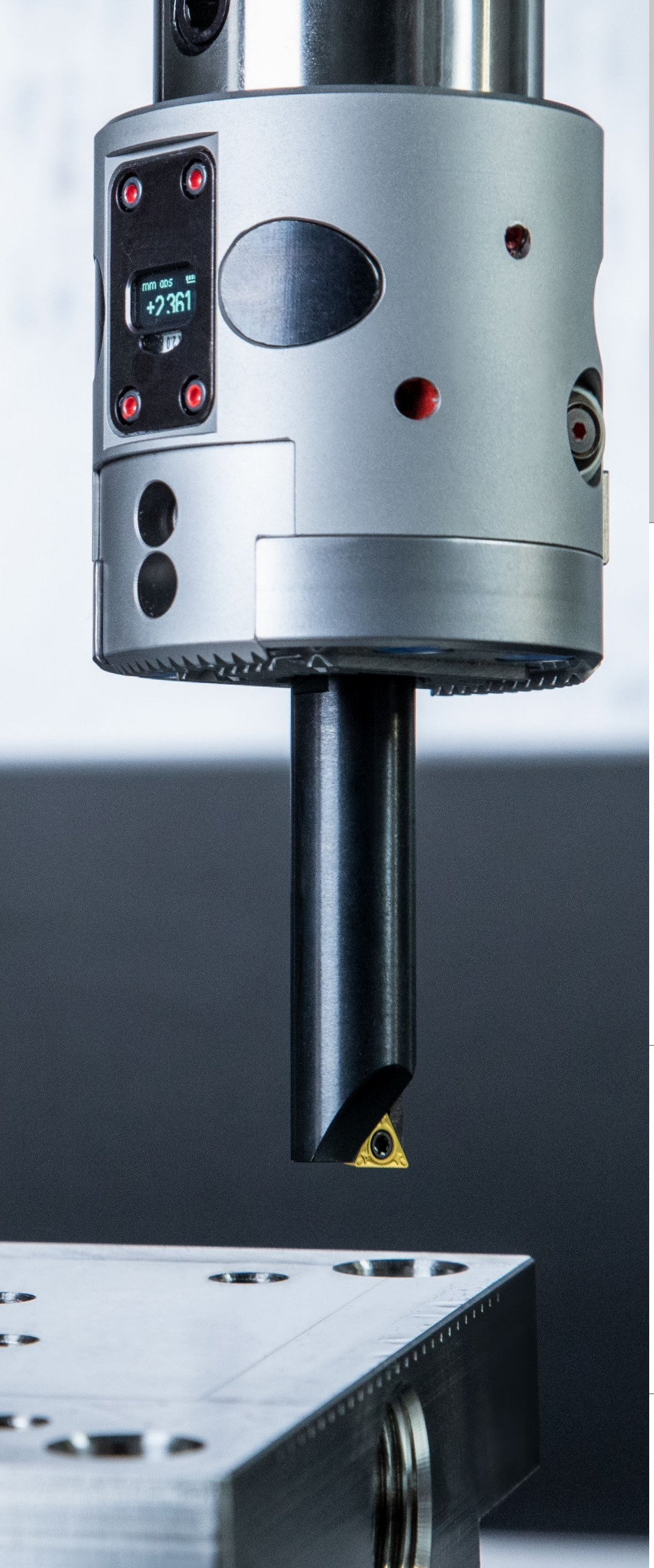


Table of contents

KOMET \ Performance

Premium quality tools for high performance.

The premium quality tools from the **KOMET Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Symbol explanation

F Fine Machining
M Medium Machining
R Rough Machining

Smooth cut
Irregular cutting depth
Interrupted cut

Coolant supply central
Steep taper Form AD

KOMET ABS – modular coupling system for rotating and stationary tools

Coolant supply either via the flange or centrally

Micron-precise display resolution:
0.00005" in diameter

Universal ABS interface

Modern, high contrast OLED display on the precision adjustment head itself

Absolute position measuring system

Additional Bluetooth Low Energy interface for easy display on any conventional smartphone

System overview – MicroKom / TwinKom

System

Diameter range Ø 0.221 – 14.370 inch

BluFlex 2

5

hi.flex

6

ABS

Diameter range Ø 1.181 – 8.031 inch

TwinKom – G04

10

ABS

Accessories

Diameter range Ø 0.220 – 1.024 inch

ABS32 boring bar

7

Steel boring bar

7

Boring bar, vibration-optimized

8

Adapter

7

Boring Bar

8

Diameter range Ø 0.984 – 14.370 inch

Coolant diverting plug

9

Insert holder

9

Bridge

9

Insert holder

9

Serrated body

9

Insert holder

9

Support bridge

7

Indexable Insert

WOHX

13

TOEX / TOGX / TOHX

17–19

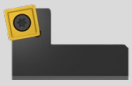
Tool holder 90° radially adjustable

11

Tool holder 80° radially adjustable

11

Tool holder 80° radially adjustable



12

Indexable Insert

WOEX / WOGX

14

SOEX

16

Overview of ABS tool holders

Work with flexibility and process-security with the modular ABS coupling system for rotating and stationary tools.

CAT Taper shank holder on request.

ISO 7388-1 – SK steep taper holders

ISO 7388-2 – MAS-BT taper shank

HSK hollow taper adapters with face contact

ISO 26623-1 – PSC polygon hollow adapters with face contact

metric

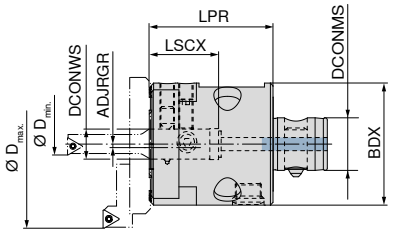
Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

MicroKom – BluFlex 2 – precision adjustment head

- ▲ Via the free app (Android/IOS), an extended display can be transferred to a standard smartphone (62 840 16097)
- ▲ For MicroKom boring bars with Ø 0.630 inch or with ABS 32, MicroKom bridges, and serrated body
- ▲ With through coolant supply
- ▲ LSCX = Recess depth of boring bar

Scope of supply:
incl. Battery

ABS



	without Bluetooth	with Bluetooth
	62 820 ...	62 840 ...

D_{min} - D_{max} inch	KOMET no.	Adapter	DCONWS inch	DCONMS inch	BDX inch	LPR inch	LSCX inch	ADJRGR inch		
0.221 -14.370	M04 30100	ABS 50	0.630	1.102	2.559	2.795	1.496	0.183	**16097**	
0.221 -14.370	M04 30000	ABS 50	0.630	1.102	2.559	2.795	1.496	0.183		**16097**


Clamping screw


Clamping screw


Clamping screw


Clamping sleeve


Battery cover

		62 950 ...		62 950 ...		62 950 ...	62 950 ...	62 950 ...
Spare parts for Article no.								
62 820 16097	M8x1x12/SW4	**13989**	M8x1x20/SW4	**13700**	M5x14/SW4	**18600**	**18500**	**18400**
62 840 16097	M8x1x12/SW4	**13989**	M8x1x20/SW4	**13700**	M5x14/SW4	**18600**	**18500**	**18400**

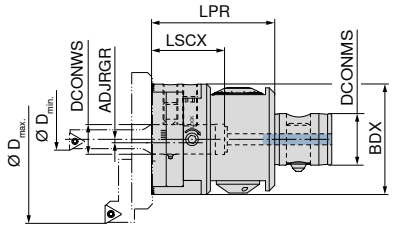
Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

metric

MicroKom – hi.flex – precision adjustment head

- ▲ for MicroKom boring bars with Ø 0.630 inch or ABS 32, MicroKom bridges, and serrated body
- ▲ with through coolant supply
- ▲ LSCX = Recess depth of boring bar

ABS



Analogue
67 800 ...

D_{min} - D_{max} inch	KOMET no.	Adapter	DCONWS inch	DCONMS inch	BDX inch	LPR inch	LSCX inch	
0.221 - 14.370	M05 01600	ABS 50	0.630	1.102	2.362	2.638	1.575	**12597**


Clamping screw
62 950 ...


Clamping screw
62 950 ...


Clamping screw
62 950 ...

Spare parts for Article no.

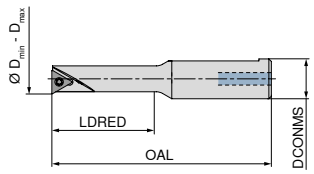
67 800 12597	**14700**	**13989**	**13700**

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

metric

MicroKom – Steel boring bar for hi.flex, BluFlex 2

▲ With internal coolant supply



62 850 ...

