



Fine Boring
Ø 6 – 125 mm

MicroKom® hi-flex



MicroKom® *hi.flex*

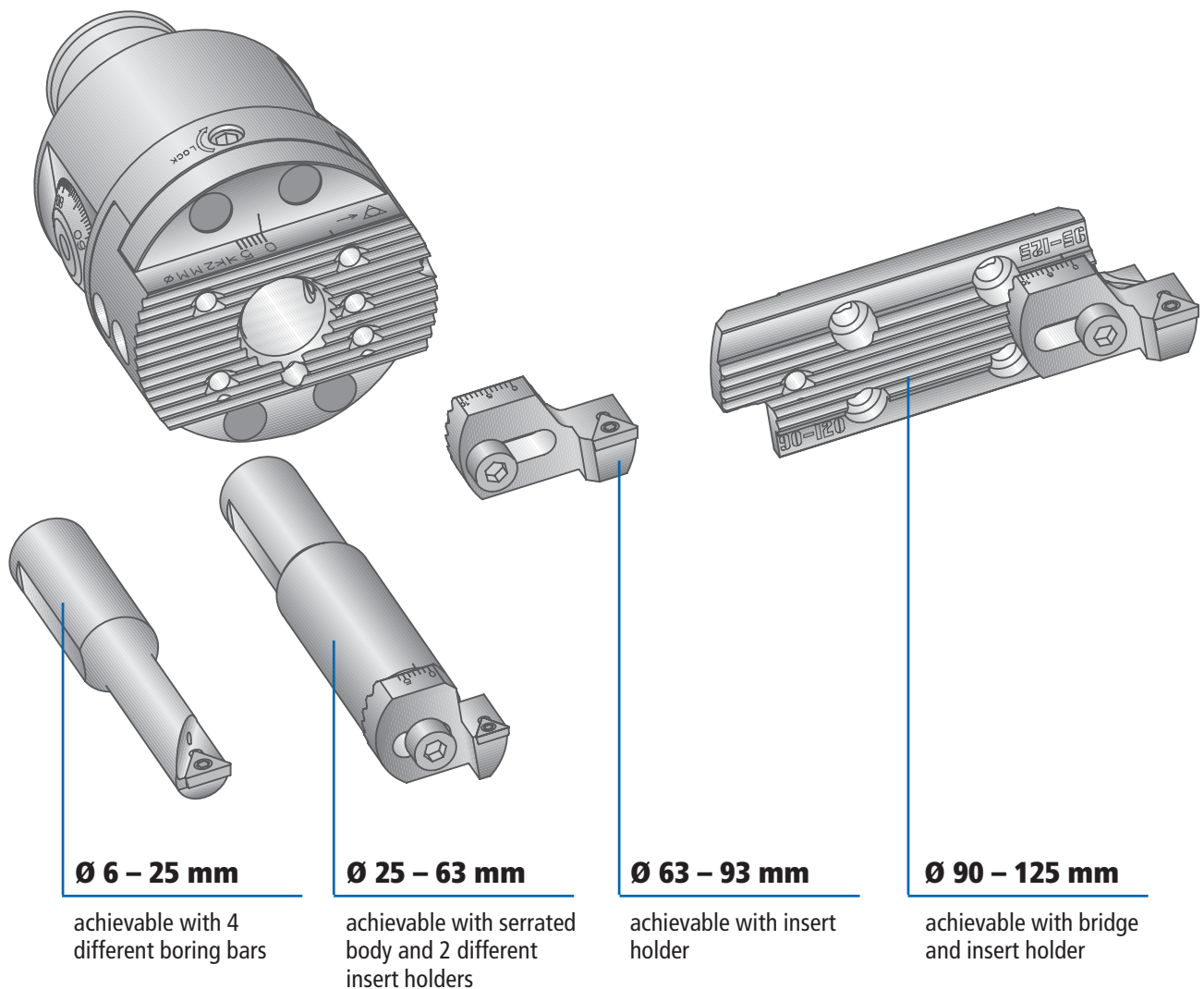
Fine adjustment system for diameters 6 to 125 mm

With the new MicroKom® *hi.flex* system KOMET has extended the range of products for MicroKom® micro adjustable heads. The system is particularly notable for high flexibility and covers diameter ranges from 6 to 125 mm fully with just one adjustable head, various boring bars and intelligently designed adaptor solutions.

The adjustable head offers an adjustment accuracy of 0.01 mm per graduation on an easy-to-read disc scale and 0.002 mm from a vernier, with an adjustment path of up to 5 mm. The system is balanced in zero position and provides an internal coolant supply directly onto the cutting edge for all diameter ranges.

The standard set includes four boring bars for diameters 6 to 25 mm. According to the individual combination, a serrated body, a bridge and two different holders for inserts provide for diameters up to 125 mm,

The MicroKom® *hi.flex* is compatible with existing ABS® and cylindrical shank fine boring components. The set can be extended with established boring tools and UniTurn® products, for which the turning range starts at 0.5 mm. Variable overhang lengths and a single key for clamping, adjusting and mounting bridges and insert holders illustrate how easy the new system is to handle.





