



TiefbohrSysteme[®] GmbH

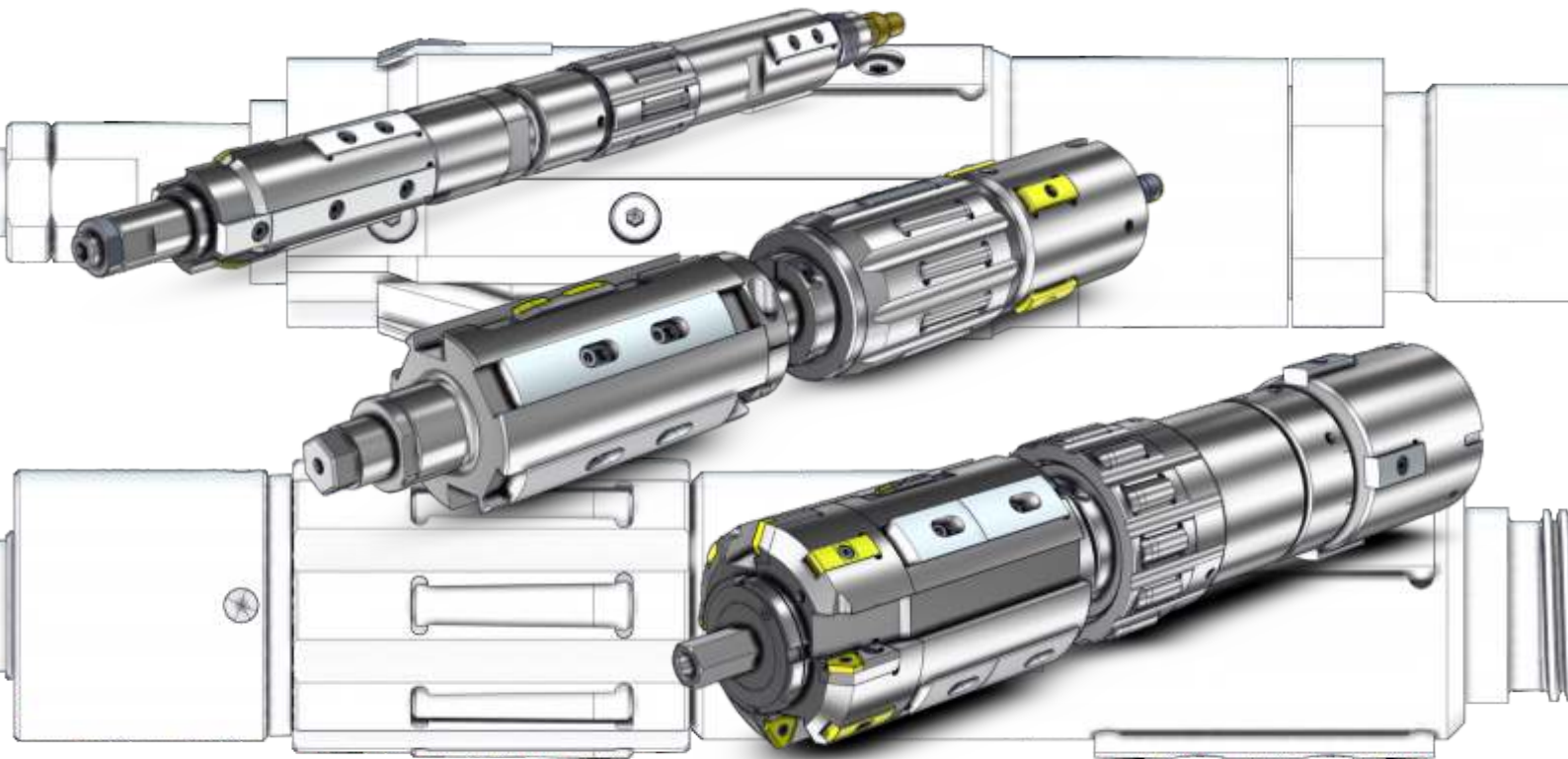
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

Skiving and Roller Burnishing Tools

Type 1200

DEEP HOLE DRILLING TOOLS

SKIVING RANGE Ø 25,00 - 401,99 mm



Deep Hole Boring - An Inaccessible World

In today's production world, precision and production strategies are a significant constituent for success. The more complex the production process, the more important are these two factors. deep hole boring our company, BTA-Tiefbohrsysteme GmbH, is the essential partner for implementation even under difficult marginal conditions with high requirements. We are the only company in the world capable of offering our customers everything from inserts to complete, suitable equipment for deep hole boring machines. Our experienced experts are always at your side to ensure proper support from planning your deep hole boring project up to tool services. All this is aimed at your success.

