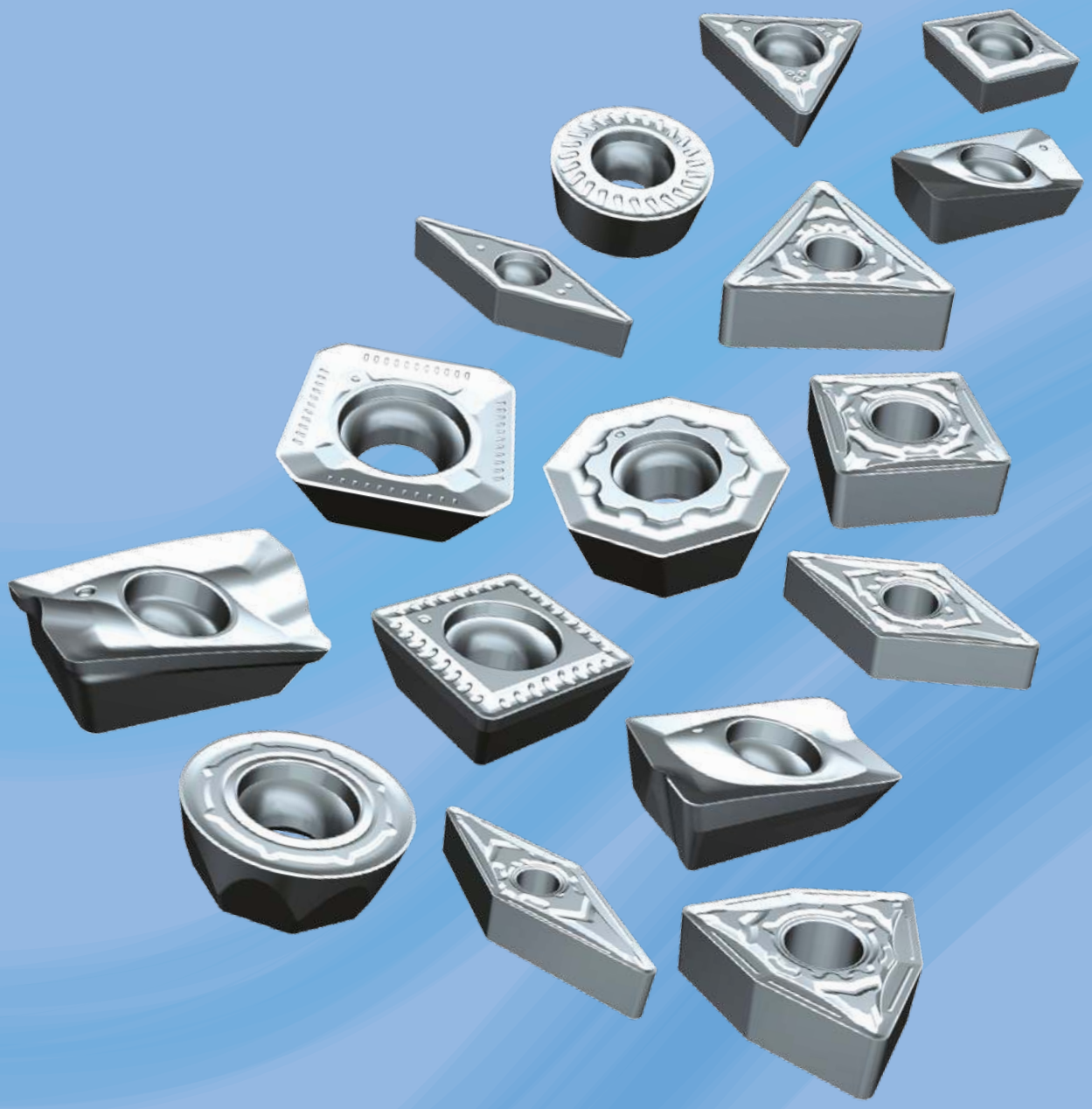
EUROPA TOOL

UNIMASTER IDX

MULTI-MATERIAL INDEXABLE INSERTS



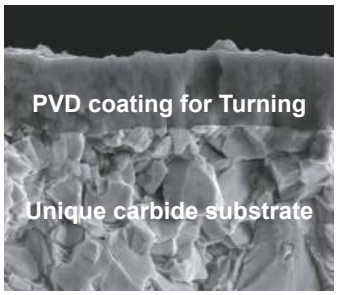
Universelle Wendeschneidpaltten f r das Drehen, Fr sen und Bohren

