SUMITOMO
CARBIDE - CBN - DIAMOND

# 鋳鉄旋削用コーティング材種新トリオ

New coated grades for Cast Iron turning

JCTMA 2012-003 ECO PRODUCT（AC405K）
JCTMA 2012-004 ECO PRODUCT（AC415K）
JCTMA 2011-023 ECO PRODUCT（AC420K）

# エースコート AC405K New / AC415K New / AC420K New

第3版

ACE-COAT AC405K/AC415K/AC420K


## 鋳鉄の高速～断続切削まで あらゆる領域をカバー

Covers all range of machining applications from high speed cutting to interrupted cutting.

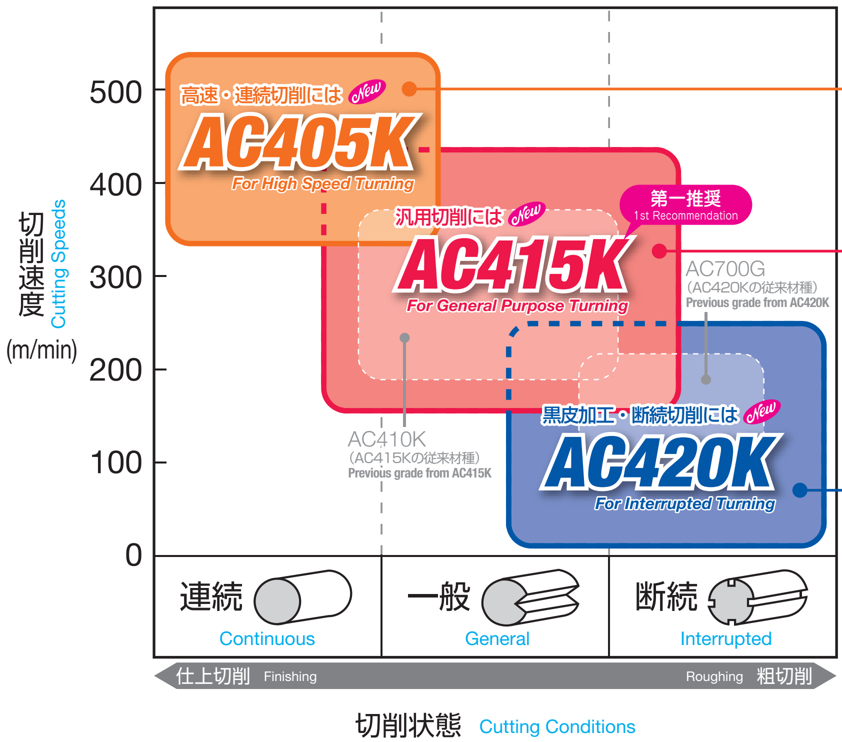
**ご好評のスーパーFFコートと特殊表面処理で従来比1.5倍の長寿命!!**

The Super FF Coat and the special surface treatment provide 1.5 times longer tool life then that of conventional tools.

**New 各材種12アイテム、合計36アイテム拡充!!**

12 items are available for each grade , whtch can be expanded to 36 items in total.

## ■ AC405K/AC415K/AC420Kの適用領域 Application Range




**◯ AC405K New**

優れた耐摩耗性と耐塑性変形性を有し、高速･連続切削に適した材種

This material has excellent wear and deformation resistance. It is suitable for high speed and continuous cutting.

**AC415K New**

幅広い領域で安定、長寿命を達成する、鋳鉄旋削の第一推奨材種

This material is stable in a wide range of applications and achieves long tool life. It is the first recommendation for cast iron turning.

**AC420K New**

優れた耐欠損性により、断続･不安定加工、黒皮加工で抜群の安定性を達成する材種

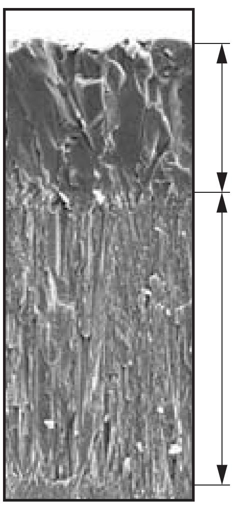
This material is extremely stable and shows good performance against interrupted/unstable cutting or mill-scaled work due to its excellent fracture resistance.

## ■ AC400Kシリーズの特長 Features

**スーパーFF-TiCN膜の更なる微粒･高硬度化で、耐摩耗性を大幅に向上**
**新開発の応力制御技術により、微粒αアルミナ（FF-$Al_2O_3$）膜を強化し、抜群の信頼性を実現**

The finer and harder Super FF TiCN layer has significantly improved wear resistance.
The newly developed stress control technology has strengthened the fine α-Alumina (FF-$Al_2O_3$) layer to provide excellent reliability.

### ●膜構造 Coating Structure



**微粒αアルミナ（FF-$Al_2O_3$）** Fine α-Alumina (FF-$Al_2O_3$)

耐溶着性・耐剥離性アップ！
Improved adhesion and peel-off resistance.

