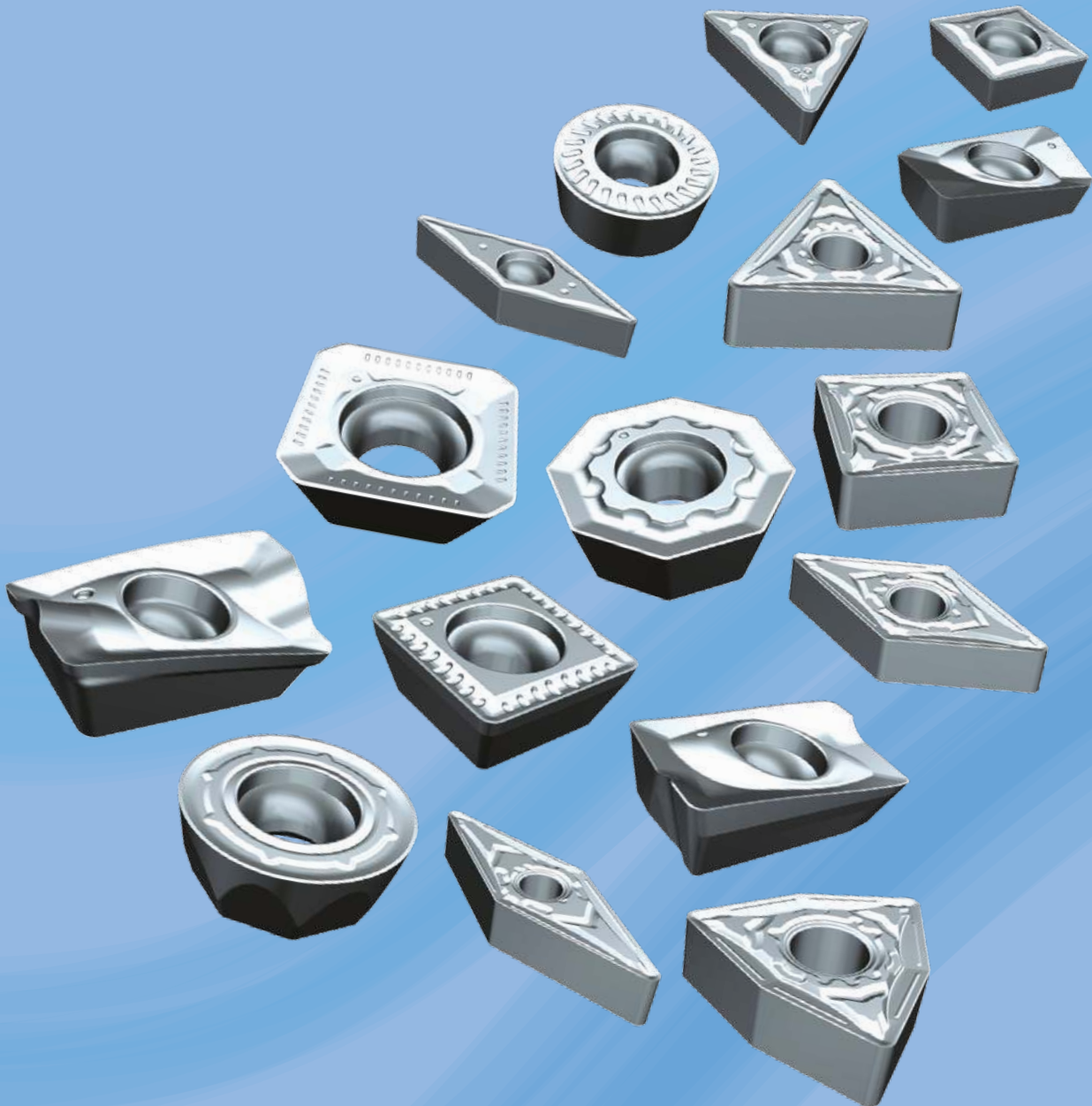




UNIMASTER *IDX*



MULTI-MATERIAL INDEXABLE INSERTS



Multi-material inserts for turning, milling and drilling.

Many manufacturing facilities carry out a wide variety of work, with many and varied workpiece materials to machine. The Unimaster IDX range offers an easy choice of inserts and chipbreakers, designed to machine a wide range of materials.

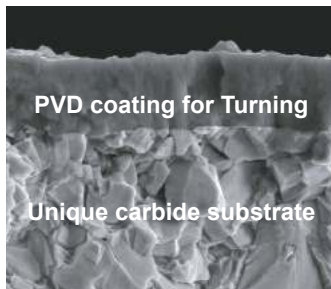
There are two grades for turning and one grade for milling and drilling, making the choice even simpler, and eliminating the need for large quantities of inserts for different jobs.

