

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS

## TYPHOON SUH MINI

HIGH PERFORMANCE - MINIATURE SHORT, LONG AND EXTRA LONG

✚ Miniature drills, from short (5xD) to extra-long (30xD) type, suitable for ISO P, M, K, N, S materials.

🇮🇹 Mini punte corte (5xD), lunghe ed extra-lunghe (30xD), adatte alla foratura di materiali ISO P, M, K, N, S.

🇩🇪 Kurze (5xD), lange und extra-lange (30xD) Kleinstbohrer für das Bohren der Materialien ISO P, M, K, N, S.

🇫🇷 Mini forets courts (5xD), longs et extra-longs (30xD), appropriés au perçage de matériaux ISO P, M, K, N, S.

🇪🇸 Mini brocas cortas (5xD), largas y extra largas (30xD), adecuadas para el taladro de materiales ISO P, M, K, N, S.

🇷🇺 Мини-свёрла от коротких (5xD) до супердлинных (30xD). Пригодны для обработки отверстий в материалах по ISO P, M, K, N, S.



INFO

**CARBIDE DRILLS**

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- Miniature drills are manufactured with unified 3 mm shank
- Oil holes for internal coolant feed
- Self-centering geometry: highly accurate holes
- Straight and reinforced edge: high stability and chipping resistance
- Edge geometry: special design for edge and corners protection
- Chip pocket: highly polished to prevent welding and to improve the chip ejection
- Substrate and coating: specifically selected for high wear resistance, long and reliable life
- Available from Ø1 mm to Ø3 mm
- Different cutting length types from short (5xD) to extra-long (30xD)



- Mini forets fabriqués avec une tige unifiée ayant un diamètre de 3 mm
- Trous de lubrification
- Affûtage autocentré pour l'exécution de trous précis et peu d'efforts de coupe
- Profil de l'arête droit et renforcé : il génère des copeaux courts et garantit une grande fiabilité
- Géométrie de l'arête avec affûtage spécifique pour protéger l'arête et les angles
- Finition des goujures : polie pour réduire le problème du collage et faciliter l'évacuation des copeaux
- Substrat et revêtement : spécifiques pour garantir durée et fiabilité
- Disponibles du Ø1 mm au Ø3 mm
- Différents types de longueur, de la plus courte (5xD) aux extra-longues (30xD)



- Mini-punte costruite con gambo unificato Ø3 mm
- Fori di refrigerazione
- Affilatura autocentrante per l'esecuzione di fori precisi e bassi sforzi di taglio
- Profilo del tagliente diritto e rinforzato: genera trucioli corti e garantisce grande affidabilità
- Geometria del tagliente con affilatura specifica a protezione del tagliente e degli spigoli
- Finitura gole: lappate per ridurre il problema dell'incollaggio e facilitare l'evacuazione dei trucioli
- Substrato e rivestimento: specifici per garantire durata e affidabilità
- Disponibili da Ø1 mm a Ø3 mm
- Differenti tipi di lunghezza, dalle corte (5XD) alle extra-lunghe (30XD)



- Mini-brocas fabricadas con mango unificado con diámetro de 3 mm
- Agujeros de refrigeración
- Afilado autocentrante para la realización de agujeros precisos y bajos esfuerzos de corte
- Perfil del filo recto y reforzado: genera virutas cortas y garantiza una gran fiabilidad
- Geometría del filo con afilado específico para proteger el filo y los ángulos
- Acabado ranuras: lapeadas para reducir el problema del encolado y facilitar la evacuación de las virutas
- Sustrato y revestimiento: específicos para garantizar duración y fiabilidad
- Disponibles de Ø1 mm a Ø3mm
- Diferentes tipos de longitud, desde las cortas (5XD) hasta las extra-largas (30XD)



- Kleinbohrer mit genormtem Schaft und einem Durchmesser von 3 mm
- Kühlöffnungen
- Selbstzentrierender Schliff für präzise Bohrungen und geringen Schneiddruck
- Gerades und verstärktes Schneidkantenprofil: zur Erzeugung kurzer Späne und zur Gewährleistung hoher Zuverlässigkeit
- Geometrie der Schneidkante mit speziellem Schliff zum Schutz von Schneidkante und Kanten
- Schlichtbearbeitung der Nuten: geläpft, um Probleme durch Verkleben zu reduzieren und um die Späneabführung zu erleichtern
- Trägermaterial und Beschichtung: speziell zur Gewährleistung von Standzeit und Zuverlässigkeit
- Erhältlich von Ø1 mm bis Ø3 mm
- Verschiedene Längen, von kurz (5XD) bis extra-lang (30XD)



- Мини-свёрла с унифицированным 3х мм хвостовиком
- Отверстия для подвода СОЖ
- Самоцентрирующаяся геометрия: высокая точность отверстий
- Прямые усиленные кромки: высокая стабильность резания и предотвращение пакетирования
- Геометрия режущей кромки со специальной заточкой для защиты лезвия и кромок
- Отполированные стружечные канавки: уменьшают вероятность приваривания стружки и облегчают ее вывод
- Специальное покрытие для повышения стойкости инструмента
- Доступны диаметром от Ø1 мм до Ø3 мм
- Различные длины: от коротких (5XD) до супердлинных (30XD)

**HSS DRILLS**

 LFTA  
 SUTA  
 HSS-HSS/CO

**CARBIDE END-MILLS**

 G2  
 MDTA  
 HF VH/UP  
 MEF  
 ALU  
 MEX/MH  
 UH/MH

**HSS END-MILLS**
**CARBIDE BURRS**

**MACHINING OF DEEP HOLES  
PERPENDICULAR TO THE SURFACE**

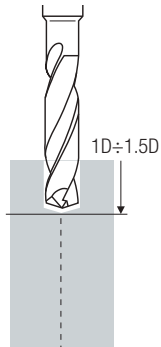
**ESECUZIONE FORI PROFONDI  
ORTOGONALI ALLA SUPERFICIE**

**HERSTELLUNG TIEFER RECHTWINKLIGER  
BOHRUNGEN**

**EXÉCUTION DE TROUS PROFONDS  
ORTHOGONAUX À LA SURFACE**

**MECANIZADO DE AGUJEROS PROFUNDOS  
PERPENDICULARES A LA SUPERFÍCIE**

**СВЕРЛЕНИЕ ГЛУБОКИХ ОТВЕРСТИЙ ПЕРПЕНДИКУЛЯРНО  
ОБРАБАТЫВАЕМОЙ ПОВЕХНОСТИ**


**STEP 1**

As pilot drill (1xD,1.5xD), please use 343TA with head angle 140° (SUH MINI=135°) and m7 tolerance (SUH MINI=h7)

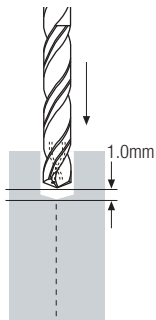
Utilizzare una punta 343TA con angolo in testa di 140° (SUH MINI=135°) e tolleranza m7 (SUH MINI=h7), per eseguire un foro pilota (1xD -1.5xD) molto preciso

Einen Bohrer 343TA mit einem Spitzenwinkel von 140° (SUH MINI=135°) und Toleranz m7 (SUH MINI=h7) für die Herstellung einer äußerst präzisen Richtbohrung (1xD - 1.5xD) verwenden.

Utiliser un foret 343TA avec un angle en bout de 140° (SUH MINI=135°) et une tolérance m7 (SUH MINI=h7), pour effectuer un trou pilote (1xD -1.5xD) très précis.

Utilice una broca 343TA con ángulo de punta de 140° (SUH MINI=135°) y tolerancia m7 (SUH MINI=h7), para realizar un agujero piloto (1xD -1,5xD) muy preciso

Для пилотного отверстия (1xD -1.5xD) используйте сверло 343TA с углом при вершине 140° (SUH MINI=135°) и допуском на диаметр m7 (SUH MINI=h7).


**STEP 2**

With coolant feed OFF, enter the pilot hole with SUH MINI drill at Vc=20 m/min and fn=0.3 mm/rev. Position the SUH MINI drill at 1 mm from the end of the pilot hole, then start supplying the coolant and start drilling.

Senza azionare il refrigerante interno, entrare con la punta lunga serie SUH MINI all'interno del foro. Vc=20 m/min, fn=0.3 mm/rev. Posizionare la punta SUH MINI sino a 1 mm dal fondo del foro pilota. Azionare il refrigerante interno ad alta pressione e cominciare la foratura.

