG 060408N-ME	●	●	●	9.525	4.76	3.81	0.8			
	060412N-ME	●	●	●				1.2			
	WNMG 080408N-ME	●	●	●				12.7	4.76	5.16	0.8
	080412N-ME	●	●	●							1.2
	080416N-ME	●	●	●	1.6						






●印: 標準在庫品、●印: 標準在庫品 (拡充品)、無印: 受注生産品、ワイドチップ

●mark: Standard stock item, ●mark: Standard stocked item(expanded), Blank: Made to order item, ワイドチップ



### ◇ ポジティブ 80° 菱形 Positive 80° Diamond Type

形状 Appearance	逃げ角 Relief angle	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
			AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
	7°	CCMT 060202N-LU	●	●	●	6.35	2.38	2.8	0.2
		060204N-LU	●	●	●	6.35	2.38	2.8	0.4
		CCMT 09T304N-LU	●	●	●	9.525	3.97	4.4	0.4
	7°	09T308N-LU	●	●	●	9.525	3.97	4.4	0.8
		CCMT 09T304N-LUW	●	●	●	9.525	3.97	4.4	0.4
		09T308N-LUW	●	●	●	9.525	3.97	4.4	0.8
	7°	CCMT 060202N-LB	●	●	●	6.35	2.38	2.8	0.2
		060204N-LB	●	●	●	6.35	2.38	2.8	0.4
		060208N-LB	●	●	●	6.35	2.38	2.8	0.8
		CCMT 09T302N-LB	●	●	●	9.525	3.97	4.4	0.2
		09T304N-LB	●	●	●	9.525	3.97	4.4	0.4
		09T308N-LB	●	●	●	9.525	3.97	4.4	0.8
	7°	CCMT 060202N-SU	●	●	●	6.35	2.38	2.8	0.2
		060204N-SU	●	●	●	6.35	2.38	2.8	0.4
		060208N-SU	●	●	●	6.35	2.38	2.8	0.8
		CCMT 09T302N-SU	●	●	●	9.525	3.97	4.4	0.2
		09T304N-SU	●	●	●	9.525	3.97	4.4	0.4
		09T308N-SU	●	●	●	9.525	3.97	4.4	0.8
	7°	CCMT 120404N-SU	●	●	●	12.7	4.76	5.5	0.4
		120408N-SU	●	●	●	12.7	4.76	5.5	0.8
		CCMT 060204N-SC	●	●	●	6.35	2.38	2.8	0.4
		080304N-SC	●	●	●	7.94	3.18	3.4	0.4
	7°	CCMT 090308N-SC	●	●	●	9.525	3.18	4.4	0.8
		120408N-SC	●	●	●	12.7	4.76	5.5	0.8
		CCMT 09T304N-MU	●	●	●	9.525	3.97	4.4	0.4
	11°	09T308N-MU	●	●	●	9.525	3.97	4.4	0.8
		CPMT 080204N-LU	●	●	●	7.94	2.38	3.4	0.4
		090304N-LU	●	●	●	9.525	3.18	4.4	0.4
	11°	090308N-LU	●	●	●	9.525	3.18	4.4	0.8
		CPMT 090304N-LUW	●	●	●	9.525	3.18	4.4	0.4
		090308N-LUW	●	●	●	9.525	3.18	4.4	0.8
	11°	CPMT 080204N-LB	●	●	●	7.94	2.38	3.4	0.4
		090304N-LB	●	●	●	9.525	3.18	4.4	0.4
		090308N-LB	●	●	●	9.525	3.18	4.4	0.8
	11°	CPMT 080204N-SU	●	●	●	7.94	2.38	3.4	0.4
		080208N-SU	●	●	●	7.94	2.38	3.4	0.8
		CPMT 090304N-SU	●	●	●	9.525	3.18	4.4	0.4
	11°	090308N-SU	●	●	●	9.525	3.18	4.4	0.8
		CPMT 080204N-MU	●	●	●	7.94	2.38	3.4	0.4
		080208N-MU	●	●	●	7.94	2.38	3.4	0.8
	11°	CPMT 090304N-MU	●	●	●	9.525	3.18	4.4	0.4
		090308N-MU	●	●	●	9.525	3.18	4.4	0.8