In the company-owned application and research department we can test innovations and special designed tools, customize the tools to user-specific material and train their operators. You will receive tools customized for your application and benefit from our experience.

Our tool systems offer you the following advantages:

- Tools designed for various processes (solid boring, trepanning, counter boring and skiving) with the same effective elements, especially such as inserts and guides. This results in extremely low stocks and simple handling.
- Suitable selection possibilities for tools, corresponding to required boring quality, from simple solid boring to form boring.
- Custom layout of tools for various production requirements to straightness, surface, material and constant wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
- Production-optimized machinery layout for reducing setup and conversion times.

Here are a few results from production boring with our tools:

- Surface Ra < 0.1 µm e.g. by skiving and roller burnishing
- Mismatch of axes < 0.1mm/m e.g. by pull counter boring
- Hole accuracy < IT8 e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.

BTA-Tiefbohrsysteme GmbH





Contents

Contents	3
Skiving Tools Type 1232	4
Skiving Tools Type 1232 spare parts	5
Skiving Tools Type 1207	6
Skiving Tools Type 1207 spare parts	7
Skiving Tools Type 1230	8
Skiving Tools Type 1230 spare parts	9
Skiving Tools Type 1220	12
Skiving Tools Type 1220 spare parts	13

Tool characteristics

- drilling depth to 400 x tool diameter
- surface up to R_a 1,25 μ m
- mismatch of axes to 0,05mm/m
- drilling accuracy up to IT8

Skiving Tools Type 1232

Skiving Tools Type 1232 with Roller Burnishing Tool Type 1224 and Threaded Adapter Type 0740



Tool description:

Skiving tools with indexable insert holders. Each insert holder holds one indexable insert.

Floating skiving inserts or insert holders are used to keep the hole constantly centered.

The base body has four fibre pads for supporting the tool in the hole. The burnishing tool attached to the skiving tool is equipped with radially arranged rollers. The burnishing tool has a threaded intermediate element for hydraulic connection. All parts mentioned are replaceable.