Ohne Aktivierung der internen Kühlung, einen langen Bohrer der Serie SUH MINI in die Bohrung einführen. Vc=20 m/min, fn=0,3 mm/U. Den Bohrer SUH MINI bis 1 mm vom Ende der Richtbohrung ansetzen. Die interne Kühlung mit Hochdruck aktivieren und mit der Bohrung beginnen.

Sans actionner la lubrification interne, entrer avec le foret long série SUH MINI à l'intérieur du trou. Vc=20 m/min, fn=0.3 mm/rév. Placer le foret SUH MINI jusqu'à 1 mm du fond du trou pilote. Actionner la lubrification interne à haute pression et commencer le perçage.

Sin accionar el refrigerante interno, entre con la broca larga de la serie SUH MINI dentro del agujero. Vc=20m/min, fn=0.3mm/rev. Posicione la broca SUH MINI hasta 1 mm. del fondo del agujero piloto. Accione el refrigerante interno a alta presión y comience el taladro.

Без подачи СОЖ, введите длинное сверло серии SUH MINI внутрь пилотного отверстия с режимами Vc=20 м/мин и fn=0,3 мм/об. Спозиционируйте сверло SUH MINI на расстоянии 1 мм от дна отверстия. Включите подачу СОЖ и начните сверление.

**TYPHOON SUH MINI**
**HIGH PERFORMANCE - MINIATURE SHORT AND LONG**

INFO

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**STEP 3**

Make continue drilling operation without steps for chip ejection. In case of through holes, reduce the feed by 30% before the hole exit (approx. 1 mm). Stop the coolant feed. Use the step drilling process whenever the chip ejection becomes poor.

Forare senza step per scarico trucioli. Nel caso di fori passanti, 1 mm prima di aver completato il foro, ridurre l'avanzamento del 30%. Fermare il refrigerante. Utilizzare il processo di foratura a step nel caso di evacuazione trucioli problematica.

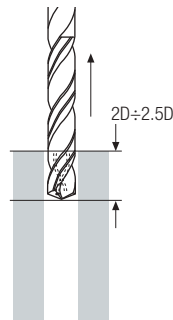
Für die Späneabführung Stufenlos bohren. Bei Durchgangsbohrungen 1 mm vor Fertigstellung der Bohrung den Vorschub um 30% reduzieren. Die Kühlung deaktivieren. Man soll bei schlechter Spanabfuhr einen Step-Bohrvorgang machen.

Percer sans step pour l'évacuation des copeaux. En présence de trous débouchants, 1 mm avant d'avoir terminé le trou, réduire l'avance de 30 %. Arrêter la lubrification. Man soll bei schlechter Spanabfuhr einen Step-Bohrvorgang machen.

Taladre sin step para la descarga de virutas. En el caso de agujeros pasantes, 1 mm antes de haber completado el agujero, reduzca el avance un 30%. Pare el refrigerante. Aplicar taladrado a step (por pasos) en el caso de problemas de evacuación de viruta.

Сверлите без остановок и выводов инструмента. В случае обработки сквозного отверстия, снизьте подачу на 30%, за 1 мм до выхода. Отключите подачу СОЖ. Используйте пошаговый процесс сверления при недостаточном удалении стружки.

**HSS DRILLS**

 LFTA  
 SUTA  
 HSS-HSS/CO

**STEP 4**

Withdraw the drill using max rpm and double fn, until 2xD from the hole entrance.

Ritirare la punta utilizzando il massimo dei giri disponibili e il doppio dell'avanzamento consigliato sino ad una profondità 2xD.

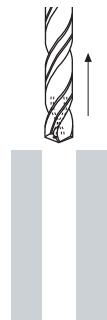
Den Bohrer zurückziehen, dabei die maximal verfügbare Drehzahl und den doppelten Wert des empfohlenen Vorschubs bis zu einer Tiefe 2xD einsetzen.

Retirer le foret en utilisant le maximum de tours disponibles et le double de l'avancement conseillé jusqu'à une profondeur 2xD.

Retire la broca utilizando el máximo de rpm disponibles y el doble del avance aconsejado hasta una profundidad 2xD.

Выньте сверло до уровня 2xD, используя максимальную частоту вращения и двойную подачу.

**CARBIDE END-MILLS**

 G2  
 MDTA  
 HF VH/UP  
 MEF  
 ALU  
 MEX/MH  
 UH/MH

**STEP 5**

Completing the exit from the hole by using slow and constant speed (200-300 rpm).

Completare l'ultimo tratto di arretramento con velocità ridotta e costante (200-300 rpm).

Den letzten Abschnitt beim Zurückziehen mit reduzierter und konstanter Geschwindigkeit fertigstellen (200-300 rpm).

Terminer la dernière partie du perçage avec une vitesse réduite et constante (200-300 rpm).

Complete el último tramo de retroceso con velocidad reducida y constante (200-300 rpm).

Полностью выньте сверло на заниженных режимах (200-300 rpm).

**HSS END-MILLS**
**CARBIDE BURRS**

**MACHINING OF DEEP HOLES ON  
SLANTED OR IRREGULAR SURFACES**
**ESECUZIONE FORI PROFONDI SU  
SUPERFICI IRREGOLARI O OBLIQUE**
**HERSTELLUNG TIEFER BOHRUNGEN AUF  
SCHRÄGEN ODER UNREGELMÄSSIGEN  
OBERFLÄCHEN**
**EXÉCUTION DE TROUS PROFONDS SUR DES  
SURFACES IRRÉGULIÈRES OU OBLIQUES**
**MECANIZADO DE AGUJEROS PROFUNDOS  
SOBRE SUPERFÍCIES IRREGULARES U  
OBLICUAS**
**ОБРАБОТКА ГЛУБОКИХ ОТВЕРСТИЙ  
НА НАКЛОННЫХ ИЛИ НЕРОВНЫХ  
ПЛОСКОСТЯХ**

**STEP 1**

Prepare a flat surface of the same size as the drilling diameter.

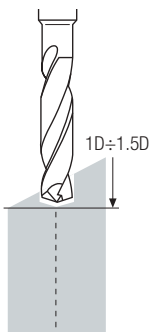
Realizzare una superficie piana utilizzando una fresa con tagliente frontale. Il piano realizzato deve avere le stesse dimensioni del diametro di foratura profonda.

Eine ebene Oberfläche, durch einen Fräser mit stirnseitiger Schneidkante, herstellen. Die hergestellte Oberfläche muss dieselben Abmessungen des Durchmessers der tiefen Bohrung aufweisen.

Réaliser une surface plane en utilisant une fraise avec une arête frontale. Le plan réalisé doit avoir les mêmes dimensions que le diamètre de perçage profond.

Realizar una superficie plana usando una fresa con filo frontal. El plano realizado tiene que tener las mismas dimensiones que el diámetro de taladro profundo.

Подготовьте ровную поверхность с помощью концевой фрезы. Эта поверхность должна быть того же размера, что и диаметр будущего глубокого отверстия.


**STEP 2**

As pilot drill (1xD, 1.5xD), please use 343TA with head angle 140° (SUH MINI=135°) and m7 tolerance (SUH MINI=h7).

Utilizzare una punta 343TA con angolo in testa di 140° (SUH MINI=135°) e tolleranza m7 (SUH MINI=h7), per eseguire un foro pilota (1xD -1.5xD) molto preciso.

Einen Bohrer 343TA mit einem Spitzenwinkel von 140° (SUH MINI=135°) und Toleranz m7 (SUH MINI=h7) für die Herstellung einer äußerst präzisen Richtbohrung (1xD - 1.5xD) verwenden.

Utiliser un foret 343TA avec un angle en bout de 140° (SUH MINI=135°) et une tolérance m7 (SUH MINI=h7), pour effectuer un trou pilote (1xD -1.5xD) très précis.

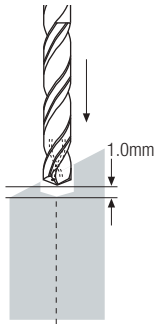
Utilice una broca 343TA con ángulo punta de 140° (SUH MINI=135°) y tolerancia m7 (SUH MINI=h7), para realizar un agujero piloto (1xD -1,5xD) muy preciso.

Для пилотного отверстия (1xD -1.5xD) используйте сверло 343TA с углом при вершине 140° (SUH MINI=135°) и допуском на диаметр m7 (SUH MINI=h7).