D_{min} - D_{max} inch	KOMET no.	OAL inch	LDRED inch	DCONMS $_{h6}$ inch	Insert	
0.236 - 0.315	B05 20100	2.823	0.827	0.630	W0.. 02T0	00600
0.315 - 0.472	B05 20120	3.047	1.102	0.630	T0.. 06T1	00800
0.394 - 0.551	B05 20140	3.220	1.339	0.630	T0.. 0902	01000
0.472 - 0.709	B05 20160	3.472	1.654	0.630	T0.. 0902	01200
0.551 - 0.709	B05 20180	3.717	1.969	0.630	T0.. 0902	01400
0.709 - 0.984	B05 20220	3.937	2.362	0.630	T0.. 0902	01800
0.866 - 1.024	B05 20260	4.252	2.697	0.630	T0.. 1403	02200

TORX® Screws

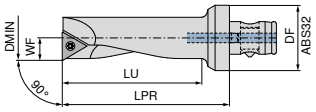
62 950 ...

Spare parts Insert	
T0.. 06T1	12800
T0.. 0902	12000
T0.. 1403	12600
W0.. 02T0	11800

MicroKom – Boring bar

▲ With internal coolant supply

ABS



62 857 ...

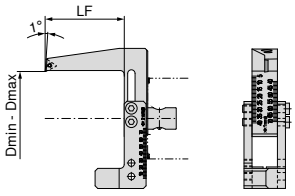
DMIN inch	KOMET no.	WF inch	DF inch	LU inch	LPR inch	Insert	
0.311	B00 25610	0.156	1.260	1.102	1.654	T0.X 06T1..	07989
0.350	B00 25700	0.175	1.260	1.339	1.890	T0.X 06T1..	21989
0.390	B00 25620	0.195	1.260	1.339	1.890	T0.X 06T1..	08989
0.429	B00 25710	0.215	1.260	1.693	2.244	T0.X 0902..	23989
0.469	B00 25630	0.234	1.260	1.693	2.244	T0.X 0902..	09989
0.547	B00 25640	0.274	1.260	1.969	2.520	T0.X 0902..	10989
0.626	B00 25650	0.313	1.260	2.283	2.835	T0.X 0902..	11989
0.705	B00 25661	0.352	1.260	2.323	2.835	T0.X 0902..	13989
0.783	B00 25671	0.390	1.260	2.756	3.228	T0.X 0902..	15989
0.862	B00 25681	0.429	1.260	2.756	3.228	T0.X 0902..	17989
0.941	B00 25691	0.469	1.260	2.756	3.228	T0.X 0902..	19989

TORX® Screws

62 950 ...

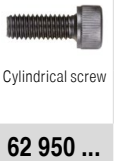
Spare parts Insert	
T0.X 06T1..	12800
T0.X 0902..	12000

MicroKom – Spindle tool



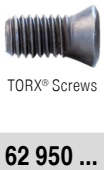
62 866 ...

D_{min} - D_{max} inch	KOMET no.	LF inch	Insert	
0.197 - 2.756	M05 90300	2.283	T0.X 0902..	07000



Cylindrical screw

62 950 ...



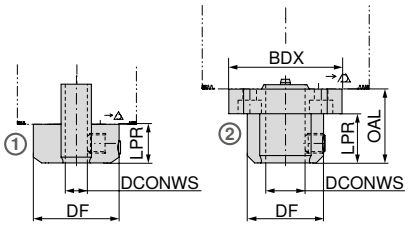
TORX® Screws

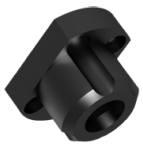
62 950 ...

Spare parts Insert		
T0.X 0902..	26800	12000

MicroKom – Adapter

▲ for 62 852 ..., 62 853 ..., 62 856 ... (essential for using the boring bar)





62 851 ...

DCONWS inch	KOMET no.	OAL inch	BDX inch	DF inch	LPR inch	Fig.	
0.236	M05 90200			1.220	0.630	1	00600
0.315	M05 90210			1.220	0.630	1	00800
0.394	M05 90220	0.984	1.811	1.220	0.591	2	01000
0.472	M05 90230	0.984	1.811	1.220	0.591	2	01200
0.630	M05 90240	1.181	1.811	1.220	0.787	2	01600

Cylindrical screw

62 950 ...

Clamping screw

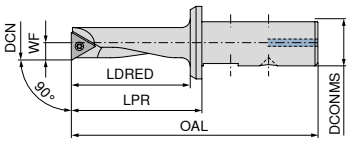
62 950 ...

Spare parts DCONWS		
0.236 - 0.315		44800
0.394 - 0.472	00000	44800
0.630	00000	14700

Suitable inserts can be found on → **Page 14–19.**

MicroKom – Boring bar

- ▲ can only be used with adapter 62 851 ...
- ▲ with internal coolant supply



62 856 ...

DCN inch	KOMET no.	OAL inch	LPR inch	DCONMS inch	WF inch	LDRED inch	Insert	
0.220	B00 37010	1.890	1.024	0.315	0.108	0.866	WOHX 02T0..	05600
0.256	B00 37020	2.047	1.181	0.315	0.126	1.024	WOHX 02T0..	06500
0.315	B00 15510	2.244	1.378	0.315	0.156	1.102	T0.X 06T1..	08000
0.315	B00 15610	2.953	1.378	0.630	0.156	1.181	T0.X 06T1..	00800
0.394	B00 15620	3.150	1.575	0.630	0.195	1.378	T0.X 0902..	01000
0.433	B00 15710	3.346	1.772	0.630	0.215	1.575	T0.X 0902..	01100
0.472	B00 15530	2.638	1.772	0.630	0.234	1.496	T0.X 0902..	11200
0.472	B00 15630	3.346	1.772	0.630	0.234	1.575	T0.X 0902..	01200
0.551	B00 15640	3.543	1.969	0.630	0.274	1.772	T0.X 0902..	01400
0.630	B00 15650	3.740	2.165	0.630	0.313	1.969	T0.X 0902..	01600
0.709	B00 15661	3.937	2.362	0.630	0.352	2.165	T0.X 0902..	01800
0.748	B00 15751	4.134	2.559	0.630	0.372	2.362	T0.X 0902..	01900
0.787	B00 15671	4.134	2.559	0.630	0.390	2.362	T0.X 0902..	02000
0.866	B00 15681	4.134	2.559	0.630	0.429	2.362	T0.X 0902..	02200
0.945	B00 15691	4.134	2.559	0.630	0.469	2.362	T0.X 0902..	02400

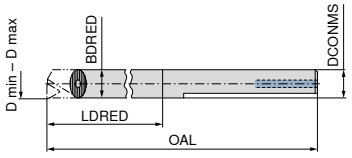
TORX® Screws

62 950 ...

Spare parts DCN	
0.220 - 0.256	11800
0.315 - 0.394	12800
0.433 - 0.945	12000

MicroKom – Carbide boring shank

- ▲ for boring head 62 854 ...
- ▲ can only be used with adapter 62 851 ...
- ▲ with internal coolant supply



62 853 ...

D_{min} - D_{max} inch	KOMET no.	OAL inch	BDRED inch	LDRED inch	DCONMS inch	
0.512 - 0.669	G10 12060	4.724	0.472	2.953	0.472	01300
0.669 - 0.866	G10 12070	5.512	0.630	3.937	0.630	01700
0.866 - 1.024	G10 12080	5.512	0.630	3.937	0.630	02200

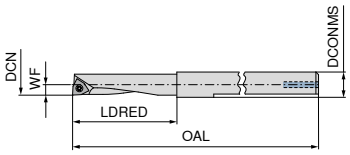
Fixing screw

62 950 ...

Spare parts DCONMS	
0.472	19700
0.630	19800

MicroKom – Boring bar, vibration-optimized

- ▲ can only be used with adapter 62 851 ...
- ▲ with internal coolant supply



62 852 ...

DCN inch	KOMET no.	OAL inch	LDRED inch	DCONMS inch	Insert	
0.220	B00 30280	2.559	0.866	0.236	WOHX 02T0..	10600
0.272	B00 30290	3.150	1.417	0.236	WOHX 02T0..	00600 1)
0.354	B00 00680	3.543	0.945	0.315	T0.X 06T1..	00800 1)
0.433	B00 00690	3.740	1.969	0.394	T0.X 06T1..	01000 1)

1) Carbide version

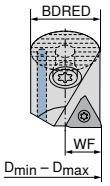
TORX® Screws

62 950 ...

Spare parts Insert	
T0.X 06T1..	09700
WOHX 02T0..	11800

MicroKom – Boring head

- ▲ for boring shank 62 853 ...



62 854 ...