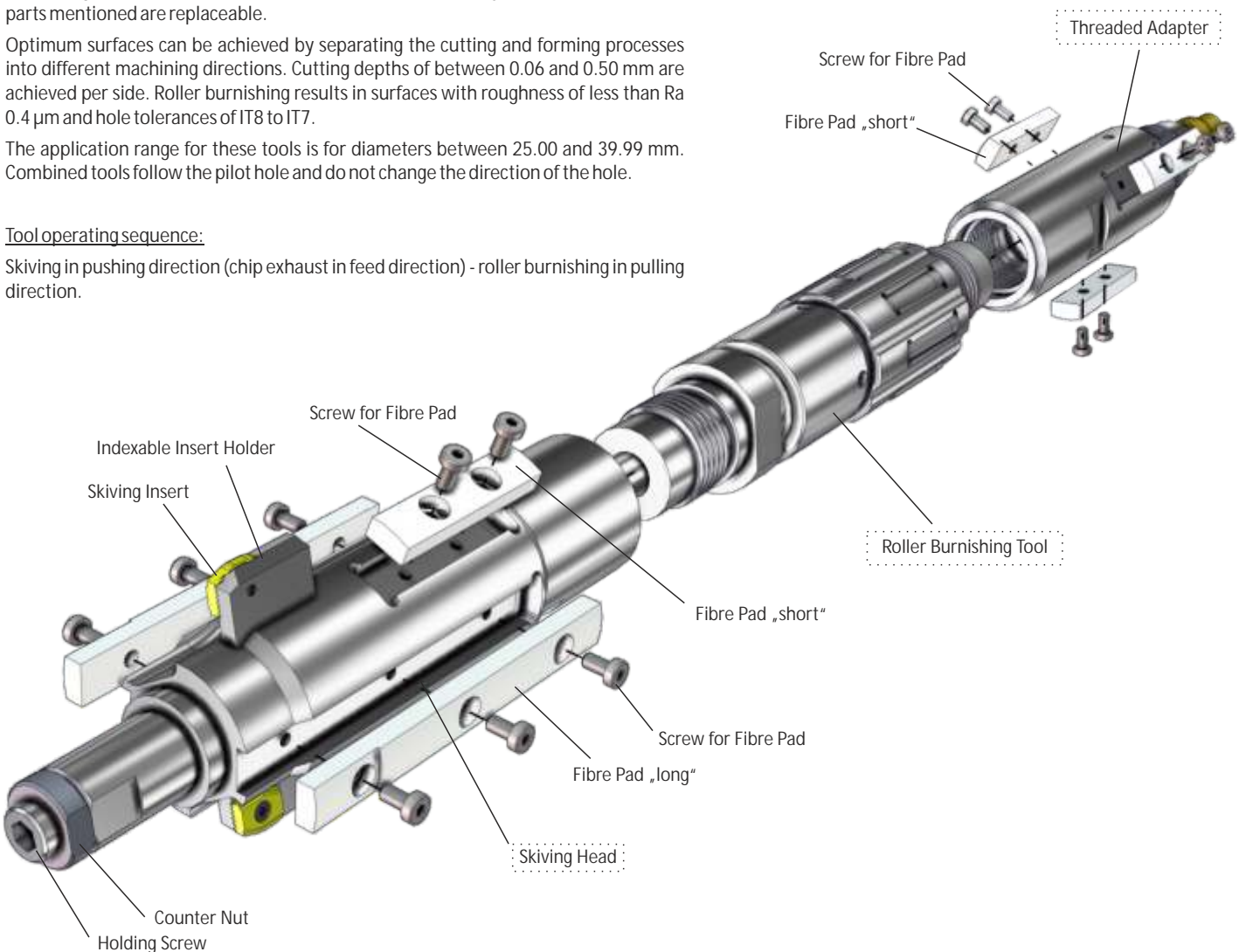
Optimum surfaces can be achieved by separating the cutting and forming processes into different machining directions. Cutting depths of between 0.06 and 0.50 mm are achieved per side. Roller burnishing results in surfaces with roughness of less than Ra 0.4 µm and hole tolerances of IT8 to IT7.

The application range for these tools is for diameters between 25.00 and 39.99 mm. Combined tools follow the pilot hole and do not change the direction of the hole.

Tool operating sequence:

Skiving in pushing direction (chip exhaust in feed direction) - roller burnishing in pulling direction.

Boring Range	Drill Tube Connection	Ident-No. Skiving Tool
Ø 25,00 - Ø 31,99	22	Numbering depending on the diameter
Ø 32,00 - Ø 35,99	26	
Ø 36,00 - Ø 39,99	30	



Skiving Tools Type 1232 - Spare and wear parts

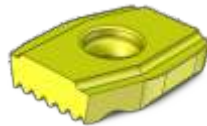
Cutter Magazine for Type 1232



Boring Range	Ident-No. Cutter Magazine	Ident-No. Clamping Screw	Ident-No. Torx-Wrench
Ø 25,00 - Ø 39,99	Numbering depending on the diameter	M2,5 x 5 - 010.8405.U	T8 - 010.8812.F

Indexable Insert for Type 1232

Boring Range	Ident-No. HM coated
Ø 25,00 - Ø 39,99	019.2704.U



Fibre Pad for Type 1232



Boring Range	Fibre Pad "short"	Fibre Pad "long"	Srew for Fibre Pad	Ident-No. Hexagon-Wrench
Ø 25,00 - Ø 29,99	018.6358.H	018.7344.K	M3x5 - 010.8643.C	SW 2
Ø 30,00 - Ø 39,99		018.2254.G	M3x6 - 008.5467.S	008.5439.X

