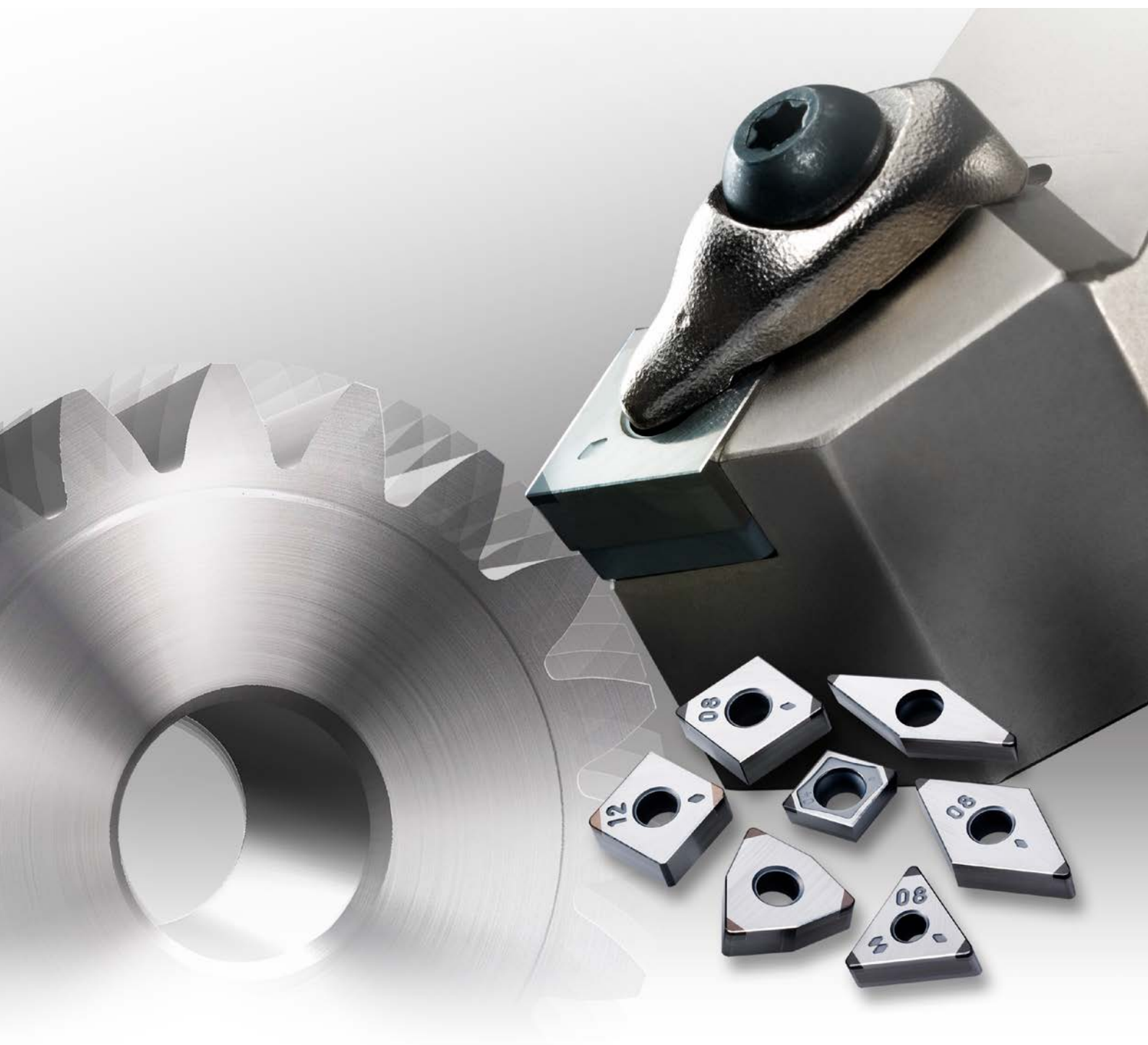


# MB4120

GRADO CBN PER LEGHE SINTERIZZATE E GHISA



# MB4120

**ECCELLENTE RESISTENZA ALLA ROTTURA E STABILITÀ  
PER UNA MIGLIORE PRODUTTIVITÀ**



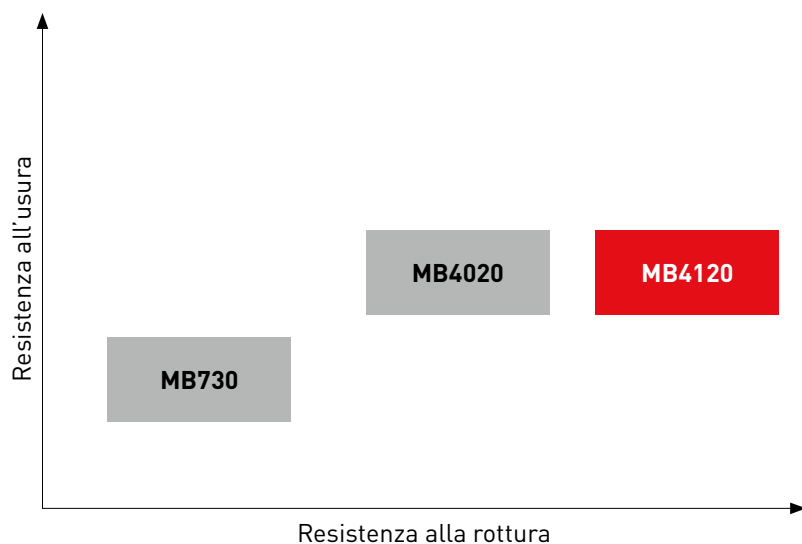
L'aumento del contenuto di particelle CBN e la resistenza del legante lo rendono adatto per la lavorazione di un'ampia gamma di materiali sinterizzati.

## **ELEVATA RESISTENZA ALLA ROTTURA**

Le micro-particelle CBN aumentano la robustezza del tagliente. L'alta resistenza alla rottura conferisce prestazioni stabili anche nelle lavorazioni a taglio interrotto.