D_{min} - D_{max} inch	KOMET no.	WF inch	BDRED inch	Insert	
0.518 - 0.591	G10 12621	0.254	0.472	T0.X 0902..	01300
0.591 - 0.669	G10 12841	0.333	0.630	T0.X 0902..	01500
0.669 - 0.748	G10 12711	0.333	0.472	T0.X 0902..	01700
0.748 - 0.866	G10 12861	0.372	0.630	T0.X 0902..	01900
0.866 - 1.024	G10 12731	0.431	0.630	T0.X 0902..	02200

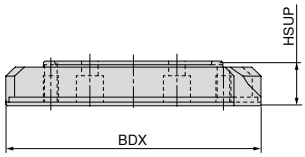
TORX® Screws

62 950 ...

Spare parts Insert	
T0.X 0902..	12000

Suitable inserts can be found on → **Page 14–19.**

MicroKom – Bridge for hi.flex, BluFlex 2



D_{min} - D_{max} inch	KOMET no.	BDX inch	HSUP inch	WT inch	62 860 ...
3.543 - 4.921	M05 80101	3.346	0.472	0.147	12500
4.724 - 6.102	M05 80200	4.528	0.719	0.107	15500
5.906 - 7.283	M05 80300	5.709	0.797	0.152	18500
7.087 - 8.465	M05 80400	6.890	0.915	0.229	21500
8.267 - 9.646	M05 80500	8.071	0.984	0.309	24500
9.449 - 10.827	M05 80510	9.252	0.984	0.349	27500
10.630 - 12.008	M05 80520	10.433	0.984	0.394	30500
11.811 - 13.189	M05 80530	11.614	0.984	0.435	33500
12.992 - 14.370	M05 80540	12.795	0.984	0.478	36500


Cylindrical screw

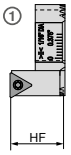

Disk spring

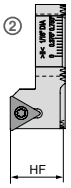
Spare parts BDX	62 950 ...	62 950 ...
3.346 - 12.795	00000	19100

MicroKom – Insert holder for hi.flex, BluFlex 2

▲ With internal coolant supply

Scope of supply:
without inserts
incl. mounting screws





DCN inch	DCX inch	KOMET no.	HF inch	Insert	Fig.	67 863 ...
0.984	1.732	M05 20601	0.531	T0.. 06T1	1	04400
1.732	2.480	M05 20651	0.531	T0.. 0902	2	12500

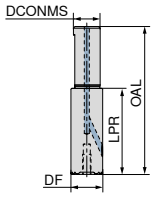

TORX® Screws

Spare parts Insert	62 950 ...
T0.. 06T1	09700
T0.. 0902	09900

MicroKom – Serrated body for hi.flex, BluFlex 2

▲ With internal coolant supply

Scope of supply:
without insert holder



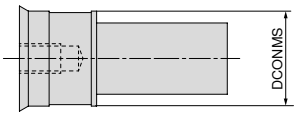
D_{min} - D_{max} inch	KOMET no.	DCONMS inch	OAL inch	LPR inch	DF inch	67 861 ...
0.984 - 2.480	M05 90600	0.630	3.484	2.028	0.748	06300


Cylindrical screw


Disk spring

Spare parts for Article no.	62 950 ...	62 950 ...
67 861 06300	00000	19100

MicroKom – Coolant diverting plug for hi.flex



DCONMS inch	KOMET no.	62 862 ...
0.630	M05 90501	09300

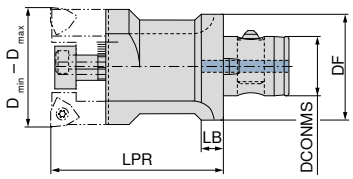
Suitable inserts can be found on → **Page 14–19.**

TwinKom – Base body

Scope of supply:

Clamping plate incl. adjustment and fixing screws
Order tool holder and indexable inserts separately

ABS



D_{min} - D_{max} inch	KOMET no.	DCONMS inch	DF inch	Adapter	LPR inch	LB inch	short 62 881 ...	long 62 881 ...
1.181 - 1.575	G04 00500	0.512	0.984	ABS 25	1.969		04190	
1.575 - 2.008	G04 01010	0.630	1.260	ABS 32	2.362		05189	
1.181 - 1.575	G04 01000	0.630	1.260	ABS 32	3.346	0.295		44189
2.008 - 2.677	G04 01510	0.787	1.575	ABS 40	2.362		07188	
1.575 - 2.008	G04 01500	0.787	1.575	ABS 40	4.724	0.335		45188
2.677 - 3.425	G04 02010	1.102	1.969	ABS 50	2.756		09197	
2.677 - 3.425	G04 02020	1.102	1.969	ABS 50	5.315			49197
2.008 - 2.677	G04 02000	1.102	1.969	ABS 50	5.315	0.413		47197
3.425 - 4.567	G04 02500	1.339	2.480	ABS 63	2.756		12196	
3.425 - 4.567	G04 02510	1.339	2.480	ABS 63	6.102			52196
4.567 - 6.024	G04 03000	1.811	3.150	ABS 80	3.543		15792	
4.567 - 6.024	G04 03010	1.811	3.150	ABS 80	6.890			55792
6.024 - 8.031	G04 03500	2.205	3.937	ABS 100	4.921		20491	

Cylindrical screw TwinKom

Cylindrical screw TwinKom

Adjustment screw

Adjustment screw

TwinKom clamping plate

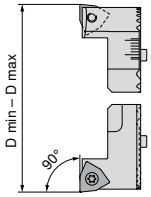
Spare parts D_{min} - D_{max}	62 950 ...	84 950 ...	10 950 ...	62 950 ...	62 950 ...
1.181 - 1.575	45500			53800	55000
1.575 - 2.008	45600		11200		55100
2.008 - 2.677	54400			53900	55200
2.677 - 3.425		42600		54000	55300
3.425 - 4.567	54500			54100	55400
4.567 - 6.024	54600			54200	55500
6.024 - 8.031	54700			54300	55600

TwinKom – Tool holder 90°

▲ radially adjustable

Scope of supply:

including pair of holders and clamping screws
Order indexable inserts separately



67 871 ...

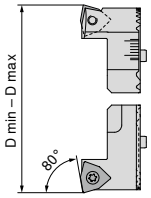
D_{min} - D_{max} inch	KOMET no.	Insert	
1.181 - 1.614	G03 60410	WO.X 05T3	04100
1.535 - 2.008	G03 60420	WO.X 06T3	05100
1.929 - 2.795	G03 60430	WO.X 06T3	07100
2.520 - 3.853	G03 60440	WO.X 0804	09800
3.268 - 4.764	G03 60450	WO.X 1005	12100
4.291 - 6.181	G03 60460	WO.X 1005	15700
5.472 - 8.031	G03 60470	WO.X 1206	20400

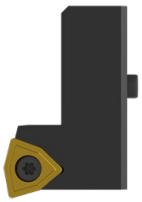
TwinKom – Tool holder 80°

▲ radially adjustable

Scope of supply:

including pair of holders and clamping screws
Order indexable inserts separately





67 875 ...

D_{min} - D_{max} inch	KOMET no.	Insert	
1.181 - 1.614	G03 50410	WO.X 05T3	04100
1.535 - 2.008	G03 50420	WO.X 06T3	05100
1.929 - 2.795	G03 50430	WO.X 06T3	07100
2.520 - 3.853	G03 50440	WO.X 0804	09800
3.268 - 4.764	G03 50450	WO.X 1005	12100
4.291 - 6.181	G03 50460	WO.X 1005	15700
5.472 - 8.031	G03 50470	WO.X 1206	20400

Screwdriver

80 950 ...

Clamping screw

10 950 ...

