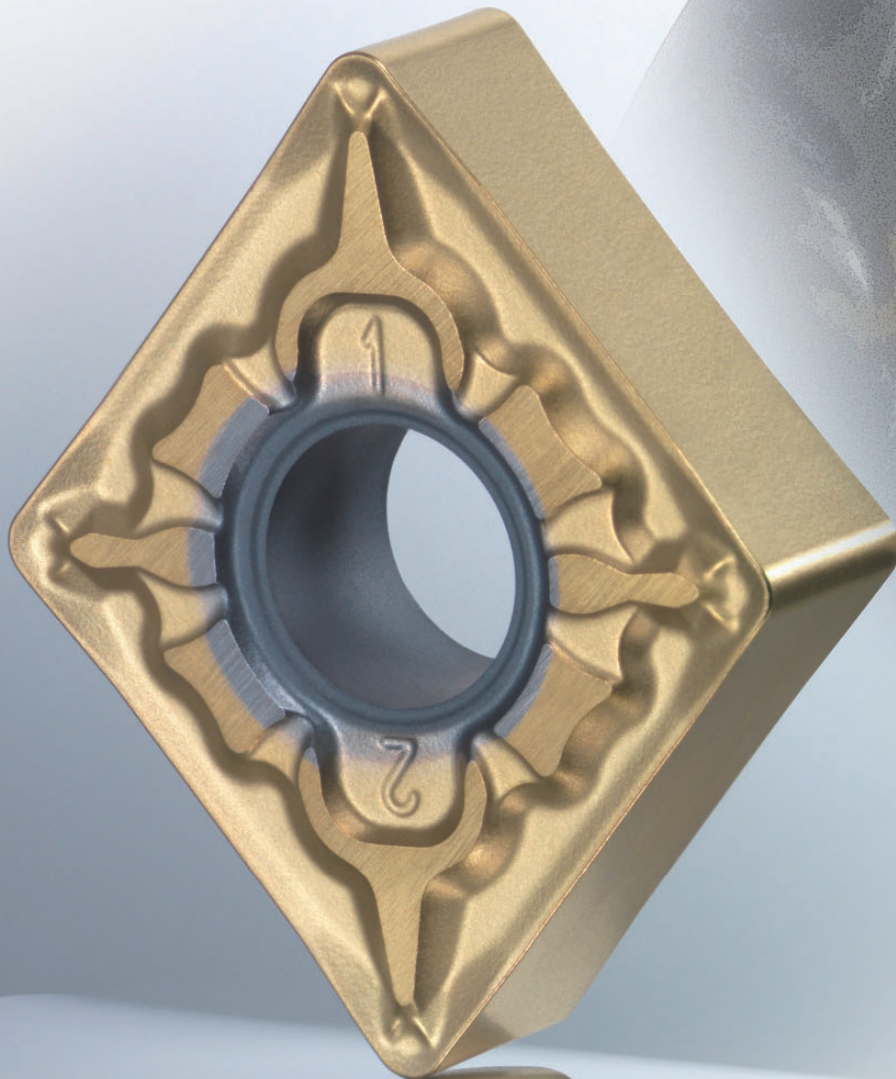


PVD coated Cermet grade for steel

MP3025

New positive
breaker for
steel

Produces excellent surface finishes.

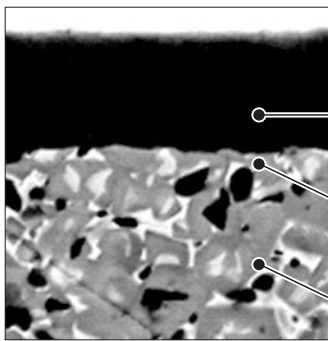


PVD coated Cermet grade for steel

MP3025

MP3025 has excellent flank wear and fracture resistance.

Due to the improved adhesion strength of the smooth substrate surface, MP3025 gives excellent surface finishes, ideal for mass production of small parts.



Ti-compound PVD coating provides excellent wear and welding resistance.

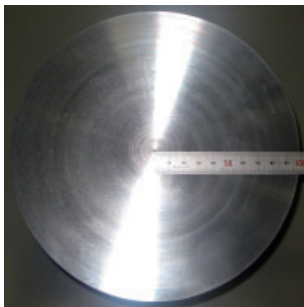
Substrate surface provides excellent adhesion strength for the coating layer.

Substrate with superior fracture and thermal shock resistance.

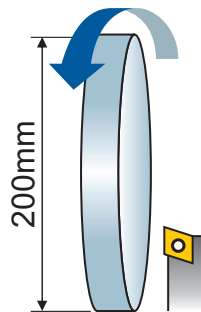
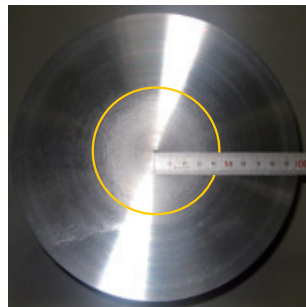
High quality finishes at low speeds.

MP3025 produces better surface finishes at low cutting speeds than competitors PVD cermet grades.

MP3025


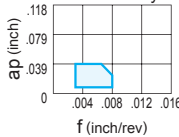
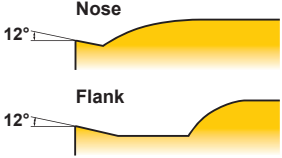

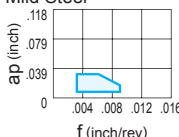
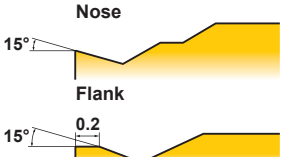

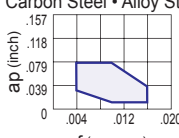
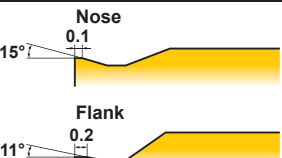

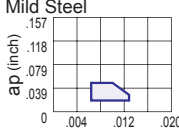
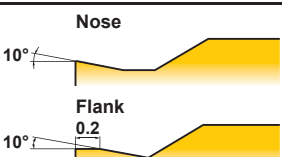

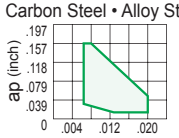
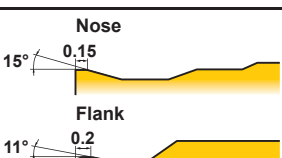


Conventional


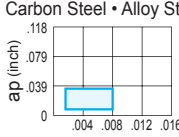
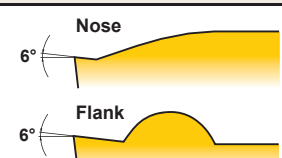

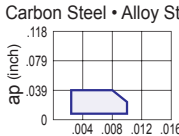
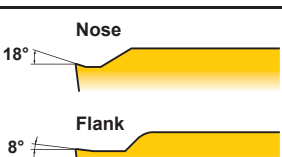

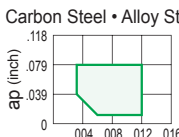
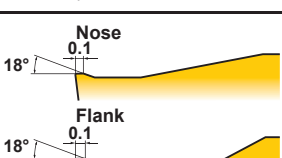


<Cutting condition>
Work piece : AISI 1025
Revolution : n=398 RPM
(Outer: vc=820 SFM)
Depth of cut : ap=.060 inch
Feed : f=.006 IPR
Wet cutting

Breaker system for steel cutting (Negative inserts)

| Application | Tolerance | Breaker Name and Picture | Features | Cross Section Geometry |
|----------------|-----------|--|--|---|
| Finish Cutting | M | FH  | First recommendation for finishing carbon steel, alloy steel and stainless steel Double sided chipbreaker. Stable chip control even at small depths of cut. | Carbon Steel • Alloy Steel   |
| | M | FY  | First recommendation for finishing mild steel Double sided chipbreaker. Effectively controls adhesive chips. Suitable for mild steel finishing. | Mild Steel   |
| Light Cutting | M | LP  | First recommendation for light cutting of carbon and alloy steel Stable chip control in the light cutting range. The curved edge allows smooth chip discharge. | Carbon Steel • Alloy Steel   |
| | M | SY  | First recommendation for light cutting of mild steel Double sided chipbreaker. Effectively controls adhesive chips. Suitable for light cutting. | Mild Steel   |
| Medium Cutting | M | MP  | First recommendation for medium cutting of carbon and alloy steel Suitable for medium to light cutting. Breaker geometry suitable for copying and back turning. Cutting edge geometry for an optimum balance of sharpness and fracture resistance. | Carbon Steel • Alloy Steel   |

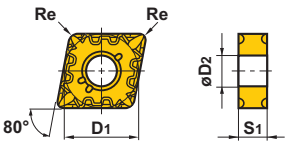
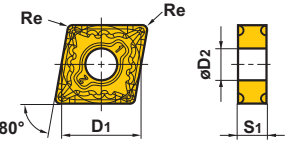
Breaker system for steel cutting (Positive inserts)

| Application | Tolerance | Breaker Name and Picture | Features | Cross Section Geometry |
|----------------|-----------|---|--|---|
| Finish Cutting | M | NEW FP  | First recommendation for finish cutting of carbon and alloy steel The protuberance at the tip of the breaker controls chips even at small depths of cut. Corner strength is maintained to prevent abnormal fracturing. 5° 7° Positive Insert | Carbon Steel • Alloy Steel   |
| Light Cutting | M | NEW LP  | First recommendation for light cutting of carbon and alloy steel Excellent cutting edge sharpness due to the large rake angle. Prevents chip welding of the insert to ensure good surface finishes. Optimised breaker realises a wide range of chip control. 5° 7° Positive Insert | Carbon Steel • Alloy Steel   |
| Medium Cutting | M | NEW MP  | First recommendation for medium cutting of carbon and alloy steel The flat land produces excellent wear resistance and superior fracture resistance. The wide pocket reduces vibration and chip jamming and also prevents increases in cutting resistance even at high depths of cut. 5° 7° Positive Insert | Carbon Steel • Alloy Steel   |


