BC8100/MB8100-SERIE

PCBN-DREH-WSP
FÜR GEHÄRTETE STÄHLE

DIAEDGE

MITSUBISHI MATERIALS

BC8100-SERIE

BESCHICHTETE PCBN-SERIE FÜR DAS DREHEN VON GEHÄRTETEM STAHL

BC8105

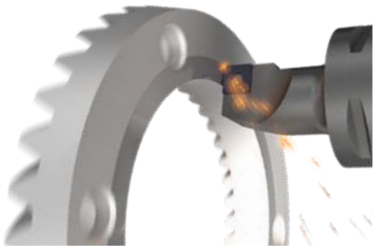
HÖCHSTE GENAUIGKEIT

Für kontinuierlichen Schnitt
- Hervorragende Oberflächenqualitäten und enge Toleranzen mit langer Werkzeugstandzeit
- Für Oberflächengüten bis zu Rz 2.4 (Ra 0.6)

BC8110 / MB8110

HOCHGESCHWINDIGKEITSDREHEN

Für kontinuierlichen und leicht unterbrochenen Schnitt
- Lange und stabile Werkzeugstandzeit für Oberflächenqualitäten unter Rz 6.3



BC8120 / MB8120

ALLGEMEINE ANWENDUNGEN

Für kontinuierliche bis mittlere unterbrochene Zerspanung
- Erste Wahl für Schruppen und Vorschlichten

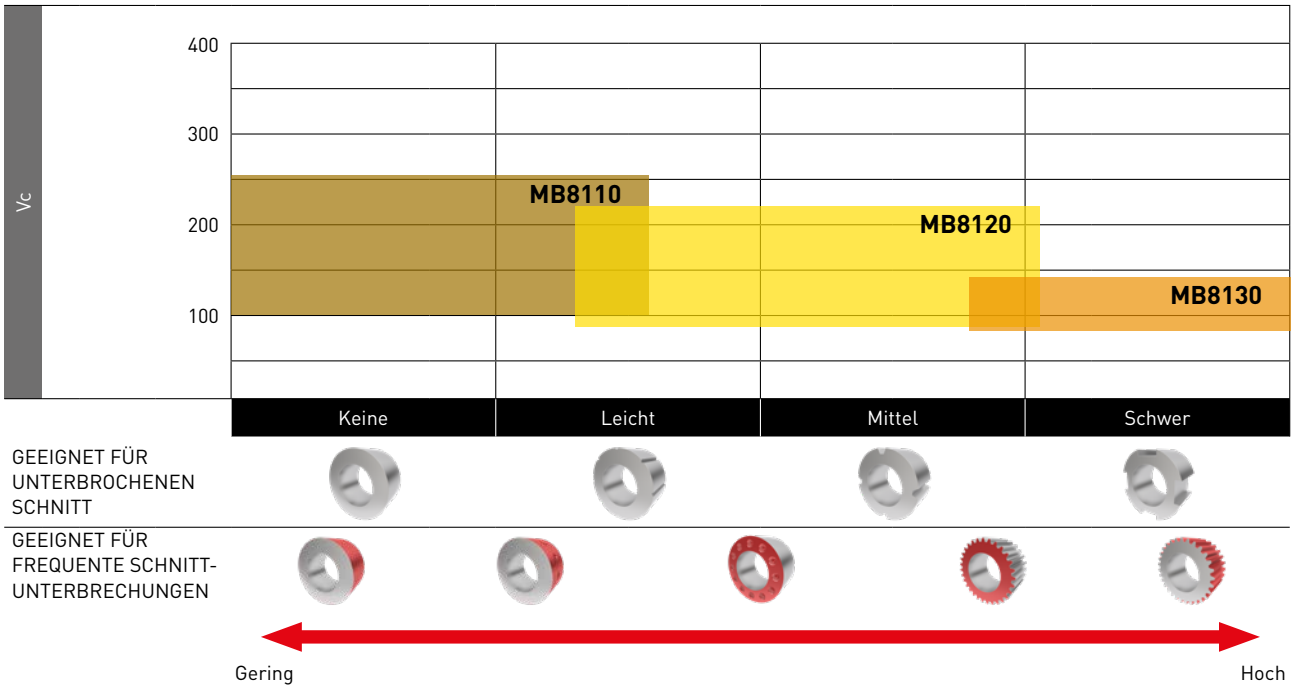
BC8130 / MB8130

SCHRUPPBEARBEITUNG

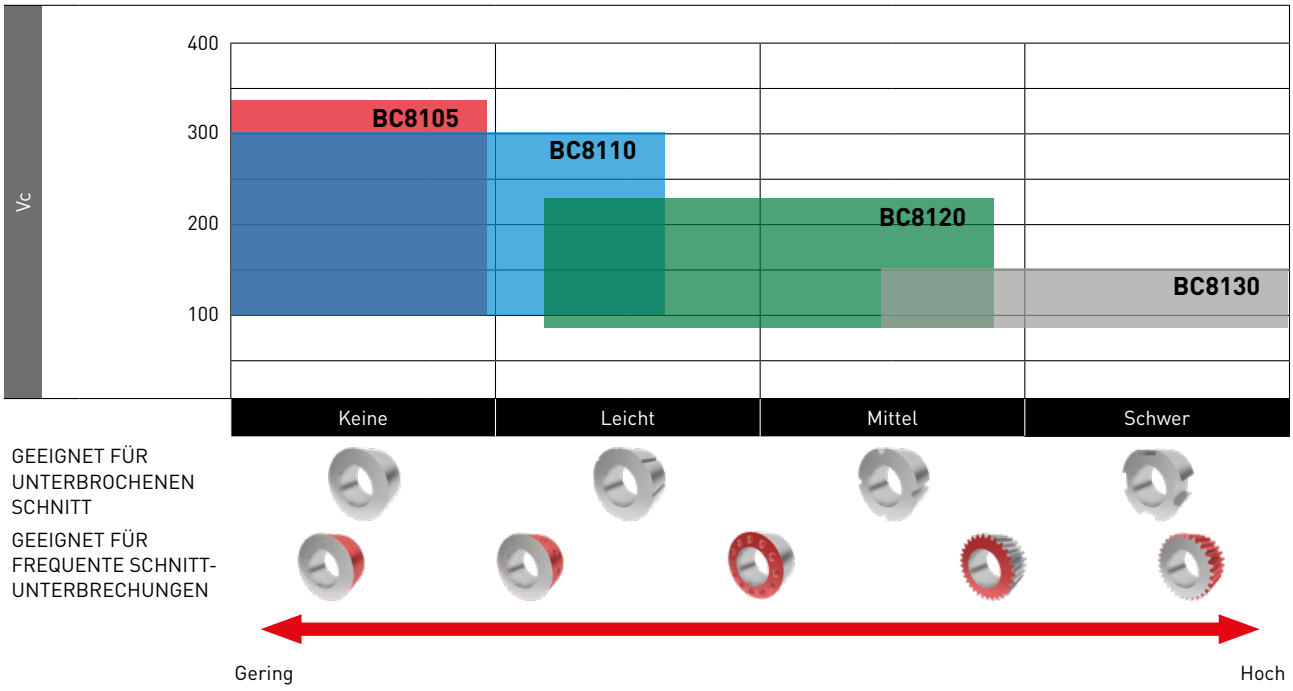
Für instabile Anwendungen und schwer unterbrochene Schnitte
- Toleranzgenauigkeit über eine hohe Anzahl an Schnitten

ANWENDUNGSBEREICH

UNBESCHICHTETE PCBN-SERIE MB8100



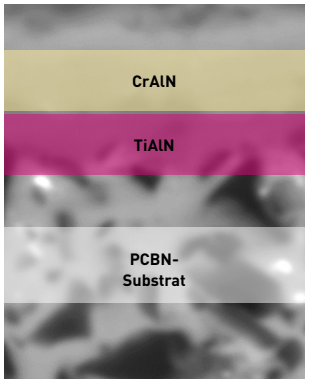
BESCHICHTETE PCBN-SERIE BC8100



SORTEN

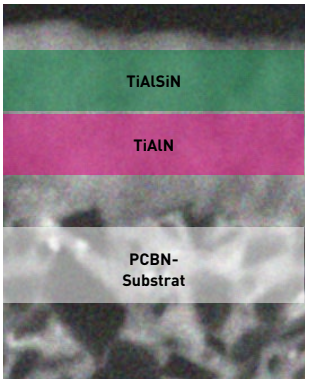
NEUE, VERBESSERTE BESCHICHTUNG

BC8105



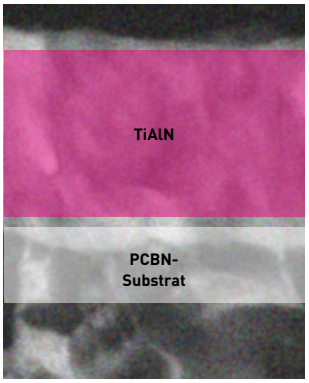
Hervorragende Oberflächenrauheit ohne Verschweißung durch Beschichtung mit geringer Reibung.

BC8110



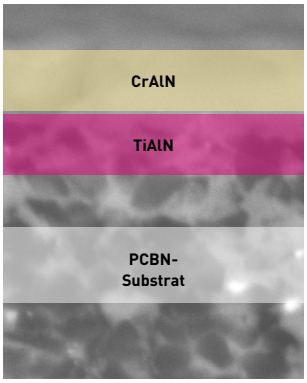
Längere Werkzeugstandzeit durch hohen Verschleißwiderstand für Hochgeschwindigkeits-bearbeitungen.

BC8120



Ausgeglichene, längere Werkzeugstandzeit ohne Abrieb der Beschichtung.

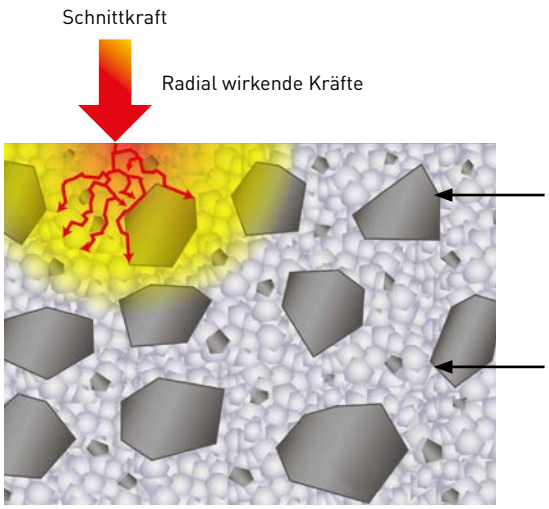
BC8130



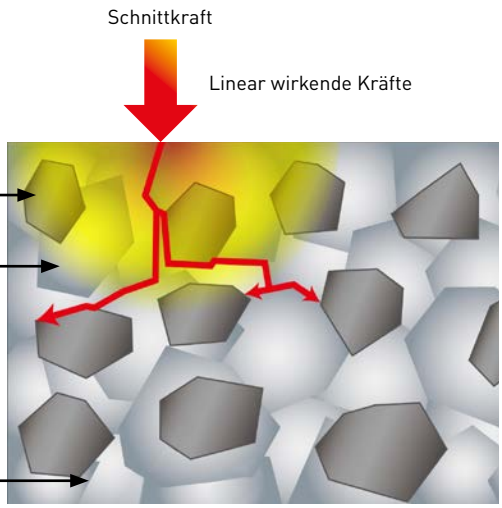
Vermeidet Absplitterung ohne Abrieb der Beschichtung.

OPTIMIERTE-SUBSTRATTECHNOLOGIE

BC8100 / MB8100-SERIE



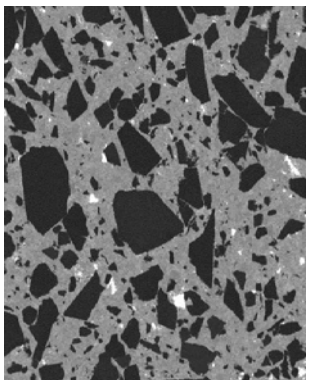
HERKÖMMLICH



Der ultra-feinkörnige Binder bei den unbeschichteten WSP verhindert die Bildung linearer Risse, die zu plötzlichem Bruch führen können.