Spare parts for Article no.		
67 875 04100 / 67 871 04100	125	10500
67 875 05100 / 67 871 05100	127	10600
67 875 07100 / 67 871 07100	127	10600
67 875 09800 / 67 871 09800	128	12700
67 875 12100 / 67 871 12100	128	12700
67 875 15700 / 67 871 15700	128	12700
67 875 20400 / 67 871 20400	129	17400

Suitable inserts can be found on → **Page 14+15.**

TwinKom – depths of cut

$a_{p\ max}$	P	M	K	N	S
WO.X 05T3	0.177	0.138	0.197	0.197	0.138
WO.X 05T6	0.236	0.157	0.236	0.236	0.157
WO.X 0804	0.295	0.236	0.295	0.295	0.236
WO.X 1005	0.354	0.354	0.354	0.354	0.354
WO.X 1206	0.354	0.354	0.354	0.354	0.354

Further cutting data can be found on –→ **pages 20**

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

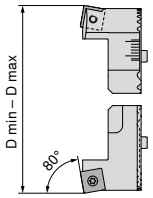
metric

TwinKom – Tool holder 80°

▲ radially adjustable

Scope of supply:

including pair of holders and clamping screws
Order indexable inserts separately



			67 872 ...
D_{min} - D_{max} inch	KOMET no.	Insert	
1.181 - 1.614	G03 80200	SOEX 07T308	04100
1.535 - 2.008	G03 80211	SOEX 090408	05100
1.929 - 2.795	G03 80220	SOEX 090408	07100
2.520 - 3.853	G03 80230	SOEX 120508	09800
3.268 - 4.764	G03 80240	SOEX 120508	12100
4.291 - 6.181	G03 80250	SOEX 120508	15700
5.472 - 8.031	G03 80260	SOEX 120508	20400

Screwdriver

Clamping screw

	80 950 ...	10 950 ...
Spare parts D_{min} - D_{max}		
1.181 - 1.614	125	10800
1.535 - 2.008	128	10300
1.929 - 2.795	128	10300
2.520 - 3.853	129	10400
3.268 - 4.764	129	10400
4.291 - 6.181	129	10400
5.472 - 8.031	129	10400

TwinKom – depths of cut

$a_{p\ max}$	P	M	K	N
SOEX 07T308	0.177	0.138	0.197	0.197
SOEX 090408	0.236	0.157	0.236	0.236
SOEX 120508	0.354	0.354	0.354	0.354

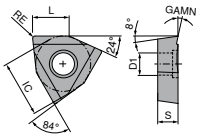
Further cutting data can be found on → **pages 20**

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

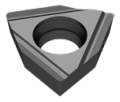
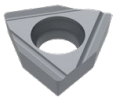
metric

WOHX

Designation	L inch	S inch	D1 inch	IC inch
WOHX 02T0..	0.102	0.047	0.079	0.157



WOHX

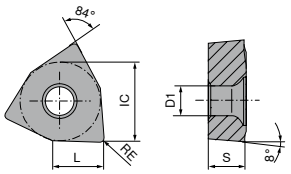
	-G12 BK2710	-G12 BK8440	-G12 K10
			
	F	**F**	**F**
	WOHX	WOHX	WOHX
	62 600 ...	**62 600 ...**	**62 600 ...**
ISO			
02T001EL	**10102**	**00102**	**20102**
02T001EL	**10102**	**00102**	**20102**
02T001FL	**10102**	**00102**	**20102**
P	●	●	
M	●	●	
K	●	●	
N			●
S			●
H		●	
O			●

KOMET no.	RE inch
W00 04120.018440	0.004
W00 04120.012710	0.004
W00 04120.0121	0.004

→ v_c Page 21

WOGX / WOEX

Designation	L inch	S inch	D1 inch	IC inch
WOEX 0302..	0.126	0.091	0.091	0.197
WOEX 0403..	0.161	0.125	0.100	0.250
WO.X 05T3..	0.209	0.150	0.112	0.315
WO.X 06T3..	0.260	0.150	0.159	0.394
WO.X 0804..	0.311	0.189	0.193	0.472
WOEX 0804..	0.311	0.189	0.195	0.472
WOEX 1005..	0.390	0.209	0.193	0.591
WOEX 1206..	0.457	0.236	0.236	0.693



WOGX / WOEX

	NEW	NEW			
	-15 BK8430	-02 BK6440	-11 BK77	-11 BK7710	-01 BK8425
					
	WOGX	WOEX	WOEX	WOEX	WOEX
	10 821 ...	10 821 ...	10 821 ...	10 821 ...	10 821 ...

ISO	KOMET no.	RE inch									
030204	W29 10110.0477	0.016					80311			
030204	W29 10010.048425	0.016								30301
030204	W29 10110.047710	0.016						90311		
040304	W29 18110.047710	0.016						90411		
040304	W29 18010.048425	0.016								30401
040304	W29 18110.0477	0.016					80411			
05T304	W29 24110.0477	0.016					80511			
05T304	W29 24010.048425	0.016								30501
05T304	W29 24110.047710	0.016						90511		
05T304	W29 24020.046440	0.016		25502						
05T304	W29 24150.048430	0.016	00515							
06T304	W29 34110.0477	0.016					80611			
06T304	W29 34010.048425	0.016								30601
06T304	W29 34110.047710	0.016						90611		
06T304	W29 34020.046440	0.016		25602						
06T304	W29 34150.048430	0.016	00615							
080404	W29 42110.0477	0.016					80811			
080404	W29 42010.048425	0.016								30801
080404	W29 42110.047710	0.016						90811		
080404	W29 42020.046440	0.016		25802						
080404	W29 42150.048430	0.016	00815							
100504	W29 50110.0477	0.016					81011			
100504	W29 50010.048425	0.016								31001
100504	W29 50110.047710	0.016						91011		
100504	W29 50020.046440	0.016		26002						
100508	W29 50010.088425	0.031								39001
120608	W29 58020.086440	0.031		21202						

P	○	●			●
M	○	●			●
K	○				●
N				●	○
S	●		●		
H	●		○		○
O			○		

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WOEX

			-01 BK7935		-01 BK6115		-01 BK7615	
								
			WOEX		WOEX		WOEX	
			10 821 ...		10 821 ...		10 821 ...	
ISO	KOMET no.	RE inch						
030204	W29 10010.046115	0.016				**40301**		
030204	W29 10010.047615	0.016						**05301**
030204	W29 10010.047935	0.016		**50301**				
040304	W29 18010.046115	0.016				**40401**		
040304	W29 18010.047615	0.016						**05401**
040304	W29 18010.047935	0.016		**50401**				
05T304	W29 24010.046115	0.016				**40501**		
05T304	W29 24010.047615	0.016						**05501**
05T304	W29 24010.047935	0.016		**50501**				
06T304	W29 34010.046115	0.016				**40601**		
06T304	W29 34010.047615	0.016						**05601**
06T304	W29 34010.047935	0.016		**50601**				
080404	W29 42010.046115	0.016				**40801**		
080404	W29 42010.047615	0.016						**05801**
100504	W29 50010.046115	0.016				**41001**		
100508	W29 50010.087615	0.031						**08001**
120608	W29 58010.086115	0.031				**41201**		
120608	W29 58010.087615	0.031						**08201**
P				●		●		
M				●		●		
K				●		●		●
N				○				
S				●				
H						○		
O								

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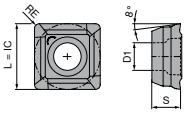
SOEX

Designation	L inch	IC inch	D1 inch	S inch
SOEX 0502..	0.219	0.219	0.091	0.094
SOEX 0603..	0.250	0.250	0.104	0.125
SOEX 07T3..	0.313	0.313	0.112	0.141
SOEX 0904..	0.375	0.375	0.161	0.172
SOEX 1205..	0.500	0.500	0.205	0.203



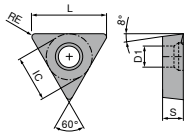
SOEX

			NEW -01 BK8425	NEW -01 BK7615	NEW -01 BK7935
					
			SOEX	SOEX	SOEX
			10 822 ...	10 822 ...	10 822 ...
ISO	KOMET no.	RE inch			
050204	W83 13010.047615	0.016		05501	
050204	W83 13010.047935	0.016			50501
050204	W83 13010.048425	0.016	30501		
060306	W83 18010.067615	0.024		05601	
060306	W83 18010.067935	0.024			50601
060306	W83 18010.068425	0.024	30601		
07T308	W83 23010.087615	0.031		05701	
07T308	W83 23010.087935	0.031			50701
07T308	W83 23010.088425	0.031	30701		
090408	W83 32010.087615	0.031		05901	
090408	W83 32010.087935	0.031			50901
090408	W83 32010.088425	0.031	30901		
120508	W83 44010.087615	0.031		06201	
120508	W83 44010.087935	0.031			51201
120508	W83 44010.088425	0.031	31201		
P			●		●
M			●		●
K			●	●	●
N			○		○
S			●		●
H			○		
O					○

→ v_c Page 24

TOGX

Designation	L inch	S inch	D1 inch	IC inch
TOGX 06T1..	0.261	0.071	0.087	0.157
TOGX 0902..	0.359	0.098	0.110	0.220
TOGX 1403..	0.536	0.118	0.150	0.323



TOGX

	NEW		NEW	
	-18 CK32	-14 CK3230	-14 CK3230	-14 BK60
				
	F	F	F	F
	TOGX	TOGX	TOGX	TOGX
	62 607 ...	62 601 ...	62 606 ...	62 601 ...