The grades cover Steel, Stainless Steel, Cast Iron, Titanium, Nickel Alloys (HRSA) and Hardened materials. They can also be used for dry cutting in some materials.

UNIVERSAL GRADES

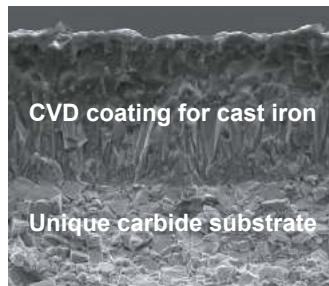
ET801

- PVD coating and substrate designed to balance edge strength and wear resistance.
- Excellent performance in turning, especially under harsh conditions.



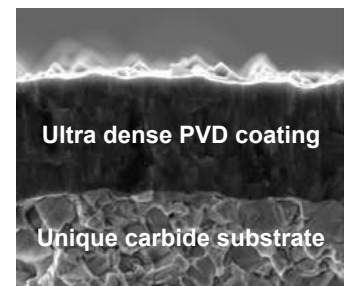
ET1001

- CVD coating with optimal thermal and wear resistance, ideal for Cast Iron.
- Combination of thick coating and carbide substrate give excellent performance in turning.



ET602

- PVD coating with optimal thermal resistance and added strength.
- Tough carbide substrate designed for demanding applications in milling and drilling.



CHIPBREAKERS

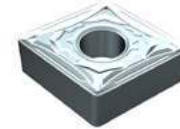
UNIMASTER P

Positive style turning inserts.

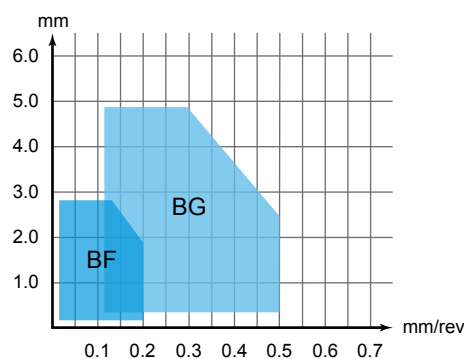


UNIMASTER N

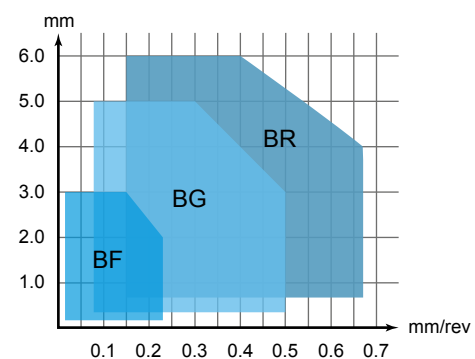
Negative style turning inserts.



Chipbreaker operating areas



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			

INDEX

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	DRILLING INSERTS	P. 6
	TURNING INSERTS - POSITIVE	P. 7
	TURNING INSERTS - NEGATIVE	P. 8-9
	CUTTING DATA	P. 10-11

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	
	RPMW 10T3MO	●			-	10.0	3.97	-	
	RPMW 1204MO	●			-	12.0	4.76	-	
	SEKN 1203AFTN	●			-	12.7	3.18	-	
	SEKR 1203AFTN	●			-	12.7	3.18	-	
	SEKT 12T3AGTN	●			-	12.7	4.0	-	
	SEKT 1204AFTN	●			-	12.7	4.76	-	
	SEKT 13T3AGTN	●			-	13.4	4.0	-	
	SPKN 1203EDTR	●			-	12.7	3.18	-	
	SPKN 1504EDTR	●			-	15.88	4.76	-	
	SPKR 1203EDTR	●			-	12.7	3.18	-	
	SPUN 120308	●			-	12.7	3.18	-	

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 Stainless 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: $n = \frac{v_c \cdot 1000}{\pi \cdot \phi}$

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

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 Stainless 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

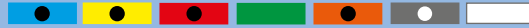
TURNING INSERTS	f _n (mm/rev)		a _p (mm)	
	min	max	min	max
CCMT 060204-BF	0.04	0.20	0.5	2.1
CCMT 060208-BG	0.04	0.20	0.8	2.1
CCMT 09T304-BF	0.05	0.23	0.5	3.0
CCMT 09T308-BG	0.11	0.50	0.8	4.0
CCMT 120408-BG	0.11	0.50	0.8	5.0
DCMT 070204-BF	0.04	0.20	0.5	2.1
DCMT 11T304-BF	0.05	0.23	0.5	3.0
DCMT 11T308-BG	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



UNIMASTER **IDX**



Price List no. UIP17/1

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