**スーパー FF-TiCN** Super FF-TiCN

超微粒 & 高硬度 TiCN 膜により更に耐摩耗性 ×1.5 倍
Ultra-fine and hardened TiCN layer provides improved wear resistance of 1.5 times the conventional tools.

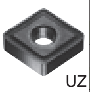
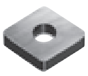
### ●コーティング応力制御技術 Coating stress control technology

| AC400K シリーズコーティング AC400K Series Coating | 従来コーティング Conventional coating |
|---|---|
|  |  |

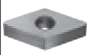
コーティング応力制御技術により、チッピングからの異常損傷を抑制
The coating stress control technology reduces abnormal damages due to chipping.

## ネガティブチップ Negative Insert

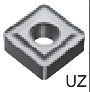
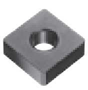
### ネガティブ80°菱形 80° Diamond Type

| 形状 Appearance | 型番 Catalogue No. | 在庫 Stock AC405K New | AC415K New | AC420K New | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|
|  UZ | CNMG 120404N-UZ | ● | ● | ● | ◍ | 12.9 | 12.7 | 4.76 | 0.4 |
| | 120408N-UZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 120412N-UZ | ● | ● | ● | ◍ | | | | 1.2 |
| | 120416N-UZ | ● | ● | ● | ◍ | | | | 1.6 |
| | CNMG 160612N-UZ | ● | ● | ● | ◍ | 16.1 | 15.875 | 6.35 | 1.2 |
| | 160616N-UZ | ● | ● | ● | ◍ | | | | 1.6 |
| | CNMG 190612N-UZ | ● | ● | ● | ◍ | 19.3 | 19.05 | | 1.2 |
| | 190616N-UZ | ● | ● | ● | ◍ | | | | 1.6 |
|  GZ | CNMG 120404N-GZ | ● | ● | ● | ◍ | 12.9 | 12.7 | 4.76 | 0.4 |
| | 120408N-GZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 120412N-GZ | ● | ● | ● | ◍ | | | | 1.2 |
| | 120416N-GZ | ● | ● | ● | ◍ | | | | 1.6 |
| | CNMG 160608N-GZ New | 🔴 | 🔴 | 🔴 | | 16.1 | 15.875 | 6.35 | 0.8 |
| | 160612N-GZ New | 🔴 | 🔴 | 🔴 | | | | | 1.2 |
| | 160616N-GZ New | 🔴 | 🔴 | 🔴 | | | | | 1.6 |
| | CNMG 190612N-GZ New | 🔴 | 🔴 | 🔴 | | 19.3 | 19.05 | 6.35 | 1.2 |
| | 190616N-GZ New | 🔴 | 🔴 | 🔴 | | | | | 1.6 |
|  | CNMA 120404 | ● | ● | ● | ◍ | 12.9 | 12.7 | 4.76 | 0.4 |
| | 120408 | ● | ● | ● | ◍ | | | | 0.8 |
| | 120412 | ● | ● | ● | ◍ | | | | 1.2 |
| | 120416 | ● | ● | ● | ◍ | | | | 1.6 |
| | CNMA 160612 | ● | ● | ● | ◍ | 16.1 | 15.875 | 6.35 | 1.2 |
| | CNMA 190612 | ● | ● | ● | ◍ | 19.3 | 19.05 | | 1.2 |
| | 190616 | ● | ● | ● | ◍ | | | | 1.6 |

### ネガティブ55°菱形 55° Diamond Type

| 形状 Appearance | 型番 Catalogue No. | 在庫 Stock AC405K New | AC415K New | AC420K New | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|
|  UZ | DNMG 150404N-UZ | ● | ● | ● | ◍ | 15.5 | 12.7 | 4.76 | 0.4 |
| | 150408N-UZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 150412N-UZ | ● | ● | ● | ◍ | | | | 1.2 |
| | DNMG 150608N-UZ | ● | ● | ● | ◍ | 15.5 | 12.7 | 6.35 | 0.8 |
| | 150612N-UZ | ● | ● | ● | ◍ | | | | 1.2 |
|  GZ | DNMG 150404N-GZ | ● | ● | ● | ◍ | 15.5 | 12.7 | 4.76 | 0.4 |
| | 150408N-GZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 150412N-GZ | ● | ● | ● | ◍ | | | | 1.2 |
| | DNMG 150608N-GZ | ● | ● | ● | ◍ | 15.5 | 12.7 | 6.35 | 0.8 |
| | 150612N-GZ | ● | ● | ● | ◍ | | | | 1.2 |
|  | DNMA 150404 | ● | ● | ● | ◍ | 15.5 | 12.7 | 4.76 | 0.4 |
| | 150408 | ● | ● | ● | ◍ | | | | 0.8 |
| | 150412 | ● | ● | ● | ◍ | | | | 1.2 |
| | DNMA 150608 | ● | ● | ● | ◍ | 15.5 | 12.7 | 6.35 | 0.8 |
| | 150612 | ● | ● | ● | ◍ | | | | 1.2 |