ISO	KOMET no.	RE inch				
06T102EN	W57 04140.023210	0.008		53202		
06T102EN	W57 04140.0260	0.008				90206
06T102EN	W57 04140.023230	0.008			10201	
06T102EN	W57 04180.0432	0.016	20401			
090204EN	W57 14140.043210	0.016		54002		
090204EN	W57 14140.0460	0.016				70409
090204EN	W57 14140.043230	0.016			11401	
090204EN	W57 14180.0432	0.016	21401			
140304EN	W57 26140.043210	0.016		54602		
140304EN	W57 26140.0460	0.016				70414
140304EN	W57 26140.043230	0.016			12601	
140304EN	W57 26180.0432	0.016	22601			
P			●	●	●	●
M			●	●	●	●
K						●
N						
S						
H						
O						

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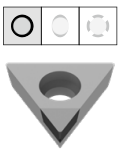
TOGX

			NEW			NEW
			-18 BK8430	-12 BK7710	-12 K10	CBN40
						
			F	F	F	F
			TOGX	TOGX	TOGX	TOGX
			62 607 ...	62 601 ...	62 601 ...	62 601 ...
ISO	KOMET no.	RE inch				
06T102EN	W57 04180.048430	0.016	30401			
06T102FN	W57 04120.027710	0.008		70201		
06T102FN	W57 04120.0223	0.008			50206	
06T102TN	W30 04990.0240	0.008				60206
090204EN	W57 14180.048430	0.016	31401			
090204FN	W57 14120.047710	0.016		70401		
090204FN	W57 14120.0423	0.016			50409	
090204TN	W30 14990.0440	0.016				60409
140304EN	W57 26180.048430	0.016	32601			
140304FN	W57 26120.0423	0.016			50414	
140304TN	W30 26990.0440	0.016				62600
P			○			
M			○			
K			○			
N				●	●	
S			●		●	
H			●			●
O					●	

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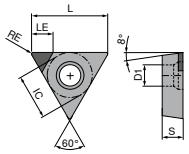
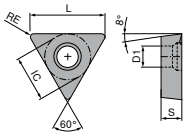
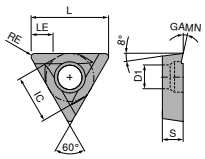
TOEX / TOHX / TOGX

Designation	L inch	S inch	D1 inch	IC inch	LE inch
TO.X 0902..	0.359	0.098	0.110	0.220	-
TOEX 06T1..	0.261	0.071	0.087	0.157	0.071
TOEX 0902..	0.359	0.098	0.110	0.220	0.106
TOEX 1403..	0.536	0.118	0.150	0.323	0.106
TOGX 06T1..	0.261	0.071	0.087	0.157	-
TOHX 06T1..	0.256	0.071	0.087	0.157	-
TOHX 1403..	0.536	0.118	0.150	0.323	-







2

TOEX / TOHX / TOGX

	NEW	NEW		NEW		NEW
	CTDPU20	-G12 BK8425	-14 BK8430	-G06 BK2710	-G06 BK6110	-G06 BK7615
	F	F	F	F	F	F
	DIAMOND TOEX	TOHX	TOGX	TOHX	TOHX	TOHX
	62 605 ...	62 603 ...	62 601 ...	62 602 ...	62 602 ...	62 602 ...

ISO	KOMET no.	RE inch											
06T102EN	W57 04140.028430	0.008					30201						
06T102FN	W30 04990.025510	0.008	00201										
06T103EL	W30 04120.038425	0.012		30200									
06T103EL	W30 04060.036110	0.012									40606		
06T103EL	W30 04060.032710	0.012						10606					
090204EL	W30 14060.042710	0.016						10409					
090204EL	W30 14060.046110	0.016									40409		
090204EL	W30 14120.048425	0.016		31800									
090204EN	W57 14140.048430	0.016					30401						
090204FN	W30 14990.045510	0.016	01401										
140304EL	W30 26120.048425	0.016		32600									
140304EL	W30 26060.047615	0.016											82600
140304EL	W30 26060.046110	0.016									40414		
140304EL	W30 26060.042710	0.016						12600					
140304FN	W30 26990.045510	0.016	02601										
P				●		○		●		●			
M				●		○		●		●			
K				●		○		●		●			●
N			●										
S				●		●							
H				○		●				●			
O			●										

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Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting data standard values for indexable inserts – MicroKom tools

	Indexable inserts for ...											
	62 820 ... / 62 840 ... / 62 800 ... / 62 815 ... / 62 810 ... / 62 858 ...											
Index	BK8440	BK8425	BK2710	K10	BK60	BK6110	BK7615	BK7710	CBN40	PKD5510 CTDPU20	CK3230	CK32
	v_c ft/min											
P.1.1	**560**	**660**	**750**		**890**	**980**					**1150**	**1150**
P.1.2	**560**	**660**	**750**		**890**	**980**					**1150**	**1150**
P.1.3	**560**	**660**	**750**		**890**	**980**					**1150**	**1150**
P.1.4	**490**	**590**	**690**		**820**	**980**					**1050**	**1050**
P.1.5	**490**	**590**	**690**		**820**	**980**					**1050**	**1050**
P.2.1	**460**	**520**	**590**		**690**	**890**					**920**	**920**
P.2.2	**460**	**520**	**590**		**690**	**890**					**920**	**920**
P.2.3	**460**	**520**	**590**		**690**	**890**					**920**	**920**
P.2.4	**460**	**520**	**590**		**690**	**890**					**920**	**920**
P.3.1	**390**	**460**	**520**		**620**	**820**					**820**	**820**
P.3.2	**390**	**460**	**520**		**620**	**820**					**820**	**820**
P.3.3	**390**	**460**	**520**		**620**	**820**					**820**	**820**
P.4.1	**330**	**390**	**460**		**520**	**720**					**690**	**690**
P.4.2	**330**	**390**	**460**		**520**	**720**					**690**	**690**
M.1.1	**460**	**520**	**590**		**920**	**720**					**920**	**920**
M.2.1	**390**	**460**	**520**		**820**	**720**					**820**	**820**
M.3.1	**300**	**330**	**390**		**590**	**660**					**590**	**590**
K.1.1	**490**	**590**	**690**		**690**	**950**	**950**					
K.1.2	**460**	**520**	**590**		**590**	**950**	**950**					
K.2.1	**390**	**460**	**520**		**520**	**890**	**890**					
K.2.2	**390**	**460**	**520**		**520**	**820**	**820**					
K.3.1	**330**	**390**	**460**		**460**	**720**	**720**					
K.3.2	**330**	**390**	**460**		**460**	**720**	**720**					
N.1.1				**820**				**1300**		**1640**		
N.1.2				**820**				**1300**		**1640**		
N.2.1				**820**				**1300**		**1640**		
N.2.2				**820**				**1300**		**1640**		
N.2.3				**820**				**1100**		**1640**		
N.3.1				**750**				**1100**		**1480**		
N.3.2				**750**				**1100**		**1480**		
N.3.3				**750**				**1100**		**1480**		
N.4.1				**750**				**1100**		**1480**		
S.1.1		**200**		**70**								
S.1.2		**160**		**70**								
S.2.1		**200**		**70**								
S.2.2		**160**		**70**								
S.2.3		**100**		**70**								
S.3.1		**330**		**200**								
S.3.2		**260**		**100**								
S.3.3		**160**		**100**								
H.1.1	**300**	330				**330**			**520**			
H.1.2	**230**	260				**260**			**610**			
H.1.3	**130**	160				**160**			**710**			
H.1.4									**790**			
H.2.1	**300**	330				**330**						
H.3.1	**230**	260				**260**						
O.1.1				**330**						**1640**		
O.1.2				**330**						**1640**		
O.2.1										**1640**		
O.2.2				**330**						**980**		
O.3.1				**330**						**980**		

The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The stated values are possible cutting data which have to be increased or reduced according to the application conditions! The specified values represent guideline cutting data that can be adjusted by approx. **± 20 %** according to the usage conditions. It is essential to observe the vc values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length. You can find these on pages **24 + 25**.