MB8100 UNBESCHICHTETE SORTEN

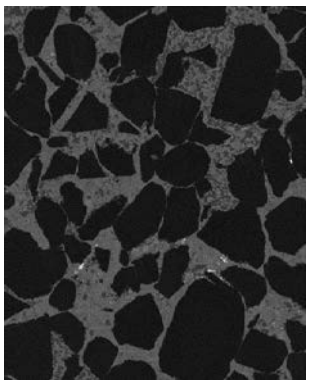
MB8110



Für kontinuierlichen Schnitt

MB8110 ist dank seiner ausgezeichneten Verschleißfestigkeit die ideale Wahl für kontinuierlichen Schnitt.

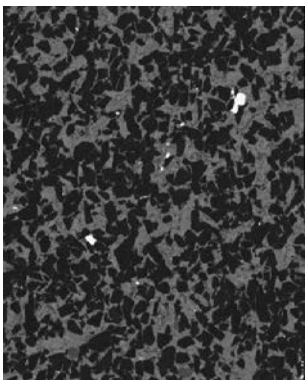
MB8120



Für allgemeine Zerspanung

MB8120 bietet sowohl eine ausgezeichnete Verschleiß- als auch Bruchfestigkeit und eignet sich für ein breites Anwendungsspektrum.

MB8130



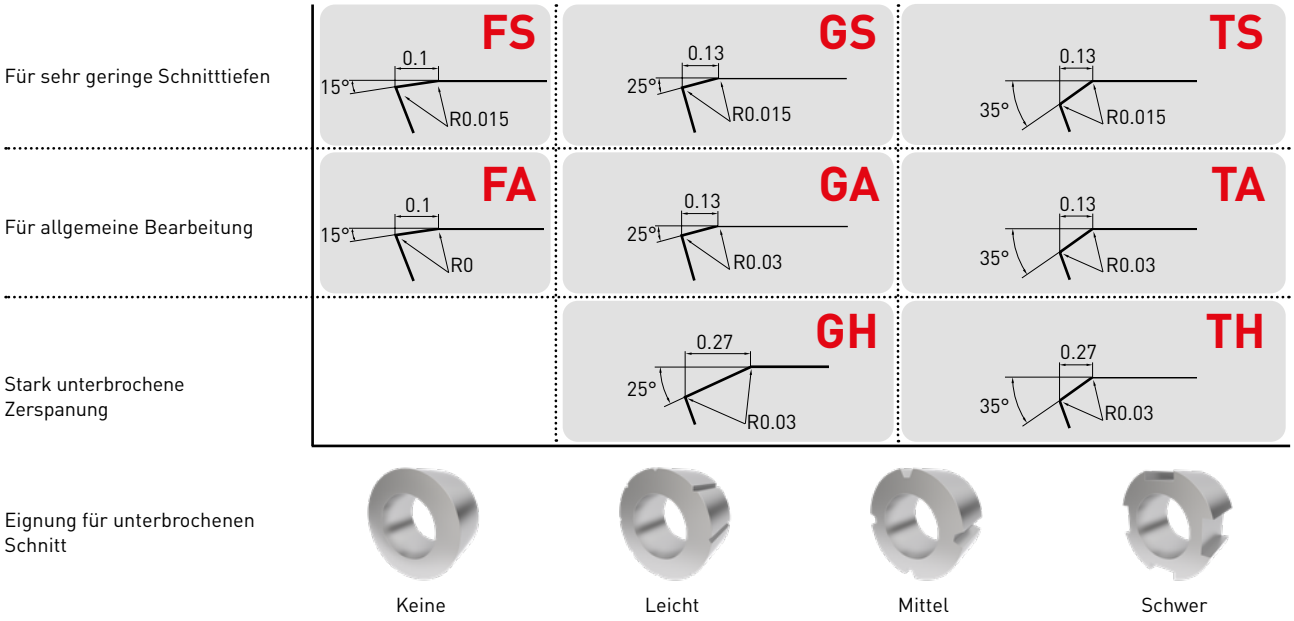
Für schwer unterbrochene Schnitte

MB8130 zeichnet sich durch die höchste Bruchfestigkeit aus und ist ideal für instabile Anwendungen und schwer unterbrochene Schnitte.

Sowohl unbeschichtete als auch beschichtete PCBN-Sorten werden mit Hilfe des ultra-feinkörnigen Binders hergestellt.

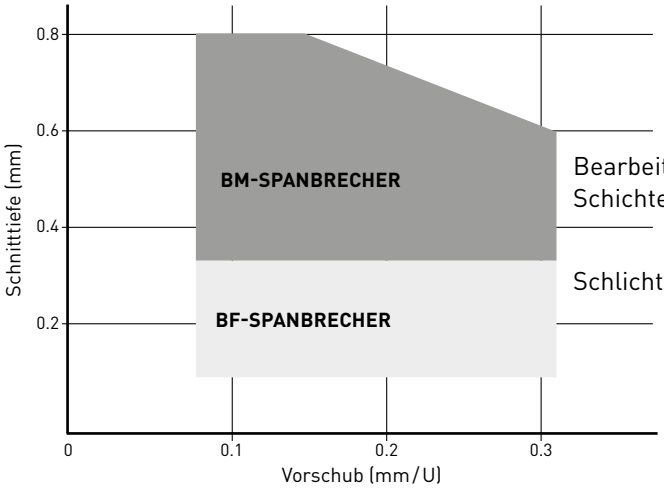
GEOMETRIE

SCHNEIDENVERFASUNG



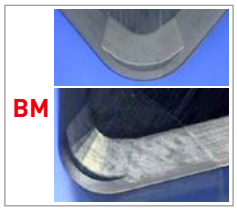
Unterschiedliche Schneidenverfasungen für alle Anwendungen.

BM/BF-SPANBRECHER



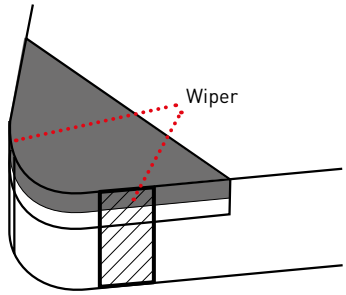
Bearbeiten von aufgekohlten Schichten

Schlicht-Anwendungen



Spanbrecher-System für hervorragende Spankontrolle beim Schlichten, Bearbeiten von aufgekohlten Schichten und bei der Hart-Weich-Bearbeitung.

WIPER-WSP



VERBESSERTE OBERFLÄCHENQUALITÄT
Mit denselben Bearbeitungsbedingungen wie bei herkömmlichen Spanbrechern, aber mit erhöhter Vorschubgeschwindigkeit, kann die Oberflächengüte der Werkstücke verbessert werden.

VERBESSERTE EFFIZIENZ
Eine hohe Vorschubgeschwindigkeit verkürzt nicht nur die Bearbeitungszeiten, sondern ermöglicht auch die Kombination von Schrupp- und Schlichtarbeiten.

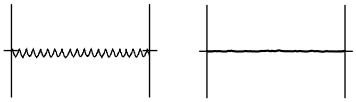
ERHÖHTE WERKZEUGSTANDZEIT
Bei hohen Vorschubgeschwindigkeiten verringert sich die Zeit für die Zerspanung eines Bauteils, wodurch pro WSP mehr Bauteile bearbeitet werden können. Außerdem verhindert die hohe Vorschubgeschwindigkeit den Abrieb, wodurch sich der Verschleißverlauf verzögert und die Werkzeugstandzeit erhöht wird.

VERBESSERTE SPANKONTROLLE
Bei hohen Vorschubgeschwindigkeiten werden die Späne dicker und brechen leichter, wodurch die Spankontrolle verbessert wird.

EMPFOHLENE SCHNITTDATEN UND SCHNITTLEISTUNG

HOCHPRÄZISE ENDBEARBEITUNG

Ohne Wiper | **Mit Wiper**



Ry = 3.2 µm | Ry = 1.0 µm

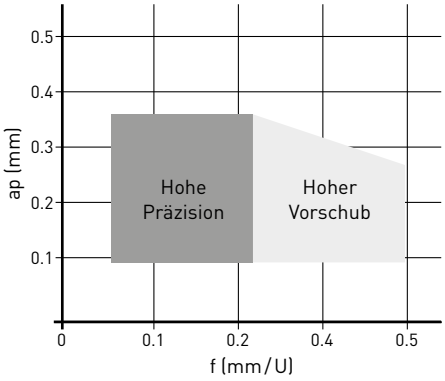
Schnittgeschwindigkeit: 100 m/min
Vorschub: 0.1 mm/U.
Schnitttiefe: 0.1 mm
Trockenbearbeitung

BEARBEITUNG MIT HOHEM VORSCHUB

Ohne Wiper | **Mit Wiper**

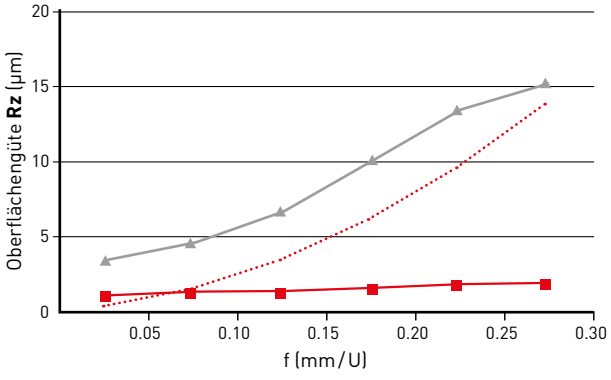
Ry = 12.2 µm | Ry = 1.2 µm

Schnittgeschwindigkeit: 100 m/min
Vorschub: 0.3 mm/U
Schnitttiefe: 0.1 mm
Trockenbearbeitung



SCHNITTLEISTUNG

WSP	NP-CNGA120408
Werkstoff	gehärteter Stahl (HRC 60)
Schnittmodus	kontinuierlich
Vc (m/min)	120
f (mm/U)	verschiedene
ap (mm)	0.1
Kühlmittel	Trockenbearbeitung



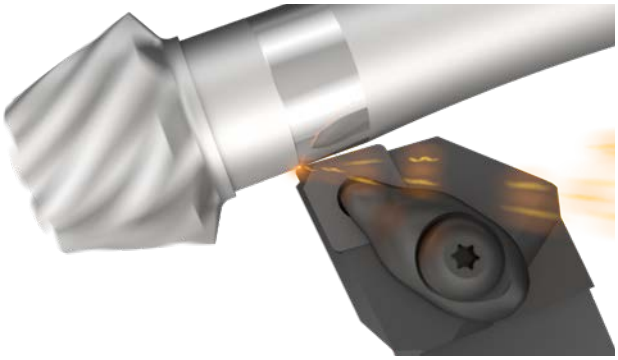
Wiper
Keine Wiper
Theoretische Oberflächengüte

BC8105

HÖCHSTE GENAUIGKEIT

FÜR KONTINUIERLICHEN SCHNITT

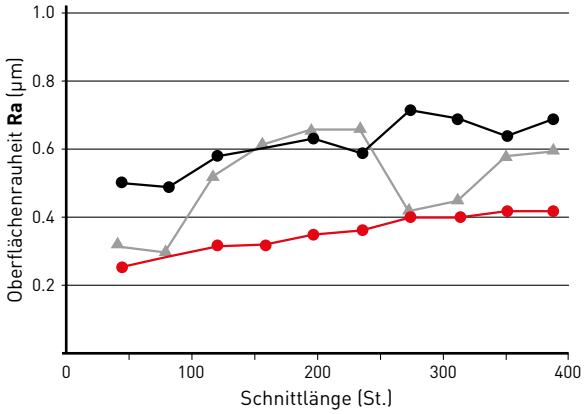
- Hervorragende Oberflächengüte und enge Toleranzen über eine lange Werkzeugstandzeit
- Für Oberflächengüten bis zu Rz. 2.4 µm (Ra 0.6 µm)



OBERFLÄCHENQUALITÄT

WSP	NP-DNGA150608GS2
Werkstoff	34Mn5 (60 HRC)
Schnittmodus	kontinuierlich
Vc (m/min)	176
f (mm/U)	0.09
ap (mm)	0.15
Kühlmittel	Emulsion

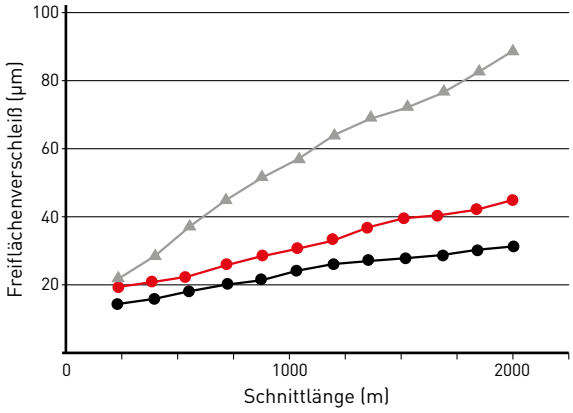
BC8105 ist die erste Wahl für hochwertige Oberflächengüten.