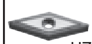
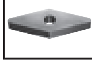
### ネガティブ正方形 Square Type

| 形状 Appearance | 型番 Catalogue No. | 在庫 Stock AC405K New | AC415K New | AC420K New | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|
|  UZ | SNMG 120408N-UZ | ● | ● | ● | ◍ | 12.7 | 12.7 | 4.76 | 0.8 |
| | 120412N-UZ | ● | ● | ● | ◍ | | | | 1.2 |
| | 120416N-UZ | ● | ● | ● | ◍ | | | | 1.6 |
| | SNMG 190612N-UZ | ● | ● | ● | ◍ | 19.05 | 19.05 | 6.35 | 1.2 |
| | 190616N-UZ | ● | ● | ● | ◍ | | | | 1.6 |
|  GZ | SNMG 120408N-GZ | ● | ● | ● | ◍ | 12.7 | 12.7 | 4.76 | 0.8 |
| | 120412N-GZ | ● | ● | ● | ◍ | | | | 1.2 |
| | 120416N-GZ | ● | ● | ● | ◍ | | | | 1.6 |
| | SNMG 150612N-GZ New | 🔴 | 🔴 | 🔴 | | 15.875 | 15.875 | 6.35 | 1.2 |
| | 150616N-GZ New | 🔴 | 🔴 | 🔴 | | | | | 1.6 |
| | SNMG 190612N-GZ New | 🔴 | 🔴 | 🔴 | | 19.05 | 19.05 | 6.35 | 1.2 |
| | 190616N-GZ New | 🔴 | 🔴 | 🔴 | | | | | 1.6 |
|  | SNMA 120404 | ● | ● | ● | ◍ | 12.7 | 12.7 | 4.76 | 0.4 |
| | 120408 | ● | ● | ● | ◍ | | | | 0.8 |
| | 120412 | ● | ● | ● | ◍ | | | | 1.2 |
| | 120416 | ● | ● | ● | ◍ | | | | 1.6 |
| | 120420 | ● | ● | ● | ◍ | | | | 2.0 |

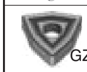
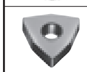
### ネガティブ三角形 Triangular Type

| 形状 Appearance | 型番 Catalogue No. | 在庫 Stock AC405K New | AC415K New | AC420K New | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|
|  UZ | TNMG 160404N-UZ | ● | ● | ● | ◍ | 16.5 | 9.525 | 4.76 | 0.4 |
| | 160408N-UZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 160412N-UZ | ● | ● | ● | ◍ | | | | 1.2 |
| | 160416N-UZ | ● | ● | ● | ◍ | | | | 1.6 |
| | 160420N-UZ | ● | ● | ● | ◍ | | | | 2.0 |
| | TNMG 220408N-UZ | ● | ● | ● | ◍ | 22.0 | 12.7 | 4.76 | 0.8 |
| | 220412N-UZ | ● | ● | ● | ◍ | | | | 1.2 |
| | 220416N-UZ | ● | ● | ● | ◍ | | | | 1.6 |
|  GZ | TNMG 160404N-GZ | ● | ● | ● | ◍ | 16.5 | 9.525 | 4.76 | 0.4 |
| | 160408N-GZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 160412N-GZ | ● | ● | ● | ◍ | | | | 1.2 |
| | TNMG 220408N-GZ New | 🔴 | 🔴 | 🔴 | | 22.0 | 12.7 | 4.76 | 0.8 |
| | 220412N-GZ New | 🔴 | 🔴 | 🔴 | | | | | 1.2 |
| | 220416N-GZ New | 🔴 | 🔴 | 🔴 | | | | | 1.6 |
|  | TNMA 160404 | ● | ● | ● | ◍ | 16.5 | 9.525 | 4.76 | 0.4 |
| | 160408 | ● | ● | ● | ◍ | | | | 0.8 |
| | 160412 | ● | ● | ● | ◍ | | | | 1.2 |
| | 160416 | ● | ● | ● | ◍ | | | | 1.6 |
| | 160420 | ● | ● | ● | ◍ | | | | 2.0 |
| | TNMA 220408 | ● | ● | ● | ◍ | 22.0 | 12.7 | 4.76 | 0.8 |
| | 220412 | ● | ● | ● | ◍ | | | | 1.2 |
| | 220416 | ● | ● | ● | ◍ | | | | 1.6 |

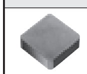
### ネガティブ35°菱形 35° Diamond Type

| 形状 Appearance | 型番 Catalogue No. | 在庫 Stock AC405K New | AC415K New | AC420K New | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|
|  UZ | VNMG 160404N-UZ | ● | ● | ● | ◍ | 16.6 | 9.525 | 4.76 | 0.4 |
| | 160408N-UZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 160412N-UZ | ● | ● | ● | ◍ | | | | 1.2 |
|  GZ | VNMG 160404N-GZ | ● | ● | ● | ◍ | 16.6 | 9.525 | 4.76 | 0.4 |
| | 160408N-GZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 160412N-GZ | ● | ● | ● | ◍ | | | | 1.2 |
|  | VNMA 160404 | ● | ● | ● | ◍ | 16.6 | 9.525 | 4.76 | 0.4 |
| | 160408 | ● | ● | ● | ◍ | | | | 0.8 |
| | 160412 | ● | ● | ● | ◍ | | | | 1.2 |