**TYPHOON SUH MINI**
**HIGH PERFORMANCE - MINIATURE SHORT AND LONG**

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**STEP 3**


With coolant feed OFF, enter the pilot hole with SUH MINI drill at  $V_c=20$  m/min and  $f_n=0.3$  mm/rev. Position the SUH MINI drill at 1 mm from the end of the pilot hole, then start supplying the coolant and start drilling.



Sans actionner la lubrification interne, entrer avec le foret long série SUH MINI à l'intérieur du trou.  $V_c=20$  m/min,  $f_n=0.3$  mm/rév. Placer le foret SUH MINI jusqu'à 1 mm du fond du trou pilote. Actionner la lubrification interne à haute pression et commencer le perçage.



Senza azionare il refrigerante interno, entrare con la punta lunga serie SUH MINI all'interno del foro.  $V_c=20$  m/min,  $f_n=0.3$  mm/rev. Posizionare la punta SUH MINI sino a 1 mm dal fondo del foro pilota. Azionare il refrigerante interno ad alta pressione e cominciare la foratura.



Sin accionar el refrigerante interno, entre con la broca larga de la serie SUH MINI dentro del agujero.  $V_c=20$  m/min,  $f_n=0.3$  mm/rev. Posicione la broca SUH MINI hasta 1 mm. del fondo del agujero piloto. Accione el refrigerante interno a alta presión y comience el taladro.



Ohne Aktivierung der internen Kühlung, einen langen Bohrer der Serie SUH MINI in die Bohrung einführen.  $V_c=20$  m/min,  $f_n=0,3$  mm/U. Den Bohrer SUH MINI bis 1 mm vom Ende der Richtbohrung ansetzen. Die interne Kühlung mit Hochdruck aktivieren und mit der Bohrung beginnen.



Без включения СОЖ, введите длинное сверло серии SUH MINI внутрь пилотного отверстия с режимами  $V_c=20$  м/мин и  $f_n=0.3$  мм/об. Спозиционируйте сверло SUH MINI на расстоянии 1 мм от дна отверстия. Включите подачу СОЖ и начните сверление.

**HSS DRILLS**

 LFTA  
 SUTA  
 HSS-HSS/CO

**CARBIDE END-MILLS**

 G2  
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 ALU  
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 UH/MH

**STEP 4**


Make continue drilling operation without steps for chip ejection. In case of through holes, reduce the feed by 30% before the hole exit (approx. 1 mm). Stop the coolant feed.



Perçer sans step pour l'évacuation des copeaux. En présence de trous débouchants, 1 mm avant d'avoir terminé le trou, réduire l'avance de 30 %. Arrêter la lubrification.



Forare senza step per scarico trucioli. Nel caso di fori passanti, 1 mm prima di aver completato il foro, ridurre l'avanzamento del 30%. Fermare il refrigerante.



Taladre sin step para la descarga de virutas. En el caso de agujeros pasantes, 1 mm antes de haber completado el agujero, reduzca el avance un 30%. Pare el refrigerante.

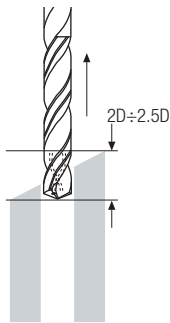


Für die Späneabführung Stufenlos bohren. Bei Durchgangsbohrungen 1 mm vor Fertigstellung der Bohrung den Vorschub um 30% reduzieren. Die Kühlung deaktivieren.



Сверлите без остановок и выводов инструмента. В случае обработки сквозного отверстия, снизьте подачу на 30%, за 1 мм до выхода. Отключите подачу СОЖ.

**HSS END-MILLS**
**CARBIDE BURRS**


**STEP 5**

Withdraw the drill using max rpm and double  $f_n$ , until  $2xD \div 2.5xD$  from the hole entrance.

Ritirare la punta utilizzando il massimo dei giri disponibili e il doppio dell'avanzamento consigliato sino ad una profondità  $2xD \div 2.5xD$ .

Den Bohrer zurückziehen, dabei die maximal verfügbare Drehzahl und den doppelten Wert des empfohlenen Vorschubs bis zu einer Tiefe  $2xD \div 2.5xD$  einsetzen.

Retirer le foret en utilisant le maximum de tours disponibles et le double de l'avancement conseillé jusqu'à une profondeur  $2xD \div 2.5xD$ .

Retire la broca utilizando el máximo de rpm disponibles y el doble del avance aconsejado hasta una profundidad de  $2xD \div 2.5xD$ .

Выньте сверло до уровня  $2xD$ , используя максимальную частоту вращения и двойную подачу.


**STEP 6**

Completing the exit from the hole by using slow and constant speed (200-300 rpm).

Completare l'ultimo tratto di arretramento con velocità ridotta e costante (200-300 rpm).

Den letzten Abschnitt beim Zurückziehen mit reduzierter und konstanter Geschwindigkeit fertigstellen (200-300 rpm).

Terminer la dernière partie du perçage avec une vitesse réduite et constante (200-300 rpm).

Complete el último tramo de retroceso con velocidad reducida y constante (200-300 rpm).

Полностью выньте сверло на заниженных режимах (200-300 rpm).

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TA-4HTA  
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CUTTING PARAMETERS

### 355SUH MINI

Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8							
	Hardness/Rm		500÷700 N/mm <sup>2</sup>		600÷1000 N/mm <sup>2</sup>		900÷1200 N/mm <sup>2</sup>		1200÷1400 N/mm <sup>2</sup>				
	Vc (m/min)		85÷95*		75÷85*		65÷75*		60÷70*		55÷65*		38÷42*
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.025	0.025	0.026	0.026	0.012	0.012							
1.1	0.027	0.028	0.029	0.029	0.014	0.013							
1.2	0.030	0.030	0.032	0.031	0.015	0.014							
1.3	0.032	0.033	0.034	0.034	0.016	0.015							
1.4	0.035	0.035	0.037	0.037	0.017	0.017							
1.5	0.037	0.038	0.040	0.039	0.018	0.018							
1.6	0.041	0.041	0.044	0.043	0.021	0.020							
1.7	0.044	0.044	0.047	0.046	0.022	0.021							
1.8	0.047	0.047	0.049	0.049	0.024	0.023							
1.9	0.049	0.049	0.052	0.051	0.025	0.024							
2.0	0.052	0.052	0.055	0.054	0.026	0.025							
2.1	0.056	0.056	0.059	0.059	0.029	0.028							
2.2	0.059	0.059	0.062	0.062	0.031	0.029							
2.3	0.062	0.061	0.065	0.064	0.032	0.031							
2.4	0.064	0.064	0.068	0.067	0.033	0.032							
2.5	0.067	0.067	0.071	0.070	0.035	0.033							
2.6	0.073	0.071	0.076	0.075	0.038	0.037							
2.7	0.075	0.074	0.079	0.078	0.040	0.038							
2.8	0.078	0.077	0.082	0.081	0.041	0.040							
2.9	0.081	0.080	0.085	0.084	0.043	0.041							
3.0	0.084	0.082	0.088	0.087	0.044	0.042							



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Material Group ISO 513	M1	M2	M3					
	Hardness/Rm		55÷65*		50÷60*		40÷50*	
	Vc (m/min)		55÷65*		50÷60*		40÷50*	
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1.0	0.012	0.013	0.013					
1.1	0.014	0.014	0.014					
1.2	0.015	0.015	0.015					
1.3	0.016	0.016	0.016					
1.4	0.017	0.018	0.018					
1.5	0.018	0.019	0.019					
1.6	0.021	0.021	0.021					
1.7	0.022	0.022	0.023					
1.8	0.024	0.024	0.024					
1.9	0.025	0.025	0.025					
2.0	0.026	0.026	0.027					
2.1	0.029	0.029	0.029					
2.2	0.031	0.030	0.031					
2.3	0.032	0.032	0.032					
2.4	0.033	0.033	0.034					
2.5	0.035	0.034	0.035					
2.6	0.038	0.037	0.038					
2.7	0.040	0.039	0.040					
2.8	0.041	0.040	0.041					
2.9	0.043	0.041	0.043					
3.0	0.044	0.043	0.044					



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
SUH MINI  
HL  
HSD  
C-SD-TA