WERKZEUGSTANDZEIT (FLANKENVERSCHLEISS)

WSP	NP-CNGA120408GS2
Werkstoff	42CrMo4 (60 HRC)
Schnittmodus	kontinuierlich
Vc (m/min)	200
f (mm/U)	0.05
ap (mm)	0.05
Kühlmittel	Trockenbearbeitung

Hervorragender Verschleißwiderstand durch Miracle-Sigma-Technologie.



BC8105
BC8110
Herkömmlich

BC8110

HOCHGESCHWINDIGKEITSDREHEN

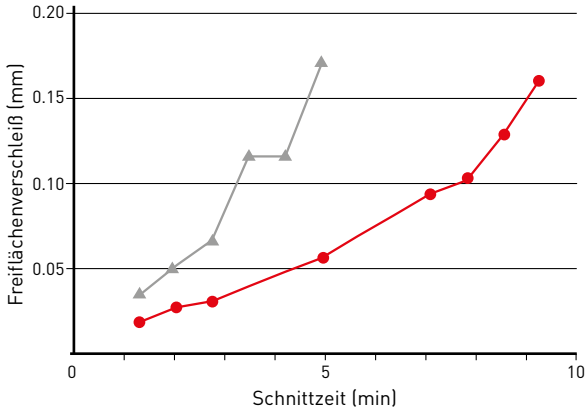
FÜR KONTINUIERLICHEN SCHNITT

- Lange und stabile Werkzeugstandzeiten für Oberflächenqualitäten unter Rz 6.3 µm
- Für einen breiten Anwendungsbereich für die kontinuierliche Zerspanung

WERKZEUGSTANDZEIT (FREIFLÄCHENVERSCHLEISS)

WSP	NP-CNGA120408GS2
Werkstoff	42CrMo4 (60HRC)
Schnittmodus	kontinuierlich
Vc (m/min)	250
f (mm/U)	0.10
ap (mm)	0.2
Kühlmittel	Trockenbearbeitung

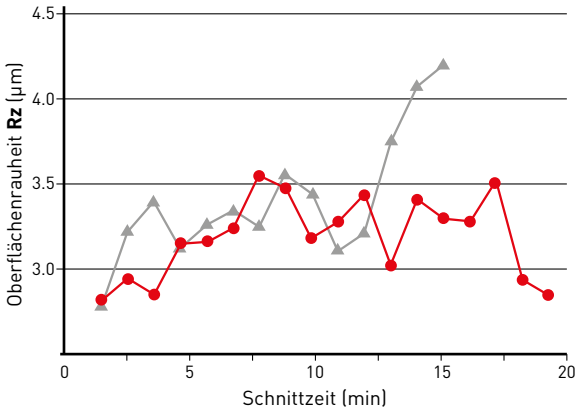
BC8110 ist die erste Wahl für das Hochgeschwindigkeitsschlichten.



OBERFLÄCHENQUALITÄT

WSP	NP-CNGA120408GS2
Werkstoff	42CrMo4 (60HRC)
Schnittmodus	kontinuierlich
Vc (m/min)	250
f (mm/U)	0.10
ap (mm)	0.2
Kühlmittel	Trockenbearbeitung

Hervorragende Oberflächenqualitäten bei der Bearbeitung im kontinuierlichen Schnitt.



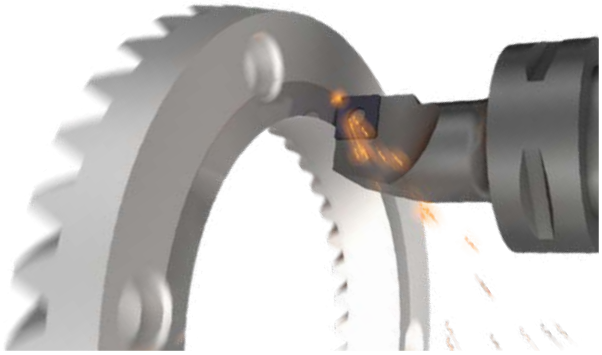
BC8110
Herkömmlich

BC8120

ALLGEMEINE ANWENDUNG

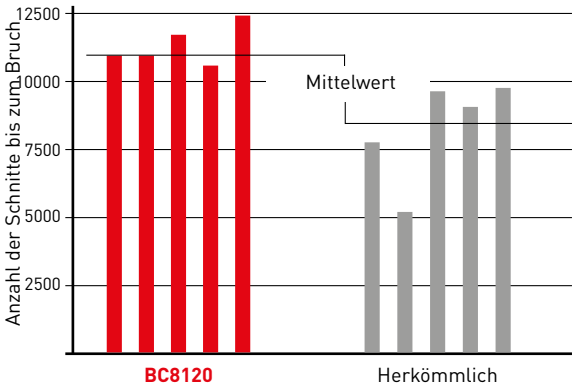
FÜR KONTINUIERLICHEN UND LEICHT UNTERBROCHENEN SCHNITT

- Erste Wahl für das Schruppen und Vorschlichten
- Für einen breiten Anwendungsbereich zwischen kontinuierlicher und leicht unterbrochener Bearbeitung

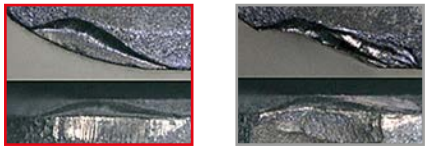


VERSUCH IM UNTERBROCHENEN SCHNITT

WSP	NP-CNGA120408GA2
Werkstoff	42CrMo4 (60 HRC)
Schnittmodus	kontinuierlich
Vc (m/min)	250
f (mm/U)	0.15
ap (mm)	0.1
Kühlmittel	Trockenbearbeitung



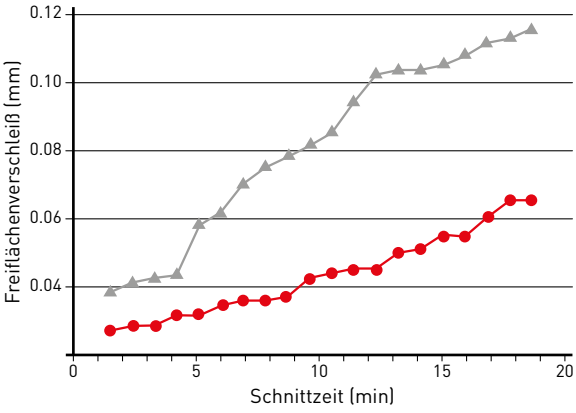
Zustand der Schneidkante nach 8000 Schnitten.



BC8120 Herkömmlich

WERKZEUGSTANDZEIT (FREIFLÄCHENVERSCHLEISS)

WSP	NP-CNGA120408GA2
Werkstoff	42CrMo4 (60 HRC)
Schnittmodus	kontinuierlich
Vc (m/min)	150
f (mm/U)	0.10
ap (mm)	0.2
Kühlmittel	Trockenbearbeitung



Schneide nach 15 Minuten.

BC8120 Herkömmlich

BC8120
Herkömmlich

BC8130

SCHRUPPBEARBEITUNG

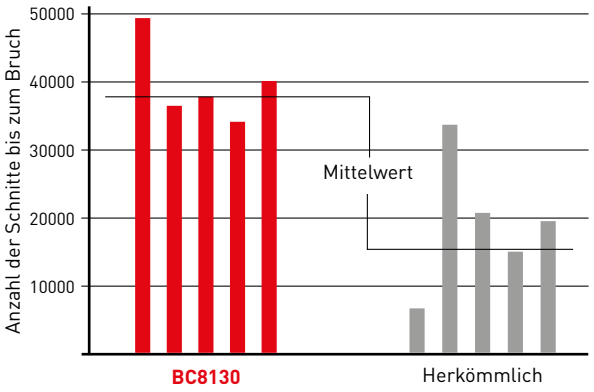
FÜR INSTABILE ANWENDUNGEN UND SCHWER UNTERBROCHENE SCHNITTE

- Toleranzgenauigkeit auch über eine hohe Anzahl an Schnitten

SCHWER UNTERBROCHENE SCHNITTE (LABORTEST)

WSP	NP-CNGA120408GA2
Werkstoff	42CrMo4 (60 HRC)
Schnittmodus	schwer unterbrochen
Vc (m/min)	250
f (mm/U)	0.05
ap (mm)	0.1
Kühlmittel	Nassbearbeitung

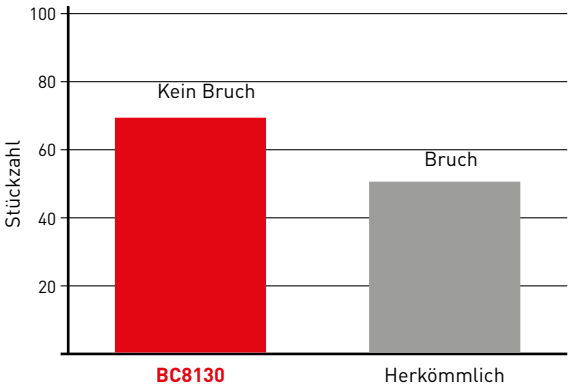
BC8130 gewährleistet Stabilität bis zu 30000 Schnitten.



SCHWERZERSPANUNG

WSP	NP-CNGA120408TH2
Werkstoff	C45 (58 HRC)
Schnittmodus	schwer unterbrochen
Vc (m/min)	130
f (mm/U)	0.08
ap (mm)	0.15
Kühlmittel	Nassbearbeitung

Kein Bruch nach der Bearbeitung von 70 Stück.

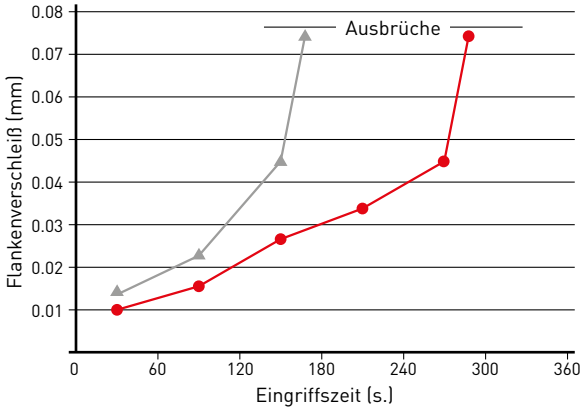


MB8100-SERIE

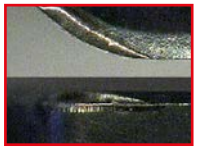
UNBESCHICHTETE PCBN-SORTEN MIT ULTRA-FEINKÖRNIGEM BINDER

WERKZEUGSTANDZEIT (FLANKENVERSCHLEISS)

WSP	NP-CNGA120408GA2
Werkstoff	JIS SCr420 (60HRC)
Schnittmodus	Außen kontinuierlicher Schnitt
Vc (m/min)	250
f (mm/U)	0.1
ap (mm)	0.2
Kühlmittel	Trockenbearbeitung



SCHNEIDKANTE NACH 180 SEKUNDEN



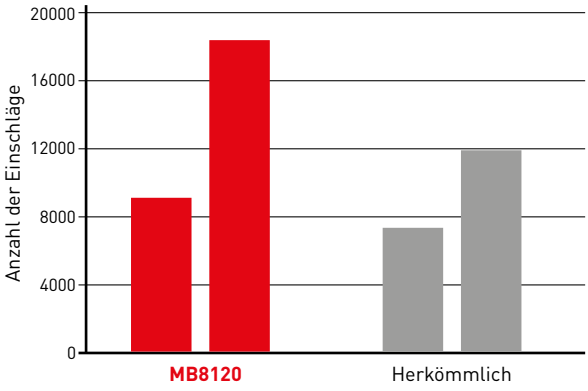
MB8110

Herkömmlich

Hoher Verschleiß

SCHWER UNTERBROCHENER SCHNITT

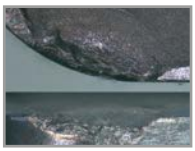
WSP	NP-CNGA120408GA2
Werkstoff	JIS SCr420 (60HRC)
Schnittmodus	Externe unterbrochene Bearbeitung
Vc (m/min)	250
f (mm/U)	0.15
ap (mm)	0.1
Kühlmittel	Trockenbearbeitung