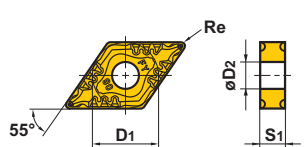

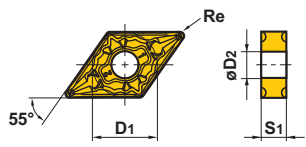
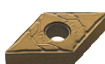
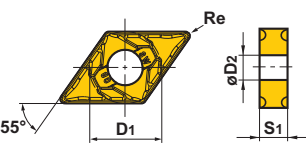

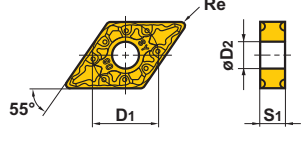

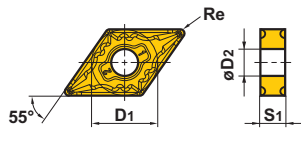

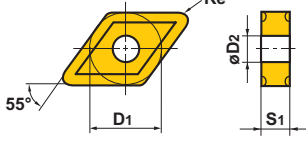

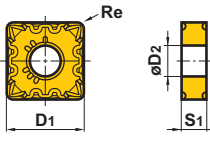

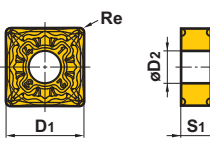
MP3025

INSERTS

● Negative Inserts (With hole)

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|--------------------|----------------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  | CNMG430.5FH | CNMG120402-FH | M | ● | .500 | .187 | .008 | .203 |  |
| | 431FH | 120404-FH | M | ● | .500 | .187 | .016 | .203 | |
| | 432FH | 120408-FH | M | ● | .500 | .187 | .031 | .203 | |
| Finish Cutting | | | | | | | | | |
|  | CNMG431FY | CNMG120404-FY | M | ● | .500 | .187 | .016 | .203 |  |
| | 432FY | 120408-FY | M | ● | .500 | .187 | .031 | .203 | |
| | | | | | | | | | |
| Finish Cutting | | | | | | | | | |
|  | CNMG431LP | CNMG120404-LP | M | ● | .500 | .187 | .016 | .203 |  |
| | 432LP | 120408-LP | M | ● | .500 | .187 | .031 | .203 | |
| | | | | | | | | | |
| Light Cutting | | | | | | | | | |
|  | CNMG431SW | CNMG120404-SW | M | ● | .500 | .187 | .016 | .203 |  |
| | 432SW | 120408-SW | M | ● | .500 | .187 | .031 | .203 | |
| | 433SW | 120412-SW | M | ● | .500 | .187 | .047 | .203 | |
| Light Cutting (Wiper) | | | | | | | | | |
|  | CNMG431SY | CNMG120404-SY | M | ● | .500 | .187 | .016 | .203 |  |
| | 432SY | 120408-SY | M | ● | .500 | .187 | .031 | .203 | |
| | | | | | | | | | |
| Light Cutting | | | | | | | | | |
|  | CNMG431MP | CNMG120404-MP | M | ● | .500 | .187 | .016 | .203 |  |
| | 432MP | 120408-MP | M | ● | .500 | .187 | .031 | .203 | |
| | 433MP | 120412-MP | M | ● | .500 | .187 | .047 | .203 | |
| Medium Cutting | | | | | | | | | |
|  | CNMG431 | CNMG120404 | M | ● | .500 | .187 | .016 | .203 |  |
| | 432 | 120408 | M | ● | .500 | .187 | .031 | .203 | |
| | | | | | | | | | |
| Medium Cutting | | | | | | | | | |
|  | DNMG430.5FH | DNMG150402-FH | M | ● | .500 | .187 | .008 | .203 |  |
| | 431FH | 150404-FH | M | ● | .500 | .187 | .016 | .203 | |
| | 432FH | 150408-FH | M | ● | .500 | .187 | .031 | .203 | |
| | 440.5FH | 150602-FH | M | ● | .500 | .250 | .008 | .203 | |
| | 441FH | 150604-FH | M | ★ | .500 | .250 | .016 | .203 | |
| | 442FH | 150608-FH | M | ★ | .500 | .250 | .031 | .203 | |
| Finish Cutting | | | | | | | | | |


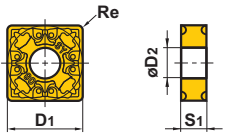

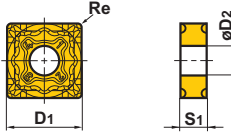

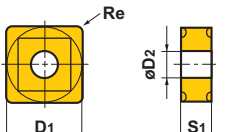

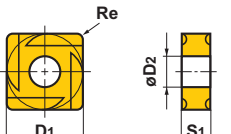

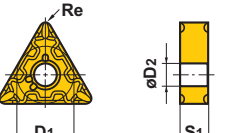

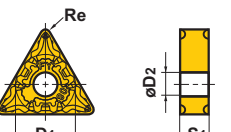

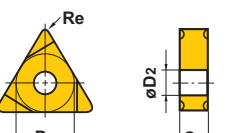

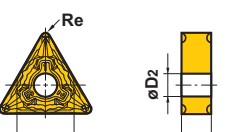
● : Inventory maintained. ★ : Inventory maintained in Japan.

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|--|------------------|----------------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  Finish Cutting | DNMG431FY | DNMG150404-FY | M | ● | .500 | .187 | .016 | .203 |  |
| | 432FY | 150408-FY | M | ● | .500 | .187 | .031 | .203 | |
| | 441FY | 150604-FY | M | ★ | .500 | .250 | .016 | .203 | |
| | 442FY | 150608-FY | M | ★ | .500 | .250 | .031 | .203 | |
|  Light Cutting | DNMG331LP | DNMG110404-LP | M | ● | .375 | .187 | .016 | .150 |  |
| | 332LP | 110408-LP | M | ● | .375 | .187 | .031 | .150 | |
| | 431LP | 150404-LP | M | ● | .500 | .187 | .016 | .203 | |
| | 432LP | 150408-LP | M | ● | .500 | .187 | .031 | .203 | |
| | 433LP | 150412-LP | M | ● | .500 | .187 | .047 | .203 | |
| | 441LP | 150604-LP | M | ● | .500 | .250 | .016 | .203 | |
|  Light Cutting (Wiper) | DNMX431SW | DNMX150404-SW | M | ● | .500 | .187 | .016 | .203 |  |
| | 432SW | 150408-SW | M | ● | .500 | .187 | .031 | .203 | |
| | 441SW | 150604-SW | M | ★ | .500 | .250 | .016 | .203 | |
| | 442SW | 150608-SW | M | ★ | .500 | .250 | .031 | .203 | |
|  Light Cutting | DNMG431SY | DNMG150404-SY | M | ● | .500 | .187 | .016 | .203 |  |
| | 432SY | 150408-SY | M | ● | .500 | .187 | .031 | .203 | |
| | 441SY | 150604-SY | M | ★ | .500 | .250 | .016 | .203 | |
| | 442SY | 150608-SY | M | ★ | .500 | .250 | .031 | .203 | |
|  Medium Cutting | DNMG431MP | DNMG150404-MP | M | ● | .500 | .187 | .016 | .203 |  |
| | 432MP | 150408-MP | M | ● | .500 | .187 | .031 | .203 | |
| | 433MP | 150412-MP | M | ● | .500 | .187 | .047 | .203 | |
| | 441MP | 150604-MP | M | ★ | .500 | .250 | .016 | .203 | |
| | 442MP | 150608-MP | M | ★ | .500 | .250 | .031 | .203 | |
| | 443MP | 150612-MP | M | ★ | .500 | .250 | .047 | .203 | |
|  Medium Cutting | DNMG431 | DNMG150404 | M | ● | .500 | .187 | .016 | .203 |  |
| | 432 | 150408 | M | ● | .500 | .187 | .031 | .203 | |
| | 441 | 150604 | M | ● | .500 | .250 | .016 | .203 | |
| | 442 | 150608 | M | ● | .500 | .250 | .031 | .203 | |
|  Finish Cutting | SNMG431FH | SNMG120404-FH | M | ● | .500 | .187 | .016 | .203 |  |
| | 432FH | 120408-FH | M | ● | .500 | .187 | .031 | .203 | |
|  Light Cutting | SNMG431LP | SNMG120404-LP | M | ● | .500 | .187 | .016 | .203 |  |
| | 432LP | 120408-LP | M | ● | .500 | .187 | .031 | .203 | |


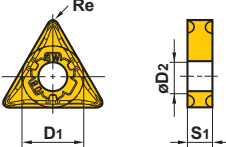

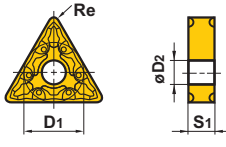

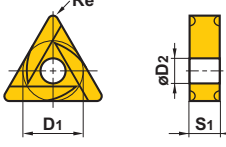

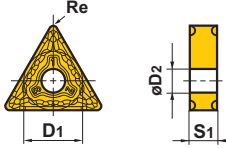

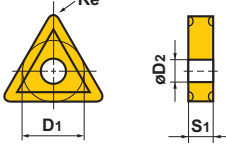

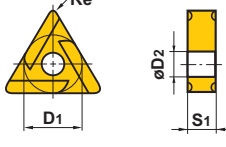

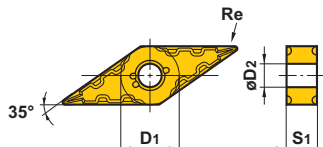

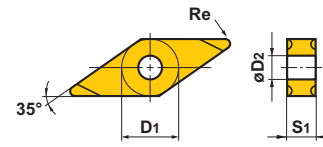
MP3025

INSERTS

● Negative Inserts (With hole)