HSS DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS END-MILLS

CARBIDE BURRS



INFO

### 355SUH MINI

CARBIDE DRILLS

- PU-HPU
- TA-4HTA
- SUH
- ALH
- HRC
- SUH MINI**
- HL
- HSD
- C-SD-TA



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	<b>80÷90*</b>	<b>70÷80*</b>	<b>60÷70*</b>	<b>55÷65*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.016	0.015	0.014	0.012		
1.1	0.018	0.017	0.015	0.014		
1.2	0.019	0.018	0.017	0.015		
1.3	0.021	0.020	0.018	0.016		
1.4	0.023	0.021	0.019	0.017		
1.5	0.024	0.023	0.021	0.018		
1.6	0.027	0.025	0.023	0.021		
1.7	0.028	0.027	0.025	0.022		
1.8	0.030	0.028	0.026	0.024		
1.9	0.032	0.030	0.028	0.025		
2.0	0.033	0.031	0.029	0.026		
2.1	0.036	0.034	0.032	0.029		
2.2	0.038	0.036	0.034	0.031		
2.3	0.040	0.038	0.035	0.032		
2.4	0.041	0.039	0.037	0.033		
2.5	0.043	0.041	0.038	0.035		
2.6	0.046	0.044	0.041	0.038		
2.7	0.048	0.046	0.043	0.040		
2.8	0.050	0.047	0.045	0.041		
2.9	0.051	0.049	0.046	0.043		
3.0	0.053	0.051	0.048	0.044		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

HSS DRILLS

- LFTA
- SUTA
- HSS-HSS/CO

Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	<b>140÷150*</b>	<b>120÷130*</b>	<b>110÷120*</b>	<b>155÷165*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.016	0.016	0.015	0.016		
1.1	0.018	0.018	0.016	0.017		
1.2	0.019	0.019	0.018	0.019		
1.3	0.021	0.021	0.019	0.020		
1.4	0.022	0.023	0.021	0.022		
1.5	0.024	0.024	0.022	0.023		
1.6	0.026	0.027	0.024	0.026		
1.7	0.028	0.028	0.026	0.027		
1.8	0.030	0.030	0.028	0.029		
1.9	0.031	0.032	0.029	0.031		
2.0	0.033	0.033	0.031	0.032		
2.1	0.035	0.036	0.033	0.035		
2.2	0.037	0.038	0.035	0.037		
2.3	0.039	0.039	0.036	0.038		
2.4	0.041	0.041	0.038	0.040		
2.5	0.042	0.043	0.040	0.042		
2.6	0.045	0.046	0.043	0.045		
2.7	0.047	0.048	0.044	0.047		
2.8	0.049	0.049	0.046	0.048		
2.9	0.050	0.051	0.048	0.050		
3.0	0.052	0.053	0.049	0.052		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

CARBIDE END-MILLS

- G2
- MDTA
- HF VH/UP
- MEF
- ALU
- MEX/MH
- UH/MH



HSS END-MILLS

CARBIDE BURRS

### 355SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5			
	Hardness/Rm	<35 HRC		35÷45 HRC				
	Vc (m/min)	<b>26÷30*</b>		<b>24÷26*</b>		<b>34÷36*</b>		<b>28÷32*</b>
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.009	0.011	0.011	0.009				
1.1	0.010	0.012	0.012	0.010				
1.2	0.011	0.013	0.013	0.011				
1.3	0.012	0.014	0.014	0.012				
1.4	0.013	0.015	0.015	0.013				
1.5	0.013	0.016	0.016	0.014				
1.6	0.016	0.018	0.019	0.017				
1.7	0.017	0.019	0.020	0.018				
1.8	0.018	0.020	0.021	0.019				
1.9	0.019	0.021	0.022	0.020				
2.0	0.020	0.023	0.023	0.021				
2.1	0.024	0.025	0.026	0.024				
2.2	0.025	0.026	0.028	0.025				
2.3	0.026	0.027	0.029	0.027				
2.4	0.027	0.029	0.030	0.028				
2.5	0.028	0.030	0.031	0.029				
2.6	0.032	0.033	0.035	0.033				
2.7	0.033	0.034	0.036	0.034				
2.8	0.035	0.035	0.038	0.035				
2.9	0.036	0.036	0.039	0.036				
3.0	0.037	0.038	0.040	0.038				



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS



CUTTING PARAMETERS

### 358SUH MINI

Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8							
	Hardness/Rm		500÷700 N/mm <sup>2</sup>		600÷1000 N/mm <sup>2</sup>		900÷1200 N/mm <sup>2</sup>		1200÷1400 N/mm <sup>2</sup>				
	Vc (m/min)		85÷95*		75÷85*		65÷75*		60÷70*		55÷65*		38÷42*
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.025	0.025	0.026	0.026	0.012	0.012							
1.1	0.027	0.028	0.029	0.029	0.014	0.013							
1.2	0.030	0.030	0.032	0.031	0.015	0.014							
1.3	0.032	0.033	0.034	0.034	0.016	0.015							
1.4	0.035	0.035	0.037	0.037	0.017	0.017							
1.5	0.037	0.038	0.040	0.039	0.018	0.018							
1.6	0.041	0.041	0.044	0.043	0.021	0.020							
1.7	0.044	0.044	0.047	0.046	0.022	0.021							
1.8	0.047	0.047	0.049	0.049	0.024	0.023							
1.9	0.049	0.049	0.052	0.051	0.025	0.024							
2.0	0.052	0.052	0.055	0.054	0.026	0.025							
2.1	0.056	0.056	0.059	0.059	0.029	0.028							
2.2	0.059	0.059	0.062	0.062	0.031	0.029							
2.3	0.062	0.061	0.065	0.064	0.032	0.031							
2.4	0.064	0.064	0.068	0.067	0.033	0.032							
2.5	0.067	0.067	0.071	0.070	0.035	0.033							
2.6	0.073	0.071	0.076	0.075	0.038	0.037							
2.7	0.075	0.074	0.079	0.078	0.040	0.038							
2.8	0.078	0.077	0.082	0.081	0.041	0.040							
2.9	0.081	0.080	0.085	0.084	0.043	0.041							
3.0	0.084	0.082	0.088	0.087	0.044	0.042							



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Material Group ISO 513	M1	M2	M3					
	Hardness/Rm		55÷65*		50÷60*		40÷50*	
	Vc (m/min)		55÷65*		50÷60*		40÷50*	
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1.0	0.012	0.013	0.013					
1.1	0.014	0.014	0.014					
1.2	0.015	0.015	0.015					
1.3	0.016	0.016	0.016					
1.4	0.017	0.018	0.018					
1.5	0.018	0.019	0.019					
1.6	0.021	0.021	0.021					
1.7	0.022	0.022	0.023					
1.8	0.024	0.024	0.024					
1.9	0.025	0.025	0.025					
2.0	0.026	0.026	0.027					
2.1	0.029	0.029	0.029					
2.2	0.031	0.030	0.031					
2.3	0.032	0.032	0.032					
2.4	0.033	0.033	0.034					
2.5	0.035	0.034	0.035					
2.6	0.038	0.037	0.038					
2.7	0.040	0.039	0.040					
2.8	0.041	0.040	0.041					
2.9	0.043	0.041	0.043					
3.0	0.044	0.043	0.044					



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
SUH MINI  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS



INFO

### 358SUH MINI

CARBIDE DRILLS

- PU-HPU
- TA-4HTA
- SUH
- ALH
- HRC
- SUH MINI**
- HL
- HSD
- C-SD-TA



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	<b>80÷90*</b>	<b>70÷80*</b>	<b>60÷70*</b>	<b>55÷65*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.016	0.015	0.014	0.012		
1.1	0.018	0.017	0.015	0.014		
1.2	0.019	0.018	0.017	0.015		
1.3	0.021	0.020	0.018	0.016		
1.4	0.023	0.021	0.019	0.017		
1.5	0.024	0.023	0.021	0.018		
1.6	0.027	0.025	0.023	0.021		
1.7	0.028	0.027	0.025	0.022		
1.8	0.030	0.028	0.026	0.024		
1.9	0.032	0.030	0.028	0.025		
2.0	0.033	0.031	0.029	0.026		
2.1	0.036	0.034	0.032	0.029		
2.2	0.038	0.036	0.034	0.031		
2.3	0.040	0.038	0.035	0.032		
2.4	0.041	0.039	0.037	0.033		
2.5	0.043	0.041	0.038	0.035		
2.6	0.046	0.044	0.041	0.038		
2.7	0.048	0.046	0.043	0.040		
2.8	0.050	0.047	0.045	0.041		
2.9	0.051	0.049	0.046	0.043		
3.0	0.053	0.051	0.048	0.044		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