Spare parts for Roller Burnishing Tool Type 1224



Boring Range	Ident-No. Cone Shaft	Ident-No. Roller Cage	Roller
Ø 25,00 - Ø 31,99	Numbering depending on the diameter	Numbering depending on the diameter	008.7942.C RDRY-701-00218
Ø 32,00 - Ø 35,99			
Ø 36,00 - Ø 39,99			

Skiving and Roller Burnishing Tools Type 1207

Skiving and Roller Burnishing Tools with hydraulically extended skiving inserts

Boring Range	Drill Tube Connection
Ø 40,00 - Ø 45,99	33
Ø 46,00 - Ø 49,99	36
Ø 50,00 - Ø 56,99	39
Ø 57,00 - Ø 60,99	43
Ø 61,00 - Ø 67,99	47
Ø 68,00 - Ø 74,99	51
Ø 75,00 - Ø 80,99	56
Ø 81,00 - Ø 90,99	62
Ø 91,00 - Ø 98,99	68
Ø 99,00 - Ø 110,99	75
Ø 111,00 - Ø 122,99	82
Ø 123,00 - Ø 134,99	94
Ø 135,00 - Ø 148,99	106
Ø 149,00 - Ø 161,99	118
Ø 162,00 - Ø 173,99	130
Ø 174,00 - Ø 185,99	142
Ø 186,00 - Ø 197,99	154
Ø 198,00 - Ø 209,99	166
Ø 210,00 - Ø 221,99	178
Ø 222,00 - Ø 233,99	190
Ø 234,00 - Ø 245,99	202
Ø 246,00 - Ø 257,99	214
Ø 258,00 - Ø 269,99	226
Ø 270,00 - Ø 281,99	238
Ø 282,00 - Ø 293,99	250
Ø 294,00 - Ø 305,99	262
Ø 306,00 - Ø 317,99	274
Ø 318,00 - Ø 329,99	286
Ø 330,00 - Ø 341,99	298
Ø 342,00 - Ø 353,99	310
Ø 354,00 - Ø 365,99	322
Ø 366,00 - Ø 377,99	334
Ø 378,00 - Ø 389,99	346
Ø 390,00 - Ø 401,99	358

Tool description:

Combined skiving and roller burnishing tools.

Skiving tool with insert holders installed in exchangeable cartridge. Each insert holder is equipped with one indexable insert, one chip breaker and one auxiliary cutter.

If desired a version with clamping inserts can also be used.

Floating skiving inserts or cartridges are used to keep the hole constantly centered.

The base body has four fibre pads for supporting the tool in the hole. The burnishing tool attached to the skiving tool is equipped with radially arranged rollers. All parts mentioned are replaceable.

The different machining directions separate the cutting and the forming process from each other, so that optimum surfaces can be achieved.

Cutting depths between 0,05 mm and 0,5 mm per side are achieved. Roller burnishing results in surfaces with roughness of less than Ra 0.4 to 0.05 µm and hole tolerances of IT8 to IT7.

The application range for these tools is for diameters between 40.00 and 401.99 mm. Combined tools follow the pilot hole and do not change the direction of the hole.

Tool operating sequence:

Skiving in pushing direction (chip exhaust in feed direction) - roller burnishing in pulling direction.



Skiving Tools Type 1207 - Spare and wear parts

Indexable / Clamping Insert Holder for Type 1207

Boring Range	Insert Holder Size	Ident-No. Indexable Insert Holder	Ident-No. Clamping Insert Holder
Ø 40,00 - Ø 42,99		018.9654.R	019.6580.G
Ø 43,00 - Ø 45,99	01	019.2185.D	019.6979.X
Ø 46,00 - Ø 49,99		019.2186.E	019.6980.Y
Ø 50,00 - Ø 60,99	1	018.9719.J	017.0613.K
Ø 61,00 - Ø 122,99	2	014.0238.E	017.0616.D
Ø 123,00 - Ø 401,99	3	014.0240.T	017.0618.Z