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|--------------------|----------------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  Light Cutting | SNMG432SY | SNMG120408-SY | M | ● | .500 | .187 | .031 | .203 |  |
| | | | | | | | | | |
|  Medium Cutting | SNMG431MP | SNMG120404-MP | M | ● | .500 | .187 | .016 | .203 |  |
| | 432MP | 120408-MP | M | ● | .500 | .187 | .031 | .203 | |
| | 433MP | 120412-MP | M | ● | .500 | .187 | .047 | .203 | |
|  Medium Cutting | SNMG321 | SNMG090304 | M | ● | .375 | .125 | .016 | .150 |  |
| | 322 | 090308 | M | ● | .375 | .125 | .031 | .150 | |
| | 431 | 120404 | M | ● | .500 | .187 | .016 | .203 | |
| | 432 | 120408 | M | ● | .500 | .187 | .031 | .203 | |
|  Medium Cutting | SNGG431R | SNGG120404R | G | ● | .500 | .187 | .016 | .203 |  |
| | 432R | 120408R | G | ● | .500 | .187 | .031 | .203 | |
| | 431L | 120404L | G | ● | .500 | .187 | .016 | .203 | |
| | 432L | 120408L | G | ● | .500 | .187 | .031 | .203 | |
|  Finish Cutting | TNMG330.5FH | TNMG160402-FH | M | ● | .375 | .187 | .008 | .150 |  |
| | 331FH | 160404-FH | M | ● | .375 | .187 | .016 | .150 | |
| | 332FH | 160408-FH | M | ● | .375 | .187 | .031 | .150 | |
|  Finish Cutting | TNMG331FY | TNMG160404-FY | M | ● | .375 | .187 | .016 | .150 |  |
| | 332FY | 160408-FY | M | ● | .375 | .187 | .031 | .150 | |
|  Finish Cutting | TNGG330.5RF | TNGG160402R-F | G | ● | .375 | .187 | .008 | .150 |  |
| | 331RF | 160404R-F | G | ● | .375 | .187 | .016 | .150 | |
| | 332RF | 160408R-F | G | ● | .375 | .187 | .031 | .150 | |
| | 330.5LF | 160402L-F | G | ● | .375 | .187 | .008 | .150 | |
| | 331LF | 160404L-F | G | ● | .375 | .187 | .016 | .150 | |
| | 332LF | 160408L-F | G | ● | .375 | .187 | .031 | .150 | |
|  Light Cutting | TNMG331LP | TNMG160404-LP | M | ● | .375 | .187 | .016 | .150 |  |
| | 332LP | 160408-LP | M | ● | .375 | .187 | .031 | .150 | |
| | 333LP | 160412-LP | M | ● | .375 | .187 | .047 | .150 | |
| | 432LP | 220408-LP | M | ● | .500 | .187 | .031 | .203 | |


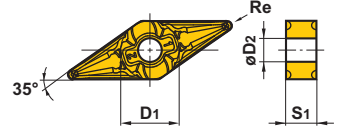

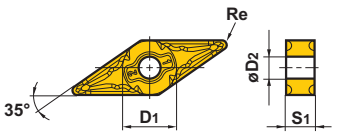

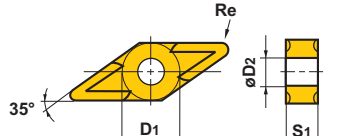

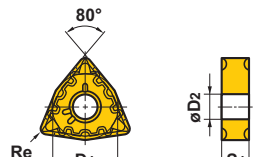

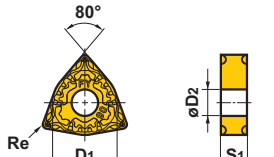

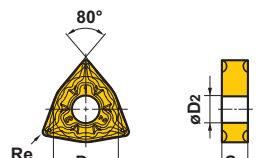

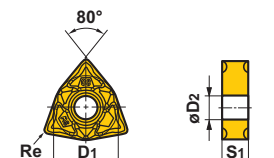

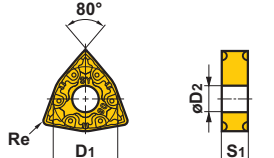
● : Inventory maintained.

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|--------------|---------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  Light Cutting (Wiper) | TNMX331SW | TNMX160404-SW | M | ● | .375 | .187 | .016 | .150 |  |
| | 332SW | 160408-SW | M | ● | .375 | .187 | .031 | .150 | |
|  Light Cutting | TNMG331SY | TNMG160404-SY | M | ● | .375 | .187 | .016 | .150 |  |
| | 332SY | 160408-SY | M | ● | .375 | .187 | .031 | .150 | |
|  Light Cutting | TNGG330.5RK | TNGG160402R-K | G | ● | .375 | .187 | .008 | .150 |  |
| | 331RK | 160404R-K | G | ● | .375 | .187 | .016 | .150 | |
| | 332RK | 160408R-K | G | ● | .375 | .187 | .031 | .150 | |
| | 330.5LK | 160402L-K | G | ● | .375 | .187 | .008 | .150 | |
| | 331LK | 160404L-K | G | ● | .375 | .187 | .016 | .150 | |
| | 332LK | 160408L-K | G | ● | .375 | .187 | .031 | .150 | |
|  Medium Cutting | TNMG331MP | TNMG160404-MP | M | ● | .375 | .187 | .016 | .150 |  |
| | 332MP | 160408-MP | M | ● | .375 | .187 | .031 | .150 | |
| | 333MP | 160412-MP | M | ● | .375 | .187 | .047 | .150 | |
|  Medium Cutting | TNMG331 | TNMG160404 | M | ● | .375 | .187 | .016 | .150 |  |
| | 332 | 160408 | M | ● | .375 | .187 | .031 | .150 | |
|  Medium Cutting | TNGG330.5R | TNGG160402R | G | ● | .375 | .187 | .008 | .150 |  |
| | 331R | 160404R | G | ● | .375 | .187 | .016 | .150 | |
| | 332R | 160408R | G | ● | .375 | .187 | .031 | .150 | |
| | 330.5L | 160402L | G | ● | .375 | .187 | .008 | .150 | |
| | 331L | 160404L | G | ● | .375 | .187 | .016 | .150 | |
| | 332L | 160408L | G | ● | .375 | .187 | .031 | .150 | |
|  Finish Cutting | VNMG330.5FH | VNMG160402-FH | M | ● | .375 | .187 | .008 | .150 |  |
| | 331FH | 160404-FH | M | ● | .375 | .187 | .016 | .150 | |
| | 332FH | 160408-FH | M | ● | .375 | .187 | .031 | .150 | |
|  Finish Cutting | VNGG330.5RF | VNGG160402R-F | G | ● | .375 | .187 | .008 | .150 |  |
| | 331RF | 160404R-F | G | ● | .375 | .187 | .016 | .150 | |
| | 330.5LF | 160402L-F | G | ● | .375 | .187 | .008 | .150 | |
| | 331LF | 160404L-F | G | ● | .375 | .187 | .016 | .150 | |


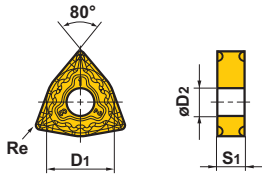

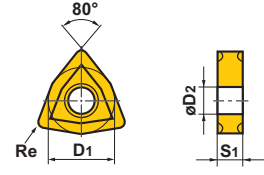
MP3025

INSERTS

● Negative Inserts (With hole)

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|--------------|---------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  | VNMG331LP | VNMG160404-LP | M | ● | .375 | .187 | .016 | .150 |  |
| | 332LP | 160408-LP | M | ● | .375 | .187 | .031 | .150 | |
| Light Cutting | | | | | | | | | |
|  | VNMG331MP | VNMG160404-MP | M | ● | .375 | .187 | .016 | .150 |  |
| | 332MP | 160408-MP | M | ● | .375 | .187 | .031 | .150 | |
| Medium Cutting | | | | | | | | | |
|  | VNMG331 | VNMG160404 | M | ● | .375 | .187 | .016 | .150 |  |
| | 332 | 160408 | M | ● | .375 | .187 | .031 | .150 | |
| Medium Cutting | | | | | | | | | |
|  | WNMG431FH | WNMG080404-FH | M | ● | .500 | .187 | .016 | .203 |  |
| | 432FH | 080408-FH | M | ● | .500 | .187 | .031 | .203 | |
| Finish Cutting | | | | | | | | | |
|  | WNMG431FY | WNMG080404-FY | M | ● | .500 | .187 | .016 | .203 |  |
| | 432FY | 080408-FY | M | ● | .500 | .187 | .031 | .203 | |
| Finish Cutting | | | | | | | | | |
|  | WNMG32.51LP | WNMG06T304-LP | M | ● | .375 | .156 | .016 | .150 |  |
| | 32.52LP | 06T308-LP | M | ● | .375 | .156 | .031 | .150 | |
| | 331LP | 060404-LP | M | ● | .375 | .187 | .016 | .150 | |
| | 332LP | 060408-LP | M | ● | .375 | .187 | .031 | .150 | |
| | 431LP | 080404-LP | M | ● | .500 | .187 | .016 | .203 | |
| | 432LP | 080408-LP | M | ● | .500 | .187 | .031 | .203 | |
| Light Cutting | | | | | | | | | |
|  | WNMG331SW | WNMG060404-SW | M | ● | .375 | .187 | .016 | .150 |  |
| | 332SW | 060408-SW | M | ● | .375 | .187 | .031 | .150 | |
| | 431SW | 080404-SW | M | ● | .500 | .187 | .016 | .203 | |
| | 432SW | 080408-SW | M | ● | .500 | .187 | .031 | .203 | |
| | 433SW | 080412-SW | M | ● | .500 | .187 | .047 | .203 | |
| Light Cutting (Wiper) | | | | | | | | | |
|  | WNMG431SY | WNMG080404-SY | M | ● | .500 | .187 | .016 | .203 |  |
| | 432SY | 080408-SY | M | ● | .500 | .187 | .031 | .203 | |
| Light Cutting | | | | | | | | | |