HSS DRILLS

- LFTA
- SUTA
- HSS-HSS/CO

Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	<b>140÷150*</b>	<b>120÷130*</b>	<b>110÷120*</b>	<b>155÷165*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.016	0.016	0.015	0.016		
1.1	0.018	0.018	0.016	0.017		
1.2	0.019	0.019	0.018	0.019		
1.3	0.021	0.021	0.019	0.020		
1.4	0.022	0.023	0.021	0.022		
1.5	0.024	0.024	0.022	0.023		
1.6	0.026	0.027	0.024	0.026		
1.7	0.028	0.028	0.026	0.027		
1.8	0.030	0.030	0.028	0.029		
1.9	0.031	0.032	0.029	0.031		
2.0	0.033	0.033	0.031	0.032		
2.1	0.035	0.036	0.033	0.035		
2.2	0.037	0.038	0.035	0.037		
2.3	0.039	0.039	0.036	0.038		
2.4	0.041	0.041	0.038	0.040		
2.5	0.042	0.043	0.040	0.042		
2.6	0.045	0.046	0.043	0.045		
2.7	0.047	0.048	0.044	0.047		
2.8	0.049	0.049	0.046	0.048		
2.9	0.050	0.051	0.048	0.050		
3.0	0.052	0.053	0.049	0.052		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

CARBIDE END-MILLS

- G2
- MDTA
- HF VH/UP
- MEF
- ALU
- MEX/MH
- UH/MH



HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

### 358SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5			
	Hardness/Rm	<35 HRC		35÷45 HRC				
	Vc (m/min)	<b>26÷30*</b>		<b>24÷26*</b>		<b>34÷36*</b>		<b>28÷32*</b>
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.009	0.011	0.011	0.009				
1.1	0.010	0.012	0.012	0.010				
1.2	0.011	0.013	0.013	0.011				
1.3	0.012	0.014	0.014	0.012				
1.4	0.013	0.015	0.015	0.013				
1.5	0.013	0.016	0.016	0.014				
1.6	0.016	0.018	0.019	0.017				
1.7	0.017	0.019	0.020	0.018				
1.8	0.018	0.020	0.021	0.019				
1.9	0.019	0.021	0.022	0.020				
2.0	0.020	0.023	0.023	0.021				
2.1	0.024	0.025	0.026	0.024				
2.2	0.025	0.026	0.028	0.025				
2.3	0.026	0.027	0.029	0.027				
2.4	0.027	0.029	0.030	0.028				
2.5	0.028	0.030	0.031	0.029				
2.6	0.032	0.033	0.035	0.033				
2.7	0.033	0.034	0.036	0.034				
2.8	0.035	0.035	0.038	0.035				
2.9	0.036	0.036	0.039	0.036				
3.0	0.037	0.038	0.040	0.038				



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS





CUTTING PARAMETERS

### 3512SUH MINI

Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8							
	Hardness/Rm		500÷700 N/mm <sup>2</sup>		600÷1000 N/mm <sup>2</sup>		900÷1200 N/mm <sup>2</sup>		1200÷1400 N/mm <sup>2</sup>				
	Vc (m/min)		80÷90*		60÷70*		55÷65*		50÷60*		45÷55*		38÷42*
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.012	0.010	0.010	0.010	0.007	0.008	0.007						
1.1	0.013	0.011	0.011	0.011	0.008	0.009	0.008						
1.2	0.014	0.012	0.012	0.012	0.008	0.010	0.008						
1.3	0.015	0.014	0.014	0.014	0.009	0.011	0.009						
1.4	0.016	0.015	0.015	0.015	0.010	0.011	0.010						
1.5	0.017	0.016	0.016	0.016	0.010	0.012	0.011						
1.6	0.020	0.019	0.019	0.019	0.013	0.014	0.013						
1.7	0.021	0.020	0.020	0.020	0.014	0.015	0.014						
1.8	0.023	0.021	0.021	0.021	0.014	0.016	0.014						
1.9	0.024	0.022	0.022	0.022	0.015	0.017	0.015						
2.0	0.025	0.023	0.023	0.023	0.016	0.018	0.016						
2.1	0.028	0.027	0.027	0.027	0.019	0.020	0.018						
2.2	0.030	0.028	0.028	0.028	0.020	0.021	0.019						
2.3	0.031	0.029	0.029	0.029	0.021	0.022	0.020						
2.4	0.032	0.031	0.031	0.031	0.022	0.023	0.021						
2.5	0.034	0.032	0.032	0.032	0.023	0.024	0.022						
2.6	0.037	0.035	0.035	0.035	0.027	0.026	0.024						
2.7	0.038	0.037	0.037	0.037	0.028	0.027	0.025						
2.8	0.039	0.038	0.038	0.038	0.029	0.028	0.026						
2.9	0.041	0.039	0.039	0.039	0.030	0.029	0.027						
3.0	0.042	0.041	0.041	0.041	0.031	0.030	0.028						



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Material Group ISO 513	M1	M2	M3					
	Hardness/Rm		45÷55*		45÷50*		40÷45*	
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1.0	0.008	0.008	0.008	0.007				
1.1	0.009	0.008	0.008	0.008				
1.2	0.010	0.009	0.009	0.009				
1.3	0.011	0.010	0.010	0.009				
1.4	0.011	0.011	0.011	0.010				
1.5	0.012	0.012	0.012	0.011				
1.6	0.014	0.013	0.013	0.013				
1.7	0.015	0.014	0.014	0.014				
1.8	0.016	0.015	0.015	0.014				
1.9	0.017	0.016	0.016	0.015				
2.0	0.018	0.017	0.017	0.016				
2.1	0.020	0.019	0.019	0.018				
2.2	0.021	0.020	0.020	0.019				
2.3	0.022	0.021	0.021	0.020				
2.4	0.023	0.022	0.022	0.021				
2.5	0.024	0.023	0.023	0.022				
2.6	0.026	0.025	0.025	0.025				
2.7	0.027	0.026	0.026	0.026				
2.8	0.028	0.027	0.027	0.027				
2.9	0.029	0.028	0.028	0.028				
3.0	0.030	0.029	0.029	0.029				



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
SUH MINI  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS



INFO

### 3512SUH MINI

CARBIDE  
DRILLS

- PU-HPU
- TA-4HTA
- SUH
- ALH
- HRC
- SUH MINI**
- HL
- HSD
- C-SD-TA



Material Group ISO 513	<b>K1</b>	<b>K2</b>	<b>K3</b>	<b>K4</b>		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	<b>75÷85*</b>	<b>60÷70*</b>	<b>50÷60*</b>	<b>48÷52*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.012	0.013	0.013	0.008		
1.1	0.014	0.014	0.014	0.009		
1.2	0.015	0.015	0.015	0.010		
1.3	0.016	0.016	0.016	0.011		
1.4	0.017	0.018	0.018	0.011		
1.5	0.019	0.019	0.019	0.012		
1.6	0.021	0.021	0.021	0.014		
1.7	0.022	0.023	0.022	0.015		
1.8	0.023	0.024	0.024	0.016		
1.9	0.025	0.025	0.025	0.017		
2.0	0.026	0.027	0.026	0.018		
2.1	0.028	0.029	0.029	0.020		
2.2	0.030	0.031	0.030	0.021		
2.3	0.031	0.032	0.032	0.022		
2.4	0.033	0.034	0.033	0.023		
2.5	0.034	0.035	0.034	0.024		
2.6	0.037	0.038	0.037	0.026		
2.7	0.038	0.040	0.039	0.027		
2.8	0.040	0.041	0.040	0.028		
2.9	0.041	0.043	0.041	0.029		
3.0	0.042	0.044	0.043	0.030		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

HSS  
DRILLS

- LFTA
- SUTA
- HSS-HSS/CO

Material Group ISO 513	<b>N1</b>	<b>N2</b>	<b>N3 N4</b>	<b>N5</b>		
Hardness/Rm						
Vc (m/min)	<b>125÷135*</b>	<b>110÷120*</b>	<b>100÷110*</b>	<b>140÷150*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.015	0.014	0.013	0.014		
1.1	0.016	0.016	0.014	0.016		
1.2	0.018	0.017	0.016	0.017		
1.3	0.019	0.018	0.017	0.019		
1.4	0.021	0.020	0.018	0.020		
1.5	0.022	0.021	0.020	0.021		
1.6	0.025	0.024	0.022	0.024		
1.7	0.026	0.025	0.023	0.025		
1.8	0.028	0.027	0.024	0.027		
1.9	0.029	0.028	0.026	0.028		
2.0	0.031	0.030	0.027	0.030		
2.1	0.034	0.032	0.029	0.033		
2.2	0.035	0.034	0.031	0.034		
2.3	0.037	0.035	0.032	0.036		
2.4	0.038	0.037	0.033	0.037		
2.5	0.040	0.038	0.035	0.039		
2.6	0.043	0.041	0.037	0.042		
2.7	0.044	0.043	0.039	0.044		
2.8	0.046	0.044	0.040	0.046		
2.9	0.048	0.046	0.042	0.047		
3.0	0.049	0.048	0.043	0.049		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

