

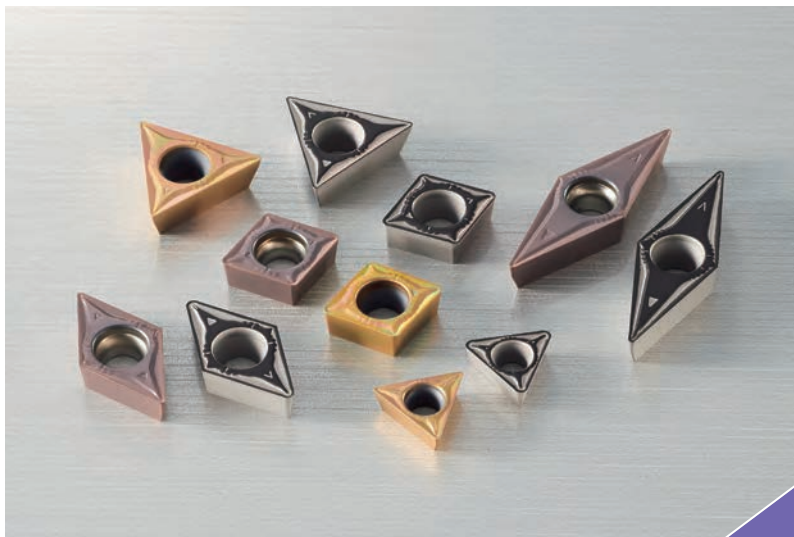
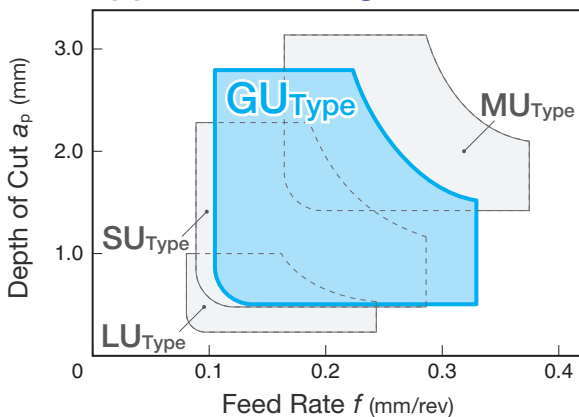
Positive M-class chipbreaker for general turning