### ◇ ポジティブ 55° 菱形 Positive 55° Diamond Type

	7°	DCMT 070202N-LU	●	●	●	6.35	2.38	2.8	0.2
		070204N-LU	●	●	●	6.35	2.38	2.8	0.4
		DCMT 11T302N-LU	●	●	●	9.525	3.97	4.4	0.2
	7°	11T304N-LU	●	●	●	9.525	3.97	4.4	0.4
		11T308N-LU	●	●	●	9.525	3.97	4.4	0.8
		DCMT 070202N-LB	●	●	●	6.35	2.38	2.8	0.2
	7°	070204N-LB	●	●	●	6.35	2.38	2.8	0.4
		070208N-LB	●	●	●	6.35	2.38	2.8	0.8
		DCMT 11T302N-LB	●	●	●	9.525	3.97	4.4	0.2
		11T304N-LB	●	●	●	9.525	3.97	4.4	0.4
		11T308N-LB	●	●	●	9.525	3.97	4.4	0.8
		DCMT 070202N-SU	●	●	●	6.35	2.38	2.8	0.2
	7°	070204N-SU	●	●	●	6.35	2.38	2.8	0.4
		070208N-SU	●	●	●	6.35	2.38	2.8	0.8
		DCMT 11T302N-SU	●	●	●	9.525	3.97	4.4	0.2
		11T304N-SU	●	●	●	9.525	3.97	4.4	0.4
		11T308N-SU	●	●	●	9.525	3.97	4.4	0.8
		DCMT 11T304N-MU	●	●	●	9.525	3.97	4.4	0.4
	7°	11T308N-MU	●	●	●	9.525	3.97	4.4	0.8









### ○ ポジティブ円形 Positive Round Type

	7°	RCMT 1003M0N-RX	●	●	●	10	3.18	4.4	—
		1204M0N-RX	●	●	●	12	4.76	4.4	—
		1606M0N-RX	●	●	●	16	6.35	5.0	—
		2006M0N-RX	●	●	●	20	6.35	6.5	—
		2507M0N-RX	●	●	●	25	7.94	7.6	—
	7°	RCMT 1204M0N-RH	●	●	●	12	4.76	4.4	—
		1606M0N-RH	●	●	●	16	6.35	5.0	—
		2006M0N-RH	●	●	●	20	6.35	6.5	—












### ○ ポジティブ円形 (つづき) Positive Round Type (Con't)

	7°	RCMX 1003M0N-RP	●	●	●	10	3.18	3.6	—
		1204M0N-RP	●	●	●	12	4.76	4.2	—
		1606M0N-RP	●	●	●	16	6.35	5.2	—
		2006M0N-RP	●	●	●	20	6.35	6.5	—
		2507M0N-RP	●	●	●	25	7.94	7.2	—
		3209M0N-RP	●	●	●	32	9.52	9.5	—

### ○ ポジティブ正方形 Positive Square Type

	7°	SCMT 09T304N-LU	●	●	●	9.525	3.97	4.4	0.4
		09T308N-LU	●	●	●	9.525	3.97	4.4	0.8
	7°	SCMT 09T304N-LB	●	●	●	9.525	3.97	4.4	0.4
		09T308N-LB	●	●	●	9.525	3.97	4.4	0.8
	7°	SCMT 09T304N-SU	●	●	●	9.525	3.97	4.4	0.4
		09T308N-SU	●	●	●	9.525	3.97	4.4	0.8
		SCMT 120404N-SU	●	●	●	12.7	4.76	5.5	0.4
	7°	120408N-SU	●	●	●	12.7	4.76	5.5	0.8
		SCMT 09T308N-MU	●	●	●	9.525	3.97	4.4	0.8
	11°	SCMT 120408N-MU	●	●	●	12.7	4.76	5.5	0.8
		SPMT 090304N-LU	●	●	●	9.525	3.18	3.4	0.4
	11°	090308N-LU	●	●	●	9.525	3.18	3.4	0.8
		SPMT 090304N-LB	●	●	●	9.525	3.18	3.4	0.4
	11°	090308N-LB	●	●	●	9.525	3.18	3.4	0.8
		SPMT 090304N-SF	●	●	●	9.525	3.18	3.3	0.4
	11°	090308N-SF	●	●	●	9.525	3.18	3.3	0.8