17000 EINSCHLÄGE

MB8120

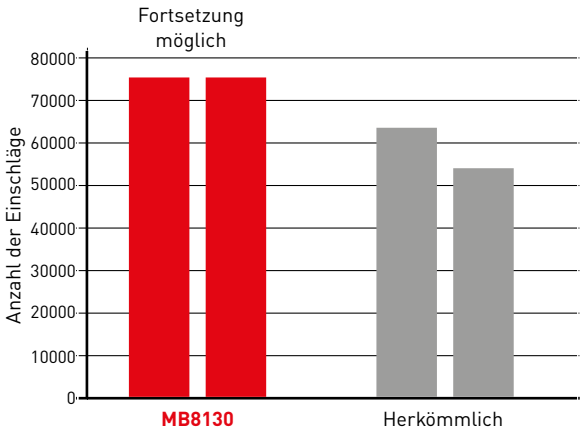
11000 EINSCHLÄGE



Herkömmlich

SCHWER UNTERBROCHENER SCHNITT

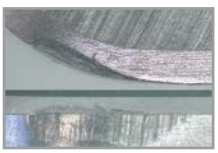
WSP	NP-CNGA120408GA2
Werkstoff	JIS SCr420 (60HRC)
Schnittmodus	Externe unterbrochene Bearbeitung
Vc (m/min)	150
f (mm/U)	0.05
ap (mm)	0.1
Kühlmittel	Nassbearbeitung



77000 EINSCHLÄGE

MB8130

54000 EINSCHLÄGE



Herkömmlich

BC8130
Herkömmlich

IDENTIFIKATION

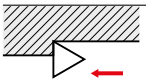
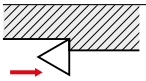
FÜR PCBN-WSP

NP	-	CNGA	120404	GA	WS	4	JR
		WSP-Form	WSP-Größe			Anzahl an Schneidkanten	

WSP-Geometrie	
NP	Standard

Schneidkanten-Verfasung	
GA	Kontinuierlicher Schnitt
FA FS	Kontinuierlicher Schnitt
TA TH	Unterbrochener Schnitt

Wiper	
WS FBWL GBWL	Mit Wiper
keine Markierung	Ohne Wiper

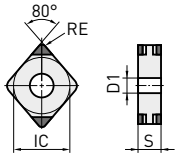
Schnittrichtung*	
Abbildung	Symbol
	JR Rechts
	JL Links

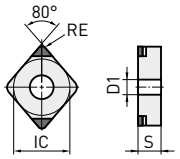
* Anstellwinkel 93°

CNGA, CNGM

NEGATIVE WSP (MIT LOCH)

Bestellnummer		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-CNGA120404GA4				●	●		★		4	12.7	4.76	0.4	5.16	
NP-CNGA120408GA4				●	●		★		4	12.7	4.76	0.8	5.16	
NP-CNGA120412GA4				●	●		★		4	12.7	4.76	1.2	5.16	
NP-CNGA120404GS4		●	●						4	12.7	4.76	0.4	5.16	
NP-CNGA120408GS4		●	●						4	12.7	4.76	0.8	5.16	
NP-CNGA120412GS4		●	●						4	12.7	4.76	1.2	5.16	
NP-CNGA120404GH4			★	★	●				4	12.7	4.76	0.4	5.16	
NP-CNGA120408GH4			★	★	●				4	12.7	4.76	0.8	5.16	
NP-CNGA120412GH4			★	★	●				4	12.7	4.76	1.2	5.16	
NP-CNGA120404FS4		●	★	★		★			4	12.7	4.76	0.4	5.16	
NP-CNGA120408FS4		●	★	★		★			4	12.7	4.76	0.8	5.16	
NP-CNGA120412FS4		●	★	★		★			4	12.7	4.76	1.2	5.16	
NP-CNGA120404TA4				★	●		★	★	4	12.7	4.76	0.4	5.16	
NP-CNGA120408TA4				●	●		★	★	4	12.7	4.76	0.8	5.16	
NP-CNGA120412TA4				★	●		★	★	4	12.7	4.76	1.2	5.16	
NP-CNGA120404TS4			★						4	12.7	4.76	0.4	5.16	
NP-CNGA120408TS4			★						4	12.7	4.76	0.8	5.16	
NP-CNGA120412TS4			★						4	12.7	4.76	1.2	5.16	
NP-CNGA120404TH4				★	●			★	4	12.7	4.76	0.4	5.16	
NP-CNGA120408TH4				★	●			★	4	12.7	4.76	0.8	5.16	
NP-CNGA120412TH4				★	●			★	4	12.7	4.76	1.2	5.16	
NP-CNGA120404FSWS4	W	★	★	★		★			4	12.7	4.76	0.4	5.16	
NP-CNGA120408FSWS4	W	★	★	★		★			4	12.7	4.76	0.8	5.16	
NP-CNGA120412FSWS4	W	★	★	★		★			4	12.7	4.76	1.2	5.16	
NP-CNGA120404GAWS4	W			●	●		★		4	12.7	4.76	0.4	5.16	
NP-CNGA120408GAWS4	W			●	●		★		4	12.7	4.76	0.8	5.16	
NP-CNGA120412GAWS4	W			●	●		★		4	12.7	4.76	1.2	5.16	
NP-CNGA120404GSWS4	W	●	●						4	12.7	4.76	0.4	5.16	
NP-CNGA120408GSWS4	W	●	●						4	12.7	4.76	0.8	5.16	
NP-CNGA120412GSWS4	W	●	●						4	12.7	4.76	1.2	5.16	
NP-CNGA120402GA2				★			★		2	12.7	4.76	0.2	5.16	
NP-CNGA120404GA2				●	●		●		2	12.7	4.76	0.4	5.16	
NP-CNGA120408GA2				●	●		●		2	12.7	4.76	0.8	5.16	
NP-CNGA120412GA2				●	●		●		2	12.7	4.76	1.2	5.16	
NP-CNGA120402GS2			★						2	12.7	4.76	0.2	5.16	
NP-CNGA120404GS2		●	●						2	12.7	4.76	0.4	5.16	
NP-CNGA120408GS2		●	●						2	12.7	4.76	0.8	5.16	
NP-CNGA120412GS2		●	●						2	12.7	4.76	1.2	5.16	
NP-CNGA120404GH2			★	★	●				2	12.7	4.76	0.4	5.16	
NP-CNGA120408GH2			★	★	●				2	12.7	4.76	0.8	5.16	
NP-CNGA120412GH2			●	★	●				2	12.7	4.76	1.2	5.16	
NP-CNGA120402FS2			★			★			2	12.7	4.76	0.2	5.16	
NP-CNGA120404FS2		●	●	●		●			2	12.7	4.76	0.4	5.16	
NP-CNGA120408FS2		●	●	●		●			2	12.7	4.76	0.8	5.16	
NP-CNGA120412FS2		●	●	●		★			2	12.7	4.76	1.2	5.16	
NP-CNGA120404TA2				●	●		★	●	2	12.7	4.76	0.4	5.16	
NP-CNGA120408TA2				●	●		★	●	2	12.7	4.76	0.8	5.16	
NP-CNGA120412TA2				●	●		★	●	2	12.7	4.76	1.2	5.16	
NP-CNGA120404TS2			●						2	12.7	4.76	0.4	5.16	
NP-CNGA120408TS2			●						2	12.7	4.76	0.8	5.16	
NP-CNGA120412TS2			●						2	12.7	4.76	1.2	5.16	
NP-CNGA120404TH2				★	●			●	2	12.7	4.76	0.4	5.16	
NP-CNGA120408TH2				★	●			●	2	12.7	4.76	0.8	5.16	
NP-CNGA120412TH2				★	●			●	2	12.7	4.76	1.2	5.16	
NP-CNGA120404FBWL2	W	★	★	★		★			2	12.7	4.76	0.4	5.16	
NP-CNGA120408FBWL2	W	●	★	★		★			2	12.7	4.76	0.8	5.16	
NP-CNGA120412FBWL2	W	★	★	★		★			2	12.7	4.76	1.2	5.16	
NP-CNGA120404GBWL2	W	★	★	★			★		2	12.7	4.76	0.4	5.16	

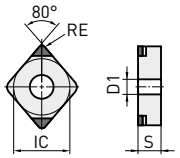




B: Spanbrecher **W**: Wiper

● : Lagerstandard. ★ : Lagerstandard in Japan.

Bestellnummer		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-CNGA120408GBWL2	**W**	★	★	★			★		2	12.7	4.76	0.8	5.16	
NP-CNGA120412GBWL2	**W**	★	★	★			★		2	12.7	4.76	1.2	5.16	
NP-CNGA120404FSWS2	**W**	★	★	★		★			2	12.7	4.76	0.4	5.16	
NP-CNGA120408FSWS2	**W**	●	●	★		★			2	12.7	4.76	0.8	5.16	
NP-CNGA120412FSWS2	**W**	★	★	★		★			2	12.7	4.76	1.2	5.16	
NP-CNGA120404GAWS2	**W**			●	●		★		2	12.7	4.76	0.4	5.16	
NP-CNGA120408GAWS2	**W**			●	●		★		2	12.7	4.76	0.8	5.16	
NP-CNGA120412GAWS2	**W**			●	●		★		2	12.7	4.76	1.2	5.16	
NP-CNGA120404GSWS2	**W**	●	★						2	12.7	4.76	0.4	5.16	
NP-CNGA120408GSWS2	**W**	●	●						2	12.7	4.76	0.8	5.16	
NP-CNGA120412GSWS2	**W**	●	★						2	12.7	4.76	1.2	5.16	
BM-CNGM120404TA2	**B**			●					2	12.7	4.76	0.4	5.16	
BM-CNGM120408TA2	**B**		★						2	12.7	4.76	0.8	5.16	
BM-CNGM120412TA2	**B**			●					2	12.7	4.76	1.2	5.16	
BF-CNGM120404TS2	**B**		●						2	12.7	4.76	0.4	5.16	
BF-CNGM120408TS2	**B**		●						2	12.7	4.76	0.8	5.16	
BF-CNGM120412TS2	**B**		●						2	12.7	4.76	1.2	5.16	



B: Spanbrecher **W**: Wiper

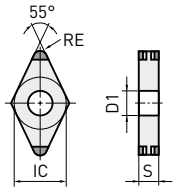
26 Vc

● : Lagerstandard. ★ : Lagerstandard in Japan.

DNGA, DNGM

NEGATIVE WSP (MIT LOCH)

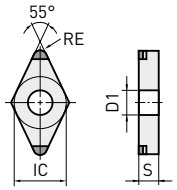
Bestellnummer	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-DNGA150404GA4			★	★		★		4	12.7	4.76	0.4	5.16	
NP-DNGA150408GA4			★	★		★		4	12.7	4.76	0.8	5.16	
NP-DNGA150412GA4			★	★		★		4	12.7	4.76	1.2	5.16	
NP-DNGA150604GA4			●	●		★		4	12.7	6.35	0.4	5.16	
NP-DNGA150608GA4			●	●		★		4	12.7	6.35	0.8	5.16	
NP-DNGA150612GA4			●	●		★		4	12.7	6.35	1.2	5.16	
NP-DNGA150404GS4	★	★						4	12.7	4.76	0.4	5.16	
NP-DNGA150408GS4	★	★						4	12.7	4.76	0.8	5.16	
NP-DNGA150412GS4	★	★						4	12.7	4.76	1.2	5.16	
NP-DNGA150604GS4	●	●						4	12.7	6.35	0.4	5.16	
NP-DNGA150608GS4	●	●						4	12.7	6.35	0.8	5.16	
NP-DNGA150612GS4	●	●						4	12.7	6.35	1.2	5.16	
NP-DNGA150404GH4		★	★	★				4	12.7	4.76	0.4	5.16	
NP-DNGA150408GH4		★	★	★				4	12.7	4.76	0.8	5.16	
NP-DNGA150412GH4		★	★	★				4	12.7	4.76	1.2	5.16	
NP-DNGA150604GH4		★	★	●				4	12.7	6.35	0.4	5.16	
NP-DNGA150608GH4		★	★	●				4	12.7	6.35	0.8	5.16	
NP-DNGA150612GH4		★	★	●				4	12.7	6.35	1.2	5.16	
NP-DNGA150404FS4	★	★	★		★			4	12.7	4.76	0.4	5.16	
NP-DNGA150408FS4	★	★	★		★			4	12.7	4.76	0.8	5.16	
NP-DNGA150412FS4	★	★	★		★			4	12.7	4.76	1.2	5.16	
NP-DNGA150604FS4	●	★			★			4	12.7	6.35	0.4	5.16	
NP-DNGA150608FS4	●	★			★			4	12.7	6.35	0.8	5.16	
NP-DNGA150612FS4	●	★			★			4	12.7	6.35	1.2	5.16	
NP-DNGA150404TA4			★	★		★	★	4	12.7	4.76	0.4	5.16	
NP-DNGA150408TA4			★	★		★	★	4	12.7	4.76	0.8	5.16	
NP-DNGA150412TA4			★	★		★	★	4	12.7	4.76	1.2	5.16	
NP-DNGA150604TA4			★	●		★		4	12.7	6.35	0.4	5.16	
NP-DNGA150608TA4			★	●		★		4	12.7	6.35	0.8	5.16	
NP-DNGA150612TA4			★	●		★		4	12.7	6.35	1.2	5.16	
NP-DNGA150404TS4		★						4	12.7	4.76	0.4	5.16	
NP-DNGA150408TS4		★						4	12.7	4.76	0.8	5.16	
NP-DNGA150412TS4		★						4	12.7	4.76	1.2	5.16	
NP-DNGA150604TS4		★						4	12.7	6.35	0.4	5.16	
NP-DNGA150608TS4		★						4	12.7	6.35	0.8	5.16	
NP-DNGA150612TS4		★						4	12.7	6.35	1.2	5.16	
NP-DNGA150404TH4			★	★			★	4	12.7	4.76	0.4	5.16	
NP-DNGA150408TH4			★	★			★	4	12.7	4.76	0.8	5.16	
NP-DNGA150412TH4			★	★			★	4	12.7	4.76	1.2	5.16	
NP-DNGA150604TH4			★	★				4	12.7	6.35	0.4	5.16	
NP-DNGA150608TH4			★	★				4	12.7	6.35	0.8	5.16	
NP-DNGA150612TH4			★	★				4	12.7	6.35	1.2	5.16	