Spare parts for Roller Burnishing Tool



Boring Range	Ident-No. Cone	Ident-No. Roller Cage	Roller
Ø 40,00 - Ø 67,99	Numbering depending on the diameter	Numbering depending on the diameter	008.0322.X
Ø 68,00 - Ø 90,99			008.7541.W
Ø 91,00 - Ø 122,99			008.7274.T
Ø 123,00 - Ø 401,99			008.7540.Z



Skiving- and Roller Burnishing Tool Type 1230

Skiving and Roller Burnishing Tools with hydraulically extended skiving inserts

Boring Range	Drill Tube Connection
Ø 50,00 - Ø 56,99	43
Ø 57,00 - Ø 60,99	47
Ø 61,00 - Ø 67,99	51
Ø 68,00 - Ø 74,99	56
Ø 75,00 - Ø 80,99	62
Ø 81,00 - Ø 90,99	68
Ø 91,00 - Ø 98,99	75
Ø 99,00 - Ø 110,99	82
Ø 111,00 - Ø 122,99	94
Ø 123,00 - Ø 134,99	106
Ø 135,00 - Ø 148,99	118
Ø 149,00 - Ø 161,99	130
Ø 162,00 - Ø 173,99	142
Ø 174,00 - Ø 197,99	154
Ø 198,00 - Ø 209,99	166
Ø 210,00 - Ø 221,99	178
Ø 222,00 - Ø 233,99	190
Ø 234,00 - Ø 245,99	202
Ø 246,00 - Ø 257,99	214
Ø 258,00 - Ø 269,99	226
Ø 270,00 - Ø 281,99	238
Ø 282,00 - Ø 293,99	250
Ø 294,00 - Ø 305,99	262
Ø 306,00 - Ø 317,99	274
Ø 318,00 - Ø 329,99	286
Ø 330,00 - Ø 341,99	298
Ø 342,00 - Ø 353,99	310
Ø 354,00 - Ø 365,99	322
Ø 366,00 - Ø 377,99	334
Ø 378,00 - Ø 389,99	346
Ø 390,00 - Ø 401,99	358

Tool description:

Combined skiving and roller burnishing tools.

Skiving tool with insert holders installed in exchangeable cartridge. Each insert holder is equipped with one indexable insert, one chip breaker and one auxiliary cutter.

If desired a version with clamping plates can also be used.

Floating skiving inserts or cartridges are used to keep the hole constantly centered.

The base body has four fibre pads for supporting the tool in the hole. The burnishing tool attached to the skiving tool is equipped with radially arranged rollers. All parts mentioned are replaceable.

Short cycle times are achieved by performing the cutting and forming operations in the same direction.

Cutting depths of between 0.05 and 0.50 mm are achieved per side. Roller burnishing results in surfaces with roughness of less than Ra 0.4 to 0.05 µm and hole tolerances of IT8 to IT7.

The application range for these tools is for diameters between 50.00 and 401.99 mm. Combined tools follow the pilot hole and do not change the direction of the hole.

Tool operating sequence:

Skiving in the pushing direction and roller burnishing are accomplished in one operation (chip exhaust in feed direction).

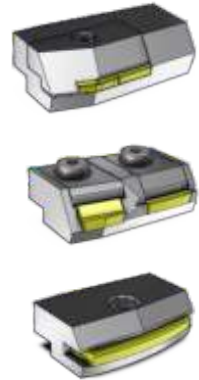


Spare and wear parts for Type 1230

Indexable / Clamping Inserts Holder for Type 1230



Boring Range	Insert Holder Size	Ident-No.	
		Indexable Insert Holder	Clamping Insert Holder
Ø 50,00 - Ø 60,99	1	018.9719.J	017.0613.K
Ø 61,00 - Ø 122,99	2	014.0238.E	017.0616.D
Ø 123,00 - Ø 401,99	3	014.0240.T	017.0618.Z



Indexable Insert / Chip Breaker / Additional Insert for Type 1230

Range: from Ø50,00 mm



Boring Range	Indexable Insert		Additional Cutter	
	P20 coated	K35 coated	P20 coated	K20 coated
Ø 50,00 - Ø 60,99	018.9670.H	019.2704.U	018.9705.U	018.9657.U