CARBIDE  
END-MILLS

- G2
- MDTA
- HF VH/UP
- MEF
- ALU
- MEX/MH
- UH/MH




HSS  
END-MILLS

CARBIDE  
BURRS



CUTTING PARAMETERS

### 3512SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC	35÷45 HRC				
	Vc (m/min)	<b>26÷30*</b>	<b>24÷26*</b>	<b>34÷36*</b>	<b>28÷32*</b>		
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.008	0.007	0.008	0.009			
1.1	0.009	0.008	0.009	0.010			
1.2	0.009	0.008	0.010	0.011			
1.3	0.010	0.009	0.011	0.012			
1.4	0.011	0.010	0.011	0.012			
1.5	0.012	0.010	0.012	0.013			
1.6	0.013	0.012	0.014	0.015			
1.7	0.014	0.013	0.015	0.016			
1.8	0.015	0.014	0.016	0.017			
1.9	0.016	0.014	0.017	0.018			
2.0	0.017	0.015	0.018	0.019			
2.1	0.019	0.017	0.021	0.021			
2.2	0.020	0.018	0.022	0.022			
2.3	0.021	0.019	0.023	0.023			
2.4	0.022	0.020	0.024	0.024			
2.5	0.022	0.020	0.025	0.025			
2.6	0.025	0.023	0.028	0.027			
2.7	0.026	0.024	0.029	0.028			
2.8	0.027	0.025	0.030	0.029			
2.9	0.028	0.026	0.031	0.030			
3.0	0.029	0.026	0.032	0.031			

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS



CUTTING PARAMETERS

### 3520SUH MINI

Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8	
	Hardness/Rm		500÷700 N/mm <sup>2</sup>	600÷1000 N/mm <sup>2</sup>	900÷1200 N/mm <sup>2</sup>	1200÷1400 N/mm <sup>2</sup>	
	Vc (m/min)		<b>80÷90*</b>	<b>60÷70*</b>	<b>55÷65*</b>	<b>50÷60*</b>	<b>45÷55*</b>
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1.0	0.012	0.010	0.010	0.007	0.008	0.007	
1.1	0.013	0.011	0.012	0.008	0.009	0.008	
1.2	0.014	0.012	0.013	0.008	0.010	0.008	
1.3	0.015	0.014	0.014	0.009	0.011	0.009	
1.4	0.016	0.015	0.015	0.010	0.011	0.010	
1.5	0.017	0.016	0.016	0.010	0.012	0.011	
1.6	0.020	0.019	0.018	0.013	0.014	0.013	
1.7	0.021	0.020	0.019	0.014	0.015	0.013	
1.8	0.023	0.021	0.020	0.014	0.016	0.014	
1.9	0.024	0.022	0.021	0.015	0.017	0.015	
2.0	0.025	0.023	0.022	0.016	0.018	0.016	
2.1	0.028	0.027	0.024	0.019	0.020	0.018	
2.2	0.030	0.028	0.025	0.020	0.021	0.019	
2.3	0.031	0.029	0.027	0.021	0.022	0.020	
2.4	0.032	0.031	0.028	0.022	0.023	0.021	
2.5	0.034	0.032	0.029	0.023	0.024	0.022	
2.6	0.037	0.035	0.031	0.027	0.026	0.024	
2.7	0.038	0.037	0.033	0.028	0.027	0.025	
2.8	0.039	0.038	0.034	0.029	0.028	0.026	
2.9	0.041	0.039	0.035	0.030	0.029	0.027	
3.0	0.042	0.041	0.036	0.031	0.030	0.028	



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Material Group ISO 513	M1	M2	M3			
	Hardness/Rm					
	Vc (m/min)		<b>45÷55*</b>	<b>45÷50*</b>	<b>40÷45*</b>	
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.008	0.008	0.007			
1.1	0.009	0.008	0.008			
1.2	0.010	0.009	0.009			
1.3	0.011	0.010	0.009			
1.4	0.011	0.011	0.010			
1.5	0.012	0.012	0.011			
1.6	0.014	0.013	0.013			
1.7	0.015	0.014	0.014			
1.8	0.016	0.015	0.014			
1.9	0.017	0.016	0.015			
2.0	0.018	0.017	0.016			
2.1	0.020	0.019	0.018			
2.2	0.021	0.020	0.019			
2.3	0.022	0.021	0.020			
2.4	0.023	0.022	0.021			
2.5	0.024	0.023	0.022			
2.6	0.026	0.025	0.025			
2.7	0.027	0.026	0.026			
2.8	0.028	0.027	0.027			
2.9	0.029	0.028	0.028			
3.0	0.030	0.029	0.029			



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS



INFO

### 3520SUH MINI

CARBIDE DRILLS

- PU-HPU
- TA-4HTA
- SUH
- ALH
- HRC
- SUH MINI**
- HL
- HSD
- C-SD-TA



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	<b>75÷85*</b>	<b>60÷70*</b>	<b>50÷60*</b>	<b>48÷52*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.012	0.013	0.013	0.008		
1.1	0.014	0.014	0.014	0.009		
1.2	0.015	0.015	0.015	0.010		
1.3	0.016	0.016	0.016	0.011		
1.4	0.017	0.018	0.018	0.011		
1.5	0.019	0.019	0.019	0.012		
1.6	0.021	0.021	0.021	0.014		
1.7	0.022	0.023	0.022	0.015		
1.8	0.023	0.024	0.024	0.016		
1.9	0.025	0.025	0.025	0.017		
2.0	0.026	0.027	0.026	0.018		
2.1	0.028	0.029	0.029	0.020		
2.2	0.030	0.031	0.030	0.021		
2.3	0.031	0.032	0.032	0.022		
2.4	0.033	0.034	0.033	0.023		
2.5	0.034	0.035	0.034	0.024		
2.6	0.037	0.038	0.037	0.026		
2.7	0.038	0.040	0.039	0.027		
2.8	0.040	0.041	0.040	0.028		
2.9	0.041	0.043	0.041	0.029		
3.0	0.042	0.044	0.043	0.030		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

HSS DRILLS

- LFTA
- SUTA
- HSS-HSS/CO

Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	<b>125÷135*</b>	<b>110÷120*</b>	<b>100÷110*</b>	<b>140÷150*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.015	0.014	0.013	0.014		
1.1	0.016	0.016	0.014	0.016		
1.2	0.018	0.017	0.016	0.017		
1.3	0.019	0.018	0.017	0.019		
1.4	0.021	0.020	0.018	0.020		
1.5	0.022	0.021	0.020	0.021		
1.6	0.025	0.024	0.022	0.024		
1.7	0.026	0.025	0.023	0.025		
1.8	0.028	0.027	0.024	0.027		
1.9	0.029	0.028	0.026	0.028		
2.0	0.031	0.030	0.027	0.030		
2.1	0.034	0.032	0.029	0.033		
2.2	0.035	0.034	0.031	0.034		
2.3	0.037	0.035	0.032	0.036		
2.4	0.038	0.037	0.033	0.037		
2.5	0.040	0.038	0.035	0.039		
2.6	0.043	0.041	0.037	0.042		
2.7	0.044	0.043	0.039	0.044		
2.8	0.046	0.044	0.040	0.046		
2.9	0.048	0.046	0.042	0.047		
3.0	0.049	0.048	0.043	0.049		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

CARBIDE END-MILLS

- G2
- MDTA
- HF VH/UP
- MEF
- ALU
- MEX/MH
- UH/MH



HSS END-MILLS

CARBIDE BURRS

### 3520SUH MINI

Material Group ISO 513	S1	S2	S3	S4	S5			
	Hardness/Rm		<35 HRC	35÷45 HRC				
	Vc (m/min)		<b>26÷30*</b>	<b>24÷26*</b>	<b>34÷36*</b>	<b>28÷32*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.008	0.007	0.008	0.009	0.010			
1.1	0.009	0.008	0.008	0.009	0.010			
1.2	0.009	0.008	0.008	0.010	0.011			
1.3	0.010	0.009	0.009	0.011	0.012			
1.4	0.011	0.010	0.010	0.011	0.012			
1.5	0.012	0.010	0.010	0.012	0.013			
1.6	0.013	0.012	0.012	0.014	0.015			
1.7	0.014	0.013	0.013	0.015	0.016			
1.8	0.015	0.014	0.014	0.016	0.017			
1.9	0.016	0.014	0.014	0.017	0.018			
2.0	0.017	0.015	0.015	0.018	0.019			
2.1	0.019	0.017	0.017	0.021	0.021			
2.2	0.020	0.018	0.018	0.022	0.022			
2.3	0.021	0.019	0.019	0.023	0.023			
2.4	0.022	0.020	0.020	0.024	0.024			
2.5	0.022	0.020	0.020	0.025	0.025			
2.6	0.025	0.023	0.023	0.028	0.027			
2.7	0.026	0.024	0.024	0.029	0.028			
2.8	0.027	0.025	0.025	0.030	0.029			
2.9	0.028	0.026	0.026	0.031	0.030			
3.0	0.029	0.026	0.026	0.032	0.031			