26 Vc

● : Lagerstandard. ★ : Lagerstandard in Japan.

Bestellnummer		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-DNGA110408GA2				●	●		●		2	9.53	4.76	0.8	3.81	
NP-DNGA150402GA2				★					2	12.7	4.76	0.2	5.16	
NP-DNGA150404GA2				★	★		★		2	12.7	4.76	0.4	5.16	
NP-DNGA150408GA2				★	★		★		2	12.7	4.76	0.8	5.16	
NP-DNGA150412GA2				★	★		★		2	12.7	4.76	1.2	5.16	
NP-DNGA150602GA2				★					2	12.7	6.35	0.2	5.16	
NP-DNGA150604GA2				●	●		●		2	12.7	6.35	0.4	5.16	
NP-DNGA150608GA2				●	●		●		2	12.7	6.35	0.8	5.16	
NP-DNGA150612GA2				●	●		●		2	12.7	6.35	1.2	5.16	
NP-DNGA150402GS2			★						2	12.7	4.76	0.2	5.16	
NP-DNGA150404GS2		★	★						2	12.7	4.76	0.4	5.16	
NP-DNGA150408GS2		★	★						2	12.7	4.76	0.8	5.16	
NP-DNGA150412GS2		★	★						2	12.7	4.76	1.2	5.16	
NP-DNGA150604GS2		●	●						2	12.7	6.35	0.4	5.16	
NP-DNGA150608GS2		●	●						2	12.7	6.35	0.8	5.16	
NP-DNGA150612GS2		●	●						2	12.7	6.35	1.2	5.16	
NP-DNGA150404GH2			★	★	★				2	12.7	4.76	0.4	5.16	
NP-DNGA150408GH2			★	★	★				2	12.7	4.76	0.8	5.16	
NP-DNGA150412GH2			★	★	★				2	12.7	4.76	1.2	5.16	
NP-DNGA150604GH2			★	★	●				2	12.7	6.35	0.4	5.16	
NP-DNGA150608GH2			★	★	●				2	12.7	6.35	0.8	5.16	
NP-DNGA150612GH2			★	★	●				2	12.7	6.35	1.2	5.16	
NP-DNGA150402FS2			★			★			2	12.7	4.76	0.2	5.16	
NP-DNGA150404FS2		★	★	★		★			2	12.7	4.76	0.4	5.16	
NP-DNGA150408FS2		★	★	★		★			2	12.7	4.76	0.8	5.16	
NP-DNGA150412FS2		★	★	★		★			2	12.7	4.76	1.2	5.16	
NP-DNGA150604FS2		●	●	●		★			2	12.7	6.35	0.4	5.16	
NP-DNGA150608FS2		●	●	●		★			2	12.7	6.35	0.8	5.16	
NP-DNGA150612FS2		●	●	●		●			2	12.7	6.35	1.2	5.16	
NP-DNGA150404TA2				★	★		★	●	2	12.7	4.76	0.4	5.16	
NP-DNGA150408TA2				★	★		★	●	2	12.7	4.76	0.8	5.16	
NP-DNGA150412TA2				★	★		★	★	2	12.7	4.76	1.2	5.16	
NP-DNGA150604TA2				●	●		★		2	12.7	6.35	0.4	5.16	
NP-DNGA150608TA2				●	●		●		2	12.7	6.35	0.8	5.16	
NP-DNGA150612TA2				●	●		★		2	12.7	6.35	1.2	5.16	
NP-DNGA150404TS2			★						2	12.7	4.76	0.4	5.16	
NP-DNGA150408TS2			★						2	12.7	4.76	0.8	5.16	
NP-DNGA150412TS2			★						2	12.7	4.76	1.2	5.16	
NP-DNGA150604TS2			●						2	12.7	6.35	0.4	5.16	
NP-DNGA150608TS2			●						2	12.7	6.35	0.8	5.16	
NP-DNGA150612TS2			●						2	12.7	6.35	1.2	5.16	
NP-DNGA150404TH2				★	★			★	2	12.7	4.76	0.4	5.16	
NP-DNGA150408TH2				★	★			★	2	12.7	4.76	0.8	5.16	
NP-DNGA150412TH2				★	★			★	2	12.7	4.76	1.2	5.16	
NP-DNGA150604TH2				★	★				2	12.7	6.35	0.4	5.16	
NP-DNGA150608TH2				★	★				2	12.7	6.35	0.8	5.16	
NP-DNGA150612TH2				★	★				2	12.7	6.35	1.2	5.16	
NP-DNGA150404GAWS2JR	**W**			★			★		2	12.7	4.76	0.4	5.16	
NP-DNGA150404GAWS2JL	**W**			★			★		2	12.7	4.76	0.4	5.16	
NP-DNGA150408GAWS2JR	**W**			★			★		2	12.7	4.76	0.8	5.16	
NP-DNGA150408GAWS2JL	**W**			★			★		2	12.7	4.76	0.8	5.16	
NP-DNGA150604GAWS2JR	**W**			●			★		2	12.7	6.35	0.4	5.16	
NP-DNGA150604GAWS2JL	**W**			●			★		2	12.7	6.35	0.4	5.16	
NP-DNGA150608GAWS2JR	**W**			●			★		2	12.7	6.35	0.8	5.16	
NP-DNGA150608GAWS2JL	**W**			●			★		2	12.7	6.35	0.8	5.16	
BF-DNGM150404TS2	**B**		●						2	12.7	4.76	0.4	5.16	
BF-DNGM150408TS2	**B**		●						2	12.7	4.76	0.8	5.16	
BF-DNGM150412TS2	**B**		●						2	12.7	4.76	1.2	5.16	
BM-DNGM150404TA2	**B**			★					2	12.7	4.76	0.4	5.16	
BM-DNGM150408TA2	**B**			★					2	12.7	4.76	0.8	5.16	
BM-DNGM150412TA2	**B**			★					2	12.7	4.76	1.2	5.16	
BM-DNGM150604TA2	**B**			●					2	12.7	6.35	0.4	5.16	
BM-DNGM150608TA2	**B**			●					2	12.7	6.35	0.8	5.16	
BM-DNGM150612TA2	**B**			●					2	12.7	6.35	1.2	5.16	

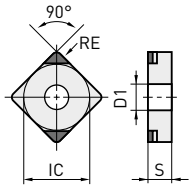


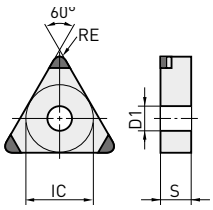
B: Spanbrecher **W**: Wiper

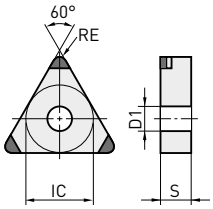
● : Lagerstandard. ★ : Lagerstandard in Japan.

SNGA, TNGA, TNGM

NEGATIVE WSP (MIT LOCH)

Bestellnummer		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-SNGA120408GA2				●	★		★		2	12.7	4.76	0.8	5.16	
NP-SNGA120412GA2				★	★		★		2	12.7	4.76	1.2	5.16	
NP-TNGA160404GA6				●	●		★		6	9.53	4.76	0.4	3.81	
NP-TNGA160408GA6				●	●		★		6	9.53	4.76	0.8	3.81	
NP-TNGA160412GA6				●	●		★		6	9.53	4.76	1.2	3.81	
NP-TNGA160404GS6		●	●						6	9.53	4.76	0.4	3.81	
NP-TNGA160408GS6		●	●						6	9.53	4.76	0.8	3.81	
NP-TNGA160412GS6		●	●						6	9.53	4.76	1.2	3.81	
NP-TNGA160404GH6			★	★	★				6	9.53	4.76	0.4	3.81	
NP-TNGA160408GH6			★	★	★				6	9.53	4.76	0.8	3.81	
NP-TNGA160412GH6			★	★	★				6	9.53	4.76	1.2	3.81	
NP-TNGA160404FS6		●	★	★		★			6	9.53	4.76	0.4	3.81	
NP-TNGA160408FS6		●	★	★		★			6	9.53	4.76	0.8	3.81	
NP-TNGA160412FS6		●	★	★		★			6	9.53	4.76	1.2	3.81	
NP-TNGA160404TA6				★	●		★	★	6	9.53	4.76	0.4	3.81	
NP-TNGA160408TA6				★	●		★	★	6	9.53	4.76	0.8	3.81	
NP-TNGA160412TA6				★	●		★	★	6	9.53	4.76	1.2	3.81	
NP-TNGA160404TS6			★						6	9.53	4.76	0.4	3.81	
NP-TNGA160408TS6			★						6	9.53	4.76	0.8	3.81	
NP-TNGA160412TS6			★						6	9.53	4.76	1.2	3.81	
NP-TNGA160404TH6				★	★			★	6	9.53	4.76	0.4	3.81	
NP-TNGA160408TH6				★	●			★	6	9.53	4.76	0.8	3.81	
NP-TNGA160412TH6				★	●			★	6	9.53	4.76	1.2	3.81	
NP-TNGA160402GA3				★			★		3	9.53	4.76	0.2	3.81	
NP-TNGA160404GA3				●	●		★		3	9.53	4.76	0.4	3.81	
NP-TNGA160408GA3				●	●		●		3	9.53	4.76	0.8	3.81	
NP-TNGA160412GA3				★	●		★		3	9.53	4.76	1.2	3.81	
NP-TNGA160402GS3			★						3	9.53	4.76	0.2	3.81	
NP-TNGA160404GS3		●	★						3	9.53	4.76	0.4	3.81	
NP-TNGA160408GS3		●	★						3	9.53	4.76	0.8	3.81	
NP-TNGA160412GS3		●	★						3	9.53	4.76	1.2	3.81	
NP-TNGA160404GH3			★	★	●				3	9.53	4.76	0.4	3.81	
NP-TNGA160408GH3			★	★	●				3	9.53	4.76	0.8	3.81	
NP-TNGA160412GH3			★	★	●				3	9.53	4.76	1.2	3.81	
NP-TNGA160402FS3			★			★			3	9.53	4.76	0.2	3.81	
NP-TNGA160404FS3		●	●	●		★			3	9.53	4.76	0.4	3.81	
NP-TNGA160408FS3		●	●	●		★			3	9.53	4.76	0.8	3.81	
NP-TNGA160412FS3		●	●	●		★			3	9.53	4.76	1.2	3.81	
NP-TNGA160404TA3				●	●		●	●	3	9.53	4.76	0.4	3.81	
NP-TNGA160408TA3				●	●		●	★	3	9.53	4.76	0.8	3.81	
NP-TNGA160412TA3				●	●		●	★	3	9.53	4.76	1.2	3.81	
NP-TNGA160404TS3			●						3	9.53	4.76	0.4	3.81	
NP-TNGA160408TS3			●						3	9.53	4.76	0.8	3.81	
NP-TNGA160412TS3			●						3	9.53	4.76	1.2	3.81	
NP-TNGA160404TH3				★	★			★	3	9.53	4.76	0.4	3.81	
NP-TNGA160408TH3				★	★			★	3	9.53	4.76	0.8	3.81	
NP-TNGA160412TH3				★	★			★	3	9.53	4.76	1.2	3.81	
BM-TNGM160408TA3	**B**			●					3	9.53	4.76	0.8	3.81	
BM-TNGM160412TA3	**B**			●					3	9.53	4.76	1.2	3.81	





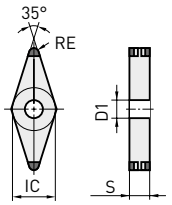
B: Spanbrecher **W**: Wiper

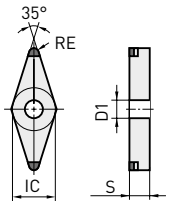
● : Lagerstandard. ★ : Lagerstandard in Japan.