Range: from Ø61,00 mm



Boring Range	Indexable Insert		Chip Breaker		Additional Insert	
	P20 coated	P20	P20 coated	P20	P20 coated	P20
Ø 61,00 - Ø 122,99	014.0842.N	014.0837.F	008.0104.J	008.5342.P	014.0329.B	014.0328.D
Ø 123,00 - Ø 401,99	014.0843.L	014.0838.D	008.0246.M	008.0236.Q		

Clamping Insert for Type 1230



Boring Range	Radius 80		Radius 165	
	P10 coated	P10	P10 coated	P10
Ø 50,00 - Ø 60,99	018.0435.N	-	018.3372.X	-
Ø 61,00 - Ø 122,99	018.0436.P	011.8586.F	017.3628.E	011.8584.K
Ø 123,00 - Ø 401,99	018.1142.Y	011.8544.X	016.9840.F	011.8585.H

Spare and wear parts for Type 1230

Fibre Pads for Type 1230



Boring Range	Size	Ident-No. Polyamid	Washer	Screw for Fibre Pad	Ident-No. Hexagon Wrench
Ø 50,00 - Ø 56,99	12	019.9659.P	011.2044.C	M4x10 DIN7984 008.5000.U	SW2,5 - 008.5836.M
Ø 57,00 - Ø 67,99	16	018.7264.B			
Ø 68,00 - Ø 122,99	20	013.9377.W	011.2043.E	M6x12 DIN7984 008.5020.N	SW4 - 008.5837.K
Ø 123,00 - Ø 173,99	30	019.5845.R		M6x16 DIN6912 008.5021.L	SW5 - 008.6948.U
Ø 174,00 - Ø 399,99	50	019.5846.S	008.6776.X	M8x20 DIN912 008.5133.Z	SW5 - 008.5839.F
Ø 400,00 - Ø 401,99	80	019.5847.T	011.2042.G	M10x20 DIN7984 008.5043.A	SW7 - 008.5840.W

Notice: The Fibre Pads are wear parts and are supplied oversize. To achieve the correct diameter they will have to be turned to size once mounted in the tool.

Standard placement: 4 pieces per tool.



Spare and wear parts for Type 1230

Spare and wear parts for Roller Burnishing Tool



Boring Range	Ident-No. Cone	Ident-No. Roller Cage	Roller	Guide Pad
Ø 50,00 - Ø 60,99			008.9074.R	017.8967.D
Ø 61,00 - Ø 74,99			010.7705.M	018.1799.H
Ø 75,00 - Ø 80,99			008.0805.B	
Ø 81,00 - Ø 85,99			008.9017.E	018.1800.J
Ø 86,00 - Ø 90,99	Numbering depending on the diameter	Numbering depending on the diameter	008.0920.B	
Ø 91,00 - Ø 105,99			008.7278.K	
Ø 106,00 - Ø 116,99				
Ø 117,00 - Ø 141,99			008.7862.A	018.1801.K
Ø 142,00 - Ø 148,99				018.1802.L
Ø 149,00 - Ø 245,99				
Ø 246,00 - Ø 401,99				

Notice: The Guide Pads are wear parts and are supplied oversize. To achieve the correct diameter they will have to be turned to size once mounted in the tool.



Counter boring, Skiving and Roller Burnishing Tool Type 1220

Counter boring, Skiving and Roller Burnishing Tools (Triple combined tool)