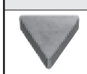
### ネガティブ六角形 Trigon Type

| 形状 Appearance | 型番 Catalogue No. | 在庫 Stock AC405K New | AC415K New | AC420K New | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|
|  UZ | WNMG 080404N-UZ | ● | ● | ● | ◍ | 8.7 | 12.7 | 4.76 | 0.4 |
| | 080408N-UZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 080412N-UZ | ● | ● | ● | ◍ | | | | 1.2 |
|  GZ | WNMG 080404N-GZ | ● | ● | ● | ◍ | 8.7 | 12.7 | 4.76 | 0.4 |
| | 080408N-GZ | ● | ● | ● | ◍ | | | | 0.8 |
| | 080412N-GZ | ● | ● | ● | ◍ | | | | 1.2 |
|  | WNMA 080408 | ● | ● | ● | ◍ | 8.7 | 12.7 | 4.76 | 0.8 |
| | 080412 | ● | ● | ● | ◍ | | | | 1.2 |
| | 080416 | ● | ● | ● | ◍ | | | | 1.6 |

### ネガティブ正方形（穴なし） Square Type (without Insert Hole)

| 形状 Appearance | 型番 Catalogue No. | 在庫 Stock AC405K New | AC415K New | AC420K New | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|
|  | SNMN 120408 | ● | ● | ● | ◍ | 12.7 | 12.7 | 4.76 | 0.8 |
| | 120412 | ● | ● | ● | ◍ | | | | 1.2 |
| | 120416 | ● | ● | ● | ◍ | | | | 1.6 |

### ネガティブ三角形（穴なし） Triangular Type (without Insert Hole)

| 形状 Appearance | 型番 Catalogue No. | 在庫 Stock AC405K New | AC415K New | AC420K New | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|
|  | TNMN 160408 | ● | ● | ● | ◍ | 16.5 | 9.525 | 4.76 | 0.8 |
| | 160412 | ● | ● | ● | ◍ | | | | 1.2 |
| | 160416 | ● | ● | ● | ◍ | | | | 1.6 |

●印：標準在庫品　🔴印：標準在庫品（拡充品）　◍印：将来、AC405K/AC415Kに置換え予定　無印：受注生産品

● mark : Standard stocked item, 🔴 mark : Standard stocked item(expansion item) ◍ mark : Scheduled to be replaced as follows: AC410K by AC405K and AC415K, Blank : Made to order

# ポジティブチップ Positive Insert

## ポジティブ80° 菱形 80° Diamond Type

| 形状 Appearance | 逃げ角 Relief angle | 型番 Catalogue No. | 在庫 Stock AC405K (New) | AC415K (New) | AC420K (New) | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|---|
| MU | 7° | CCMT 09T304N-MU | ● | ● | ● | ● | 9.7 | 9.525 | 3.97 | 0.4 |
| | | 09T308N-MU | ● | ● | ● | ● | | | | 0.8 |
| | | | | | | | | | | |
| | | CCMW 060204 | ● | ● | ● | ● | 6.4 | 6.35 | 2.38 | 0.4 |
| | | CCMW 09T304 | ● | ● | ● | ● | 9.7 | 9.525 | 3.97 | 0.4 |
| | | 09T308 | ● | ● | ● | ● | | | | 0.8 |
| MU | 11° | CPMT 080204N-MU | ● | ● | ● | ● | 8.0 | 7.94 | 2.38 | 0.4 |
| | | 080208N-MU | ● | ● | ● | ● | | | | 0.8 |
| | | CPMT 090304N-MU | ● | ● | ● | ● | 9.7 | 9.525 | 3.18 | 0.4 |
| | | 090308N-MU | ● | ● | ● | ● | | | | 0.8 |
| | | CPMW 080204 | ● | ● | ● | ● | 8.0 | 7.94 | 2.38 | 0.4 |
| | | 080208 | ● | ● | ● | ● | | | | 0.8 |
| | | CPMW 090304 | ● | ● | ● | ● | 9.7 | 9.525 | 3.18 | 0.4 |
| | | 090308 | ● | ● | ● | ● | | | | 0.8 |

## ポジティブ55° 菱形 55° Diamond Type

| 形状 Appearance | 逃げ角 Relief angle | 型番 Catalogue No. | 在庫 Stock AC405K (New) | AC415K (New) | AC420K (New) | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|---|
| MU | 7° | DCMT 11T304N-MU | ● | ● | ● | ● | 11.6 | 9.525 | 3.97 | 0.4 |
| | | 11T308N-MU | ● | ● | ● | ● | | | | 0.8 |
| | | | | | | | | | | |
| | | DCMW 070204 | ● | ● | ● | ● | 7.7 | 6.35 | 2.38 | 0.4 |
| | | 070208 | ● | ● | ● | ● | | | | 0.8 |
| | | DCMW 11T304 | ● | ● | ● | ● | 11.6 | 9.525 | 3.97 | 0.4 |
| | | 11T308 | ● | ● | ● | ● | | | | 0.8 |