Mit der UNIMASTER IDX wurden Wendeplatten entwickelt, welche ein sehr breites Spektrum im Anwendungsbereich abdecken.
Sie bearbeiten Edelst hle, rostfreie St hle, Gusseisen, Titan, Nickel Legierungen und geh rtete St hle mit nur einer Sorte.
Der Werkzeugwechsel sowie eine umfangreiche Lagerhaltung entf llt.
R stzeiten und Lagerkosten werden reduziert.

Substrate

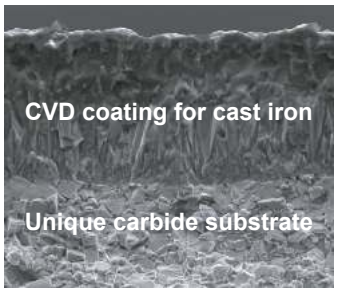
ET801

- PVD-Beschichtung
  Hohe Kanten.- und Verschlei festigkeit.
  Hervorragend beim Drehen unter schwierigen Bedingungen.



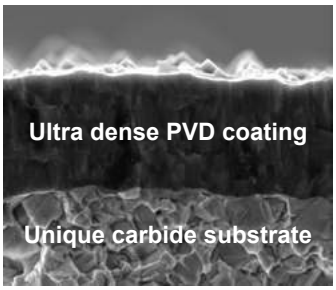
ET1001

- CVD-Beschichtung
  Sehr hitzebest ndig und Verschlei fest.
  Die Kombination aus einer sehr dicken Beschichtung und dem Substrat bietet sehr gute Eigenschaften beim Drehen in Gusseisen