GU_{Type} Chipbreaker

Highly Recommended Versatile Positive Chipbreaker



Positive GU Type Chipbreaker Application Range



GU Type Chipbreaker

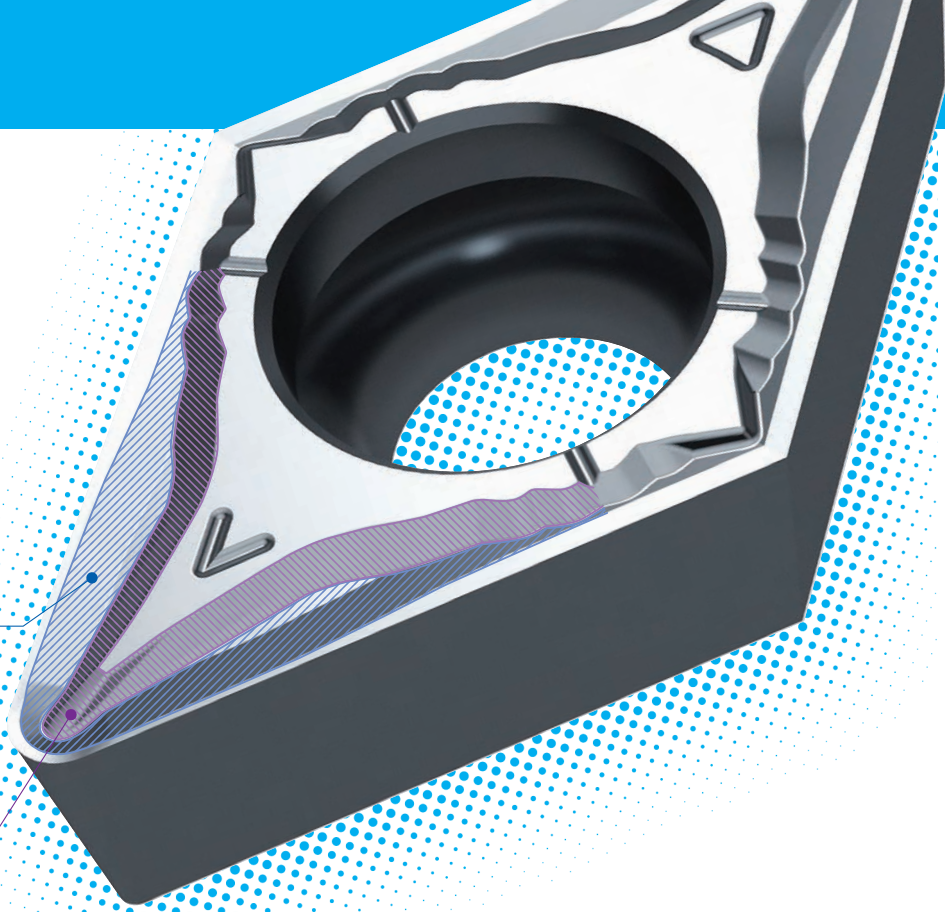
GU^{Positive} type Chipbreaker

Excellent Chip Control Performance

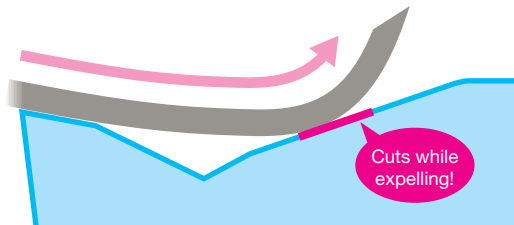
Wide chip pocket supports various cutting conditions

Low Resistance Suppresses Chatter

Protrusion design gives control while expelling chips



Wide restraining face enables consistent chip control for light to medium cutting. Discharges chips well under high feed conditions and suppresses build-up.



Achieves stable machining with both versatility and low resistance

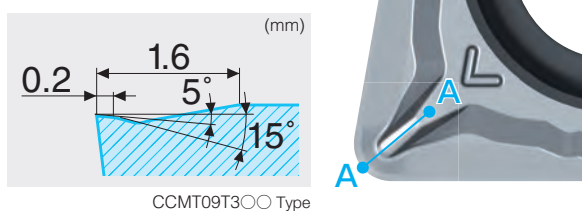
Suppresses chip build-up at high feed rates for ideal chip control