VNGA

NEGATIVE WSP (MIT LOCH)

Bestellnummer	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-VNGA160404GA4			●	●		★		4	9.53	4.76	0.4	3.81	
NP-VNGA160408GA4			●	●		★		4	9.53	4.76	0.8	3.81	
NP-VNGA160412GA4			●	●		★		4	9.53	4.76	1.2	3.81	
NP-VNGA160404GS4	●	★						4	9.53	4.76	0.4	3.81	
NP-VNGA160408GS4	●	●						4	9.53	4.76	0.8	3.81	
NP-VNGA160412GS4		★						4	9.53	4.76	1.2	3.81	
NP-VNGA160404GH4		★	★	★				4	9.53	4.76	0.4	3.81	
NP-VNGA160408GH4		★	★	★				4	9.53	4.76	0.8	3.81	
NP-VNGA160412GH4		★	★	★				4	9.53	4.76	1.2	3.81	
NP-VNGA160404FS4	●	★	★		★			4	9.53	4.76	0.4	3.81	
NP-VNGA160408FS4	●	★	★		★			4	9.53	4.76	0.8	3.81	
NP-VNGA160412FS4			★					4	9.53	4.76	1.2	3.81	
NP-VNGA160404TA4			★	●		★		4	9.53	4.76	0.4	3.81	
NP-VNGA160408TA4			★	●		★		4	9.53	4.76	0.8	3.81	
NP-VNGA160412TA4			★	●		★		4	9.53	4.76	1.2	3.81	
NP-VNGA160404TS4		★						4	9.53	4.76	0.4	3.81	
NP-VNGA160408TS4		★						4	9.53	4.76	0.8	3.81	
NP-VNGA160404TH4			★	★				4	9.53	4.76	0.4	3.81	
NP-VNGA160408TH4			★	★				4	9.53	4.76	0.8	3.81	
NP-VNGA160412TH4			★	★				4	9.53	4.76	1.2	3.81	
NP-VNGA160402GA2			●			★		2	9.53	4.76	0.2	3.81	
NP-VNGA160404GA2			●	●		●		2	9.53	4.76	0.4	3.81	
NP-VNGA160408GA2			●	●		●		2	9.53	4.76	0.8	3.81	
NP-VNGA160412GA2			★	★		★		2	9.53	4.76	1.2	3.81	
NP-VNGA160402GS2		★						2	9.53	4.76	0.2	3.81	
NP-VNGA160404GS2	●	●						2	9.53	4.76	0.4	3.81	
NP-VNGA160408GS2	●	●						2	9.53	4.76	0.8	3.81	
NP-VNGA160412GS2		★						2	9.53	4.76	1.2	3.81	
NP-VNGA160404GH2		★	★	★				2	9.53	4.76	0.4	3.81	
NP-VNGA160408GH2		★	★	★				2	9.53	4.76	0.8	3.81	
NP-VNGA160412GH2		★	★	★				2	9.53	4.76	1.2	3.81	
NP-VNGA160402FS2		★			★			2	9.53	4.76	0.2	3.81	
NP-VNGA160404FS2	●	★	●		★			2	9.53	4.76	0.4	3.81	
NP-VNGA160408FS2	●	★	●		★			2	9.53	4.76	0.8	3.81	
NP-VNGA160412FS2			★					2	9.53	4.76	1.2	3.81	
NP-VNGA160404TA2			●	●		●		2	9.53	4.76	0.4	3.81	
NP-VNGA160408TA2			●	●		★		2	9.53	4.76	0.8	3.81	
NP-VNGA160412TA2			★	★		★		2	9.53	4.76	1.2	3.81	
NP-VNGA160404TS2		★						2	9.53	4.76	0.4	3.81	
NP-VNGA160408TS2		★						2	9.53	4.76	0.8	3.81	
NP-VNGA160404TH2			★	★				2	9.53	4.76	0.4	3.81	
NP-VNGA160408TH2			★	★				2	9.53	4.76	0.8	3.81	
NP-VNGA160412TH2			★	★				2	9.53	4.76	1.2	3.81	



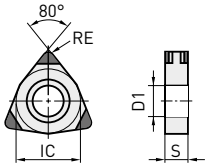
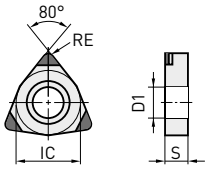


26 Vc

● : Lagerstandard. ★ : Lagerstandard in Japan.

WNGA

NEGATIVE WSP (MIT LOCH)

Bestellnummer		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-WNGA080408GS6		★	●						6	12.7	4.76	0.8	5.16	
NP-WNGA080408FS6		★	★						6	12.7	4.76	0.8	5.16	
NP-WNGA080408TS6			★						6	12.7	4.76	0.8	5.16	
NP-WNGA080408GA3				★	★				3	12.7	4.76	0.8	5.16	
NP-WNGA080408GS3		★	★						3	12.7	4.76	0.8	5.16	
NP-WNGA080408GH3			★	★	★				3	12.7	4.76	0.8	5.16	
NP-WNGA080408FS3		★	★	★					3	12.7	4.76	0.8	5.16	
NP-WNGA080408TA3				★	★				3	12.7	4.76	0.8	5.16	
NP-WNGA080408TS3			★						3	12.7	4.76	0.8	5.16	
NP-WNGA080408TH3				★	★				3	12.7	4.76	0.8	5.16	
NP-WNGA080408GSWS3	**W**		●						3	12.7	4.76	0.8	5.16	

B: Spanbrecher **W**: Wiper

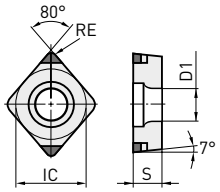
26 Vc

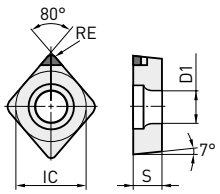
● : Lagerstandard. ★ : Lagerstandard in Japan.

CCGW 7°, CCGT 7°

POSITIVE WSP (MIT LOCH)

Bestellnummer		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-CCGW060202GA2				●			●		2	6.35	2.38	0.2	2.8	
NP-CCGW060204GA2				●	●		●		2	6.35	2.38	0.4	2.8	
NP-CCGW060208GA2				●	●		●		2	6.35	2.38	0.8	2.8	
NP-CCGW09T302GA2				●			●		2	9.53	3.97	0.2	4.4	
NP-CCGW09T304GA2				●	●		●		2	9.53	3.97	0.4	4.4	
NP-CCGW09T308GA2				●	●		●		2	9.53	3.97	0.8	4.4	
NP-CCGW060202GS2		★	★						2	6.35	2.38	0.2	2.8	
NP-CCGW060204GS2		●	●						2	6.35	2.38	0.4	2.8	
NP-CCGW060208GS2		●	●						2	6.35	2.38	0.8	2.8	
NP-CCGW09T302GS2		★	★						2	9.53	3.97	0.2	4.4	
NP-CCGW09T304GS2		●	●						2	9.53	3.97	0.4	4.4	
NP-CCGW09T308GS2		●	●						2	9.53	3.97	0.8	4.4	
NP-CCGW09T304GH2			★	★	●				2	9.53	3.97	0.4	4.4	
NP-CCGW09T308GH2			★	★	●				2	9.53	3.97	0.8	4.4	
NP-CCGW060202FS2			●			●			2	6.35	2.38	0.2	2.8	
NP-CCGW060204FS2			●			●			2	6.35	2.38	0.4	2.8	
NP-CCGW060208FS2			●			●			2	6.35	2.38	0.8	2.8	
NP-CCGW09T302FS2		★	●			●			2	9.53	3.97	0.2	4.4	
NP-CCGW09T304FS2		●	●	●		●			2	9.53	3.97	0.4	4.4	
NP-CCGW09T308FS2		●	●	●		●			2	9.53	3.97	0.8	4.4	
NP-CCGW060204TA2					●			★	2	6.35	2.38	0.4	2.8	
NP-CCGW060208TA2					●			★	2	6.35	2.38	0.8	2.8	
NP-CCGW09T304TA2				●	●		★	★	2	9.53	3.97	0.4	4.4	
NP-CCGW09T308TA2				●	●		★	★	2	9.53	3.97	0.8	4.4	
NP-CCGW09T304TH2				★	●			★	2	9.53	3.97	0.4	4.4	
NP-CCGW09T308TH2				★	●			★	2	9.53	3.97	0.8	4.4	
NP-CCGW09T304FBWL2	**W**	★	★	★		★			2	9.525	3.97	0.4	4.4	
NP-CCGW09T308FBWL2	**W**	★	★	★		★			2	9.525	3.97	0.8	4.4	
NP-CCGW09T304GBWL2	**W**	★	★	★			★		2	9.525	3.97	0.4	4.4	
NP-CCGW09T308GBWL2	**W**	★	★	★			★		2	9.525	3.97	0.8	4.4	
NP-CCGW09T304FSWS2	**W**	●	★	★		★			2	9.53	3.97	0.4	4.4	
NP-CCGW09T308FSWS2	**W**	●	★	★		★			2	9.53	3.97	0.8	4.4	
NP-CCGW09T304GAWS2	**W**			●	●		★		2	9.53	3.97	0.4	4.4	
NP-CCGW09T308GAWS2	**W**			●	●		★		2	9.53	3.97	0.8	4.4	
NP-CCGW09T304GSWS2	**W**	●	●						2	9.53	3.97	0.4	4.4	
NP-CCGW09T308GSWS2	**W**	●	●						2	9.53	3.97	0.8	4.4	
BF-CCGT09T304TS2	**B**		●						2	9.53	3.97	0.4	4.4	
BF-CCGT09T308TS2	**B**		●						2	9.53	3.97	0.8	4.4	
BM-CCGT09T304TA2	**B**			●					2	9.53	3.97	0.4	4.4	
BM-CCGT09T308TA2	**B**			●					2	9.53	3.97	0.8	4.4	
NP-CCGW03S102GS		●							1	3.57	1.39	0.2	2.0	
NP-CCGW03S104GS		●							1	3.57	1.39	0.4	2.0	
NP-CCGW04T002GS		●							1	4.37	1.79	0.2	2.4	
NP-CCGW04T004GS		●							1	4.37	1.79	0.4	2.4	
NP-CCGW03S102FS			●			★			1	3.57	1.39	0.2	2.0	
NP-CCGW03S104FS			●			●			1	3.57	1.39	0.4	2.0	
NP-CCGW04T002FS			●			●			1	4.37	1.79	0.2	2.4	
NP-CCGW04T004FS			●			●			1	4.37	1.79	0.4	2.4	





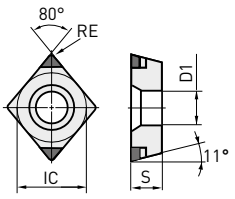
B: Spanbrecher **W**: Wiper

● : Lagerstandard. ★ : Lagerstandard in Japan.