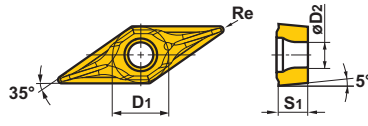

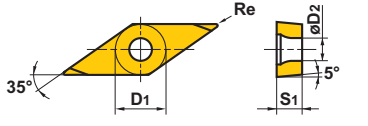

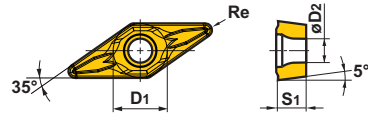

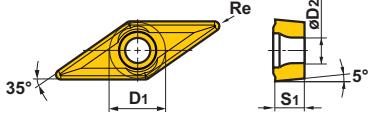

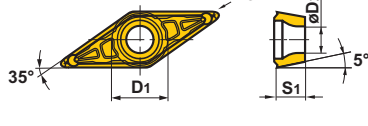

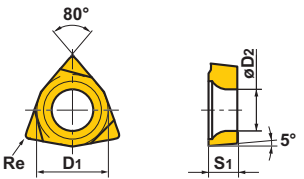

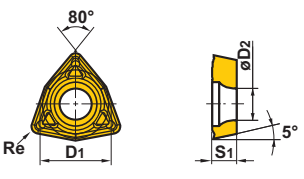
● : Inventory maintained.

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|--|------------------|----------------------|-------|---------------|-------------------|------|------|------|---|
| | | | | <i>MP3025</i> | D1 | S1 | Re | D2 | |
| MP  Medium Cutting | WNMG431MP | WNMG080404-MP | M | ● | .500 | .187 | .016 | .203 |  |
| | 432MP | 080408-MP | M | ● | .500 | .187 | .031 | .203 | |
| | 433MP | 080412-MP | M | ● | .500 | .187 | .047 | .203 | |
| Standard  Medium Cutting | WNMG431 | WNMG080404 | M | ● | .500 | .187 | .016 | .203 |  |
| | 432 | 080408 | M | ● | .500 | .187 | .031 | .203 | |


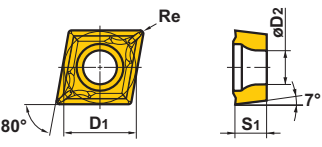

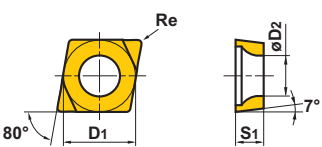

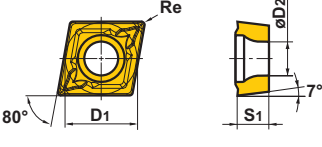

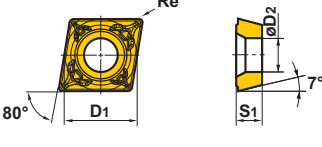

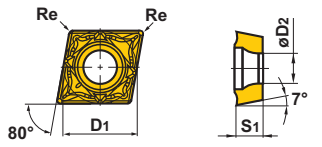

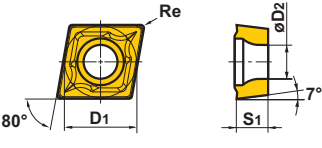

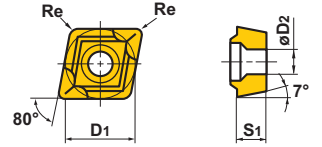
MP3025

INSERTS

● 5° Positive Inserts (With hole)

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|-------------------------|----------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  | NEW VBMT220.5FP | VBMT110302-FP | M | ● | .250 | .125 | .008 | .115 |  |
| | 221FP | 110304-FP | M | ● | .250 | .125 | .016 | .115 | |
| | 222FP | 110308-FP | M | ● | .250 | .125 | .031 | .115 | |
| | 331FP | 160404-FP | M | ● | .375 | .187 | .016 | .178 | |
| | 332FP | 160408-FP | M | ● | .375 | .187 | .031 | .178 | |
| Finish Cutting | | | | | | | | | |
|  | R/L-F VBGT220.5RF | VBGT110302R-F | G | ● | .250 | .125 | .008 | .115 |  |
| | 220.5LF | 110302L-F | G | ● | .250 | .125 | .008 | .115 | |
| Finish Cutting | | | | | | | | | |
|  | NEW VBMT221LP | VBMT110304-LP | M | ● | .250 | .125 | .016 | .115 |  |
| | 222LP | 110308-LP | M | ● | .250 | .125 | .031 | .115 | |
| | 331LP | 160404-LP | M | ● | .375 | .187 | .016 | .178 | |
| | 332LP | 160408-LP | M | ● | .375 | .187 | .031 | .178 | |
| Light Cutting | | | | | | | | | |
|  | NEW VBMT331MP | VBMT160404-MP | M | ● | .375 | .187 | .016 | .178 |  |
| | 332MP | 160408-MP | M | ● | .375 | .187 | .031 | .178 | |
| Medium Cutting | | | | | | | | | |
|  | MV VBMT221MV | VBMT110304-MV | M | ● | .250 | .125 | .016 | .115 |  |
| | 222MV | 110308-MV | M | ● | .250 | .125 | .031 | .115 | |
| | 331MV | 160404-MV | M | ● | .375 | .187 | .016 | .178 | |
| | 332MV | 160408-MV | M | ● | .375 | .187 | .031 | .178 | |
| Medium Cutting | | | | | | | | | |
|  | R/L-F WBGT1.210.5LF | WBGT020102L-F | G | ● | .156 | .063 | .008 | .091 |  |
| | 1.211LF | 020104L-F | G | ● | .156 | .063 | .016 | .091 | |
| | 1.51.50.5LF | L30202L-F | G | ● | .187 | .094 | .008 | .091 | |
| | 1.51.51LF | L30204L-F | G | ● | .187 | .094 | .016 | .091 | |
| Finish Cutting | | | | | | | | | |
|  | R/L-MV WBMT1.51.50.5RMV | WBMTL30202L-MV | M | ● | .187 | .094 | .008 | .091 |  |
| | 1.51.50.5LMV | L30202R-MV | M | ● | .187 | .094 | .008 | .091 | |
| | 1.51.51RMV | L30204L-MV | M | ● | .187 | .094 | .016 | .091 | |
| | 1.51.51LMV | L30204R-MV | M | ● | .187 | .094 | .016 | .091 | |
| Medium Cutting | | | | | | | | | |


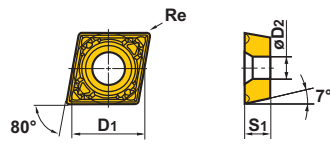

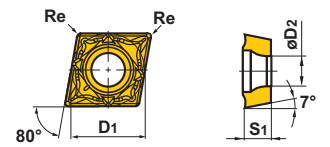

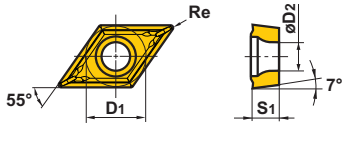

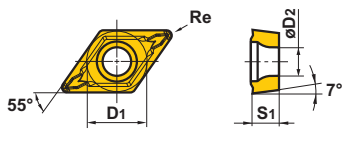

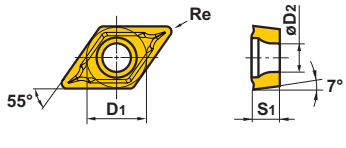
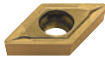
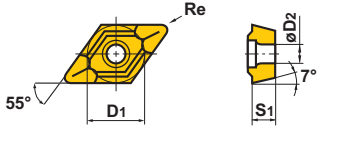

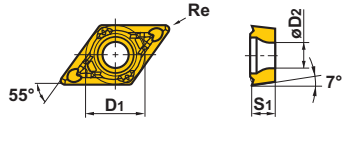
● 7° Positive Inserts (With hole)