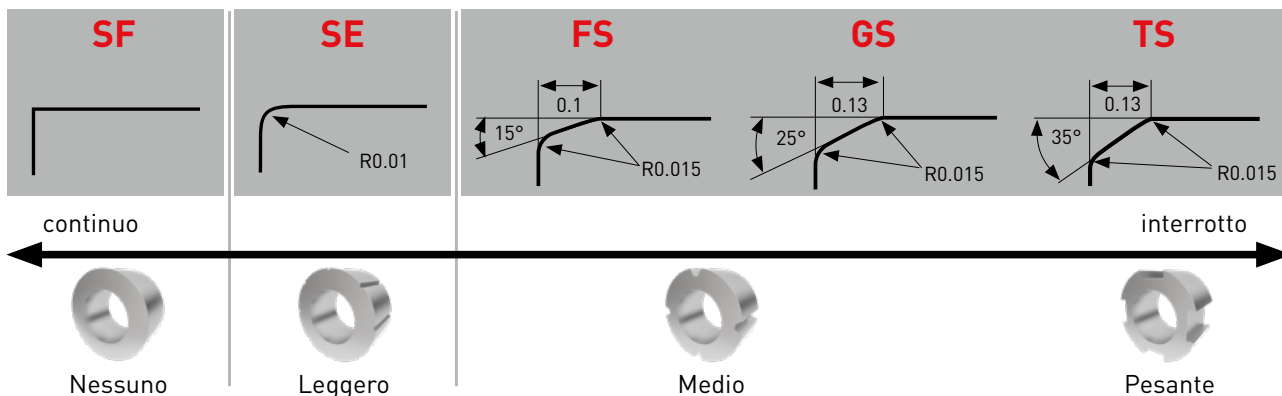
## **ELEVATA RESISTENZA ALL'ADESIONE DELLE MICRO-PARTICELLE CBN**

L'ottimizzazione delle condizioni di sinterizzazione rafforza l'adesione tra le micro-particelle CBN. Ciò aumenta sia la resistenza alla rottura che all'usura.



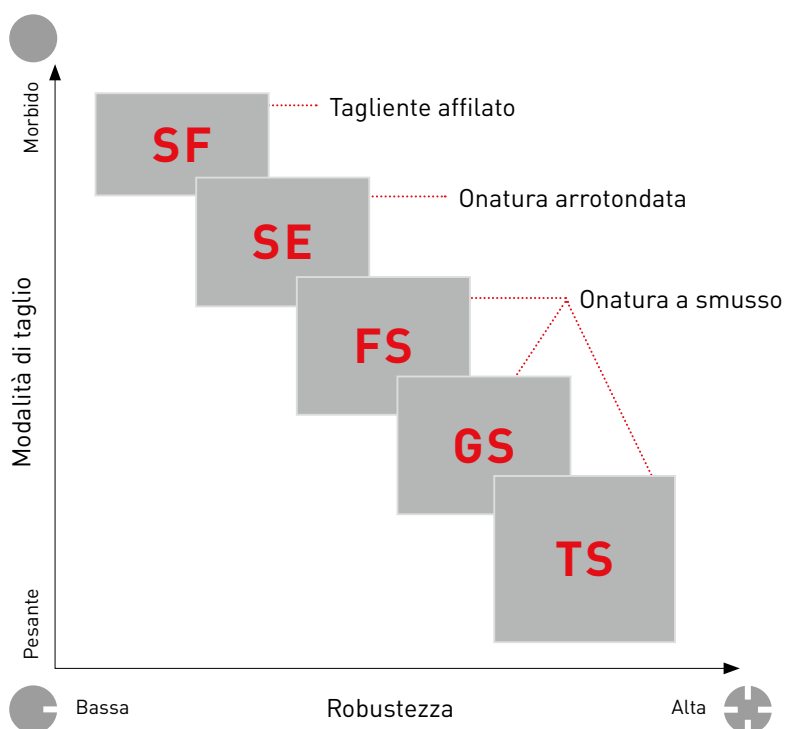
# GEOMETRIA

## PREPARAZIONE DEL TAGLIENTE



## AMPIA SELEZIONE DI PREPARAZIONI DEL TAGLIENTE (ONATURE)

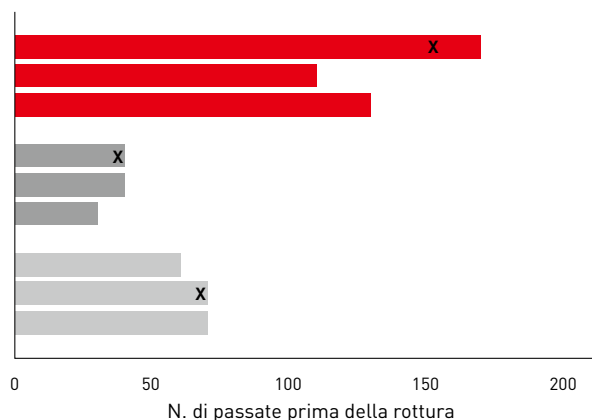
Il tipo di onatura SF fornisce un tagliente più affilato, comportando la riduzione della resistenza di taglio e la formazione di bave, oltre ad offrire un miglioramento della finitura della superficie dei componenti. Il tipo SF è la prima raccomandazione generale, ma per un aumento della robustezza del tagliente e della resistenza alla scheggiatura esistono i tipi di onatura SE, FS, GS e TS.



## AUMENTO DELLA RESISTENZA ALLA ROTTURA DURANTE LE LAVORAZIONI PESANTI CON TAGLIO INTERROTTO

Comparazione della resistenza alla rottura durante la sfacciatura interrotta di una lega sinterizzata altamente resistente.

|                    |                                        |
|--------------------|----------------------------------------|
| Materiale          | Lega sinterizzata altamente resistente |
| Inserto            | NP-TNGA160408SE3                       |
| Vc (m/min)         | 150                                    |
| f (mm/rev)         | 0.15                                   |
| ap (mm)            | 0.1                                    |
| Modalità di taglio | Taglio a umido                         |



**MB4120**



Scheggiatura 150 passate

Convenzionale A

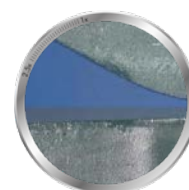
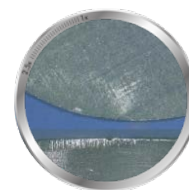