Cutting data standard values for precision adjustment heads

Fine machining with depth of cut a_p = 0.004 - 0.008 inch

● 1st choice
○ suitable

Index	hi.flex 67 800 ... Ø .236"-.311"	Ø .315"-.469"	Ø .472"-.984"	Ø .984"-1.732"	Ø 1.732"-3.701"	Ø 3.701"-2.559"	Emulsion	Compressed air	MMS
	f in inch/rev.								
P.1.1	.002	.003	.004	.003	.004	.004	●	○	
P.1.2	.002	.003	.005	.004	.006	.006	●	○	
P.1.3	.002	.002	.005	.003	.005	.005	●	○	
P.1.4	.002	.002	.004	.003	.004	.004	●	○	
P.1.5	.002	.003	.005	.004	.006	.006	●	○	
P.2.1	.002	.002	.005	.003	.005	.005	●	○	
P.2.2	.002	.002	.004	.003	.004	.004	●	○	
P.2.3	.001	.002	.004	.003	.004	.004	●	○	
P.2.4	.001	.002	.002	.002	.002	.002	●	○	
P.3.1	.001	.002	.004	.002	.004	.004	●	○	
P.3.2	.001	.002	.003	.002	.003	.003	●	○	
P.3.3	.001	.002	.003	.002	.003	.003	●	○	
P.4.1	.001	.002	.004	.002	.004	.004	●	○	
P.4.2	.001	.002	.003	.002	.003	.003	●	○	
M.1.1	.000	.002	.004	.002	.004	.004	●	○	
M.2.1	.000	.002	.003	.002	.004	.004	●	○	
M.3.1	.000	.002	.003	.002	.003	.003	●	○	
K.1.1	.002	.004	.006	.006	.008	.008	○	●	
K.1.2	.002	.004	.006	.006	.008	.008	○	●	
K.2.1	.002	.003	.006	.004	.006	.006	○	●	
K.2.2	.001	.003	.005	.003	.005	.005	○	●	
K.3.1	.002	.003	.006	.004	.006	.006	○	●	
K.3.2	.001	.003	.005	.003	.005	.005	○	●	
N.1.1	.001	.002	.004	.003	.005	.005	●	○	
N.1.2	.001	.002	.004	.003	.005	.005	●	○	
N.2.1	.002	.003	.005	.004	.006	.006	●	○	
N.2.2	.002	.003	.005	.004	.006	.006	●	○	
N.2.3	.002	.003	.005	.004	.006	.006	●	○	
N.3.1	.001	.002	.003	.004	.006	.006	●	○	
N.3.2	.001	.002	.003	.004	.006	.006	●	○	
N.3.3	.002	.003	.006	.004	.006	.006	●	○	
N.4.1	.001	.002	.003	.004	.006	.006	●	○	
S.1.1	.000	.002	.003	.002	.003	.003	●	○	
S.1.2	.000	.001	.002	.002	.002	.002	●	○	
S.2.1	.000	.002	.003	.002	.003	.003	●	○	
S.2.2	.000	.001	.002	.002	.002	.002	●	○	
S.2.3	.002	.003	.002	.003	.003	.003	●	○	
S.3.1	.000	.002	.003	.002	.003	.003	●	○	
S.3.2	.000	.002	.003	.002	.003	.003	●	○	
S.3.3	.000	.001	.002	.001	.002	.002	●	○	
H.1.1	.000	.002	.003	.003	.003	.003		●	
H.1.2	.000	.002	.003	.002	.003	.003		●	
H.1.3	.000	.001	.002	.001	.002	.002		●	
H.1.4									
H.2.1	.000	.002	.003	.003	.003	.003		●	
H.3.1	.000	.002	.003	.002	.003	.003		●	
O.1.1	.000	.002	.002	.002	.002	.002	○	●	
O.1.2	.000	.002	.002	.002	.002	.002	○	●	
O.2.1									
O.2.2	.000	.001	.001	.002	.002	.002	○	●	
O.3.1	.000	.001	.001	.002	.002	.002	○	●	

The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The stated values are possible cutting data which have to be increased or reduced according to the application conditions! The specified values represent guideline cutting data that can be adjusted by approx. **± 20 %** according to the usage conditions. It is essential to observe the vc values of the type used **(page 65 + 66)**, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length. You can find these on pages **24 + 25**.

Cutting data values for rough boring heads

Cutting depth a_p = 0.138" - 0.354"

	TwinKom G04 with WOEX / WOGX												● 1st choice ○ suitable		
	67 881 ...														
Index	BK8425	BK6440	BK6115	BK8430	BK77	Ø 1.181"– 1.614"	Ø 1.535"– 2.008"	Ø 1.929"– 2.795"	Ø 2.520"– 3.853"	Ø 3.268"– 4.764"	Ø 4.291"– 6.181"	Ø 5.472"– 8.031"	Emulsion	Compressed air	MMS
						f in inch/rev.									
P.1.1	660	790	980	660		.006	.007	.008	.009	.010	.011	.011	●	○	○
P.1.2	660	790	980	660		.006	.007	.008	.008	.009	.011	.011	●	○	○
P.1.3	660	720	980	660		.006	.007	.008	.008	.009	.011	.011	●	○	○
P.1.4	590	720	980	590		.006	.007	.008	.008	.009	.011	.011	●	○	○
P.1.5	590	720	980	590		.006	.007	.008	.008	.009	.011	.011	●	○	○
P.2.1	520	660	890	520		.006	.007	.007	.008	.009	.010	.010	●	○	○
P.2.2	520	660	890	520		.006	.007	.007	.008	.009	.010	.010	●	○	○
P.2.3	520	660	890	520		.006	.007	.007	.008	.009	.010	.010	●	○	○
P.2.4	520	660	890	520		.006	.007	.007	.008	.009	.010	.010	●	○	○
P.3.1	460	590	820	460		.006	.006	.007	.007	.009	.010	.010	●	○	○
P.3.2	460	520	820	460		.006	.006	.007	.007	.009	.010	.010	●	○	○
P.3.3	460	520	820	460		.006	.006	.007	.007	.009	.010	.010	●	○	○
P.4.1	390	460	720	390		.005	.006	.006	.006	.007	.008	.008	●	○	○
P.4.2	390	460	720	390		.005	.006	.006	.006	.007	.008	.008	●	○	○
M.1.1	520	660	720	520		.006	.006	.007	.007	.008	.009	.009	●	○	○
M.2.1	460	590	720	460		.005	.006	.006	.006	.007	.008	.008	●	○	○
M.3.1	330	520	660	330		.005	.006	.006	.006	.007	.008	.008	●	○	○
K.1.1	590		950	590		.009	.009	.010	.010	.012	.012	.012	○	●	○
K.1.2	520		950	520		.009	.009	.010	.010	.012	.012	.012	○	●	○
K.2.1	460		890	460		.009	.009	.010	.010	.012	.012	.012	○	●	○
K.2.2	460		820	460		.009	.009	.010	.010	.012	.012	.012	○	●	○
K.3.1	390		720	390		.008	.009	.009	.009	.010	.010	.010	○	●	○
K.3.2	390		720	390		.008	.009	.009	.009	.010	.010	.010	○	●	○
N.1.1					820	.006	.010	.010	.012	.014	.014	.014	●	○	○
N.1.2					820	.006	.010	.010	.012	.014	.014	.014	●	○	○
N.2.1					820	.006	.010	.010	.012	.014	.014	.014	●	○	○
N.2.2					820	.006	.010	.010	.012	.014	.014	.014	●	○	○
N.2.3					660	.006	.009	.009	.011	.013	.013	.013	●	○	○
N.3.1					820	.006	.010	.010	.012	.014	.014	.014	●	○	○
N.3.2					820	.006	.011	.011	.013	.014	.014	.014	●	○	○
N.3.3					820	.006	.010	.010	.012	.014	.014	.014	●	○	○
N.4.1					820	.006	.010	.010	.012	.014	.014	.014	●	○	○
S.1.1	200			200		.002	.003	.003	.003	.004	.004	.004	●	○	○
S.1.2	160			160		.002	.002	.002	.002	.003	.003	.003	●	○	○
S.2.1	200			200		.002	.003	.003	.003	.004	.004	.004	●	○	○
S.2.2	160			160		.002	.002	.002	.002	.003	.003	.003	●	○	○
S.2.3	100			100		.002	.002	.002	.002	.003	.003	.003	●	○	○
S.3.1	330			330		.002	.003	.003	.003	.004	.004	.004	●	○	○
S.3.2	260			260		.002	.003	.003	.003	.004	.004	.004	●	○	○
S.3.3	160			160		.002	.002	.002	.002	.003	.003	.003	●	○	○
H.1.1	330		330	330		.003	.003	.003	.003	.003	.003	.003		●	○
H.1.2	260		260	260		.002	.002	.002	.002	.002	.002	.002		●	○
H.1.3	160		160	160		.002	.002	.002	.002	.002	.002	.002		●	○
H.1.4															○
H.2.1	330		330	330		.002	.002	.002	.002	.002	.002	.002		●	○
H.3.1	260		260	260		.002	.002	.002	.002	.002	.002	.002		●	○
O.1.1															
O.1.2															
O.2.1															
O.2.2															
O.3.1															

The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The stated values are possible cutting data which have to be increased or reduced according to the application conditions! The specified values represent guideline cutting data that can be adjusted by approx. **± 20 %** according to the usage conditions. It is essential to observe the vc values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length. You can find these on pages **24 + 25**.