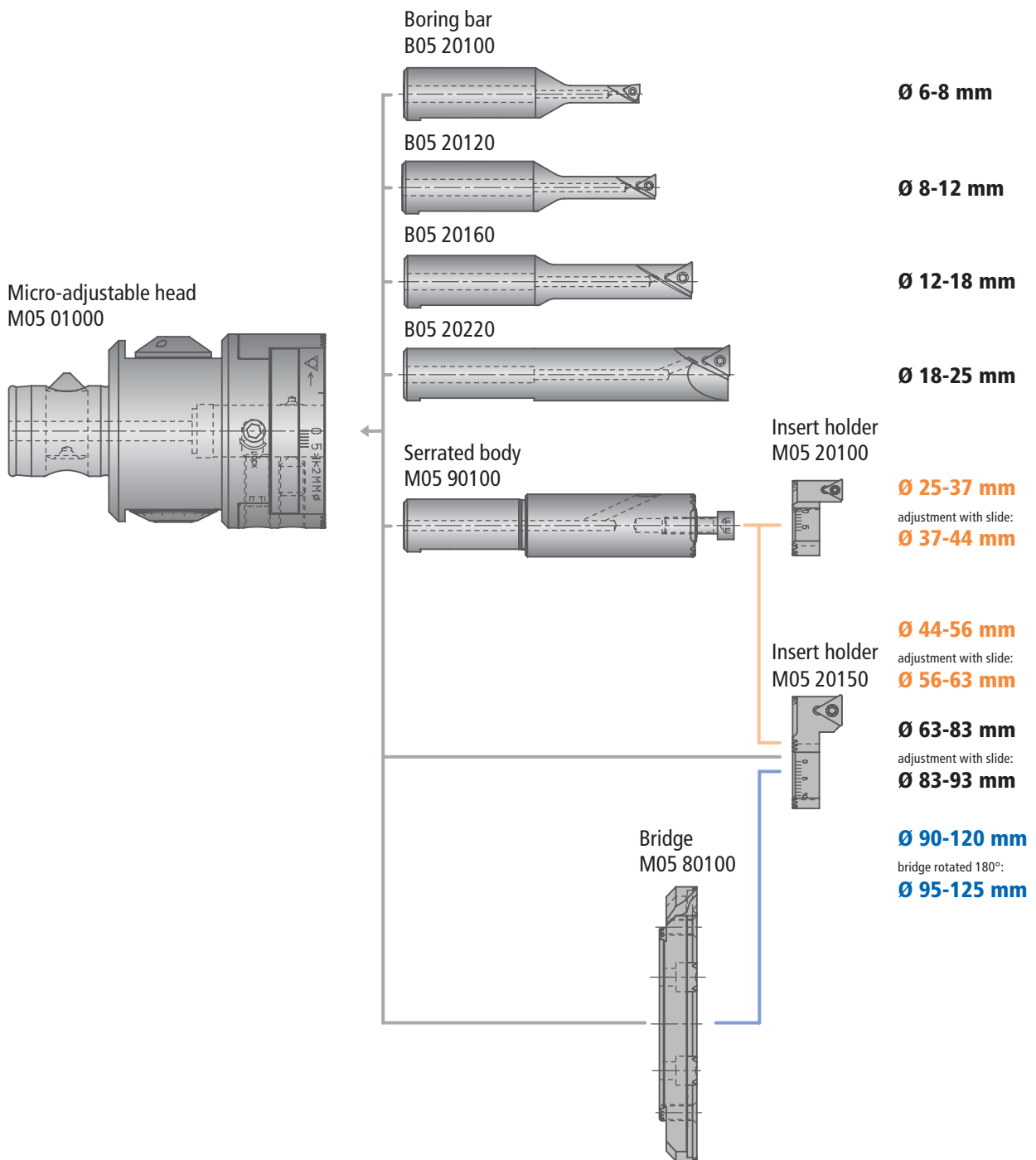
Fine boring set Ø 6 – 125 mm
Order No. M05 00010

Contents of case			
	Order No.	Qty.	Article
①	M05 01000	1	Micro-adjustable head
②	M05 20100	1	Insert holder Ø 25-44
③	M05 20150	1	Insert holder Ø 44-125
④	M05 80100	1	Bridge
⑤	M05 90100	1	Serrated body
⑥	M05 90500.11	1	Packing piece
⑦	B05 20100	1	Boring bar Ø 6-8
⑧	B05 20120	1	Boring bar Ø 8-12
⑨	B05 20160	1	Boring bar Ø 12-18
⑩	B05 20220	1	Boring bar Ø 18-25
⑪	1805010040	1	Allen key SW4
⑫	L05 01110	1	Flag key 5IP
	L05 01120	1	Flag key 6IP
	L05 01240	1	Flag key 8IP
	5501105016	5	Cylindrical screw M5×16
⑬	W57 04140.0260	4	Insert BK60
	W57 14140.0460	4	Insert BK60
	W00 04120.0164	2	Insert BK64