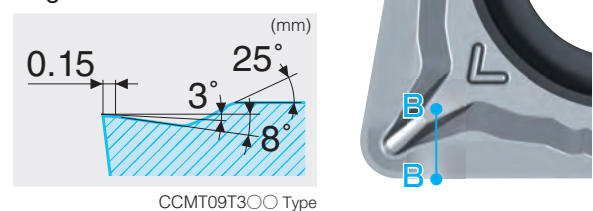
Improved Fracture Resistance

Double rake shape with excellent sharpness and hardness

Corner A-A Cross Section



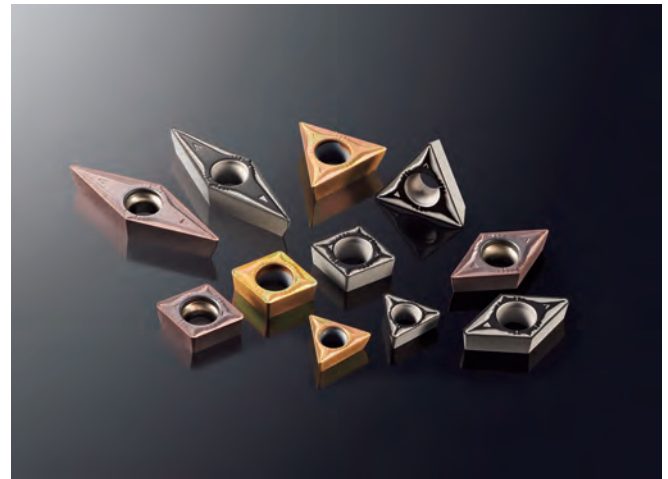
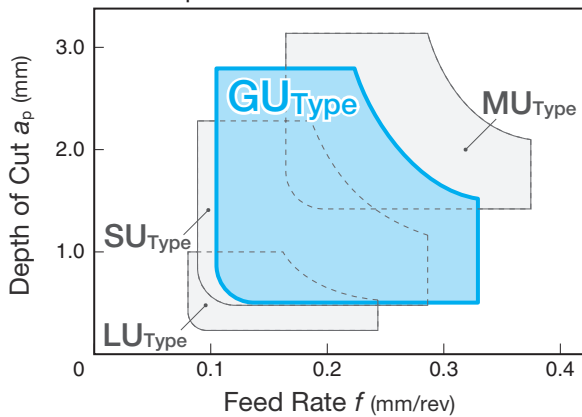
Edge B-B Cross Section