CPGB 11°

POSITIVE WSP (MIT LOCH)

Bestellnummer	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-CPGB080204GA2			●	●				2	7.94	2.38	0.4	3.5	
NP-CPGB080208GA2			●	●				2	7.94	2.38	0.8	3.5	
NP-CPGB080212GA2			★	★				2	7.94	2.38	1.2	3.5	
NP-CPGB090302GA2			★					2	9.53	3.18	0.2	4.5	
NP-CPGB090304GA2			●	●				2	9.53	3.18	0.4	4.5	
NP-CPGB090308GA2			●	●				2	9.53	3.18	0.8	4.5	
NP-CPGB090312GA2			★	★				2	9.53	3.18	1.2	4.5	
NP-CPGB080204GS2	●	★						2	7.94	2.38	0.4	3.5	
NP-CPGB080208GS2	●	★						2	7.94	2.38	0.8	3.5	
NP-CPGB090302GS2	★	★						2	9.53	3.18	0.2	4.5	
NP-CPGB090304GS2	●	★						2	9.53	3.18	0.4	4.5	
NP-CPGB090308GS2	●	★						2	9.53	3.18	0.8	4.5	
NP-CPGB080204FS2		★						2	7.94	2.38	0.4	3.5	
NP-CPGB080208FS2		★						2	7.94	2.38	0.8	3.5	
NP-CPGB090302FS2	★	★						2	9.53	3.18	0.2	4.5	
NP-CPGB090304FS2	●		★					2	9.53	3.18	0.4	4.5	
NP-CPGB090308FS2	●		★					2	9.53	3.18	0.8	4.5	
NP-CPGB090312FS2			★					2	9.53	3.18	1.2	4.5	
NP-CPGB080204TA2				★				2	7.94	2.38	0.4	3.5	
NP-CPGB080208TA2				★				2	7.94	2.38	0.8	3.5	
NP-CPGB080212TA2				★				2	7.94	2.38	1.2	3.5	
NP-CPGB090304TA2			★	★				2	9.53	3.18	0.4	4.5	
NP-CPGB090308TA2			★	★				2	9.53	3.18	0.8	4.5	
NP-CPGB090312TA2			★	★				2	9.53	3.18	1.2	4.5	



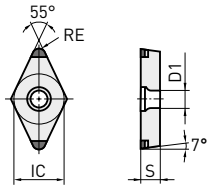
26 Vc

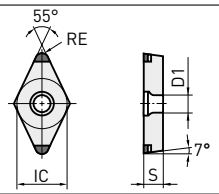
● : Lagerstandard. ★ : Lagerstandard in Japan.

DCGW 7°, DCGT 7°

POSITIVE WSP (MIT LOCH)

Bestellnummer		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-DCGW070202GA2				●			●		2	6.35	2.38	0.2	2.8	
NP-DCGW070204GA2				●	●		●		2	6.35	2.38	0.4	2.8	
NP-DCGW070208GA2					●				2	6.35	2.38	0.8	2.8	
NP-DCGW11T302GA2				●			●		2	9.53	3.97	0.2	4.4	
NP-DCGW11T304GA2				●	●		●		2	9.53	3.97	0.4	4.4	
NP-DCGW11T308GA2				●	●		●		2	9.53	3.97	0.8	4.4	
NP-DCGW070202GS2		●	●						2	6.35	2.38	0.2	2.8	
NP-DCGW070204GS2		●	●						2	6.35	2.38	0.4	2.8	
NP-DCGW070208GS2		●	●						2	6.35	2.38	0.8	2.8	
NP-DCGW11T302GS2		●	●						2	9.53	3.97	0.2	4.4	
NP-DCGW11T304GS2		●	●						2	9.53	3.97	0.4	4.4	
NP-DCGW11T308GS2		●	●						2	9.53	3.97	0.8	4.4	
NP-DCGW11T304GH2			★	★	●				2	9.53	3.97	0.4	4.4	
NP-DCGW11T308GH2			★	★	●				2	9.53	3.97	0.8	4.4	
NP-DCGW070202FS2			●			●			2	6.35	2.38	0.2	2.8	
NP-DCGW070204FS2			●	●		●			2	6.35	2.38	0.4	2.8	
NP-DCGW070208FS2			★			★			2	6.35	2.38	0.8	2.8	
NP-DCGW11T302FS2		●	●			●			2	9.53	3.97	0.2	4.4	
NP-DCGW11T304FS2		●	●	●		●			2	9.53	3.97	0.4	4.4	
NP-DCGW11T308FS2		●	●	●		●			2	9.53	3.97	0.8	4.4	
NP-DCGW070204TA2				●	●		●	●	2	6.35	2.38	0.4	2.8	
NP-DCGW070208TA2					●			★	2	6.35	2.38	0.8	2.8	
NP-DCGW11T304TA2				★	●		★	●	2	9.53	3.97	0.4	4.4	
NP-DCGW11T308TA2				★	●		★	●	2	9.53	3.97	0.8	4.4	
NP-DCGW11T304TH2				★	●			●	2	9.53	3.97	0.4	4.4	
NP-DCGW11T308TH2				★	●			●	2	9.53	3.97	0.8	4.4	
BM-DCGT11T304TA2	**B**			●					2	9.53	3.97	0.4	4.4	
BM-DCGT11T308TA2	**B**			●					2	9.53	3.97	0.8	4.4	
BF-DCGT11T304TS2	**B**		●						2	9.53	3.97	0.4	4.4	
BF-DCGT11T308TS2	**B**		●						2	9.53	3.97	0.8	4.4	





B: Spanbrecher **W**: Wiper

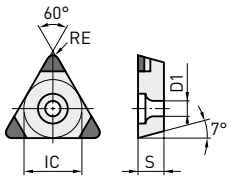
26 Vc

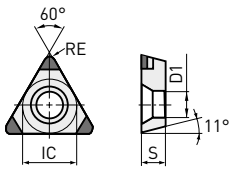
● : Lagerstandard. ★ : Lagerstandard in Japan.

TCGW 7°, TPGB 11°

POSITIVE WSP (MIT LOCH)

Bestellnummer	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-TCGW090204GS3		★						3	5.56	2.38	0.4	2.5	
NP-TCGW090208GS3		★						3	5.56	2.38	0.8	2.5	
NP-TCGW110202GS3		★						3	6.35	2.38	0.2	2.8	
NP-TCGW110204GS3		★						3	6.35	2.38	0.4	2.8	
NP-TCGW110208GS3		★						3	6.35	2.38	0.8	2.8	
NP-TCGW130304GS3		★						3	7.94	3.18	0.4	3.4	
NP-TCGW130308GS3		★						3	7.94	3.18	0.8	3.4	
NP-TCGW16T304GS3		★						3	9.53	3.97	0.4	4.4	
NP-TCGW16T308GS3		★						3	9.53	3.97	0.8	4.4	
NP-TPGB080204GA3				●				3	4.76	2.38	0.4	2.4	
NP-TPGB080208GA3				●				3	4.76	2.38	0.8	2.4	
NP-TPGB090204GA3			★	●		●		3	5.56	2.38	0.4	2.9	
NP-TPGB090208GA3			★	●		★		3	5.56	2.38	0.8	2.9	
NP-TPGB110302GA3			★			★		3	6.35	3.18	0.2	3.4	
NP-TPGB110304GA3			●	●		●		3	6.35	3.18	0.4	3.4	
NP-TPGB110308GA3			●	●		●		3	6.35	3.18	0.8	3.4	
NP-TPGB160304GA3			●	★		★		3	9.53	3.18	0.4	4.4	
NP-TPGB160308GA3			●	★		★		3	9.53	3.18	0.8	4.4	
NP-TPGB080204GS3	★	★						3	4.76	2.38	0.4	2.4	
NP-TPGB080208GS3	★	★						3	4.76	2.38	0.8	2.4	
NP-TPGB090204GS3	★	★						3	5.56	2.38	0.4	2.9	
NP-TPGB090208GS3	★	★						3	5.56	2.38	0.8	2.9	
NP-TPGB110302GS3	★	★						3	6.35	3.18	0.2	3.4	
NP-TPGB110304GS3	★	★						3	6.35	3.18	0.4	3.4	
NP-TPGB110308GS3	★	★						3	6.35	3.18	0.8	3.4	
NP-TPGB160304GS3	★	★						3	9.53	3.18	0.4	4.4	
NP-TPGB160308GS3	★	★						3	9.53	3.18	0.8	4.4	
NP-TPGB160304GH3		★	★	★				3	9.53	3.18	0.4	4.4	
NP-TPGB160308GH3		★	★	★				3	9.53	3.18	0.8	4.4	
NP-TPGB110302FS3	★	★			★			3	6.35	3.18	0.2	3.4	
NP-TPGB110304FS3	★	★	●		●			3	6.35	3.18	0.4	3.4	
NP-TPGB110308FS3	★	★	●		●			3	6.35	3.18	0.8	3.4	
NP-TPGB160304FS3			●					3	9.53	3.18	0.4	4.4	
NP-TPGB160308FS3			●					3	9.53	3.18	0.8	4.4	
NP-TPGB080204TA3				★			●	3	4.76	2.38	0.4	2.4	
NP-TPGB080208TA3				★			★	3	4.76	2.38	0.8	2.4	
NP-TPGB090204TA3				★			●	3	5.56	2.38	0.4	2.9	
NP-TPGB090208TA3				★			★	3	5.56	2.38	0.8	2.9	
NP-TPGB110304TA3			★	●		●	●	3	6.35	3.18	0.4	3.4	
NP-TPGB110308TA3			★	★		★	★	3	6.35	3.18	0.8	3.4	
NP-TPGB160304TA3			★	●		★	★	3	9.53	3.18	0.4	4.4	
NP-TPGB160308TA3			★	●		★	★	3	9.53	3.18	0.8	4.4	
NP-TPGB160304TH3			★	★			★	3	9.53	3.18	0.4	4.4	
NP-TPGB160308TH3			★	★			★	3	9.53	3.18	0.8	4.4	



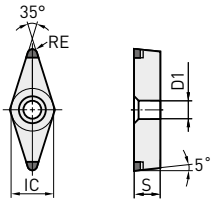


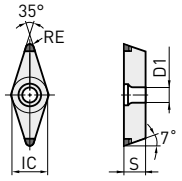
● : Lagerstandard. ★ : Lagerstandard in Japan.

VBGW 5°, VCGW 7°

POSITIVE WSP (MIT LOCH)

Bestellnummer	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometrie
NP-VBGW110302GA2			●			★		2	6.35	3.18	0.2	2.9	
NP-VBGW110304GA2			●	●		★		2	6.35	3.18	0.4	2.9	
NP-VBGW110308GA2			★	★		★		2	6.35	3.18	0.8	2.9	
NP-VBGW160402GA2			★			★		2	9.53	4.76	0.2	4.4	
NP-VBGW160404GA2			●	●		★		2	9.53	4.76	0.4	4.4	
NP-VBGW160408GA2			●	●		★		2	9.53	4.76	0.8	4.4	
NP-VBGW110302GS2	★	★						2	6.35	3.18	0.2	2.9	
NP-VBGW110304GS2	★	★						2	6.35	3.18	0.4	2.9	
NP-VBGW110308GS2	★	★						2	6.35	3.18	0.8	2.9	
NP-VBGW160402GS2	★	●						2	9.53	4.76	0.2	4.4	
NP-VBGW160404GS2	●	●						2	9.53	4.76	0.4	4.4	
NP-VBGW160408GS2	●	●						2	9.53	4.76	0.8	4.4	
NP-VBGW160404GH2		★	★	★				2	9.53	4.76	0.4	4.4	
NP-VBGW160408GH2		★	★	●				2	9.53	4.76	0.8	4.4	
NP-VBGW110302FS2		●			★			2	6.35	3.18	0.2	2.9	
NP-VBGW110304FS2		★			★			2	6.35	3.18	0.4	2.9	
NP-VBGW110308FS2		★			★			2	6.35	3.18	0.8	2.9	
NP-VBGW160402FS2		★			★			2	9.53	4.76	0.2	4.4	
NP-VBGW160404FS2			●					2	9.53	4.76	0.4	4.4	
NP-VBGW160408FS2			●					2	9.53	4.76	0.8	4.4	
NP-VBGW110304TA2				★				2	6.35	3.18	0.4	2.9	
NP-VBGW110308TA2				★				2	6.35	3.18	0.8	2.9	
NP-VBGW160404TA2			●	★		★		2	9.53	4.76	0.4	4.4	
NP-VBGW160408TA2			★	★		★		2	9.53	4.76	0.8	4.4	
NP-VBGW160404TH2			★	★				2	9.53	4.76	0.4	4.4	
NP-VBGW160408TH2			★	★				2	9.53	4.76	0.8	4.4	
NP-VCGW160404GA2			●	●				2	9.53	4.76	0.4	4.4	
NP-VCGW160408GA2			●	●				2	9.53	4.76	0.8	4.4	
NP-VCGW160404GS2	●	●						2	9.53	4.76	0.4	4.4	
NP-VCGW160408GS2	●	●						2	9.53	4.76	0.8	4.4	
NP-VCGW160404GH2		★	★	★				2	9.53	4.76	0.4	4.4	
NP-VCGW160408GH2		★	★	★				2	9.53	4.76	0.8	4.4	
NP-VCGW160404FS2		●	●		★			2	9.53	4.76	0.4	4.4	
NP-VCGW160408FS2		●	●		★			2	9.53	4.76	0.8	4.4	
NP-VCGW160404TA2			★	★				2	9.53	4.76	0.4	4.4	
NP-VCGW160408TA2			★	★				2	9.53	4.76	0.8	4.4	
NP-VCGW160404TS2		★						2	9.53	4.76	0.4	4.4	
NP-VCGW160408TS2		★						2	9.53	4.76	0.8	4.4	
NP-VCGW160404TH2			★	★				2	9.53	4.76	0.4	4.4	
NP-VCGW160408TH2			★	★				2	9.53	4.76	0.8	4.4	





26 Vc

● : Lagerstandard. ★ : Lagerstandard in Japan.