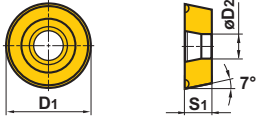

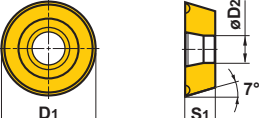

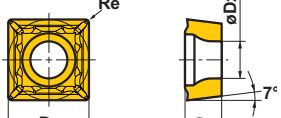

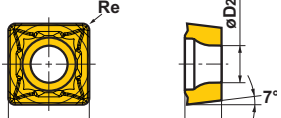

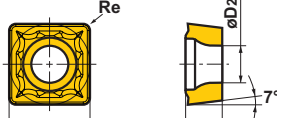

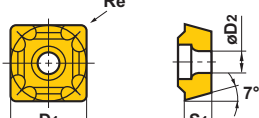


| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|-----------------------------|---------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  | NEW CCMT21.50.5FP | CCMT060202-FP | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51FP | 060204-FP | M | ● | .250 | .094 | .016 | .110 | |
| | 32.50.5FP | 09T302-FP | M | ● | .375 | .156 | .008 | .173 | |
| | 32.51FP | 09T304-FP | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52FP | 09T308-FP | M | ● | .375 | .156 | .031 | .173 | |
| Finish Cutting | | | | | | | | | |
|  | L-F CCGT03S102L-F | CCGT03S102L-F | G | ● | .156 | .055 | .008 | .079 |  |
| | 03S104L-F | 03S104L-F | G | ● | .156 | .055 | .016 | .079 | |
| | 04T002L-F | 04T002L-F | G | ● | .187 | .070 | .008 | .094 | |
| | 04T004L-F | 04T004L-F | G | ● | .187 | .070 | .016 | .094 | |
| Finish Cutting | | | | | | | | | |
|  | NEW LP CCMT21.51LP | CCMT060204-LP | M | ● | .250 | .094 | .016 | .110 |  |
| | 21.52LP | 060208-LP | M | ● | .250 | .094 | .031 | .110 | |
| | 32.51LP | 09T304-LP | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52LP | 09T308-LP | M | ● | .375 | .156 | .031 | .173 | |
| Light Cutting | | | | | | | | | |
|  | SV CCMH21.50.5SV | CCMH060202-SV | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51SV | 060204-SV | M | ● | .250 | .094 | .016 | .110 | |
| Light Cutting | | | | | | | | | |
|  | SW CCMT21.50.5SW | CCMT060202-SW | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51SW | 060204-SW | M | ● | .250 | .094 | .016 | .110 | |
| | 32.50.5SW | 09T302-SW | M | ● | .375 | .156 | .008 | .173 | |
| | 32.51SW | 09T304-SW | M | ● | .375 | .156 | .016 | .173 | |
| Light Cutting (Wiper) | | | | | | | | | |
|  | NEW MP CCMT21.51MP | CCMT060204-MP | M | ● | .250 | .094 | .016 | .110 |  |
| | 21.52MP | 060208-MP | M | ● | .250 | .094 | .031 | .110 | |
| | 32.51MP | 09T304-MP | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52MP | 09T308-MP | M | ● | .375 | .156 | .031 | .173 | |
| | 431MP | 120404-MP | M | ● | .500 | .187 | .016 | .217 | |
| | 432MP | 120408-MP | M | ● | .500 | .187 | .031 | .217 | |
| | 433MP | 120412-MP | M | ● | .500 | .187 | .047 | .217 | |
| Medium Cutting | | | | | | | | | |
|  | Standard CCMT21.50.5 | CCMT060202 | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51 | 060204 | M | ● | .250 | .094 | .016 | .110 | |
| | 2.521 | 080304 | M | ● | .313 | .125 | .016 | .110 | |
| | 32.50.5 | 09T302 | M | ● | .375 | .156 | .008 | .173 | |
| | 32.51 | 09T304 | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52 | 09T308 | M | ● | .375 | .156 | .031 | .173 | |
| | 431 | 120404 | M | ● | .500 | .187 | .016 | .217 | |
| | 432 | 120408 | M | ● | .500 | .187 | .031 | .217 | |
| Medium Cutting | | | | | | | | | |

MP3025

INSERTS

● 7° Positive Inserts (With hole)


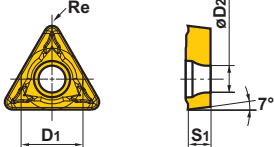

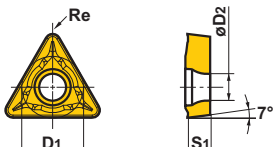

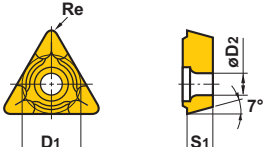

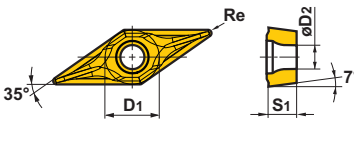

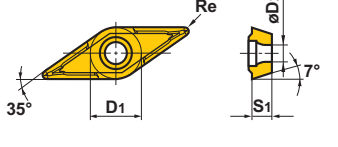

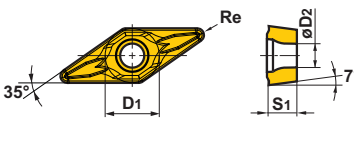
| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|---------------|---------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  | CCMH21.50.5MV | CCMH060202-MV | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51MV | 060204-MV | M | ● | .250 | .094 | .016 | .110 | |
| Medium Cutting | | | | | | | | | |
|  | CCMT21.51MW | CCMT060204-MW | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.52MW | 060208-MW | M | ● | .250 | .094 | .016 | .110 | |
| | 32.51MW | 09T304-MW | M | ● | .375 | .156 | .008 | .173 | |
| | 32.52MW | 09T308-MW | M | ● | .375 | .156 | .016 | .173 | |
| Medium Cutting (Wiper) | | | | | | | | | |
|  | DCMT21.50.5FP | DCMT070202-FP | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51FP | 070204-FP | M | ● | .250 | .094 | .016 | .110 | |
| | 32.50.5FP | 11T302-FP | M | ● | .375 | .156 | .008 | .173 | |
| | 32.51FP | 11T304-FP | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52FP | 11T308-FP | M | ● | .375 | .156 | .031 | .173 | |
| Finish Cutting | | | | | | | | | |
|  | DCMT21.51LP | DCMT070204-LP | M | ● | .250 | .094 | .016 | .110 |  |
| | 21.52LP | 070208-LP | M | ● | .250 | .094 | .031 | .110 | |
| | 32.51LP | 11T304-LP | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52LP | 11T308-LP | M | ● | .375 | .156 | .031 | .173 | |
| Light Cutting | | | | | | | | | |
|  | DCMT21.51MP | DCMT070204-MP | M | ● | .250 | .094 | .016 | .110 |  |
| | 21.52MP | 070208-MP | M | ● | .250 | .094 | .031 | .110 | |
| | 32.51MP | 11T304-MP | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52MP | 11T308-MP | M | ● | .375 | .156 | .031 | .173 | |
| | 431MP | 150404-MP | M | ● | .500 | .187 | .016 | .217 | |
| | 432MP | 150408-MP | M | ● | .500 | .187 | .031 | .217 | |
| Medium Cutting | | | | | | | | | |
|  | DCMT21.50.5 | DCMT070202 | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51 | 070204 | M | ● | .250 | .094 | .016 | .110 | |
| | 21.52 | 070208 | M | ● | .250 | .094 | .031 | .110 | |
| | 32.50.5 | 11T302 | M | ● | .375 | .156 | .008 | .173 | |
| | 32.51 | 11T304 | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52 | 11T308 | M | ● | .375 | .156 | .031 | .173 | |
| | 431 | 150404 | M | ● | .500 | .187 | .016 | .217 | |
| | 432 | 150408 | M | ● | .500 | .187 | .031 | .217 | |
| Medium Cutting | | | | | | | | | |
|  | DCMT21.50.5MV | DCMT070202-MV | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51MV | 070204-MV | M | ● | .250 | .094 | .016 | .110 | |
| | 21.52MV | 070208-MV | M | ● | .250 | .094 | .031 | .110 | |
| | 32.50.5MV | 11T302-MV | M | ● | .375 | .156 | .008 | .173 | |
| | 32.51MV | 11T304-MV | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52MV | 11T308-MV | M | ● | .375 | .156 | .031 | .173 | |
| Medium Cutting | | | | | | | | | |


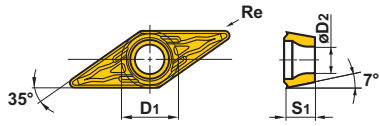

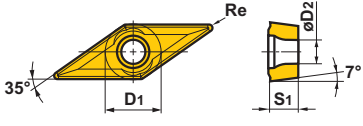

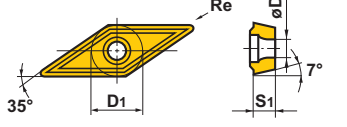

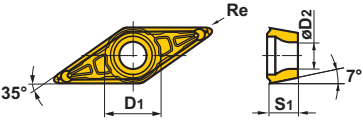

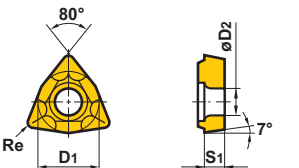
| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|------------------------|----------------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  Medium Cutting | RCMT0602M0 | RCMT0602M0 | M | ● | .236 | .094 | - | .110 |  |
| | 0803M0 | 0803M0 | M | ● | .315 | .125 | - | .134 | |
|  Medium Cutting | RCMX1003M0 | RCMX1003M0 | M | ● | .394 | .125 | - | .142 |  |
| | 1204M0 | 1204M0 | M | ● | .472 | .187 | - | .165 | |
|  Finish Cutting | SCMT32.51FP | SCMT09T304-FP | M | ● | .375 | .156 | .016 | .173 |  |
| | 32.52FP | 09T308-FP | M | ● | .375 | .156 | .031 | .173 | |
|  Light Cutting | SCMT32.51LP | SCMT09T304-LP | M | ● | .375 | .156 | .016 | .173 |  |
| | 32.52LP | 09T308-LP | M | ● | .375 | .156 | .031 | .173 | |
|  Medium Cutting | SCMT32.51MP | SCMT09T304-MP | M | ● | .375 | .156 | .016 | .173 |  |
| | 32.52MP | 09T308-MP | M | ● | .375 | .156 | .031 | .173 | |
| | 431MP | 120404-MP | M | ● | .500 | .187 | .016 | .217 | |
| | 432MP | 120408-MP | M | ● | .500 | .187 | .031 | .217 | |
|  Medium Cutting | SCMT32.51 | SCMT09T304 | M | ● | .375 | .156 | .016 | .173 |  |
| | 32.52 | 09T308 | M | ● | .375 | .156 | .031 | .173 | |
| | 431 | 120404 | M | ● | .500 | .187 | .016 | .217 | |
| | 432 | 120408 | M | ● | .500 | .187 | .031 | .217 | |
|  Finish Cutting | TCMT1.81.50.5FP | TCMT090202-FP | M | ● | .219 | .094 | .008 | .098 |  |
| | 1.81.51FP | 090204-FP | M | ● | .219 | .094 | .016 | .098 | |
| | 21.50.5FP | 110202-FP | M | ● | .250 | .094 | .008 | .110 | |
| | 21.51FP | 110204-FP | M | ● | .250 | .094 | .016 | .110 | |
| | 32.51FP | 16T304-FP | M | ● | .375 | .156 | .016 | .173 | |