Variation options

With only **9** tool components

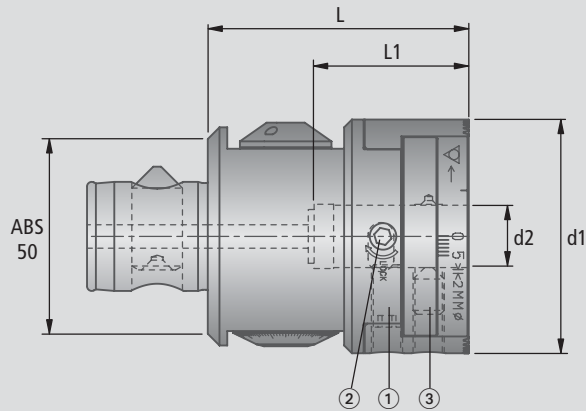
covering diameters **6 – 125 mm**





Micro-adjustable head with ABS® connection

with ABS® and cylindrical tool adaptor



Article	Order No.	ABS d	d1	d2	Adjustment S	L	L1	kg	Assembly parts		
									Clamping screw ① DIN913 Order No. Article	Clamping screw ② DIN913 Order No. Article	Gripper screw ③ Order No. Article
ABS50/16	M05 01000	50	60	ABS32 Ø 16	5	67	40	1,225	5505108116 M8×1×16	5505108008 M8×8	N00 02061 ABS32-F1

The micro-adjustable drilling head is balanced in the zero position.
Adjustment must be in line with cutting parameters and spindle speed.

Features :

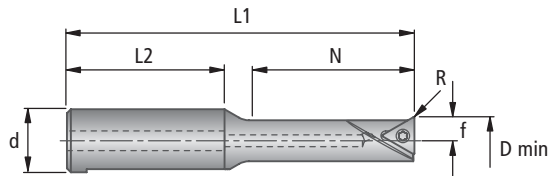
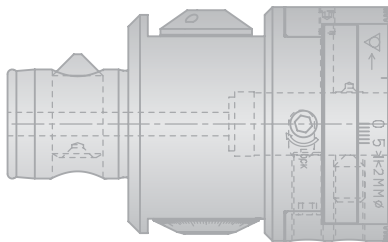
- Diameter range 0.5-125 mm with existing KOMET standard tools
- large adjustment range from -0.5 to +10 mm on dia.
- easy to use
- Adjustment per graduation = 0.01 mm Ø
- Adjustment accuracy 0.002 mm Ø with vernier
- Easy-to-read disc scale
- Use of existing ABS32 tools possible
- Internal coolant supply over whole range
- ABS 32 spindle connection and 16 mm cylindrical shank
- can be adapted for any machine tool with standard tool adaptors
- head diameter: 60 mm

MicroKom® *hi.flex* Boring bar Ø 6 – 25 mm

L / D	through hole	blind hole	angled	cross bore	reverse machining	HRC > 54 through hole	HRC > 54 blind hole	vibration dampening
3,5xD								
	●	●	○	○	×	●	●	×

● very good ○ good ○ possible × not possible

with cylindrical shank
 $\alpha = 90^\circ$ R.H. cutting



D min	Order No.	d	L1	L2	N	f	R	kg	Basic recommendation		for workpiece material						Assembly parts	Accessories	
									Insert Order No. size	Insert ISO-Code	P	M	K	N	S	H	Clamping screw Order No. Article	Screwdriver Order No. Article	
6	B05 20100	16	71,7	40	21	3	0,1	0,065	W00 04120.0164	WOHX02T001EL-G12 BK64	●	●					N00 56011	L05 00800	
									W00 04120.0121	WOHX02T001FL-G12 K10			●	●			S/M1,8x2,9-5IP	5IP	
8	B05 20120	16	77,4	40	28	4	0,2	0,069	W57 04140.0260	TOGX06T102EN-14 BK60	●	●					N00 56021	L05 00810	
									W57 04120.0223	TOGX06T102FN-12 K10			●	●		S/M2x3,8-6IP			6IP
12	B05 20160	16	88,2	40	42	6	0,2	0,085	W30 04990.0240	TOGX06T102TN CBN40					○	N00 56101	L05 00830		
									W30 04060.036110	TOHX06T103EL-G06 BK6110			●		○			S/M2,6x5,2-8IP	8IP
18	B05 20220	16	100	40	60	9	0,2	0,14	W57 14140.0460	TOGX090204EN-14 BK60	●	●				N00 56101	L05 00830		
									W57 14120.0423	TOGX090204FN-12 K10			●	●				S/M2,6x5,2-8IP	8IP
									W30 14990.0440	TOGX090204TN CBN40					○			1,28 Nm	
									W30 14060.046110	TOHX090204EL-G06 BK6110			●		○				

Supply includes:

Boring bar with clamping screw. Please order inserts and accessories separately.