ET602

-
  W rmebest ndigkeit
  .
  Hartes Supstrat f r Fräsen und Bohren

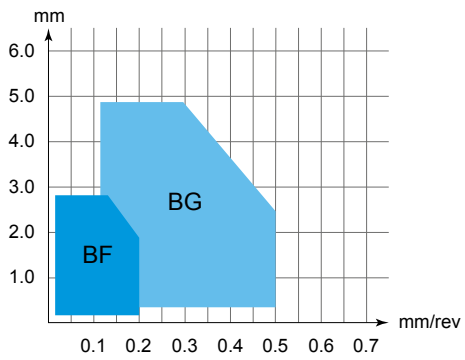


Spanbrecher

UNIMASTER P

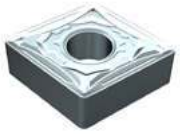
Positiver
Spanbrecher
Drehbearbeitung

Chipbreaker operating areas

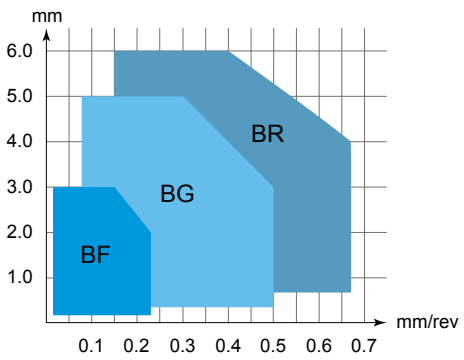


UNIMASTER N

Negativer
Spanbrecher
Drehbearbeitung



Chipbreaker operating areas



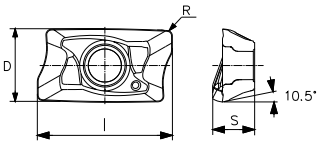
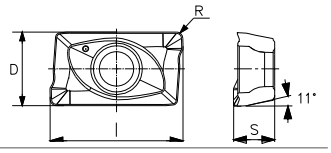
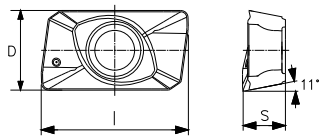
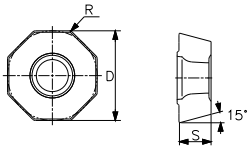
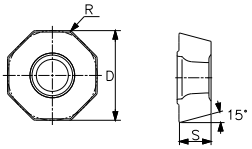
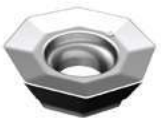
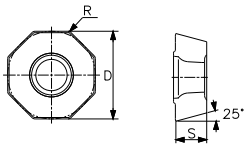
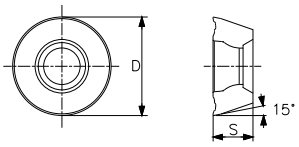
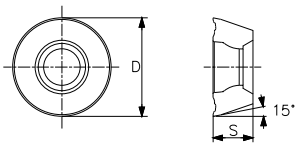
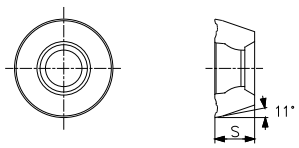
GRADE MAP

ISO	Finishing to Light		Medium	Rough to Heavy	
	01	10	20	30	40
P			ET801		
				ET602	
M			ET801		
			ET602		
K		ET801			
		ET1001			
			ET602		
S	ET801				
		ET602			
H		ET801			
		ET602			

Inhalt

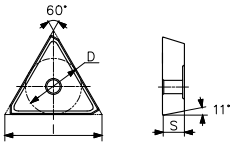
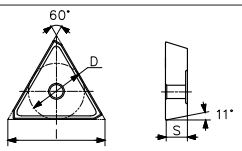
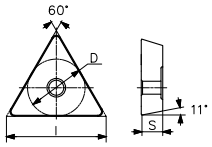
MILLING INSERTS

▸ cutting conditions: P.10

SHAPE	ISO DESIGNATION	ET602	ET801	ET1001	DIMENSIONS				GEOMETRY
					I	D	S	R	
	**AOMT 123608PDTR**	●			12.0	6.6	3.6	0.8	
	**APKT 1003PDTR**	●			10.5	6.7	3.5	0.5	
	APKT 100308PDTR	●			10.5	6.7	3.5	0.8	
	APKT 1604PDTR	●			16.3	9.5	5.3	0.8	
	**APMT 1135PDTR**	●			11.18	6.2	3.5	0.4	
	APMT 113508PDTR	●			11.18	6.2	3.5	0.8	
	APMT 1604PDTR	●			17.19	9.5	5.5	0.8	
	**ODMT 060508**	●			-	15.88	5.56	-	
	**ODMW 060508**	●			-	15.88	5.56	-	
	**OFMT 05T308**	●			-	12.7	4.0	-	
	**RDMT 0602MO**	●			-	6.0	2.38	-	
	RDMT 0803MO	●			-	8.0	3.18	-	
	RDMT 10T3MO	●			-	10.0	3.97	-	
	RDMT 1204MO	●			-	12.0	4.76	-	
	**RDMW 0602MO**	●			-	6.0	2.38	-	
	RDMW 0802MO	●			-	8.0	2.38	-	
	RDMW 10T3MO	●			-	10.0	3.97	-	
	RDMW 1204MO	●			-	12.0	4.76	-	
	**RPMT 08T2MO**	●			-	8.0	2.78	-	
	RPMT 10T3MO	●			-	10.0	3.97	-	
	RPMT 1204MO	●			-	12.0	4.76	-	

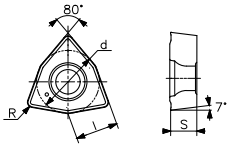
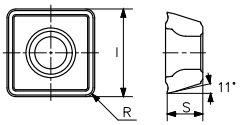
MILLING INSERTS