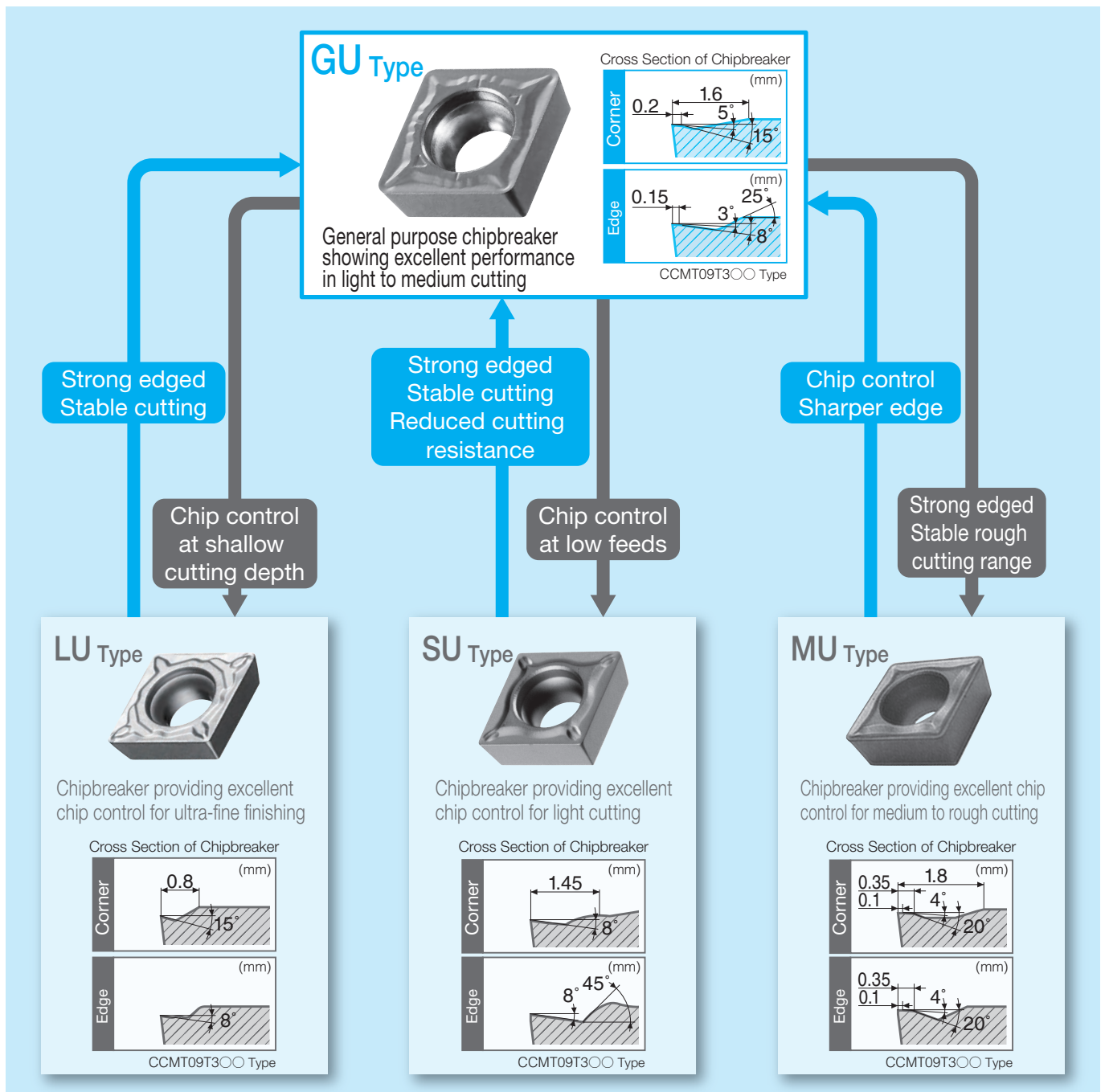
GU Type Chipbreaker

Application Range

Enhanced application range over conventional products



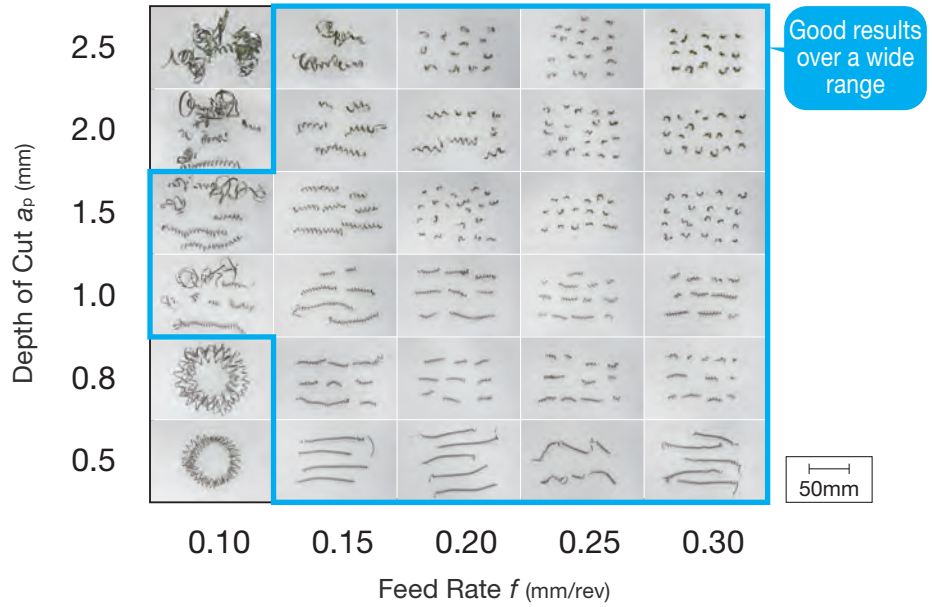
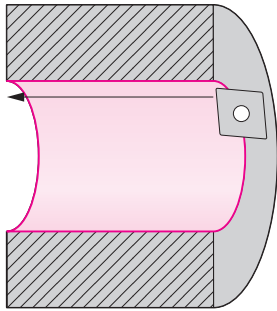
Chipbreaker Selection Guide



GU Type Chipbreaker

Chip Control

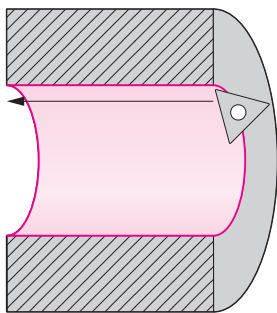
Wide ranging compatibility from light to medium cutting!
 Suppresses chip entanglement under high feed conditions to realize stable machining!