Technical Notes

Guidelines for fine boring with MicroKom® hi.flex Fine boring system

Material group	Strength Rm N/mm²	Hardness HB	Material	Material example material code/DIN	Cutting speed v _c m/min	Max. feed f (mm/rev)		
						Ø 6,0-7,9	Ø 8,0-11,9	Ø 12,0-25,0
1.0	≤500		non-alloy steels	S137-2 / 1.0037, 95Mn28 / 1.0715, S144-2 / 1.0044	300	0,04	0,07	0,10
2.0	500-900		non-alloy / low alloy steels	S152-2 / 1.0050, C55 / 1.0525, 16MnCr5 / 1.7131	250	0,04	0,06	0,12
2.1	<500		lead alloys	95MnPb28 / 1.0718	300	0,04	0,07	0,12
3.0	>900		non alloy / low alloy steels: heat resostant structural, heat treated, nitride and tools steels	42CrMo4 / 1.7225, CK60 / 1.1221	240	0,03	0,06	0,10
4.0	>900		high alloy steels	X6CrMo4 / 1.2341, X165CrMoV12/1.2601	200	0,03	0,05	0,10
4.1			HSS		120	0,02	0,04	0,08
5.0		250	special alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel 718/2.4668, Nimonic 80A/2.4631	50	0,01	0,04	0,08
5.1	400		titanium, titanium alloys	TiAl5Sn2 / 3.7114	30	0,01	0,04	0,08
6.0	≤600		stainless steels	X2CrNi189 / 1.4306, X5CrNiMo1810/ 1.4401	200	0,01	0,05	0,10
6.1	<900		stainless steels	X8CrNb17/1.4511, X10CrNiMoTi1810/ 1.4571	180	0,01	0,05	0,10
7.0	>900		stainless / fireproof steels	X20Cr13 / 1.4021, X40Cr13 / 1.4034	120	0,01	0,04	0,08
8.0		180	gray cast iron	GG-25/0.6025, GG-35/0.6035	240	0,05	0,10	0,15
8.1		250	alloy gray cast iron	GG-NiCr202 / 0.6660	200	0,05	0,10	0,15
9.0	≤600	130	spheroidal, graphite cast iron, ferritic	GGG-40 / 0.7040	180	0,04	0,08	0,15
9.1		230	spheroidal graphite cast iron, ferritic/perlitic	GGG-50 / 0.7050 GGG-55 / 0.7055 GTW-55 / 0.8055	180	0,04	0,08	0,15
10.0	>600	250	spheroidal graph. cast iron, perlitic malleable iron	GGG-60 / 0.7060 GTS-65 / 0.8165	160	0,04	0,08	0,15
10.1		200	alloyed spheroidal graphite cast iron	GGG-NiCr20-2 / 0.7661	140	0,03	0,07	0,12
10.2		300	vermicular cast iron	GGV Ti < 0,2 GGV Ti > 0,2	120	0,03	0,10	0,15
12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	CuZn36Pb3 / 2.1182, G-CuPb15Sn / 2.1182	400	0,02	0,04	0,08
12.1		100	copper alloy, brass, bronze: average cut	CuZn40Al1 / 2.0550, E-Cu57 / 2.0060	300	0,05	0,08	0,15
13.0		60	wrought aluminium alloys	AlMg1 / 3.3315, AlMnCu / 3.0517	500	0,02	0,06	0,10
13.1		75	cast alum. alloy: Si-content <10% magnesium alloy	G-AlMg5 / 3.3561, G-AISi9Mg / 3.2373	350	0,05	0,08	0,12
14.0		100	cast alum.alloy: Si-content >10%	G-AISi10Mg / 3.2381	300	0,05	0,08	0,12
15.0	1400		hardened steels < 45 HRC		120	-	0,05	0,08
16.0			hardened steels > 45 HRC		90	-	0,05	0,08

Alternative Inserts

for better chip control			for workpiece material					
D	Order No. size	Insert ISO-Code	P	M	K	N	S	H
			6,0-7,9	-				
8,0-11,9	W30 04120.3232 W30 04120.3977	TOHX06T102EL-US12 CK32 TOHX06T1Z2EL-39G12 BK77	●	●				
12,0-25,0	W30 14120.3232 W30 14120.3977	TOHX090202EL-US12 CK32 TOHX0902Z2EL-39G12 BK77	●	●				●

for better wear resistance			for workpiece material					
D	Order No. size	Insert ISO-Code	P	M	K	N	S	H
			6,0-7,9	-				
8,0-11,9	W57 04140.0232 W30 04120.0238 W30 04990.0255 W30 04990.0257	TOGX06T102EN-14 CK32 TOHX06T102EL-G12 CK38 TOGX06T102FN PKD55 TOGX06T102TN CBN57	●	●				
12,0-25,0	W57 14140.0432 W30 14120.0238 W30 14990.0455 W30 14990.0457	TOGX090204EN-14 CK32 TOHX090202EL-G12 CK32 TOGX090204FN PKD55 TOGX090204TN CBN57	●	●				●

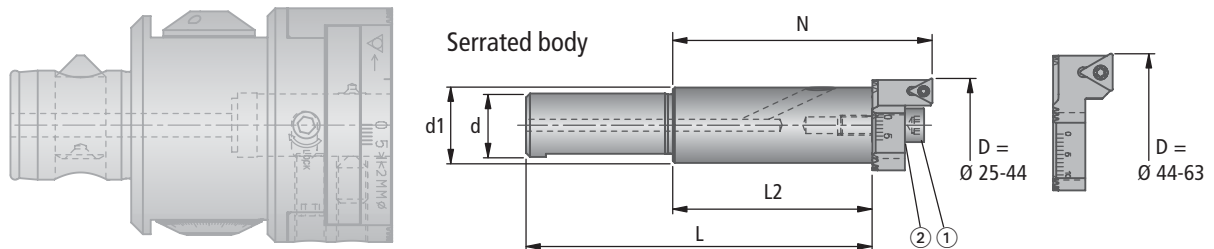
for better surface finish			for workpiece material					
D	Order No. size	Insert ISO-Code	P	M	K	N	S	H
			6,0-7,9	-				
8,0-11,9	W57 04140.0232 W30 04060.036110 W30 04200.0321 W30 04990.0255	TOGX06T102EN-14 CK32 TOHX06T103EL-G06 BK6110 TOHX06T103FL-G20 K10 TOGX06T102FN PKD55	●	●				
12,0-25,0	W57 14140.0432 W30 14060.046110 W30 14200.0421 W30 14990.0455	TOGX090204EN-14 CK32 TOHX090204EL-G06 BK6110 TOHX090204FL-G20 K10 TOGX090204FN PKD55	●	●				●