Scheggiatura 40 passate

Convenzionale B



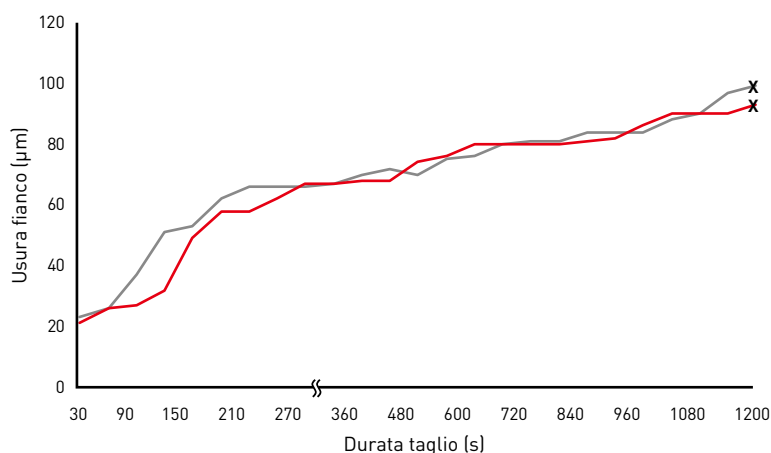
Scheggiatura 70 passate



## CONFRONTO DELLA LAVORAZIONE CONTINUA DI DIN GG25

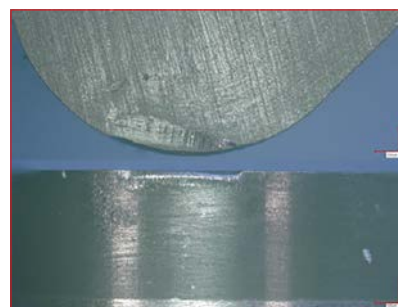
Eccellente resistenza alla rottura rispetto ai prodotti convenzionali.

|                    |                    |
|--------------------|--------------------|
| Materiale          | DIN GG25 (Perlite) |
| Inserto            | NP-TNGA160408SF3   |
| Vc (m/min)         | 800                |
| f (mm/rev)         | 0.1                |
| ap (mm)            | 0.2                |
| Modalità di taglio | Taglio a secco     |



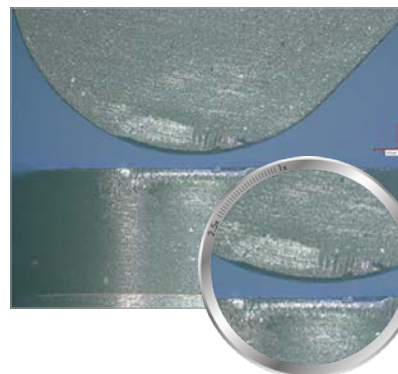
**MB4120**

1.200 s



Convenzionale

1.200 s



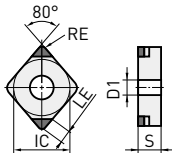
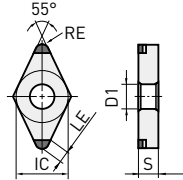
# MB4120

## INSERTI NEGATIVI (CON FORO)

K

H

CLASSE G

| Codice ordinazione | MB4020 | MB4120 | Taglienti | IC   | S    | RE  | D1   | LE  | Forma                                                                                                                                                                       | Geometria     |
|--------------------|--------|--------|-----------|------|------|-----|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| NP-CNGA120404SF2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 1.9 |       | NEW PETIT CUT |
| NP-CNGA120408SF2   | ▲      | ●      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-CNGA120412SF2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-CNGA120404SE2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-CNGA120408SE2   | ▲      | ●      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-CNGA120412SE2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-CNGA120404FS2   | ▲      | ●      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-CNGA120408FS2   | ▲      | ●      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-CNGA120412FS2   | ▲      | ●      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-CNGA120404GS2   | ▲      | ●      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-CNGA120408GS2   | ▲      | ●      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-CNGA120412GS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-CNGA120404TS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-CNGA120408TS2   | ▲      | ●      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-CNGA120412TS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-DNGA150404SF2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 2.1 |   | NEW PETIT CUT |
| NP-DNGA150408SF2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150412SF2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150604SF2   | ▲      | ★      | 2         | 12.7 | 6.35 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150608SF2   | ▲      | ★      | 2         | 12.7 | 6.35 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150612SF2   | ▲      | ★      | 2         | 12.7 | 6.35 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150404SE2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150408SE2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150412SE2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150604SE2   | ▲      | ★      | 2         | 12.7 | 6.35 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150608SE2   | ▲      | ★      | 2         | 12.7 | 6.35 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150612SE2   | ▲      | ★      | 2         | 12.7 | 6.35 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150404FS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150408FS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150412FS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150604FS2   | ▲      | ●      | 2         | 12.7 | 6.35 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150608FS2   | ▲      | ●      | 2         | 12.7 | 6.35 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150612FS2   | ▲      | ●      | 2         | 12.7 | 6.35 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150404GS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150408GS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150412GS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150604GS2   | ▲      | ★      | 2         | 12.7 | 6.35 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150608GS2   | ▲      | ●      | 2         | 12.7 | 6.35 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150612GS2   | ▲      | ★      | 2         | 12.7 | 6.35 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150404TS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150408TS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150412TS2   | ▲      | ★      | 2         | 12.7 | 4.76 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |
| NP-DNGA150604TS2   | ▲      | ★      | 2         | 12.7 | 6.35 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-DNGA150608TS2   | ▲      | ★      | 2         | 12.7 | 6.35 | 0.8 | 5.16 | 2.0 |                                                                                                                                                                             |               |
| NP-DNGA150612TS2   | ▲      | ★      | 2         | 12.7 | 6.35 | 1.2 | 5.16 | 1.9 |                                                                                                                                                                             |               |

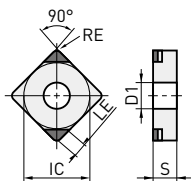
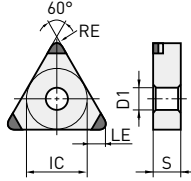
# MB4120