▸ cutting conditions: P.10

SHAPE	ISO DESIGNATION	ET602	ET801	ET1001	DIMENSIONS				GEOMETRY
					I	D	S	R	
	**TPKN 1603PDTR**	●			16.4	9.525	3.18	-	
	TPKN 2204PDTR	●			22.1	12.7	4.76	-	
	**TPKR 1603PDTR**	●			16.4	9.525	3.18	-	
	TPKR 2204PDTR	●			16.4	9.525	3.18	-	
	**TPUN 160308**	●			16.4	9.525	3.18	-	

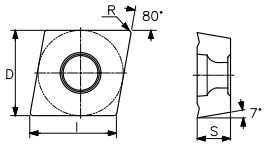
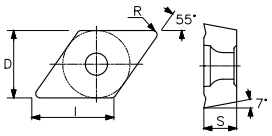
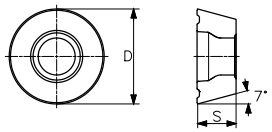
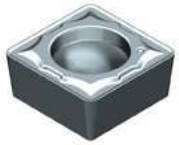
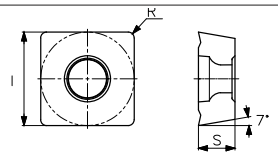
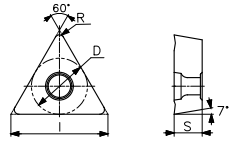
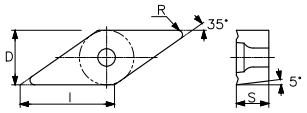
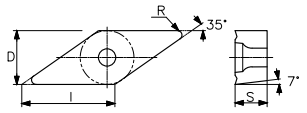
DRILLING INSERTS

▸ cutting conditions: P.10

SHAPE	ISO DESIGNATION	ET602	ET801	ET1001	DIMENSIONS				GEOMETRY
					I	D	S	R	
	**WCMX 040208**	●			3.99	6.35	2.38	0.8	
	WCMX 050308	●			5.07	7.94	3.18	0.8	
	WCMX 06T308	●			6.14	9.52	3.97	0.8	
	WCMX 080412	●			8.01	12.7	4.76	1.2	
	**SPMX 050204**	●			5.0	-	2.38	0.4	
	SPMX 060204	●			6.0	-	2.38	0.4	
	SPMX 07T308	●			7.94	-	3.97	0.8	
	SPMX 090408	●			9.8	-	4.3	0.8	

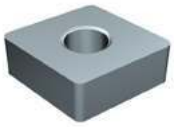
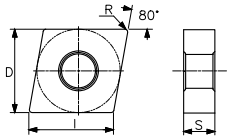
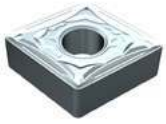
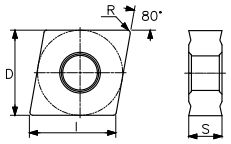
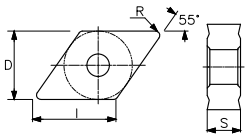
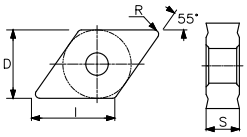
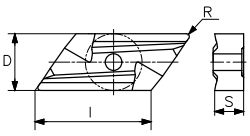
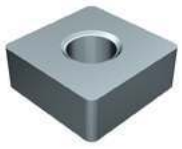
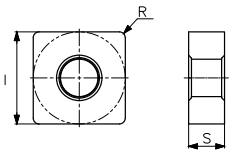
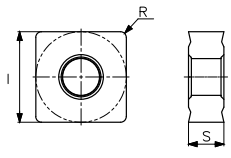
TURNING INSERTS - POSITIVE