MP3025

INSERTS

● 7° Positive Inserts (With hole)


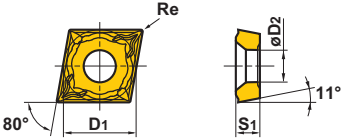

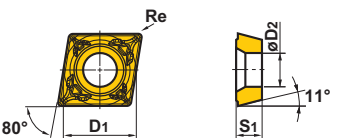

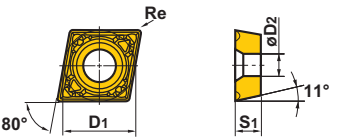

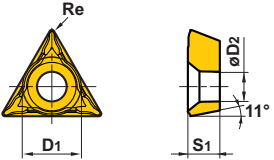

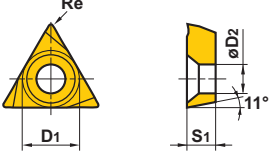

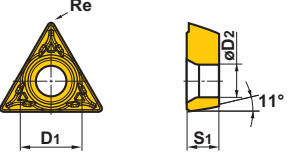
| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry | |
|---|-----------------|-----------------|---------------|--------|-------------------|------|------|------|----------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | | |
|  | NEW LP | TCMT1.81.51LP | TCMT090204-LP | M | ● | .219 | .094 | .016 | .098 |  |
| | | 1.81.52LP | 090208-LP | M | ● | .219 | .094 | .031 | .098 | |
| | | 21.51LP | 110204-LP | M | ● | .250 | .094 | .016 | .110 | |
| | | 21.52LP | 110208-LP | M | ● | .250 | .094 | .031 | .110 | |
| | | 32.51LP | 16T304-LP | M | ● | .375 | .156 | .016 | .173 | |
| | Light Cutting | 32.52LP | 16T308-LP | M | ● | .375 | .156 | .031 | .173 | |
|  | NEW MP | TCMT1.81.51MP | TCMT090204-MP | M | ● | .219 | .094 | .016 | .098 |  |
| | | 1.81.52MP | 090208-MP | M | ● | .219 | .094 | .031 | .098 | |
| | | 21.51MP | 110204-MP | M | ● | .250 | .094 | .016 | .110 | |
| | | 21.52MP | 110208-MP | M | ● | .250 | .094 | .031 | .110 | |
| | | 2.521MP | 130304-MP | M | ● | .313 | .125 | .016 | .134 | |
| | | 32.51MP | 16T304-MP | M | ● | .375 | .156 | .016 | .173 | |
| | Medium Cutting | 32.52MP | 16T308-MP | M | ● | .375 | .156 | .031 | .173 | |
| | 32.53MP | 16T312-MP | M | ● | .375 | .156 | .047 | .173 | | |
|  | Standard | TCMT1.51.51 | TCMT080204 | M | ● | .187 | .094 | .016 | .091 |  |
| | | 1.81.51 | 090204 | M | ● | .219 | .094 | .016 | .098 | |
| | | 21.50.5 | 110202 | M | ● | .250 | .094 | .008 | .110 | |
| | | 21.51 | 110204 | M | ● | .250 | .094 | .016 | .110 | |
| | | 21.52 | 110208 | M | ● | .250 | .094 | .031 | .110 | |
| | | 2.520.5 | 130302 | M | ● | .313 | .125 | .008 | .134 | |
| | | 2.521 | 130304 | M | ● | .313 | .125 | .016 | .134 | |
| | | 32.51 | 16T304 | M | ● | .375 | .156 | .016 | .173 | |
| | Medium Cutting | 32.52 | 16T308 | M | ● | .375 | .156 | .031 | .173 | |
|  | NEW FP | VCMT220.5FP | VCMT110302-FP | M | ● | .250 | .125 | .008 | .110 |  |
| | | 221FP | 110304-FP | M | ● | .250 | .125 | .016 | .110 | |
| | | 331FP | 160404-FP | M | ● | .375 | .187 | .016 | .173 | |
| | | 332FP | 160408-FP | M | ● | .375 | .187 | .031 | .173 | |
| | Finish Cutting | | | | | | | | | |
|  | FV | VCMT1.51.50.5FV | VCMT080202-FV | M | ● | .187 | .094 | .008 | .097 |  |
| | | 1.51.51FV | 080204-FV | M | ● | .187 | .094 | .016 | .097 | |
| Finish Cutting | | | | | | | | | | |
|  | NEW LP | VCMT221LP | VCMT110304-LP | M | ● | .250 | .125 | .016 | .110 |  |
| | | 222LP | 110308-LP | M | ● | .250 | .125 | .031 | .110 | |
| | | 331LP | 160404-LP | M | ● | .375 | .187 | .016 | .173 | |
| | | 332LP | 160408-LP | M | ● | .375 | .187 | .031 | .173 | |
| Light Cutting | | | | | | | | | | |


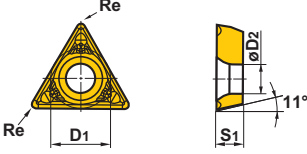

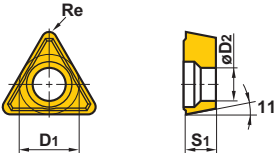

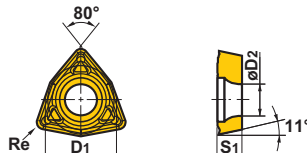
| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|------------------------|----------------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  Light Cutting | VCMT1.51.50.5SV | VCMT080202-SV | M | ● | .187 | .094 | .008 | .097 |  |
| | 1.51.51SV | 080204-SV | M | ● | .187 | .094 | .016 | .097 | |
|  Medium Cutting | VCMT331MP | VCMT160404-MP | M | ● | .375 | .187 | .016 | .173 |  |
| | 332MP | 160408-MP | M | ● | .375 | .187 | .031 | .173 | |
| | 333MP | 160412-MP | M | ● | .375 | .187 | .047 | .173 | |
|  Medium Cutting | VCMT221 | VCMT110304 | M | ● | .250 | .125 | .016 | .110 |  |
| | 331 | 160404 | M | ● | .375 | .187 | .016 | .173 | |
| | 332 | 160408 | M | ● | .375 | .187 | .031 | .173 | |
|  Medium Cutting | VCMT1.51.50.5MV | VCMT080202-MV | M | ● | .187 | .094 | .008 | .097 |  |
| | 1.51.51MV | 080204-MV | M | ● | .187 | .094 | .016 | .097 | |
|  Medium Cutting | WCMT1.210.5 | WCMT020102 | M | ● | .156 | .063 | .008 | .091 |  |
| | 1.211 | 020104 | M | ● | .156 | .063 | .016 | .091 | |
| | 1.51.50.5 | L30202 | M | ● | .187 | .094 | .008 | .091 | |
| | 1.51.51 | L30204 | M | ● | .187 | .094 | .016 | .091 | |
| | 21.50.5 | 040202 | M | ● | .250 | .094 | .008 | .110 | |
| | 21.51 | 040204 | M | ● | .250 | .094 | .016 | .110 | |
| | 32.51 | 06T304 | M | ● | .375 | .156 | .016 | .173 | |
| | 32.52 | 06T308 | M | ● | .375 | .156 | .031 | .173 | |

MP3025


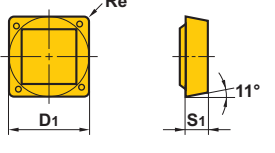

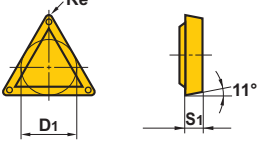
INSERTS

● 11° Positive Inserts (With hole)