Cutting data values for rough boring heads

Cutting depth a_p = 0.138" - 0.354"

Index	TwinKom G04 with SOEX 67 881 ...										● 1st choice ○ suitable		
	BK8425	BK7935	BK7615	Ø 1.181"– 1.614"	Ø 1.535"– 2.008"	Ø 1.929"– 2.795"	Ø 2.520"– 3.853"	Ø 3.268"– 4.764"	Ø 4.291"– 6.181"	Ø 5.472"– 8.031"	Emulsion	Compressed air	MMS
				f in inch/rev.									
P.1.1	660			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.1.2	660			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.1.3	660			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.1.4	590			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.1.5	590			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.2.1	520			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.2.2	520			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.2.3	520			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.2.4	520			.007	.009	.012	.014	.017	.019	.019	●	○	○
P.3.1	460			.006	.007	.009	.012	.012	.014	.014	●	○	○
P.3.2	460			.006	.007	.009	.012	.012	.014	.014	●	○	○
P.3.3	460			.006	.007	.009	.012	.012	.014	.014	●	○	○
P.4.1	390			.006	.007	.009	.012	.012	.014	.014	●	○	○
P.4.2	390			.006	.007	.009	.012	.012	.014	.014	●	○	○
M.1.1		390		.006	.007	.009	.012	.012	.014	.014	●	○	○
M.2.1		390		.006	.007	.009	.012	.012	.014	.014	●	○	○
M.3.1		300		.006	.007	.009	.012	.012	.014	.014	●	○	○
K.1.1			790	.009	.012	.014	.017	.019	.024	.024	○	●	○
K.1.2			590	.009	.012	.014	.017	.019	.024	.024	○	●	○
K.2.1			520	.009	.012	.014	.017	.019	.024	.024	○	●	○
K.2.2			330	.009	.012	.014	.017	.019	.024	.024	○	●	○
K.3.1			390	.009	.012	.014	.017	.019	.024	.024	○	●	○
K.3.2			330	.009	.012	.014	.017	.019	.024	.024	○	●	○
N.1.1	820			.009	.012	.014	.017	.019	.024	.024	●	○	○
N.1.2	820			.009	.012	.014	.017	.019	.024	.024	●	○	○
N.2.1	820			.009	.012	.014	.017	.019	.024	.024	●	○	○
N.2.2	820			.009	.012	.014	.017	.019	.024	.024	●	○	○
N.2.3	660			.009	.012	.014	.017	.019	.024	.024	●	○	○
N.3.1	820			.009	.012	.014	.017	.019	.024	.024	●	○	○
N.3.2	820			.009	.012	.014	.017	.019	.024	.024	●	○	○
N.3.3	820			.009	.012	.014	.017	.019	.024	.024	●	○	○
N.4.1	820			.009	.012	.014	.017	.019	.024	.024	●	○	○
S.1.1													
S.1.2													
S.2.1													
S.2.2													
S.2.3													
S.3.1													
S.3.2													
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The stated values are possible cutting data which have to be increased or reduced according to the application conditions! The specified values represent guideline cutting data that can be adjusted by approx. **± 20 %** according to the usage conditions. It is essential to observe the vc values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length. You can find these on pages **24 + 25**.

Maximum Speeds and Scale Accuracy

Maximum speeds for precision adjustment heads and Micro-Boring Heads

System	Boring range	Maximum speed n_{max} in RPM
BlueFlex 2 (62 820 ..., 62 840 ...)	Ø 0.221"-14.370"	20,000
hi.flex (67 800 ...)	Ø 0.221"-14.370"	17,500

Maximum speeds for two-edged systems

System	Boring range	Maximum speed n_{max} in RPM
TwinKom (62 881 ...)	Ø 1.181"-1.575"	10,000
	Ø 1.575"-2.008"	8,000
	Ø 2.008"-2.677"	6,500
	Ø 2.677"-3.425"	5,000
	Ø 3.425"-4.567"	4,000
	Ø 4.567"-6.024"	3,000
	Ø 6.024"-8.031"	2,200

The specified maximum speeds refer to an overhang length of up to 4xD.

For longer overhangs the maximum speeds should be reduced as follows:

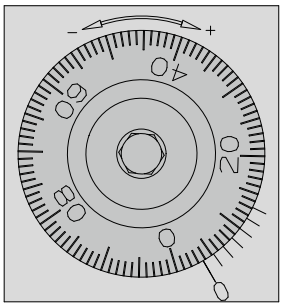
5xD = 80 % n_{max}
6xD = 60 % n_{max}

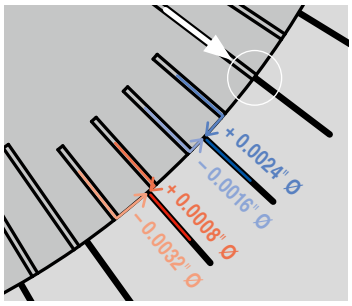
> 6xD n_{max} identify with caution

Scale accuracy

Large scale with 0.0008" adjustment

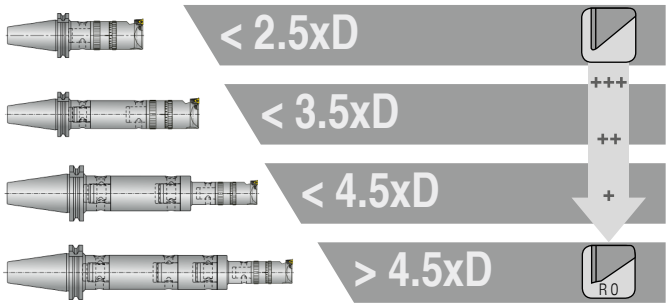
How it works:



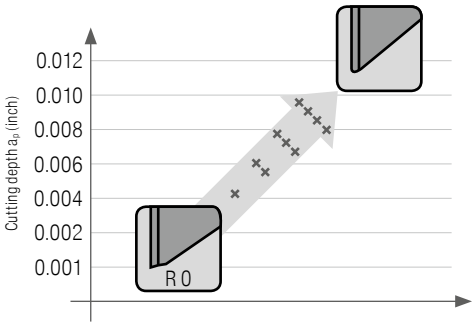


Using the vernier the diameter can be set to 0.0008". The starting point is the point at which the graduation on the vernier and a graduation on the scale ring overlap (white arrow).
If the **first vernier graduation** (blue) is brought to the left of it with the left section of the scale ring to congruence, this corresponds to a diameter change of **– 0.0016"**.
If this vernier graduation is brought to congruence with the right section of the scale ring, this corresponds to a diameter change of **+ 0.0024"**.
If the **second vernier graduation** (red) is brought to the left of it with the left section of the scale ring to congruence, this corresponds to a diameter change of **– 0.0032"**.
If this vernier graduation is brought to congruence with the right section of the scale ring, this corresponds to a diameter change of **+ 0.0008"**.

Selection of the cutting radius depending on the overhang length



Selection of the cutting edge radius in dependency of the cutting depth a_p



Influence of the cutting forces of the cutting edge radius on internal machining

Resulting force

$$F_{res} = \sqrt{F^2_a + F^2_p} = \sqrt{F^2_c + F^2_f + F^2_p}$$

Tangential cutting force (Fc)

- pushes the tool down from the vertical central axis
- is influenced by the cutting depth and the chip thickness
- reduces the clearance angle

Passive cutting force (Fp)

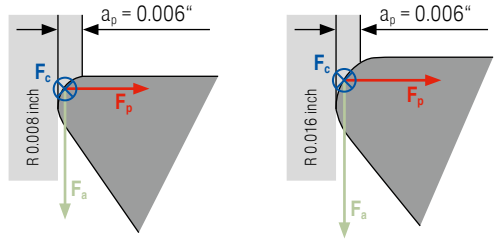
- pushes the tool away from the horizontal central axis
- increases the risk of vibrations and causes dimensional inaccuracies

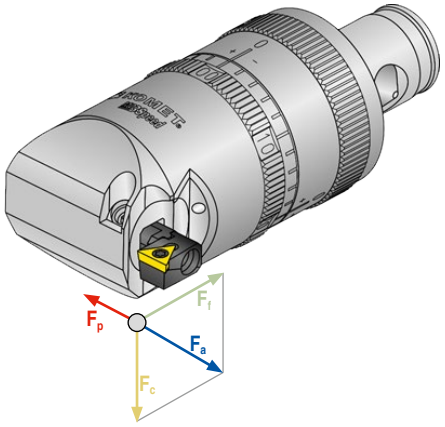
Feed force (Ff)

- acts in the machining direction of the tool

Active cutting force (Fa)

- determined by F_c and F_f





Selection of the rake angle

Recommendations for the use of inserts with ground Chip breakers

	rounded E	Sharp F	chamfered T
0°	P	P	P
	M	M	M
	K	K	**K**
	N	**N**	N
	S	S	S
	H	H	**H**
≤ 6°	**P**	P	P
	M	M	M
	K	K	K
	N	N	N
	S	S	S
	H	H	H
≤ 12°	**P**	P	P
	M	M	M
	K	K	K
	N	**N**	N
	S	**S**	S
	H	H	H
≤ 20°	P	P	P
	M	M	M
	K	K	K
	N	**N**	N
	S	**S**	S
	H	H	H

Chip groove description → **page 29**

Types of wear

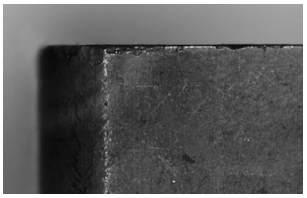
Wear on clearance face

Abrasion on the flank: normal wear after a certain period of operation

Cause
- Cutting speed too high
- Carbide grade does not have enough wear resistance
- Feed not adapted to application

Remedy
- Reduce cutting speed
- Select a carbide grade with high wear resistance
- Bring feed into the right relationship with cutting speed and cutting depth

Edge chipping

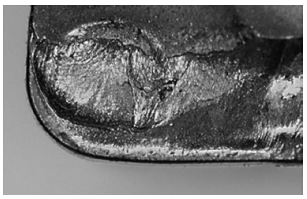


Increased mechanical stress on the cutting edge may result in carbide particles breaking off.