▸ cutting conditions: P.11

SHAPE	ISO DESIGNATION	ET602	ET801	ET1001	DIMENSIONS				GEOMETRY
					I	D	S	R	
	**CCMT 060204-BF**		●		6.45	6.35	2.38	0.4	
	CCMT 060208-BG		●		6.45	6.35	2.38	0.8	
	CCMT 09T304-BF		●		9.65	9.52	3.97	0.4	
	CCMT 09T308-BG		●		9.65	9.52	3.97	0.8	
	CCMT 120408-BG		●		12.9	12.7	4.76	0.8	
	**DCMT 070204-BF**		●		7.75	6.35	2.38	0.4	
	DCMT 11T304-BF		●		11.6	9.52	3.97	0.4	
	DCMT 11T308-BG		●		11.6	9.52	3.97	0.8	
	**RCMT 0602MO**		●		-	6.0	2.38	-	
	RCMT 0803MO		●		-	8.0	3.18	-	
	RCMT 10T3MO		●		-	10.0	3.97	-	
	RCMT 1204MO		●		-	12.0	4.76	-	
	**SCMT 09T304-BF**		●		9.52	9.52	3.97	0.4	
	SCMT 09T308-BG		●		9.52	9.52	3.97	0.8	
	**TCMT 110204-BF**		●		11.0	6.35	2.38	0.4	
	TCMT 16T304-BF		●		16.5	9.52	3.97	0.4	
	TCMT 16T308-BG		●		16.5	9.52	3.97	0.8	
	**VBMT 160404-BF**		●		16.5	9.52	4.76	0.4	
	VBMT 160408-BG		●		16.5	9.52	4.76	0.8	
	**VCMT 110304-BF**		●		11.0	6.35	3.18	0.4	
	VCMT 160404-BF		●		16.5	9.52	4.76	0.4	
	VCMT 160408-BG		●		16.5	9.52	4.76	0.8	

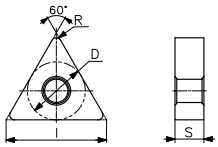
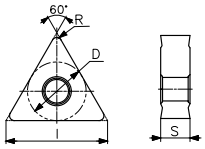
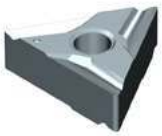
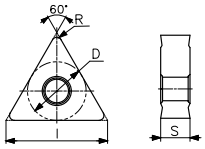
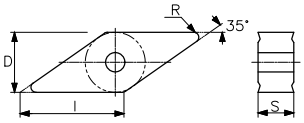
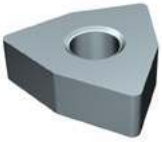
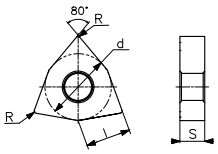
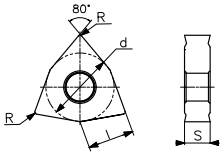
TURNING INSERTS - NEGATIVE

▸ cutting conditions: P.11

SHAPE	ISO DESIGNATION	ET602	ET801	ET1001	DIMENSIONS				GEOMETRY
					I	D	S	R	
	**CNMA 120408**			●	12.9	12.7	4.76	0.8	
	CNMA 120412			●	12.9	12.7	4.76	1.2	
	CNMA 160612			●	16.1	15.88	6.35	1.2	
	**CNMG 120404-BF**		●		12.9	12.7	4.76	0.4	
	CNMG 120408-BG		●		12.9	12.7	4.76	0.8	
	CNMG 120412-BR		●		12.9	12.7	4.76	1.2	
	**DNMG 150404-BF**		●		15.5	12.7	4.76	0.4	
	DNMG 150408-BG		●		15.5	12.7	4.76	0.8	
	DNMG 150604-BF		●		15.5	12.7	6.35	0.4	
	DNMG 150608-BG		●		15.5	12.7	6.35	0.8	
	DNMG 150612-BR		●		15.5	12.7	6.35	1.2	
	**DNUX 150608R**		●		15.0	12.7	6.35	0.5	
	**KNUX 160405L**		●		16.0	9.52	4.76	0.5	
	KNUX 160405R		●		16.0	9.52	4.76	0.5	
	**SNMA 120408**			●	12.7	12.7	4.76	0.8	
	SNMA 120412			●	12.7	12.7	4.76	1.2	
	**SNMG 120404-BF**		●		12.7	12.7	4.76	0.4	
	SNMG 120408-BG		●		12.7	12.7	4.76	0.8	
	SNMG 120412-BR		●		12.7	12.7	4.76	1.2	