### △ ポジティブ三角形 Positive Triangular Type

	7°	TCMT 110204N-LU	●	●	●	6.35	2.38	2.8	0.4
		110208N-LU	●	●	●	6.35	2.38	2.8	0.8
	7°	TCMT 110204N-LB	●	●	●	6.35	2.38	2.8	0.4
		110208N-LB	●	●	●	6.35	2.38	2.8	0.8
	7°	TCMT 110204N-SU	●	●	●	6.35	2.38	2.8	0.4
		110208N-SU	●	●	●	6.35	2.38	2.8	0.8
		TCMT 16T304N-SU	●	●	●	9.525	3.97	4.3	0.4
	7°	16T308N-SU	●	●	●	9.525	3.97	4.3	0.8
		TPMT 090202N-LU	●	●	●	5.56	2.38	2.8	0.2
		TPMT 090204N-LU	●	●	●	5.56	2.38	2.8	0.4
	11°	TPMT 110304N-LU	●	●	●	6.35	3.18	3.4	0.4
		110308N-LU	●	●	●	6.35	3.18	3.4	0.8
		TPMT 080202N-LB	●	●	●	4.76	2.38	2.4	0.2
	11°	080204N-LB	●	●	●	4.76	2.38	2.4	0.4
		TPMT 090202N-LB	●	●	●	5.56	2.38	2.8	0.2
		090204N-LB	●	●	●	5.56	2.38	2.8	0.4
		TPMT 110302N-LB	●	●	●	6.35	3.18	3.4	0.2
		110304N-LB	●	●	●	6.35	3.18	3.4	0.4
		110308N-LB	●	●	●	6.35	3.18	3.4	0.8
	11°	TPMT 160304N-LB	●	●	●	9.525	3.18	4.4	0.4
		160308N-LB	●	●	●	9.525	3.18	4.4	0.8
		TPMT 160404N-LB	●	●	●	9.525	4.76	4.4	0.4
	11°	160408N-LB	●	●	●	9.525	4.76	4.4	0.8
		TPMT 110302N-SU	●	●	●	6.35	3.18	3.4	0.2
		110304N-SU	●	●	●	6.35	3.18	3.4	0.4
	11°	110308N-SU	●	●	●	6.35	3.18	3.4	0.8
		TPMT 160404N-SU	●	●	●	9.525	4.76	4.4	0.4
		160408N-SU	●	●	●	9.525	4.76	4.4	0.8
	11°	TPMT 110304N-MU	●	●	●	6.35	3.18	3.4	0.4
		110308N-MU	●	●	●	6.35	3.18	3.4	0.8
		TPMT 160404N-MU	●	●	●	9.525	4.76	4.4	0.4
	11°	160408N-MU	●	●	●	9.525	4.76	4.4	0.8
		TPMH 110304N-SF	●	●	●	6.35	3.18	3.3	0.4
		110308N-SF	●	●	●	6.35	3.18	3.3	0.8