## INSERTI NEGATIVI (CON FORO)

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CLASSE G

| Codice ordinazione | MB4020 | MB4120 | Taglienti | IC    | S    | RE  | D1   | LE  | Forma                                                                                                                                                                       | Geometria     |
|--------------------|--------|--------|-----------|-------|------|-----|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| NP-SNGA120404SF2   | ▲      | ★      | 2         | 12.7  | 4.76 | 0.4 | 5.16 | 2.1 |       | NEW PETIT CUT |
| NP-SNGA120408SF2   | ▲      | ★      | 2         | 12.7  | 4.76 | 0.8 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-SNGA120412SF2   | ▲      | ★      | 2         | 12.7  | 4.76 | 1.2 | 5.16 | 2.5 |                                                                                                                                                                             |               |
| NP-SNGA120404SE2   | ▲      | ★      | 2         | 12.7  | 4.76 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-SNGA120408SE2   | ▲      | ★      | 2         | 12.7  | 4.76 | 0.8 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-SNGA120412SE2   | ▲      | ★      | 2         | 12.7  | 4.76 | 1.2 | 5.16 | 2.5 |                                                                                                                                                                             |               |
| NP-SNGA120404FS2   | ▲      | ★      | 2         | 12.7  | 4.76 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-SNGA120408FS2   | ▲      | ●      | 2         | 12.7  | 4.76 | 0.8 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-SNGA120412FS2   | ▲      | ●      | 2         | 12.7  | 4.76 | 1.2 | 5.16 | 2.5 |                                                                                                                                                                             |               |
| NP-SNGA120404GS2   | ▲      | ★      | 2         | 12.7  | 4.76 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-SNGA120408GS2   | ▲      | ●      | 2         | 12.7  | 4.76 | 0.8 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-SNGA120412GS2   | ▲      | ★      | 2         | 12.7  | 4.76 | 1.2 | 5.16 | 2.5 |                                                                                                                                                                             |               |
| NP-SNGA120404TS2   | ▲      | ★      | 2         | 12.7  | 4.76 | 0.4 | 5.16 | 2.1 |                                                                                                                                                                             |               |
| NP-SNGA120408TS2   | ▲      | ★      | 2         | 12.7  | 4.76 | 0.8 | 5.16 | 2.3 |                                                                                                                                                                             |               |
| NP-SNGA120412TS2   | ▲      | ★      | 2         | 12.7  | 4.76 | 1.2 | 5.16 | 2.5 |                                                                                                                                                                             |               |
| NP-TNGA160404SF3   | ▲      | ★      | 3         | 9.525 | 4.76 | 0.4 | 3.81 | 1.6 |   | NEW PETIT CUT |
| NP-TNGA160408SF3   | ▲      | ★      | 3         | 9.525 | 4.76 | 0.8 | 3.81 | 1.8 |                                                                                                                                                                             |               |
| NP-TNGA160412SF3   | ▲      | ★      | 3         | 9.525 | 4.76 | 1.2 | 3.81 | 1.9 |                                                                                                                                                                             |               |
| NP-TNGA160404SE3   | ▲      | ★      | 3         | 9.525 | 4.76 | 0.4 | 3.81 | 1.6 |                                                                                                                                                                             |               |
| NP-TNGA160408SE3   | ▲      | ★      | 3         | 9.525 | 4.76 | 0.8 | 3.81 | 1.8 |                                                                                                                                                                             |               |
| NP-TNGA160412SE3   | ▲      | ★      | 3         | 9.525 | 4.76 | 1.2 | 3.81 | 1.9 |                                                                                                                                                                             |               |
| NP-TNGA160404FS3   | ▲      | ●      | 3         | 9.525 | 4.76 | 0.4 | 3.81 | 1.6 |                                                                                                                                                                             |               |
| NP-TNGA160408FS3   | ▲      | ★      | 3         | 9.525 | 4.76 | 0.8 | 3.81 | 1.8 |                                                                                                                                                                             |               |
| NP-TNGA160412FS3   | ▲      | ★      | 3         | 9.525 | 4.76 | 1.2 | 3.81 | 1.9 |                                                                                                                                                                             |               |
| NP-TNGA160404GS3   | ▲      | ★      | 3         | 9.525 | 4.76 | 0.4 | 3.81 | 1.6 |                                                                                                                                                                             |               |
| NP-TNGA160408GS3   | ▲      | ●      | 3         | 9.525 | 4.76 | 0.8 | 3.81 | 1.8 |                                                                                                                                                                             |               |
| NP-TNGA160412GS3   | ▲      | ★      | 3         | 9.525 | 4.76 | 1.2 | 3.81 | 1.9 |                                                                                                                                                                             |               |
| NP-TNGA160404TS3   | ▲      | ★      | 3         | 9.525 | 4.76 | 0.4 | 3.81 | 1.6 |                                                                                                                                                                             |               |
| NP-TNGA160408TS3   | ▲      | ★      | 3         | 9.525 | 4.76 | 0.8 | 3.81 | 1.8 |                                                                                                                                                                             |               |
| NP-TNGA160412TS3   | ▲      | ★      | 3         | 9.525 | 4.76 | 1.2 | 3.81 | 1.9 |                                                                                                                                                                             |               |

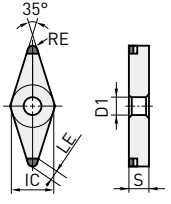
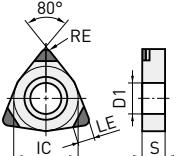
# MB4120

## INSERTI NEGATIVI (CON FORO)

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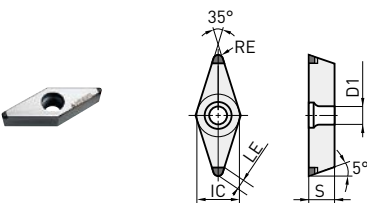
| Codice ordinazione | MB4020 | MB4120 | Taglienti | IC    | S    | RE  | D1   | LE  | Forma                                                                                 | Geometria                                                                            |
|--------------------|--------|--------|-----------|-------|------|-----|------|-----|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| NP-VNGA160404SF2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.4 | 3.81 | 2.5 |    |   |
| NP-VNGA160408SF2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.8 | 3.81 | 2.0 |                                                                                       |                                                                                      |
| NP-VNGA160404SE2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.4 | 3.81 | 2.5 |                                                                                       |                                                                                      |
| NP-VNGA160408SE2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.8 | 3.81 | 2.0 |                                                                                       |                                                                                      |
| NP-VNGA160404FS2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.4 | 3.81 | 2.5 |                                                                                       |                                                                                      |
| NP-VNGA160408FS2   | ▲      | ●      | 2         | 9.525 | 4.76 | 0.8 | 3.81 | 2.0 |                                                                                       |                                                                                      |
| NP-VNGA160404GS2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.4 | 3.81 | 2.5 |                                                                                       |                                                                                      |
| NP-VNGA160408GS2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.8 | 3.81 | 2.0 |                                                                                       |                                                                                      |
| NP-VNGA160404TS2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.4 | 3.81 | 2.5 |                                                                                       |                                                                                      |
| NP-VNGA160408TS2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.8 | 3.81 | 2.0 |                                                                                       |                                                                                      |
| NP-WNGA080408SF3   | ▲      | ★      | 3         | 12.7  | 4.76 | 0.8 | 5.16 | 2.1 |  |  |
| NP-WNGA080408SE3   | ▲      | ★      | 3         | 12.7  | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                       |                                                                                      |
| NP-WNGA080408FS3   | ▲      | ★      | 3         | 12.7  | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                       |                                                                                      |
| NP-WNGA080408GS3   | ▲      | ★      | 3         | 12.7  | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                       |                                                                                      |
| NP-WNGA080408TS3   | ▲      | ★      | 3         | 12.7  | 4.76 | 0.8 | 5.16 | 2.1 |                                                                                       |                                                                                      |