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS





### 3525SUH MINI

Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8							
	Hardness/Rm		500÷700 N/mm <sup>2</sup>		600÷1000 N/mm <sup>2</sup>		900÷1200 N/mm <sup>2</sup>		1200÷1400 N/mm <sup>2</sup>				
	Vc (m/min)		80÷90*		60÷70*		55÷65*		50÷60*		45÷55*		38÷42*
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
1.0	0.008	0.008	0.007	0.005	0.005	0.005	0.005						
1.1	0.009	0.009	0.008	0.006	0.006	0.006	0.006						
1.2	0.010	0.010	0.008	0.006	0.006	0.006	0.006						
1.3	0.010	0.010	0.009	0.007	0.007	0.007	0.007						
1.4	0.011	0.011	0.010	0.007	0.007	0.007	0.007						
1.5	0.012	0.012	0.011	0.008	0.008	0.008	0.008						
1.6	0.014	0.014	0.012	0.009	0.009	0.009	0.009						
1.7	0.014	0.015	0.013	0.010	0.010	0.010	0.009						
1.8	0.015	0.016	0.014	0.010	0.010	0.010	0.010						
1.9	0.016	0.017	0.014	0.011	0.011	0.011	0.010						
2.0	0.017	0.017	0.015	0.011	0.011	0.011	0.011						
2.1	0.019	0.020	0.017	0.013	0.013	0.013	0.012						
2.2	0.020	0.021	0.018	0.014	0.013	0.013	0.013						
2.3	0.021	0.022	0.019	0.014	0.014	0.014	0.014						
2.4	0.022	0.023	0.019	0.015	0.014	0.014	0.014						
2.5	0.023	0.024	0.020	0.016	0.015	0.015	0.015						
2.6	0.025	0.026	0.022	0.018	0.016	0.016	0.016						
2.7	0.026	0.027	0.023	0.019	0.017	0.017	0.017						
2.8	0.027	0.028	0.024	0.019	0.018	0.018	0.018						
2.9	0.028	0.029	0.025	0.020	0.018	0.018	0.018						
3.0	0.029	0.030	0.026	0.021	0.019	0.019	0.019						



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Material Group ISO 513	M1	M2	M3					
	Hardness/Rm		45÷55*		45÷50*		40÷45*	
	Vc (m/min)		45÷55*		45÷50*		40÷45*	
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1.0	0.005	0.005	0.005					
1.1	0.006	0.006	0.006					
1.2	0.006	0.006	0.007					
1.3	0.007	0.007	0.007					
1.4	0.007	0.007	0.008					
1.5	0.008	0.008	0.008					
1.6	0.009	0.009	0.009					
1.7	0.010	0.010	0.010					
1.8	0.010	0.010	0.011					
1.9	0.011	0.011	0.011					
2.0	0.011	0.011	0.012					
2.1	0.013	0.013	0.013					
2.2	0.013	0.013	0.014					
2.3	0.014	0.014	0.014					
2.4	0.014	0.014	0.015					
2.5	0.015	0.015	0.016					
2.6	0.016	0.017	0.017					
2.7	0.017	0.017	0.018					
2.8	0.018	0.018	0.018					
2.9	0.018	0.018	0.019					
3.0	0.019	0.019	0.020					



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS



INFO

### 3525SUH MINI

CARBIDE  
DRILLS

- PU-HPU
- TA-4HTA
- SUH
- ALH
- HRC
- SUH MINI**
- HL
- HSD
- C-SD-TA



Material Group ISO 513	K1	K2	K3	K4		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	<b>75÷85*</b>	<b>60÷70*</b>	<b>50÷60*</b>	<b>45÷55*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.008	0.009	0.010	0.005		
1.1	0.009	0.010	0.011	0.006		
1.2	0.010	0.011	0.012	0.006		
1.3	0.011	0.012	0.013	0.007		
1.4	0.012	0.013	0.014	0.007		
1.5	0.012	0.014	0.015	0.008		
1.6	0.014	0.015	0.016	0.009		
1.7	0.015	0.016	0.017	0.010		
1.8	0.016	0.017	0.019	0.010		
1.9	0.016	0.018	0.020	0.011		
2.0	0.017	0.019	0.021	0.011		
2.1	0.019	0.021	0.023	0.013		
2.2	0.020	0.022	0.024	0.013		
2.3	0.021	0.023	0.025	0.014		
2.4	0.022	0.024	0.026	0.014		
2.5	0.023	0.025	0.027	0.015		
2.6	0.025	0.028	0.030	0.016		
2.7	0.025	0.029	0.031	0.017		
2.8	0.026	0.030	0.032	0.018		
2.9	0.027	0.031	0.033	0.018		
3.0	0.028	0.032	0.034	0.019		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

HSS  
DRILLS

- LFTA
- SUTA
- HSS-HSS/CO

CARBIDE  
END-MILLS

- G2
- MDTA
- HF VH/UP
- MEF
- ALU
- MEX/MH
- UH/MH



Material Group ISO 513	N1	N2	N3 N4	N5		
Hardness/Rm						
Vc (m/min)	<b>125÷135*</b>	<b>105÷115*</b>	<b>96÷104*</b>	<b>135÷140*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.012	0.012	0.010	0.012		
1.1	0.013	0.013	0.011	0.013		
1.2	0.015	0.014	0.012	0.015		
1.3	0.016	0.015	0.013	0.016		
1.4	0.017	0.017	0.014	0.017		
1.5	0.018	0.018	0.015	0.018		
1.6	0.020	0.020	0.017	0.020		
1.7	0.021	0.021	0.018	0.021		
1.8	0.023	0.022	0.019	0.023		
1.9	0.024	0.023	0.020	0.024		
2.0	0.025	0.025	0.021	0.025		
2.1	0.027	0.027	0.023	0.027		
2.2	0.029	0.028	0.024	0.029		
2.3	0.030	0.029	0.025	0.030		
2.4	0.031	0.031	0.026	0.031		
2.5	0.033	0.032	0.027	0.033		
2.6	0.035	0.034	0.029	0.035		
2.7	0.037	0.035	0.031	0.036		
2.8	0.038	0.037	0.032	0.038		
2.9	0.039	0.038	0.033	0.039		
3.0	0.041	0.039	0.034	0.040		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

HSS  
END-MILLS

CARBIDE  
BURRS

### 3525SUH MINI

	Material Group ISO 513	S1 S2	S3	S4	S5		
	Hardness/Rm	<35 HRC		35÷45 HRC			
	Vc (m/min)	<b>26÷30*</b>		<b>24÷26*</b>		<b>34÷36*</b>	
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.005	0.005	0.004	0.005			
1.1	0.006	0.006	0.005	0.005			
1.2	0.006	0.007	0.005	0.006			
1.3	0.007	0.007	0.006	0.006			
1.4	0.007	0.008	0.006	0.007			
1.5	0.008	0.008	0.007	0.007			
1.6	0.009	0.010	0.008	0.008			
1.7	0.010	0.011	0.008	0.009			
1.8	0.010	0.011	0.009	0.009			
1.9	0.011	0.012	0.009	0.010			
2.0	0.011	0.013	0.010	0.010			
2.1	0.013	0.015	0.011	0.012			
2.2	0.014	0.016	0.012	0.013			
2.3	0.014	0.016	0.012	0.013			
2.4	0.015	0.017	0.013	0.014			
2.5	0.016	0.018	0.013	0.014			
2.6	0.018	0.020	0.015	0.016			
2.7	0.019	0.021	0.016	0.017			
2.8	0.019	0.022	0.016	0.018			
2.9	0.020	0.023	0.017	0.018			
3.0	0.021	0.024	0.018	0.019			