◇ **ポジティブ 35° 菱形** Positive 35° Diamond Type

形状 Appearance	逃げ角 Relief angle	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
			AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
LU	5°	VBMT 110304N-LU	●	●	●	6.35	3.18	2.8	0.4
		VBMT 160404N-LU	●	●	●	9.525	4.76	4.4	0.4
		VBMT 160408N-LU	●	●	●	9.525	4.76	4.4	0.8
LB	5°	VBMT 110302N-LB	●	●	●	6.35	3.18	2.8	0.2
		VBMT 110304N-LB	●	●	●	6.35	3.18	2.8	0.4
		VBMT 110308N-LB	●	●	●	6.35	3.18	2.8	0.8
		VBMT 160404N-LB	●	●	●	9.525	4.76	4.4	0.4
		VBMT 160408N-LB	●	●	●	9.525	4.76	4.4	0.8
		VBMT 160412N-LB	●	●	●	9.525	4.76	4.4	1.2
SU	5°	VBMT 160404N-SU	●	●	●	9.525	4.76	4.4	0.4
LU	7°	VCMT 160404N-LU	●	●	●	9.525	4.76	4.4	0.4
		VCMT 160408N-LU	●	●	●	9.525	4.76	4.4	0.8
LB	7°	VCMT 080202N-LB	●	●	●	4.76	2.38	2.3	0.2
		VCMT 080204N-LB	●	●	●	4.76	2.38	2.3	0.4
LB	7°	VCMT 160404N-LB	●	●	●	9.525	4.76	4.4	0.4
		VCMT 160408N-LB	●	●	●	9.525	4.76	4.4	0.8
SU	7°	VCMT 160404N-SU	●	●	●	9.525	4.76	4.4	0.4
		VCMT 160408N-SU	●	●	●	9.525	4.76	4.4	0.8

◇ **ポジティブ六角形** Positive Trigon Type

形状 Appearance	逃げ角 Relief angle	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
			AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
LB	11°	WPMT 110204N-LB	●	●	●	6.35	2.38	2.8	0.4
		WPMT 160308N-LB	●	●	●	9.525	3.18	4.4	0.8

□ **ポジティブ正方形 (穴なし)** Square Type (Without Insert Hole)

形状 Appearance	逃げ角 Relief angle	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
			AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
SF	11°	SPMR 090304N-SF	●	●	●	9.525	3.18	-	0.4
		SPMR 090308N-SF	●	●	●	9.525	3.18	-	0.8
		SPMR 120304N-SF	●	●	●	12.7	3.18	-	0.4
		SPMR 120308N-SF	●	●	●	12.7	3.18	-	0.8
UJ	11°	SPMR 090304N-UJ	●	●	●	9.525	3.18	-	0.4
		SPMR 090308N-UJ	●	●	●	9.525	3.18	-	0.8
		SPMR 120304N-UJ	●	●	●	12.7	3.18	-	0.4
		SPMR 120308N-UJ	●	●	●	12.7	3.18	-	0.8

△ **ポジティブ三角形 (穴なし)** Triangular Type (Without Insert Hole)

形状 Appearance	逃げ角 Relief angle	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions			
			AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	穴径 Hole	ノーズ半径 Nose radius
SF	11°	TPMR 110304N-SF	●	●	●	6.35	3.18	-	0.4
		TPMR 110308N-SF	●	●	●	6.35	3.18	-	0.8
		TPMR 160304N-SF	●	●	●	9.525	3.18	-	0.4
		TPMR 160308N-SF	●	●	●	9.525	3.18	-	0.8
UJ	11°	TPMR 110304N-UJ	●	●	●	6.35	3.18	-	0.4
		TPMR 110308N-UJ	●	●	●	6.35	3.18	-	0.8
		TPMR 160304N-UJ	●	●	●	9.525	3.18	-	0.4
		TPMR 160308N-UJ	●	●	●	9.525	3.18	-	0.8

●印: 標準在庫品、無印: 受注生産品  
●mark: Standard stock item, Blank: Made to order item

Inserts for T-REX, SumiGrip, SumiGrip Jr.