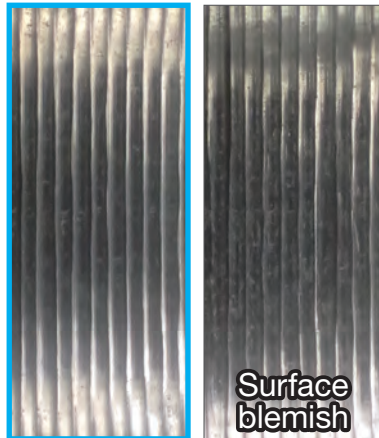
Work Material: STKM13A, Pipe Material (ø30mm internal boring) Insert: CCMT09T308N-GU (AC8025P)
 Cutting Conditions: $v_c=200\text{m/min}$ Wet

Chatter Resistance

Protrusion design with a smooth incline that suppresses chatter!



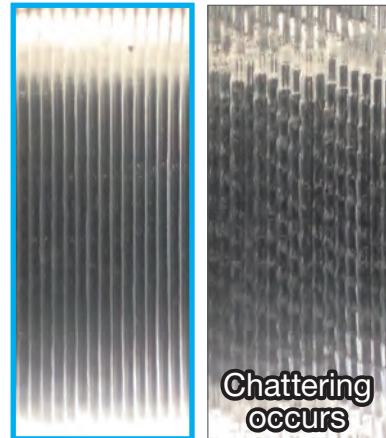
$f=0.3\text{mm/rev}$ $a_p=1.0\text{mm}$



GU Type

Competitor's Product A

$f=0.2\text{mm/rev}$ $a_p=1.5\text{mm}$



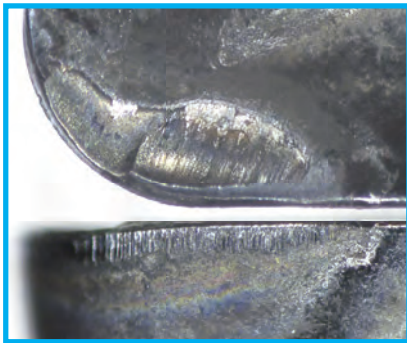
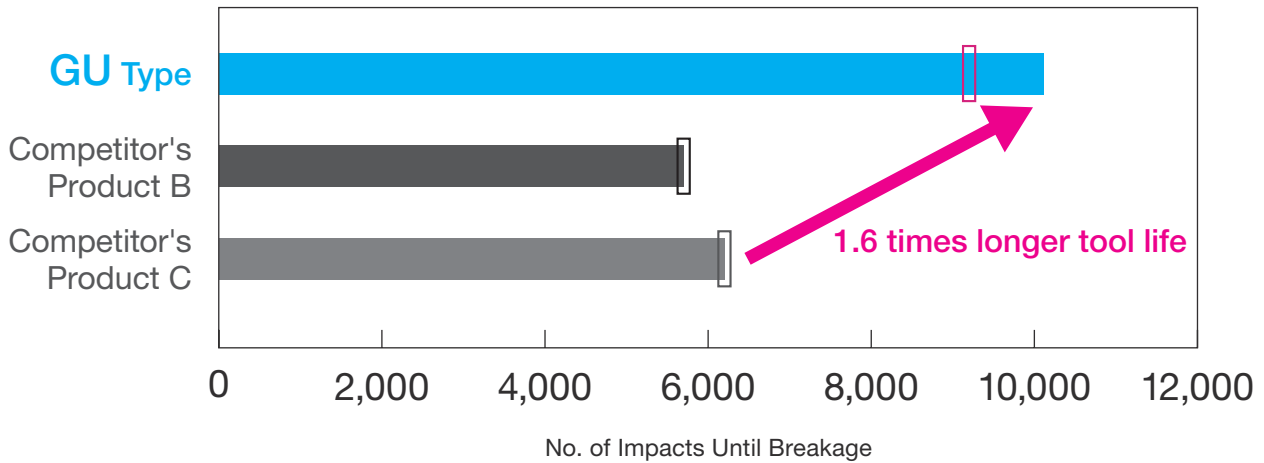
GU Type