TURNING INSERTS - NEGATIVE

▸ cutting conditions: P.11

SHAPE	ISO DESIGNATION	ET602	ET801	ET1001	DIMENSIONS				GEOMETRY
					I	D	S	R	
	**TNMA 160408**			●	16.5	9.52	4.76	0.8	
	TNMA 160412			●	16.5	9.52	4.76	1.2	
	**TNMG 160404-BF**		●		16.5	9.52	4.76	0.4	
	TNMG 160408-BG		●		16.5	9.52	4.76	0.8	
	TNMG 160412-BR		●		16.5	9.52	4.76	1.2	
	TNMG 220404-BF		●		22.0	12.7	4.76	0.4	
	TNMG 220408-BG		●		22.0	12.7	4.76	0.8	
	TNMG 220412-BR		●		22.0	12.7	4.76	1.2	
	**TNUX 160404L**		●		16.5	9.52	4.76	0.4	
	TNUX 160408L		●		16.5	9.52	4.76	0.8	
	TNUX 160404R		●		16.5	9.52	4.76	0.4	
	TNUX 160408R		●		16.5	9.52	4.76	0.8	
	**VNMG 160404-BF**		●		16.5	9.52	4.76	0.4	
	VNMG 160408-BG		●		16.5	9.52	4.76	0.8	
	VNMG 160412-BR		●		16.5	9.52	4.76	1.2	
	**WNMA 080404**			●	8.14	12.7	4.76	0.4	
	WNMA 080408			●	8.14	12.7	4.76	0.8	
	WNMA 080412			●	8.14	12.7	4.76	1.2	
	**WNMG 060404-BF**		●		6.45	9.52	4.76	0.4	
	WNMG 060408-BG		●		6.45	9.52	4.76	0.8	
	WNMG 080404-BF		●		8.14	12.7	4.76	0.4	
	WNMG 080408-BG		●		8.14	12.7	4.76	0.8	
	WNMG 080412-BR		●		8.14	12.7	4.76	1.2	

GRADE ET602

ISO	P			M		K		S		H		
MATERIAL	Non-alloy steel	Low alloy steel	High alloy steel	Ferritic / Martensitic Stainless steel	Austenitic Stainles steel	Grey Cast iron	Malleable Cast iron	HRSA Fe, Ni or Co based	Titanium & Ti alloys	Hardened steel	Chilled cast iron	Cast iron
VDI GROUP	1-5	6-9	10-11	12-13	14	15-16	19-20	31-35	36-37	38-39	40	41
v_c (m/min)	**150-250**	**140-200**	**80-130**	**130-190**	**100-200**	**160-200**	**130-180**	**30-50**	**35-75**	**55-65**	**45-55**	**55-65**