T-REXバイト/つきるくんJr./つきるくん

T-REX チップ (做い加工用)

T-REX Insert (For Profiling)

ネガティブ 頂角 55°  
Negative 55° Apex Angle



形状 Appearance	型番 Cat. No.	在庫 Stock			寸法 (mm) Dimensions		
		AC810P	AC820P	AC830P	内接円 Inscribed circle	厚さ Thickness	ノーズ半径 Nose radius
FL	TRM 551704-FL	●	●	●	10.0	5.0	0.4
	551708-FL	●	●	●	10.0	5.0	0.8
LU	TRM 551704-LU	●	●	●	10.0	5.0	0.4
	551708-LU	●	●	●	10.0	5.0	0.8
	551712-LU	●	●	●	10.0	5.0	1.2
SU	TRM 551704-SU	●	●	●	10.0	5.0	0.4
	551708-SU	●	●	●	10.0	5.0	0.8
	551712-SU	●	●	●	10.0	5.0	1.2
GU	TRM 551704-GU	●	●	●	10.0	5.0	0.4
	551708-GU	●	●	●	10.0	5.0	0.8
	551712-GU	●	●	●	10.0	5.0	1.2

●印: 標準在庫品、無印: 受注生産品  
●mark: Standard stock item, Blank: Made to order item

つきるくん Jr. / つきるくん用チップ (突切り加工用)

SumiGrip, SumiGrip Jr. Insert (For Cut Off)

STFH/STFS/WCFH/WCFS用チップ

Inserts for STFH, STFS, WCFH, WCFS Type

形状 Appearance	型番 Cat. No.	在庫 Stock		
		AC810P	AC820P	AC830P
勝手なし(N) Neutral (N)	WCF□○ (一般鋼用) (General purpose)	●	●	●
右勝手(R) Right Hand (R)	WCF□2T (小径用、低抵抗型) (Small dia., Low cutting force)	●	●	●
左勝手(L) Left Hand (L)	WCF L2T	●	●	●
	WCF L3	●	●	●
	WCF L4	●	●	●
	WCF L5	●	●	●
	WCF N2T	●	●	●
	WCF N3	●	●	●
	WCF N4	●	●	●
	WCF N5	●	●	●
	WCF R2T	●	●	●
	WCF R3	●	●	●
	WCF R4	●	●	●
	WCF R5	●	●	●