Competitor's Product A

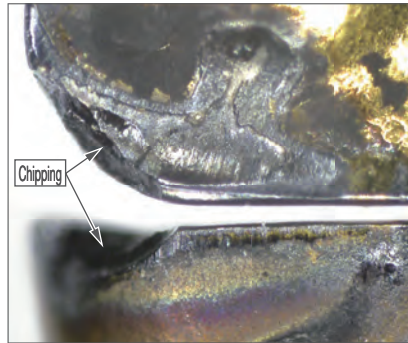
Work Material: SCM415 (ø15mm internal boring) Insert: TPMT110308N-GU(AC8025P)
 Cutting Conditions: $v_c=100\text{m/min}$ Wet Holder: S10K-STUP R1103-12 (Steel holder L/D=3)

GU Type Chipbreaker

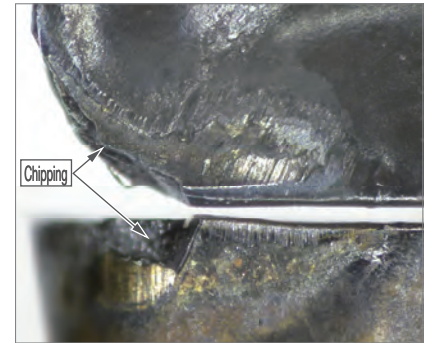
Fracture Resistance Strengthened cutting edge design improves fracture resistance!



GU Type
(9,200 impacts)



Competitor's Product B
(5,700 impacts)



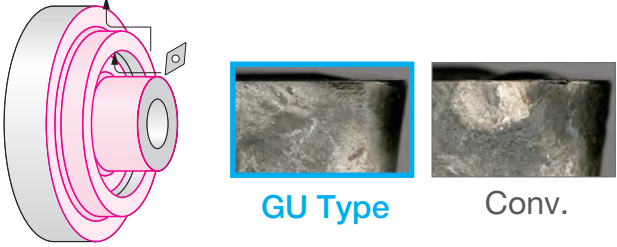

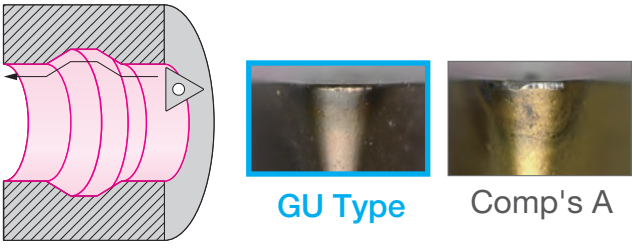
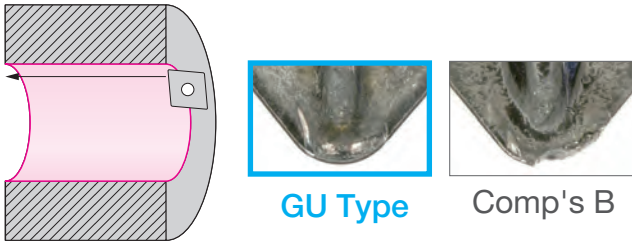
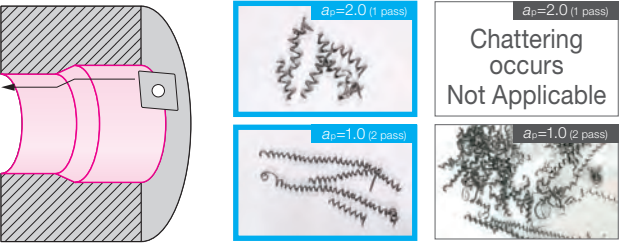
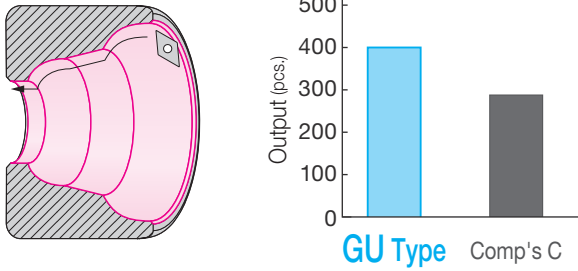
Competitor's Product C
(6,200 impacts)