## ポジティブ円形 Round Type

| 形状 Appearance | 逃げ角 Relief angle | 型番 Catalogue No. | 在庫 Stock AC405K (New) | AC415K (New) | AC420K (New) | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness |
|---|---|---|---|---|---|---|---|---|---|
| RP | 7° | RCMX 1003M0N-RP | ● | ● | ● | ● | 10.0 | 10.0 | 3.18 |
| | | RCMX 1204M0N-RP | ● | ● | ● | ● | 12.0 | 12.0 | 4.76 |
| | | RCMX 1606M0N-RP | ● | ● | ● | ● | 16.0 | 16.0 | 6.35 |

## ポジティブ正方形 Square Type

| 形状 Appearance | 逃げ角 Relief angle | 型番 Catalogue No. | 在庫 Stock AC405K (New) | AC415K (New) | AC420K (New) | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|---|
| MU | 7° | SCMT 09T308N-MU | ● | ● | ● | ● | 9.525 | 9.525 | 3.97 | 0.8 |
| | | SCMT 120408N-MU | ● | ● | ● | ● | 12.7 | 12.7 | 4.76 | 0.8 |
| | | | | | | | | | | |
| | | SCMW 09T308 | ● | ● | ● | ● | 9.525 | 9.525 | 3.97 | 0.8 |
| | | SCMW 120408 | ● | ● | ● | ● | 12.7 | 12.7 | 4.76 | 0.8 |
| | | 120412 | ● | ● | ● | | | | | 1.2 |

## ポジティブ三角形 Triangular Type

| 形状 Appearance | 逃げ角 Relief angle | 型番 Catalogue No. | 在庫 Stock AC405K (New) | AC415K (New) | AC420K (New) | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|---|
| | 7° | TCMW 110204 | ● | ● | ● | ● | 11.0 | 6.35 | 2.38 | 0.4 |
| | | 110208 | ● | ● | ● | ● | | | | 0.8 |
| | | TCMW 16T304 | ● | ● | ● | ● | 16.5 | 9.525 | 3.97 | 0.4 |
| | | 16T308 | ● | ● | ● | ● | | | | 0.8 |
| | | 16T312 | ● | ● | ● | | | | | 1.2 |
| MU | 11° | TPMT 110304N-MU | ● | ● | ● | ● | 11.0 | 6.35 | 3.18 | 0.4 |
| | | 110308N-MU | ● | ● | ● | ● | | | | 0.8 |
| | | | | | | | | | | |
| MU | 11° | TPMT 160404N-MU | ● | ● | ● | ● | 16.5 | 9.525 | 4.76 | 0.4 |
| | | 160408N-MU | ● | ● | ● | ● | | | | 0.8 |

## ポジティブ35° 菱形 35° Diamond Type

| 形状 Appearance | 逃げ角 Relief angle | 型番 Catalogue No. | 在庫 Stock AC405K (New) | AC415K (New) | AC420K (New) | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5° | VBMW 160404 | ● | ● | ● | ● | 16.6 | 9.525 | 4.76 | 0.4 |
| | | 160408 | ● | ● | ● | ● | | | | 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 Catalogue No. | 在庫 Stock AC405K (New) | AC415K (New) | AC420K (New) | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11° | SPMN 090304 | ● | ● | ● | ● | 9.525 | 9.525 | 3.18 | 0.4 |
| | | 090308 | ● | ● | ● | ● | | | | 0.8 |
| | | SPMN 120304 | ● | ● | ● | ● | 12.7 | 12.7 | 3.18 | 0.4 |
| | | 120308 | ● | ● | ● | ● | | | | 0.8 |
| | | 120312 | ● | ● | ● | ● | | | | 1.2 |

## ポジティブ三角形 (穴なし) Triangular Type (without Insert Hole)

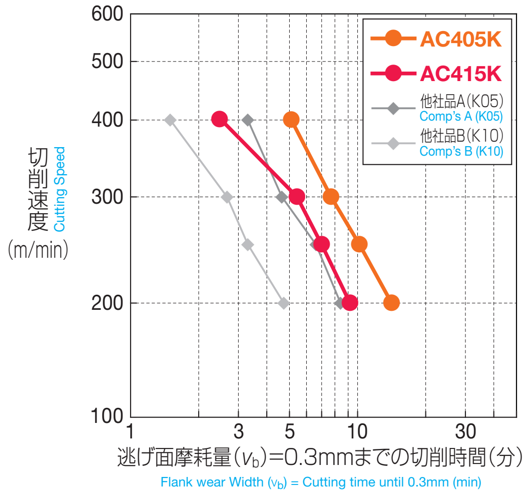
| 形状 Appearance | 逃げ角 Relief angle | 型番 Catalogue No. | 在庫 Stock AC405K (New) | AC415K (New) | AC420K (New) | AC410K | 寸法 (mm) Dimensions 切刃長 Cutting edge length | 内接円 Inscribed circle | 厚さ Thickness | ノーズ半径 Nose radius |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11° | TPMN 110304 | ● | ● | ● | ● | 11.0 | 6.35 | 3.18 | 0.4 |
| | | 110308 | ● | ● | ● | ● | | | | 0.8 |
| | | TPMN 160304 | ● | ● | ● | ● | 16.5 | 9.525 | 3.18 | 0.4 |
| | | 160308 | ● | ● | ● | ● | | | | 0.8 |
| | | 160312 | ● | ● | ● | ● | | | | 1.2 |