# MB4120

## INSERTI POSITIVI (CON FORO)

**K** **H**

CLASSE G

| Codice ordinazione | MB4020 | MB4120 | Taglienti | IC    | S    | RE  | D1   | LE  | Forma         | Geometria                                                                           |
|--------------------|--------|--------|-----------|-------|------|-----|------|-----|---------------|-------------------------------------------------------------------------------------|
| NP-VBGW110304SF2   | ▲      | ★      | 2         | 6.35  | 3.18 | 0.4 | 2.85 | 2.5 | NEW PETIT CUT |  |
| NP-VBGW110308SF2   | ▲      | ★      | 2         | 6.35  | 3.18 | 0.8 | 2.85 | 2.0 |               |                                                                                     |
| NP-VBGW160404SF2   | ▲      | ●      | 2         | 9.525 | 4.76 | 0.4 | 4.43 | 2.5 |               |                                                                                     |
| NP-VBGW160408SF2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.8 | 4.43 | 2.0 |               |                                                                                     |
| NP-VBGW110304SE2   | ▲      | ★      | 2         | 6.35  | 3.18 | 0.4 | 2.85 | 2.5 |               |                                                                                     |
| NP-VBGW110308SE2   | ▲      | ★      | 2         | 6.35  | 3.18 | 0.8 | 2.85 | 2.0 |               |                                                                                     |
| NP-VBGW160404SE2   | ▲      | ●      | 2         | 9.525 | 4.76 | 0.4 | 4.43 | 2.5 |               |                                                                                     |
| NP-VBGW160408SE2   | ▲      | ★      | 2         | 9.525 | 4.76 | 0.8 | 4.43 | 2.0 |               |                                                                                     |
| NP-VBGW110304FS2   | ▲      | ★      | 2         | 6.35  | 3.18 | 0.4 | 2.85 | 2.5 |               |                                                                                     |
| NP-VBGW110308FS2   | ▲      | ★      | 2         | 6.35  | 3.18 | 0.8 | 2.85 | 2.0 |               |                                                                                     |
| NP-VBGW160404FS2   | ▲      | ●      | 2         | 9.525 | 4.76 | 0.4 | 4.43 | 2.5 |               |                                                                                     |
| NP-VBGW160408FS2   | ▲      | ●      | 2         | 9.525 | 4.76 | 0.8 | 4.43 | 2.0 |               |                                                                                     |
| NP-VBGW110304GS2   | ▲      | ★      | 2         | 6.35  | 3.18 | 0.4 | 2.85 | 2.5 |               |                                                                                     |
| NP-VBGW110308GS2   | ▲      | ★      | 2         | 6.35  | 3.18 | 0.8 | 2.85 | 2.0 |               |                                                                                     |
| NP-VBGW160404GS2   | ▲      | ●      | 2         | 9.525 | 4.76 | 0.4 | 4.43 | 2.5 |               |                                                                                     |
| NP-VBGW160408GS2   | ▲      | ●      | 2         | 9.525 | 4.76 | 0.8 | 4.43 | 2.0 |               |                                                                                     |

# MB4120

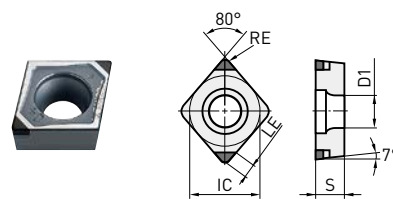
## INSERTI POSITIVI (CON FORO)

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CLASSE G

| Codice ordinazione | MB4020 | MB4120 | Taglienti | IC    | S    | RE  | D1  | LE  | Forma         | Geometria |
|--------------------|--------|--------|-----------|-------|------|-----|-----|-----|---------------|-----------|
| NP-CCGW060202SF2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.2 | 2.8 | 1.8 | NEW PETIT CUT |           |
| NP-CCGW060204SF2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.4 | 2.8 | 1.9 |               |           |
| NP-CCGW060208SF2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.1 |               |           |
| NP-CCGW09T302SF2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.2 | 4.4 | 1.8 |               |           |
| NP-CCGW09T304SF2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.4 | 4.4 | 1.9 |               |           |
| NP-CCGW09T308SF2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.1 |               |           |
| NP-CCGW060202SE2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.2 | 2.8 | 1.8 |               |           |
| NP-CCGW060204SE2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.4 | 2.8 | 1.9 |               |           |
| NP-CCGW060208SE2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.1 |               |           |
| NP-CCGW09T302SE2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.2 | 4.4 | 1.8 |               |           |
| NP-CCGW09T304SE2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.4 | 4.4 | 1.9 |               |           |
| NP-CCGW09T308SE2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.1 |               |           |
| NP-CCGW060202FS2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.2 | 2.8 | 1.8 |               |           |
| NP-CCGW060204FS2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.4 | 2.8 | 1.9 |               |           |
| NP-CCGW060208FS2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.1 |               |           |
| NP-CCGW09T302FS2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.2 | 4.4 | 1.8 |               |           |
| NP-CCGW09T304FS2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.4 | 4.4 | 1.9 |               |           |
| NP-CCGW09T308FS2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.1 |               |           |
| NP-CCGW060202GS2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.2 | 2.8 | 1.8 |               |           |
| NP-CCGW060204GS2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.4 | 2.8 | 1.9 |               |           |
| NP-CCGW060208GS2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.1 |               |           |
| NP-CCGW09T302GS2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.2 | 4.4 | 1.8 |               |           |
| NP-CCGW09T304GS2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.4 | 4.4 | 1.9 |               |           |
| NP-CCGW09T308GS2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.1 |               |           |
| NP-CCGW060208TS2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.1 |               |           |
| NP-CCGW09T308TS2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.1 |               |           |



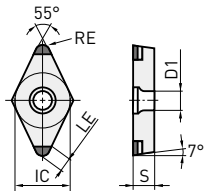
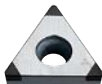
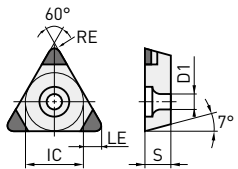
# MB4120