MicroKom® *hi.flex* Serrated body / Insert holder Ø 25 – 93 mm

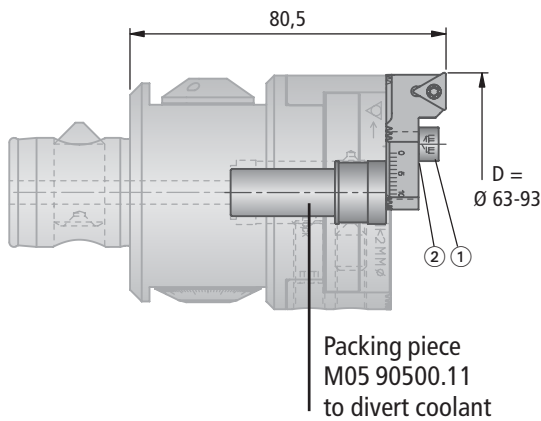
L / D	through hole	blind hole	angled	cross bore	reverse machining	HRC > 54 through hole	HRC > 54 blind hole	vibration dampening
< 2,5×D								
	●	●	○	○	×	●	●	×

● very good ○ good ○ possible × not possible

Ø 25 – 63 mm



Ø 63 – 93 mm



Serrated body							Assembly parts	
							Location screw ① 	Cup spring ②
Order No.	d	d1	N	L	L1		Order No. Article	Order No. Article
M05 90100	16	19	65	88,5	51,5	0,163	5501105016 M5×16 ISO4762	5677110053 A12,5Ø6,2×0,35

Supply includes serrated body: Serrated body with assembly parts.

Insert holder			Basic recommendation				Assembly parts	Accessories
D	 Order No.		Insert		for workpiece material P M K N S H	Clamping screw	Screwdriver	
			Order No. size	ISO-Code		 Order No. Article	 Order No. Article	
25 - 44	M05 20100	0,019	W57 04140.0260	TOGX06T102EN-14 BK60		N00 56031 S/M2×4,9-6IP 0,62 Nm	L05 00810 6IP	
			W30 04060.0361	TOHX06T103EL-G06 BK61				
			W57 04120.0223	TOGX06T102FN-12 K10				
44 - 93	M05 20150	0,026	W57 14140.0460	TOGX090204EN-14 BK60		N00 56111 S/M2,6×6,2-8IP 1,28 Nm	L05 00830 8IP	
			W30 14060.0461	TOHX090204EL-G06 BK61				
			W57 14120.0423	TOGX090204FN-12 K10				

Supply includes insert holder: Insert holder with assembly parts.

Please order inserts and accessories separately.

Technical Notes

Guidelines for fine boring with MicroKom® hi.flex Fine boring system

Material group	Strength Rm N/mm²	Hardness HB	Material	Material example material code/DIN	Cutting speed v _c m/min	Max. feed f (mm/rev)	
1.0	≤500		non-alloy steels	S137-2 / 1.0037, 95Mn28 / 1.0715, St44-2 / 1.0044	300	0,08	0,10
				2.0	500-900	non-alloy / low alloy steels	St52-2 / 1.0050, C55 / 1.0525, 16MnCr5 / 1.7131
2.1	<500		lead alloys	95MnPb28 / 1.0718	300	0,10	0,15
3.0	>900		non alloy / low alloy steels: heat resostant structural, heat treated, nitride and tools steels	42CrMo4 / 1.7225, CK60 / 1.1221	240	0,08	0,10
4.0	>900		high alloy steels	X6CrMo4 / 1.2341, X165CrMoV12/1.2601	200	0,06	0,10
4.1			HSS		120	0,06	0,08
5.0		250	special alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel 718/2.4668, Nimonic 80A/2.4631	50	0,06	0,08
5.1	400		titanium, titanium alloys	TiAl5Sn2 / 3.7114	30	0,06	0,08
6.0	≤600		stainless steels	X2CrNi189 / 1.4306, X5CrNiMo1810/ 1.4401	200	0,08	0,10
6.1	<900		stainless steels	X8CrNb17/1.4511, X10CrNiMoTi1810/ 1.4571	180	0,06	0,10
7.0	>900		stainless / fireproof steels	X20Cr13 / 1.4021, X40Cr13 / 1.4034	120	0,06	0,10
8.0		180	gray cast iron	GG-25/0.6025, GG-35/0.6035	240	0,15	0,20
8.1		250	alloy gray cast iron	GG-NiCr202 / 0.6660	200	0,15	0,20
9.0	≤600	130	spheroidal, graphite cast iron, ferritic	GGG-40 / 0.7040	180	0,10	0,15
9.1		230	spheroidal graphite cast iron, ferritic/perlitic	GGG-50 / 0.7050 GGG-55 / 0.7055 GTW-55 / 0.8055	180	0,10	0,15
10.0	>600	250	spheroidal graph. cast iron, perlitic malleable iron	GGG-60 / 0.7060 GTS-65 / 0.8165	160	0,10	0,15
10.1		200	alloyed spheroidal graphite cast iron	GGG-NiCr20-2 / 0.7661	140	0,10	0,15
10.2		300	vermicular cast iron	GGV Ti < 0,2 GGV Ti > 0,2	120	0,10	0,15
12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	CuZn36Pb3 / 2.1182, G-CuPb15Sn / 2.1182	300	0,10	0,15
12.1		100	copper alloy, brass, bronze: average cut	CuZn40Al1 / 2.0550, E-Cu57 / 2.0060	270	0,10	0,15
13.0		60	wrought aluminium alloys	AlMg1 / 3.3315, AlMnCu / 3.0517	500	0,08	0,12
13.1		75	cast alum. alloy: Si-content <10% magnesium alloy	G-AlMg5 / 3.3561, G-AISi9Mg / 3.2373	350	0,10	0,15
14.0		100	cast alum.alloy: Si-content >10%	G-AISi10Mg / 3.2381	250	0,10	0,15
16.0	1800	1400	hardened steels < 45 HRC		120	0,08	0,08
			hardened steels > 45 HRC		90	0,06	0,08