●印：標準在庫品　●印：標準在庫品（拡充品）　●印：将来、AC405K/AC415Kに置換え予定　無印：受注生産品

●mark : Standard stocked item, ●mark : Standard stocked item(expansion item) ●mark : Scheduled to be replaced as follows: AC410K by AC405K and AC415K, Blank : Made to order

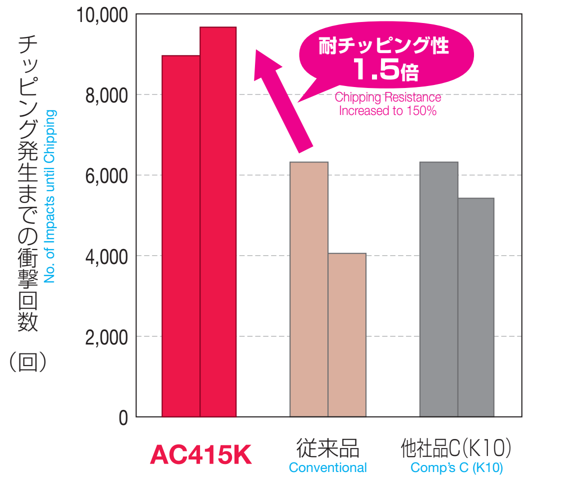
## 切削性能 Cutting Performance

### AC405K/AC415Kの耐摩耗性 Wear Resistance of AC405K/AC415K




被削材：FCD450(丸棒)　チップ：CNMG120408
Work material　Insert
切削条件：$v_c$=200～400m/min, $f$=0.30mm/rev, $a_p$=1.5mm, Wet
Cutting condition

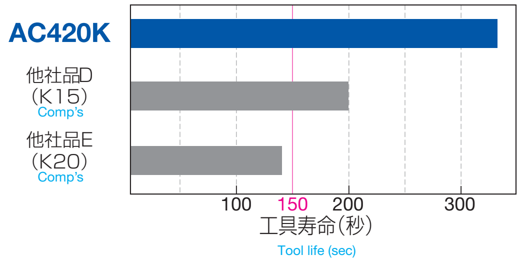
### AC415Kの耐チッピング性 Chipping Resistance of AC415K




被削材：FCD450　チップ：CNMG120408
Work material　Insert
切削条件：$v_c$=300m/min, $f$=0.25mm/rev, $a_p$=1.5mm, Wet
Cutting condition

### AC420Kの耐欠損性 Fracture resistance of AC420K

FCD450 溝材（強断続加速試験） FCD450 Grooved (Heavy Interrupted Acceleration Test)

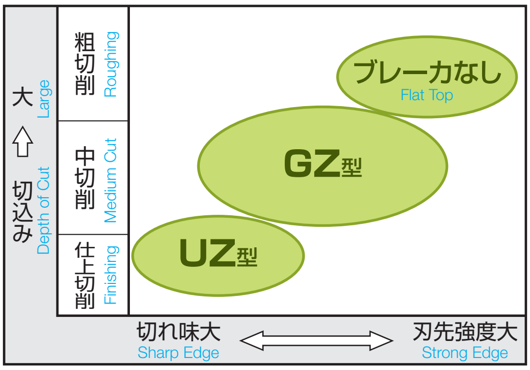



刃先損傷状態（150秒時点） Edge Comparison (150 sec)

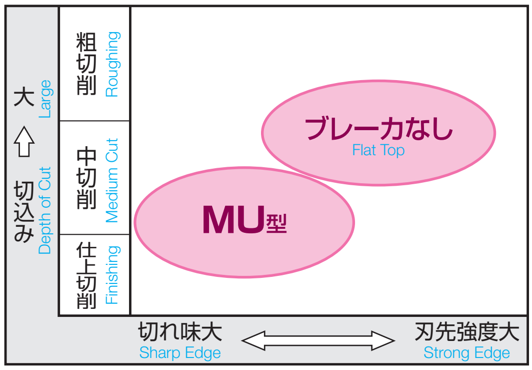

被削材：FCD450　ホルダ：PCLNR2525-43　チップ：CNMG120408
Work material　Holder　Insert
切削条件：$v_c$=350m/min, $f$=0.25mm/rev, $a_p$=1.5mm, Wet
Cutting condition