## INSERTI POSITIVI (CON FORO)

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CLASSE G

| Codice ordinazione | MB4020 | MB4120 | Taglienti | IC    | S    | RE  | D1  | LE  | Forma                                                                                                                                                                       | Geometria     |
|--------------------|--------|--------|-----------|-------|------|-----|-----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| NP-DCGW070204SF2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.4 | 2.8 | 2.1 |      | NEW PETIT CUT |
| NP-DCGW070208SF2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.0 |                                                                                                                                                                             |               |
| NP-DCGW11T302SF2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.2 | 4.4 | 1.5 |                                                                                                                                                                             |               |
| NP-DCGW11T304SF2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.4 | 4.4 | 2.1 |                                                                                                                                                                             |               |
| NP-DCGW11T308SF2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.0 |                                                                                                                                                                             |               |
| NP-DCGW070204SE2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.4 | 2.8 | 2.1 |                                                                                                                                                                             |               |
| NP-DCGW070208SE2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.0 |                                                                                                                                                                             |               |
| NP-DCGW11T302SE2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.2 | 4.4 | 1.5 |                                                                                                                                                                             |               |
| NP-DCGW11T304SE2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.4 | 4.4 | 2.1 |                                                                                                                                                                             |               |
| NP-DCGW11T308SE2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.0 |                                                                                                                                                                             |               |
| NP-DCGW070204FS2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.4 | 2.8 | 2.1 |                                                                                                                                                                             |               |
| NP-DCGW070208FS2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.0 |                                                                                                                                                                             |               |
| NP-DCGW11T302FS2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.2 | 4.4 | 1.5 |                                                                                                                                                                             |               |
| NP-DCGW11T304FS2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.4 | 4.4 | 2.1 |                                                                                                                                                                             |               |
| NP-DCGW11T308FS2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.0 |                                                                                                                                                                             |               |
| NP-DCGW070204GS2   | ▲      | ●      | 2         | 6.35  | 2.38 | 0.4 | 2.8 | 2.1 |                                                                                                                                                                             |               |
| NP-DCGW070208GS2   | ▲      | ★      | 2         | 6.35  | 2.38 | 0.8 | 2.8 | 2.0 |                                                                                                                                                                             |               |
| NP-DCGW11T302GS2   | ▲      | ★      | 2         | 9.525 | 3.97 | 0.2 | 4.4 | 1.5 |                                                                                                                                                                             |               |
| NP-DCGW11T304GS2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.4 | 4.4 | 2.1 |                                                                                                                                                                             |               |
| NP-DCGW11T308GS2   | ▲      | ●      | 2         | 9.525 | 3.97 | 0.8 | 4.4 | 2.0 |                                                                                                                                                                             |               |
| NP-TCGW110204SF3   | ▲      | ★      | 3         | 6.35  | 2.38 | 0.4 | 2.8 | 1.6 |   | NEW PETIT CUT |
| NP-TCGW110208SF3   | ▲      | ★      | 3         | 6.35  | 2.38 | 0.8 | 2.8 | 1.8 |                                                                                                                                                                             |               |
| NP-TCGW110204SE3   | ▲      | ★      | 3         | 6.35  | 2.38 | 0.4 | 2.8 | 1.6 |                                                                                                                                                                             |               |
| NP-TCGW110208SE3   | ▲      | ★      | 3         | 6.35  | 2.38 | 0.8 | 2.8 | 1.8 |                                                                                                                                                                             |               |
| NP-TCGW110204FS3   | ▲      | ●      | 3         | 6.35  | 2.38 | 0.4 | 2.8 | 1.6 |                                                                                                                                                                             |               |
| NP-TCGW110208FS3   | ▲      | ●      | 3         | 6.35  | 2.38 | 0.8 | 2.8 | 1.8 |                                                                                                                                                                             |               |
| NP-TCGW110204GS3   | ▲      | ★      | 3         | 6.35  | 2.38 | 0.4 | 2.8 | 1.6 |                                                                                                                                                                             |               |

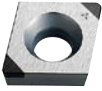
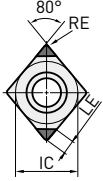
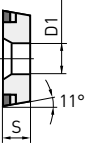
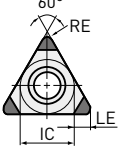
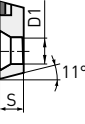
# MB4120