MILLING INSERTS	f_z (mm/tooth)		a_p (mm)	
	min	max	min	max
AOMT 123608PDTR	0.07	0.22	0.5	11.0
APKT 1003PDTR	0.06	0.20	0.5	9.0
APKT 100308PDTR	0.07	0.26	0.5	9.0
APKT 1604PDTR	0.10	0.32	0.5	15.0
APMT 1135PDTR	0.07	0.22	0.5	10.0
APMT 113508PDTR	0.07	0.22	0.5	10.0
APMT 1604PDTR	0.09	0.30	0.5	15.0
ODMT 060508	0.12	0.54	0.4	4.0
ODMW 060508	0.12	0.58	0.4	4.0
OFMT 05T308	0.12	0.51	0.4	3.5
RDMT 0602MO	0.10	0.48	0.3	1.5
RDMT 0802MO	0.10	0.58	0.3	2.0
RDMT 0803MO	0.10	0.58	0.3	2.0
RDMT 10T3MO	0.10	0.64	0.3	2.5
RDMT 1204MO	0.14	0.74	0.3	3.0
RDMW 0602MO	0.10	0.48	0.3	1.5
RDMW 0802MO	0.10	0.58	0.3	2.0
RDMW 10T3MO	0.10	0.70	0.3	2.5
RDMW 1204MO	0.14	0.74	0.3	3.0
RPMT 08T2MO	0.10	0.58	0.3	2.0
RPMT 10T3MO	0.10	0.64	0.3	2.5
RPMT 1204MO	0.14	0.74	0.3	3.0
RPMW 10T3MO	0.10	0.64	0.3	2.5
RPMW 1204MO	0.14	0.74	0.3	3.0

MILLING INSERTS	f_z (mm/tooth)		a_p (mm)	
	min	max	min	max
SEKN 1203EDTR	0.10	0.46	0.5	6.0
SEKR 1203AFTN	0.10	0.50	0.5	6.0
SEKT 12T3AGTN	0.10	0.46	0.5	7.0
SEKT 1204AFTN	0.10	0.46	0.5	7.0
SEKT 13T3AGTN	0.10	0.46	0.5	7.0
SPKN 1203EDTR	0.10	0.43	0.5	9.0
SPKN 1504EDTR	0.10	0.43	0.5	12.0
SPKR 1203EDTR	0.10	0.43	0.5	9.0
SPUN 120308	0.10	0.37	0.5	6.0
TPKN 1603PDTR	0.08	0.22	0.5	12.0
TPKN 2204PDTR	0.09	0.27	0.5	18.0
TPKR 1603PDTR	0.08	0.22	0.5	12.0
TPKR 2204PDTR	0.09	0.27	0.5	18.0
TPUN 160308	0.08	0.22	0.5	12.0

DRILLING INSERTS	f_n (mm/rev)	
	min	max
WCMX 040208	0.05	0.11
WCMX 050308	0.06	0.11
WCMX 06T308	0.06	0.13
WCMX 080412	0.06	0.18
SPMX 050204	0.04	0.10
SPMX 060204	0.04	0.10
SPMX 07T308	0.05	0.11
SPMX 090408	0.06	0.12

To calculate RPM from cutting speed: $n = \frac{v_c * 1000}{\pi * ø}$

To calculate feed rate (milling): $f = f_z * z * n$

n - RPM (rev/min)
v_c - cutting speed (m/min)
f_z - feed per tooth (mm)
f_n - feed rate (mm/rev)
a_p - axial depth of cut (mm)
z - no. of teeth

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.

GRADE ET801 & ET1001

ISO	P			M		K		S		H		
MATERIAL	Non-alloy steel	Low alloy steel	High alloy steel	Ferritic / Martensitic Stainless steel	Austenitic Stainles steel	Grey Cast iron	Malleable Cast iron	HRSA Fe, Ni or Co based	Titanium & Ti alloys	Hardened steel	Chilled cast iron	Cast iron
VDI GROUP	1-5	6-9	10-11	12-13	14	15-16	19-20	31-35	36-37	38-39	40	41
v_c (m/min)	**180-320**	**120-280**	**70-190**	**170-250**	**160-220**	**30-140**	**30-140**	**30-80**	**50-180**	**20-90**	**40-60**	**30-50**