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|------------------|----------------|-------|--------|-------------------|------|------|------|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  | CPMH2.51.50.5FV | CPMH080202-FV | M | ● | .313 | .094 | .008 | .138 |  |
| | 2.51.51FV | 080204-FV | M | ● | .313 | .094 | .016 | .138 | |
| | 320.5FV | 090302-FV | M | ● | .375 | .125 | .008 | .177 | |
| | 321FV | 090304-FV | M | ● | .375 | .125 | .016 | .177 | |
| | 322FV | 090308-FV | M | ● | .375 | .125 | .031 | .177 | |
| Finish Cutting | | | | | | | | | |
|  | CPMH2.51.50.5SV | CPMH080202-SV | M | ● | .313 | .094 | .008 | .138 |  |
| | 2.51.51SV | 080204-SV | M | ● | .313 | .094 | .016 | .138 | |
| | 320.5SV | 090302-SV | M | ● | .375 | .125 | .008 | .177 | |
| | 321SV | 090304-SV | M | ● | .375 | .125 | .016 | .177 | |
| | 322SV | 090308-SV | M | ● | .375 | .125 | .031 | .177 | |
| Light Cutting | | | | | | | | | |
|  | CPMH2.51.51MV | CPMH080204-MV | M | ● | .313 | .094 | .016 | .138 |  |
| | 2.51.52MV | 080208-MV | M | ● | .313 | .094 | .031 | .138 | |
| | 321MV | 090304-MV | M | ● | .375 | .125 | .016 | .177 | |
| | 322MV | 090308-MV | M | ● | .375 | .125 | .031 | .177 | |
| | | | | | | | | | |
| Medium Cutting | | | | | | | | | |
|  | TPMH1.51.50.5FV | TPMH080202-FV | M | ● | .187 | .094 | .008 | .098 |  |
| | 1.51.51FV | 080204-FV | M | ● | .187 | .094 | .016 | .098 | |
| | 1.81.50.5FV | 090202-FV | M | ● | .219 | .094 | .008 | .114 | |
| | 1.81.51FV | 090204-FV | M | ● | .219 | .094 | .016 | .114 | |
| | 220.5FV | 110302-FV | M | ● | .250 | .125 | .008 | .134 | |
| | 221FV | 110304-FV | M | ● | .250 | .125 | .016 | .134 | |
| | 222FV | 110308-FV | M | ● | .250 | .125 | .031 | .134 | |
| | 320.5FV | 160302-FV | M | ● | .375 | .125 | .008 | .173 | |
| | 321FV | 160304-FV | M | ● | .375 | .125 | .016 | .173 | |
| | 322FV | 160308-FV | M | ● | .375 | .125 | .031 | .173 | |
| Finish Cutting | | | | | | | | | |
|  | TPGH1.51.50.5LFS | TPGH080202L-FS | G | ● | .187 | .094 | .008 | .098 |  |
| | 1.51.51LFS | 080204L-FS | G | ● | .187 | .094 | .016 | .098 | |
| | 1.81.50.5LFS | 090202L-FS | G | ● | .219 | .094 | .008 | .114 | |
| | 1.81.51LFS | 090204L-FS | G | ● | .219 | .094 | .016 | .114 | |
| | 220.5LFS | 110302L-FS | G | ● | .250 | .125 | .008 | .134 | |
| | 221LFS | 110304L-FS | G | ● | .250 | .125 | .016 | .134 | |
| | 321LFS | 160304L-FS | G | ● | .375 | .125 | .016 | .173 | |
| | 322LFS | 160308L-FS | G | ● | .375 | .125 | .031 | .173 | |
| Finish Cutting | | | | | | | | | |
|  | TPMH1.51.50.5SV | TPMH080202-SV | M | ● | .187 | .094 | .008 | .098 |  |
| | 1.51.51SV | 080204-SV | M | ● | .187 | .094 | .016 | .098 | |
| | 1.81.50.5SV | 090202-SV | M | ● | .219 | .094 | .008 | .114 | |
| | 1.81.51SV | 090204-SV | M | ● | .219 | .094 | .016 | .114 | |
| | 220.5SV | 110302-SV | M | ● | .250 | .125 | .008 | .134 | |
| | 221SV | 110304-SV | M | ● | .250 | .125 | .016 | .134 | |
| | 222SV | 110308-SV | M | ● | .250 | .125 | .031 | .134 | |
| | 320.5SV | 160302-SV | M | ● | .375 | .125 | .008 | .173 | |
| | 321SV | 160304-SV | M | ● | .375 | .125 | .016 | .173 | |
| | 322SV | 160308-SV | M | ● | .375 | .125 | .031 | .173 | |
| Light Cutting | | | | | | | | | |

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|---|------------------------|----------------------|-------|--------|-------------------|------|------|------|--|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  Medium Cutting | TPMH1.51.50.5MV | TPMH080202-MV | M | ● | .187 | .094 | .008 | .098 |  |
| | 1.51.51MV | 080204-MV | M | ● | .187 | .094 | .016 | .098 | |
| | 1.81.50.5MV | 090202-MV | M | ● | .219 | .094 | .008 | .114 | |
| | 1.81.51MV | 090204-MV | M | ● | .219 | .094 | .016 | .114 | |
| | 1.81.52MV | 090208-MV | M | ● | .219 | .094 | .031 | .114 | |
| | 220.5MV | 110302-MV | M | ● | .250 | .125 | .008 | .134 | |
| | 221MV | 110304-MV | M | ● | .250 | .125 | .016 | .134 | |
| | 222MV | 110308-MV | M | ● | .250 | .125 | .031 | .134 | |
| | 321MV | 160304-MV | M | ● | .375 | .125 | .016 | .173 | |
| | 322MV | 160308-MV | M | ● | .375 | .125 | .031 | .173 | |
|  Medium Cutting | TPMX221 | TPMX110304 | M | ● | .250 | .125 | .016 | .138 |  |
| | 222 | 110308 | M | ● | .250 | .125 | .031 | .138 | |
|  Medium Cutting | WPMT21.50.5MV | WPMT040202-MV | M | ● | .250 | .094 | .008 | .110 |  |
| | 21.51MV | 040204-MV | M | ● | .250 | .094 | .016 | .110 | |
| | 321MV | 060304-MV | M | ● | .375 | .125 | .016 | .173 | |
| | 322MV | 060308-MV | M | ● | .375 | .125 | .031 | .173 | |

● 11° Positive Inserts (Without hole)

| Shape | Order Number | (ISO) Number | Class | Stock | Dimensions (inch) | | | | Geometry |
|--|----------------------|-------------------|-------|--------|-------------------|------|------|----|---|
| | | | | MP3025 | D1 | S1 | Re | D2 | |
|  Light to Medium Cutting | SPMR321 | SPMR090304 | M | ● | .375 | .125 | .016 | - |  |
| | 322 | 090308 | M | ● | .375 | .125 | .031 | - | |
| | 421 | 120304 | M | ● | .500 | .125 | .016 | - | |
| | 422 | 120308 | M | ● | .500 | .125 | .031 | - | |
|  Light to Medium Cutting | TPMR1.81.50.5 | TPMR090202 | M | ● | .219 | .094 | .008 | - |  |
| | 1.81.51 | 090204 | M | ● | .219 | .094 | .016 | - | |
| | 1.81.52 | 090208 | M | ● | .219 | .094 | .031 | - | |
| | 220.5 | 110302 | M | ● | .250 | .125 | .008 | - | |
| | 221 | 110304 | M | ● | .250 | .125 | .016 | - | |
| | 222 | 110308 | M | ● | .250 | .125 | .031 | - | |
| | 321 | 160304 | M | ● | .375 | .125 | .016 | - | |
| | 322 | 160308 | M | ● | .375 | .125 | .031 | - | |
| | 323 | 160312 | M | ● | .375 | .125 | .047 | - | |

PVD coated Cermet grade for steel

RECOMMENDED CUTTING CONDITIONS

Negative Inserts (External turning tools)

| Work Material | Hardness | Cutting Mode | | Breaker | Cutting Speed (SFM) | Feed (IPR) | Depth of Cut (inch) |
|---|-----------|-----------------|----------------|----------|---------------------|------------|---------------------|
| P Mild Steel (1010, 1018, 1020 etc.) | ≤180HB | General Cutting | Finish Cutting | FY | 900-1375 | .003-.009 | .008-.031 |
| | | | Light Cutting | SY | 820-1260 | .006-.013 | .020-.047 |
| Carbon Steel, Alloy Steel (1045, 4140 etc.) | 180-280HB | Stable Cutting | Finish Cutting | R/L-F | 690-1065 | .002-.006 | .004-.020 |
| | | | Light Cutting | LP | 640-965 | .004-.016 | .012-.079 |
| | | | Light Cutting | SW | 640-965 | .004-.020 | .012-.098 |
| | | | Light Cutting | R/L-K | 640-965 | .003-.008 | .012-.047 |
| | | | Medium Cutting | MP | 575-885 | .006-.020 | .012-.157 |
| | | | Medium Cutting | Standard | 575-885 | .010-.024 | .059-.197 |
| | | General Cutting | Medium Cutting | R/L | 575-885 | .006-.013 | .016-.079 |
| | | | Finish Cutting | FH | 690-1065 | .003-.008 | .008-.039 |
| | | | Medium Cutting | LP | 640-965 | .004-.016 | .012-.079 |

7° Positive Inserts (SP Holder, External turning tools)

| Work Material | Hardness | Cutting Mode | | Breaker | Cutting Speed (SFM) | Feed (IPR) | Depth of Cut (inch) |
|---|-----------|-----------------|----------------|--------------|---------------------|------------|---------------------|
| P Mild Steel (1010, 1018, 1020 etc.) | ≤180HB | Stable Cutting | Finish Cutting | R/L-F | 755-1150 | .002-.005 | .004-.059 |
| | | | Light Cutting | MV, Standard | 620-970 | .003-.012 | .012-.079 |
| | | General Cutting | Finish Cutting | FP, FV | 755-1150 | .002-.008 | .008-.035 |
| | | | Light Cutting | LP | 755-1150 | .002-.010 | .008-.039 |
| | | | Medium Cutting | MP | 620-970 | .003-.012 | .012-.079 |
| Carbon Steel, Alloy Steel (1045, 4140 etc.) | 180-280HB | Stable Cutting | Finish Cutting | R/L-F | 560-850 | .002-.005 | .004-.020 |
| | | | Light Cutting | SV | 560-850 | .002-.010 | .008-.039 |
| | | | Medium Cutting | MV, Standard | 460-705 | .003-.012 | .012-.079 |
| | | | Medium Cutting | MW | 460-705 | .004-.014 | .031-.098 |
| | | General Cutting | Finish Cutting | FP, FV | 560-850 | .002-.008 | .008-.035 |
| | | | Light Cutting | LP | 560-850 | .002-.010 | .008-.039 |
| | | | Light Cutting | SW | 560-850 | .002-.009 | .008-.059 |
| | | | Medium Cutting | MP | 460-705 | .003-.012 | .012-.079 |
| Carbon Steel, Alloy Steel (4340 etc.) | 280-350HB | General Cutting | Medium Cutting | MP | 330-510 | .003-.012 | .012-.079 |