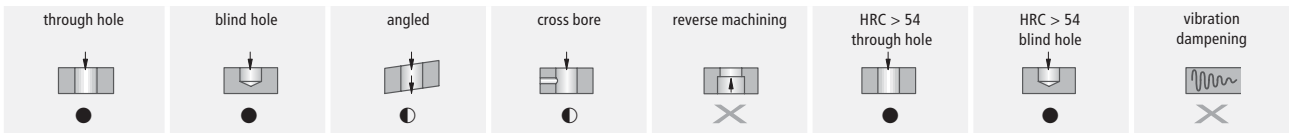
Alternative Inserts

for better chip control			for workpiece material					
D	Insert		P	M	K	N	S	H
	Order No. size	ISO-Code						
25 - 44	W30	TOHX06T102EL-US12 CK32	●	●				
	W30	TOHX06T100EL-G12 BK60	●	●				
	W57	TOGX06T102FN-12 K10				●	●	
44 - 93	W30	TOHX090202EL-US12 CK32	●	●				
	W30	TOHX090200EL-G12 BK60	●	●				
	W57	TOGX090204FN-12 K10				●	●	

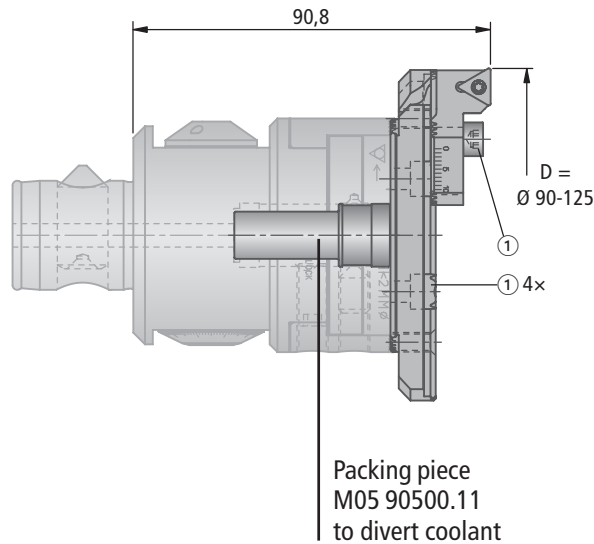
for better wear resistance			for workpiece material					
D	Insert		P	M	K	N	S	H
	Order No. size	ISO-Code						
25 - 44	W57	TOGX06T102EN-14 CK32	●	●				
	W30	TOGX06T103FN PKD55				●		
	W30	TOGX06T103TN CBN57					●	
44 - 93	W30	TOHX090202EL-US12 CK32	●	●				
	W30	TOHX090200EL-G12 BK60	●	●				
	W57	TOGX090204FN-12 K10				●	●	

for better surface finish			for workpiece material					
D	Insert		P	M	K	N	S	H
	Order No. size	ISO-Code						
25 - 44	W30	TOHX06T102EL-UF12 BK60	●	●				
	W30	TOGX06T103FN PKD55				●		
	W30	TOGX06T103TN CBN57					●	
	W30	TOGX06T103TN CBN40						●
44 - 93	W30	TOHX090202EL-UF12 BK60	●	●				
	W30	TOHX090200EL-G12 BK60	●	●				
	W57	TOGX090204FN-12 K10				●	●	
	W30	TOGX090204TN CBN40						●

MicroKom® *hi.flex* Bridge / Insert holder Ø 90 – 125 mm



● very good ◐ good ○ possible ✕ not possible



D	Bridge		Insert holder	Basic recommendation			Assembly parts	Accessories
	Order No.	Location screw ① Order No. Article		Order No.	Insert Order No. size	Insert ISO-Code	for workpiece material P M K N S H	Clamping screw Order No. Article
90-125	M05 80100 0,147	5501105016 M5×16 ISO4762	M05 20150 0,026	W57 14140.0460 W30 14060.0461 W57 14120.0423	TOGX090204EN-14 BK60 TOHX090204EL-G06 BK61 TOGX090204FN-12 K10		N00 56111 S/M2,6×6,2-8IP 1,28 Nm	L05 00830 8IP

Supply includes bridge: Bridge with location screw.