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS END-MILLS

CARBIDE BURRS



### 3530SUH MINI

Material Group ISO 513	P1 P2	P3 P4	P5	P6	P7	P8	
	Hardness/Rm	500÷700 N/mm <sup>2</sup>	600÷1000 N/mm <sup>2</sup>	900÷1200 N/mm <sup>2</sup>	1200÷1400 N/mm <sup>2</sup>		
	Vc (m/min)	<b>80÷90*</b>	<b>60÷70*</b>	<b>55÷65*</b>	<b>50÷60*</b>	<b>45÷55*</b>	<b>38÷42*</b>
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	
1.0	0.008	0.008	0.007	0.005	0.005	0.005	
1.1	0.009	0.009	0.008	0.006	0.006	0.006	
1.2	0.010	0.010	0.008	0.006	0.006	0.006	
1.3	0.010	0.010	0.009	0.007	0.007	0.007	
1.4	0.011	0.011	0.010	0.007	0.007	0.007	
1.5	0.012	0.012	0.011	0.008	0.008	0.008	
1.6	0.014	0.014	0.012	0.009	0.009	0.009	
1.7	0.014	0.015	0.013	0.010	0.010	0.009	
1.8	0.015	0.016	0.014	0.010	0.010	0.010	
1.9	0.016	0.017	0.014	0.011	0.011	0.010	
2.0	0.017	0.017	0.015	0.011	0.011	0.011	
2.1	0.019	0.020	0.017	0.013	0.013	0.012	
2.2	0.020	0.021	0.018	0.014	0.013	0.013	
2.3	0.021	0.022	0.019	0.014	0.014	0.014	
2.4	0.022	0.023	0.019	0.015	0.014	0.014	
2.5	0.023	0.024	0.020	0.016	0.015	0.015	
2.6	0.025	0.026	0.022	0.018	0.016	0.016	
2.7	0.026	0.027	0.023	0.019	0.017	0.017	
2.8	0.027	0.028	0.024	0.019	0.018	0.018	
2.9	0.028	0.029	0.025	0.020	0.018	0.018	
3.0	0.029	0.030	0.026	0.021	0.019	0.019	



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

Material Group ISO 513	M1	M2	M3			
	Hardness/Rm					
	Vc (m/min)	<b>45÷55*</b>	<b>45÷50*</b>	<b>40÷45*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.005	0.005	0.005			
1.1	0.006	0.006	0.006			
1.2	0.006	0.006	0.007			
1.3	0.007	0.007	0.007			
1.4	0.007	0.007	0.008			
1.5	0.008	0.008	0.008			
1.6	0.009	0.009	0.009			
1.7	0.010	0.010	0.010			
1.8	0.010	0.010	0.011			
1.9	0.011	0.011	0.011			
2.0	0.011	0.011	0.012			
2.1	0.013	0.013	0.013			
2.2	0.013	0.013	0.014			
2.3	0.014	0.014	0.014			
2.4	0.014	0.014	0.015			
2.5	0.015	0.015	0.016			
2.6	0.016	0.017	0.017			
2.7	0.017	0.017	0.018			
2.8	0.018	0.018	0.018			
2.9	0.018	0.018	0.019			
3.0	0.019	0.019	0.020			



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS



INFO

### 3530SUH MINI

CARBIDE  
DRILLS

- PU-HPU
- TA-4HTA
- SUH
- ALH
- HRC
- SUH MINI**
- HL
- HSD
- C-SD-TA



Material Group ISO 513	<b>K1</b>	<b>K2</b>	<b>K3</b>	<b>K4</b>		
Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB	250÷500 HB		
Vc (m/min)	<b>75÷85*</b>	<b>60÷70*</b>	<b>50÷60*</b>	<b>45÷55*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.008	0.009	0.010	0.005		
1.1	0.009	0.010	0.011	0.006		
1.2	0.010	0.011	0.012	0.006		
1.3	0.011	0.012	0.013	0.007		
1.4	0.012	0.013	0.014	0.007		
1.5	0.012	0.014	0.015	0.008		
1.6	0.014	0.015	0.016	0.009		
1.7	0.015	0.016	0.017	0.010		
1.8	0.016	0.017	0.019	0.010		
1.9	0.016	0.018	0.020	0.011		
2.0	0.017	0.019	0.021	0.011		
2.1	0.019	0.021	0.023	0.013		
2.2	0.020	0.022	0.024	0.013		
2.3	0.021	0.023	0.025	0.014		
2.4	0.022	0.024	0.026	0.014		
2.5	0.023	0.025	0.027	0.015		
2.6	0.025	0.028	0.030	0.016		
2.7	0.025	0.029	0.031	0.017		
2.8	0.026	0.030	0.032	0.018		
2.9	0.027	0.031	0.033	0.018		
3.0	0.028	0.032	0.034	0.019		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

HSS  
DRILLS

- LFTA
- SUTA
- HSS-HSS/CO

Material Group ISO 513	<b>N1</b>	<b>N2</b>	<b>N3 N4</b>	<b>N5</b>		
Hardness/Rm						
Vc (m/min)	<b>125÷135*</b>	<b>105÷115*</b>	<b>96÷104*</b>	<b>135÷140*</b>		
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
1.0	0.012	0.012	0.010	0.012		
1.1	0.013	0.013	0.011	0.013		
1.2	0.015	0.014	0.012	0.015		
1.3	0.016	0.015	0.013	0.016		
1.4	0.017	0.017	0.014	0.017		
1.5	0.018	0.018	0.015	0.018		
1.6	0.020	0.020	0.017	0.020		
1.7	0.021	0.021	0.018	0.021		
1.8	0.023	0.022	0.019	0.023		
1.9	0.024	0.023	0.020	0.024		
2.0	0.025	0.025	0.021	0.025		
2.1	0.027	0.027	0.023	0.027		
2.2	0.029	0.028	0.024	0.029		
2.3	0.030	0.029	0.025	0.030		
2.4	0.031	0.031	0.026	0.031		
2.5	0.033	0.032	0.027	0.033		
2.6	0.035	0.034	0.029	0.035		
2.7	0.037	0.035	0.031	0.036		
2.8	0.038	0.037	0.032	0.038		
2.9	0.039	0.038	0.033	0.039		
3.0	0.041	0.039	0.034	0.040		

\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

CARBIDE  
END-MILLS

- G2
- MDTA
- HF VH/UP
- MEF
- ALU
- MEX/MH
- UH/MH



HSS  
END-MILLS

CARBIDE  
BURRS

### 3530SUH MINI

Material Group ISO 513	S1	S2	S3	S4	S5			
	Hardness/Rm	<35 HRC		35÷45 HRC				
Vc (m/min)	<b>26÷30*</b>		<b>24÷26*</b>		<b>34÷36*</b>		<b>28÷32*</b>	
D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
1.0	0.005	0.005	0.004	0.005				
1.1	0.006	0.006	0.005	0.005				
1.2	0.006	0.007	0.005	0.006				
1.3	0.007	0.007	0.006	0.006				
1.4	0.007	0.008	0.006	0.007				
1.5	0.008	0.008	0.007	0.007				
1.6	0.009	0.010	0.008	0.008				
1.7	0.010	0.011	0.008	0.009				
1.8	0.010	0.011	0.009	0.009				
1.9	0.011	0.012	0.009	0.010				
2.0	0.011	0.013	0.010	0.010				
2.1	0.013	0.015	0.011	0.012				
2.2	0.014	0.016	0.012	0.013				
2.3	0.014	0.016	0.012	0.013				
2.4	0.015	0.017	0.013	0.014				
2.5	0.016	0.018	0.013	0.014				
2.6	0.018	0.020	0.015	0.016				
2.7	0.019	0.021	0.016	0.017				
2.8	0.019	0.022	0.016	0.018				
2.9	0.020	0.023	0.017	0.018				
3.0	0.021	0.024	0.018	0.019				



\*if the machine tool or the equipment wouldn't allow to reach the requested rpm, please use the max. available rpm recalculating the Vf value (Vf=n available x fn)

INFO

CARBIDE  
DRILLS

PU-HPU  
TA-4HTA  
SUH  
ALH  
HRC  
**SUH MINI**  
HL  
HSD  
C-SD-TA

HSS  
DRILLS

LFTA  
SUTA  
HSS-HSS/CO

CARBIDE  
END-MILLS

G2  
MDTA  
HF-VH/UP  
MEF  
ALU  
MEX/MH  
UH/MH

HSS  
END-MILLS

CARBIDE  
BURRS



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