Boring Range	Drill Tube Connection	Insert Holder	Insert Screw	Clamping Screw
Ø 68,00 - Ø 74,99	56	A 14,5 016.4593.X	M4x7,5 T15 011.2416.Q	M4x10 008.5000.U
Ø 75,00 - Ø 80,99	62			
Ø 81,00 - Ø 90,99	68			
Ø 91,00 - Ø 98,99	75			
Ø 99,00 - Ø 110,99	82	A 21 016.4595.T	M5x10 T20 011.2061.C	M6x16 008.5021.L
Ø 111,00 - Ø 122,99	94			
Ø 123,00 - Ø 134,99	106			
Ø 135,00 - Ø 148,99	118			
Ø 149,00 - Ø 161,99	130			
Ø 162,00 - Ø 173,99	142			
Ø 174,00 - Ø 197,99	154			
Ø 198,00 - Ø 209,99	166			
Ø 210,00 - Ø 221,99	178			
Ø 222,00 - Ø 233,99	190			
Ø 234,00 - Ø 245,99	202	A 28 016.4597.P	M6x14 T20 016.4592.A	M8x20 008.5031.H
Ø 246,00 - Ø 257,99	214			
Ø 258,00 - Ø 401,99	226			

Tool description:

Combined counter boring, skiving and burnishing tools for parts with significantly high material allowance.

Multi-cutter counterboring body is equipped with four insert holders, four carbide inserts and three carbide guide pads.

All counterboring bodies can be replaced in the completely assembled state.

The skiving tool guide bodies are equipped with two opposing, hydraulically extending insert holders, two carbide inserts, two carbide auxiliary cutters and four fibre pads. The fibre pads support the tool in the hole and attenuate vibrations. The burnishing tool connected with the skiving tool is equipped with radially arranged rollers, which are also hydraulically deployed to the burnishing diameter. All parts mentioned are replaceable.

Floating skiving inserts or cartridges are used to keep the hole constantly centered.

The cutting depth is splitted between two

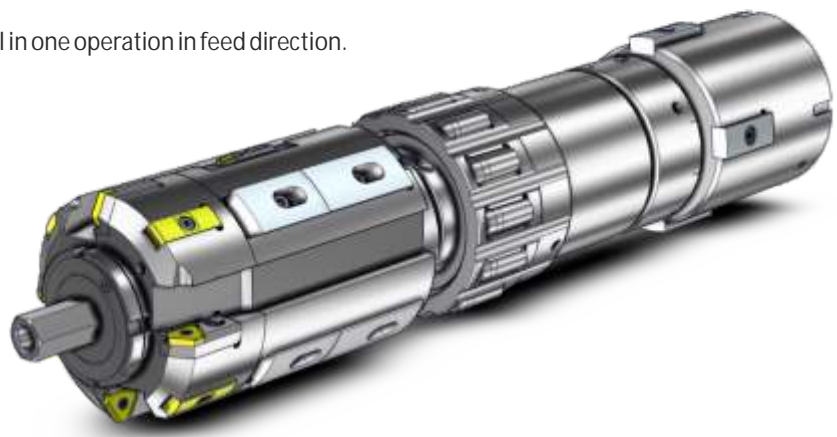
cutters to ensure better chip removal and optimum surfaces.

Cutting depths of between 0.05 and 0.50 mm are achieved per side. Roller burnishing results in surfaces with roughness of less than Ra 0.4 to 0.05 µm and hole tolerances of IT8 to IT7.

The application range for these tools is for diameters between 68.00 and 401.99 mm.

Tool operating sequence:

Counter boring, skiving and roller burnishing all in one operation in feed direction.

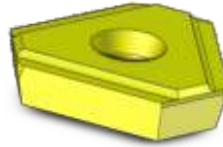


See Page 13 for Indexable Inserts ordering data,
See Page 14 for Guide Pads and Fibre Pads ordering data.



Spare and wear parts for Type 1220

Indexable Inserts Size AK 16 - AK 40



Description	Chip Breaker	Carbide		
		P20 TiN	K10 TiN	K10
AK 16	Gr.1 - 1,8x0,6	011.2840.B	018.7016.T	011.2802.K
AK 25	Gr.1 - 2,1x0,6	011.2842.W	013.9684.M	011.2778.D
AK 40	Gr.1 - 2,5x0,8	011.2844.S	013.9685.K	011.2779.B