Supply includes insert holder: Insert holder with clamping screw.

Please order inserts and accessories separately.

Technical Notes

Guidelines for fine boring with MicroKom® hi.flex Fine boring system

Material group	Strength Rm N/mm²	Hardness HB	Material	Material example material code/DIN	Cutting speed v_c m/min	Max. feed f (mm/rev)
1.0	≤500		non-alloy steels	S137-2 / 1.0037, 95Mn28 / 1.0715, St44-2 / 1.0044	300	0,10
2.0	500-900		non-alloy / low alloy steels	St52-2 / 1.0050, C55 / 1.0525, 16MnCr5 / 1.7131	250	0,12
2.1	<500		lead alloys	95MnPb28 / 1.0718	300	0,15
3.0	>900		non alloy / low alloy steels: heat resostant structural, heat treated, nitride and tools steels	42CrMo4 / 1.7225, CK60 / 1.1221	240	0,10
4.0	>900		high alloy steels	X6CrMo4 / 1.2341, X165CrMoV12/1.2601	200	0,10
4.1			HSS		120	0,08
5.0		250	special alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel 718/2.4668, Nimonic 80A/2.4631	50	0,08
5.1	400		titanium, titanium alloys	TiAl5Sn2 / 3.7114	30	0,08
6.0	≤600		stainless steels	X2CrNi189 / 1.4306, X5CrNiMo1810/ 1.4401	200	0,10
6.1	<900		stainless steels	X8CrNb17/1.4511, X10CrNiMoTi1810/ 1.4571	180	0,10
7.0	>900		stainless / fireproof steels	X20Cr13 / 1.4021, X40Cr13 / 1.4034	120	0,10
8.0		180	gray cast iron	GG-25/0.6025, GG-35/0.6035	240	0,20
8.1		250	alloy gray cast iron	GG-NiCr202 / 0.6660	200	0,20
9.0	≤600	130	spheroidal, graphite cast iron, ferritic	GGG-40 / 0.7040	180	0,15
9.1		230	spheroidal graphite cast iron, ferritic/perlitic	GGG-50 / 0.7050, GGG-55 / 0.7055, GTW-55 / 0.8055	180	0,15
10.0	>600	250	spheroidal graph. cast iron, perlitic malleable iron	GGG-60 / 0.7060, GTS-65 / 0.8165	160	0,15
10.1		200	alloyed spheroidal graphite cast iron	GGG-NiCr20-2 / 0.7661	140	0,15
10.2		300	vermicular cast iron	GGV Ti < 0,2, GGV Ti > 0,2	120	0,15
12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	CuZn36Pb3 / 2.1182, G-CuPb15Sn / 2.1182	300	0,15
12.1		100	copper alloy, brass, bronze: average cut	CuZn40Al1 / 2.0550, E-Cu57 / 2.0060	270	0,15
13.0		60	wrought aluminium alloys	AlMg1 / 3.3315, AlMnCu / 3.0517	500	0,12
13.1		75	cast alum. alloy: Si-content <10% magnesium alloy	G-AlMg5 / 3.3561, G-AISi9Mg / 3.2373	300	0,15
14.0		100	cast alum.alloy: Si-content >10%	G-AISi10Mg / 3.2381	250	0,15
15.0	1400		hardened steels < 45 HRC		120	0,08
16.0	1800		hardened steels > 45 HRC		90	0,08

Alternative Inserts

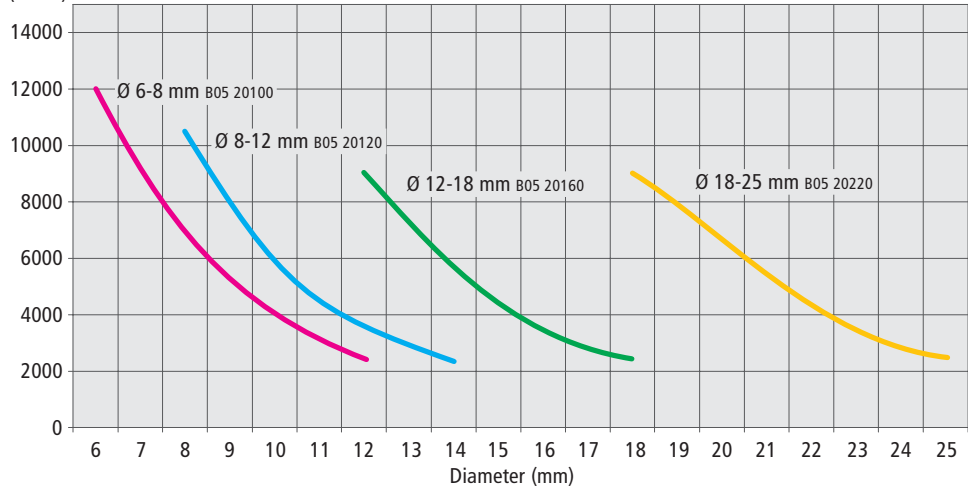
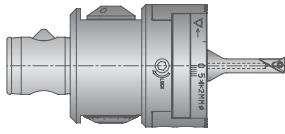
for better chip control			for workpiece material							
D	Insert		Order No. size	ISO-Code	P	M	K	N	S	H
	W30	W57								
90 - 125			W30 14120.3232	TOHX090202EL-US12 CK32	●	●				
			W30 14120.3060	TOHX090200EL-G12 BK60	●	●				
			W57 14120.0423	TOGX090204FN-12 K10				●	●	