## ブレーカ選択ガイド Chipbreaker Selection

### ネガティブタイプ Negative Type




### ポジティブタイプ Positive Type




## 推奨条件 Recommended Cutting Conditions

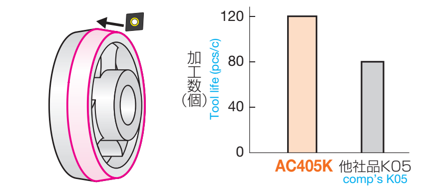
（下限値 - **推奨値** - 上限値）
(min.-optimum-max.)

| 用途 Grade | 切削状態 Grade | 材種 Grade | ブレーカ Breaker | FC(普通鋳鉄) Gray Cast Iron 切削速度 $v_c$(m/min) Cutting Speed | FC(普通鋳鉄) Gray Cast Iron 送り量 $f$(mm/rev) Feed rate | FCD(ダクタイル鋳鉄) Ductile Cast Iron 切削速度 $v_c$(m/min) Cutting Speed | FCD(ダクタイル鋳鉄) Ductile Cast Iron 送り量 $f$(mm/rev) Feed rate |
|---|---|---|---|---|---|---|---|
| 仕上げ切削 Finishing | 連続 Continuous | AC405K | UZ | 230 - **400** - 570 | 0.1 - **0.25** - 0.4 | 170 - **350** - 500 | 0.1 - **0.25** - 0.4 |
| | 一般 General | AC415K | UZ | 200 - **350** - 500 | 0.1 - **0.25** - 0.4 | 150 - **300** - 450 | 0.1 - **0.25** - 0.4 |
| | 断続 Interrupted | AC415K | GZ | 150 - **275** - 400 | 0.1 - **0.30** - 0.5 | 150 - **250** - 350 | 0.1 - **0.30** - 0.5 |
| 中切削 Medium Cut | 連続 Continuous | AC405K | GZ | 170 - **315** - 460 | 0.1 - **0.30** - 0.5 | 170 - **285** - 400 | 0.1 - **0.30** - 0.5 |
| | 一般 General | AC415K | GZ | 150 - **275** - 400 | 0.1 - **0.30** - 0.5 | 150 - **250** - 350 | 0.1 - **0.30** - 0.5 |
| | 断続 Interrupted | AC420K | GZ | 100 - **200** - 300 | 0.1 - **0.30** - 0.5 | 80 - **150** - 220 | 0.1 - **0.30** - 0.5 |
| 粗(黒皮)切削 Roughing Coasted work cutting | 連続 Continuous | AC415K | GZ | 150 - **275** - 400 | 0.1 - **0.30** - 0.5 | 150 - **250** - 350 | 0.1 - **0.30** - 0.5 |
| | 一般 General | AC420K | GZ | 100 - **200** - 300 | 0.1 - **0.30** - 0.5 | 80 - **150** - 220 | 0.1 - **0.30** - 0.5 |
| | 断続 Interrupted | AC420K | なし | 100 - **175** - 250 | 0.2 - **0.35** - 0.6 | 80 - **130** - 180 | 0.2 - **0.35** - 0.6 |

# 使用実例 Application Examples

## AC405Kの使用実例 Application examples of AC405K

### ●FC200 コンプレッサ部品(プーリー) Compressor part

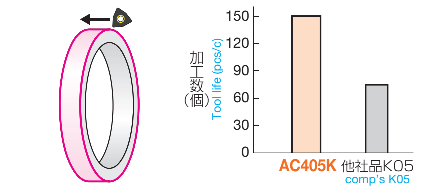



使用工具：CNMG120412N-GZ（AC405K）
Insert
切削条件：$v_c$=500m/min, $f$=0.25mm/rev
Cutting Condition $a_p$=〜2.0mm Dry

**AC405Kは耐摩耗性の向上により、1.5倍の長寿命化を達成**

AC405K has improved the wear resistance to achieve 1.5 times the tool life of conventional tools.

### ●FCD650 リング Ring

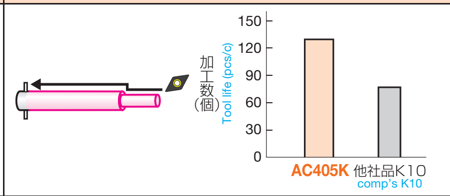



使用工具：WNMG080408N-UZ（AC405K）
Insert
切削条件：$v_c$=340m/min, $f$=0.3mm/rev
Cutting Condition $a_p$=0.2mm Wet

**AC405Kはチッピングの抑制と耐摩耗性の向上により、寿命不安定を解消し、2.5倍の安定長寿命化を達成**

AC405K has reduced chipping and improved wear resistance for stable tool life. It has achieved longer and stable tool life of 2.5 times the conventional tools.