Work Material: SCM435, Groove Material (Light interrupted cut, external turning) Insert: CCMT09T308N-GU (AC8025P)
Cutting Conditions: $v_c=300\text{m/min}$ $f=0.2\text{mm/rev}$ $a_p=1.5\text{mm}$ Wet



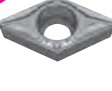



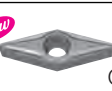
Recommended Cutting Conditions

| | Work Materials | Grade | Cutting Speed v_c (m/min) | Feed Rate f (mm/rev) | Depth of Cut a_p (mm) |
|---|--|----------------|-----------------------------|---------------------------|---------------------------|
| P | Mild Steel (STKM13A, SS400, others) | AC8015P | 240 - 330 - 420 | 0.12 - 0.20 - 0.30 | 0.50 - 1.00 - 2.50 |
| | | AC8025P | 220 - 300 - 380 | | |
| | | AC8035P | 160 - 200 - 240 | | |
| | | T1500A | 100 - 190 - 280 | | |
| | | T1500Z | 110 - 220 - 310 | | |
| | | T2500Z | 80 - 180 - 280 | | |
| P | Carbon Steel / Alloy Steel (S45C, SCM435, others) | AC8015P | 220 - 300 - 380 | 0.10 - 0.20 - 0.30 | 0.40 - 1.00 - 2.50 |
| | | AC8025P | 190 - 250 - 310 | | |
| | | AC8035P | 140 - 180 - 220 | | |
| | | T1500A | 90 - 170 - 250 | | |
| | | T1500Z | 100 - 200 - 300 | | |
| | | T2500Z | 70 - 160 - 250 | | |
| M | Stainless Steel (Austenitic) | AC6020M | 130 - 170 - 210 | 0.10 - 0.20 - 0.30 | 0.40 - 1.00 - 2.50 |
| | | AC6030M | 100 - 130 - 160 | | |
| | | AC6040M | 90 - 115 - 140 | | |
| S | Heat-Resistant Alloy (Ni, Fe, Co materials) | AC5025S | 30 - 55 - 80 | 0.08 - 0.15 - 0.25 | 0.40 - 0.80 - 2.00 |

Application Examples

| | |
|--|--|
| <p>SPHC440 Press Material Cylinder Components</p> <p>Stable machining without cutting edge failure</p>  <p>Insert: DCMT11T304N-GU (AC8025P) Cutting Conditions: $v_c=220\text{m/min}$ $f=0.2\text{mm/rev}$ $a_p=0.5\text{mm}$ Wet, External Profiling</p> | <p>SCM415 Automotive Drive Components</p> <p>Improves chip entanglement for improved machining efficiency</p>  <p>Insert: DCMT11T308N-GU (AC8015P) Cutting Conditions: $v_c=180\text{m/min}$ $f=0.3\text{mm/rev}$ $a_p=1.5\text{mm}$ Wet, External Profiling</p> |
| <p>SCM415 Precision Mechanical Components</p> <p>Suppresses cutting edge temperature rise, reducing wear and damage</p>  <p>Insert: TPMT11034N-GU (AC6040M) Cutting Conditions: $v_c=130\text{m/min}$ $f=0.2\text{mm/rev}$ $a_p=0.5\text{mm}$ Wet, Internal Profiling</p> | <p>SCr415 Fastening Components</p> <p>Strong cutting edge design realizes 1.5 times the tool life</p>  <p>Insert: CCMT09T308N-GU (AC8025P) Cutting Conditions: $v_c=190\text{m/min}$ $f=0.25\text{mm/rev}$ $a_p=1.0\text{mm}$ Wet, Internal Boring</p> |
| <p>SCM420H Automotive Components</p> <p>Improves chip entanglement for improved machining efficiency</p>  <p>Insert: CPMT090308N-GU (AC8025P) Cutting Conditions: $v_c=200\text{m/min}$ $f=0.2\text{mm/rev}$ $a_p=2.0\text{mm}$ Wet, Internal Taper Boring</p> | <p>Bearing Steel - Bearing Components</p> <p>Strong cutting edge design realizes 1.3 times the tool life</p>  <p>Insert: DCMT11T312N-GU (AC8025P) Cutting Conditions: $v_c=220\text{m/min}$ $f=0.15\text{-}0.35\text{mm/rev}$ $a_p=0.8\text{-}3.8\text{mm}$ Wet, Internal Boring</p> |