## INSERTI POSITIVI (CON FORO)

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CLASSE G

| Codice ordinazione | MB4020 | MB4120 | Taglienti | IC    | S    | RE  | D1  | LE  | Forma                                                                                                                                                                                                                                                             | Geometria     |
|--------------------|--------|--------|-----------|-------|------|-----|-----|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| NP-CPGB080202SE2   | ▲      | ★      | 2         | 7.94  | 2.38 | 0.2 | 3.5 | 1.8 |          | NEW PETIT CUT |
| NP-CPGB080204SE2   | ▲      | ★      | 2         | 7.94  | 2.38 | 0.4 | 3.5 | 1.9 |                                                                                                                                                                                                                                                                   |               |
| NP-CPGB090302SE2   | ▲      | ★      | 2         | 9.525 | 3.18 | 0.2 | 4.5 | 1.8 |                                                                                                                                                                                                                                                                   |               |
| NP-CPGB090304SE2   | ▲      | ★      | 2         | 9.525 | 3.18 | 0.4 | 4.5 | 1.9 |                                                                                                                                                                                                                                                                   |               |
| NP-CPGB090308SE2   | ▲      | ★      | 2         | 9.525 | 3.18 | 0.8 | 4.5 | 2.1 |                                                                                                                                                                                                                                                                   |               |
| NP-CPGB080202FS2   | ▲      | ★      | 2         | 7.94  | 2.38 | 0.2 | 3.5 | 1.8 |                                                                                                                                                                                                                                                                   |               |
| NP-CPGB080204FS2   | ▲      | ●      | 2         | 7.94  | 2.38 | 0.4 | 3.5 | 1.9 |                                                                                                                                                                                                                                                                   |               |
| NP-CPGB090302FS2   | ▲      | ★      | 2         | 9.525 | 3.18 | 0.2 | 4.5 | 1.8 |                                                                                                                                                                                                                                                                   |               |
| NP-CPGB090304FS2   | ▲      | ★      | 2         | 9.525 | 3.18 | 0.4 | 4.5 | 1.9 |                                                                                                                                                                                                                                                                   |               |
| NP-CPGB090308FS2   | ▲      | ★      | 2         | 9.525 | 3.18 | 0.8 | 4.5 | 2.1 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB090202SF3   | ▲      | ★      | 3         | 5.56  | 2.38 | 0.2 | 2.9 | 1.5 |    | NEW PETIT CUT |
| NP-TPGB090204SF3   | ▲      | ★      | 3         | 5.56  | 2.38 | 0.4 | 2.9 | 1.6 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110302SF3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.2 | 3.4 | 1.5 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110304SF3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.4 | 3.4 | 1.6 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110308SF3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.8 | 3.4 | 1.8 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB090202SE3   | ▲      | ★      | 3         | 5.56  | 2.38 | 0.2 | 2.9 | 1.5 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB090204SE3   | ▲      | ★      | 3         | 5.56  | 2.38 | 0.4 | 2.9 | 1.6 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110302SE3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.2 | 3.4 | 1.5 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110304SE3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.4 | 3.4 | 1.6 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110308SE3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.8 | 3.4 | 1.8 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB090202FS3   | ▲      | ★      | 3         | 5.56  | 2.38 | 0.2 | 2.9 | 1.5 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB090204FS3   | ▲      | ★      | 3         | 5.56  | 2.38 | 0.4 | 2.9 | 1.6 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110302FS3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.2 | 3.4 | 1.5 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110304FS3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.4 | 3.4 | 1.6 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110308FS3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.8 | 3.4 | 1.8 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB090202GS3   | ▲      | ★      | 3         | 5.56  | 2.38 | 0.2 | 2.9 | 1.5 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB090204GS3   | ▲      | ★      | 3         | 5.56  | 2.38 | 0.4 | 2.9 | 1.6 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110302GS3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.2 | 3.4 | 1.5 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110304GS3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.4 | 3.4 | 1.6 |                                                                                                                                                                                                                                                                   |               |
| NP-TPGB110308GS3   | ▲      | ★      | 3         | 6.35  | 3.18 | 0.8 | 3.4 | 1.8 |                                                                                                                                                                                                                                                                   |               |

# MB4120

## CONDIZIONI DI TAGLIO CONSIGLIATE

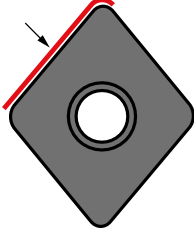
|   | Materiale                               | Modalità di taglio | Grado  | f    | ap   | Vc      |
|---|-----------------------------------------|--------------------|--------|------|------|---------|
| H | Leghe sinterizzate generiche            | Secco, umido       | MB4120 | ≤0.2 | ≤0.3 | 80—320  |
|   | Leghe sinterizzate altamente resistenti | Secco, umido       |        | ≤0.2 | ≤0.3 | 80—230  |
|   | Leghe sinterizzate temprate             | Secco, umido       |        | ≤0.2 | ≤0.3 | 80—180  |
| K | Ghisa grigia                            | Secco, umido       | MB4120 | ≤0.2 | ≤0.3 | 210—320 |

# MB4020

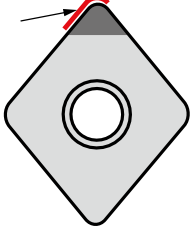
## CBN FULL FACE

L'inserto in CBN full face può essere usato per profondità di taglio e smussi quando gli inserti CBN con scheggia saldobrasata convenzionali non sono idonei.

Area di taglio



Area di taglio



| Codice ordinazione | MB4020 | MB4120 | Taglienti | IC    | S    | RE  | D1  | Forma | Geometria |
|--------------------|--------|--------|-----------|-------|------|-----|-----|-------|-----------|
| CCGW060202FS       | ★      | —      | 2         | 6.35  | 2.38 | 0.2 | 2.8 |       |           |
| CCGW060204FS       | ★      | —      | 2         | 6.35  | 2.38 | 0.4 | 2.8 |       |           |
| CCGW060208FS       | ★      | —      | 2         | 6.35  | 2.38 | 0.8 | 2.8 |       |           |
| CCGW09T304FS       | ★      | —      | 2         | 9.525 | 3.97 | 0.4 | 4.4 |       |           |
| CCGW09T308FS       | ★      | —      | 2         | 9.525 | 3.97 | 0.8 | 4.4 |       |           |
| DCGW070204FS       | ★      | —      | 2         | 6.35  | 2.38 | 0.4 | 2.8 |       |           |
| DCGW070208FS       | ★      | —      | 2         | 6.35  | 2.38 | 0.8 | 2.8 |       |           |
| TCGW090204FS       | ★      | —      | 3         | 5.56  | 2.38 | 0.4 | 2.5 |       |           |
| TCGW090208FS       | ★      | —      | 3         | 5.56  | 2.38 | 0.8 | 2.5 |       |           |
| TCGW110204FS       | ★      | —      | 3         | 6.35  | 2.38 | 0.4 | 2.8 |       |           |
| TCGW110208FS       | ★      | —      | 3         | 6.35  | 2.38 | 0.8 | 2.8 |       |           |

## CONDIZIONI DI TAGLIO CONSIGLIATE

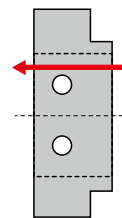
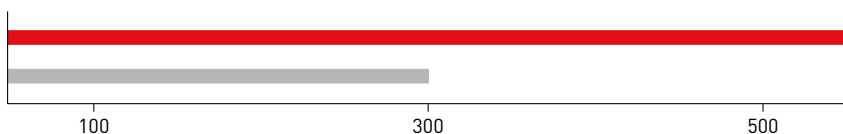
### CONDIZIONI DI TAGLIO PER SUPERFICI PIENE

| Materiale | Modalità di taglio                      | Grado        | f     | ap          | Vc       |
|-----------|-----------------------------------------|--------------|-------|-------------|----------|
| H         | Leghe sinterizzate generiche            | Secco, umido | -0.2  | -0.3 [-2.0] | 80—250   |
|           | Leghe sinterizzate altamente resistenti | Secco, umido | -0.2  | -0.3 [-2.0] | 80—200   |
|           | Leghe sinterizzate temprate             | Secco, umido | -0.2  | -0.3 [-2.0] | 80—150   |
| K         | Ghisa grigia                            | Secco, umido | -0.4  | -0.5 [-2.0] | 230—760  |
|           |                                         | A Secco      | -0.15 | -0.5 [-2.0] | 510—1000 |