### ●FCD700 インプットシャフト Shaft



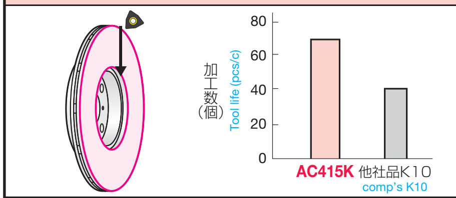

使用工具：DNMG150408N-UZ（AC405K）
Insert
切削条件：$v_c$=200m/min, $f$=0.45mm/rev
Cutting Condition $a_p$=0.25〜0.40mm Wet

**AC405Kはチッピングの抑制と耐摩耗性の向上により、1.8倍の長寿命化を達成**

AC405K has reduced chipping and improved wear resistance to achieve 1.8 times tool life of the conventional tools.

## AC415Kの使用実例 Application examples of AC415K

### ●FC200 ブレーキディスク Breake disc

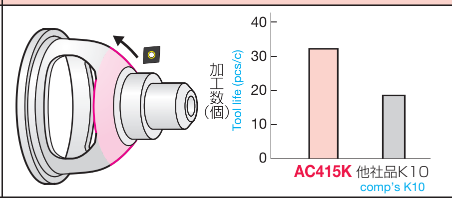



使用工具：WNMA080412（AC415K）
Insert
切削条件：$v_c$=450m/min, $f$=0.25mm/rev
Cutting Condition $a_p$=〜1.5mm Dry

**AC415Kは耐摩耗性の向上により、1.4倍の長寿命化を達成**

AC415K has improved wear resistance to achieve 1.4 times tool life of the conventional tools.

### ●FCD450 デフケース Differential gear case

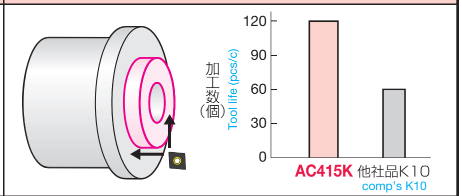



使用工具：CNMG120408N-GZ（AC415K）
Insert
切削条件：$v_c$=240m/min, $f$=0.3mm/rev
Cutting Condition $a_p$=2.0〜3.0mm Wet

**AC415Kはチッピングの抑制と耐摩耗性の向上により、寿命不安定を解消し、1.6倍の安定長寿命化を達成**

AC415K has reduced chipping and improved wear resistance for stable tool life. It has achieved longer and stable tool life of 1.6 times the conventional tools.

### ●FCD500 ハブ Hub



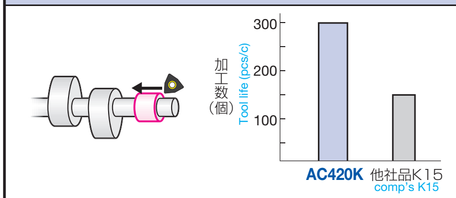

使用工具：CNMA120408（AC415K）
Insert
切削条件：$v_c$=230m/min, $f$=0.2〜0.3mm/rev
Cutting Condition $a_p$=1.5〜2.0mm Wet

**AC415Kは一部断続黒皮加工において、耐チッピング性、耐摩耗性の向上により2倍寿命を達成**

AC415K has achieved 2 times tool life by improving chipping resistance and wear resistance in some interrupted cutting and mill-scaled work.

## AC420Kの使用実例 Application examples of AC420K

### ●FCD700 カムシャフト Cum shaft

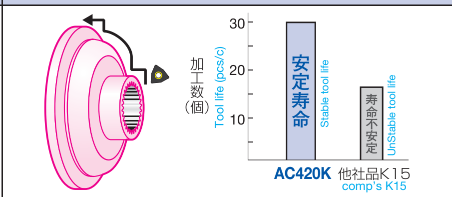



使用工具：WNMA080408（AC420K）
Insert
切削条件：$v_c$=100~250m/min, $f$=0.15~0.30mm/rev
Cutting Condition $a_p$=1.0mm Wet

**AC420Kは高硬度・黒皮切削で、2倍の長寿命**

200% increase in tool life using AC420K -application roughing OD turning of high hardness and casted work.

### ●FCD450 ドライブスプロケット Drive sprocket

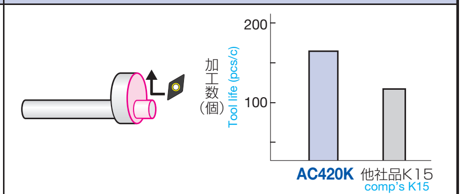



使用工具：WNMA080412（AC420K）
Insert
切削条件：$v_c$=200m/min, $f$=0.32mm/rev
Cutting Condition $a_p$=3.0mm Wet

**AC420Kは黒皮の不安定加工で、安定した2倍の長寿命**

200% increase in tool life using AC420K -application unstable and casted work cutting.

### ●FCD500 シャフト Shaft




使用工具：DNMG150412N-GZ（AC420K）
Insert
切削条件：$v_c$=100~270m/min, $f$=0.15~0.40mm/rev
Cutting Condition $a_p$=1.5mm Wet

**AC420Kは強断続加工において、安定した1.3倍の長寿命**

130% increase in tool life using AC420K -application hardly interrupted turning.

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