Stock Items

| Shape | Relief Angle | Cat. No. | Grade | | | | | | | | | Dimensions (mm) | | | | | |
|---|--------------|----------------|----------------|---------|---------|---------|---------|---------|---------|---------------|--------|-----------------|------------------|-----------|-----------|-------------|-----|
| | | | Coated carbide | | | | | | | Coated Cermet | | Cermet | Inscribed Circle | Thickness | Hole Dia. | Nose Radius | |
| | | | AC8015P | AC8025P | AC8035P | AC6020M | AC6030M | AC6040M | AC5025S | T1500Z | T2500Z | T1500A | | | | | |
|  GU | 7° | CCMT060204N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6.35 | 2.38 | 2.8 | 0.4 | |
| | | CCMT060208N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6.35 | 2.38 | 2.8 | 0.8 |
| | | CCMT09T304N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.97 | 4.4 | 0.4 |
| | | CCMT09T308N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.97 | 4.4 | 0.8 |
| | | CCMT120408N-GU | ● | ● | ● | | | | | | | | | 12.7 | 4.76 | 5.5 | 0.8 |
|  GU | 11° | CPMT090304N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.18 | 4.4 | 0.4 | |
| | | CPMT090308N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.18 | 4.4 | 0.8 |
|  GU | 7° | DCMT070204N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6.35 | 2.38 | 2.8 | 0.4 | |
| | | DCMT070208N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6.35 | 2.38 | 2.8 | 0.8 |
| | | DCMT11T302N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.97 | 4.4 | 0.2 |
| | | DCMT11T304N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.97 | 4.4 | 0.4 |
| | | DCMT11T308N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.97 | 4.4 | 0.8 |
| | | DCMT11T312N-GU | | ● | | | | ● | | | | | | 9.525 | 3.97 | 4.4 | 1.2 |
|  GU | 7° | SCMT09T304N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.97 | 4.4 | 0.4 | |
| | | SCMT09T308N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 3.97 | 4.4 | 0.8 |
| | | SCMT120408N-GU | ● | ● | ● | | | | | | | | | 12.7 | 4.76 | 5.5 | 0.8 |
|  GU | 11° | TPMT110304N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6.35 | 3.18 | 3.4 | 0.4 | |
| | | TPMT110308N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6.35 | 3.18 | 3.4 | 0.8 |
| | | TPMT160404N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 4.76 | 4.4 | 0.4 |
| | | TPMT160408N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 4.76 | 4.4 | 0.8 |
|  GU | 5° | VBMT110304N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6.35 | 3.18 | 2.8 | 0.4 | |
| | | VBMT110308N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6.35 | 3.18 | 2.8 | 0.8 |
| | | VBMT160404N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 4.76 | 4.4 | 0.4 |
| | | VBMT160408N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 4.76 | 4.4 | 0.8 |
|  GU | 7° | VCMT160404N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 4.76 | 4.4 | 0.4 | |
| | | VCMT160408N-GU | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9.525 | 4.76 | 4.4 | 0.8 |



- 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.

< SAFETY NOTES >

- Please handle with care as this product has sharp edges.
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.

- 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.

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