11° Positive Inserts (MC Holder, External turning tools)

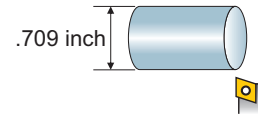
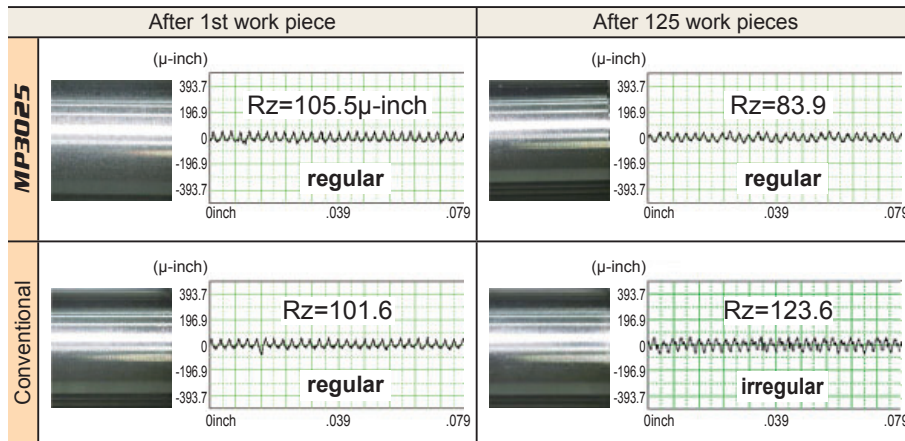
| Work Material | Hardness | Cutting Mode | | Breaker | Cutting Speed (SFM) | Feed (IPR) | Depth of Cut (inch) |
|---|-----------|-----------------|----------------------|----------|---------------------|------------|---------------------|
| P Mild Steel (1010, 1018, 1020 etc.) | ≤180HB | General Cutting | Light/Medium Cutting | Standard | 620-965 | .003-.012 | .012-.079 |
| Carbon Steel, Alloy Steel (1045, 4140 etc.) | 180-280HB | General Cutting | Light/Medium Cutting | Standard | 460-705 | .003-.012 | .012-.079 |

5°/7° Positive Inserts (Boring bars)

| Work Material | Hardness | Cutting Mode | | Breaker | Cutting Speed (SFM) | Feed (IPR) | Depth of Cut (inch) |
|---|-----------|-----------------|----------------|------------------|---------------------|------------|---------------------|
| P Mild Steel (1010, 1018, 1020 etc.) | ≤180HB | General Cutting | Finish Cutting | FP, FV | 755-1150 | .002-.008 | .008-.035 |
| | | | Light Cutting | LP | 755-1150 | .002-.010 | .008-.039 |
| | | | Medium Cutting | MP, MV, Standard | 620-970 | .003-.012 | .012-.079 |
| Carbon Steel, Alloy Steel (1045, 4140 etc.) | 180-280HB | General Cutting | Finish Cutting | FP | 560-850 | .002-.008 | .008-.035 |
| | | | Light Cutting | LP | 560-850 | .002-.010 | .008-.039 |
| | | | Medium Cutting | MP | 460-705 | .003-.012 | .012-.079 |
| Carbon Steel, Alloy Steel (4340 etc.) | 280-350HB | General Cutting | Finish Cutting | FP | 395-605 | .002-.008 | .008-.035 |
| | | | Light Cutting | LP | 395-605 | .002-.010 | .008-.039 |
| | | | Medium Cutting | MP | 330-510 | .003-.012 | .012-.079 |

*Recommended cutting conditions for 5° and 7° positive insert may vary depending on overhang. Please refer to the recommended cutting conditions for the boring bar when boring.

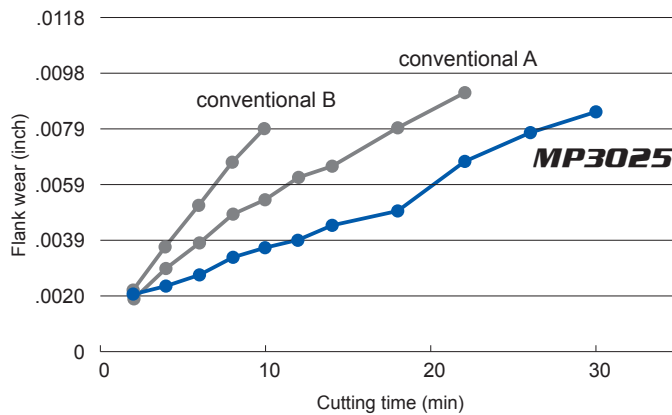
Comparison of surface finishes



<Cutting condition>
 Work piece : AISI 1045
 Inserts : DCMT32.51
 Cutting speed : $vc=490$ SFM
 Depth of cut : $ap=.039$ inch
 Feed : $f=.003$ IPR
 Wet cutting

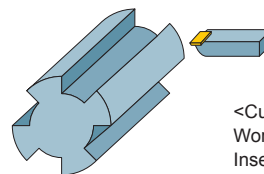
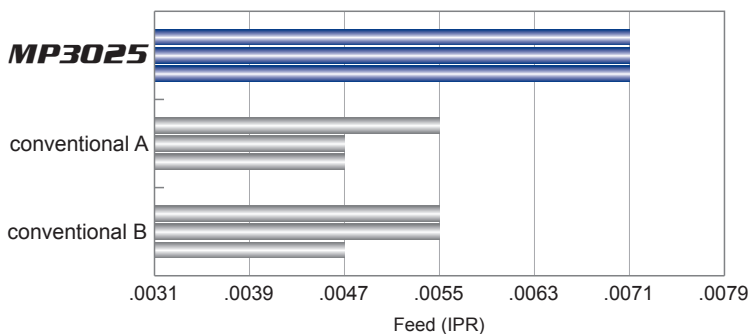
*MP3025 maintained a high quality surface finish through 125 components.

Wear resistance comparison



<Cutting condition>
 Work piece : AISI 1045
 Inserts : CNMG432-00
 Cutting speed : $vc=820$ SFM
 Depth of cut : $ap=.039$ inch
 Feed : $f=.006$ IPR
 Wet cutting

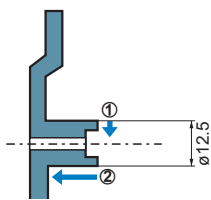
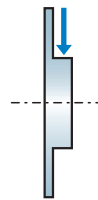
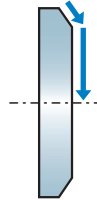

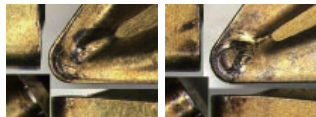
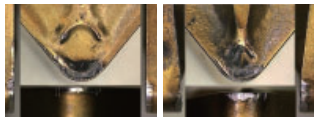
Fracture resistance comparison

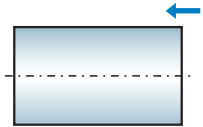
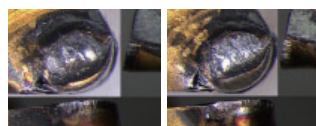


<Cutting condition>
 Work piece : AISI 4140
 Inserts : CNMG432-00
 Cutting speed : $vc=655$ SFM
 Depth of cut : $ap=.039$ inch
 Dry cutting

PVD coated Cermet grade for steel

APPLICATION EXAMPLES

| Insert | | WNMG432LP (MP3025) | DNMG431LP (MP3025) | WNMG432LP (MP3025) |
|--------------------|---------------------|--|---|---|
| Work piece | | Sprocket (ASTM A569)  | Motor parts (AISI 4130)  | ASTM A283  |
| Cutting Conditions | Cutting Speed (SFM) | 320 | 655 | 655 |
| | Feed (IPM) | .008 | .005 | .008 |
| | Depth of Cut (inch) | .014 | .012 | .020 |
| Coolant | | Wet cutting | | Dry cutting |
| Results | | <p>Coventional MP3025</p>  <p>MP3025 has better wear resistance than conventional cermet and enables extended time between tool changes.</p> | <p>Coventional MP3025</p>  <p>MP3025 doubled tool life and the LP chip breaker allowed vibration free machining.</p> | <p>Coventional MP3025</p>  <p>MP3025 doubled tool life compared to conventional inserts during dry cutting machining.</p> |

| Insert | | TNGG331LF (MP3025) |
|--------------------|---------------------|--|
| Work piece | | AISI 1045  |
| Cutting Conditions | Cutting Speed (SFM) | 820 |
| | Feed (IPM) | .006 |
| | Depth of Cut (inch) | .020 |
| Coolant | | Wet cutting |
| Results | | <p>Coventional MP3025</p>  <p>Compared to conventional products, MP3025 displayed less wear, therefore extended tool life.</p> |

For your safety

●Don't touch breakers and chips without gloves. ●Please machine within recommended application range, and exchange expired tools with new parts in advance. ●Please use safety cover and wear safety glasses. ●When using compounded cutting oils, please take fire prevention. ●When attaching chips or spare parts, please use the attached wrench or driver. ●When using tools in revolution machining, please make a trial run to check run-out, vibration, abnormal sounds etc.

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