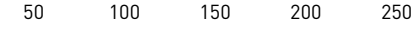
SCHNITTDATEN-EMPFEHLUNGEN

BC8100

	Material	Sorte	Schnittmodus	Vc	f	ap	Kühlmittel
H	Hardened Steel (Heat treated steel etc)	**BC8105**	Kontinuierlicher Schnitt		– 0.15	– 0.20	Trocken, nass
		BC8110	Kontinuierlicher Schnitt		– 0.20	– 0.35	
		BC8120	Kontinuierlicher Schnitt		– 0.30	– 0.80	
			Unterbrochener Schnitt		– 0.20	– 0.30	
		BC8130	Unterbrochener Schnitt		– 0.20	– 0.30	

MB8100

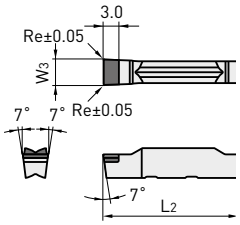
	Material	Sorte	Schnittmodus	Vc	f	ap	Kühlmittel
H	Gehärteter Stahl (wärmebehandelter Stahl)	**MB8110**	Außen kontinuierlicher Schnitt		– 0.20	– 0.30	Trocken, nass
		MB8120	Außen kontinuierlicher Schnitt		– 0.20	– 0.50	
			Außen unterbrochener Schnitt		– 0.20	– 0.30	
		MB8130	Außen unterbrochener Schnitt		– 0.20	– 0.30	



GY1G

WSP FÜR STECHSYSTEM GY-SERIE

Bestellnummer	BC8110	W3	Toleranz	Re	L2	Geometrie
GY1G0200D020N-GFGS	●	2.00	±0.03	0.2	20.70	Glatt (für gehärtete Werkstoffe)
GY1G0239E020N-GFGS	●	2.39	±0.03	0.2	20.70	
GY1G0250E020N-GFGS	●	2.50	±0.03	0.2	20.70	
GY1G0300F020N-GFGS	●	3.00	±0.03	0.2	20.70	
GY1G0318F020N-GFGS	●	3.18	±0.03	0.2	20.70	
GY1G0400G020N-GFGS	●	4.00	±0.03	0.2	25.65	
GY1G0475H020N-GFGS	●	4.75	±0.03	0.2	25.65	
GY1G0500H020N-GFGS	●	5.00	±0.03	0.2	25.65	
GY1G0600J020N-GFGS	●	6.00	±0.03	0.2	25.65	

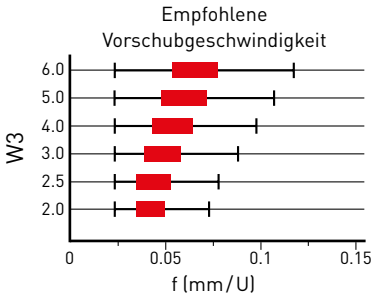


1. Bei Erreichen des min. Bohrungsdurchmessers „D1" für Inneneinstechen reduzieren Sie den Vorschub bitte um 20 %.

SCHNITTDATENEMPFEHLUNGEN

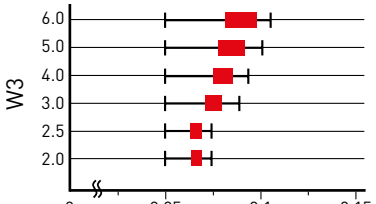
ZUM AUSSENEINSTECHEN

	Material	Härte	Vc
H	Gehärteter Stahl	⩽ 50HRC	80 – 120



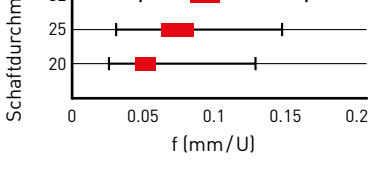
ZUM AXIALEINSTECHEN

	Material	Härte	Vc
H	Gehärteter Stahl	⩽ 50HRC	60 – 100



ZUM INNENEINSTECHEN

	Material	Härte	Vc
H	Gehärteter Stahl	⩽ 50HRC	60 – 100

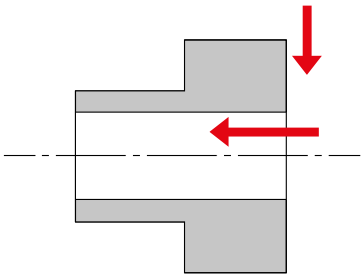


: 1. empfohlener Bereich

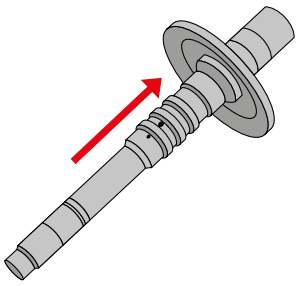
ANWENDUNGSBEISPIELE

BC8105

WSP	NP-DCGW11T308GS2
Werkstoff	20CrMo2-2 (58-60 HRC)
Schnittmodus	außen/plan, kontinuierlich
Schnittgeschwindigkeit Vc (m/min)	165
Vorschub f (mm/U)	0.085
Schnitttiefe ap (mm)	0.1
Kühlung	Trockenbearbeitung
Ergebnis	Anzahl der Werkstücke: 80

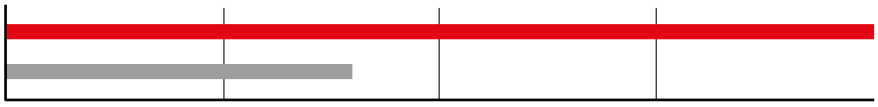


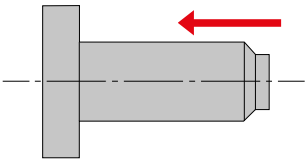
WSP	NP-CNGA120408GSWS2
Werkstoff	S55CHT (55-65 HRC)
Schnittmodus	außen, kontinuierlich
Schnittgeschwindigkeit Vc (m/min)	160
Vorschub f (mm/U)	0.35
Schnitttiefe ap (mm)	0.15
Kühlung	Trockenbearbeitung
Ergebnis	Anzahl der Werkstücke: 134



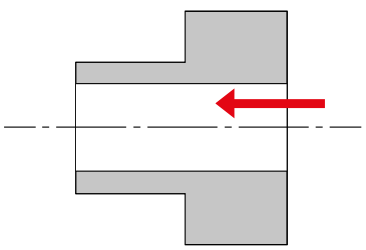
BC8110

WSP	NP-DNGA150404FS2
Werkstoff	S55CHT (55-65HRC)
Schnittmodus	außen, kontinuierlich
Schnittgeschwindigkeit Vc (m/min)	160
Vorschub f (mm/U)	0.20
Schnitttiefe ap (mm)	0.20
Kühlung	Nassbearbeitung
Ergebnis	Anzahl der Werkstücke: 500





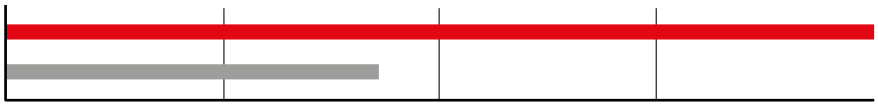
WSP	NP-CCGW09T308GS2
Werkstoff	16MnCr5 (60-65HRC)
Schnittmodus	innen, kontinuierlich
Schnittgeschwindigkeit Vc (m/min)	110
Vorschub f (mm/U)	0.15
Schnitttiefe ap (mm)	0.20
Kühlung	Trockenbearbeitung
Ergebnis	Anzahl der Werkstücke: 3500

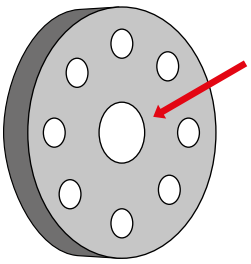


■ : Mitsubishi Materials Werkzeug ■ : Herkömmliches Werkzeug

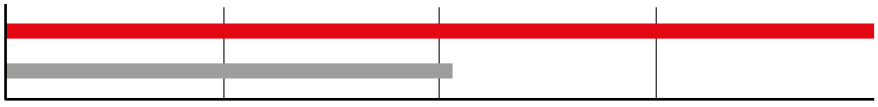
BC8120

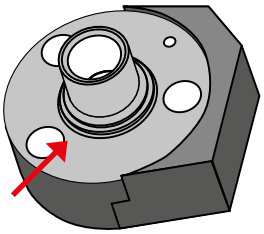
WSP	NP-CNGA120408TA2
Werkstoff	SUJ (50HRC)
Schnittmodus	plan, unterbrochen
Schnittgeschwindigkeit vc (m/min)	130
Vorschub f (mm/U)	0.08
Schnitttiefe (mm)	0.50
Kühlung	Nassbearbeitung
Ergebnis	Anzahl der Werkstücke: 110





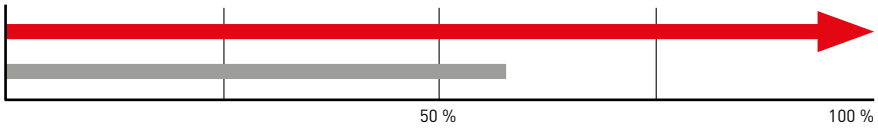
WSP	NP-CNGA120408GA2
Werkstoff	CAC403 (55-58HRC)
Schnittmodus	plan, unterbrochen
Schnittgeschwindigkeit Vc (m/min)	150
Vorschub f (mm/U)	0.15
Schnitttiefe ap(mm)	0.10
Kühlung	Trockenbearbeitung
Ergebnis	Anzahl der Werkstücke: 150

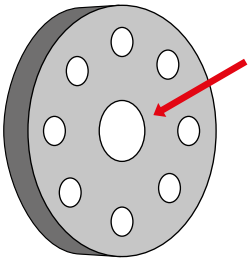




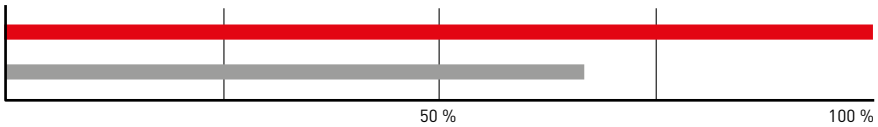
BC8130

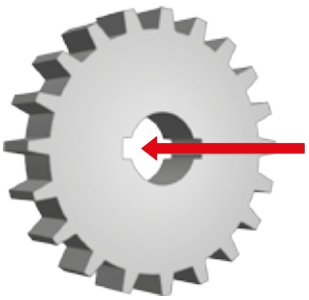
WSP	NP-CNGA120408TH2
Werkstoff	S45C (58 HRC)
Schnittmodus	plan, unterbrochen
Schnittgeschwindigkeit Vc (m/min)	130
Vorschub f (mm/U)	0.08
Schnitttiefe ap (mm)	0.15
Kühlung	Nassbearbeitung
Ergebnis	Anzahl der Werkstücke: 70 (kein Bruch)





WSP	NP-CCGW09T308TN2
Werkstoff	16MnCrS5 (58-60 HRC)
Schnittmodus	innen, unterbrochen
Schnittgeschwindigkeit Vc (m/min)	159-175
Vorschub f (mm/U)	0.11
Schnitttiefe ap (mm)	0.12
Kühlung	Trockenbearbeitung
Ergebnis	Anzahl der Werkstücke: 170





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