Cause
- Grade with too high a wear resistance
- Vibrations on tool or workpiece
- Feed rate or cutting depth is too high
- Built-up edge
- Interrupted cut
- Chip stroke

Remedy
- Use tougher grade
- Improve stability (tool, workpiece)
- Avoid built-up edges

Cratering

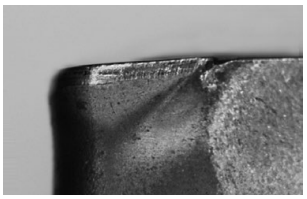


The outgoing hot chip is causing cratering of the cutting insert on the clamping surface.

Cause
- Cutting speed, feed rate or both are too high
- Rake angle too small
- Grade does not have enough wear resistance
- Incorrectly supplied coolant

Remedy
- Reduce cutting speed and/or feed rate
- Choose carbide grades with greater wear-resistance
- Increase quantity and/or pressure of coolant, check supply
- Use a more crater-resistant grade

Plastic deformation

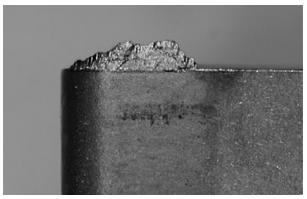


High machining temperature with simultaneous mechanical stress can lead to plastic deformation.

Cause
- Working temperature too high, softening of the base material
- Damage to the coating
- Grade does not have enough wear resistance
- Incorrectly supplied coolant

Remedy
- Reduce cutting speed
- Choose carbide grades with greater wear-resistance and thermal stability
- Make provisions for cooling

Built-up edge

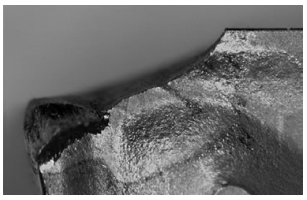


Material builds up on the cutting edge if the chip does not flow correctly due to the cutting temperature being too low.

Cause
- Cutting speed to low
- Rake angle too small
- Incorrect cutting material
- Missing coolant/lubrication

Remedy
- Increase cutting speed
- Increase rake angle
- Use coating
- Increase oil content of emulsion

Insert breakage



If a cutting insert is overloaded, insert breakage may occur.

Cause
- Cutting material overloaded (extreme values)
- Lack of stability
- Wedge angle too small
- Interference contours were not taken into account
- Interrupted cut

Remedy
- Use a tougher cutting material
- Use chamfer for edge protection
- Increase rounding of cutting edge
- Use more stable geometry
- Check cutting data
- Check interference contours

Grade description

BK60

- Carbide, TiC-TiCN-TiN-coated
- ISO | P25 | **M10**
- Multi-layer coating for long service life even in the upper cutting speed range

BK77

- Carbide, TiN-coated:
- wear-resistant PVD-coated grade
- for cutting aluminum alloys and plastics at medium cutting speeds
- sufficient properties of toughness and a high level of resistance against the formation of build-up on the cutting edges

BK2710

- Carbide, TiAlN-coated
- ISO | P10 | M10 | **K10**
- Extremely wear-resistant carbide grade for machining stainless steels, structural steels and tool steels as well as cast iron materials

BK6110

- Carbide, TiCN-TiN-Al_2O_3-coated
- ISO | P10 | **K10**
- Wear-resistant carbide for machining cast iron and steel materials

BK6115

- Carbide, TiCN-TiN-Al_2O_3-coated
- ISO | **P20** | **K20** | H20
- High-quality, surface-treated coating for machining cast iron materials in normal to stable conditions and at high cutting speeds

BK6440

- Carbide, CVD-TiCn-Al2O3-TiN coated
- ISO | **M25** | **K35**
- Extremely tough standard grain grade; good wear resistance in steel and stainless steel materials, even in unfavourable cutting conditions / interrupted cut

BK7615

- Carbide, TiCN-Al_2O_3-coated
- ISO | **K15**
- Highly productive grade with extreme edge stability for wet and dry machining of all cast iron materials

BK7935

- PVD-AlTiN:
- coating with high aluminum content on tough substrate for continous drilling of rust- and acid-resistant steels, and special alloys
- Use as continuous drilling inner indexable insert and for difficult conditions recommended

BK7710

- Carbide, TiB_2-coated
- ISO | **N10** | S10 | O10
- The wear-resistant grade with optimum cutting characteristics to prevent built-up edge formation for machining aluminium and titanium alloys.

BK8425

- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25** | **K25**
- Universal grade with greater wear resistance thanks to innovative PVD multi-layer coating

BK8430

- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25**
- Fine-grain grade with high wear resistance
- Extreme edge stability and maximum wear resistance in the middle and top speed range

BK8440

- Carbide, TiCN-TiN-coated
- ISO | **P35** | M10
- Very tough carbide grade for medium cutting speeds and interrupted cut

CBN40

- Cubic boron nitride, uncoated
- ISO | **H05**
- Uncoated cutting material made of cubic boron nitride for machining hardened steels over 45 HRC, heat-resistant nickel-based or cobalt-based alloys

CK32

- Cermet, uncoated
- ISO | **P10** | **M15** | K05 | N15
- For fine and finish turning
- Less wear and greater cutting speed result in longer tool life and high surface quality
- Cutting material for high productivity in the top cutting speed range

CK3230

- Cermet, uncoated
- ISO | **P20** | **M20** | K10 | N20
- Extremely tough behaviour with good wear resistance suitable for use also in interrupted cut

K10

- Carbide, uncoated
- ISO | **K10**
- Uncoated carbide grade for machining grey cast iron or non-ferrous metals, depending on the cutting edge geometry

PKD5510 CTDPU20

- Polycrystalline diamond cutting material with mixed grain, uncoated
- ISO | **N15**
- Outstanding wear resistance, even where Si content > 12% and high proportion of abrasive reinforcements
- Used in plastics and fibre composites (GFK, CFK)

Chip breakers

-01

- Rake angle 12°
- All-round topography chamfered, rounded
- Very smooth-cutting thanks to positive cutting edge geometry
- Also suitable for less-powerful machines and unstable workpieces
- Easily controllable chip formation also in less solid materials

-02

- Rake angle 0°
- Roughing topography, extremely stable (significant wedge angle)
- Excellent chip formation for chips that are difficult to control
- For small cutting depths < 1.5 mm only suitable under certain circumstances

-11

- Highly positive, minimally rounded chip breaker
- For soft cutting use
- Main application in aluminum

-12

- Rake angle 30°
- Peripheral ground indexable insert with pressed chip breaker
- Highly positive, sharp and all-round cutting edge, therefore extremely smooth-cutting
- Peripheral ground flanks guarantee controlled chip formation and best surface quality at low cutting forces

-14

- Rake angle 14°
- Peripheral ground, sintered topography
- Controlled chip formation in fine and extremely fine machining

-15

- Rake angle 15°
- Semi-finishing chip breaker; peripheral ground, sintered
- Controlled chip formation in fine and extremely fine machining

-18

- Rake angle 14°
- Peripheral ground and sintered topography
- Controlled chip formation in fine and extremely fine machining
- Positive wiper geometry for maximum demands on surface quality

-G06

- Rake angle 6°
- For P / M / K materials
- High stability due to significant wedge angle

-G12

- Rake angle 12°
- For P / N / S materials
- Extremely smooth-cutting thanks to positive cutting edge geometry
- Extremely suitable for less-powerful machines and unstable workpieces
- Easily controllable chip formation also in less solid materials