●印: 標準在庫品  
●mark: Standard stock item

**GND 型用チップ (溝入れ・突切り用)**  
Inserts for GND (For Grooving, Cut Off)

**GNDS/GNDM/GNDMS/GNDL/GNDLS/GNDI/GNDF/GNDFS用チップ**  
Inserts for GNDS, GNDM, GNDMS, GNDL, GNDLS, GNDI, GNDF, GNDFS Type

形状 Shape	型番 Cat. No.	在庫 Stock		寸法 Dimensions (mm)					包装単位 Package	適用ホルダ Applicable Holder							
		AC830P		W		r <sub>ε</sub>	ℓ	S		GND S	GND M	GND MS	GND L	GND LS	GND I	GND F	GND FS
		●	○	刃幅 Grooving width	公差 Tolerance					溝幅 Grooving width	公差 Tolerance	溝幅 Grooving width	公差 Tolerance	溝幅 Grooving width	公差 Tolerance	溝幅 Grooving width	公差 Tolerance
<b>溝入れ・横送り</b> Grooving / Turning 	<b>MG型</b> MG Type 汎用タイプ General Purpose	GCM N3004-MG	●	●	3.0	±0.03	0.4	21.1	3.8	5	●	●	●	●	●	●	●
		GCM N4008-MG	●	●	4.0	±0.03	0.8	26.4	4.0	●	●	●	●	●	●	●	●
		GCM N5008-MG	●	●	5.0	±0.03	0.8	26.4	4.1	●	●	●	●	●	●	●	●
		GCM N6008-MG	●	●	6.0	±0.03	0.8	26.4	4.5	●	●	●	●	●	●	●	●
		GCM N7008-MG	●	●	7.0	±0.04	0.8	28.75	5.5	●	●	●	●	●	●	●	●
	<b>ML型</b> ML Type 低送りタイプ Low Feed Type w=4.0mm w=5.0mm	GCM N3002-ML	●	●	3.0	±0.03	0.2	21.1	3.8	5	●	●	●	●	●	●	●
		GCM N4004-ML	●	●	4.0	±0.03	0.4	26.4	4.0	●	●	●	●	●	●	●	●
		GCM N5004-ML	●	●	5.0	±0.03	0.4	26.4	4.1	●	●	●	●	●	●	●	●
		GCM N6004-ML	●	●	6.0	±0.03	0.4	26.4	4.5	●	●	●	●	●	●	●	●
		GCM N7004-ML	●	●	7.0	±0.04	0.4	28.75	5.5	●	●	●	●	●	●	●	●
<b>溝入れ・突切り</b> Grooving / Cut-Off 	<b>GG型</b> GG Type 汎用タイプ General Purpose	GCM N2002-GG	●	●	2.0	±0.03	0.2	21.1	3.6	5	●	●	●	●	●	●	
		GCM N3002-GG	●	●	3.0	±0.03	0.2	21.1	3.8	●	●	●	●	●	●	●	
		GCM N4002-GG	●	●	4.0	±0.03	0.2	26.4	4.0	●	●	●	●	●	●	●	
		GCM N5002-GG	●	●	5.0	±0.03	0.2	26.4	4.1	●	●	●	●	●	●	●	
		GCM N6002-GG	●	●	6.0	±0.03	0.2	26.4	4.5	●	●	●	●	●	●	●	
	<b>GL型</b> GL Type 低送りタイプ Low Feed Type	GCM N3004-GG	●	●	3.0	±0.03	0.4	21.1	3.8	5	●	●	●	●	●	●	●
		GCM N4004-GG	●	●	4.0	±0.03	0.4	26.4	4.0	●	●	●	●	●	●	●	
		GCM N5004-GG	●	●	5.0	±0.03	0.4	26.4	4.1	●	●	●	●	●	●	●	
		GCM N6004-GG	●	●	6.0	±0.03	0.4	26.4	4.5	●	●	●	●	●	●	●	
		GCM N7004-GG	●	●	7.0	±0.04	0.4	28.75	5.5	●	●	●	●	●	●	●	
	<b>GF型</b> GF Type 低抵抗タイプ Low Cutting Forces Type	GCM N8004-GG	●	●	8.0	±0.04	0.4	28.75	6.0	●	●	●	●	●	●	●	●
		GCM N2002-GL	●	●	2.0	±0.03	0.2	21.1	3.6	5	●	●	●	●	●	●	●
		GCM N3002-GL	●	●	3.0	±0.03	0.2	21.1	3.8	●	●	●	●	●	●	●	
		GCM N4002-GL	●	●	4.0	±0.03	0.2	26.4	4.0	●	●	●	●	●	●	●	
		GCM N5002-GL	●	●	5.0	±0.03	0.2	26.4	4.1	●	●	●	●	●	●	●	
<b>GF型</b> (New) GF Type (New) 低抵抗タイプ (New) Low Cutting Forces Type (New)	GCM N6002-GL	●	●	6.0	±0.03	0.2	26.4	4.5	●	●	●	●	●	●	●	●	
	GCM N7004-GL	●	●	7.0	±0.04	0.4	28.75	5.5	●	●	●	●	●	●	●	●	
	GCM N8004-GL	●	●	8.0	±0.04	0.4	28.75	6.0	●	●	●	●	●	●	●	●	
	GCM N3002-GF	●	●	3.0	±0.03	0.2	21.1	3.8	5	●	●	●	●	●	●	●	
	GCM N4002-GF	●	●	4.0	±0.03	0.2	26.4	4.0	●	●	●	●	●	●	●	●	
<b>削い</b> Profiling 	<b>RG型</b> RG Type 汎用タイプ General Purpose	GCM N5002-GF	●	●	5.0	±0.03	0.2	26.4	4.1	5	●	●	●	●	●	●	
		GCM N6002-GF	●	●	6.0	±0.03	0.2	26.4	4.5	●	●	●	●	●	●	●	
		GCM N3015-RG	●	●	3.0	±0.03	1.5	21.1	3.8	5	●	●	●	●	●	●	
		GCM N4020-RG	●	●	4.0	±0.03	2.0	26.4	4.0	●	●	●	●	●	●	●	
		GCM N5025-RG	●	●	5.0	±0.03	2.5	27.2	4.1	●	●	●	●	●	●	●	
GCM N6030-RG	●	●	6.0	±0.03	3.0	27.5	4.5	●	●	●	●	●	●	●			
GCM N7035-RG	●	●	7.0	±0.04	3.5	29.05	5.5	●	●	●	●	●	●	●	●		
GCM N8040-RG	●	●	8.0	±0.04	4.0	29.25	6.0	●	●	●	●	●	●	●	●		