for better wear resistance			for workpiece material							
D	Insert		Order No. size	ISO-Code	P	M	K	N	S	H
	W57	W30 PKD CBN								
90 - 125			W30 14120.3232	TOHX090202EL-US12 CK32	●	●				
			W30 14120.3060	TOHX090200EL-G12 BK60	●	●				
			W57 14120.0423	TOGX090204FN-12 K10				●	●	

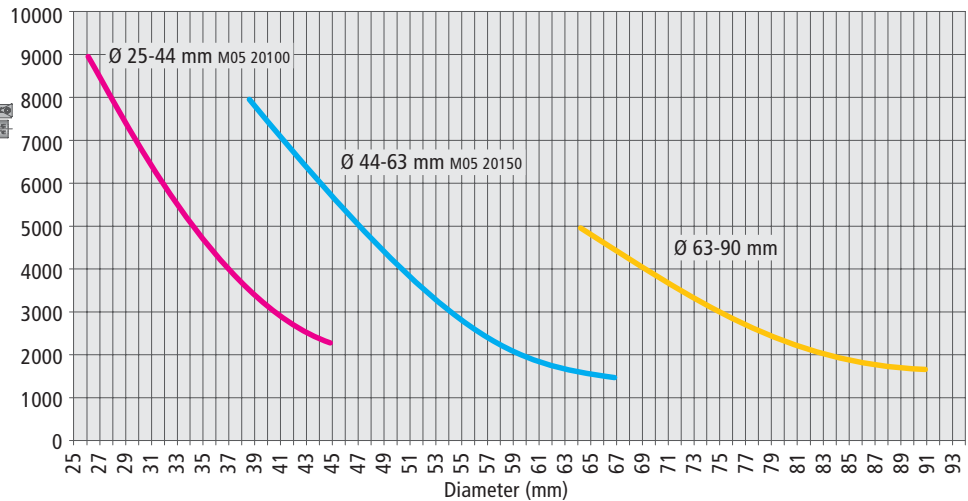
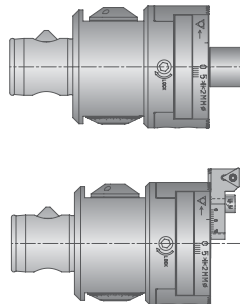
for better surface finish			for workpiece material							
D	Insert		Order No. size	ISO-Code	P	M	K	N	S	H
	W57	W30 PKD CBN								
90 - 125			W30 14120.3160	TOHX090202EL-UF12 BK60	●	●				
			W30 14120.3060	TOHX090200EL-G12 BK60	●	●				
			W57 14120.0423	TOGX090204FN-12 K10				●	●	
			W30 14990.0440	TOGX090204TN CBN40						●

Spindle speed diagram

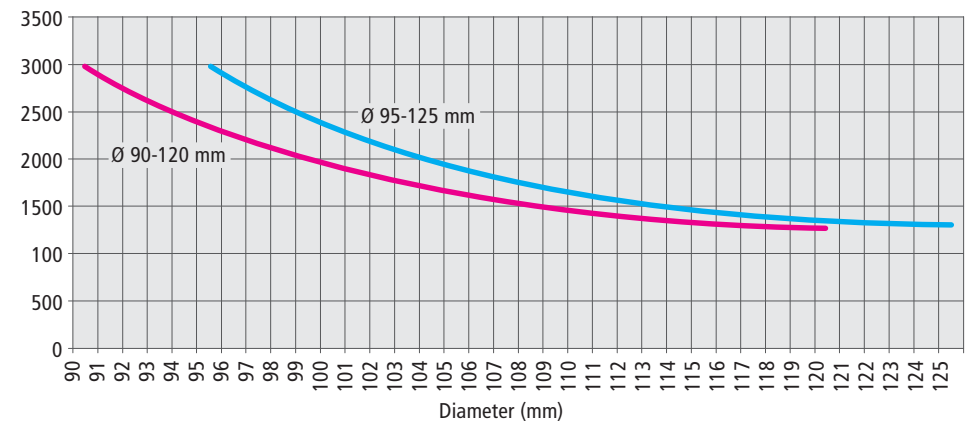
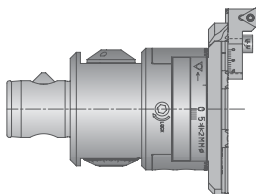
Ø 6 - 24 mm Spindle speed (1/min)



Ø 25 - 89 mm Spindle speed (1/min)



Ø 90 - 125 mm Spindle speed (1/min)



The technical notes provided in the **application details** depend on the environmental and application conditions (such as machine, environmental temperature, lubrication/coolant used and desired machining results): these are based on proper application conditions, use and compliance with the spindle speed limits given for the tools.