Additional Chip Breakers and coatings on request



Cutter Magazine Size 2+3
Ø68,00 - 401,99

Indexable / Clamping Insert Holder for Type 1220



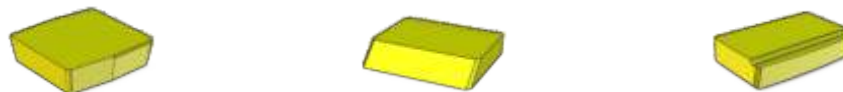
Boring Range	Insert Holder Size	Ident-No.	
		Indexable Insert Holder	Clamping Insert Holder
Ø 68,00 - Ø 122,99	2	014.0238.E	017.0616.D
Ø 123,00 - Ø 401,99	3	014.0240.T	017.0618.Z



Cutter Magazine Size 2+3
Ø68,00 - 401,99
alternatively for use
with Clamping Insert

Indexable Insert / Chip Breaker / Additional Insert for Type 1220

Range: from Ø68,00 mm



Boring Range	Indexable Insert		Chip Breaker		Additional Insert	
	P20 coated	P20	P20 coated	P20	P20 coated	P20
Ø 68,00 - Ø 122,99	014.0842.N	014.0837.F	008.0104.J	008.5342.P	014.0329.B	014.0328.D
Ø 123,00 - Ø 401,99	014.0843.L	014.0838.D	008.0246.M	008.0236.Q		

Clamping Insert for Type 1220

Boring Range	Radius 80		Radius 165	
	P10 coated	P10	P10 coated	P10
Ø 68,00 - Ø 122,99	018.0436.P	011.8586.F	017.3628.E	011.8584.K
Ø 123,00 - Ø 401,99	018.1142.Y	011.8544.X	016.9840.F	011.8585.H



Spare and wear parts for Type 1220

Guide Pads for Type 1220



Description	Boring Range	Radius	Carbide		Shoe for Guide Pads	Screws for Shoes
			TiN coated	ML coated		
FL 14	Ø 68,00 - Ø 110,99	30	016.9229.T	019.6681.M	-	-
FL 18	Ø 111,00 - Ø 144,99	40	014.4761.R	019.6682.N	017.0631.H	008.5019.W
	Ø 145,00 - Ø 197,99	65	016.9238.S	019.6683.P		
	Ø 198,00 - Ø 401,99	90	019.2768.L	019.6684.Q		

Fibre Pads for Type 1220



Boring Range	Size	Ident-No. Polyamid	Washer	Screw for Fibre Pad	Ident-No. Hexagon Wrench
Ø 68,00 - Ø 122,99	20	013.9377.W	011.2043.E	M6x12 DIN7984 008.5020.N	SW4 - 008.5837.K
Ø 123,00 - Ø 173,99	30	019.5845.R		M6x16 DIN6912 008.5021.L	SW5 - 008.6948.U
Ø 174,00 - Ø 399,99	50	019.5846.S	008.6776.X	M8x20 DIN912 008.5133.Z	SW5 - 008.5839.F
Ø 400,00 - Ø 401,99	80	019.5847.T	011.2042.G	M10x20 DIN7984 008.5043.A	SW7 - 008.5840.W

Notice: The Fibre Pads are wear parts and are supplied oversize. To achieve the correct diameter they will have to be turned to size once mounted in the tool.

Standard placement: 4 pieces per tool.



Spare and wear parts for Type 1220

Spare and wear parts for Roller Burnishing Tool



Boring Range	Ident-No. Cone	Ident-No. Roller Cage	Roller	Guide Pad
Ø 68,00 - Ø 74,99			008.9074.R	018.1799.H
Ø 75,00 - Ø 80,99			010.7705.M	
Ø 81,00 - Ø 85,99			008.0805.B	
Ø 86,00 - Ø 90,99	Numbering depending on the diameter	Numbering depending on the diameter	008.9017.E	018.1800.J
Ø 91,00 - Ø 105,99			008.0920.B	
Ø 106,00 - Ø 116,99			008.7278.K	
Ø 117,00 - Ø 141,99				
Ø 142,00 - Ø 148,99				
Ø 149,00 - Ø 245,99			008.7862.A	018.1801.K
Ø 246,00 - Ø 401,99				018.1802.L

Notice: The Guide Pads are wear parts and are supplied oversize. To achieve the correct diameter they will have to be turned to size once mounted in the tool.





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