## ESEMPI DI APPLICAZIONE

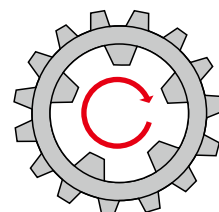
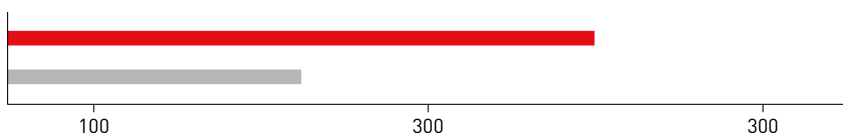
|                       |                                       |
|-----------------------|---------------------------------------|
| Inserto               | NP-DCGW11T308SF2                      |
| Materiale da lavorare | Lega sinterizzata generica            |
| Componente            | Alloggiamento (barenatura interrotta) |
| Vc (m/min.)           | 200                                   |
| f (mm/giro)           | 0.07                                  |
| ap (mm)               | 0.2                                   |
| Modalità di taglio    | Taglio a umido                        |

Risultati Raddoppia la durata dell'utensile rispetto ai prodotti convenzionali.



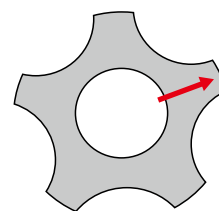
|                       |                                     |
|-----------------------|-------------------------------------|
| Inserto               | NP-DCGW11T308SF2                    |
| Materiale da lavorare | Lega sinterizzata generica          |
| Componente            | Contenitore (barenatura interrotta) |
| Vc (m/min.)           | 180                                 |
| f (mm/giro)           | 0.25                                |
| ap (mm)               | 0.2 - 0.3                           |
| Modalità di taglio    | Taglio a umido                      |

Risultati Raddoppia la durata dell'utensile rispetto ai prodotti convenzionali.



|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| Inserto               | NP-DCGW11T308SF2                                      |
| Materiale da lavorare | Lega sinterizzata a base di ferro (60 HRB) Ra <1,0 µm |
| Componente            | Pignone (sfacciatura interrotta)                      |
| Vc (m/min.)           | 200                                                   |
| f (mm/giro)           | 0.04 - 0.05                                           |
| ap (mm)               | 0.4                                                   |
| Modalità di taglio    | Taglio a umido                                        |

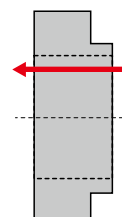
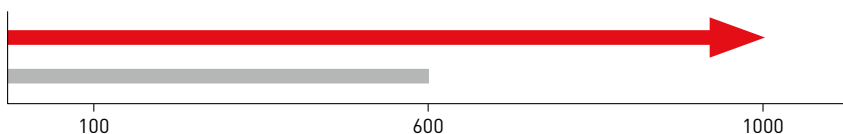
Risultati Rispetto a un prodotto convenzionale, è stata mantenuta una buona finitura superficiale ed è stata raggiunta una durata dell'utensile 2,5 volte maggiore.



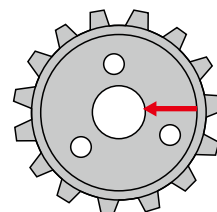
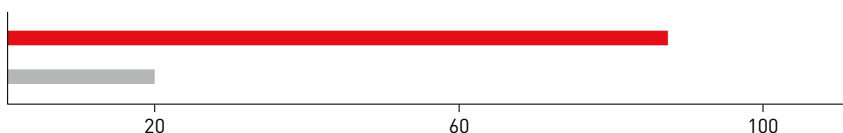
Gli esempi di cui sopra sono applicazioni di clienti reali e dunque possono non rispettare le condizioni raccomandate.

## ESEMPI DI APPLICAZIONE

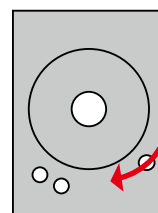
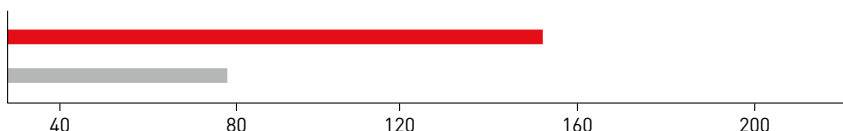
|                       |                                                                                                                        |
|-----------------------|------------------------------------------------------------------------------------------------------------------------|
| Inserto               | NP-TNGA160408SF3                                                                                                       |
| Materiale da lavorare | Lega sinterizzata altamente resistente                                                                                 |
| Componente            | Ruota dentata (barenatura continua)                                                                                    |
| Vc (m/min.)           | 250                                                                                                                    |
| f (mm/giro)           | 0.1                                                                                                                    |
| ap (mm)               | 0.1                                                                                                                    |
| Modalità di taglio    | Taglio a umido                                                                                                         |
| Risultati             | Rispetto a un prodotto convenzionale, l'usura del fianco era minore e l'inserto poteva continuare a essere utilizzato. |



|                       |                                                                                                                                                                      |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inserto               | NP-TNGA160408SE3                                                                                                                                                     |
| Materiale da lavorare | Lega sinterizzata generica                                                                                                                                           |
| Componente            | Ruota dentata (sfacciatura interrotta)                                                                                                                               |
| Vc (m/min.)           | 240                                                                                                                                                                  |
| f (mm/giro)           | 0.12                                                                                                                                                                 |
| ap (mm)               | 0.05                                                                                                                                                                 |
| Modalità di taglio    | Taglio a umido                                                                                                                                                       |
| Risultati             | Rispetto a un prodotto Cermet convenzionale, è stata ottenuta una maggiore qualità della finitura delle superfici e una durata dell'utensile oltre 4 volte maggiore. |



|                       |                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------|
| Inserto               | NP-CNGA120408SF2                                                                             |
| Materiale da lavorare | Ghisa                                                                                        |
| Componente            | Parti meccaniche (sfacciatura interrotta)                                                    |
| Vc (m/min.)           | 600                                                                                          |
| f (mm/giro)           | 0.175 – 0.25                                                                                 |
| ap (mm)               | 0.15 – 0.2                                                                                   |
| Modalità di taglio    | Taglio a secco                                                                               |
| Risultati             | Nessun danno anormale ed è stata ottenuta una durata dell'utensile oltre 1,5 volte maggiore. |



Gli esempi di cui sopra sono applicazioni di clienti reali e dunque possono non rispettare le condizioni raccomandate.

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