TURNING INSERTS	f_n (mm/rev)		a_p (mm)	
	min	max	min	max
CCMT 060204-BF	0.04	0.20	0.5	2.1
CCMT 060208-BG	0.04	0.20	0.8	2.1
CCMT 09T304-BF	0.05	0.23	0.5	3.0
CCMT 09T308-BG	0.11	0.50	0.8	4.0
CCMT 120408-BG	0.11	0.50	0.8	5.0
DCMT 070204-BF	0.04	0.20	0.5	2.1
DCMT 11T304-BF	0.05	0.23	0.5	3.0
DCMT 11T308-BG	0.11	0.50	0.8	4.0
RCMT 0602MO	0.05	0.40	0.3	2.0
RCMT 0803MO	0.05	0.40	0.3	2.4
RCMT 10T3MO	0.05	0.40	0.3	2.8
RCMT 1204MO	0.05	0.40	0.5	3.2
SCMT 09T304-BF	0.05	0.23	0.5	3.0
SCMT 09T308-BG	0.11	0.50	0.8	3.0
TCMT 110204-BF	0.04	0.20	0.5	2.1
TCMT 16T304-BF	0.05	0.23	0.5	3.0
TCMT 16T308-BG	0.11	0.43	0.8	5.0
VBMT 160404-BF	0.05	0.23	0.5	3.0
VBMT 160408-BF	0.10	0.40	0.8	3.5
VCMT 110304-BF	0.04	0.20	0.5	2.1
VCMT 160404-BF	0.05	0.23	0.5	3.0
VCMT 160408-BG	0.10	0.40	0.8	3.5
CNMA 120408	0.20	0.70	0.8	6.0
CNMA 120412	0.20	0.70	1.2	6.0
CNMA 160612	0.20	0.70	1.2	6.0
CNMG 120404-BF	0.05	0.23	0.5	3.0
CNMG 120408-BG	0.11	0.50	0.8	5.0
CNMG 120412-BR	0.14	0.68	1.2	6.0
DNMG 150404-BF	0.05	0.23	0.5	3.0
DNMG 150408-BG	0.11	0.50	0.8	5.0
DNMG 150604-BF	0.05	0.23	0.5	3.0
DNMG 150608-BG	0.11	0.50	0.8	5.0
DNMG 150612-BR	0.14	0.68	1.2	6.0
DNUX 160508R	0.11	0.50	0.5	5.0

TURNING INSERTS	f_n (mm/rev)		a_p (mm)	
	min	max	min	max
KNUX 160405L	0.05	0.23	0.5	5.0
KNUX 160405R	0.05	0.23	0.5	5.0
SNMA 120408	0.15	0.70	1.0	6.0
SNMA 120412	0.20	0.80	1.5	6.0
SNMG 120404-BF	0.16	0.70	0.5	5.0
SNMG 120408-BG	0.16	0.70	0.8	5.0
SNMG 120412-BR	0.19	0.95	1.2	6.0
TNMA 160408	0.10	0.40	1.0	4.0
TNMA 160412	0.10	0.50	1.5	4.5
TNMG 160404-BF	0.05	0.23	0.5	3.0
TNMG 160408-BG	0.11	0.50	0.8	5.0
TNMG 160412-BR	0.14	0.68	1.2	5.0
TNMG 220404-BF	0.05	0.23	0.5	3.0
TNMG 220408-BG	0.11	0.50	0.8	5.0
TNMG 220412-BR	0.14	0.68	1.2	7.0
TNUX 160404L	0.05	0.23	0.5	3.0
TNUX 160408L	0.11	0.50	0.8	5.0
TNUX 160404R	0.05	0.23	0.5	3.0
TNUX 160408R	0.11	0.50	0.8	5.0
VNMG 160404-BF	0.05	0.23	0.5	3.0
VNMG 160408-BG	0.10	0.40	0.8	4.0
VNMG 160412-BR	0.10	0.40	0.8	4.0
WNMA 080404	0.15	0.60	1.0	5.0
WNMA 080408	0.15	0.60	1.0	6.0
WNMA 080412	0.15	0.70	1.5	6.0
WNMG 060404-BF	0.05	0.23	0.5	3.0
WNMG 060408-BG	0.11	0.50	0.8	3.0
WNMG 080404-BF	0.05	0.23	0.5	3.0
WNMG 080408-BG	0.11	0.50	0.8	3.5
WNMG 080412-BR	0.13	0.65	1.2	3.5

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