形状 Shape	型番 Cat. No.	在庫 Stock		寸法 Dimensions (mm)					包装単位 Package	適用ホルダ Applicable Holder							
		AC830P		W		r <sub>ε</sub>	ℓ	S		GND S	GND M	GND MS	GND L	GND LS	GND I	GND F	GND FS
		R	L	刃幅 Grooving width	公差 Tolerance					溝幅 Grooving width	公差 Tolerance	溝幅 Grooving width	公差 Tolerance	溝幅 Grooving width	公差 Tolerance	溝幅 Grooving width	公差 Tolerance
<b>突切り(勝手付き)</b> Cut-Off (Handed) 	<b>CG型</b> CG Type 汎用タイプ General Purpose	GCM R/L2002-CG-05	●	●	2.0	±0.03	0.2	21.1	3.6	5	●	●	●	●	●	●	
		GCM R/L3002-CG-05	●	●	3.0	±0.03	0.2	21.3	3.8	●	●	●	●	●	●	●	
		GCM R/L4002-CG-05	●	●	4.0	±0.03	0.2	26.7	4.0	●	●	●	●	●	●	●	

●印：標準在庫品 ■印：適用ホルダ在庫あり □印：適用ホルダ受注生産  
●mark: Standard stocked item ■mark: Standard stock item □mark: Made to order item

チップとホルダの刃幅Wは同一の組合わせでご利用ください。  
Please use the same grooving width for the inserts and holder.

◆安全にお使いいただくために◆



- 高温の切りくずが飛散したり長く伸びた切りくずが排出されることがありますので、安全カバーや保護メガネ等の保護具を使用し、防災・防火に十分ご注意ください。
- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.
- 鋭い切れ刃を持っているため取扱いにご注意ください。
- Please handle with care as this product has sharp edges.
- 使用方法を誤ったり、使用条件が不適切な場合、工具破損、飛散を招きますので推奨条件の範囲内でご利用ください。
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.
- 不水溶性の切削液をご使用になる場合は、自動消火装置を設置するなどの対策を講じて頂き、火災にくれぐれもご注意ください。
- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

**住友電気工業株式会社**

ハードメタル事業部 〒664-0016 兵庫県伊丹市昆陽北1-1-1 TEL(072)772-4531  
Sumitomo Electric Industries, Ltd. FAX(072)772-4595  
Hardmetal Division  
Global Marketing Department 1-1-1, Koyakita, Itami, Hyogo 664-0016, Japan TEL+81-(72)-772-4535 FAX+81-(72)-771-0088

TOKYO NAGOYA OSAKA  
直営営業部 東京営業グループ ☎(03)6406-2635 名古屋営業グループ ☎(052)963-2841 大阪営業グループ ☎(06)6221-3600  
流通販売部 東京市販グループ ☎(03)6406-2636 名古屋市販グループ ☎(052)963-2880 大阪市販グループ ☎(06)6221-3700

住友電工ツールネット株式会社 製造元 住友電工ハードメタル株式会社  
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